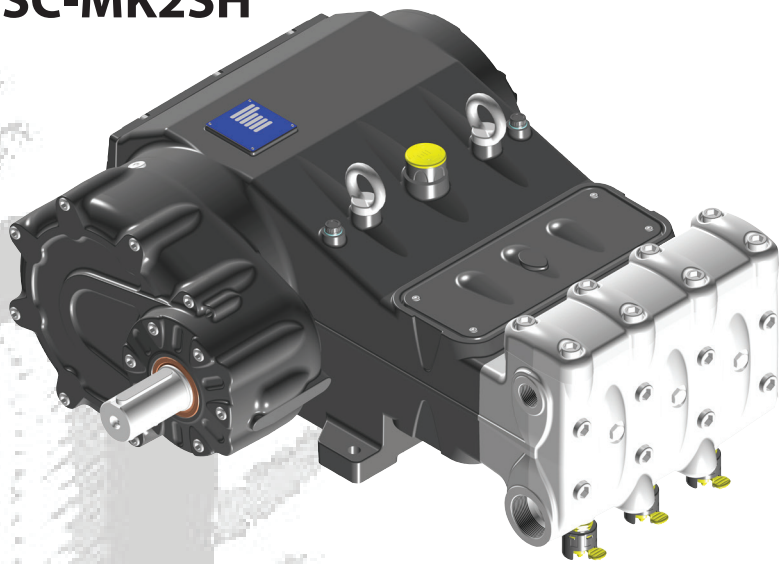
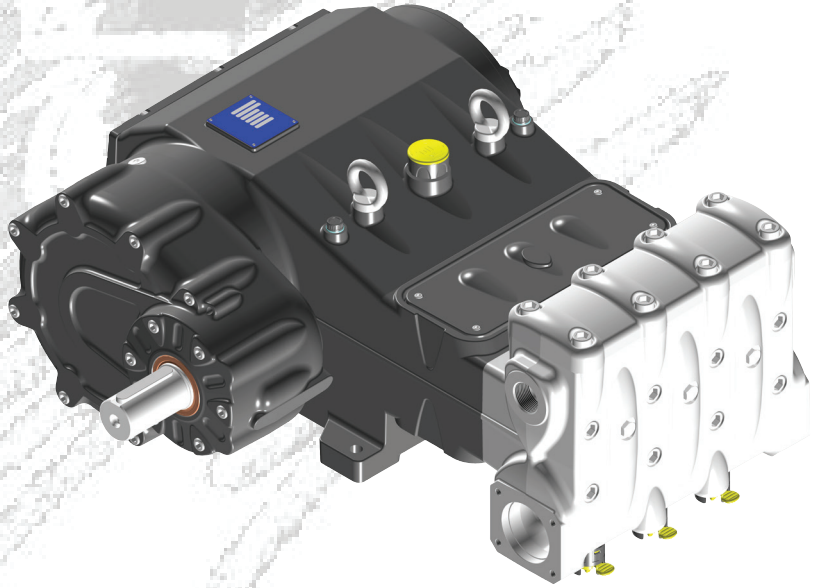
Serie
MK2-MK2S

Pratissoli

MK2R-MK2SR-MK2C-MK2SC-MK2SH



MK240 – MK245 – MK250



MK255 – MK260 – MK265

Manuale uso e manutenzione
Use and Maintenance Manual
Manuel d'utilisation et d'entretien
Betriebs- und Wartungsanleitung
Manual de Uso y mantenimiento
Manual de uso e manutenção
Руководство по эксплуатации и техническому обслуживанию
使用和保养手册
Kullanma ve bakım kılavuzu
دليل الاستخدام والصيانة

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1 INTRODUZIONE

Questo manuale descrive le istruzioni per l'uso e la manutenzione della pompa MK2 e deve essere attentamente letto e compreso prima dell'utilizzo della pompa.
Dal corretto uso e dall'adeguata manutenzione dipende il regolare funzionamento e durata della pompa.
Interpump Group declina ogni responsabilità per danni causati da negligenza e mancata osservazione delle norme descritte in questo manuale.
Verificare, all'atto del ricevimento, che la pompa sia integra e completa.
Segnalare eventuali anomalie prima di installare ed avviare la pompa.

2 DESCRIZIONE SIMBOLI

Leggere attentamente quanto riportato in questo manuale prima di ogni operazione.



Segnale di Avvertenza



Leggere attentamente quanto riportato in questo manuale prima di ogni operazione.



Segnale di Pericolo
Pericolo di folgorazione.



Segnale di Pericolo
Munirsi di maschera protettiva.



Segnale di Pericolo
Munirsi di occhiali protettivi.



Segnale di Pericolo
Munirsi di guanti protettivi prima di ogni operazione.



Segnale di Pericolo
Munirsi di opportune calzature

3 SICUREZZA

3.1 Avvertenze generali sulla sicurezza

L'uso improprio di pompe e sistemi ad alta pressione nonché l'inosservanza delle norme di installazione e manutenzione possono causare gravi danni a persone e/o cose. Chiunque si appresti ad assemblare o utilizzare sistemi ad alta pressione deve possedere la necessaria competenza per farlo, conoscere le caratteristiche dei componenti che andrà ad assemblare/utilizzare ed adottare tutte le possibili precauzioni necessarie a garantire la massima sicurezza in qualsiasi condizione di esercizio. Nessuna precauzione ragionevolmente applicabile dovrà essere omessa nell'interesse della sicurezza, sia da parte dell'Installatore che dell'Operatore.

3.2 Sicurezze essenziali del sistema alta pressione

1. La linea di pressione deve sempre prevedere una valvola di sicurezza.
2. I componenti del sistema alta pressione, in particolare per quei sistemi che operano prevalentemente all'esterno, devono essere adeguatamente protetti da pioggia, gelo e calore.
3. Le parti elettriche del sistema oltre ad essere adeguatamente protette da spruzzi d'acqua devono rispondere alle specifiche normative vigenti.
4. I tubi ad alta pressione devono essere correttamente dimensionati per la massima pressione di esercizio del sistema ed utilizzati sempre e solo all'interno del campo di pressioni di lavoro indicate dal Costruttore del tubo stesso. Le stesse modalità devono essere osservate per tutti gli altri accessori del sistema interessati all'alta pressione.
5. Le estremità dei tubi alta pressione devono essere inguainate ed assicurate ad una struttura solida, onde evitare pericolosi colpi di frusta in caso di scoppio o rottura delle connessioni.
6. Opportuni carter, di protezione devono essere previsti nei sistemi di trasmissione pompa (giunti, pulegge e cinghie, prese di potenza ausiliarie).

3.3 Sicurezza durante il lavoro



L'ambiente o l'area entro la quale opera un sistema alta pressione deve essere chiaramente segnalata e vietata a personale non autorizzato e, per quanto possibile, circoscritta o recintata. Il personale autorizzato ad accedere in tale area dovrà essere preventivamente istruito sul comportamento da tenere in questa area ed informato sui rischi derivanti da difetti o malfunzionamenti del sistema alta pressione.
Prima dell'avviamento del sistema l'Operatore è tenuto a verificare che:

1. Il sistema alta pressione sia correttamente alimentato vedere capitolo 9 par. 9.5.
2. I filtri in aspirazione pompa siano perfettamente puliti; è opportuno inserire un qualsiasi dispositivo che indichi il valore di intasamento.
3. Le parti elettriche siano adeguatamente protette ed in perfetto stato.
4. I tubi ad alta pressione non presentino evidenti segni di abrasione e le raccorderie siano in perfetto ordine.
5. In relazione all'applicazione, all'utilizzo e alle condizioni ambientali, durante il funzionamento le superfici esterne della pompa possono raggiungere temperature elevate. Consigliamo quindi di cautelarsi per evitare il contatto con le parti calde.

Qualsiasi anomalia o ragionevole dubbio che dovesse sorgere prima o durante il lavoro dovrà essere prontamente segnalato e verificato da personale competente. In questi casi la pressione dovrà essere immediatamente azzerata ed il sistema alta pressione fermato.

3.4 Norme di comportamento per l'utilizzo di lance



1. L'operatore deve sempre anteporre la sua incolumità e sicurezza, nonché quella di terzi che possano essere direttamente coinvolti dalle sue azioni, a qualsiasi altra valutazione od interesse del caso; il suo operato dovrà essere dettato dal buon senso e dalla responsabilità.
2. L'operatore deve sempre indossare un casco con visiera di protezione, indumenti impermeabili e calzare stivali appropriati al tipo di utilizzo e capaci di assicurare una buona presa sul pavimento in in presenza di bagnato.

Nota: *un adeguato abbigliamento protegge efficacemente dagli spruzzi d'acqua ma non altrettanto dall'impatto diretto con il getto d'acqua o da spruzzi molto ravvicinati. In talune circostanze potrebbero pertanto rendersi necessarie ulteriori protezioni.*

3. È buona norma organizzarsi in squadre di almeno due persone, in grado di darsi reciproca ed immediata assistenza in caso di necessità e di darsi il cambio durante lavori lunghi ed impegnativi.

4. L'area di lavoro interessata dal raggio d'azione del getto deve essere assolutamente interdetta e sgombrata da oggetti che, inavvertitamente investiti dal getto in pressione, possano danneggiarsi e/o creare situazioni di pericolo.
5. Il getto d'acqua deve essere puntato sempre e solo in direzione della zona di lavoro, anche durante prove o controlli preliminari.
6. L'operatore deve porre sempre attenzione alla traiettoria dei detriti rimossi dal getto d'acqua. Qualora necessario, adeguate paratie dovranno essere previste dall'Operatore a protezione di quanto potrebbe essere accidentalmente esposto.
7. Durante il lavoro l'Operatore non deve essere distratto per nessun motivo. Addetti ai lavori con necessità di accedere nell'area operativa dovranno attendere che l'Operatore sospenda il lavoro di propria iniziativa dopodichè rendere immediatamente nota la loro presenza.
8. È importante ai fini della sicurezza che tutti i componenti della squadra siano sempre a perfetta conoscenza delle reciproche intenzioni onde evitare pericolosi malintesi.
9. Il sistema ad alta pressione non deve essere avviato e portato in pressione senza che tutti i componenti della squadra siano in posizione e l'Operatore abbia già diretto la lancia verso la zona di lavoro.

3.5 Sicurezza nella manutenzione del sistema

1. La manutenzione del sistema alta pressione deve avvenire negli intervalli di tempo previsti dal costruttore che è responsabile dell'intero gruppo a norma di legge.
2. La manutenzione deve sempre essere eseguita da personale specializzato e autorizzato.
3. Il montaggio e lo smontaggio della pompa e dei vari componenti deve essere eseguita esclusivamente da personale autorizzato, utilizzando attrezzature idonee allo scopo onde evitare danni ai componenti, ed in modo particolare alle connessioni.
4. A garanzia della totale affidabilità e sicurezza utilizzare sempre e solo ricambi originali.

4 IDENTIFICAZIONE POMPA

Ogni pompa ha una targhetta di identificazione che riporta:
- Modello e versione pompa
- Numero di matricola
- Max numero di giri
- Potenza assorbita Hp - kW
- Pressione bar - P.S.I.
- Portata l/min - Gpm

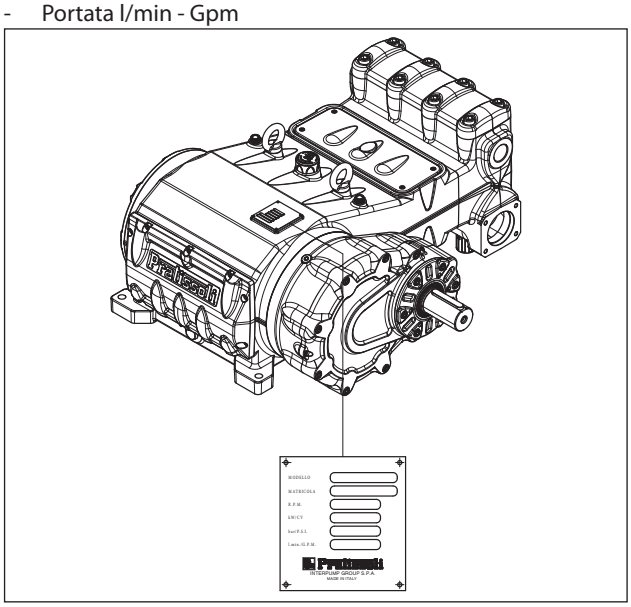


Fig. 1

Modello, versione e numero di matricola dovranno essere sempre indicati in caso di ordinazione di pezzi di ricambio

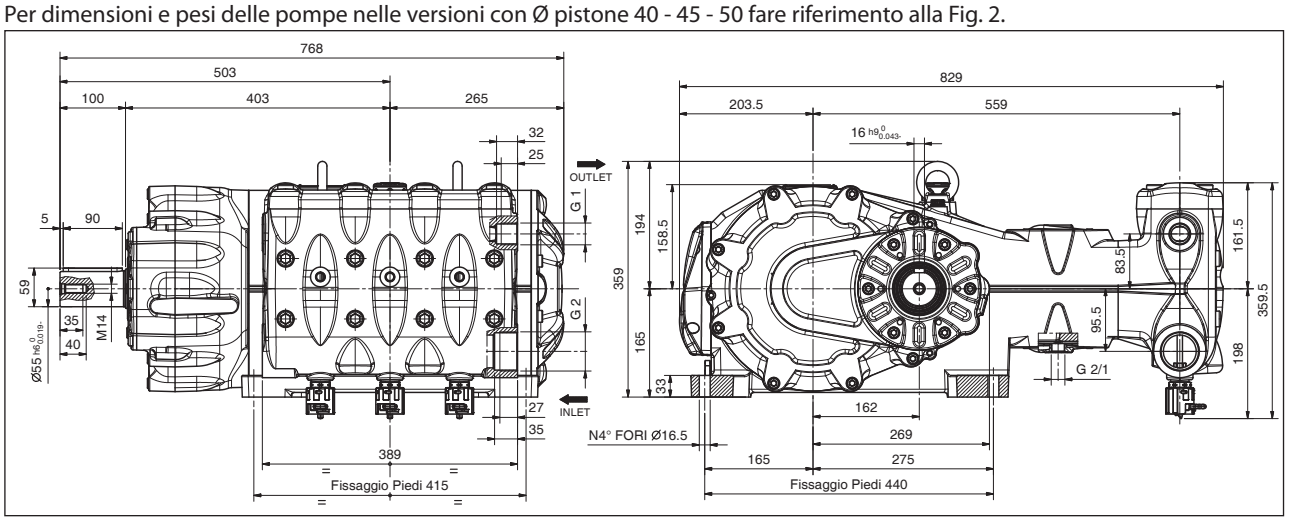
5 CARATTERISTICHE TECNICHE

Modello	Giri/1'	Portata		Pressione		Potenza	
		l/min	Gpm	bar	psi	kW	Hp
MK2 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Modello	Giri/1'	Portata		Pressione		Potenza	
		l/min	Gpm	bar	psi	kW	Hp
MK2S 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2S 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2S 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2S 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2S 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2S 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

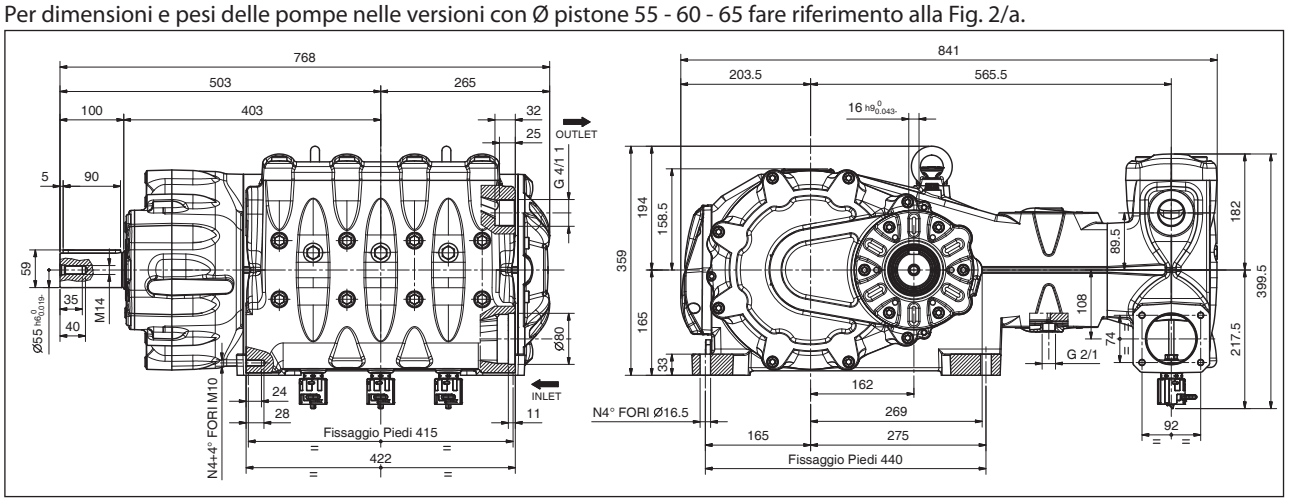
6 DIMENSIONI E PESI

Per dimensioni e pesi delle pompe nelle versioni con Ø pistone 40 - 45 - 50 fare riferimento alla Fig. 2.



Peso a secco 398 Kg. Fig. 2

Per dimensioni e pesi delle pompe nelle versioni con Ø pistone 55 - 60 - 65 fare riferimento alla Fig. 2/a.



Peso a secco 411 Kg. Fig. 2/a

Per dimensioni delle pompe versione H.P. con predisposizione Hydraulic Pack, fare riferimento alla Fig. 2/b.

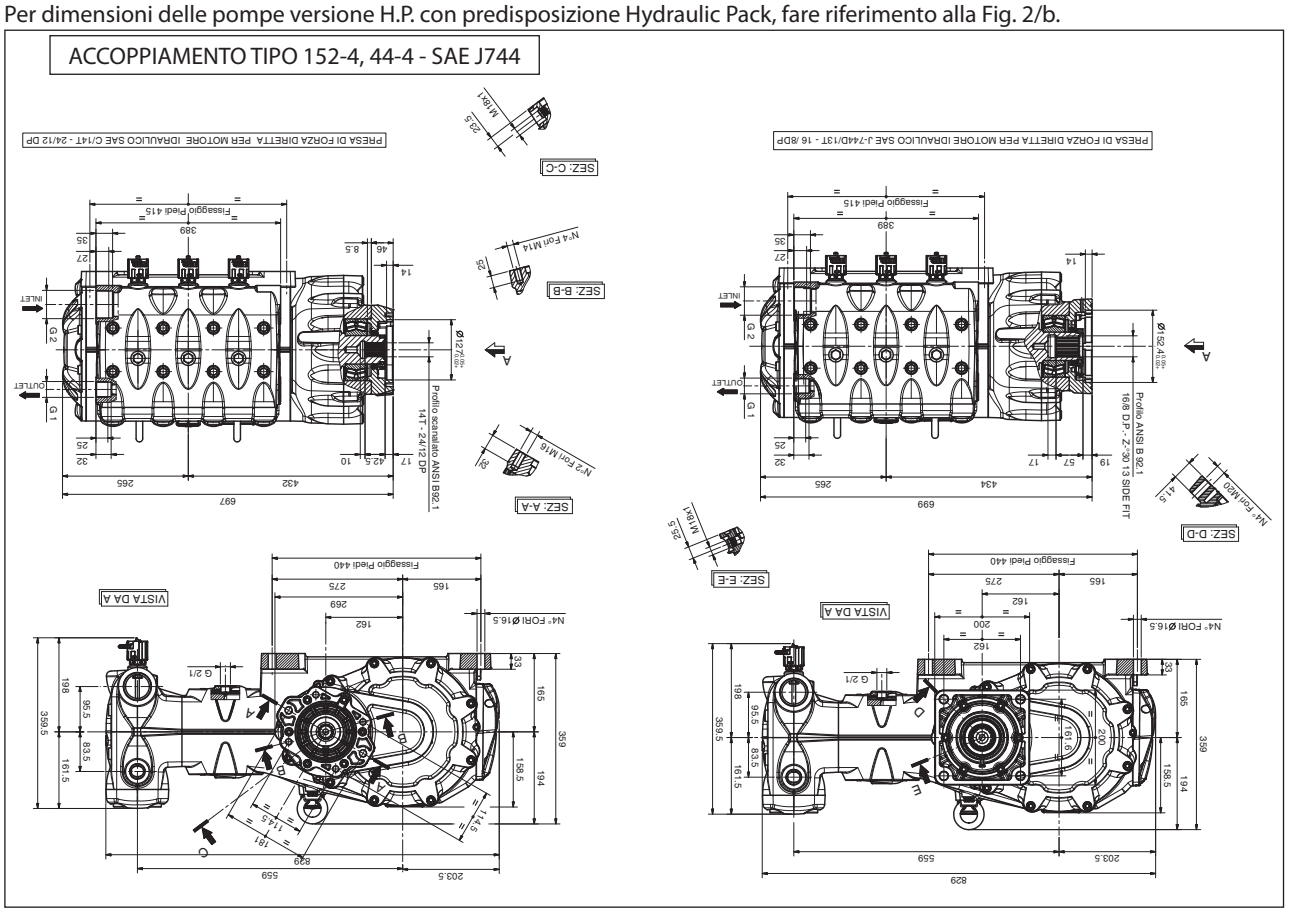


Fig. 2/b

Per dimensioni delle pompe versione L.P. con predisposizione Hydraulic Pack, fare riferimento alla Fig. 2/c.

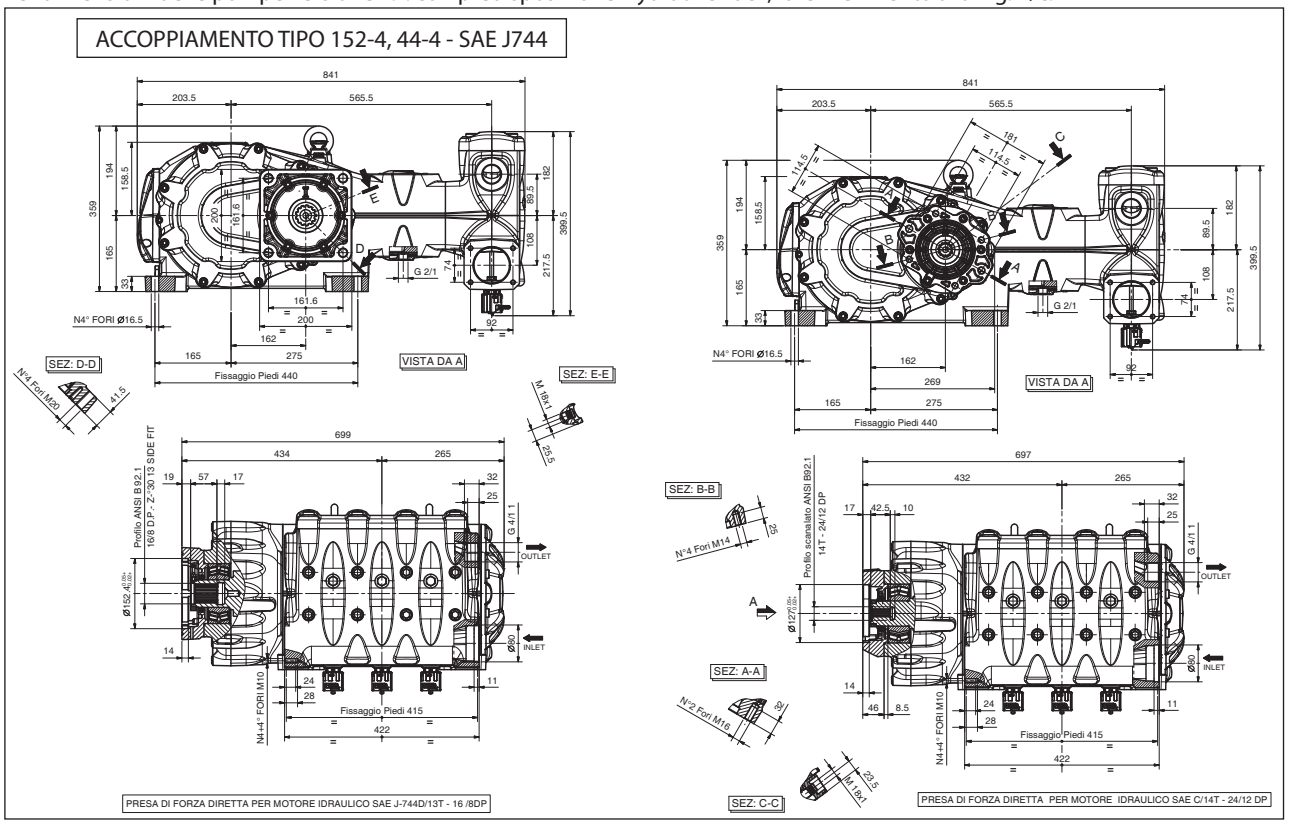


Fig. 2/c

7 INDICAZIONI PER L'UTILIZZO

La pompa è stata progettata per operare in ambienti con atmosfera non potenzialmente esplosiva, e con acqua filtrata (vedere par. 9.7).
Altri liquidi potranno essere utilizzati soltanto previo benestare formale dell'***Ufficio Tecnico*** o ***Servizio Assistenza Clienti***.

7.1 Temperatura acqua

La massima temperatura dell'acqua ammessa è 40 °C. Tuttavia è possibile utilizzare la pompa con acqua alla temperatura fino a 60 °C, ma solamente per brevi periodi. In tal caso si consiglia di interpellare l'***Ufficio Tecnico*** o ***Servizio Assistenza Clienti***.

7.2 Portata e pressione massima

Le prestazioni indicate a catalogo si riferiscono alle massime prestazioni fornibili dalla pompa. **Indipendentemente** dalla potenza utilizzata, la pressione ed il numero di giri massimi indicati in targhetta non possono essere superati se non espressamente autorizzati formalmente dall'***Ufficio Tecnico*** o ***Servizio Assistenza Clienti***.

7.3 Regime minimo di rotazione

Il regime minimo consentito per tali tipologie di pompe è 300 Giri/1'; Qualsiasi regime di rotazione diverso da quello menzionato e da quello indicato nella tabella prestazioni (vedere capitolo 5) deve essere espressamente autorizzato formalmente dall'***Ufficio Tecnico*** o ***Servizio Assistenza Clienti***.

7.4 Emissione sonora

Il test di rilevamento della pressione sonora è stato eseguito secondo la direttiva 2000/14 del parlamento e del consiglio europeo (direttiva macchine) e della EN-ISO 3744-2010 con strumentazione di classe 1.
Il rilievo finale della pressione sonora dovrà essere eseguito sulla macchina/sistema completo.
Qualora l'operatore dovesse trovarsi ad una distanza inferiore ad 1 metro dovrà utilizzare adeguate protezioni acustiche secondo le normative vigenti.

7.5 Vibrazioni

Il rilievo del valore deve essere fatto solo a pompa allestita sull'impianto e alle prestazioni dichiarate dal cliente. I valori dovranno essere conformi alle normative vigenti.

7.6 Marche e tipi di oli consigliati

La pompa è consegnata con olio tipo valido per temperatura ambiente da 0 °C a 30 °C.
Alcune tipologie di olio consigliate sono indicate nella tabella sottostante. Questi oli sono additivati per incrementare la protezione alla corrosione e la resistenza alla fatica (secondo DIN 51517 parte 2).
In alternativa si possono anche utilizzare oli lubrificati per ingranaggeria Automotive SAE 85W-90.

Produttore	Lubrificante
Agip	AGIP ACER220
ARAL	Aral Degol BG 220
BP	BP Energol HLP 220
Castrol	CASTROL HYSPIN VG 220 CASTROL MAGNA 220
DEA	Falcon CL220
elf	ELF POLYTELIS 220 REDUCTELF SP 220
Esso	NUTO 220 TERESSO 220
FINA	FINA CIRKAN 220
FUCHS	RENOLIN 212 RENOLIN DTA 220
Mobil	Mobil DTE Oil BB
Shell	Shell Tellus Öl C 220
SRS	Wintershall Ersolon 220 Wintershall Wiolan CN 220
TEXACO	RANDO HD 220
TOTAL	TOTAL Cortis 220

Controllare il livello dell'olio tramite le apposite aste livello olio dotate di tacche di minimo e massimo ①, Fig. 3.
Se necessario rabboccare dal tappo olio ③, Fig. 3.
Il controllo corretto del livello dell'olio si esegue con la pompa a temperatura ambiente, il cambio dell'olio va eseguito con pompa a temperatura di lavoro rimuovendo il tappo pos. ②, Fig. 3.
Il controllo dell'olio e il cambio va effettuato come indicato nel capitolo 11.
Il quantitativo necessario è di ~13,5 litri.

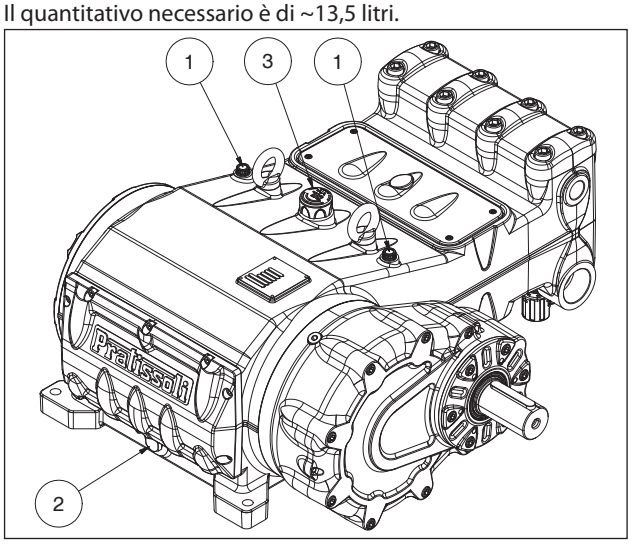


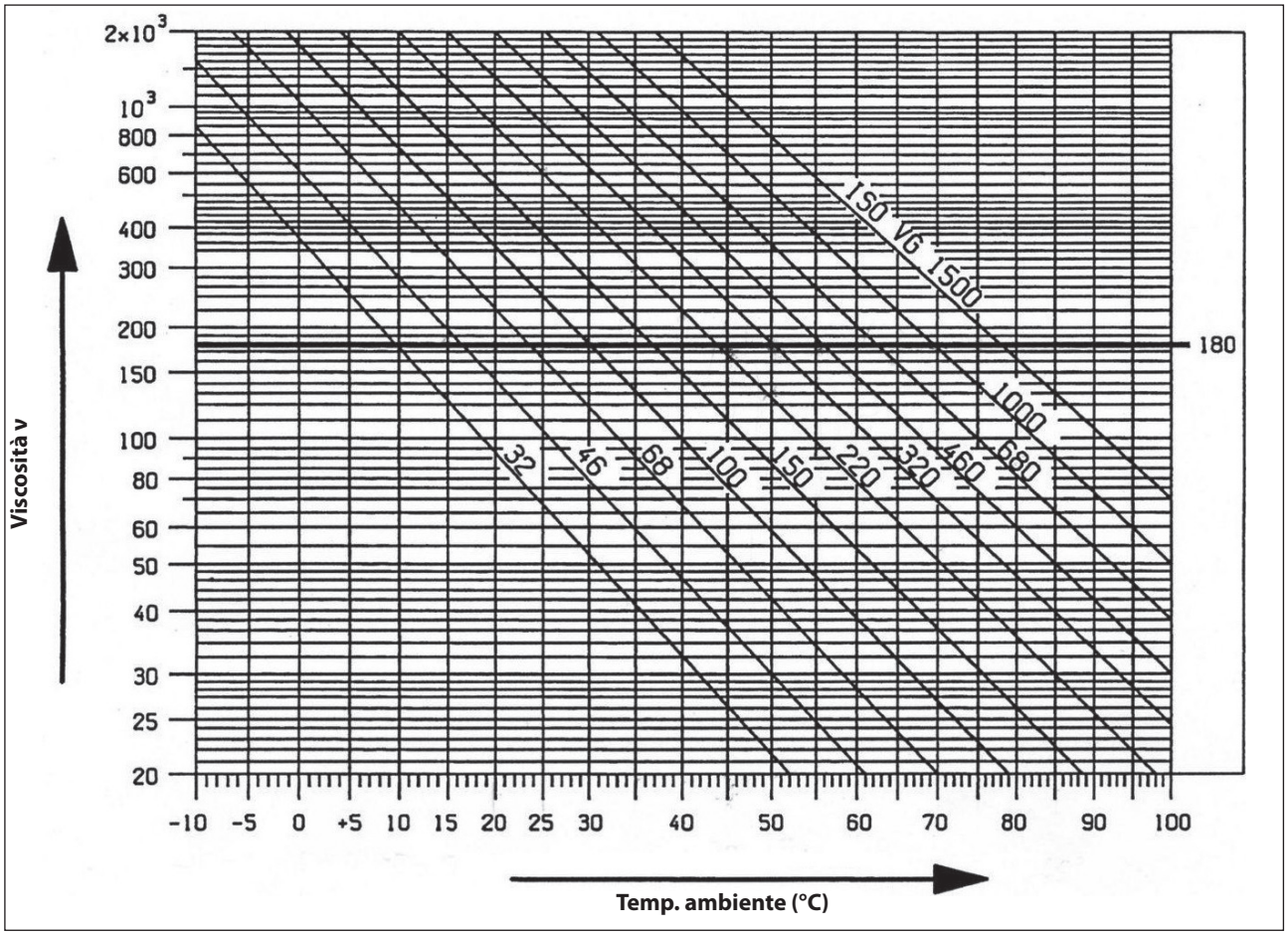
Fig. 3

In ogni caso l'olio deve essere cambiato almeno una volta all'anno in quanto potrebbe deteriorarsi per ossidazione.

Per temperatura ambiente diversa da 0 °C a 30 °C attenersi alle indicazioni contenute nel diagramma successivo, considerando che l'olio deve avere una viscosità minima di 180 cSt.

Diagramma Viscosità / Temperatura ambiente

$mm^2/s = cSt$



L'olio esausto deve essere messo in un apposito recipiente e smaltito negli appositi centri. Non deve essere assolutamente disperso nell'ambiente.

8 PRESE E CONNESSIONI

Le pompe sono dotate di:

N° 2 prese d'aspirazione "IN":

G2" (nelle versioni con Ø pistone 40, 45, 50)

Ø80 mm (nelle versioni con Ø pistone 55, 60, 65)

La connessione della linea ad una qualsiasi delle due prese è indifferente al fine del buon funzionamento della pompa; le prese non utilizzate dovranno essere chiuse ermeticamente.

N° 2 prese di mandata "OUT":

G1" (nelle versioni con Ø pistone 40, 45, 50)

G1 ¼" (nelle versioni con Ø pistone 55, 60, 65)

N° 1 presa "DRAIN ": con foro G1/2" ricavato nel coperchio inferiore per monitorare l'eventuale perdita di fluido dovuta all'usura delle guarnizioni di pressione. Qualora si presentassero perdite fare riferimento al ***Manuale di riparazione***.

Detto foro deve sempre essere mantenuto aperto (vedere Fig. 4 e Fig. 4/a).

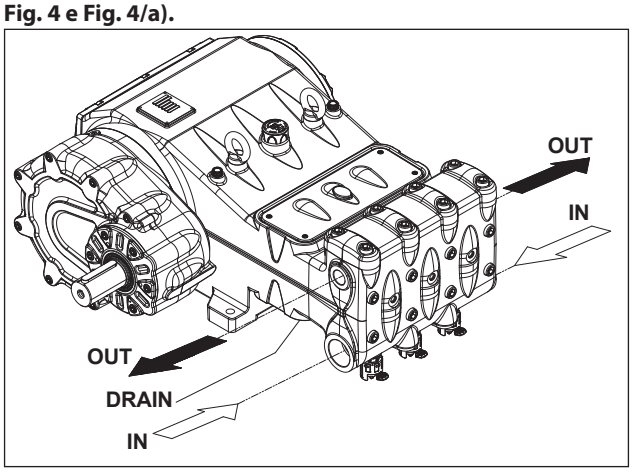


Fig. 4

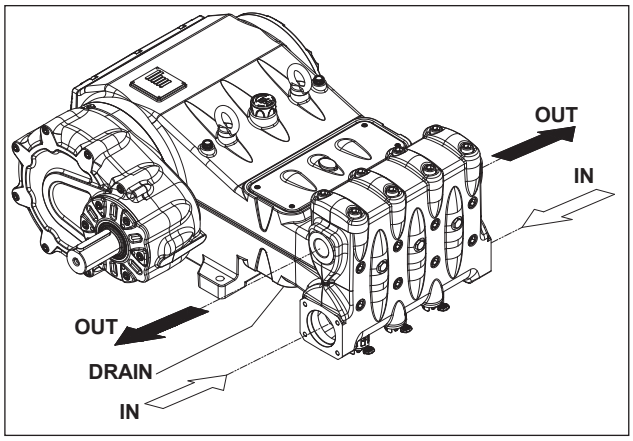


Fig. 4/a

9 INSTALLAZIONE POMPA

9.1 Installazione

La pompa deve essere fissata in posizione orizzontale utilizzando gli appositi piedini d'appoggio forati Ø16,5.
La base deve essere perfettamente piana e sufficientemente rigida da non consentire flessioni e disallineamenti sull'asse di accoppiamento pompa/trasmissione dovuti alla coppia trasmessa durante il funzionamento.
Sulla pompa sono montati due golfari di sollevamento per facilitarne l'installazione, come da figura sottostante.

I golfari di sollevamento non devono essere rimossi.

I golfari sono dimensionati per il solo sollevamento della pompa, pertanto non è assolutamente consentito il loro utilizzo per carichi aggiuntivi



Sostituire il tappo di servizio di chiusura foro introduzione olio posizionato sul carter con il tappo di carico olio.
Il tappo di carico olio dovrà essere sempre raggiungibile anche a gruppo montato.

L'albero della pompa (PTO) non deve essere rigidamente collegato al gruppo propulsore.
Si consigliano le seguenti tipologie di trasmissione:

- Giunto elastico.
- Cardanica (attenersi agli angoli di lavoro Max consigliati dai costruttori).
- Cinghie; per una corretta applicazione consultare l'***Ufficio Tecnico*** o ***Servizio Assistenza Clienti***.

9.2 Senso di rotazione

Il senso di rotazione della PTO è indicato da una freccia posizionata sul coperchio riduttore.
Posizionandosi di fronte alla testata pompa il senso di rotazione dovrà risultare come da Fig. 5.

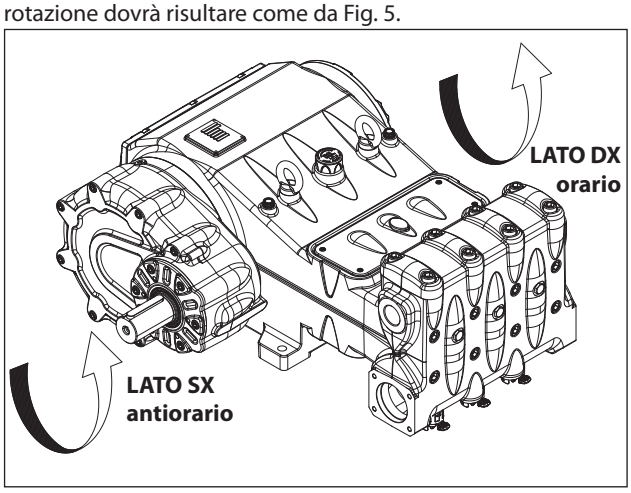


Fig. 5

9.3 Cambio di versione e posizionamento riduttore

Viene definita pompa versione destra quando:
osservando la pompa di fronte lato testata l'albero pompa deve avere il codolo PTO sul lato Dx.
Viene definita pompa versione sinistra quando:
osservando la pompa di fronte lato testata l'albero pompa deve avere il codolo PTO sul lato Sx (vedere Fig. 5).

La versione può essere modificata soltanto da personale specializzato ed autorizzato seguendo scrupolosamente quanto indicato nel *Manuale di riparazione*.

Inoltre è possibile posizionare il riduttore in 5 posizione diverse sia sul lato Dx che sul lato Sx come da Fig. 6.

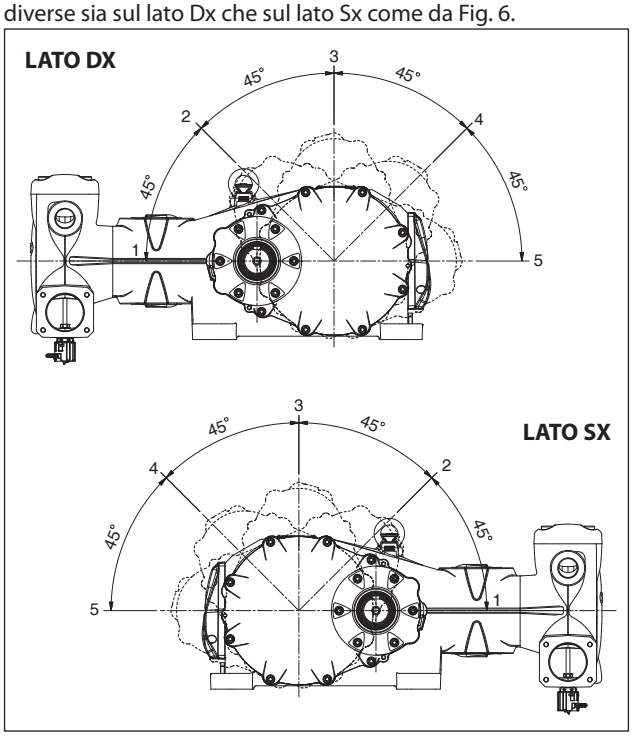


Fig. 6

La posizione del riduttore può essere modificata soltanto da personale specializzato ed autorizzato seguendo scrupolosamente quanto indicato nel *Manuale di riparazione*.

9.4 Collegamenti idraulici

Allo scopo di isolare l'impianto dalle vibrazioni prodotte dalla pompa è consigliabile realizzare il primo tratto di condotta adiacente alla pompa (sia in aspirazione che in mandata) con tubazioni flessibili. La consistenza del tratto di aspirazione dovrà essere tale da impedire deformazioni causate dalla depressione prodotta dalla pompa.

9.5 Alimentazione pompa

Le pompe MK2 devono essere sempre installate sotto battente, ossia devono ricevere l'acqua per caduta o mediante alimentazione forzata e mai aspirarla da un livello inferiore.
Le pompe sono in grado di tollerare battenti minimi anche di 1 metro, tuttavia, per ottenere il migliore rendimento volumetrico e soprattutto evitare fenomeni di cavitazione, il battente positivo disponibile (NPSH avail) misurato alla flangia di aspirazione in testata, dovrà risultare pari o superiore ai valori sottostanti:

	$NPSH_r$ (m)
MK240	4,5
MK245	5,5
MK250	6,5
MK255	7,5
MK260	8
MK265	9

Per le cilindrate maggiori, pompe MK2 55 - 60 - 65, l'alimentazione forzata per mezzo di una pompa booster é fortemente raccomandata per evitare fenomeni di cavitazione, in considerazione della geometria della parte idraulica e delle notevoli portate.
La pompa booster dovrà avere una portata almeno doppia della portata di targa della pompa a pistoni e una pressione compresa tra 2 e 3 bar.
Queste condizioni di alimentazione dovranno essere rispettate a qualunque regime di lavoro.

L'avviamento della booster dovrà sempre precedere quello della pompa a pistoni. È consigliabile installare un pressostato sulla linea di alimentazione a valle dei filtri a protezione della pompa.

9.6 Linea d'aspirazione

Per un buon funzionamento della pompa la linea d'aspirazione dovrà avere le seguenti caratteristiche:

1. Diametro interno minimo come indicato dal grafico al par. 9.9 e comunque uguale o superiore a quello della testata pompa.

   Lungo il percorso della condotta sono da evitare restrizioni localizzate, che possono causare perdite di carico con conseguente cavitazione. Evitare assolutamente gomiti a 90°, connessioni con altre tubazioni, strozzature, contropendenze, curve a "U" rovesciate, connessioni a "T".
2. Il lay-out deve essere realizzato per evitare fenomeni di cavitazione.
3. Essere perfettamente ermetica e costruita in modo da assicurare la perfetta tenuta nel tempo.
4. Evitare che all'arresto della pompa si possa verificare lo svuotamento, anche solo parziale.
5. Non utilizzare raccorderia di tipo oleodinamico, raccordi a 3 o 4 vie, adattatori, girelli, ecc… in quanto potrebbero pregiudicare le performance della pompa.
6. Non installare venturi od iniettori per l'aspirazione del detergente.
7. Evitare l'utilizzo di valvole di fondo od altri tipi di valvole unidirezionali.
8. Non ricircolare lo scarico della valvola by-pass direttamente in aspirazione.
9. Prevedere opportune paratie all'interno del serbatoio per evitare che i flussi d'acqua provenienti dal by-pass e dalla linea di alimentazione serbatoio possano creare vortici o turbolenze in prossimità della presa del tubo di alimentazione pompa.
10. Assicurarsi che la linea di aspirazione prima di essere collegata alla pompa sia perfettamente pulita all'interno.
11. Installare il manometro per il controllo della pressione della booster vicino alla presa di aspirazione della pompa a pistoni e sempre a valle dei filtri.

9.7 Filtrazione

Sulla linea di aspirazione pompa è necessario installare due filtri posizionati come indicato in Fig. 7 e Fig. 7/a.

Con valvola di regolazione ad azionamento manuale

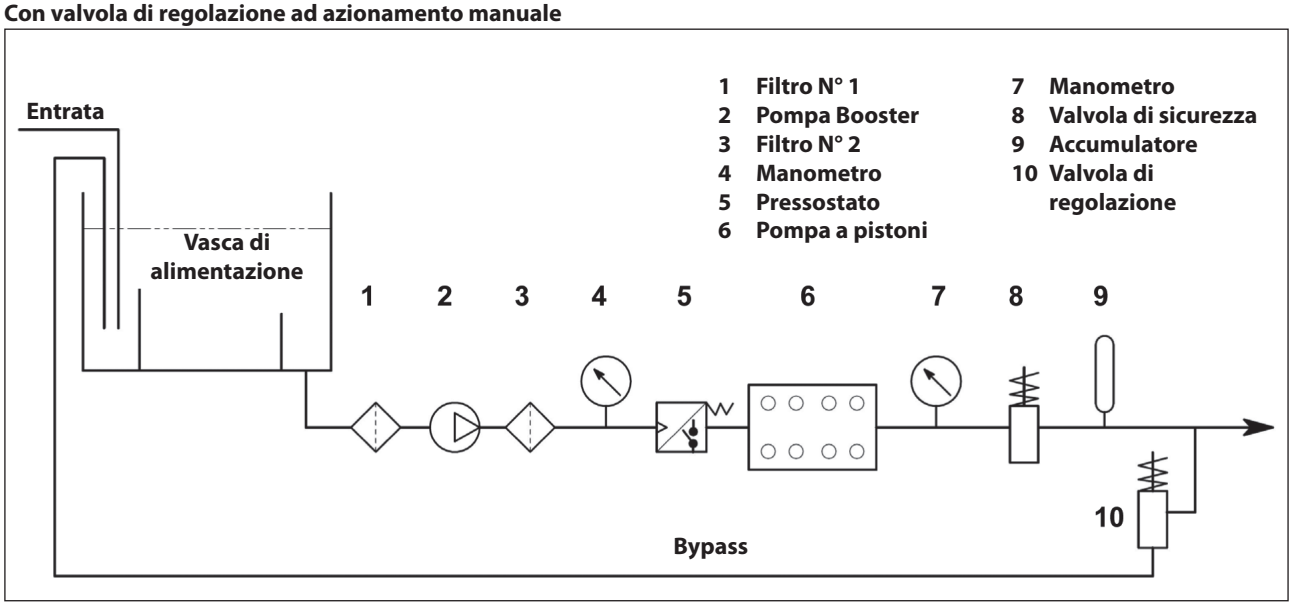


Fig. 7

Con valvola di regolazione ad azionamento pneumatico

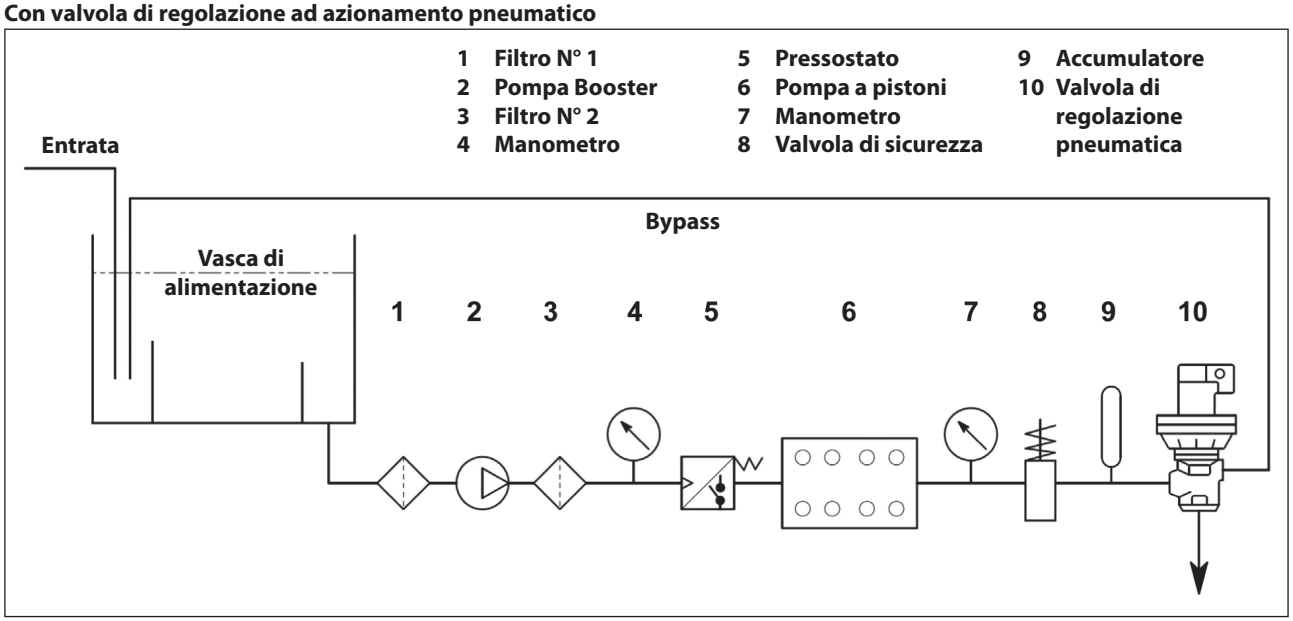


Fig. 7/a

Il filtro deve essere installato il più possibile vicino alla pompa, essere facilmente ispezionabile ed avere le seguenti caratteristiche:

1. Portata minima 3 volte superiore alla portata di targa della pompa.
2. Diametro delle bocche di ingresso/uscita non inferiore al diametro della presa di aspirazione pompa.
3. Grado di filtrazione compreso tra 200 e 360 µm.

Per il buon funzionamento della pompa prevedere periodiche pulizie del filtro che andranno pianificate secondo l'effettivo utilizzo della pompa in relazione anche alla qualità dell'acqua utilizzata e alle reali condizioni di intasamento.

9.8 Linea di mandata

Per la realizzazione di una corretta linea di mandata osservare le seguenti norme di installazione:

1. Il diametro interno del tubo deve essere sufficiente a garantire la corretta velocità del fluido, vedere grafico al par. 9.9.
2. Il primo tratto di tubazione collegato alla pompa deve essere flessibile, onde isolare le vibrazioni prodotte dalla pompa dal resto dell'impianto.
3. Utilizzare tubi e raccorderie per alta pressione che garantiscano ampi margini di sicurezza in ogni condizione di esercizio.
4. Sulla linea di mandata installare una valvola di sicurezza.
5. Utilizzare manometri adatti a sopportare i carichi pulsanti tipici delle pompe a pistoni.
6. Tenere conto, in fase di progettazione, delle perdite di carico della linea, che si traducono in un calo di pressione all'utilizzo rispetto alla pressione misurata alla pompa.
7. Per quelle applicazioni nelle quali le pulsazioni prodotte dalla pompa sulla linea di mandata risultassero dannose o indesiderate installare uno smorzatore di pulsazioni di adeguate dimensioni.

9.9 Calcolo del diametro interno dei tubi delle condotte

Per determinare il diametro interno della condotta, fare riferimento al seguente diagramma:

Condotta aspirazione

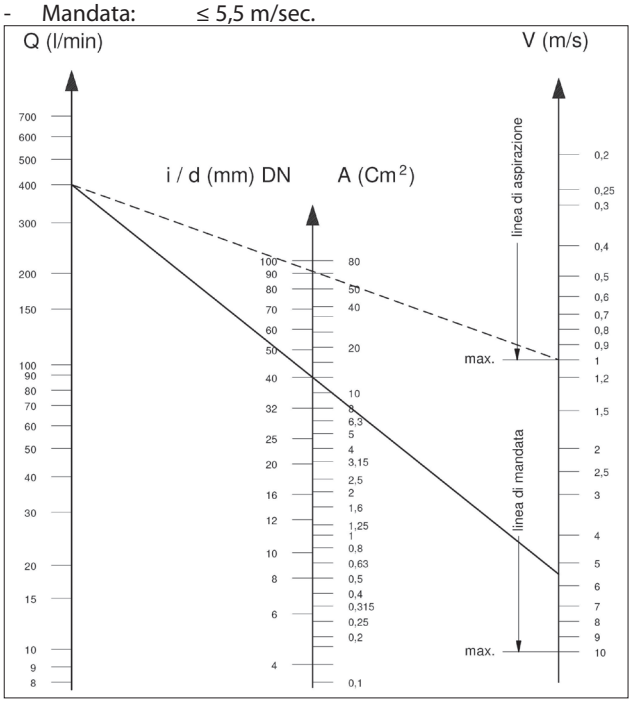
Con una portata di ~ 400 l/min ed una velocità dell'acqua di 1 m/sec. La linea del grafico che congiunge le due scale incontra la scala centrale, indicante i diametri, ad un valore corrispondente di ~ 90 mm.

Condotta mandata

Con una portata di ~ 400 l/min ed una velocità dell'acqua di 5,5 m/sec. La linea del grafico che congiunge le due scale incontra la scala centrale, indicante i diametri, ad un valore corrispondente di ~ 40 mm.

Velocità ottimali ottenibili con pompa Booster:

- Aspirazione: ≤ 1 m/sec.
- Mandata: ≤ 5,5 m/sec.



Il grafico non tiene conto della resistenza dei tubi, delle valvole, della perdita di carico prodotta dalla lunghezza delle condotte, della viscosità del liquido pompato e della temperatura dello stesso.
Se necessario contattare l'***Ufficio Tecnico*** o ***Servizio Assistenza Clienti***.

9.10 Trasmissione a cinghia trapezoidale

Come indicato al par. 9.1 solamente in casi eccezionali la pompa può essere comandata da un sistema di cinghie trapezoidali.
Per un corretto dimensionamento del lay-out consultare l'***Ufficio Tecnico*** o ***Servizio Assistenza Clienti***.

10 AVVIAMENTO E FUNZIONAMENTO

10.1 Controlli preliminari

Prima dell'avviamento assicurarsi che:

La linea di aspirazione sia collegata e in pressione (vedere capitolo 9): la pompa non deve mai girare a secco.

1. La linea di aspirazione garantisca anche nel tempo una tenuta ermetica.
2. Tutte le eventuali valvole di intercettazione tra fonte di alimentazione e la pompa siano completamente aperte. La linea di mandata sia a scarico libero onde permettere all'aria presente nella testata della pompa di fuoriuscire velocemente e favorire quindi un veloce adescamento.
3. Tutte le raccorderie e le connessioni, in aspirazione e mandata, siano correttamente serrate.
4. Le tolleranze di accoppiamento sull'asse pompa/ trasmissione (disallineamento semigiunti, inclinazione cardano, tiraggio cinghie, ecc.) restino entro i limiti previsti dal costruttore della trasmissione.
5. L'olio nel carter pompa sia al livello previsto verificandolo con le apposite aste (pos. ①, Fig. 8).

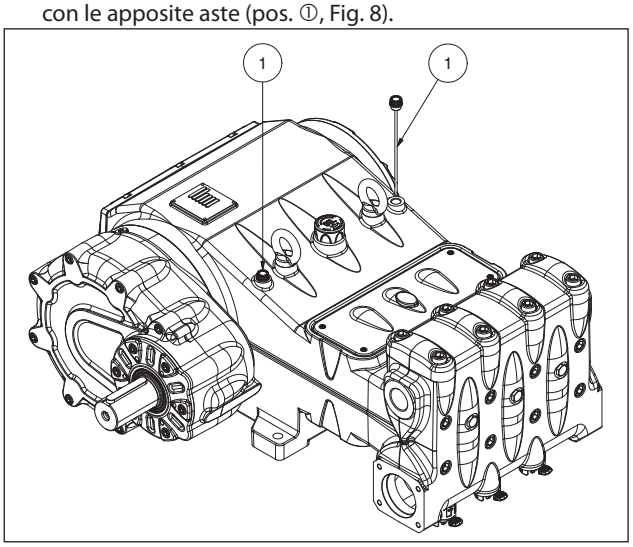


Fig. 8

In caso di stoccaggio prolungato o inattività per lungo periodo occorre ripristinare il corretto funzionamento delle valvole di aspirazione aprendo i tre dispositivi alzavalvola (vedere pos. ② Fig. 9). Accertarsi di aver richiuso le valvole prima dell'avviamento della pompa. Per le posizioni di "lavoro" e di "riposo" vedere Fig. 10.

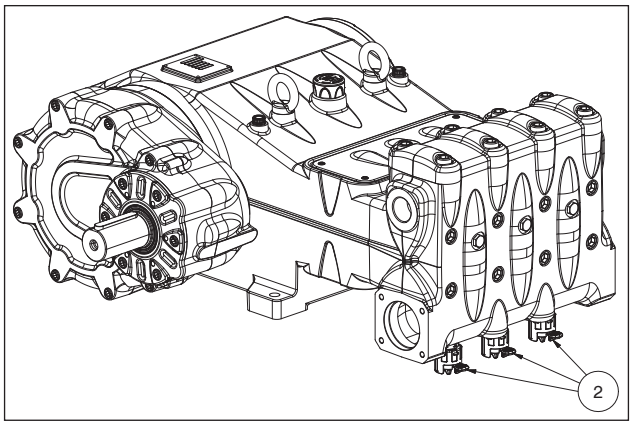


Fig. 9

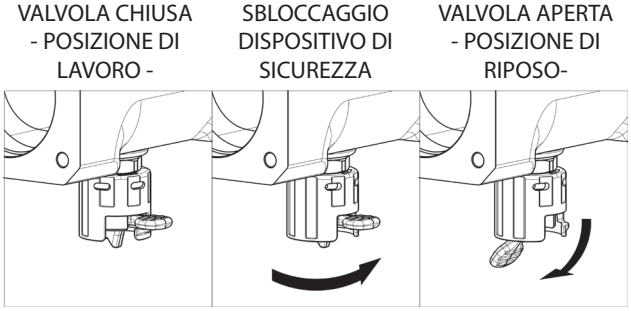


Fig. 10

10.2 Avviamento

1. Al primo avviamento verificare che il senso di rotazione sia corretto.
2. Verificare la corretta alimentazione della pompa.
3. Avviare la pompa senza carico alcuno.
4. Verificare che in fase di esercizio il regime di rotazione non superi quello di targa.
5. Lasciare funzionare la pompa per un tempo non inferiore a 3 minuti prima di metterla in pressione.
6. Prima di ogni arresto della pompa azzerare la pressione agendo sulla valvola di regolazione o sugli eventuali dispositivi di messa in scarico.

Qualora si verificassero problemi di adescamento a causa di una insufficiente alimentazione è possibile intervenire rimuovendo i tre tappi frontali alla testata (esclusa la versione MK240) come indicato in pos. ③ Fig. 11.

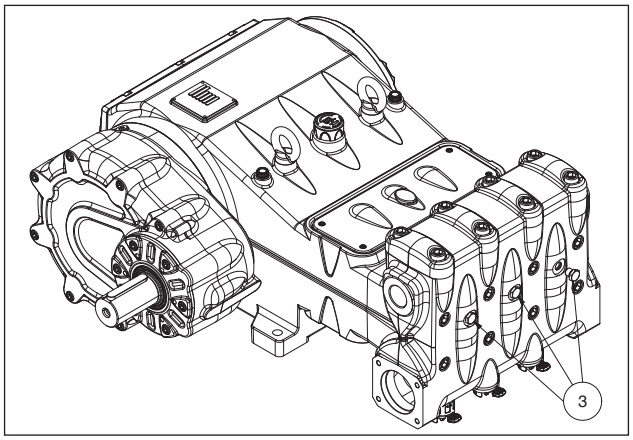


Fig. 11

11 MANUTENZIONE PREVENTIVA

Per una buona affidabilità ed efficienza della pompa è necessario rispettare gli intervalli di manutenzione come riportato nella tabella sottostante.

MANUTENZIONE PREVENTIVA	
Ogni 500 ore	**Ogni 1500 ore**
Verifica livello olio	Cambio olio
	Verifica / Sostituzione*: Valvole Sedi valvola Molle valvola Guide valvola
	Verifica / Sostituzione*: Tenute di H.P. Tenute di L.P.

* Per la sostituzione attenersi alle indicazioni riportate nel ***Manuale di riparazione***.

12 RIMESSAGGIO DELLA POMPA

12.1 Metodo di riempimento della pompa con emulsione anticorrosiva o soluzione anti-freeze

Metodo di riempimento della pompa con emulsione anticorrosiva o soluzione anti-freeze usando una pompa esterna a membrana sulla base dei layout espletati al par. 9.7:

a) Chiudere il drenaggio del filtro, se aperto.
b) Assicurarsi che il tubo di collegamento sia pulito, spalmare con grasso e connetterlo allo scarico di alta pressione.
c) Fissare il tubo di aspirazione alla pompa a membrana; aprire la connessione dell'aspirazione della pompa e fissare il tubo tra questo e la pompa a membrana.
d) Riempire il contenitore con soluzione/emulsione.
e) Mettere le estremità libere del tubo di aspirazione e il tubo di scarico alta pressione all'interno del contenitore.
f) Accendere la pompa a membrana.
g) Pompare l'emulsione fino a quando si vede uscire dal tubo di scarico di alta pressione l'emulsione.
h) Continuare il pompaggio per almeno un altro minuto; l'emulsione può essere rinforzata, se necessario, aggiungendo per es. Shell Donax alla soluzione.
i) Fermare la pompa, rimuovere il tubo dalla connessione di aspirazione e chiuderla con un tappo
j) Rimuovere il tubo dallo scarico dell'alta pressione. Pulire, ingrassare e tappare entrambe le connessioni ed i tubi.

12.2 Tubi

a) Prima di ingrassare e proteggere i tubi secondo la procedura precedentemente descritta asciugare le connessioni usando aria compressa.
b) Coprire con polietilene.
c) Non avvolgerli troppo stretti; assicurarsi che non ci siano piegature.

13 PRECAUZIONI CONTRO IL GELO



Nelle zone e nei periodi dell'anno a rischio di gelo seguire le indicazioni riportate nel capitolo 12 (vedere par. 12.1).



In presenza di ghiaccio non avviare la pompa per nessun motivo fino a quando il circuito non sia stato perfettamente scongelato; in caso contrario si possono procurare gravissimi danni alla pompa.

14 CONDIZIONI DI GARANZIA

Il periodo e le condizioni di garanzia sono contenute nel contratto d'acquisto.
La garanzia sarà comunque invalidata se:

a) La pompa è stata utilizzata per scopi diversi da quanto concordato.
b) La pompa è stata allestita con motore elettrico od endotermico con prestazioni superiori a quelle indicate in tabella.
c) I dispositivi di sicurezza previsti sono stati starati o sconnessi.
d) La pompa è stata usata con accessori o con ricambi non forniti da Interpump Group.
e) I danneggiamenti sono stati causati da:
   1) uso improprio
   2) mancanza di perseguimento delle istruzioni di manutenzione
   3) utilizzo diverso da quello descritto nelle istruzioni operative
   4) insufficiente portata
   5) installazione difettosa
   6) incorretto posizionamento o dimensionamento dei tubi
   7) modifiche di progetto non autorizzate
   8) cavitazione.

15 ANOMALIE DI FUNZIONAMENTO E LORO POSSIBILI CAUSE



All'avviamento la pompa non produce nessun rumore:

- La pompa non è adescata e gira a secco.
- Manca acqua in aspirazione.
- Le valvole sono bloccate.
- La linea di mandata è chiusa e non permette all'aria presente nella testata pompa di fuoriuscire.



La pompa pulsa irregolarmente:

- Aspirazione di aria.
- Alimentazione insufficiente.
- Curve, gomiti, raccordi, lungo la linea di aspirazione strozzano il passaggio del liquido.
- Il filtro di aspirazione è sporco o troppo piccolo.
- La pompa booster ove installata, fornisce una pressione o portata insufficiente.
- La pompa non è adescata per battente insufficiente o è chiusa la mandata durante l'adescamento.
- La pompa non è adescata per incollaggio di qualche valvola.
- Valvole usurate.
- Guarnizioni di pressione usurate.
- Imperfetto funzionamento delle valvola di regolazione di pressione.
- Problemi sulla trasmissione.





La pompa non fornisce la portata di targa /rumore eccessivo:

- Alimentazione insufficiente (vedere varie cause come sopra).
- Il numero di giri è inferiore a quello di targa;
- Eccessivo trafilamento dalla valvola di regolazione pressione.
- Valvole usurate.
- Eccessivo trafilamento dalle guarnizioni di pressione.
- Cavitazione dovuta a:
  1) Cattivo dimensionamento condotti di aspirazione /diametri sottodimensionati.
  2) Portata insufficiente.
  3) Temperatura acqua elevata.



La pressione fornita dalla pompa è insufficiente:
- L'utilizzo (ugello) è o è diventato superiore alla capacità della pompa.
- Il numero di giri è insufficiente.
- Eccessivo trafilamento dalle guarnizioni di pressione.
- Imperfetto funzionamento delle valvola di regolazione di pressione.
- Valvole usurate.

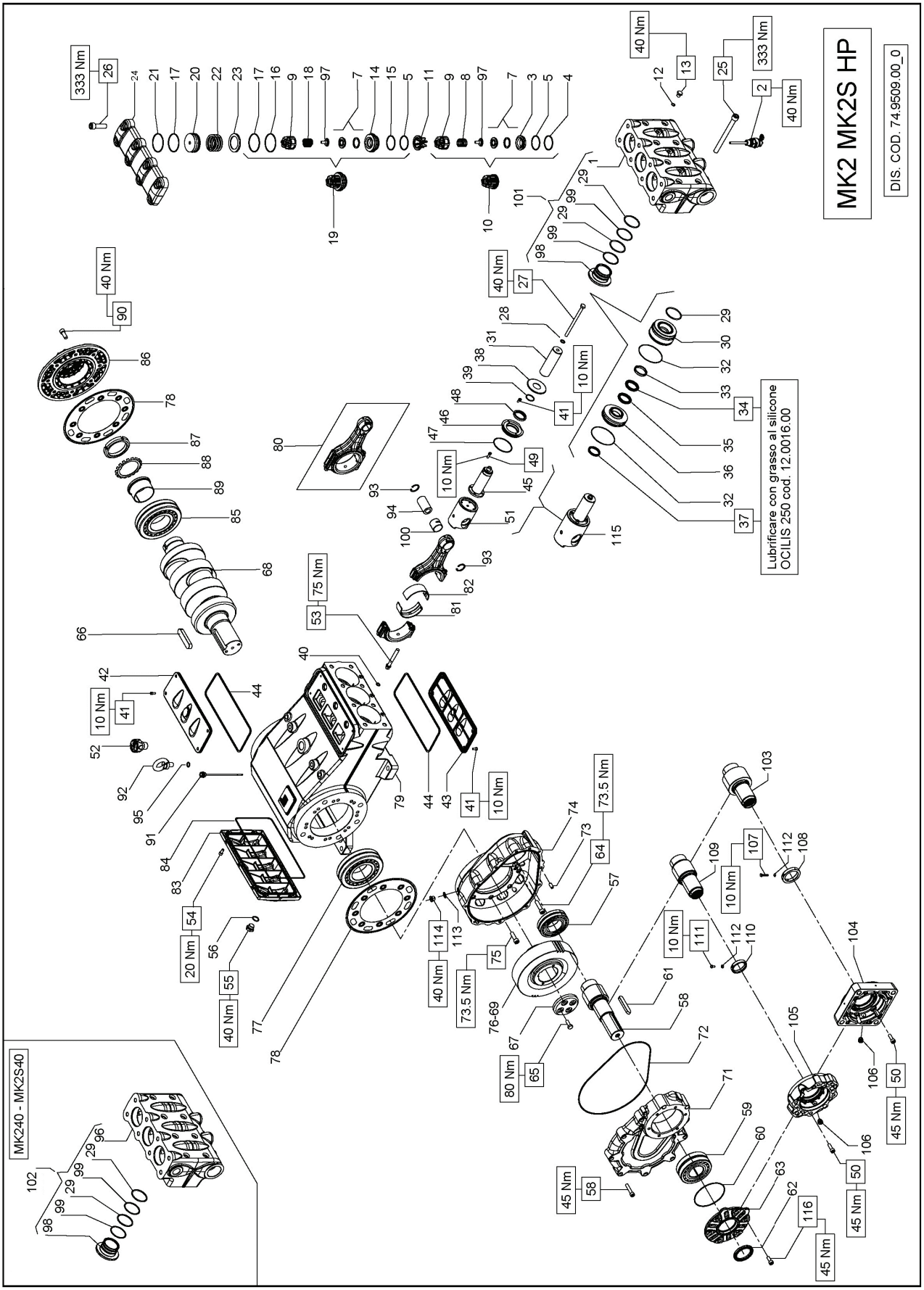


La pompa si surriscalda:
- La pompa lavora in eccesso di pressione o il numero di giri è superiore a quello di targa.
- L'olio nel carter pompa non è a livello oppure non del tipo consigliato riportato nel capitolo 7 (vedere par. 7.6).
- L'allineamento del giunto o delle pulegge è imperfetto.
- L'inclinazione della pompa durante il lavoro è eccessiva.



Vibrazioni o colpi sui tubi:
- Aspirazione aria.
- Imperfetto funzionamento della valvola di regolazione pressione.
- Malfunzionamento delle valvole.
- Non uniformità di moto nella trasmissione.

16 DISEGNO ESPLOSO E DISTINTA RICAMBI



KIT RICAMBIO – SPARE KIT

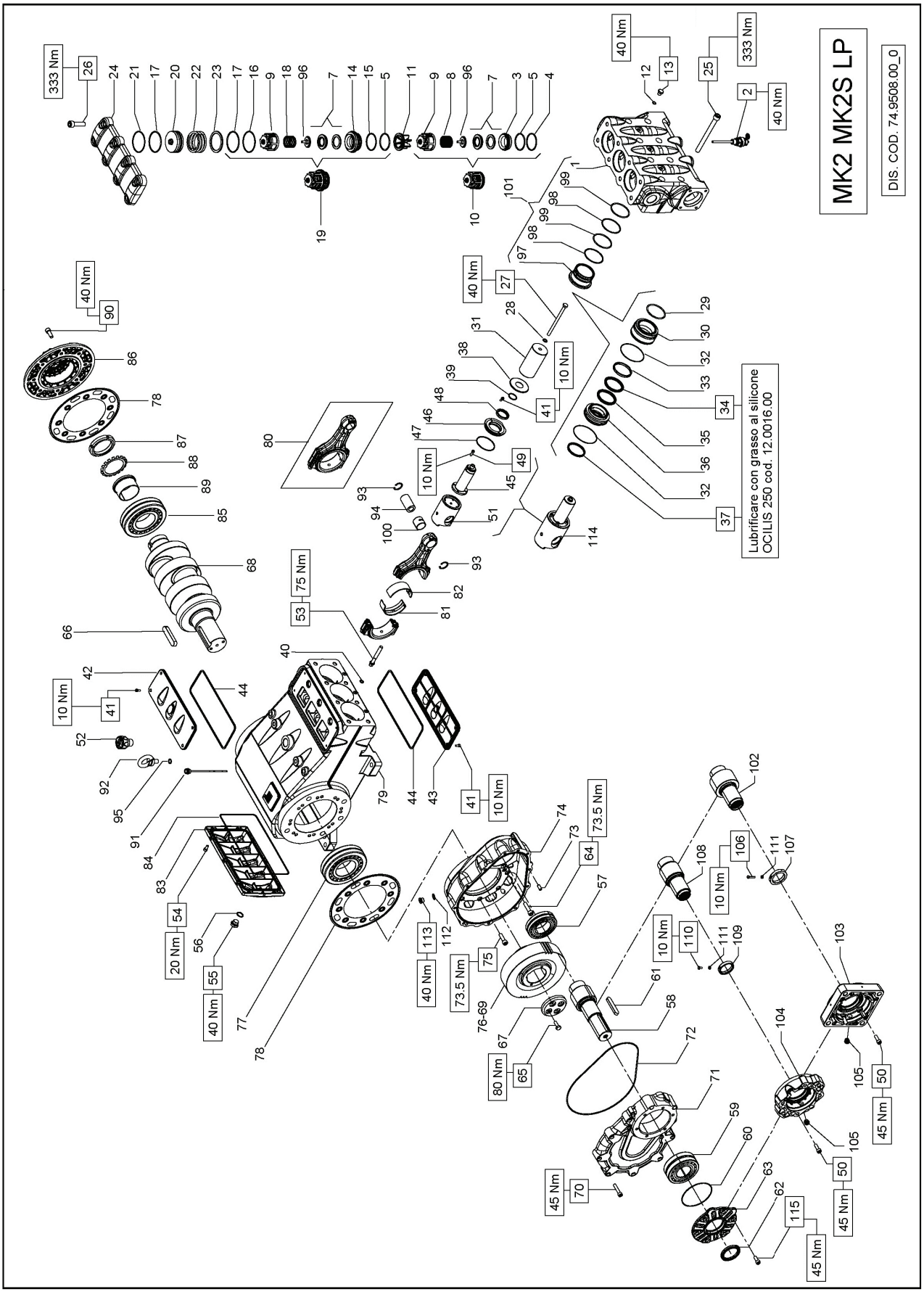
		MK240 - MK2S40 (D.40)	MK245 - MK2S45 (D.45)	MK250 - MK2S50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK240 - MK2S40
MK245 - MK2S45
MK250 - MK2S50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1


MK2 MK2S LP
DIS. COD. 74.9508.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK255 - MK2S55 (D.55)	MK260 - MK2S60 (D.60)	MK265 - MK2S65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2045	KIT 2046	KIT 2047
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2447	KIT 2448	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK255 - MK2S55
MK260 - MK2S60
MK265 - MK2S65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2114.56	CAMICIA PISTONE D. 55		3
	74.2115.56	CAMICIA PISTONE D. 60		
	74.2116.56	CAMICIA PISTONE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1003.92	ANELLO DI TESTA PISTONE D. 55		3
	74.1004.92	ANELLO DI TESTA PISTONE D. 60		
	74.1005.92	ANELLO DI TESTA PISTONE D. 65		
34	90.2873.00	ANELLO TEN. ALT. D. 55.0x70.0x7.5/4.5 HP	A-C	3
	90.2883.00	ANELLO TEN. ALT. D. 60.0x76.0x8.0/4.8 HP	A-C	
	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	
35	90.2875.00	ANELLO RESTOP D. 55.0x70.0x8.0/4.5	A-C	3
	90.2885.00	ANELLO RESTOP D. 60.0x76.0x8.0/4.5	A-C	
	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	
36	74.2120.68	SUPPORTO GUARNIZIONE D. 55		3
	74.2121.68	SUPPORTO GUARNIZIONE D. 60		
	74.2122.68	SUPPORTO GUARNIZIONE D. 65		
37	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		10
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.55	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	73.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK2		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2S		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	74.2150.56	BOCCOLA TESTATA		3
98	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
99	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1201.01	TESTATA CON BOCCOLA		1
112	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
113	98.2086.00	TAPPO G 3/8"x12		2
114	74.6062.01	GR. GUIDA PISTONE		3
115	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
102	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
103	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
107	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
111	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.750 - ELICOIDALE		1
104	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
108	10.0906.55	PIGNONE Z16 R. 3.750 - ELICOIDALE FEMM.		1
109	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
110	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
111	92.2025.00	DADO M6x5 UNI 5588		1

17 VERSIONI SPECIALI

La pompa MK2 è disponibile anche nelle seguenti versioni speciali:

- MK2R (Per Acqua Ricircolata)
- MK2SR (Per Acqua Ricircolata)
- MK2C (Per Metanolo)
- MK2SC (Per Metanolo)
- MK2SH (con testata AISI 420)

Di seguito vengono riportate le indicazioni relative alle scelta ed all'utilizzo di tali versioni.
Dove non diversamente specificato attenersi a quanto riportato in precedenza per la versione della pompa MK2 standard.

17.1 Pompa versione MK2R-MK2SR

17.1.1 Indicazioni per l'utilizzo

Le pompe serie MK2R/MK2SR sono state progettate per operare in ambienti con atmosfera non potenzialmente esplosiva e per utilizzo di acqua ricca di particolato, pertanto sono ritenute idonee per impianti con ricircolo di fluido.
La durata delle tenute pistone sono direttamente interessate dalla percentuale di presenza di parti solide nel fluido sia per dimensione che per densità.
Per una buona durata delle tenute si consiglia una dimensione del grano del particolato non superiore a 200 micron e 20% max. in volume.
Per ulteriori indicazioni e lay-out di massima dell'impianto vedere par. 17.2.6.

17.1.2 Portata e pressione massima

Le prestazioni indicate a catalogo si riferiscono alle massime prestazioni fornibili dalla pompa. **Indipendentemente** dalla potenza utilizzata, la pressione ed il numero di giri massimi indicati in targhetta non possono essere superati se non espressamente autorizzati formalmente dall'***Ufficio Tecnico*** o ***Servizio Assistenza Clienti***.

17.1.3 Caratteristiche tecniche

Modello	Giri/1'	Portata		Pressione		Potenza	
		l/min	Gpm	bar	psi	kW	Hp
MK2R 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2R 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2R 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2R 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2R 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2R 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Modello	Giri/1'	Portata		Pressione		Potenza	
		l/min	Gpm	bar	psi	kW	Hp
MK2SR 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2SR 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SR 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2SR 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2SR 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2SR 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.1.4 Dimensioni e pesi

Per dimensioni e pesi delle pompe fare riferimento agli schemi riportati nel capitolo 6.

17.1.5 Alimentazione pompa

Le pompe devono essere sempre installate sotto battente, ossia devono ricevere l'acqua per caduta o mediante alimentazione forzata e mai aspirarla da un livello inferiore.
Le pompe sono in grado di tollerare battenti minimi anche di 1 metro, tuttavia, per ottenere il migliore rendimento volumetrico e soprattutto evitare fenomeni di cavitazione, il battente positivo disponibile (NPSH avail) misurato alla flangia di aspirazione in testata, dovrà risultare pari o superiore ai valori sottostanti.

	$NPSH_r$ (m)
MK2R/MK2SR40	4,5
MK2R/MK2SR45	5,5
MK2R/MK2SR50	6,5
MK2R/MK2SR55	7,5
MK2R/MK2SR60	8
MK2R/MK2SR65	9

Per le cilindrate maggiori, delle pompe con Ø Pistone 55 - 60 - 65, l'alimentazione forzata per mezzo di una pompa booster é fortemente raccomandata per evitare fenomeni di cavitazione, in considerazione della geometria della parte idraulica e delle notevoli portate.
La pompa booster dovrà avere una portata almeno doppia della portata di targa della pompa a pistoni e una pressione compresa tra 2 e 3 bar.
Queste condizioni di alimentazione dovranno essere rispettate a qualunque regime di lavoro.

L'avviamento della booster dovrà sempre precedere quello della pompa a pistoni.
È consigliabile installare un pressostato sulla linea di alimentazione a valle dei filtri a protezione della pompa.

17.1.6 Filtrazione

L'ufficio tecnico o il servizio assistenza clienti è a disposizione del cliente per la migliore definizione dell'impianto; a titolo d'esempio forniamo i seguenti lay-out (Fig. 12 e Fig. 12/a).

Con valvola di regolazione ad azionamento manuale

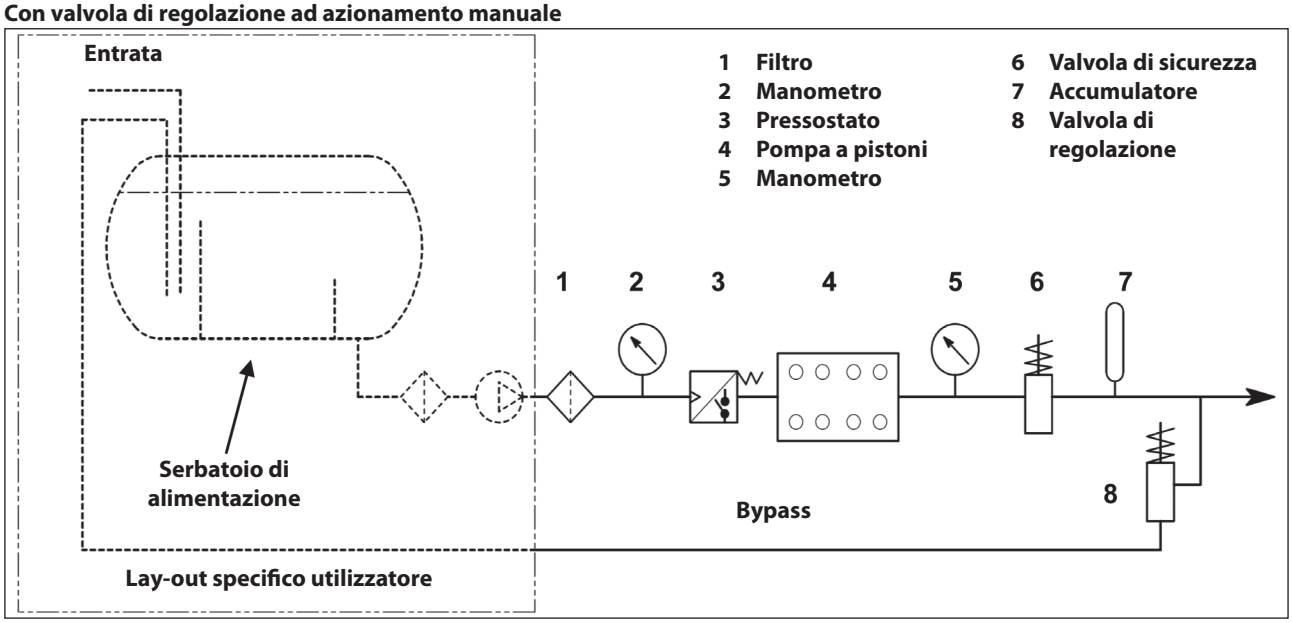


Fig. 12

Con valvola di regolazione ad azionamento pneumatico

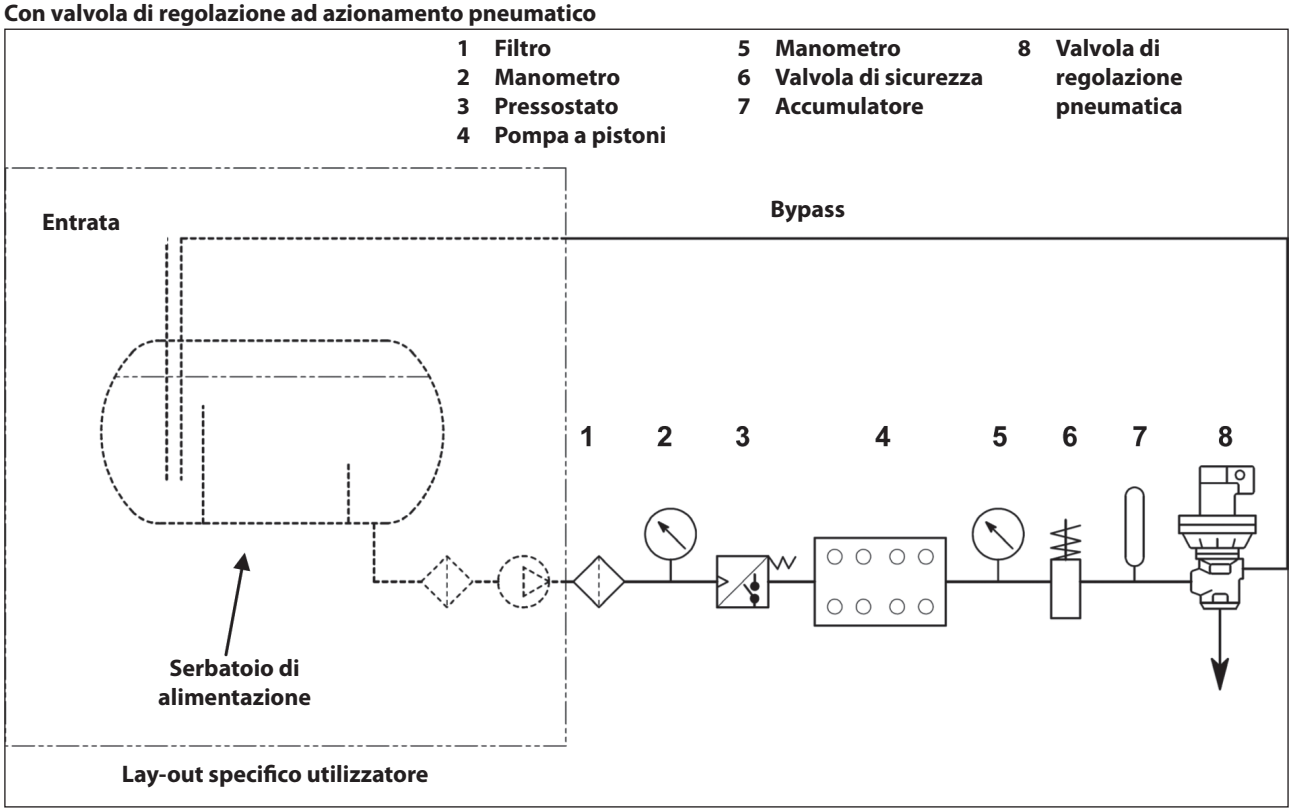


Fig. 12/a

Il filtro deve essere installato il più possibile vicino alla pompa ed essere facilmente ispezionabile.

Per il buon funzionamento della pompa il grado di filtrazione ed il potere d'accumulo del sistema filtrante va dimensionato in relazione all'obiettivo che mira al miglior compromesso tra la durata della parte idraulica della pompa ed il numero di ore di lavoro tra un riempimento di acqua e l'altro.
Il miglior compromesso consigliato è quello espletato al par. 17.1.1.

È indispensabile dopo l'utilizzo della pompa, a fine giornata lavorativa, lavarla con acqua esente da particolato.

17.1.7 Manutenzione preventiva

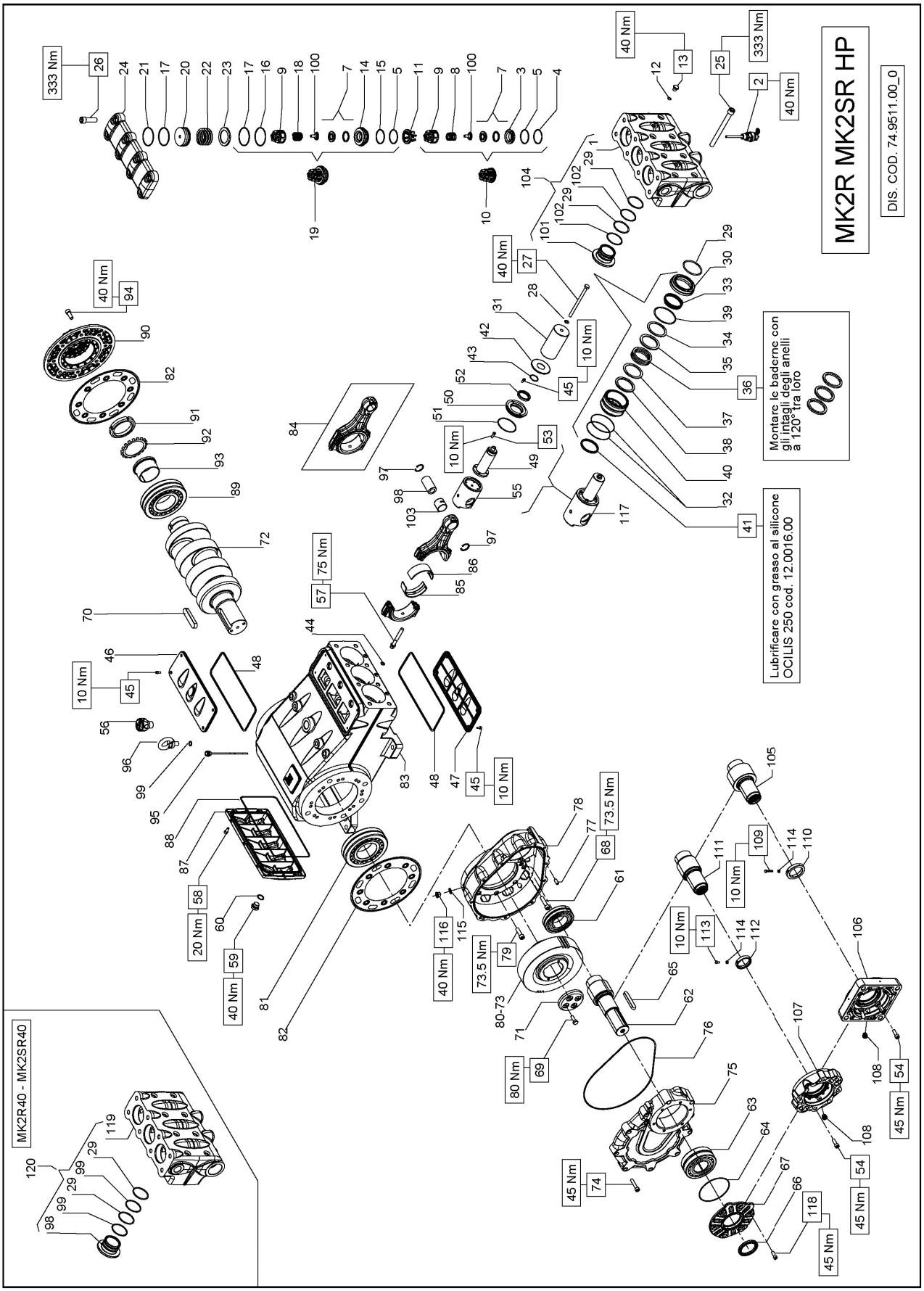
Per una buona affidabilità ed efficienza della pompa è necessario rispettare gli intervalli di manutenzione come riportato nella tabella sottostante.

MANUTENZIONE PREVENTIVA	
Ogni 500 ore	**Ogni 1000 ore**
Verifica livello olio	Cambio olio
	Verifica / Sostituzione*: Valvole Sedi valvola Molle valvola Guide valvola

Tenute HP-LP: la durata è subordinata al grado di filtrazione, tipo di fluido e percentuale in volume (vedere capitolo 7).

* Per la sostituzione attenersi alle indicazioni riportate nel ***Manuale di riparazione***.

17.1.8 Disegno esploso e distinta ricambi

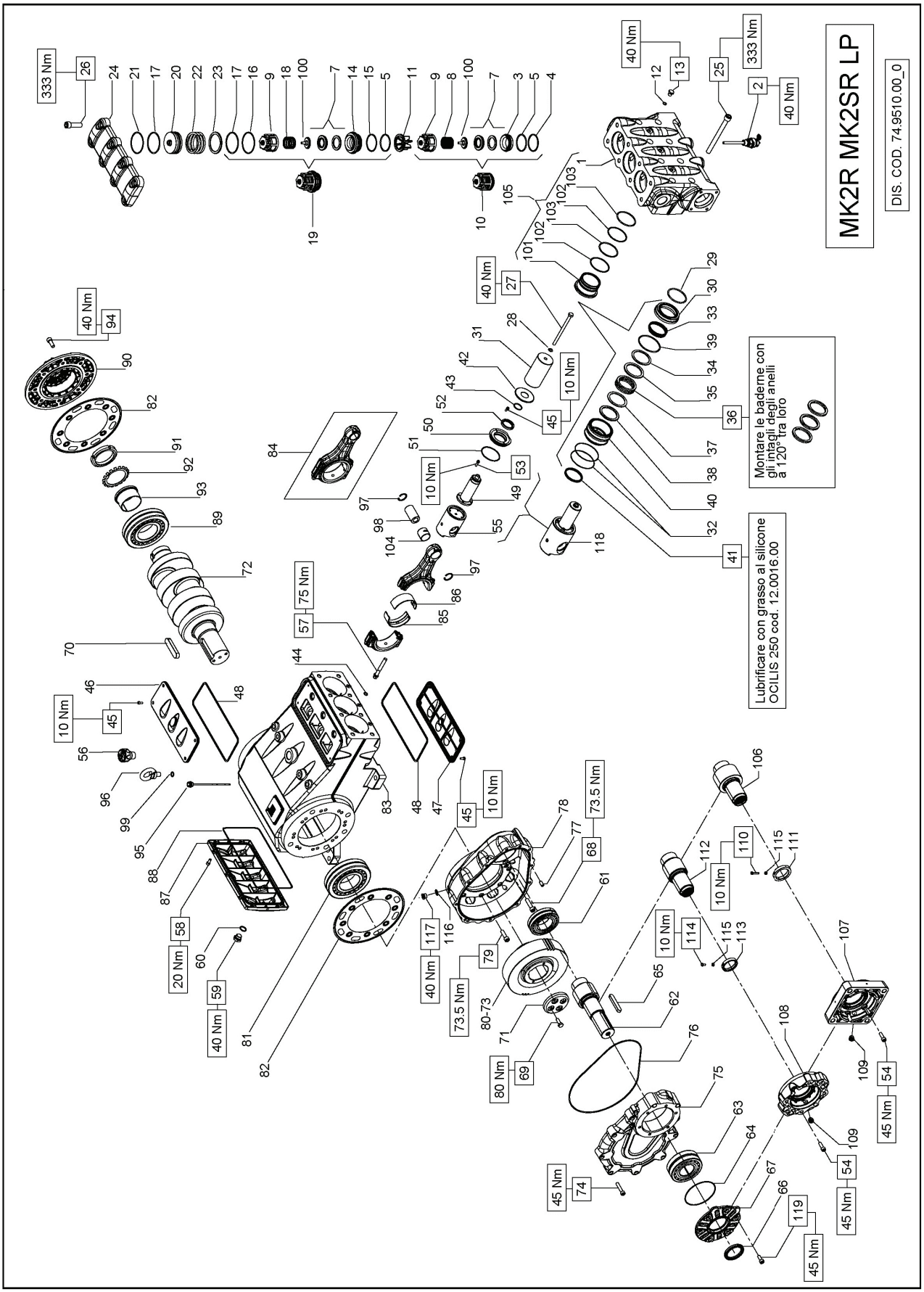


KIT RICAMBIO – SPARE KIT

		MK2R40 - MK2SR40 (D.40)	MK2R45 - MK2SR45 (D.45)	MK2R50 - MK2SR50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2430	KIT 2431	KIT 2100
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2456	KIT 2457	KIT 2458
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R40 - MK2SR40
MK2R45 - MK2SR45
MK2R50 - MK2SR50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.1010.56	ANELLO DI TESTA BADERNE D. 40		3
	74.1011.56	ANELLO DI TESTA BADERNE D. 45		
	74.1006.56	ANELLO DI TESTA BADERNE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	94.7730.00	MOLLA Dm. 51.5x36.0 - D. 40-45		3
	94.7770.00	MOLLA Dm. 61.5x35.0 - D. 50		
34	74.2165.56	ANELLO PER MOLLA D. 40		3
	74.2169.56	ANELLO PER MOLLA D. 45		
	74.2134.56	ANELLO PER MOLLA D. 50		
35	74.2164.72	ANELLO RASCHIATORE BADERNE D. 40	A-C	3
	74.2168.72	ANELLO RASCHIATORE BADERNE D. 45	A-C	
	74.2138.82	ANELLO RASCHIATORE BADERNE D. 50	A-C	
36	90.5655.00	ANELLO TEN. ALT. KC D. 40.0x56.0x19.5	A-C	3
	90.5680.00	ANELLO TEN. ALT. KC D. 45.0x61.0x19.5	A-C	
	90.5700.00	ANELLO TEN. ALT. KC D. 50.0x66.0x19.5	A-C	
37	90.5232.00	ANELLO ANTIEST. D. 40.0x56.0x2.5	A-C	3
	90.5236.00	ANELLO ANTIEST. D. 45.0x61.0x2.5	A-C	
	90.5245.00	ANELLO ANTIEST. D. 50.0x66.0x2.5	A-C	
38	74.2163.60	ANELLO DI SUPPORTO D. 40		3
	74.2167.60	ANELLO DI SUPPORTO D. 45		
	74.2142.60	ANELLO DI SUPPORTO D. 50		
39	90.4110.00	OR D. 61.91x3.53 NBR 70SH 165 - D. 40	A-C	3
	90.4117.00	OR D. 66.27x3.53 NBR 70SH 4262 - D. 45	A-C	
	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - D. 50	A-C	
40	74.2162.56	SUPPORTO BADERNE D. 40		3
	74.2166.56	SUPPORTO BADERNE D. 45		
	74.2146.56	SUPPORTO BADERNE D. 50		
41	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
42	74.2133.51	PARASPRUZZI		3
43	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
44	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
45	99.1837.00	VITE M6x14 UNI 5931		14
46	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
47	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
48	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
49	74.0503.36	STELO GUIDA PISTONE		3
50	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
51	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
52	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
53	99.1884.00	VITE M6x20 UNI 5931		12
55	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
56	98.2333.00	TAPPO CARICO OLIO G1"		1
57	99.4410.00	VITE SERRAGGIO BIELLA		6
58	99.3045.00	VITE M8x18 UNI 5931		6
59	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
60	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
61	91.8700.00	CUSCINETTO A RULLI		1
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	91.8610.00	CUSCINETTO A RULLI		1
64	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
65	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
66	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
67	74.2173.22	COPERCHIO PIGNONE		1
68	99.4335.00	VITE M12x50 UNI 5931		2
69	99.3684.00	VITE M10x30 UNI 5739		4
70	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
71	74.2252.55	FERMO CORONA		1
72	74.0202.35	ALBERO A GOMITI C. 72 - MKSR		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	99.3730.00	VITE M10x50 UNI 5931		10
75	74.2174.13	COPERCHIO RIDUTTORE		1
76	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
77	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
78	74.2175.13	SCATOLA RIDUTTORE		1
79	99.4305.00	VITE M12x40 UNI 5931		6
81	91.8850.00	CUSCINETTO A RULLI		1
82	74.2130.84	GUARNIZIONE LATERALE	C	2
83	74.0101.13	CARTER POMPA		1
84	74.0302.01	BIELLA COMPLETA		3
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
87	74.1600.22	COPERCHIO CARTER	C	1
88	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
89	91.8852.00	CUSCINETTO A RULLI		1
90	74.1500.22	COPERCHIO CUSCINETTO		1
91	93.0800.00	GHIERA DI BLOCCAGGIO		1
92	96.8300.00	ROSETTA DI SICUREZZA		1
93	91.8800.00	BUSSOLA DI PRESSIONE		1
94	99.4280.00	VITE M12x30 UNI 5931		8
95	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
96	93.1050.00	GOLFARE M16 UNI 2947		2
97	90.0697.00	ANELLO D'ARRESTO J35		6
98	97.7450.00	SPINOTTO D. 35x64		3
99	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
100	36.2090.51	GUIDA INTERNA VALVOLA		6
101	74.2151.56	BOCCOLA TESTATA		3
102	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
103	90.9173.00	BOCCOLA PIEDE BIELLA		3
104	74.1206.01	TESTATA CON BOCCOLA D. 40		1
	74.1203.01	TESTATA CON BOCCOLA D. 45-50		
115	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
116	98.2086.00	TAPPO G 3/8"x12		2
117	74.6062.01	GR. GUIDA PISTONE		3
118	99.3668.00	VITE M10x25 5931		6
119	74.1206.15	TESTATA D. 40 HP		1
	74.1207.15	TESTATA D. 40 HP - NPT		
120	74.1206.01	TESTATA CON BOCCOLA D. 40		1
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
105	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
106	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
108	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
110	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
114	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
107	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
108	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
111	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
112	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
113	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
114	92.2025.00	DADO M6x5 UNI 5588		1


MK2R MK2SR LP
DIS. COD. 74.9510.00_0
Montare le baderne con gli intagli degli anelli a 120° tra loro
Lubrificare con grasso al silicone OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT

		MK2R55 - MK2SR55 (D.55)	MK2R60 - MK2SR60 (D.60)	MK2R65- MK2SR65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2102	KIT 2103	KIT 2104
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2453	KIT 2454	KIT 2455
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R55 - MK2SR55
MK2R60 - MK2SR60
MK2R65 - MK2SR65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.1007.56	ANELLO DI TESTA BADERNE D. 55		3
	74.1008.56	ANELLO DI TESTA BADERNE D. 60		
	74.1009.56	ANELLO DI TESTA BADERNE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	94.7770.00	MOLLA Dm. 61.5x35.0 - MK2R MK2SR 55		3
	94.7900.00	MOLLA Dm. 71.5x35.0 - MK2R MK2SR 60-65		
34	74.2135.56	ANELLO PER MOLLA D. 55		3
	74.2136.56	ANELLO PER MOLLA D. 60		
	74.2137.56	ANELLO PER MOLLA D. 65		
35	74.2139.82	ANELLO RASCHIATORE D. 55	A-C	3
	74.2140.82	ANELLO RASCHIATORE D. 60	A-C	
	74.2141.82	ANELLO RASCHIATORE D. 65	A-C	
36	90.5725.00	BADERNE D. 55.0x71.0x19.5	A-C	3
	90.5750.00	BADERNE D. 60.0x76.0x19.5	A-C	
	90.5775.00	BADERNE D. 65.0x81.0x19.5	A-C	
37	90.5267.00	ANELLO ANTIEST. D. 55.0x71.0x2.5	A-C	3
	90.5269.00	ANELLO ANTIEST. D. 60.0x76.0x2.5	A-C	
	90.5275.00	ANELLO ANTIEST. D. 65.0x81.0x2.5	A-C	
38	74.2143.60	ANELLO DI SUPPORTO D. 55		3
	74.2144.60	ANELLO DI SUPPORTO D. 60		
	74.2145.60	ANELLO DI SUPPORTO D. 65		
39	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - MK2R MK2SR 55	A-C	3
	90.4141.00	OR D. 85.32x3.53 NBR 70SH 4337 - MK2R MK2SR 60-65	A-C	
40	74.2147.56	SUPPORTO BADERNE D. 55		3
	74.2148.56	SUPPORTO BADERNE D. 60		
	74.2149.56	SUPPORTO BADERNE D. 65		
41	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
42	74.2133.51	PARASPRUZZI		3
43	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
44	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
45	99.1837.00	VITE M6x14 UNI 5931		14
46	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
47	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
48	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
49	74.0503.36	STELO GUIDA PISTONE		3
50	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
51	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
52	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
53	99.1884.00	VITE M6x20 UNI 5931		12
55	79.0504.43	GUIDA PISTONE		3
	790.0505.43	GUIDA PISTONE +1.0		
56	98.2333.00	TAPPO CARICO OLIO G1"		1
57	99.4410.00	VITE SERRAGGIO BIELLA		6
58	99.3045.00	VITE M8x18 UNI 5931		6
59	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
60	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
61	91.8700.00	CUSCINETTO A RULLI		1
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	91.8610.00	CUSCINETTO A RULLI		1
64	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
65	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
66	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
67	74.2173.22	COPERCHIO PIGNONE		1
68	99.4335.00	VITE M12x50 UNI 5931		2
69	99.3684.00	VITE M10x30 UNI 5739		4
70	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
71	74.2252.55	FERMO CORONA		1
72	74.0202.35	ALBERO A GOMITI C. 72 - MK2R		1
	74.0201.35	ALBERO A GOMITI C. 72 - MK2SR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	99.3730.00	VITE M10x50 UNI 5931		10
75	74.2174.13	COPERCHIO RIDUTTORE		1
76	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
77	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
78	74.2175.13	SCATOLA RIDUTTORE		1
79	99.4305.00	VITE M12x40 UNI 5931		6
81	91.8850.00	CUSCINETTO A RULLI		1
82	74.2130.84	GUARNIZIONE LATERALE	C	2
83	74.0101.13	CARTER POMPA		1
84	74.0302.01	BIELLA COMPLETA		3
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0.50 - SUP.	D	
87	74.1600.22	COPERCHIO CARTER		1
88	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
89	91.8852.00	CUSCINETTO A RULLI		1
90	74.1500.22	COPERCHIO CUSCINETTO		1
91	93.0800.00	GHIERA DI BLOCCAGGIO		1
92	96.8300.00	ROSETTA DI SICUREZZA		1
93	91.8800.00	BUSSOLA DI PRESSIONE		1
94	99.4280.00	VITE M12x30 UNI 5931		8
95	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
96	93.1050.00	GOLFARE M16 UNI 2947		2
97	90.0697.00	ANELLO D'ARRESTO J35		6
98	97.7450.00	SPINOTTO D. 35x64		3
99	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
100	36.2089.51	GUIDA INTERNA VALVOLA		6
101	74.2150.56	BOCCOLA TESTATA		3
102	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
103	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
104	90.9173.00	BOCCOLA PIEDE BIELLA		3
105	74.1201.01	TESTATA CON BOCCOLA		1
116	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
117	98.2086.00	TAPPO G 3/8"x12		2
118	74.6062.01	GR. GUIDA PISTONE		3
119	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
109	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
110	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
111	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
115	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
108	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
109	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
112	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
113	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
114	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
115	92.2025.00	DADO M6x5 UNI 5588		1

17.2 Pompa versione MK2C-MK25C

17.2.1 Indicazioni per l'utilizzo

Le pompe ono state progettate per operare in ambienti con atmosfera non potenzialmente esplosiva.
L'***Ufficio Tecnico*** o ***Servizio Assistenza Clienti***. è a disposizione del cliente per la migliore definizione dell'impianto.

17.2.2 Temperatura di utilizzo

La temperatura del fluido ammessa è: -30 °C÷+30 °C.
Per differenti valori interpellare l'***Ufficio Tecnico*** o ***Servizio Assistenza Clienti***.

17.2.3 Portata e pressione massima

Le prestazioni indicate a catalogo si riferiscono alle massime prestazioni fornibili dalla pompa. **Indipendentemente** dalla potenza utilizzata, la pressione ed il numero di giri massimi indicati in targhetta non possono essere superati se non espressamente autorizzati formalmente dall'***Ufficio Tecnico*** o ***Servizio Assistenza Clienti***.

17.2.4 Caratteristiche tecniche

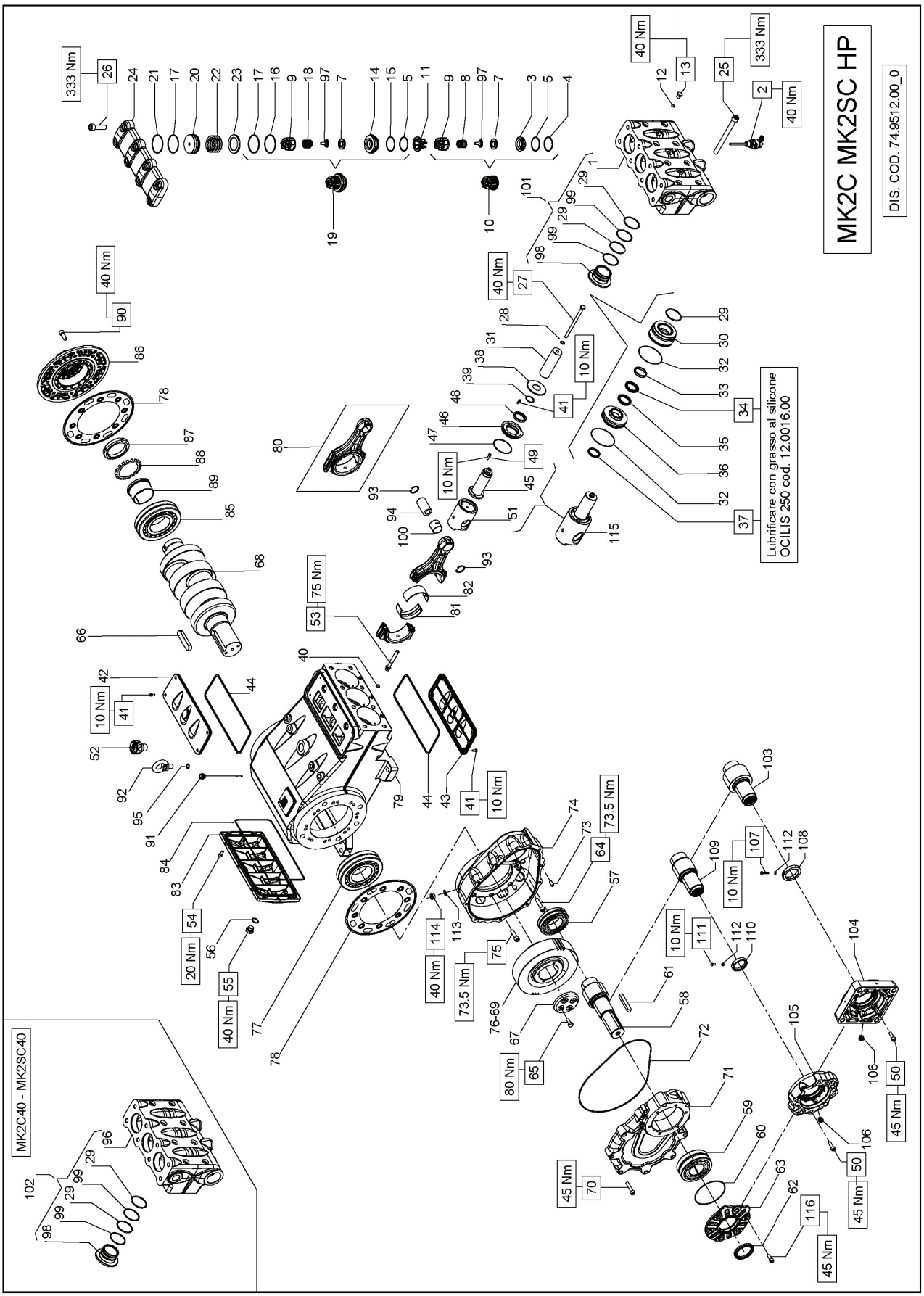
Modello	Giri/1'	Portata		Pressione		Potenza	
		l/min	Gpm	bar	psi	kW	Hp
MK2SC 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2SC 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2SC 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2SC 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2SC 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2SC 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Modello	Giri/1'	Portata		Pressione		Potenza	
		l/min	Gpm	bar	psi	kW	Hp
MK2SC 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2SC 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SC 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2SC 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2SC 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2SC 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.2.5 Dimensioni e pesi

Per dimensioni e pesi delle pompe fare riferimento agli schemi riportati nel capitolo 6.

17.2.6 Disegno esploso e distinta ricambi



KIT RICAMBIO – SPARE KIT

		MK2C40 - MK2SC40 (D.40)	MK2C45 - MK2SC45 (D.45)	MK2C50 - MK2SC50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2258		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2C40 - MK2SC40
MK2C45 - MK2SC45
MK2C50 - MK2SC50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIRAZ.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2118.56	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7222.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7223.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE HP		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE - FLANGIATO		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72 - MKSC		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKC		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1

17.3 Pompa versione MK2SH

17.3.1 Indicazioni per l'utilizzo

La pompa è stata progettata per operare in ambienti con atmosfera non potenzialmente esplosiva, e con acqua filtrata (vedere par. 9.7).
Altri liquidi potranno essere utilizzati soltanto previo benestare formale dell'***Ufficio Tecnico*** o ***Servizio Assistenza Clienti***.

17.3.2 Temperatura acqua

La massima temperatura dell'acqua ammessa è 40 °C. Tuttavia è possibile utilizzare la pompa con acqua alla temperatura fino a 60 °C, ma solamente per brevi periodi. In tal caso si consiglia di interpellare l'***Ufficio Tecnico*** o ***Servizio Assistenza Clienti***.

17.3.3 Portata e pressione massima

Le prestazioni indicate a catalogo si riferiscono alle massime prestazioni fornibili dalla pompa. **Indipendentemente** dalla potenza utilizzata, la pressione ed il numero di giri massimi indicati in targhetta non possono essere superati se non espressamente autorizzati formalmente dall'***Ufficio Tecnico*** o ***Servizio Assistenza Clienti***.

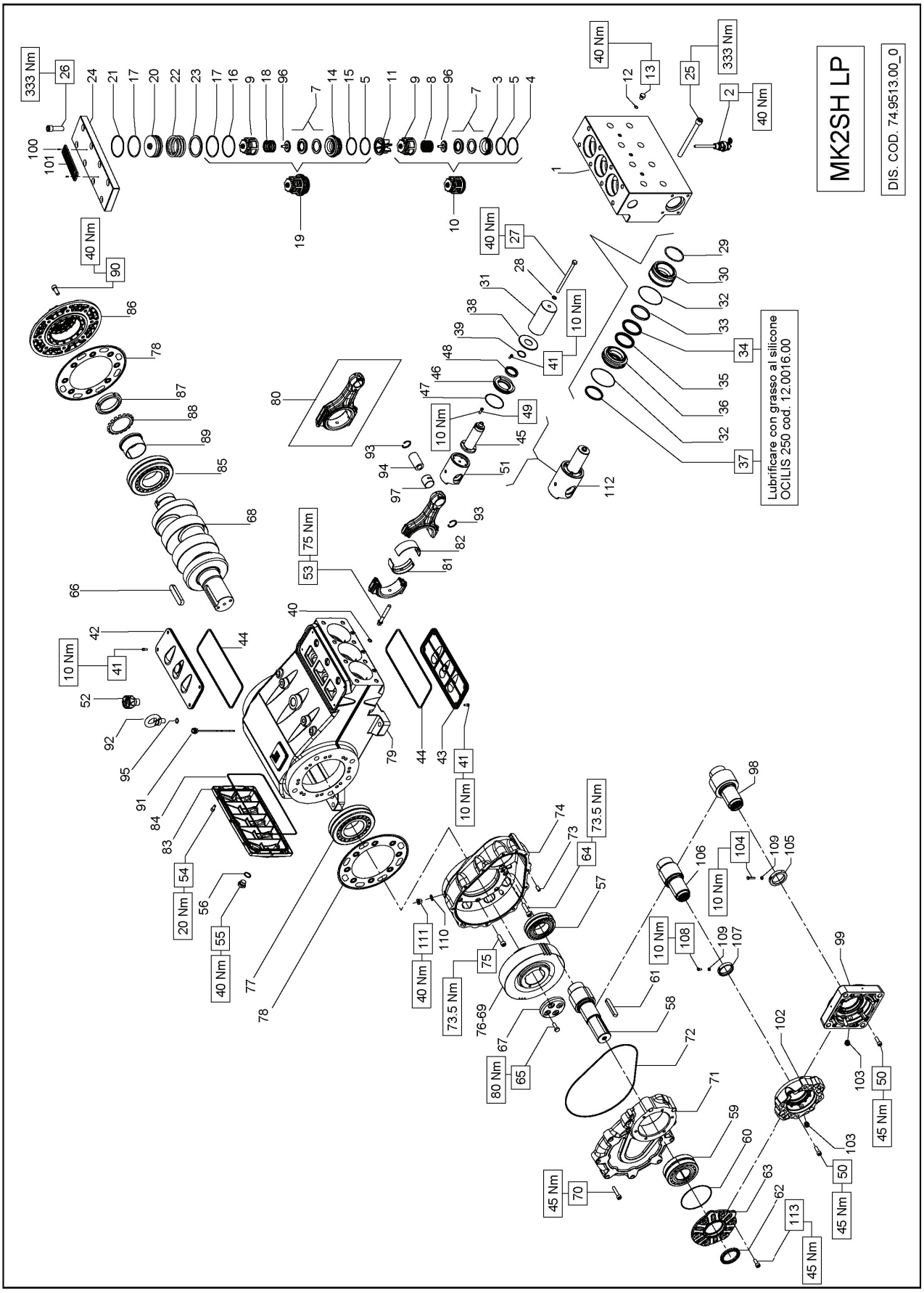
17.3.4 Caratteristiche tecniche

Modello	Giri/1'	Portata		Pressione		Potenza	
		l/min	Gpm	bar	psi	kW	Hp
MK2SH 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SH 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.3.5 Dimensioni e pesi

Per dimensioni e pesi delle pompe fare riferimento agli schemi riportati nel capitolo 6.

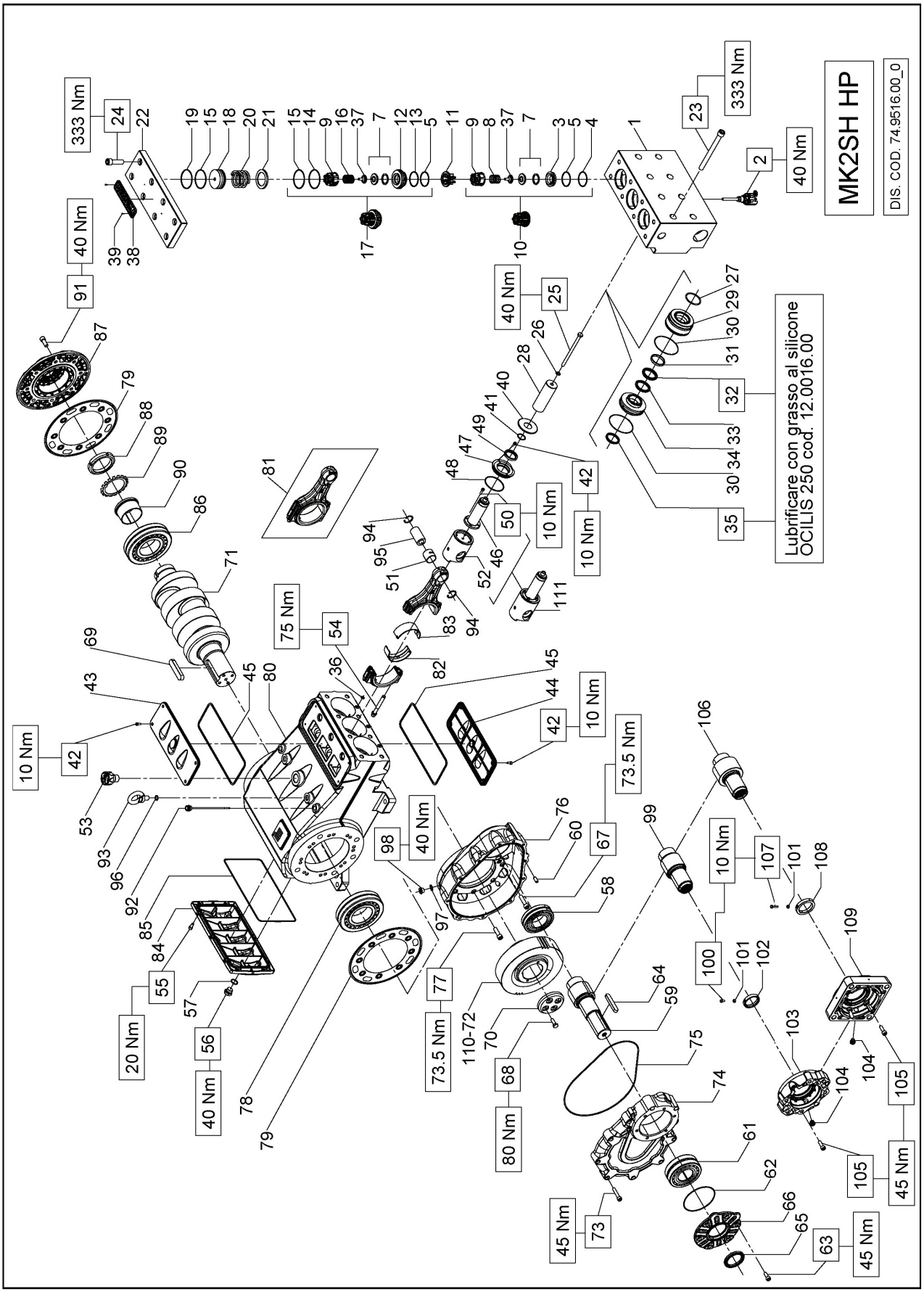
17.3.6 Disegno esploso e distinta ricambi



KIT RICAMBIO – SPARE KIT		MK2S65H (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2047
B	Kit valvole – Valves kit	KIT 2048
C	Kit tenute complete – Complete seals kit	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)

MK2S65H

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1210.56	TESTATA LP		1
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2161.56	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2116.56	CAMICIA PISTONE D. 65		3
31	74.0405.09	PISTONE D. 65x127		3
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1005.92	ANELLO DI TESTA PISTONE D. 65		3
34	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	3
35	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	3
36	74.2122.68	SUPPORTO GUARNIZIONE D. 65		3
37	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	3
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72		1
69	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		3
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
82	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	90.9173.00	BOCCOLA PIEDE BIELLA		3
100	91.5703.00	RIVETTO AUTOF. D. 2.5x8 UNI 7346		2
101	97.8276.00	MARCHIO PRATISSOLI		1
110	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
111	98.2086.00	TAPPO G 3/8"x12		2
112	74.6062.01	GR. GUIDA PISTONE		3
113	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
98	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
99	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
104	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
105	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
102	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
107	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
108	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
109	92.2025.00	DADO M6x5 UNI 5588		1


MK2SH HP
DIS. COD. 74.9516.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK2SH45 (D.45)
A	Kit tenute pompanti – Plunger packing kit	KIT 2053
B	Kit valvole – Valves kit	KIT 2055
C	Kit tenute complete – Complete seals kit	KIT 2451
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0.25) - 2078 (+0.50)

MK2SH45

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1212.56	TESTATA POMPA D. 45		1
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	36.2069.66	SEDE VALVOLA DI MANDATA		3
13	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
14	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
15	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
16	94.7605.00	MOLLA Dm. 28.5x45.4		3
17	36.7153.01	GR. VALVOLA DI MANDATA	B	3
18	74.2110.70	TAPPO VALVOLE DI MANDATA		3
19	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
20	94.7750.00	MOLLA Dm. 58.0x45.4		3
21	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
22	74.2181.56	COPERCHIO VALVOLE		1
23	99.5222.00	VITE M16x180 UNI 5931		8
24	99.5147.00	VITE M16x55 UNI 5931		8
25	99.3850.00	VITE M10x160 UNI 5737		3
26	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
27	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	3
29	74.2112.56	CAMICIA PISTONE D. 45		3
28	74.0401.09	PISTONE D. 45x127		3
30	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
31	74.1001.92	ANELLO DI TESTA PISTONE D. 45		3
32	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	3
33	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	3
34	74.2118.68	SUPPORTO GUARNIZIONE D. 45		3
35	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	3
36	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
37	36.2090.51	GUIDA INTERNA VALVOLA		6
38	97.8276.00	MARCHIO PRATISSOLI		1
39	91.5703.00	RIVETTO AUTOFILETTANTE D. 2.5x8.0		2
40	74.2133.51	PARASPRUZZI		3
41	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
42	99.1837.00	VITE M6x14 UNI 5931		14
43	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
44	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
45	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
46	74.0503.36	STELO GUIDA PISTONE		3
47	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
48	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
49	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
50	99.1884.00	VITE M6x20 UNI 5931		12
51	90.9173.00	BOCCOLA PIEDE BIELLA		3
52	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
53	98.2333.00	TAPPO CARICO OLIO G1"		1
54	99.4410.00	VITE SERRAGGIO BIELLA		6
55	99.3045.00	VITE M8x18 UNI 5931		6
56	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
57	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
58	91.8700.00	CUSCINETTO A RULLI		1
59	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
60	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
61	91.8610.00	CUSCINETTO A RULLI		1
62	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
63	99.3668.00	VITE M10x25 5931		6
64	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
65	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
66	74.2173.22	COPERCHIO PIGNONE		1
67	99.4335.00	VITE M12x50 UNI 5931		2
68	99.3684.00	VITE M10x30 UNI 5739		4
69	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
70	74.2252.55	FERMO CORONA		1
71	74.0202.35	ALBERO A GOMITI C. 72		1
72	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
73	99.3730.00	VITE M10x50 UNI 5931		10
74	74.2174.13	COPERCHIO RIDUTTORE		1
75	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
76	74.2175.13	SCATOLA RIDUTTORE		1
77	99.4305.00	VITE M12x40 UNI 5931		6
78	91.8850.00	CUSCINETTO A RULLI		1
79	74.2130.84	GUARNIZIONE LATERALE	C	2
80	74.0101.13	CARTER POMPA		1
81	74.0302.01	BIELLA COMPLETA		3
82	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
83	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
84	74.1600.22	COPERCHIO CARTER		1
85	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
86	91.8852.00	CUSCINETTO A RULLI		1
87	74.1500.22	COPERCHIO CUSCINETTO		1
88	93.0800.00	GHIERA DI BLOCCAGGIO		1
89	96.8300.00	ROSETTA DI SICUREZZA		1
90	91.8800.00	BUSSOLA DI PRESSIONE		1
91	99.4280.00	VITE M12x30 UNI 5931		8
92	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
93	93.1050.00	GOLFARE M16 UNI 2947		2
94	90.0697.00	ANELLO D'ARRESTO J35		6
95	97.7450.00	SPINOTTO D. 35x64		3
96	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
97	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
98	98.2086.00	TAPPO G 3/8"x12		2
111	74.6062.01	GR. GUIDA PISTONE		3
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
101	92.2025.00	DADO M6x5 UNI 5588		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
110	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
99	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
100	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
101	92.2025.00	DADO M6x5 UNI 5588		1
102	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
103	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
110	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1

18 DICHIARAZIONE DI INCORPORAZIONE

DICHIARAZIONE DI INCORPORAZIONE

(Ai sensi dell'allegato II della Direttiva Europea 2006/42/CE)

Il produttore **INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 - 42049 - S. ILARIO D'ENZA - Italia DICHIARA** sotto la propria esclusiva responsabilità che il prodotto identificato e descritto come segue:

Denominazione:	Pompa
Tipo:	Pompa alternativa a pistoni per acqua ad alta pressione
Marchio di fabbrica:	INTERPUMP GROUP
Modello:	Serie 74 MK2, MK2S, MK2R, MK2SR, MK2C, MK2SC, MK2SH

Risulta essere conforme all Direttiva Macchine 2006/42/CE
Norme applicate: UNI EN ISO 12100- UNI EN 809

La pompa sopra identificata rispetta tutti i requisiti essenziali di sicurezza e di tutela della salute elencati nel punto 1 dell'allegato I della Direttiva Macchine:
1.1.2 - 1.1.3 - 1.1.5 - 1.3.1 - 1.3.2 - 1.3.3 - 1.3.4 - 1.5.4 - 1.5.5 - 1.6.1 - 1.7.1 - 1.7.2 - 1.7.4 - 1.7.4.1 - 1.7.4.2 e la relativa documentazione tecnica è stata compilata in conformità dell'allegato VII B.

Inoltre il produttore si impegna a rendere disponibile, a seguito di una richiesta adeguatamente motivata, copia della documentazione tecnica pertinente la pompa nei modi e nei termini da definire.

La pompa non deve essere messa in servizio finché l'impianto al quale la pompa deve essere incorporata è stato dichiarato conforme alle disposizioni delle relative direttive e/o norme.

Persona autorizzata a costituire il fascicolo tecnico
Nome: Maurizio Novelli
Indirizzo: INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 - 42049 - S. ILARIO D'ENZA (RE) - Italia

Il responsabile:
Reggio Emilia - Gennaio 2017

Ing. Massimiliano Bizzarri

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1 INTRODUCTION

This manual describes the instructions for use and maintenance of the MK2 pump and should be carefully read and understood before using the pump.
Proper pump operation and duration depend on the correct use and maintenance.
Interpump Group disclaims any responsibility for damage caused by negligence or failure to observe the standards described in this manual.
Upon receipt, check that the pump is intact and complete. Report any faults before installing and starting the pump.

2 DESCRIPTION OF SYMBOLS

Read the contents of this manual carefully before each operation.



Warning Sign



Read the contents of this manual carefully before each operation.



Danger Sign
Danger of electrocution.



Danger Sign
Wear a protective mask.



Danger Sign
Wear protective goggles.



Danger Sign
Put on protective gloves before each operation.



Danger Sign
Wear appropriate footwear

3 SAFETY

3.1 General safety warnings

Improper use of pumps and high pressure systems as well as non-compliance with installation and maintenance standards can cause serious damage to people and/or property.
Anyone assembling or using high pressure systems must possess the necessary competence to do so, knowing the characteristics of the components to be assembled/used and taking all the necessary precautions to ensure maximum safety in all conditions of use. In the interest of safety, both for the Installer and the Operator, no reasonably applicable precaution should be omitted.

3.2 Essential safety in the high pressure system

1. The pressure line must always be provided with a safety valve.
2. High pressure system components, particularly for systems that operate primarily outside, must be adequately protected from rain, frost and heat.
3. The electrical control system must be adequately protected against sprays of water and must meet specific regulations in force.
4. The high pressure pipes must be properly sized for maximum operating pressure of the system and always and only used within the operating pressure range specified by the Manufacturer of the pipe itself. The same rules should be observed for all other auxiliary systems affected by high pressure.
5. The ends of high pressure pipes must be sheathed and secured in a solid structure, to prevent dangerous whiplash in case of bursting or broken connections.
6. Appropriate protective casing must be provided in pump transmission systems (couplings, pulleys and belts, auxiliary power outlets).

3.3 Safety during work



The room or area within which the high pressure system operates must be clearly marked and prohibited to unauthorized personnel and, wherever possible, segregated or fenced to ensure restricted access. Personnel authorized to access this area should first be instructed how to operate within this area and informed of the risks arising from high pressure system defects or malfunctions.
Before starting the system, the Operator is required to verify that:

1. The high pressure system is properly powered, see chapter 9 par. 9.5.
2. The pump suction filters are perfectly clean; it is appropriate to include a device indicating the clogging level on all devices.
3. Electrical parts are adequately protected and in perfect condition.
4. The high pressure pipes do not show signs of abrasion and the fittings are in perfect order.
5. In relation to the application, use and environmental conditions, during the operation the outer surfaces of the pump may reach high temperatures. Therefore we recommend to take precautions to avoid contact with hot parts.

Any fault or reasonable doubt that may arise before or during operation should be promptly reported and verified by qualified personnel. In these cases, pressure should be immediately cleared and the high pressure system stopped.

3.4 Rules of conduct for the use of lances



1. The operator must always place his safety and security first, as well as that of others that may be directly affected by his/her actions, or any other assessments or interests. The operator's work must be dictated by common sense and responsibility.
2. The operator must always wear a helmet with a protective visor, waterproof gear and wear boots that are appropriate for use and can ensure a good grip on wet floors.

Note: *appropriate clothing will protect against sprays of water but not from direct impact with jets of water or very close sprays. Additional protections may therefore be necessary in certain circumstances.*

3. It is good practice to organize personnel into teams of at least two people capable of giving mutual and immediate assistance in case of necessity and of taking turns during long and demanding operations.

4. The work area jet range must be absolutely prohibited to and free from objects that, inadvertently under a pressure jet, can be damaged and/or create dangerous situations.
5. The water jet must always and only be pointed in the direction of the work area, including during preliminary tests or checks.
6. The operator must always pay attention to the trajectory of debris removed by the water jet. Where necessary, suitable guards must be provided by the Operator to protect anything that could become accidentally exposed.
7. The operator should not be distracted for any reason during work. Workers needing to access the operating area must wait for the Operator to stop work on his/her own initiative, after which they should immediately make their presence known.
8. It is important for safety that all team members are always fully aware of each other's intentions in order to avoid dangerous misunderstandings.
9. The high pressure system must not be started up and run under pressure without all team members in position and without the Operator having already directed his/her lance toward the work area.

3.5 Safety during system maintenance

1. High pressure system maintenance must be carried out in the time intervals set by the manufacturer who is responsible for the whole group according to law.
2. Maintenance should always be performed by trained and authorized personnel.
3. Assembly and disassembly of the pump and the various components must only be carried out by authorized personnel, using appropriate equipment in order to prevent damage to components, in particular to connections.
4. Always only use original spare parts to ensure total reliability and safety.

4 PUMP IDENTIFICATION

Each pump has an identification label, showing:

- Pump model and version
- Serial number
- Max revs
- Absorbed power HP - kW
- Pressure bar - P.S.I.
- Flow rate l/min - Rpm

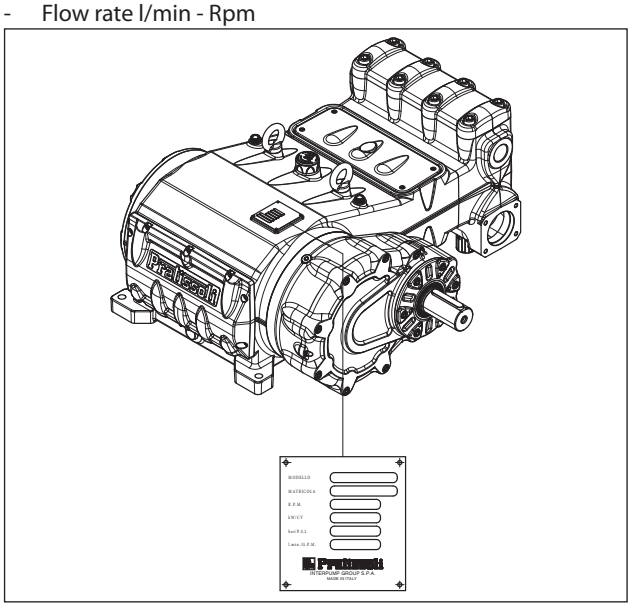


Fig. 1

Model, version and serial number must always be indicated when ordering spare parts

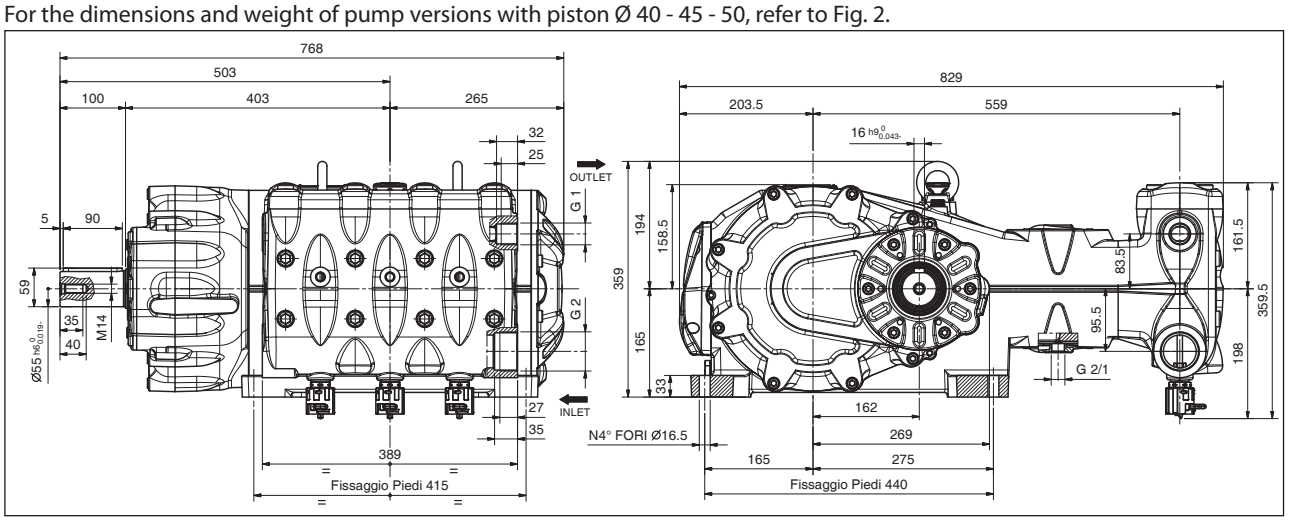
5 TECHNICAL CHARACTERISTICS

Model	Rpm	Flow rate		Pressure		Power	
		l/min	Gpm	bar	psi	kW	HP
MK2 40	1500	153	40.4	400	5800	159	117
	1800	149	39.4	400	5800	155	114
MK2 45	1500	193	51.0	300	4350	150	110
	1800	189	49.9	300	4350	147	108
MK2 50	1500	239	63.1	250	3625	155	114
	1800	233	61.6	250	3625	151	111
MK2 55	1500	289	76.4	200	2900	150	110
	1800	282	74.5	200	2900	146	107
MK2 60	1500	343	90.6	170	2465	151	111
	1800	335	88.5	170	2465	148	109
MK2 65	1500	403	106.5	150	2175	157	115
	1800	394	104.1	150	2175	154	113

Model	Rpm	Flow rate		Pressure		Power	
		l/min	Gpm	bar	psi	kW	HP
MK2S 40	1500	184	48.6	400	5800	140.5	191
	1800	183	48.3	400	5800	140	190
	2200	182	48.1	400	5800	139	189
MK2S 45	1500	233	61.6	300	4350	134	182
	1800	232	61.3	300	4350	133	181
	2200	231	61.0	300	4350	132	180
MK2S 50	1500	288	76.1	250	3625	137.5	187
	1800	286	75.6	250	3625	137	186
	2200	285	75.3	250	3625	136	185
MK2S 55	1500	349	92.2	200	2900	133	181
	1800	346	91.4	200	2900	132	180
	2200	344	90.9	200	2900	132	179
MK2S 60	1500	415	109.6	170	2465	135	183
	1800	412	108.9	170	2465	134	182
	2200	410	108.3	170	2465	133	181
MK2S 65	1500	487	128.7	150	2175	140	190
	1800	484	127.9	150	2175	139	189
	2200	481	127.1	150	2175	137.5	187

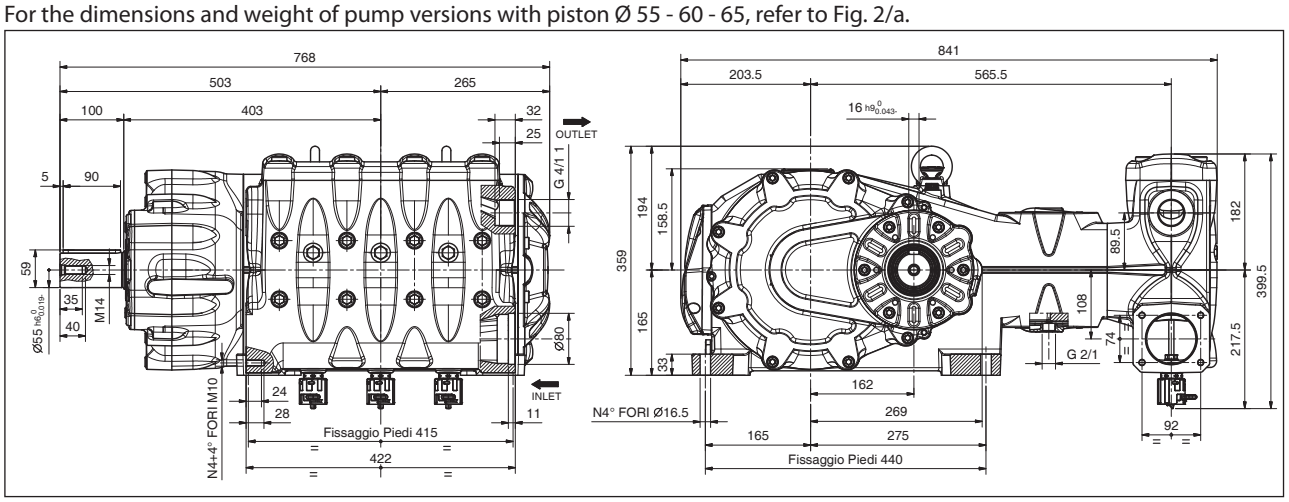
6 DIMENSIONS AND WEIGHT

For the dimensions and weight of pump versions with piston Ø 40 - 45 - 50, refer to Fig. 2.



Dry weight 398 kg. Fig. 2

For the dimensions and weight of pump versions with piston Ø 55 - 60 - 65, refer to Fig. 2/a.



Dry weight 411 kg. Fig. 2/a

For the dimensions and weight of H.P. pump versions with the Hydraulic Pack setup, refer to Fig. 2/b.

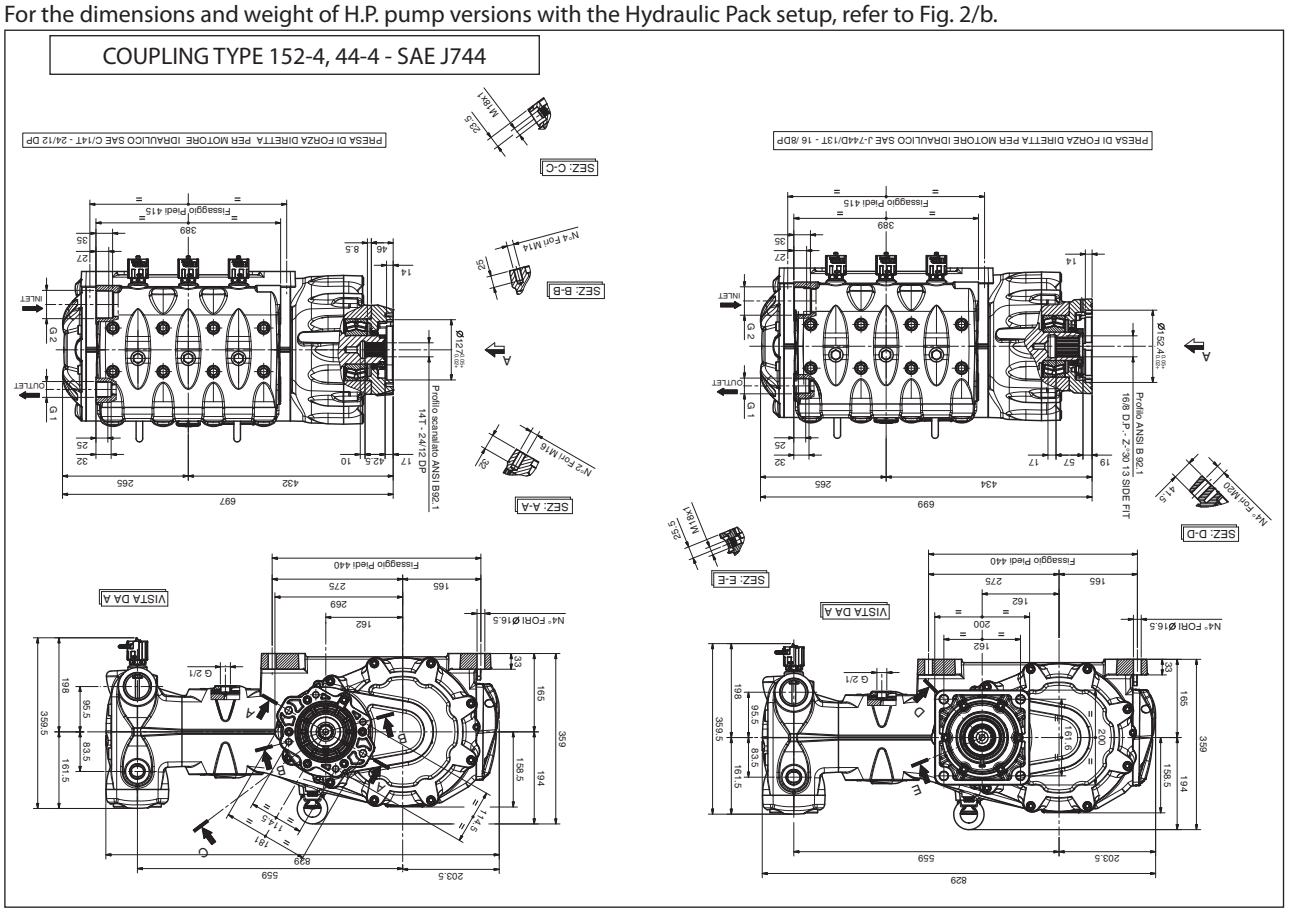


Fig. 2/b

For the dimensions and weight of L.P. pump versions with the Hydraulic Pack setup, refer to Fig. 2/c.

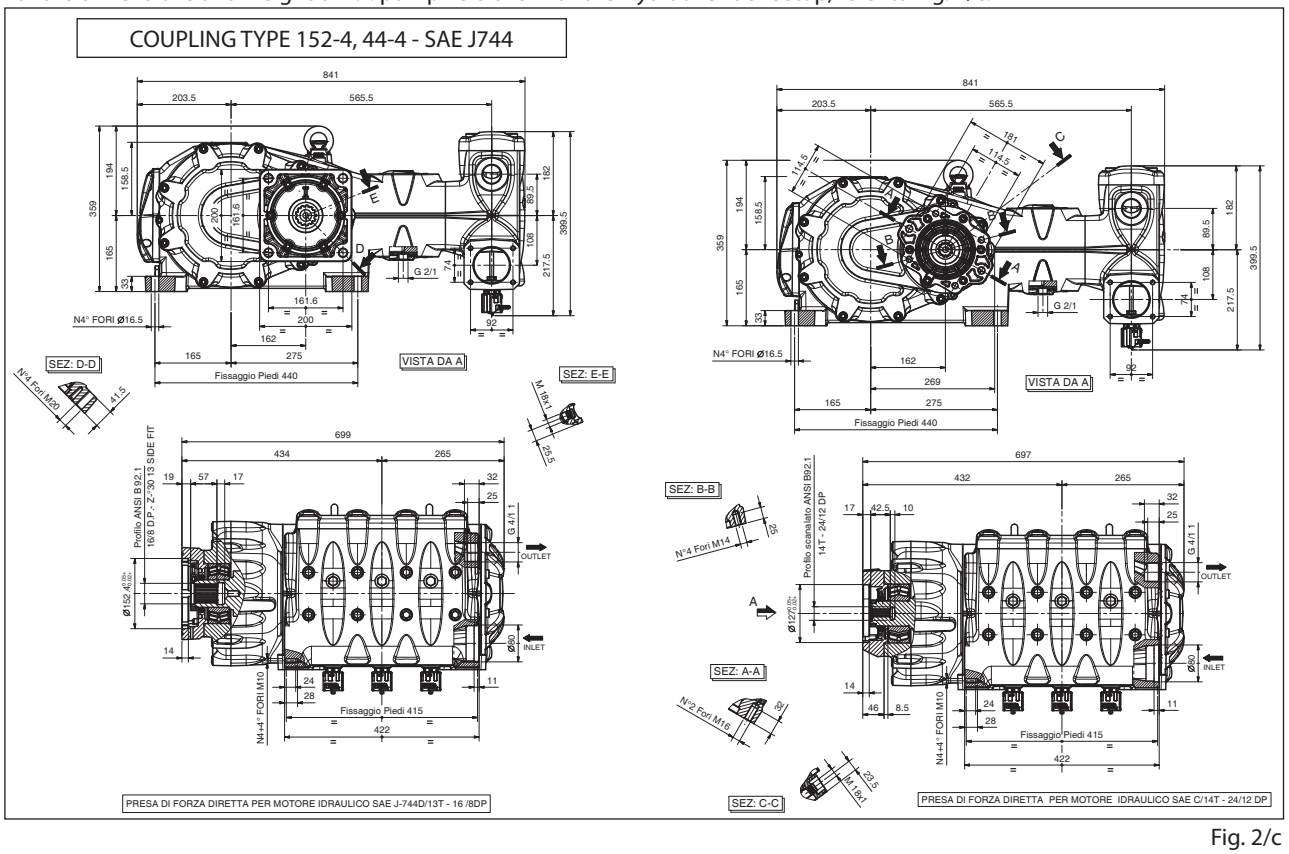


Fig. 2/c

7 OPERATING INSTRUCTIONS

The pump has been designed to operate in environments with atmospheres that are not potentially explosive, and with filtered water (see par. 9.7).
Other liquids can be used only upon formal approval by the ***Engineering Department*** or ***Customer Service Department***.

7.1 Water temperature

The maximum permissible water temperature is 40 °C. However, the pump can be used with water up to a temperature of 60 °C, but only for short periods. In this case, it is best to consult the ***Technical*** or ***Customer Service Departments***.

7.2 Maximum pressure and flow rate

The rated specifications stated in our catalog are the maximum that can be obtained by the pump. **Independently** of the power used, the maximum pressure and rpm indicated on the specification label can never be exceeded unless prior formal authorization is given by our ***Technical*** or ***Customer Service Departments***.

7.3 Minimum operating speed

The minimum permissible speed for these types of pumps is 300 rpm. Any rotating speed other than that mentioned and that indicated in the performance table (see chapter 5) must be expressly formally authorised by our ***Technical*** or ***Customer Service Departments***.

7.4 Sound emission

The sound pressure detection test was performed according to Directive 2000/14 of the European Parliament and Council (Machinery Directive) and EN-ISO 3744-2010 with class 1 instrumentation.
A final detection of sound pressure must be performed on the complete machine/system.
Should the operator be located at a distance of less than 1 meter, appropriate hearing protection must be employed according to current regulations.

7.5 Vibration

The detection of this value shall be carried out only with the pump set up on the plant and at the performance declared by the customer. Values must be in accordance with regulations.

7.6 Brands and types of oils recommended

The pump is supplied with oil of a type suitable for room temperatures from 0 °C to 30 °C.
Some types of recommended oil are indicated in the table below. These oils have additives to increase corrosion resistance and fatigue resistance (DIN 51517 part 2).
Alternatively you can also use Automotive Gear SAE 85W-90 oil for gearing lubrication.

Manufacturer	Lubricant
Agip	AGIP ACER220
ARAL	Aral Degol BG 220
BP	BP Energol HLP 220
Castrol	CASTROL HYSPIN VG 220 CASTROL MAGNA 220
DEA	Falcon CL220
elf	ELF POLYTELIS 220 REDUCTELF SP 220
Esso	NUTO 220 TERESSO 220
FINA	FINA CIRKAN 220
FUCHS	RENOLIN 212 RENOLIN DTA 220
Mobil	Mobil DTE Oil BB
Shell	Shell Tellus Öl C 220
SRS	Wintershall Ersolon 220 Wintershall Wiolan CN 220
TEXACO	RANDO HD 220
TOTAL	TOTAL Cortis 220

Check the oil level via the oil dipsticks that have minimum and maximum marks ①, Fig. 3.
If necessary, top up via the oil cap ③, Fig. 3.
The correct checking of the oil level is made with the pump not running, at room temperature. The oil change must be made with the pump at working temperature, removing the plug pos. ②, Fig. 3.
The oil check and change must be carried out as indicated in chapter 11.
The quantity required is ~13.5 liters.

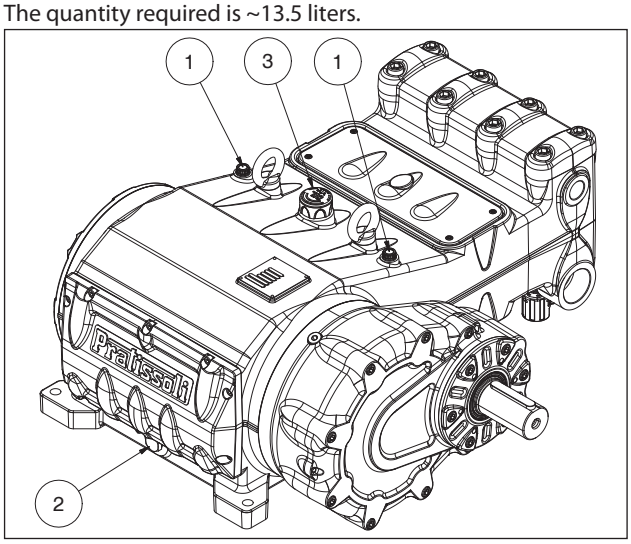


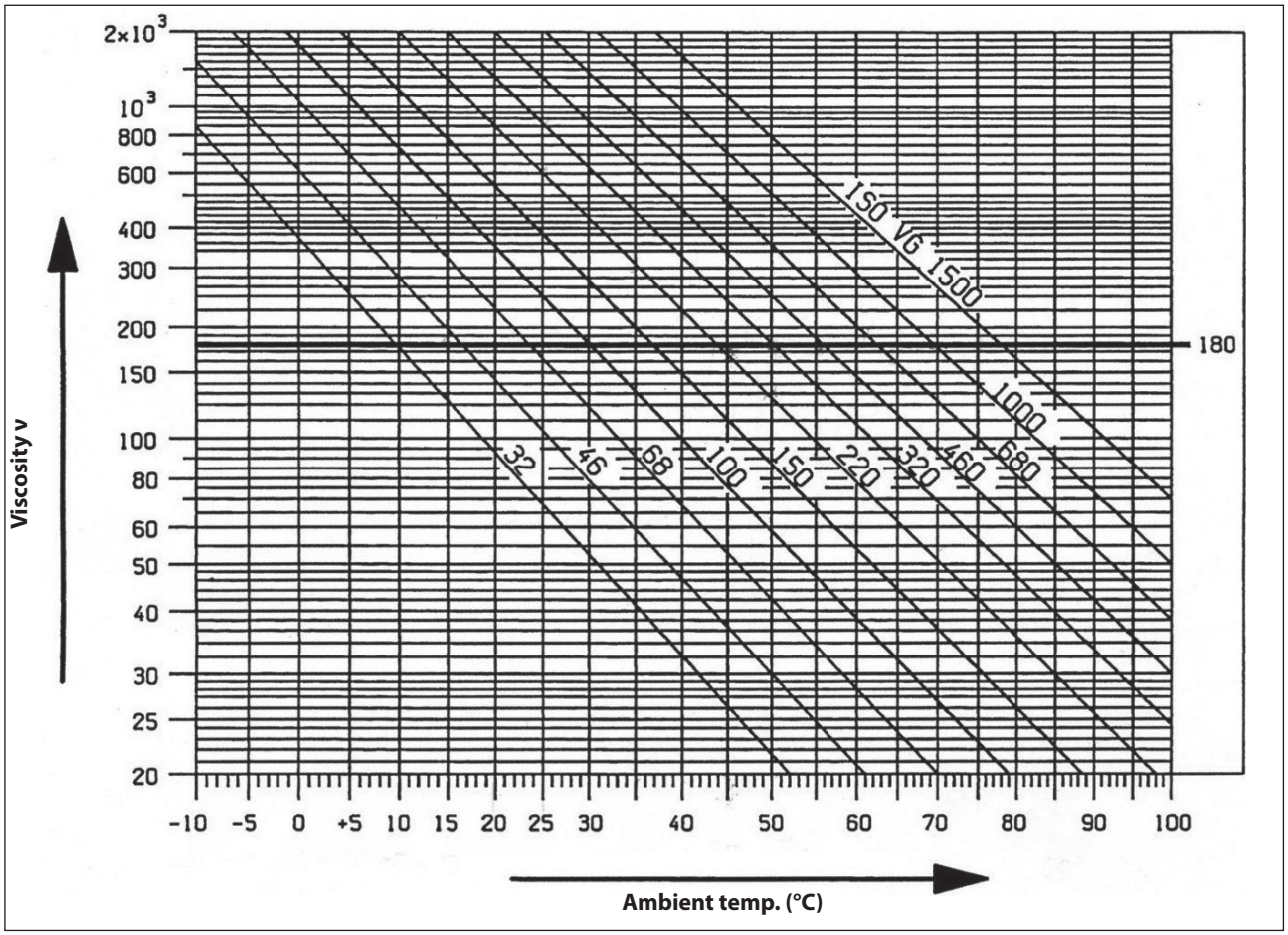
Fig. 3

In any case the oil must be changed at least once a year, as it is degraded by oxidation.

For a room temperature other than between 0 °C - 30 °C, follow the instructions in the following diagram, considering that oil must have a minimum viscosity of 180 cSt.

Viscosity / Room Temperature diagram

$mm^2/s = cSt$



The used oil must be poured unto a suitable container and consigned to an authorized recycling center. Do not release used oil into the environment under any circumstances.

8 PORTS AND CONNECTIONS

The pumps are equipped with:

2 "IN" inlet ports:

G2" (versions with piston Ø 40, 45, 50)

Ø80 mm (versions with piston Ø 55, 60, 65)

Line connection to any of the two ports is indifferent for proper pump functioning. The unused ports must be hermetically closed.

2 "OUT" outlet ports:

G1" (versions with piston Ø 40, 45, 50)

G1 ¼" (versions with piston Ø 55, 60, 65)

1 "DRAIN" port: with G1/2" orifice obtained in the lower cover to monitor any leakage of fluid due to wear on the pressure seals. If there are any leaks, refer to the ***Repair manual***.

This orifice must always be kept open (see Fig. 4 and Fig. 4/a).

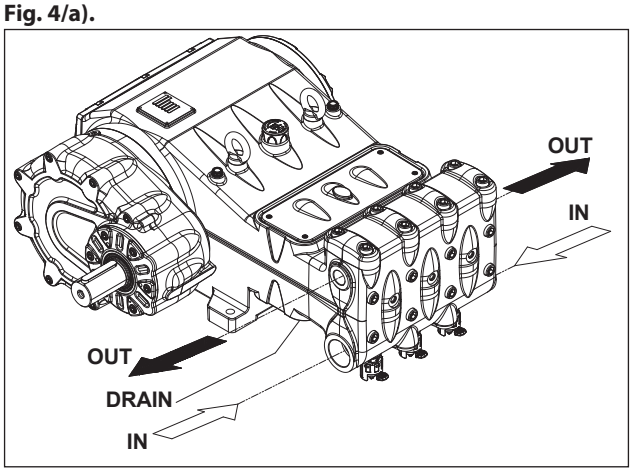


Fig. 4

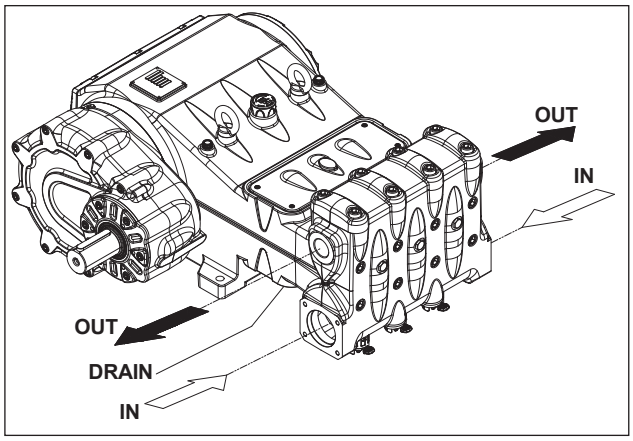


Fig. 4/a

9 PUMP INSTALLATION

9.1 Installation

The pump must be fixed horizontally using the Ø16.5 drilled support feet.
The base must be perfectly flat and rigid enough as not to allow bending or misalignment on the pump coupling axis/transmission due to torque transmitted during operation.
Two lifting eyebolts are mounted on the pump for easy installation, as per the figure below.

The lifting eyebolts must not be removed.

The eyebolts are sized for lifting the pump only and must never be used to handle additional loads



Replace the oil filler closing plug located on the casing with the oil filler cap.
The oil filler cap must always be reachable, even when the unit is assembled.

The pump shaft (PTO) must not be rigidly connected to the drive unit.
The following types of transmission are recommended:

- Flexible coupling.
- Universal joint (comply with the maximum working angles recommended by the manufacturer).
- Belts, for proper application consult with our ***Technical*** or ***Customer Service Departments***.

9.2 Rotation direction

The direction of rotation of the PTO is indicated by an arrow on the reduction unit cover.
From a position facing the pump head, the rotation direction will be as in Fig. 5.

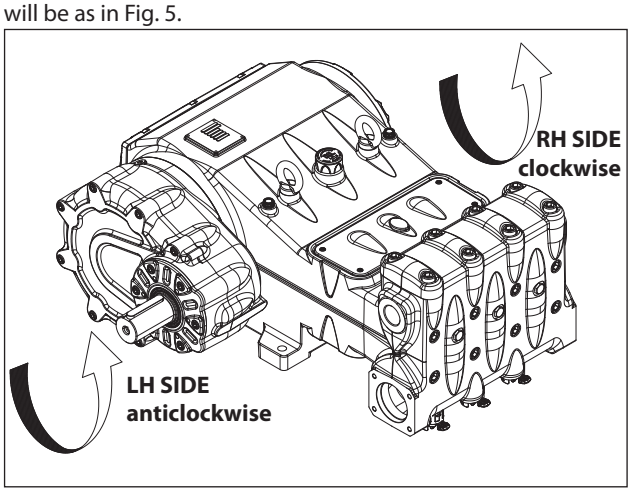


Fig. 5

9.3 Changing version and reduction unit positioning

The pump version is defined as right when:
observing the pump facing the head side, the pump shaft must have a PTO shank on the RH side.
The pump version is defined as left when:
observing the pump facing the head side, the pump shaft must have the PTO shank on the LH side (see Fig. 5).

The version can only be changed by authorized specialized personnel meticulously following the instructions in the *repair manual*.

In addition it is possible to position the reduction unit in 5 different positions either on the RH or LH side as per Fig. 6.

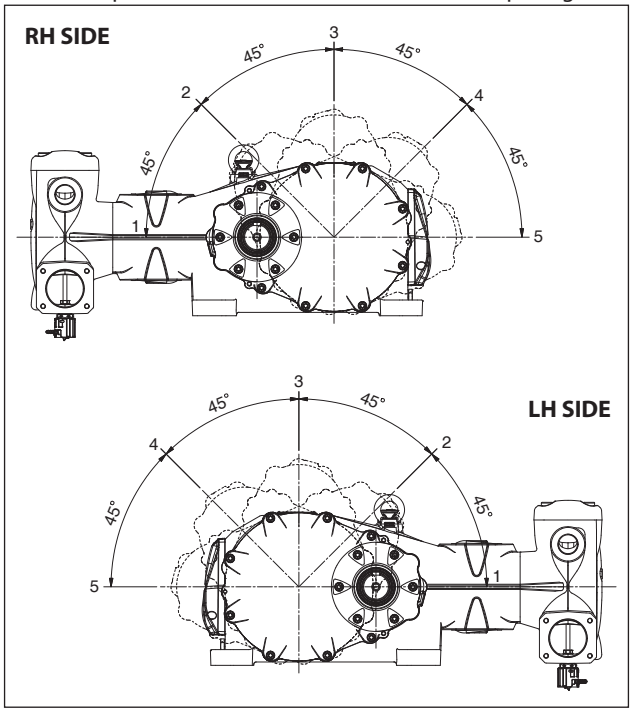


Fig. 6

The position of the reduction unit can only be changed by authorized specialized personnel meticulously following the instructions in the *repair manual*.

9.4 Hydraulic connections

In order to isolate the system from vibrations produced by the pump, it is advisable to make the first section of the duct adjacent to the pump (both suction and outlet) with flexible piping. The suction hose must be sufficiently rigid to prevent deformation due to the negative pressure exerted by the action of the pump.

9.5 Pump supply

MK2 pumps must always be installed with a suction head, that is they must receive the water by gravity or by forced feeding, but never draw it from a lower level.

The pumps are able to withstand minimum suction heads of even 1 metre, however, for the best volumetric efficiency and above all to avoid cavitation, the available positive suction head (NPSH avail) measured at the suction flange in the manifold must be equal to or greater than the values below:

	$NPSH_r$ (m)
MK240	4.5
MK245	5.5
MK250	6.5
MK255	7.5
MK260	8
MK265	9

For the greater displacements, MK2 55 - 60 - 65 pumps, forced feeding by a booster pump is highly recommended in order to avoid cavitation, considering the geometry of the hydraulics and the considerable flow rates.

The booster pump must have at least twice the flow rate of the rated flow rate of the plunger pump and pressure of between 2 and 3 bar.

These supply conditions must be observed at all operating speeds.

The booster pump must always be started up before the plunger pump.
It is advisable to install a pressure switch on the supply line downstream of the filters protecting the pump.

9.6 Suction line

For smooth operation of the pump, the suction line must have the following characteristics:

1. Minimum internal diameter as indicated in the graph in par. 9.9 and in any case equal to or exceeding that of the pump head.

   Localized restrictions should be avoided along the piping, as these can cause pressure drops resulting in cavitation. Avoid 90° elbows, connections with other piping, restrictions, reverse gradients, inverted U-curves and Tee connections.
2. The layout must be such as to prevent cavitation problems.
3. Completely airtight and constructed to ensure a perfectly hermetic seal through time.
4. Prevent the pump from emptying when it is stopped, including partial emptying.
5. Do not use 3 or 4-way hydraulic fittings, adapters, swivel joints, etc. as they could jeopardize pump performance.
6. Do not install Venturi tubes or injectors for detergent suction.
7. Avoid use of foot valves or other types of unidirectional valves.
8. Do not recirculate the by-pass valve drain directly to the suction line.
9. Provide for proper baffles inside the tank to prevent the water flow from the bypass and the tank supply line from creating vortexes or turbulence near the pump feeding pipe port.
10. Make sure the suction line is thoroughly clean inside before connecting it to the pump.
11. Install the pressure gauge for checking the booster pressure near the plunger pump suction port and always downstream from the filters.

9.7 Filtration

Two filters must be installed on the pump suction line, positioned as indicated in Fig. 7 and Fig. 7/a.

With a manually activated control valve

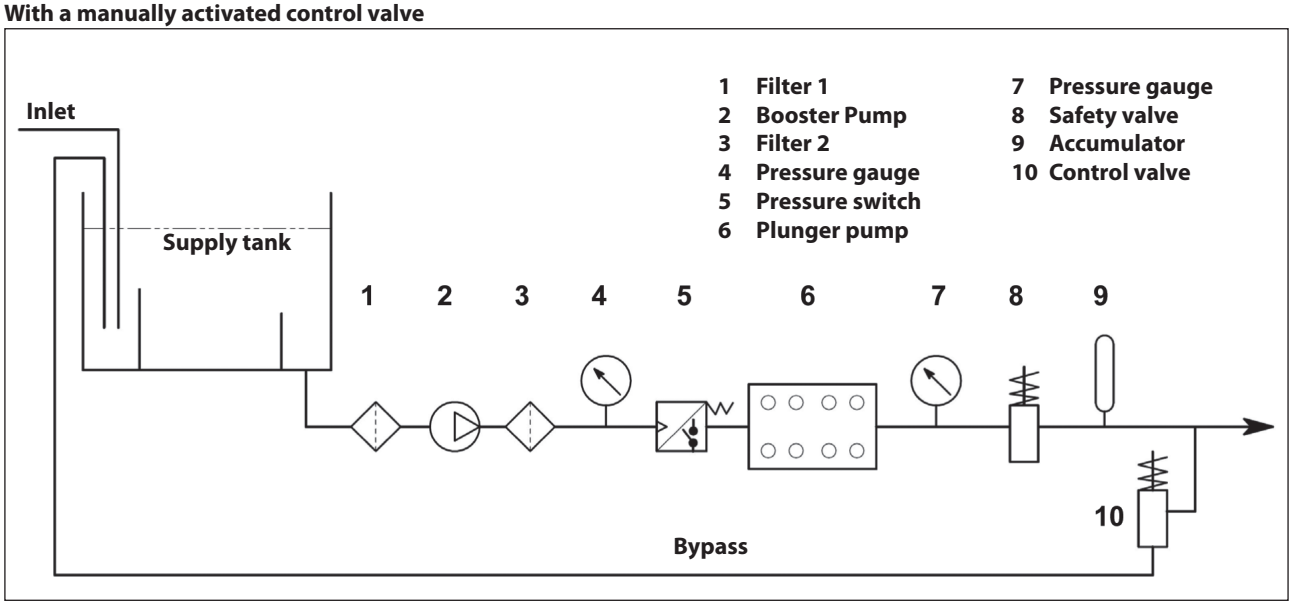


Fig. 7

With pneumatic control valve

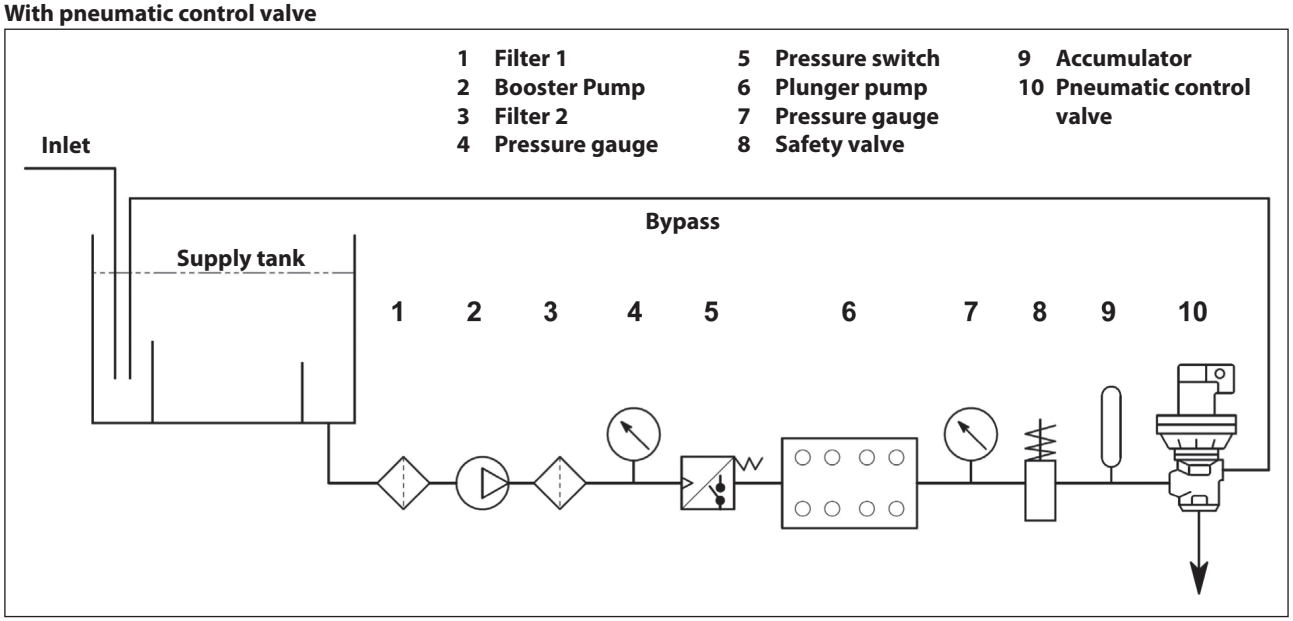


Fig. 7/a

The filter, which is to be installed as close to the pump as possible, must be easily inspectable and have the following specifications:

1. Minimum flow rate at least 3 times the nominal flow rate of the pump.
2. Inlet/outlet port diameters no smaller than the inlet port diameter of the pump.
3. Filtration grade between 200 and 360 µm.

For smooth pump operation, regular filter cleaning is necessary, planned according to the actual use of the pump in relation to the quality of water used and actual clogging conditions.

9.8 Outlet line

For correct design of the outlet line comply with the following installation prescriptions:

1. The internal diameter of the pipe must be sufficient to ensure correct fluid velocity, see graph in par. 9.9.
2. The first section of the line connected to the pump outlet must be a flexible hose, in order to isolate vibration produced by the pump from the rest of the system.
3. Use high pressure pipes and fittings to ensure high safety margins in all operating conditions.
4. The outlet line must always be equipped with a safety valve.
5. Use pressure gauges capable of withstanding the pulsating loads typical of plunger pumps.
6. During the design stage, keep in mind the line pressure drops that lead to a pressure reduction at the user with respect to the pressure measured on the pump.
7. For applications in which pulses produced by the pump on the outlet line may prove harmful or are anyway undesirable, install a pulsation dampener of sufficient size.

9.9 Calculation of the internal diameter of the duct pipes

To determine the internal diameter of the duct, refer to the following diagram:

Suction duct

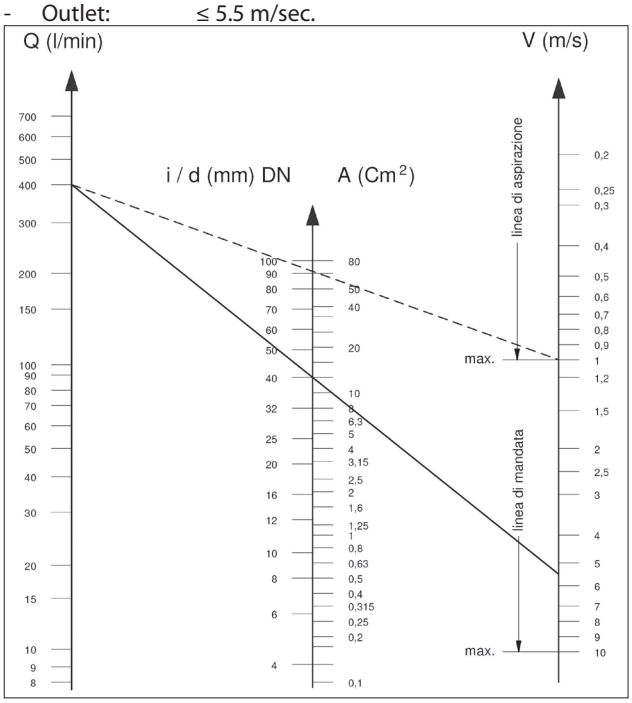
With a flow rate of ~ 400 l/min and a water velocity of 1 m/sec. The graph line joining the two scales meets the central scale, showing the diameters, corresponding to a value of ~ 90 mm.

Outlet duct

With a flow rate of ~ 400 l/min and a water velocity of 5.5 m/sec. The graph line joining the two scales meets the central scale, showing the diameters, corresponding to a value of ~ 40 mm.

Optimal speeds that can be obtained with the Booster pump:

- Suction: ≤ 1 m/sec.
- Outlet: ≤ 5.5 m/sec.



The graph does not take into account pipe resistance, valves, load loss produced by the length of the ducts, the viscosity of the liquid pumped or the temperature itself.
If necessary, contact our ***Technical*** or ***Customer Service Departments***.

9.10 V-belt transmission

As indicated in par. 9.1 in exceptional cases only, the pump can be controlled by a V-belt system.
For proper layout sizing, consult with our ***Technical*** or ***Customer Service Departments***.

10 START-UP AND OPERATION

10.1 Preliminary checks

Before start-up, ensure that:

The suction line is connected and pressurized (see chapter 9): the pump must never run dry.

1. The suction line ensures a hermetic seal over time.
2. Any shut-off valves between the supply source and the pump are fully open. The outlet line is free discharge, to permit rapid expulsion of the air present in the pump manifold and therefore facilitate fast priming.
3. All suction and outlet fittings and connections are properly tightened.
4. The coupling tolerances on the pump/transmission axis (half-joint misalignment, Cardan joint tilt, belt pulling, etc.) remain within limits required by the transmission manufacturer.
5. Oil in the pump casing is at the required level, verified with the dipsticks (pos. ①,Fig. 8).

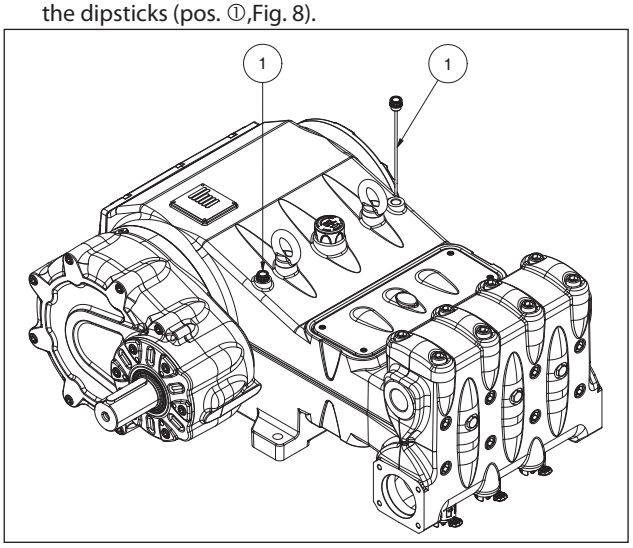


Fig. 8

In case of prolonged storage or long-term inactivity, you need to restore the proper functioning of the suction valves by opening the three valve-lift devices (see pos. ② Fig. 9). Make sure you have closed the valves before starting the pump.
For the "work" and "rest" positions, see Fig. 10.

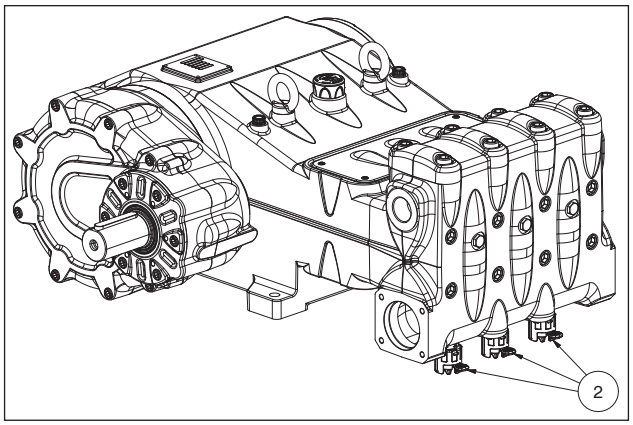


Fig. 9

VALVE CLOSED - WORK POSITION -	SAFETY DEVICE RELEASE	VALVE OPEN - REST POSITION -

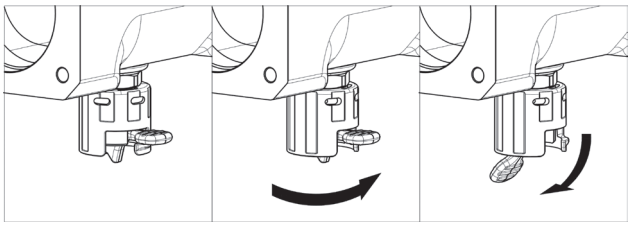


Fig. 10

10.2 Start-up

1. At first start-up, verify that the rotation direction is correct.
2. Check that the pump is fed correctly.
3. Start-up the pump without any load.
4. Check that the rotation rpm during operation does not exceed the nominal rpm of the pump.
5. Allow the pump run for no less than 3 minutes before pressurizing it.
6. Before each pump stop, reset pressure by means of the control valve or with any pressure relief devices.

Should there be any priming trouble due to insufficient supply, it is possible to remove the three plugs in front of the head (except for the MK240 version) as shown in pos. ③ Fig. 11.

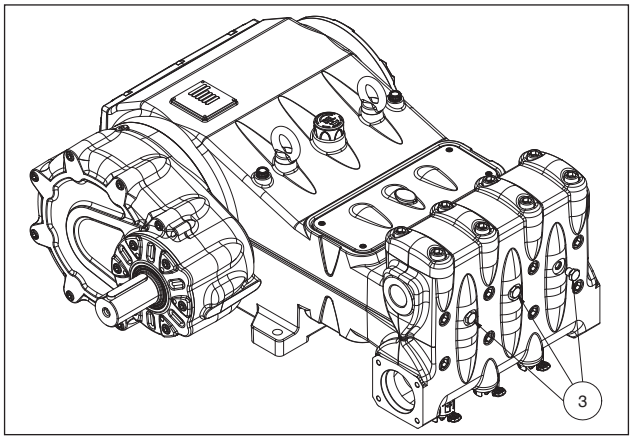


Fig. 11

11 PREVENTIVE MAINTENANCE

For pump reliability and efficiency, comply with maintenance intervals as shown in the table below.

PREVENTIVE MAINTENANCE	
Every 500 hours	**Every 1500 hours**
Check oil level	Change oil
	Check / Replace*: Valves Valve seats Valve springs Valve guides
	Check / Replace*: H.P. seals L.P. seals

* To replace, follow instructions contained in the ***repair manual***.

12 PUMP STORAGE

12.1 Method for filling pump with anti-corrosion emulsion or anti-freeze solution

Method for filling pump with anti-corrosion emulsion or anti-freeze solution using an external diaphragm pump based on the layouts shown in par. 9.7:

a) Close the filter drain line, if open.
b) Make sure the connecting pipe is clean, coat with grease and connect it to the high pressure discharge.
c) Connect the suction pipe to the diaphragm pump; open the pump suction connection and attach the pipe between it and the diaphragm pump.
d) Fill the container with solution/emulsion.
e) Insert the free ends of the suction pipe and the high pressure exhaust pipe inside the container.
f) Switch on the diaphragm pump.
g) Pump the emulsion until it exits from the high pressure exhaust pipe.
h) Continue pumping for at least another minute. The emulsion can be strengthened if necessary by adding Shell Donax for example to the solution.
i) Stop the pump, remove the pipe from the suction connection and close with a plug
j) Remove the hose from the high pressure exhaust. Clean, grease and plug both pipe connections.

12.2 Pipes

a) Before greasing and protecting pipes according to previously described procedure, dry connections with compressed air.
b) Cover with polyethylene.
c) Do not wrap the pump too tightly and make sure there are no folds.

13 PRECAUTIONS AGAINST FROST



Follow the instructions in Chapter 12 in areas and times of the year at risk of frost (see par. 12.1).



In the presence of ice, do not start the pump under any circumstances until the circuit has been fully defrosted. Serious damage to the pump may result if this prescription is disregarded.

14 WARRANTY CONDITIONS

The guarantee period and conditions are contained in the purchase agreement.
The guarantee will in any case be invalidated if:

a) The pump is used for purposes other than the agreed purposes.
b) The pump is driven by an electric motor or internal combustion engine having performance values exceeding those shown in the table.
c) The safety devices provided are uncalibrated or disconnected.
d) The pump has been used with accessories or spare parts not supplied by Interpump Group.
e) Damage has been caused by:
   1) improper use
   2) failure to follow maintenance instructions
   3) any use different from that described in the operating instructions
   4) insufficient flow rate
   5) defective installation
   6) improper positioning or sizing of pipes
   7) unauthorized design modifications
   8) cavitation.

15 OPERATING FAULTS AND THEIR POSSIBLE CAUSES



The pump does not produce any noise upon start-up:

- The pump is not primed and is running dry.
- No suction water.
- Valves are jammed.
- The outlet line is closed and does not allow the release of air present in the pump manifold.



Pump pulsates irregularly:

- Air suction.
- Insufficient supply.
- Bends, elbows, fittings on the suction line are choking the passage of liquid.
- Suction filter is dirty or too small.
- The booster pump, where installed, is supplying insufficient pressure or flow rate.
- The pump is not primed due to insufficient head or the outlet is closed during priming.
- The pump is not primed due to valve jamming.
- Worn valves.
- Worn pressure seals.
- Imperfect functioning of the pressure control valve.
- Problems on the transmission.



The pump does not supply the nominal flow rate/excessive noise:



- Insufficient supply (see various causes as above).
- Pump speed is below the rated speed;
- Excessive internal leakage of pressure control valve.
- Worn valves.
- Excessive leakage from the pressure seals.
- Cavitation due to:
   1) Improper sizing of suction ducts/undersized diameters.
   2) Insufficient flow rate.
   3) High water temperature.



The pressure supplied by the pump is insufficient:
- The user flow (nozzle) is or has become greater than the pump capacity.
- Insufficient revolutions per minute.
- Excessive leakage from the pressure seals.
- Imperfect functioning of the pressure control valve.
- Worn valves.

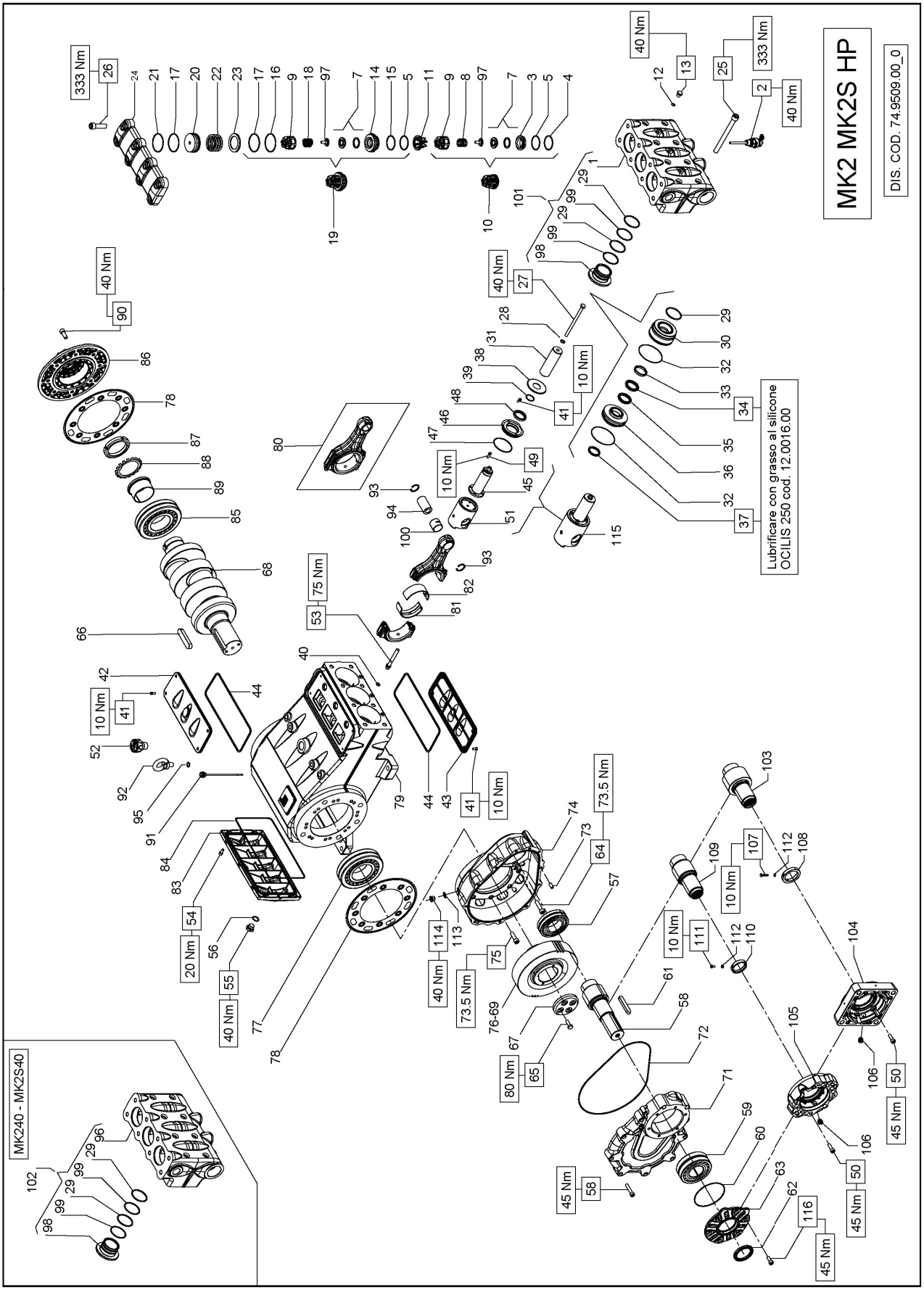


Pump overheats:
- The pump is working in overpressure conditions or pump rpm is higher than the nominal value.
- Oil in the pump casing is not at level or not the recommended type as detailed in chapter 7 (see par. 7.6).
- Joint or pulley alignment is incorrect.
- Excessive pump tilt during operation.



Vibrations or hammering on pipes:
- Air suction.
- Faulty operation of pressure control valve.
- Valves malfunction.
- Non-uniformity of transmission motion.

16 EXPLODED DRAWING AND PARTS LIST

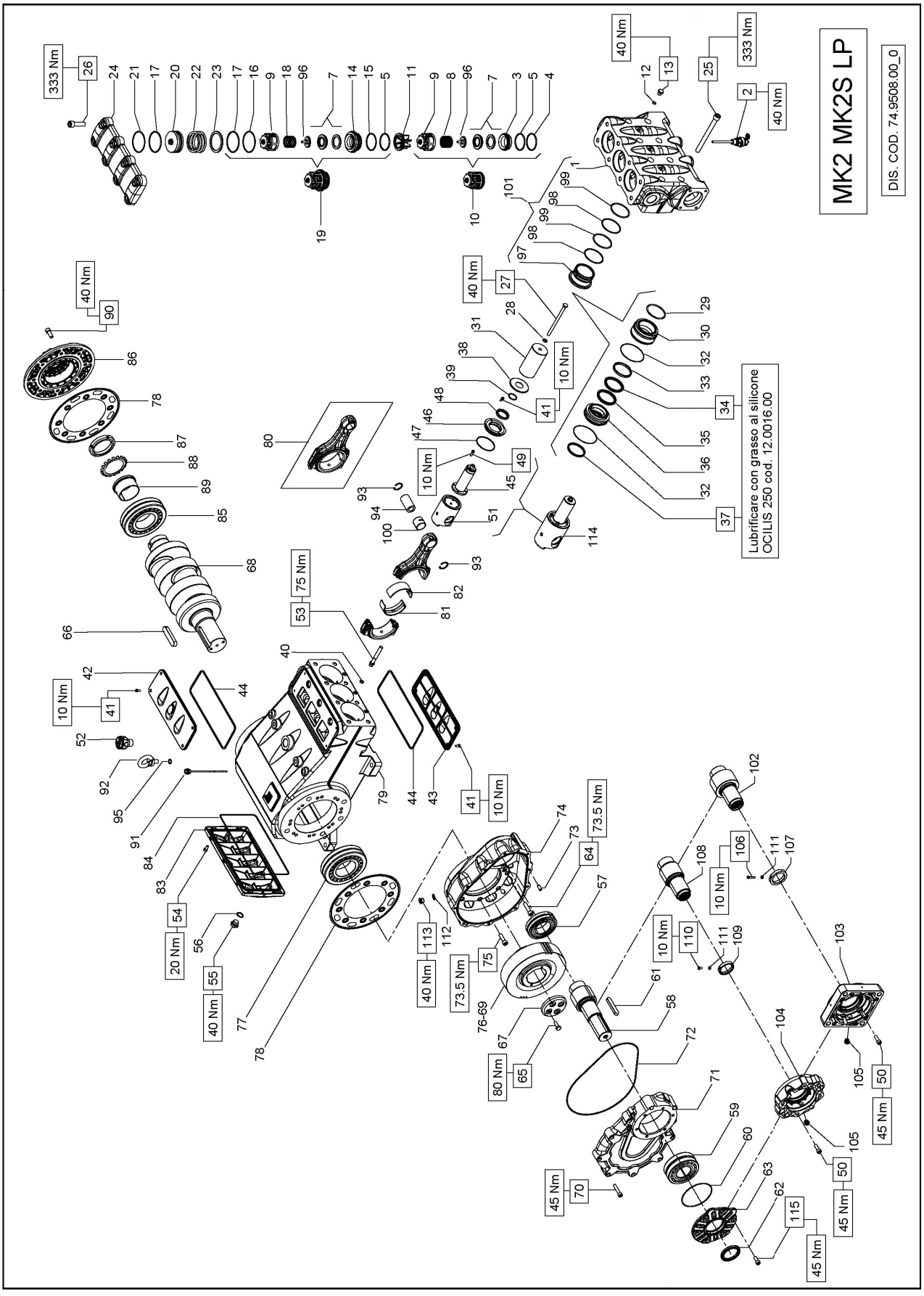


KIT RICAMBIO – SPARE KIT

		MK240 - MK2S40 (D.40)	MK245 - MK2S45 (D.45)	MK250 - MK2S50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK240 - MK2S40
MK245 - MK2S45
MK250 - MK2S50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1


MK2 MK2S LP
DIS. COD. 74.9508.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT

		MK255 - MK2S55 (D.55)	MK260 - MK2S60 (D.60)	MK265 - MK2S65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2045	KIT 2046	KIT 2047
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2447	KIT 2448	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK255 - MK2S55
MK260 - MK2S60
MK265 - MK2S65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2114.56	CAMICIA PISTONE D. 55		3
	74.2115.56	CAMICIA PISTONE D. 60		
	74.2116.56	CAMICIA PISTONE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1003.92	ANELLO DI TESTA PISTONE D. 55		3
	74.1004.92	ANELLO DI TESTA PISTONE D. 60		
	74.1005.92	ANELLO DI TESTA PISTONE D. 65		
34	90.2873.00	ANELLO TEN. ALT. D. 55.0x70.0x7.5/4.5 HP	A-C	3
	90.2883.00	ANELLO TEN. ALT. D. 60.0x76.0x8.0/4.8 HP	A-C	
	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	
35	90.2875.00	ANELLO RESTOP D. 55.0x70.0x8.0/4.5	A-C	3
	90.2885.00	ANELLO RESTOP D. 60.0x76.0x8.0/4.5	A-C	
	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	
36	74.2120.68	SUPPORTO GUARNIZIONE D. 55		3
	74.2121.68	SUPPORTO GUARNIZIONE D. 60		
	74.2122.68	SUPPORTO GUARNIZIONE D. 65		
37	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		10
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.55	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	73.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK2		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2S		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	74.2150.56	BOCCOLA TESTATA		3
98	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
99	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1201.01	TESTATA CON BOCCOLA		1
112	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
113	98.2086.00	TAPPO G 3/8"x12		2
114	74.6062.01	GR. GUIDA PISTONE		3
115	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
102	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
103	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
107	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
111	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.750 - ELICOIDALE		1
104	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
108	10.0906.55	PIGNONE Z16 R. 3.750 - ELICOIDALE FEMM.		1
109	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
110	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
111	92.2025.00	DADO M6x5 UNI 5588		1

17 SPECIAL VERSIONS

The MK2 pump is also available in the following special versions:

- MK2R (for Recirculated Water)
- MK2SR (for Recirculated Water)
- MK2C (for Methanol)
- MK2SC (for Methanol)
- MK2SH (with AISI 420 head)

The following information is helpful in deciding how to choose and use these versions.
Unless specified otherwise, observe the above instructions for the standard MK2 pump.

17.1 MK2R-MK2SR pumps

17.1.1 Operating instructions

The MK2R/MK2SR series pumps have been designed to operate in environments with atmospheres that are not potentially explosive and for using water rich in particulate, therefore they are considered ideal for systems with fluid recirculation.
The durability of the piston seals is directly in relation to the percentage of the presence of solids in the fluid as regards both their size and their density.
For a long seal life we recommend a particulate grain size of no more than 200 micron and 20% max. in volume.
For more information and a general system layout, see par. 17.2.6.

17.1.2 Maximum pressure and flow rate

The rated specifications stated in our catalog are the maximum that can be obtained by the pump. **Independently** of the power used, the maximum pressure and rpm indicated on the specification label can never be exceeded unless prior formal authorization is given by our ***Technical*** or ***Customer Service Departments***.

17.1.3 Technical characteristics

Model	Rpm	Flow rate		Pressure		Power	
		l/min	Gpm	bar	psi	kW	HP
MK2R 40	1500	153	40.4	400	5800	159	117
	1800	149	39.4	400	5800	155	114
MK2R 45	1500	193	51.0	300	4350	150	110
	1800	189	49.9	300	4350	147	108
MK2R 50	1500	239	63.1	250	3625	155	114
	1800	233	61.6	250	3625	151	111
MK2R 55	1500	289	76.4	200	2900	150	110
	1800	282	74.5	200	2900	146	107
MK2R 60	1500	343	90.6	170	2465	151	111
	1800	335	88.5	170	2465	148	109
MK2R 65	1500	403	106.5	150	2175	157	115
	1800	394	104.1	150	2175	154	113

Model	Rpm	Flow rate		Pressure		Power	
		l/min	Gpm	bar	psi	kW	HP
MK2SR 40	1500	184	48.6	400	5800	140.5	191
	1800	183	48.3	400	5800	140	190
	2200	182	48.1	400	5800	139	189
MK2SR 45	1500	233	61.6	300	4350	134	182
	1800	232	61.3	300	4350	133	181
	2200	231	61.0	300	4350	132	180
MK2SR 50	1500	288	76.1	250	3625	137.5	187
	1800	286	75.6	250	3625	137	186
	2200	285	75.3	250	3625	136	185
MK2SR 55	1500	349	92.2	200	2900	133	181
	1800	346	91.4	200	2900	132	180
	2200	344	90.9	200	2900	132	179
MK2SR 60	1500	415	109.6	170	2465	135	183
	1800	412	108.9	170	2465	134	182
	2200	410	108.3	170	2465	133	181
MK2SR 65	1500	487	128.7	150	2175	140	190
	1800	484	127.9	150	2175	139	189
	2200	481	127.1	150	2175	137.5	187

17.1.4 Dimensions and weight

For the dimensions and weight of the pumps, refer to the diagrams in chapter 6.

17.1.5 Pump supply

The pumps must always be installed with a suction head, that is they must receive the water by gravity or by forced feeding, but never draw it from a lower level.
The pumps are able to withstand minimum suction heads of even 1 metre, however, for the best volumetric efficiency and above all to avoid cavitation, the available positive suction head (NPSH avail) measured at the suction flange in the head must be equal to or greater than the values below.

	$NPSH_r$ (m)
MK2R/MK2SR40	4.5
MK2R/MK2SR45	5.5
MK2R/MK2SR50	6.5
MK2R/MK2SR55	7.5
MK2R/MK2SR60	8
MK2R/MK2SR65	9

For the greater displacements, of the pumps with piston Ø 55 - 60 - 65, forced feeding by a booster pump is highly recommended in order to avoid cavitation, considering the geometry of the hydraulics and the considerable flow rates.
The booster pump must have at least twice the flow rate of the rated flow rate of the plunger pump and pressure of between 2 and 3 bar.
These supply conditions must be observed at all operating speeds.

The booster pump must always be started up before the plunger pump.
It is advisable to install a pressure switch on the supply line downstream of the filters protecting the pump.

17.1.6 Filtration

Our technical or customer service departments are at the disposal of our customers in order to define the system better; by way of example, we provide the following layouts (Fig. 12 and Fig. 12/a).

With a manually activated control valve

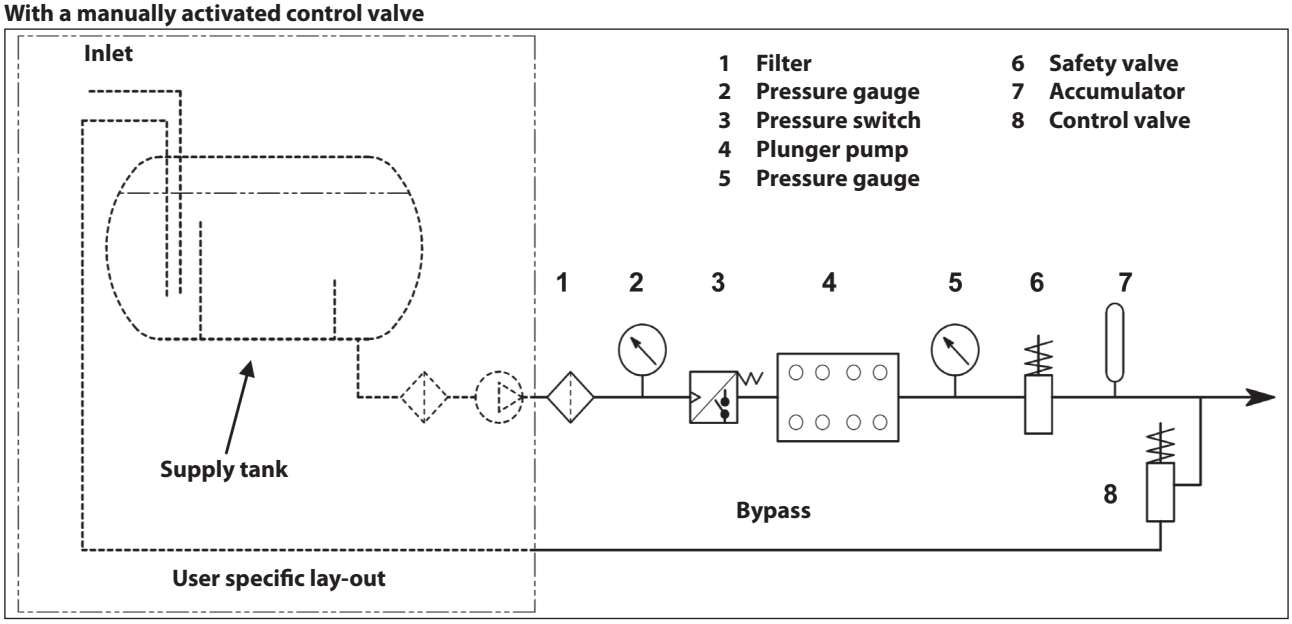


Fig. 12

With pneumatic control valve

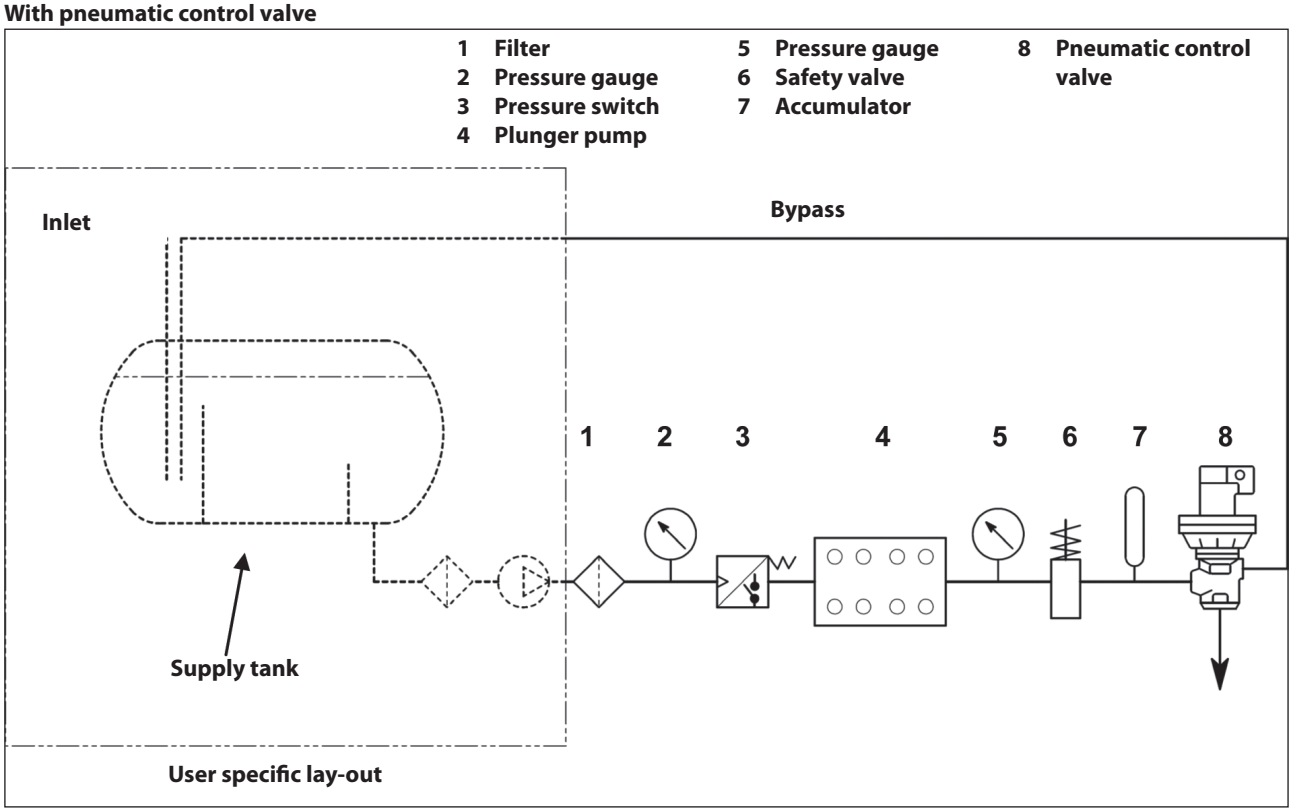


Fig. 12/a

The filter must be installed as close as possible to the pump and be easily inspected.

For the pump to work properly, the degree of filtration and accumulating capacity of the filtering system must be sized to achieve the best compromise between the durability of the pump's hydraulics and the number of hours worked between each filling with water.
The best recommended compromise is the one illustrated in par. 17.1.1.

It is imperative, after using the pump, at the end of the working day, to wash it with particulate-free water.

17.1.7 Preventive maintenance

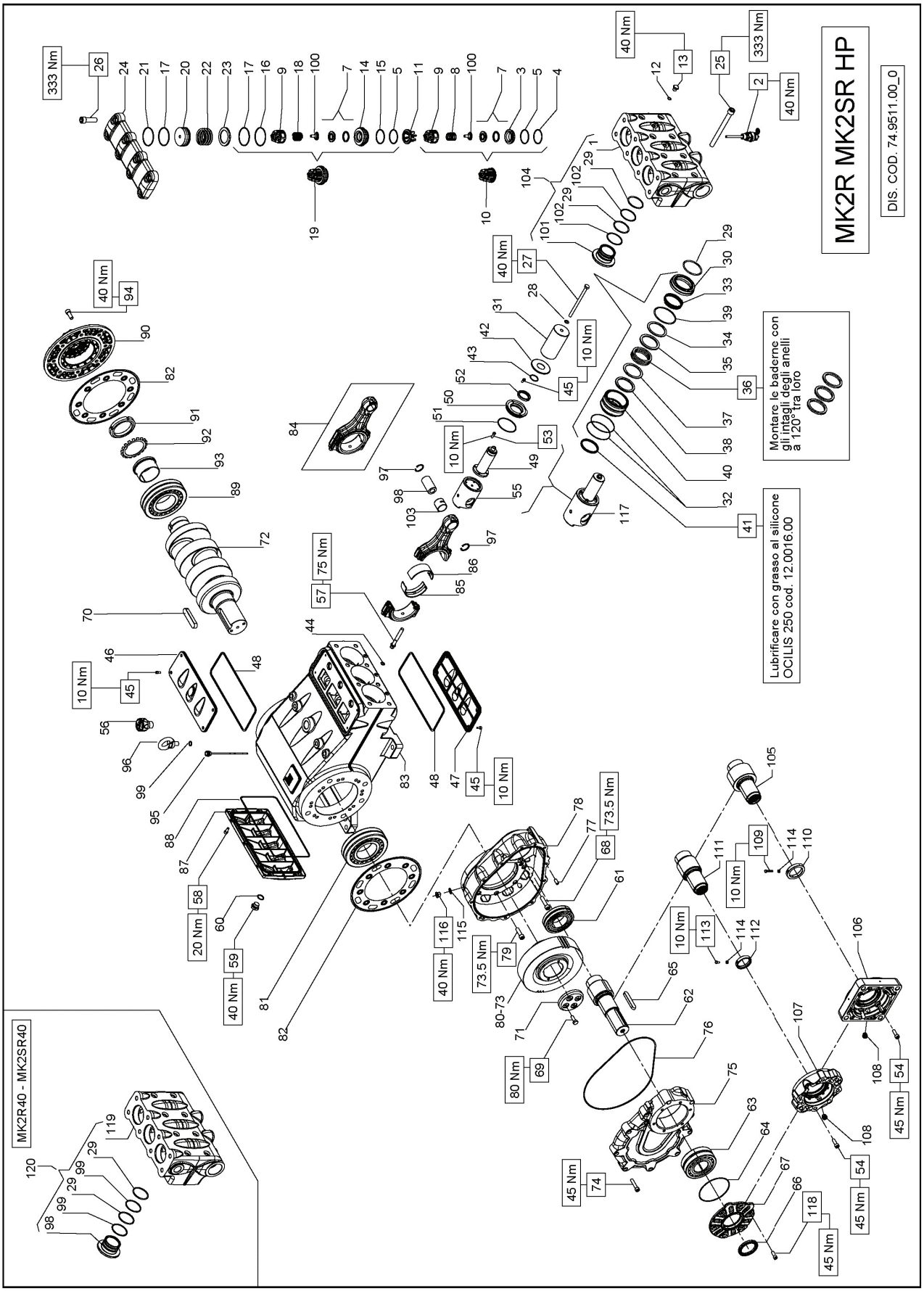
For pump reliability and efficiency, comply with maintenance intervals as shown in the table below.

PREVENTIVE MAINTENANCE	
Every 500 hours	**Every 1000 hours**
Check oil level	Change oil
	Check / Replace*: Valves Valve seats Valve springs Valve guides

HP-LP seals: durability depends on the degree of filtration, type of fluid and percentage in volume (see chapter 7).

* To replace, follow instructions contained in the ***repair manual***.

17.1.8 Exploded drawing and parts list

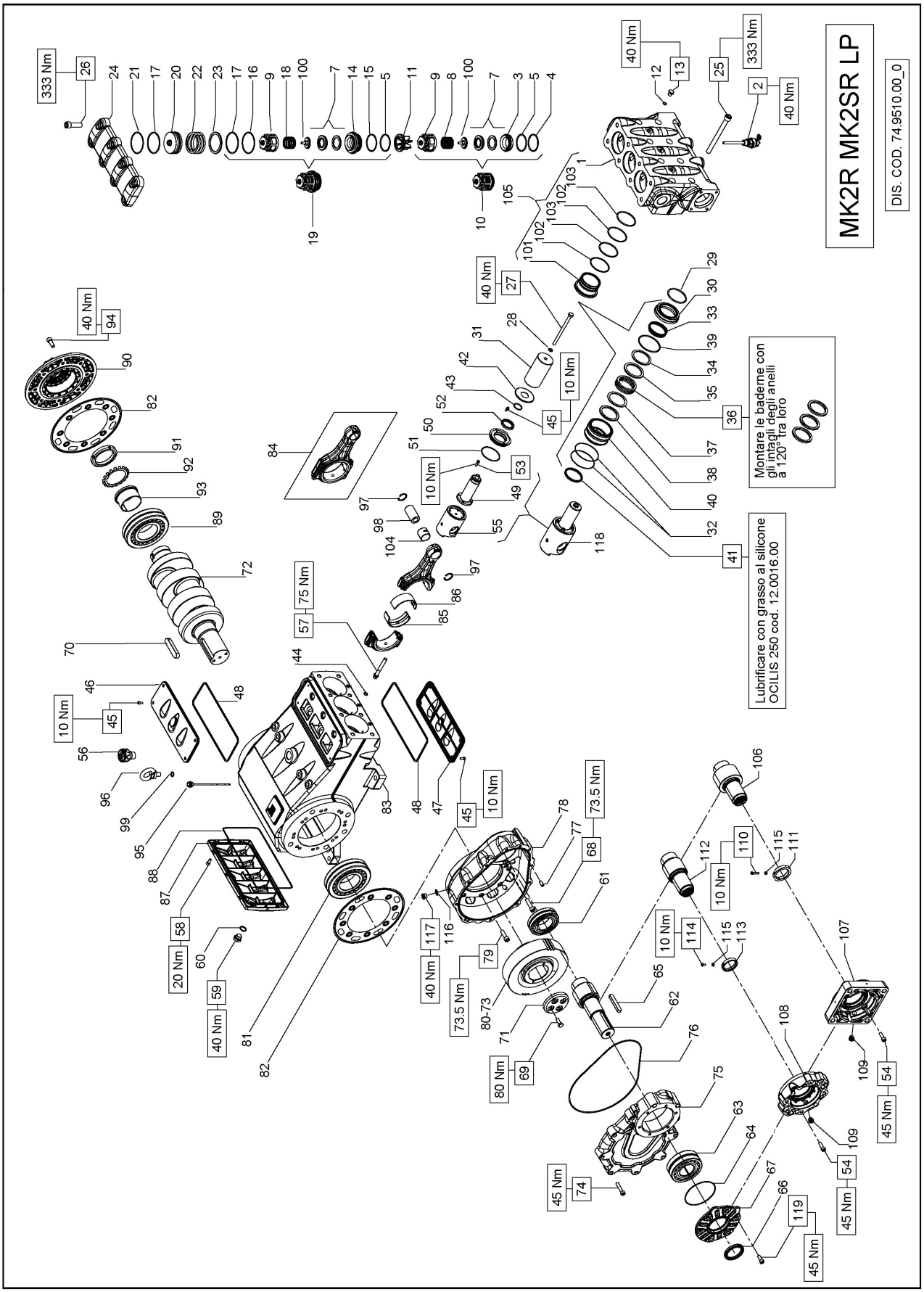


KIT RICAMBIO – SPARE KIT

		MK2R40 - MK2SR40 (D.40)	MK2R45 - MK2SR45 (D.45)	MK2R50 - MK2SR50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2430	KIT 2431	KIT 2100
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2456	KIT 2457	KIT 2458
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R40 - MK2SR40
MK2R45 - MK2SR45
MK2R50 - MK2SR50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.1010.56	ANELLO DI TESTA BADERNE D. 40		3
	74.1011.56	ANELLO DI TESTA BADERNE D. 45		
	74.1006.56	ANELLO DI TESTA BADERNE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	94.7730.00	MOLLA Dm. 51.5x36.0 - D. 40-45		3
	94.7770.00	MOLLA Dm. 61.5x35.0 - D. 50		
34	74.2165.56	ANELLO PER MOLLA D. 40		3
	74.2169.56	ANELLO PER MOLLA D. 45		
	74.2134.56	ANELLO PER MOLLA D. 50		
35	74.2164.72	ANELLO RASCHIATORE BADERNE D. 40	A-C	3
	74.2168.72	ANELLO RASCHIATORE BADERNE D. 45	A-C	
	74.2138.82	ANELLO RASCHIATORE BADERNE D. 50	A-C	
36	90.5655.00	ANELLO TEN. ALT. KC D. 40.0x56.0x19.5	A-C	3
	90.5680.00	ANELLO TEN. ALT. KC D. 45.0x61.0x19.5	A-C	
	90.5700.00	ANELLO TEN. ALT. KC D. 50.0x66.0x19.5	A-C	
37	90.5232.00	ANELLO ANTIEST. D. 40.0x56.0x2.5	A-C	3
	90.5236.00	ANELLO ANTIEST. D. 45.0x61.0x2.5	A-C	
	90.5245.00	ANELLO ANTIEST. D. 50.0x66.0x2.5	A-C	
38	74.2163.60	ANELLO DI SUPPORTO D. 40		3
	74.2167.60	ANELLO DI SUPPORTO D. 45		
	74.2142.60	ANELLO DI SUPPORTO D. 50		
39	90.4110.00	OR D. 61.91x3.53 NBR 70SH 165 - D. 40	A-C	3
	90.4117.00	OR D. 66.27x3.53 NBR 70SH 4262 - D. 45	A-C	
	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - D. 50	A-C	
40	74.2162.56	SUPPORTO BADERNE D. 40		3
	74.2166.56	SUPPORTO BADERNE D. 45		
	74.2146.56	SUPPORTO BADERNE D. 50		
41	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
42	74.2133.51	PARASPRUZZI		3
43	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
44	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
45	99.1837.00	VITE M6x14 UNI 5931		14
46	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
47	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
48	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
49	74.0503.36	STELO GUIDA PISTONE		3
50	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
51	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
52	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
53	99.1884.00	VITE M6x20 UNI 5931		12
55	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
56	98.2333.00	TAPPO CARICO OLIO G1"		1
57	99.4410.00	VITE SERRAGGIO BIELLA		6
58	99.3045.00	VITE M8x18 UNI 5931		6
59	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
60	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
61	91.8700.00	CUSCINETTO A RULLI		1
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	91.8610.00	CUSCINETTO A RULLI		1
64	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
65	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
66	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
67	74.2173.22	COPERCHIO PIGNONE		1
68	99.4335.00	VITE M12x50 UNI 5931		2
69	99.3684.00	VITE M10x30 UNI 5739		4
70	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
71	74.2252.55	FERMO CORONA		1
72	74.0202.35	ALBERO A GOMITI C. 72 - MKSR		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	99.3730.00	VITE M10x50 UNI 5931		10
75	74.2174.13	COPERCHIO RIDUTTORE		1
76	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
77	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
78	74.2175.13	SCATOLA RIDUTTORE		1
79	99.4305.00	VITE M12x40 UNI 5931		6
81	91.8850.00	CUSCINETTO A RULLI		1
82	74.2130.84	GUARNIZIONE LATERALE	C	2
83	74.0101.13	CARTER POMPA		1
84	74.0302.01	BIELLA COMPLETA		3
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
87	74.1600.22	COPERCHIO CARTER	C	1
88	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
89	91.8852.00	CUSCINETTO A RULLI		1
90	74.1500.22	COPERCHIO CUSCINETTO		1
91	93.0800.00	GHIERA DI BLOCCAGGIO		1
92	96.8300.00	ROSETTA DI SICUREZZA		1
93	91.8800.00	BUSSOLA DI PRESSIONE		1
94	99.4280.00	VITE M12x30 UNI 5931		8
95	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
96	93.1050.00	GOLFARE M16 UNI 2947		2
97	90.0697.00	ANELLO D'ARRESTO J35		6
98	97.7450.00	SPINOTTO D. 35x64		3
99	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
100	36.2090.51	GUIDA INTERNA VALVOLA		6
101	74.2151.56	BOCCOLA TESTATA		3
102	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
103	90.9173.00	BOCCOLA PIEDE BIELLA		3
104	74.1206.01	TESTATA CON BOCCOLA D. 40		1
	74.1203.01	TESTATA CON BOCCOLA D. 45-50		
115	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
116	98.2086.00	TAPPO G 3/8"x12		2
117	74.6062.01	GR. GUIDA PISTONE		3
118	99.3668.00	VITE M10x25 5931		6
119	74.1206.15	TESTATA D. 40 HP		1
	74.1207.15	TESTATA D. 40 HP - NPT		
120	74.1206.01	TESTATA CON BOCCOLA D. 40		1
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
105	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
106	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
108	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
110	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
114	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
107	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
108	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
111	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
112	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
113	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
114	92.2025.00	DADO M6x5 UNI 5588		1


MK2R MK2SR LP
DIS. COD. 74.9510.00_0
Montare le baderne con gli intagli degli anelli a 120° tra loro
Lubrificare con grasso al silicone OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK2R55 - MK2SR55 (D.55)	MK2R60 - MK2SR60 (D.60)	MK2R65- MK2SR65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2102	KIT 2103	KIT 2104
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2453	KIT 2454	KIT 2455
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R55 - MK2SR55
MK2R60 - MK2SR60
MK2R65 - MK2SR65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.1007.56	ANELLO DI TESTA BADERNE D. 55		3
	74.1008.56	ANELLO DI TESTA BADERNE D. 60		
	74.1009.56	ANELLO DI TESTA BADERNE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	94.7770.00	MOLLA Dm. 61.5x35.0 - MK2R MK2SR 55		3
	94.7900.00	MOLLA Dm. 71.5x35.0 - MK2R MK2SR 60-65		
34	74.2135.56	ANELLO PER MOLLA D. 55		3
	74.2136.56	ANELLO PER MOLLA D. 60		
	74.2137.56	ANELLO PER MOLLA D. 65		
35	74.2139.82	ANELLO RASCHIATORE D. 55	A-C	3
	74.2140.82	ANELLO RASCHIATORE D. 60	A-C	
	74.2141.82	ANELLO RASCHIATORE D. 65	A-C	
36	90.5725.00	BADERNE D. 55.0x71.0x19.5	A-C	3
	90.5750.00	BADERNE D. 60.0x76.0x19.5	A-C	
	90.5775.00	BADERNE D. 65.0x81.0x19.5	A-C	
37	90.5267.00	ANELLO ANTIEST. D. 55.0x71.0x2.5	A-C	3
	90.5269.00	ANELLO ANTIEST. D. 60.0x76.0x2.5	A-C	
	90.5275.00	ANELLO ANTIEST. D. 65.0x81.0x2.5	A-C	
38	74.2143.60	ANELLO DI SUPPORTO D. 55		3
	74.2144.60	ANELLO DI SUPPORTO D. 60		
	74.2145.60	ANELLO DI SUPPORTO D. 65		
39	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - MK2R MK2SR 55	A-C	3
	90.4141.00	OR D. 85.32x3.53 NBR 70SH 4337 - MK2R MK2SR 60-65	A-C	
40	74.2147.56	SUPPORTO BADERNE D. 55		3
	74.2148.56	SUPPORTO BADERNE D. 60		
	74.2149.56	SUPPORTO BADERNE D. 65		
41	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
42	74.2133.51	PARASPRUZZI		3
43	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
44	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
45	99.1837.00	VITE M6x14 UNI 5931		14
46	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
47	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
48	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
49	74.0503.36	STELO GUIDA PISTONE		3
50	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
51	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
52	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
53	99.1884.00	VITE M6x20 UNI 5931		12
55	79.0504.43	GUIDA PISTONE		3
	790.0505.43	GUIDA PISTONE +1.0		
56	98.2333.00	TAPPO CARICO OLIO G1"		1
57	99.4410.00	VITE SERRAGGIO BIELLA		6
58	99.3045.00	VITE M8x18 UNI 5931		6
59	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
60	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
61	91.8700.00	CUSCINETTO A RULLI		1
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	91.8610.00	CUSCINETTO A RULLI		1
64	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
65	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
66	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
67	74.2173.22	COPERCHIO PIGNONE		1
68	99.4335.00	VITE M12x50 UNI 5931		2
69	99.3684.00	VITE M10x30 UNI 5739		4
70	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
71	74.2252.55	FERMO CORONA		1
72	74.0202.35	ALBERO A GOMITI C. 72 - MK2R		1
	74.0201.35	ALBERO A GOMITI C. 72 - MK2SR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	99.3730.00	VITE M10x50 UNI 5931		10
75	74.2174.13	COPERCHIO RIDUTTORE		1
76	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
77	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
78	74.2175.13	SCATOLA RIDUTTORE		1
79	99.4305.00	VITE M12x40 UNI 5931		6
81	91.8850.00	CUSCINETTO A RULLI		1
82	74.2130.84	GUARNIZIONE LATERALE	C	2
83	74.0101.13	CARTER POMPA		1
84	74.0302.01	BIELLA COMPLETA		3
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0.50 - SUP.	D	
87	74.1600.22	COPERCHIO CARTER		1
88	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
89	91.8852.00	CUSCINETTO A RULLI		1
90	74.1500.22	COPERCHIO CUSCINETTO		1
91	93.0800.00	GHIERA DI BLOCCAGGIO		1
92	96.8300.00	ROSETTA DI SICUREZZA		1
93	91.8800.00	BUSSOLA DI PRESSIONE		1
94	99.4280.00	VITE M12x30 UNI 5931		8
95	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
96	93.1050.00	GOLFARE M16 UNI 2947		2
97	90.0697.00	ANELLO D'ARRESTO J35		6
98	97.7450.00	SPINOTTO D. 35x64		3
99	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
100	36.2089.51	GUIDA INTERNA VALVOLA		6
101	74.2150.56	BOCCOLA TESTATA		3
102	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
103	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
104	90.9173.00	BOCCOLA PIEDE BIELLA		3
105	74.1201.01	TESTATA CON BOCCOLA		1
116	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
117	98.2086.00	TAPPO G 3/8"x12		2
118	74.6062.01	GR. GUIDA PISTONE		3
119	99.3668.00	VITE M10x25 5931		6
PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D				
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
109	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
110	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
111	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
115	92.2025.00	DADO M6x5 UNI 5588		1
PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C				
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
108	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
109	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
112	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
113	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
114	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
115	92.2025.00	DADO M6x5 UNI 5588		1

17.2 MK2C-MK25C pump

17.2.1 Operating instructions



The pumps are designed to operate in environments with atmospheres that are not potentially explosive. Our ***Technical*** or ***Customer Service Departments*** are at the disposal of our customers in order to define the system better.

17.2.2 Operating temperature



The permissible fluid temperature is: -30 °C to +30 °C. For other values contact our ***Technical*** or ***Customer Service Departments***.

17.2.3 Maximum pressure and flow rate

The rated specifications stated in our catalog are the maximum that can be obtained by the pump. **Independently** of the power used, the maximum pressure and rpm indicated on the specification label can never be exceeded unless prior formal authorization is given by our ***Technical*** or ***Customer Service Departments***.

17.2.4 Technical characteristics

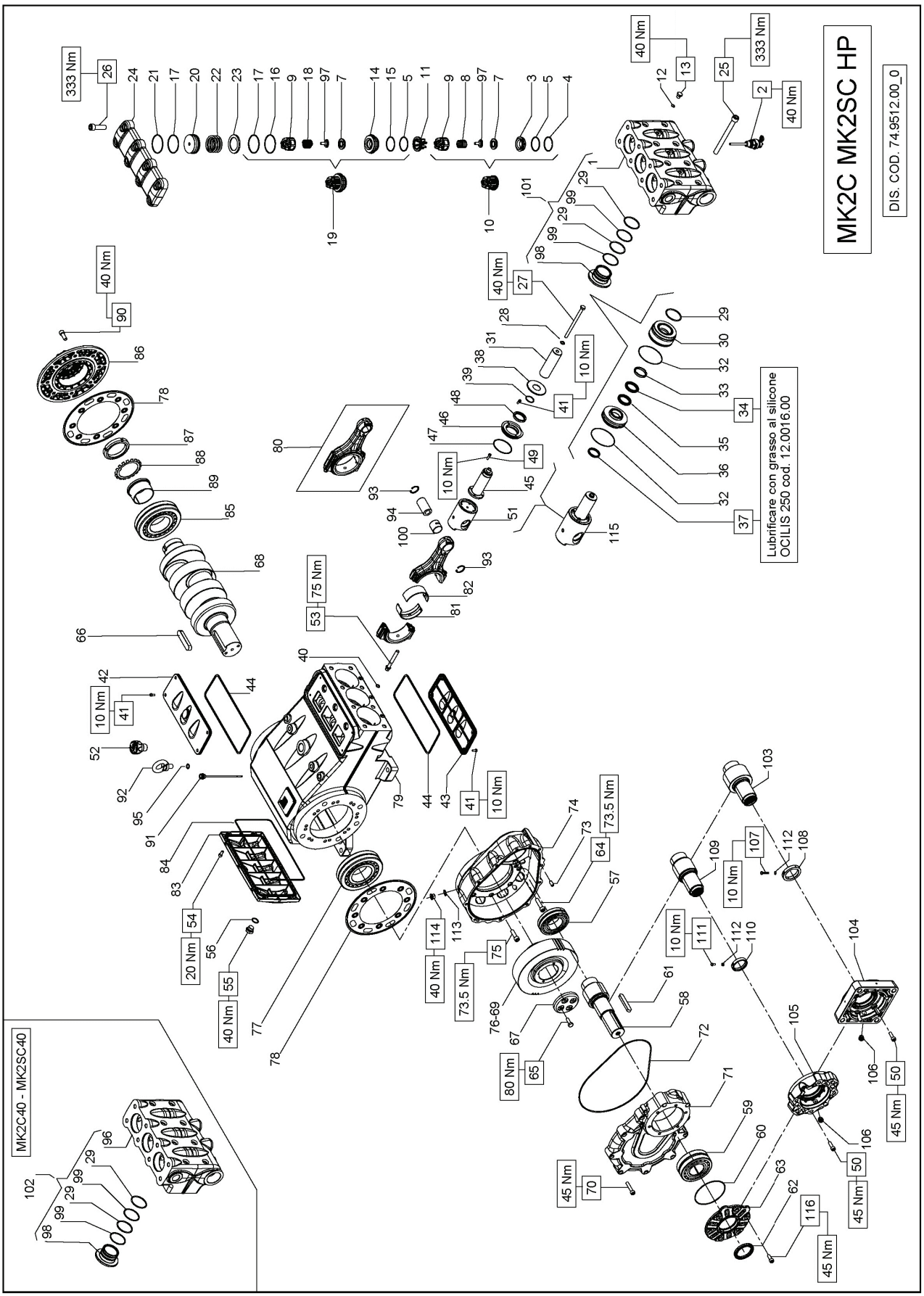
Model	Rpm	Flow rate		Pressure		Power	
		l/min	Gpm	bar	psi	kW	HP
MK2SC 40	1500	153	40.4	400	5800	159	117
	1800	149	39.4	400	5800	155	114
MK2SC 45	1500	193	51.0	300	4350	150	110
	1800	189	49.9	300	4350	147	108
MK2SC 50	1500	239	63.1	250	3625	155	114
	1800	233	61.6	250	3625	151	111
MK2SC 55	1500	289	76.4	200	2900	150	110
	1800	282	74.5	200	2900	146	107
MK2SC 60	1500	343	90.6	170	2465	151	111
	1800	335	88.5	170	2465	148	109
MK2SC 65	1500	403	106.5	150	2175	157	115
	1800	394	104.1	150	2175	154	113

Model	Rpm	Flow rate		Pressure		Power	
		l/min	Gpm	bar	psi	kW	HP
MK2SC 40	1500	184	48.6	400	5800	140.5	191
	1800	183	48.3	400	5800	140	190
	2200	182	48.1	400	5800	139	189
MK2SC 45	1500	233	61.6	300	4350	134	182
	1800	232	61.3	300	4350	133	181
	2200	231	61.0	300	4350	132	180
MK2SC 50	1500	288	76.1	250	3625	137.5	187
	1800	286	75.6	250	3625	137	186
	2200	285	75.3	250	3625	136	185
MK2SC 55	1500	349	92.2	200	2900	133	181
	1800	346	91.4	200	2900	132	180
	2200	344	90.9	200	2900	132	179
MK2SC 60	1500	415	109.6	170	2465	135	183
	1800	412	108.9	170	2465	134	182
	2200	410	108.3	170	2465	133	181
MK2SC 65	1500	487	128.7	150	2175	140	190
	1800	484	127.9	150	2175	139	189
	2200	481	127.1	150	2175	137.5	187

17.2.5 Dimensions and weight

For the dimensions and weight of the pumps, refer to the diagrams in chapter 6.

17.2.6 Exploded drawing and parts list



KIT RICAMBIO – SPARE KIT

		MK2C40 - MK2SC40 (D.40)	MK2C45 - MK2SC45 (D.45)	MK2C50 - MK2SC50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2258		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2C40 - MK2SC40
MK2C45 - MK2SC45
MK2C50 - MK2SC50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIRAZ.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2118.56	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7222.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7223.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE HP		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE - FLANGIATO		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72 - MKSC		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKC		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1

17.3 MK2SH pump

17.3.1 Operating instructions



The pump has been designed to operate in environments with atmospheres that are not potentially explosive, and with filtered water (see par. 9.7).
Other liquids can be used only upon formal approval by the ***Engineering Department*** or ***Customer Service Department***.

17.3.2 Water temperature



The maximum permissible water temperature is 40 °C. However, the pump can be used with water up to a temperature of 60 °C, but only for short periods. In this case, it is best to consult the ***Technical*** or ***Customer Service Departments***.

17.3.3 Maximum pressure and flow rate

The rated specifications stated in our catalog are the maximum that can be obtained by the pump. **Independently** of the power used, the maximum pressure and rpm indicated on the specification label can never be exceeded unless prior formal authorization is given by our ***Technical*** or ***Customer Service Departments***.

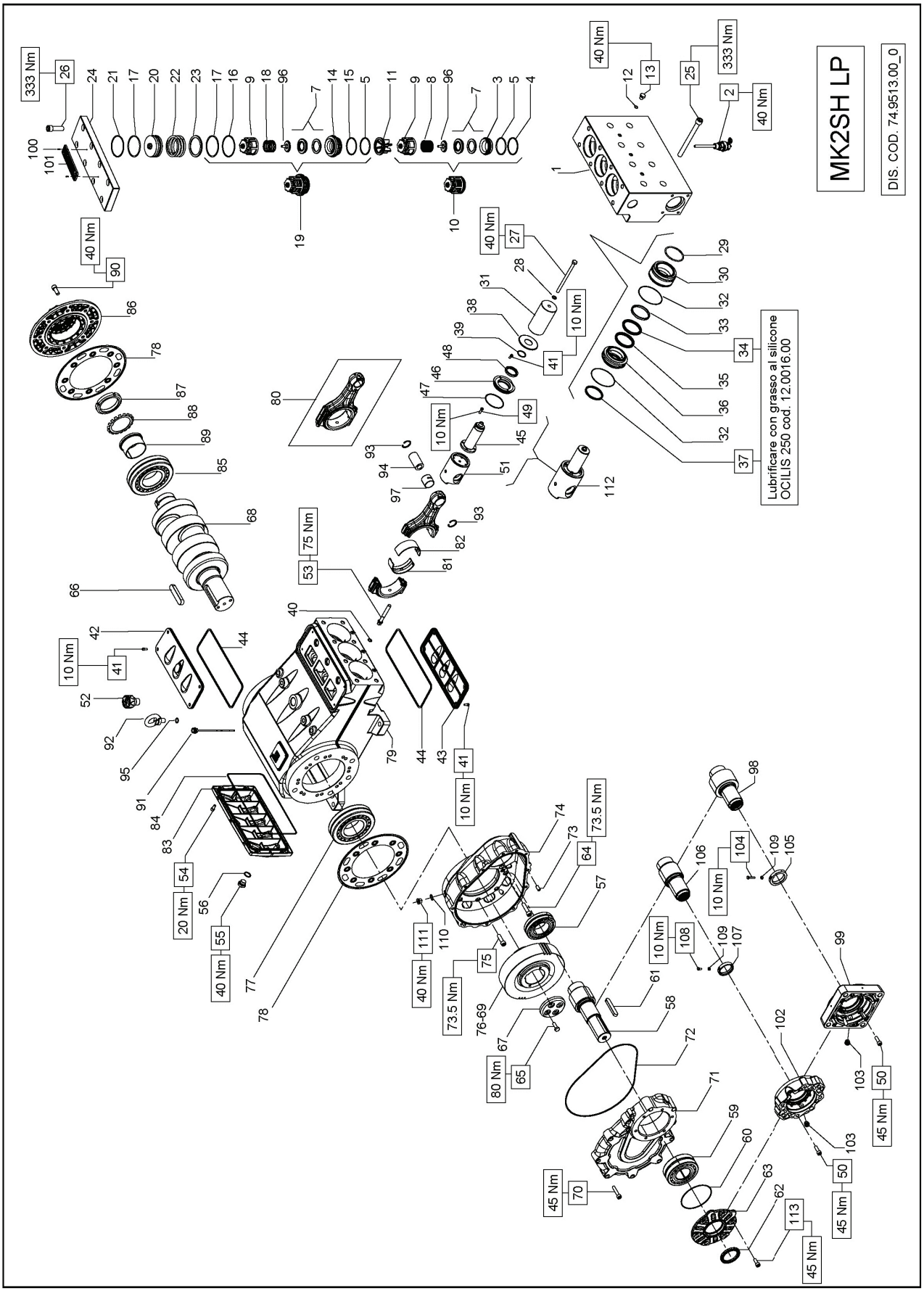
17.3.4 Technical characteristics

Model	Rpm	Flow rate		Pressure		Power	
		l/min	Gpm	bar	psi	kW	HP
MK2SH 45	1500	233	61.6	300	4350	134	182
	1800	232	61.3	300	4350	133	181
	2200	231	61.0	300	4350	132	180
MK2SH 65	1500	487	128.7	150	2175	140	190
	1800	484	127.9	150	2175	139	189
	2200	481	127.1	150	2175	137.5	187

17.3.5 Dimensions and weight

For the dimensions and weight of the pumps, refer to the diagrams in chapter 6.

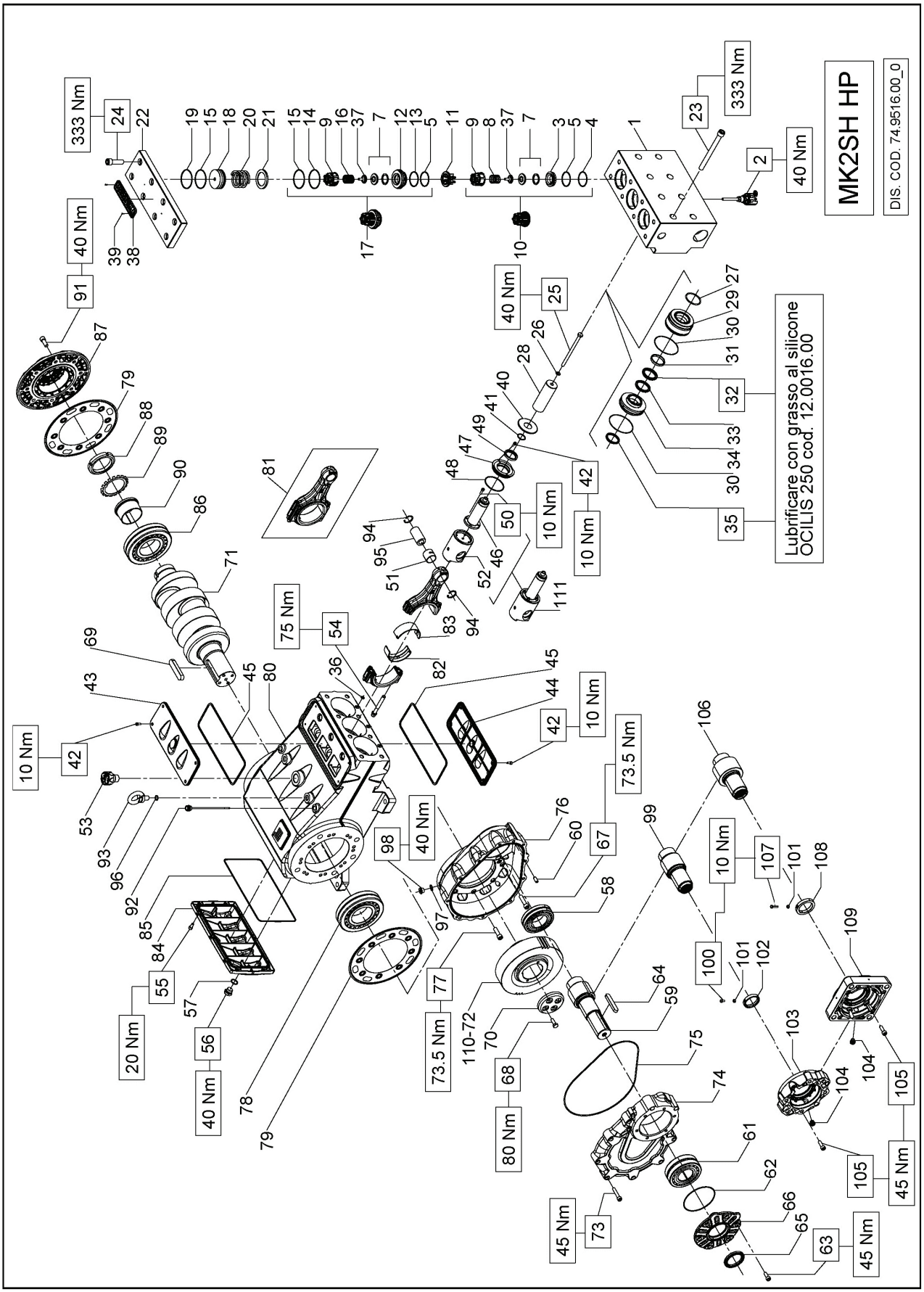
17.3.6 Exploded drawing and parts list



KIT RICAMBIO – SPARE KIT		MK2S65H (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2047
B	Kit valvole – Valves kit	KIT 2048
C	Kit tenute complete – Complete seals kit	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)

MK2S65H

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1210.56	TESTATA LP		1
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2161.56	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2116.56	CAMICIA PISTONE D. 65		3
31	74.0405.09	PISTONE D. 65x127		3
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1005.92	ANELLO DI TESTA PISTONE D. 65		3
34	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	3
35	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	3
36	74.2122.68	SUPPORTO GUARNIZIONE D. 65		3
37	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	3
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72		1
69	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		3
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
82	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	90.9173.00	BOCCOLA PIEDE BIELLA		3
100	91.5703.00	RIVETTO AUTOF. D. 2.5x8 UNI 7346		2
101	97.8276.00	MARCHIO PRATISSOLI		1
110	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
111	98.2086.00	TAPPO G 3/8"x12		2
112	74.6062.01	GR. GUIDA PISTONE		3
113	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
98	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
99	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
104	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
105	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
102	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
107	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
108	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
109	92.2025.00	DADO M6x5 UNI 5588		1


MK2SH HP
DIS. COD. 74.9516.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK2SH45 (D.45)
A	Kit tenute pompanti – Plunger packing kit	KIT 2053
B	Kit valvole – Valves kit	KIT 2055
C	Kit tenute complete – Complete seals kit	KIT 2451
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0.25) - 2078 (+0.50)

MK2SH45

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1212.56	TESTATA POMPA D. 45		1
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	36.2069.66	SEDE VALVOLA DI MANDATA		3
13	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
14	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
15	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
16	94.7605.00	MOLLA Dm. 28.5x45.4		3
17	36.7153.01	GR. VALVOLA DI MANDATA	B	3
18	74.2110.70	TAPPO VALVOLE DI MANDATA		3
19	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
20	94.7750.00	MOLLA Dm. 58.0x45.4		3
21	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
22	74.2181.56	COPERCHIO VALVOLE		1
23	99.5222.00	VITE M16x180 UNI 5931		8
24	99.5147.00	VITE M16x55 UNI 5931		8
25	99.3850.00	VITE M10x160 UNI 5737		3
26	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
27	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	3
29	74.2112.56	CAMICIA PISTONE D. 45		3
28	74.0401.09	PISTONE D. 45x127		3
30	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
31	74.1001.92	ANELLO DI TESTA PISTONE D. 45		3
32	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	3
33	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	3
34	74.2118.68	SUPPORTO GUARNIZIONE D. 45		3
35	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	3
36	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
37	36.2090.51	GUIDA INTERNA VALVOLA		6
38	97.8276.00	MARCHIO PRATISSOLI		1
39	91.5703.00	RIVETTO AUTOFILETTANTE D. 2.5x8.0		2
40	74.2133.51	PARASPRUZZI		3
41	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
42	99.1837.00	VITE M6x14 UNI 5931		14
43	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
44	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
45	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
46	74.0503.36	STELO GUIDA PISTONE		3
47	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
48	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
49	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
50	99.1884.00	VITE M6x20 UNI 5931		12
51	90.9173.00	BOCCOLA PIEDE BIELLA		3
52	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
53	98.2333.00	TAPPO CARICO OLIO G1"		1
54	99.4410.00	VITE SERRAGGIO BIELLA		6
55	99.3045.00	VITE M8x18 UNI 5931		6
56	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
57	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
58	91.8700.00	CUSCINETTO A RULLI		1
59	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
60	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
61	91.8610.00	CUSCINETTO A RULLI		1
62	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
63	99.3668.00	VITE M10x25 5931		6
64	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
65	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
66	74.2173.22	COPERCHIO PIGNONE		1
67	99.4335.00	VITE M12x50 UNI 5931		2
68	99.3684.00	VITE M10x30 UNI 5739		4
69	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
70	74.2252.55	FERMO CORONA		1
71	74.0202.35	ALBERO A GOMITI C. 72		1
72	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
73	99.3730.00	VITE M10x50 UNI 5931		10
74	74.2174.13	COPERCHIO RIDUTTORE		1
75	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
76	74.2175.13	SCATOLA RIDUTTORE		1
77	99.4305.00	VITE M12x40 UNI 5931		6
78	91.8850.00	CUSCINETTO A RULLI		1
79	74.2130.84	GUARNIZIONE LATERALE	C	2
80	74.0101.13	CARTER POMPA		1
81	74.0302.01	BIELLA COMPLETA		3
82	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
83	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
84	74.1600.22	COPERCHIO CARTER		1
85	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
86	91.8852.00	CUSCINETTO A RULLI		1
87	74.1500.22	COPERCHIO CUSCINETTO		1
88	93.0800.00	GHIERA DI BLOCCAGGIO		1
89	96.8300.00	ROSETTA DI SICUREZZA		1
90	91.8800.00	BUSSOLA DI PRESSIONE		1
91	99.4280.00	VITE M12x30 UNI 5931		8
92	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
93	93.1050.00	GOLFARE M16 UNI 2947		2
94	90.0697.00	ANELLO D'ARRESTO J35		6
95	97.7450.00	SPINOTTO D. 35x64		3
96	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
97	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
98	98.2086.00	TAPPO G 3/8"x12		2
111	74.6062.01	GR. GUIDA PISTONE		3
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
101	92.2025.00	DADO M6x5 UNI 5588		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
110	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
99	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
100	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
101	92.2025.00	DADO M6x5 UNI 5588		1
102	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
103	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
110	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1

18 DECLARATION OF INCORPORATION

DECLARATION OF INCORPORATION

(In accordance with Annex II of European Directive 2006/42/EC)

The manufacturer **INTERPUMP GROUP S.p.A. - Via E. Fermi, 25 - 42049 - S. ILARIO D'ENZA - Italy DECLARES** that the product identified and described as follows:

Designation:	Pump
Type:	Reciprocating plunger pump for high pressure water
Trademark:	INTERPUMP GROUP
Model:	Series 74 MK2, MK2S, MK2R, MK2SR, MK2C, MK2SC, MK2SH

Is found to comply with the Machinery Directive 2006/42/EC
Standards applied: UNI EN ISO 12100- UNI EN 809

The pump identified above meets all the essential safety and health protection requirements as listed in section 1 of Annex I of the Machinery Directive:
1.1.2 - 1.1.3 - 1.1.5 - 1.3.1 - 1.3.2 - 1.3.3 - 1.3.4 - 1.5.4 - 1.5.5 - 1.6.1 - 1.7.1 - 1.7.2 - 1.7.4 - 1.7.4.1 - 1.7.4.2 and the relevant technical documentation has been compiled in accordance with Annex VII B.

In addition, following a motivated request the manufacturer undertakes to provide a copy of the relevant pump technical documentation in the manner and terms to be defined.

The pump must not be commissioned until the plant in which it is to be incorporated has been declared in to be in compliance with the provisions of the relevant directives and/or standards.

Person authorized to compile the technical file

Name: Maurizio Novelli
Address: INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 - 42049 - S. ILARIO D'ENZA (RE) - Italy

The manager:
Reggio Emilia - January 2017

Ing. Massimiliano Bizzarri

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1 INTRODUCTION

Ce manuel décrit les instructions d'utilisation et de réparation de la pompe MK2 et doit être lu et compris attentivement avant toute intervention sur la pompe.
Le bon fonctionnement et la durée de vie de la pompe dépendent de son utilisation et de son entretien appropriés.
Interpump Group décline toute responsabilité concernant les dommages dérivant d'une négligence et/ou de l'inobservation des consignes de ce manuel.
Vérifier, dès réception, que la pompe est intacte et complète. Signaler les anomalies éventuelles avant de l'installer et de la démarrer.

2 DESCRIPTION DES SYMBOLES

Lire attentivement ce manuel avant toute opération.



Signal de Mise en garde



Lire attentivement ce manuel avant toute opération.



Signal de Danger
Risque d'électrocution.



Signal de Danger
S'équiper d'un masque de protection.



Signal de Danger
S'équiper de lunettes de protection.



Signal de Danger
S'équiper de gants de protection avant chaque opération.



Signal de Danger
S'équiper de chaussures spéciales

3 SÉCURITÉ

3.1 Consignes générales de sécurité

L'utilisation impropre des pompes et des systèmes à haute pression, ainsi que l'inobservation des normes d'installation et d'entretien, peuvent être à l'origine de graves dommages corporels et/ou matériels. Toute personne qui s'apprête à assembler ou à utiliser des systèmes à haute pression doit posséder les compétences nécessaires pour le faire, connaître les caractéristiques des composants assemblés/utilisés, et prendre toutes les précautions nécessaires afin de garantir la sécurité maximale dans n'importe quelle situation. Toutes les précautions normalement applicables devront être prises, aussi bien par l'installateur que par l'opérateur, aux fins de la sécurité.

3.2 Protections essentielles du système à haute pression

1. La ligne de pression doit toujours être pourvue d'une soupape de sécurité (clapet de surpression).
2. Les composants du système à haute pression, et particulièrement pour les groupes qui fonctionnent en extérieur, doivent être convenablement protégés contre la pluie, le gel et la chaleur.
3. Les parties électriques du système, outre à être correctement protégées contre les projections d'eau, doivent être conformes aux réglementations spécifiques en vigueur.
4. Les tuyaux HP doivent avoir les dimensions requises pour supporter la pression de service maximale du système, et doivent toujours être utilisés uniquement dans le plages des pressions de service indiquées par le constructeur du tuyau. Les mêmes modalités doivent être appliquées pour tous les accessoires du système sous haute pression.
5. Les extrémités des tuyaux HP doivent être gainées et fixées à une structure solide, afin d'éviter de graves traumatismes en cas d'explosion ou de rupture des connexions.
6. Des carters de protection appropriés doivent être prévus dans les systèmes de transmission de la pompe (joints, poulies, courroies, prises de force auxiliaires).

3.3 Sécurité durant le travail



Le milieu ou la zone dans laquelle fonctionne un système à haute pression doit être clairement signalé, interdit aux personnes non autorisées et, si possible, délimité ou entouré. Le personnel autorisé à accéder à cette zone devra préalablement prendre connaissance du comportement spécifique à adopter et des risques dérivant des défauts ou des dysfonctionnements du système à haute pression.
Avant le démarrage du système, l'opérateur doit vérifier que :

1. Le système haute pression soit correctement alimenté, voir chapitre 9 paragr. 9.5.
2. Les filtres d'aspiration de la pompe sont parfaitement propres ; installer un capteur de colmatage.
3. Les pièces électriques sont convenablement protégées et en parfait état.
4. Les tuyaux HP ne présentent pas de signes d'abrasion, et les raccords sont installés correctement.
5. Selon les conditions d'application, l'utilisation et l'environnement, les surfaces extérieures de la pompe peuvent atteindre des températures élevées pendant le fonctionnement. Par conséquent, nous vous recommandons de prendre des précautions pour éviter le contact avec les parties chaudes.

Toute anomalie ou tout doute raisonnable qui surviendraient avant ou durant le travail devront être signalés le plus rapidement possible, et faire l'objet d'une vérification par un personnel compétent. Dans ces conditions, la pression devra être immédiatement remise à zéro et le système à haute pression arrêté.

3.4 Normes de comportement pour l'utilisation des lances



1. L'opérateur doit toujours assurer son intégrité et sa sécurité ainsi que celle des personnes qui pourraient être directement impliquées dans ses actions, avant d'évaluer ou de s'intéresser à la situation ; ses actions devront être dictées par son bon sens et sa responsabilité.
2. L'opérateur doit toujours porter un casque ayant une visière de protection, des vêtements imperméables et chausser des chaussures adaptées au travail à fournir et en mesure d'assurer une bonne adhérence au sol si ce dernier est mouillé.

Remarque : *une tenue de travail appropriée protège efficacement contre les projections d'eau, mais pas autant contre l'impact direct du jet ou des projections d'eau trop rapprochés. Dans certaines circonstances, il pourrait être nécessaire de prendre des précautions supplémentaires.*

3. Il est préférable de s'organiser par équipes de deux personnes au moins, en mesure de s'entraider et de se secourir immédiatement en cas de besoin, et de se relayer durant des travaux longs et contraignants.

4. La zone de travail concernée par le champ d'action du jet doit être strictement interdite d'accès et libérée de tout objet qui, touché par mégarde par le jet sous pression, pourrait être endommagé et/ou créer des situations de danger.
5. Le jet d'eau doit toujours et uniquement être dirigé vers la zone de travail, même durant les essais ou les contrôles préliminaires.
6. L'opérateur doit toujours faire attention à la trajectoire des déchets chassés par le jet d'eau. En cas de besoin, des cloisons appropriées devront être prévues par l'opérateur afin de protéger ce qui pourrait être accidentellement touché.
7. Durant le travail, l'opérateur ne doit se distraire sous aucun prétexte. Les agents chargés des travaux qui exigent d'accéder à la zone opérationnelle devront attendre que l'opérateur interrompe le travail de sa propre initiative, puis communiquer immédiatement leur présence dans cette zone.
8. Il est important pour la sécurité que tous les membres de l'équipe soient toujours au courant des intentions de chacun, afin d'éviter les malentendus dangereux.
9. Ne pas démarrer ni mettre sous pression le système à haute pression avant que tous les membres de l'équipe soient en place et que l'opérateur ait dirigé la lance vers la zone de travail.

3.5 Sécurité lors de l'entretien du système

1. L'entretien du système à haute pression doit être effectué selon les échéances prévues par le constructeur qui est responsable de tout le groupe aux termes de la loi.
2. L'entretien doit toujours être confié à un personnel spécialisé et autorisé.
3. Le montage et le démontage de la pompe et des divers composants doivent être effectués exclusivement par du personnel autorisé, qui utilisera des équipements appropriés à la tâche, afin d'éviter d'endommager les composants, et plus particulièrement les connexions.
4. Pour garantir fiabilité et sécurité maximales, utiliser exclusivement des pièces de rechange d'origine.

4 IDENTIFICATION DE LA POMPE

Chaque pompe dispose d'une plaque signalétique portant :
- Modèle et version de la pompe
- Numéro de série
- Régime maxi
- Puissance absorbée ch - kW
- Pression en bars – P.S.I.
- Débit l/min - tr/min

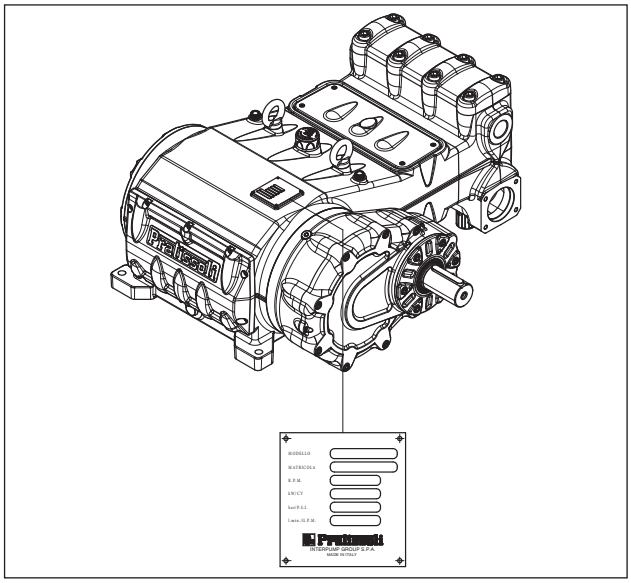


Fig. 1

Le modèle, la version et le numéro de série devront toujours être indiqués en cas de commande de pièces de rechange

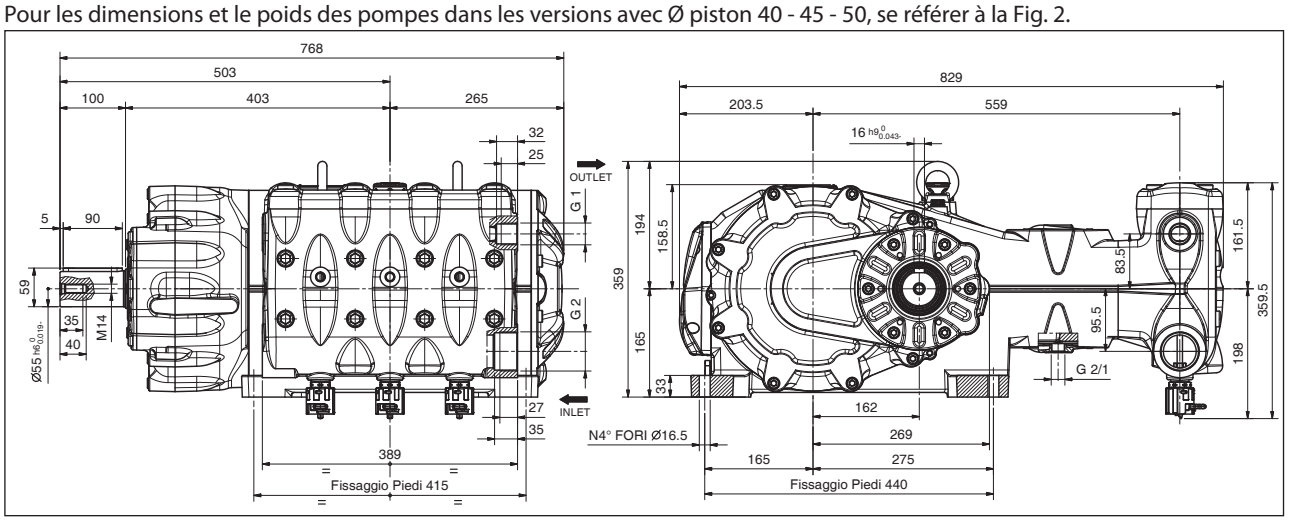
5 CARACTÉRISTIQUES TECHNIQUES

Modèle	Tr/min	Débit		Pression		Puissance	
		l/min	Tr/min	bar	psi	kW	ch
MK2 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Modèle	Tr/min	Débit		Pression		Puissance	
		l/min	Tr/min	bar	psi	kW	ch
MK2S 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2S 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2S 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2S 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2S 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2S 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

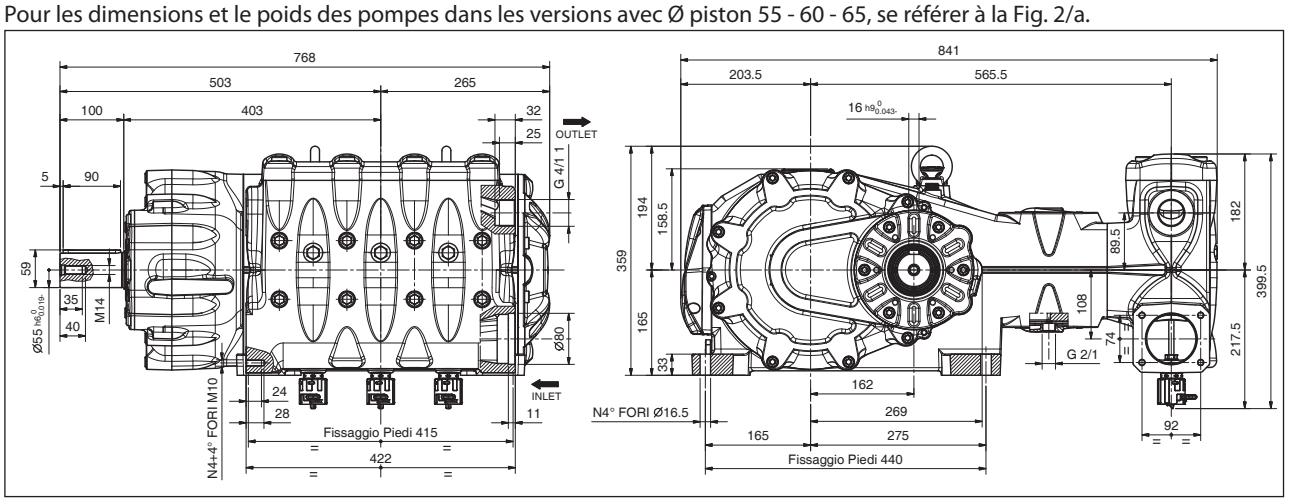
6 DIMENSIONS ET POIDS

Pour les dimensions et le poids des pompes dans les versions avec Ø piston 40 - 45 - 50, se référer à la Fig. 2.



Poids à vide 398 kg Fig. 2

Pour les dimensions et le poids des pompes dans les versions avec Ø piston 55 - 60 - 65, se référer à la Fig. 2/a.



Poids à vide 411 kg Fig. 2/a

Pour les dimensions des pompes version H.P. avec prédisposition Hydraulic Pack, se référer à la Fig. 2/b.

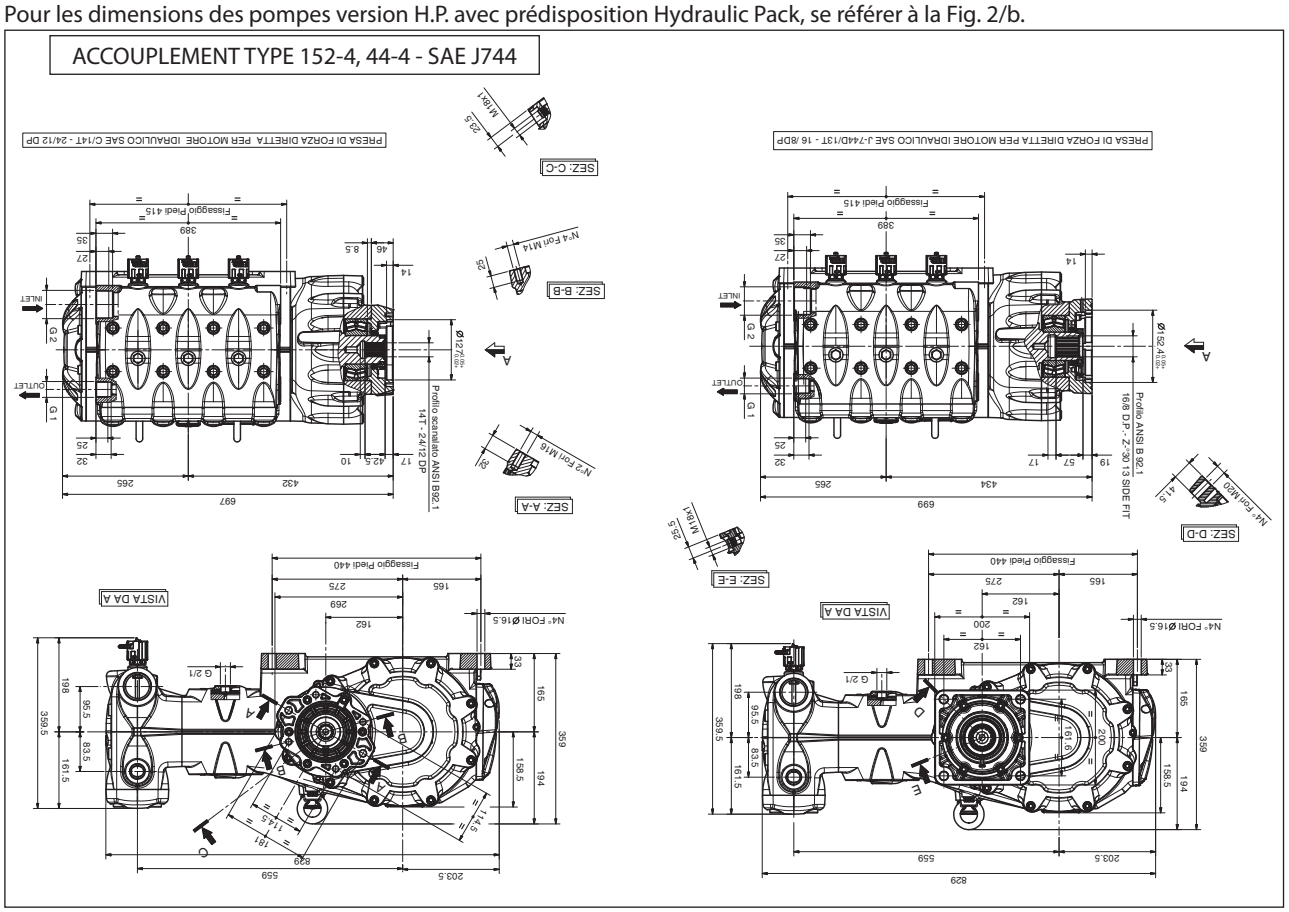


Fig. 2/b

Pour les dimensions des pompes version L.P. avec prédisposition Hydraulic Pack, se référer à la Fig. 2/c.

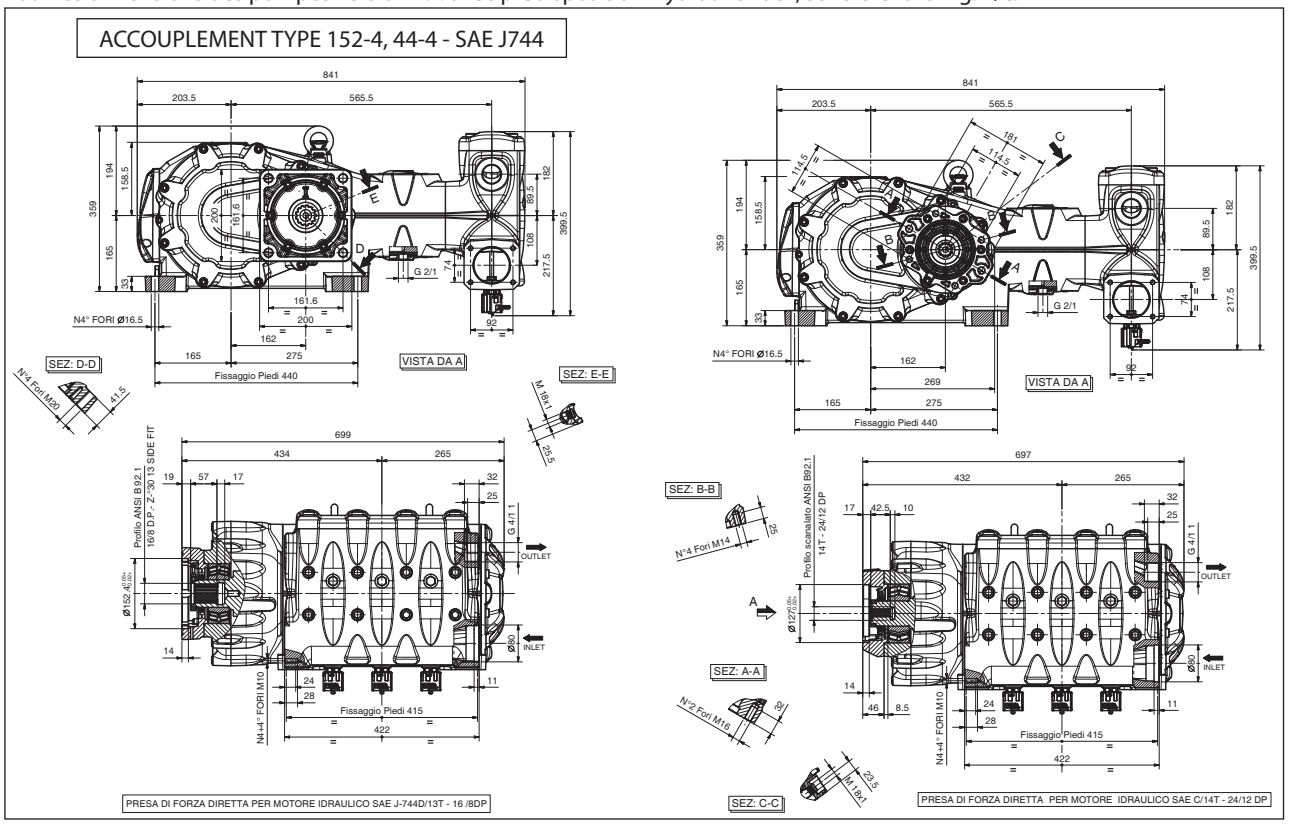


Fig. 2/c

7 INSTRUCTIONS D'UTILISATION

La pompe a été conçue pour opérer dans des environnements ayant une atmosphère potentiellement non déflagrante, avec de l'eau filtrée (voir parag. 9.7).
Noter qu'il ne sera pas possible d'utiliser d'autres fluides sauf accord formel préalable du ***bureau technique*** ou du ***service d'assistance clients***.

7.1 Température de l'eau

La température maximale de l'eau autorisée est de 40 °C. Cependant, il est possible d'utiliser la pompe avec de l'eau à une température allant jusqu'à 60 °C, mais uniquement pendant de courtes périodes.
Dans ce cas, il est conseillé de consulter le ***bureau technique*** ou le ***service d'assistance clients***.

7.2 Débit et pression maximums

Les performances indiquées dans le catalogue se réfèrent aux performances maximales de la pompe. **Quelle que soit** la puissance utilisée, la pression et le régime maximums indiqués sur la plaque signalétique ne peuvent être dépassés qu'avec l'autorisation expresse du ***bureau technique*** ou du ***service d'assistance clients***.

7.3 Régime de rotation minimum

Le régime minimum autorisé pour ce type de pompes correspond à 300 tr/min ; tout régime différent de celui indiqué dans le tableau des performances (voir le chapitre 5) doit être expressément autorisé par le ***bureau technique*** ou le ***service d'assistance clients***.

7.4 Émission sonore

Le test de détection de la pression sonore a été effectué conformément à la directive 2000/14 du Parlement et du Conseil européens (directive Machines) et à la norme EN-ISO 3744-2010 avec instruments de classe 1.
Le mesurage final du niveau de pression acoustique devra être effectué sur la machine/système complet.
Si l'opérateur se trouve à une distance inférieure à 1 mètre, il devra utiliser des protections acoustiques adéquates conformément aux normes en vigueur.

7.5 Vibrations

Le mesurage de la valeur doit être effectué uniquement avec la pompe montée et fonctionnant selon les performances déclarées par le client. Les valeurs devront être conformes aux normes en vigueur.

7.6 Marques et types d'huiles préconisés

La pompe est livrée avec le type d'huile valable pour les températures ambiantes de 0 °C à 30 °C.
Certains types d'huile conseillés sont indiqués dans le tableau ci-après. Ces huiles contiennent des additifs pour augmenter la protection contre la corrosion et la résistance à la fatigue (selon DIN 51517 partie 2).
En guise d'alternative, il est également possible d'utiliser des huiles pour engrenages automobiles SAE 85W-90.

Fabricant	Lubrifiant
Agip	AGIP ACER220
ARAL	Aral Degol BG 220
BP	BP Energol HLP 220
Castrol	CASTROL HYSPIN VG 220 CASTROL MAGNA 220
DEA	Falcon CL220
elf	ELF POLYTELIS 220 REDUCTELF SP 220
Esso	NUTO 220 TERESSO 220
FINA	FINA CIRKAN 220
FUCHS	RENOLIN 212 RENOLIN DTA 220
Mobil	Mobil DTE Oil BB
Shell	Shell Tellus Öl C 220
SRS	Wintershall Ersolon 220 Wintershall Wiolan CN 220
TEXACO	RANDO HD 220
TOTAL	TOTAL Cortis 220

Contrôler le niveau d'huile à travers les jauges présentant des repères de niveau minimum et maximum ①, Fig. 3.
Si nécessaire, faire l'appoint à travers le bouchon ③, Fig. 3.
Le contrôle de niveau d'huile correct est effectué avec la pompe à la température ambiante, l'huile doit être vidangée avec la pompe à la température de fonctionnement en retirant le bouchon pos. ②, Fig. 3.
Procéder au contrôle de l'huile et à la vidange comme indiqué au chapitre 11.
La quantité nécessaire est d'environ 13,5 litres.

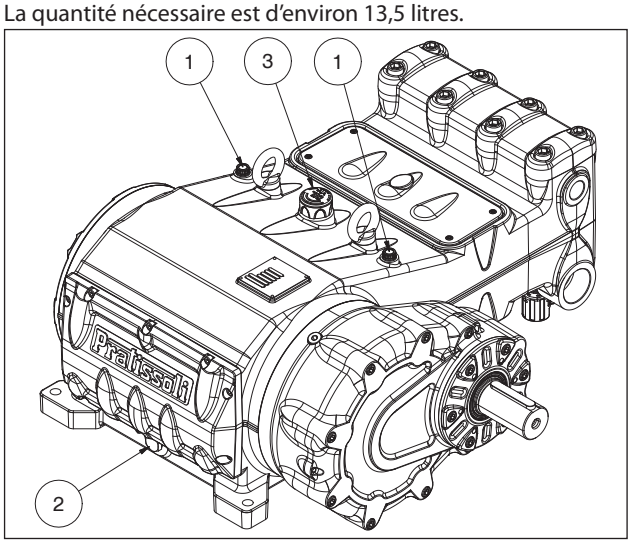


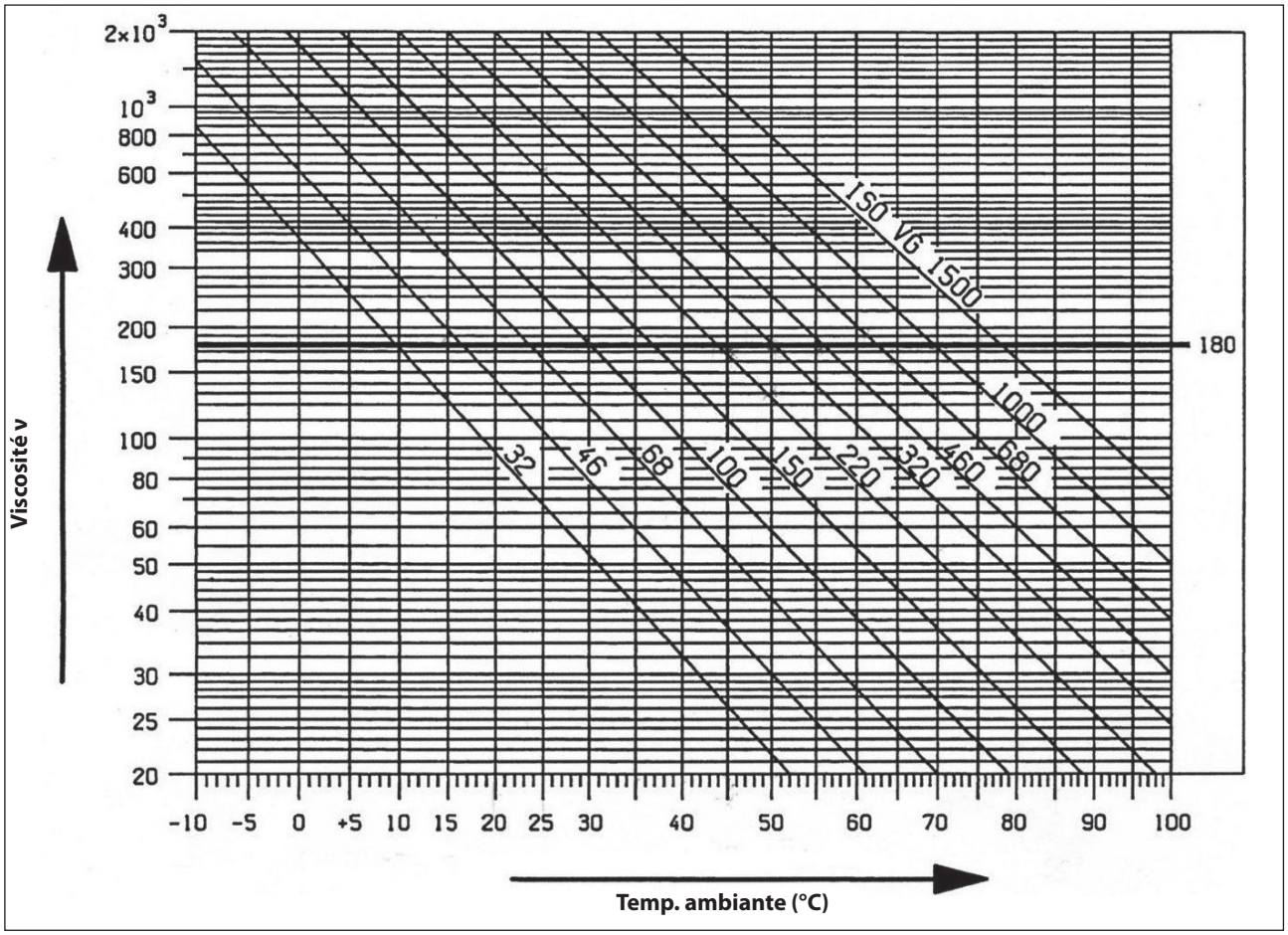
Fig. 3

Dans tous les cas, vidanger l'huile au moins une fois par an car elle pourrait se détériorer à cause de l'oxydation.

Pour une température ambiante non comprise entre 0 °C et 30 °C, suivre les indications contenues dans le diagramme suivant, en considérant que l'huile doit avoir une viscosité minimale de 180 cSt.

Diagramme de viscosité / Température ambiante

$mm^2/s = cSt$



Verser l'huile usagée dans un récipient spécial et l'éliminer auprès des centres autorisés. Elle ne doit en aucun cas être jetée dans la nature ou à l'égout.

8 PRISES ET CONNEXIONS

Les pompes sont dotées de :

2 orifices d'aspiration « IN » :

G2" (dans les versions avec Ø piston 40, 45, 50)

Ø80 mm (dans les versions avec Ø piston 55, 60, 65)

La connexion de la ligne à l'un des deux orifices n'interfère pas sur le bon fonctionnement de la pompe ; les orifices non utilisés devront être fermés hermétiquement.

2 orifices de refoulement « OUT » :

G1" (dans les versions avec Ø piston 40, 45, 50)

G1 ¼" (dans les versions avec Ø piston 55, 60, 65)

1 orifice « DRAIN » G1/2" sur le couvercle inférieur, permettant de vérifier qu'il n'y ait pas de fuite de fluide due à l'usure des joints de pression. En cas de fuites, suivre les conseils du ***Manuel de réparation***.

S'assurer que cet orifice reste toujours ouvert (voir Fig. 4 et Fig. 4/a).

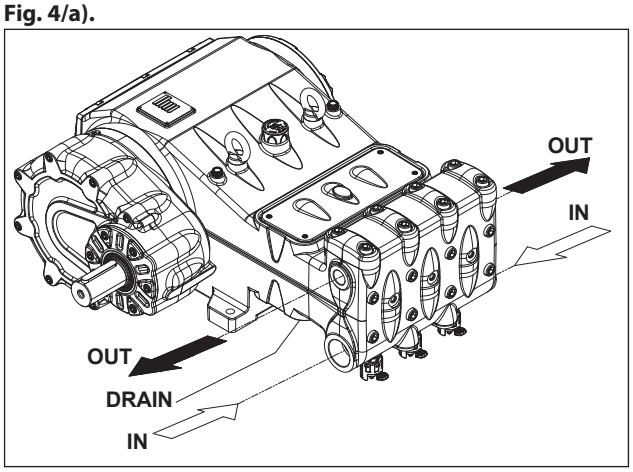


Fig. 4

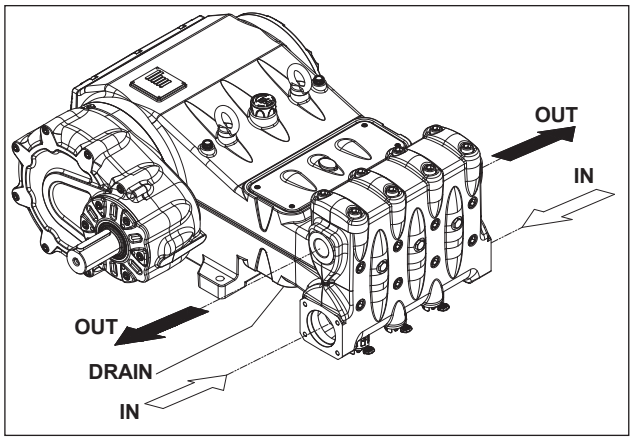


Fig. 4/a

9 INSTALLATION DE LA POMPE

9.1 Installation

La pompe doit être fixée en position horizontale à l'aide des pieds de support perforés Ø16,5 appropriés.
La base doit être parfaitement plate et suffisamment rigide afin d'éviter toute flexion et désalignement de l'axe du couplage pompe/transmission, dus au couple transmis durant le fonctionnement.
La pompe dispose de deux anneaux de levage pour faciliter son installation, voir figure ci-dessous.

Ne jamais enlever les anneaux de levage.

Les anneaux ou étriers de levage ont été dimensionnés uniquement pour soulever la pompe. Il est absolument interdit de les utiliser pour des charges supplémentaires.



Remplacer le bouchon de service de fermeture de l'orifice servant à verser l'huile présent sur le carter par le bouchon de remplissage d'huile.
Le bouchon de remplissage d'huile devra toujours être accessible, même lorsque le groupe est monté.

L'arbre de la pompe (PDF) ne doit pas être fixé solidement au groupe propulseur.
Nous conseillons d'utiliser les types de transmission suivants :

- Par accouplement élastique.
- À cardan (respecter les angles maxi conseillés par les constructeurs).
- Par courroies ; pour une application correcte, consulter le ***bureau technique*** ou le ***service d'assistance clients***.

9.2 Sens de rotation

Le sens de rotation de la prise de force est indiqué par une flèche présente sur le couvercle du réducteur.
En se plaçant face à la tête de la pompe, le sens de rotation devra correspondre aux indications de la Fig. 5.

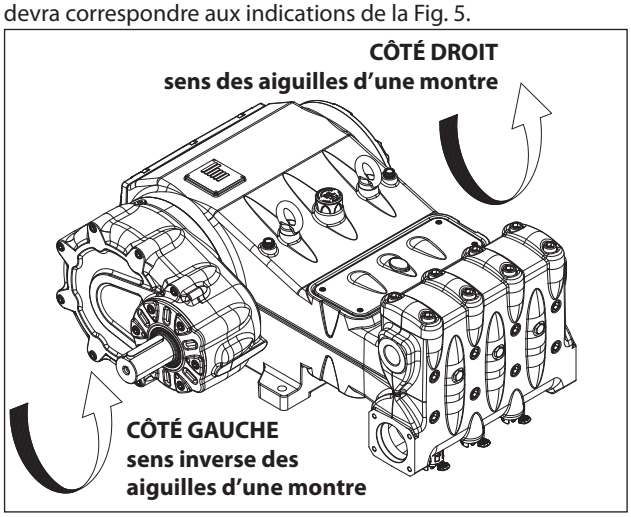


Fig. 5

9.3 Changement de version et mise en place du réducteur

On parle de pompe version droite quand :
en observant la pompe de face du côté tête, l'arbre de la pompe doit avoir l'embout de prise de force du côté DROIT.
On parle de pompe version gauche quand :
en observant la pompe de face du côté tête, l'arbre de la pompe présente l'embout de prise de force du côté GAUCHE (voir Fig. 5).

Seul le personnel spécialisé et autorisé peut modifier la version du réducteur, opération qui se fera dans le respect des indications contenues dans le *Manuel de réparation*.

Il est également possible d'installer le réducteur sur 5 positions différentes, aussi bien du côté droit que du côté gauche, comme le montre la Fig. 6.

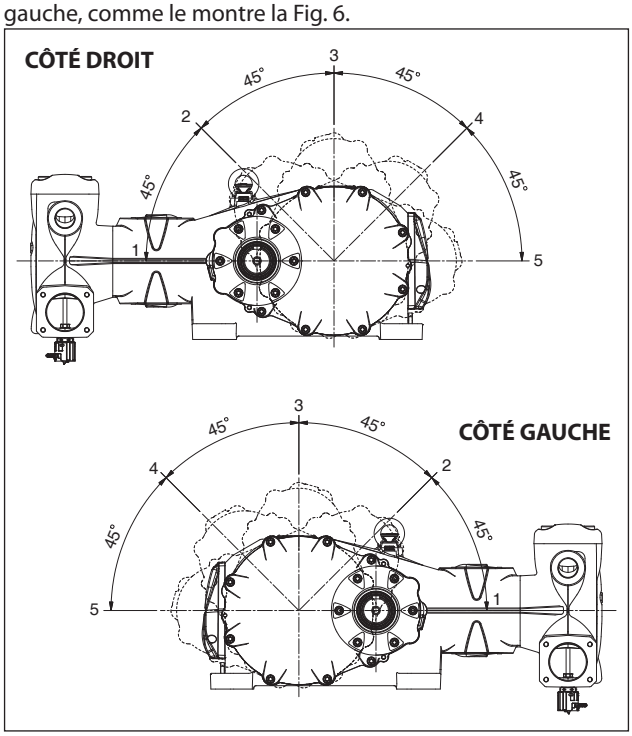


Fig. 6

La position du réducteur ne peut être modifiée que par un personnel spécialisé et autorisé, en respectant scrupuleusement les instructions du *Manuel de réparation*.

9.4 Raccordements hydrauliques

Pour isoler l'installation contre les vibrations produites par la pompe, il est préférable de réaliser le premier tronçon de conduite adjacent à la pompe (en aspiration comme en refoulement) avec des tuyaux flexibles. La consistance du tronçon d'aspiration devra être apte à éviter les déformations causées par la dépression produite par la pompe.

9.5 Alimentation de la pompe

Les pompes MK2 doivent toujours être installées sous la tête, c'est-à-dire qu'elles doivent recevoir de l'eau par gravité ou par gavage, sans jamais les aspirer à partir d'un niveau plus bas. Les pompes sont en mesure de tolérer des charges d'eau minimales d'un mètre mais, pour obtenir le meilleur rendement volumétrique et surtout pour éviter tout phénomène de cavitation, la charge d'eau positive disponible (NPSH avail) mesurée sur le flasque d'aspiration de la tête devra être supérieure ou égale aux valeurs suivantes :

	$NPSH_r$(m)
MK240	4,5
MK245	5,5
MK250	6,5
MK255	7,5
MK260	8
MK265	9

Pour les cylindrées plus importantes, pompes MK2 55 - 60 - 65, l'alimentation forcée à l'aide d'une pompe de surpression est fortement recommandée pour éviter les phénomènes de cavitation, compte tenu de la géométrie de la partie hydraulique et des débits importants.
Le débit de la pompe booster devra correspondre au moins au double de la valeur déclarée pour la pompe à pistons et la pression devra être comprise entre 2 et 3 bars.
Respecter ces conditions d'alimentation quel que soit le régime de service.

Toujours amorcer la pompe booster avant la pompe à pistons.
Il est conseillé d'installer un pressostat sur la ligne d'alimentation en aval des filtres pour protéger la pompe.

9.6 Ligne d'aspiration

Pour un bon fonctionnement de la pompe, la ligne d'aspiration devra présenter les caractéristiques suivantes :

1. Diamètre intérieur minimum comme l'indique le graphique au paragr. 9.9 mais toujours supérieur ou égal à celui de la tête de la pompe.

   Le long du parcours de la conduite, éviter les restrictions localisées qui peuvent causer des pertes de charge et par conséquent une cavitation. Éviter à tout prix les coudes à 90°, les connexions avec d'autres tuyauteries, les étranglements, les contre-pentes, les courbes inversées en « U », les raccordements en « T ».
2. Le schéma doit être réalisé afin d'éviter tout phénomène de cavitation.
3. Être parfaitement hermétique et construite de façon à assurer une étanchéité parfaite et une longue durée de vie.
4. Éviter qu'une fois à l'arrêt, la pompe se vide, même partiellement.
5. Ne pas utiliser de raccords oléodynamiques, raccords à 3 ou 4 voies, adaptateurs, bagues etc. Ils pourraient en effet réduire les performances de la pompe.
6. Ne pas installer de trompes de venturi ou d'injecteurs pour l'aspiration du détergent.
7. Éviter d'utiliser des clapets de fond ou d'autres types de clapets unidirectionnels.
8. Ne pas faire recirculer l'échappement de la soupape by-pass directement en aspiration.
9. Prévoir des cloisons à l'intérieur du réservoir pour éviter que les flux d'eau provenant de la soupape by-pass et de la ligne d'alimentation du réservoir puissent créer des tourbillons ou des turbulences à proximité de la prise du tuyau d'alimentation de la pompe.
10. S'assurer que la ligne d'aspiration, avant d'être raccordée à la pompe, est parfaitement propre à l'intérieur.
11. Installer le manomètre pour contrôler la pression de la pompe booster à proximité de l'orifice d'aspiration de la pompe à pistons et toujours en aval des filtres.

9.7 Filtration

Sur la ligne d'aspiration de la pompe, il est nécessaire d'installer deux filtres comme le montrent les Fig. 7 et Fig. 7/a.

Avec soupape de régulation à actionnement manuel

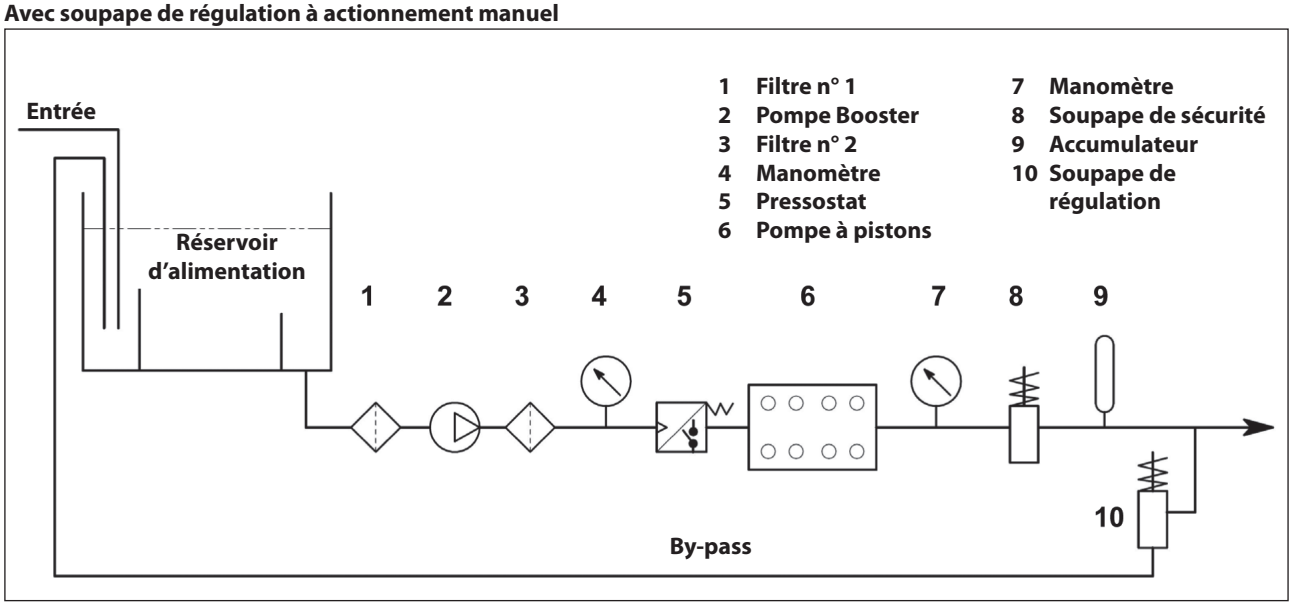


Fig. 7

Avec soupape de régulation à actionnement pneumatique

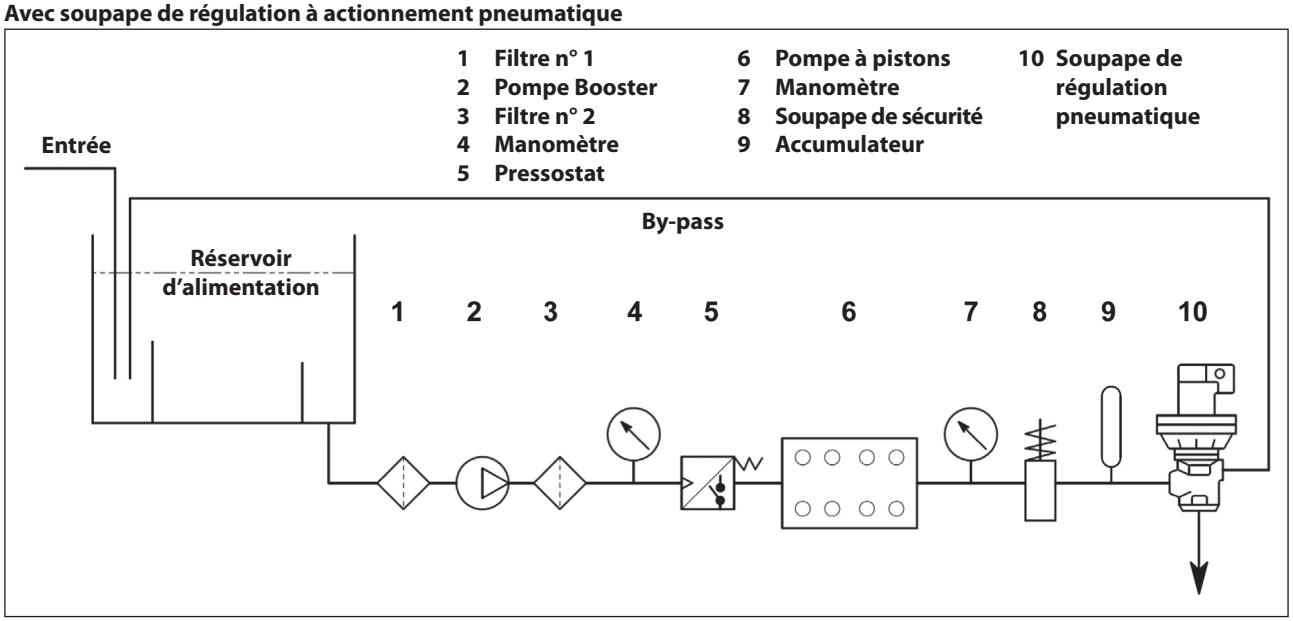


Fig. 7/a

Le filtre doit être installé le plus près possible de la pompe, accessible pour être facilement contrôlé et présenter les caractéristiques suivantes :

1. Débit minimum 3 fois supérieur au débit indiqué sur la plaque d'identification de la pompe.
2. Diamètre des orifices d'entrée/sortie non inférieur au diamètre de l'orifice d'aspiration de la pompe.
3. Degrés de filtration compris entre 200 et 360 µm.

Pour le bon fonctionnement de la pompe, prévoir l'entretien régulier du filtre, programmé selon l'utilisation effective de la pompe et également en fonction de la qualité de l'eau utilisée et des réelles conditions d'obstruction.

9.8 Ligne de refoulement

Pour la réalisation d'une ligne de refoulement correcte, respecter les consignes d'installation suivantes :

1. Le diamètre interne du tuyau doit être suffisamment grand pour garantir la vitesse correcte du fluide, voir le graphique au paragr. 9.9.
2. Le premier tronçon de conduite relié à la pompe doit être flexible, afin d'isoler les vibrations transmises par la pompe aux autres éléments de l'installation.
3. Utiliser des tuyaux et des raccords pour haute pression qui garantissent de larges marges de sécurité dans toutes les conditions d'exercice.
4. Installer une soupape de sûreté sur la ligne de refoulement.
5. Utiliser des manomètres adaptés à supporter des charges pulsatoires typiques des pompes à pistons.
6. Tenir compte, en phase d'étude, des pertes de charge de la ligne qui se traduisent par une diminution de la pression utilisée par rapport à la pression mesurée à la pompe.
7. Pour les applications dans lesquelles les pulsations de la pompe sur la ligne de refoulement se révèleraient nuisibles ou inopportunes, installer un amortisseur adapté.

9.9 Calcul du diamètre interne des tuyaux des conduites

Pour déterminer le diamètre interne de la conduite, se référer au diagramme suivant :

Conduite d'aspiration

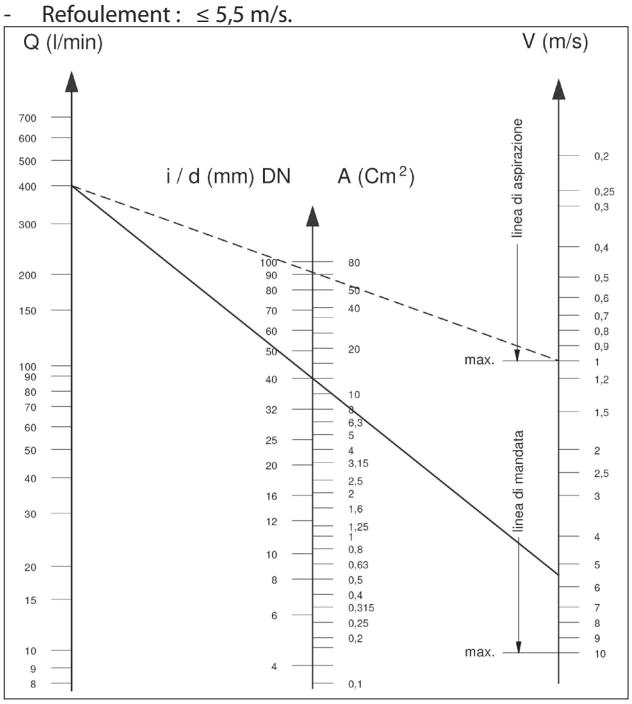
Avec un débit d'environ 400 l/min et une vitesse de l'eau de 1 m/s. La ligne du graphique qui réunit les deux échelles rencontre l'échelle centrale indiquant les diamètres, sur une valeur correspondant à environ 90 mm.

Conduite de refoulement

Avec un débit d'environ 400 l/min et une vitesse de l'eau de 5,5 m/s. La ligne du graphique qui réunit les deux échelles rencontre l'échelle centrale indiquant les diamètres, sur une valeur correspondant à environ 40 mm.

Vitesses optimales assurées par la pompe Booster :

- Aspiration : ≤ 1 m/s.
- Refoulement : ≤ 5,5 m/s.



Le graphique ne tient pas compte de la résistance des tuyaux, des soupapes, de la perte de charge due à la longueur des conduites, de la viscosité du liquide pompé et de la température de ce dernier. En cas de besoin, contacter le ***bureau technique*** ou le ***service d'assistance clients***.

9.10 Transmission par courroie trapézoïdale

Comme indiqué dans le paragr. 9.1 la pompe peut être commandée par un système de courroies trapézoïdales exclusivement dans des cas exceptionnels.
Pour une installation correctement dimensionnée, consulter le ***bureau technique*** ou le ***service d'assistance clients***.

10 DÉMARRAGE ET FONCTIONNEMENT

10.1 Contrôles préliminaires

Avant le démarrage, s'assurer que :

La ligne d'aspiration est raccordée et sous pression (voir chapitre 9) : la pompe ne doit jamais tourner à vide.

1. La ligne d'aspiration garantit l'étanchéité dans le temps.
2. Toutes les soupapes d'arrêt ou d'isolement éventuelles entre la source d'alimentation et la pompe sont complètement ouvertes. La ligne de refoulement est à échappement libre afin de permettre à l'air de la tête de la pompe de ressortir rapidement et de favoriser un amorçage rapide.
3. Tous les raccords et toutes les connexions, en aspiration et en refoulement, sont serrés à fond.
4. Les tolérances de couplage sur l'axe de la pompe/transmission (désalignement des demi- accouplements, inclinaison du cardan, entraînement des courroies, etc.) restent dans les limites prévues par le constructeur de la transmission.
5. L'huile contenue dans le carter de pompe est au bon niveau, en le vérifiant avec les jauges prévues à cet effet (rep. ①, Fig. 8).

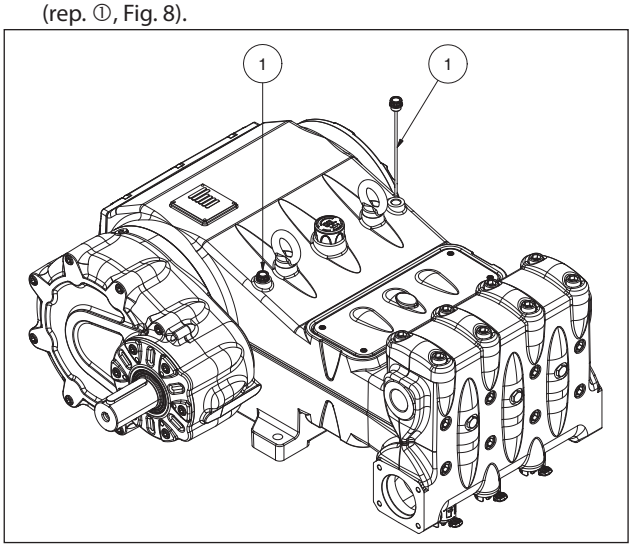


Fig. 8

En cas de stockage ou d'arrêt prolongé, remettre les soupapes d'aspiration en état de fonctionner en ouvrant les trois dispositifs d'ouverture (voir rep. ② Fig. 9). S'assurer d'avoir refermé les soupapes avant d'amorcer la pompe.
Pour les positions de « travail » et de « repos », voir Fig. 10.

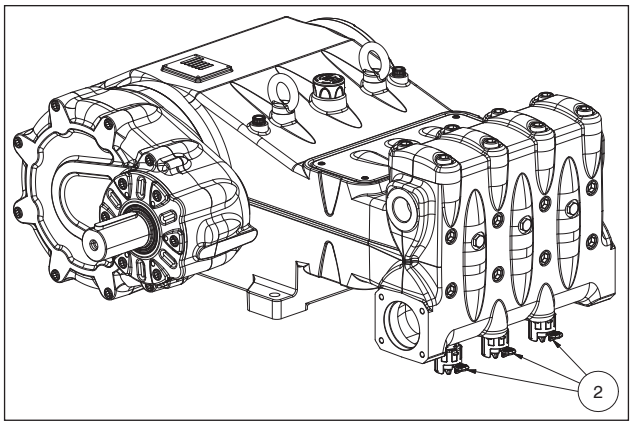


Fig. 9

SOUPAPE FERMÉE - POSITION DE TRAVAIL -	DÉVERROUILLAGE DISPOSITIF DE SÉCURITÉ	SOUPAPE OUVERTE - POSITION DE REPOS -

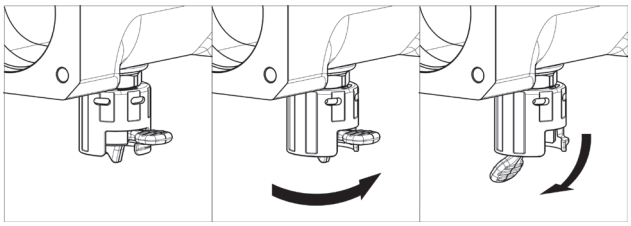


Fig. 10

10.2 Démarrage

1. Au premier démarrage, vérifier si le sens de rotation est correct.
2. Vérifier si la pompe est alimentée correctement.
3. Démarrer la pompe sans aucune charge.
4. Vérifier que pendant le fonctionnement le régime de rotation ne dépasse pas celui indiqué sur la plaque signalétique.
5. Laisser fonctionner la pompe pendant au moins 3 minutes avant de la mettre sous pression.
6. Avant chaque arrêt de la pompe, mettre la pression à zéro en agissant sur la soupape de régulation ou sur les éventuels dispositifs d'évacuation.

Si des problèmes d'amorçage se produisent en raison d'une alimentation électrique insuffisante, il est possible d'intervenir en retirant les trois capuchons avant de la tête (à l'exclusion de la version MK240) comme indiqué pos.③ Fig. 11.

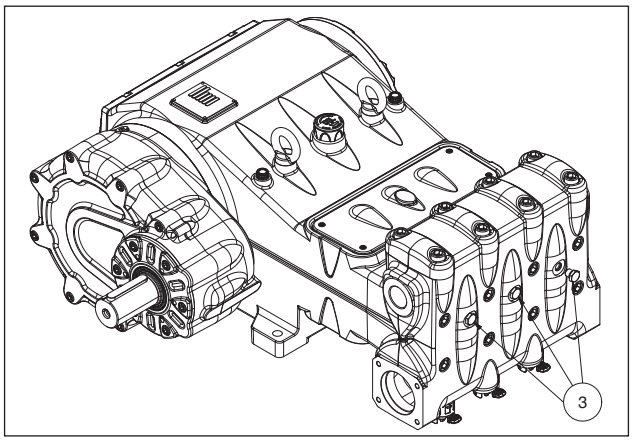


Fig. 11

11 ENTRETIEN PRÉVENTIF

Pour assurer la fiabilité et l'efficacité de la pompe, respecter les intervalles d'entretien indiqués dans le tableau ci-dessous.

ENTRETIEN PRÉVENTIF	
Toutes les 500 heures	**Toutes les 1500 heures**
Vérification du niveau d'huile	Vidange de l'huile
	Vérification / Remplacement* : Soupapes Sièges de soupapes Ressorts de soupapes Guides de soupapes
	Vérification / Remplacement* : Joints H.P. Joints L.P.

* Pour le remplacement, suivre les indications contenues dans le ***Manuel de réparation***.

12 REMISAGE DE LA POMPE

12.1 Méthode de remplissage de la pompe avec une émulsion anticorrosive ou une solution antigel

Méthode de remplissage de la pompe avec une émulsion anticorrosive ou une solution antigel en utilisant une pompe externe à membrane sur la base des schémas décrits au paragr. 9.7 :

a) Fermer l'orifice de drainage du filtre, s'il est ouvert.
b) S'assurer que le tuyau de raccordement est propre, l'enduire de graisse et le raccorder au dispositif d'évacuation de haute pression.
c) Fixer le tuyau d'aspiration à la pompe à membrane ; ouvrir le raccord de l'aspiration de la pompe et fixer le tuyau entre celui-ci et la pompe à membrane.
d) Remplir le récipient avec la solution/ émulsion.
e) Mettre les extrémités libres du tuyau d'aspiration ainsi que le tuyau d'évacuation à haute pression à l'intérieur du récipient.
f) Amorcer la pompe à membrane.
g) Pomper l'émulsion jusqu'à ce que l'émulsion ressorte du tuyau d'évacuation à haute pression.
h) Continuer le pompage pendant au moins une minute ; l'émulsion peut être renforcée si nécessaire en ajoutant - par ex. Shell Donax à la solution.
i) Arrêter la pompe, retirer le tuyau relié au raccord d'aspiration et fermer ce dernier avec un bouchon.
j) Retirer le tuyau de l'évacuation à haute pression. Nettoyer, graisser et boucher les deux raccords et les tuyaux.

12.2 Tuyaux

a) Avant de graisser et de protéger les tuyaux selon la procédure précédente, sécher les raccords à l'air comprimé.
b) Couvrir avec du polyéthylène.
c) Ne pas serrer trop fort ; s'assurer qu'ils ne sont pas pliés.

13 PRÉCAUTIONS CONTRE LE GEL



Dans les zones et les périodes de l'année où il y a un risque de gel, suivez les indications du chapitre 12 (voir par. 12.1).



En présence de gel, ne jamais amorcer la pompe avant que le circuit ne soit complètement dégelé afin d'éviter d'endommager gravement la pompe.

14 CONDITIONS DE GARANTIE

La période et les conditions de garantie sont contenues dans le contrat d'achat.
La garantie sera toutefois annulée si :

a) La pompe a été utilisée pour des motifs différents de ceux consentis.
b) La pompe a été équipée d'un moteur électrique ou endothermique avec des performances supérieures à celles indiquées dans le tableau.
c) Les dispositifs de sécurité prévus sont déréglés ou déconnectés.
d) La pompe a été utilisée avec des accessoires ou des pièces de rechange non fournis par Interpump Group.
e) Les dommages ont été causés par :
   1) utilisation impropre
   2) inobservation des instructions à suivre lors de l'entretien
   3) utilisation différente de celle décrite dans les instructions
   4) débit insuffisant
   5) installation défectueuse
   6) emplacement incorrect ou dimensions erronées des tuyaux
   7) modifications non autorisées apportées au projet
   8) cavitation.

15 ANOMALIES DE FONCTIONNEMENT ET CAUSES POSSIBLES



Au démarrage de la pompe, aucun bruit ne s'est produit :
- La pompe n'est pas amorcée et tourne à vide.
- Manque d'eau en aspiration.
- Les soupapes sont bloquées.
- La ligne de refoulement est fermée et ne permet pas à l'air présent dans la tête de la pompe de ressortir.



La pompe aspire de façon irrégulière :
- Aspiration d'air.
- Alimentation insuffisante.
- Les courbes, coudes, raccords présents le long de la ligne d'aspiration rétrécissent le passage du liquide.
- Le filtre d'aspiration est sale ou trop petit.
- La pompe booster, si présente, fournit une pression ou un débit insuffisant.
- La pompe n'est pas amorcée à cause d'une charge d'eau insuffisante ou parce que la soupape de refoulement est fermée durant l'amorçage.
- La pompe n'est pas amorcée à cause du collage de certaines soupapes.
- Soupapes usagées.
- Joints de pression usagés.
- Fonctionnement anormal de la soupape de régulation de la pression.
- Problèmes sur la transmission.



La pompe ne fournit pas le débit indiqué sur la plaque/bruit excessif :
- Alimentation insuffisante (voir les causes diverses indiquées ci-dessus).
- Le régime est inférieur à celui indiqué sur la plaque signalétique.
- Fuite excessive de la soupape de régulation de pression.
- Soupapes usagées.
- Fuite excessive des joints d'étanchéité.
- Cavitation due à :
  1) Dimensions erronées des conduites d'aspiration/diamètres trop petits.
  2) Débit insuffisant.
  3) Température de l'eau élevée.



La pression fournie par la pompe est insuffisante :
- L'utilisation (buse) est ou est devenue supérieure à la capacité de la pompe.
- Le nombre de tours est insuffisant.
- Fuite excessive des joints d'étanchéité.
- Fonctionnement anormal de la soupape de régulation de la pression.
- Soupapes usagées.

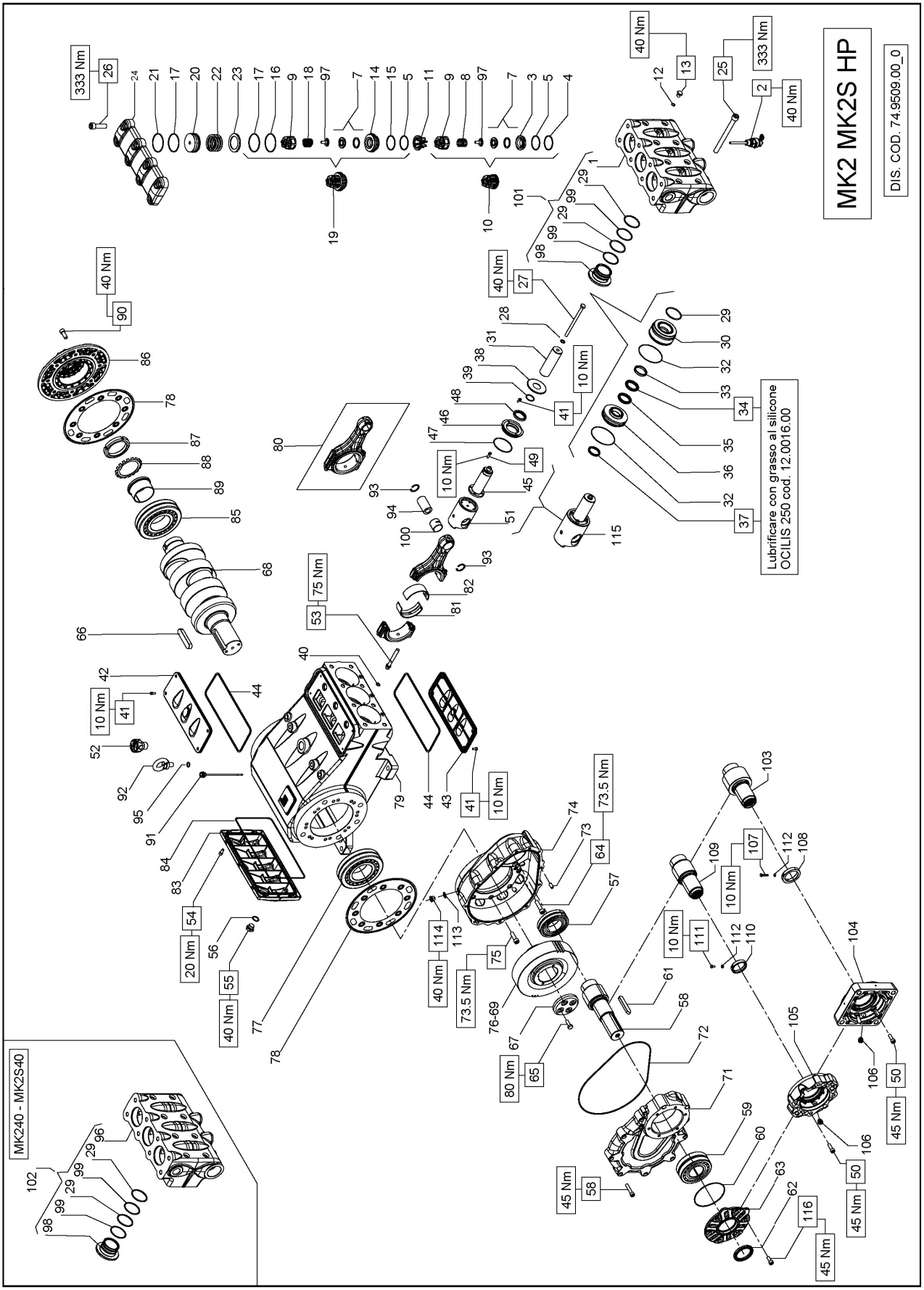


La pompe surchauffe :
- La pompe fonctionne sous une pression excessive ou le régime est supérieur à celui indiqué sur la plaque signalétique.
- L'huile dans le carter de la pompe n'est pas à niveau ou pas du type recommandé décrit dans le chapitre 7 (voir par. 7.6).
- L'alignement du joint ou des poulies n'est pas précis.
- L'inclinaison de la pompe durant le travail est excessive.



Vibrations ou à-coups dans les tuyaux :
- Aspiration d'air.
- Fonctionnement anormal de la soupape de régulation de pression.
- Dysfonctionnement des soupapes.
- Mouvement irrégulier dans la transmission.

16 VUE ÉCLATÉE ET LISTE DES PIÈCES DE RECHANGE



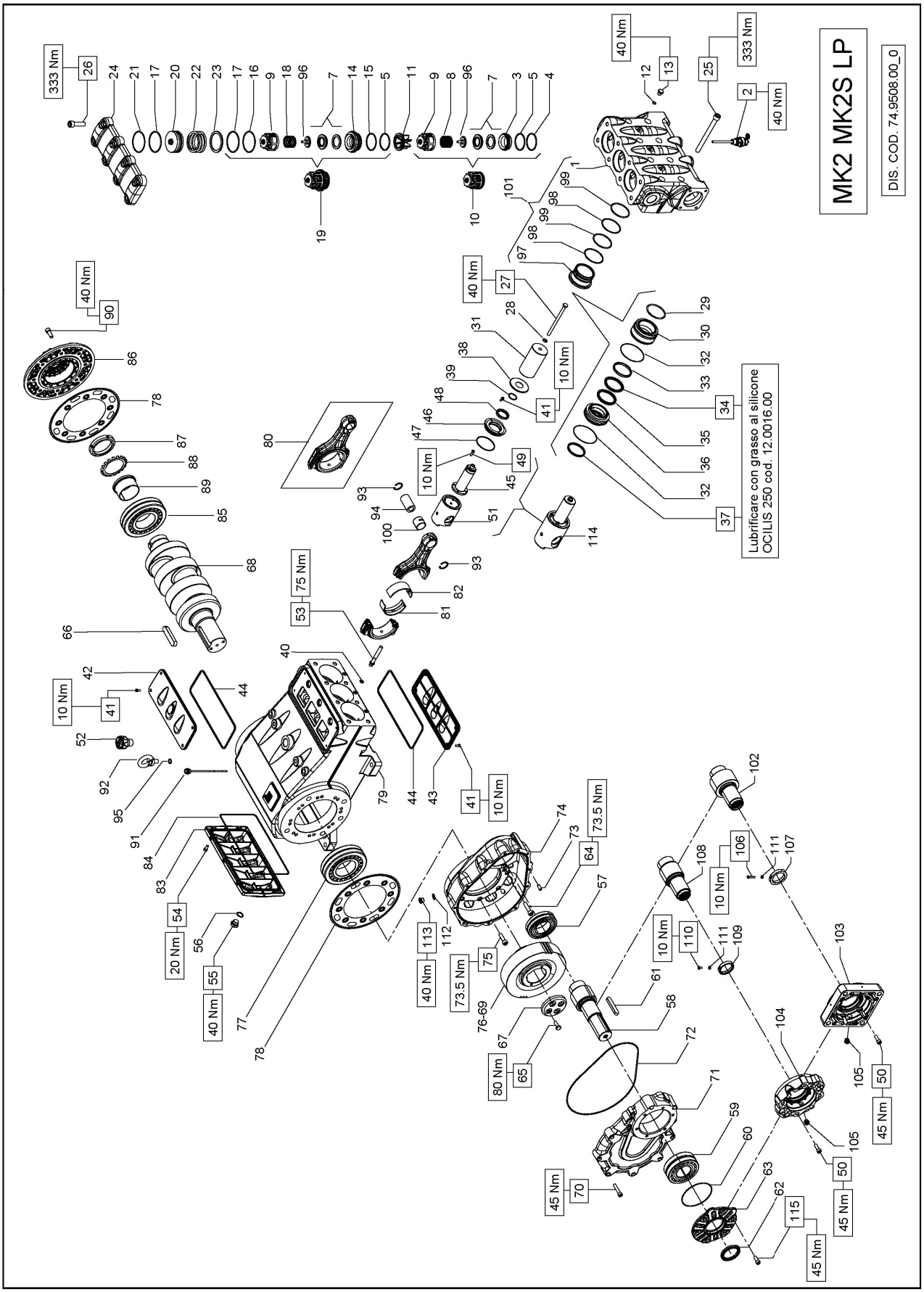
KIT RICAMBIO – SPARE KIT		MK240 - MK2S40 (D.40)	MK245 - MK2S45 (D.45)	MK250 - MK2S50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK240 - MK2S40
MK245 - MK2S45
MK250 - MK2S50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D				
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C				
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1


MK2 MK2S LP
DIS. COD. 74.9508.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK255 - MK2S55 (D.55)	MK260 - MK2S60 (D.60)	MK265 - MK2S65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2045	KIT 2046	KIT 2047
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2447	KIT 2448	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK255 - MK2S55
MK260 - MK2S60
MK265 - MK2S65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2114.56	CAMICIA PISTONE D. 55		3
	74.2115.56	CAMICIA PISTONE D. 60		
	74.2116.56	CAMICIA PISTONE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1003.92	ANELLO DI TESTA PISTONE D. 55		3
	74.1004.92	ANELLO DI TESTA PISTONE D. 60		
	74.1005.92	ANELLO DI TESTA PISTONE D. 65		
34	90.2873.00	ANELLO TEN. ALT. D. 55.0x70.0x7.5/4.5 HP	A-C	3
	90.2883.00	ANELLO TEN. ALT. D. 60.0x76.0x8.0/4.8 HP	A-C	
	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	
35	90.2875.00	ANELLO RESTOP D. 55.0x70.0x8.0/4.5	A-C	3
	90.2885.00	ANELLO RESTOP D. 60.0x76.0x8.0/4.5	A-C	
	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	
36	74.2120.68	SUPPORTO GUARNIZIONE D. 55		3
	74.2121.68	SUPPORTO GUARNIZIONE D. 60		
	74.2122.68	SUPPORTO GUARNIZIONE D. 65		
37	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		10
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.55	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	73.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK2		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2S		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	74.2150.56	BOCCOLA TESTATA		3
98	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
99	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1201.01	TESTATA CON BOCCOLA		1
112	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
113	98.2086.00	TAPPO G 3/8"x12		2
114	74.6062.01	GR. GUIDA PISTONE		3
115	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
102	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
103	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
107	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
111	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.750 - ELICOIDALE		1
104	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
108	10.0906.55	PIGNONE Z16 R. 3.750 - ELICOIDALE FEMM.		1
109	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
110	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
111	92.2025.00	DADO M6x5 UNI 5588		1

17 VERSIONS SPÉCIALES

La pompe MK2 est également disponible dans les versions spéciales suivantes :

- MK2R (eau recyclée)
- MK2SR (eau recyclée)
- MK2C (méthanol)
- MK2SC (méthanol)
- MK2SH (tête AISI 420)

Les indications relatives au choix et à l'utilisation de ces versions sont présentées ci-après.
Sauf indication contraire, suivez les instructions ci-dessus pour la pompe MK2 version standard.

17.1 Pompe version MK2R-MK2SR

17.1.1 Instructions d'utilisation



Les pompes de la série MK2R/MK2SR ont été conçues pour fonctionner dans des environnements avec des atmosphères non déflagrantes et une utilisation d'eau riche en particules. Elles sont donc considérées comme appropriées pour les systèmes avec recirculation de fluide.
La durée des joints d'étanchéité du piston est directement liée au pourcentage de parties solides dans le liquide, aussi bien en dimensions qu'en densité.
Pour assurer la longévité des joints d'étanchéité, la dimension du grain des particules ne devrait pas dépasser 200 microns pour un volume maxi de 20 %.
Pour des informations plus détaillées et une présentation générale de l'installation, voir paragr. 17.2.6.

17.1.2 Débit et pression maximums

Les performances indiquées dans le catalogue se réfèrent aux performances maximales de la pompe. **Quelle que soit** la puissance utilisée, la pression et le régime maximums indiqués sur la plaque signalétique ne peuvent être dépassés qu'avec l'autorisation expresse du ***bureau technique*** ou du ***service d'assistance clients***.

17.1.3 Caractéristiques techniques

Modèle	Tr/min	Débit		Pression		Puissance	
		l/min	Tr/min	bar	psi	kW	ch
MK2R 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2R 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2R 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2R 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2R 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2R 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Modèle	Tr/min	Débit		Pression		Puissance	
		l/min	Tr/min	bar	psi	kW	ch
MK2SR 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2SR 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SR 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2SR 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2SR 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2SR 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.1.4 Dimensions et poids

Pour les dimensions et le poids des pompes, se référer aux schémas du chapitre 6.

17.1.5 Alimentation de la pompe

Les pompes doivent toujours être installées sous la tête, c'est-à-dire qu'elles doivent recevoir de l'eau par gravité ou par gavage, sans jamais les aspirer à partir d'un niveau plus bas.
Les pompes sont en mesure de tolérer des charges d'eau minimales atteignant 1 m, mais pour obtenir le meilleur rendement volumétrique et surtout pour éviter tout phénomène de cavitation, la charge positive disponible (NPSH avail) mesurée sur le flasque d'aspiration de la tête devra résulter supérieure ou égale aux valeurs ci-après.

	$NPSH_r$ (m)
MK2R/MK2SR40	4,5
MK2R/MK2SR45	5,5
MK2R/MK2SR50	6,5
MK2R/MK2SR55	7,5
MK2R/MK2SR60	8
MK2R/MK2SR65	9

Pour les cylindrées plus importantes, pompes avec Ø piston 55 - 60 - 65, l'alimentation forcée à l'aide d'une pompe de surpression est fortement recommandée pour éviter les phénomènes de cavitation, compte tenu de la géométrie de la partie hydraulique et des débits importants.
Le débit de la pompe booster devra correspondre au moins au double de la valeur déclarée pour la pompe à pistons et la pression devra être comprise entre 2 et 3 bars.
Respecter ces conditions d'alimentation quel que soit le régime de service.

Toujours amorcer la pompe booster avant la pompe à pistons.
Il est conseillé d'installer un pressostat sur la ligne d'alimentation en aval des filtres pour protéger la pompe.

17.1.6 Filtration

Le bureau technique ou le service d'assistance clients est à disposition du client pour définir l'installation avec plus de précision ; les schémas (Fig. 12 et Fig. 12/a) sont fournis à titre indicatif.

Avec soupape de régulation à actionnement manuel

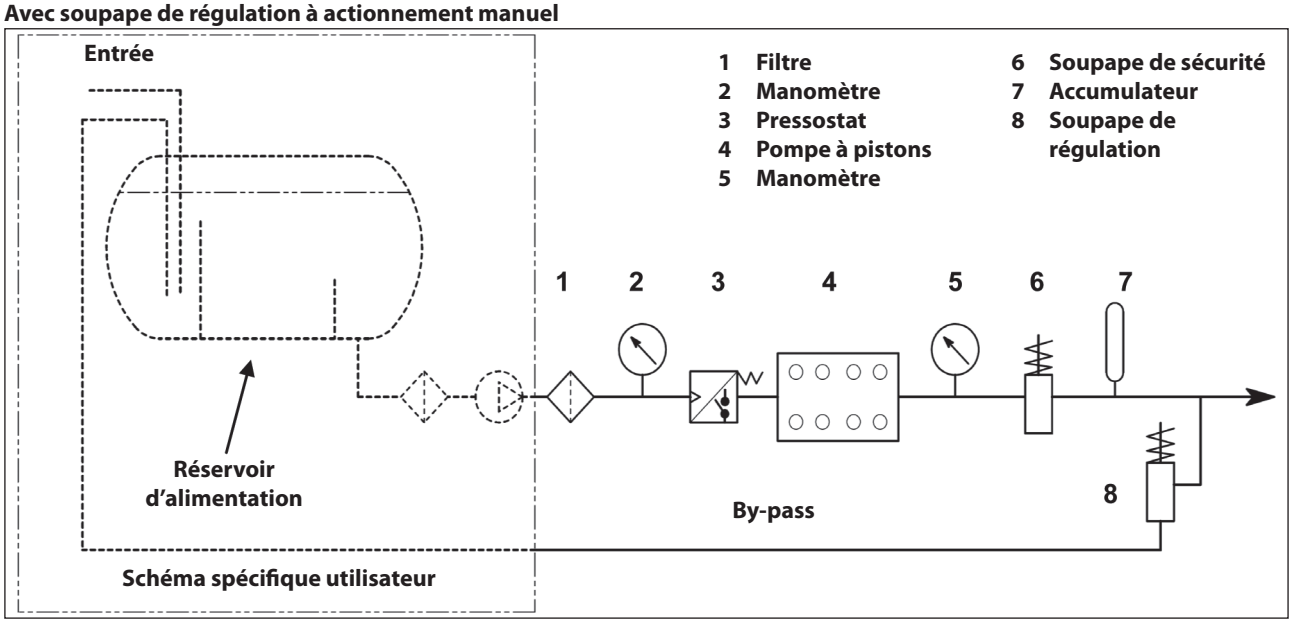


Fig. 12

Avec soupape de régulation à actionnement pneumatique

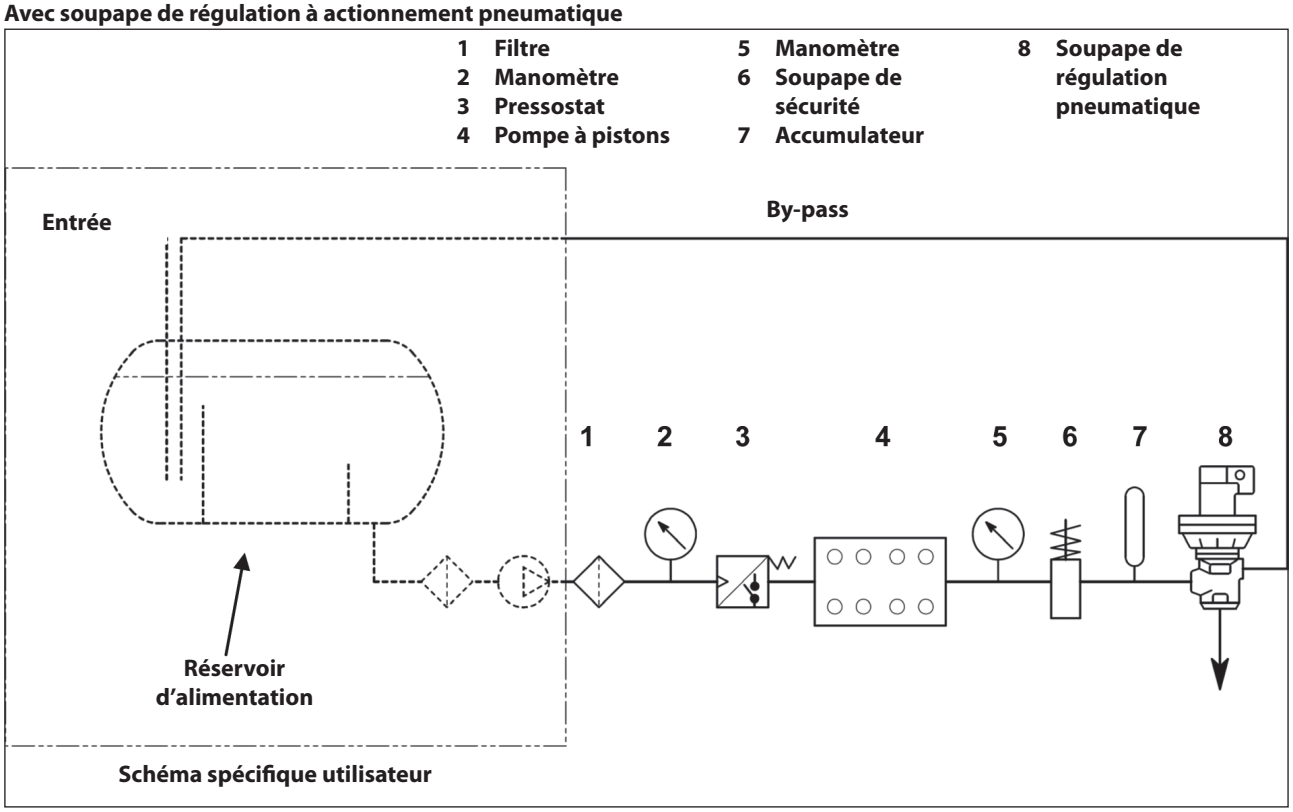


Fig. 12/a

Le filtre doit être installé le plus près possible de la pompe, accessible pour être facilement contrôlé.

Pour assurer le fonctionnement de la pompe, le degré de filtration et le pouvoir d'accumulation du système filtrant doivent être dimensionnés en fonction de l'objectif visant à atteindre le meilleur compromis entre la durée de la partie hydraulique de la pompe et le nombre d'heures de service entre un remplissage d'eau et un autre.
Le meilleur compromis conseillé est détaillé au parag. 17.1.1.

À la fin d'une journée de travail, après avoir utilisé la pompe, la laver avec de l'eau ne présentant pas de particules.

17.1.7 Entretien préventif

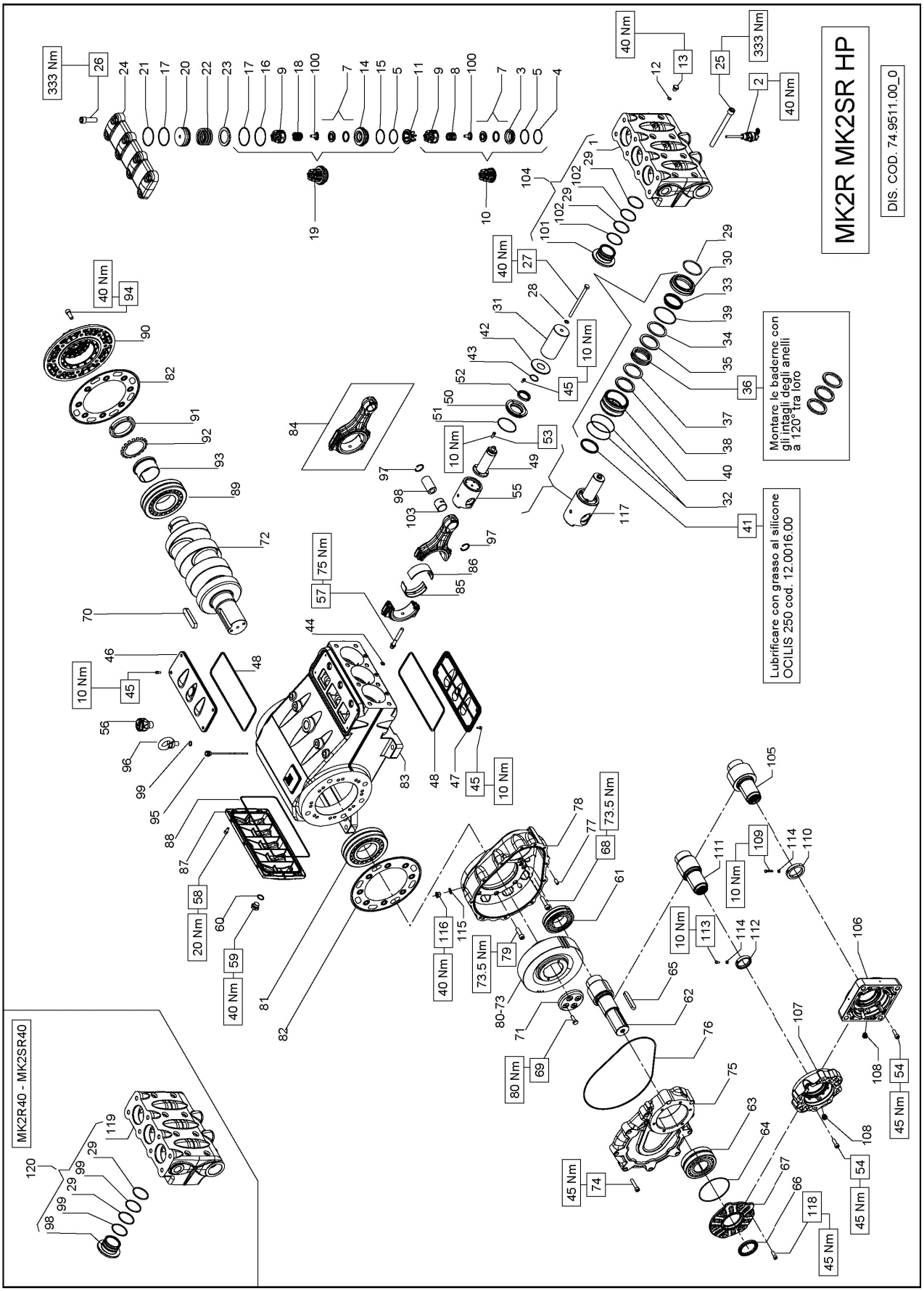
Pour assurer la fiabilité et l'efficacité de la pompe, respecter les intervalles d'entretien indiqués dans le tableau ci-dessous.

ENTRETIEN PRÉVENTIF	
Toutes les 500 heures	**Toutes les 1000 heures**
Vérification du niveau d'huile	Vidange de l'huile
	Vérification / Remplacement* : Soupapes Sièges de soupapes Ressorts de soupapes Guides de soupapes

Joints d'étanchéité HP-LP : leur durée dépend du degré de filtration, du type de fluide et du pourcentage en volume (voir chapitre 7).

* Pour le remplacement, suivre les indications contenues dans le ***Manuel de réparation***.

17.1.8 Vue éclatée et liste des pièces de rechange

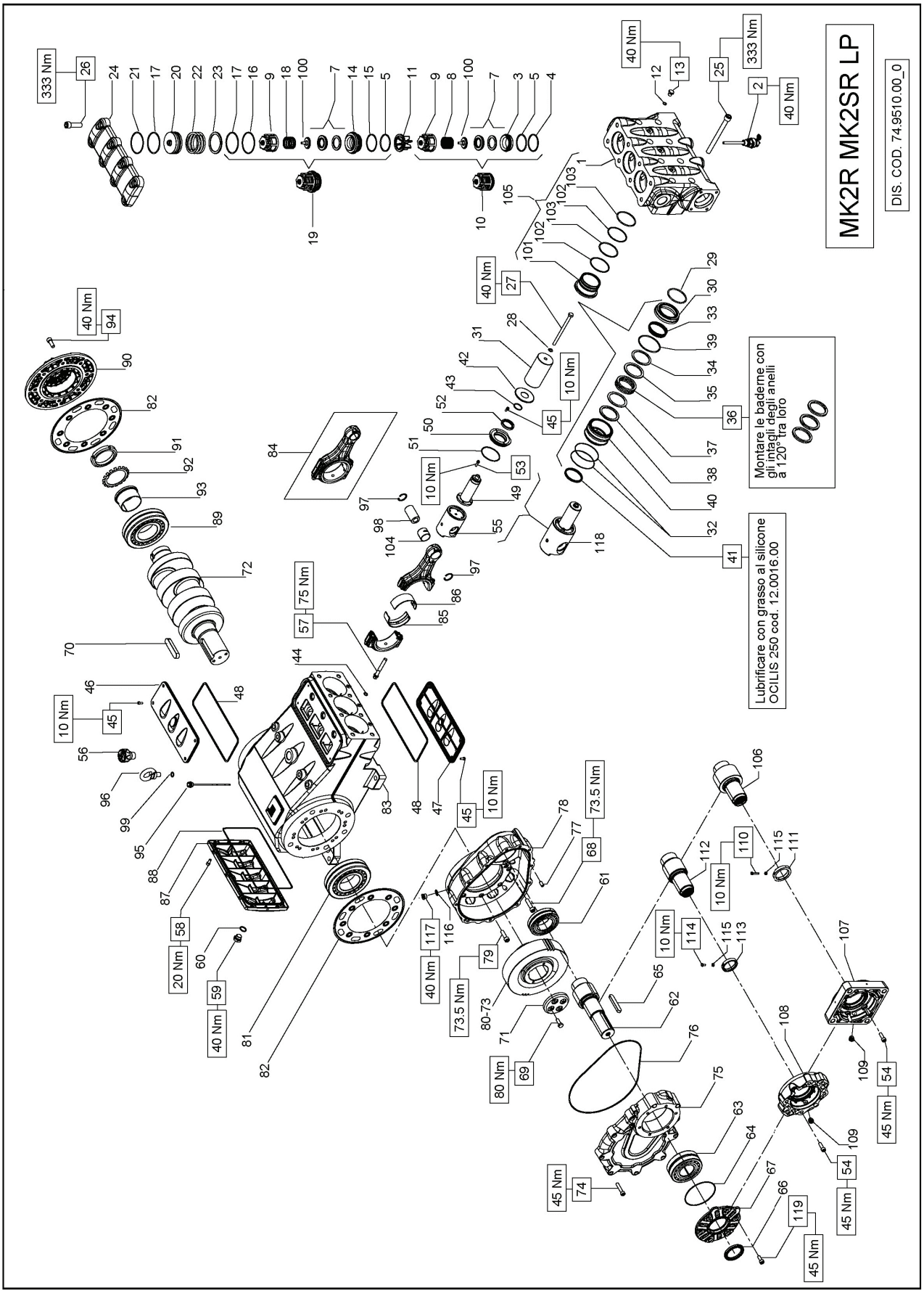


KIT RICAMBIO – SPARE KIT

		MK2R40 - MK2SR40 (D.40)	MK2R45 - MK2SR45 (D.45)	MK2R50 - MK2SR50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2430	KIT 2431	KIT 2100
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2456	KIT 2457	KIT 2458
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R40 - MK2SR40
MK2R45 - MK2SR45
MK2R50 - MK2SR50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.1010.56	ANELLO DI TESTA BADERNE D. 40		3
	74.1011.56	ANELLO DI TESTA BADERNE D. 45		
	74.1006.56	ANELLO DI TESTA BADERNE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	94.7730.00	MOLLA Dm. 51.5x36.0 - D. 40-45		3
	94.7770.00	MOLLA Dm. 61.5x35.0 - D. 50		
34	74.2165.56	ANELLO PER MOLLA D. 40		3
	74.2169.56	ANELLO PER MOLLA D. 45		
	74.2134.56	ANELLO PER MOLLA D. 50		
35	74.2164.72	ANELLO RASCHIATORE BADERNE D. 40	A-C	3
	74.2168.72	ANELLO RASCHIATORE BADERNE D. 45	A-C	
	74.2138.82	ANELLO RASCHIATORE BADERNE D. 50	A-C	
36	90.5655.00	ANELLO TEN. ALT. KC D. 40.0x56.0x19.5	A-C	3
	90.5680.00	ANELLO TEN. ALT. KC D. 45.0x61.0x19.5	A-C	
	90.5700.00	ANELLO TEN. ALT. KC D. 50.0x66.0x19.5	A-C	
37	90.5232.00	ANELLO ANTIEST. D. 40.0x56.0x2.5	A-C	3
	90.5236.00	ANELLO ANTIEST. D. 45.0x61.0x2.5	A-C	
	90.5245.00	ANELLO ANTIEST. D. 50.0x66.0x2.5	A-C	
38	74.2163.60	ANELLO DI SUPPORTO D. 40		3
	74.2167.60	ANELLO DI SUPPORTO D. 45		
	74.2142.60	ANELLO DI SUPPORTO D. 50		
39	90.4110.00	OR D. 61.91x3.53 NBR 70SH 165 - D. 40	A-C	3
	90.4117.00	OR D. 66.27x3.53 NBR 70SH 4262 - D. 45	A-C	
	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - D. 50	A-C	
40	74.2162.56	SUPPORTO BADERNE D. 40		3
	74.2166.56	SUPPORTO BADERNE D. 45		
	74.2146.56	SUPPORTO BADERNE D. 50		
41	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
42	74.2133.51	PARASPRUZZI		3
43	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
44	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
45	99.1837.00	VITE M6x14 UNI 5931		14
46	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
47	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
48	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
49	74.0503.36	STELO GUIDA PISTONE		3
50	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
51	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
52	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
53	99.1884.00	VITE M6x20 UNI 5931		12
55	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
56	98.2333.00	TAPPO CARICO OLIO G1"		1
57	99.4410.00	VITE SERRAGGIO BIELLA		6
58	99.3045.00	VITE M8x18 UNI 5931		6
59	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
60	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
61	91.8700.00	CUSCINETTO A RULLI		1
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	91.8610.00	CUSCINETTO A RULLI		1
64	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
65	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
66	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
67	74.2173.22	COPERCHIO PIGNONE		1
68	99.4335.00	VITE M12x50 UNI 5931		2
69	99.3684.00	VITE M10x30 UNI 5739		4
70	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
71	74.2252.55	FERMO CORONA		1
72	74.0202.35	ALBERO A GOMITI C. 72 - MKSR		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	99.3730.00	VITE M10x50 UNI 5931		10
75	74.2174.13	COPERCHIO RIDUTTORE		1
76	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
77	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
78	74.2175.13	SCATOLA RIDUTTORE		1
79	99.4305.00	VITE M12x40 UNI 5931		6
81	91.8850.00	CUSCINETTO A RULLI		1
82	74.2130.84	GUARNIZIONE LATERALE	C	2
83	74.0101.13	CARTER POMPA		1
84	74.0302.01	BIELLA COMPLETA		3
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
87	74.1600.22	COPERCHIO CARTER	C	1
88	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
89	91.8852.00	CUSCINETTO A RULLI		1
90	74.1500.22	COPERCHIO CUSCINETTO		1
91	93.0800.00	GHIERA DI BLOCCAGGIO		1
92	96.8300.00	ROSETTA DI SICUREZZA		1
93	91.8800.00	BUSSOLA DI PRESSIONE		1
94	99.4280.00	VITE M12x30 UNI 5931		8
95	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
96	93.1050.00	GOLFARE M16 UNI 2947		2
97	90.0697.00	ANELLO D'ARRESTO J35		6
98	97.7450.00	SPINOTTO D. 35x64		3
99	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
100	36.2090.51	GUIDA INTERNA VALVOLA		6
101	74.2151.56	BOCCOLA TESTATA		3
102	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
103	90.9173.00	BOCCOLA PIEDE BIELLA		3
104	74.1206.01	TESTATA CON BOCCOLA D. 40		1
	74.1203.01	TESTATA CON BOCCOLA D. 45-50		
115	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
116	98.2086.00	TAPPO G 3/8"x12		2
117	74.6062.01	GR. GUIDA PISTONE		3
118	99.3668.00	VITE M10x25 5931		6
119	74.1206.15	TESTATA D. 40 HP		1
	74.1207.15	TESTATA D. 40 HP - NPT		
120	74.1206.01	TESTATA CON BOCCOLA D. 40		1
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
105	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
106	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
108	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
110	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
114	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
107	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
108	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
111	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
112	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
113	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
114	92.2025.00	DADO M6x5 UNI 5588		1


MK2R MK2SR LP
DIS. COD. 74.9510.00_0
Montare le baderne con gli intagli degli anelli a 120° tra loro
Lubrificare con grasso al silicone OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT

		MK2R55 - MK2SR55 (D.55)	MK2R60 - MK2SR60 (D.60)	MK2R65- MK2SR65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2102	KIT 2103	KIT 2104
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2453	KIT 2454	KIT 2455
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R55 - MK2SR55
MK2R60 - MK2SR60
MK2R65 - MK2SR65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	**10.7443.01**	**DISPOS. APERTURA VALVOLE ASPIR.**		**3**
3	**36.2066.66**	**SEDE VALVOLA ASPIRAZIONE**		**3**
4	**90.5270.00**	**ANELLO ANTIEST. D. 61.2x67.0x2.0**	**C**	**3**
5	**90.4105.00**	**OR D. 59.92x3.53 NBR 90SH 4237**	**C**	**6**
7	**36.2087.01**	**VALVOLA SFERICA**		**6**
8	**94.7698.00**	**MOLLA Dm. 41.5x37.9**		**3**
9	**36.2060.01**	**GUIDA VALVOLA**		**6**
10	**36.7150.01**	**GR. VALVOLA D'ASPIRAZIONE**	**B**	**3**
11	**74.2105.51**	**DISTANZIALE GUIDA VALVOLA**	**B**	**3**
12	**90.3584.00**	**OR D. 10.82x1.78 NBR 90SH 2043**	**C**	**3**
13	**98.2046.00**	**TAPPO G 1/4"x13**		**3**
14	**36.2068.66**	**SEDE VALVOLA DI MANDATA**		**3**
15	**90.5273.00**	**ANELLO ANTIEST. D. 61.4x67.5x1.5**	**C**	**3**
16	**90.5290.00**	**ANELLO ANTIEST. D. 77.2x83.0x1.5**	**C**	**3**
17	**90.4134.00**	**OR D. 75.80x3.53 NBR 70SH 4300**	**B-C**	**6**
18	**94.7700.00**	**MOLLA Dm. 41.5x38.3**		**3**
19	**36.7152.01**	**GR. VALVOLA DI MANDATA**	**B**	**3**
20	**74.2109.70**	**TAPPO VALVOLE DI MANDATA**		**3**
21	**90.5293.00**	**ANELLO ANTIEST. D. 77.4x83.2x1.5**	**B-C**	**3**
22	**94.8000.00**	**MOLLA Dm. 75.0x49.6**		**3**
23	**74.2107.66**	**ANELLO SEDE VALVOLA DI MANDATA**		**3**
24	**74.2101.15**	**COPERCHIO VALVOLE**		**1**
25	**99.5222.00**	**VITE M16x180 UNI 5931**		**8**
26	**99.5147.00**	**VITE M16x55 UNI 5931**		**8**
27	**99.3850.00**	**VITE M10x160 UNI 5737**		**3**
28	**96.7105.00**	**ROSETTA D. 10.0x18.0x0.9**	**C**	**3**
29	**90.4185.00**	**OR D. 72.00x4.00 NBR 70SH**	**A-C**	**3**
30	74.1007.56	ANELLO DI TESTA BADERNE D. 55		3
	74.1008.56	ANELLO DI TESTA BADERNE D. 60		
	74.1009.56	ANELLO DI TESTA BADERNE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	**90.3722.00**	**OR D. 96.00x2.00 NBR 70SH**	**A-C**	**6**
33	94.7770.00	MOLLA Dm. 61.5x35.0 - MK2R MK2SR 55		3
	94.7900.00	MOLLA Dm. 71.5x35.0 - MK2R MK2SR 60-65		
34	74.2135.56	ANELLO PER MOLLA D. 55		3
	74.2136.56	ANELLO PER MOLLA D. 60		
	74.2137.56	ANELLO PER MOLLA D. 65		
35	74.2139.82	ANELLO RASCHIATORE D. 55	A-C	3
	74.2140.82	ANELLO RASCHIATORE D. 60	A-C	
	74.2141.82	ANELLO RASCHIATORE D. 65	A-C	
36	90.5725.00	BADERNE D. 55.0x71.0x19.5	A-C	3
	90.5750.00	BADERNE D. 60.0x76.0x19.5	A-C	
	90.5775.00	BADERNE D. 65.0x81.0x19.5	A-C	
37	90.5267.00	ANELLO ANTIEST. D. 55.0x71.0x2.5	A-C	3
	90.5269.00	ANELLO ANTIEST. D. 60.0x76.0x2.5	A-C	
	90.5275.00	ANELLO ANTIEST. D. 65.0x81.0x2.5	A-C	
38	74.2143.60	ANELLO DI SUPPORTO D. 55		3
	74.2144.60	ANELLO DI SUPPORTO D. 60		
	74.2145.60	ANELLO DI SUPPORTO D. 65		
39	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - MK2R MK2SR 55	A-C	3
	90.4141.00	OR D. 85.32x3.53 NBR 70SH 4337 - MK2R MK2SR 60-65	A-C	
40	74.2147.56	SUPPORTO BADERNE D. 55		3
	74.2148.56	SUPPORTO BADERNE D. 60		
	74.2149.56	SUPPORTO BADERNE D. 65		
41	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
42	**74.2133.51**	**PARASPRUZZI**		**3**
43	**90.3865.00**	**OR D. 29.82x2.62 NBR 70SH 3118**	**C**	**3**
44	**90.3825.00**	**OR D. 10.78x2.62 NBR 70SH 3043**	**A-C**	**3**
45	**99.1837.00**	**VITE M6x14 UNI 5931**		**14**
46	**74.1501.22**	**COPERCHIO ISPEZIONE CHIUSO**		**1**
47	**74.1502.22**	**COPERCHIO ISPEZIONE APERTO**		**1**
48	**90.4500.00**	**OR D. 266.07x5.33 NBR 70SH**	**C**	**2**
49	**74.0503.36**	**STELO GUIDA PISTONE**		**3**
50	**74.2131.71**	**COPERCHIO PARAOLIO GUIDA PISTONE**		**3**
51	**90.3914.00**	**OR D. 72.69x2.62 NBR 90SH 3287**	**C**	**3**
52	**90.1679.00**	**ANELLO RAD. D. 40.0x52.0x7.0**	**C**	**3**
53	**99.1884.00**	**VITE M6x20 UNI 5931**		**12**
55	79.0504.43	GUIDA PISTONE		3
	790.0505.43	GUIDA PISTONE +1.0		
56	**98.2333.00**	**TAPPO CARICO OLIO G1"**		**1**
57	**99.4410.00**	**VITE SERRAGGIO BIELLA**		**6**
58	**99.3045.00**	**VITE M8x18 UNI 5931**		**6**
59	**98.2187.00**	**TAPPO G 1/2"X13 TE22 ZINC.**		**1**
60	**96.7514.00**	**ROSETTA D. 21.5x27.0x1.5**		**1**
61	**91.8700.00**	**CUSCINETTO A RULLI**		**1**
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	**91.8610.00**	**CUSCINETTO A RULLI**		**1**
64	**90.3926.50**	**OR D. 126.67x2.62 NBR 70SH 3500**	**C**	**1**
65	**91.5030.00**	**LINGUETTA 16.0x10.0x90.0**		**1**
66	**90.1800.00**	**ANELLO RAD. D. 60.0x80.0x8.0**	**C**	**1**
67	**74.2173.22**	**COPERCHIO PIGNONE**		**1**
68	**99.4335.00**	**VITE M12x50 UNI 5931**		**2**
69	**99.3684.00**	**VITE M10x30 UNI 5739**		**4**
70	**91.5120.00**	**LINGUETTA 22.0x14.0x100.0**		**1**
71	**74.2252.55**	**FERMO CORONA**		**1**
72	74.0202.35	ALBERO A GOMITI C. 72 - MK2R		1
	74.0201.35	ALBERO A GOMITI C. 72 - MK2SR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	**99.3730.00**	**VITE M10x50 UNI 5931**		**10**
75	**74.2174.13**	**COPERCHIO RIDUTTORE**		**1**
76	**90.4173.00**	**OR D. 338.00x3.60 NBR 70SH**	**C**	**1**
77	**97.6230.00**	**SPINA CILINDRICA D. 10.0x24.0**		**2**
78	**74.2175.13**	**SCATOLA RIDUTTORE**		**1**
79	**99.4305.00**	**VITE M12x40 UNI 5931**		**6**
81	**91.8850.00**	**CUSCINETTO A RULLI**		**1**
82	**74.2130.84**	**GUARNIZIONE LATERALE**	**C**	**2**
83	**74.0101.13**	**CARTER POMPA**		**1**
84	**74.0302.01**	**BIELLA COMPLETA**		**3**
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0.50 - SUP.	D	
87	**74.1600.22**	**COPERCHIO CARTER**		**1**
88	**90.4160.00**	**OR D. 304.39x3.53 NBR 70SH 41200**	**C**	**1**
89	**91.8852.00**	**CUSCINETTO A RULLI**		**1**
90	**74.1500.22**	**COPERCHIO CUSCINETTO**		**1**
91	**93.0800.00**	**GHIERA DI BLOCCAGGIO**		**1**
92	**96.8300.00**	**ROSETTA DI SICUREZZA**		**1**
93	**91.8800.00**	**BUSSOLA DI PRESSIONE**		**1**
94	**99.4280.00**	**VITE M12x30 UNI 5931**		**8**
95	**98.2092.00**	**TAPPO CON ASTA G 3/8"x163**		**2**
96	**93.1050.00**	**GOLFARE M16 UNI 2947**		**2**
97	**90.0697.00**	**ANELLO D'ARRESTO J35**		**6**
98	**97.7450.00**	**SPINOTTO D. 35x64**		**3**
99	**90.3833.00**	**OR D. 13.95x2.62 NBR 70SH 3056**	**C**	**2**
100	**36.2089.51**	**GUIDA INTERNA VALVOLA**		**6**
101	**74.2150.56**	**BOCCOLA TESTATA**		**3**
102	**90.5285.00**	**ANELLO ANTIEST. D. 72.5x78.5x1.5**		**6**
103	**90.4129.00**	**OR D. 72.62x3.53 NBR 70SH 4287**		**6**
104	**90.9173.00**	**BOCCOLA PIEDE BIELLA**		**3**
105	**74.1201.01**	**TESTATA CON BOCCOLA**		**1**
116	**96.7380.00**	**ROSETTA D. 17.5x23.0x1.5**		**2**
117	**98.2086.00**	**TAPPO G 3/8"x12**		**2**
118	**74.6062.01**	**GR. GUIDA PISTONE**		**3**
119	**99.3668.00**	**VITE M10x25 5931**		**6**
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
54	**99.3686.00**	**VITE M10x30 UNI 5931**		**6**
80	**10.0889.35**	**CORONA Z56 R. 2.667 - ELICOIDALE**		**1**
106	**10.0905.55**	**PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.**		**1**
107	**10.0909.20**	**FLANGIA MOTORE IDRAULICO SAE-D**		**1**
109	**90.2065.00**	**TAPPO PER FORO D. 17 - TTN19**		**2**
110	**74.2178.34**	**VITE M6x30 CON INCAVO COMPLETA**		**1**
111	**74.2176.71**	**ANELLO PER ALBERO D. 55 HYDR.PACK**		**1**
115	**92.2025.00**	**DADO M6x5 UNI 5588**		**1**
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
54	**99.3686.00**	**VITE M10x30 UNI 5931**		**6**
80	**10.0907.35**	**CORONA Z60 R. 3.375 - ELICOIDALE**		**1**
108	**10.0908.20**	**FLANGIA MOTORE IDRAULICO SAE-C**		**1**
109	**90.2065.00**	**TAPPO PER FORO D. 17 - TTN19**		**2**
112	**10.0906.55**	**PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.**		**1**
113	**74.2171.71**	**ANELLO PER ALBERO D. 50 HYDR.PACK**		**1**
114	**70.2270.34**	**VITE M6x12 CON INCAVO COMPLETA**		**1**
115	**92.2025.00**	**DADO M6x5 UNI 5588**		**1**

17.2 Pompe version MK2C-MK25C

17.2.1 Instructions d'utilisation

Les pompes ont été conçues pour fonctionner dans des environnements à atmosphère non déflagrante. Le ***bureau technique*** ou ***le service d'assistance clients*** est à la disposition du client pour la meilleure définition de l'installation.

17.2.2 Température de service

La température admise pour le fluide est de : -30 °C÷+30 °C. Pour d'autres valeurs contacter le ***bureau technique*** ou le ***service d'assistance clients***.

17.2.3 Débit et pression maximums

Les performances indiquées dans le catalogue se réfèrent aux performances maximales de la pompe. **Quelle que soit** la puissance utilisée, la pression et le régime maximums indiqués sur la plaque signalétique ne peuvent être dépassés qu'avec l'autorisation expresse du ***bureau technique*** ou du ***service d'assistance clients***.

17.2.4 Caractéristiques techniques

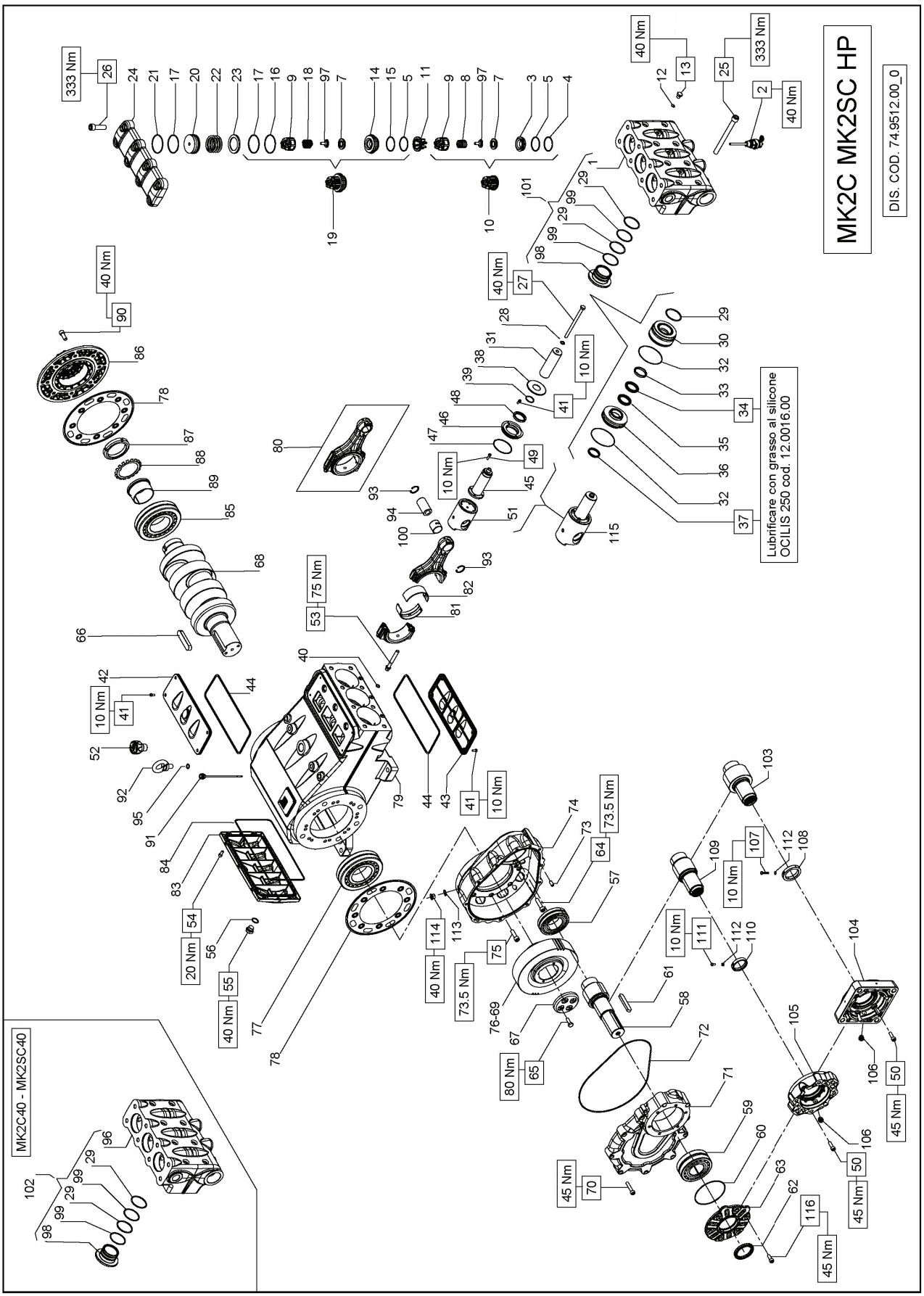
Modèle	Tr/min	Débit		Pression		Puissance	
		l/min	Tr/min	bar	psi	kW	ch
MK2SC 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2SC 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2SC 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2SC 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2SC 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2SC 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Modèle	Tr/min	Débit		Pression		Puissance	
		l/min	Tr/min	bar	psi	kW	ch
MK2SC 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2SC 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SC 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2SC 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2SC 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2SC 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.2.5 Dimensions et poids

Pour les dimensions et le poids des pompes, se référer aux schémas du chapitre 6.

17.2.6 Vue éclatée et liste des pièces de rechange



KIT RICAMBIO – SPARE KIT		MK2C40 - MK2SC40 (D.40)	MK2C45 - MK2SC45 (D.45)	MK2C50 - MK2SC50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2258		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2C40 - MK2SC40
MK2C45 - MK2SC45
MK2C50 - MK2SC50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIRAZ.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2118.56	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7222.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7223.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE HP		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE - FLANGIATO		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72 - MKSC		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKC		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1

17.3 Pompe version MK2SH

17.3.1 Instructions d'utilisation



La pompe a été conçue pour opérer dans des environnements ayant une atmosphère potentiellement non déflagrante, avec de l'eau filtrée (voir parag. 9.7).
Noter qu'il ne sera pas possible d'utiliser d'autres fluides sauf accord formel préalable du ***bureau technique*** ou du ***service d'assistance clients***.

17.3.2 Température de l'eau



La température maximale de l'eau autorisée est de 40 °C. Cependant, il est possible d'utiliser la pompe avec de l'eau à une température allant jusqu'à 60 °C, mais uniquement pendant de courtes périodes.
Dans ce cas, il est conseillé de consulter le ***bureau technique*** ou le ***service d'assistance clients***.

17.3.3 Débit et pression maximums

Les performances indiquées dans le catalogue se réfèrent aux performances maximales de la pompe. **Quelle que soit** la puissance utilisée, la pression et le régime maximums indiqués sur la plaque signalétique ne peuvent être dépassés qu'avec l'autorisation expresse du ***bureau technique*** ou du ***service d'assistance clients***.

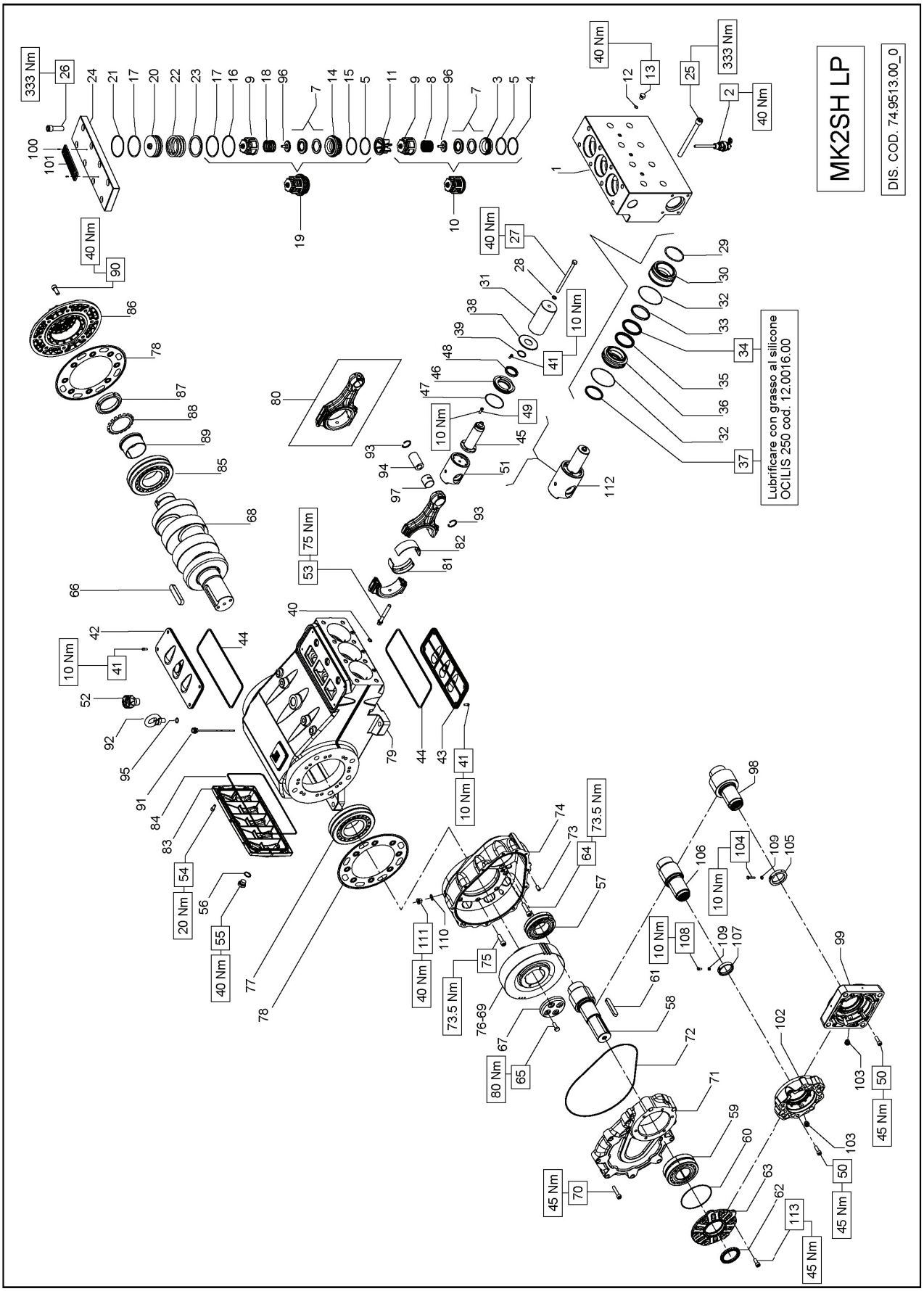
17.3.4 Caractéristiques techniques

Modèle	Tr/min	Débit		Pression		Puissance	
		l/min	Tr/min	bar	psi	kW	ch
MK2SH 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SH 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.3.5 Dimensions et poids

Pour les dimensions et le poids des pompes, se référer aux schémas du chapitre 6.

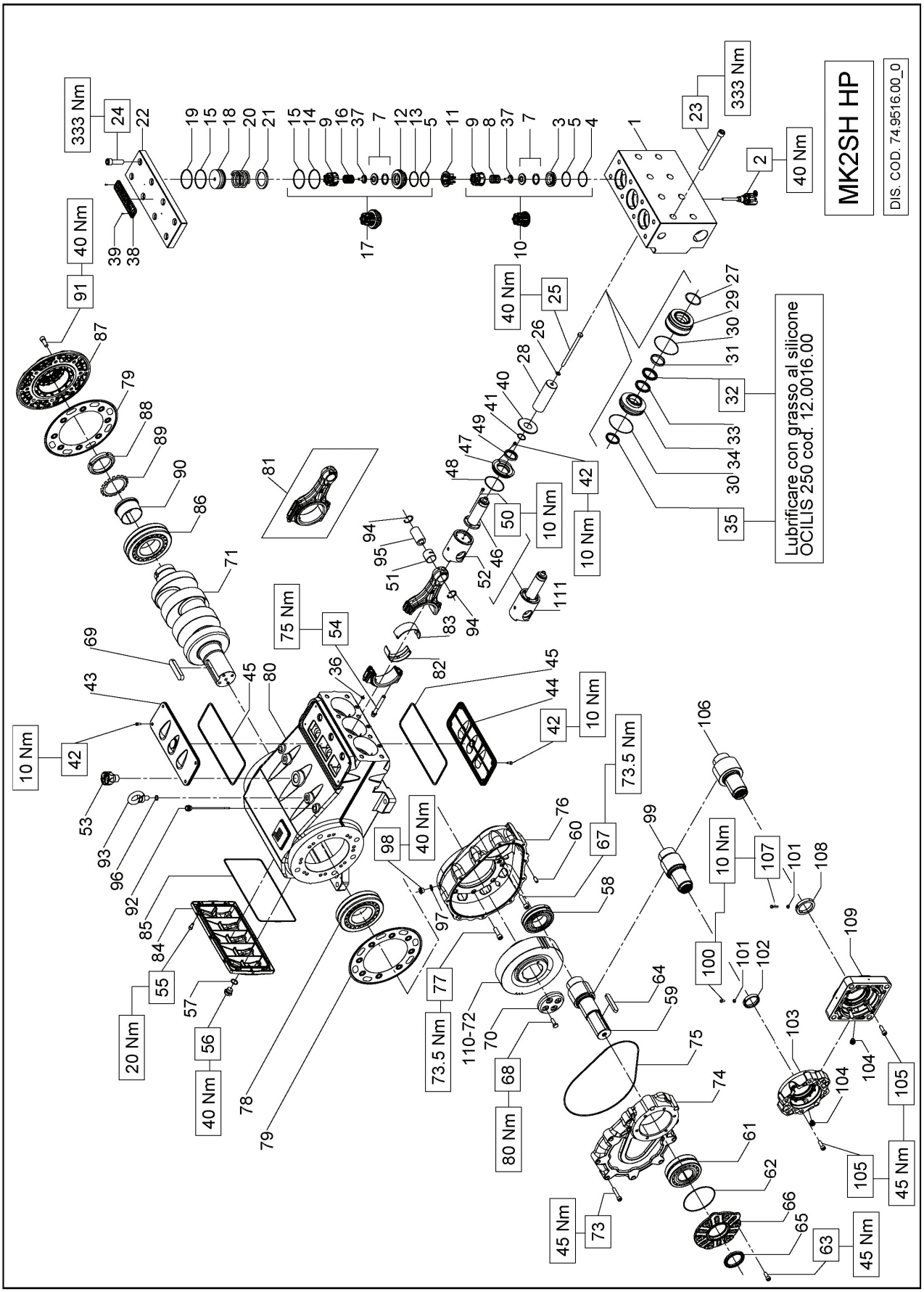
17.3.6 Vue éclatée et liste des pièces de rechange



KIT RICAMBIO – SPARE KIT		MK2S65H (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2047
B	Kit valvole – Valves kit	KIT 2048
C	Kit tenute complete – Complete seals kit	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)

MK2S65H

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1210.56	TESTATA LP		1
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2161.56	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2116.56	CAMICIA PISTONE D. 65		3
31	74.0405.09	PISTONE D. 65x127		3
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1005.92	ANELLO DI TESTA PISTONE D. 65		3
34	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	3
35	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	3
36	74.2122.68	SUPPORTO GUARNIZIONE D. 65		3
37	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	3
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72		1
69	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		3
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
82	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	90.9173.00	BOCCOLA PIEDE BIELLA		3
100	91.5703.00	RIVETTO AUTOF. D. 2.5x8 UNI 7346		2
101	97.8276.00	MARCHIO PRATISSOLI		1
110	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
111	98.2086.00	TAPPO G 3/8"x12		2
112	74.6062.01	GR. GUIDA PISTONE		3
113	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
98	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
99	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
104	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
105	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
102	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
107	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
108	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
109	92.2025.00	DADO M6x5 UNI 5588		1


MK2SH HP
DIS. COD. 74.9516.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK2SH45 (D.45)
A	Kit tenute pompanti – Plunger packing kit	KIT 2053
B	Kit valvole – Valves kit	KIT 2055
C	Kit tenute complete – Complete seals kit	KIT 2451
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0.25) - 2078 (+0.50)

MK2SH45

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1212.56	TESTATA POMPA D. 45		1
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	36.2069.66	SEDE VALVOLA DI MANDATA		3
13	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
14	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
15	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
16	94.7605.00	MOLLA Dm. 28.5x45.4		3
17	36.7153.01	GR. VALVOLA DI MANDATA	B	3
18	74.2110.70	TAPPO VALVOLE DI MANDATA		3
19	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
20	94.7750.00	MOLLA Dm. 58.0x45.4		3
21	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
22	74.2181.56	COPERCHIO VALVOLE		1
23	99.5222.00	VITE M16x180 UNI 5931		8
24	99.5147.00	VITE M16x55 UNI 5931		8
25	99.3850.00	VITE M10x160 UNI 5737		3
26	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
27	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	3
29	74.2112.56	CAMICIA PISTONE D. 45		3
28	74.0401.09	PISTONE D. 45x127		3
30	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
31	74.1001.92	ANELLO DI TESTA PISTONE D. 45		3
32	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	3
33	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	3
34	74.2118.68	SUPPORTO GUARNIZIONE D. 45		3
35	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	3
36	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
37	36.2090.51	GUIDA INTERNA VALVOLA		6
38	97.8276.00	MARCHIO PRATISSOLI		1
39	91.5703.00	RIVETTO AUTOFILETTANTE D. 2.5x8.0		2
40	74.2133.51	PARASPRUZZI		3
41	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
42	99.1837.00	VITE M6x14 UNI 5931		14
43	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
44	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
45	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
46	74.0503.36	STELO GUIDA PISTONE		3
47	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
48	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
49	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
50	99.1884.00	VITE M6x20 UNI 5931		12
51	90.9173.00	BOCCOLA PIEDE BIELLA		3
52	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
53	98.2333.00	TAPPO CARICO OLIO G1"		1
54	99.4410.00	VITE SERRAGGIO BIELLA		6
55	99.3045.00	VITE M8x18 UNI 5931		6
56	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
57	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
58	91.8700.00	CUSCINETTO A RULLI		1
59	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
60	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
61	91.8610.00	CUSCINETTO A RULLI		1
62	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
63	99.3668.00	VITE M10x25 5931		6
64	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
65	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
66	74.2173.22	COPERCHIO PIGNONE		1
67	99.4335.00	VITE M12x50 UNI 5931		2
68	99.3684.00	VITE M10x30 UNI 5739		4
69	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
70	74.2252.55	FERMO CORONA		1
71	74.0202.35	ALBERO A GOMITI C. 72		1
72	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
73	99.3730.00	VITE M10x50 UNI 5931		10
74	74.2174.13	COPERCHIO RIDUTTORE		1
75	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
76	74.2175.13	SCATOLA RIDUTTORE		1
77	99.4305.00	VITE M12x40 UNI 5931		6
78	91.8850.00	CUSCINETTO A RULLI		1
79	74.2130.84	GUARNIZIONE LATERALE	C	2
80	74.0101.13	CARTER POMPA		1
81	74.0302.01	BIELLA COMPLETA		3
82	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
83	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
84	74.1600.22	COPERCHIO CARTER		1
85	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
86	91.8852.00	CUSCINETTO A RULLI		1
87	74.1500.22	COPERCHIO CUSCINETTO		1
88	93.0800.00	GHIERA DI BLOCCAGGIO		1
89	96.8300.00	ROSETTA DI SICUREZZA		1
90	91.8800.00	BUSSOLA DI PRESSIONE		1
91	99.4280.00	VITE M12x30 UNI 5931		8
92	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
93	93.1050.00	GOLFARE M16 UNI 2947		2
94	90.0697.00	ANELLO D'ARRESTO J35		6
95	97.7450.00	SPINOTTO D. 35x64		3
96	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
97	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
98	98.2086.00	TAPPO G 3/8"x12		2
111	74.6062.01	GR. GUIDA PISTONE		3
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
101	92.2025.00	DADO M6x5 UNI 5588		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
110	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
99	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
100	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
101	92.2025.00	DADO M6x5 UNI 5588		1
102	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
103	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
110	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1

18 DÉCLARATION D'INCORPORATION

DÉCLARATION D'INCORPORATION

(Conformément à l'annexe II de la directive européenne 2006/42/CE)

Le fabricant **INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 - 42049 - S. ILARIO D'ENZA - Italie DÉCLARE** sous sa responsabilité exclusive, que le produit identifié et décrit ci-après :

Désignation :	Pompe
Type :	Pompe alternative à pistons pour eau à haute pression
Marque de fabrique :	INTERPUMP GROUP
Modèle :	Séries 74 MK2, MK2S, MK2R, MK2SR, MK2C, MK2SC, MK2SH

est conforme à la directive Machines 2006/42/CE
Normes appliquées : UNI EN ISO 12100- UNI EN 809

La pompe identifiée ci-dessus satisfait à l'ensemble des exigences essentielles de sécurité et de santé citées au point 1 de l'annexe I de la directive Machines :
1.1.2 - 1.1.3 - 1.1.5 - 1.3.1 - 1.3.2 - 1.3.3 - 1.3.4 - 1.5.4 - 1.5.5 - 1.6.1 - 1.7.1 - 1.7.2 - 1.7.4 - 1.7.4.1 - 1.7.4.2 et la documentation technique relative a été rédigée conformément à l'annexe VII B.

De plus, le fabricant s'engage à rendre disponible, suite à une demande adéquatement motivée, une copie de la documentation technique relative à la pompe dans les modes et les termes à définir.

La pompe ne doit pas être mise en service avant que l'installation ou la machine finale dans laquelle elle doit être incorporée ait été déclarée conforme aux dispositions des directives et / ou normes qui s'y rattachent.

Personne autorisée à établir le dossier technique — Nom : Maurizio Novelli
Adresse : INTERPUMP GROUP S.p.A. - Via E. Fermi, 25 - 42049 - S. ILARIO D'ENZA (RE) - Italie

Le responsable :
Reggio Emilia - Janvier 2017

Ing. Massimiliano Bizzarri

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1 EINLEITUNG

Diese Anleitung enthält die Anweisungen für den Betrieb und die Wartung der Pumpen MK2 und muss vor deren Inbetriebnahme sorgfältig gelesen und verstanden werden. Der einwandfreie Betrieb und die lange Lebensdauer der Pumpe sind von der korrekten Verwendung und angemessenen Wartung abhängig.
Interpump Group haftet nicht für Schäden durch Nachlässigkeit oder Nichtbeachtung der in dieser Anleitung beschriebenen Vorschriften.
Stellen Sie mit einer Empfangsprüfung fest, ob die Pumpe unbeschädigt und vollständig angeliefert worden ist.
Melden Sie etwaige Unstimmigkeiten vor Installation und Inbetriebnahme der Pumpe.

2 BESCHREIBUNG DER SYMBOLE

Lesen Sie vor jeder Arbeit stets aufmerksam die Anweisungen in dieser Anleitung.



Warnzeichen



Lesen Sie vor jeder Arbeit stets aufmerksam die Anweisungen in dieser Anleitung.



Gefahrenzeichen
Stromschlaggefahr.



Gefahrenzeichen
Schutzmaske tragen.



Gefahrenzeichen
Schutzbrille tragen.



Gefahrenzeichen
Vor jeder Arbeit Schutzhandschuhe anziehen.



Gefahrenzeichen
Geeignetes Schuhwerk tragen

3 SICHERHEIT

3.1 Allgemeine Sicherheitshinweise

Die unsachgemäße Verwendung von Pumpen und Hochdrucksystemen sowie die Nichteinhaltung der Installations- und Wartungsvorschriften kann schwere Personen- und/oder Sachschäden verursachen.
Hochdrucksysteme dürfen nur von Personal installiert oder betrieben werden, das über die erforderlichen Kompetenzen verfügt und die Eigenschaften der zu verwendenden/installierenden Bestandteile kennt. Außerdem müssen alle möglichen Vorkehrungen getroffen werden, um höchste Sicherheit unter allen Betriebsbedingungen zu gewährleisten.
Weder der Installateur noch das Bedienungspersonal dürfen keine vernünftigerweise anwendbare Vorsichtsmaßnahme unterlassen, die zur Sicherheit beiträgt.

3.2 Grundlegende Sicherheitsanforderungen des Hochdrucksystems

1. Die Druckleitung muss stets ein Sicherheitsventil beinhalten.
2. Die Bestandteile des Hochdrucksystems, besonders der im Freien betriebenen Systeme, müssen in angemessener Weise gegen Regen, Frost und Hitze geschützt sein.
3. Die elektrischen Systemteile müssen gegen Spritzwasser geschützt sein und die einschlägigen Vorschriften erfüllen.
4. Die Hochdruckschläuche müssen dem maximalen Betriebsdruck des Systems entsprechend bemessen sein und dürfen ausschließlich innerhalb des vom Schlauchherstellers angegebenen Betriebsdruckbereichs verwendet werden. Die gleichen Forderungen gelten für das gesamte Hochdruckzubehör des Systems.
5. Die Endseiten der Hochdruckschläuche müssen umhüllt und an einer festen Struktur gesichert werden, um gefährliche Schläge beim Bersten oder Brechen der Verbindungen zu vermeiden.
6. Entsprechende Schutzgehäuse sind in den Antriebssystemen der Pumpe (Kupplungen, Riemenscheiben und Riemen, Nebenabtrieben) anzubringen.

3.3 Sicherheit bei der Arbeit



Der Betriebsbereich eines Hochdrucksystems muss deutlich gekennzeichnet und für Unbefugte unzugänglich sein und zu diesem Zweck möglichst abgesperrt oder umzäunt werden.
Personal, das befugt ist, diesen Bereich zu betreten, muss im Vorfeld über das korrekte Verhalten in diesem Bereich unterrichtet und über die Risiken informiert werden, die sich aus Defekten oder Störungen des Hochdrucksystems ergeben können.
Vor dem Start des Systems muss das Bedienungspersonal sicherstellen, dass:

1. das Hochdrucksystem ordnungsgemäß versorgt ist, siehe Kapitel9 Abschn. 9.5.
2. die Saugfilter der Pumpe perfekt sauber sind; es sollten Vorrichtungen für die Anzeige von Verstopfungen installiert werden.
3. die elektrischen Teile in angemessener Weise geschützt und in einwandfreiem Zustand sind.
4. die Hochdruckschläuche keine offensichtlichen Abriebspuren aufweisen und die Anschlüsse in einwandfreiem Zustand sind.
5. Je nach Anwendung, Gebrauch und Umgebungsbedingungen können die Außenflächen der Pumpe während des Betriebs hohe Temperaturen erreichen. Seien Sie daher vorsichtig, um den Kontakt mit den heißen Teilen zu verhindern.

Störungen oder begründete Zweifel, die vor oder während der Arbeit auftreten, müssen unverzüglich gemeldet und durch kompetentes Personal überprüfen werden. In diesen Fällen sofort den Druck abbauen und das Hochdrucksystem anhalten.

3.4 Verhaltensregeln bei Verwendung von Strahlrohren



1. Der Bediener muss immer seine Gesundheit und Sicherheit sowie die von Dritten, die direkt von seinen Handlungen betroffen sein können, an erste Stelle setzen. Seine Vorgehensweise muss stets durch den gesunden Menschenverstand und Verantwortungsbewusstsein geleitet sein.
2. Der Bediener hat immer einen Helm mit Schutzvisier, wasserfeste Schutzkleidung sowie Stiefel tragen, die für den Verwendungszweck geeignet sind und gute Haftung auch auf nassem Boden gewährleisten.

Hinweis: *Angemessene Arbeitskleidung schützt effizient vor Spritzwasser, jedoch nicht vor dem direkten Auftreffen eines Wasserstrahls oder vor Wasserspritzern aus unmittelbarer Nähe. Unter bestimmten Umständen können daher zusätzliche Sicherheitsmaßnahmen erforderlich sein.*

3. Es sollten Teams mit mindestens zwei Personen gebildet werden, die sich bei Bedarf sofort gegenseitig helfen und bei langen und schweren Arbeiten abwechseln können.

4. Der vom Aktionsradius des Strahls betroffene Arbeitsbereich muss unzugänglich und von Gegenständen frei geräumt sein, die durch den unter Druck stehenden Strahl Schaden nehmen bzw. Gefahrensituationen verursachen können.
5. Der Wasserstrahl darf immer nur auf den Arbeitsbereich gerichtet werden, dies auch bei vorbereitenden Prüfungen oder Inspektionen.
6. Der Bediener muss stets auf die Flugbahn der durch den Wasserstrahl abgelösten Partikel achten. Falls erforderlich, muss der Bediener geeignete Schutzwände vorsehen, um die gefährdeten Stellen zu schützen.
7. Während der Arbeit darf sich der Bediener durch nichts ablenken lassen. Personal, das den Arbeitsbereich betreten muss, hat solange zu warten, bis der Bediener die Arbeit unterbricht, und ihn daraufhin sofort über seine Anwesenheit in Kenntnis zu setzen.
8. Aus Sicherheitsgründen ist es unerlässlich, dass alle Mitglieder des Teams immer genau ihre gegenseitigen Absichten kennen, um gefährliche Missverständnisse zu vermeiden.
9. Das Hochdrucksystem darf nur gestartet und unter Druck gesetzt werden, nachdem alle Mitglieder des Teams auf ihrem Platz sind und der Bediener das Strahlrohr auf den Arbeitsbereich gerichtet hat.

3.5 Sicherheit bei der Wartung des Systems

1. Die Wartung des Hochdrucksystems muss zu den vom Hersteller vorgesehenen Intervallen erfolgen. Letzterer ist dafür verantwortlich, dass die gesamte Gruppe die gesetzlichen Anforderungen erfüllt.
2. Die Wartungsarbeiten müssen immer von autorisiertem Fachpersonal durchgeführt werden.
3. Der Ein- und Ausbau der Pumpe sowie der verschiedenen Bauteile darf ausschließlich durch autorisiertes Personal mithilfe zweckmäßiger Werkzeuge erfolgen, um Schäden an den Bauteilen und insbesondere an den Verbindungen zu vermeiden.
4. Verwenden Sie zur Gewähr absoluter Zuverlässigkeit und Sicherheit stets nur Original-Ersatzteile.

4 KENNZEICHNUNG DER PUMPE

Jede Pumpe ist durch ein Typenschild mit folgenden Angaben gekennzeichnet:

- Modell und Version der Pumpe
- Seriennummer
- Max. Drehzahl
- Leistungsaufnahme PS - kW
- Druck bar - PSI
- Fördermenge l/min - Gpm

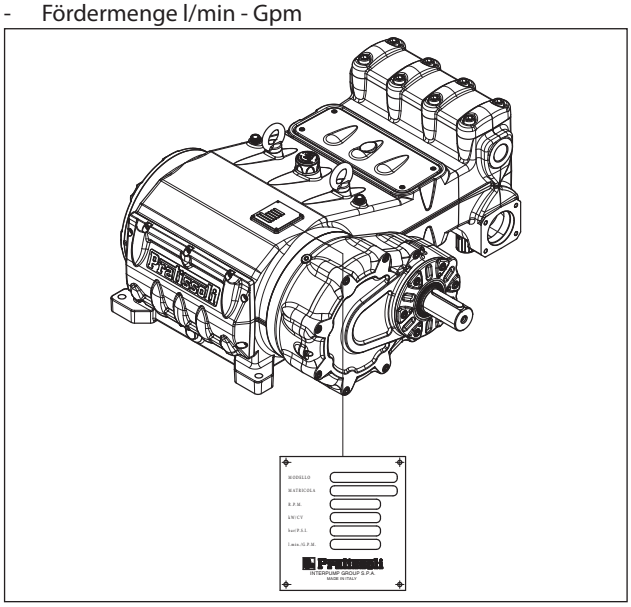


Abb. 1

Modell, Version und Seriennummer sind bei der Bestellung von Ersatzteilen immer anzugeben

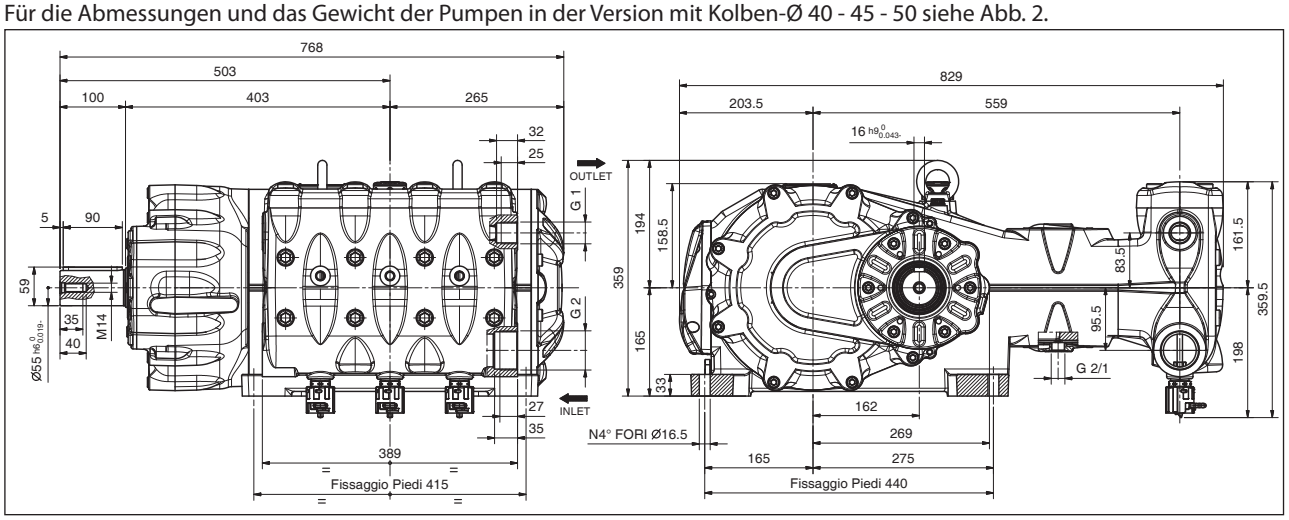
5 TECHNISCHE DATEN

Modell	1/min	Fördermenge		Druck		Leistung	
		l/min	Gpm	bar	psi	kW	PS
MK2 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Modell	1/min	Fördermenge		Druck		Leistung	
		l/min	Gpm	bar	psi	kW	PS
MK2S 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2S 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2S 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2S 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2S 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2S 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

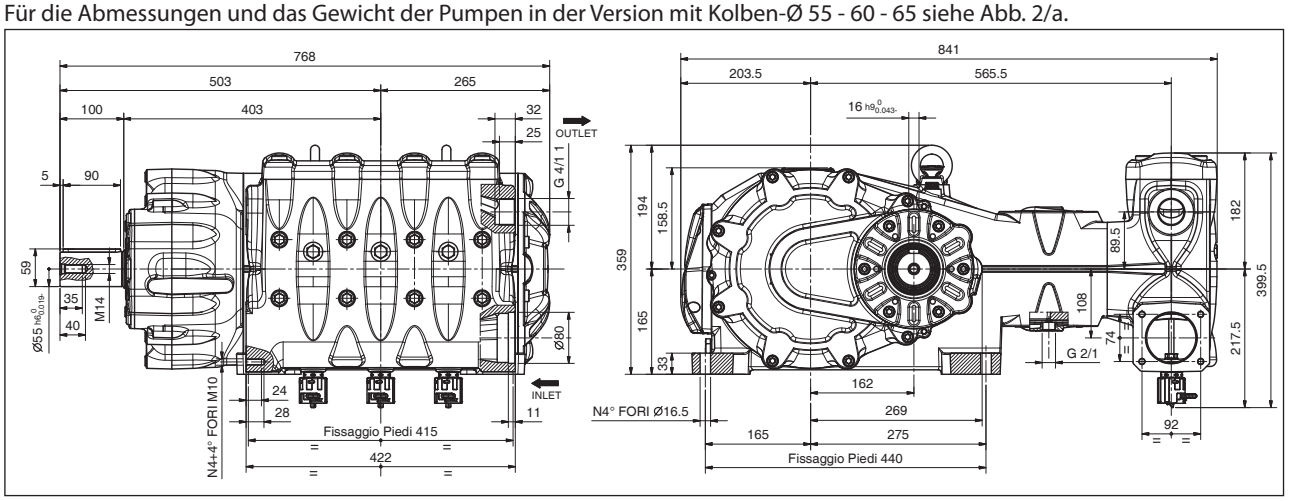
6 ABMESSUNGEN UND GEWICHT

Für die Abmessungen und das Gewicht der Pumpen in der Version mit Kolben-Ø 40 - 45 - 50 siehe Abb. 2.



Trockengewicht 398 kg. Abb. 2

Für die Abmessungen und das Gewicht der Pumpen in der Version mit Kolben-Ø 55 - 60 - 65 siehe Abb. 2/a.



Trockengewicht 411 kg. Abb. 2/a

Für die Abmessungen und das Gewicht der Pumpen in HD-Version mit Hydraulic-Pack-Vorrüstung siehe Abb. 2/b.

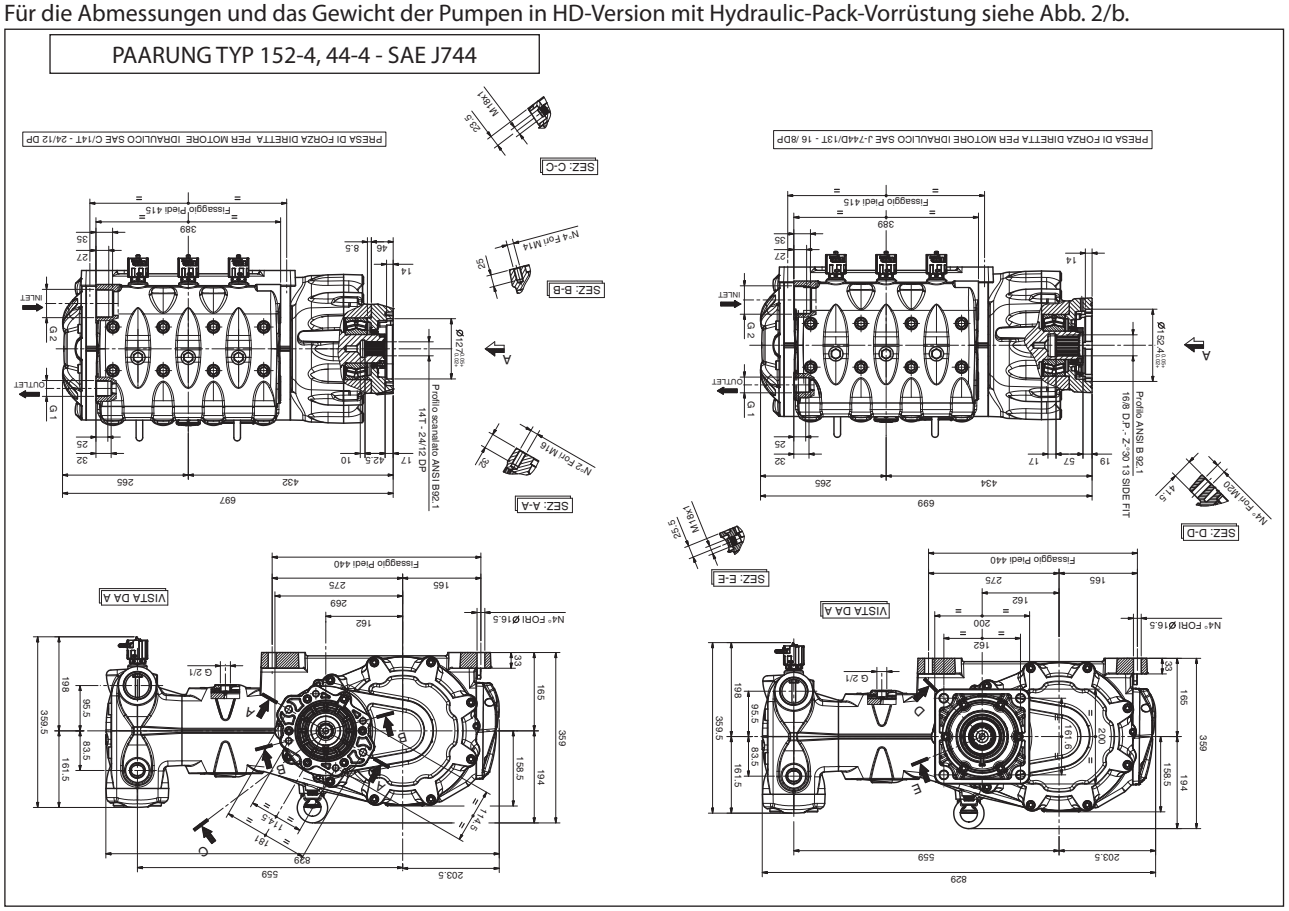


Abb. 2/b

Für die Abmessungen und das Gewicht der Pumpen in ND-Version mit Hydraulic-Pack-Vorrüstung siehe Abb. 2/c.

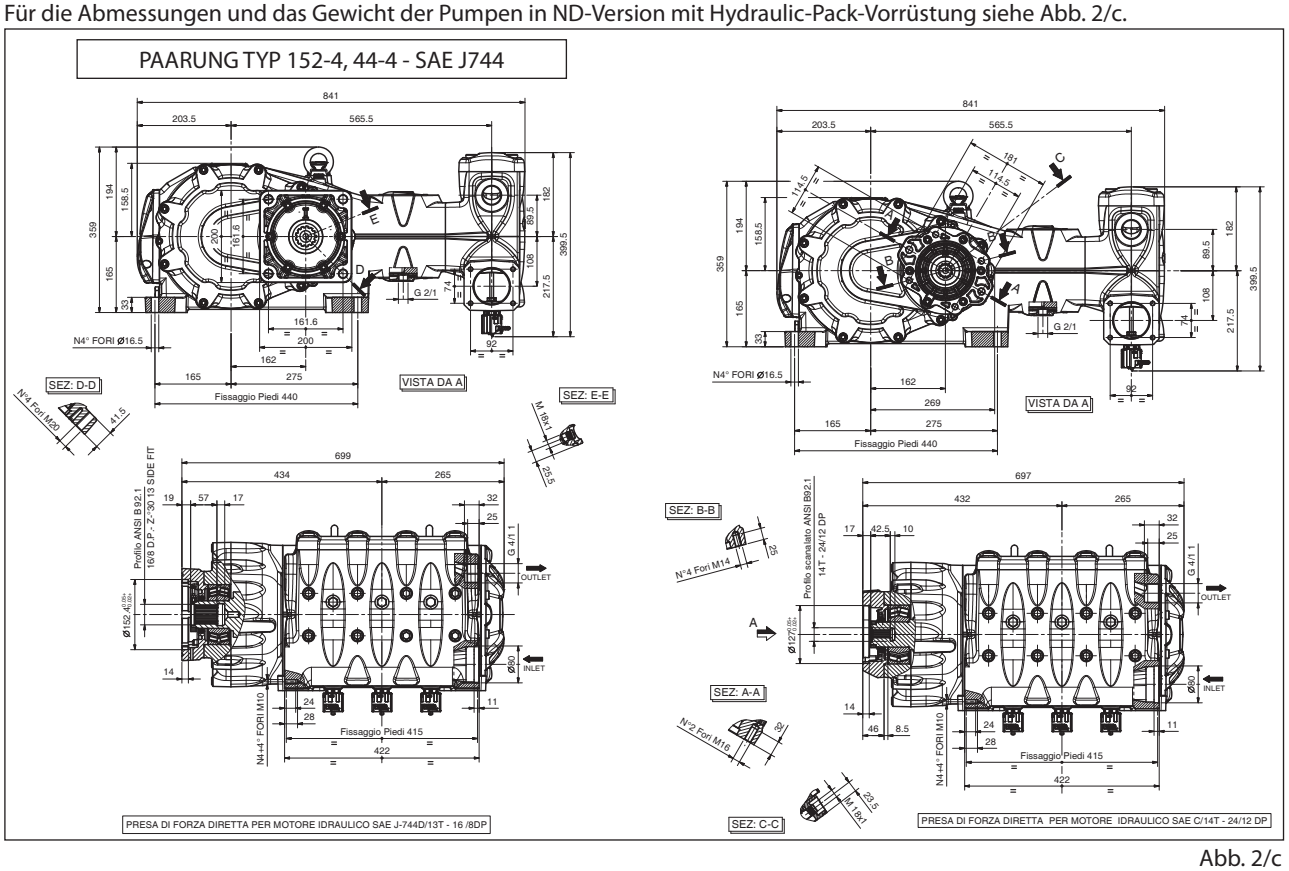


Abb. 2/c

7 GEBRAUCHSANWEISUNGEN

Die Pumpen sind für den Betrieb in nicht explosionsgefährdeten Umgebungen mit gefiltertem Wasser (siehe Abschn. 9.7).
Andere Flüssigmedien dürfen nur nach ausdrücklicher Genehmigung durch die ***technische Abteilung*** oder den ***Kundendienst*** verwendet werden.

7.1 Wassertemperatur

Die zulässige Höchsttemperatur des Wassers beträgt 40 °C. Kurzzeitig kann die Pumpe auch mit Wasser bei einer Temperatur von bis zu 60 °C betrieben werden. Wenden Sie sich für solche Fälle bitte an die ***technische Abteilung*** oder den ***Kundendienst***.

7.2 Fördermenge und Höchstdruck

Die im Katalog angegebenen Leistungen beziehen sich auf die Höchstleistungen der Pumpe. **Unabhängig** von der genutzten Leistung dürfen die auf dem Typenschild angegebenen Höchstwerte für Druck und Drehzahl nur mit ausdrücklicher und formeller Genehmigung durch die ***technische Abteilung*** oder den ***Kundendienst*** überschritten werden.

7.3 Mindestdrehzahl

Die zulässige Mindestdrehzahl für diese Pumpentypen beträgt 300 1/min.; Jede von der in der Tabelle der Leistungsdaten (siehe Kapitel 5) abweichende Drehzahl muss ausdrücklich formell durch die ***technische Abteilung*** oder den ***Kundendienst*** genehmigt werden.

7.4 Schallemission

Die Schalldruckprüfung wurde gemäß der Richtlinie 2000/14 des Europäischen Parlaments und des Rates (Maschinenrichtlinie) sowie der Norm EN-ISO 3744-2010 mit Geräten der Klasse 1 durchgeführt.
Die endgültige Messung des Schalldrucks muss an der kompletten Maschine/dem vollständigen System durchgeführt werden.
Sollte sich der Bediener weniger als 1 Meter vom System entfernt befinden, muss er einen angemessenen Gehörschutz tragen, der die geltenden gesetzlichen Vorschriften erfüllt.

7.5 Vibrationen

Die Messung des Wertes darf nur bei installierter Pumpe an der Anlage und mit den vom Kunden erklärten Leistungen erfolgen. Die Werte müssen den geltenden gesetzlichen Vorschriften entsprechen.

7.6 Empfohlene Ölmarken und -sorten

Die Pumpe wird mit einem Öl geliefert, das für Umgebungstemperaturen von 0 °C bis 30 °C ausgelegt ist.
In nachstehender Tabelle sind einige empfohlenen Ölsorten verzeichnet. Diese Öle sind für besseren Korrosionsschutz und höhere Alterungsbeständigkeit (nach DIN 51517 Teil 2) mit Zusätzen angereichert.
Alternativ dazu können Sie auch Schmieröle für Automotive-Getriebe SAE 85W-90 verwenden.

Hersteller	Schmieröl
Agip	AGIP ACER220
ARAL	Aral Degol BG 220
BP	BP Energol HLP 220
Castrol	CASTROL HYSPIN VG 220 CASTROL MAGNA 220
DEA	Falcon CL220
elf	ELF POLYTELIS 220 REDUCTELF SP 220
Esso	NUTO 220 TERESSO 220
FINA	FINA CIRKAN 220
FUCHS	RENOLIN 212 RENOLIN DTA 220
Mobil	Mobil DTE Oil BB
Shell	Shell Tellus Öl C 220
SRS	Wintershall Ersolon 220 Wintershall Wiolan CN 220
TEXACO	RANDO HD 220
TOTAL	TOTAL Cortis 220

Überprüfen Sie den Ölstand über die Messstäbe mit min. sowie max. Markierungen ①, Abb. 3.
Füllen Sie bei Bedarf über den Ölverschluss ③, Abb. 3 nach.
Die Ölstandsprüfung hat bei Pumpe auf Umgebungstemperatur zu erfolgen, für den Ölwechsel soll die Pumpe dagegen auf Betriebstemperatur sein. Entfernen Sie dazu den Verschluss Pos. ②, Abb. 3.
Für die Ölstandprüfung und den Ölwechsel siehe Angaben in Kapitel 11.
Die benötigte Menge beträgt ~ 13,5 Liter.

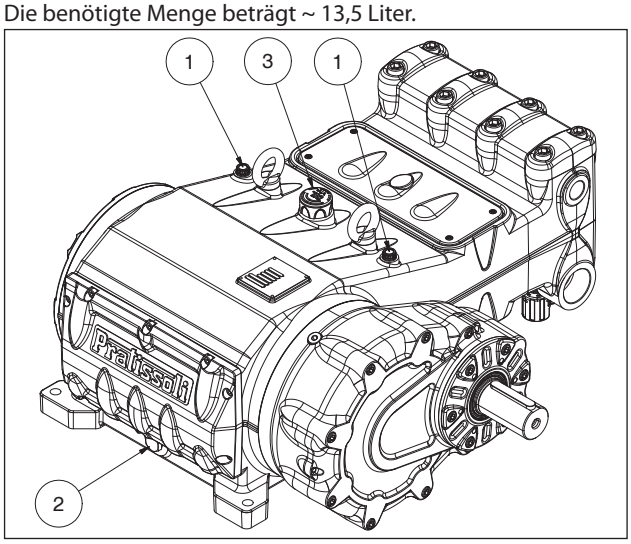


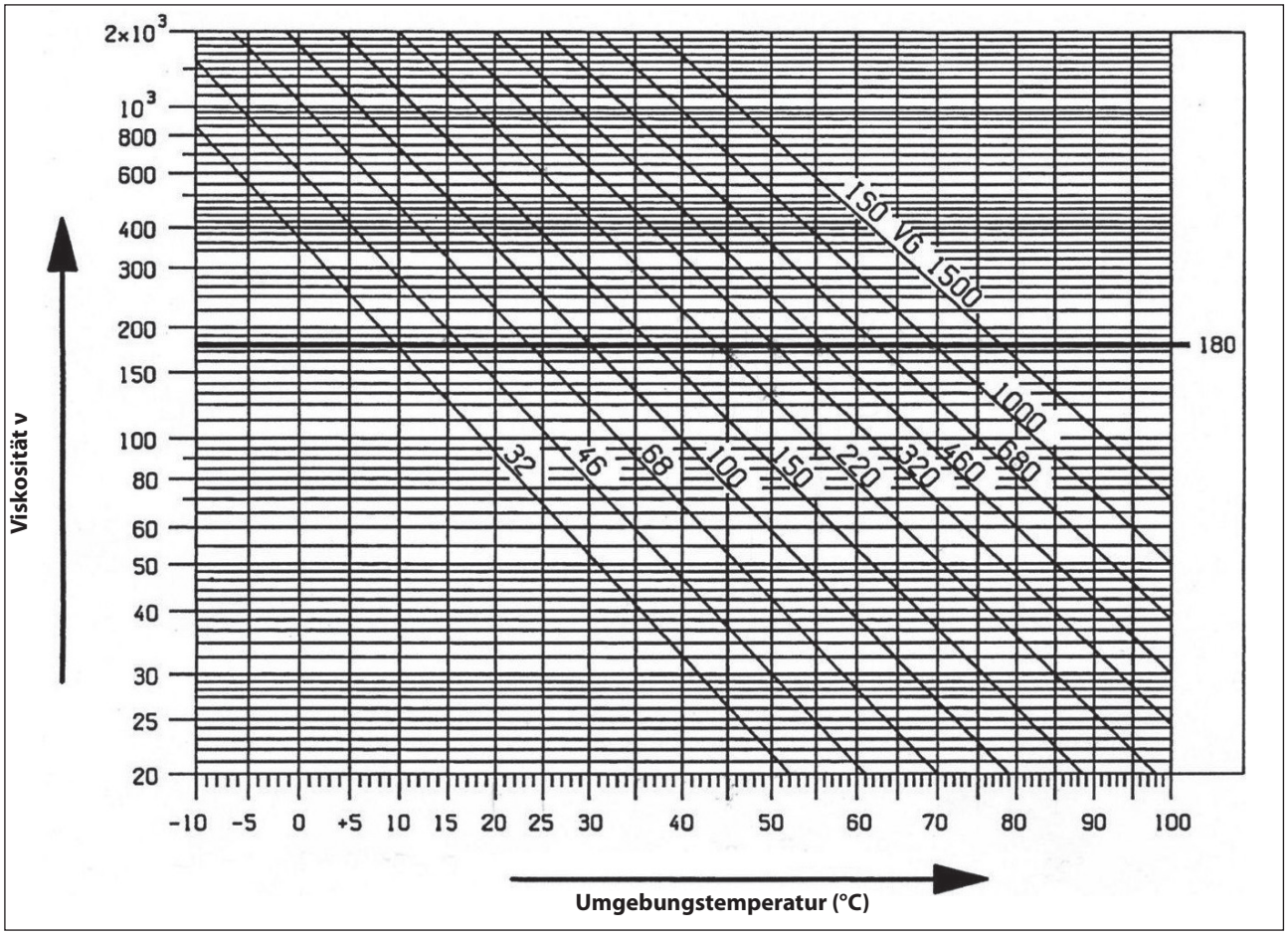
Abb. 3

Aufgrund der zeitlich bedingten Oxidation muss das Öl in jedem Fall mindestens einmal pro Jahr gewechselt werden.

Wenn die Umgebungstemperatur nicht zwischen 0 °C und 30 °C liegt, beachten Sie bitte die in nachstehendem Diagramm enthaltenen Anweisungen und berücksichtigen Sie, dass das Öl eine Viskosität von mindestens 180 cSt aufweisen muss.

Diagramm Viskosität / Umgebungstemperatur

$mm^2/s = cSt$



Altöl muss in einem geeigneten Behälter gesammelt und den entsprechenden Wertstoffstellen zugeführt werden.
Es darf auf keinen Fall in die Umwelt abgeleitet werden.

8 ANSCHLÜSSE UND VERBINDUNGEN

Die Pumpen verfügen über:

2 Sauganschlüsse „IN“:

G2" (in den Versionen mit Kolben-Ø 40, 45, 50)

Ø80 mm (in den Versionen mit Kolben-Ø 55, 60, 65)

An welchen der beiden Anschlüsse die Leitung angeschlossen wird, ist für die Funktionstüchtigkeit der Pumpe unerheblich; nicht verwendete Anschlüssen müssen dicht verschlossen werden.

2 Druckanschlüsse „OUT“:

G1" (in den Versionen mit Kolben-Ø 40, 45, 50)

G1 ¼" (in den Versionen mit Kolben-Ø 55, 60, 65)

1 „ABLASS“-Anschluss: mit im unteren Deckel eingearbeiteter Bohrung G1/2" zur Überprüfung etwaiger Flüssigkeitslecks durch Verschleiß der Druckdichtungen. Bei auftretenden Lecks siehe die ***Reparaturanleitung***.

Die Bohrung muss stets geöffnet bleiben (siehe Abb. 4 und Abb. 4/a).

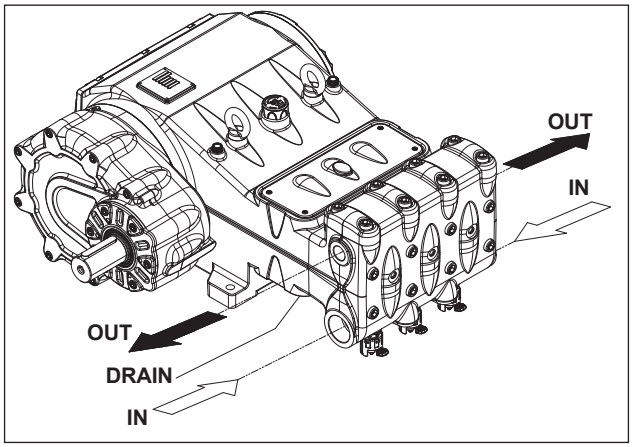


Abb. 4

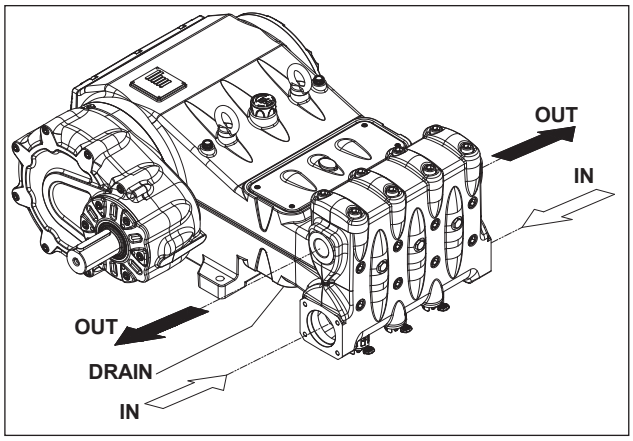


Abb. 4/a

9 INSTALLATION DER PUMPE

9.1 Installation

Die Pumpe muss in horizontaler Position mit den zugehörigen Stellfüßen (Ø 16,5) eingebaut werden.
Die Stellfläche muss perfekt eben und solide genug sein, um das Durchbiegen oder Fluchtungsfehler an der Kupplungsachse Pumpe/Antrieb durch das beim Betrieb übertragene Drehmoment zu verhindern.
Als Installationshilfe sind zwei Hubösen auf der Pumpe angebracht, siehe folgende Abbildung.

Die Hubösen dürfen nicht abgenommen werden.

Die Hubösen sind ausschließlich zum Heben der Pumpe ausgelegt und dürfen daher nicht für zusätzliche Lasten verwendet werden



Ersetzen Sie den Schraubverschluss der Öleinfüllöffnung am Gehäuse durch den Öleinfüllverschluss.
Der Öleinfüllverschluss muss auch nach montierter Baugruppe zugänglich sein.

Die Pumpenwelle (PTO) darf mit dem Antriebsstrang nicht starr verbunden sein.
Wir empfehlen folgende Antriebstypen:

- Mit elastischer Kupplung.
- Mit Gelenkwelle (beachten Sie die vom Hersteller empfohlenen max. Winkel).
- Mit Riemen; wenden Sie sich für die korrekte Anwendung an die ***technische Abteilung*** oder den ***Kundendienst***.

9.2 Drehrichtung

Die Drehrichtung der Zapfwelle ist durch einen am Gehäuse eingearbeiteten Pfeil angegeben.
Vor dem Pumpenkopf stehend muss die Drehrichtung den Angaben in Abb. 5 entsprechen.

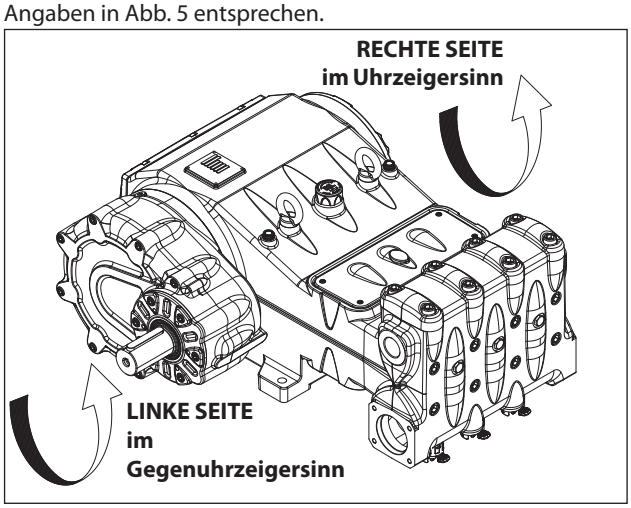


Abb. 5

9.3 Änderung der Version und Bauposition des Getriebes

Die rechte Pumpenausführung ist dann gegeben, wenn: sich der Zapfwellenstummel der Pumpenwelle bei Frontansicht auf den Pumpenkopf auf der rechten Seite befindet.
Die linke Pumpenausführung ist dann gegeben, wenn: sich der Zapfwellenstummel der Pumpenwelle bei Frontansicht auf den Pumpenkopf auf der linken Seite befindet (siehe Abb. 5).

Die Version darf nur von autorisiertem Fachpersonal unter strikter Beachtung der Anweisungen in der *Reparaturanleitung* geändert werden.

Sie können darüber hinaus das Getriebe in 5 Baupositionen sowohl auf der rechten als auch auf der linken Seite anbringen, siehe Abb. 6.

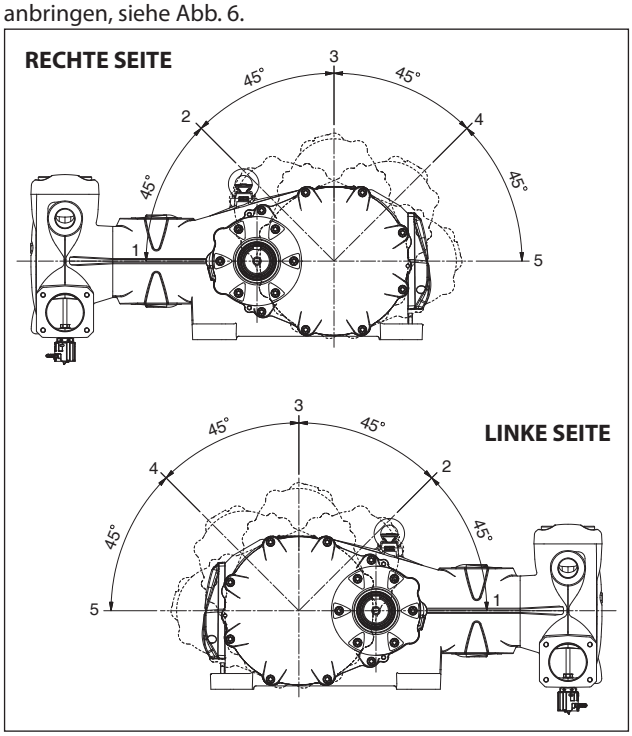


Abb. 6

Die Bauposition des Getriebes darf nur von autorisiertem Fachpersonal unter strikter Beachtung der Anweisungen in der *Reparaturanleitung* geändert werden.

9.4 Wasseranschlüsse

Um die Anlage von den beim Pumpenbetrieb erzeugten Schwingungen zu isolieren, sollten für den ersten Leitungsabschnitt an der Pumpe (sowohl saug- als druckseitig) Schläuche verwendet werden. Der Ansaugtrakt muss so beschaffen sein, dass Verformungen durch den von der Pumpe erzeugten Unterdruck vermieden werden.

9.5 Versorgung der Pumpe

Die Pumpen MK2 sind stets bei positiver Saughöhe zu installieren, das Wasser läuft also durch Schwerkraft oder mittels unterstützter Versorgung zu und wird nicht von unten angesaugt.
Die Pumpen sind zwar für minimale Zulaufhöhen von 1 Meter ausgelegt, zur Erzielung des besten volumetrischen Wirkungsgrads und insbesondere zur Vermeidung von Kavitation muss die am Saugflansch des Kopfs gemessene verfügbare positive Saughöhe (NPSH avail) mindestens den nachstehenden Werten entsprechen:

	$NPSH_r$(m)
MK240	4,5
MK245	5,5
MK250	6,5
MK255	7,5
MK260	8
MK265	9

Angesichts der Geometrie der Hydraulik und der erheblichen Förderleistungen sollte die Versorgung der Pumpen MK2 55 - 60 - 65 aufgrund ihres größeren Hubvolumens unbedingt durch eine Booster-Pumpe unterstützt werden, um Kavitationserscheinungen zu vermeiden.
Die Booster-Pumpe muss mindestens das Zweifache der Nenn-Förderleistung der Kolbenpumpe und einen Druck zwischen 2 und 3 bar aufweisen.
Diese Versorgungsbedingungen sind bei jeder Betriebsdrehzahl einzuhalten.

Vor Start der Kolbenpumpe ist stets die Booster-Pumpe einzuschalten.
Zum Schutz der Pumpe sollte ein Druckschalter in der Versorgungsleitung nach den Filtern installiert werden.

9.6 Saugleitung

Für den einwandfreien Pumpenbetrieb muss die Saugleitung folgende Eigenschaften aufweisen:

1. Der min. Innendurchmesser muss dem Diagramm im Abschn. 9.9 entsprechen und in jedem Fall größer oder gleich dem des Pumpenkopfes sein.

   Entlang des Leitungsverlaufs sind lokalisierte Verengungen zu vermeiden, die Druckverluste mit daraus folgender Kavitation verursachen können. Unbedingt 90°-Bögen, Verbindungen mit anderen Leitungen, Drosselstellen, Gegengefälle, umgekehrte U-Kurven und T-Anschlüsse vermeiden.
2. Die Anordnung muss derart gestaltet sein, dass Kavitationserscheinungen ausgeschlossen sind.
3. Die Leitung muss perfekt dicht und so ausgelegt sein, die langfristige Dichtigkeit zu garantieren.
4. Beim Anhalten der Pumpe darf sich die Leitung selbst teilweise nicht entleeren.
5. Keine hydraulischen 3- oder 4-Wege-Armaturen, Adapter usw. verwenden, da diese die Leistung der Pumpe beeinträchtigen können.
6. Keine Venturi-Rohre oder Einspritzdüsen für das Ansaugen von Reinigungsmittel installieren.
7. Der Einsatz von Bodenventilen oder anderen Arten von Rückschlagventilen ist zu vermeiden.
8. Den Auslass des Bypass-Ventils nicht direkt in den Ansaugtrakt leiten.
9. Geeignete Trennwände im Inneren des Tanks einrichten, um zu vermeiden, dass der Wasserstrom aus dem Bypass und der Versorgungsleitung des Tanks Verwirbelungen oder Turbulenzen am Anschluss des Versorgungsschlauchs der Pumpe bilden kann.
10. Stellen Sie vor dem Anschluss der Saugleitung sicher, dass diese innen vollkommen sauber ist.
11. Installieren Sie das Manometer für die Druckmessung der Booster-Pumpe am Sauganschluss der Kolbenpumpe und stets nach den Filtern.

9.7 Filterung

In der Saugleitung der Pumpe müssen zwei Filter installiert werden, siehe Einbauposition in Abb. 7 und Abb. 7/a.
Mit manuell betätigtem Regelventil

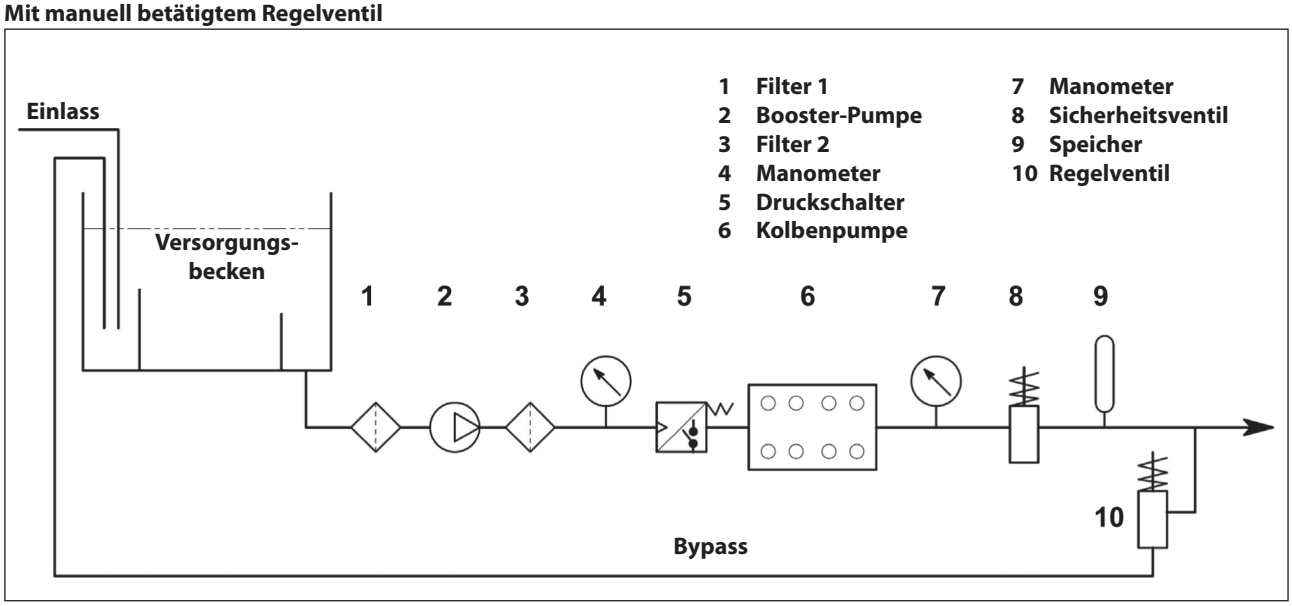


Abb. 7

Mit pneumatisch betätigtem Regelventil

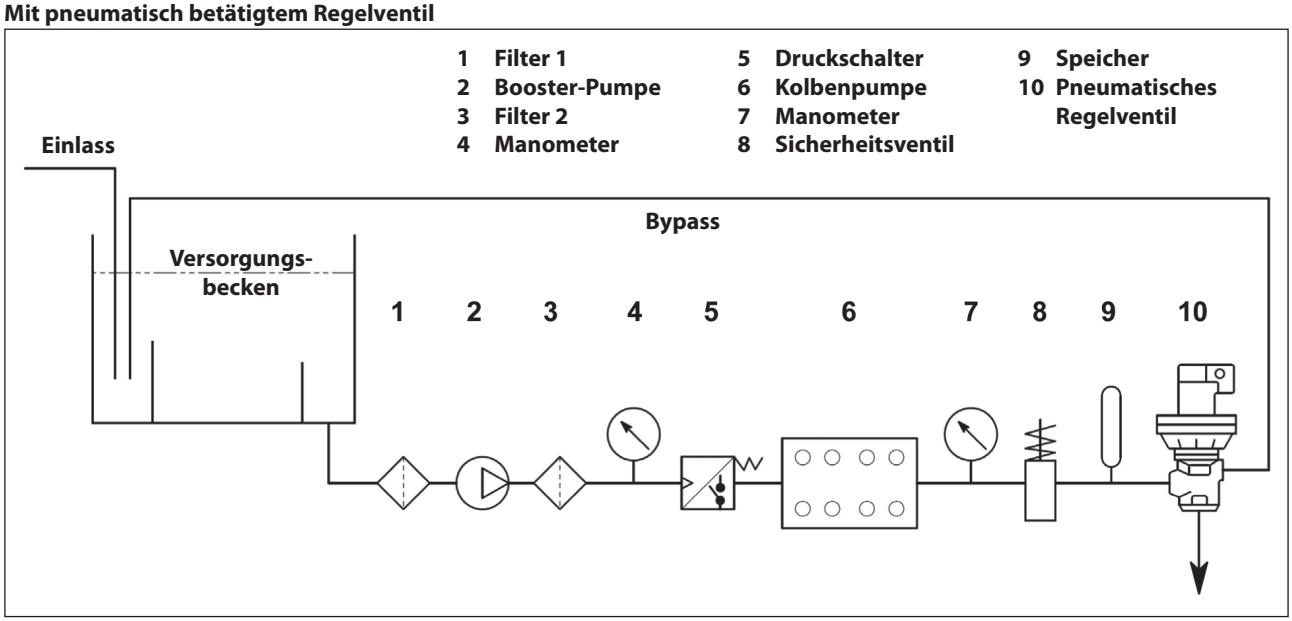


Abb. 7/a

Der Filter muss so nah wie möglich an der Pumpe installiert werden, leicht zugänglich sein und folgende Eigenschaften aufweisen:

1. Die min. Fördermenge muss 3 Mal höher sein als die Nenn-Förderleistung der Pumpe.
2. Der Durchmesser der Ein-/Auslassöffnungen darf nicht kleiner sein als der Durchmesser des Ansauganschlusses der Pumpe.
3. Filterfeinheit zwischen 200 und 360 µm.

Für den ordnungsgemäßen Betrieb der Pumpe müssen regelmäßige Reinigungen des Filters durchgeführt und entsprechend der tatsächlichen Nutzung der Pumpe sowie der Qualität des verwendeten Wassers und der tatsächlichen Verstopfung geplant werden.

9.8 Druckleitung

Für die Auslegung einer korrekten Druckleitung beachten Sie bitte die folgenden Installationsvorschriften:

1. Der Innendurchmesser der Leitung muss die richtige Geschwindigkeit des Flüssigmediums gewährleisten, siehe Diagramm in Abschn. 9.9.
2. Für den an die Pumpe angeschlossenen ersten Leitungsabschnitt muss ein Schlauch verwendet werden, um die von der Pumpe erzeugten Vibrationen nicht an den übrigen Teil der Anlage zu übertragen.
3. Leitungen und Armaturen für Hochdruckanwendungen verwenden, die hohe Sicherheitsreserven unter sämtlichen Betriebsbedingungen garantieren.
4. In der Druckleitung muss ein Sicherheitsventil installiert werden.
5. Manometer verwenden, die den typischen pulsierenden Lasten der Kolbenpumpen standhalten.
6. Bei der Planung sind Druckverluste der Leitung zu berücksichtigen, die am Abnahmepunkt zu einem Minderdruck gegenüber des an der Pumpe gemessenen Drucks führen.
7. Für Anwendungen, bei denen sich die Pulsationen der Pumpe in der Druckleitung als schädlich oder unerwünscht erweisen, muss ein Pulsationsdämpfer geeigneter Größe installiert werden.

9.9 Berechnung des Innendurchmessers der Rohrleitungen

Für die Berechnung des Innendurchmessers der Leitung siehe folgendes Diagramm:

Saugleitung

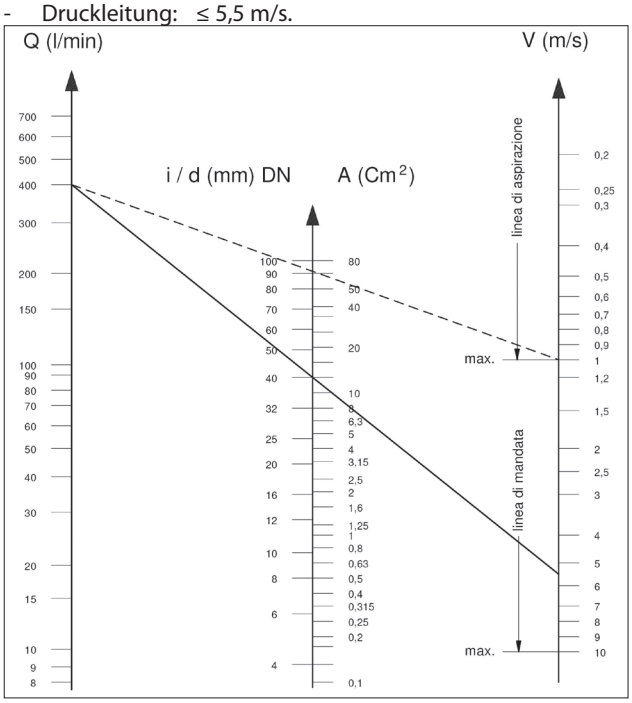
Mit einer Fördermenge von ~ 400 l/min und einer Fließgeschwindigkeit des Wassers von 1 m/s. Die Verbindungslinie der beiden im Graph dargestellten Skalen schneidet die mittlere Skala der Durchmesser bei einem Wert von ~ 90 mm.

Druckleitung

Mit einer Fördermenge von ~ 400 l/min und einer Fließgeschwindigkeit des Wassers von 5,5 m/s. Die Verbindungslinie der beiden im Graph dargestellten Skalen schneidet die mittlere Skala der Durchmesser bei einem Wert von ~ 40 mm.

Optimale Geschwindigkeiten mit Booster-Pumpe:

- Saugleitung: ≤ 1 m/s.
- Druckleitung: ≤ 5,5 m/s.



Der Graph berücksichtigt nicht den Widerstand der Leitungen und Ventile, den aus der Leitungslänge hervorgehenden Druckverlust, die Viskosität der gepumpten Flüssigkeit und deren Temperatur. Wenden Sie sich bei Bedarf an die ***technische Abteilung*** oder den ***Kundendienst***.

9.10 Keilriementrieb

Gemäß Angaben in Abschn. 9.1 kann die Pumpe in Ausnahmefällen durch ein System von Keilriemen angetrieben werden.
Wenden Sie sich eine korrekte Anordnung an die ***technische Abteilung*** oder den ***Kundendienst***.

10 START UND BETRIEB

10.1 Vorbereitende Prüfungen

Vergewissern Sie sich vor dem Start, dass:

Die Saugleitung angeschlossen und unter Druck ist (siehe Kapitel 9): Die Pumpe darf niemals trocken laufen.

1. Die Saugleitung auf lange Zeit perfekt dicht ist.
2. Alle eventuellen Absperrventile zwischen der Versorgungsquelle und der Pumpe vollständig geöffnet sind. Der Auslass der Druckleitung frei abgeführt wird, damit die im Pumpenkopf vorhandene Luft schnell austreten kann und dadurch ein schnelles Ansaugen ermöglicht.
3. Sämtliche Saug- und Druckanschlüsse und Verbindungen ordnungsgemäß festgezogen sind.
4. Sich die Paarungstoleranzen an der Kupplungsachse Pumpe/Antrieb (Versatz Kupplungshälften, Neigung der Gelenkwelle, Kettenspannung usw.) innerhalb der vom Hersteller des Antriebs vorgegebenen Grenzen befinden.
5. Der Ölstand im Pumpengehäuse korrekt ist, u.z. über die entsprechenden Messstäbe (Pos. ①, Abb. 8).

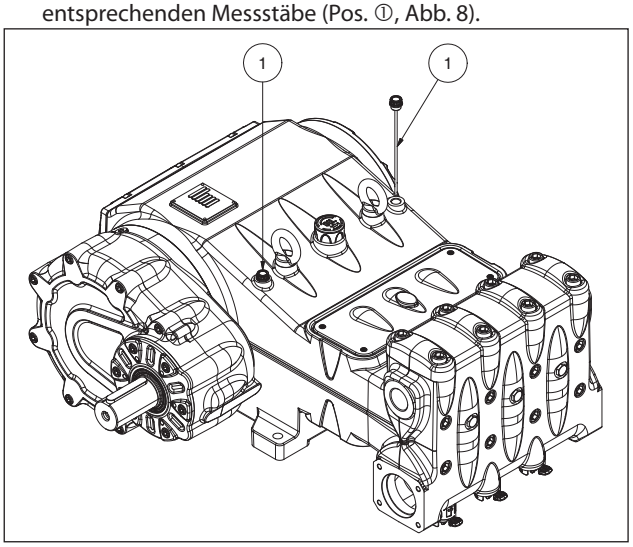


Abb. 8

Stellen Sie nach längerer Lagerung oder Stillstand die Funktionstüchtigkeit der Saugventile wieder her, indem Sie die drei Ventilheber öffnen (siehe Pos. ② Abb. 9). Schließen Sie die Ventile vor Start der Pumpe wieder.
Für die „Arbeits"- und „Ruhe"-Positionen siehe Abb. 10.

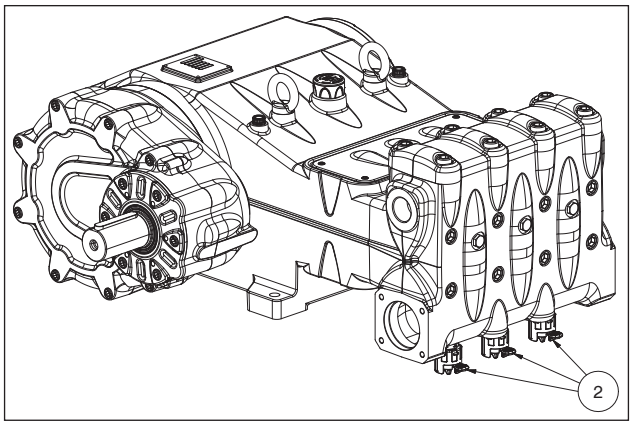


Abb. 9

VENTIL GESCHLOSSEN - ARBEITSPOSITION -

ENTRIEGELUNG SICHERHEITSVORRICHTUNG

VENTIL GEÖFFNET - RUHEPOSITION -

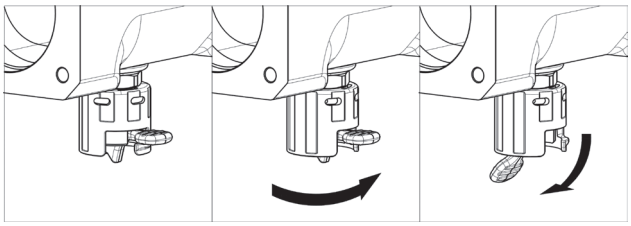


Abb. 10

10.2 Start

1. Prüfen Sie bei der erstmaligen Inbetriebnahme, ob die Drehrichtung den Vorgaben entspricht.
2. Stellen Sie die korrekte Versorgung der Pumpe sicher.
3. Starten Sie die Pumpe ohne Last.
4. Stellen Sie sicher, dass die Drehzahl während des Betriebs nicht den Wert auf dem Typenschild überschreitet.
5. Lassen Sie die Pumpe vor Druckbeaufschlagung mindestens 3 Minuten lang laufen.
6. Fahren Sie den Druck vor jedem Pumpenstopp auf Null, indem Sie das Regelventil oder die ggf. vorgesehenen Vorrichtungen zum Druckabbau betätigen.

Bei etwaigen Ansaugproblemen durch unzureichende Versorgung können Sie die drei frontseitigen Verschlüsse abnehmen (nicht bei Version MK240), siehe Pos. ③ Abb. 11.

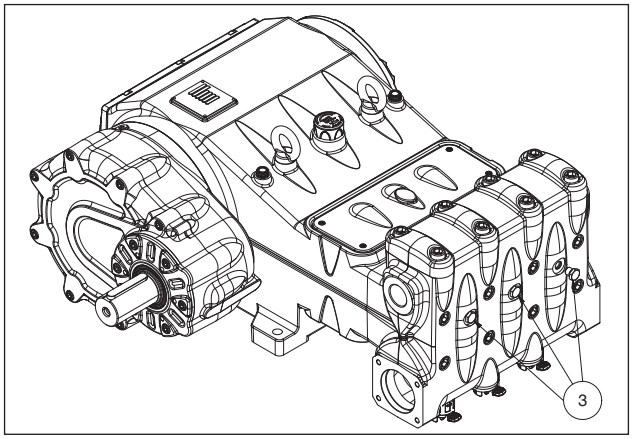


Abb. 11

11 VORBEUGENDE WARTUNG

Für eine hohe Zuverlässigkeit und Effizienz der Pumpe müssen Sie die Wartungsintervalle lt. folgender Tabelle beachten.

VORBEUGENDE WARTUNG	
Alle 500 Stunden	**Alle 1500 Stunden**
Ölstandprüfung	Ölwechsel
	Überprüfung / Austausch*: Ventile Ventilsitze Ventilfedern Ventilführungen
	Überprüfung / Austausch*: HD-Dichtungen ND-Dichtungen

* Beachten Sie zum Austausch die Anweisungen in der ***Reparaturanleitung***.

12 EINLAGERUNG DER PUMPE

12.1 Vorgehensweise zur Füllung der Pumpe mit Korrosions- und Frostschutzlösung

Füllung der Pumpe mit Korrosions- oder Frostschutzlösung anhand einer externen Membranpumpe, lt. den Anordnungen in Abschn. 9.7:

a) Schließen Sie die Ablassöffnung des Filters, sofern geöffnet.
b) Stellen Sie sicher, dass der Verbindungsschlauch sauber ist, schmieren Sie mit Fett und schließen Sie ihn an den HD-Ablass an.
c) Befestigen Sie den Saugschlauch an die Membranpumpe; öffnen Sie den Sauganschluss der Pumpe und befestigen Sie den Schlauch zwischen Anschluss und Membranpumpe.
d) Füllen Sie den Behälter mit der Lösung / Emulsion.
e) Führen Sie die freien Enden des Saug- und HD-Ablassschlauchs in den Behälter ein.
f) Schalten Sie die Membranpumpe ein.
g) Pumpen Sie die Emulsion solange, bis sie aus dem HD-Ablassschlauch austritt.
h) Pumpen Sie mindestens eine weitere Minute lang; die Eigenschaften der Emulsion können bei Bedarf durch Zugabe von-Additiven wie beispielsweise Shell Donax verbessert werden.
i) Stoppen Sie die Pumpe, nehmen Sie den Schlauch vom Ansauganschluss ab und verschließen Sie den Anschluss mit einem Stopfen.
j) Lösen Sie den Schlauch vom HD-Ablass. Reinigen, fetten und verschließen Sie beide Anschlüsse und die Schläuche.

12.2 Schläuche

a) Trocknen Sie vor Einfetten und Verschließen der Schläuche nach vorgenanntem Verfahren die Anschlüsse mit Druckluft.
b) Decken Sie die Schläuche mit Polyethylen ab.
c) Umwickeln Sie die Schläuche nicht zu fest und achten Sie darauf, sie nicht zu verknicken.

13 VORKEHRUNGEN GEGEN EINFRIEREN



Befolgen Sie in Gebieten und während der Jahreszeiten mit Frostgefahr die Anweisungen in Kapitel 12 (siehe Abschn. 12.1).



Bei Vorhandensein von Eis darf die Pumpe erst dann in Betrieb genommen werden, wenn das Leitungssystem vollständig enteist worden ist; andernfalls können schwerwiegende Schäden an der Pumpe verursacht werden.

14 GARANTIEBEDINGUNGEN

Laufzeit und Bedingungen der Garantie sind im Kaufvertrag angegeben.
Die Garantie erlischt, wenn:

a) Die Pumpe zu anderen Zwecken als vereinbart verwendet worden ist.
b) Die Pumpe mit einem Elektro- oder Verbrennungsmotor ausgestattet wurde, dessen Leistung die Tabellenwerte überschreitet.
c) Die vorgesehenen Sicherheitseinrichtungen verstellt oder entfernt wurden.
d) Die Pumpe mit Zubehör oder Ersatzteilen verwendet worden ist, die nicht von Interpump Group geliefert wurden.
e) Die Schäden durch folgende Faktoren verursacht wurden:
   1) unsachgemäße Verwendung
   2) Missachtung der Wartungsvorschriften
   3) eine von den Vorgaben der Betriebsanleitung abweichende Verwendung
   4) unzureichende Förderleistung
   5) fehlerhafte Installation
   6) falsche Position oder Bemessung der Leitungen
   7) unbefugte Änderungen an der Auslegung
   8) Kavitation.

15 BETRIEBSSTÖRUNGEN UND MÖGLICHE URSACHEN



Beim Start erzeugt die Pumpe keinerlei Geräusche:

- Die Pumpe ist nicht gefüllt und läuft trocken.
- Kein Wasser auf Saugseite.
- Die Ventile sind verklemmt.
- Die Druckleitung ist geschlossen, so dass die im Pumpenkopf vorhandene Luft nicht entweichen kann.



Die Pumpe pulsiert unregelmäßig:

- Ansaugung von Luft.
- Unzureichende Versorgung.
- Kurven, Bögen oder Anschlüsse in der Saugleitung drosseln den Durchfluss der Flüssigkeit.
- Der Ansaugfilter ist verschmutzt oder zu klein.
- Die Booster-Pumpe, sofern installiert, liefert unzureichenden Druck oder Durchfluss.
- Die Pumpe ist wegen niedriger Saughöhe nicht mit Wasser gefüllt bzw. die Druckseite ist beim Ansaugen geschlossen.
- Die Pumpe ist wegen Festkleben eines Ventils nicht gefüllt.
- Abgenutzte Ventile.
- Abgenutzte Druckdichtungen.
- Fehlfunktion des Druckregelventils.
- Antriebsprobleme.



Die Pumpe liefert nicht den Nenndurchfluss / läuft übermäßig geräuschvoll:



- Unzureichende Versorgung (siehe verschiedene Ursachen oben).
- Die Drehzahl liegt unter dem Wert am Typenschild.
- Übermäßiger Flüssigkeitsaustritt am Druckregelventil.
- Abgenutzte Ventile.
- Übermäßiger Flüssigkeitsaustritt an den Druckdichtungen.
- Kavitation durch:
  1) Falsche Bemessung der Saugleitungen / zu kleine Durchmesser.
  2) Unzureichende Förderleistung.
  3) Hohe Wassertemperatur.



Der von der Pumpe gelieferte Druck ist unzureichend:

- Der Einsatz (Düse) überschreitet die Kapazität der Pumpe.
- Die Drehzahl ist zu gering.
- Übermäßiger Flüssigkeitsaustritt an den Druckdichtungen.
- Fehlfunktion des Druckregelventils.
- Abgenutzte Ventile.



Die Pumpe läuft heiß:

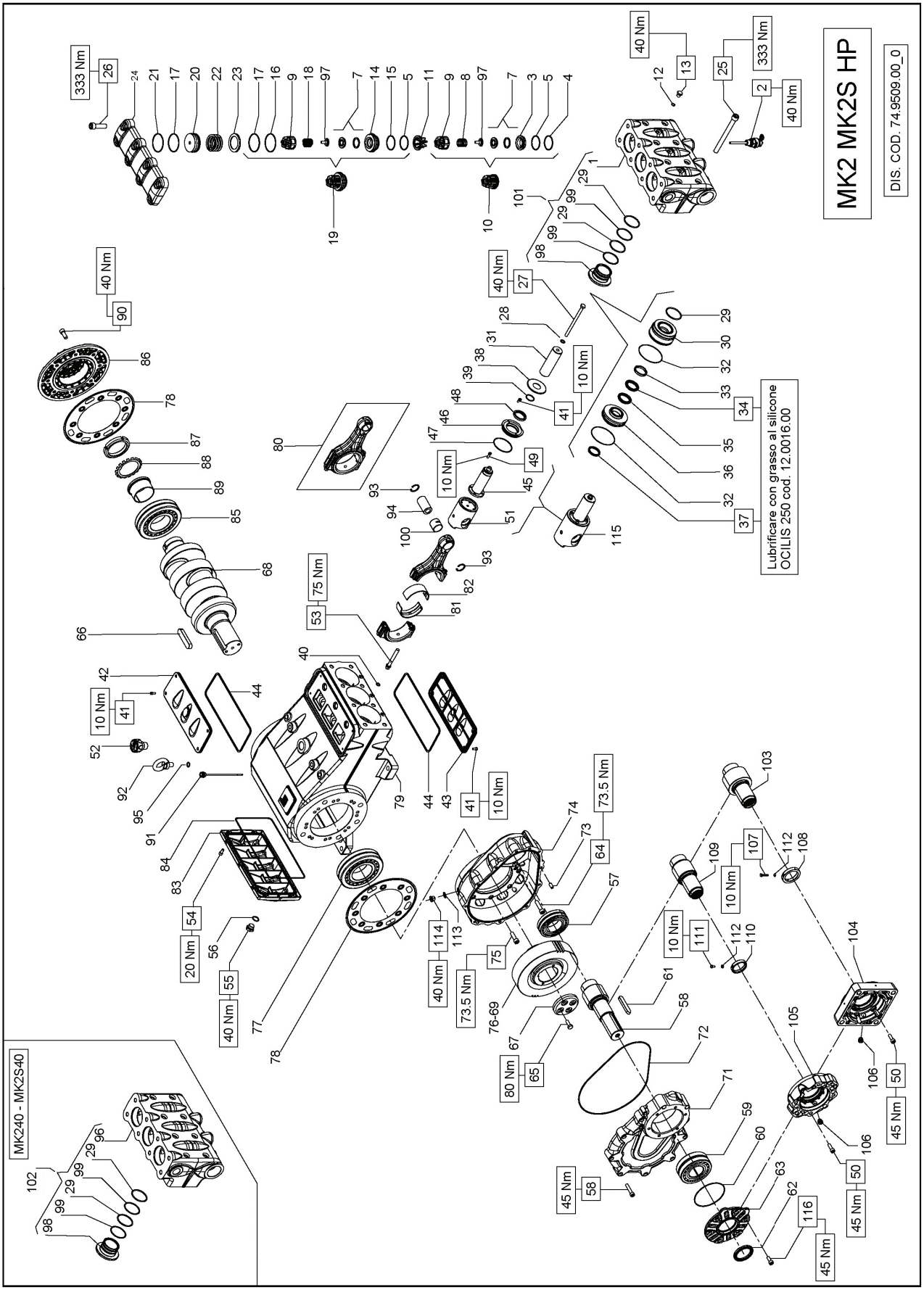
- Die Pumpe arbeitet bei höherem Druck oder höherer Drehzahl als auf dem Typenschild angegeben.
- Zu niedriger Ölstand im Pumpengehäuse oder das verwendete Öl entspricht nicht der empfohlenen Sorte lt. Angaben in Kapitel 7 (siehe Abschn. 7.6).
- Die Ausrichtung der Kupplung bzw. der Riemenscheiben ist nicht perfekt.
- Die Neigung der Pumpe beim Betrieb ist zu groß.



Vibrationen oder Stöße in den Leitungen:

- Ansaugung von Luft.
- Fehlfunktion des Druckregelventils.
- Fehlfunktion der Ventile.
- Ungleichmäßige Antriebsbewegung.

16 EXPLOSIONSZEICHNUNG UND ERSATZTEILLISTE

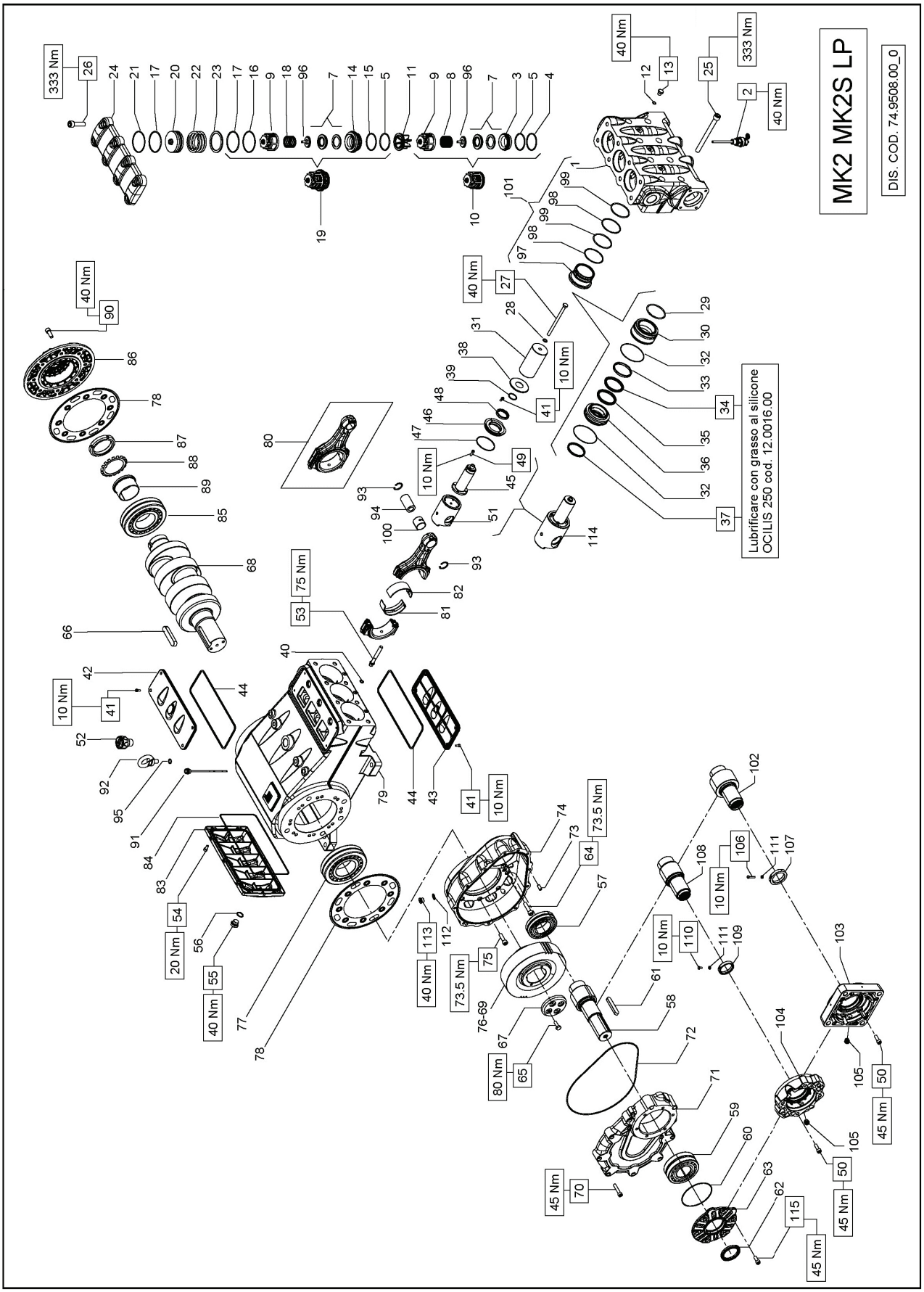


KIT RICAMBIO – SPARE KIT

		MK240 - MK2S40 (D.40)	MK245 - MK2S45 (D.45)	MK250 - MK2S50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK240 - MK2S40
MK245 - MK2S45
MK250 - MK2S50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1


MK2 MK2S LP
DIS. COD. 74.9508.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT

		MK255 - MK2S55 (D.55)	MK260 - MK2S60 (D.60)	MK265 - MK2S65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2045	KIT 2046	KIT 2047
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2447	KIT 2448	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK255 - MK2S55
MK260 - MK2S60
MK265 - MK2S65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2114.56	CAMICIA PISTONE D. 55		3
	74.2115.56	CAMICIA PISTONE D. 60		
	74.2116.56	CAMICIA PISTONE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1003.92	ANELLO DI TESTA PISTONE D. 55		3
	74.1004.92	ANELLO DI TESTA PISTONE D. 60		
	74.1005.92	ANELLO DI TESTA PISTONE D. 65		
34	90.2873.00	ANELLO TEN. ALT. D. 55.0x70.0x7.5/4.5 HP	A-C	3
	90.2883.00	ANELLO TEN. ALT. D. 60.0x76.0x8.0/4.8 HP	A-C	
	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	
35	90.2875.00	ANELLO RESTOP D. 55.0x70.0x8.0/4.5	A-C	3
	90.2885.00	ANELLO RESTOP D. 60.0x76.0x8.0/4.5	A-C	
	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	
36	74.2120.68	SUPPORTO GUARNIZIONE D. 55		3
	74.2121.68	SUPPORTO GUARNIZIONE D. 60		
	74.2122.68	SUPPORTO GUARNIZIONE D. 65		
37	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		10
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.55	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	73.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK2		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2S		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	74.2150.56	BOCCOLA TESTATA		3
98	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
99	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1201.01	TESTATA CON BOCCOLA		1
112	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
113	98.2086.00	TAPPO G 3/8"x12		2
114	74.6062.01	GR. GUIDA PISTONE		3
115	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
102	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
103	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
107	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
111	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.750 - ELICOIDALE		1
104	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
108	10.0906.55	PIGNONE Z16 R. 3.750 - ELICOIDALE FEMM.		1
109	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
110	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
111	92.2025.00	DADO M6x5 UNI 5588		1

17 SPEZIALVERSIONEN

Die Pumpen MK2 sind auch in folgenden Spezialversionen verfügbar:

- MK2R (für Umlaufwasser)
- MK2SR (für Umlaufwasser)
- MK2C (für Methanol)
- MK2SC (für Methanol)
- MK2SH (mit Pumpenkopf aus AISI 420)

Im Nachhinein finden Sie die Anweisungen zur Auswahl und Verwendung dieser Versionen.
Soweit nicht anders angegeben, gelten die vorstehenden Angaben für die Pumpen MK2 in Standardversion.

17.1 Pumpe in Version MK2R-MK2SR

17.1.1 Gebrauchsanweisungen

Die Pumpen der Baureihe MK2R/MK2SR sind für den Betrieb in nicht explosionsgefährdeten Umgebungen mit Wasser hohen Partikelgehalts ausgelegt. Sie eignen sich daher für Anlagen mit Flüssigkeitszirkulation.
Die Lebensdauer der Kolbendichtungen ist direkt vom Prozentsatz der in der Flüssigkeit enthaltenen Festpartikel sowohl von deren Größe und Dichte abhängig.
Für eine lange Lebensdauer der Dichtungen sollte die Körnung der Partikel nicht größer sein als 200 Mikron und max. 20% in Volumenteilen betragen.
Für weitere Anweisungen und die Anordnung der Anlage siehe Abschn. 17.2.6.

17.1.2 Fördermenge und Höchstdruck

Die im Katalog angegebenen Leistungen beziehen sich auf die Höchstleistungen der Pumpe. **Unabhängig** von der genutzten Leistung dürfen die auf dem Typenschild angegebenen Höchstwerte für Druck und Drehzahl nur mit ausdrücklicher und formeller Genehmigung durch die ***technische Abteilung*** oder den ***Kundendienst*** überschritten werden.

17.1.3 Technische Daten

Modell	1/min	Fördermenge		Druck		Leistung	
		l/min	Gpm	bar	psi	kW	PS
MK2R 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2R 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2R 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2R 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2R 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2R 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Modell	1/min	Fördermenge		Druck		Leistung	
		l/min	Gpm	bar	psi	kW	PS
MK2SR 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2SR 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SR 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2SR 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2SR 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2SR 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.1.4 Abmessungen und Gewicht

Für die Abmessungen und das Gewicht der Pumpen siehe Schemata in Kapitel 6.

17.1.5 Versorgung der Pumpe

Die Pumpen sind stets bei positiver Saughöhe zu installieren, das Wasser läuft also durch Schwerkraft oder mittels unterstützter Versorgung zu und wird nicht von unten angesaugt.
Die Pumpen sind zwar für minimale Zulaufhöhen von 1 Meter ausgelegt, zur Erzielung des besten volumetrischen Wirkungsgrads und insbesondere zur Vermeidung von Kavitation muss die am Saugflansch des Kopfs gemessene verfügbare positive Saughöhe (NPSH avail) mindestens den nachstehenden Werten entsprechen.

	$NPSH_r$ (m)
MK2R/MK2SR40	4,5
MK2R/MK2SR45	5,5
MK2R/MK2SR50	6,5
MK2R/MK2SR55	7,5
MK2R/MK2SR60	8
MK2R/MK2SR65	9

Angesichts der Geometrie der Hydraulik und der erheblichen Förderleistungen sollte die Versorgung der Pumpen mit größerem Hubvolumen und Kolben-Ø 55 - 60 - 65 unbedingt durch eine Booster-Pumpe unterstützt werden, um Kavitationserscheinungen zu vermeiden.
Die Booster-Pumpe muss mindestens das Zweifache der Nenn-Förderleistung der Kolbenpumpe und einen Druck zwischen 2 und 3 bar aufweisen.
Diese Versorgungsbedingungen sind bei jeder Betriebsdrehzahl einzuhalten.

Vor Start der Kolbenpumpe ist stets die Booster-Pumpe einzuschalten.
Zum Schutz der Pumpe sollte ein Druckschalter in der Versorgungsleitung nach den Filtern installiert werden.

17.1.6 Filterung

Die technische Abteilung oder der Kundendienst stehen den Kunden für die beste Auslegung der Anlage gern zur Verfügung.
Als Beispiel vermitteln wir folgende Anordnungen (Abb. 12 und Abb. 12/a).

Mit manuell betätigtem Regelventil

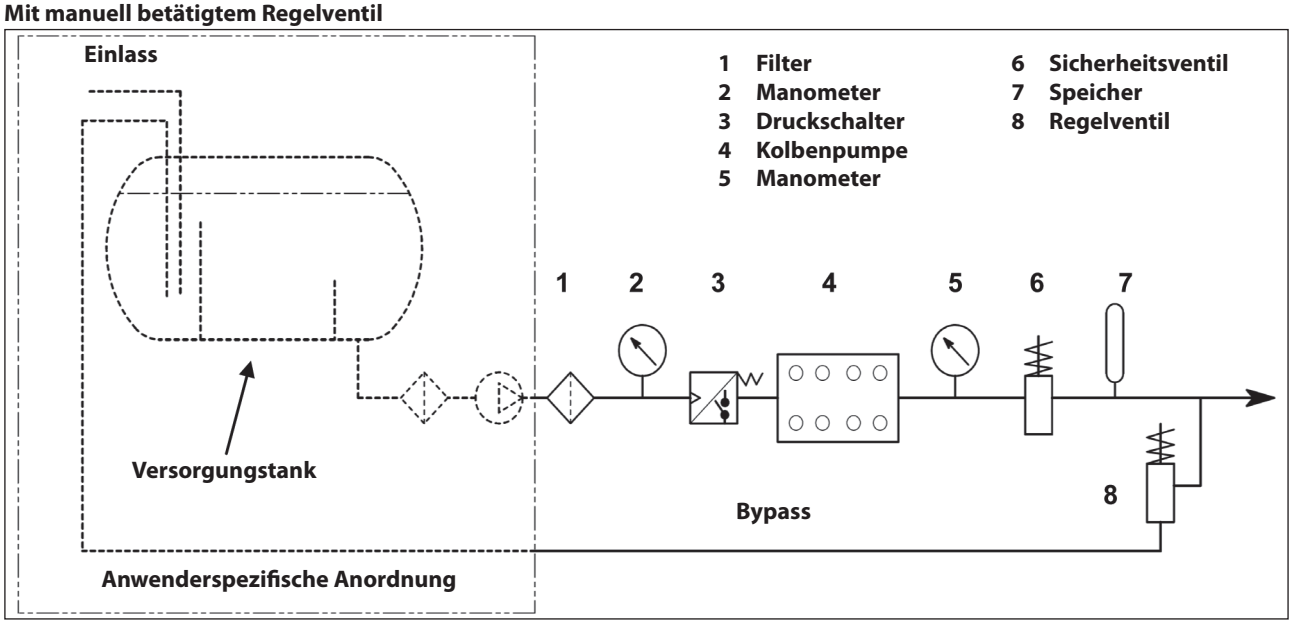


Abb. 12

Mit pneumatisch betätigtem Regelventil

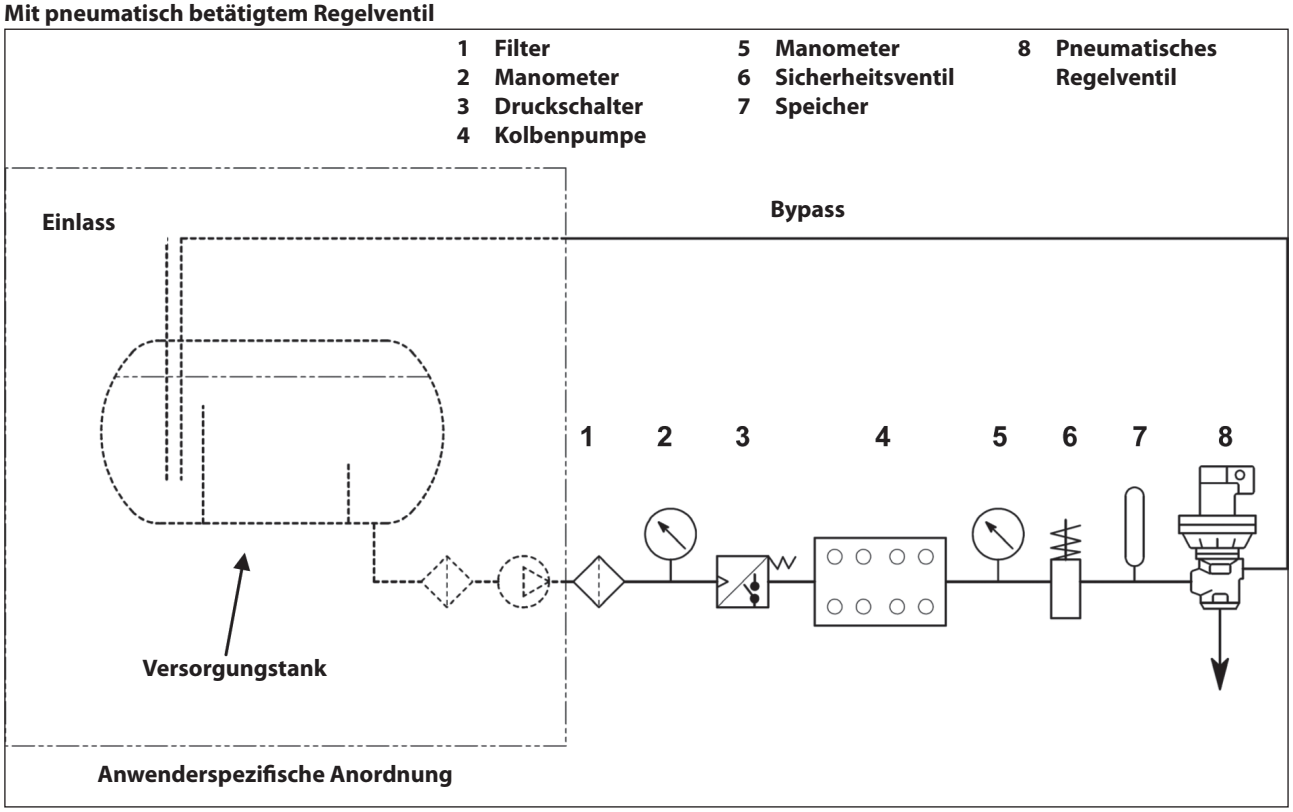


Abb. 12/a

Der Filter muss so nah wie möglich an der Pumpe installiert werden und leicht zugänglich sein.

Für die einwandfreie Pumpenfunktion müssen Filtergrad und Auffangleistung des Filtersystems auf den bestmöglichen Kompromiss zwischen Lebensdauer der Pumpenhydraulik und Anzahl der Betriebsstunden zwischen zwei aufeinander folgenden Wasserfüllungen abgestimmt sein. Der beste Kompromiss ergibt sich aus Abschn. 17.1.1.

Waschen Sie die Pumpe am Ende der täglichen Arbeitsschicht mit partikelfreiem Wasser.

17.1.7 Vorbeugende Wartung

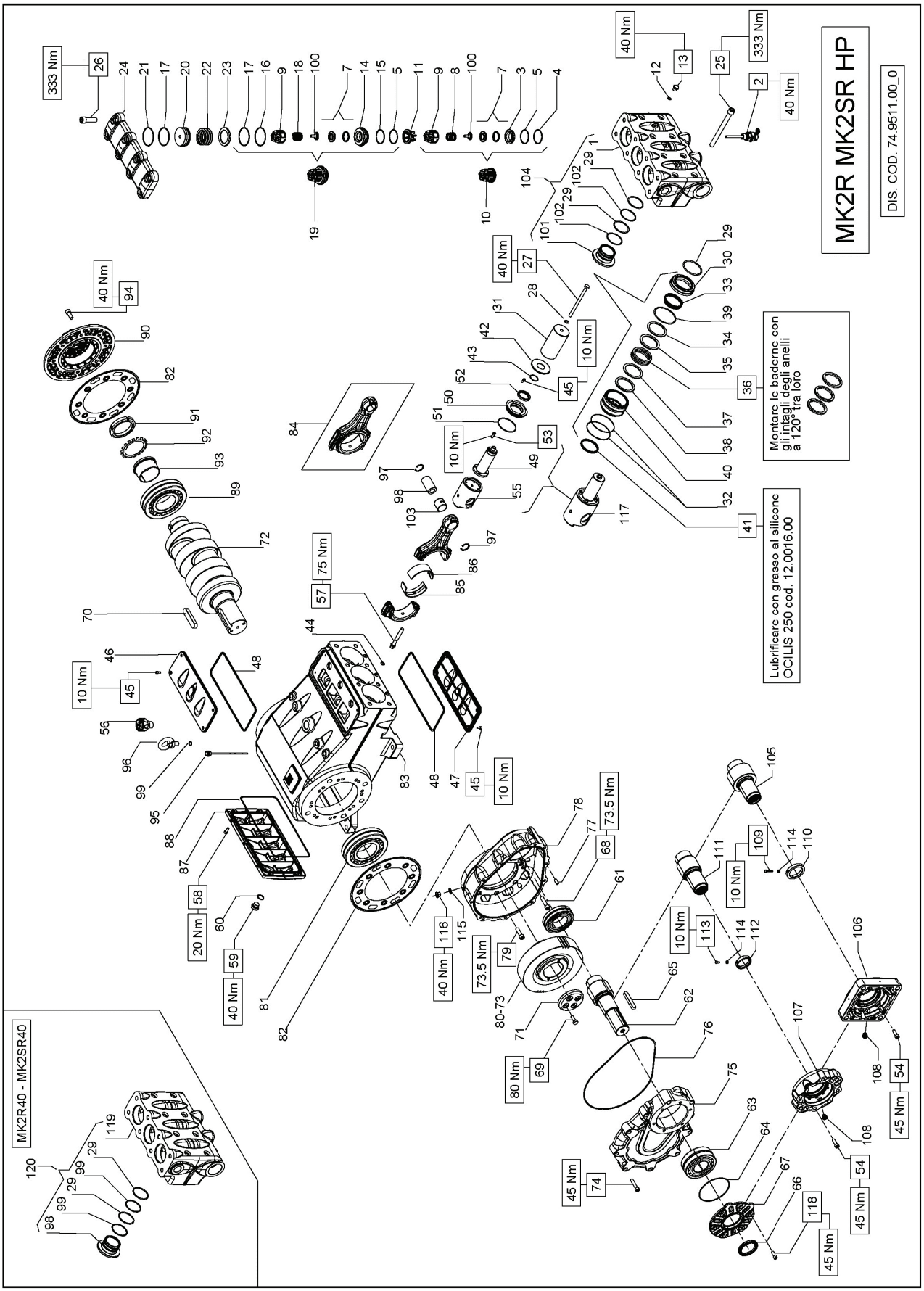
Für eine hohe Zuverlässigkeit und Effizienz der Pumpe müssen Sie die Wartungsintervalle lt. folgender Tabelle beachten.

VORBEUGENDE WARTUNG	
Alle 500 Stunden	**Alle 1000 Stunden**
Ölstandprüfung	Ölwechsel
	Überprüfung / Austausch*: Ventile Ventilsitze Ventilfedern Ventilführungen

HD-ND-Dichtungen: Die Lebensdauer ist von Filtergrad, Art und Volumenprozent des Flüssigmediums abhängig (siehe Kapitel 7).

* Beachten Sie zum Austausch die Anweisungen in der ***Reparaturanleitung***.

17.1.8 Explosionszeichnung und Ersatzteilliste



KIT RICAMBIO – SPARE KIT

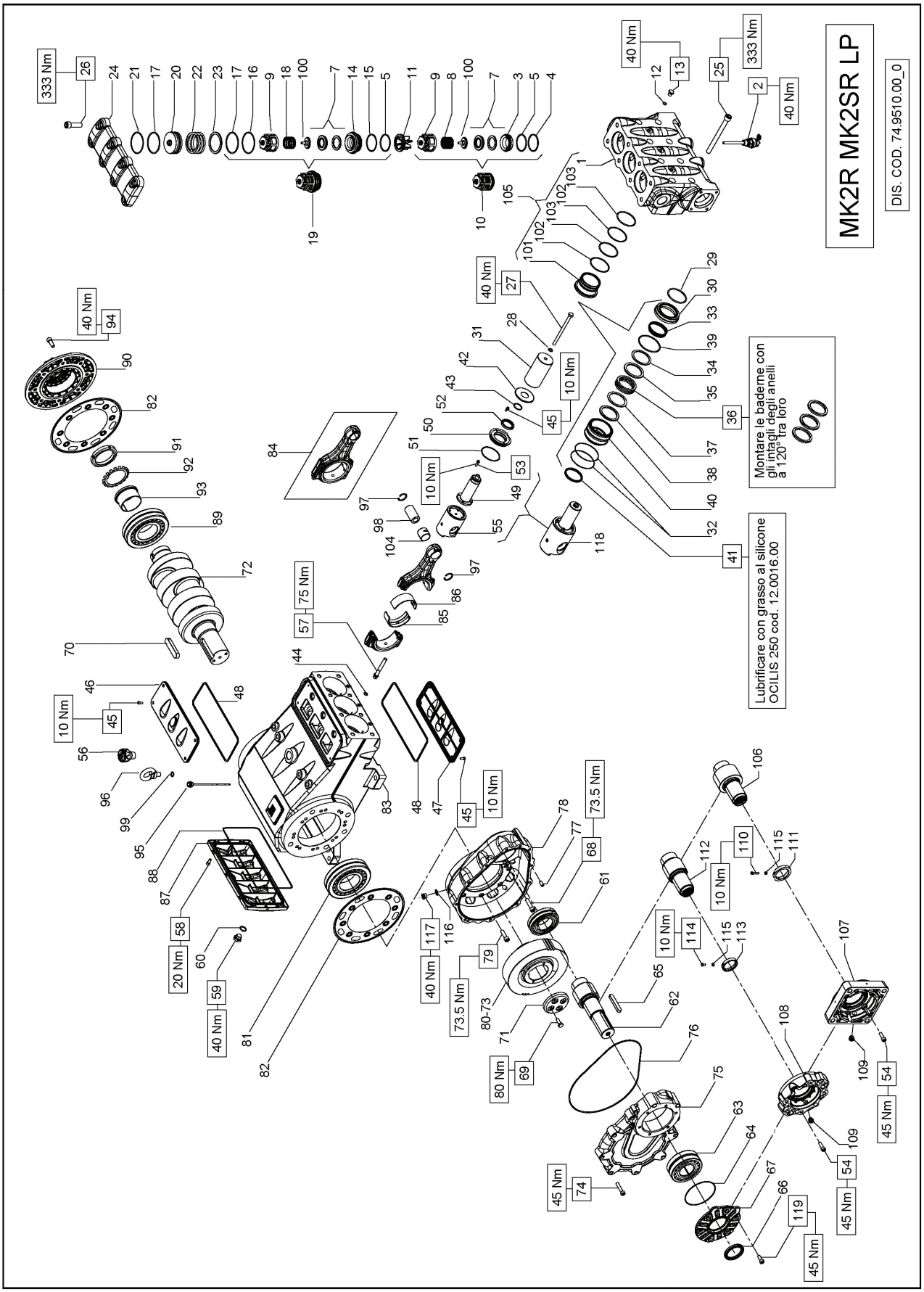
		MK2R40 - MK2SR40 (D.40)	MK2R45 - MK2SR45 (D.45)	MK2R50 - MK2SR50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2430	KIT 2431	KIT 2100
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2456	KIT 2457	KIT 2458
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R40 - MK2SR40
MK2R45 - MK2SR45
MK2R50 - MK2SR50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.1010.56	ANELLO DI TESTA BADERNE D. 40		3
	74.1011.56	ANELLO DI TESTA BADERNE D. 45		
	74.1006.56	ANELLO DI TESTA BADERNE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	94.7730.00	MOLLA Dm. 51.5x36.0 - D. 40-45		3
	94.7770.00	MOLLA Dm. 61.5x35.0 - D. 50		
34	74.2165.56	ANELLO PER MOLLA D. 40		3
	74.2169.56	ANELLO PER MOLLA D. 45		
	74.2134.56	ANELLO PER MOLLA D. 50		
35	74.2164.72	ANELLO RASCHIATORE BADERNE D. 40	A-C	3
	74.2168.72	ANELLO RASCHIATORE BADERNE D. 45	A-C	
	74.2138.82	ANELLO RASCHIATORE BADERNE D. 50	A-C	
36	90.5655.00	ANELLO TEN. ALT. KC D. 40.0x56.0x19.5	A-C	3
	90.5680.00	ANELLO TEN. ALT. KC D. 45.0x61.0x19.5	A-C	
	90.5700.00	ANELLO TEN. ALT. KC D. 50.0x66.0x19.5	A-C	
37	90.5232.00	ANELLO ANTIEST. D. 40.0x56.0x2.5	A-C	3
	90.5236.00	ANELLO ANTIEST. D. 45.0x61.0x2.5	A-C	
	90.5245.00	ANELLO ANTIEST. D. 50.0x66.0x2.5	A-C	
38	74.2163.60	ANELLO DI SUPPORTO D. 40		3
	74.2167.60	ANELLO DI SUPPORTO D. 45		
	74.2142.60	ANELLO DI SUPPORTO D. 50		
39	90.4110.00	OR D. 61.91x3.53 NBR 70SH 165 - D. 40	A-C	3
	90.4117.00	OR D. 66.27x3.53 NBR 70SH 4262 - D. 45	A-C	
	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - D. 50	A-C	

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
40	74.2162.56	SUPPORTO BADERNE D. 40		3
	74.2166.56	SUPPORTO BADERNE D. 45		
	74.2146.56	SUPPORTO BADERNE D. 50		
41	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
42	74.2133.51	PARASPRUZZI		3
43	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
44	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
45	99.1837.00	VITE M6x14 UNI 5931		14
46	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
47	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
48	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
49	74.0503.36	STELO GUIDA PISTONE		3
50	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
51	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
52	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
53	99.1884.00	VITE M6x20 UNI 5931		12
55	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
56	98.2333.00	TAPPO CARICO OLIO G1"		1
57	99.4410.00	VITE SERRAGGIO BIELLA		6
58	99.3045.00	VITE M8x18 UNI 5931		6
59	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
60	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
61	91.8700.00	CUSCINETTO A RULLI		1
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	91.8610.00	CUSCINETTO A RULLI		1
64	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
65	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
66	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
67	74.2173.22	COPERCHIO PIGNONE		1
68	99.4335.00	VITE M12x50 UNI 5931		2
69	99.3684.00	VITE M10x30 UNI 5739		4
70	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
71	74.2252.55	FERMO CORONA		1
72	74.0202.35	ALBERO A GOMITI C. 72 - MKSR		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	99.3730.00	VITE M10x50 UNI 5931		10
75	74.2174.13	COPERCHIO RIDUTTORE		1
76	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
77	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
78	74.2175.13	SCATOLA RIDUTTORE		1
79	99.4305.00	VITE M12x40 UNI 5931		6
81	91.8850.00	CUSCINETTO A RULLI		1
82	74.2130.84	GUARNIZIONE LATERALE	C	2
83	74.0101.13	CARTER POMPA		1
84	74.0302.01	BIELLA COMPLETA		3

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
87	74.1600.22	COPERCHIO CARTER		1
88	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
89	91.8852.00	CUSCINETTO A RULLI		1
90	74.1500.22	COPERCHIO CUSCINETTO		1
91	93.0800.00	GHIERA DI BLOCCAGGIO		1
92	96.8300.00	ROSETTA DI SICUREZZA		1
93	91.8800.00	BUSSOLA DI PRESSIONE		1
94	99.4280.00	VITE M12x30 UNI 5931		8
95	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
96	93.1050.00	GOLFARE M16 UNI 2947		2
97	90.0697.00	ANELLO D'ARRESTO J35		6
98	97.7450.00	SPINOTTO D. 35x64		3
99	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
100	36.2090.51	GUIDA INTERNA VALVOLA		6
101	74.2151.56	BOCCOLA TESTATA		3
102	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
103	90.9173.00	BOCCOLA PIEDE BIELLA		3
104	74.1206.01	TESTATA CON BOCCOLA D. 40		1
	74.1203.01	TESTATA CON BOCCOLA D. 45-50		
115	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
116	98.2086.00	TAPPO G 3/8"x12		2
117	74.6062.01	GR. GUIDA PISTONE		3
118	99.3668.00	VITE M10x25 5931		6
119	74.1206.15	TESTATA D. 40 HP		1
	74.1207.15	TESTATA D. 40 HP - NPT		
120	74.1206.01	TESTATA CON BOCCOLA D. 40		1
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
105	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
106	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
108	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
110	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
114	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
107	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
108	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
111	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
112	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
113	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
114	92.2025.00	DADO M6x5 UNI 5588		1


MK2R MK2SR LP
DIS. COD. 74.9510.00_0
Montare le baderne con gli intagli degli anelli a 120° tra loro
Lubrificare con grasso al silicone OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK2R55 - MK2SR55 (D.55)	MK2R60 - MK2SR60 (D.60)	MK2R65- MK2SR65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2102	KIT 2103	KIT 2104
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2453	KIT 2454	KIT 2455
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R55 - MK2SR55
MK2R60 - MK2SR60
MK2R65 - MK2SR65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.1007.56	ANELLO DI TESTA BADERNE D. 55		3
	74.1008.56	ANELLO DI TESTA BADERNE D. 60		
	74.1009.56	ANELLO DI TESTA BADERNE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	94.7770.00	MOLLA Dm. 61.5x35.0 - MK2R MK2SR 55		3
	94.7900.00	MOLLA Dm. 71.5x35.0 - MK2R MK2SR 60-65		
34	74.2135.56	ANELLO PER MOLLA D. 55		3
	74.2136.56	ANELLO PER MOLLA D. 60		
	74.2137.56	ANELLO PER MOLLA D. 65		
35	74.2139.82	ANELLO RASCHIATORE D. 55	A-C	3
	74.2140.82	ANELLO RASCHIATORE D. 60	A-C	
	74.2141.82	ANELLO RASCHIATORE D. 65	A-C	
36	90.5725.00	BADERNE D. 55.0x71.0x19.5	A-C	3
	90.5750.00	BADERNE D. 60.0x76.0x19.5	A-C	
	90.5775.00	BADERNE D. 65.0x81.0x19.5	A-C	
37	90.5267.00	ANELLO ANTIEST. D. 55.0x71.0x2.5	A-C	3
	90.5269.00	ANELLO ANTIEST. D. 60.0x76.0x2.5	A-C	
	90.5275.00	ANELLO ANTIEST. D. 65.0x81.0x2.5	A-C	
38	74.2143.60	ANELLO DI SUPPORTO D. 55		3
	74.2144.60	ANELLO DI SUPPORTO D. 60		
	74.2145.60	ANELLO DI SUPPORTO D. 65		
39	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - MK2R MK2SR 55	A-C	3
	90.4141.00	OR D. 85.32x3.53 NBR 70SH 4337 - MK2R MK2SR 60-65	A-C	
40	74.2147.56	SUPPORTO BADERNE D. 55		3
	74.2148.56	SUPPORTO BADERNE D. 60		
	74.2149.56	SUPPORTO BADERNE D. 65		
41	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
42	74.2133.51	PARASPRUZZI		3
43	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
44	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
45	99.1837.00	VITE M6x14 UNI 5931		14
46	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
47	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
48	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
49	74.0503.36	STELO GUIDA PISTONE		3
50	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
51	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
52	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
53	99.1884.00	VITE M6x20 UNI 5931		12
55	79.0504.43	GUIDA PISTONE		3
	790.0505.43	GUIDA PISTONE +1.0		
56	98.2333.00	TAPPO CARICO OLIO G1"		1
57	99.4410.00	VITE SERRAGGIO BIELLA		6
58	99.3045.00	VITE M8x18 UNI 5931		6
59	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
60	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
61	91.8700.00	CUSCINETTO A RULLI		1
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	91.8610.00	CUSCINETTO A RULLI		1
64	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
65	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
66	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
67	74.2173.22	COPERCHIO PIGNONE		1
68	99.4335.00	VITE M12x50 UNI 5931		2
69	99.3684.00	VITE M10x30 UNI 5739		4
70	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
71	74.2252.55	FERMO CORONA		1
72	74.0202.35	ALBERO A GOMITI C. 72 - MK2R		1
	74.0201.35	ALBERO A GOMITI C. 72 - MK2SR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	99.3730.00	VITE M10x50 UNI 5931		10
75	74.2174.13	COPERCHIO RIDUTTORE		1
76	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
77	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
78	74.2175.13	SCATOLA RIDUTTORE		1
79	99.4305.00	VITE M12x40 UNI 5931		6
81	91.8850.00	CUSCINETTO A RULLI		1
82	74.2130.84	GUARNIZIONE LATERALE	C	2
83	74.0101.13	CARTER POMPA		1
84	74.0302.01	BIELLA COMPLETA		3
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0.50 - SUP.	D	
87	74.1600.22	COPERCHIO CARTER		1
88	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
89	91.8852.00	CUSCINETTO A RULLI		1
90	74.1500.22	COPERCHIO CUSCINETTO		1
91	93.0800.00	GHIERA DI BLOCCAGGIO		1
92	96.8300.00	ROSETTA DI SICUREZZA		1
93	91.8800.00	BUSSOLA DI PRESSIONE		1
94	99.4280.00	VITE M12x30 UNI 5931		8
95	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
96	93.1050.00	GOLFARE M16 UNI 2947		2
97	90.0697.00	ANELLO D'ARRESTO J35		6
98	97.7450.00	SPINOTTO D. 35x64		3
99	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
100	36.2089.51	GUIDA INTERNA VALVOLA		6
101	74.2150.56	BOCCOLA TESTATA		3
102	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
103	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
104	90.9173.00	BOCCOLA PIEDE BIELLA		3
105	74.1201.01	TESTATA CON BOCCOLA		1
116	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
117	98.2086.00	TAPPO G 3/8"x12		2
118	74.6062.01	GR. GUIDA PISTONE		3
119	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
109	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
110	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
111	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
115	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
108	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
109	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
112	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
113	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
114	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
115	92.2025.00	DADO M6x5 UNI 5588		1

17.2 Pumpe in Version MK2C-MK25C

17.2.1 Gebrauchsanweisungen



Die Pumpen sind für den Betrieb in nicht explosionsgefährdeten Umgebungen ausgelegt. Unsere ***technische Abteilung*** und unser ***Kundendienst*** beraten Sie gerne zu Fragen hinsichtlich der beste Auslegung Ihrer Anlage.

17.2.2 Betriebstemperatur



Die zulässige Temperatur des Flüssigmediums beträgt: -30 °C÷+30 °C. Wenden Sie sich für hiervon abweichende Werte an die ***technische Abteilung*** oder den ***Kundendienst***.

17.2.3 Fördermenge und Höchstdruck

Die im Katalog angegebenen Leistungen beziehen sich auf die Höchstleistungen der Pumpe. **Unabhängig** von der genutzten Leistung dürfen die auf dem Typenschild angegebenen Höchstwerte für Druck und Drehzahl nur mit ausdrücklicher und formeller Genehmigung durch die ***technische Abteilung*** oder den ***Kundendienst*** überschritten werden.

17.2.4 Technische Daten

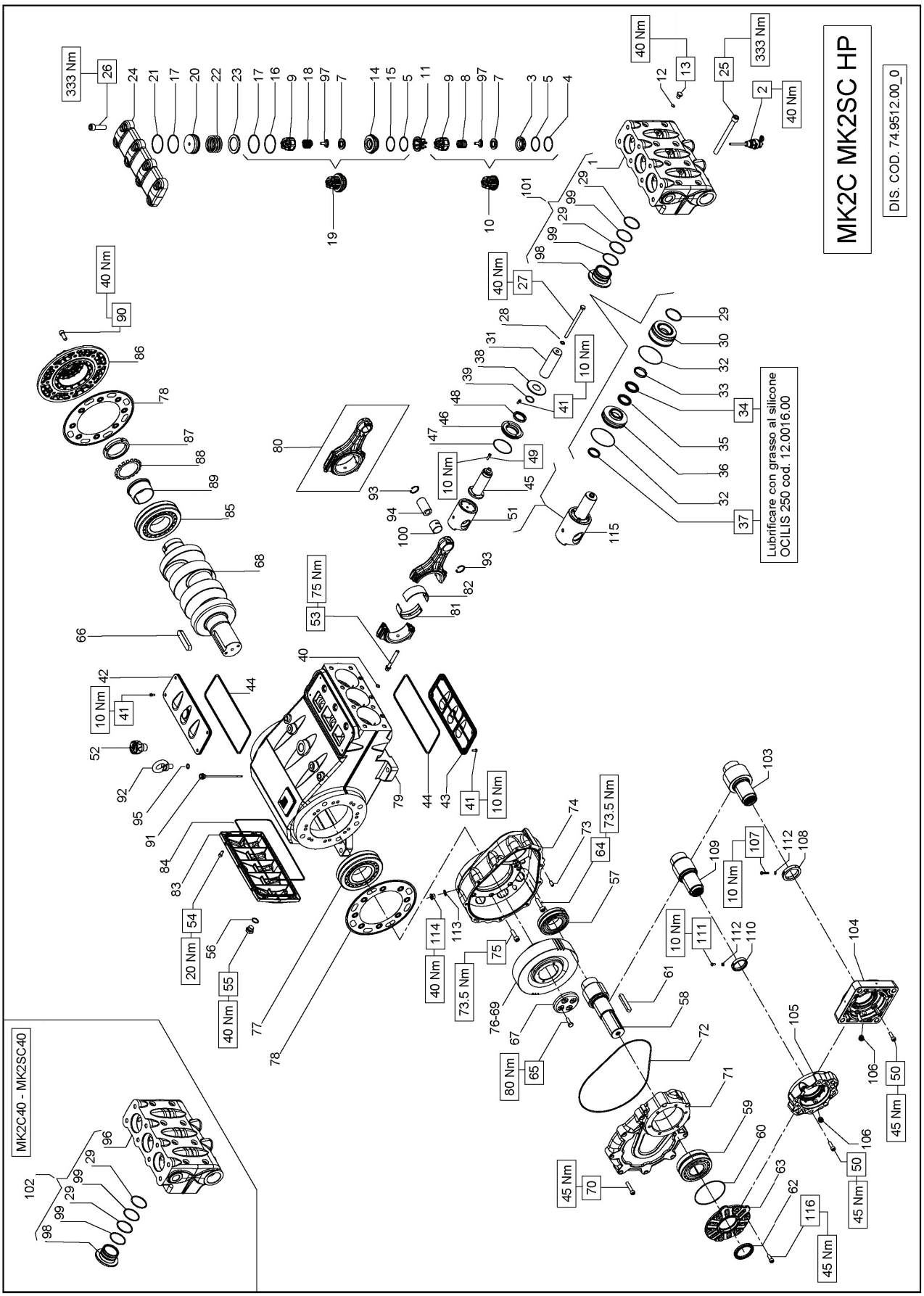
Modell	1/min	Fördermenge		Druck		Leistung	
		l/min	Gpm	bar	psi	kW	PS
MK2SC 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2SC 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2SC 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2SC 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2SC 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2SC 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Modell	1/min	Fördermenge		Druck		Leistung	
		l/min	Gpm	bar	psi	kW	PS
MK2SC 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2SC 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SC 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2SC 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2SC 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2SC 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.2.5 Abmessungen und Gewicht

Für die Abmessungen und das Gewicht der Pumpen siehe Schemata in Kapitel 6.

17.2.6 Explosionszeichnung und Ersatzteilliste



KIT RICAMBIO – SPARE KIT

		MK2C40 - MK2SC40 (D.40)	MK2C45 - MK2SC45 (D.45)	MK2C50 - MK2SC50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2258		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2C40 - MK2SC40
MK2C45 - MK2SC45
MK2C50 - MK2SC50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIRAZ.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2118.56	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7222.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7223.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE HP		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE - FLANGIATO		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72 - MKSC		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKC		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1

17.3 Pumpe in Version MK2SH

17.3.1 Gebrauchsanweisungen



Die Pumpen sind für den Betrieb in nicht explosionsgefährdeten Umgebungen mit gefiltertem Wasser (siehe Abschn. 9.7). Andere Flüssigmedien dürfen nur nach ausdrücklicher Genehmigung durch die ***technische Abteilung*** oder den ***Kundendienst*** verwendet werden.

17.3.2 Wassertemperatur



Die zulässige Höchsttemperatur des Wassers beträgt 40 °C. Kurzzeitig kann die Pumpe auch mit Wasser bei einer Temperatur von bis zu 60 °C betrieben werden. Wenden Sie sich für solche Fälle bitte an die ***technische Abteilung*** oder den ***Kundendienst***.

17.3.3 Fördermenge und Höchstdruck

Die im Katalog angegebenen Leistungen beziehen sich auf die Höchstleistungen der Pumpe. **Unabhängig** von der genutzten Leistung dürfen die auf dem Typenschild angegebenen Höchstwerte für Druck und Drehzahl nur mit ausdrücklicher und formeller Genehmigung durch die ***technische Abteilung*** oder den ***Kundendienst*** überschritten werden.

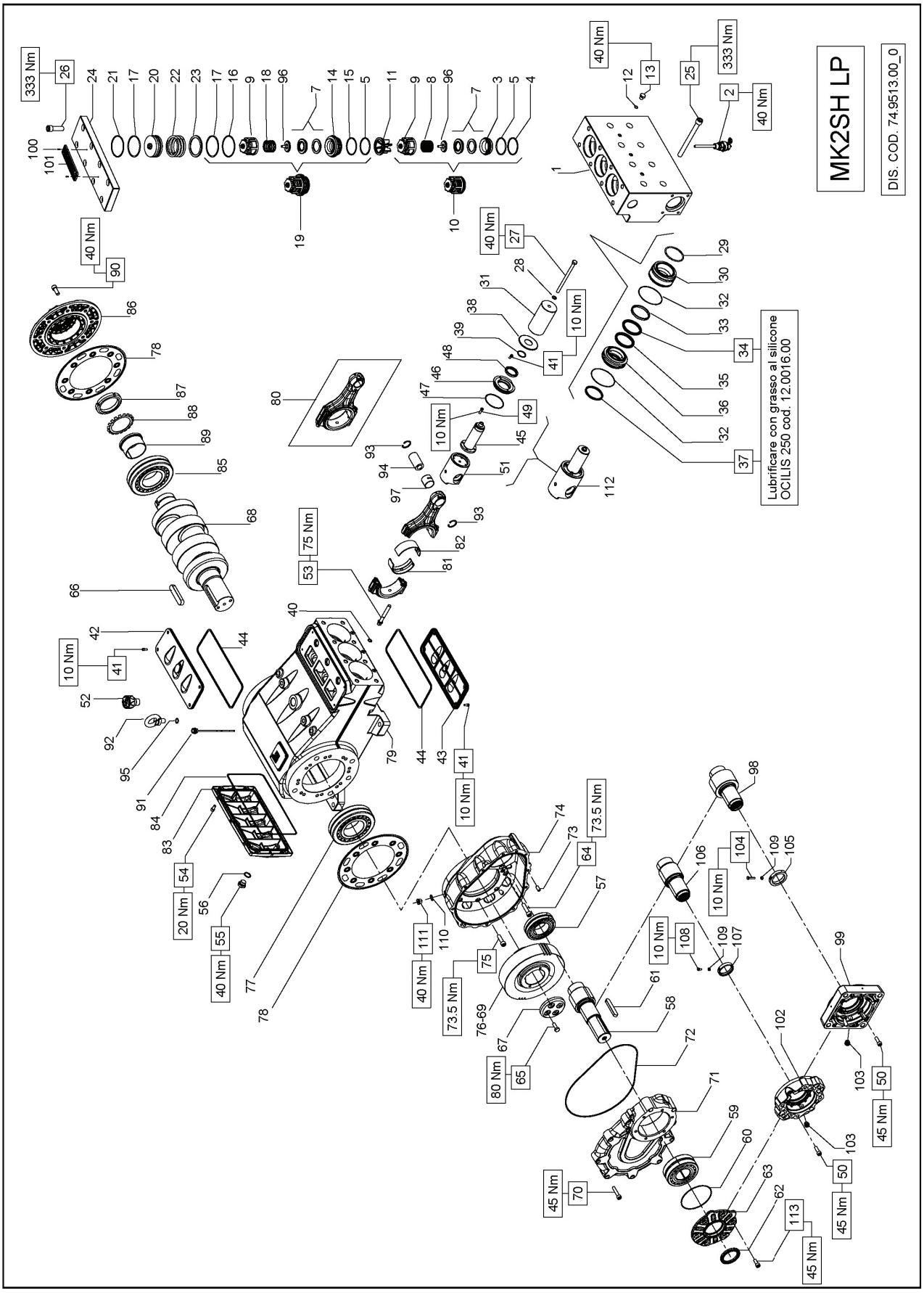
17.3.4 Technische Daten

Modell	1/min	Fördermenge		Druck		Leistung	
		l/min	Gpm	bar	psi	kW	PS
MK2SH 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SH 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.3.5 Abmessungen und Gewicht

Für die Abmessungen und das Gewicht der Pumpen siehe Schemata in Kapitel 6.

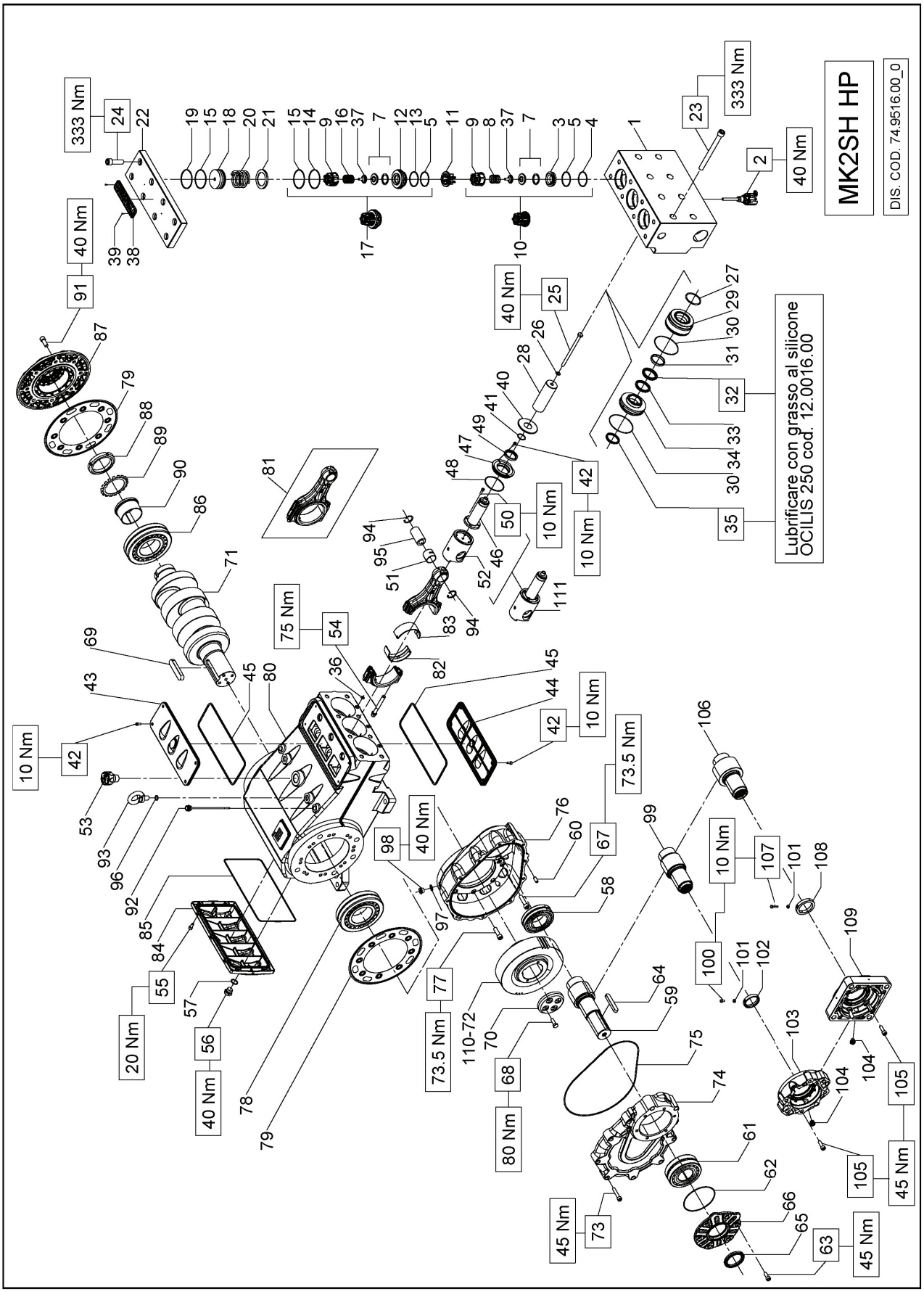
17.3.6 Explosionszeichnung und Ersatzteilliste



KIT RICAMBIO – SPARE KIT		MK2S65H (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2047
B	Kit valvole – Valves kit	KIT 2048
C	Kit tenute complete – Complete seals kit	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)

MK2S65H

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1210.56	TESTATA LP		1
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2161.56	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2116.56	CAMICIA PISTONE D. 65		3
31	74.0405.09	PISTONE D. 65x127		3
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1005.92	ANELLO DI TESTA PISTONE D. 65		3
34	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	3
35	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	3
36	74.2122.68	SUPPORTO GUARNIZIONE D. 65		3
37	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	3
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72		1
69	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		3
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
82	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	90.9173.00	BOCCOLA PIEDE BIELLA		3
100	91.5703.00	RIVETTO AUTOF. D. 2.5x8 UNI 7346		2
101	97.8276.00	MARCHIO PRATISSOLI		1
110	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
111	98.2086.00	TAPPO G 3/8"x12		2
112	74.6062.01	GR. GUIDA PISTONE		3
113	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
98	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
99	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
104	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
105	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
102	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
107	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
108	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
109	92.2025.00	DADO M6x5 UNI 5588		1


MK2SH HP
DIS. COD. 74.9516.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK2SH45 (D.45)
A	Kit tenute pompanti – Plunger packing kit	KIT 2053
B	Kit valvole – Valves kit	KIT 2055
C	Kit tenute complete – Complete seals kit	KIT 2451
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0.25) - 2078 (+0.50)

MK2SH45

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1212.56	TESTATA POMPA D. 45		1
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	36.2069.66	SEDE VALVOLA DI MANDATA		3
13	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
14	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
15	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
16	94.7605.00	MOLLA Dm. 28.5x45.4		3
17	36.7153.01	GR. VALVOLA DI MANDATA	B	3
18	74.2110.70	TAPPO VALVOLE DI MANDATA		3
19	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
20	94.7750.00	MOLLA Dm. 58.0x45.4		3
21	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
22	74.2181.56	COPERCHIO VALVOLE		1
23	99.5222.00	VITE M16x180 UNI 5931		8
24	99.5147.00	VITE M16x55 UNI 5931		8
25	99.3850.00	VITE M10x160 UNI 5737		3
26	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
27	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	3
29	74.2112.56	CAMICIA PISTONE D. 45		3
28	74.0401.09	PISTONE D. 45x127		3
30	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
31	74.1001.92	ANELLO DI TESTA PISTONE D. 45		3
32	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	3
33	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	3
34	74.2118.68	SUPPORTO GUARNIZIONE D. 45		3
35	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	3
36	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
37	36.2090.51	GUIDA INTERNA VALVOLA		6
38	97.8276.00	MARCHIO PRATISSOLI		1
39	91.5703.00	RIVETTO AUTOFILETTANTE D. 2.5x8.0		2
40	74.2133.51	PARASPRUZZI		3
41	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
42	99.1837.00	VITE M6x14 UNI 5931		14
43	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
44	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
45	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
46	74.0503.36	STELO GUIDA PISTONE		3
47	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
48	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
49	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
50	99.1884.00	VITE M6x20 UNI 5931		12
51	90.9173.00	BOCCOLA PIEDE BIELLA		3
52	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
53	98.2333.00	TAPPO CARICO OLIO G1"		1
54	99.4410.00	VITE SERRAGGIO BIELLA		6
55	99.3045.00	VITE M8x18 UNI 5931		6
56	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
57	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
58	91.8700.00	CUSCINETTO A RULLI		1
59	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
60	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
61	91.8610.00	CUSCINETTO A RULLI		1
62	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
63	99.3668.00	VITE M10x25 5931		6
64	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
65	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
66	74.2173.22	COPERCHIO PIGNONE		1
67	99.4335.00	VITE M12x50 UNI 5931		2
68	99.3684.00	VITE M10x30 UNI 5739		4
69	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
70	74.2252.55	FERMO CORONA		1
71	74.0202.35	ALBERO A GOMITI C. 72		1
72	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
73	99.3730.00	VITE M10x50 UNI 5931		10
74	74.2174.13	COPERCHIO RIDUTTORE		1
75	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
76	74.2175.13	SCATOLA RIDUTTORE		1
77	99.4305.00	VITE M12x40 UNI 5931		6
78	91.8850.00	CUSCINETTO A RULLI		1
79	74.2130.84	GUARNIZIONE LATERALE	C	2
80	74.0101.13	CARTER POMPA		1
81	74.0302.01	BIELLA COMPLETA		3
82	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
83	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
84	74.1600.22	COPERCHIO CARTER		1
85	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
86	91.8852.00	CUSCINETTO A RULLI		1
87	74.1500.22	COPERCHIO CUSCINETTO		1
88	93.0800.00	GHIERA DI BLOCCAGGIO		1
89	96.8300.00	ROSETTA DI SICUREZZA		1
90	91.8800.00	BUSSOLA DI PRESSIONE		1
91	99.4280.00	VITE M12x30 UNI 5931		8
92	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
93	93.1050.00	GOLFARE M16 UNI 2947		2
94	90.0697.00	ANELLO D'ARRESTO J35		6
95	97.7450.00	SPINOTTO D. 35x64		3
96	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
97	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
98	98.2086.00	TAPPO G 3/8"x12		2
111	74.6062.01	GR. GUIDA PISTONE		3
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
101	92.2025.00	DADO M6x5 UNI 5588		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
110	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
99	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
100	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
101	92.2025.00	DADO M6x5 UNI 5588		1
102	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
103	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
110	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1

18 EINBAUERKLÄRUNG

EINBAUERKLÄRUNG

(Gemäß Anhang II der europäischen Richtlinie 2006/42/EG)

Der Hersteller **INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 - 42049 - S. ILARIO D'ENZA - Italien ERKLÄRT** eigenverantwortlich, dass das wie folgt identifizierte und beschriebene Produkt:

Bezeichnung:	Pumpe
Typ:	Kolbenhubpumpe für Hochdruckwasser
Herstellermarke:	INTERPUMP GROUP
Modell:	Serie 74 MK2, MK2S, MK2R, MK2SR, MK2C, MK2SC, MK2SH

der Maschinenrichtlinie 2006/42/EG entspricht
Angewandte Normen: UNI EN ISO 12100- UNI EN 809

Die vorgenannte Pumpe erfüllt alle grundlegenden Sicherheits- und Gesundheitsschutzanforderungen, die unter Punkt 1 des Anhangs I der Maschinenrichtlinie aufgeführt sind:
1.1.2 - 1.1.3 - 1.1.5 - 1.3.1 - 1.3.2 - 1.3.3 - 1.3.4 - 1.5.4 - 1.5.5 - 1.6.1 - 1.7.1 - 1.7.2 - 1.7.4 - 1.7.4.1 - 1.7.4.2. Die speziellen technischen Unterlagen sind gemäß Anhang VII B erstellt worden.

Darüber hinaus verpflichtet sich der Hersteller, einzelstaatlichen Stellen auf begründetes Verlangen die speziellen technischen Unterlagen zur Pumpe in festzulegenden Modalitäten und Fristen zu übermitteln.

Die Inbetriebnahme der Pumpe ist so lange untersagt, bis festgestellt wurde, dass die Maschine, in die die Pumpe eingebaut wird, den Bestimmungen der einschlägigen Richtlinien bzw. Normen entspricht.

Bevollmächtigter für die Zusammenstellung der relevanten technischen Unterlagen

Name: Maurizio Novelli

Adresse: INTERPUMP GROUP S.p.A. - Via E. Fermi, 25 - 42049 - S. ILARIO D'ENZA (RE) - Italien

Der Verantwortliche:
Reggio Emilia - Januar 2017

Ing. Massimiliano Bizzarri

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1 INTRODUCCIÓN

Este manual contiene las instrucciones de uso y mantenimiento de la bomba MK2 y se debe leer atentamente y comprender antes de utilizar la bomba.
De un correcto uso y un mantenimiento adecuado depende el funcionamiento regular y la duración de la bomba.
Interpump Group no se responsabiliza de los daños causados por negligencia o falta de observación de las normas descritas sobre el presente manual.
Verificar, en el momento de recepción de la bomba, que ésta se encuentre íntegra y completa.
En caso de anomalías señalarlas antes de instalar y poner en funcionamiento la bomba.

2 DESCRIPCIÓN DE LOS SÍMBOLOS

Leer atentamente lo indicado en el presente manual antes de realizar cada operación.



Señal de advertencia



Leer atentamente lo indicado en el presente manual antes de realizar cada operación.



Señal de Peligro
Peligro de electrocución.



Señal de Peligro
Utilizar una mascarilla de protección.



Señal de Peligro
Utilizar gafas de protección.



Señal de Peligro
Utilizar guantes de protección para realizar cualquier tipo de operación.



Señal de Peligro
Utilizar calzado de seguridad

3 SEGURIDAD

3.1 Advertencias generales acerca de la seguridad

El uso inadecuado de las bombas y de los sistemas de alta presión, además de la inobservancia de las normas de instalación y mantenimiento pueden causar graves daños a las personas y/o cosas. Todo aquel que vaya a encargarse de ensamblar o utilizar sistemas de alta presión deberá poseer la competencia necesaria para hacerlo, conocer las características de los componentes que irá a ensamblar/utilizar y adoptar todas las precauciones necesarias para garantizar la máxima seguridad en cualquier condición de funcionamiento. Ninguna precaución que sea razonablemente aplicable acerca de las medidas de seguridad podrá ser omitida, sea tanto por parte del técnico Instalador como del Operador.

3.2 Medidas esenciales de seguridad del sistema de alta presión

1. La línea de presión debe siempre prever una válvula de seguridad.
2. Los componentes del sistema de alta presión, en particular para aquellos sistemas que operan sobre todo en el exterior, deben ser protegidos de manera adecuada de la lluvia, el hielo y el calor.
3. Las partes eléctricas del sistema, además de ser protegidas adecuadamente de salpicaduras de agua, deben cumplir con las normativas vigentes específicas.
4. Los tubos de alta presión deben estar correctamente dimensionados para obtener la máxima presión de funcionamiento del sistema y utilizados siempre y exclusivamente en el interior del campo de presiones de trabajo, indicadas por el fabricante del mismo. Las mismas modalidades deben ser observadas por todos los otros accesorios del sistema sometidos a alta presión.
5. Los extremos de los tubos de alta presión deben ser enfundados y asegurados a una estructura sólida, para evitar peligrosos golpes de látigo en el caso de explosión o ruptura de las conexiones.
6. Cárteres adecuados de protección deben estar previstos en los sistemas de transmisión de la bomba (uniones, poleas y correas, tomas de potencia auxiliares).

3.3 Seguridad durante el trabajo



El ambiente o el área donde se opera con un sistema a alta presión debe estar claramente señalizado y prohibido a personal no autorizado y, a ser posible, delimitado o cercado.
El personal autorizado para acceder a tal área deberá ser previamente formado acerca del comportamiento que debe tener en la misma e informado sobre los riesgos derivados de defectos o malfuncionamientos del sistema de alta presión.
Antes de activar el sistema el Operador debe verificar que:

1. El sistema de alta presión se encuentre correctamente alimentado ver capítulo 9 punto 9.5.
2. Los filtros de aspiración de la bomba se encuentren perfectamente limpios; se recomienda introducir cualquier dispositivo que indique el valor de atascamiento.
3. Las partes eléctricas estén adecuadamente protegidas y en perfecto estado.
4. Los tubos de alta presión no presenten signos evidentes de abrasión y los racores se encuentren en perfecto orden.
5. En función de la aplicación, del uso y de las condiciones ambientales, las superficies externas de la bomba pueden alcanzar temperaturas elevadas durante el funcionamiento. Aconsejamos aplicar las medidas necesarias para evitar el contacto con las partes calientes.

Cualquier anomalía o duda que surgiera antes o durante el trabajo deberá ser inmediatamente señalada y verificada por personal competente. En estos casos la presión deberá ser inmediatamente restablecida y el sistema de alta presión detenido.

3.4 Normas de comportamiento para el uso de lanzas



1. El técnico operador debe siempre anteponer su integridad y seguridad, además de aquella de la de terceros que puedan estar directamente implicados a causa de sus acciones, a cualquier otra valoración o interés del caso; sus acciones deberán ser dictaminadas basándose en el buen sentido y en la responsabilidad.
2. El técnico operador debe siempre utilizar un casco con visera de protección, indumentaria impermeable y calzar botas adecuadas para el tipo de uso que sean capaces de asegurar un buen agarre al pavimento en presencia de mojado.

Nota: *una adecuada vestimenta protege de manera eficaz de las salpicaduras de agua pero no del impacto directo con el chorro de agua o de salpicaduras muy cercanas. En tales circunstancias podría ser necesario utilizar otras protecciones.*

3. Es conveniente organizar equipos formados por al menos dos personas, capaces de darse una recíproca e inmediata asistencia en caso de necesidad, así como de darse el cambio en caso de trabajos duros y prolongados.

4. El área de trabajo interesada por el radio de acción del chorro debe ser absolutamente reservada y liberada de objetos que, inadvertidamente investidos por el chorro de presión, puedan dañarse y/o crear situaciones de peligro.
5. El chorro de agua debe ser apuntado siempre y exclusivamente en dirección de la zona de trabajo, incluso durante las pruebas o controles previos.
6. El técnico operador debe siempre prestar atención a la trayectoria de los detritos eliminados por el chorro de agua. En el caso que sea necesario, deberán aplicarse protecciones para el técnico Operador ya que podría estar accidentalmente expuesto.
7. Durante el trabajo el técnico Operador no debe ser distraído bajo ningún concepto. El personal encargado a trabajos con necesidad de acceder en el área operativa deberá esperar que el técnico operador suspenda el trabajo de iniciativa propia para poder mostrar inmediatamente su presencia.
8. Es importante para la seguridad que todos los componentes del equipo sean siempre informados acerca de las recíprocas intenciones con el fin de evitar peligrosos malentendidos.
9. El sistema de alta presión no debe ser puesto en marcha y llevado a presión sin que todos los componentes del equipo se encuentren en posición, y el técnico Operador haya dirigido la lanza hacia la zona de trabajo.

3.5 Seguridad en el mantenimiento del sistema

1. El mantenimiento del sistema de alta presión debe realizarse en los intervalos de tiempo previstos por el fabricante que es responsable de todo el grupo según la ley.
2. El mantenimiento debe ser realizado por personal especializado y autorizado.
3. El montaje y el desmontaje de la bomba, así como de los diferentes componentes, deben ser realizados exclusivamente por personal autorizado, utilizando equipos adecuados con el fin de evitar daños a los componentes, especialmente a las conexiones.
4. Utilizar siempre y exclusivamente piezas de recambio originales para garantizar una total fiabilidad y seguridad al equipo.

4 IDENTIFICACIÓN DE LA BOMBA

Todas las bombas tienen una placa de identificación que contiene:

- Modelo y versión de la bomba
- Número de matrícula
- Número de vueltas máximo
- Potencia absorbida Hp - kW
- Presión bar - P.S.I.
- Capacidad l/min - Gpm

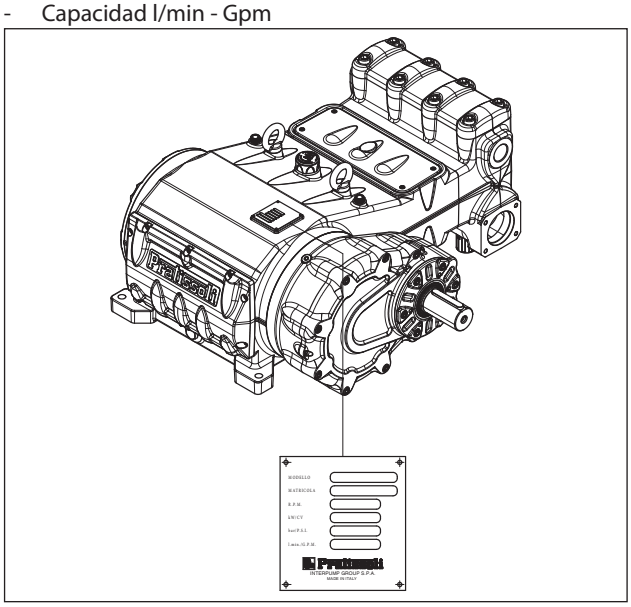


Fig. 1

Modelo, versión y número de matrícula deberán estar siempre indicados en caso de solicitar piezas de recambio.

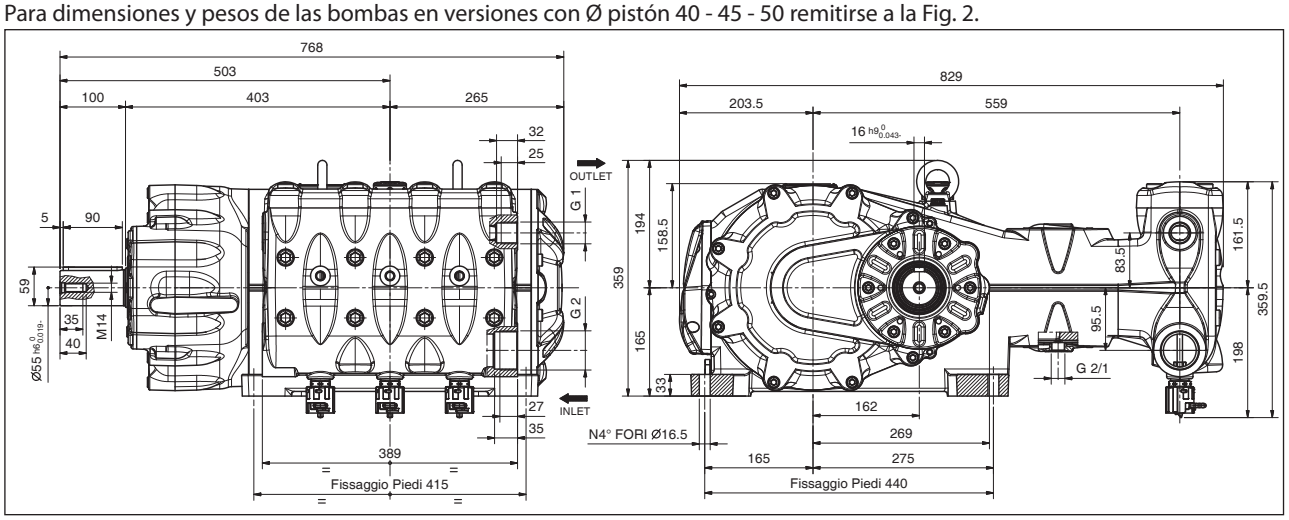
5 CARACTERÍSTICAS TÉCNICAS

Modelo	Vueltas/1'	Capacidad		Presión		Potencia	
		l/min	Gpm	bar	psi	kW	Hp
MK2 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Modelo	Vueltas/1'	Capacidad		Presión		Potencia	
		l/min	Gpm	bar	psi	kW	Hp
MK2S 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2S 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2S 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2S 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2S 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2S 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

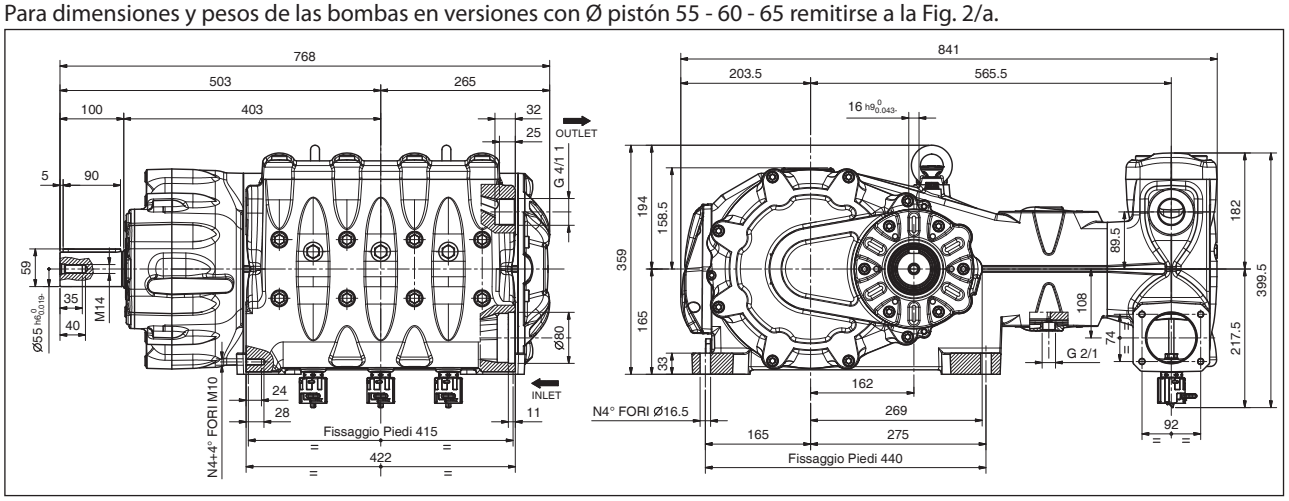
6 DIMENSIONES Y PESOS

Para dimensiones y pesos de las bombas en versiones con Ø pistón 40 - 45 - 50 remitirse a la Fig. 2.



Peso en seco 398 kg. Fig. 2

Para dimensiones y pesos de las bombas en versiones con Ø pistón 55 - 60 - 65 remitirse a la Fig. 2/a.



Peso en seco 411 kg. Fig. 2/a

Para dimensiones de las bombas en versión H.P. con preinstalación Hydraulic Pack remitirse a la Fig. 2/b.

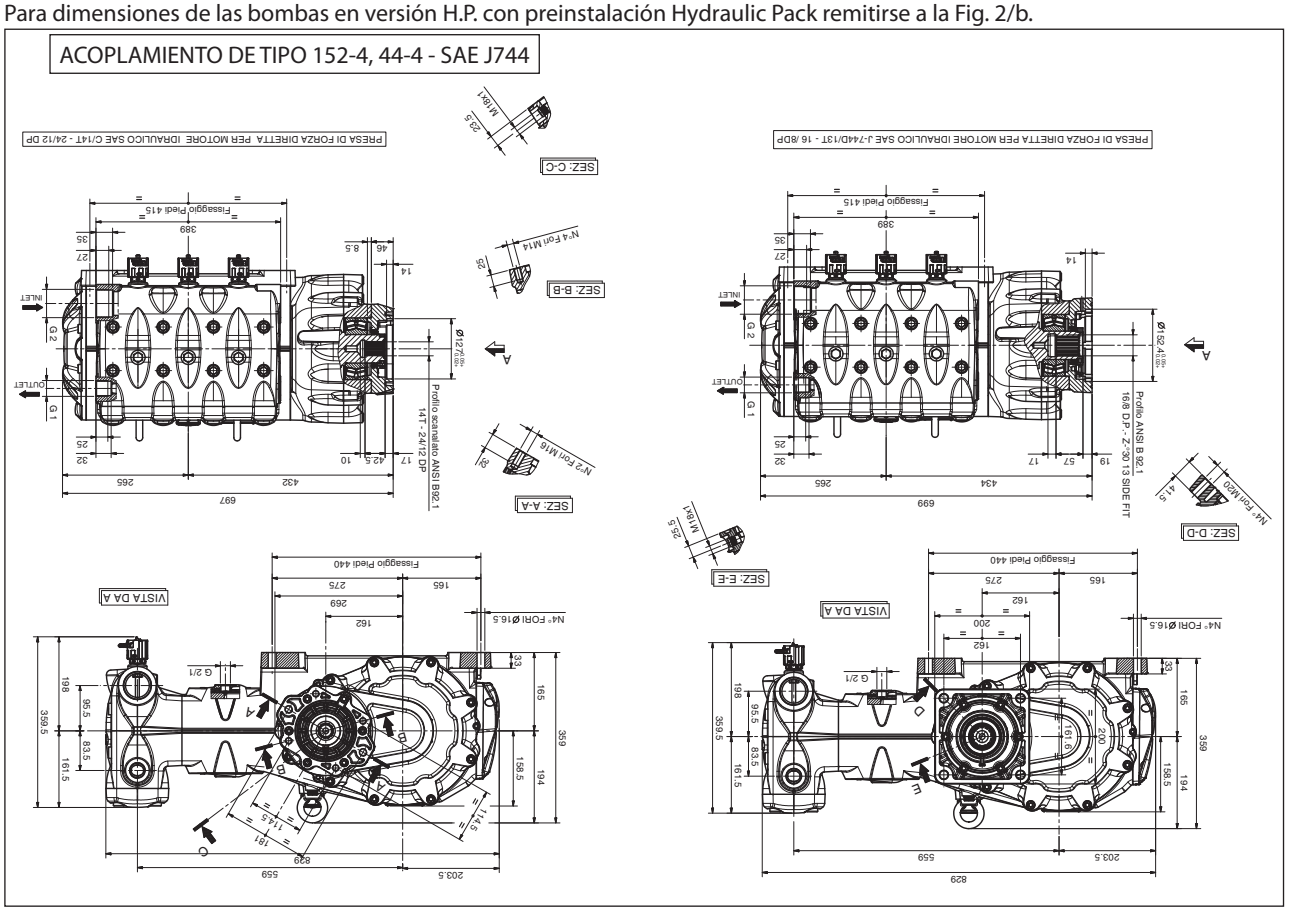


Fig. 2/b

Para dimensiones de las bombas en versión L.P. con preinstalación Hydraulic Pack remitirse a la Fig. 2/c.

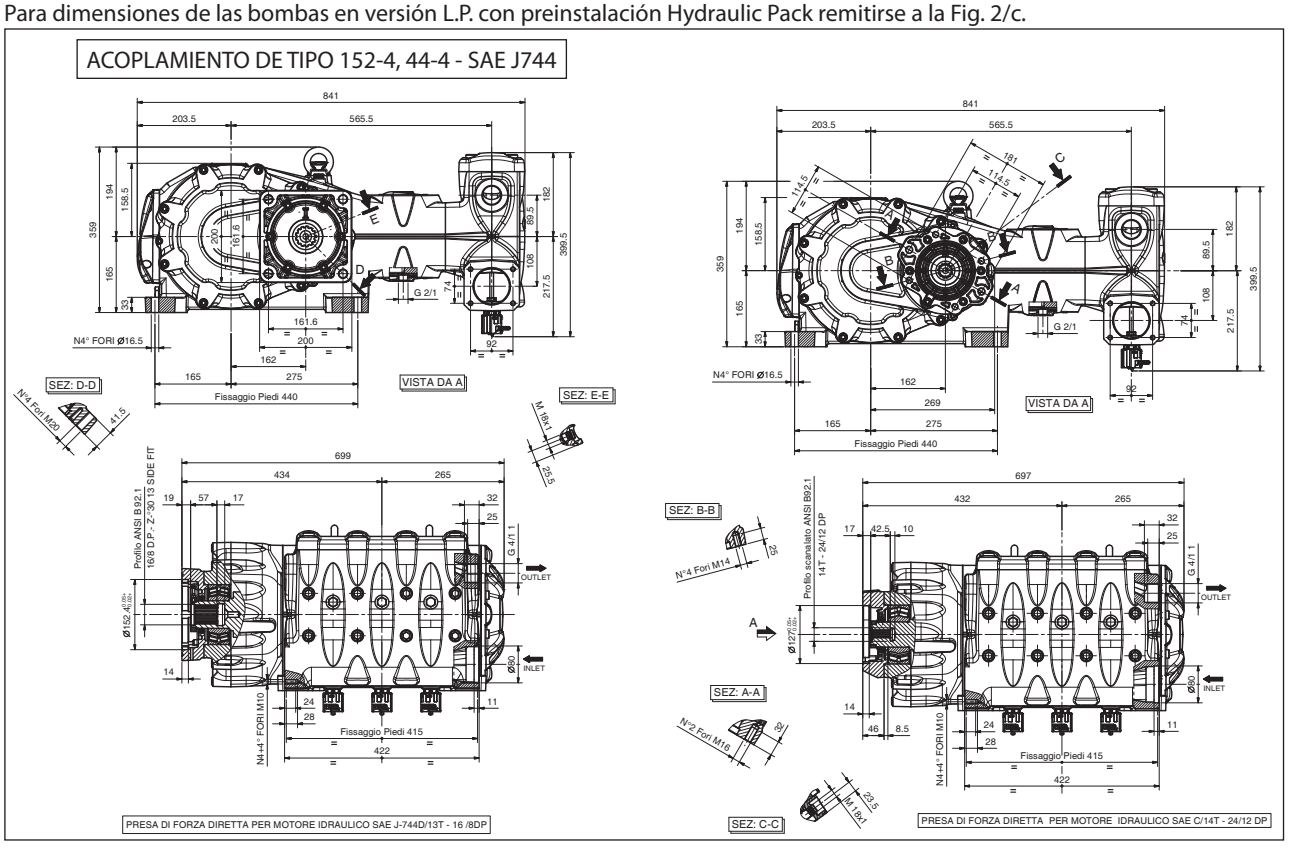


Fig. 2/c

7 INDICACIONES PARA EL USO

La bomba ha sido diseñada para trabajar en ambientes con una atmósfera no potencialmente explosiva y con agua filtrada (ver punto 9.7).
Otros líquidos podrán ser utilizados solamente previo bienestar formal de la ***Oficina Técnica*** o el ***Servicio de Asistencia al Cliente***.

7.1 Temperatura del agua

Aunque la temperatura máxima del agua admitida es 40 °C, la bomba se puede utilizar con agua a una temperatura de hasta 60 °C pero solo durante cortos intervalos de tiempo. En estos casos, se recomienda contactar con la ***Oficina Técnica*** o el ***Servicio de Asistencia al Cliente***.

7.2 Capacidad y presión máxima

Las prestaciones indicadas en el catálogo hacen referencia a las prestaciones máximas suministrables por la bomba.
Independientemente de la potencia utilizada, la presión y el número de vueltas máximas indicadas en la matrícula no pueden ser superadas si no son expresamente autorizados formalmente por la ***Oficina Técnica*** o el ***Servicio de Asistencia al Cliente***.

7.3 Régimen mínimo de rotación

El régimen mínimo para dicho tipo de bombas es de 300 rpm.
Cualquier régimen de rotación diferente de aquel indicado en la tabla de prestaciones (ver capítulo 5) debe estar expresamente autorizado formalmente por la ***Oficina Técnica*** o el ***Servicio de Asistencia al Cliente***.

7.4 Emisión sonora

La prueba de detección de la presión sonora ha sido realizada según la directiva 2000/14 del Parlamento Europeo y del Consejo Europeo (Directiva de Máquinas) y de la EN-ISO 3744-2010 con instrumentación de clase 1.
La detección final de la presión sonora deberá ser realizada sobre la máquina/sistema completo.
En el caso que el técnico operador se encontrara a una distancia inferior de 1 m deberá utilizar protecciones acústicas adecuadas según las normativas vigentes.

7.5 Vibraciones

La detección del valor debe ser realizado solamente con la bomba equipada sobre el sistema y a las prestaciones declaradas por el cliente. Los valores deberán cumplir con las normativas vigentes.

7.6 Marcas y tipos de aceites recomendados

La bomba se suministra con aceite tipo válido para una temperatura ambiente de 0 °C a 30 °C.
Algunos tipos de aceites recomendados se encuentran indicados en la tabla inferior. Estos aceites son aditivados para aumentar la protección a la corrosión y la resistencia a la fatiga (según DIN 51517 parte 2).
Como alternativa pueden también utilizarse aceites lubricantes para el sistema de engranajes Automotive SAE 85W-90.

Fabricante	Lubricante
Agip	AGIP ACER220
ARAL	Aral Degol BG 220
BP	BP Energol HLP 220
Castrol	CASTROL HYSPIN VG 220 CASTROL MAGNA 220
DEA	Falcon CL220
elf	ELF POLYTELIS 220 REDUCTELF SP 220
Esso	NUTO 220 TERESSO 220
FINA	FINA CIRKAN 220
FUCHS	RENOLIN 212 RENOLIN DTA 220
Mobil	Mobil DTE Oil BB
Shell	Shell Tellus Öl C 220
SRS	Wintershall Ersolon 220 Wintershall Wiolan CN 220
TEXACO	RANDO HD 220
TOTAL	TOTAL Cortis 220

Controlar el nivel de aceite utilizando las varillas de nivel con marca de mínimo y máximo ①, Fig. 3.
Si es necesario, repostar a través del tapón de aceite ③, Fig. 3.
Para controlar de manera correcta el nivel del aceite, la bomba debe estar a temperatura ambiente. El cambio de aceite se debe realizar con la bomba a temperatura de trabajo, quitando el tapón pos. ②, Fig. 3.
El control del aceite y el cambio se han de realizar como se indica en el capítulo 11.
La cantidad necesaria es de ~ 13,5 litros.

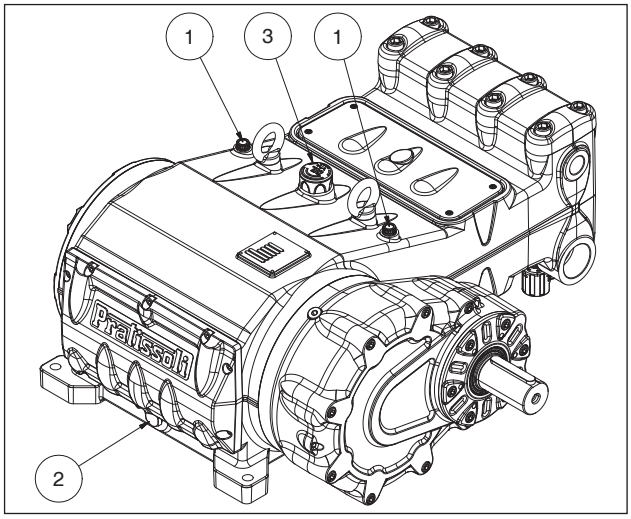


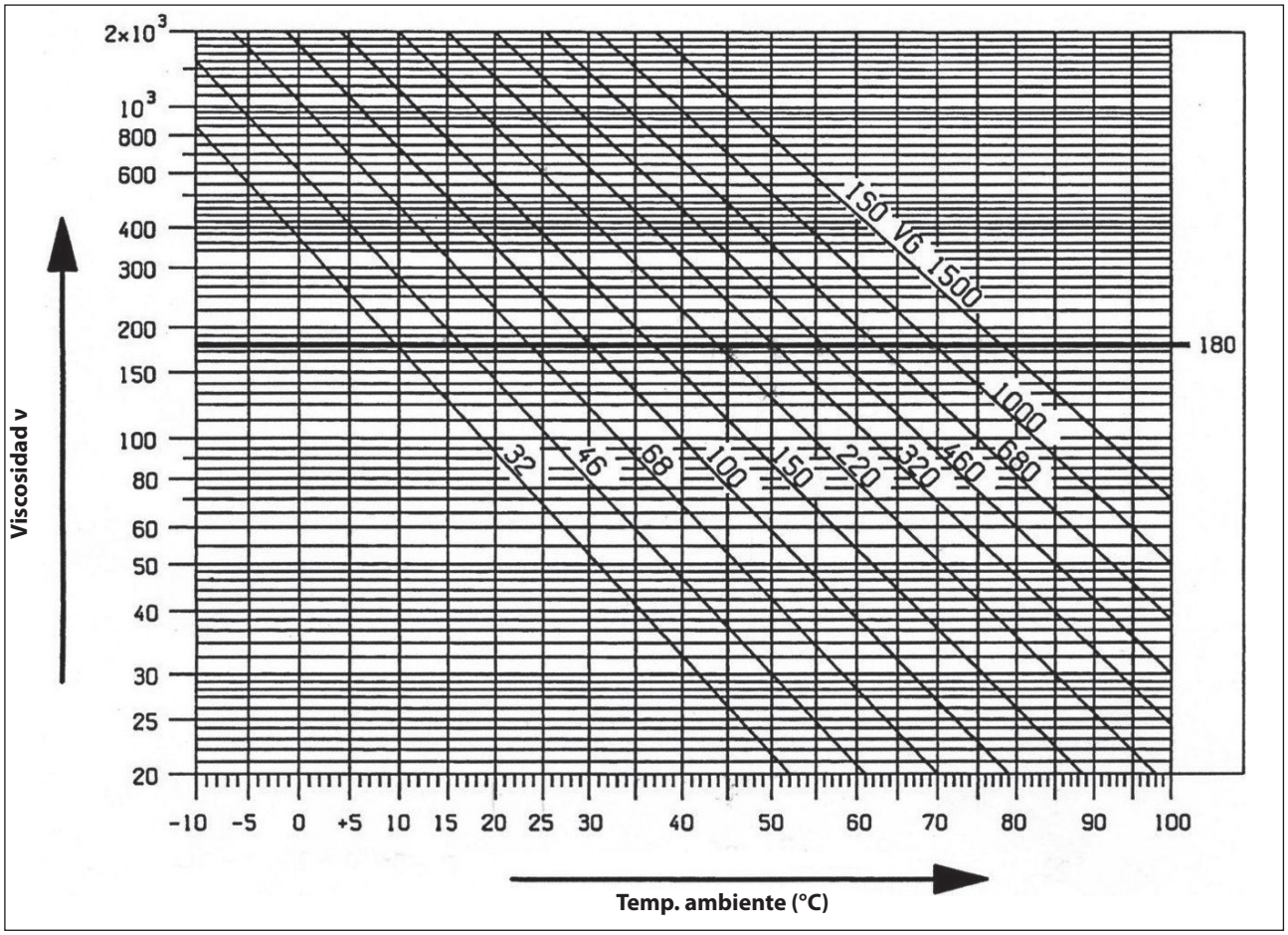
Fig. 3

En todo caso el aceite debe ser cambiado al menos una vez al año ya que podría deteriorarse por oxidación.

Para una temperatura ambiente diferente de 0 °C a 30 °C seguir las indicaciones contenidas en el diagrama siguiente considerando que el aceite debe tener una viscosidad mínima de 180 cSt.

Diagrama Viscosidad / Temperatura ambiente

$mm^2/s = cSt$



El aceite agotado debe ser colocado en un recipiente adecuado y eliminado en los correspondientes centros. No debe dispersarse en el ambiente.

8 TOMAS Y CONEXIONES

Las bombas están dotadas de:

2 tomas de aspiración "IN":

G2" (en las versiones con Ø pistón 40, 45, 50)

Ø 80 mm (en las versiones con Ø pistón 55, 60, 65)

La conexión de la línea a cualquiera de las dos tomas es indiferente con el fin de obtener un buen funcionamiento de la bomba; las tomas no utilizadas deberán ser cerradas herméticamente.

2 tomas de envío "OUT"

G1" (en las versiones con Ø pistón 40, 45, 50)

G1 ¼" (en las versiones con Ø pistón 55, 60, 65)

1 toma "DRAIN " con orificio G1/2" en la tapa inferior para controlar la pérdida de fluido que se genera por desgaste de las juntas de presión. Si se detectan pérdidas, consultar el ***Manual de reparación***.

Dicho orificio debe permanecer abierto (ver Fig. 4 y Fig. 4/a).

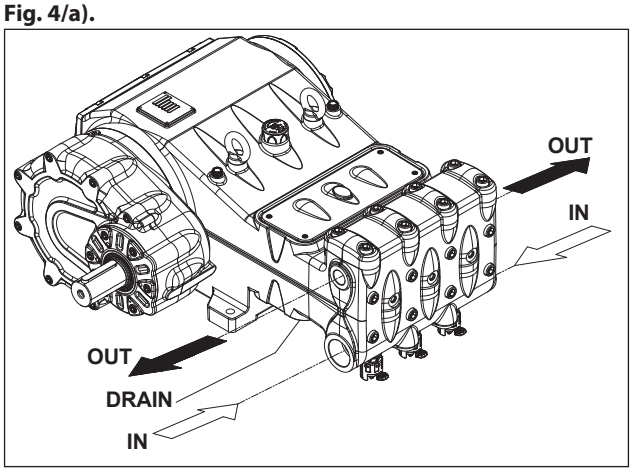


Fig. 4

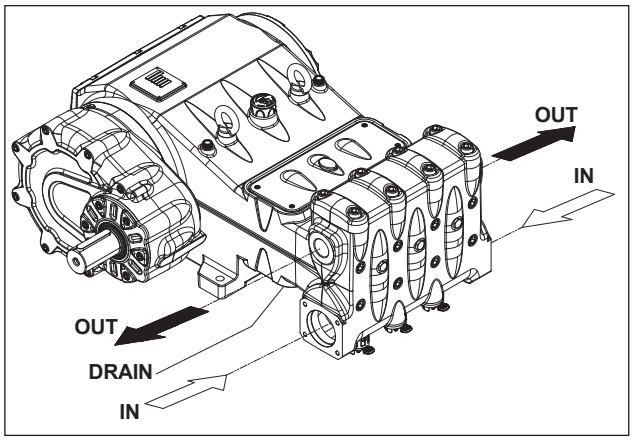


Fig. 4/a

9 INSTALACIÓN DE LA BOMBA

9.1 Instalación

La bomba se ha de fijar en posición horizontal utilizando los pies de apoyo específicos con orificios Ø16,5.
La base debe ser perfectamente plana y lo suficientemente rígida como para no consentir flexiones ni desalineamientos sobre el eje de acoplamiento bomba/transmisión debidos al par transmitido durante el funcionamiento.
Sobre la bomba hay dos cáncamos de elevación para facilitar la instalación; como se muestra en la figura inferior.

No desmontar los cáncamos de elevación.

Los cáncamos de elevación sólo tienen capacidad para elevar la bomba. Se prohíbe utilizarlos para elevar cargas superiores.



Sustituir el tapón de servicio de cierre del orificio de introducción del aceite, que está situado en el cárter, por el tapón de llenado del aceite.
El tapón de llenado del aceite deberá ser siempre accesible incluso con el grupo montado.

El eje de la bomba (PTO) no debe ser rígidamente conectado al grupo propulsor.
Se recomiendan los siguientes tipos de transmisión:

- Junta elástica.
- Cardánica (seguir los ángulos de trabajo máximos recomendados por los fabricantes).
- Correas; para una correcta aplicación consultar a la ***Oficina Técnica*** o al ***Servicio de Asistencia al Cliente***.

9.2 Sentido de rotación

La flecha de la tapa del reductor indica el sentido de rotación de la PTO.
Posicionándose de frente al cabezal de la bomba el sentido de rotación deberá ser como el que se muestra en la Fig. 5.

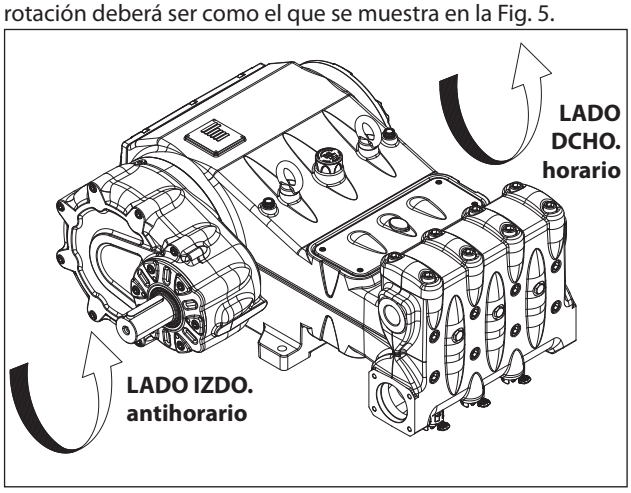


Fig. 5

9.3 Cambio de versión y montaje del reductor

Es definida bomba versión derecha cuando:
Observando la bomba de frente al lado del cabezal, el eje de la bomba posee el codo PTO sobre el lado Dcho.
Es definida bomba versión izquierda cuando:
Observando la bomba de frente al lado del cabezal, el eje de la bomba posee el codo PTO sobre el lado Izdo. (ver Fig. 5).

La versión sólo puede ser modificada por personal especializado y autorizado que respete escrupulosamente las instrucciones del *Manual de reparación*.

Es posible montar el reductor en 5 posiciones distintas tanto en el lado Dcho. como en el lado Izdo. como se indica en la Fig. 6.

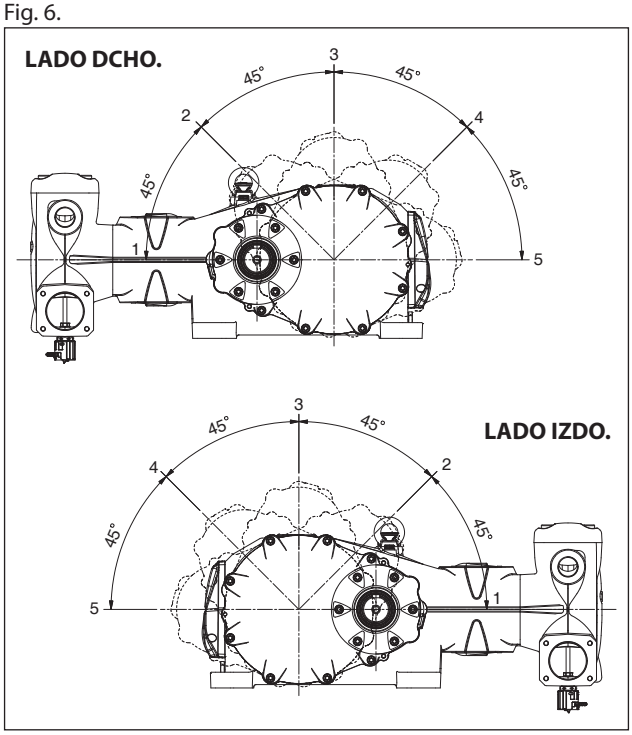


Fig. 6

La posición del reductor sólo puede ser modificada por personal especializado y autorizado que respete escrupulosamente las instrucciones del *Manual de reparación*.

9.4 Conexiones hidráulicas

Para aislar el sistema de las vibraciones producidas por la bomba se recomienda realizar el primer tramo de conducción adyacente a la bomba (sea en aspiración que en envío) con mangueras. La consistencia del tramo de aspiración deberá ser tal de impedir deformaciones causadas por la depresión producida por la bomba.

9.5 Alimentación de la bomba

Las bombas MK2 se deben instalar siempre bajo batiente, es decir, la alimentación de agua se debe efectuar por caída o mediante alimentación forzada, no mediante aspiración de un nivel inferior.

Las bombas pueden soportar batientes mínimos de hasta 1 m aunque, para optimizar el rendimiento volumétrico y evitar fenómenos de cavitación, el batiente positivo disponible (NPSH avail) medido en la brida de aspiración en el cabezal debe ser igual o mayor que los valores indicados a continuación:

	$NPSH_r$(m)
MK240	4,5
MK245	5,5
MK250	6,5
MK255	7,5
MK260	8
MK265	9

Cuando se utilizan cilindradas mayores, bombas MK2 55 - 60 - 65, se recomienda forzar la alimentación utilizando una bomba booster para evitar fenómenos de cavitación debido a la geometría de la parte hidráulica y a la gran capacidad.

La bomba booster debe tener al menos el doble de capacidad que la bomba de pistones y una presión comprendida entre 2 y 3 bar.

Dichas condiciones de alimentación se deben respetar en todos los regímenes de trabajo.

La bomba booster se debe accionar siempre antes que la bomba de pistones.
Se recomienda instalar un presostato en la línea de alimentación, línea abajo de los filtros de protección de la bomba.

9.6 Línea de aspiración

Para un buen funcionamiento de la bomba, la línea de aspiración deberá tener las siguientes características:

1. Diámetro interno mínimo como es indicado por el gráfico en el punto 9.9 y de todos modos igual o superior a aquel del cabezal de la bomba.

   A lo largo del recorrido del conducto deben evitarse restricciones localizadas, que pueden causar pérdidas de carga creando una cavitación. Evitar absolutamente codos a 90°, conexiones con otras tuberías, estrechamientos, contrapendientes, curva a "U" invertidas y conexiones en "T".
2. El lay-out debe ser realizado para evitar fenómenos de cavitación.
3. Ser perfectamente hermética y estar construida de manera que garantice una perfecta resistencia con el paso del tiempo.
4. Evitar que al detener la bomba puedan verificarse el vaciado, incluso parcial.
5. No utilizar racores de tipo oleodinámico, racores con 3 o 4 vías, adaptadores, aspas, etc. ya que podrían perjudicar los resultados de la bomba.
6. No instalar tubos venturi o inyectores para aspirar el detergente.
7. Evitar el uso de válvulas de fondo u otros tipos de válvulas unidireccionales.
8. No recircular la descarga de la válvula by-pass directamente en aspiración.
9. Adoptar protecciones adecuadas en el interior del depósito para evitar que los flujos de agua provenientes del by-pass y de la línea de alimentación del depósito puedan crear remolinos o turbulencias cerca de la toma del tubo de alimentación de la bomba.
10. Asegurarse que el interior de la línea de aspiración esté completamente limpio antes de conectarla a la toma.
11. Instalar el manómetro de control de la presión de la bomba booster cerca de la toma de aspiración de la bomba de pistones y siempre línea abajo de los filtros.

9.7 Filtración

Sobre la línea de aspiración de la bomba es necesario instalar 2 filtros posicionados como se indica en la Fig. 7 y la Fig. 7/a.

Con válvula de regulación de accionamiento manual

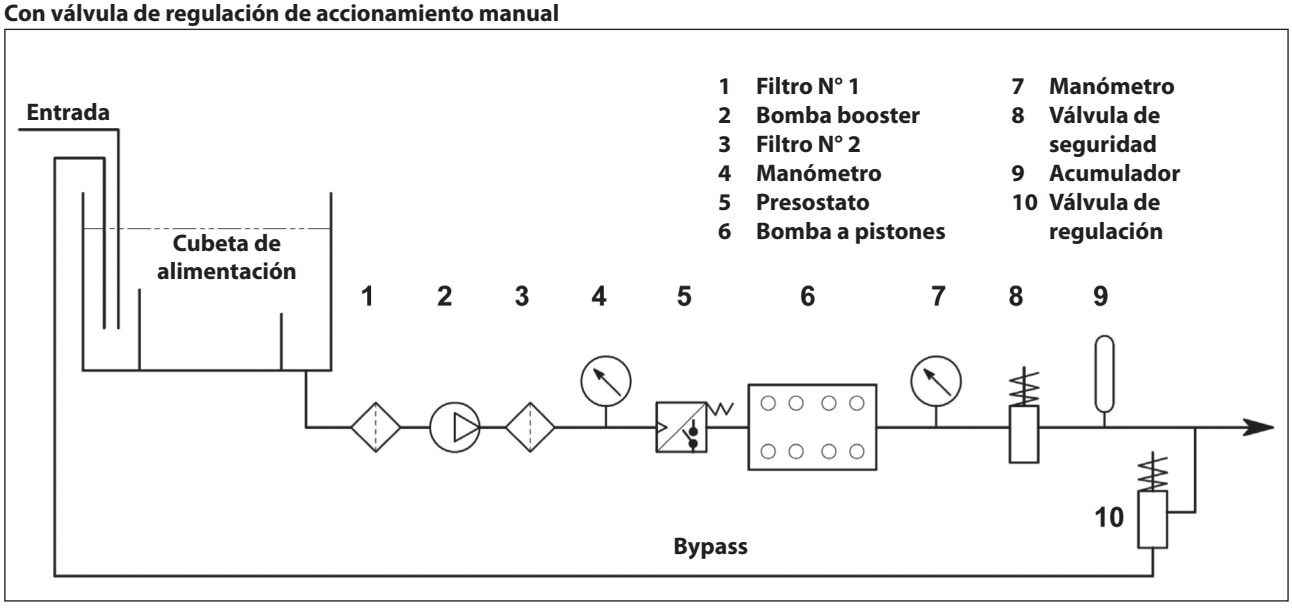


Fig. 7

Con válvula de regulación de accionamiento neumático

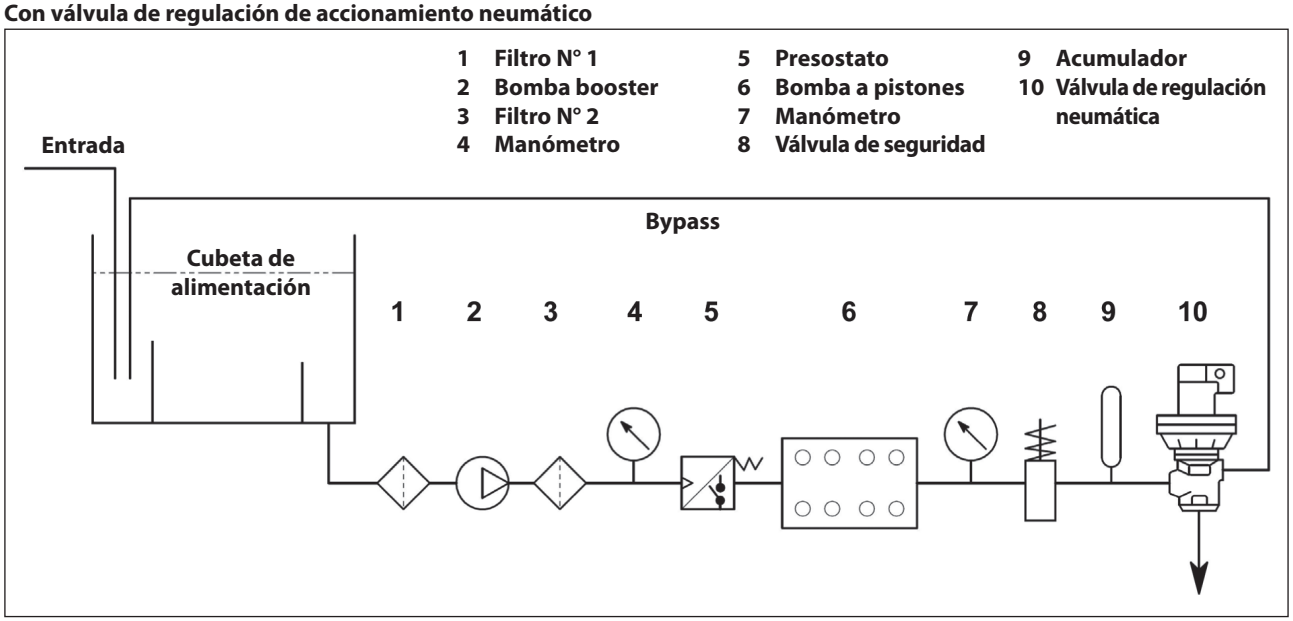


Fig. 7/a

El filtro se ha de instalar lo más cerca posible de la bomba y debe poderse inspeccionar con facilidad y poseer las siguientes características:

1. Capacidad mínima 3 veces superior a la capacidad visualizada sobre la placa de la bomba.
2. Diámetro de las bocas de entrada/salida no inferior al diámetro de la toma de aspiración de la bomba.
3. Grado de filtración comprendido entre 200 y 360 µm.

Para el buen funcionamiento de la bomba realizar limpiezas periódicas de limpieza del filtro, planificadas según el uso efectivo de la bomba dependiendo de la calidad del agua utilizada y de las condiciones reales de atascamiento.

9.8 Línea de envío

Para la realización de una línea correcta de envío observar las siguientes normas de instalación:

1. El diámetro interno del tubo debe ser lo suficiente para garantizar la correcta velocidad del líquido, ver el gráfico del punto 9.9.
2. El primer tramo de tubería conectado a la bomba debe ser flexible, para aislar las vibraciones producidas por la bomba del resto del sistema.
3. Utilizar tubos y racores para una alta presión que garanticen amplios márgenes de seguridad en cualquier condición de funcionamiento.
4. Sobre la línea de envío instalar una válvula de seguridad.
5. Utilizar manómetros indicados para soportar las cargas pulsantes típicas de las bombas con pistones.
6. Tener en cuenta, durante la fase de diseño, pérdidas de carga de la línea que se traducen en una pérdida de presión durante el uso con respecto a la presión medida en la bomba.
7. En aquellas aplicaciones en las que las pulsaciones producidas por la bomba sobre la línea de envío fueran dañinas o no deseadas, instalar un amortiguador de pulsaciones con unas dimensiones adecuadas.

9.9 Cálculo del diámetro interno de los tubos de los conductos

Para determinar el diámetro interno del conducto, remitirse al siguiente diagrama:

Conducto de aspiración

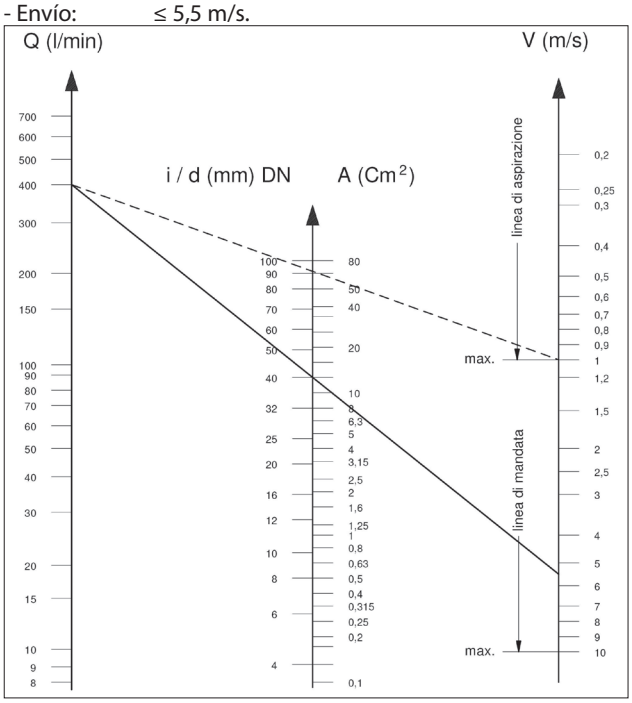
Con una capacidad de ~ 400 l/min y una velocidad del agua de 1 m/s. La línea del gráfico que alcanza a las dos escalas, intercepta la escala central que indica los diámetros en un valor de ~ 90 mm.

Conducto de envío

Con una capacidad de ~ 400 l/min y una velocidad del agua de 5,5 m/s. La línea del gráfico que alcanza a las dos escalas, intercepta la escala central que indica los diámetros en un valor de ~ 40 mm.

Velocidades óptimas que se pueden obtener con la bomba Booster:

- Aspiración: ≤ 1 m/s.
- Envío: ≤ 5,5 m/s.



El gráfico no tiene en cuenta la resistencia de los tubos ni de las válvulas, la pérdida de carga producida por la longitud de los conductos, la viscosidad del líquido bombeado ni la temperatura del mismo.
Si es necesario ponerse en contacto con la ***Oficina Técnica*** o con el ***Servicio de Asistencia al Cliente***.

9.10 Transmisión con correa trapezoidal

Como se indica en el apart. 9.1 el sistema de correas trapezoidales de transmisión sólo se puede utilizar en determinados casos específicos.
Para un correcto dimensionamiento del lay-out, consultar a la ***Oficina Técnica*** o al ***Servicio de Asistencia al Cliente***.

10 PUESTA EN MARCHA Y FUNCIONAMIENTO

10.1 Controles previos

Antes de poner en marcha asegurarse que:

La línea de aspiración esté conectada y bajo presión (ver capítulo 9): la bomba no debe nunca girar en seco.

1. La línea de aspiración garantice también con el paso del tiempo una resistencia hermética.
2. Todas las válvulas de interceptación entre la fuente de alimentación y la bomba se encuentren perfectamente abiertas. La línea de envío sea con descarga libre, con el fin de permitir al aire presente en el cabezal de la bomba salir rápidamente y favorecer un veloz cebado.
3. Todos los racores y las conexiones, en aspiración y envío, se encuentren perfectamente ajustadas.
4. Las tolerancias de acoplamiento sobre el eje bomba/transmisión (desalineamiento semi uniones, inclinación del cardan, tiro de las correas, etc.) permanezcan dentro de los límites previstos por el fabricante de la transmisión.
5. El aceite en el cárter de la bomba alcance el nivel previsto, verificándolo con las correspondientes varillas (pos. ①, Fig. 8).

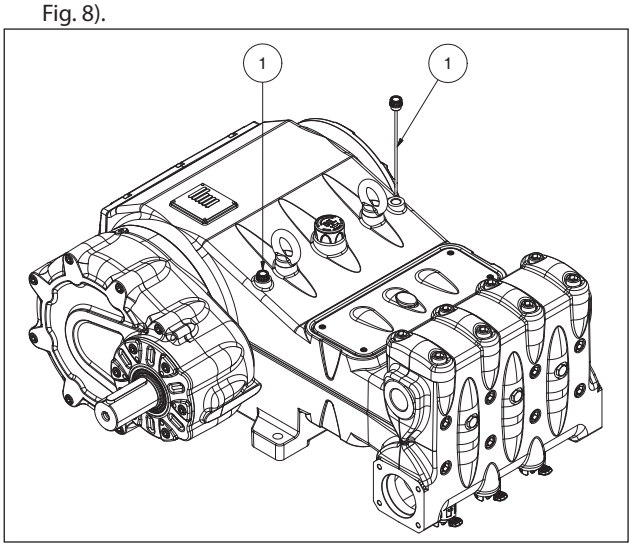


Fig. 8

En caso de almacenamiento prolongado o inactividad durante un largo periodo, controlar el buen funcionamiento de las válvulas de aspiración abriendo los tres dispositivos alza válvulas (ver pos. ② Fig. 9). Comprobar que las válvulas estén cerradas antes de poner en marcha la bomba.
Ver las posiciones de "trabajo" y de "reposo" en la Fig. 10.

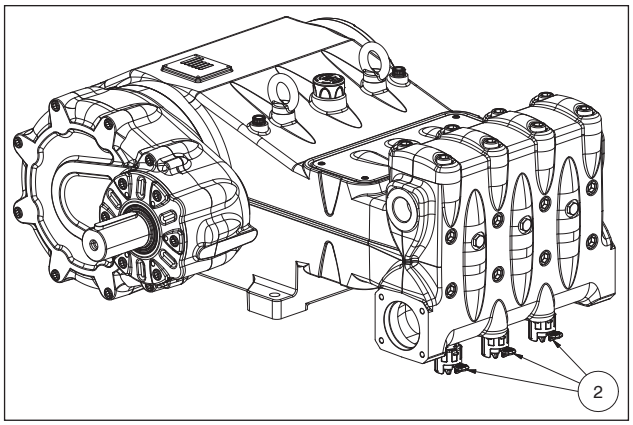


Fig. 9

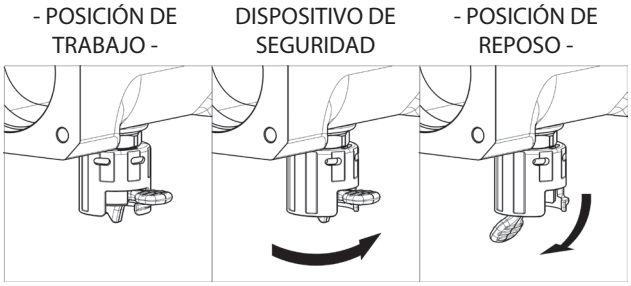


Fig. 10

10.2 Puesta en marcha

1. En el primer arranque verificar que el sentido de rotación sea correcto.
2. Comprobar que la alimentación de la bomba sea correcta.
3. Poner en marcha la bomba sin ninguna carga.
4. Verificar que en fase de funcionamiento el régimen de rotación no supere el indicado en la matrícula.
5. Dejar funcionar a la bomba durante un periodo no inferior a 3 minutos, antes de ponerla bajo presión.
6. Antes de cada detención de la bomba restablecer la presión actuando sobre la válvula de regulación o sobre los dispositivos de descarga.

En caso de anomalías de cebado por alimentación insuficiente, es posible desmontar los tres tapones frontales del cabezal (excepto en la versión MK240) como se indica en la pos. ③ Fig. 11.

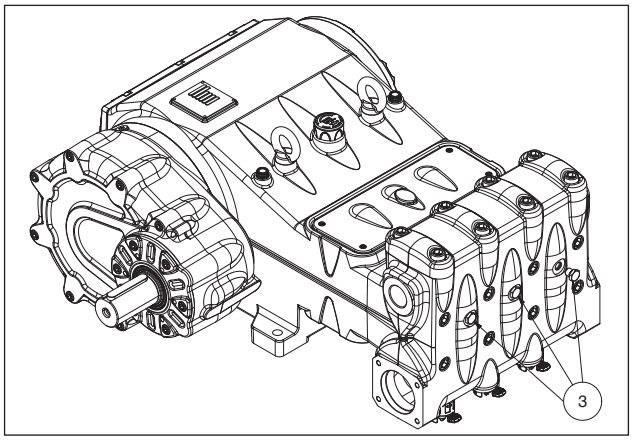


Fig. 11

11 MANTENIMIENTO PREVENTIVO

Para una buena fiabilidad y eficacia de la bomba, es necesario respetar los intervalos de mantenimiento como se muestra en la tabla siguiente.

MANTENIMIENTO PREVENTIVO	
Cada 500 horas	**Cada 1500 horas**
Verificación del nivel de aceite	Cambio de aceite
	Verificación / Sustitución*: Válvulas Sedes de la válvula Muelles de la válvula Guías de la válvula
	Verificación / Sustitución*: Juntas de H.P. Juntas de L.P.

* Para realizar la sustitución seguir las indicaciones contenidas en el ***Manual de reparación***.

12 CONSERVACIÓN DE LA BOMBA

12.1 Método de llenado de la bomba con emulsión anticorrosiva o solución anticongelante

Método de llenado de la bomba con emulsión anticorrosiva o solución anticongelante utilizando una bomba externa con membrana sobre la base de los layout descritos en el apart. 9.7:

a) Cerrar el drenaje del filtro si está abierto.
b) Comprobar que el tubo de conexión esté limpio, lubricarlo con grasa y conectarlo a la descarga de alta presión.
c) Fijar el tubo de aspiración a la bomba de membrana; abrir la conexión de la aspiración de la bomba y fijar el tubo entre éste y la bomba de membrana.
d) Llenar el contenedor con solución / emulsión.
e) Introducir los extremos libres de los tubos de aspiración y de descarga de alta presión en el interior del contenedor.
f) Encender la bomba con membrana.
g) Bombear la emulsión hasta que salga del tubo de descarga de alta presión.
h) Continuar el bombeo durante al menos otro minuto. Si es necesario, la emulsión se puede reforzar añadiendo, por ejemplo, Shell Donax a la solución.
i) Detener la bomba, extraer el tubo de la conexión de aspiración y cerrarla con un tapón.
j) Desconectar el tubo de la descarga de alta presión. Limpiar, engrasar y tapar las dos conexiones y los tubos.

12.2 Tubos

a) Antes de engrasar y proteger los tubos como se indica en el parágrafo anterior, es necesario secar las conexiones con aire comprimido.
b) Cubrir con polietileno.
c) No ejercer demasiada presión al envolverlos y comprobar que no haya pliegues.

13 PRECAUCIONES CONTRA EL HIELO



En las zonas y en los periodos del año con riesgo de heladas seguir las indicaciones contenidas en el capítulo 12 (ver el apart. 12.1).



En presencia de hielo no poner en marcha la bomba bajo ningún motivo hasta que el circuito no haya sido perfectamente descongelado. Dicha acción podría producir daños muy graves a la bomba.

14 CONDICIONES DE LA GARANTÍA

El periodo y las condiciones de garantía se especifican en el contrato de compra.
La garantía de todos modos será anulada si:

a) La bomba ha sido utilizada para fines diferentes de aquellos concordados.
b) La bomba ha sido equipada con un motor eléctrico o endotérmico con prestaciones superiores a aquellas indicadas en la tabla.
c) Los dispositivos de seguridad previstos están desajustados o desconectados.
d) La bomba ha sido usada con accesorios o con piezas de recambio no suministrados por Interpump Group.
e) Los daños han sido causados por:
   1) uso inadecuado
   2) incumplimiento de las instrucciones de mantenimiento
   3) uso diferente del descrito en las instrucciones operativas
   4) capacidad insuficiente
   5) instalación defectuosa
   6) montaje o dimensionamiento de los tubos incorrectos
   7) modificaciones del proyecto no autorizadas
   8) cavitación.

15 ANOMALÍAS DE FUNCIONAMIENTO Y POSIBLES CAUSAS



Al poner en marcha la bomba no produce ningún ruido:

- La bomba no está cebada y gira en seco.
- Falta agua en aspiración.
- Las válvulas están bloqueadas.
- La línea de envío está cerrada y no permite al aire presente en el cabezal de la bomba salir.



La bomba pulsa de manera irregular:

- Aspiración de aire.
- Alimentación insuficiente.
- Curvas, codos, acoplamientos, a lo largo de la línea de aspiración impiden el paso de líquido.
- El filtro de aspiración está sucio o es muy pequeño.
- La bomba booster en donde se encuentra instalada, suministra una presión o capacidad insuficiente.
- La bomba no es cebada por batiente insuficiente o por estar cerrado el envío durante el cebado.
- La bomba no se ceba porque hay alguna válvula pegada.
- Válvulas desgastadas.
- Juntas de presión desgastadas.
- Funcionamiento imperfecto de la válvula de regulación de presión.
- Problemas de transmisión.





La bomba no suministra la capacidad indicada en la matrícula /ruido excesivo:

- Alimentación insuficiente (ver varias causas como anteriormente).
- El número de vueltas es inferior a la indicada en la matrícula.
- Excesivo estrechamiento de la válvula de regulación de la presión.
- Válvulas desgastadas.
- Excesivo estrechamiento de las juntas de presión.
- Cavitación debida a:
  1) Mal dimensionamiento de los conductos de aspiración/diámetros subdimensionados.
  2) Capacidad insuficiente.
  3) Temperatura del agua elevada.



La presión suministrada por la bomba es insuficiente:

- El uso (boquilla) es o se ha vuelto superior a la capacidad de la bomba.
- El número de vueltas es insuficiente.
- Excesivo estrechamiento de las juntas de presión.
- Funcionamiento imperfecto de la válvula de regulación de presión.
- Válvulas desgastadas.



La bomba se recalienta:

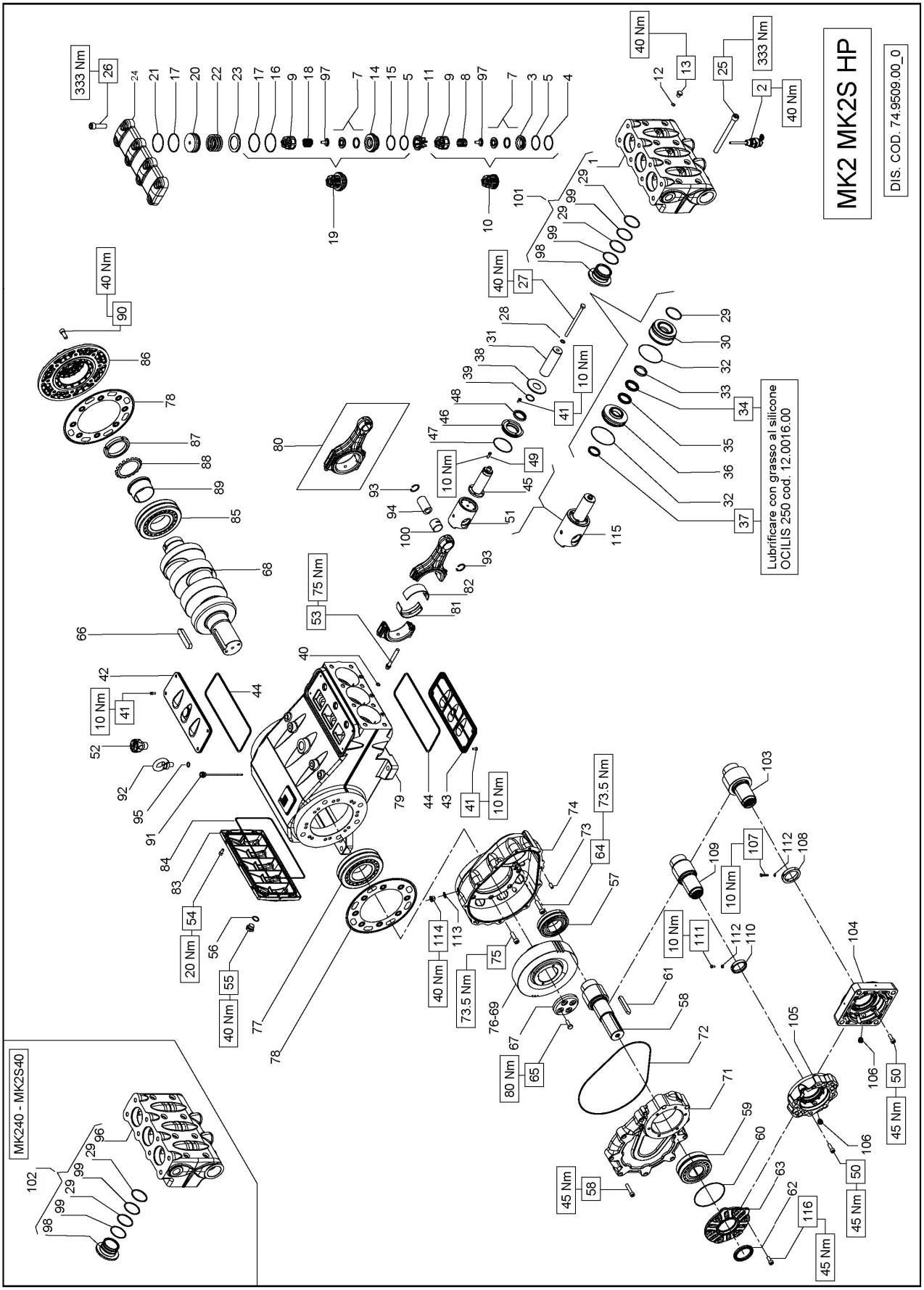
- La bomba trabaja en exceso de presión o el número de vueltas es superior a aquel de matrícula.
- El aceite contenido en el cárter de la bomba no llega al nivel mínimo o no es del tipo aconsejado en el capítulo 7 (ver el apart. 7.6).
- La junta o las poleas están mal alineadas.
- La inclinación de la bomba durante el trabajo es excesiva.



Vibraciones o golpes sobre los tubos:

- Aspiración de aire.
- Funcionamiento imperfecto de la válvula de regulación de presión.
- Malfuncionamiento de las válvulas.
- Movimiento en la transmisión no uniforme.

16 DIBUJO DESGLOSADO Y NOMENCLATURA DE LAS PIEZAS DE RECAMBIO



KIT RICAMBIO – SPARE KIT

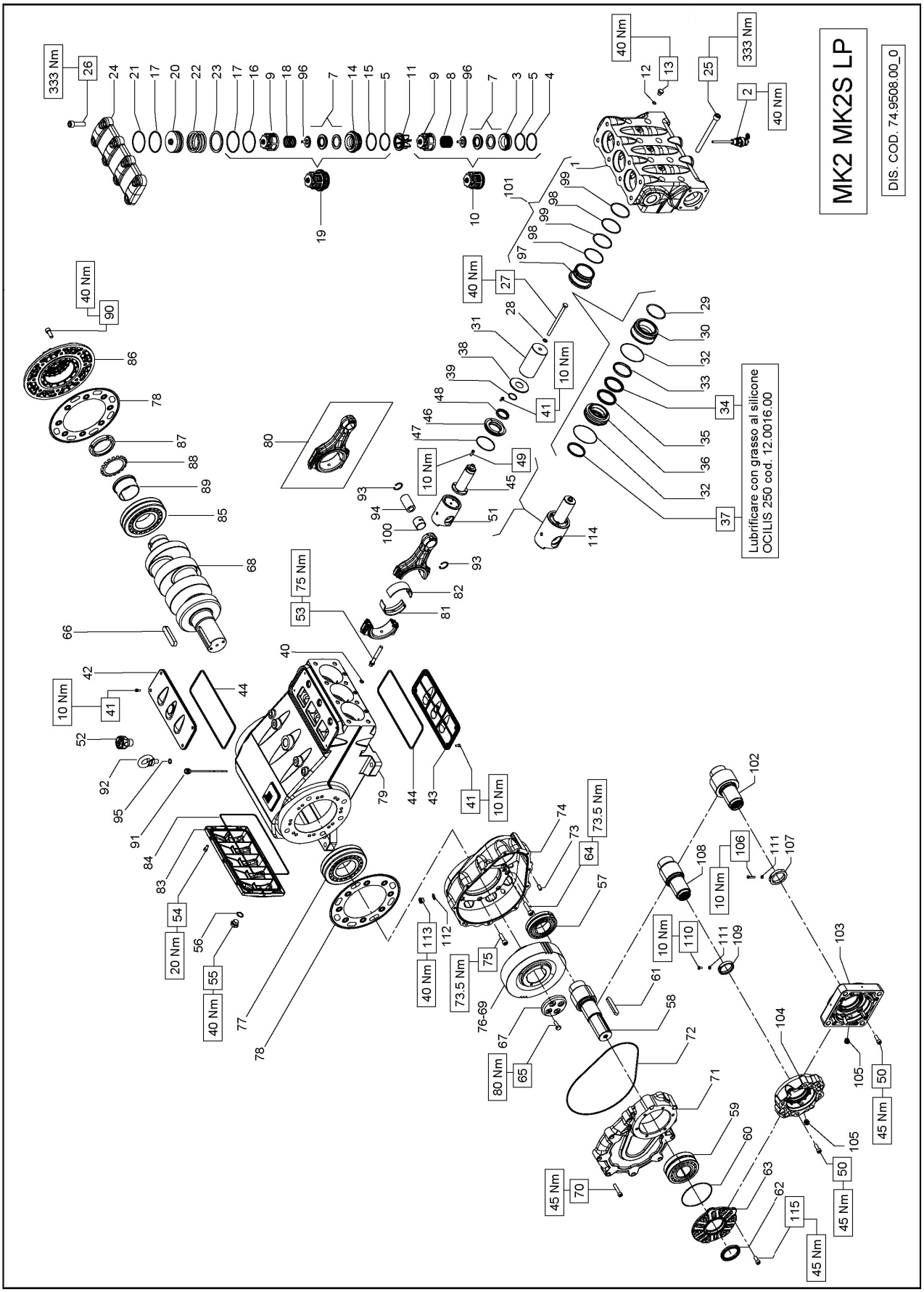
		MK240 - MK2S40 (D.40)	MK245 - MK2S45 (D.45)	MK250 - MK2S50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK240 - MK2S40
MK245 - MK2S45
MK250 - MK2S50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1


MK2 MK2S LP
DIS. COD. 74.9508.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK255 - MK2S55 (D.55)	MK260 - MK2S60 (D.60)	MK265 - MK2S65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2045	KIT 2046	KIT 2047
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2447	KIT 2448	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK255 - MK2S55
MK260 - MK2S60
MK265 - MK2S65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2114.56	CAMICIA PISTONE D. 55		3
	74.2115.56	CAMICIA PISTONE D. 60		
	74.2116.56	CAMICIA PISTONE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1003.92	ANELLO DI TESTA PISTONE D. 55		3
	74.1004.92	ANELLO DI TESTA PISTONE D. 60		
	74.1005.92	ANELLO DI TESTA PISTONE D. 65		
34	90.2873.00	ANELLO TEN. ALT. D. 55.0x70.0x7.5/4.5 HP	A-C	3
	90.2883.00	ANELLO TEN. ALT. D. 60.0x76.0x8.0/4.8 HP	A-C	
	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	
35	90.2875.00	ANELLO RESTOP D. 55.0x70.0x8.0/4.5	A-C	3
	90.2885.00	ANELLO RESTOP D. 60.0x76.0x8.0/4.5	A-C	
	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	
36	74.2120.68	SUPPORTO GUARNIZIONE D. 55		3
	74.2121.68	SUPPORTO GUARNIZIONE D. 60		
	74.2122.68	SUPPORTO GUARNIZIONE D. 65		
37	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		10
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.55	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	73.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK2		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2S		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	74.2150.56	BOCCOLA TESTATA		3
98	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
99	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1201.01	TESTATA CON BOCCOLA		1
112	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
113	98.2086.00	TAPPO G 3/8"x12		2
114	74.6062.01	GR. GUIDA PISTONE		3
115	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
102	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
103	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
107	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
111	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.750 - ELICOIDALE		1
104	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
108	10.0906.55	PIGNONE Z16 R. 3.750 - ELICOIDALE FEMM.		1
109	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
110	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
111	92.2025.00	DADO M6x5 UNI 5588		1

17 VERSIONES ESPECIALES

La bomba MK2 está disponible en las siguientes versiones especiales:

- MK2R (Para agua de recirculación)
- MK2SR (Para agua de recirculación)
- MK2C (Para metanol)
- MK2SC (Para metanol)
- MK2SH (con cabeza AISI 420)

A continuación se describe cómo seleccionar y utilizar dichas versiones.

Excepto cuando se especifique de manera distinta, respetar lo indicado anteriormente para la versión estándar de la bomba MK2.

17.1 Bomba versión MK2R-MK2SR

17.1.1 Indicaciones para el uso

Las bombas de la serie MK2R/MK2SR han sido diseñadas para trabajar en ambientes con una atmósfera no potencialmente explosiva con agua saturada de partículas, por lo tanto son adecuadas para instalaciones con recirculación de líquido.
La vida de las juntas del pistón depende del porcentaje de partículas sólidas contenidas en el líquido, tanto de su tamaño como de su densidad.
Para garantizar una vida prolongada de las juntas, se recomienda que las partículas no superen las 200 micras ni un volumen máximo del 20%.
Para más información, consultar el lay-out de valores máximos de la instalación en el apart. 17.2.6.

17.1.2 Capacidad y presión máxima

Las prestaciones indicadas en el catálogo hacen referencia a las prestaciones máximas suministrables por la bomba.
Independientemente de la potencia utilizada, la presión y el número de vueltas máximas indicadas en la matrícula no pueden ser superadas si no son expresamente autorizados formalmente por la ***Oficina Técnica*** o el ***Servicio de Asistencia al Cliente***.

17.1.3 Características técnicas

Modelo	Vueltas/1'	Capacidad		Presión		Potencia	
		l/min	Gpm	bar	psi	kW	Hp
MK2R 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2R 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2R 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2R 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2R 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2R 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Modelo	Vueltas/1'	Capacidad		Presión		Potencia	
		l/min	Gpm	bar	psi	kW	Hp
MK2SR 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2SR 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SR 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2SR 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2SR 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2SR 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.1.4 Dimensiones y pesos

Para dimensiones y pesos de las bombas remitirse a los esquemas del capítulo 6.

17.1.5 Alimentación de la bomba

Las bombas se deben instalar siempre bajo batiente, es decir, la alimentación de agua se debe efectuar por caída o mediante alimentación forzada, no mediante aspiración de un nivel inferior.
Las bombas pueden soportar batientes mínimos de hasta 1 m aunque, para optimizar el rendimiento volumétrico y evitar fenómenos de cavitación, el batiente positivo disponible (NPSH avail) medido en la brida de aspiración en el cabezal debe ser igual o mayor que los valores indicados a continuación:

	$NPSH_r$ (m)
MK2R/MK2SR40	4,5
MK2R/MK2SR45	5,5
MK2R/MK2SR50	6,5
MK2R/MK2SR55	7,5
MK2R/MK2SR60	8
MK2R/MK2SR65	9

Cuando se utilizan cilindradas mayores, de bombas con Ø pistón 55 - 60 - 65, se recomienda forzar la alimentación utilizando una bomba booster para evitar fenómenos de cavitación debido a la geometría de la parte hidráulica y a la gran capacidad.
La bomba booster debe tener al menos el doble de capacidad que la bomba de pistones y una presión comprendida entre 2 y 3 bar.
Dichas condiciones de alimentación se deben respetar en todos los regímenes de trabajo.

La bomba booster se debe accionar siempre antes que la bomba de pistones.
Se recomienda instalar un presostato en la línea de alimentación, línea abajo de los filtros de protección de la bomba.

17.1.6 Filtración

La Oficina Técnica y el Servicio de Asistencia al cliente están a disposición del cliente para mejorar el diseño de la instalación; a título de ejemplo, se suministran los siguientes lay-out (Fig. 12 y Fig. 12/a).

Con válvula de regulación de accionamiento manual

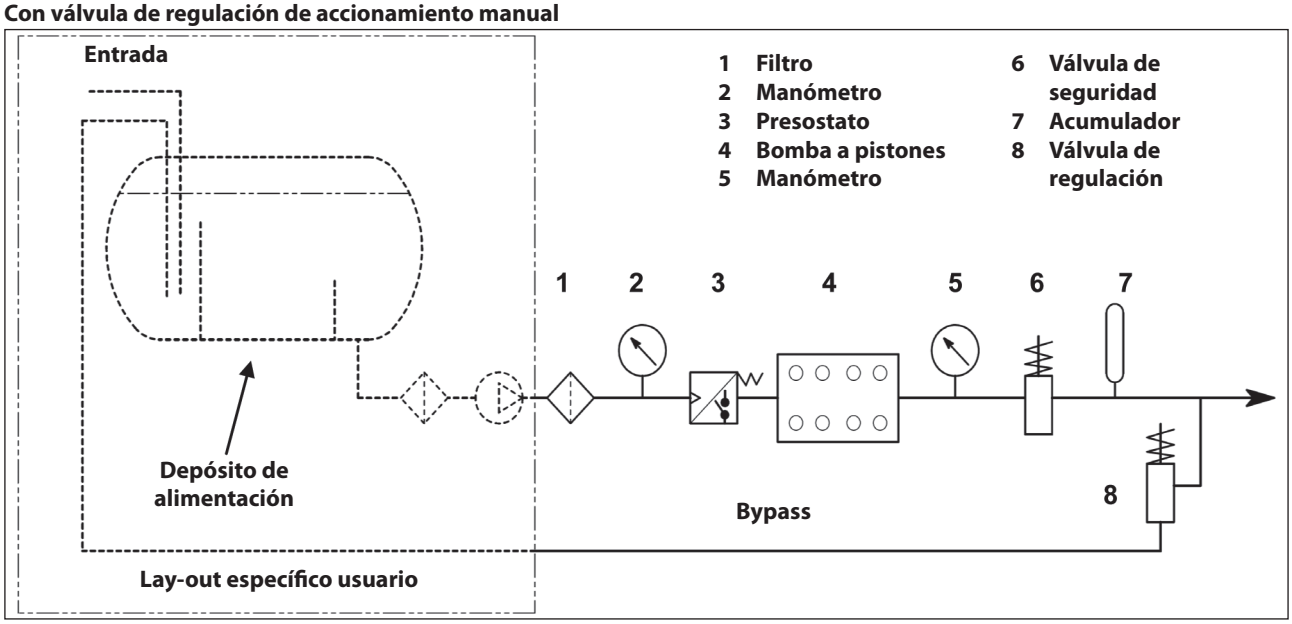


Fig. 12

Con válvula de regulación de accionamiento neumático

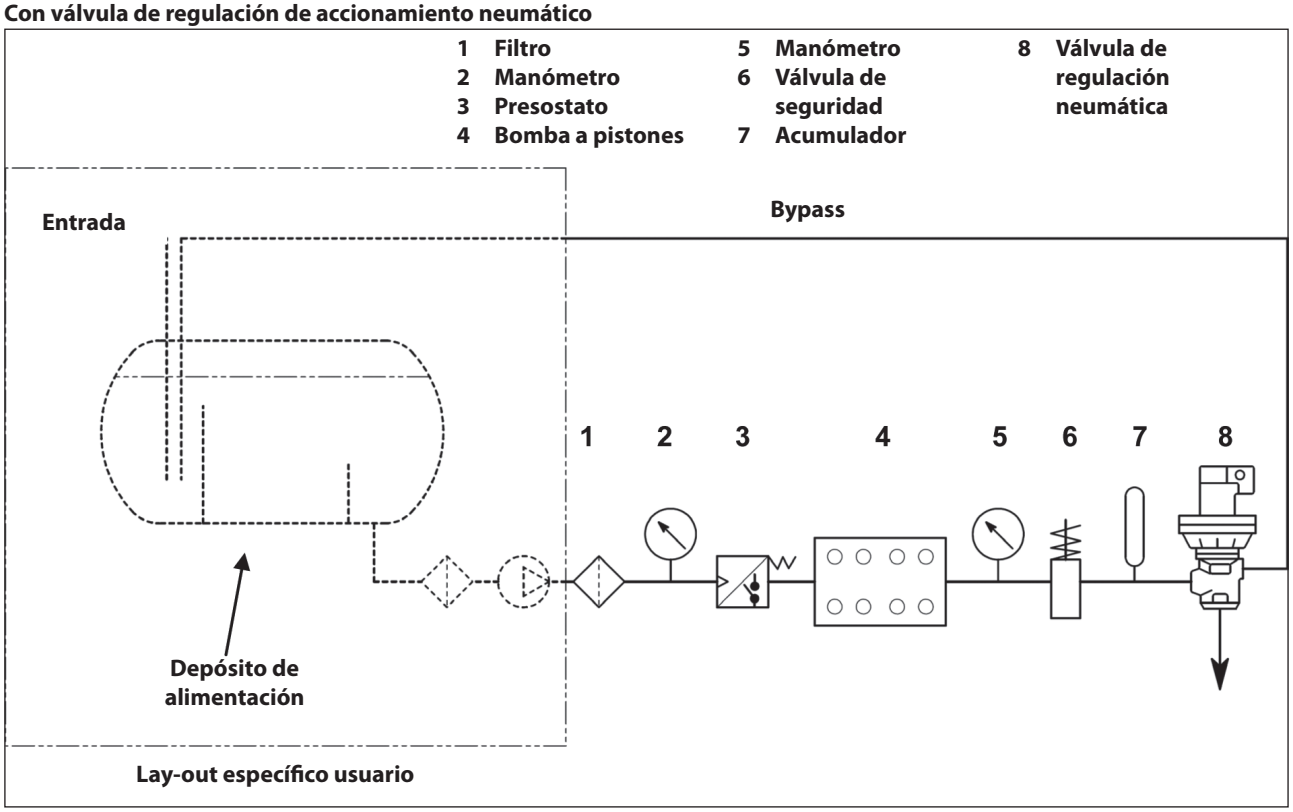


Fig. 12/a

El filtro se ha de instalar lo más cerca posible de la bomba y debe poderse inspeccionar con facilidad.

Para garantizar el buen funcionamiento de la bomba, es necesario dimensionar el grado de filtración y el poder de acumulación del sistema filtrante en función del objetivo que asegura el mejor compromiso entre vida de la parte hidráulica de la bomba y número de horas de trabajo entre dos fases de llenado con agua. El mejor compromiso se describe en el apart. 17.1.1.

Al final de la jornada de trabajo, es indispensable lavar la bomba con agua sin partículas.

17.1.7 Mantenimiento preventivo

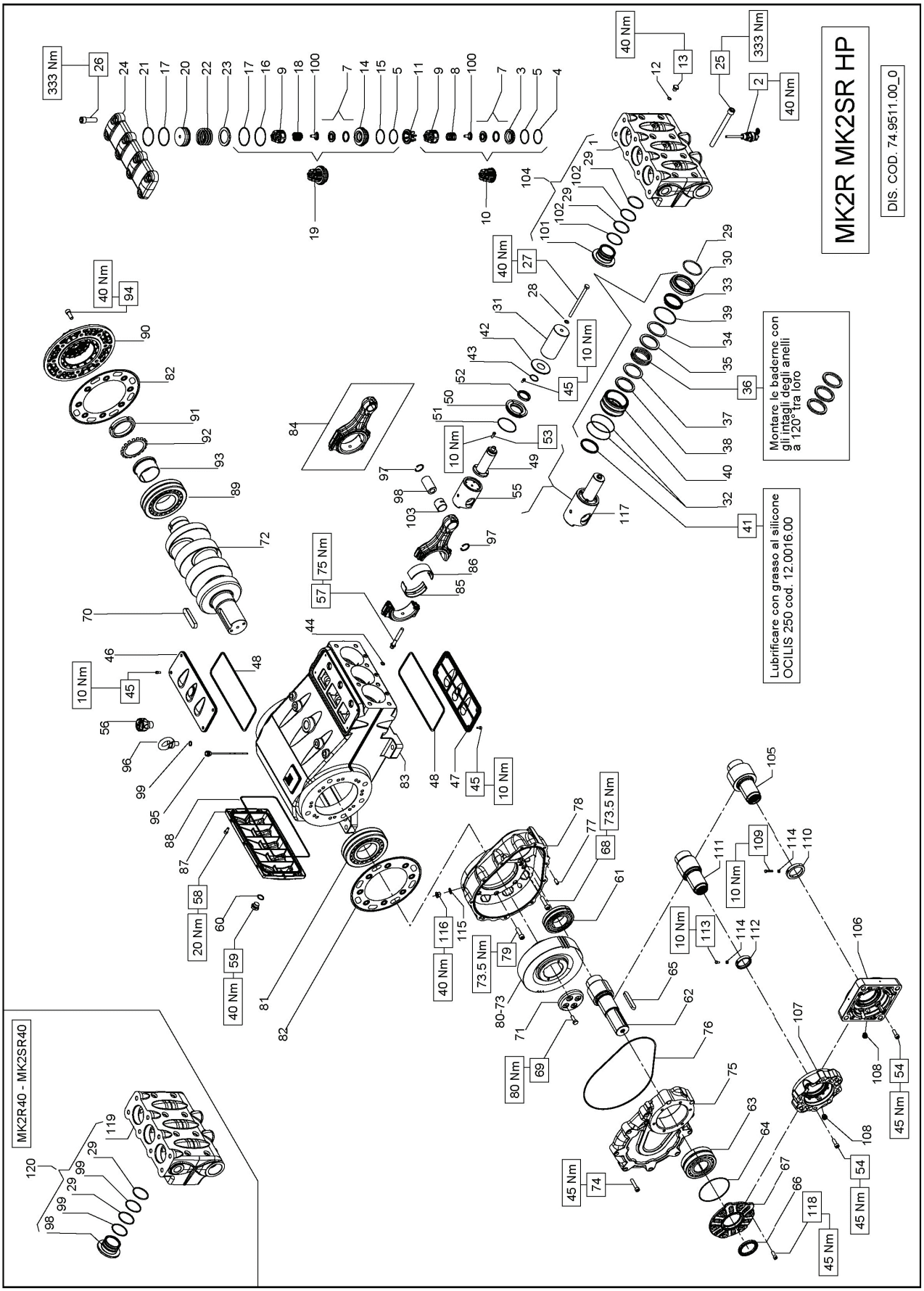
Para una buena fiabilidad y eficacia de la bomba, es necesario respetar los intervalos de mantenimiento como se muestra en la tabla siguiente.

MANTENIMIENTO PREVENTIVO	
Cada 500 horas	**Cada 1000 horas**
Verificación del nivel de aceite	Cambio de aceite
	Verificación / Sustitución*: Válvulas Sedes de la válvula Muelles de la válvula Guías de la válvula

Juntas HP-LP: su vida depende del grado de filtración, del tipo de fluido y del porcentaje en volumen (ver el capítulo 7).

* Para realizar la sustitución seguir las indicaciones contenidas en el ***Manual de reparación***.

17.1.8 Dibujo desglosado y nomenclatura de las piezas de recambio

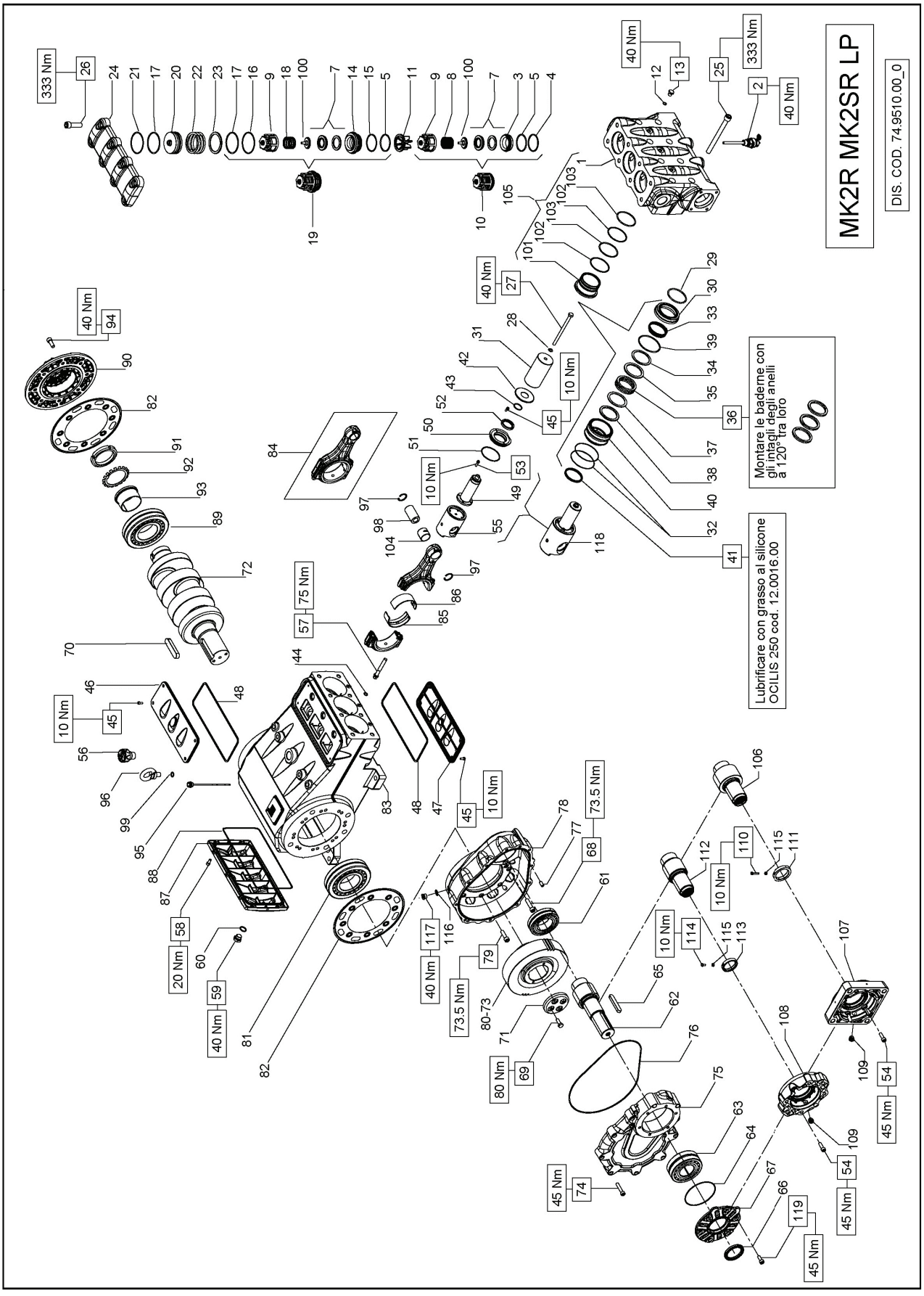


KIT RICAMBIO – SPARE KIT

		MK2R40 - MK2SR40 (D.40)	MK2R45 - MK2SR45 (D.45)	MK2R50 - MK2SR50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2430	KIT 2431	KIT 2100
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2456	KIT 2457	KIT 2458
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R40 - MK2SR40
MK2R45 - MK2SR45
MK2R50 - MK2SR50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	**10.7444.01**	**DISPOS. APERTURA VALVOLE ASPIR.**		3
3	**36.2067.66**	**SEDE VALVOLA ASPIRAZIONE**		3
4	**90.5260.00**	**ANELLO ANTIEST. D. 51.5x56.0x1.5**	**B-C**	3
5	**90.3890.00**	**OR D. 50.47x2.62 NBR 90SH 3200**	**B-C**	6
7	**36.2088.01**	**VALVOLA SFERICA**		6
8	**94.7600.00**	**MOLLA Dm. 28.3x30.7**		3
9	**36.2061.01**	**GUIDA VALVOLA**		6
10	**36.7151.01**	**GR. VALVOLA D'ASPIRAZIONE**	**B**	3
11	**74.2106.51**	**DISTANZIALE GUIDA VALVOLA**	**B**	3
12	**90.3584.00**	**OR D. 10.82x1.78 NBR 90SH 2043**	**C**	3
13	**98.2046.00**	**TAPPO G 1/4"x13**		3
14	**36.2069.66**	**SEDE VALVOLA DI MANDATA**		3
15	**90.5265.00**	**ANELLO ANTIEST. D. 51.7x56.2x1.5**	**C**	3
16	**90.5276.00**	**ANELLO ANTIEST. D. 67.5x72.0x1.5**	**C**	3
17	**90.3911.00**	**OR D. 66.35x2.62 NBR 70SH 3262**	**B-C**	6
18	**94.7605.00**	**MOLLA Dm. 28.5x45.4**		3
19	**36.7153.01**	**GR. VALVOLA DI MANDATA**	**B**	3
20	**74.2110.70**	**TAPPO VALVOLE DI MANDATA**		3
21	**90.5280.00**	**ANELLO ANTIEST. D. 67.7x72.2x1.5**	**B-C**	3
22	**94.7750.00**	**MOLLA Dm. 58.0x45.4**		3
23	**74.2108.66**	**ANELLO SEDE VALVOLA DI MANDATA**		3
24	**74.2103.15**	**COPERCHIO VALVOLE**		1
25	**99.5222.00**	**VITE M16x180 UNI 5931**		8
26	**99.5147.00**	**VITE M16x55 UNI 5931**		8
27	**99.3850.00**	**VITE M10x160 UNI 5737**		3
28	**96.7105.00**	**ROSETTA D. 10.0x18.0x0.9**	**C**	3
29	**90.4102.00**	**OR D. 58.74x3.53 NBR 70SH 162**	**A-C**	9
30	74.1010.56	ANELLO DI TESTA BADERNE D. 40		3
	74.1011.56	ANELLO DI TESTA BADERNE D. 45		
	74.1006.56	ANELLO DI TESTA BADERNE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	**90.3722.00**	**OR D. 96.00x2.00 NBR 70SH**	**A-C**	6
33	94.7730.00	MOLLA Dm. 51.5x36.0 - D. 40-45		3
	94.7770.00	MOLLA Dm. 61.5x35.0 - D. 50		
34	74.2165.56	ANELLO PER MOLLA D. 40		3
	74.2169.56	ANELLO PER MOLLA D. 45		
	74.2134.56	ANELLO PER MOLLA D. 50		
35	74.2164.72	ANELLO RASCHIATORE BADERNE D. 40	A-C	3
	74.2168.72	ANELLO RASCHIATORE BADERNE D. 45	A-C	
	74.2138.82	ANELLO RASCHIATORE BADERNE D. 50	A-C	
36	90.5655.00	ANELLO TEN. ALT. KC D. 40.0x56.0x19.5	A-C	3
	90.5680.00	ANELLO TEN. ALT. KC D. 45.0x61.0x19.5	A-C	
	90.5700.00	ANELLO TEN. ALT. KC D. 50.0x66.0x19.5	A-C	
37	90.5232.00	ANELLO ANTIEST. D. 40.0x56.0x2.5	A-C	3
	90.5236.00	ANELLO ANTIEST. D. 45.0x61.0x2.5	A-C	
	90.5245.00	ANELLO ANTIEST. D. 50.0x66.0x2.5	A-C	
38	74.2163.60	ANELLO DI SUPPORTO D. 40		3
	74.2167.60	ANELLO DI SUPPORTO D. 45		
	74.2142.60	ANELLO DI SUPPORTO D. 50		
39	90.4110.00	OR D. 61.91x3.53 NBR 70SH 165 - D. 40	A-C	3
	90.4117.00	OR D. 66.27x3.53 NBR 70SH 4262 - D. 45	A-C	
	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - D. 50	A-C	
40	74.2162.56	SUPPORTO BADERNE D. 40		3
	74.2166.56	SUPPORTO BADERNE D. 45		
	74.2146.56	SUPPORTO BADERNE D. 50		
41	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
42	**74.2133.51**	**PARASPRUZZI**		3
43	**90.3865.00**	**OR D. 29.82x2.62 NBR 70SH 3118**	**C**	3
44	**90.3825.00**	**OR D. 10.78x2.62 NBR 70SH 3043**	**A-C**	3
45	**99.1837.00**	**VITE M6x14 UNI 5931**		14
46	**74.1501.22**	**COPERCHIO ISPEZIONE CHIUSO**		1
47	**74.1502.22**	**COPERCHIO ISPEZIONE APERTO**		1
48	**90.4500.00**	**OR D. 266.07x5.33 NBR 70SH**	**C**	2
49	**74.0503.36**	**STELO GUIDA PISTONE**		3
50	**74.2131.71**	**COPERCHIO PARAOLIO GUIDA PISTONE**		3
51	**90.3914.00**	**OR D. 72.69x2.62 NBR 90SH 3287**	**C**	3
52	**90.1679.00**	**ANELLO RAD. D. 40.0x52.0x7.0**	**C**	3
53	**99.1884.00**	**VITE M6x20 UNI 5931**		12
55	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
56	**98.2333.00**	**TAPPO CARICO OLIO G1"**		1
57	**99.4410.00**	**VITE SERRAGGIO BIELLA**		6
58	**99.3045.00**	**VITE M8x18 UNI 5931**		6
59	**98.2187.00**	**TAPPO G 1/2"x13 TE22 ZINC.**		1
60	**96.7514.00**	**ROSETTA D. 21.5x27.0x1.5**		1
61	**91.8700.00**	**CUSCINETTO A RULLI**		1
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	**91.8610.00**	**CUSCINETTO A RULLI**		1
64	**90.3926.50**	**OR D. 126.67x2.62 NBR 70SH 3500**	**C**	1
65	**91.5030.00**	**LINGUETTA 16.0x10.0x90.0**		1
66	**90.1800.00**	**ANELLO RAD. D. 60.0x80.0x8.0**	**C**	1
67	**74.2173.22**	**COPERCHIO PIGNONE**		1
68	**99.4335.00**	**VITE M12x50 UNI 5931**		2
69	**99.3684.00**	**VITE M10x30 UNI 5739**		4
70	**91.5120.00**	**LINGUETTA 22.0x14.0x100.0**		1
71	**74.2252.55**	**FERMO CORONA**		1
72	74.0202.35	ALBERO A GOMITI C. 72 - MKSR		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	**99.3730.00**	**VITE M10x50 UNI 5931**		10
75	**74.2174.13**	**COPERCHIO RIDUTTORE**		1
76	**90.4173.00**	**OR D. 338.00x3.60 NBR 70SH**	**C**	1
77	**97.6230.00**	**SPINA CILINDRICA D. 10.0x24.0**		2
78	**74.2175.13**	**SCATOLA RIDUTTORE**		1
79	**99.4305.00**	**VITE M12x40 UNI 5931**		6
81	**91.8850.00**	**CUSCINETTO A RULLI**		1
82	**74.2130.84**	**GUARNIZIONE LATERALE**	**C**	2
83	**74.0101.13**	**CARTER POMPA**		1
84	**74.0302.01**	**BIELLA COMPLETA**		3
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
87	**74.1600.22**	**COPERCHIO CARTER**	**C**	1
88	**90.4160.00**	**OR D. 304.39x3.53 NBR 70SH 41200**		1
89	**91.8852.00**	**CUSCINETTO A RULLI**		1
90	**74.1500.22**	**COPERCHIO CUSCINETTO**		1
91	**93.0800.00**	**GHIERA DI BLOCCAGGIO**		1
92	**96.8300.00**	**ROSETTA DI SICUREZZA**		1
93	**91.8800.00**	**BUSSOLA DI PRESSIONE**		1
94	**99.4280.00**	**VITE M12x30 UNI 5931**		8
95	**98.2092.00**	**TAPPO CON ASTA G 3/8"x163**		2
96	**93.1050.00**	**GOLFARE M16 UNI 2947**		2
97	**90.0697.00**	**ANELLO D'ARRESTO J35**		6
98	**97.7450.00**	**SPINOTTO D. 35x64**		3
99	**90.3833.00**	**OR D. 13.95x2.62 NBR 70SH 3056**	**C**	2
100	**36.2090.51**	**GUIDA INTERNA VALVOLA**		6
101	**74.2151.56**	**BOCCOLA TESTATA**		3
102	**90.5268.80**	**ANELLO ANTIEST. D. 59.0x65.0x1.5**		6
103	**90.9173.00**	**BOCCOLA PIEDE BIELLA**		3
104	74.1206.01	TESTATA CON BOCCOLA D. 40		1
	74.1203.01	TESTATA CON BOCCOLA D. 45-50		
115	**96.7380.00**	**ROSETTA D. 17.5x23.0x1.5**		2
116	**98.2086.00**	**TAPPO G 3/8"x12**		2
117	**74.6062.01**	**GR. GUIDA PISTONE**		3
118	**99.3668.00**	**VITE M10x25 5931**		6
119	74.1206.15	TESTATA D. 40 HP		1
	74.1207.15	TESTATA D. 40 HP - NPT		
120	**74.1206.01**	**TESTATA CON BOCCOLA D. 40**		1
	PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D			
54	**99.3686.00**	**VITE M10x30 UNI 5931**		6
80	**10.0889.35**	**CORONA Z56 R. 2.667 - ELICOIDALE**		1
105	**10.0905.55**	**PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.**		1
106	**10.0909.20**	**FLANGIA MOTORE IDRAULICO SAE-D**		1
108	**90.2065.00**	**TAPPO PER FORO D. 17 - TTN19**		2
109	**74.2178.34**	**VITE M6x30 CON INCAVO COMPLETA**		1
110	**74.2176.71**	**ANELLO PER ALBERO D. 55 HYDR.PACK**		1
114	**92.2025.00**	**DADO M6x5 UNI 5588**		1
	PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C			
54	**99.3686.00**	**VITE M10x30 UNI 5931**		6
80	**10.0907.35**	**CORONA Z60 R. 3.375 - ELICOIDALE**		1
107	**10.0908.20**	**FLANGIA MOTORE IDRAULICO SAE-C**		1
108	**90.2065.00**	**TAPPO PER FORO D. 17 - TTN19**		2
111	**10.0906.55**	**PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.**		1
112	**74.2171.71**	**ANELLO PER ALBERO D. 50 HYDR.PACK**		1
113	**70.2270.34**	**VITE M6x12 CON INCAVO COMPLETA**		1
114	**92.2025.00**	**DADO M6x5 UNI 5588**		1


MK2R MK2SR LP
DIS. COD. 74.9510.00_0
Montare le baderne con gli intagli degli anelli a 120° tra loro
Lubrificare con grasso al silicone OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT

		MK2R55 - MK2SR55 (D.55)	MK2R60 - MK2SR60 (D.60)	MK2R65- MK2SR65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2102	KIT 2103	KIT 2104
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2453	KIT 2454	KIT 2455
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R55 - MK2SR55
MK2R60 - MK2SR60
MK2R65 - MK2SR65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.1007.56	ANELLO DI TESTA BADERNE D. 55		3
	74.1008.56	ANELLO DI TESTA BADERNE D. 60		
	74.1009.56	ANELLO DI TESTA BADERNE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	94.7770.00	MOLLA Dm. 61.5x35.0 - MK2R MK2SR 55		3
	94.7900.00	MOLLA Dm. 71.5x35.0 - MK2R MK2SR 60-65		
34	74.2135.56	ANELLO PER MOLLA D. 55		3
	74.2136.56	ANELLO PER MOLLA D. 60		
	74.2137.56	ANELLO PER MOLLA D. 65		
35	74.2139.82	ANELLO RASCHIATORE D. 55	A-C	3
	74.2140.82	ANELLO RASCHIATORE D. 60	A-C	
	74.2141.82	ANELLO RASCHIATORE D. 65	A-C	
36	90.5725.00	BADERNE D. 55.0x71.0x19.5	A-C	3
	90.5750.00	BADERNE D. 60.0x76.0x19.5	A-C	
	90.5775.00	BADERNE D. 65.0x81.0x19.5	A-C	
37	90.5267.00	ANELLO ANTIEST. D. 55.0x71.0x2.5	A-C	3
	90.5269.00	ANELLO ANTIEST. D. 60.0x76.0x2.5	A-C	
	90.5275.00	ANELLO ANTIEST. D. 65.0x81.0x2.5	A-C	
38	74.2143.60	ANELLO DI SUPPORTO D. 55		3
	74.2144.60	ANELLO DI SUPPORTO D. 60		
	74.2145.60	ANELLO DI SUPPORTO D. 65		
39	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - MK2R MK2SR 55	A-C	3
	90.4141.00	OR D. 85.32x3.53 NBR 70SH 4337 - MK2R MK2SR 60-65	A-C	
40	74.2147.56	SUPPORTO BADERNE D. 55		3
	74.2148.56	SUPPORTO BADERNE D. 60		
	74.2149.56	SUPPORTO BADERNE D. 65		
41	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
42	74.2133.51	PARASPRUZZI		3
43	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
44	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
45	99.1837.00	VITE M6x14 UNI 5931		14
46	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
47	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
48	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
49	74.0503.36	STELO GUIDA PISTONE		3
50	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
51	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
52	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
53	99.1884.00	VITE M6x20 UNI 5931		12
55	79.0504.43	GUIDA PISTONE		3
	790.0505.43	GUIDA PISTONE +1.0		
56	98.2333.00	TAPPO CARICO OLIO G1"		1
57	99.4410.00	VITE SERRAGGIO BIELLA		6
58	99.3045.00	VITE M8x18 UNI 5931		6
59	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
60	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
61	91.8700.00	CUSCINETTO A RULLI		1
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	91.8610.00	CUSCINETTO A RULLI		1
64	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
65	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
66	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
67	74.2173.22	COPERCHIO PIGNONE		1
68	99.4335.00	VITE M12x50 UNI 5931		2
69	99.3684.00	VITE M10x30 UNI 5739		4
70	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
71	74.2252.55	FERMO CORONA		1
72	74.0202.35	ALBERO A GOMITI C. 72 - MK2R		1
	74.0201.35	ALBERO A GOMITI C. 72 - MK2SR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	99.3730.00	VITE M10x50 UNI 5931		10
75	74.2174.13	COPERCHIO RIDUTTORE		1
76	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
77	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
78	74.2175.13	SCATOLA RIDUTTORE		1
79	99.4305.00	VITE M12x40 UNI 5931		6
81	91.8850.00	CUSCINETTO A RULLI		1
82	74.2130.84	GUARNIZIONE LATERALE	C	2
83	74.0101.13	CARTER POMPA		1
84	74.0302.01	BIELLA COMPLETA		3
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0.50 - SUP.	D	
87	74.1600.22	COPERCHIO CARTER		1
88	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
89	91.8852.00	CUSCINETTO A RULLI		1
90	74.1500.22	COPERCHIO CUSCINETTO		1
91	93.0800.00	GHIERA DI BLOCCAGGIO		1
92	96.8300.00	ROSETTA DI SICUREZZA		1
93	91.8800.00	BUSSOLA DI PRESSIONE		1
94	99.4280.00	VITE M12x30 UNI 5931		8
95	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
96	93.1050.00	GOLFARE M16 UNI 2947		2
97	90.0697.00	ANELLO D'ARRESTO J35		6
98	97.7450.00	SPINOTTO D. 35x64		3
99	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
100	36.2089.51	GUIDA INTERNA VALVOLA		6
101	74.2150.56	BOCCOLA TESTATA		3
102	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
103	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
104	90.9173.00	BOCCOLA PIEDE BIELLA		3
105	74.1201.01	TESTATA CON BOCCOLA		1
116	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
117	98.2086.00	TAPPO G 3/8"x12		2
118	74.6062.01	GR. GUIDA PISTONE		3
119	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
109	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
110	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
111	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
115	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
108	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
109	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
112	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
113	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
114	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
115	92.2025.00	DADO M6x5 UNI 5588		1

17.2 Bomba versión MK2C-MK25C

17.2.1 Indicaciones para el uso

Las bombas han sido diseñadas para trabajar en ambientes con una atmósfera no potencialmente explosiva.
La ***Oficina Técnica*** o el ***Servicio de Asistencia al Cliente*** está a la disposición del cliente para ofrecer más información sobre la instalación.

17.2.2 Temperatura de uso

La temperatura del fluido admitida es: -30 °C / +30 °C. Para valores distintos, contactar con la ***Oficina Técnica*** o el ***Servicio de Asistencia al Cliente***.

17.2.3 Capacidad y presión máxima

Las prestaciones indicadas en el catálogo hacen referencia a las prestaciones máximas suministrables por la bomba. **Independientemente** de la potencia utilizada, la presión y el número de vueltas máximas indicadas en la matrícula no pueden ser superadas si no son expresamente autorizados formalmente por la ***Oficina Técnica*** o el ***Servicio de Asistencia al Cliente***.

17.2.4 Características técnicas

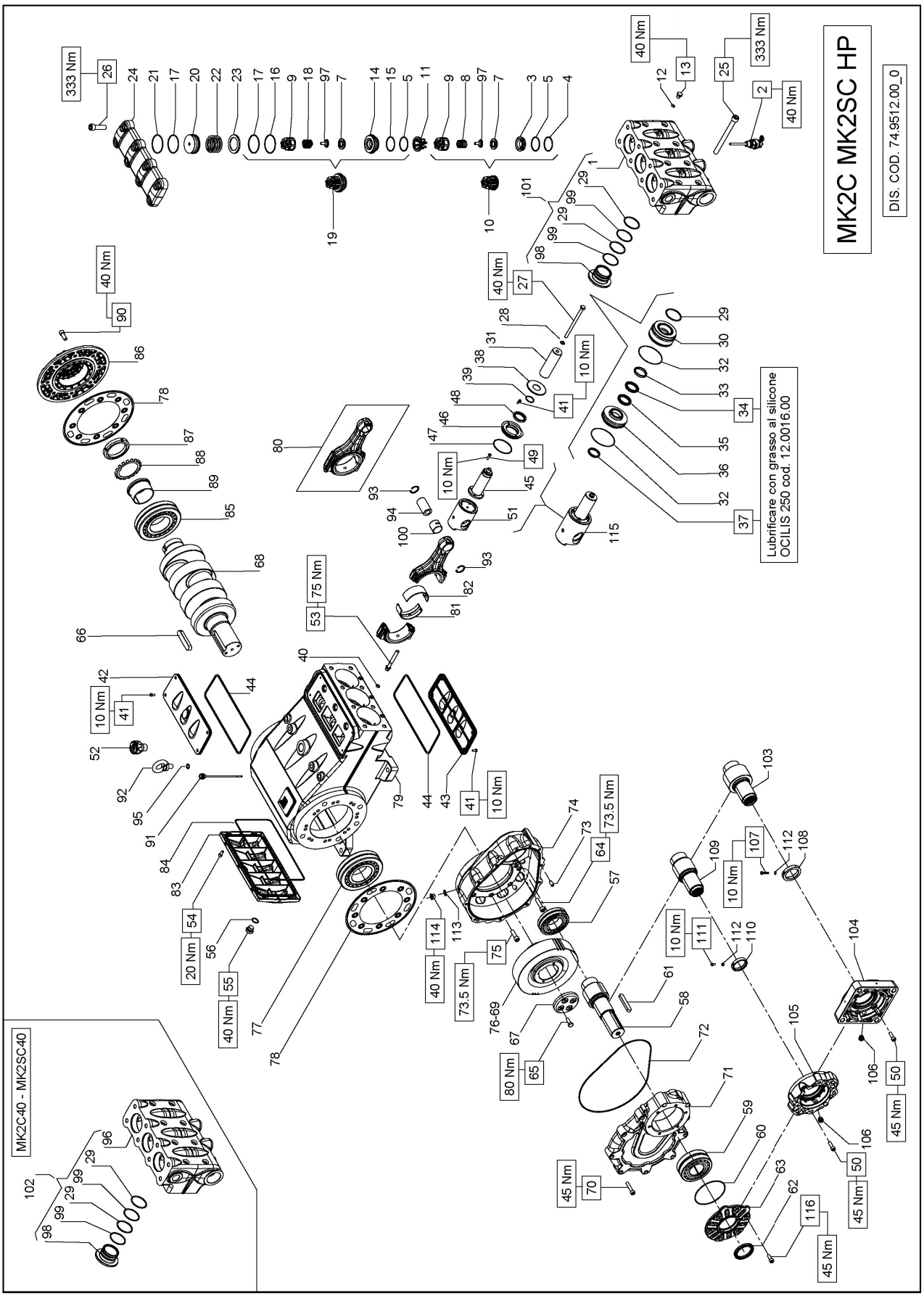
Modelo	Vueltas/1'	Capacidad		Presión		Potencia	
		l/min	Gpm	bar	psi	kW	Hp
MK2SC 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2SC 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2SC 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2SC 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2SC 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2SC 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Modelo	Vueltas/1'	Capacidad		Presión		Potencia	
		l/min	Gpm	bar	psi	kW	Hp
MK2SC 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2SC 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SC 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2SC 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2SC 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2SC 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.2.5 Dimensiones y pesos

Para dimensiones y pesos de las bombas remitirse a los esquemas del capítulo 6.

17.2.6 Dibujo desglosado y nomenclatura de las piezas de recambio



KIT RICAMBIO – SPARE KIT

		MK2C40 - MK2SC40 (D.40)	MK2C45 - MK2SC45 (D.45)	MK2C50 - MK2SC50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2258		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2C40 - MK2SC40
MK2C45 - MK2SC45
MK2C50 - MK2SC50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIRAZ.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2118.56	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7222.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7223.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE HP		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE - FLANGIATO		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72 - MKSC		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKC		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1

17.3 Bomba versión MK2SH

17.3.1 Indicaciones para el uso

La bomba ha sido diseñada para trabajar en ambientes con una atmósfera no potencialmente explosiva y con agua filtrada (ver punto 9.7). Otros líquidos podrán ser utilizados solamente previo bienestar formal de la ***Oficina Técnica*** o el ***Servicio de Asistencia al Cliente***.

17.3.2 Temperatura del agua

Aunque la temperatura máxima del agua admitida es 40 °C, la bomba se puede utilizar con agua a una temperatura de hasta 60 °C pero solo durante cortos intervalos de tiempo. En estos casos, se recomienda contactar con la ***Oficina Técnica*** o el ***Servicio de Asistencia al Cliente***.

17.3.3 Capacidad y presión máxima

Las prestaciones indicadas en el catálogo hacen referencia a las prestaciones máximas suministrables por la bomba. **Independientemente** de la potencia utilizada, la presión y el número de vueltas máximas indicadas en la matrícula no pueden ser superadas si no son expresamente autorizados formalmente por la ***Oficina Técnica*** o el ***Servicio de Asistencia al Cliente***.

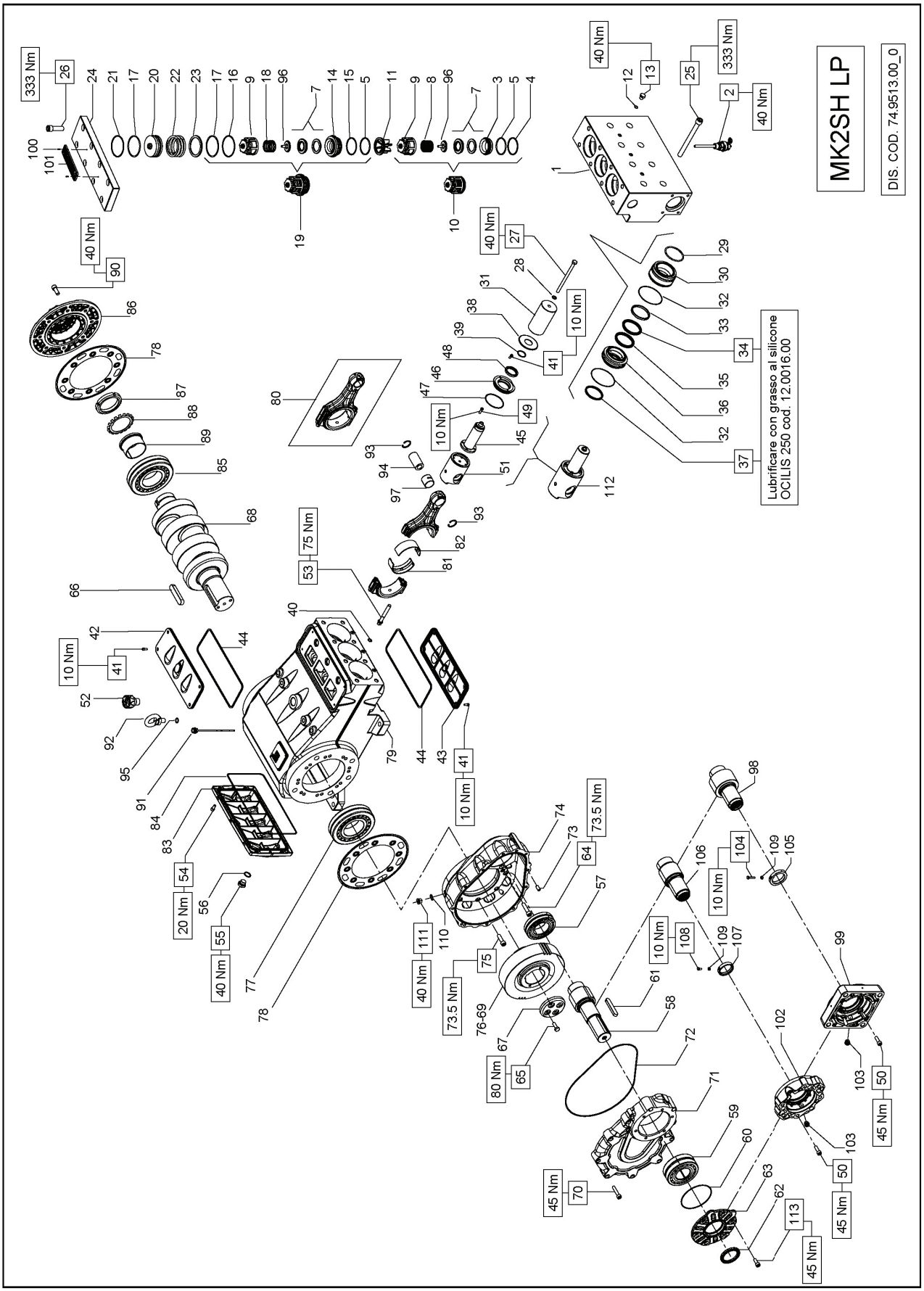
17.3.4 Características técnicas

Modelo	Vueltas/1'	Capacidad		Presión		Potencia	
		l/min	Gpm	bar	psi	kW	Hp
MK2SH 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SH 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.3.5 Dimensiones y pesos

Para dimensiones y pesos de las bombas remitirse a los esquemas del capítulo 6.

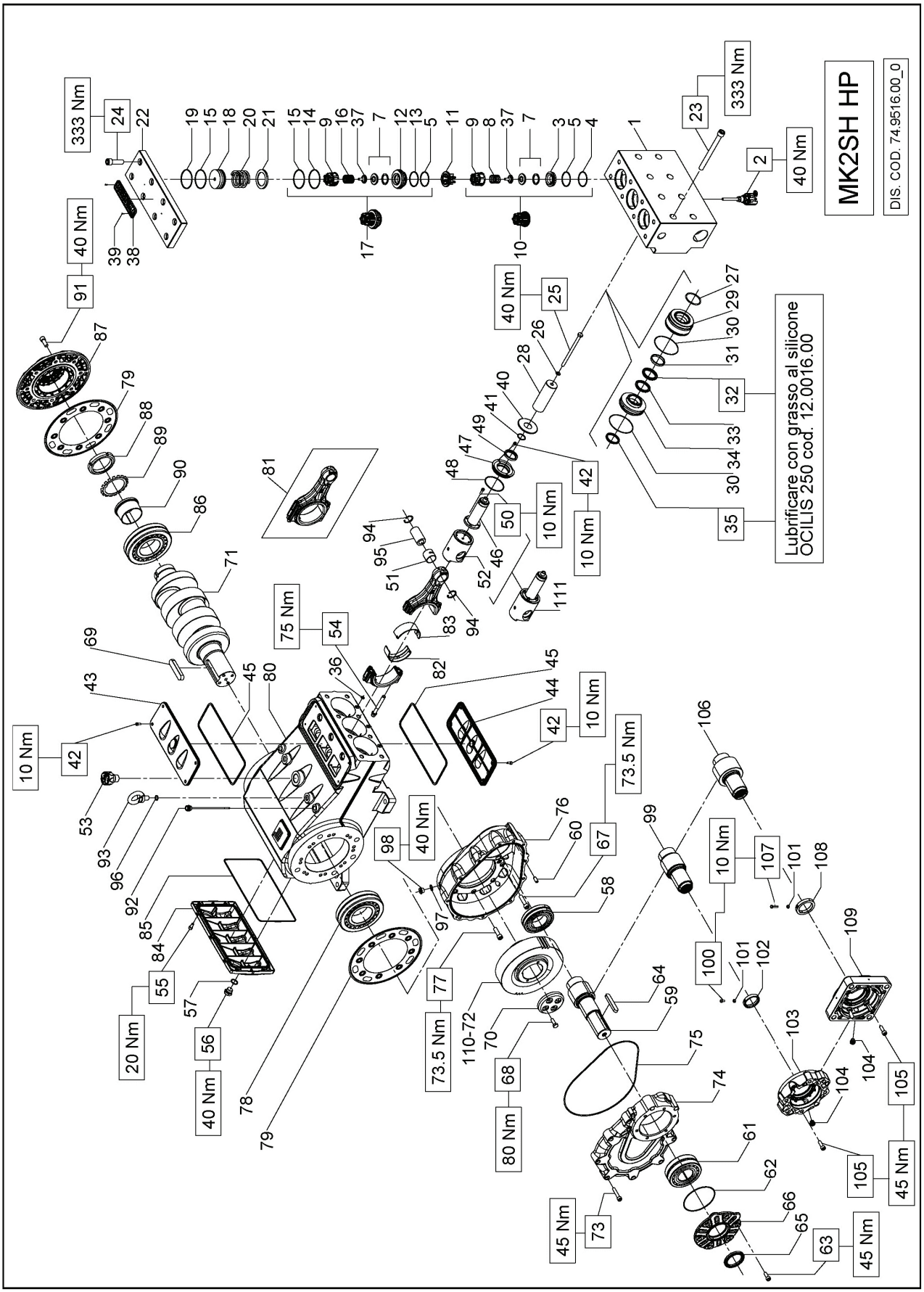
17.3.6 Dibujo desglosado y nomenclatura de las piezas de recambio



KIT RICAMBIO – SPARE KIT		MK2S65H (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2047
B	Kit valvole – Valves kit	KIT 2048
C	Kit tenute complete – Complete seals kit	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)

MK2S65H

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1210.56	TESTATA LP		1
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2161.56	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2116.56	CAMICIA PISTONE D. 65		3
31	74.0405.09	PISTONE D. 65x127		3
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1005.92	ANELLO DI TESTA PISTONE D. 65		3
34	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	3
35	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	3
36	74.2122.68	SUPPORTO GUARNIZIONE D. 65		3
37	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	3
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72		1
69	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		3
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
82	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	90.9173.00	BOCCOLA PIEDE BIELLA		3
100	91.5703.00	RIVETTO AUTOF. D. 2.5x8 UNI 7346		2
101	97.8276.00	MARCHIO PRATISSOLI		1
110	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
111	98.2086.00	TAPPO G 3/8"x12		2
112	74.6062.01	GR. GUIDA PISTONE		3
113	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
98	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
99	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
104	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
105	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
102	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
107	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
108	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
109	92.2025.00	DADO M6x5 UNI 5588		1


MK2SH HP
DIS. COD. 74.9516.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00
333 Nm
40 Nm
10 Nm
75 Nm
73.5 Nm
80 Nm
45 Nm
20 Nm

KIT RICAMBIO – SPARE KIT		MK2SH45 (D.45)
A	Kit tenute pompanti – Plunger packing kit	KIT 2053
B	Kit valvole – Valves kit	KIT 2055
C	Kit tenute complete – Complete seals kit	KIT 2451
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0.25) - 2078 (+0.50)

MK2SH45

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1212.56	TESTATA POMPA D. 45		1
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	36.2069.66	SEDE VALVOLA DI MANDATA		3
13	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
14	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
15	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
16	94.7605.00	MOLLA Dm. 28.5x45.4		3
17	36.7153.01	GR. VALVOLA DI MANDATA	B	3
18	74.2110.70	TAPPO VALVOLE DI MANDATA		3
19	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
20	94.7750.00	MOLLA Dm. 58.0x45.4		3
21	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
22	74.2181.56	COPERCHIO VALVOLE		1
23	99.5222.00	VITE M16x180 UNI 5931		8
24	99.5147.00	VITE M16x55 UNI 5931		8
25	99.3850.00	VITE M10x160 UNI 5737		3
26	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
27	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	3
29	74.2112.56	CAMICIA PISTONE D. 45		3
28	74.0401.09	PISTONE D. 45x127		3
30	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
31	74.1001.92	ANELLO DI TESTA PISTONE D. 45		3
32	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	3
33	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	3
34	74.2118.68	SUPPORTO GUARNIZIONE D. 45		3
35	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	3
36	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
37	36.2090.51	GUIDA INTERNA VALVOLA		6
38	97.8276.00	MARCHIO PRATISSOLI		1
39	91.5703.00	RIVETTO AUTOFILETTANTE D. 2.5x8.0		2
40	74.2133.51	PARASPRUZZI		3
41	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
42	99.1837.00	VITE M6x14 UNI 5931		14
43	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
44	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
45	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
46	74.0503.36	STELO GUIDA PISTONE		3
47	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
48	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
49	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
50	99.1884.00	VITE M6x20 UNI 5931		12
51	90.9173.00	BOCCOLA PIEDE BIELLA		3
52	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
53	98.2333.00	TAPPO CARICO OLIO G1"		1
54	99.4410.00	VITE SERRAGGIO BIELLA		6
55	99.3045.00	VITE M8x18 UNI 5931		6
56	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
57	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
58	91.8700.00	CUSCINETTO A RULLI		1
59	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
60	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
61	91.8610.00	CUSCINETTO A RULLI		1
62	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
63	99.3668.00	VITE M10x25 5931		6
64	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
65	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
66	74.2173.22	COPERCHIO PIGNONE		1
67	99.4335.00	VITE M12x50 UNI 5931		2
68	99.3684.00	VITE M10x30 UNI 5739		4
69	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
70	74.2252.55	FERMO CORONA		1
71	74.0202.35	ALBERO A GOMITI C. 72		1
72	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
73	99.3730.00	VITE M10x50 UNI 5931		10
74	74.2174.13	COPERCHIO RIDUTTORE		1
75	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
76	74.2175.13	SCATOLA RIDUTTORE		1
77	99.4305.00	VITE M12x40 UNI 5931		6
78	91.8850.00	CUSCINETTO A RULLI		1
79	74.2130.84	GUARNIZIONE LATERALE	C	2
80	74.0101.13	CARTER POMPA		1
81	74.0302.01	BIELLA COMPLETA		3
82	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
83	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
84	74.1600.22	COPERCHIO CARTER		1
85	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
86	91.8852.00	CUSCINETTO A RULLI		1
87	74.1500.22	COPERCHIO CUSCINETTO		1
88	93.0800.00	GHIERA DI BLOCCAGGIO		1
89	96.8300.00	ROSETTA DI SICUREZZA		1
90	91.8800.00	BUSSOLA DI PRESSIONE		1
91	99.4280.00	VITE M12x30 UNI 5931		8
92	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
93	93.1050.00	GOLFARE M16 UNI 2947		2
94	90.0697.00	ANELLO D'ARRESTO J35		6
95	97.7450.00	SPINOTTO D. 35x64		3
96	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
97	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
98	98.2086.00	TAPPO G 3/8"x12		2
111	74.6062.01	GR. GUIDA PISTONE		3
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
101	92.2025.00	DADO M6x5 UNI 5588		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
110	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
99	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
100	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
101	92.2025.00	DADO M6x5 UNI 5588		1
102	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
103	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
110	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1

18 DECLARACIÓN DE INCORPORACIÓN

DECLARACIÓN DE INCORPORACIÓN

(De acuerdo con el anexo II de la Directiva Europea 2006/42/CE)

El fabricante **INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 - 42049 - S. ILARIO D'ENZA - Italia DECLARA** bajo su responsabilidad exclusiva que el producto identificado y descrito del siguiente modo:

Denominación:	Bomba
Tipo:	Bomba alternativa de pistones para agua a alta presión
Marca de fábrica:	INTERPUMP GROUP
Modelo:	Serie 74 MK2, MK2S, MK2R, MK2SR, MK2C, MK2SC, MK2SH

Es conforme con la Directiva de Máquinas 2006/42/CE
Normas aplicadas: UNI EN ISO 12100- UNI EN 809

La bomba identificada en la parte superior respeta todos los requisitos esenciales de seguridad y de cuidado de la salud enumerados en el punto 1 del anexo de la Directiva de Máquinas:
1.1.2 - 1.1.3 - 1.1.5 - 1.3.1 - 1.3.2 - 1.3.3 - 1.3.4 - 1.5.4 - 1.5.5 - 1.6.1 - 1.7.1 - 1.7.2 - 1.7.4 - 1.7.4.1 - 1.7.4.2 y la correspondiente documentación técnica ha sido cumplimentada de acuerdo con el anexo VII B.

Asimismo, el fabricante se compromete a proporcionar, ante solicitud adecuadamente motivada, una copia de la documentación técnica relativa a la bomba con la modalidad y en el plazo por definir.

La bomba no debe ser puesta en funcionamiento, hasta que el sistema al cuál la bomba debe ser incorporada, haya sido declarado conforme a las disposiciones de las respectivas directivas y/o normativas.

Persona autorizada a realizar el fascículo técnico

Nombre: Maurizio Novelli
Dirección: INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 - 42049 - S. ILARIO D'ENZA (RE) - Italia

El responsable:
Reggio Emilia - Enero de 2017

Ing. Massimiliano Bizzarri

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1 INTRODUÇÃO

Este manual descreve as instruções para o uso e a manutenção da bomba MK2 e deve ser atentamente lido e compreendido antes do uso da bomba.
O uso e manutenção adequados depende do bom funcionamento e duração da bomba.
A Interpump Group não se responsabiliza por qualquer dano causado por mau uso ou pelo não cumprimento das regras descritas neste manual.
Verifique, após o recebimento, se a bomba está intacta e completa.
Comunique quaisquer anomalias antes de instalar e ligar a bomba.

2 DESCRIÇÕES DOS SÍMBOLOS

Leia atentamente as instruções contidas neste manual antes de qualquer operação.



Sinal de Advertência



Leia atentamente as instruções contidas neste manual antes de qualquer operação.



Sinal de Perigo
Perigo de choque elétrico.



Sinal de Perigo
Use máscara de proteção.



Sinal de Perigo
Use óculos de proteção.



Sinal de Perigo
Use luvas de proteção antes de cada operação.



Sinal de Perigo
Use calçados adequados

3 SEGURANÇA

3.1 Advertências gerais sobre segurança

O uso inadequado de bombas e sistemas de alta pressão, bem como o não cumprimento das normas de instalação e manutenção pode causar sérios danos a pessoas e/ou bens. Quem está se preparando para montar ou usar os sistemas de alta pressão deve possuir o conhecimento necessário para fazê-lo, conhecer as características dos componentes que montará/usará, e tomar todas as precauções possíveis para garantir a máxima segurança em todas as condições operacionais. Nenhuma precaução razoavelmente aplicável deverá ser omitida em relação à segurança, seja por parte do Instalador, seja por parte do Operador.

3.2 Seguranças essenciais do sistema de alta pressão

1. A linha de pressão deve possuir sempre uma válvula de segurança.
2. Os componentes do sistema de alta pressão, em particular aqueles que operam principalmente no exterior, devem ser adequadamente protegidos de chuva, gelo e calor.
3. As partes elétricas do sistema, além de estarem devidamente protegidas contra jatos de água, devem atender às normas específicas vigentes.
4. Os tubos de alta pressão devem ser corretamente dimensionados para a pressão máxima de exercício do sistema e utilizados sempre e somente no interior do campo de pressão de trabalho indicado pelo Fabricante desses tubos. O mesmo procedimento deve ser observado para todos os outros acessórios do sistema em alta pressão.
5. As extremidades dos tubos de alta pressão devem ser revestidas e protegidas por uma estrutura sólida, a fim de evitar choques bruscos em caso de estouro ou ruptura das conexões.
6. Devem ser providenciados cárteres de proteção adequados nos sistemas de transmissão da bomba (juntas, polias e correias, tomadas elétricas auxiliares).

3.3 Segurança durante o trabalho



O ambiente ou área em que opera um sistema de alta pressão deve ser claramente marcado e proibido ao pessoal não autorizado e, na medida do possível, limitado ou fechado.
O pessoal autorizado ao acesso desta área deverá ser primeiramente instruído sobre como se comportar nesta área e deverá ser informado sobre os riscos derivados dos defeitos ou mau funcionamento do sistema de alta pressão.
Antes de iniciar o sistema, o Operador deve verificar se:

1. O sistema de alta pressão está corretamente energizado, veja o capítulo 9, parág. 9.5.
2. Os filtros de aspiração da bomba estão perfeitamente limpos. É apropriado inserir um dispositivo qualquer que indique o valor de entupimento.
3. As partes elétricas estão adequadamente protegidas e em perfeito estado.
4. Os tubos de alta pressão não apresentam sinais evidentes de abrasão e os acessórios estão em perfeita ordem.
5. Em relação à aplicação, ao uso e às condições ambientais durante a operação as superfícies exteriores da bomba podem atingir altas temperaturas. Por conseguinte, recomendamos que você se proteja para evitar o contato com peças quentes.

Qualquer anomalia ou dúvida razoável que possa surgir antes ou durante o trabalho deverá ser imediatamente notificado e verificado por pessoal qualificado. Nestes casos, a pressão deverá ser imediatamente apagada e o sistema de alta pressão parado.

3.4 Normas de comportamento para o uso de lanças



1. O operador deve sempre privilegiar sua proteção e segurança, bem como a de terceiros que possam ser diretamente afetados pelas suas ações ou por qualquer outra avaliação em relação ao caso. Suas ações deverão ser ditadas pelo bom senso e responsabilidade.
2. O operador deve sempre usar capacete com viseira de proteção, roupas impermeáveis e botas adequadas para o tipo de uso e capazes de garantir uma boa aderência no chão, na presença de água.

Obs.: *um vestuário adequado protege contra respingos de água, mas não contra o impacto direto de jatos de água ou respingos muito próximos. Em determinadas circunstâncias pode, portanto, ser necessário outras proteções.*

3. É prática recomendada organizar uma equipe de pelo menos duas pessoas, com o intuito de fornecer assistência imediata e recíproca em caso de necessidade e até para substituição durante trabalhos longos e pesados.

4. A área de trabalho dentro do raio de ação do jato deve estar absolutamente interditada e livre de objetos que, inadvertidamente, afetados pelo jato de pressão, possam sofrer danos e/ou criar situações de perigo.
5. O jato de água deve estar sempre e somente na direção da área de trabalho, mesmo durante os testes ou controles preliminares.
6. O operador deve sempre prestar atenção na trajetória dos detritos removidos pelo jato d'água. Se necessário, o Operador deve providenciar anteparos para proteger tudo que possa ser exposto acidentalmente.
7. Durante o trabalho, o Operador não deve se distrair por nenhum motivo. Os encarregados do trabalho que precisarem ter acesso à área operacional deverão esperar até que o Operador suspenda o trabalho por iniciativa própria, depois que ele notar a presença dos mesmos.
8. É importante, para fins de segurança, que todos os componentes da equipe tenham sempre perfeito conhecimento das intenções uns dos outros, a fim de evitar mal-entendidos perigosos.
9. O sistema de alta pressão não deve ser acionado e colocado em pressão sem que todos os membros da equipe estejam em posição e o Operador já tenha direcionado sua lança para a área de trabalho.

3.5 Segurança na manutenção do sistema

1. A manutenção do sistema de alta pressão deve ser feita nos intervalos de tempo especificados pelo fabricante, que é responsável por todo o grupo, de acordo com a lei.
2. A manutenção deve sempre ser executada por pessoal especializado e autorizado.
3. A montagem e desmontagem da bomba e dos vários componentes devem ser executadas exclusivamente por pessoal autorizado, usando equipamento adequado ao objetivo, para evitar danos aos componentes, e de modo particular às conexões.
4. Para garantir total confiabilidade e segurança, use sempre e apenas peças de reposição originais.

4 IDENTIFICAÇÃO DA BOMBA

Cada bomba tem uma etiqueta de identificação que relaciona:
- Modelo e versão da bomba
- Número de série
- Número máx. de giros
- Potência absorvida em Hp - kW
- Pressão em bar - P.S.I.
- Capacidade em l/min - Rpm

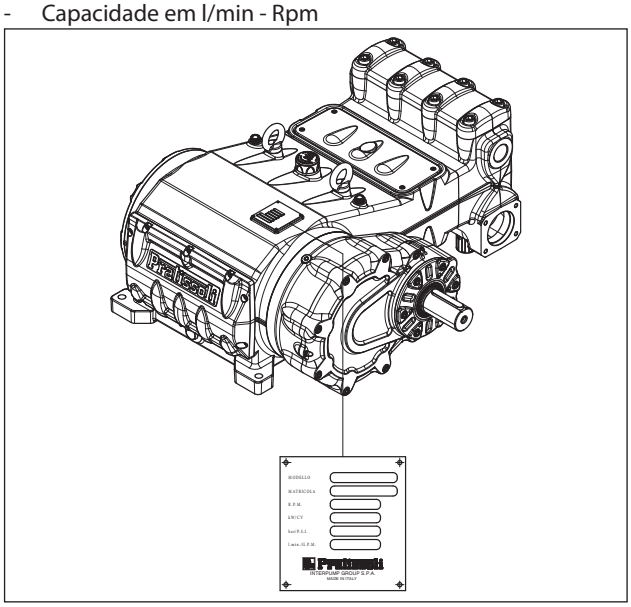


Fig. 1

Modelo, versão e número de série deverão ser sempre indicados em caso de pedido de peças de reposição

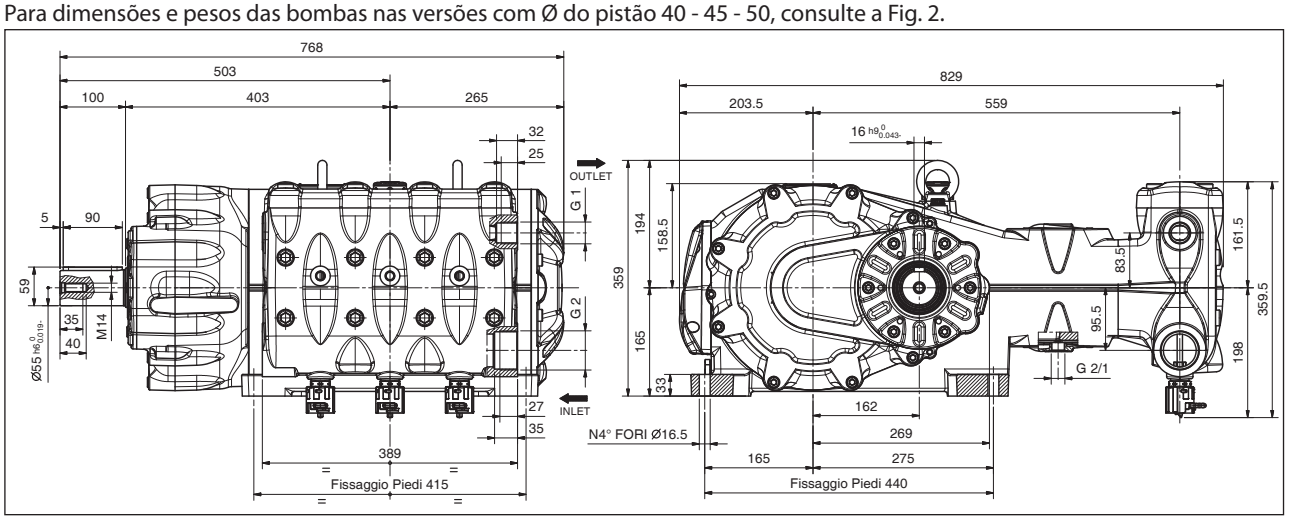
5 CARACTERÍSTICAS TÉCNICAS

Modelo	Rotações/1'	Capacidade		Pressão		Potência	
		l/min	Rpm	bar	psi	kW	Hp
MK2 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Modelo	Rotações/1'	Capacidade		Pressão		Potência	
		l/min	Rpm	bar	psi	kW	Hp
MK2S 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2S 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2S 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2S 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2S 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2S 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

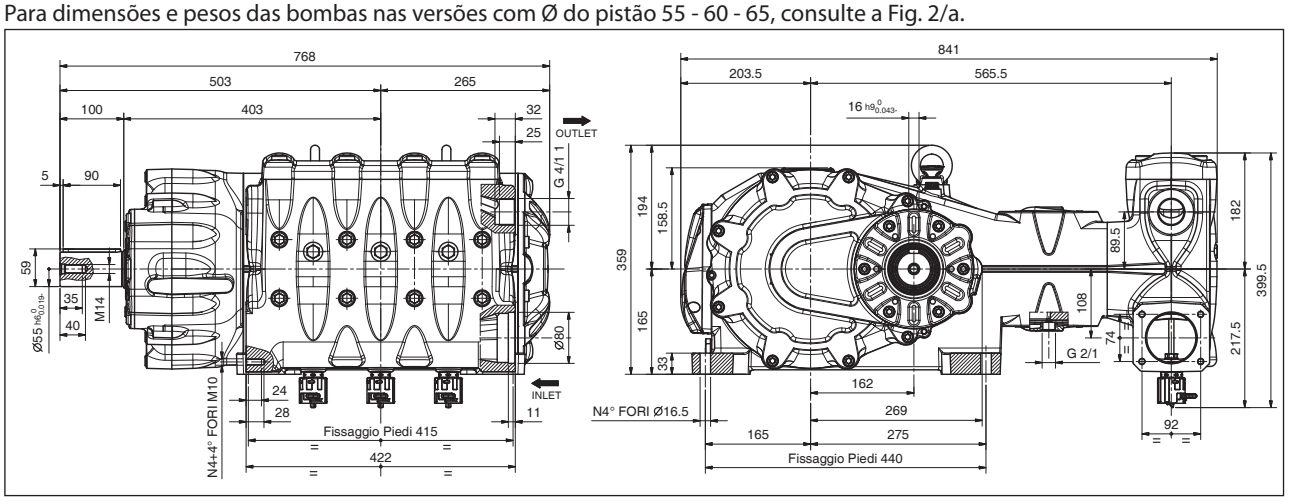
6 DIMENSÕES E PESOS

Para dimensões e pesos das bombas nas versões com Ø do pistão 40 - 45 - 50, consulte a Fig. 2.



Peso a seco 398 kg. Fig. 2

Para dimensões e pesos das bombas nas versões com Ø do pistão 55 - 60 - 65, consulte a Fig. 2/a.



Peso a seco 411 kg. Fig. 2/a

Para dimensões das bombas versão H.P., com pré-disposição Hydraulic Pack, consulte a Fig. 2/b.

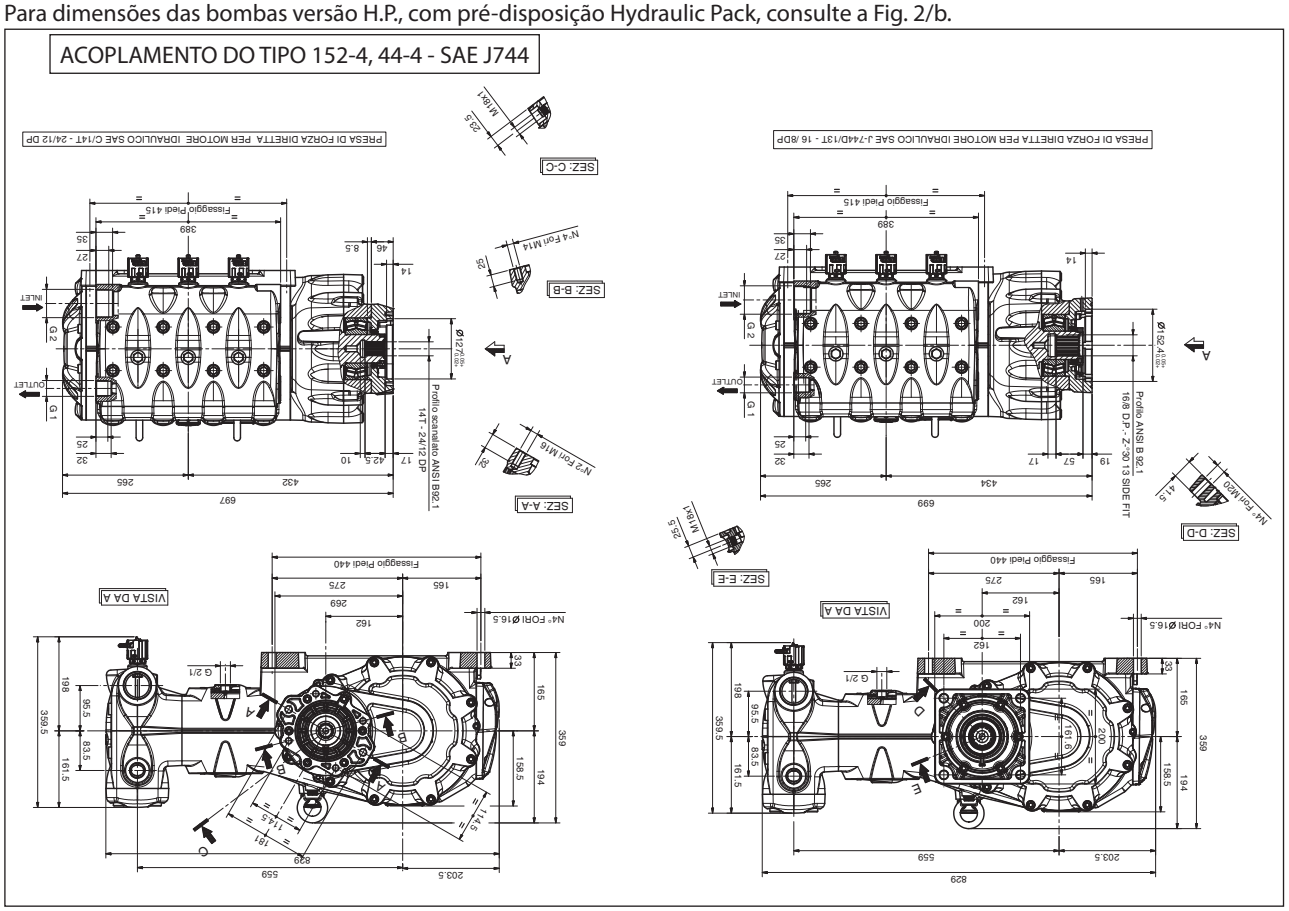


Fig. 2/b

Para dimensões das bombas versão L.P., com pré-disposição Hydraulic Pack, consulte a Fig. 2/c.

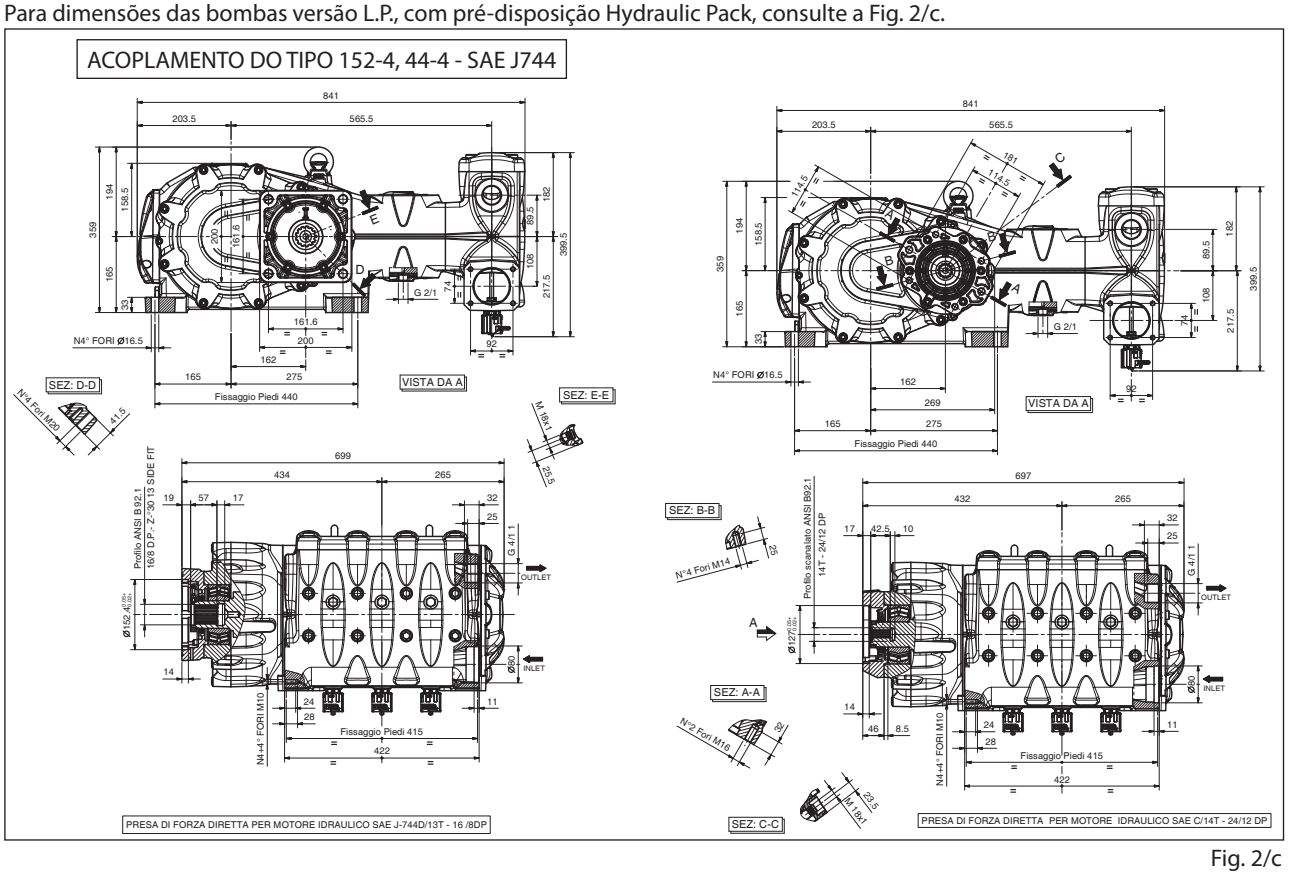


Fig. 2/c

7 INDICAÇÕES PARA O USO

A bomba foi projetada para operar em ambientes com atmosfera não potencialmente explosiva, com água filtrada (ver parág. 9.7).
Outros líquidos poderão ser usados após a aprovação formal prévia do ***Departamento Técnico*** ou o ***Serviço de Assistência ao Cliente***.

7.1 Temperatura da água

A temperatura máxima da água permitida é de 40 °C. Todavia, é possível usar a bomba com água até a temperatura de 60 °C, mas somente por períodos curtos. Em tais casos, aconselha-se consultar o ***Departamento Técnico*** ou o ***Serviço de Assistência ao Cliente***.

7.2 Capacidade e pressão máxima

O desempenho indicado no catálogo se refere ao desempenho máx. fornecido pela bomba. **Independentemente** da potência usada, a pressão e o número de giros máximos indicados na etiqueta não podem ser ultrapassados, a não ser se expressamente autorizados formalmente pelo ***Departamento Técnico*** ou o ***Serviço de Assistência ao Cliente***.

7.3 Velocidade mínima de rotação

A velocidade mínima permitida para esses tipos de bombas é de 300 giros/1'. Qualquer velocidade de rotação diferente do mencionado e do indicado na tabela de desempenho (ver capítulo 5) deve ser expressamente autorizada formalmente pelo ***Departamento Técnico*** ou o ***Serviço de Assistência ao Cliente***.

7.4 Emissão sonora

O teste para detecção da pressão sonora foi realizado de acordo com a diretiva 2000/14 do Parlamento e do Conselho Europeu (Diretiva de Máquinas) e a EN-ISO 3744-2010 com instrumentação de classe 1.
O alívio final da pressão sonora deverá ser executado na máquina/sistema completo.
Se o operador estiver a uma distância inferior a 1 metros, deverá usar proteção auditiva adequada, segundo os regulamentos vigentes.

7.5 Vibrações

A detecção do valor deve ser feito somente com a bomba posicionada na instalação e dentro do desempenho declarado pelo cliente. Os valores deverão estar de acordo com os regulamentos vigentes.

7.6 Marcas e tipos de óleos recomendados

A bomba é fornecida com óleo adequado para temperatura ambiente de 0 °C a 30 °C.
Alguns tipos de óleo são recomendados na tabela abaixo.
Estes óleos são aditivados para aumentar a proteção contra a corrosão e a resistência à fadiga (de acordo com a norma DIN 51517, parte 2).
Alternativamente, você também pode usar óleos lubrificantes para engrenagens Automotivas SAE 85W-90.

Produtor	Lubrificante
Agip	AGIP ACER220
ARAL	Aral Degol BG 220
BP	BP Energol HLP 220
Castrol	CASTROL HYSPIN VG 220 CASTROL MAGNA 220
DEA	Falcon CL220
elf	ELF POLYTELIS 220 REDUCTELF SP 220
Esso	NUTO 220 TERESSO 220
FINA	FINA CIRKAN 220
FUCHS	RENOLIN 212 RENOLIN DTA 220
Mobil	Mobil DTE Oil BB
Shell	Shell Tellus Öl C 220
SRS	Wintershall Ersolon 220 Wintershall Wiolan CN 220
TEXACO	RANDO HD 220
TOTAL	TOTAL Cortis 220

Verifique o nível do óleo com a vareta da haste do nível do óleo especial, equipada de entalhes de mínimo e máximo ①, Fig. 3.
Se necessário, complete até a tampa do óleo. ③, Fig. 3.
O controle correto do nível do óleo é realizado com a bomba em temperatura ambiente, a troca do óleo é feita com a bomba em temperatura de trabalho, removendo o tampão pos.②, Fig. 3.
O controle do óleo e a troca são efetuados conforme indicado no capítulo 11.
A quantidade necessária é de ~13,5 litros.

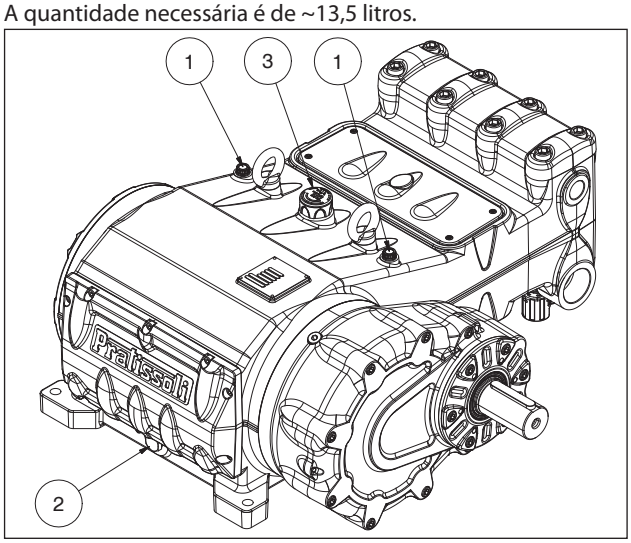


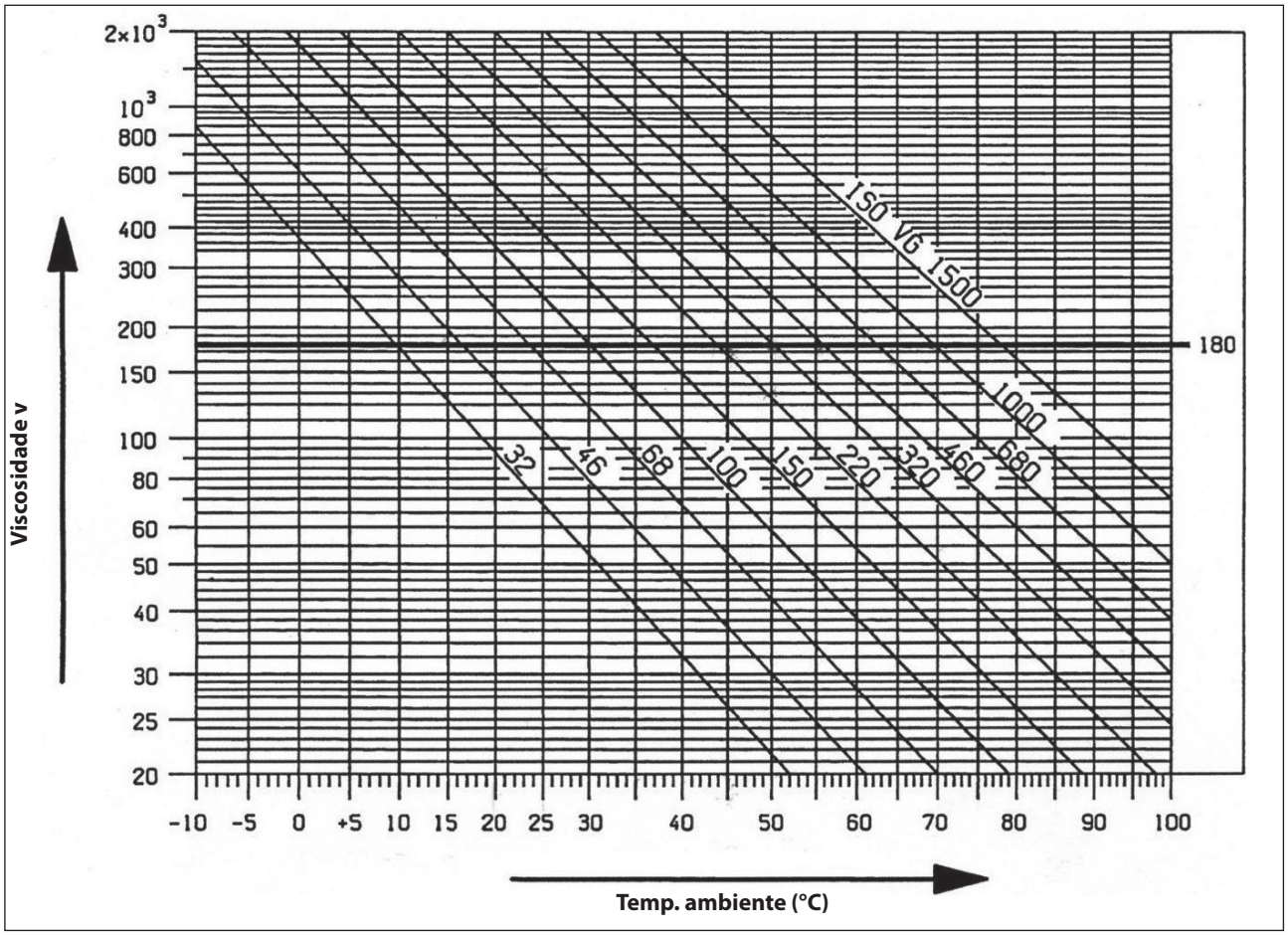
Fig. 3

Em qualquer caso, o óleo deve ser trocado pelo menos uma vez por ano, uma vez que pode se deteriorar por oxidação.

Para temperatura ambiente diferente de 0 °C a 30 °C, observe as indicações contidas no diagrama seguinte, considerando que o óleo deve ter uma viscosidade mínima de 180 cSt.

Diagrama de viscosidade/temperatura ambiente

$mm^2/s = cSt$



O óleo esgotado deve ser colocado em um recipiente adequado e descartado em centros próprios. Não deve ser, de forma nenhuma, disperso no meio ambiente.

8 TOMADAS E CONEXÕES

As bombas são equipadas de:

Duas tomadas de aspiração "IN":

G2" (nas versões com Ø do pistão 40, 45, 50)

Ø80 mm (nas versões com Ø do pistão 55, 60, 65)

As conexões da linha a qualquer uma das duas tomadas é indiferente para garantir o bom funcionamento da bomba.

As tomadas não usadas deverão ser fechadas hermeticamente.

Duas tomadas de fluxo "OUT":

G1" (nas versões com Ø do pistão 40, 45, 50)

G1 ¼" (nas versões com Ø do pistão 55, 60, 65)

Uma tomada "DRAIN": com furo G1/2" formato na cobertura inferior para monitorar a eventual perda de água devido ao desgaste das vedações de pressão. Se forem apresentadas perdas, consulte o ***Manual de reparação***.

Determinado furo deve ser sempre mantido aberto. (ver Fig. 4 e Fig. 4/a).

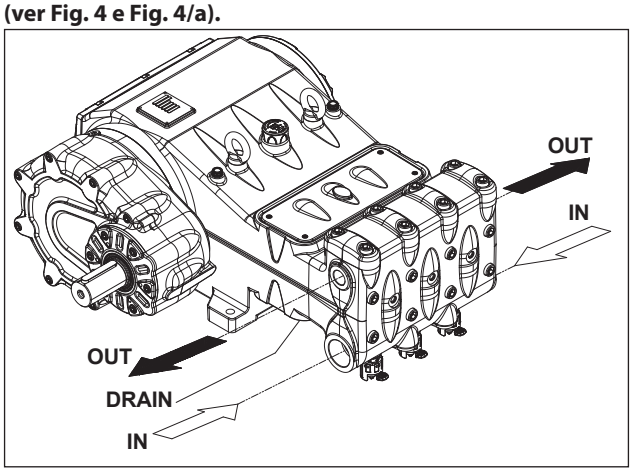


Fig. 4

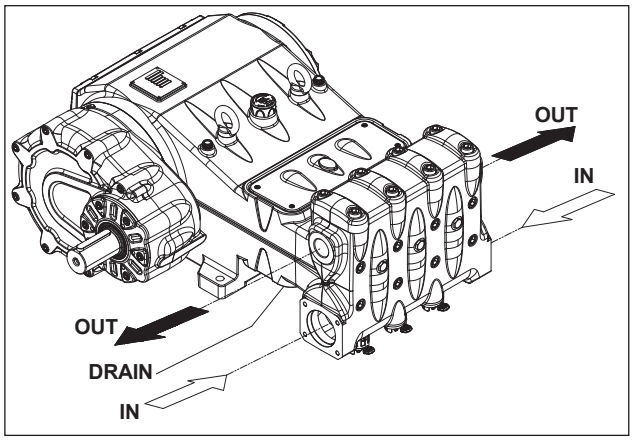


Fig. 4/a

9 INSTALAÇÃO DA BOMBA

9.1 Instalação

A bomba deve ser fixada na posição horizontal usando os respectivos pés de apoio furados de Ø16,5.
A base deve ser perfeitamente plana e suficientemente rígida para não permitir flexões e desalinhamentos sobre o eixo de acoplamento da bomba/transmissão devido ao torque transmitido durante o funcionamento.
A bomba está equipada com dois suportes de elevação para facilitar a instalação, conforme a figura abaixo.

Os suportes de elevação não devem ser removidos.

Os suportes são dimensionados somente para elevação da bomba, portanto não é permitido de forma alguma o seu uso para cargas adicionais



Substitua a tampa de serviço de fechamento do furo de introdução do óleo, posicionado no cárter com a tampa de carga do óleo.
A tampa de carga do óleo deverá sempre ser acessível, mesmo no grupo montado.

O eixo da bomba (PTO) não deve estar rigidamente conectado ao grupo do propulsor.
É aconselhável os seguintes tipos de transmissão:

- Engate flexível.
- Suspensão tipo Cardam (preste atenção aos ângulos de trabalho máx. aconselhados pelos fabricantes).
- Correias, para uma aplicação correta, consulte o ***Departamento Técnico*** ou o ***Serviço de Assistência ao Cliente***.

9.2 Sentido de rotação

O sentido da rotação da PTO é indicado por uma flecha posicionada na tampa do redutor.
Posicionando-se na frente do cabeçote da bomba, o sentido da rotação deverá ser como da Fig. 5.

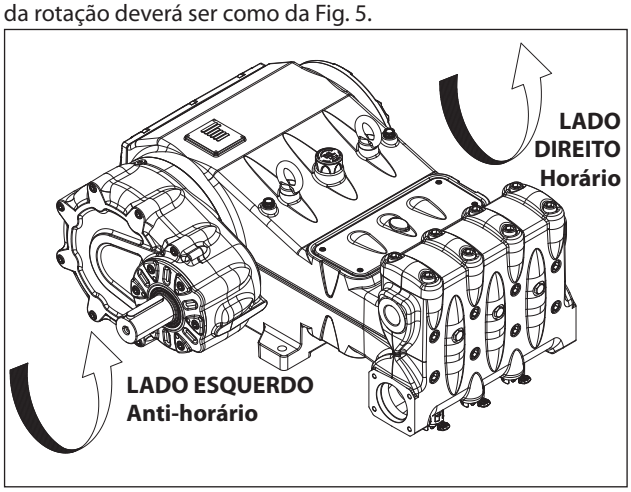


Fig. 5

9.3 Mudança de versão e posicionamento do redutor

A versão direita da bomba é definida quando:
observando a bomba de frente do lado do cabeçote, o eixo da bomba deve ter a haste do PTO do lado direito.
A versão esquerda da bomba é definida quando:
observando a bomba do lado oposto do cabeçote, o eixo da bomba deve ter a haste do PTO do lado esquerdo. (veja Fig. 5).

A versão pode ser modificada apenas por pessoal especializado e autorizado, seguindo cuidadosamente o indicado no *Manual de reparação*.

Também é possível posicionar o redutor em cinco posições diferentes, seja do lado direito, seja do lado esquerdo, como na Fig. 6.

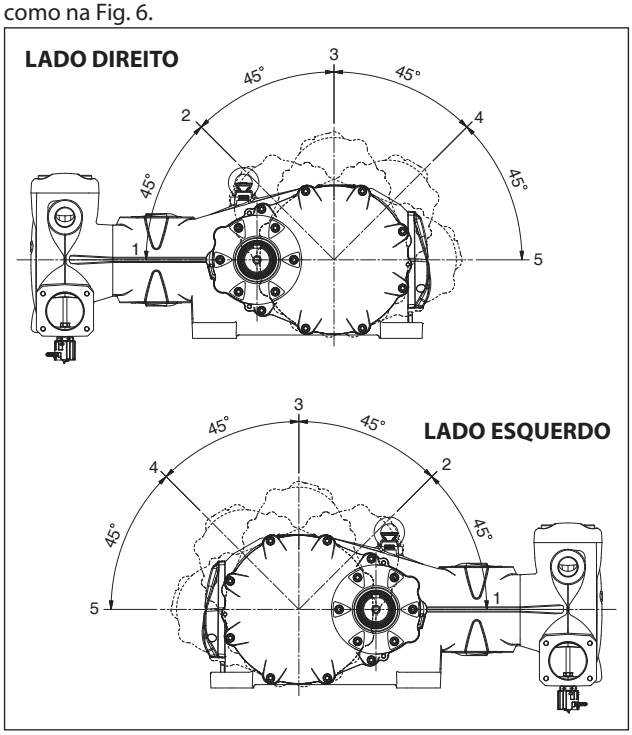


Fig. 6

A posição do redutor pode ser modificada somente por pessoal especializado e autorizado, seguindo fielmente o indicado no *Manual de reparação*.

9.4 Conexões hidráulicas

Com o objetivo de isolar a instalação das vibrações produzidas pela bomba, é aconselhável realizar a primeira parte do condutor adjacente à bomba (seja na aspiração, seja na saída) com tubulações flexíveis. A consistência da área de aspiração deverá ser tal que possa impedir deformações causadas pela depressão produzida pela bomba.

9.5 Alimentação da bomba

As bombas MK2 devem ser sempre instaladas sob batente, ou seja, devem receber a água por queda ou mediante alimentação forçada e nunca aspirada por um nível inferior. As bombas são capazes de tolerar batentes mínimos de até 1 metro, no entanto, para obter o melhor rendimento volumétrico e, acima de tudo, evitar o fenômeno da cavitação, o batente positivo disponível (NPSH disponível) medido no flange de aspiração no cabeçote, deve ser igual ou maior aos valores abaixo:

	$NPSH_r$ (m)
MK240	4,5
MK245	5,5
MK250	6,5
MK255	7,5
MK260	8
MK265	9

Para as cilindradas maiores, as bombas MK2 55 - 60 - 65, a alimentação forçada por meio de uma bomba de reforço (booster) é fortemente recomendada para evitar fenômenos de cavitação, em consideração à geometria da parte hidráulica e das capacidades importantes.
A bomba booster deverá ter uma capacidade de pelo menos o dobro da capacidade que consta na plaquinha da bomba do pistão e uma pressão entre 2 e 3 bar.
Estas condições de alimentação deverão ser respeitadas em qualquer regime de trabalho.

O acionamento do booster deverá sempre preceder ao da bomba de pistão.
É aconselhável instalar um pressostato na linha de alimentação a jusante dos filtros para proteção da bomba.

9.6 Linha de aspiração

Para um bom funcionamento da bomba, a linha de aspiração deverá ter as seguintes características:

1. Diâmetro interno mínimo, conforme indicado pelo gráfico no parág. 9.9 e, em qualquer caso, igual ou superior ao do cabeçote da bomba.

   Ao longo do percurso da tubulação para evitar restrições localizadas, que podem causar perdas de carga, resultando em cavitação. Evite completamente curvas de 90°, conexões com outras tubulações, gargalos, contrainclinação, curva em "U" invertida, conexões em "T".
2. O layout deve ser realizado para evitar fenômenos de cavitação.
3. Ser perfeitamente hermético e construído de forma a garantir uma perfeita estanqueidade ao longo do tempo.
4. Evitar que com a parada da bomba se possa verificar o esvaziamento, mesmo que apenas parcial.
5. Não use acessórios do tipo hidráulico, acessórios de 3 ou 4 vias, adaptadores, andadores, etc... à medida em que podem prejudicar o desempenho da bomba.
6. Não instale tubo Venturi ou injetores para a aspiração do detergente.
7. Evite o uso de válvulas de fundo ou outros tipos de válvula de sentido único.
8. Não recircule a descarga da válvula de desvio diretamente na aspiração.
9. Forneça anteparos adequados no interior do reservatório para evitar que os fluxos de água provenientes do desvio e da linha de alimentação do reservatório possam criar vórtices ou turbulências na proximidade da saída do tubo de alimentação da bomba.
10. Certifique-se de que a linha de aspiração esteja completamente limpa no seu interior, antes de ser conectada à bomba.
11. Instale o manômetro para o controle da pressão do booster, próximo à tomada de aspiração da bomba de pistão e sempre a jusante dos filtros.

9.7 Filtragem

Na linha de aspiração da bomba, é necessário instalar dois filtros, posicionados conforme indicado nas Fig. 7 e Fig. 7/a.
Com válvula de regulação de acionamento manual

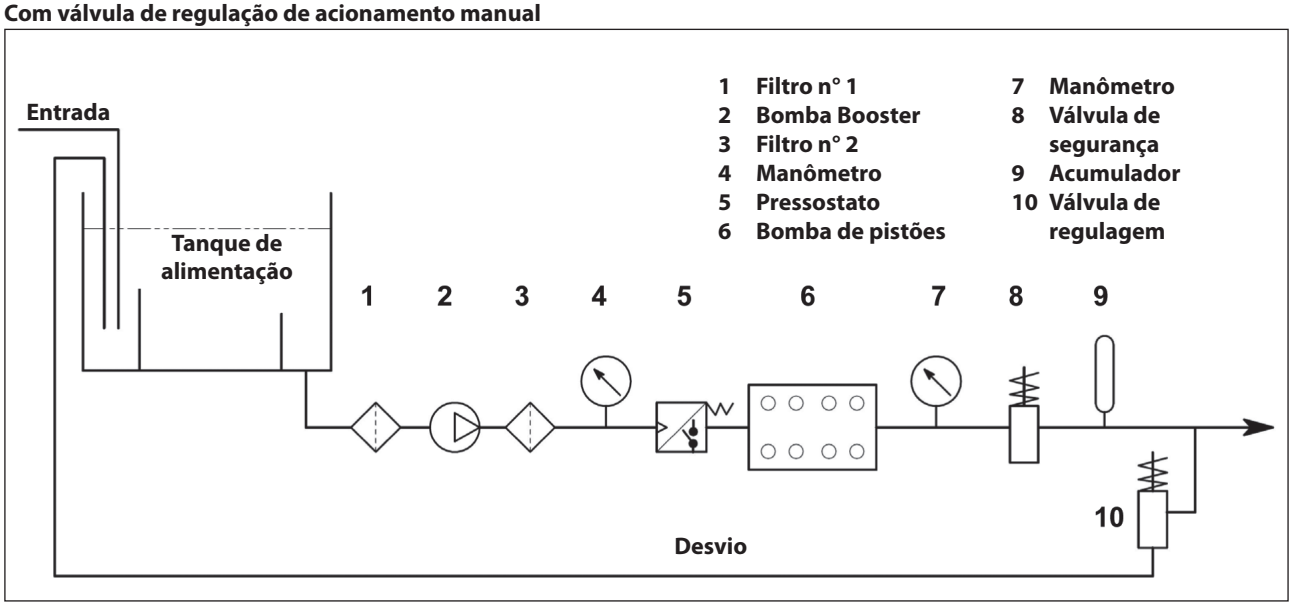


Fig. 7

Com válvula de regulagem de acionamento pneumático

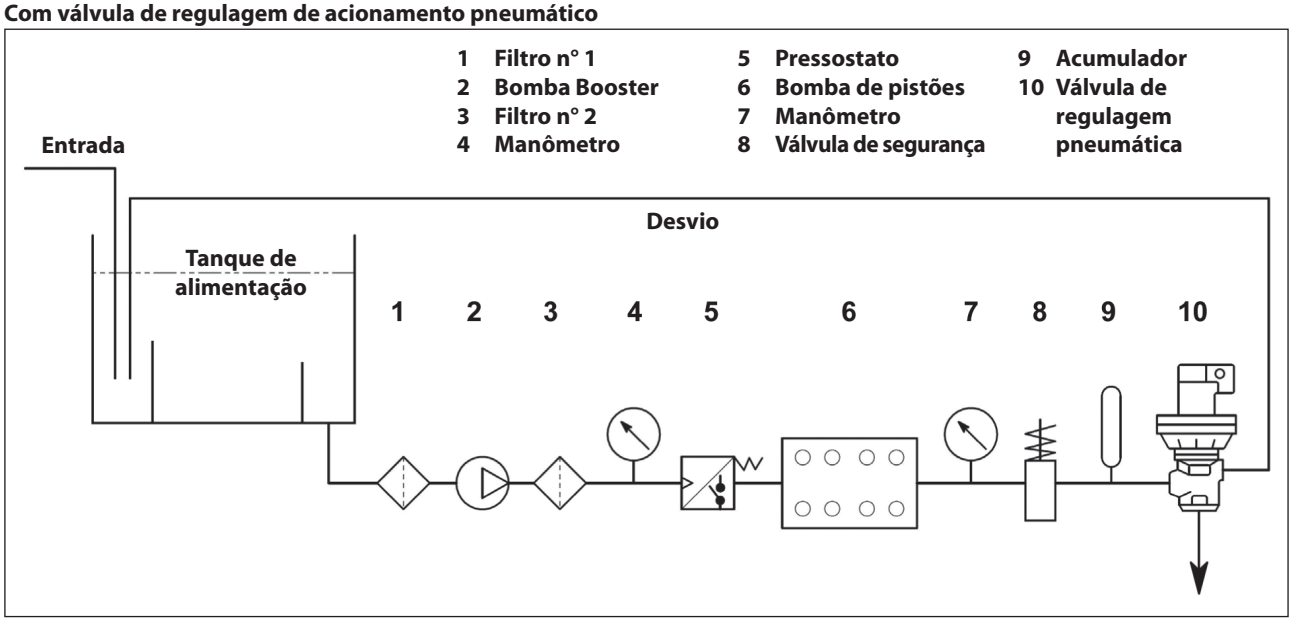


Fig. 7/a

O filtro deve ser instalado o mais próximo possível da bomba, ser fácil de inspecionar e ter as seguintes características:

1. Capacidade mínima três vezes superior à capacidade da chapinha de identificação da bomba.
2. Diâmetro do bocal de entrada/saída não inferior ao diâmetro da saída de aspiração da bomba.
3. Grau de filtragem entre 200 e 360 µm.

Para o bom funcionamento da bomba, providencie a limpeza regular dos filtros, programada segundo o uso efetivo da bomba em relação também à qualidade da água usada e às reais condições de entupimento.

9.8 Linha de descarga

Para a realização de uma linha de descarga correta, observe as seguintes normas de instalação:

1. O diâmetro interno do tubo deve ser suficiente para garantir a velocidade correta do fluido. Veja o gráfico no parág. 9.9.
2. A primeira extensão da tubulação conectada à bomba deve ser flexível, a fim de isolar as vibrações produzidas pela bomba do resto da instalação.
3. Use tubos e acessórios para alta pressão que garantam amplas margens de segurança em cada condição de exercício.
4. Na linha de descarga, instale uma válvula de segurança.
5. Use manômetros projetados para suportar as cargas de choques típicas da bomba de pistão.
6. Leve em conta, na fase de projeto, as perdas de carga da linha, que resultam em uma queda de pressão no uso em relação à pressão medida na bomba.
7. Para as aplicações em que as pulsações produzidas pela bomba sobre a linha de descarga resultem em danos ou sejam indesejáveis, instale um amortecedor de pulsação de dimensões adequadas.

9.9 Cálculo de diâmetro interno dos tubos do condutor

Para determinar o diâmetro interno do condutor, consulte o seguinte diagrama:

Condutor de aspiração

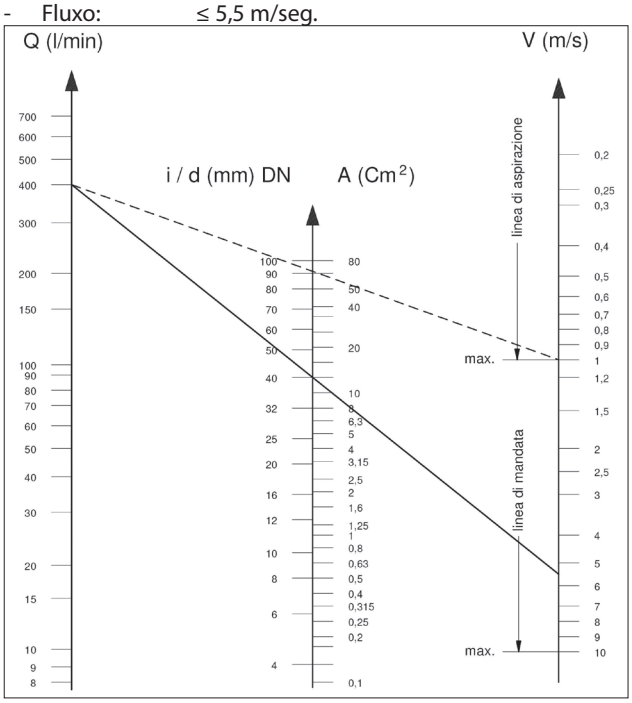
Com uma capacidade de ~ 400 l/min e uma velocidade da água de 1 m/seg. A linha do gráfico que conecta as duas escalas encontra a escala central, indicando os diâmetros, a um valor correspondente a ~ 90 mm.

Condutor do fluxo

Com uma capacidade de ~ 400 l/min e uma velocidade da água de 5,5 m/seg. A linha do gráfico que conecta as duas escalas encontra a escala central, indicando os diâmetros, a um valor correspondente a ~ 40 mm.

Velocidade ideal obtida com bomba Booster:

- Aspiração: ≤ 1 m/seg.
- Fluxo: ≤ 5,5 m/seg.



O gráfico não leva em consideração a resistência dos tubos, das válvulas, da perda de carga causada pelo comprimento da tubagem, a viscosidade do líquido bombeado e da temperatura do mesmo.
Se necessário, contate o ***Departamento Técnico*** ou o ***Serviço de Assistência ao Cliente***.

9.10 Transmissão de correia trapezoidal

Conforme indicado no parág. 9.1 somente em casos excepcionais, a bomba pode ser comandada por um sistema de correias trapezoidais.
Para o dimensionamento correto do layout, consulte o ***Departamento Técnico*** ou o ***Serviço de Assistência ao Cliente***.

10 INICIALIZAÇÃO E FUNCIONAMENTO

10.1 Controles preliminares

Antes da inicialização, certifique-se de que:

A linha de aspiração esteja conectada e com pressão (veja capítulo 9): a bomba nunca deve girar a seco.

1. A linha de aspiração garanta também o tempo de estanqueidade hermética.
2. Todas as eventuais válvulas de interceptação entre a fonte de alimentação e a bomba estejam completamente abertas. A linha de descarga, seja de descarga livre, onde permite que o ar no cabeçote da bomba escape rapidamente, favorecendo assim um condicionamento mais rápido.
3. Todos os acessórios e conexões, na aspiração e na descarga, estejam completamente alinhados.
4. A tolerância de acoplamento do eixo da bomba/ transmissão (desalinhamento das semiarticulações, inclinação do eixo de transmissão, aperto do cinto, etc.) permanece dentro dos limites previstos pelo fabricante da transmissão.
5. O óleo no cárter da bomba esteja no nível, verificando-o com as varetas adequadas (pos. ①, Fig. 8).

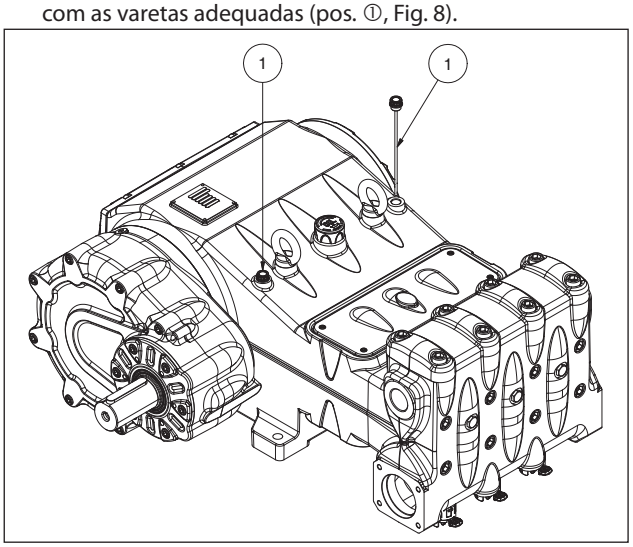


Fig. 8

Em caso de armazenamento prolongado ou inatividade por longos períodos, verifique o bom funcionamento das válvulas de aspiração, abrindo os três dispositivos levantadores (veja pos. ② Fig. 9). Certifique-se de ter fechado as válvulas antes de acionar a bomba.
Para as posições de "trabalho" e de "repouso", veja Fig. 10.

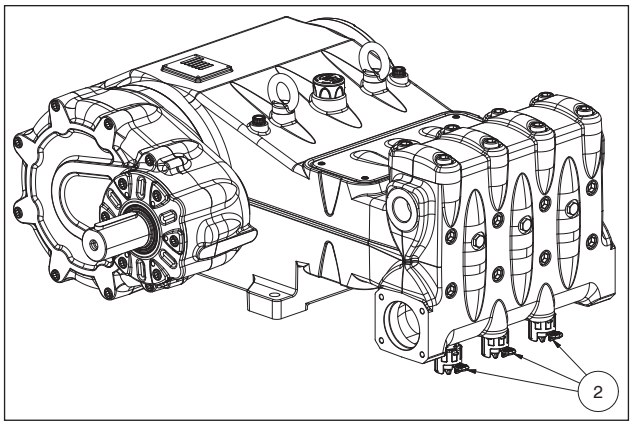


Fig. 9

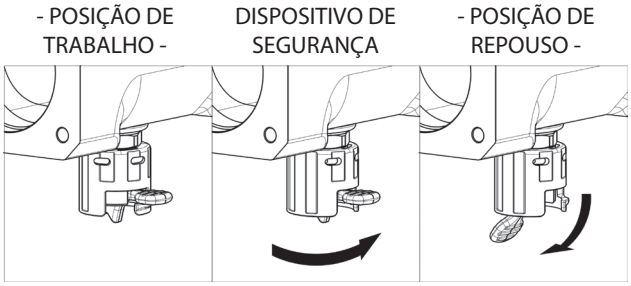


Fig. 10

10.2 Inicialização

1. Na primeira inicialização, verifique se o sentido de rotação está correto.
2. Verifique a alimentação correta da bomba.
3. Inicialize a bomba sem nenhuma carga.
4. Verifique se na fase de funcionamento, o regime de rotação não é superior ao da chapinha de identificação.
5. Deixe a bomba funcionar por um período não inferior a 3 minutos, antes de colocá-la sob pressão.
6. Antes de cada parada da bomba, zere a pressão, agindo sobre a válvula de regulação ou sobre eventuais dispositivos de colocação em descarga.

Se ocorrerem problemas de iniciação devido a uma alimentação insuficiente é possível intervir, removendo as três tampas da parte da frente do cabeçote (exceto a versão MK240), conforme indicado na pos. ③ Fig. 11.

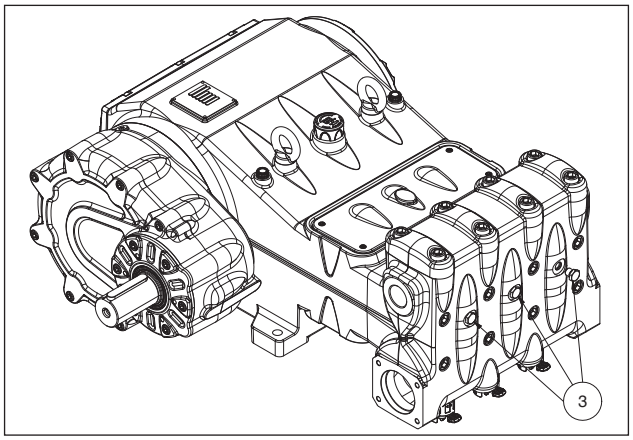


Fig. 11

11 MANUTENÇÃO PREVENTIVA

Para uma boa confiabilidade e eficiência da bomba, é necessário respeitar os intervalos de manutenção, conforme relacionado na tabela abaixo.

MANUTENÇÃO PREVENTIVA	
A cada 500 horas	**A cada 1500 horas**
Verifique o nível do óleo	Trocar o óleo
	Verificação/Substituição*: Válvula Sedes da válvula Molas da válvula Guias da válvula
	Verificação/Substituição*: Vedantes de H.P. Vedantes de L.P.

* Para a substituição, consulte as indicações relacionadas no ***Manual de reparos***.

12 ARMAZENAMENTO DA BOMBA

12.1 Método de preenchimento da bomba com emulsão de anticorrosão ou solução anticongelante

Método de preenchimento da bomba com emulsão anticorrosão ou solução antigelo usando uma bomba externa no diafragma na base do layout descrito no parág. 9.7:

a) Feche a drenagem do filtro, se aberto.
b) Certifique-se de que o tubo de conexão está limpo, esparrame graxa e conecte-o com a descarga de alta pressão.
c) Fixe o tubo de aspiração da bomba com membrana. Abra a conexão da aspiração da bomba e fixe o tubo entre este e a bomba com membrana.
d) Encha o contentor com a solução/emulsão.
e) Coloque a extremidade livre do tubo de aspiração e o tubo de descarga de alta pressão no interior do contentor.
f) Ative a bomba com membrana.
g) Bombeie a emulsão até que se veja sair do tubo de descarga de alta pressão.
h) Continue a bombear por pelo menos mais um minuto. A emulsão pode ser reforçada, se necessário, adicionando por exemplo, o Shell Dinax à solução.
i) Pare a bomba e remova os tubos da conexão de aspiração e feche-a com uma tampa
j) Remova o tubo da descarga de alta pressão. Limpe, lubrifique e tampe ambas as conexões e os tubos.

12.2 Tubos

a) Antes de lubrificar e proteger os tubos de acordo com o procedimento descrito previamente, seque as conexões usando o ar comprimido.
b) Cubra com polietileno.
c) Não enrole com muita força, certifique-se de que não tenha dobras.

13 PRECAUÇÕES CONTRA O GELO



Nas regiões e nos períodos do ano com risco de gelo, siga as indicações relacionadas no capítulo 12 (veja parág. 12.1).



Na presença de gelo, não inicie o movimento da bomba por nenhum motivo até que o circuito esteja completamente descongelado, a fim de evitar graves danos à bomba.

14 CONDIÇÕES DE GARANTIA

O período e as condições de garantia estão contidas no contrato de compra.
A garantia ainda será invalidada se:

a) A bomba foi utilizada para objetivos diferentes daquele concordado.
b) A bomba foi equipada com motor elétrico ou de combustão interna com desempenho superior à indicada na tabela.
c) Os dispositivos de segurança fornecidos não foram calibrados ou foram desconectados.
d) A bomba foi usada com acessórios ou com peças de reposição não fornecidos pela Interpump Group.
e) Os danos foram causados por:
   1) uso impróprio
   2) falta de procura pelas instruções de manutenção
   3) uso diferente do descrito nas instruções operacionais
   4) capacidade insuficiente
   5) instalação com defeito
   6) posicionamento ou dimensionamento incorreto dos tubos
   7) modificações não autorizadas do projeto
   8) cavitação.

15 PROBLEMAS DE FUNCIONAMENTO E SUAS POSSÍVEIS CAUSAS



Com o início da bomba, a mesma não produz nenhum ruído:

- A bomba não está preparada e funciona a seco.
- Falta água na aspiração.
- As válvulas estão bloqueadas.
- A linha de descarga está fechada e não permite que o ar presente no cabeçote da bomba escape.



A bomba pulsa de forma irregular:

- Aspiração de ar.
- Alimentação insuficiente.
- Curvas, cotovelos, articulações, ao longo da linha de aspiração aceleram a passagem do líquido.
- O filtro de aspiração está sujo ou é muito pequeno.
- A bomba booster, quando instalada, fornece uma pressão ou capacidade insuficiente.
- A bomba não está preparada para o batente baixo ou a saída está fechada durante a solicitação.
- A bomba não está preparada para a ligação de qualquer válvula.
- Válvulas gastas.
- Vedantes de pressão gastos.
- Funcionamento imperfeito da válvula de regulagem da pressão.
- Problemas na transmissão.





A bomba não fornece a capacidade que consta na chapinha de identificação/ruído excessivo:

- Alimentação insuficiente (veja as diversas causas, como acima).
- O número de rotações é inferior ao da plaquinha de identificação;
- Vazamento excessivo da válvula de regulagem de pressão.
- Válvulas gastas.
- Vazamento excessivo dos vedantes de pressão.
- Cavitação devido a:
  1) Mau dimensionamento dos condutores de aspiração/diâmetros subdimensionados.
  2) Capacidade insuficiente.
  3) Temperatura de água elevada.



A pressão fornecida pela bomba é insuficiente:
- O uso (bocal) é ou se tornou superior à capacidade da bomba.
- O número de rotações é insuficiente.
- Vazamento excessivo dos vedantes de pressão.
- Funcionamento imperfeito da válvula de regulagem da pressão.
- Válvulas gastas.

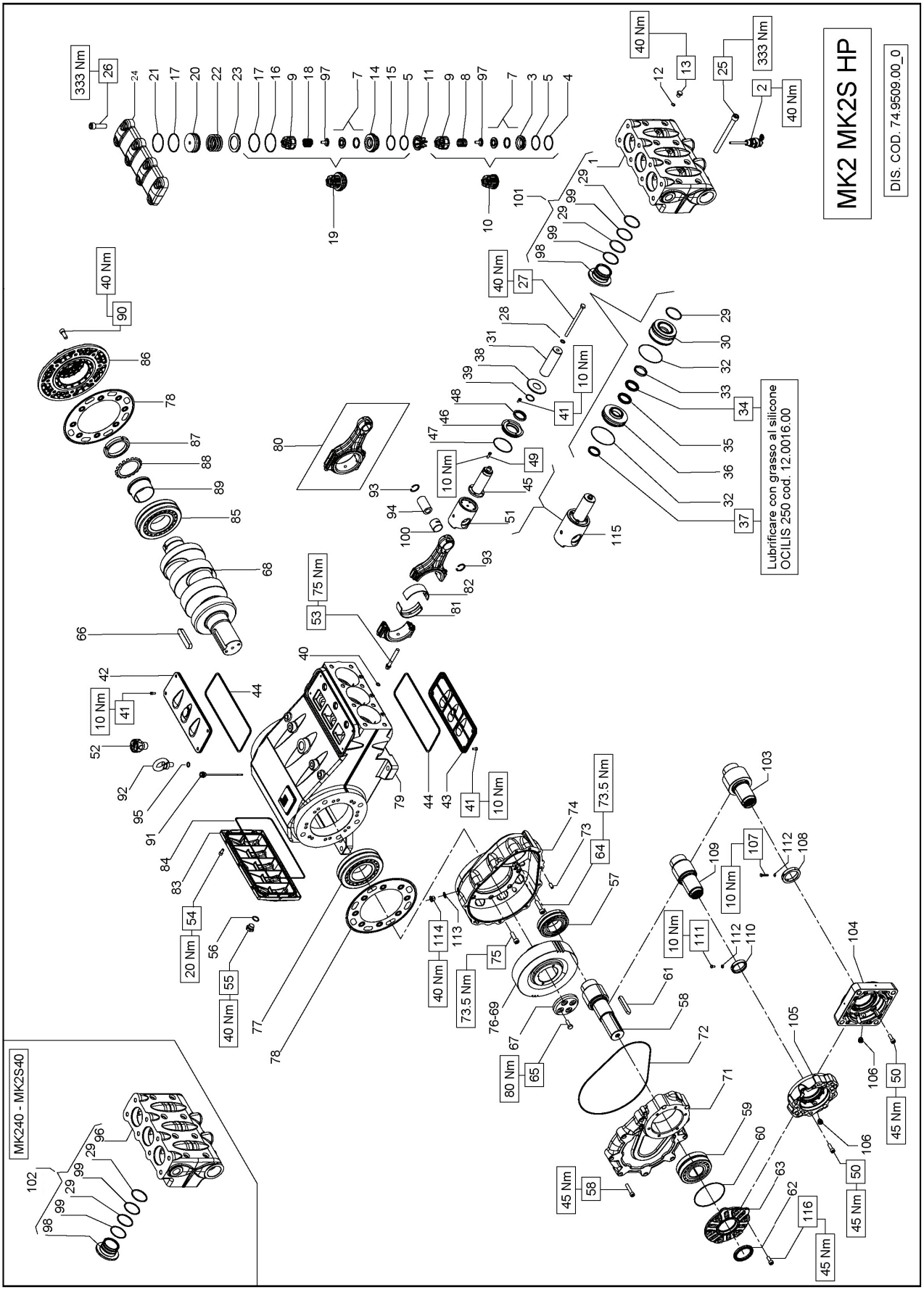


A bomba superaquece:
- A bomba trabalha com excesso de pressão ou o número de rotações é superior ao que consta na chapinha de identificação.
- O óleo no cárter da bomba não está nivelado ou não é do tipo aconselhado no capítulo 7 (veja parág. 7.6).
- O alinhamento do engate ou da polia é imperfeito.
- A inclinação da bomba durante o trabalho é excessiva.



Vibrações ou impactos nos tubos:
- Aspiração de ar.
- Mau funcionamento da válvula de regulagem de pressão.
- Mal funcionamento das válvulas.
- Não conformidade de movimento na transmissão.

16 DESENHO EXPANDIDO E LISTA DAS PEÇAS DE REPOSIÇÃO

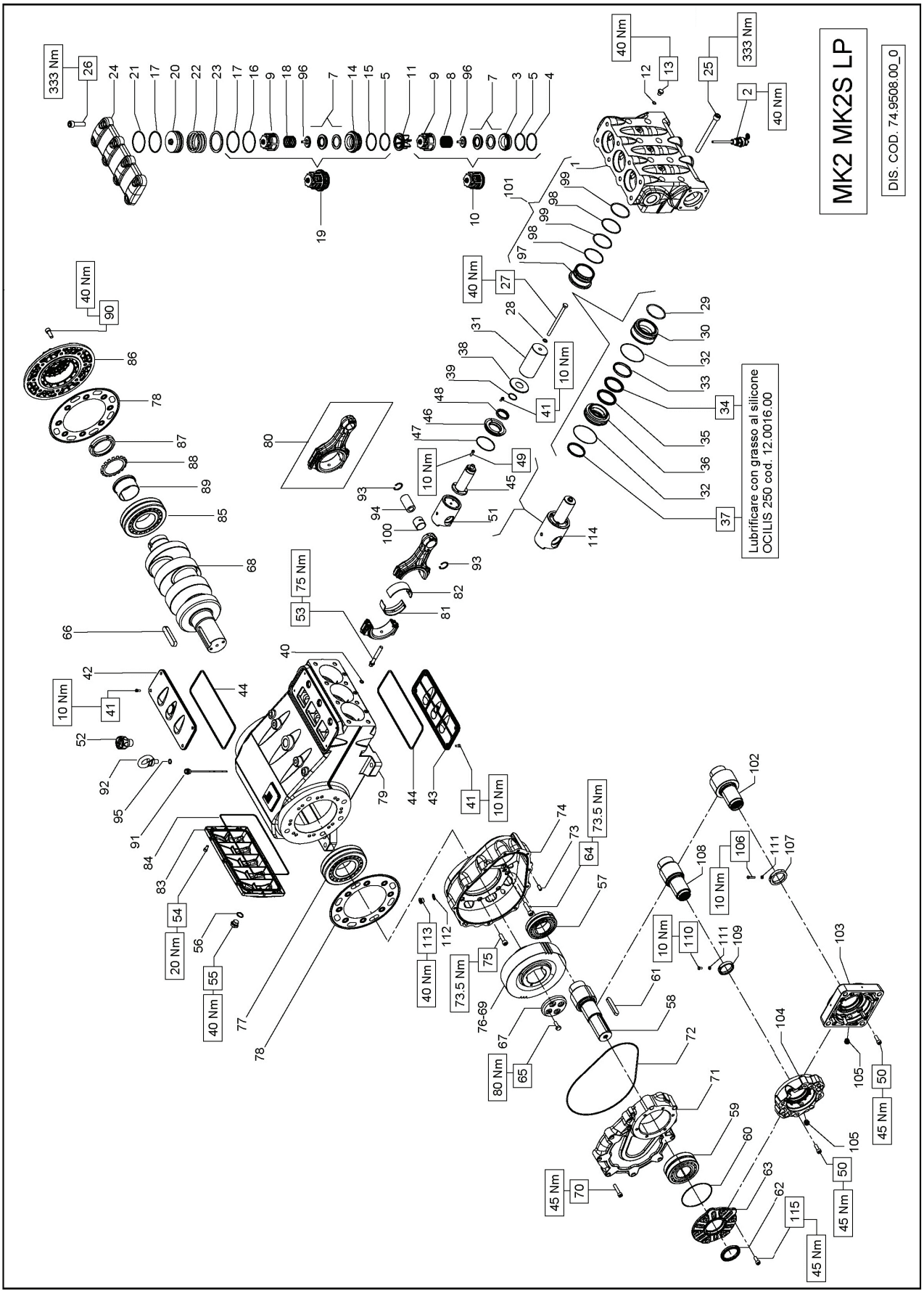


KIT RICAMBIO – SPARE KIT

		MK240 - MK2S40 (D.40)	MK245 - MK2S45 (D.45)	MK250 - MK2S50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK240 - MK2S40
MK245 - MK2S45
MK250 - MK2S50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1


MK2 MK2S LP
DIS. COD. 74.9508.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT

		MK255 - MK2S55 (D.55)	MK260 - MK2S60 (D.60)	MK265 - MK2S65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2045	KIT 2046	KIT 2047
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2447	KIT 2448	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK255 - MK2S55
MK260 - MK2S60
MK265 - MK2S65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2114.56	CAMICIA PISTONE D. 55		3
	74.2115.56	CAMICIA PISTONE D. 60		
	74.2116.56	CAMICIA PISTONE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1003.92	ANELLO DI TESTA PISTONE D. 55		3
	74.1004.92	ANELLO DI TESTA PISTONE D. 60		
	74.1005.92	ANELLO DI TESTA PISTONE D. 65		
34	90.2873.00	ANELLO TEN. ALT. D. 55.0x70.0x7.5/4.5 HP	A-C	3
	90.2883.00	ANELLO TEN. ALT. D. 60.0x76.0x8.0/4.8 HP	A-C	
	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	
35	90.2875.00	ANELLO RESTOP D. 55.0x70.0x8.0/4.5	A-C	3
	90.2885.00	ANELLO RESTOP D. 60.0x76.0x8.0/4.5	A-C	
	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	
36	74.2120.68	SUPPORTO GUARNIZIONE D. 55		3
	74.2121.68	SUPPORTO GUARNIZIONE D. 60		
	74.2122.68	SUPPORTO GUARNIZIONE D. 65		
37	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		10
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.55	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	73.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK2		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2S		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	74.2150.56	BOCCOLA TESTATA		3
98	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
99	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1201.01	TESTATA CON BOCCOLA		1
112	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
113	98.2086.00	TAPPO G 3/8"x12		2
114	74.6062.01	GR. GUIDA PISTONE		3
115	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
102	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
103	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
107	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
111	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.750 - ELICOIDALE		1
104	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
108	10.0906.55	PIGNONE Z16 R. 3.750 - ELICOIDALE FEMM.		1
109	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
110	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
111	92.2025.00	DADO M6x5 UNI 5588		1

17 VERSÕES ESPECIAIS

A bomba MK2 está disponível também nas seguintes versões especiais:

- MK2R (para água recirculada)
- MK2SR (para água recirculada)
- MK2C (para metanol)
- MK2SC (para metanol)
- MK2SH (com cabeçote AISI 420)

A seguir estão relacionadas as indicações relativas à escolha e ao uso de tais versões.
Onde não especificado de forma diferente, consulte as informações relacionadas acima para a versão da bomba MK2 padrão.

17.1 Bomba versão MK2R-MK2SR

17.1.1 Indicações para o uso

As bombas série MK2R/MK2SR foram projetadas para operar em ambientes com atmosfera não potencialmente explosiva e para o uso de água rica em partículas, portanto são consideradas próprias para instalações com recirculação de líquidos.
A duração do vedante do pistão é diretamente afetada pelo percentual de presença de partes sólidas no fluído, seja de dimensão, seja pela densidade.
Para uma boa duração do vedante, é aconselhável uma dimensão do grão da partícula não superior a 200 mícron e 20% de volume, no máx.
Para obter mais indicações e layout da instalação máxima, ver parág. 17.2.6.

17.1.2 Capacidade e pressão máxima

O desempenho indicado no catálogo se refere ao desempenho máx. fornecido pela bomba.
Independentemente da potência usada, a pressão e o número de giros máximos indicados na etiqueta não podem ser ultrapassados, a não ser se expressamente autorizados formalmente pelo ***Departamento Técnico*** ou o ***Serviço de Assistência ao Cliente***.

17.1.3 Características técnicas

Modelo	Rotações/1'	Capacidade		Pressão		Potência	
		l/min	Rpm	bar	psi	kW	Hp
MK2R 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2R 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2R 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2R 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2R 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2R 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Modelo	Rotações/1'	Capacidade		Pressão		Potência	
		l/min	Rpm	bar	psi	kW	Hp
MK2SR 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2SR 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SR 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2SR 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2SR 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2SR 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.1.4 Dimensões e pesos

Para dimensões e pesos das bombas, consulte os esquemas relacionados no capítulo 6.

17.1.5 Alimentação da bomba

As bombas devem sempre ser instaladas sob batente, ou seja, devem receber a água por queda ou mediante a alimentação forçada, e nunca aspirada a partir de um nível inferior.
As bombas são capazes de tolerar passagens mínimas de até 1 metro, no entanto, para obter o melhor rendimento volumétrico e, sobretudo, evitar fenômenos de cavitação, a passagem positiva disponível (NPSH avail) medida na flange de aspiração no cabeçote, deverá ser igual aos valores abaixo.

	$NPSH_r$ (m)
MK2R/MK2SR40	4,5
MK2R/MK2SR45	5,5
MK2R/MK2SR50	6,5
MK2R/MK2SR55	7,5
MK2R/MK2SR60	8
MK2R/MK2SR65	9

Para as cilindradas maiores, as bombas com Ø de pistão 55 - 60 - 65, a alimentação forçada por meio de uma bomba de reforço (booster) é fortemente recomendada para evitar fenômenos de cavitação, em consideração à geometria da parte hidráulica e das capacidades importantes.
A bomba booster deverá ter uma capacidade de pelo menos o dobro da capacidade que consta na plaquinha da bomba do pistão e uma pressão entre 2 e 3 bar.
Estas condições de alimentação deverão ser respeitadas em qualquer regime de trabalho.

O acionamento do booster deverá sempre preceder ao da bomba de pistão.
É aconselhável instalar um pressostato na linha de alimentação a jusante dos filtros para proteção da bomba.

17.1.6 Filtragem

O departamento técnico ou o serviço de assistência ao cliente está à disposição do cliente para a melhor definição da instalação.
A título de exemplo, fornecemos os seguintes layouts (Fig. 12 e Fig. 12/a).

Com válvula de regulação de acionamento manual

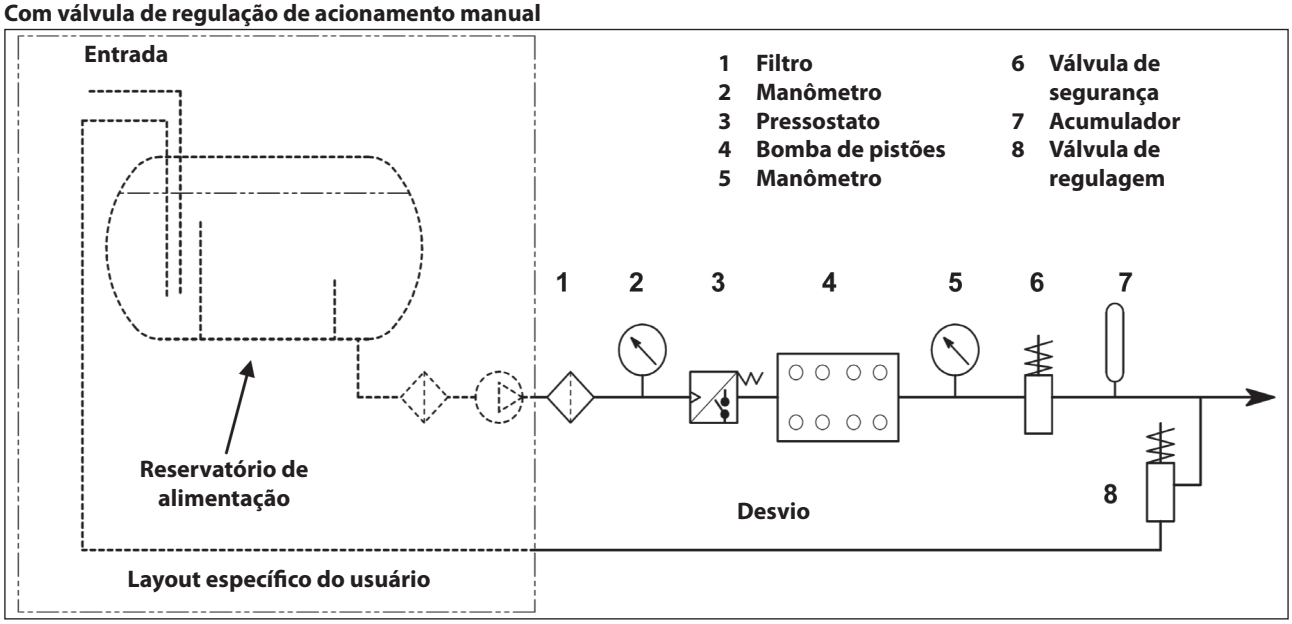


Fig. 12

Com válvula de regulagem de acionamento pneumático

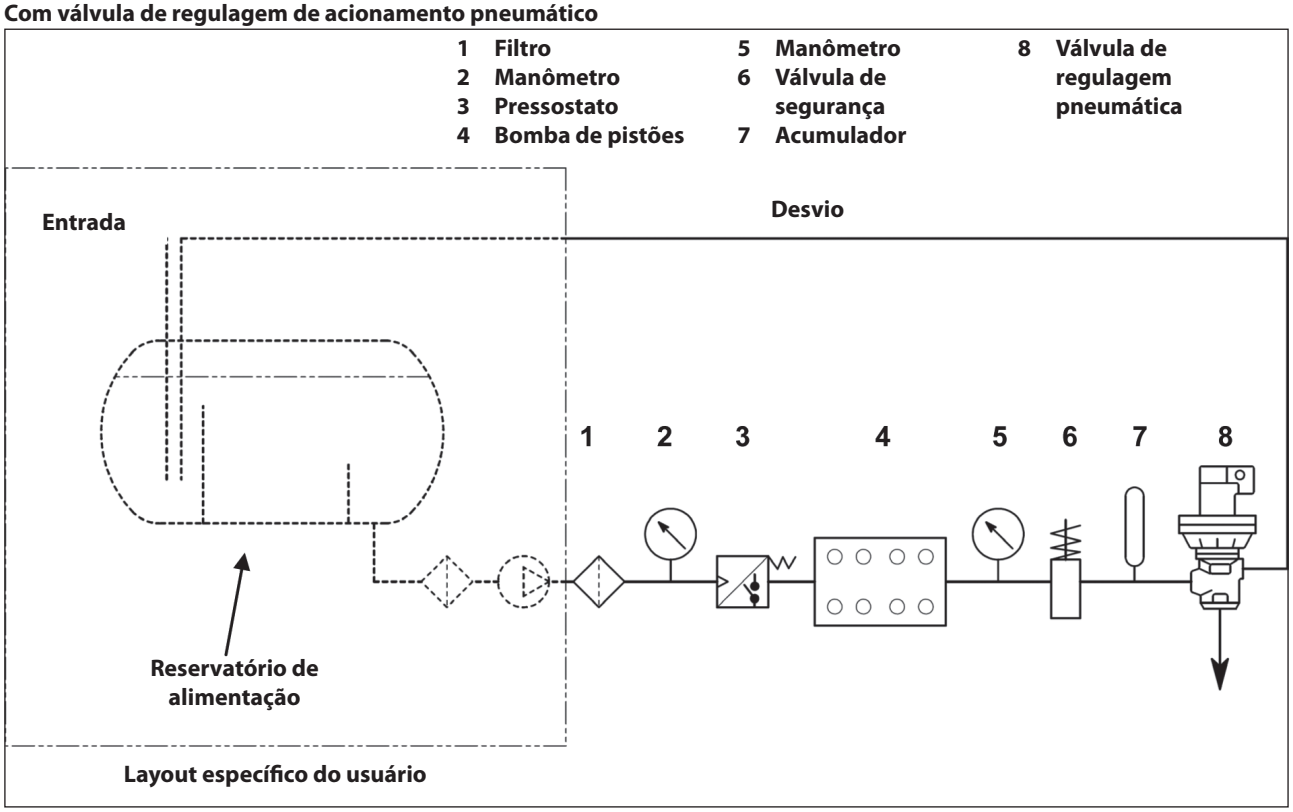


Fig. 12/a

O filtro deve ser instalado o mais próximo possível da bomba e ser fácil de inspecionar.

Para o bom funcionamento da bomba, o grau de filtragem e o poder de acúmulo do sistema de filtragem devem ser dimensionados em relação ao objetivo que pretende comprometer entre a duração da parte hidráulica da bomba e o número de horas de trabalho entre um preenchimento de água e o outro.
O melhor compromisso recomendado é o realizado no parág. 17.1.1.

É indispensável, depois do uso da bomba, no final do dia de trabalho, lavá-la com água livre de partículas.

17.1.7 Manutenção preventiva

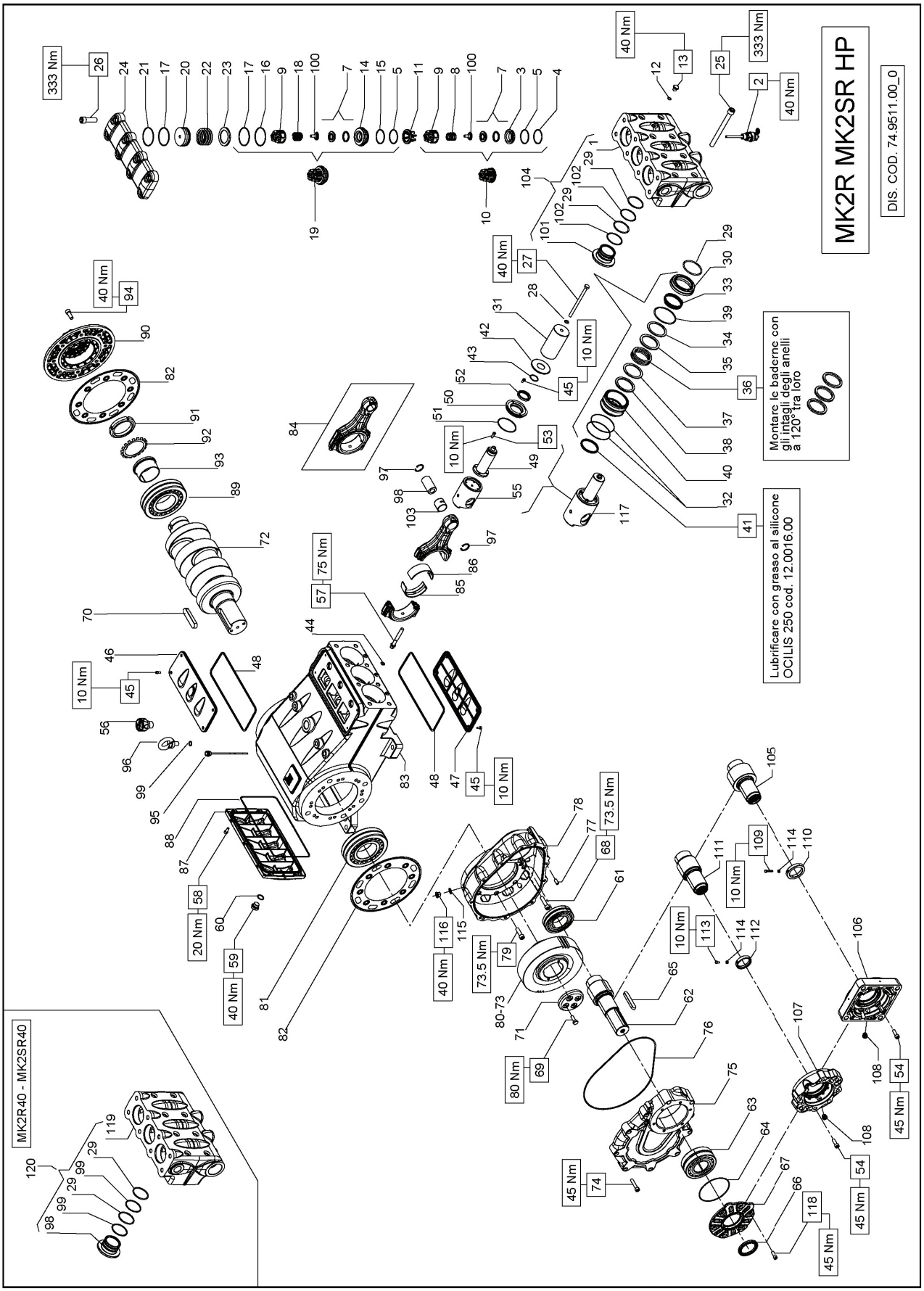
Para uma boa confiabilidade e eficiência da bomba, é necessário respeitar os intervalos de manutenção, conforme relacionado na tabela abaixo.

MANUTENÇÃO PREVENTIVA	
A cada 500 horas	**A cada 1000 horas**
Verifique o nível do óleo	Trocar o óleo
	Verificação/Substituição*: Válvula Sedes da válvula Molas da válvula Guias da válvula

Vedação HP-LP: a duração é subordinada ao grau de filtragem, tipo de fluido e percentual de volume (ver capítulo 7).

* Para a substituição, consulte as indicações relacionadas no ***Manual de reparos***.

17.1.8 Desenho da explosão e peças de reposição distintas



KIT RICAMBIO – SPARE KIT

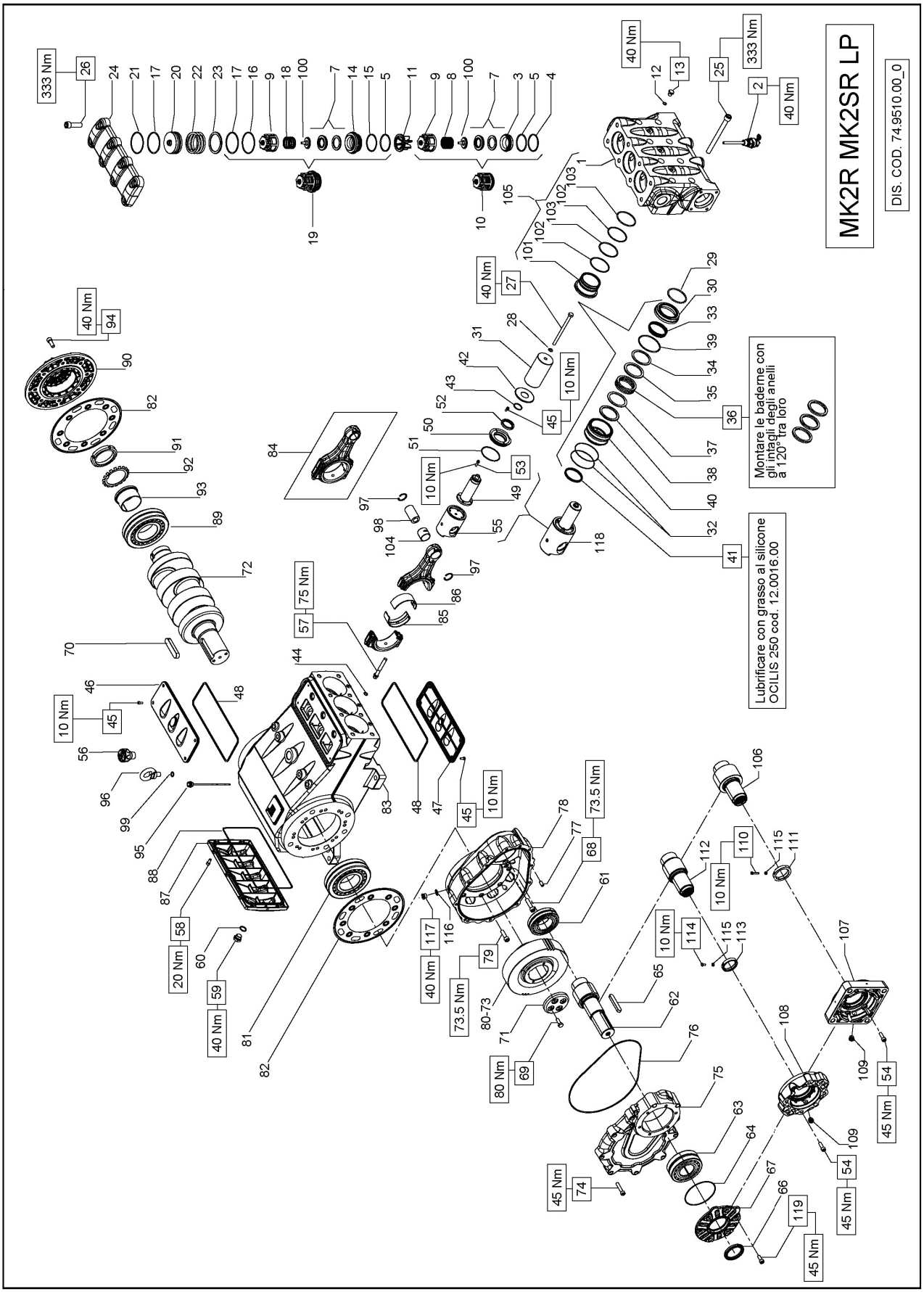
		MK2R40 - MK2SR40 (D.40)	MK2R45 - MK2SR45 (D.45)	MK2R50 - MK2SR50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2430	KIT 2431	KIT 2100
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2456	KIT 2457	KIT 2458
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R40 - MK2SR40
MK2R45 - MK2SR45
MK2R50 - MK2SR50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.	POS
1	74.1203.15	TESTATA D. 45-50 HP		1	40
	74.1205.15	TESTATA D. 45-50 HP - NPT			
2	**10.7444.01**	**DISPOS. APERTURA VALVOLE ASPIR.**		**3**	
3	**36.2067.66**	**SEDE VALVOLA ASPIRAZIONE**		**3**	
4	**90.5260.00**	**ANELLO ANTIEST. D. 51.5x56.0x1.5**	**B-C**	**3**	41
5	**90.3890.00**	**OR D. 50.47x2.62 NBR 90SH 3200**	**B-C**	**6**	
7	**36.2088.01**	**VALVOLA SFERICA**		**42**	
8	**94.7600.00**	**MOLLA Dm. 28.3x30.7**		**43**	
9	**36.2061.01**	**GUIDA VALVOLA**		**44**	
10	**36.7151.01**	**GR. VALVOLA D'ASPIRAZIONE**	**B**	**45**	
11	**74.2106.51**	**DISTANZIALE GUIDA VALVOLA**	**B**	**46**	
12	**90.3584.00**	**OR D. 10.82x1.78 NBR 90SH 2043**	**C**	**47**	
13	**98.2046.00**	**TAPPO G 1/4"x13**		**48**	
14	**36.2069.66**	**SEDE VALVOLA DI MANDATA**		**49**	
15	**90.5265.00**	**ANELLO ANTIEST. D. 51.7x56.2x1.5**	**C**	**50**	
16	**90.5276.00**	**ANELLO ANTIEST. D. 67.5x72.0x1.5**	**C**	**51**	
17	**90.3911.00**	**OR D. 66.35x2.62 NBR 70SH 3262**	**B-C**	**52**	
18	**94.7605.00**	**MOLLA Dm. 28.5x45.4**		**53**	
19	**36.7153.01**	**GR. VALVOLA DI MANDATA**	**B**	**3**	55
20	**74.2110.70**	**TAPPO VALVOLE DI MANDATA**		**3**	
21	**90.5280.00**	**ANELLO ANTIEST. D. 67.7x72.2x1.5**	**B-C**	**3**	**56**
22	**94.7750.00**	**MOLLA Dm. 58.0x45.4**		**3**	**57**
23	**74.2108.66**	**ANELLO SEDE VALVOLA DI MANDATA**		**3**	**58**
24	**74.2103.15**	**COPERCHIO VALVOLE**		**1**	**59**
25	**99.5222.00**	**VITE M16x180 UNI 5931**		**8**	**60**
26	**99.5147.00**	**VITE M16x55 UNI 5931**		**8**	**61**
27	**99.3850.00**	**VITE M10x160 UNI 5737**		**3**	
28	**96.7105.00**	**ROSETTA D. 10.0x18.0x0.9**	**C**	**3**	62
29	**90.4102.00**	**OR D. 58.74x3.53 NBR 70SH 162**	**A-C**	**9**	
30	74.1010.56	ANELLO DI TESTA BADERNE D. 40		3	**63**
	74.1011.56	ANELLO DI TESTA BADERNE D. 45			**64**
	74.1006.56	ANELLO DI TESTA BADERNE D. 50			**65**
31	74.0400.09	PISTONE D. 40x127		3	**66**
	74.0401.09	PISTONE D. 45x127			**67**
	74.0402.09	PISTONE D. 50x127			
32	**90.3722.00**	**OR D. 96.00x2.00 NBR 70SH**	**A-C**	**6**	**68**
33	94.7730.00	MOLLA Dm. 51.5x36.0 - D. 40-45		3	**69**
	94.7770.00	MOLLA Dm. 61.5x35.0 - D. 50			**70**
34	74.2165.56	ANELLO PER MOLLA D. 40		3	**71**
	74.2169.56	ANELLO PER MOLLA D. 45			72
	74.2134.56	ANELLO PER MOLLA D. 50			
35	74.2164.72	ANELLO RASCHIATORE BADERNE D. 40	A-C	3	73
	74.2168.72	ANELLO RASCHIATORE BADERNE D. 45	A-C		
	74.2138.82	ANELLO RASCHIATORE BADERNE D. 50	A-C		
36	90.5655.00	ANELLO TEN. ALT. KC D. 40.0x56.0x19.5	A-C	3	**74**
	90.5680.00	ANELLO TEN. ALT. KC D. 45.0x61.0x19.5	A-C		**75**
	90.5700.00	ANELLO TEN. ALT. KC D. 50.0x66.0x19.5	A-C		**76**
37	90.5232.00	ANELLO ANTIEST. D. 40.0x56.0x2.5	A-C	3	**77**
	90.5236.00	ANELLO ANTIEST. D. 45.0x61.0x2.5	A-C		**78**
	90.5245.00	ANELLO ANTIEST. D. 50.0x66.0x2.5	A-C		**79**
38	74.2163.60	ANELLO DI SUPPORTO D. 40		3	**80**
	74.2167.60	ANELLO DI SUPPORTO D. 45			**81**
	74.2142.60	ANELLO DI SUPPORTO D. 50			**82**
39	90.4110.00	OR D. 61.91x3.53 NBR 70SH 165 - D. 40	A-C	3	**83**
	90.4117.00	OR D. 66.27x3.53 NBR 70SH 4262 - D. 45	A-C		**84**
	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - D. 50	A-C		

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
	74.2162.56	SUPPORTO BADERNE D. 40		3
	74.2166.56	SUPPORTO BADERNE D. 45		
	74.2146.56	SUPPORTO BADERNE D. 50		
	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	3
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
	74.2133.51	**PARASPRUZZI**		**3**
	90.3865.00	**OR D. 29.82x2.62 NBR 70SH 3118**	**C**	**3**
	90.3825.00	**OR D. 10.78x2.62 NBR 70SH 3043**	**A-C**	**3**
	99.1837.00	**VITE M6x14 UNI 5931**		**14**
	74.1501.22	**COPERCHIO ISPEZIONE CHIUSO**		**1**
	74.1502.22	**COPERCHIO ISPEZIONE APERTO**		**1**
	90.4500.00	**OR D. 266.07x5.33 NBR 70SH**	**C**	**2**
	74.0503.36	**STELO GUIDA PISTONE**		**3**
	74.2131.71	**COPERCHIO PARAOLIO GUIDA PISTONE**	**C**	**3**
	90.3914.00	**OR D. 72.69x2.62 NBR 90SH 3287**	**C**	**3**
	90.1679.00	**ANELLO RAD. D. 40.0x52.0x7.0**	**C**	**3**
	99.1884.00	**VITE M6x20 UNI 5931**		**12**
	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
	98.2333.00	**TAPPO CARICO OLIO G1"**		**1**
	99.4410.00	**VITE SERRAGGIO BIELLA**		**6**
	99.3045.00	**VITE M8x18 UNI 5931**		**6**
	98.2187.00	**TAPPO G 1/2"x13 TE22 ZINC.**		**1**
	96.7514.00	**ROSETTA D. 21.5x27.0x1.5**		**1**
	91.8700.00	**CUSCINETTO A RULLI**		**1**
	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
	91.8610.00	**CUSCINETTO A RULLI**		**1**
	90.3926.50	**OR D. 126.67x2.62 NBR 70SH 3500**	**C**	**1**
	91.5030.00	**LINGUETTA 16.0x10.0x90.0**		**1**
	90.1800.00	**ANELLO RAD. D. 60.0x80.0x8.0**	**C**	**1**
	74.2173.22	**COPERCHIO PIGNONE**		**1**
	99.4335.00	**VITE M12x50 UNI 5931**		**2**
	99.3684.00	**VITE M10x30 UNI 5739**		**4**
	91.5120.00	**LINGUETTA 22.0x14.0x100.0**		**1**
	74.2252.55	**FERMO CORONA**		**1**
	74.0202.35	ALBERO A GOMITI C. 72 - MKSR		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKR		
	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
	99.3730.00	**VITE M10x50 UNI 5931**		**10**
	74.2174.13	**COPERCHIO RIDUTTORE**		**1**
	90.4173.00	**OR D. 338.00x3.60 NBR 70SH**	**C**	**1**
	97.6230.00	**SPINA CILINDRICA D. 10.0x24.0**		**2**
	74.2175.13	**SCATOLA RIDUTTORE**		**1**
	99.4305.00	**VITE M12x40 UNI 5931**		**6**
	91.8850.00	**CUSCINETTO A RULLI**		**1**
	74.2130.84	**GUARNIZIONE LATERALE**	**C**	**2**
	74.0101.13	**CARTER POMPA**		**1**
	74.0302.01	**BIELLA COMPLETA**		**3**

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.		
85	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	3
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	
86	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	3
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
87	**74.1600.22**	**COPERCHIO CARTER**	**C**	**1**
88	**90.4160.00**	**OR D. 304.39x3.53 NBR 70SH 41200**		**1**
89	**91.8852.00**	**CUSCINETTO A RULLI**		**1**
90	**74.1500.22**	**COPERCHIO CUSCINETTO**		**1**
91	**93.0800.00**	**GHIERA DI BLOCCAGGIO**		**1**
92	**96.8300.00**	**ROSETTA DI SICUREZZA**		**1**
93	**91.8800.00**	**BUSSOLA DI PRESSIONE**		**1**
94	**99.4280.00**	**VITE M12x30 UNI 5931**		**8**
95	**98.2092.00**	**TAPPO CON ASTA G 3/8"x163**		**2**
96	**93.1050.00**	**GOLFARE M16 UNI 2947**		**2**
97	**90.0697.00**	**ANELLO D'ARRESTO J35**		**6**
98	**97.7450.00**	**SPINOTTO D. 35x64**		**3**
99	**90.3833.00**	**OR D. 13.95x2.62 NBR 70SH 3056**	**C**	**2**
100	**36.2090.51**	**GUIDA INTERNA VALVOLA**		**6**
101	**74.2151.56**	**BOCCOLA TESTATA**		**3**
102	**90.5268.80**	**ANELLO ANTIEST. D. 59.0x65.0x1.5**		**6**
103	**90.9173.00**	**BOCCOLA PIEDE BIELLA**		**3**
104	74.1206.01	TESTATA CON BOCCOLA D. 40		1
	74.1203.01	TESTATA CON BOCCOLA D. 45-50		
115	**96.7380.00**	**ROSETTA D. 17.5x23.0x1.5**		**2**
116	**98.2086.00**	**TAPPO G 3/8"x12**		**2**
117	**74.6062.01**	**GR. GUIDA PISTONE**		**3**
118	**99.3668.00**	**VITE M10x25 5931**		**6**
119	74.1206.15	TESTATA D. 40 HP		1
	74.1207.15	TESTATA D. 40 HP - NPT		
120	**74.1206.01**	**TESTATA CON BOCCOLA D. 40**		**1**
	PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D			
54	**99.3686.00**	**VITE M10x30 UNI 5931**		**6**
80	**10.0889.35**	**CORONA Z56 R. 2.667 - ELICOIDALE**		**1**
105	**10.0905.55**	**PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.**		**1**
106	**10.0909.20**	**FLANGIA MOTORE IDRAULICO SAE-D**		**1**
108	**90.2065.00**	**TAPPO PER FORO D. 17 - TTN19**		**2**
109	**74.2178.34**	**VITE M6x30 CON INCAVO COMPLETA**		**1**
110	**74.2176.71**	**ANELLO PER ALBERO D. 55 HYDR.PACK**		**1**
114	**92.2025.00**	**DADO M6x5 UNI 5588**		**1**
	PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C			
54	**99.3686.00**	**VITE M10x30 UNI 5931**		**6**
80	**10.0907.35**	**CORONA Z60 R. 3.375 - ELICOIDALE**		**1**
107	**10.0908.20**	**FLANGIA MOTORE IDRAULICO SAE-C**		**1**
108	**90.2065.00**	**TAPPO PER FORO D. 17 - TTN19**		**2**
111	**10.0906.55**	**PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.**		**1**
112	**74.2171.71**	**ANELLO PER ALBERO D. 50 HYDR.PACK**		**1**
113	**70.2270.34**	**VITE M6x12 CON INCAVO COMPLETA**		**1**
114	**92.2025.00**	**DADO M6x5 UNI 5588**		**1**


MK2R MK2SR LP
DIS. COD. 74.9510.00_0
Montare le baderne con gli intagli degli anelli a 120° tra loro
Lubrificare con grasso al silicone OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT

		MK2R55 - MK2SR55 (D.55)	MK2R60 - MK2SR60 (D.60)	MK2R65- MK2SR65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2102	KIT 2103	KIT 2104
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2453	KIT 2454	KIT 2455
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R55 - MK2SR55
MK2R60 - MK2SR60
MK2R65 - MK2SR65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	**10.7443.01**	**DISPOS. APERTURA VALVOLE ASPIR.**		**3**
3	**36.2066.66**	**SEDE VALVOLA ASPIRAZIONE**		**3**
4	**90.5270.00**	**ANELLO ANTIEST. D. 61.2x67.0x2.0**	**C**	**3**
5	**90.4105.00**	**OR D. 59.92x3.53 NBR 90SH 4237**	**C**	**6**
7	**36.2087.01**	**VALVOLA SFERICA**		**6**
8	**94.7698.00**	**MOLLA Dm. 41.5x37.9**		**3**
9	**36.2060.01**	**GUIDA VALVOLA**		**6**
10	**36.7150.01**	**GR. VALVOLA D'ASPIRAZIONE**	**B**	**3**
11	**74.2105.51**	**DISTANZIALE GUIDA VALVOLA**	**B**	**3**
12	**90.3584.00**	**OR D. 10.82x1.78 NBR 90SH 2043**	**C**	**3**
13	**98.2046.00**	**TAPPO G 1/4"x13**		**3**
14	**36.2068.66**	**SEDE VALVOLA DI MANDATA**		**3**
15	**90.5273.00**	**ANELLO ANTIEST. D. 61.4x67.5x1.5**	**C**	**3**
16	**90.5290.00**	**ANELLO ANTIEST. D. 77.2x83.0x1.5**	**C**	**3**
17	**90.4134.00**	**OR D. 75.80x3.53 NBR 70SH 4300**	**B-C**	**6**
18	**94.7700.00**	**MOLLA Dm. 41.5x38.3**		**3**
19	**36.7152.01**	**GR. VALVOLA DI MANDATA**	**B**	**3**
20	**74.2109.70**	**TAPPO VALVOLE DI MANDATA**		**3**
21	**90.5293.00**	**ANELLO ANTIEST. D. 77.4x83.2x1.5**	**B-C**	**3**
22	**94.8000.00**	**MOLLA Dm. 75.0x49.6**		**3**
23	**74.2107.66**	**ANELLO SEDE VALVOLA DI MANDATA**		**3**
24	**74.2101.15**	**COPERCHIO VALVOLE**		**1**
25	**99.5222.00**	**VITE M16x180 UNI 5931**		**8**
26	**99.5147.00**	**VITE M16x55 UNI 5931**		**8**
27	**99.3850.00**	**VITE M10x160 UNI 5737**		**3**
28	**96.7105.00**	**ROSETTA D. 10.0x18.0x0.9**	**C**	**3**
29	**90.4185.00**	**OR D. 72.00x4.00 NBR 70SH**	**A-C**	**3**
30	74.1007.56	ANELLO DI TESTA BADERNE D. 55		3
	74.1008.56	ANELLO DI TESTA BADERNE D. 60		
	74.1009.56	ANELLO DI TESTA BADERNE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	**90.3722.00**	**OR D. 96.00x2.00 NBR 70SH**	**A-C**	**6**
33	94.7770.00	MOLLA Dm. 61.5x35.0 - MK2R MK2SR 55		3
	94.7900.00	MOLLA Dm. 71.5x35.0 - MK2R MK2SR 60-65		
34	74.2135.56	ANELLO PER MOLLA D. 55		3
	74.2136.56	ANELLO PER MOLLA D. 60		
	74.2137.56	ANELLO PER MOLLA D. 65		
35	74.2139.82	ANELLO RASCHIATORE D. 55	A-C	3
	74.2140.82	ANELLO RASCHIATORE D. 60	A-C	
	74.2141.82	ANELLO RASCHIATORE D. 65	A-C	
36	90.5725.00	BADERNE D. 55.0x71.0x19.5	A-C	3
	90.5750.00	BADERNE D. 60.0x76.0x19.5	A-C	
	90.5775.00	BADERNE D. 65.0x81.0x19.5	A-C	
37	90.5267.00	ANELLO ANTIEST. D. 55.0x71.0x2.5	A-C	3
	90.5269.00	ANELLO ANTIEST. D. 60.0x76.0x2.5	A-C	
	90.5275.00	ANELLO ANTIEST. D. 65.0x81.0x2.5	A-C	
38	74.2143.60	ANELLO DI SUPPORTO D. 55		3
	74.2144.60	ANELLO DI SUPPORTO D. 60		
	74.2145.60	ANELLO DI SUPPORTO D. 65		
	74.2101.55	TESTATA LP		1
	74.1204.55	TESTATA LP - NPT		
2	**10.7443.02**	**DISPOS. APERTURA VALVOLE ASPIR.**		**3**
3	**36.2066.67**	**SEDE VALVOLA ASPIRAZIONE**		**3**
4	**90.5270.00**	**ANELLO ANTIEST. D. 61.2x67.0x2.0**	**C**	**3**
5	**90.4105.00**	**OR D. 59.92x3.53 NBR 90SH 4237**	**C**	**6**
7	**36.2087.02**	**VALVOLA SFERICA**		**6**
8	**94.7698.00**	**MOLLA Dm. 41.5x37.9**		**3**
9	**36.2060.02**	**GUIDA VALVOLA**		**6**
10	**36.7150.02**	**GR. VALVOLA D'ASPIRAZIONE**	**B**	**3**
11	**74.2105.52**	**DISTANZIALE GUIDA VALVOLA**	**B**	**3**
12	**90.3584.00**	**OR D. 10.82x1.78 NBR 90SH 2043**	**C**	**3**
13	**98.2046.00**	**TAPPO G 1/4"x13**		**3**
14	**36.2068.66**	**SEDE VALVOLA DI MANDATA**		**3**
15	**90.5273.00**	**ANELLO ANTIEST. D. 61.4x67.5x1.5**	**C**	**3**
16	**90.5290.00**	**ANELLO ANTIEST. D. 77.2x83.0x1.5**	**C**	**3**
17	**90.4134.00**	**OR D. 75.80x3.53 NBR 70SH 4300**	**B-C**	**6**
18	**94.7700.00**	**MOLLA Dm. 41.5x38.3**		**3**
19	**36.7152.01**	**GR. VALVOLA DI MANDATA**	**B**	**3**
20	**74.2109.70**	**TAPPO VALVOLE DI MANDATA**		**3**
21	**90.5293.00**	**ANELLO ANTIEST. D. 77.4x83.2x1.5**	**B-C**	**3**
22	**94.8000.00**	**MOLLA Dm. 75.0x49.6**		**3**
23	**74.2107.66**	**ANELLO SEDE VALVOLA DI MANDATA**		**3**
24	**74.2101.15**	**COPERCHIO VALVOLE**		**1**
25	**99.5222.00**	**VITE M16x180 UNI 5931**		**8**
26	**99.5147.00**	**VITE M16x55 UNI 5931**		**8**
27	**99.3850.00**	**VITE M10x160 UNI 5737**		**3**
28	**96.7105.00**	**ROSETTA D. 10.0x18.0x0.9**	**C**	**3**
29	**90.4185.00**	**OR D. 72.00x4.00 NBR 70SH**	**A-C**	**3**
30	74.1007.56	ANELLO DI TESTA BADERNE D. 55		3
	74.1008.56	ANELLO DI TESTA BADERNE D. 60		
	74.1009.56	ANELLO DI TESTA BADERNE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	**90.3722.00**	**OR D. 96.00x2.00 NBR 70SH**	**A-C**	**6**
33	94.7770.00	MOLLA Dm. 61.5x35.0 - MK2R MK2SR 55		3
	94.7900.00	MOLLA Dm. 71.5x35.0 - MK2R MK2SR 60-65		
34	74.2135.56	ANELLO PER MOLLA D. 55		3
	74.2136.56	ANELLO PER MOLLA D. 60		
	74.2137.56	ANELLO PER MOLLA D. 65		
35	74.2139.82	ANELLO RASCHIATORE D. 55	A-C	3
	74.2140.82	ANELLO RASCHIATORE D. 60	A-C	
	74.2141.82	ANELLO RASCHIATORE D. 65	A-C	
36	90.5725.00	BADERNE D. 55.0x71.0x19.5	A-C	3
	90.5750.00	BADERNE D. 60.0x76.0x19.5	A-C	
	90.5775.00	BADERNE D. 65.0x81.0x19.5	A-C	
37	90.5267.00	ANELLO ANTIEST. D. 55.0x71.0x2.5	A-C	3
	90.5269.00	ANELLO ANTIEST. D. 60.0x76.0x2.5	A-C	
	90.5275.00	ANELLO ANTIEST. D. 65.0x81.0x2.5	A-C	
38	74.2143.60	ANELLO DI SUPPORTO D. 55		3
	74.2144.60	ANELLO DI SUPPORTO D. 60		
	74.2145.60	ANELLO DI SUPPORTO D. 65		

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - MK2R MK2SR 55	A-C	3
	90.4141.00	OR D. 85.32x3.53 NBR 70SH 4337 - MK2R MK2SR 60-65	A-C	
2	**74.2147.56**	**SUPPORTO BADERNE D. 55**		**3**
3	**74.2148.56**	**SUPPORTO BADERNE D. 60**		**3**
4	**74.2149.56**	**SUPPORTO BADERNE D. 65**		
5	**90.2870.00**	**ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP**	**A-C**	**3**
7	**90.2880.00**	**ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP**	**A-C**	
8	**90.2890.00**	**ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP**	**A-C**	
9	**74.2133.51**	**PARASPRUZZI**		**6**
10	**90.3865.00**	**OR D. 29.82x2.62 NBR 70SH 3118**	**C**	**3**
11	**90.3825.00**	**OR D. 10.78x2.62 NBR 70SH 3043**	**A-C**	**3**
12	**99.1837.00**	**VITE M6x14 UNI 5931**		**14**
13	**74.1501.22**	**COPERCHIO ISPEZIONE CHIUSO**		**1**
14	**74.1502.22**	**COPERCHIO ISPEZIONE APERTO**		**1**
15	**90.4500.00**	**OR D. 266.07x5.33 NBR 70SH**	**C**	**2**
16	**74.0503.36**	**STELO GUIDA PISTONE**		**3**
17	**74.2131.71**	**COPERCHIO PARAOLIO GUIDA PISTONE**		**3**
18	**90.3914.00**	**OR D. 72.69x2.62 NBR 90SH 3287**	**C**	**3**
19	**90.1679.00**	**ANELLO RAD. D. 40.0x52.0x7.0**	**C**	**3**
20	**99.1884.00**	**VITE M6x20 UNI 5931**		**12**
21	79.0504.43	GUIDA PISTONE		3
22	790.0505.43	GUIDA PISTONE +1.0		
23	**98.2333.00**	**TAPPO CARICO OLIO G1"**		**1**
24	**99.4410.00**	**VITE SERRAGGIO BIELLA**		**6**
25	**99.3045.00**	**VITE M8x18 UNI 5931**		**6**
26	**98.2187.00**	**TAPPO G 1/2"X13 TE22 ZINC.**		**1**
27	**96.7514.00**	**ROSETTA D. 21.5x27.0x1.5**		**1**
28	**91.8700.00**	**CUSCINETTO A RULLI**		**1**
30	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
31	**91.8610.00**	**CUSCINETTO A RULLI**		**1**
32	**90.3926.50**	**OR D. 126.67x2.62 NBR 70SH 3500**	**C**	**1**
33	**91.5030.00**	**LINGUETTA 16.0x10.0x90.0**		**1**
34	**90.1800.00**	**ANELLO RAD. D. 60.0x80.0x8.0**	**C**	**1**
35	**74.2173.22**	**COPERCHIO PIGNONE**		**1**
36	**99.4335.00**	**VITE M12x50 UNI 5931**		**2**
37	**99.3684.00**	**VITE M10x30 UNI 5739**		**4**
38	**91.5120.00**	**LINGUETTA 22.0x14.0x100.0**		**1**
39	**74.2252.55**	**FERMO CORONA**		**1**
40	74.0202.35	ALBERO A GOMITI C. 72 - MK2R		1
	74.0201.35	ALBERO A GOMITI C. 72 - MK2SR		
41	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
42	**99.3730.00**	**VITE M10x50 UNI 5931**		**10**
43	**74.2174.13**	**COPERCHIO RIDUTTORE**		**1**
44	**90.4173.00**	**OR D. 338.00x3.60 NBR 70SH**	**C**	**1**
45	**97.6230.00**	**SPINA CILINDRICA D. 10.0x24.0**		**2**
46	**74.2175.13**	**SCATOLA RIDUTTORE**		**1**
47	**99.4305.00**	**VITE M12x40 UNI 5931**		**6**
48	**90.3825.00**	**OR D. 10.78x2.62 NBR 70SH 3043**	**A-C**	**3**
49	**74.1600.21**	**COPERCHIO CARTER**		**1**
50	**90.4160.00**	**OR D. 304.39x3.53 NBR 70SH 41200**	**C**	**1**
51	**91.8852.00**	**CUSCINETTO A RULLI**		**1**
52	**74.1500.22**	**COPERCHIO CUSCINETTO**		**1**
53	**93.0800.00**	**GHIERA DI BLOCCAGGIO**		**1**
54	**96.8300.00**	**ROSETTA DI SICUREZZA**		**1**
55	**91.8800.00**	**BUSSOLA DI PRESSIONE**		**1**
56	**99.4280.00**	**VITE M12x30 UNI 5931**		**8**
57	**98.2092.00**	**TAPPO CON ASTA G 3/8"x163**		**2**
58	**93.1050.00**	**GOLFARE M16 UNI 2947**		**2**
59	**90.0697.00**	**ANELLO D'ARRESTO J35**		**6**
60	**97.7450.00**	**SPINOTTO D. 35x64**		**3**
61	**90.3833.00**	**OR D. 13.95x2.62 NBR 70SH 3056**	**C**	**2**
63	**90.2089.51**	**GUIDA INTERNA VALVOLA**		**6**
64	**74.2150.56**	**BOCCOLA TESTATA**		**3**
65	**90.5285.00**	**ANELLO ANTIEST. D. 72.5x78.5x1.5**		**6**
66	**90.4129.00**	**OR D. 72.62x3.53 NBR 70SH 4287**		**6**
67	**90.9173.00**	**BOCCOLA PIEDE BIELLA**		**3**
68	**74.1201.01**	**TESTATA CON BOCCOLA**		**1**
69	**96.7380.00**	**ROSETTA D. 17.5x23.0x1.5**		**2**
70	**98.2086.00**	**TAPPO G 3/8"x12**		**3**
71	**74.6062.01**	**GR. GUIDA PISTONE**		**3**
72	**99.3668.00**	**VITE M10x25 5931**		**6**
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
73	**99.3686.00**	**VITE M10x30 UNI 5931**		**6**
	10.0889.35	**CORONA Z56 R. 2.667 - ELICOIDALE**		**1**
	10.0905.55	**PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.**		**1**
	10.0909.20	**FLANGIA MOTORE IDRAULICO SAE-D**		**1**
	90.2065.00	**TAPPO PER FORO D. 17 - TTN19**		**2**
	74.2178.34	**VITE M6x30 CON INCAVO COMPLETA**		**1**
	74.2176.71	**ANELLO PER ALBERO D. 55 HYDR.PACK**		**1**
	92.2025.00	**DADO M6x5 UNI 5588**		**1**
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
54	**99.3686.00**	**VITE M10x30 UNI 5931**		**6**
80	**10.0907.35**	**CORONA Z60 R. 3.375 - ELICOIDALE**		**1**
108	**10.0908.20**	**FLANGIA MOTORE IDRAULICO SAE-C**		**1**
109	**90.2065.00**	**TAPPO PER FORO D. 17 - TTN19**		**2**
112	**10.0906.55**	**PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.**		**1**
113	**74.2171.71**	**ANELLO PER ALBERO D. 50 HYDR.PACK**		**1**
114	**70.2270.34**	**VITE M6x12 CON INCAVO COMPLETA**		**1**
115	**92.2025.00**	**DADO M6x5 UNI 5588**		**1**

17.2 Bomba versão MK2C-MK25C

17.2.1 Indicações para o uso



As bombas foram projetadas para operar em ambientes com atmosfera não potencialmente explosiva.
O ***Departamento Técnico*** ou o ***Serviço de Assistência ao Cliente*** está à disposição para indicar a melhor programação do equipamento.

17.2.2 Temperatura de uso



A temperatura do fluido permitida é: -30 °C a +30 °C.
Para outros valores, consulte o ***Departamento Técnico*** ou o ***Serviço de Assistência ao Cliente***.

17.2.3 Capacidade e pressão máxima

O desempenho indicado no catálogo se refere ao desempenho máx. fornecido pela bomba.
Independentemente da potência usada, a pressão e o número de giros máximos indicados na etiqueta não podem ser ultrapassados, a não ser se expressamente autorizados formalmente pelo ***Departamento Técnico*** ou o ***Serviço de Assistência ao Cliente***.

17.2.4 Características técnicas

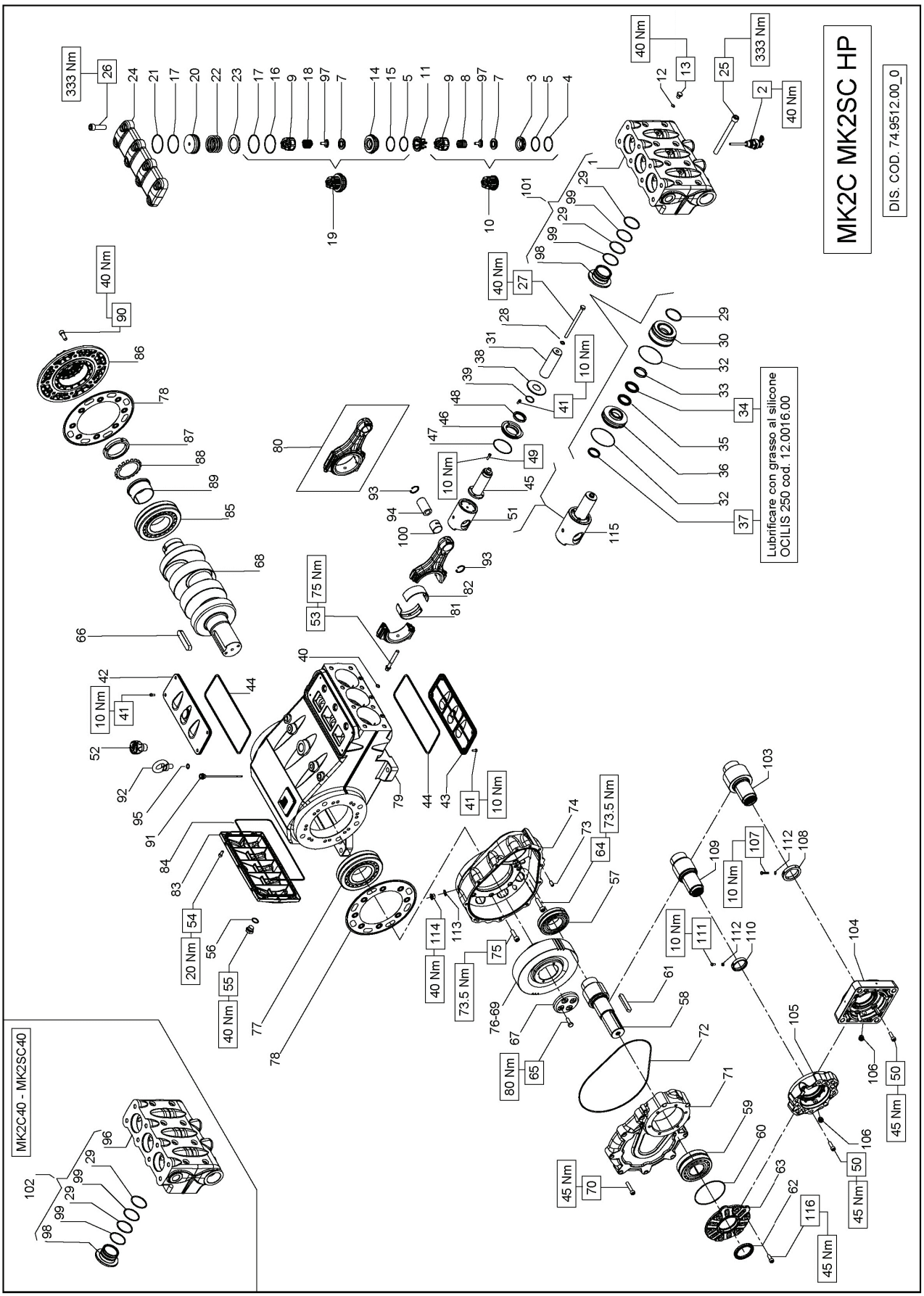
Modelo	Rotações/1'	Capacidade		Pressão		Potência	
		l/min	Rpm	bar	psi	kW	Hp
MK2SC 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2SC 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2SC 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2SC 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2SC 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2SC 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Modelo	Rotações/1'	Capacidade		Pressão		Potência	
		l/min	Rpm	bar	psi	kW	Hp
MK2SC 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2SC 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SC 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2SC 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2SC 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2SC 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.2.5 Dimensões e pesos

Para dimensões e pesos das bombas, consulte os esquemas relacionados no capítulo 6.

17.2.6 Desenho da explosão e peças de reposição distintas



KIT RICAMBIO – SPARE KIT

		MK2C40 - MK2SC40 (D.40)	MK2C45 - MK2SC45 (D.45)	MK2C50 - MK2SC50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2258		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2C40 - MK2SC40
MK2C45 - MK2SC45
MK2C50 - MK2SC50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIRAZ.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2118.56	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7222.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7223.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE HP		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE - FLANGIATO		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72 - MKSC		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKC		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1

17.3 Bomba versão MK2SH

17.3.1 Indicações para o uso



A bomba foi projetada para operar em ambientes com atmosfera não potencialmente explosiva, com água filtrada (ver parág. 9.7).
Outros líquidos poderão ser usados após a aprovação formal prévia do ***Departamento Técnico*** ou o ***Serviço de Assistência ao Cliente***.

17.3.2 Temperatura da água



A temperatura máxima da água permitida é de 40 °C. Todavia, é possível usar a bomba com água até a temperatura de 60 °C, mas somente por períodos curtos. Em tais casos, aconselha-se consultar o ***Departamento Técnico*** ou o ***Serviço de Assistência ao Cliente***.

17.3.3 Capacidade e pressão máxima

O desempenho indicado no catálogo se refere ao desempenho máx. fornecido pela bomba.
Independentemente da potência usada, a pressão e o número de giros máximos indicados na etiqueta não podem ser ultrapassados, a não ser se expressamente autorizados formalmente pelo ***Departamento Técnico*** ou o ***Serviço de Assistência ao Cliente***.

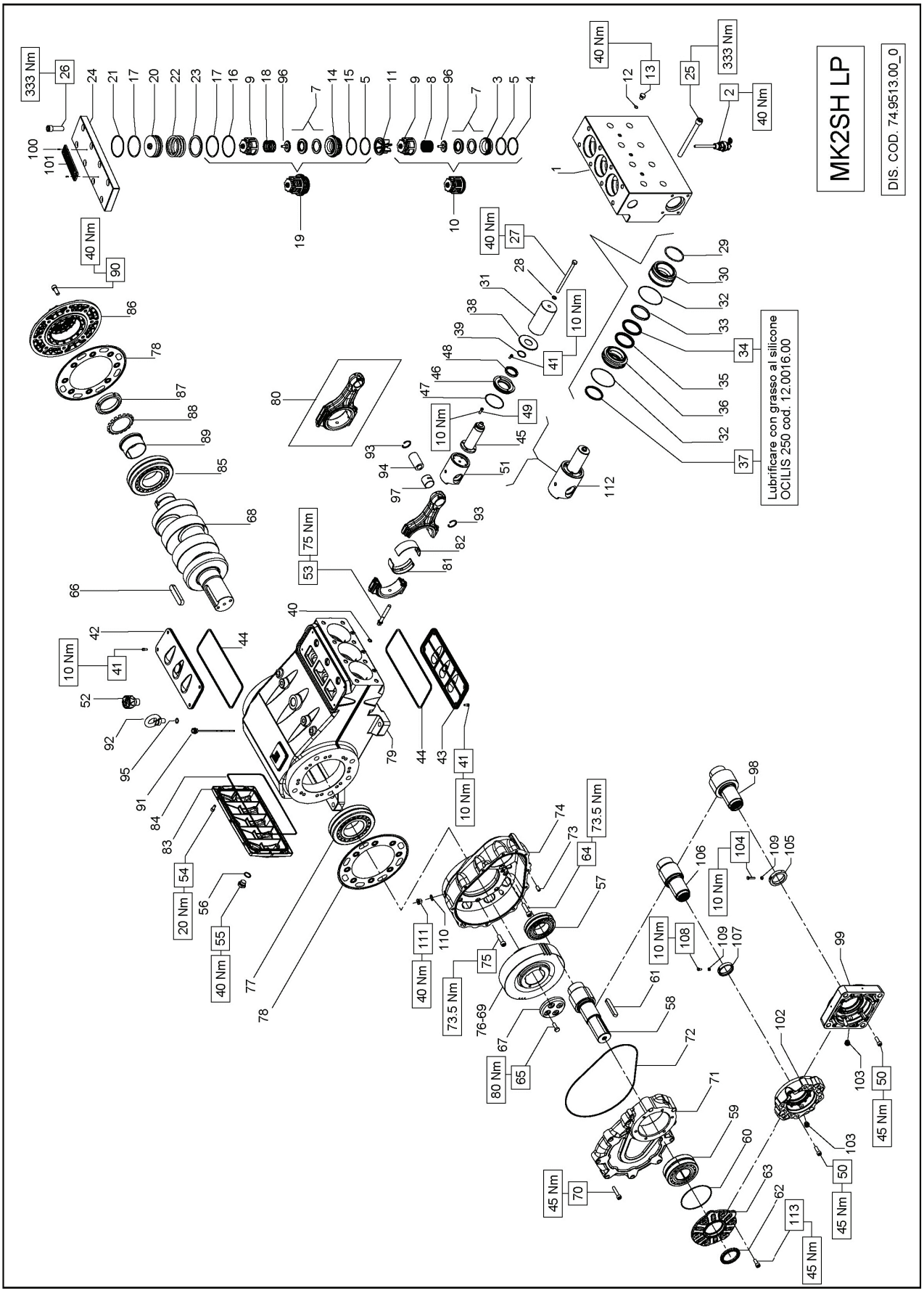
17.3.4 Características técnicas

Modelo	Rotações/1'	Capacidade		Pressão		Potência	
		l/min	Rpm	bar	psi	kW	Hp
MK2SH 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SH 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.3.5 Dimensões e pesos

Para dimensões e pesos das bombas, consulte os esquemas relacionados no capítulo 6.

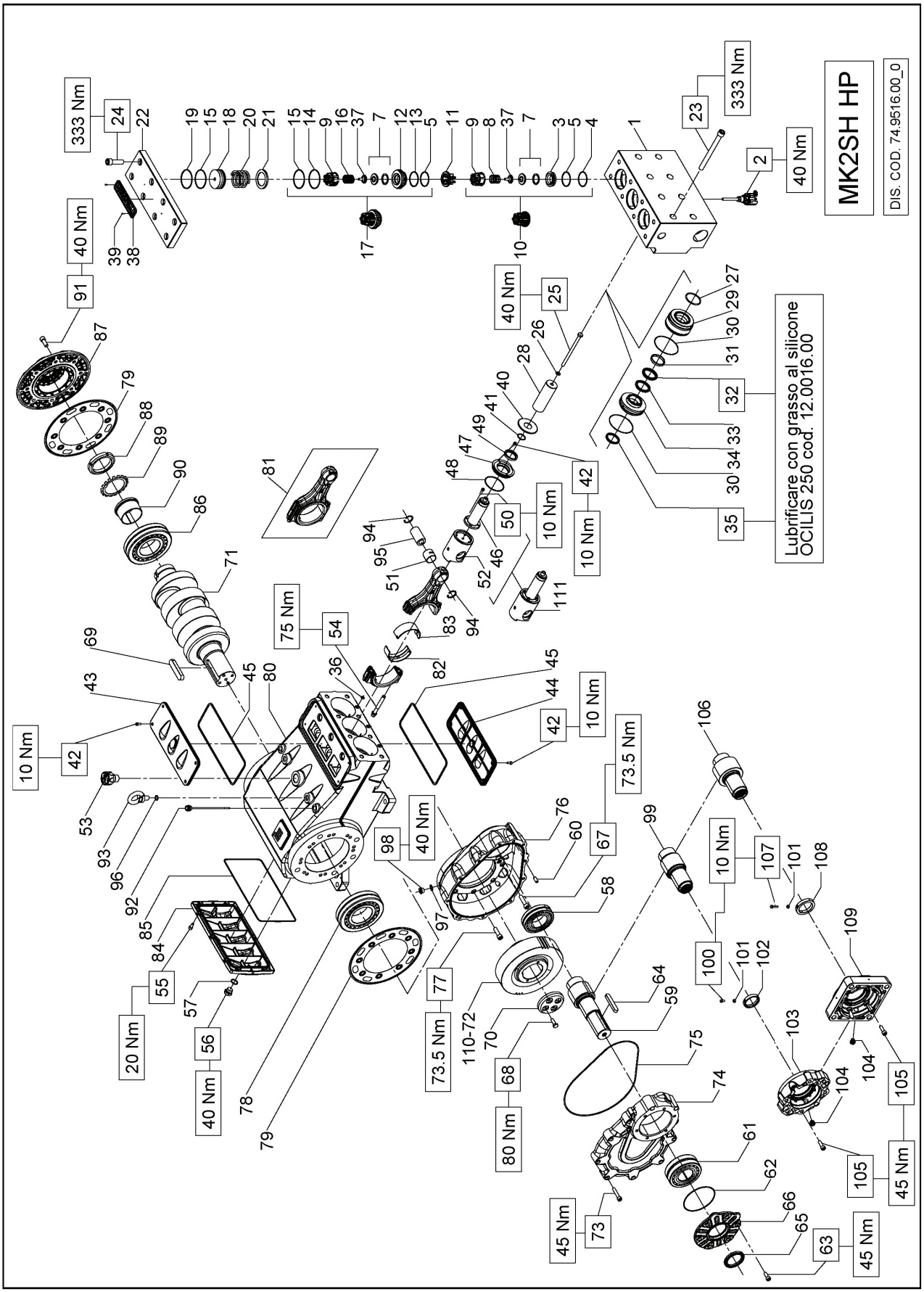
17.3.6 Desenho da explosão e peças de reposição distintas



KIT RICAMBIO – SPARE KIT		MK2S65H (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2047
B	Kit valvole – Valves kit	KIT 2048
C	Kit tenute complete – Complete seals kit	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)

MK2S65H

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1210.56	TESTATA LP		1
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2161.56	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2116.56	CAMICIA PISTONE D. 65		3
31	74.0405.09	PISTONE D. 65x127		3
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1005.92	ANELLO DI TESTA PISTONE D. 65		3
34	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	3
35	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	3
36	74.2122.68	SUPPORTO GUARNIZIONE D. 65		3
37	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	3
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72		1
69	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		3
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
82	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	90.9173.00	BOCCOLA PIEDE BIELLA		3
100	91.5703.00	RIVETTO AUTOF. D. 2.5x8 UNI 7346		2
101	97.8276.00	MARCHIO PRATISSOLI		1
110	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
111	98.2086.00	TAPPO G 3/8"x12		2
112	74.6062.01	GR. GUIDA PISTONE		3
113	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
98	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
99	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
104	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
105	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
102	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
107	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
108	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
109	92.2025.00	DADO M6x5 UNI 5588		1


MK2SH HP
DIS. COD. 74.9516.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK2SH45 (D.45)
A	Kit tenute pompanti – Plunger packing kit	KIT 2053
B	Kit valvole – Valves kit	KIT 2055
C	Kit tenute complete – Complete seals kit	KIT 2451
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0.25) - 2078 (+0.50)

MK2SH45

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1212.56	TESTATA POMPA D. 45		1
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	36.2069.66	SEDE VALVOLA DI MANDATA		3
13	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
14	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
15	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
16	94.7605.00	MOLLA Dm. 28.5x45.4		3
17	36.7153.01	GR. VALVOLA DI MANDATA	B	3
18	74.2110.70	TAPPO VALVOLE DI MANDATA		3
19	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
20	94.7750.00	MOLLA Dm. 58.0x45.4		3
21	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
22	74.2181.56	COPERCHIO VALVOLE		1
23	99.5222.00	VITE M16x180 UNI 5931		8
24	99.5147.00	VITE M16x55 UNI 5931		8
25	99.3850.00	VITE M10x160 UNI 5737		3
26	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
27	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	3
29	74.2112.56	CAMICIA PISTONE D. 45		3
28	74.0401.09	PISTONE D. 45x127		3
30	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
31	74.1001.92	ANELLO DI TESTA PISTONE D. 45		3
32	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	3
33	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	3
34	74.2118.68	SUPPORTO GUARNIZIONE D. 45		3
35	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	3
36	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
37	36.2090.51	GUIDA INTERNA VALVOLA		6
38	97.8276.00	MARCHIO PRATISSOLI		1
39	91.5703.00	RIVETTO AUTOFILETTANTE D. 2.5x8.0		2
40	74.2133.51	PARASPRUZZI		3
41	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
42	99.1837.00	VITE M6x14 UNI 5931		14
43	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
44	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
45	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
46	74.0503.36	STELO GUIDA PISTONE		3
47	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
48	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
49	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
50	99.1884.00	VITE M6x20 UNI 5931		12
51	90.9173.00	BOCCOLA PIEDE BIELLA		3
52	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
53	98.2333.00	TAPPO CARICO OLIO G1"		1
54	99.4410.00	VITE SERRAGGIO BIELLA		6
55	99.3045.00	VITE M8x18 UNI 5931		6
56	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
57	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
58	91.8700.00	CUSCINETTO A RULLI		1
59	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
60	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
61	91.8610.00	CUSCINETTO A RULLI		1
62	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
63	99.3668.00	VITE M10x25 5931		6
64	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
65	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
66	74.2173.22	COPERCHIO PIGNONE		1
67	99.4335.00	VITE M12x50 UNI 5931		2
68	99.3684.00	VITE M10x30 UNI 5739		4
69	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
70	74.2252.55	FERMO CORONA		1
71	74.0202.35	ALBERO A GOMITI C. 72		1
72	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
73	99.3730.00	VITE M10x50 UNI 5931		10
74	74.2174.13	COPERCHIO RIDUTTORE		1
75	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
76	74.2175.13	SCATOLA RIDUTTORE		1
77	99.4305.00	VITE M12x40 UNI 5931		6
78	91.8850.00	CUSCINETTO A RULLI		1
79	74.2130.84	GUARNIZIONE LATERALE	C	2
80	74.0101.13	CARTER POMPA		1
81	74.0302.01	BIELLA COMPLETA		3
82	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
83	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
84	74.1600.22	COPERCHIO CARTER		1
85	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
86	91.8852.00	CUSCINETTO A RULLI		1
87	74.1500.22	COPERCHIO CUSCINETTO		1
88	93.0800.00	GHIERA DI BLOCCAGGIO		1
89	96.8300.00	ROSETTA DI SICUREZZA		1
90	91.8800.00	BUSSOLA DI PRESSIONE		1
91	99.4280.00	VITE M12x30 UNI 5931		8
92	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
93	93.1050.00	GOLFARE M16 UNI 2947		2
94	90.0697.00	ANELLO D'ARRESTO J35		6
95	97.7450.00	SPINOTTO D. 35x64		3
96	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
97	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
98	98.2086.00	TAPPO G 3/8"x12		2
111	74.6062.01	GR. GUIDA PISTONE		3
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
101	92.2025.00	DADO M6x5 UNI 5588		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
110	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
99	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
100	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
101	92.2025.00	DADO M6x5 UNI 5588		1
102	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
103	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
110	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1

18 DECLARAÇÃO DE INCORPORAÇÃO

DECLARAÇÃO DE INCORPORAÇÃO

(Nos termos do anexo II da Diretiva Europeia 2006/42/CE)

O fabricante **INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 - 42049 - S. ILARIO D'ENZA - Itália - DECLARA** sob sua inteira responsabilidade, que o produto identificado e descrito a seguir:

Denominação:	Bomba
Tipo:	Bomba alternativa de pistões para água de alta pressão
Marca registrada:	INTERPUMP GROUP
Modelo:	Série 74 MK2, MK2S, MK2R, MK2SR, MK2C, MK2SC, MK2SH

Parece estar em conformidade com a Diretriz da Máquina 2006/42/CE
Normas aplicadas: UNI EN ISO 12100- UNI EN 809

A bomba acima identificada respeita todos os requisitos essenciais de segurança e de proteção da saúde listados no ponto 1 do anexo I da Diretiva de Máquinas:
1.1.2 - 1.1.3 - 1.1.5 - 1.3.1 - 1.3.2 - 1.3.3 - 1.3.4 - 1.5.4 - 1.5.5 - 1.6.1 - 1.7.1 - 1.7.2 - 1.7.4 - 1.7.4.1 - 1.7.4.2 e a documentação técnica relativa foi elaborada em conformidade com o anexo VII B.

Além disso, o fabricante se compromete a disponibilizar, como resultado de uma solicitação adequadamente fundamentada, uma cópia da documentação técnica pertinente à bomba, na forma e nos termos a serem definidos.

A bomba não deve ser colocada em funcionamento até que o sistema em que a mesma deve ser incorporada tenha sido declarado em conformidade com as disposições das diretivas e/ou normas correspondentes.

Pessoa autorizada para constituir o folheto técnico

Nome: Maurizio Novelli
Endereço: INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 - 42049 - S. ILARIO D'ENZA (RE) - Itália

O responsável:
Reggio Emilia - Janeiro de 2017

Ing. Massimiliano Bizzarri

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1 ВВЕДЕНИЕ

Настоящее руководство содержит указания по эксплуатации и техобслуживанию насоса MK2; необходимо внимательно прочитать и усвоить его содержание перед тем, как приступать к использованию насоса.
От правильности эксплуатации и надлежащего технического обслуживания зависит бесперебойность работы и долгий срок службы насоса.
Interpump Group не несет никакой ответственности за повреждения, вызванные небрежностью и несоблюдением требований этого руководства.
В момент получения насоса проверьте его целостность и комплектность.
О возможных аномалиях сообщите до того, как устанавливать и запускать насос.

2 УСЛОВНЫЕ ОБОЗНАЧЕНИЯ

Внимательно ознакомьтесь с информацией, приведенной в данном руководстве, перед выполнением любой операции.



Знак предупреждения



Внимательно ознакомьтесь с информацией, приведенной в данном руководстве, перед выполнением любой операции.



Знак опасности
Опасность поражения электрическим током.



Знак опасности
Надевайте защитную маску.



Знак опасности
Надевайте защитные очки.



Знак опасности
Надевайте защитные перчатки перед выполнением любой операции.



Знак опасности
Надевайте подходящую обувь.

3 ПРАВИЛА ТЕХНИКИ БЕЗОПАСНОСТИ

3.1 Общие требования безопасности

Ненадлежащее использование насосов и систем высокого давления, а также несоблюдение правил установки и техобслуживания, могут привести к нанесению серьезных травм и/или материальному ущербу. Лица, которые будут проводить сборку или эксплуатировать системы высокого давления, должны обладать необходимыми навыками, знать характеристики собираемых/используемых компонентов, и принять все возможные меры предосторожности для обеспечения максимальной безопасности в любых условиях эксплуатации. Как установщик, так и пользователь в целях безопасности должны строго соблюдать все без исключения разумные меры предосторожности.

3.2 Основные средства, обеспечивающие безопасность системы высокого давления

1. Линия давления всегда должна иметь предохранительный клапан.
2. Компоненты системы высокого давления, в особенности для тех систем, которые работают по большей части под открытым небом, должны быть соответствующим образом защищены от дождя, мороза и тепла.
3. Электрические части системы, помимо надлежащей защиты от брызг воды, должны отвечать предписаниям соответствующих действующих норм.
4. Трубы высокого давления должны быть надлежащим образом рассчитаны на максимальное рабочее давление в системе и всегда использоваться только в пределах диапазона рабочих давлений, указанных изготовителем этих труб. Те же правила должны соблюдаться для всех остальных принадлежностей системы, находящихся под высоким давлением.
5. Концы труб высокого давления должны иметь оболочку и быть закреплены на прочной конструкции во избежание опасных отскакиваний в случае разрыва или разрушения соединений.
6. Системы силовой передачи насоса (муфты, шкивы и ремни, вспомогательные механизмы отбора мощности) должны иметь соответствующие защитные кожухи.

3.3 Безопасность во время работы



Помещение или место, где работает система высокого давления, должно быть четко обозначено, а по возможности отделено или огорожено, с запретом доступа для посторонних лиц. Персонал, имеющий доступ в эту зону, должен быть предварительно проинструктирован о правилах поведения в ней и проинформирован о рисках, связанных с неисправностями или повреждениями системы высокого давления.
Перед запуском системы оператор обязан убедиться в удовлетворении следующих условий:

1. Система высокого давления должна иметь правильную подачу; см. главу 9 пар. 9.5.
2. Всасывающие фильтры должны быть полностью чистыми; рекомендуется установить специальное устройство, измеряющее степень засорения.
3. Электрические части должны быть должным образом защищены и находиться в идеальном состоянии.
4. Трубы высокого давления не должны иметь явных следов износа, а фитинги должны быть в идеальном состоянии.
5. В зависимости от способа применения, интенсивности использования и условий окружающей среды, в процессе эксплуатации наружные поверхности насоса могут достигать высоких температур. Поэтому рекомендуется принимать меры предосторожности во избежание соприкосновения с горячими частями.

Квалифицированный персонал должен немедленно сообщать о любых аномалиях или обоснованных сомнениях, которые могут возникнуть до или во время работы, с проведением соответствующих проверок. В этих случаях, давление должно быть немедленно сведено к нулю, а система высокого давления остановлена.

3.4 Правила поведения при использовании водометных стволов



1. Оператор всегда должен заботиться в первую очередь о своей целости и сохранности, а также о безопасности других людей, которые могут попасть в непосредственную зависимость от его действий, и лишь потом учитывать остальные факторы или расчеты, а его действия должны быть продиктованы здравым смыслом и чувством ответственности.
2. Оператор всегда должен носить шлем с защитным козырьком, непромокаемую одежду и сапоги, подходящие для конкретных условий и способные обеспечивать хорошее сцепление с влажным полом.

Примечание: *соответствующая одежда эффективно защищает от водных брызг, но не от прямого воздействия водной струи или слишком плотных брызг. Поэтому в определенных обстоятельствах может понадобиться дополнительная защита.*

3. Рекомендуется работать в командах, состоящих по меньшей мере из двух человек, которые могли бы в случае необходимости немедленно оказывать взаимопомощь и сменять друг друга в процессе продолжительной и тяжелой работы.
4. Вход в рабочую область, ограниченную радиусом действия струи, должен быть категорически запрещен, а сама зона свободна от объектов, которые при случайном попадании на них струи под давлением могут повредиться и/или создать опасную ситуацию.
5. Струя воды всегда должна направляться исключительно в рабочую зону, даже в ходе предварительных испытаний или проверок.
6. Оператор должен всегда внимательно следить за траекторией отходов, удаляемых водной струей. При необходимости, оператор должен предусмотреть установку соответствующих переборок для защиты объектов, которые могут быть случайно задеты.
7. Во время выполнения работы оператор не должен отвлекаться ни под каким предлогом. Если другим работникам понадобится войти в рабочую зону, они должны сначала дождаться, пока оператор приостановит работу по собственной инициативе, после чего сразу же заявить о своем присутствии.
8. В целях безопасности важно, чтобы все члены команды всегда прекрасно знали о намерениях друг друга во избежание опасных недоразумений.
9. Систему высокого давления не следует включать и создавать в ней давление до тех пор, пока все члены команды не будут находиться на месте, а оператор не направит гидромонитор в сторону рабочей зоны.

3.5 Безопасность при техобслуживании системы

1. Техническое обслуживание системы высокого давления должно проводиться с периодичностью, предусмотренной изготовителем, который по закону отвечает за весь узел.
2. Техническое обслуживание всегда должно выполняться уполномоченным квалифицированным персоналом.
3. Монтаж и демонтаж насоса и различных компонентов должен выполняться только уполномоченным персоналом с использованием соответствующих приспособлений во избежание повреждения компонентов, а в особенности - соединений.
4. Для гарантии полной надежности и безопасности всегда используйте только оригинальные запчасти.

4 ИДЕНТИФИКАЦИЯ НАСОСА

На каждом насосе находится идентификационная табличка, на которой указано:

- Модель и версия исполнения насоса
- Заводской номер
- Макс. количество оборотов
- Потребляемая мощность л.с. - кВт
- Давление бар - фунт на кв. дюйм (P.S.I.)
- Производительность л/мин - галлонов в минуту

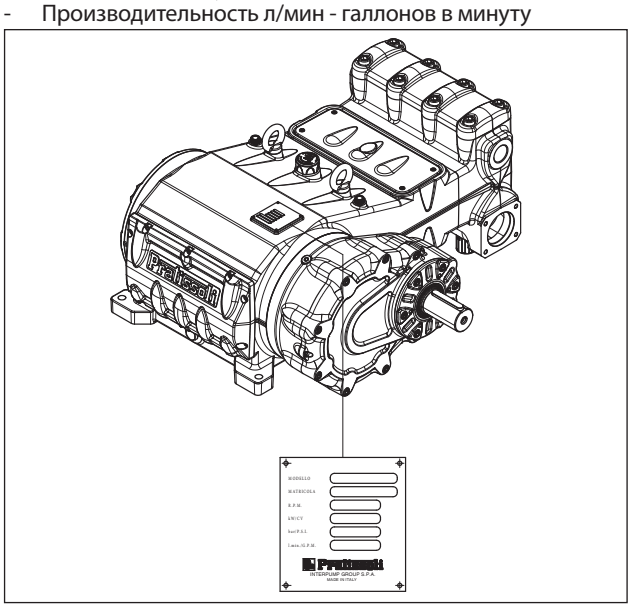


Рис. 1

При заказе запчастей обязательно указывайте модель, исполнение и заводской номер.

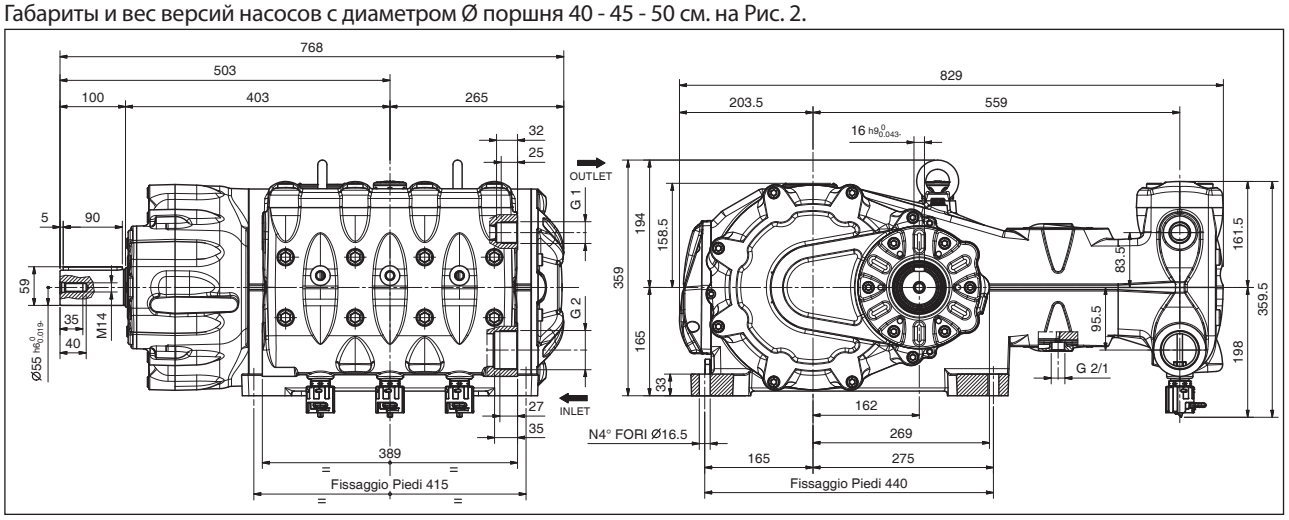
5 ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ

Модель	Об/мин	Производительность		Давление		Мощность	
		л/мин	об/мин	бар	фунт на кв. дюйм (psi)	кВт	л.с.
MK2 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Модель	Об/мин	Производительность		Давление		Мощность	
		л/мин	об/мин	бар	фунт на кв. дюйм (psi)	кВт	л.с.
MK2S 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2S 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2S 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2S 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2S 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2S 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

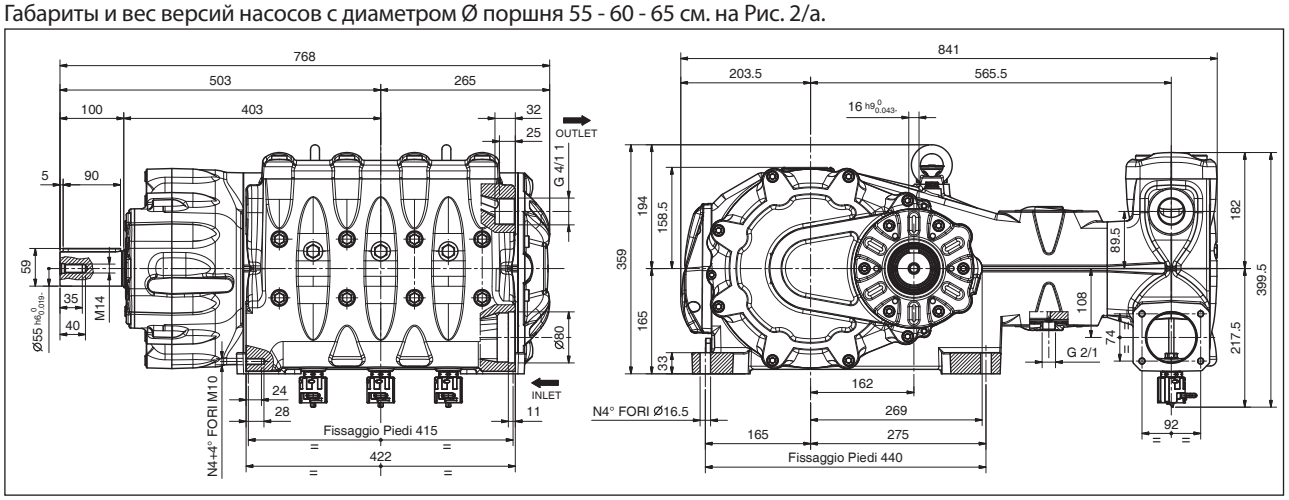
6 ГАБАРИТЫ И ВЕС

Габариты и вес версий насосов с диаметром Ø поршня 40 - 45 - 50 см. на Рис. 2.



Сухой вес 398 кг Рис. 2

Габариты и вес версий насосов с диаметром Ø поршня 55 - 60 - 65 см. на Рис. 2/a.



Сухой вес 411 кг Рис. 2/a

Габариты насосов версии ВД с возможностью установки гидроблока Hydraulic Pack см. на Рис. 2/b.

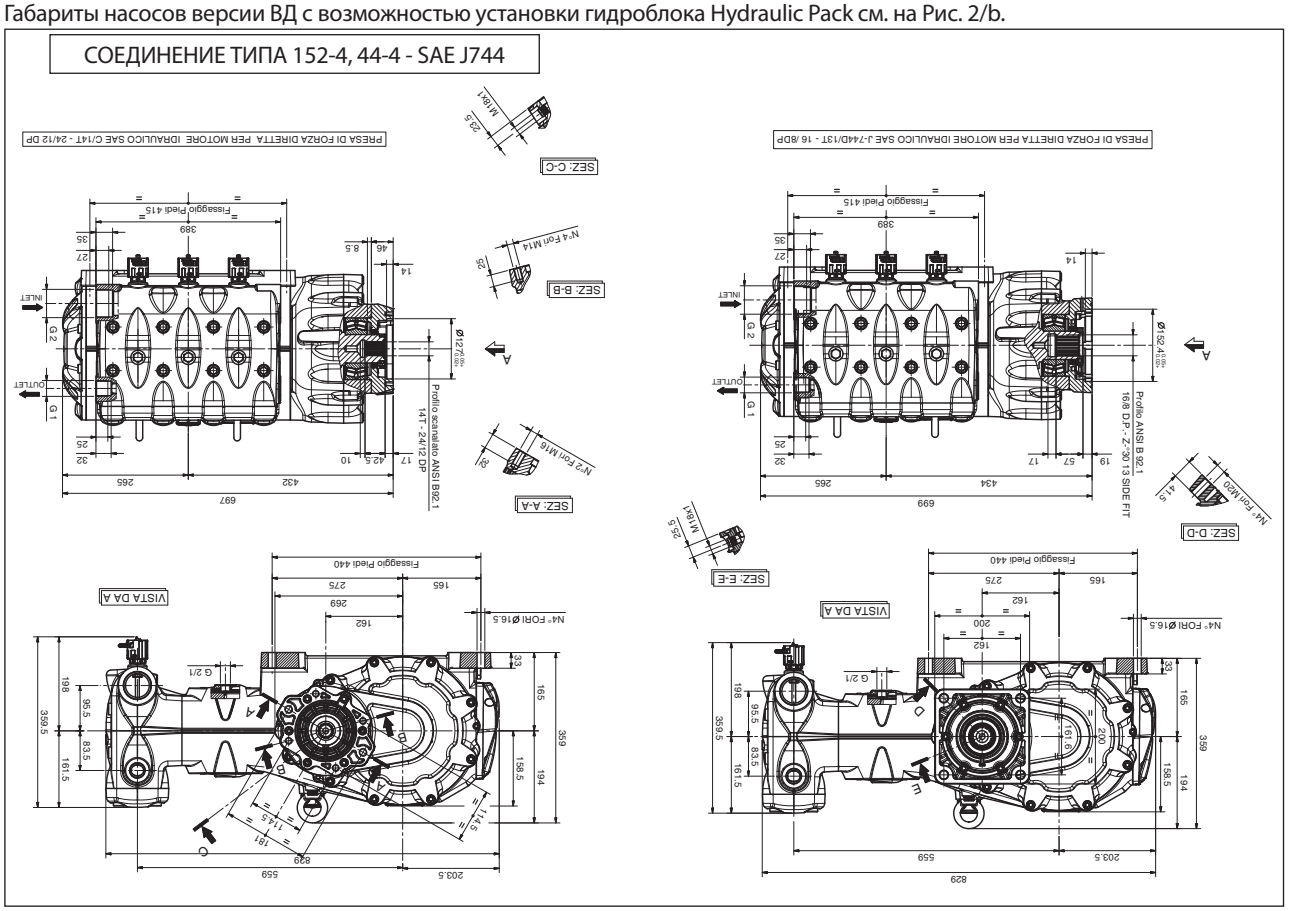


Рис. 2/b

Габариты насосов версии НД с возможностью установки гидроблока Hydraulic Pack см. на Рис. 2/c.

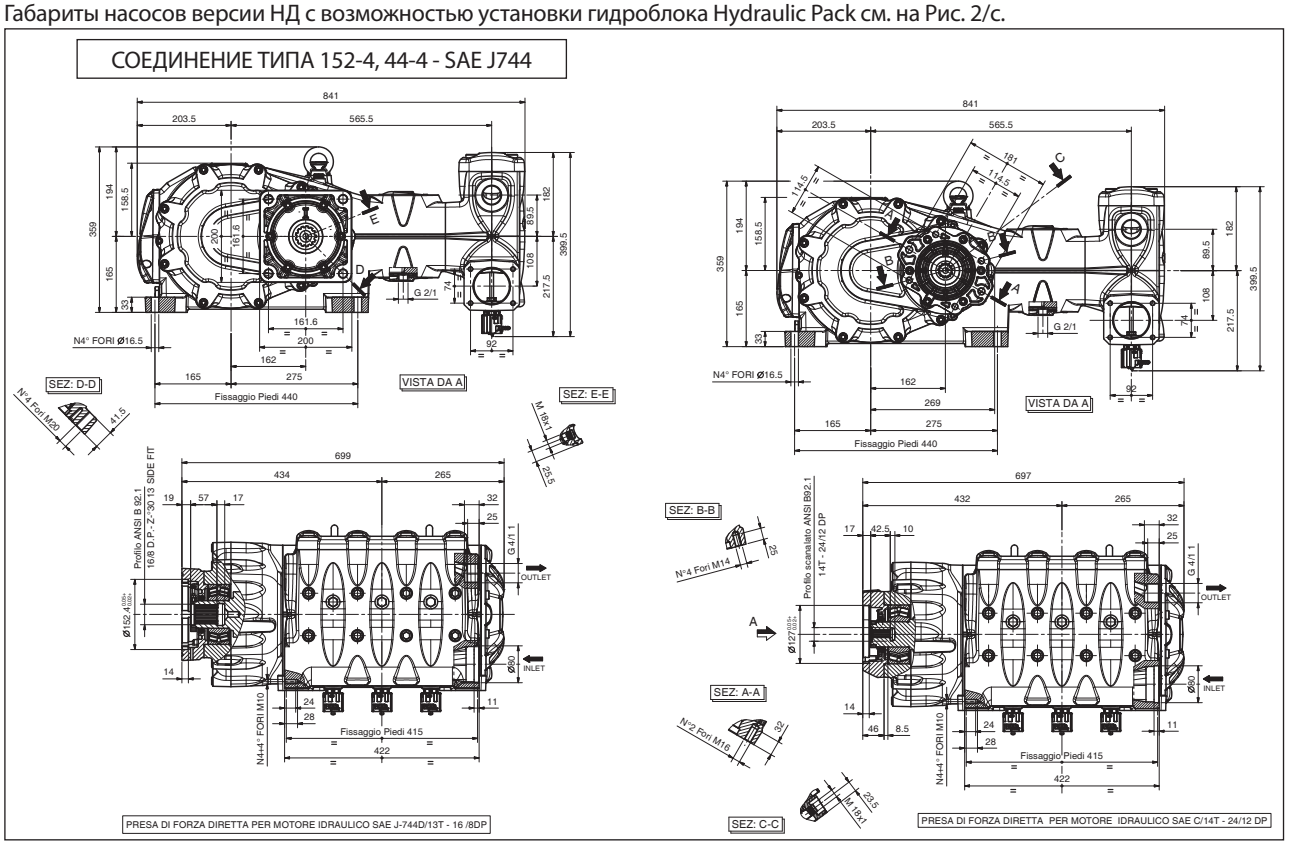


Рис. 2/c

7 УКАЗАНИЯ ПО ЭКСПЛУАТАЦИИ

Насос предназначен для работы с фильтрованной водой в условиях атмосферы, не являющейся потенциально взрывоопасной (см. п. 9.7).
Другие жидкости могут использоваться только по официальному одобрению ***технического отдела*** или ***службы технической поддержки***.

7.1 Температура воды

Максимально допустимая температура воды составляет 40 °C. Тем не менее, возможна эксплуатация насоса при температуре до 60 °C, но только в течение непродолжительного времени. В таких случаях рекомендуется обращаться в ***Технический отдел*** компании-изготовителя или ***в Службу поддержки клиентов***.

7.2 Максимальное давление и производительность

Указанные в каталоге параметры считаются максимально возможными характеристиками насоса. **Независимо** от используемой мощности не допускается превышение максимальных значений давления и числа оборотов, указанных в табличке технических данных, без получения надлежащим образом оформленного разрешения со стороны ***Технического отдела*** компании-изготовителя или ***Службы поддержки клиентов***.

7.3 Минимальный режим вращения

Минимально допустимый режим для данной категории насосов составляет 300 оборотов/мин. Если режим вращения отличается от указанного в таблице технических характеристик (см. раздел 5), он в любом случае должен быть официально одобрен ***техническим отделом*** или ***сервисной службой***.

7.4 Шумоизлучение

Тест по замеру акустического давления осуществлялся в соответствии с директивой 2000/14 Европейского парламента и Совета Европы (Директивой по машинному оборудованию), а также согласно стандарту EN-ISO 3744-2010, при помощи контрольно-измерительных приборов класса 1. Окончательный замер акустического давления должен производиться после полной сборки машины/системы. Если оператор вынужден находиться на расстоянии менее 1 метра от машины, он должен пользоваться специальными средствами защиты от воздействия акустического шума, предусмотренными действующими нормами.

7.5 Вибрации

При выполнении замера насос должен быть обязательно установлен на машине, а эксплуатационные характеристики должны соответствовать заявленным заказчиком. Значения должны соответствовать действующим нормам.

7.6 Рекомендуемые марки и типы масел

Насос поставляется заполненным маслом, пригодным для работы при температуре окружающей среды от 0 °C до 30 °C. Ниже в таблице указаны некоторые рекомендуемые виды масла. Эти масла содержат присадки для улучшения защиты от коррозии и усталостной прочности (согласно DIN 51517 часть 2). В качестве альтернативы также можно использовать смазочные автомобильные трансмиссионные масла SAE 85W-90.

Производитель	Смазочный материал
Agip	AGIP ACER220
ARAL	Aral Degol BG 220
BP	BP Energol HLP 220
Castrol	CASTROL HYSPIN VG 220 CASTROL MAGNA 220
DEA	Falcon CL220
elf	ELF POLYTELIS 220 REDUCTELF SP 220
Esso	NUTO 220 TERESSO 220
FINA	FINA CIRKAN 220
FUCHS	RENOLIN 212 RENOLIN DTA 220
Mobil	Mobil DTE Oil BB
Shell	Shell Tellus Öl C 220
SRS	Wintershall Ersolon 220 Wintershall Wiolan CN 220
TEXACO	RANDO HD 220
TOTAL	TOTAL Cortis 220

Проверьте уровень масла с помощью специальных маслоизмерительных щупов, на которых есть метки минимального и максимального уровня ①, Рис. 3.
При необходимости долейте масло через пробку ③, Рис. 3.
Для правильной проверки уровня масла насос должен находиться при температуре окружающей среды; смену масла следует осуществлять при рабочей температуре насоса; сняв пробку ②, Рис. 3.
Масло необходимо проверять и заменять, как указано в разделе 11.
Требуемое количество составляет прибл. ~ 13,5 л.

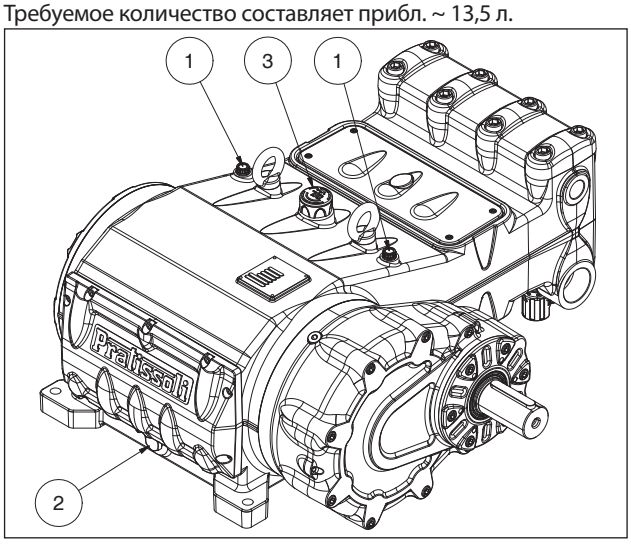


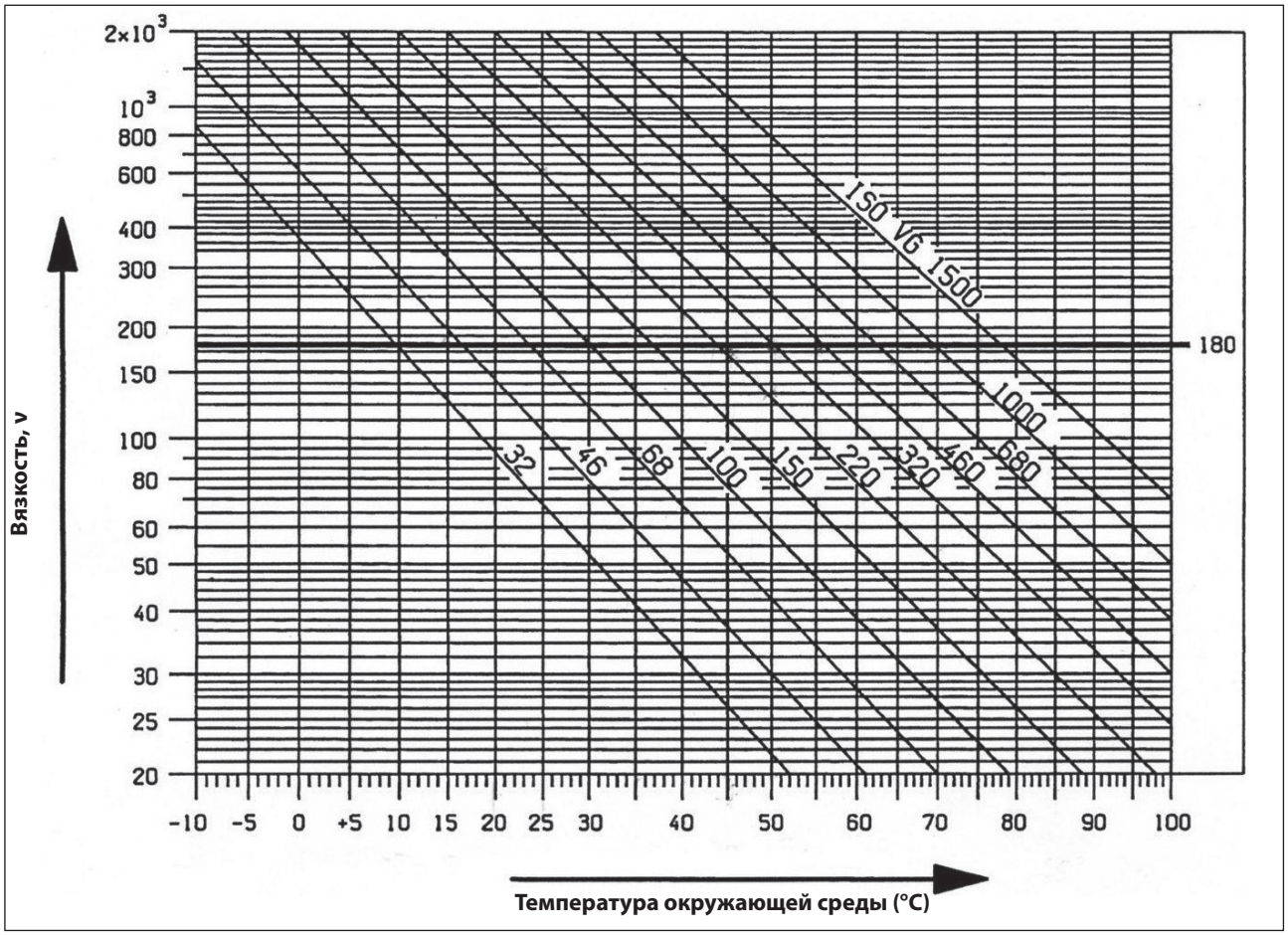
Рис. 3

В любом случае масло нужно менять не реже, чем раз в год, так как при окислении его свойства ухудшаются.

Если температура окружающей среды выходит за рамки диапазона от 0 °C до 30 °C, соблюдайте указания на нижеприведенном графике, учитывая, что минимальная вязкость масла должна составлять 180 сСт.

График зависимости вязкости от температуры окружающей среды

мм²/с = сСт



Отработанное масло необходимо поместить в специальную емкость и обеспечить его утилизацию в специальных центрах.
Не допускайте попадания масла в окружающую среду.

8 ПАТРУБКИ И ПОДСОЕДИНЕНИЯ

Насосы имеют:
2 всасывающих патрубка для «впуска»:
G2" (в версиях с диаметром Ø поршня 40, 45, 50)
Ø80 мм (в версиях с диаметром Ø поршня 55, 60, 65)
Правильная работа насоса не зависит от того, к какому из двух патрубков подключается линия; неиспользуемые патрубки нужно герметично закрыть.
2 нагнетательных патрубка для «выпуска»:
G1" (в версиях с диаметром Ø поршня 40, 45, 50)
G1 ¼" (в версиях с диаметром Ø поршня 55, 60, 65)
1 дренажный патрубок с отверстием G1/2" в нижней крышке, служит для определения возможной утечки среды в случае износа прижимных уплотнений. При утечке см. ***руководство по ремонту***.

Это отверстие должно всегда оставаться открытым (см. Рис. 4 и Рис. 4/a).

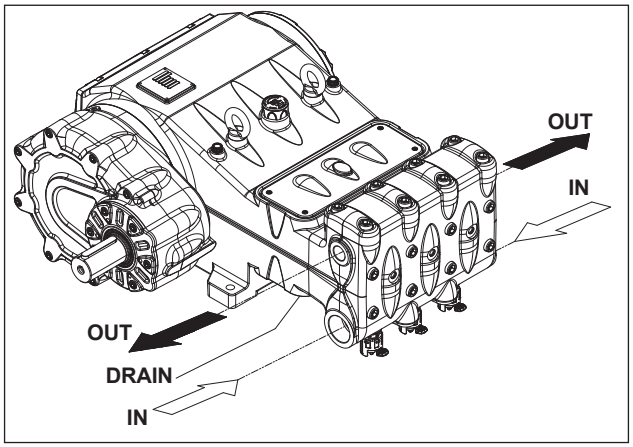


Рис. 4

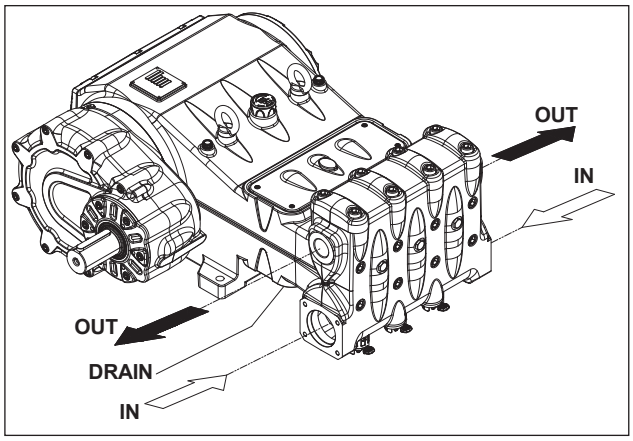


Рис. 4/a

9 УСТАНОВКА НАСОСА

9.1 Установка

Насос должен крепиться в горизонтальном положении с использованием специальных опорных ножек с отверстиями Ø16,5.
Основание должно быть идеально ровным и достаточно жестким во избежание прогибов и перекосов соединительной оси насоса/трансмиссии, которые могут возникнуть из-за передачи момента во время работы.
Для упрощения установки на насосе предусмотрено два подъемных рым-болта, см. рисунок ниже.

Подъемные рым-болты не нужно снимать.

Данные рым-болты рассчитаны только на подъем насоса, поэтому категорически запрещается дополнительно перегружать их.



Вместо служебной пробки, служащей для закрытия маслозаливного отверстия и расположенной на картере, установите маслозаливную пробку.
Необходимо обеспечить постоянный доступ к маслозаливной пробке, даже когда узел установлен.

Вал насоса (ВОМ) не должен быть жестко соединен с узлом двигателя.
Рекомендуется использовать следующие виды трансмиссии:

- с упругой муфтой
- с карданной передачей (соблюдайте максимальные значения рабочих углов, рекомендуемые изготовителями)
- ременная; для получения информации о правильном использовании обращайтесь в ***технический отдел*** или ***сервисную службу***.

9.2 Направление вращения

Направление вращения ВОМ указано стрелкой, расположенной на крышке редуктора.
Если стоять лицом к головке насоса, то направление вращения должно быть, как на Рис. 5.

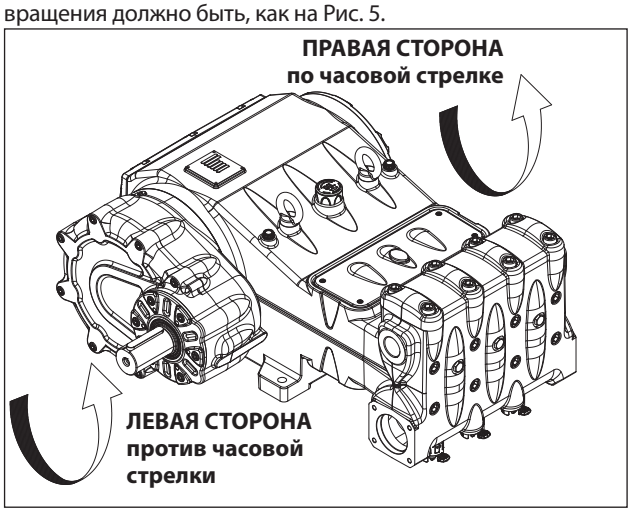


Рис. 5

9.3 Изменение версии и позиционирование редуктора

Насос считается имеющим правостороннюю версию в следующем случае:
если смотреть на насос со стороны головки, хвостовик ВОМ вала насоса располагается с правой стороны.
Насос считается имеющим левостороннюю версию в следующем случае:
если смотреть на насос со стороны головки, хвостовик ВОМ вала насоса располагается с левой стороны (см. Рис. 5).

Изменять версию могут только квалифицированные и уполномоченные специалисты, строго соблюдая указания *руководства по ремонту*.

Кроме того, редуктор можно поместить в 5 различных положений, как с правой, так и с левой стороны, как показано на Рис. 6.

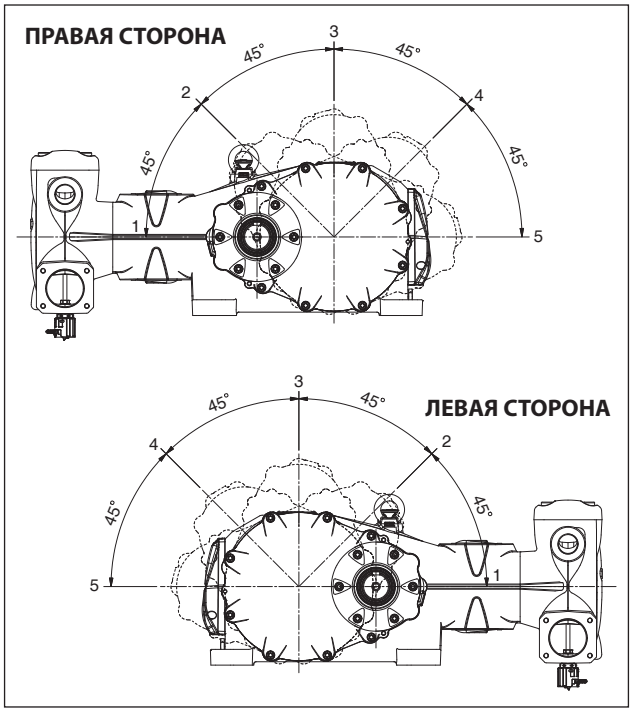


Рис. 6

Изменять положение редуктора могут только квалифицированные и уполномоченные специалисты, строго соблюдая указания *руководства по ремонту*.

9.4 Гидравлические соединения

Чтобы изолировать оборудование от вибраций, производимых насосом, первый участок прилегающего к насосу трубопровода (как всасывающего, так и нагнетательного) рекомендуется изготовить из шлангов. Участок всасывающей трубы должен быть настолько прочным, чтобы не деформироваться под воздействием создаваемого насосом разрежения.

9.5 Питание насоса

Насосы MK2 всегда должны устанавливаться ниже подпора, то есть подача воды в них должна всегда осуществляться падением или принудительно; ни в коем случае вода не должна не всасываться с уровня ниже насоса.
Для насосов допустим и минимальный подпор в 1 метр, однако для максимального улучшения объемного КПД и во избежание явлений кавитации высота столба жидкости над входом в насос (NPSH avail), измеренная у всасывающего фланца на головке, должна быть равной или превышать следующие значения:

	$NPSH_r$(м)
MK240	4,5
MK245	5,5
MK250	6,5
MK255	7,5
MK260	8
MK265	9

Для насосов MK2 55 - 60 - 65 с бóльшими значениями объема цилиндра настоятельно рекомендуется принудительное питание с помощью бустерного насоса во избежание явлений кавитации; это необходимо вследствие геометрии гидравлической части и высокой производительности.
Производительность бустерного насоса должна, как минимум, в два раза превышать номинальную производительность поршневого насоса, указанную на его табличке технических данных, а давление должно составлять от 2 до 3 бар.
Эти требования к питанию нужно соблюдать при любых рабочих условиях.

Бустерный насос нужно всегда запускать до того, как включать поршневой насос. Рекомендуется установить реле давления на линии питания после фильтров для защиты насоса.

9.6 Линия всасывания

Для исправной работы насоса линия всасывания должна иметь следующие характеристики:

1. Минимальный внутренний диаметр - как указано на графике в п. 9.9 и в любом случае не менее внутреннего диаметра головки насоса.

   Следите за тем, чтобы на трубе не образовывались локальные сужения, которые могу привести к падению напора с последующей кавитацией. Категорически избегайте колен под углом 90°, подсоединения других трубопроводов, сужений, обратных уклонов, подковообразных изгибов и «T»-образных соединений.
2. Линия должна располагаться таким образом, чтобы избегать возникновения кавитации.
3. Линия должна быть идеально герметичной и сохранять полную герметичность на протяжении длительного времени.
4. Следите за тем, чтобы при остановке насоса не происходило опорожнения, даже частичного.
5. Запрещается использовать фитинги гидродинамического типа, 3-х или 4-х ходовые муфты, переходные устройства, патрубки с гайкой и т.п., поскольку они могут отрицательно повлиять на рабочие характеристики насоса.
6. Не рекомендуется использовать клапаны Venturi либо инжекторы для всасывания моющих средств.
7. Не рекомендуется использовать донные клапаны либо другие типы однонаправленных клапанов.
8. Не направляйте выбросы из байпасного клапана непосредственно в линию всасывания.
9. Предусмотрите специальные перегородки внутри бака с тем, чтобы поток воды, поступающий из байпасного клапана и линии подачи жидкости в бак, не создавал завихрений или водоворотов вблизи места подсоединения трубы, питающей насос.
10. Перед подсоединением линии всасывания к насосу убедитесь в ее идеальной чистоте изнутри.
11. Установите манометр для контроля давления бустерного насоса возле всасывающего патрубка поршневого насоса, также после фильтров.

9.7 Фильтрация

На линии всасывания насоса необходимо установить два фильтра, расположив их, как показано на Рис. 7 и Рис. 7/a.
С регулирующим клапаном с ручным приводом

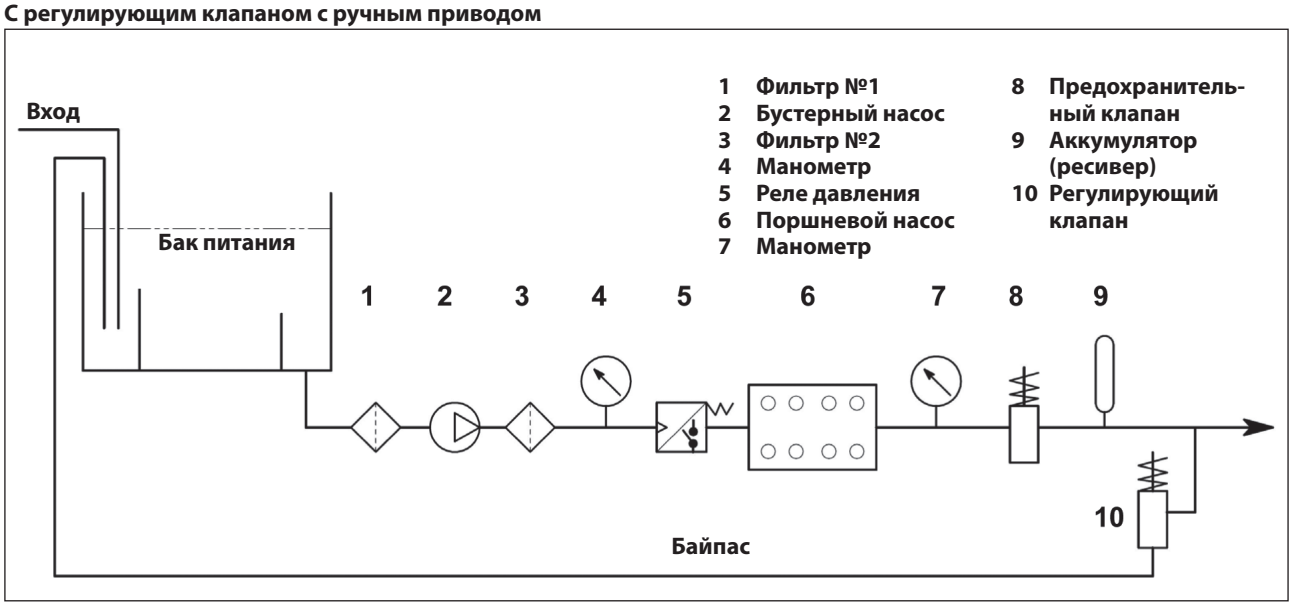


Рис. 7

С регулирующим клапаном с пневматическим приводом

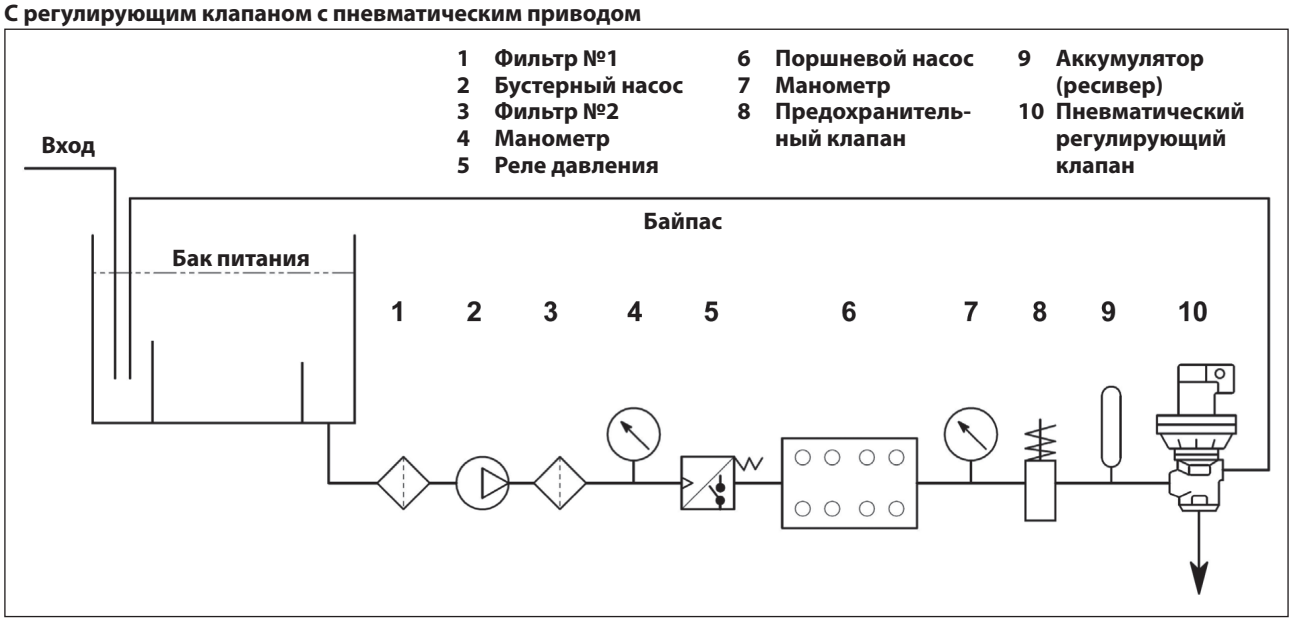


Рис. 7/a

Фильтр нужно установить как можно ближе к насосу, обеспечив простой доступ к нему для контроля. Он должен обладать следующими характеристиками:

1. Минимальная производительность в 3 раза больше производительности насоса, указанной в его табличке технических данных.
2. Диаметр входных/выходных отверстий не должен быть меньше диаметра всасывающего патрубка насоса.
3. Степень фильтрации - от 200 до 360 мкм включительно.

Для правильной работы насоса нужно запланировать периодическую чистку фильтра в зависимости от фактического пользования насосом, в том числе от количества используемой воды и реальных условий засорения.

9.8 Линия нагнетания

Для правильной установки линии нагнетания соблюдайте следующие правила:

1. Внутренний диаметр трубы должен иметь достаточные размеры, чтобы обеспечивать правильную скорость жидкости, см. график в п. 9.9.
2. Первый участок трубы, подсоединенный к насосу, должен быть гибким, чтобы изолировать всю остальную установку от производимых насосом вибраций.
3. Пользуйтесь трубами и фитингами для высокого давления, которые обеспечивают высокий уровень безопасности в любых рабочих условиях.
4. На линии нагнетания установите предохранительный клапан.
5. Пользуйтесь манометрами, предназначенными для выдерживания пульсирующей нагрузки, свойственной поршневым насосам.
6. На стадии проектирования следует учесть возможность снижения напора на линии, выражающейся в падении давления во время работы по сравнению со значением давления, замеренным в насосе.
7. В тех случаях, когда пульсация, которая передается от насоса в линию нагнетания, может оказаться вредной или нежелательной, необходимо установить амортизатор пульсации соответствующих размеров.

9.9 Расчет внутреннего диаметра трубопровода

Для определения внутреннего диаметра трубопровода руководствуйтесь следующим графиком:

Всасывающий трубопровод

С расходом ~ 400 л/мин и скоростью воды 1 м/с. Линия на графике, соединяющая обе шкалы, пересекает центральную шкалу с величинами диаметров в точке со значением ~90 мм.

Нагнетающий трубопровод

С расходом ~ 400 л/мин и скоростью воды 5,5 м/с. Линия на графике, соединяющая обе шкалы, пересекает центральную шкалу с величинами диаметров в точке со значением ~40 мм.

Оптимальные значения скорости, получаемые с помощью бустерного насоса:

- При всасывании: ≤ 1 м/с.
- При нагнетании: ≤ 5,5 м/с.

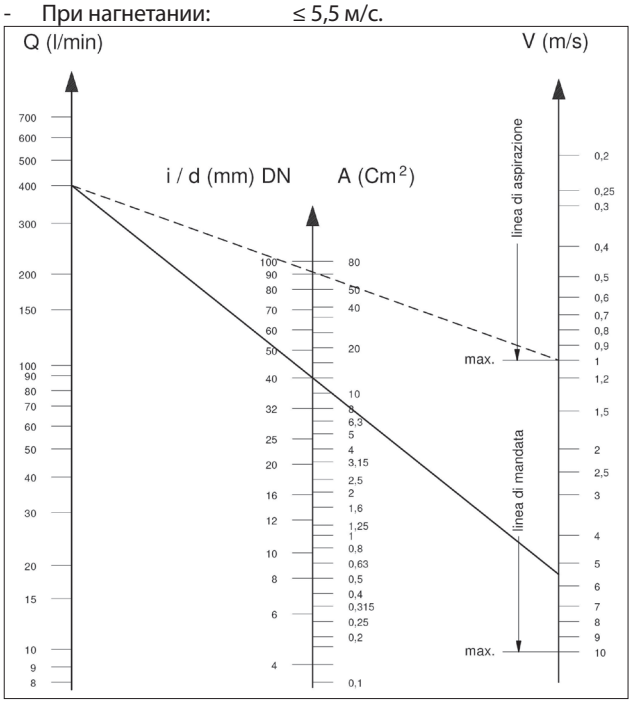


График не учитывает сопротивление труб, клапанов, падение напора из-за длины трубопроводов, вязкость перекачиваемой жидкости и ее температуру.
При необходимости обращайтесь в ***технический отдел*** или ***сервисную службу***.

9.10 Клиноременная передача

Как указано в п. 9.1, только в исключительных случаях насос может приводиться системой клиновых ремней.
За информацией о правильных размерах компоновки обращайтесь в ***технический отдел*** или ***сервисную службу***.

10 ЗАПУСК И РАБОТА

10.1 Предварительные проверки

Перед запуском убедитесь в том, что:

Линия всасывания подключена и находится под давлением (см. раздел 9): насос никогда не должен работать всухую.

1. Герметичность линии всасывания сохраняется и после продолжительной эксплуатации.
2. Все отсечные клапаны (если установлены) между источником питания и насосом полностью открыты. Линия нагнетания имеет свободный слив, обеспечивающий быстрый выход воздуха, присутствующего в головке насоса, что способствует быстрому наполнению насоса.
3. Все фитинги и соединения на линиях всасывания и нагнетания правильно затянуты.
4. Допуски соединений вдоль оси насос/трансмиссия (перекос полумуфт, наклон кардана, натяжение ремней и т.п.) остаются в пределах, предусмотренных изготовителем трансмиссии.
5. Масло в картере насоса находится на должном уровне при проверке с помощью специальных щупов (поз. ①, Рис. 8).

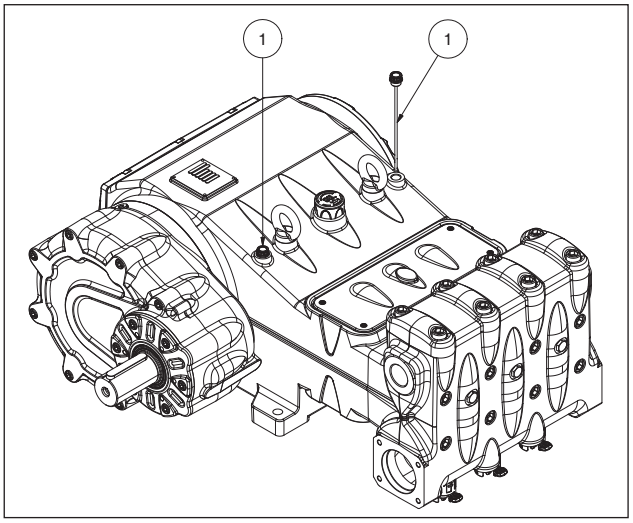


Рис. 8

В случае длительного хранения на складе или продолжительного простоя необходимо восстановить правильность работы всасывающих клапанов путем открытия трех толкателей клапанов (см. поз. ② Рис. 9). Перед следующим запуском насоса проверьте, закрыты ли клапаны.
Рабочее и нерабочее положение см. на Рис. 10.

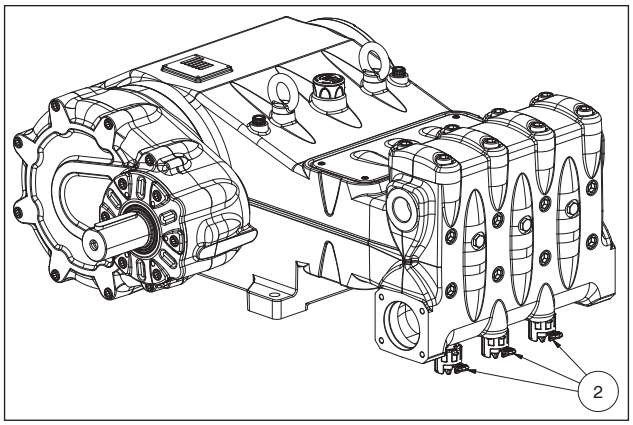


Рис. 9

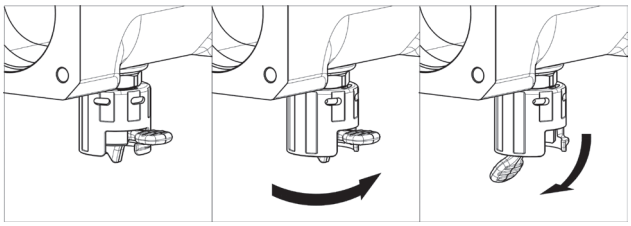


Рис. 10

10.2 Запуск

1. При первом запуске проверьте правильность направления вращения.
2. Проверьте правильность питания насоса.
3. Запустите насос без какой-либо нагрузки.
4. Убедитесь в том, что во время работы режим вращения не превышает значений, указанных на заводской табличке.
5. Перед тем, как создавать давление в насосе, дайте ему поработать в течение минимум 3 минут.
6. Перед каждой остановкой насоса необходимо сбросить давление до нуля при помощи регулирующего клапана либо возможных устройств для сброса.

В случае проблем с всасыванием вследствие недостаточной подачи воды можно снять три пробки с передней стороны головки насоса (за исключением исполнения MK240) как указано на рисунке поз. ③ Рис. 11.

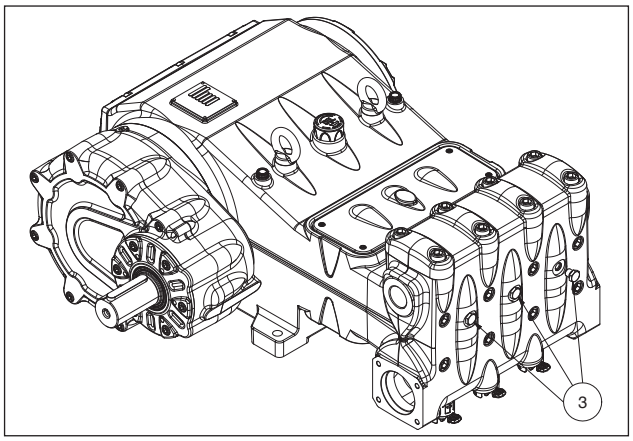


Рис. 11

11 ПРОФИЛАКТИЧЕСКОЕ ТЕХОБСЛУЖИВАНИЕ

Для обеспечения надежной и эффективной работы насоса необходимо соблюдать установленные сроки проведения техобслуживания, указанные ниже в таблице.

ПРОФИЛАКТИЧЕСКОЕ ТЕХОБСЛУЖИВАНИЕ	
Через каждые 500 часов	**Через каждые 1500 часов**
Проверка уровня масла	Замена масла
	Проверка / замена*: Клапаны Седла клапанов Пружины клапанов Направляющие клапанов
	Проверка / замена*: Уплотнения высокого давления Уплотнения низкого давления

* В случае замены соблюдайте указания ***руководства по ремонту***.

12 ПОСТАНОВКА НАСОСА НА ХРАНЕНИЕ

12.1 Правила наполнения насоса антикоррозионной эмульсией или раствором антифриза

Способ наполнения насоса антикоррозионной эмульсией или раствором антифриза с помощью внешнего мембранного насоса, на основе компоновок, изложенных в п. 9.7:

а) Закройте дренажное отверстие фильтра, если оно открыто.
б) Проверьте чистоту соединительной трубы, нанесите консистентную смазку и подсоедините к выпуску высокого давления.
в) Закрепите всасывающую трубу на мембранном насосе; откройте всасывающий патрубок на насосе и закрепите трубу между ним и мембранным насосом.
г) Заполните емкость раствором / эмульсией.
д) Вставьте свободные концы всасывающей трубы и трубы для выпуска высокого давления внутрь емкости.
е) Включите мембранный насос.
ж) Закачивайте эмульсию до тех пор, пока она не начнет выходить из трубы выпуска высокого давления.
з) Продолжайте закачку еще в течение минимум одной минуты; если потребуется усилить эмульсию, можно добавить к раствору, например, Shell Donax.
и) Остановите насос, отсоедините трубу от всасывающего патрубка и закройте его пробкой.
к) Отсоедините трубу от выпуска высокого давления. Очистите, смажьте и закройте пробками оба соединения и трубы.

12.2 Трубы

а) Перед тем как наносить смазку и защиту на трубы в вышеописанном порядке, осушите соединения сжатым воздухом.
б) Накройте полиэтиленом.
в) Не наматывайте их со слишком малым радиусом; убедитесь в отсутствии перегибов.

13 МЕРЫ ПРЕДОСТОРОЖНОСТИ ПРИ МОРОЗЕ



В климатических зонах и в сезоны с возможностью морозов следуйте указаниям, приведенным в главе 12 (см. пар. 12.1).



В случае замерзания, во избежание серьезных повреждений насоса, его категорически запрещается запускать до тех пор, пока контур полностью не оттает.

14 ГАРАНТИЙНЫЕ УСЛОВИЯ

Гарантийный период и условия гарантии приведены в договоре купли-продажи.
В любом случае право на гарантийное обслуживание утрачивается, если:

а) Насос использовался не по согласованному назначению.
б) Насос был подсоединен к электрическому или эндотермическому двигателю с характеристиками, превышающими значения, указанные в таблице.
в) Предусмотренные устройства безопасности были перенастроены или отсоединены.
г) При эксплуатации насоса использовались комплектующие либо запчасти, приобретенные не в компании Interpump Group.
д) Если повреждения возникли по следующим причинам:
   1) неправильная эксплуатация
   2) несоблюдение указаний по техническому обслуживанию
   3) использование не по назначению, указанному в инструкции по эксплуатации
   4) недостаточная производительность
   5) неправильная установка
   6) неправильное расположение либо неправильно подобранные размеры труб
   7) несанкционированные проектные изменения
   8) кавитация.

15 НЕИСПРАВНОСТИ В РАБОТЕ И ВОЗМОЖНЫЕ ПРИЧИНЫ



При запуске насос не производит никаких звуков:
- Отсутствие заливки насоса, насос работает всухую.
- Отсутствие воды на всасывании.
- Клапаны заблокированы.
- Линия нагнетания закрыта и препятствует выходу воздуха, присутствующего в головке насоса.



Неравномерная пульсация насоса:
- Всасывание воздуха.
- Недостаточное питание.
- Изгибы, колена, фитинги вдоль линии всасывания препятствуют свободному прохождению жидкости.
- Всасывающий фильтр загрязнен или слишком мал.
- Если установлен бустерный насос, он обеспечивает недостаточное давление или производительность.
- Не была произведена заливка насоса в связи с недостаточным напором или нагнетание закрыто во время заливки.
- Не была произведена заливка насоса в связи с залипанием какого-либо клапана.
- Износ клапанов.
- Износ прижимных уплотнительных прокладок.
- Неточная работа клапана регулировки давления.
- Неисправности трансмиссии.





Насос не обеспечивает производительности, указанной в паспортных данных / слишком сильный шум:
- Недостаточное питание (см. различные причины, указанные выше).
- Число оборотов ниже значения, указанного на заводской табличке.
- Слишком большая утечка из клапана регулировки давления.
- Износ клапанов.
- Чрезмерные утечки через нажимные уплотнения.
- Кавитация, возникшая в результате:
   1) Неправильного подбора размеров всасывающих труб/слишком малых диаметров.
   2) Недостаточной производительности.
   3) Слишком высокой температуры воды.



Насос не обеспечивает нужного давления:
- Эксплуатационная нагрузка (сопло) превышает или начала превышать мощность насоса.
- Недостаточное число оборотов.
- Слишком большая утечка из прижимных уплотнительных прокладок.
- Неточная работа клапана регулировки давления.
- Износ клапанов.

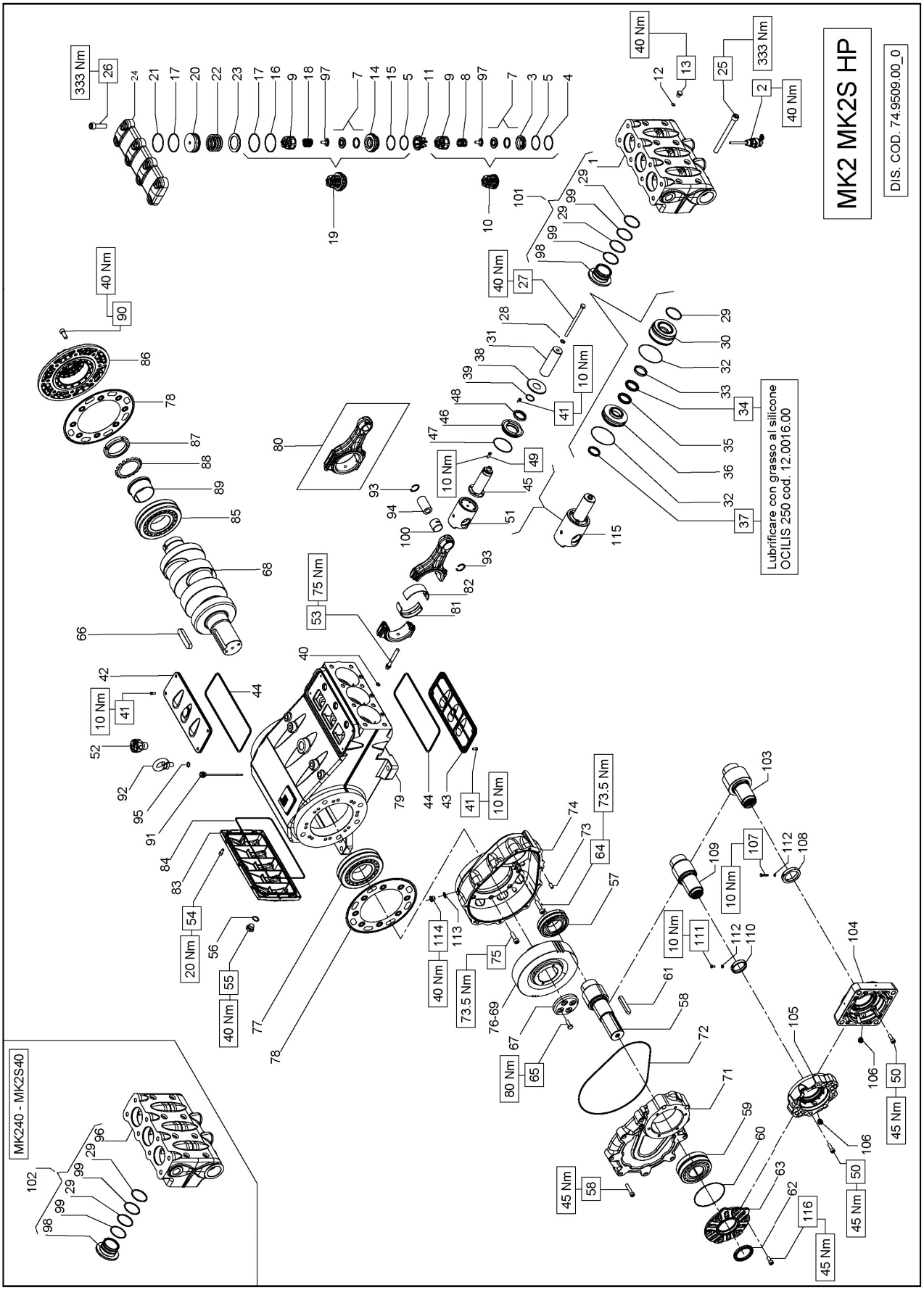


Перегрев насоса:
- Насос работает при избыточном давлении, либо число оборотов превышает значения, указанные в паспортных данных.
- Недостаточный уровень масла в картер насоса, или оно не относится к типу, рекомендованному в главе 7 (см. пар. 7.6).
- Недостаточно выровнены муфта или шкивы.
- Слишком сильный наклон насоса во время работы.



Вибрация или толчки, определяемые на трубах:
- Всасывание воздуха.
- Неточная работа клапана регулировки давления.
- Неисправная работа клапанов.
- Неравномерная работа трансмиссии.

16 ДЕТАЛИРОВОЧНЫЙ ЧЕРТЕЖ И СПЕЦИФИКАЦИЯ ЗАПЧАСТЕЙ



KIT RICAMBIO – SPARE KIT

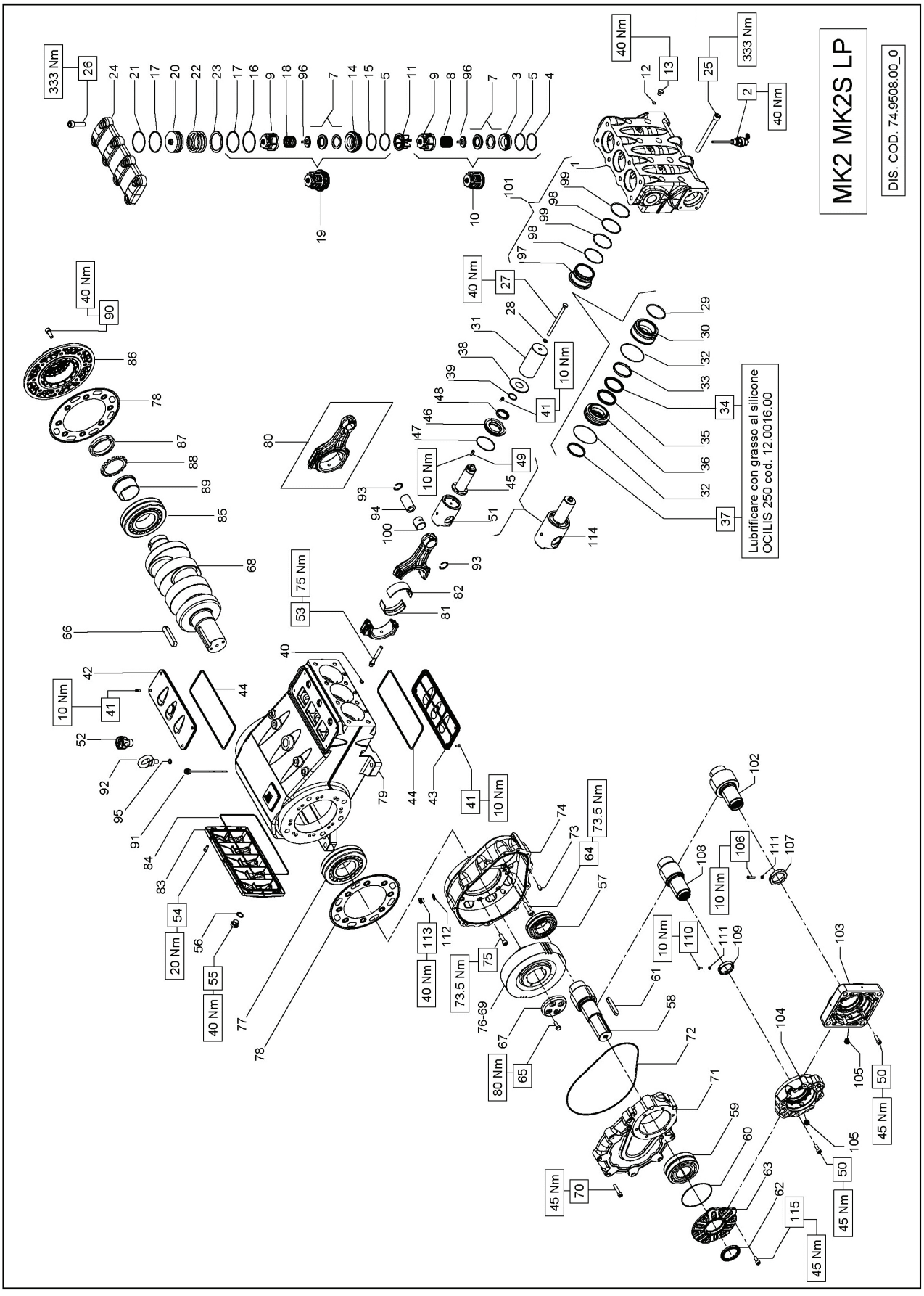
		MK240 - MK2S40 (D.40)	MK245 - MK2S45 (D.45)	MK250 - MK2S50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK240 - MK2S40
MK245 - MK2S45
MK250 - MK2S50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1


MK2 MK2S LP
DIS. COD. 74.9508.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK255 - MK2S55 (D.55)	MK260 - MK2S60 (D.60)	MK265 - MK2S65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2045	KIT 2046	KIT 2047
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2447	KIT 2448	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK255 - MK2S55
MK260 - MK2S60
MK265 - MK2S65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2114.56	CAMICIA PISTONE D. 55		3
	74.2115.56	CAMICIA PISTONE D. 60		
	74.2116.56	CAMICIA PISTONE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1003.92	ANELLO DI TESTA PISTONE D. 55		3
	74.1004.92	ANELLO DI TESTA PISTONE D. 60		
	74.1005.92	ANELLO DI TESTA PISTONE D. 65		
34	90.2873.00	ANELLO TEN. ALT. D. 55.0x70.0x7.5/4.5 HP	A-C	3
	90.2883.00	ANELLO TEN. ALT. D. 60.0x76.0x8.0/4.8 HP	A-C	
	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	
35	90.2875.00	ANELLO RESTOP D. 55.0x70.0x8.0/4.5	A-C	3
	90.2885.00	ANELLO RESTOP D. 60.0x76.0x8.0/4.5	A-C	
	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	
36	74.2120.68	SUPPORTO GUARNIZIONE D. 55		3
	74.2121.68	SUPPORTO GUARNIZIONE D. 60		
	74.2122.68	SUPPORTO GUARNIZIONE D. 65		
37	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		10
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.55	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	73.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK2		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2S		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	74.2150.56	BOCCOLA TESTATA		3
98	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
99	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1201.01	TESTATA CON BOCCOLA		1
112	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
113	98.2086.00	TAPPO G 3/8"x12		2
114	74.6062.01	GR. GUIDA PISTONE		3
115	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
102	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
103	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
107	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
111	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.750 - ELICOIDALE		1
104	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
108	10.0906.55	PIGNONE Z16 R. 3.750 - ELICOIDALE FEMM.		1
109	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
110	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
111	92.2025.00	DADO M6x5 UNI 5588		1

17 СПЕЦИАЛЬНЫЕ ВЕРСИИ

Насос MK2 предлагается также в следующих исполнениях:

- MK2R (для рециркуляционной воды)
- MK2SR (для рециркуляционной воды)
- MK2C (для метанола)
- MK2SC (для метанола)
- MK2SH (с головкой из стали AISI 420)

Ниже приведены указания по выбору и эксплуатации данных насосов в таких исполнениях.
Если не указано иное, придерживайтесь всех указаний, ранее приведенных для насоса MK2 стандартном исполнении.

17.1 Насос в исполнении MK2R-MK2SR

17.1.1 Указания по эксплуатации

Насосы серии MK2R/MK2SR предназначены для работы в атмосфере, не являющейся потенциально взрывоопасной, и для перекачивания воды с большим содержанием твердых частиц% тем самым,, они пригодны для использования систем с рециркуляцией рабочей жидкости.
Долговечность уплотнений поршня напрямую зависит от процентного содержания твердых частиц в среде, как относительно размеров, так и плотности.
Для продления срока службы уплотнений размер зерен взвешенных частиц не должен превышать 200 микрон и макс. 20% в объеме.
Дополнительные указания и общую компоновку системы см. в п. 17.2.6.

17.1.2 Максимальное давление и производительность

Указанные в каталоге параметры считаются максимально возможными характеристиками насоса. **Независимо** от используемой мощности не допускается превышение максимальных значений давления и числа оборотов, указанных в табличке технических данных, без получения надлежащим образом оформленного разрешения со стороны ***Технического отдела*** компании-изготовителя или ***Службы поддержки клиентов***.

17.1.3 Технические характеристики

Модель	Об/мин	Производительность		Давление		Мощность	
		л/мин	об/мин	бар	фунт на кв. дюйм (psi)	кВт	л.с.
MK2R 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2R 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2R 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2R 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2R 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2R 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Модель	Об/мин	Производительность		Давление		Мощность	
		л/мин	об/мин	бар	фунт на кв. дюйм (psi)	кВт	л.с.
MK2SR 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2SR 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SR 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2SR 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2SR 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2SR 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.1.4 Габариты и вес

Габариты и вес насосов см. на схемах в разделе 6.

17.1.5 Питание насоса

Насосы всегда должны устанавливаться ниже подпора, то есть подача воды в них должна всегда осуществляться падением или принудительно; ни в коем случае вода не должна не всасываться с уровня ниже насоса.
Для насосов допустим и минимальный подпор в 1 метр, однако для максимального улучшения объемного КПД и во избежание явлений кавитации высота столба жидкости над входом в насос (NPSH avail), измеренная у всасывающего фланца на головке, должна быть равной или превышать следующие значения.

	$NPSH_r$(м)
MK2R/MK2SR40	4,5
MK2R/MK2SR45	5,5
MK2R/MK2SR50	6,5
MK2R/MK2SR55	7,5
MK2R/MK2SR60	8
MK2R/MK2SR65	9

Для насосов с бóльшими значениями объема цилиндра с Ø поршня 55 - 60 - 65 настоятельно рекомендуется принудительное питание с помощью бустерного насоса во избежание явлений кавитации; это необходимо вследствие геометрии гидравлической части и высокой производительности.
Производительность бустерного насоса должна, как минимум, в два раза превышать номинальную производительность поршневого насоса, указанную на его табличке технических данных, а давление должно составлять от 2 до 3 бар.
Эти требования к питанию нужно соблюдать при любых рабочих условиях.

Бустерный насос нужно всегда запускать до того, как включать поршневой насос. Рекомендуется установить реле давления на линии питания после фильтров для защиты насоса.

17.1.6 Фильтрация

Технический отдел или сервисная служба готовы помочь заказчику рассчитать оптимальное решение для установки.
Ниже приведены компоновки в качестве примера (Рис. 12 и Рис. 12/a).

С регулирующим клапаном с ручным приводом

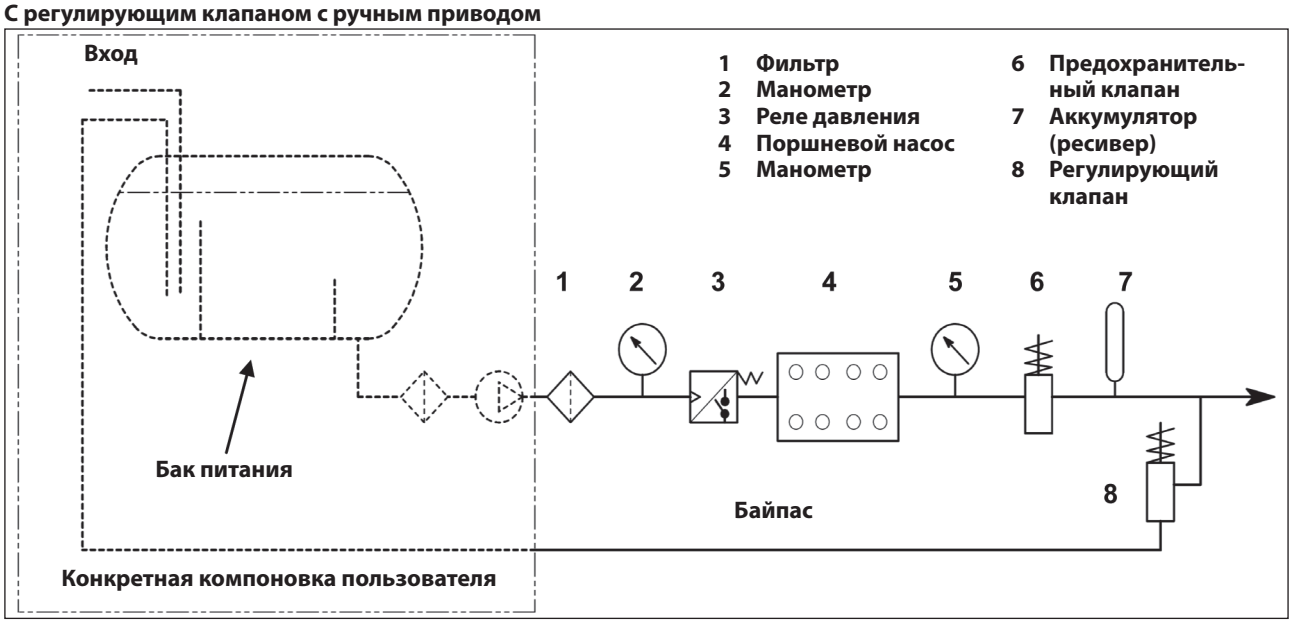


Рис. 12

С регулирующим клапаном с пневматическим приводом

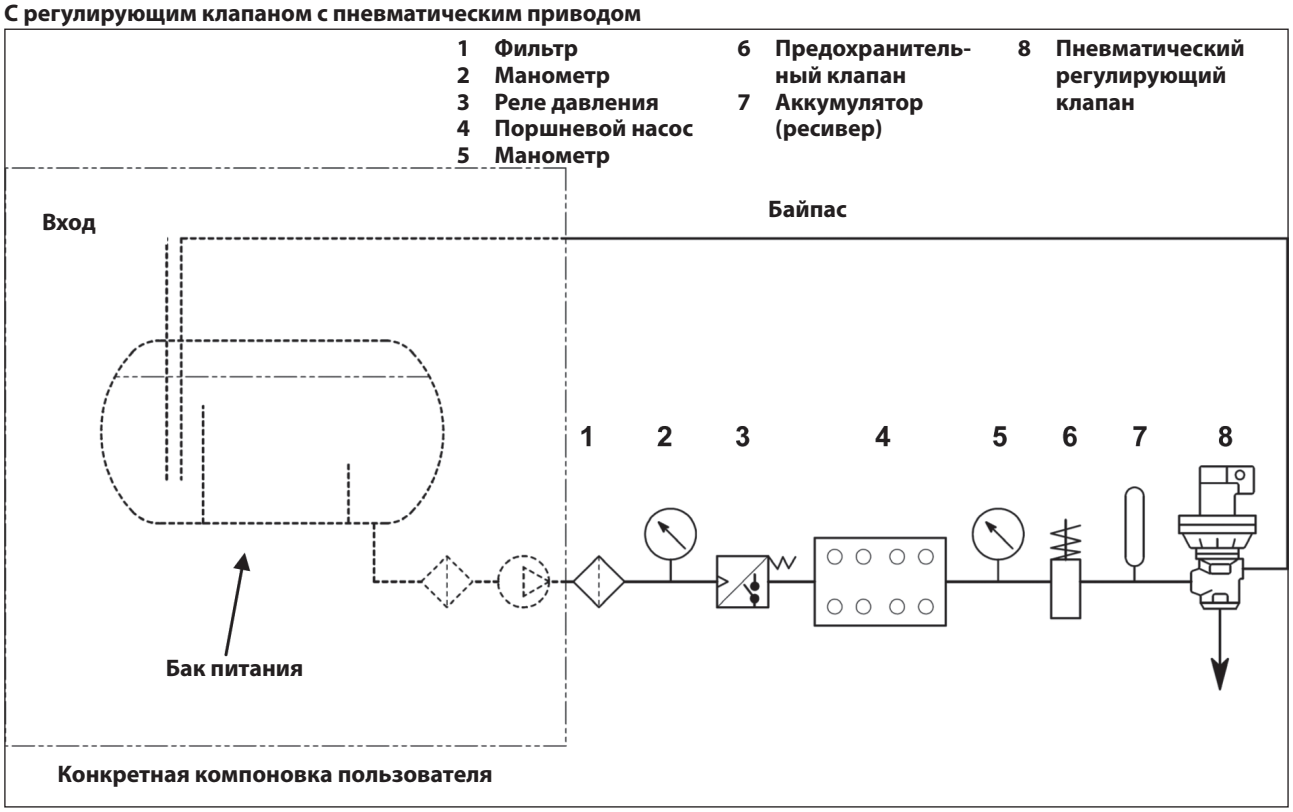


Рис. 12/a

Фильтр нужно установить как можно ближе к насосу, чтобы его было удобно проверять.

Для правильной работы насоса степень фильтрации и скорость скопления фильтрующей системы нужно рассчитывать исходя из оптимального соотношения срока службы гидравлической части насоса и количества рабочих часов между заливками воды. Рекомендуемые оптимальные параметры приведены в пар. 17.1.1.

Завершив пользование насосом в конце рабочего дня, его необходимо промыть водой, не содержащей взвешенных частиц.

17.1.7 Профилактическое техобслуживание

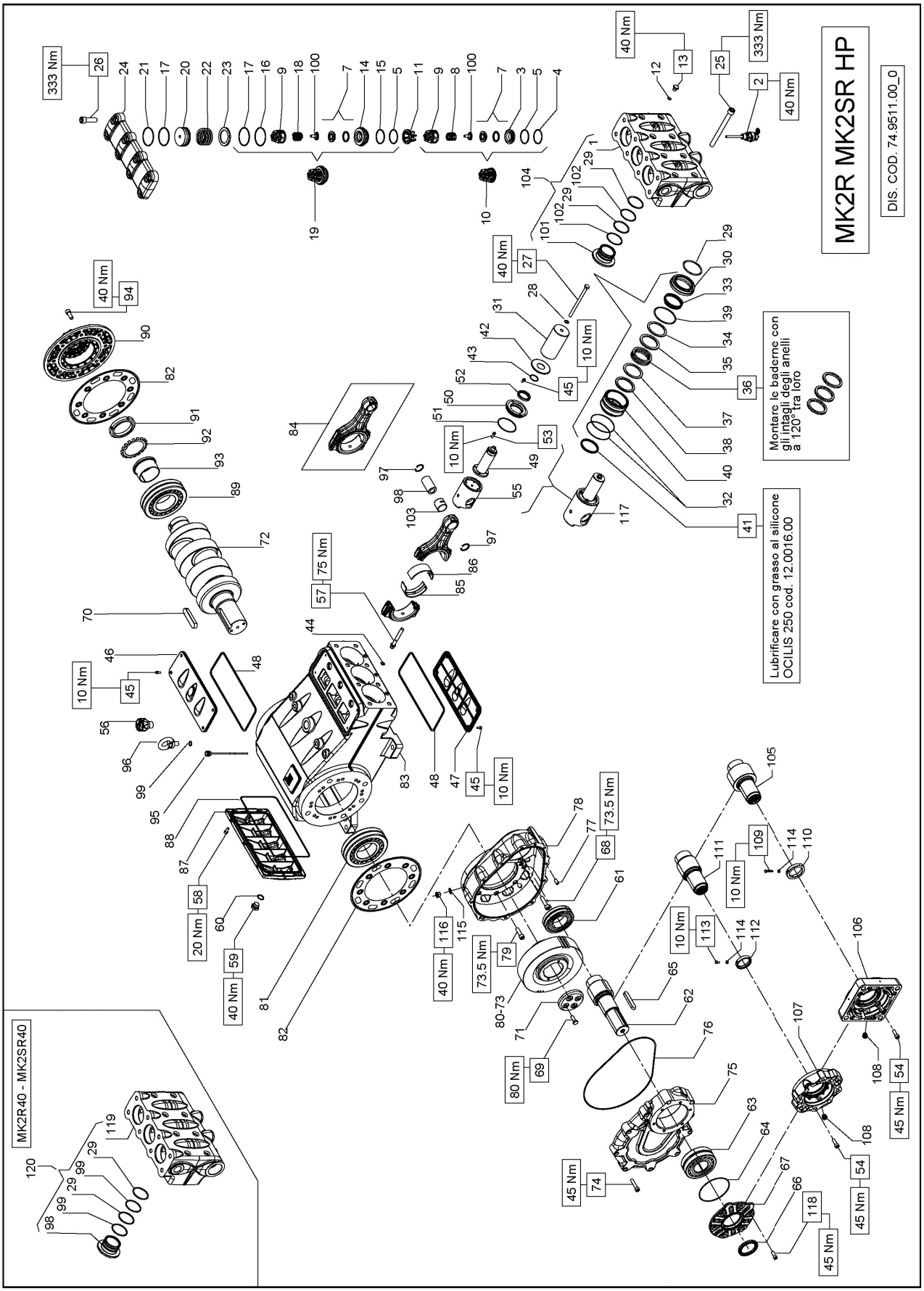
Для обеспечения надежной и эффективной работы насоса необходимо соблюдать установленные сроки проведения технического обслуживания, указанные ниже в таблице.

ПРОФИЛАКТИЧЕСКОЕ ТЕХОБСЛУЖИВАНИЕ	
Через каждые 500 часов	**Через каждые 1000 часов**
Проверка уровня масла	Замена масла
	Проверка / замена*: Клапаны Седла клапанов Пружины клапанов Направляющие клапанов

Уплотнения для ВД - НД: срок службы зависит от степени фильтрации, типа среды и процентного содержания по объему (см. раздел 7).

* В случае замены соблюдайте указания ***руководства по ремонту***.

17.1.8 Деталировочный чертеж и спецификация запчастей

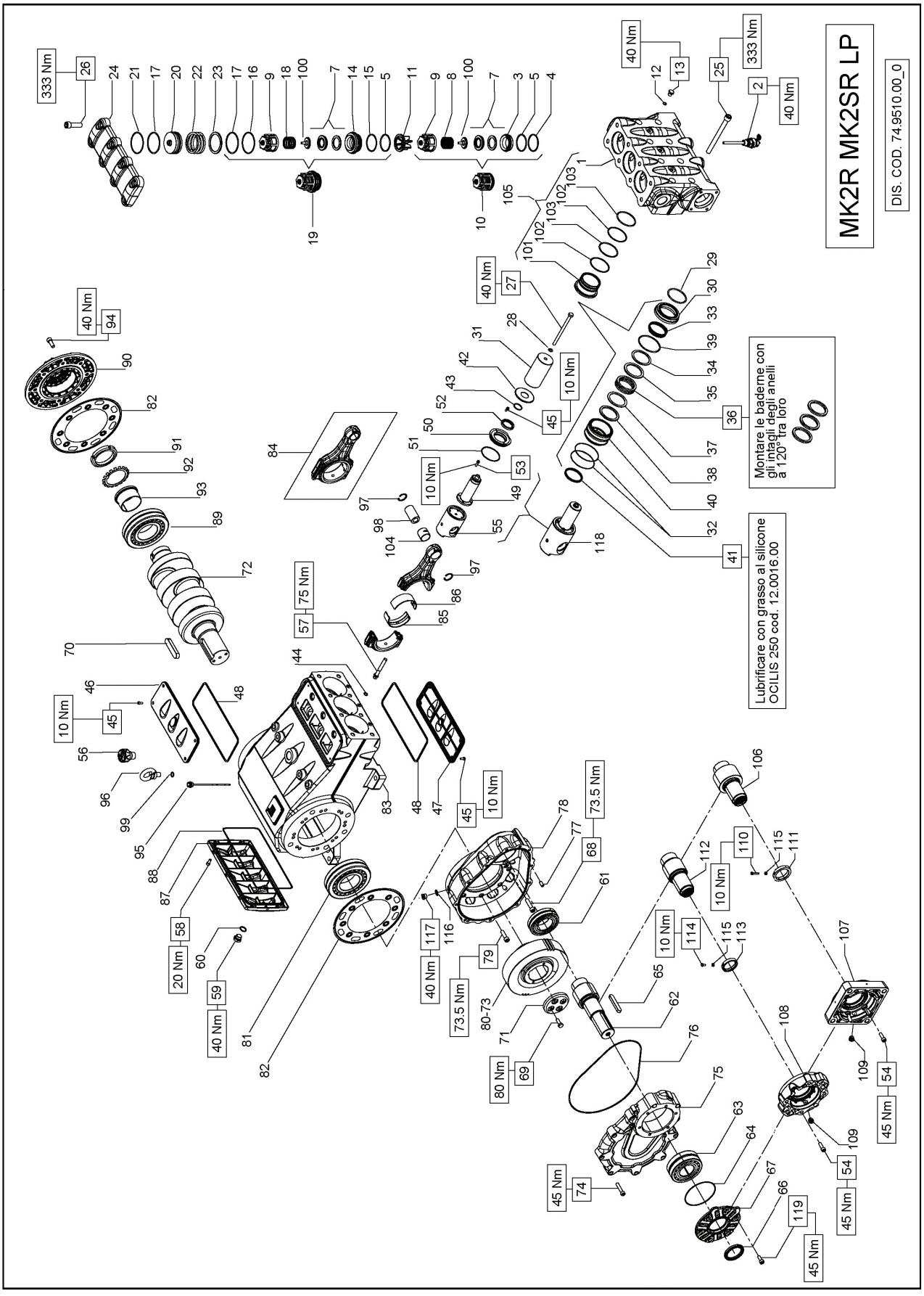


KIT RICAMBIO – SPARE KIT

		MK2R40 - MK2SR40 (D.40)	MK2R45 - MK2SR45 (D.45)	MK2R50 - MK2SR50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2430	KIT 2431	KIT 2100
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2456	KIT 2457	KIT 2458
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R40 - MK2SR40
MK2R45 - MK2SR45
MK2R50 - MK2SR50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.1010.56	ANELLO DI TESTA BADERNE D. 40		3
	74.1011.56	ANELLO DI TESTA BADERNE D. 45		
	74.1006.56	ANELLO DI TESTA BADERNE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	94.7730.00	MOLLA Dm. 51.5x36.0 - D. 40-45		3
	94.7770.00	MOLLA Dm. 61.5x35.0 - D. 50		
34	74.2165.56	ANELLO PER MOLLA D. 40		3
	74.2169.56	ANELLO PER MOLLA D. 45		
	74.2134.56	ANELLO PER MOLLA D. 50		
35	74.2164.72	ANELLO RASCHIATORE BADERNE D. 40	A-C	3
	74.2168.72	ANELLO RASCHIATORE BADERNE D. 45	A-C	
	74.2138.82	ANELLO RASCHIATORE BADERNE D. 50	A-C	
36	90.5655.00	ANELLO TEN. ALT. KC D. 40.0x56.0x19.5	A-C	3
	90.5680.00	ANELLO TEN. ALT. KC D. 45.0x61.0x19.5	A-C	
	90.5700.00	ANELLO TEN. ALT. KC D. 50.0x66.0x19.5	A-C	
37	90.5232.00	ANELLO ANTIEST. D. 40.0x56.0x2.5	A-C	3
	90.5236.00	ANELLO ANTIEST. D. 45.0x61.0x2.5	A-C	
	90.5245.00	ANELLO ANTIEST. D. 50.0x66.0x2.5	A-C	
38	74.2163.60	ANELLO DI SUPPORTO D. 40		3
	74.2167.60	ANELLO DI SUPPORTO D. 45		
	74.2142.60	ANELLO DI SUPPORTO D. 50		
39	90.4110.00	OR D. 61.91x3.53 NBR 70SH 165 - D. 40	A-C	3
	90.4117.00	OR D. 66.27x3.53 NBR 70SH 4262 - D. 45	A-C	
	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - D. 50	A-C	
40	74.2162.56	SUPPORTO BADERNE D. 40		3
	74.2166.56	SUPPORTO BADERNE D. 45		
	74.2146.56	SUPPORTO BADERNE D. 50		
41	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
42	74.2133.51	PARASPRUZZI		3
43	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
44	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
45	99.1837.00	VITE M6x14 UNI 5931		14
46	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
47	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
48	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
49	74.0503.36	STELO GUIDA PISTONE		3
50	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
51	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
52	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
53	99.1884.00	VITE M6x20 UNI 5931		12
55	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
56	98.2333.00	TAPPO CARICO OLIO G1"		1
57	99.4410.00	VITE SERRAGGIO BIELLA		6
58	99.3045.00	VITE M8x18 UNI 5931		6
59	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
60	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
61	91.8700.00	CUSCINETTO A RULLI		1
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	91.8610.00	CUSCINETTO A RULLI		1
64	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
65	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
66	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
67	74.2173.22	COPERCHIO PIGNONE		1
68	99.4335.00	VITE M12x50 UNI 5931		2
69	99.3684.00	VITE M10x30 UNI 5739		4
70	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
71	74.2252.55	FERMO CORONA		1
72	74.0202.35	ALBERO A GOMITI C. 72 - MKSR		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	99.3730.00	VITE M10x50 UNI 5931		10
75	74.2174.13	COPERCHIO RIDUTTORE		1
76	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
77	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
78	74.2175.13	SCATOLA RIDUTTORE		1
79	99.4305.00	VITE M12x40 UNI 5931		6
81	91.8850.00	CUSCINETTO A RULLI		1
82	74.2130.84	GUARNIZIONE LATERALE	C	2
83	74.0101.13	CARTER POMPA		1
84	74.0302.01	BIELLA COMPLETA		3
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
87	74.1600.22	COPERCHIO CARTER	C	1
88	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
89	91.8852.00	CUSCINETTO A RULLI		1
90	74.1500.22	COPERCHIO CUSCINETTO		1
91	93.0800.00	GHIERA DI BLOCCAGGIO		1
92	96.8300.00	ROSETTA DI SICUREZZA		1
93	91.8800.00	BUSSOLA DI PRESSIONE		1
94	99.4280.00	VITE M12x30 UNI 5931		8
95	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
96	93.1050.00	GOLFARE M16 UNI 2947		2
97	90.0697.00	ANELLO D'ARRESTO J35		6
98	97.7450.00	SPINOTTO D. 35x64		3
99	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
100	36.2090.51	GUIDA INTERNA VALVOLA		6
101	74.2151.56	BOCCOLA TESTATA		3
102	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
103	90.9173.00	BOCCOLA PIEDE BIELLA		3
104	74.1206.01	TESTATA CON BOCCOLA D. 40		1
	74.1203.01	TESTATA CON BOCCOLA D. 45-50		
115	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
116	98.2086.00	TAPPO G 3/8"x12		2
117	74.6062.01	GR. GUIDA PISTONE		3
118	99.3668.00	VITE M10x25 5931		6
119	74.1206.15	TESTATA D. 40 HP		1
	74.1207.15	TESTATA D. 40 HP - NPT		
120	74.1206.01	TESTATA CON BOCCOLA D. 40		1
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
105	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
106	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
108	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
110	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
114	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
107	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
108	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
111	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
112	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
113	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
114	92.2025.00	DADO M6x5 UNI 5588		1


MK2R MK2SR LP
DIS. COD. 74.9510.00_0
Montare le baderne con gli intagli degli anelli a 120° tra loro
Lubrificare con grasso al silicone OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT

		MK2R55 - MK2SR55 (D.55)	MK2R60 - MK2SR60 (D.60)	MK2R65- MK2SR65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2102	KIT 2103	KIT 2104
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2453	KIT 2454	KIT 2455
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R55 - MK2SR55
MK2R60 - MK2SR60
MK2R65 - MK2SR65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.1007.56	ANELLO DI TESTA BADERNE D. 55		3
	74.1008.56	ANELLO DI TESTA BADERNE D. 60		
	74.1009.56	ANELLO DI TESTA BADERNE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	94.7770.00	MOLLA Dm. 61.5x35.0 - MK2R MK2SR 55		3
	94.7900.00	MOLLA Dm. 71.5x35.0 - MK2R MK2SR 60-65		
34	74.2135.56	ANELLO PER MOLLA D. 55		3
	74.2136.56	ANELLO PER MOLLA D. 60		
	74.2137.56	ANELLO PER MOLLA D. 65		
35	74.2139.82	ANELLO RASCHIATORE D. 55	A-C	3
	74.2140.82	ANELLO RASCHIATORE D. 60	A-C	
	74.2141.82	ANELLO RASCHIATORE D. 65	A-C	
36	90.5725.00	BADERNE D. 55.0x71.0x19.5	A-C	3
	90.5750.00	BADERNE D. 60.0x76.0x19.5	A-C	
	90.5775.00	BADERNE D. 65.0x81.0x19.5	A-C	
37	90.5267.00	ANELLO ANTIEST. D. 55.0x71.0x2.5	A-C	3
	90.5269.00	ANELLO ANTIEST. D. 60.0x76.0x2.5	A-C	
	90.5275.00	ANELLO ANTIEST. D. 65.0x81.0x2.5	A-C	
38	74.2143.60	ANELLO DI SUPPORTO D. 55		3
	74.2144.60	ANELLO DI SUPPORTO D. 60		
	74.2145.60	ANELLO DI SUPPORTO D. 65		
39	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - MK2R MK2SR 55	A-C	3
	90.4141.00	OR D. 85.32x3.53 NBR 70SH 4337 - MK2R MK2SR 60-65	A-C	
40	74.2147.56	SUPPORTO BADERNE D. 55		3
	74.2148.56	SUPPORTO BADERNE D. 60		
	74.2149.56	SUPPORTO BADERNE D. 65		
41	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
42	74.2133.51	PARASPRUZZI		3
43	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
44	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
45	99.1837.00	VITE M6x14 UNI 5931		14
46	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
47	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
48	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
49	74.0503.36	STELO GUIDA PISTONE		3
50	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
51	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
52	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
53	99.1884.00	VITE M6x20 UNI 5931		12
55	79.0504.43	GUIDA PISTONE		3
	790.0505.43	GUIDA PISTONE +1.0		
56	98.2333.00	TAPPO CARICO OLIO G1"		1
57	99.4410.00	VITE SERRAGGIO BIELLA		6
58	99.3045.00	VITE M8x18 UNI 5931		6
59	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
60	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
61	91.8700.00	CUSCINETTO A RULLI		1
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	91.8610.00	CUSCINETTO A RULLI		1
64	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
65	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
66	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
67	74.2173.22	COPERCHIO PIGNONE		1
68	99.4335.00	VITE M12x50 UNI 5931		2
69	99.3684.00	VITE M10x30 UNI 5739		4
70	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
71	74.2252.55	FERMO CORONA		1
72	74.0202.35	ALBERO A GOMITI C. 72 - MK2R		1
	74.0201.35	ALBERO A GOMITI C. 72 - MK2SR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	99.3730.00	VITE M10x50 UNI 5931		10
75	74.2174.13	COPERCHIO RIDUTTORE		1
76	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
77	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
78	74.2175.13	SCATOLA RIDUTTORE		1
79	99.4305.00	VITE M12x40 UNI 5931		6
81	91.8850.00	CUSCINETTO A RULLI		1
82	74.2130.84	GUARNIZIONE LATERALE	C	2
83	74.0101.13	CARTER POMPA		1
84	74.0302.01	BIELLA COMPLETA		3
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0.50 - SUP.	D	
87	74.1600.22	COPERCHIO CARTER		1
88	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
89	91.8852.00	CUSCINETTO A RULLI		1
90	74.1500.22	COPERCHIO CUSCINETTO		1
91	93.0800.00	GHIERA DI BLOCCAGGIO		1
92	96.8300.00	ROSETTA DI SICUREZZA		1
93	91.8800.00	BUSSOLA DI PRESSIONE		1
94	99.4280.00	VITE M12x30 UNI 5931		8
95	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
96	93.1050.00	GOLFARE M16 UNI 2947		2
97	90.0697.00	ANELLO D'ARRESTO J35		6
98	97.7450.00	SPINOTTO D. 35x64		3
99	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
100	36.2089.51	GUIDA INTERNA VALVOLA		6
101	74.2150.56	BOCCOLA TESTATA		3
102	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
103	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
104	90.9173.00	BOCCOLA PIEDE BIELLA		3
105	74.1201.01	TESTATA CON BOCCOLA		1
116	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
117	98.2086.00	TAPPO G 3/8"x12		2
118	74.6062.01	GR. GUIDA PISTONE		3
119	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
109	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
110	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
111	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
115	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
108	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
109	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
112	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
113	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
114	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
115	92.2025.00	DADO M6x5 UNI 5588		1

17.2 Насос в исполнении MK2C-MK25C

17.2.1 Указания по эксплуатации



Насосы предназначены для работы в атмосфере, не являющейся потенциально взрывоопасной. ***Технический отдел*** и ***Служба поддержки клиентов*** компании-изготовителя предлагают клиентам свою помощь в подборке оптимальных параметров системы

17.2.2 Температура эксплуатации



Допустимая температура рабочей жидкости: -30 °C÷+30 °C. В случае других значений следует обращаться в ***Технический отдел*** или в ***Службу поддержки клиентов***.

17.2.3 Максимальное давление и производительность

Указанные в каталоге параметры считаются максимально возможными характеристиками насоса. **Независимо** от используемой мощности не допускается превышение максимальных значений давления и числа оборотов, указанных в табличке технических данных, без получения надлежащим образом оформленного разрешения со стороны ***Технического отдела*** компании-изготовителя или ***Службы поддержки клиентов***.

17.2.4 Технические характеристики

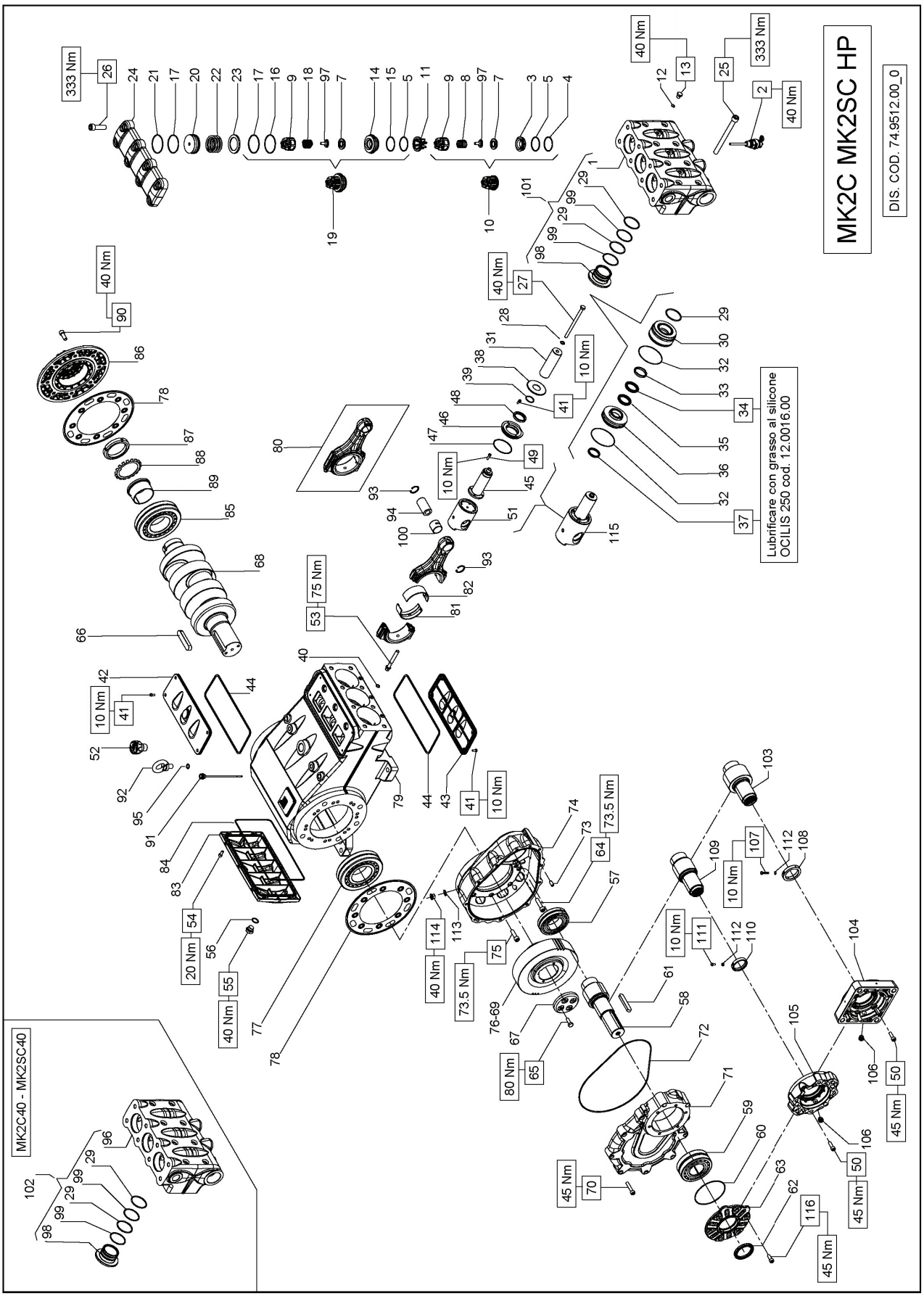
Модель	Об/мин	Производительность		Давление		Мощность	
		л/мин	об/мин	бар	фунт на кв. дюйм (psi)	кВт	л.с.
MK2SC 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2SC 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2SC 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2SC 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2SC 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2SC 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Модель	Об/мин	Производительность		Давление		Мощность	
		л/мин	об/мин	бар	фунт на кв. дюйм (psi)	кВт	л.с.
MK2SC 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2SC 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SC 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2SC 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2SC 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2SC 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.2.5 Габариты и вес

Габариты и вес насосов см. на схемах в разделе 6.

17.2.6 Деталировочный чертеж и спецификация запчастей



KIT RICAMBIO – SPARE KIT

		MK2C40 - MK2SC40 (D.40)	MK2C45 - MK2SC45 (D.45)	MK2C50 - MK2SC50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2258		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2C40 - MK2SC40
MK2C45 - MK2SC45
MK2C50 - MK2SC50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIRAZ.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2118.56	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7222.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7223.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE HP		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE - FLANGIATO		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72 - MKSC		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKC		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1

17.3 Насос в исполнении MK2SH

17.3.1 Указания по эксплуатации



Насос предназначен для работы с фильтрованной водой в условиях атмосферы, не являющейся потенциально взрывоопасной (см. п. 9.7). Другие жидкости могут использоваться только по официальному одобрению ***технического отдела*** или ***службы технической поддержки***.

17.3.2 Температура воды



Максимально допустимая температура воды составляет 40 °C. Тем не менее, возможна эксплуатация насоса при температуре до 60 °C, но только в течение непродолжительного времени. В таких случаях рекомендуется обращаться в ***Технический отдел*** компании-изготовителя или ***в Службу поддержки клиентов***.

17.3.3 Максимальное давление и производительность

Указанные в каталоге параметры считаются максимально возможными характеристиками насоса. **Независимо** от используемой мощности не допускается превышение максимальных значений давления и числа оборотов, указанных в табличке технических данных, без получения надлежащим образом оформленного разрешения со стороны ***Технического отдела*** компании-изготовителя или ***Службы поддержки клиентов***.

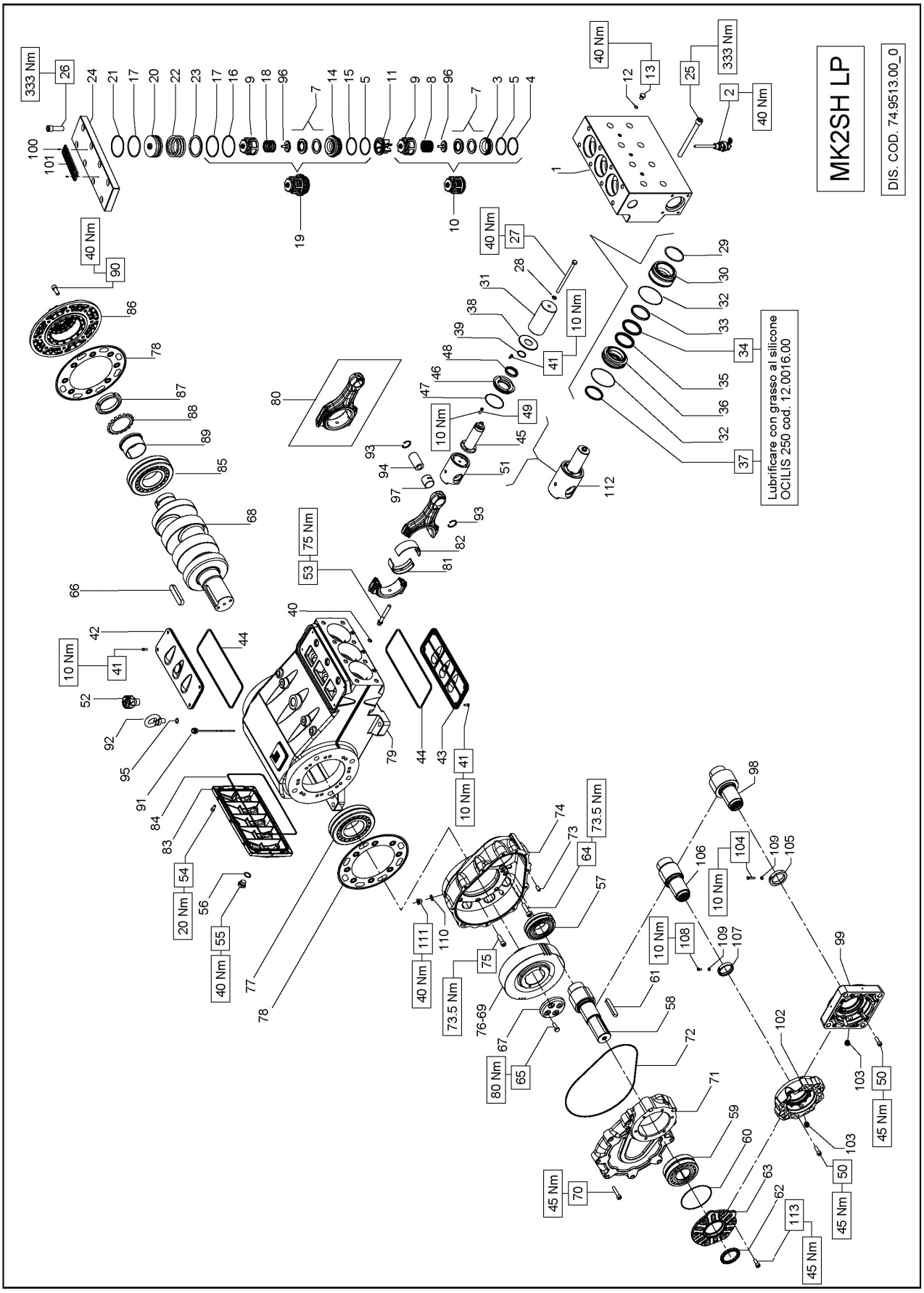
17.3.4 Технические характеристики

Модель	Об/мин	Производительность		Давление		Мощность	
		л/мин	об/мин	бар	фунт на кв. дюйм (psi)	кВт	л.с.
MK2SH 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SH 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.3.5 Габариты и вес

Габариты и вес насосов см. на схемах в разделе 6.

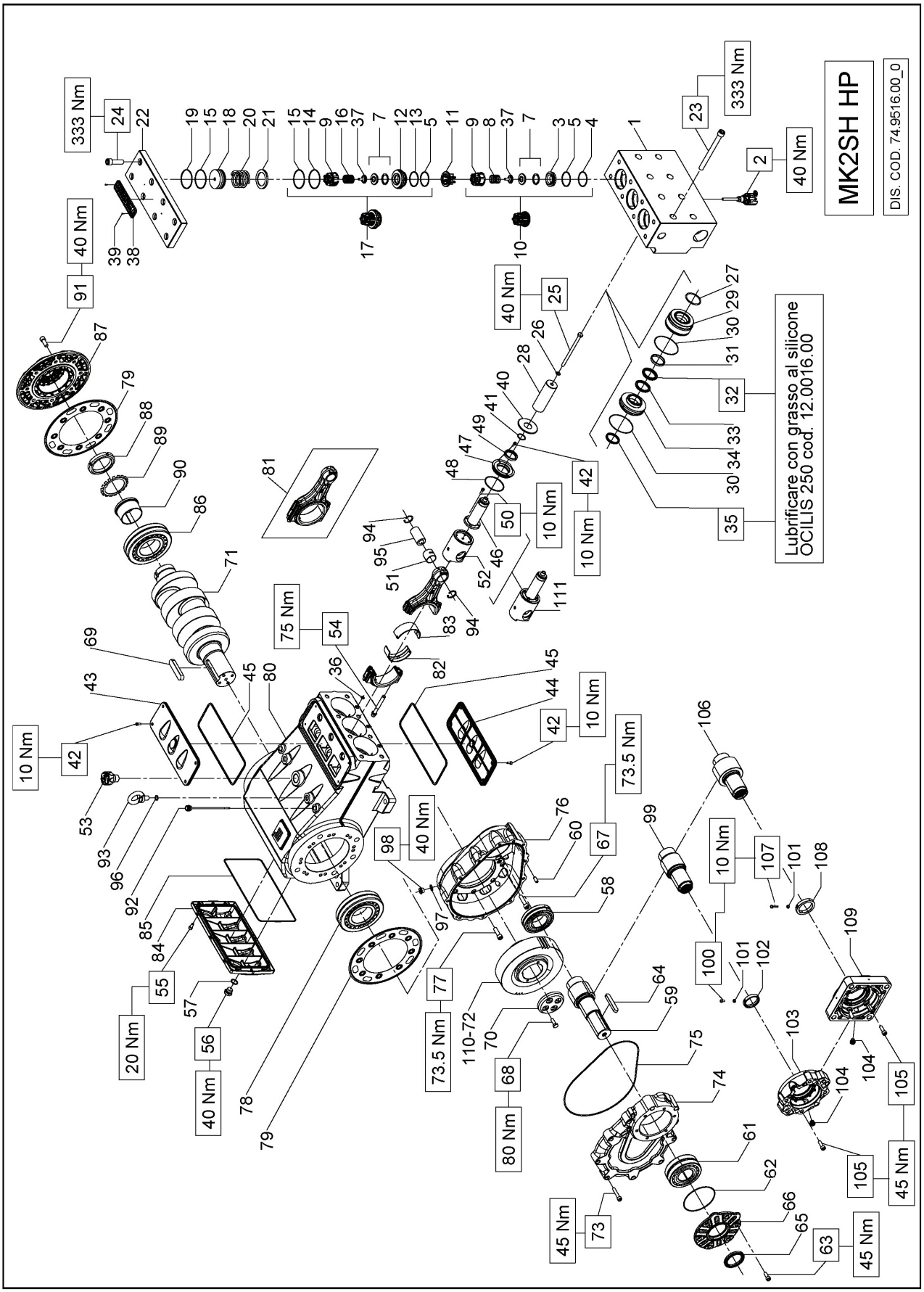
17.3.6 Деталировочный чертеж и спецификация запчастей



KIT RICAMBIO – SPARE KIT		MK2S65H (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2047
B	Kit valvole – Valves kit	KIT 2048
C	Kit tenute complete – Complete seals kit	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)

MK2S65H

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1210.56	TESTATA LP		1
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2161.56	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2116.56	CAMICIA PISTONE D. 65		3
31	74.0405.09	PISTONE D. 65x127		3
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1005.92	ANELLO DI TESTA PISTONE D. 65		3
34	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	3
35	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	3
36	74.2122.68	SUPPORTO GUARNIZIONE D. 65		3
37	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	3
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72		1
69	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		3
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
82	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	90.9173.00	BOCCOLA PIEDE BIELLA		3
100	91.5703.00	RIVETTO AUTOF. D. 2.5x8 UNI 7346		2
101	97.8276.00	MARCHIO PRATISSOLI		1
110	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
111	98.2086.00	TAPPO G 3/8"x12		2
112	74.6062.01	GR. GUIDA PISTONE		3
113	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
98	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
99	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
104	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
105	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
102	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
107	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
108	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
109	92.2025.00	DADO M6x5 UNI 5588		1


MK2SH HP
DIS. COD. 74.9516.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK2SH45 (D.45)
A	Kit tenute pompanti – Plunger packing kit	KIT 2053
B	Kit valvole – Valves kit	KIT 2055
C	Kit tenute complete – Complete seals kit	KIT 2451
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0.25) - 2078 (+0.50)

MK2SH45

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1212.56	TESTATA POMPA D. 45		1
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	36.2069.66	SEDE VALVOLA DI MANDATA		3
13	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
14	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
15	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
16	94.7605.00	MOLLA Dm. 28.5x45.4		3
17	36.7153.01	GR. VALVOLA DI MANDATA	B	3
18	74.2110.70	TAPPO VALVOLE DI MANDATA		3
19	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
20	94.7750.00	MOLLA Dm. 58.0x45.4		3
21	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
22	74.2181.56	COPERCHIO VALVOLE		1
23	99.5222.00	VITE M16x180 UNI 5931		8
24	99.5147.00	VITE M16x55 UNI 5931		8
25	99.3850.00	VITE M10x160 UNI 5737		3
26	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
27	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	3
29	74.2112.56	CAMICIA PISTONE D. 45		3
28	74.0401.09	PISTONE D. 45x127		3
30	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
31	74.1001.92	ANELLO DI TESTA PISTONE D. 45		3
32	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	3
33	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	3
34	74.2118.68	SUPPORTO GUARNIZIONE D. 45		3
35	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	3
36	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
37	36.2090.51	GUIDA INTERNA VALVOLA		6
38	97.8276.00	MARCHIO PRATISSOLI		1
39	91.5703.00	RIVETTO AUTOFILETTANTE D. 2.5x8.0		2
40	74.2133.51	PARASPRUZZI		3
41	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
42	99.1837.00	VITE M6x14 UNI 5931		14
43	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
44	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
45	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
46	74.0503.36	STELO GUIDA PISTONE		3
47	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
48	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
49	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
50	99.1884.00	VITE M6x20 UNI 5931		12
51	90.9173.00	BOCCOLA PIEDE BIELLA		3
52	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
53	98.2333.00	TAPPO CARICO OLIO G1"		1
54	99.4410.00	VITE SERRAGGIO BIELLA		6
55	99.3045.00	VITE M8x18 UNI 5931		6
56	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
57	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
58	91.8700.00	CUSCINETTO A RULLI		1
59	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
60	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
61	91.8610.00	CUSCINETTO A RULLI		1
62	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
63	99.3668.00	VITE M10x25 5931		6
64	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
65	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
66	74.2173.22	COPERCHIO PIGNONE		1
67	99.4335.00	VITE M12x50 UNI 5931		2
68	99.3684.00	VITE M10x30 UNI 5739		4
69	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
70	74.2252.55	FERMO CORONA		1
71	74.0202.35	ALBERO A GOMITI C. 72		1
72	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
73	99.3730.00	VITE M10x50 UNI 5931		10
74	74.2174.13	COPERCHIO RIDUTTORE		1
75	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
76	74.2175.13	SCATOLA RIDUTTORE		1
77	99.4305.00	VITE M12x40 UNI 5931		6
78	91.8850.00	CUSCINETTO A RULLI		1
79	74.2130.84	GUARNIZIONE LATERALE	C	2
80	74.0101.13	CARTER POMPA		1
81	74.0302.01	BIELLA COMPLETA		3
82	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
83	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
84	74.1600.22	COPERCHIO CARTER		1
85	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
86	91.8852.00	CUSCINETTO A RULLI		1
87	74.1500.22	COPERCHIO CUSCINETTO		1
88	93.0800.00	GHIERA DI BLOCCAGGIO		1
89	96.8300.00	ROSETTA DI SICUREZZA		1
90	91.8800.00	BUSSOLA DI PRESSIONE		1
91	99.4280.00	VITE M12x30 UNI 5931		8
92	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
93	93.1050.00	GOLFARE M16 UNI 2947		2
94	90.0697.00	ANELLO D'ARRESTO J35		6
95	97.7450.00	SPINOTTO D. 35x64		3
96	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
97	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
98	98.2086.00	TAPPO G 3/8"x12		2
111	74.6062.01	GR. GUIDA PISTONE		3
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
101	92.2025.00	DADO M6x5 UNI 5588		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
110	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
99	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
100	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
101	92.2025.00	DADO M6x5 UNI 5588		1
102	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
103	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
110	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1

18 ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ КОМПОНЕНТОВ

ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ КОМПОНЕНТОВ

(в соответствии с приложением II Европейской директивы 2006/42/EC)

Производитель **INTERPUMP GROUP S.p.a., расположенный по адресу: Италия, 42049 г. САНТ-ИЛАРИО-Д-ЭНЦА, Виа Э. Ферми, 25,** под собственную исключительную ответственность **ЗАЯВЛЯЕТ**, что следующее изделие:

Наименование:	Насос
Тип:	Возвратно-поступательный поршневой насос для воды высокого давления
Производственная марка:	INTERPUMP GROUP
Модель:	Серия 74 MK2, MK2S, MK2R, MK2SR, MK2C, MK2SC, MK2SH

соответствует требованиям Директивы по машинному оборудованию 2006/42/CE.
Применимые стандарты: UNI EN ISO 12100- UNI EN 809

Вышеозначенный насос соответствует всем основным требованиям безопасности и охраны здоровья, перечисленным в пункте 1 приложения I к Директиве по машинному оборудованию:
1.1.2 - 1.1.3 - 1.1.5 - 1.3.1 - 1.3.2 - 1.3.3 - 1.3.4 - 1.5.4 - 1.5.5 - 1.6.1 - 1.7.1 - 1.7.2 - 1.7.4 - 1.7.4.1 - 1.7.4.2, а соответствующая техническая документация была составлена согласно приложению VII B.

Помимо этого, изготовитель готов, по обоснованному требованию, предоставить копию технической документации, относящейся к насосу; сроки и способ передачи документов подлежат отдельному согласованию.

Насос запрещается запускать в эксплуатацию до тех пор, пока установка, составной частью которой он является, не будет признана отвечающей требованиям соответствующих директив и/или норм.

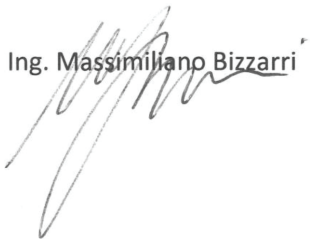
Ответственный за составление технической документации:

Имя: Маурицио Новелли

Адрес: INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 -
42049 - S. ILARIO D'ENZA (RE) - Italia
(г. Сант-Иларио-д-Энца, провинция Реджо-Эмилия, Италия)

Ответственное лицо:

Реджо-Эмилия, январь 2017 г.



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1 介绍

本手册介绍了修理MK2系列泵的说明，在对泵进行任何操作之前，必须仔细阅读并理解。
正确的使用和适当的维护决定了泵浦的正常运作和寿命。
Interpump集团对忽略和藐视本手册叙述的规则所造成的损坏概不负责。
在收货时，请检查泵浦的完整性。
如有疑问，请在安装和启动泵浦前先予以说明。

2 符号说明

进行任何操作前，请仔细阅读本手册中的说明。


警告符号


进行任何操作前，请仔细阅读本手册中的说明。


危险符号
触电危险。


危险符号
请佩戴防护面具。


危险符号
请佩戴护目镜。


危险符号
进行任何操作前，应先佩戴手套。


危险符号
穿戴合适的工作鞋。

3 安全

3.1 安全综合警告

泵浦及高压系统使用不当或不遵守安装及维护保养规则会造成人员和/或财物的严重损害。任何组装或使用高压系统的人员必须具备相当的知识，了解需要安装/使用的部件的特性，采取一切可能的保护的措施来保证在任何条件下的运作都能够达到最高的安全标准。无论安装人员或是操作人员都不得忽视任何防范措施。

3.2 高压系统必备的安全规则

1. 压力管路必须具备安全阀。
2. 高压部件尤其是一直在室外运行的系统，均必须使用适当的保护设施来抵御雨水、低温和高温。
3. 系统的电气部分除了需要具备防溅水的设施外，还必须符合现行专用条款的规定。
4. 高压管道必须具有适当的尺寸来适应设备运行的最高压力，并应在管道制造商指出的工作压力范围以内使用。对于系统中其他的高压附件同样必须遵守上述的规则。
5. 高压管道必须装设保护层并应固定在一个坚固的架构中，以避免在爆裂或受损时出现弹飞的现象。
6. 泵浦的传动系统(接头、带轮和皮带以及辅助动力接头)处必须装设适当的护盖。

3.3 作业期间的安全



高压系统运行的环境或区域并具备清晰的指示，在指示的范围或指定的区域严禁无关人员靠近。授权进入该区域的人员必须先得到在该区域就高压系统运作不良时会出现的危险的防范措施教育。
启动系统前，操作员必须先检查如下：

1. 高压系统是否已经得到正确供电，请参阅第9章的9.5.
2. 泵浦吸入端的滤清器必须洁净；必须安装能够指示阻塞状况的任何仪器。
3. 电气部分应得到适当的保护及状况良好。
4. 高压管道不存在明显的磨蚀迹象及接头排列整齐。
5. 视乎用途、使用和环境条件的不同，泵浦在使用期间其外表有可能会达到极高的温度。因此，建议避免碰触酷热的部分。

作业前和期间的任何故障或疑问应立即向有关人员反映。
出现类似情况时，压力必须立即归零并停顿高压系统。

3.4 喷枪使用安全规则



1. 在任何情况下，操作人员和直接相关的第三者均必须把安全放在首位；必须对自身的工作抱有认真负责的态度。
2. 操作人员必须一直佩戴带有护目镜的头盔、防水工作服和适合作业类型及在潮湿地面上具有相当抓地力的工作鞋。

备注：*合适的工作服具有抵御喷水的作用，但不一定适合能够适合抵御直接喷射的水柱或近距离的喷射。此情况下，应采取其他的预防措施。*

3. 必须养成组成起码有两个人的工作团队，这样可以在需要的时候可以马上提供帮助和在长时间和繁重的工作时相互替换。

4. 水柱喷射的工作范围内不能存在能够被高压水柱意外喷倒而造成损坏和/或造成危险状况的物件。
5. 水柱只能对准工作区域，即使在试验和预防性检查期间亦然。
6. 操作人员必须注意被水柱清除的物件的飞溅路径。如有需要，操作人员必须配备挡板来保护意外暴露的身体部分。
7. 在作业期间，操作人员不得分散注意力。需要进入作业区域的工作人员必须等待操作员在注意到旁人存在并已停止其作业后方可进入。
8. 出于安全的缘故，团队的所有成员相互间均必须清楚领会对方的意图，以避免理解上的错误出现。
9. 只有在团队的所有成员各就各位，且操作人员把喷枪对准工作区域后才能启动高压系统并接通压力供给。

3.5 系统维护的安全信息

1. 高压系统的维护必须按照制造商指定的期限进行，根据法律规定，这个任务是团队整体的职责所在。
2. 维护操作必须一直由具资格和经授权的人员进行。
3. 各部件的安装与拆卸只能由授权人员利用合适的工具进行，以免损坏部件，尤其是系统的连接部分。
4. 为了保证系统的总体可靠性和安全，应一直使用原厂零配件。

4 泵浦识别

每个泵浦均备有一块识别标牌，上面标有：

- 泵的型号和版本
- 系列号
- 最高转数
- 吸收功率Hp - kW
- 以巴为单位的压力 - P.S.I.
- 流量l/min - Gpm

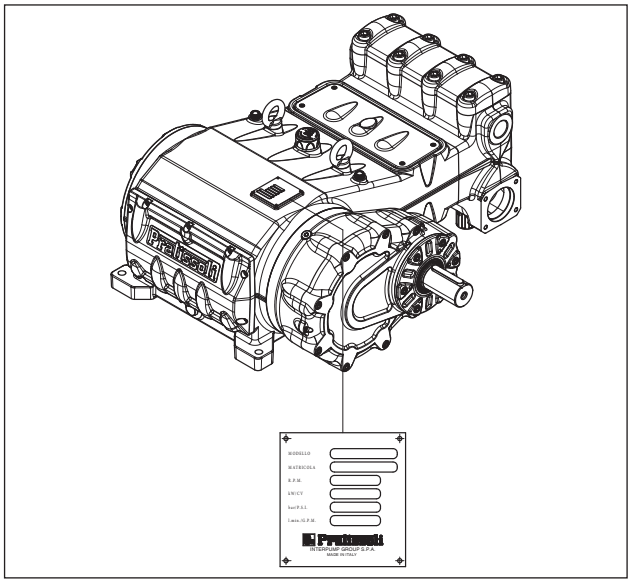


图 1

订购配件时，应说明型号、版本和系列号。

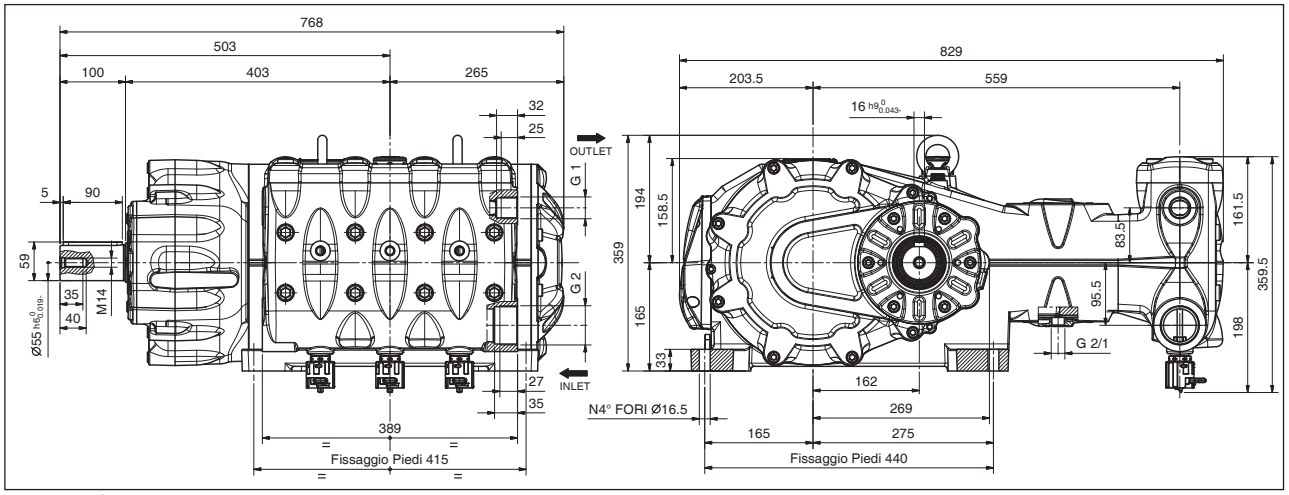
5 技术特性

型号	转/分	流量		压力		功率	
		l/min	Gpm	巴	psi	kW	Hp
MK2 40	1500	153	40.4	400	5800	159	117
	1800	149	39.4	400	5800	155	114
MK2 45	1500	193	51.0	300	4350	150	110
	1800	189	49.9	300	4350	147	108
MK2 50	1500	239	63.1	250	3625	155	114
	1800	233	61.6	250	3625	151	111
MK2 55	1500	289	76.4	200	2900	150	110
	1800	282	74.5	200	2900	146	107
MK2 60	1500	343	90.6	170	2465	151	111
	1800	335	88.5	170	2465	148	109
MK2 65	1500	403	106.5	150	2175	157	115
	1800	394	104.1	150	2175	154	113

型号	转/分	流量		压力		功率	
		l/min	Gpm	巴	psi	kW	Hp
MK2S 40	1500	184	48.6	400	5800	140.5	191
	1800	183	48.3	400	5800	140	190
	2200	182	48.1	400	5800	139	189
MK2S 45	1500	233	61.6	300	4350	134	182
	1800	232	61.3	300	4350	133	181
	2200	231	61.0	300	4350	132	180
MK2S 50	1500	288	76.1	250	3625	137.5	187
	1800	286	75.6	250	3625	137	186
	2200	285	75.3	250	3625	136	185
MK2S 55	1500	349	92.2	200	2900	133	181
	1800	346	91.4	200	2900	132	180
	2200	344	90.9	200	2900	132	179
MK2S 60	1500	415	109.6	170	2465	135	183
	1800	412	108.9	170	2465	134	182
	2200	410	108.3	170	2465	133	181
MK2S 65	1500	487	128.7	150	2175	140	190
	1800	484	127.9	150	2175	139	189
	2200	481	127.1	150	2175	137.5	187

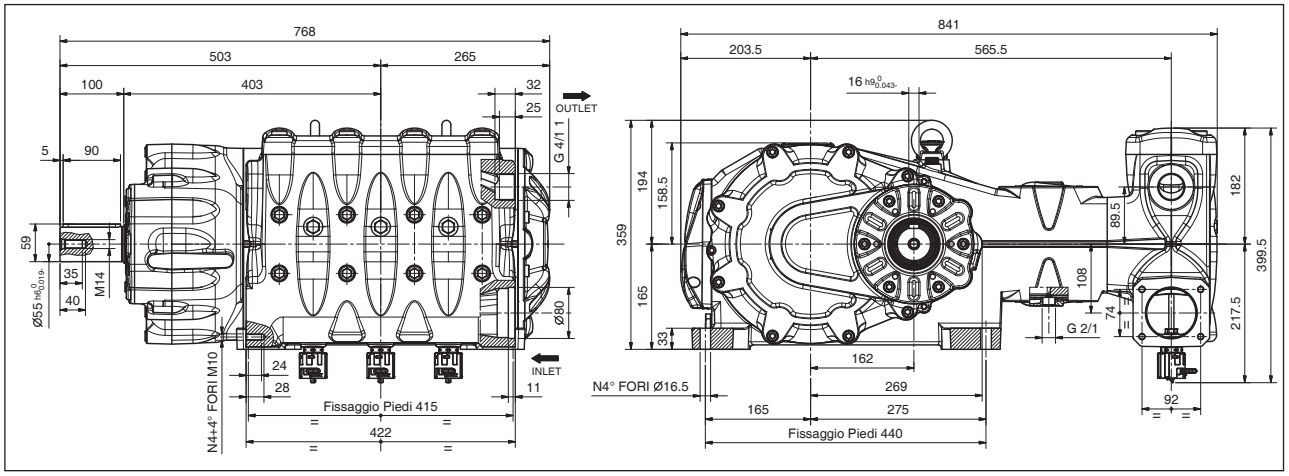
6 尺寸和重量

柱塞Ø为40、45和50的泵浦的尺寸和重量请参阅图2。



干重398公斤。 图2

柱塞Ø为55、60和65的泵浦的尺寸和重量请参阅图2/a。



干重411公斤。 图2/a

对于H.P.版并带有Hydraulic Pack预备的泵浦的尺寸请参阅图2/b。

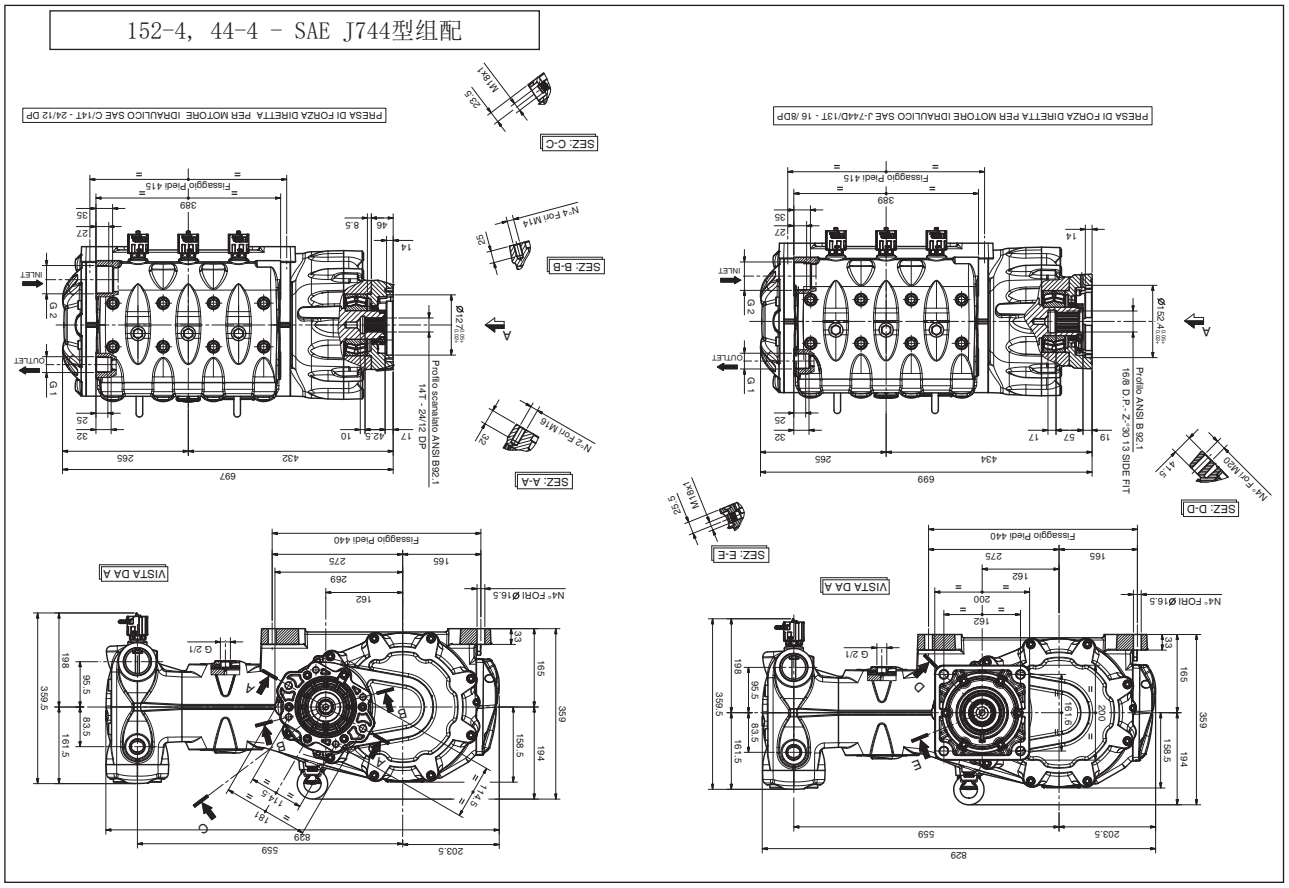


图2/b

对于L.P.版并带有Hydraulic Pack预备的泵浦的尺寸请参阅图2/c。

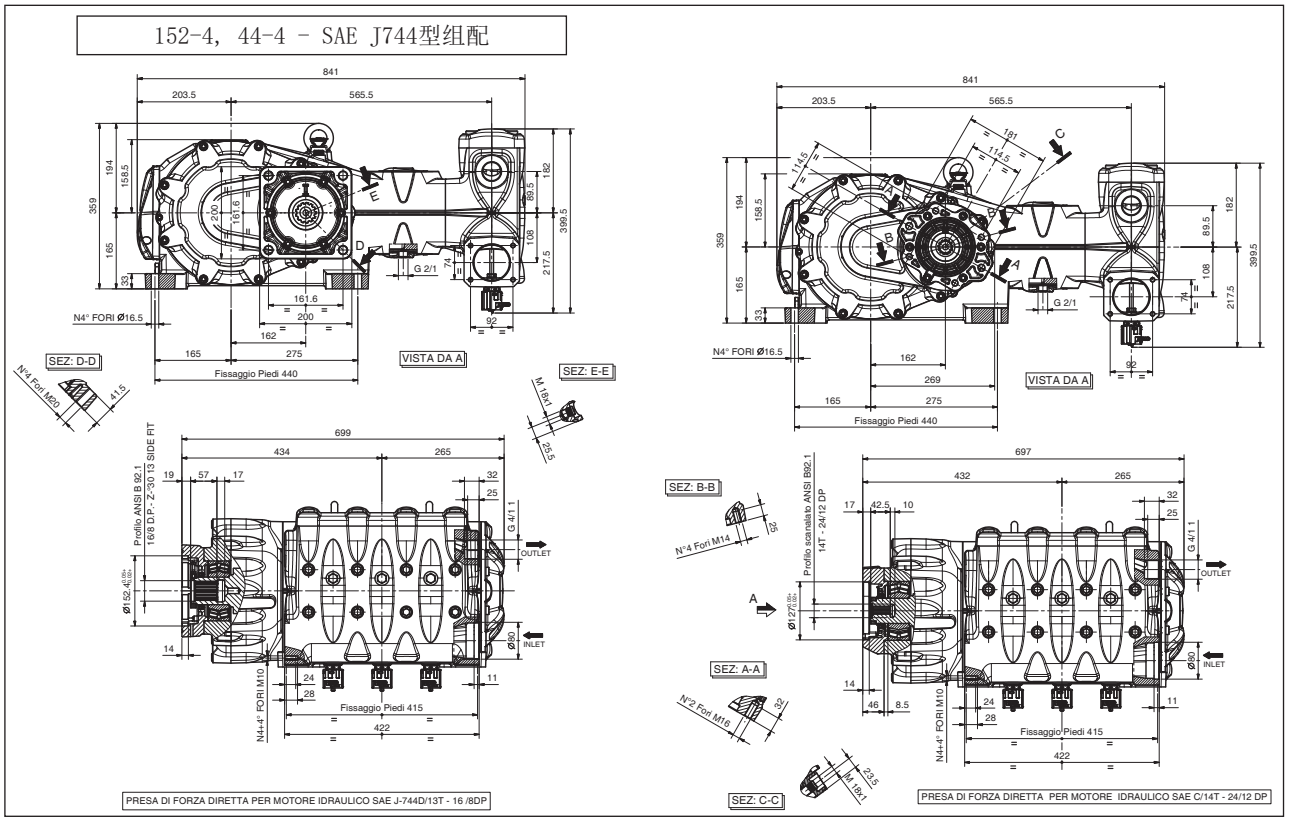


图2/c

7 用途

该泵设计用于在无潜在爆炸性的环境中使用过滤水运行（请参阅9.7）。
其他液体只能在***技术部***或***售后服务中心***的核准下使用。

7.1 水温

允许的最高水温为40° C。 但是，可以在高达60° C的温度下使用水泵，但只能在短时间内使用。在这种情况下，建议向***技术部*** 或 ***客户服务部*** 咨询。

7.2 流量和最高压力

目录中指出的性能是指泵浦能够提供的最高性能。与使用功率**无关**，如没有得到***技术部***或***售后服务中心***的许可，不得超过标牌上标出的压力和最高转数。

7.3 最低转数

此类泵浦允许的最低转数是300转/分。任何其他与性能表(请参阅第5章)中指出的转数不同的其他转数均必须先得到***技术部***或***售后服务中心***的许可。

7.4 声音

声压测试是按照欧洲议会和标准2000/14和议案(机器指令)及EN-ISO 3744-2010，利用1类仪器进行。
声压最终测试必须在完整的机器/系统上进行。
如操作人员处于1米以内的距离，必须按照现行的准则佩戴声音保护装置。

7.5 震动

数值的测试必须在泵浦安装在机器上，并以客户指出的性能下运作时进行。数值必须符合现行的准则。

7.6 建议使用的润滑油品牌和种类

泵的输出类型油适用于0° C至30° C的环境温度。
以下的表格指出了几种建议的润滑油类型；这些油料是提高抗腐蚀保护和抗疲劳(符合DIN 51517的第2部分)的加剂产品。
可使用汽车齿轮润滑剂SAE 85W-90作为替代。

制造商	润滑油
Agip	AGIP ACER220
ARAL	Aral Degol BG 220
BP	BP Energol HLP 220
Castrol	CASTROL HYSPIN VG 220 CASTROL MAGNA 220
DEA	Falcon CL220
elf	ELF POLYTELIS 220 REDUCTELF SP 220
Esso	NUTO 220 TERESSO 220
FINA	FINA CIRKAN 220
FUCHS	RENOLIN 212 RENOLIN DTA 220
Mobil	Mobil DTE Oil BB
Shell	Shell Tellus Öl C 220
SRS	Wintershall Ersolon 220 Wintershall Wiolan CN 220
TEXACO	RANDO HD 220
TOTAL	TOTAL Cortis 220

通过配有最小①和最高图3刻度的专用液面杆来检查油料液面。
如有需要应从油盖③，图3处进行添加。
润滑油液面的正确检查是在泵浦处于环境温度下时进行，润滑油的更换可在泵浦于环境温度，通过拆下塞子（②，图3）来进行。
油料检查和更换应按照第11章的表格中指出的内容进行。
需要的油量大约在13.5公升左右。

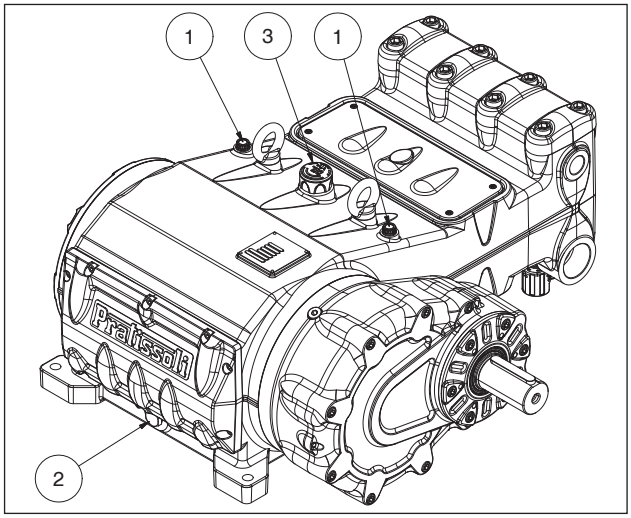


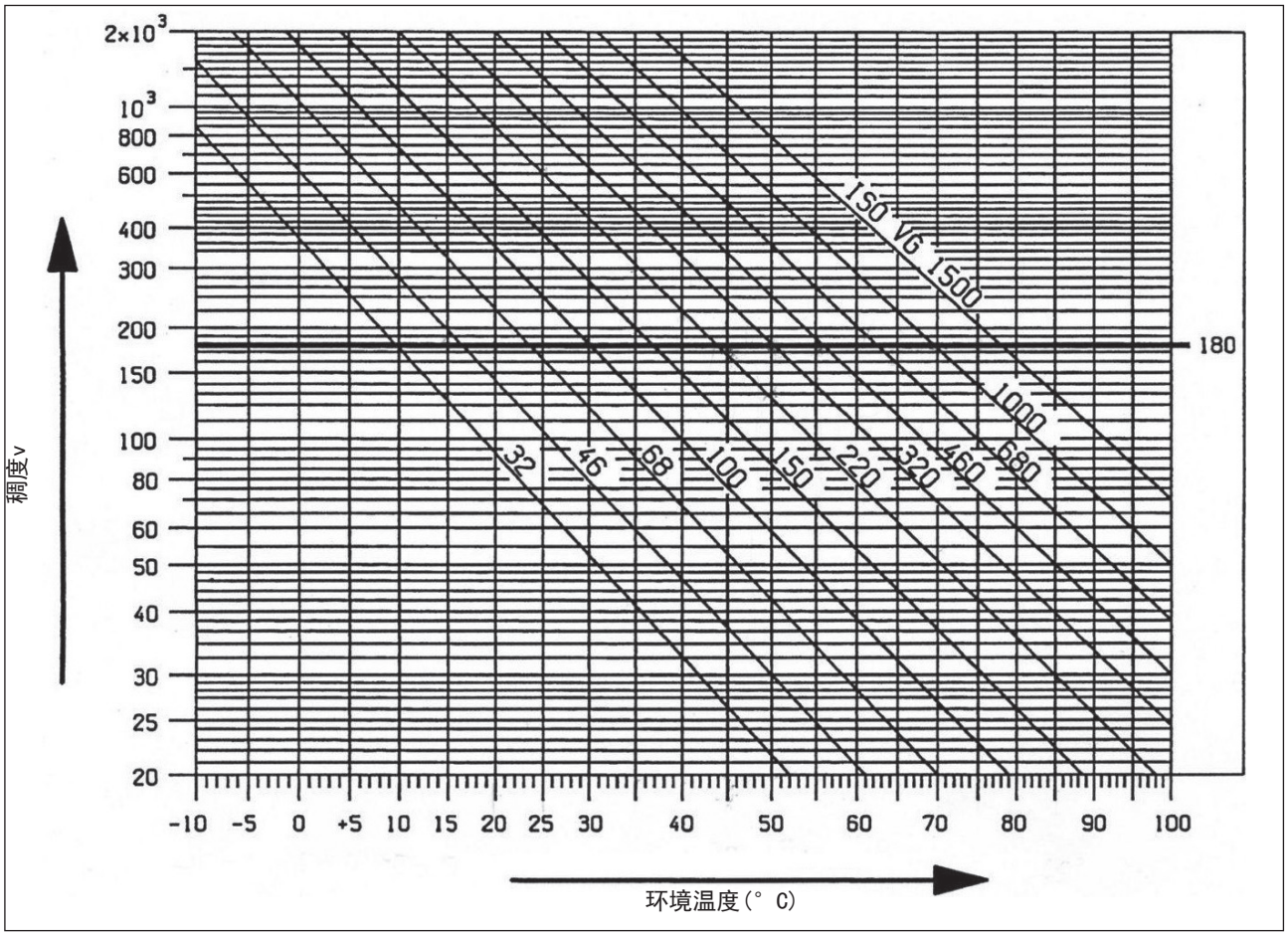
图3

无论如何，油料必须每年更换一次，原因是润滑油会氧化而变质。

对于环境温度在0° C到30° C以外的温度，请参阅随后图表的内容进行，注意，油料的稠度必须起码有180 cSt。

稠度/环境温度图表

mm^2/s = cSt



排出的油料必须用容器装纳并送交专门的收集点进行弃置。
严禁把废油料弃置在生活环境之中。

8 接头和连接

泵浦配备有：

2个吸取口“IN”：

G2″(对于柱塞Ø 40、45、50的版本)

Ø80 mm(对于柱塞Ø 55、60、65的版本)

在两个连接口上进行连接对良好运行毫无影响；不使用的进气口应严密封闭。

2个出口“OUT”：

G1″(对于柱塞Ø 40、45、50的版本)

G1 ¼″(对于柱塞Ø 55、60、65的版本)

1个“DRAIN”排放接口：G1/2″孔，位于下盖上，用于监控由于压力密封圈磨损而造成的漏水。如存在泄漏，请参阅*维修手册*。

该孔必须一致保持打开(请参阅图4和图4/a)。

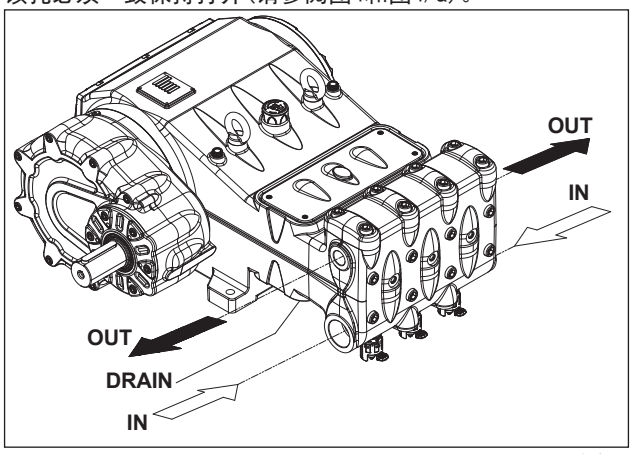


图4

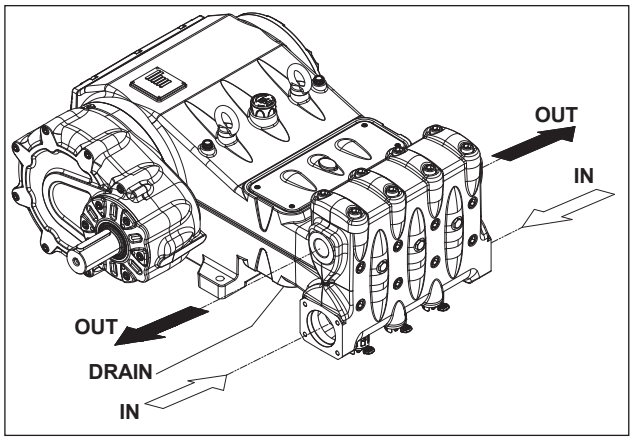


图4/a

9 泵浦安装

9.1 安装

必须使用适当的Ø16.5穿孔支撑脚将泵固定在水平位置。
底座必须完全平坦和硬度适中，以免对连接轴线产生变动和错位的影响。
泵浦上备有两个便于安装的支撑架，如下图所示。

不得拆除支撑架。

吊环螺栓的设计只能承受泵浦，因此，禁止在螺栓添加额外的负载。



更换泵壳上带有排油孔的注油孔塞。
即使在组件安装后，也应该可以触及注油塞。

泵轴(PTO)不能直接在发动机组组上进行刚性连接。
加以使用以下的传动连接：

- 弹性联轴节。
- 万向节(注意制造商建议的最大工作角度)。
- 皮带；正确的使用请联系*技术部*或*售后服务中心*。

9.2 转动方向

PTO的转动方向以减速箱上的箭头指示。
面向泵浦顶部，转动方向应如图5般。

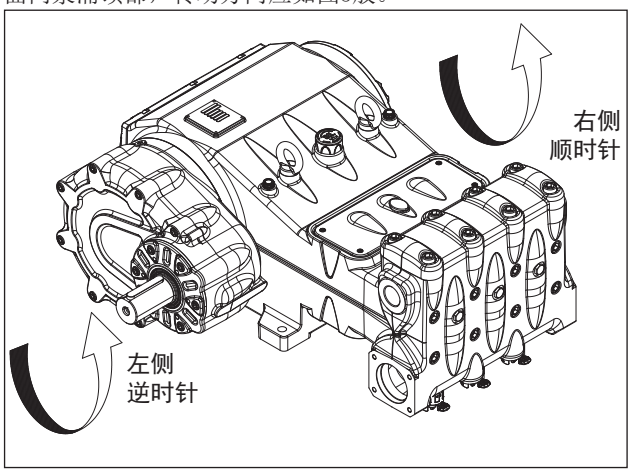


图5

9.3 减速机更换版本和定位

泵浦被定义为右版，当：
观察泵浦正前方上部，泵轴的PTO轴应在右侧。
泵浦被定义为左版，当：
观察泵浦正前方上部，泵轴的PTO轴应在左侧(请参阅图5)。

版本只能由授权和专业人员，严格按照*维修手册*的指示来进行。

此外，可如图6般指示，在左、右两侧的5个不同位置上定位减速器。

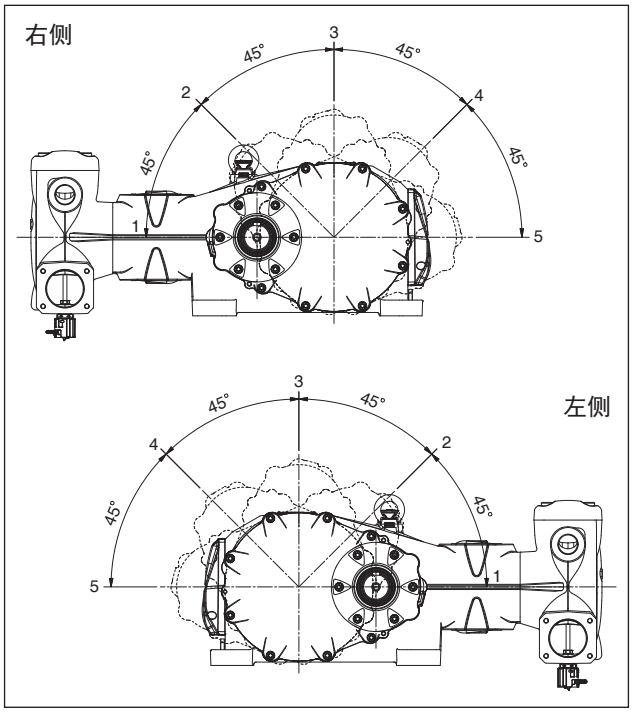


图6

减速机的位置只能由经授权的专业人员修改，严格按照*维修手册*中的说明进行操作。

9.4 液压连接

为了让设备与泵浦产生的震动隔绝，建议在泵浦附近(入口和出口)进行软管连接。入口段的一致性应可阻止泵浦产生的负压而造成的变形。

9.5 泵浦供给

MK2泵必须始终安装在头部下方，即它们必须通过扬程或强制进给来接收水，并且不要从较低的水平吸入水。
泵浦吸入压头的允许误差可达1米，即使如此，为了获得最佳的容积效率和避免气蚀，泵头法兰上测得的可用正吸入压头(NPSH avail)必须等于或大于以下数值：

	$NPSH_r$ (m)
MK240	4.5
MK245	5.5
MK250	6.5
MK255	7.5
MK260	8
MK265	9

对于排量较大的55 - 60 - 65 MK2泵，考虑到液压部件的几何形状和相当大的流速，强烈建议通过增压泵强制供水，以避免空化现象。
增压泵必须具备起码双倍于柱塞泵的标称流量，压力在2-3巴之间。
这个供给条件在任何作业转数下均必须得到遵守。

增压泵的起动必须一直在柱塞泵起动之前。
建议在过滤器的下游的供给线路上安装一个压力开关来保护泵浦。

9.6 吸入管线

为了确保泵浦的良好运作，吸入管路必须具备以下特性：

1. 如9.9 一节中的图表所示，最小内径在任何情况下都等于或大于泵头的压力。

在管道线上，应避免局部变窄，否则会造成载荷损失而导致气蚀。禁止存在90° 的弯角、与其他管路的接头、瓶颈、边坡、反“U”型弯角和“T”型连接。

2. 布局应可避免气蚀现象。
3. 结构结实，可确保长期的完好密封。
4. 避免泵浦停顿时出现排空现象，即使部分排空亦然。
5. 请勿使用3或4路的油压接头、适配器和扣压接头等。这些物品有可能会影响泵浦的性能。
6. 请勿安装文氏管或清洁剂喷射器。
7. 避免使用底阀和其他类型的单向阀。
8. 请勿把旁通阀排放口直接连接在入口上。
9. 在储罐内装设适当的隔板，以避免来自旁通管路和储罐供给管路的水流在泵浦吸入口附近产生漩涡和涡流。
10. 确保安装在泵浦上的吸入管路内部洁净。
11. 在柱塞泵吸入接头附近、过滤器的下游安装一个压力计来检查增压泵的压力。

9.7 过滤

在泵浦的吸入线上，应按照图7和图7/a的指示安装一个过滤器。

手动调节阀

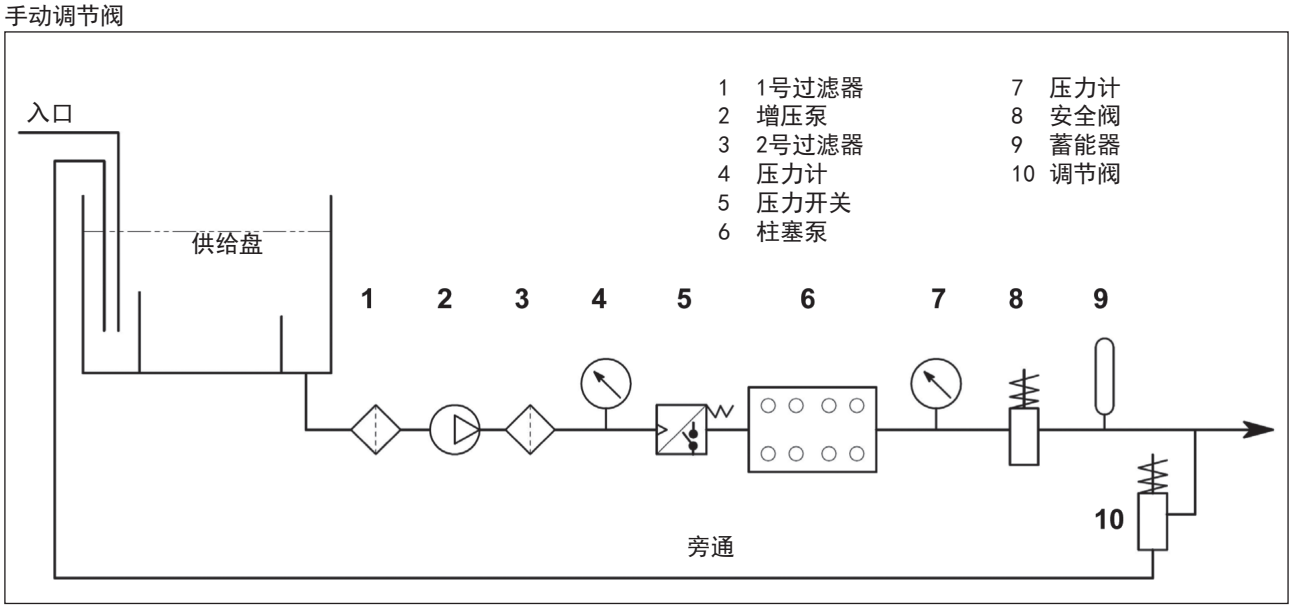


图7

气动调节阀

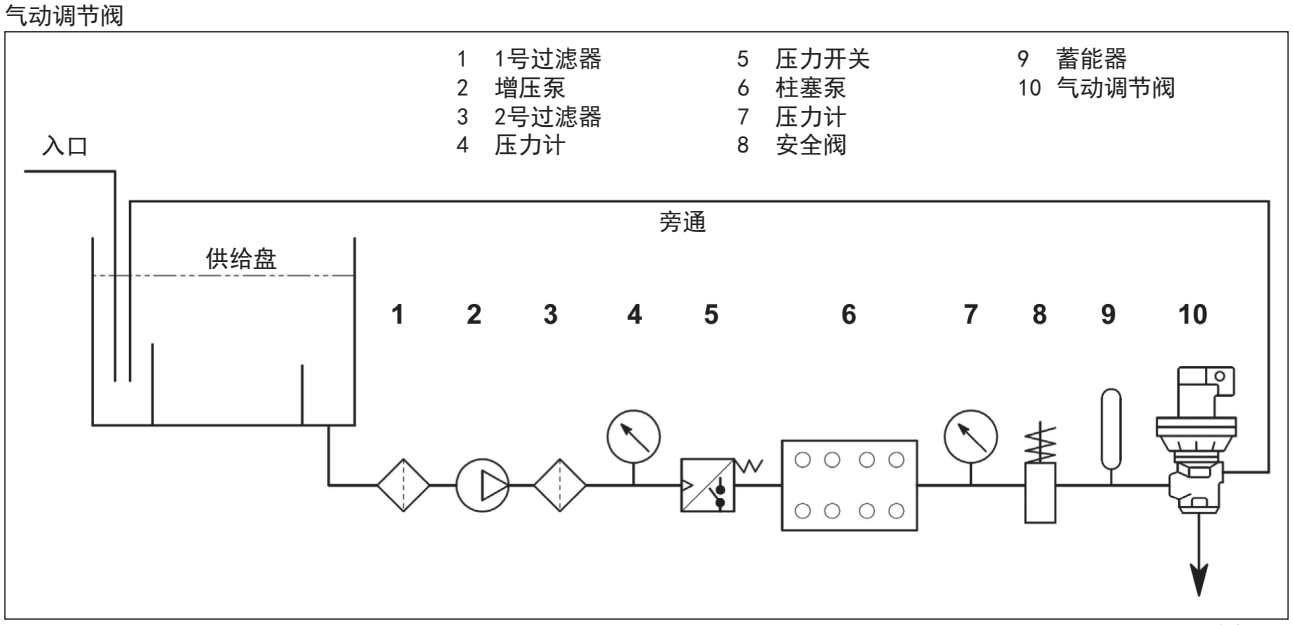


图7/a

过滤器必须尽可能靠近泵浦安装，应易于查看并具备以下特性：

1. 起码3倍于泵浦标牌上标出的流量。
2. 入口/出口直径不得小于泵浦吸入端的直径。
3. 过滤等级应为200到360 µm之间。

为了让泵浦良好运行，按照泵浦的实际使用状况和用水量及实际的阻塞情形来定期对过滤器进行清洁。

9.8 输液线

为了铺设正确的输送管路，请遵守以下规定：

1. 管的内径必须足以保证正确的流体速度，参见 9.9一节中的图表。
2. 连接泵浦的第一段管路必须为软管连接，以让泵浦产生的震动与设备的其他部分隔绝开来。
3. 使用在各种运行条件下都可以保证安全的高压管道和接头。
4. 在输液线路上安装一个安全阀。
5. 使用适合柱塞泵的典型脉冲载荷的压力计。
6. 在设计阶段，应考虑线路上的载荷损失而形成相对于测量得到的压力的使用压降。
7. 对于那些在输液管线上由泵浦造成有害或意外的脉冲的应用，应安装尺寸相当的脉冲缓冲器。

9.9 管道内径的计算

为了定义管道内径，请参阅以下的图示：

吸入管道

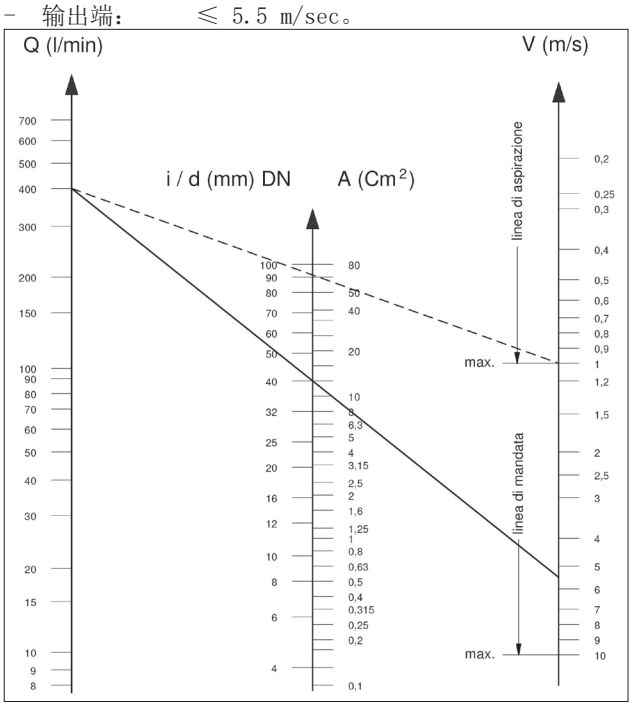
流量约为400升/分，水流速度1米/秒。图表到达两个刻度的线段与中央刻度接触为直径指示，对应约90毫米的数值。

输液管道

流量约为400升/分，水流速度5.5米/秒。图表到达两个刻度的线段与中央刻度接触为直径指示，对应约40毫米的数值。

通过增压泵可获得的最佳速度：

- 吸入端： ≤ 1 m/sec。
- 输出端： ≤ 5.5 m/sec。



图标中没有考虑管道、阀门的阻力和管长而形成的载荷损失，泵送液体的稠度及温度。
如有需要，请联系***技术部***或***售后服务中心***。

9.10 V型皮带传动

如9.1一节中所示，只有在特殊情况下才能通过梯形带系统控制泵。
正确的布局尺寸使用请联系*技术部*或*售后服务中心*。

10 起动和运行

10.1 预防性检查

起动前，应先检查：

吸入端是否已经连接好并带压(请参阅第9章)，泵浦不能干态运行。

1. 吸入管路必须保证具有长期稳定的密封。
2. 从供应源头到泵浦的所有截至阀均必须打开。输送管线必须为自由排放，以让泵头上存在的空气能够快速地排放，从而有助于快速吸取。
3. 所有的接头和连接点，无论是吸入或输出端均必须得到正确的紧固。
4. 泵/传动轴线上的连接误差(半轴没校准、万向节倾斜、皮带拉紧度等)保持在传动装置制造商的极限范围之内。
5. 通过专用液面杆(位置①,图8)检查泵浦护门内的油面状况是否正常。

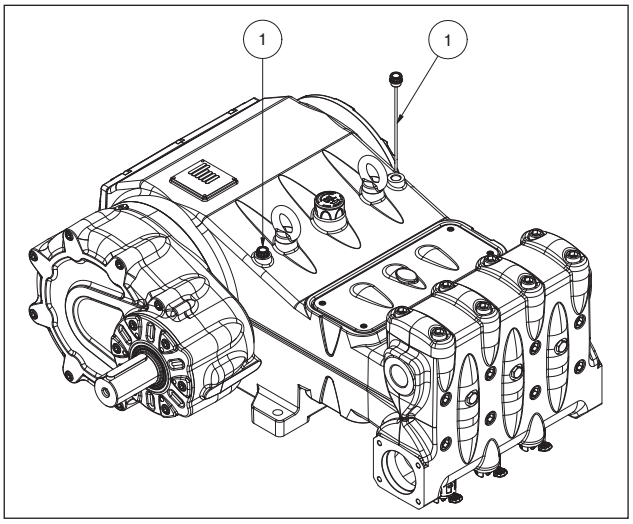


图8

需要长时间存放或长时间不使用时，必须通过打开三个气门挺杆装置(参阅部件号 ② 图9)来恢复吸入阀的正确运作。起动泵浦前，确保已经关闭了阀门。
“工作”和“空闲”位置请参阅图10。

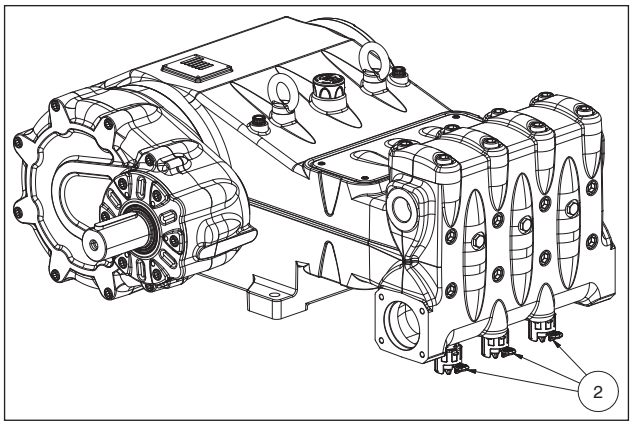


图9

阀门关闭 -工作位置-　　安全装置解锁　　阀门打开 -空闲位置-

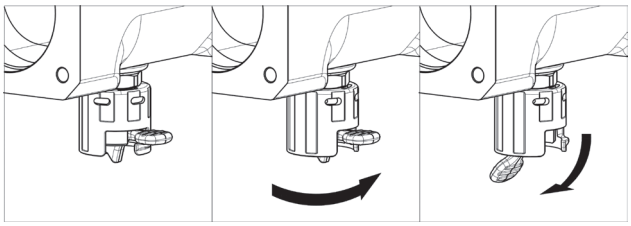


图10

10.2 起动

1. 首次起动时，应检查转动方向是否正确。
2. 检测泵浦的供给是否正确。
3. 无负载下起动泵浦。
4. 运行时检查转动转数是否超出标示数值。
5. 接通压力前，应让泵浦运行起码3分钟。
6. 每次停顿泵浦前，应先通过调节阀或其他排放装置让压力归零。

如果由于供电不足而导致启动问题，则可以通过移除头部的三个前盖（不包括MK240型）进行干预，如③ 图11所示。

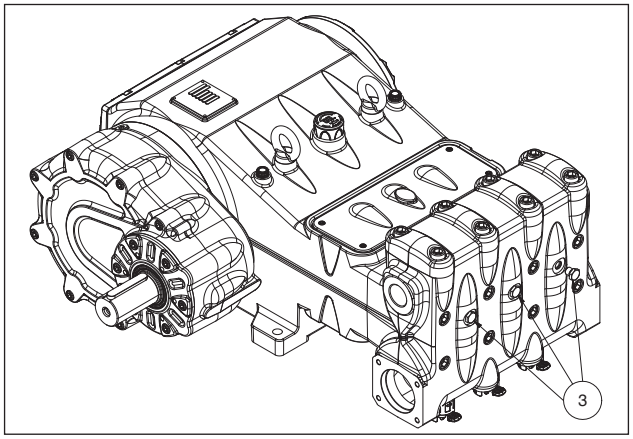


图11

11 预防性维护

为了让泵浦可靠和高效，必须遵守的表格中列出的维护期限。

预防性维护	
每500个小时	每1500个小时
检查油面	更换机油
	检查 / 更换*: 阀门 阀座 阀门弹簧 阀门导轨
	检查 / 更换*: 高压密封 低压密封

* 更换时请遵守*《维修手册》* 中的指示。

12 泵浦存放

12.1 泵浦的防腐蚀乳剂或防冻剂加注方法

使用外部隔膜泵向泵中注入防腐乳液或防冻液的方法，基于与 9.7一节中相同的布局：

a) 如打开的话，则关闭过滤器的排放口。
b) 确保连接管道清洁，涂抹油脂并将其连接到高压排放口。
c) 把吸入管固定在膜泵上；打开泵浦的接头并在接头与膜泵之间固定管道。
d) 把乳剂/溶剂灌入容器内。
e) 把吸入管的空闲端和高压排放管插入到容器内。
f) 起动膜泵。
g) 泵送乳剂，直至乳剂从高压排放口流出为止。
h) 继续泵送起码一分钟；如有需要，可在溶剂内加入Shell Donax来增强乳剂的效能。
i) 停顿泵浦，在接头上拆下管道并用盖子将其封闭。
j) 把管道从高压排放口上拆下。清洁、涂抹油脂并封闭接头和管道。

12.2 管道

a) 按照先前描述的步骤涂抹油脂来保护管道前，应用压缩空气吹干接头。
b) 用聚乙烯包裹。
c) 请勿包裹太紧；确保没有折叠。

13 防冻措施



在有霜冻风险的区域和一年中有霜冻风险的时期里，请按照12 一章中的说明进行操作（请参阅12.1 一节）。



如存在冰块则请勿起动泵浦，直至管路完全解冻为止，否则会对泵浦造成严重的损坏。

14 保修条款

保修期限和条款在购买合同上有标明。
如有以下情况，保修即失效：

a) 把泵浦作为其他用途使用。
b) 泵浦被设定成使用高于表格中指出的性能的电机或吸热发动机。
c) 规定的安全装置未调节或未连接。
d) 泵浦使用了非Interpump集团提供的附件和零配件。
e) 由以下原因造成的损坏：
   1) 使用不当
   2) 没有执行保养指示的内容
   3) 作运作说明以外的用途
   4) 流量不足
   5) 安装缺陷
   6) 管道定位错误或尺寸错误
   7) 未经授权而改动设计
   8) 气蚀。

15 运作故障及可能的原因



起动泵浦时没有任何声音：
- 泵浦没有吸液并处于干运转。
- 吸入端没有水。
- 阀门卡死。
- 输送线关闭且不允许泵头内的空气排除。



泵浦脉动异常：
- 吸入空气。
- 供给不足。
- 弯头、弯角、接头，吸入线路沿线的液体过度被节流。
- 吸入过滤器阻塞或太小。
- 安装的泵浦所提供的压力或流量不足。
- 吸入时泵浦的吸入压头不足或输送端关闭。
- 由于某个阀门粘合，泵浦无法吸液。
- 阀门磨损。
- 压力密封圈磨损。
- 压力调节阀运作不良。
- 传动部分故障。



泵浦无法供给标定流量/噪声过大：
- 供给不足(如上述内容去查找原因)。
- 转数低于标定值。
- 压力调节阀泄漏过多。
- 阀门磨损。
- 压力密封件泄漏过多。
- 以下原因造成气蚀：
  1) 吸入管道尺寸错误/直径过小。
  2) 流量不足。
  3) 水温过高。



泵浦提供的压力不足：
- 用具(喷嘴)或变得大于泵浦的泵送能力。
- 转数不足。
- 压力密封圈泄漏过多。
- 压力调节阀运作不良。
- 阀门磨损。

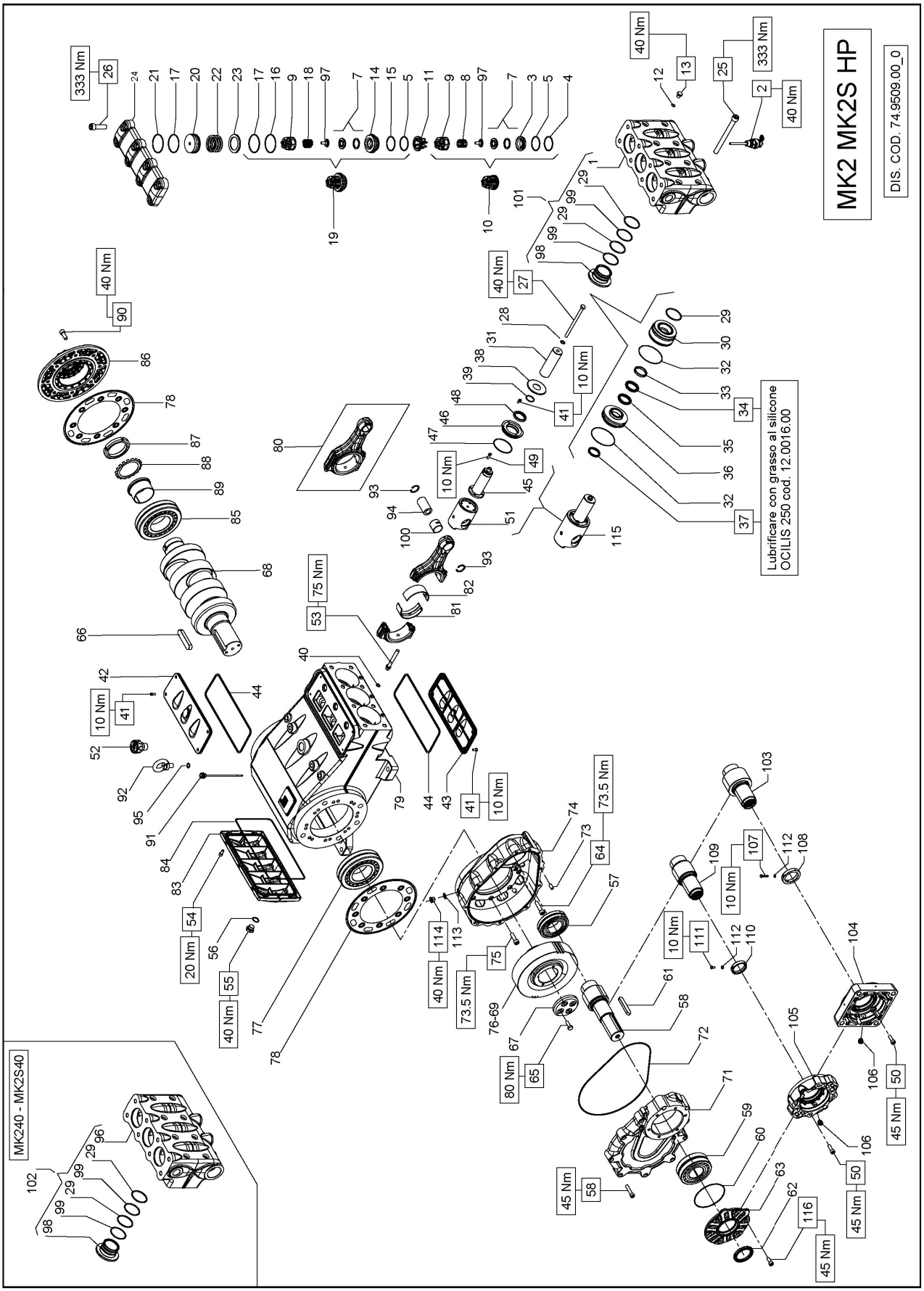


泵浦过热：
- 泵浦运作压力过高或转数超出标定值。
- 泵壳中的油位不足或不符合7 一章所示的推荐类型（请参阅 7.6 一节）。
- 联轴节或皮带轮校准不完美。
- 工作期间泵浦倾斜过度。



管道震动或抖动：
- 吸入空气。
- 压力调节阀运作不良。
- 阀门运作不良。
- 动力传动不协调。

16 备件分解图和清单


MK2 MK2S HP
DIS. COD. 74.9509.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00
MK240 - MK2S40

KIT RICAMBIO – SPARE KIT

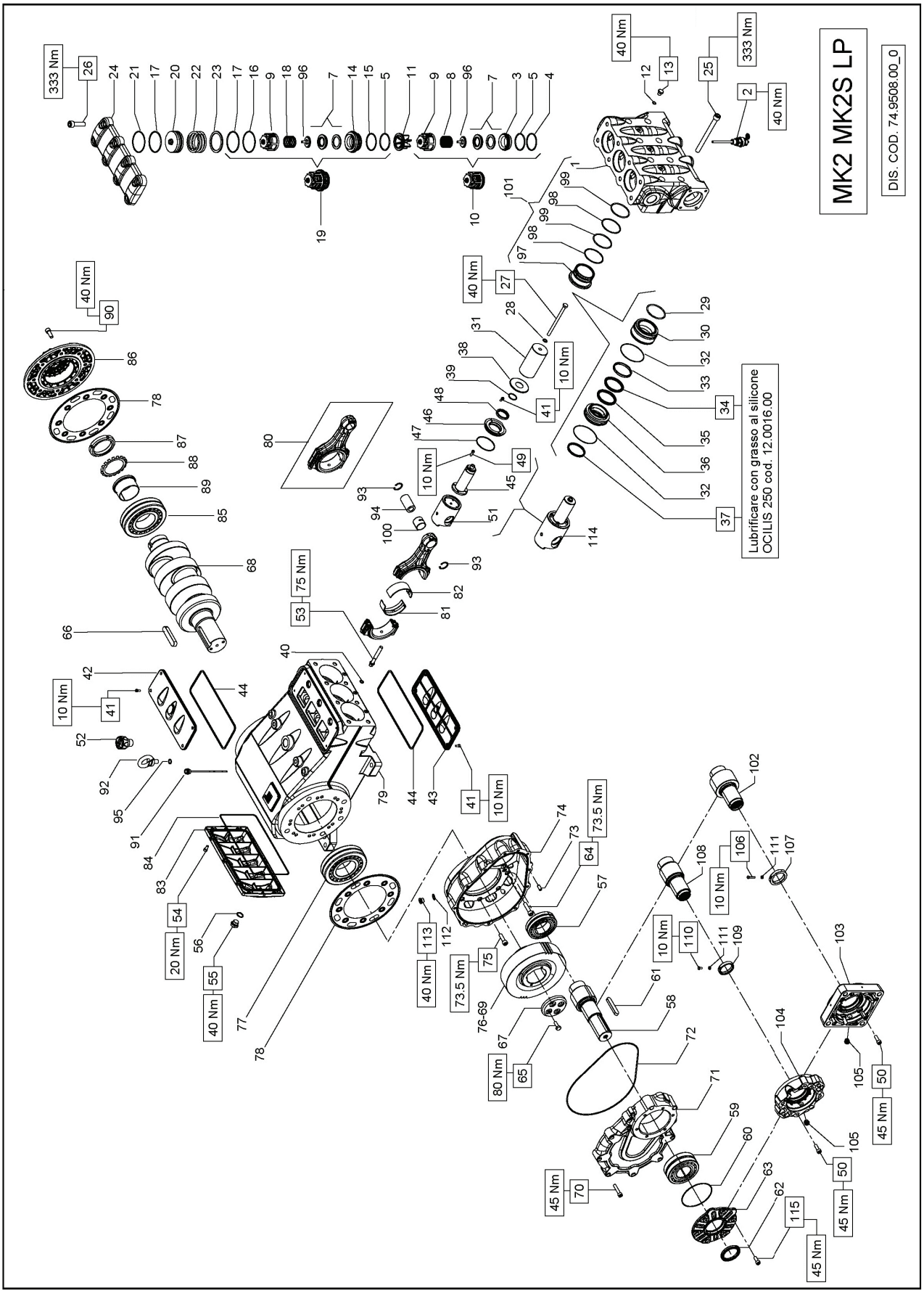
		MK240 - MK2S40 (D.40)	MK245 - MK2S45 (D.45)	MK250 - MK2S50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK240 - MK2S40
MK245 - MK2S45
MK250 - MK2S50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1


MK2 MK2S LP
DIS. COD. 74.9508.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT

		MK255 - MK2S55 (D.55)	MK260 - MK2S60 (D.60)	MK265 - MK2S65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2045	KIT 2046	KIT 2047
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2447	KIT 2448	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK255 - MK2S55
MK260 - MK2S60
MK265 - MK2S65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2114.56	CAMICIA PISTONE D. 55		3
	74.2115.56	CAMICIA PISTONE D. 60		
	74.2116.56	CAMICIA PISTONE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1003.92	ANELLO DI TESTA PISTONE D. 55		3
	74.1004.92	ANELLO DI TESTA PISTONE D. 60		
	74.1005.92	ANELLO DI TESTA PISTONE D. 65		
34	90.2873.00	ANELLO TEN. ALT. D. 55.0x70.0x7.5/4.5 HP	A-C	3
	90.2883.00	ANELLO TEN. ALT. D. 60.0x76.0x8.0/4.8 HP	A-C	
	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	
35	90.2875.00	ANELLO RESTOP D. 55.0x70.0x8.0/4.5	A-C	3
	90.2885.00	ANELLO RESTOP D. 60.0x76.0x8.0/4.5	A-C	
	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	
36	74.2120.68	SUPPORTO GUARNIZIONE D. 55		3
	74.2121.68	SUPPORTO GUARNIZIONE D. 60		
	74.2122.68	SUPPORTO GUARNIZIONE D. 65		
37	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		10
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.55	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	73.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK2		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2S		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	74.2150.56	BOCCOLA TESTATA		3
98	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
99	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1201.01	TESTATA CON BOCCOLA		1
112	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
113	98.2086.00	TAPPO G 3/8"x12		2
114	74.6062.01	GR. GUIDA PISTONE		3
115	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
102	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
103	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
107	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
111	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.750 - ELICOIDALE		1
104	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
108	10.0906.55	PIGNONE Z16 R. 3.750 - ELICOIDALE FEMM.		1
109	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
110	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
111	92.2025.00	DADO M6x5 UNI 5588		1

17 特别型号

MK2泵还有以下特殊型号：

- MK2R（用于再循环水）
- MK2SR（用于再循环水）
- MK2C（用于甲醇）
- MK2SC（用于甲醇）
- MK2SH（带AISI 420泵头）

以下列出了这些特别版相关的选择指示。
除非另有说明，否则请按照上面给出的标准MK2泵型号的说明进行操作。

17.1 MK2R-MK2SR型泵

17.1.1 用途



MK2R / MK2SR系列泵设计用于在无潜在爆炸性环境中运行，并且用于富含颗粒的水，因此它们被认为适用于具有流体再循环的系统。
柱塞密封圈的寿命直接取决于液体中含有的固体物质的百分含量，并与物质的尺寸和密度有直接关系。
为了让密封部分长久耐用，建议杂质的尺寸不超过200微米，体积最大为20%。
有关系统的进一步指示和最大布局，请参阅17.2.6 一节。

17.1.2 流量和最高压力

目录中指出的性能是指泵浦能够提供的最高性能。与使用功率**无关**，如没有得到***技术部***或***售后服务中心***的许可，不得超过标牌上标出的压力和最高转数。

17.1.3 技术特性

型号	转/分	流量		压力		功率	
		l/min	Gpm	巴	psi	kW	Hp
MK2R 40	1500	153	40.4	400	5800	159	117
	1800	149	39.4	400	5800	155	114
MK2R 45	1500	193	51.0	300	4350	150	110
	1800	189	49.9	300	4350	147	108
MK2R 50	1500	239	63.1	250	3625	155	114
	1800	233	61.6	250	3625	151	111
MK2R 55	1500	289	76.4	200	2900	150	110
	1800	282	74.5	200	2900	146	107
MK2R 60	1500	343	90.6	170	2465	151	111
	1800	335	88.5	170	2465	148	109
MK2R 65	1500	403	106.5	150	2175	157	115
	1800	394	104.1	150	2175	154	113

型号	转/分	流量		压力		功率	
		l/min	Gpm	巴	psi	kW	Hp
MK2SR 40	1500	184	48.6	400	5800	140.5	191
	1800	183	48.3	400	5800	140	190
	2200	182	48.1	400	5800	139	189
MK2SR 45	1500	233	61.6	300	4350	134	182
	1800	232	61.3	300	4350	133	181
	2200	231	61.0	300	4350	132	180
MK2SR 50	1500	288	76.1	250	3625	137.5	187
	1800	286	75.6	250	3625	137	186
	2200	285	75.3	250	3625	136	185
MK2SR 55	1500	349	92.2	200	2900	133	181
	1800	346	91.4	200	2900	132	180
	2200	344	90.9	200	2900	132	179
MK2SR 60	1500	415	109.6	170	2465	135	183
	1800	412	108.9	170	2465	134	182
	2200	410	108.3	170	2465	133	181
MK2SR 65	1500	487	128.7	150	2175	140	190
	1800	484	127.9	150	2175	139	189
	2200	481	127.1	150	2175	137.5	187

17.1.4 尺寸和重量

泵浦的尺寸和重量请参阅第6章的图示。

17.1.5 泵浦供给

泵必须始终安装在头部下方，即它们必须通过扬程或强制进给来接收水，并且不要从较低的水平吸入水。
泵浦吸入压头的允许误差可达1米，即使如此，为了获得最佳的容积效率和避免气蚀，泵头法兰上测得的可用正吸入压头(NPSH avail)必须等于或大于以下数值。

	$NPSH_r$ (m)
MK2R/MK2SR40	4.5
MK2R/MK2SR45	5.5
MK2R/MK2SR50	6.5
MK2R/MK2SR55	7.5
MK2R/MK2SR60	8
MK2R/MK2SR65	9

对于排量较大、活塞直径为Ø 55 - 60 - 65的泵，考虑到液压部件的几何形状和相当大的流速，强烈建议通过增压泵强制供水，以避免空化现象。
增压泵必须具备起码双倍于柱塞泵的标称流量，压力在2-3巴之间。
这个供给条件在任何作业转数下均必须得到遵守。

增压泵的起动必须一直在柱塞泵起动之前。
建议在过滤器的下游的供给线路上安装一个压力开关来保护泵浦。

17.1.6 过滤

技术部或售后服务中心可为客户定义最佳的设备；例如提供以下的布局(图12和图12/a)。
手动调节阀

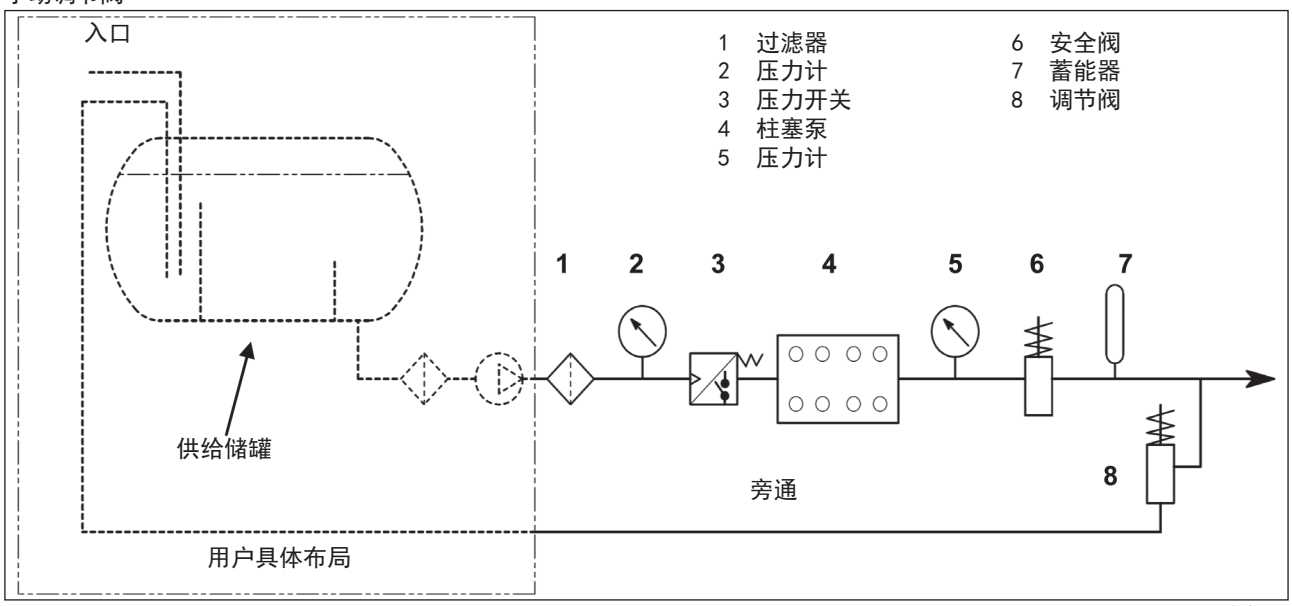


图12

气动调节阀

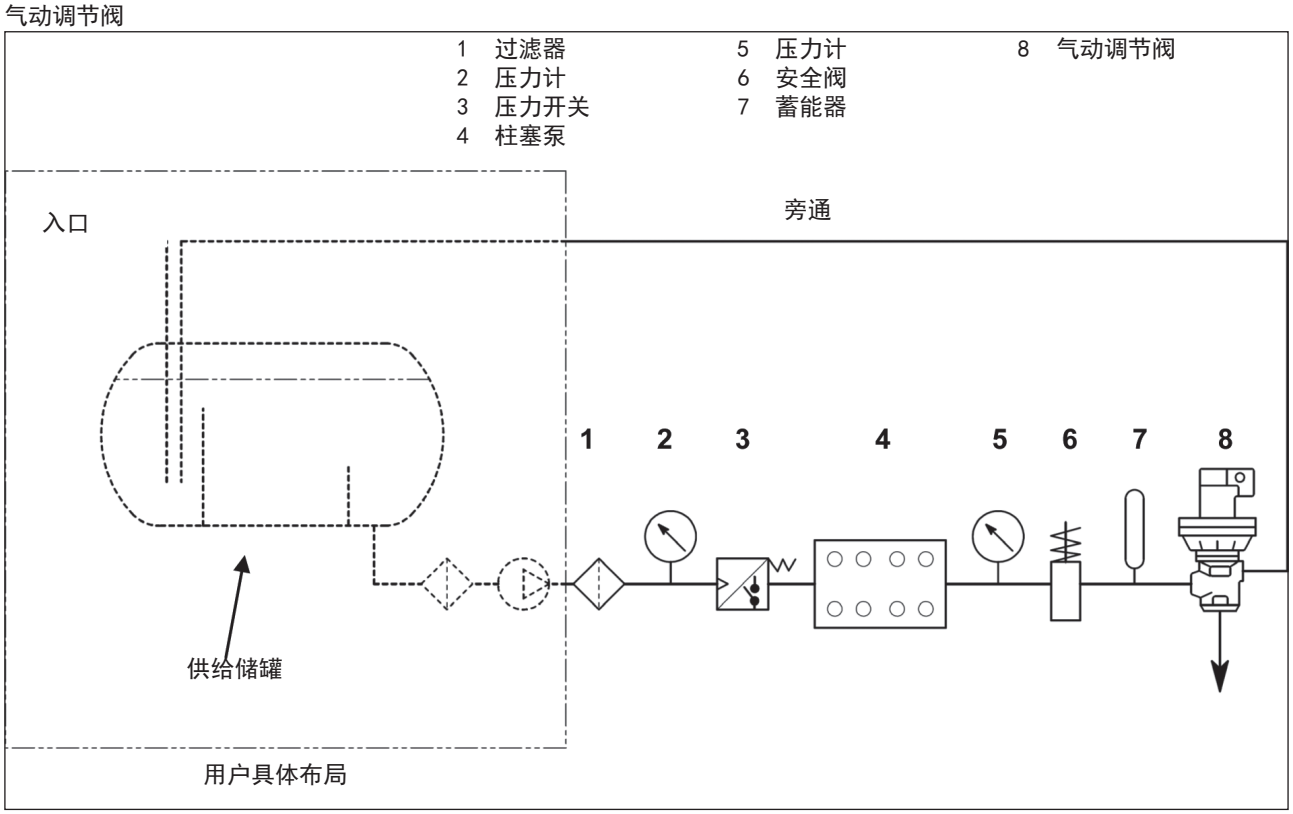


图12/a

过滤器必须尽可能靠近泵浦安装，并应易于查看。

为了让泵浦良好运作。过滤等级和过滤系统的积聚能力应按照考虑泵浦液压部分的最长寿命和从一次加水到另一次加水的工作小时数来定义大小。
推荐的最佳折衷方案是 17.1.1 一节所示方案。

每次使用泵浦并在班次结束后，应用清水对部件进行冲洗。

17.1.7 预防性维护

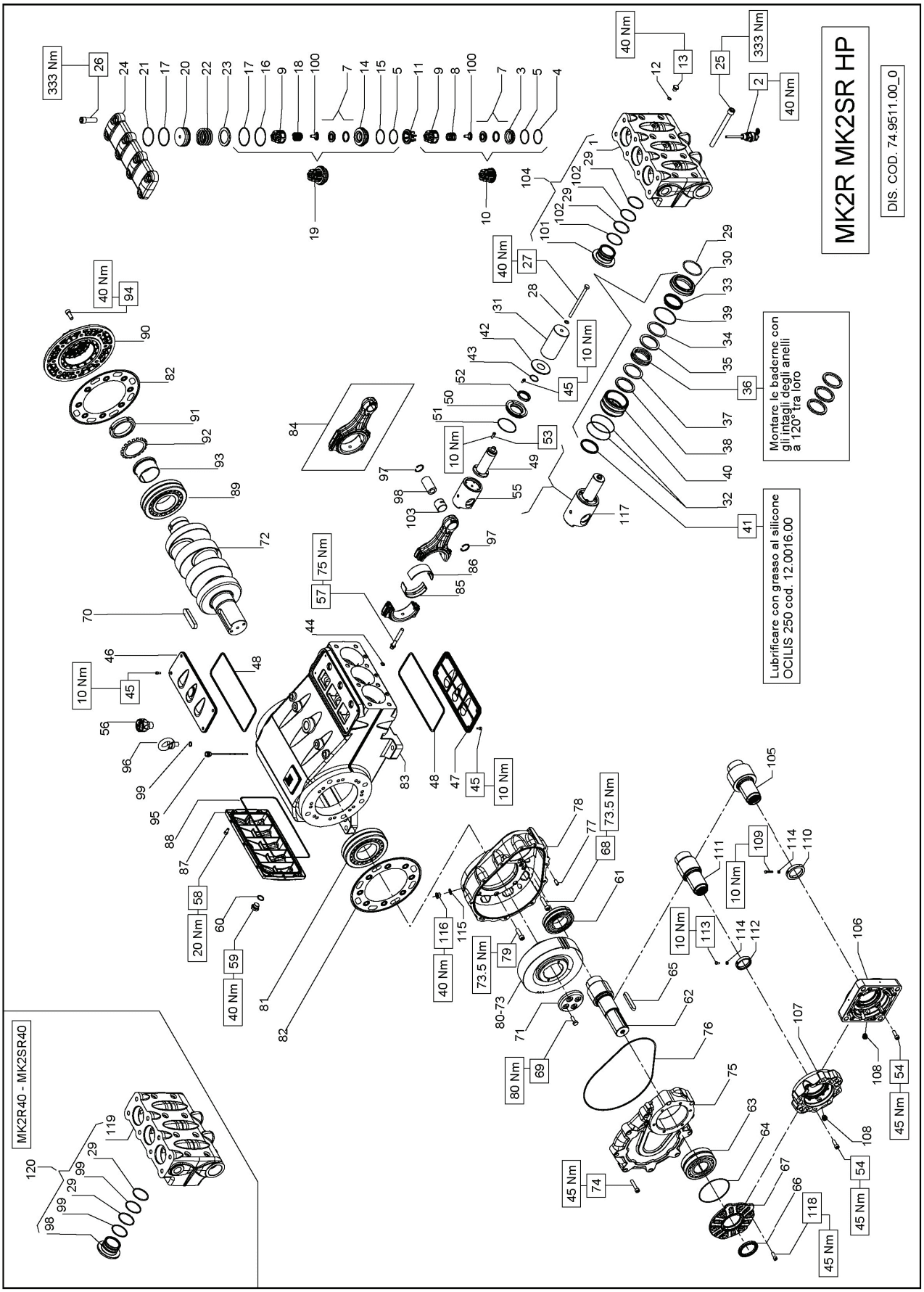
为了让泵浦可靠和高效，必须遵守的表格中列出的维护期限。

预防性维护	
每500个小时	每1000个小时
检查油面	更换机油
	检查 / 更换*: 阀门 阀座 阀门弹簧 阀门导轨

HP-LP密封：寿命受过滤等级、液体类型和容积百分比的影响(请参阅7)。

* 更换时请遵守*《维修手册》* 中的指示。

17.1.8 剖析图和配件清单



KIT RICAMBIO – SPARE KIT

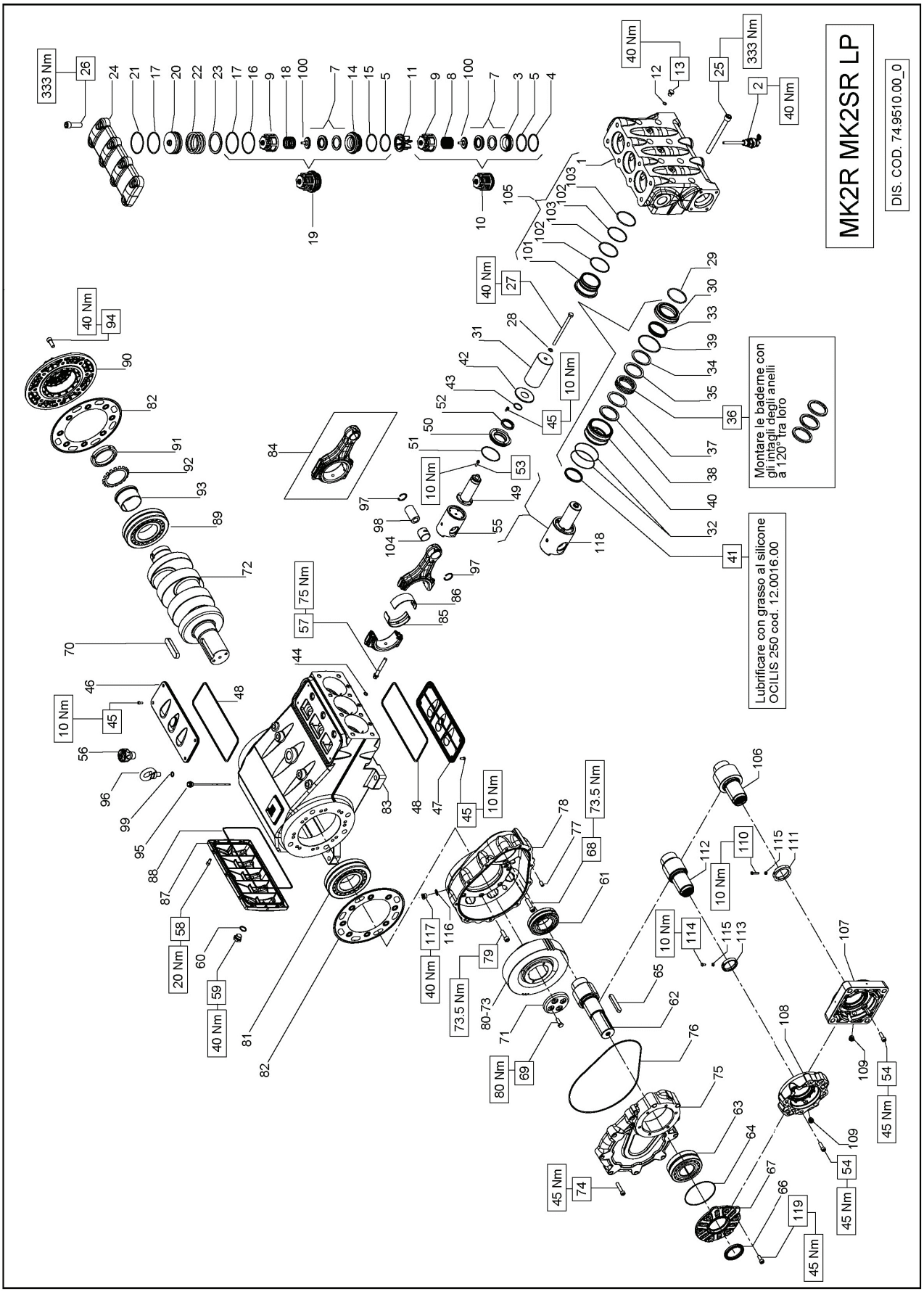
		MK2R40 - MK2SR40 (D.40)	MK2R45 - MK2SR45 (D.45)	MK2R50 - MK2SR50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2430	KIT 2431	KIT 2100
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2456	KIT 2457	KIT 2458
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R40 - MK2SR40
MK2R45 - MK2SR45
MK2R50 - MK2SR50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.1010.56	ANELLO DI TESTA BADERNE D. 40		3
	74.1011.56	ANELLO DI TESTA BADERNE D. 45		
	74.1006.56	ANELLO DI TESTA BADERNE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	94.7730.00	MOLLA Dm. 51.5x36.0 - D. 40-45		3
	94.7770.00	MOLLA Dm. 61.5x35.0 - D. 50		
34	74.2165.56	ANELLO PER MOLLA D. 40		3
	74.2169.56	ANELLO PER MOLLA D. 45		
	74.2134.56	ANELLO PER MOLLA D. 50		
35	74.2164.72	ANELLO RASCHIATORE BADERNE D. 40	A-C	3
	74.2168.72	ANELLO RASCHIATORE BADERNE D. 45	A-C	
	74.2138.82	ANELLO RASCHIATORE BADERNE D. 50	A-C	
36	90.5655.00	ANELLO TEN. ALT. KC D. 40.0x56.0x19.5	A-C	3
	90.5680.00	ANELLO TEN. ALT. KC D. 45.0x61.0x19.5	A-C	
	90.5700.00	ANELLO TEN. ALT. KC D. 50.0x66.0x19.5	A-C	
37	90.5232.00	ANELLO ANTIEST. D. 40.0x56.0x2.5	A-C	3
	90.5236.00	ANELLO ANTIEST. D. 45.0x61.0x2.5	A-C	
	90.5245.00	ANELLO ANTIEST. D. 50.0x66.0x2.5	A-C	
38	74.2163.60	ANELLO DI SUPPORTO D. 40		3
	74.2167.60	ANELLO DI SUPPORTO D. 45		
	74.2142.60	ANELLO DI SUPPORTO D. 50		
39	90.4110.00	OR D. 61.91x3.53 NBR 70SH 165 - D. 40	A-C	3
	90.4117.00	OR D. 66.27x3.53 NBR 70SH 4262 - D. 45	A-C	
	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - D. 50	A-C	

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
40	74.2162.56	SUPPORTO BADERNE D. 40		3
	74.2166.56	SUPPORTO BADERNE D. 45		
	74.2146.56	SUPPORTO BADERNE D. 50		
41	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
42	74.2133.51	PARASPRUZZI		3
43	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
44	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
45	99.1837.00	VITE M6x14 UNI 5931		14
46	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
47	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
48	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
49	74.0503.36	STELO GUIDA PISTONE		3
50	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
51	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
52	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
53	99.1884.00	VITE M6x20 UNI 5931		12
55	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
56	98.2333.00	TAPPO CARICO OLIO G1"		1
57	99.4410.00	VITE SERRAGGIO BIELLA		6
58	99.3045.00	VITE M8x18 UNI 5931		6
59	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
60	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
61	91.8700.00	CUSCINETTO A RULLI		1
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	91.8610.00	CUSCINETTO A RULLI		1
64	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
65	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
66	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
67	74.2173.22	COPERCHIO PIGNONE		1
68	99.4335.00	VITE M12x50 UNI 5931		2
69	99.3684.00	VITE M10x30 UNI 5739		4
70	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
71	74.2252.55	FERMO CORONA		1
72	74.0202.35	ALBERO A GOMITI C. 72 - MKSR		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	99.3730.00	VITE M10x50 UNI 5931		10
75	74.2174.13	COPERCHIO RIDUTTORE		1
76	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
77	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
78	74.2175.13	SCATOLA RIDUTTORE		1
79	99.4305.00	VITE M12x40 UNI 5931		6
81	91.8850.00	CUSCINETTO A RULLI		1
82	74.2130.84	GUARNIZIONE LATERALE	C	2
83	74.0101.13	CARTER POMPA		1
84	74.0302.01	BIELLA COMPLETA		3

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
87	74.1600.22	COPERCHIO CARTER		1
88	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
89	91.8852.00	CUSCINETTO A RULLI		1
90	74.1500.22	COPERCHIO CUSCINETTO		1
91	93.0800.00	GHIERA DI BLOCCAGGIO		1
92	96.8300.00	ROSETTA DI SICUREZZA		1
93	91.8800.00	BUSSOLA DI PRESSIONE		1
94	99.4280.00	VITE M12x30 UNI 5931		8
95	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
96	93.1050.00	GOLFARE M16 UNI 2947		2
97	90.0697.00	ANELLO D'ARRESTO J35		6
98	97.7450.00	SPINOTTO D. 35x64		3
99	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
100	36.2090.51	GUIDA INTERNA VALVOLA		6
101	74.2151.56	BOCCOLA TESTATA		3
102	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
103	90.9173.00	BOCCOLA PIEDE BIELLA		3
104	74.1206.01	TESTATA CON BOCCOLA D. 40		1
	74.1203.01	TESTATA CON BOCCOLA D. 45-50		
115	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
116	98.2086.00	TAPPO G 3/8"x12		2
117	74.6062.01	GR. GUIDA PISTONE		3
118	99.3668.00	VITE M10x25 5931		6
119	74.1206.15	TESTATA D. 40 HP		1
	74.1207.15	TESTATA D. 40 HP - NPT		
120	74.1206.01	TESTATA CON BOCCOLA D. 40		1
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
105	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
106	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
108	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
110	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
114	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
107	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
108	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
111	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
112	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
113	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
114	92.2025.00	DADO M6x5 UNI 5588		1


MK2R MK2SR LP
DIS. COD. 74.9510.00_0
Montare le baderne con gli intagli degli anelli a 120° tra loro
Lubrificare con grasso al silicone OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK2R55 - MK2SR55 (D.55)	MK2R60 - MK2SR60 (D.60)	MK2R65- MK2SR65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2102	KIT 2103	KIT 2104
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2453	KIT 2454	KIT 2455
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R55 - MK2SR55
MK2R60 - MK2SR60
MK2R65 - MK2SR65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.1007.56	ANELLO DI TESTA BADERNE D. 55		3
	74.1008.56	ANELLO DI TESTA BADERNE D. 60		
	74.1009.56	ANELLO DI TESTA BADERNE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	94.7770.00	MOLLA Dm. 61.5x35.0 - MK2R MK2SR 55		3
	94.7900.00	MOLLA Dm. 71.5x35.0 - MK2R MK2SR 60-65		
34	74.2135.56	ANELLO PER MOLLA D. 55		3
	74.2136.56	ANELLO PER MOLLA D. 60		
	74.2137.56	ANELLO PER MOLLA D. 65		
35	74.2139.82	ANELLO RASCHIATORE D. 55	A-C	3
	74.2140.82	ANELLO RASCHIATORE D. 60	A-C	
	74.2141.82	ANELLO RASCHIATORE D. 65	A-C	
36	90.5725.00	BADERNE D. 55.0x71.0x19.5	A-C	3
	90.5750.00	BADERNE D. 60.0x76.0x19.5	A-C	
	90.5775.00	BADERNE D. 65.0x81.0x19.5	A-C	
37	90.5267.00	ANELLO ANTIEST. D. 55.0x71.0x2.5	A-C	3
	90.5269.00	ANELLO ANTIEST. D. 60.0x76.0x2.5	A-C	
	90.5275.00	ANELLO ANTIEST. D. 65.0x81.0x2.5	A-C	
38	74.2143.60	ANELLO DI SUPPORTO D. 55		3
	74.2144.60	ANELLO DI SUPPORTO D. 60		
	74.2145.60	ANELLO DI SUPPORTO D. 65		
39	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - MK2R MK2SR 55	A-C	3
	90.4141.00	OR D. 85.32x3.53 NBR 70SH 4337 - MK2R MK2SR 60-65	A-C	
40	74.2147.56	SUPPORTO BADERNE D. 55		3
	74.2148.56	SUPPORTO BADERNE D. 60		
	74.2149.56	SUPPORTO BADERNE D. 65		
41	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
42	74.2133.51	PARASPRUZZI		3
43	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
44	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
45	99.1837.00	VITE M6x14 UNI 5931		14
46	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
47	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
48	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
49	74.0503.36	STELO GUIDA PISTONE		3
50	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
51	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
52	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
53	99.1884.00	VITE M6x20 UNI 5931		12
55	79.0504.43	GUIDA PISTONE		3
	790.0505.43	GUIDA PISTONE +1.0		
56	98.2333.00	TAPPO CARICO OLIO G1"		1
57	99.4410.00	VITE SERRAGGIO BIELLA		6
58	99.3045.00	VITE M8x18 UNI 5931		6
59	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
60	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
61	91.8700.00	CUSCINETTO A RULLI		1
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	91.8610.00	CUSCINETTO A RULLI		1
64	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
65	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
66	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
67	74.2173.22	COPERCHIO PIGNONE		1
68	99.4335.00	VITE M12x50 UNI 5931		2
69	99.3684.00	VITE M10x30 UNI 5739		4
70	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
71	74.2252.55	FERMO CORONA		1
72	74.0202.35	ALBERO A GOMITI C. 72 - MK2R		1
	74.0201.35	ALBERO A GOMITI C. 72 - MK2SR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	99.3730.00	VITE M10x50 UNI 5931		10
75	74.2174.13	COPERCHIO RIDUTTORE		1
76	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
77	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
78	74.2175.13	SCATOLA RIDUTTORE		1
79	99.4305.00	VITE M12x40 UNI 5931		6
81	91.8850.00	CUSCINETTO A RULLI		1
82	74.2130.84	GUARNIZIONE LATERALE	C	2
83	74.0101.13	CARTER POMPA		1
84	74.0302.01	BIELLA COMPLETA		3
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0.50 - SUP.	D	
87	74.1600.22	COPERCHIO CARTER		1
88	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
89	91.8852.00	CUSCINETTO A RULLI		1
90	74.1500.22	COPERCHIO CUSCINETTO		1
91	93.0800.00	GHIERA DI BLOCCAGGIO		1
92	96.8300.00	ROSETTA DI SICUREZZA		1
93	91.8800.00	BUSSOLA DI PRESSIONE		1
94	99.4280.00	VITE M12x30 UNI 5931		8
95	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
96	93.1050.00	GOLFARE M16 UNI 2947		2
97	90.0697.00	ANELLO D'ARRESTO J35		6
98	97.7450.00	SPINOTTO D. 35x64		3
99	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
100	36.2089.51	GUIDA INTERNA VALVOLA		6
101	74.2150.56	BOCCOLA TESTATA		3
102	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
103	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
104	90.9173.00	BOCCOLA PIEDE BIELLA		3
105	74.1201.01	TESTATA CON BOCCOLA		1
116	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
117	98.2086.00	TAPPO G 3/8"x12		2
118	74.6062.01	GR. GUIDA PISTONE		3
119	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
109	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
110	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
111	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
115	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
108	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
109	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
112	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
113	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
114	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
115	92.2025.00	DADO M6x5 UNI 5588		1

17.2 MK2C-MK25C型泵

17.2.1 用途

这些泵设计用于在无潜在爆炸性环境中运行。
技术部 或 ***客户服务部*** 随时为客户定义最佳的设备。

17.2.2 使用温度

允许的液体温度为：-30℃～+30℃。有关不同的值，请联系***技术部*** 或 ***客户服务部***。

17.2.3 流量和最高压力

目录中指出的性能是指泵浦能够提供的最高性能。与使用功率**无关**，如没有得到***技术部***或***售后服务中心***的许可，不得超过标牌上标出的压力和最高转数。

17.2.4 技术特性

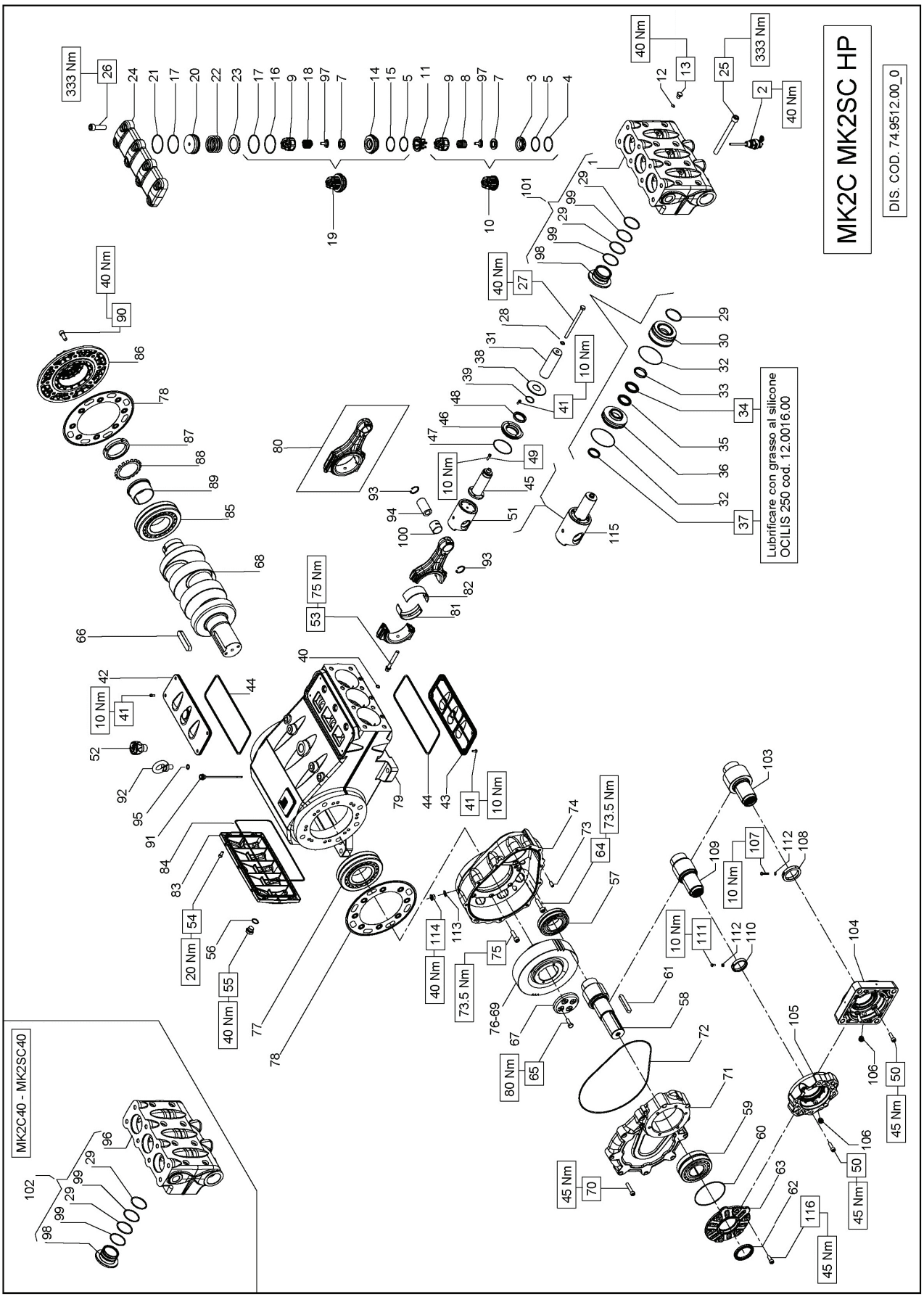
型号	转/分	流量		压力		功率	
		l/min	Gpm	巴	psi	kW	Hp
MK2SC 40	1500	153	40.4	400	5800	159	117
	1800	149	39.4	400	5800	155	114
MK2SC 45	1500	193	51.0	300	4350	150	110
	1800	189	49.9	300	4350	147	108
MK2SC 50	1500	239	63.1	250	3625	155	114
	1800	233	61.6	250	3625	151	111
MK2SC 55	1500	289	76.4	200	2900	150	110
	1800	282	74.5	200	2900	146	107
MK2SC 60	1500	343	90.6	170	2465	151	111
	1800	335	88.5	170	2465	148	109
MK2SC 65	1500	403	106.5	150	2175	157	115
	1800	394	104.1	150	2175	154	113

型号	转/分	流量		压力		功率	
		l/min	Gpm	巴	psi	kW	Hp
MK2SC 40	1500	184	48.6	400	5800	140.5	191
	1800	183	48.3	400	5800	140	190
	2200	182	48.1	400	5800	139	189
MK2SC 45	1500	233	61.6	300	4350	134	182
	1800	232	61.3	300	4350	133	181
	2200	231	61.0	300	4350	132	180
MK2SC 50	1500	288	76.1	250	3625	137.5	187
	1800	286	75.6	250	3625	137	186
	2200	285	75.3	250	3625	136	185
MK2SC 55	1500	349	92.2	200	2900	133	181
	1800	346	91.4	200	2900	132	180
	2200	344	90.9	200	2900	132	179
MK2SC 60	1500	415	109.6	170	2465	135	183
	1800	412	108.9	170	2465	134	182
	2200	410	108.3	170	2465	133	181
MK2SC 65	1500	487	128.7	150	2175	140	190
	1800	484	127.9	150	2175	139	189
	2200	481	127.1	150	2175	137.5	187

17.2.5 尺寸和重量

泵浦的尺寸和重量请参阅第6章的图示。

17.2.6 分解图和备件清单



KIT RICAMBIO – SPARE KIT

		MK2C40 - MK2SC40 (D.40)	MK2C45 - MK2SC45 (D.45)	MK2C50 - MK2SC50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2258		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2C40 - MK2SC40
MK2C45 - MK2SC45
MK2C50 - MK2SC50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIRAZ.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2118.56	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7222.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7223.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE HP		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE - FLANGIATO		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72 - MKSC		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKC		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1

17.3 MK2SH型泵

17.3.1 用途



该泵设计用于在无潜在爆炸性的环境中使用过滤水运行（请参阅9.7）。
其他液体只能在***技术部***或***售后服务中心***的核准下使用。

17.3.2 水温



允许的最高水温为40° C。 但是，可以在高达60° C的温度下使用水泵，但只能在短时间内使用。在这种情况下，建议向 ***技术部*** 或 ***客户服务部*** 咨询。

17.3.3 流量和最高压力

目录中指出的性能是指泵浦能够提供的最高性能。与使用功率**无关**，如没有得到***技术部***或***售后服务中心***的许可，不得超过标牌上标出的压力和最高转数。

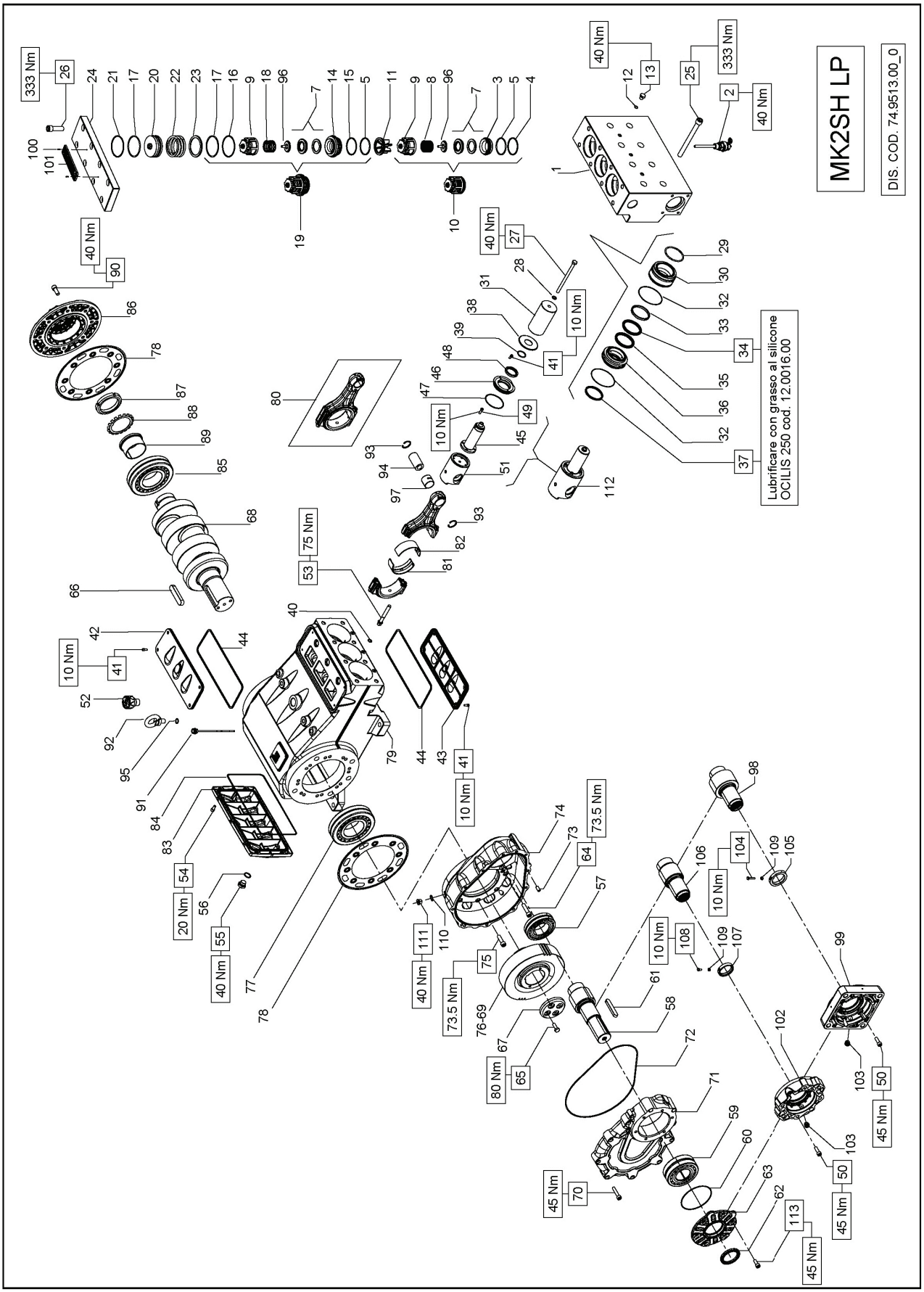
17.3.4 技术特性

型号	转/分	流量		压力		功率	
		l/min	Gpm	巴	psi	kW	Hp
MK2SH 45	1500	233	61.6	300	4350	134	182
	1800	232	61.3	300	4350	133	181
	2200	231	61.0	300	4350	132	180
MK2SH 65	1500	487	128.7	150	2175	140	190
	1800	484	127.9	150	2175	139	189
	2200	481	127.1	150	2175	137.5	187

17.3.5 尺寸和重量

泵浦的尺寸和重量请参阅第6章的图示。

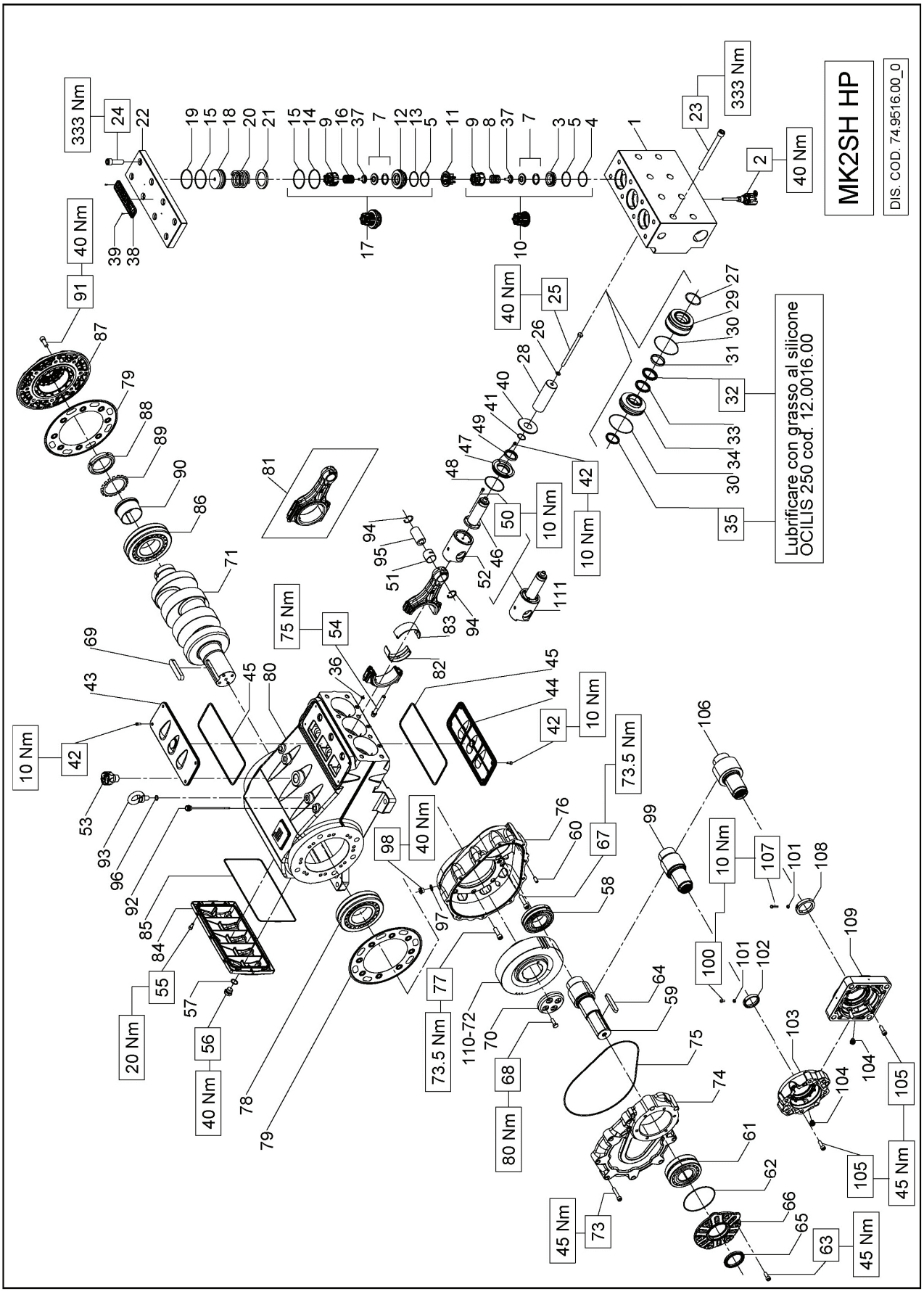
17.3.6 分解图和备件清单



KIT RICAMBIO – SPARE KIT		MK2S65H (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2047
B	Kit valvole – Valves kit	KIT 2048
C	Kit tenute complete – Complete seals kit	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)

MK2S65H

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1210.56	TESTATA LP		1
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2161.56	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2116.56	CAMICIA PISTONE D. 65		3
31	74.0405.09	PISTONE D. 65x127		3
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1005.92	ANELLO DI TESTA PISTONE D. 65		3
34	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	3
35	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	3
36	74.2122.68	SUPPORTO GUARNIZIONE D. 65		3
37	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	3
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72		1
69	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		3
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	90.9173.00	BOCCOLA PIEDE BIELLA		3
100	91.5703.00	RIVETTO AUTOF. D. 2.5x8 UNI 7346		2
101	97.8276.00	MARCHIO PRATISSOLI		1
110	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
111	98.2086.00	TAPPO G 3/8"x12		2
112	74.6062.01	GR. GUIDA PISTONE		3
113	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
98	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
99	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
104	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
105	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
102	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
107	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
108	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
109	92.2025.00	DADO M6x5 UNI 5588		1


MK2SH HP
DIS. COD. 74.9516.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK2SH45 (D.45)
A	Kit tenute pompanti – Plunger packing kit	KIT 2053
B	Kit valvole – Valves kit	KIT 2055
C	Kit tenute complete – Complete seals kit	KIT 2451
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0.25) - 2078 (+0.50)

MK2SH45

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1212.56	TESTATA POMPA D. 45		1
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	36.2069.66	SEDE VALVOLA DI MANDATA		3
13	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
14	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
15	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
16	94.7605.00	MOLLA Dm. 28.5x45.4		3
17	36.7153.01	GR. VALVOLA DI MANDATA	B	3
18	74.2110.70	TAPPO VALVOLE DI MANDATA		3
19	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
20	94.7750.00	MOLLA Dm. 58.0x45.4		3
21	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
22	74.2181.56	COPERCHIO VALVOLE		1
23	99.5222.00	VITE M16x180 UNI 5931		8
24	99.5147.00	VITE M16x55 UNI 5931		8
25	99.3850.00	VITE M10x160 UNI 5737		3
26	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
27	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	3
29	74.2112.56	CAMICIA PISTONE D. 45		3
28	74.0401.09	PISTONE D. 45x127		3
30	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
31	74.1001.92	ANELLO DI TESTA PISTONE D. 45		3
32	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	3
33	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	3
34	74.2118.68	SUPPORTO GUARNIZIONE D. 45		3
35	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	3
36	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
37	36.2090.51	GUIDA INTERNA VALVOLA		6
38	97.8276.00	MARCHIO PRATISSOLI		1
39	91.5703.00	RIVETTO AUTOFILETTANTE D. 2.5x8.0		2
40	74.2133.51	PARASPRUZZI		3
41	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
42	99.1837.00	VITE M6x14 UNI 5931		14
43	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
44	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
45	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
46	74.0503.36	STELO GUIDA PISTONE		3
47	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
48	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
49	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
50	99.1884.00	VITE M6x20 UNI 5931		12
51	90.9173.00	BOCCOLA PIEDE BIELLA		3
52	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
53	98.2333.00	TAPPO CARICO OLIO G1"		1
54	99.4410.00	VITE SERRAGGIO BIELLA		6
55	99.3045.00	VITE M8x18 UNI 5931		6
56	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
57	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
58	91.8700.00	CUSCINETTO A RULLI		1
59	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
60	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
61	91.8610.00	CUSCINETTO A RULLI		1
62	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
63	99.3668.00	VITE M10x25 5931		6
64	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
65	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
66	74.2173.22	COPERCHIO PIGNONE		1
67	99.4335.00	VITE M12x50 UNI 5931		2
68	99.3684.00	VITE M10x30 UNI 5739		4
69	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
70	74.2252.55	FERMO CORONA		1
71	74.0202.35	ALBERO A GOMITI C. 72		1
72	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
73	99.3730.00	VITE M10x50 UNI 5931		10
74	74.2174.13	COPERCHIO RIDUTTORE		1
75	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
76	74.2175.13	SCATOLA RIDUTTORE		1
77	99.4305.00	VITE M12x40 UNI 5931		6
78	91.8850.00	CUSCINETTO A RULLI		1
79	74.2130.84	GUARNIZIONE LATERALE	C	2
80	74.0101.13	CARTER POMPA		1
81	74.0302.01	BIELLA COMPLETA		3
82	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
83	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
84	74.1600.22	COPERCHIO CARTER		1
85	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
86	91.8852.00	CUSCINETTO A RULLI		1
87	74.1500.22	COPERCHIO CUSCINETTO		1
88	93.0800.00	GHIERA DI BLOCCAGGIO		1
89	96.8300.00	ROSETTA DI SICUREZZA		1
90	91.8800.00	BUSSOLA DI PRESSIONE		1
91	99.4280.00	VITE M12x30 UNI 5931		8
92	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
93	93.1050.00	GOLFARE M16 UNI 2947		2
94	90.0697.00	ANELLO D'ARRESTO J35		6
95	97.7450.00	SPINOTTO D. 35x64		3
96	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
97	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
98	98.2086.00	TAPPO G 3/8"x12		2
111	74.6062.01	GR. GUIDA PISTONE		3
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
101	92.2025.00	DADO M6x5 UNI 5588		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
110	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
99	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
100	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
101	92.2025.00	DADO M6x5 UNI 5588		1
102	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
103	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
110	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1

18 标准符合声明

标准符合声明

(根据欧洲标准2006/42/CE的附件II)

制造商**INTERPUMP GROUP S.p.a.- Via E. Fermi, 25 - 42049 - S. ILARIO D'ENZA - Italia 声明：** 保证全权负责识别和叙述的产品，具体如下：

命名：泵浦

类型：高压水用往返式柱塞泵

制造商标：INTERPUMP GROUP

型号：74 MK2, MK2S, MK2R, MK2SR, MK2C, MK2SC, MK2SH 系列

符合机械指令2006/42/CE

适用标准： UNI EN ISO 12100- UNI EN 809

上述识别的泵浦符合机械指令附件I第一点所列出的全部健康保护和安全要求：
1.1.2 - 1.1.3 - 1.1.5 - 1.3.1 - 1.3.2 - 1.3.3 - 1.3.4 - 1.5.4 - 1.5.5 - 1.6.1 - 1.7.1 - 1.7.2 - 1.7.4 - 1.7.4.1 - 1.7.4.2及其相关的技术资料是按照VII B附件的规定填写。

此外，根据合理的请求，制造商可预备泵浦所属的技术资料的复制本，具体方式和条件待定。

直至泵浦有待整合的设备声明符合相关准则和/或标准为止，不得使用本泵浦。

授权编写技术资料人

姓名：Maurizio Novelli
地址：INTERPUMP GROUP S.p.a.- Via E. Fermi, 25 - 42049 - S. ILARIO D'ENZA (RE) - Italia

负责人：
Reggio Emilia - 2017年1月

Ing. Massimiliano Bizzarri

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1 GİRİŞ

Bu kılavuz, MK2 serisi pompanın kullanımı ve bakımı hakkında talimatlar içermektedir ve pompayı kullanmaya başlamadan önce dikkatlice okunmalı ve anlaşılmalıdır.
Pompanın sorunsuz çalışması ve uzun ömürlü olması, doğru kullanım ve bakıma bağlıdır.
Interpump Group, bu kılavuzda açıklanan standartlara uyulmamasından veya ihmal edilmesinden kaynaklanan zararlardan ötürü hiçbir sorumluluk kabul etmez.
Pompayı teslim aldıktan sonra, sağlam ve eksiksiz olduğunu kontrol edin.
Pompayı monte etmeden ve çalıştırmadan önce olası anormallikleri rapor edin.

2 SEMBOLLERİN AÇIKLAMASI

Her çalıştırmadan önce bu kılavuzun içeriğini dikkatlice okuyunuz.



Uyarı İşareti



Her çalıştırmadan önce bu kılavuzun içeriğini dikkatlice okuyunuz.



Tehlike İşareti
Elektrik çarpması tehlikesi.



Tehlike İşareti
Koruyucu bir maske giyin.



Tehlike İşareti
Koruyucu gözlükler takın.



Tehlike İşareti
Her çalıştırmadan önce koruyucu eldivenler giyin.



Tehlike İşareti
Uygun ayakkabı giyin

3 GÜVENLİK

3.1 Genel güvenlik uyarıları

Pompaların ve yüksek basınçlı sistemlerin yanlış kullanımı ve ayrıca montaj ve bakım standartlarına uyulmaması, insanlar ve/veya eşyalara ciddi zarar gelmesine neden olabilir.
Yüksek basınçlı sistemleri monte eden veya kullanan kişiler, bu işlemler için gerekli uzmanlığa sahip olmalı, monte edilecek/kullanılacak bileşenlerin özelliklerini bilmeli ve tüm kullanım koşullarında maksimum güvenliği sağlamak için gerekli tüm önlemleri almalıdır. Hem Montör hem de operatörün güvenliği için, makul olarak uygulanabilir hiçbir tedbir göz ardı edilmemelidir.

3.2 Yüksek basınçlı sistemde temel güvenlik

1. Basınç hattına daima bir emniyet vanası takılmalıdır.
2. Yüksek basınçlı sistemin, özellikle de esas olarak dış mekanda kullanılan sistemlerin bileşenleri, yağmur, don ve ısıya karşı uygun şekilde korunmalıdır.
3. Elektrikli kontrol sistemi, su sıçramalarına karşı uygun şekilde korunmaya alınmalı ve yürürlükteki ilgili kanunlara uygun olmalıdır.
4. Yüksek basınç borularının boyutları, sistemin maksimum çalışma basıncına göre uygun olarak ayarlanmalı, daima ve sadece boru Üreticisinin belirlediği çalışma basıncı aralığında kullanılmalıdır. Aynı kurallara, yüksek basınçtan etkilenen diğer tüm yardımcı sistemler için de riayet edilmelidir.
5. Yüksek basınç borularının uçları, patlama veya bağlantı kırılmaları durumunda tehlikeli savrulmaları önlemek amacıyla sağlam/sert bir yapı içerisinde kaplanmalı ve emniyete alınmalıdır.
6. Pompa transmisyon sistemlerini (kuplajlar, makaralar ve kayışlar ve yardımcı güç aktarma donanımları) korumaya almak için uygun muhafazalar/karter monte edilmelidir.

3.3 Çalışma esnasında güvenlik



Yüksek basınç sisteminin içinde bulunduğu oda veya alan, anlaşılır bir şekilde işaretlenmeli ve yetkisiz personelin erişimine kapatılmalıdır ve mümkünse erişimi kısıtlamak için tecrit edilmeli veya çitle çevrilmelidir. Bu alana girmeye yetkili personel, öncelikle bu alanda nasıl çalışılacağı konusunda eğitilmeli ve yüksek basınçlı sistem sorunlarından veya arızalarından kaynaklanan riskler konusunda bilgilendirilmelidir.
Sistemi çalıştırmadan önce, Operatörün aşağıdaki hususları kontrol etmesi gerekir:

1. Yüksek basınçlı sisteme uygun şekilde güç verildiğini (bkz. Başlık 9 par. 9.5.
2. Pompa emme filtrelerinin mükemmel şekilde temiz olduğunu; tüm cihazlarda tıkanma seviyesini gösteren bir aygıtın sisteme dahil edilmesi uygun olur.
3. Elektrik parçalarının uygun şekilde korumaya alındığını ve iyi durumda olduklarını.
4. Yüksek basınç borularında aşınma emareleri olmadığını ve bağlantıların mükemmel durumda olduğunu.
5. Uygulama, kullanım ve çevresel koşullarla ilgili olarak, çalışma esnasında pompanın dış yüzeyleri yüksek sıcaklıklara ulaşabilir. Dolayısıyla, sıcak parçalara temasın önlenmesi için gerekli önlemlerin alınmasını öneririz.

Çalışma öncesinde veya esnasında ortaya çıkabilecek herhangi bir arıza veya sorun, uygun şekilde rapor edilmeli ve kalifiye personelce kontrol edilmelidir. Bu tür durumlarda, basınç derhal tahliye edilmeli ve yüksek basınçlı sistem durdurulmalıdır.

3.4 Mızrak kullanımında davranış kuralları



1. Operatör kendisinin ve ayrıca kendisinin yaptığı işlemlerden, değerlendirmelerden veya işlerden doğrudan etkilenebilecek olan diğer kişilerin güvenliğini her zaman birinci sırada tutmalıdır; operatörün davranışı sağduyulu olmalı ve sorumluluk bilinciyle hareket etmelidir.
2. Operatör daima, yapacağı uygulamaya uygun bir kask, koruyucu vizör, su geçirmez kıyafet ve ıslak zeminlerde iyi bir kavrama/tutuş sağlayabilen botlar giymelidir.

Not: *uygun kıyafet su sıçramalarına karşı koruyacaktır, fakat su jetlerinin veya çok yakından su fışkırmalarının vereceği doğrudan etkilere karşı koruyucu olmayacaktır. Dolayısıyla bazı durumlar için ek korumalar gerekli olabilir.*

3. Personeli en az iki kişiden oluşan ve gerektiğinde ve uzun ve zorlu işler esnasında işleri devralmada karşılıklı ve acil yardım edebilme yeteneğine sahip takımlar halinde organize etmek iyi bir uygulamadır.

4. Jetlerin erişim bölgesinde yer alan çalışma alanı mutlaka tüm erişimlere kapatılmalı ve bir jetin neden olduğu basınçla sıkışması halinde zarar görebilecek ve/veya tehlikeli durumlara yol açabilecek nesnelerden/eşyalardan arındırılmış olmalıdır.
5. Su jeti, ön hazırlık testleri veya kontrolleri de dahil olmak üzere, daima ve sadece çalışma alanına doğru yönlendirilmelidir.
6. Operatör, su jeti ile çıkan pisliklerin rotasına/yönüne daima dikkat etmelidir. Gerektiğinde, kazara tehlikeye maruz kalabilecek her şeyi korumaya almak için Operatör tarafından uygun korumalar/muhafazalar tedarik edilmelidir.
7. Çalışma esnasında hiç bir sebeple Operatörün dikkati dağıtılmamalıdır. Çalışma alanına erişmesi/girmesi gereken işçiler, Operatörün kendi inisiyatifiyle çalışmayı durdurmasını beklemelidir, daha sonra işçiler derhal ortamda bulunduklarını belli etmelidirler.
8. Tehlikeye yol açabilecek yanlış anlamaları önlemek amacıyla, tüm takım üyelerinin birbirlerinin yapacağı işlerin tam olarak farkında olmaları güvenlik açısından önemlidir.
9. Yüksek basınç sistemi, tüm takım üyeleri yerlerini almadan önce ve Operatör mızrağını çalışma alanına doğru yönlendirmeden önce başlatılmamalı ve basınç altında çalıştırılmamalıdır.

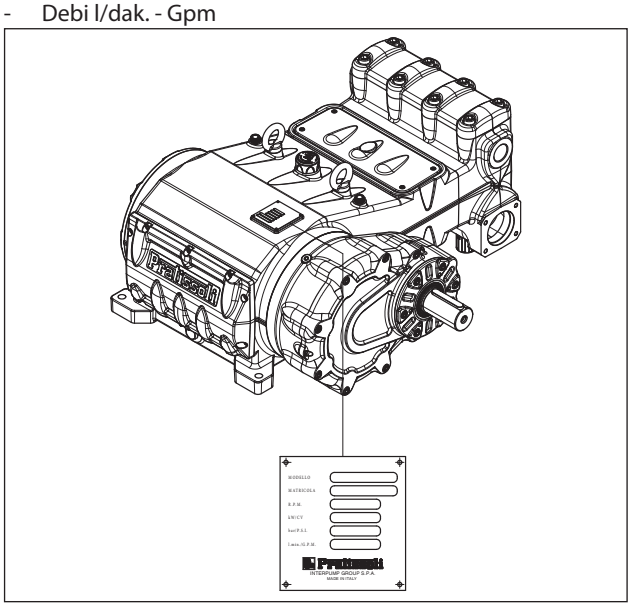
3.5 Sistem bakımı esnasında güvenlik

1. Yüksek basınçlı sistemin bakımının, kanunlar uyarınca tüm gruptan sorumlu olan üreticinin belirlediği zaman aralıklarıyla yapılması gerekmektedir.
2. Bakım işlemi, daima eğitimli ve yetkili personel tarafından yapılmalıdır.
3. Pompanın ve muhtelif bileşenlerin montaj ve sökme işlemleri sadece yetkili personel tarafından ve bileşenlerin, özellikle de bağlantıların, zarar/hasar görmemeleri için uygun ekipmanlar kullanılarak yapılmalıdır.
4. Toplam güvenilirlik ve güvenlik için, daima ve sadece orijinal yedek parça kullanınız.

4 POMPA TANIMI

Her bir pompa aşağıdaki bilgileri içeren bir tanım etiketine sahiptir:

- Pompa modeli ve versiyonu
- Seri numarası
- Maks. devir sayısı
- Çekilen güç Hp - kW
- Basınç bar - P.S.I.
- Debi l/dak. - Gpm



Şek. 1

Model, versiyon ve seri numarası, yedek parça sipariş edilirken daima belirtilmelidir

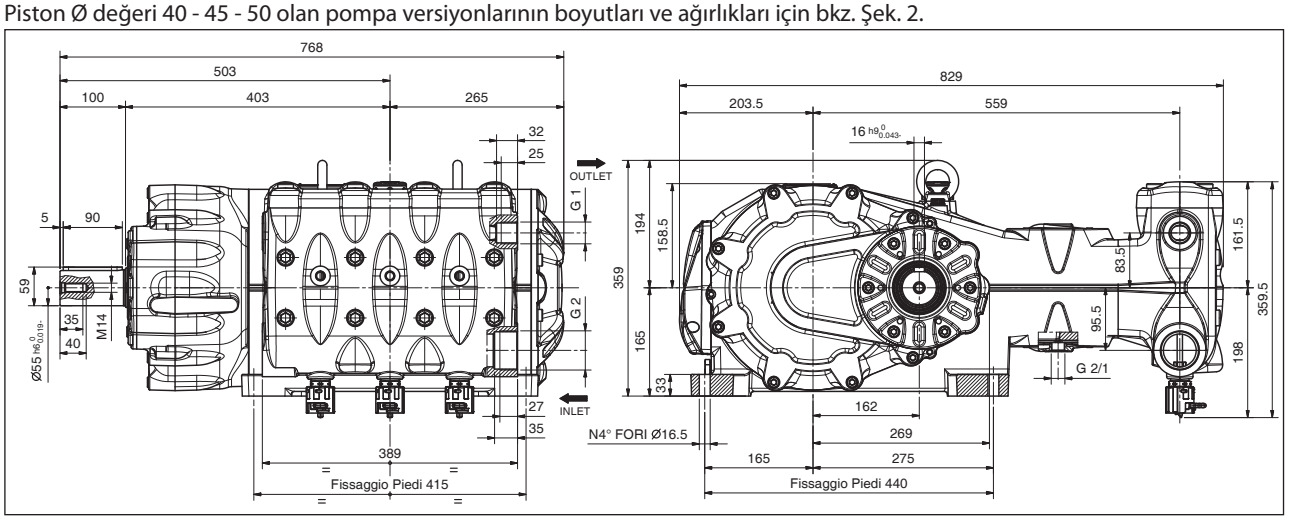
5 TEKNİK ÖZELLİKLER

Model	Devir/1'	Debi		Basınç		Güç	
		l/dak	Gpm	bar	psi	kW	Hp
MK2 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Model	Devir/1′	Debi		Basınç		Güç	
		l/dak	Gpm	bar	psi	kW	Hp
MK2S 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2S 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2S 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2S 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2S 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2S 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

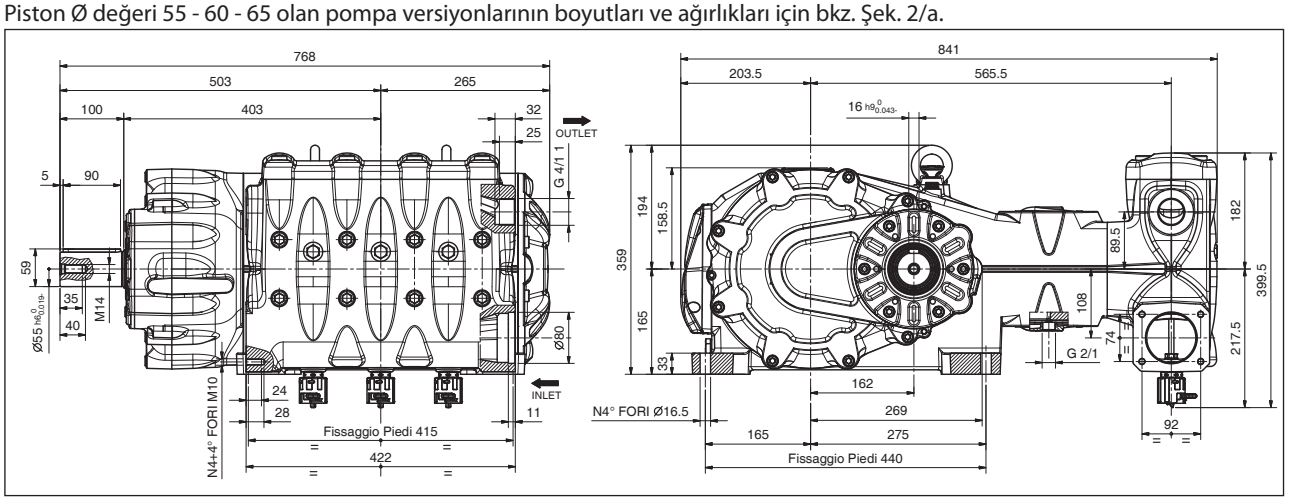
6 BOYUTLAR VE AĞIRLIKLAR

Piston Ø değeri 40 - 45 - 50 olan pompa versiyonlarının boyutları ve ağırlıkları için bkz. Şek. 2.



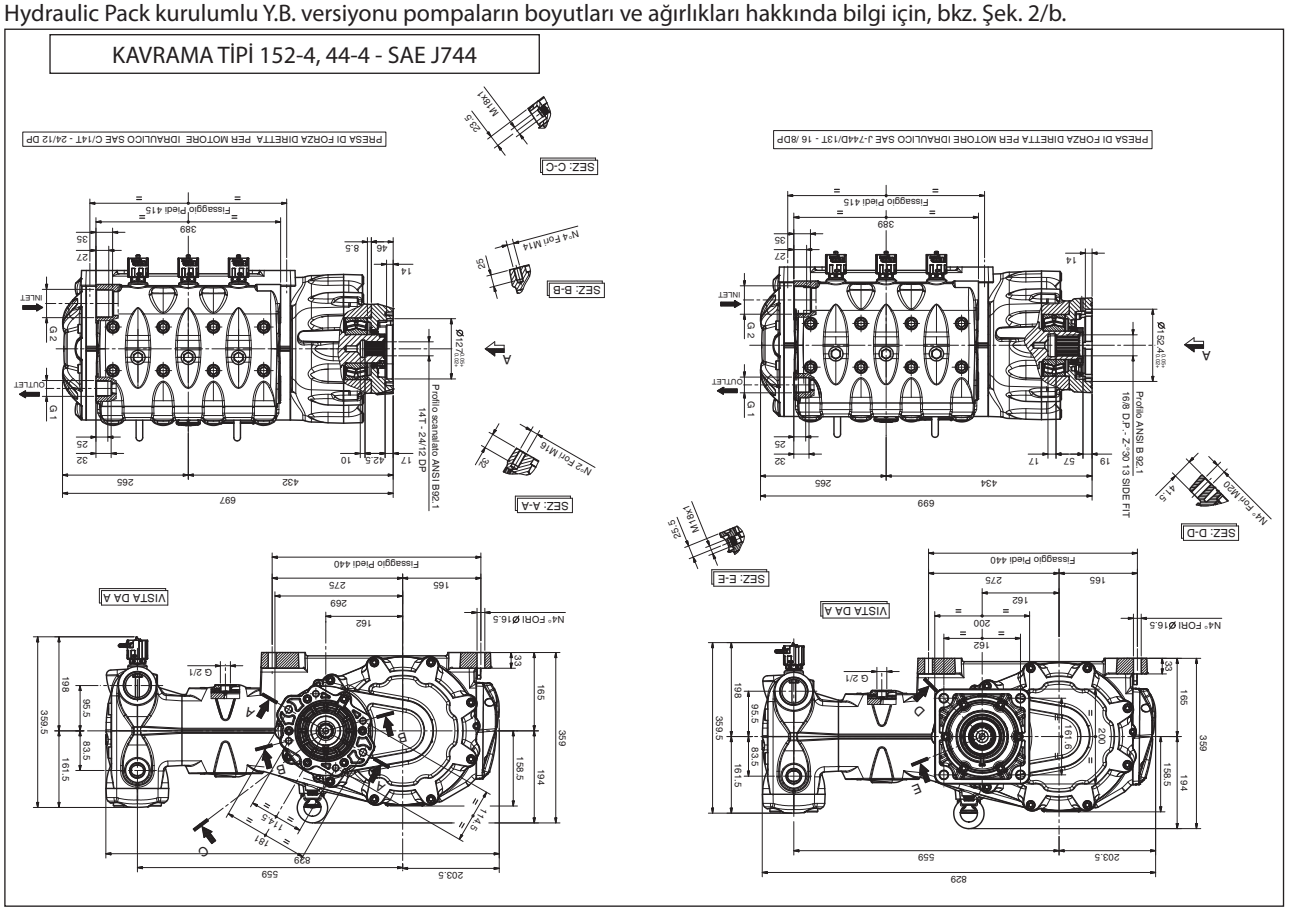
Kuru ağırlık 398 Kg. Şek. 2

Piston Ø değeri 55 - 60 - 65 olan pompa versiyonlarının boyutları ve ağırlıkları için bkz. Şek. 2/a.



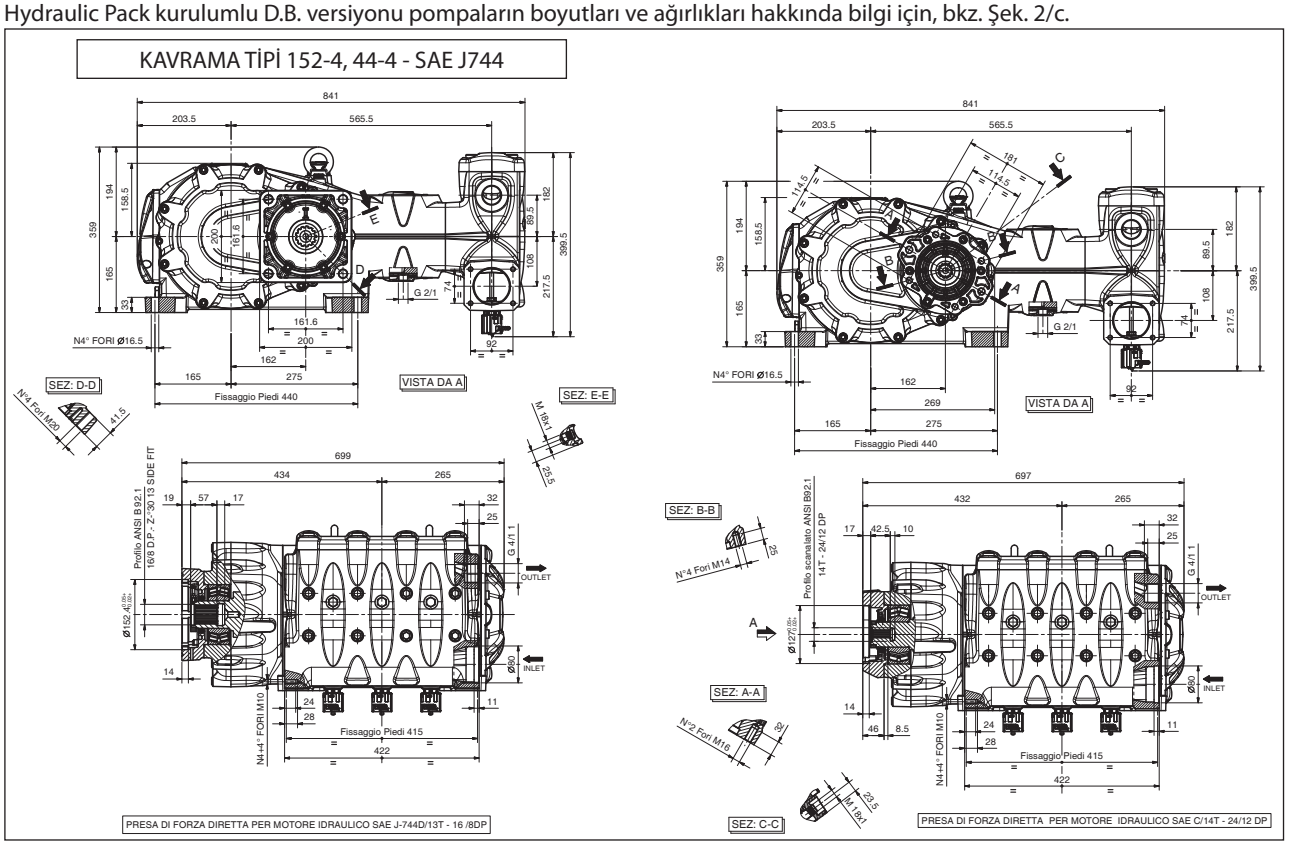
Kuru ağırlık 411 Kg. Şek. 2/a

Hydraulic Pack kurulumlu Y.B. versiyonu pompaların boyutları ve ağırlıkları hakkında bilgi için, bkz. Şek. 2/b.



Şek. 2/b

Hydraulic Pack kurulumlu D.B. versiyonu pompaların boyutları ve ağırlıkları hakkında bilgi için, bkz. Şek. 2/c.



Şek. 2/c

7 KULLANMA TALİMATLARI

Pompa, patlayıcı özelliği olmayan atmosfere sahip ortamlarda, filtrelenmiş (bkz. par. 9.7) su ile çalışacak şekilde tasarlanmıştır.
Diğer sıvılar sadece, ***Teknik Departmanının*** veya ***Müşteri Hizmetleri Departmanının*** resmi onayı ile kullanılabilir.

7.1 Su sıcaklığı

İzin verilen maksimum su sıcaklığı 40 °C'dir. Bununla birlikte pompa, su ile 60 °C'ye kadar kullanılabilir, fakat sadece kısa süreler için. Böyle bir durumda, ***Teknik Departmanımıza*** veya ***Müşteri Hizmetleri Departmanımıza*** danışmanızı öneririz.

7.2 Maksimum debi ve basınç

Katalogda belirtilen performans değerleri, pompanın elde edebildiği maksimum değerlerdir. Kullanılan güçten **bağımsız olarak**, tanım etiketinde/plakasında belirtilen maksimum basınç ve devir sayısı/hızı, ***Teknik Departmanımız*** veya ***Müşteri Hizmetleri Departmanımızın*** önceden resmi izni alınmadan asla aşılamaz.

7.3 Minimum dönme hızı

Bu tip pompalar için izin verilen minimum dönme hızı 300 dev/1'dir; performans tablosunda (bkz. bölüm 5) verilen değerden başka herhangi bir hıza ***Teknik Departmanımız*** veya ***Müşteri Hizmetleri Departmanımız*** tarafından açıkça ve resmi olarak izin verilmiş olması gerekir.

7.4 Ses emisyonu

Ses basıncı tespit testi, Avrupa Parlamentosu ve Konseyinin 2000/14 Sayılı Direktifi (Makine Direktifi) uyarınca ve sınıf 1 enstrümanlarla EN-ISO 3744-2010 uyarınca gerçekleştirilmiştir.
Ses basıncının nihai bir tespiti, komple makine/sistem üzerinde gerçekleştirilmelidir.
Eğer operatör 1 metreden daha yakın bir mesafede bulunuyorsa, yürürlükteki kanunlara uyarınca uygun bir işitme koruması kullanılmalıdır.

7.5 Titreşimler

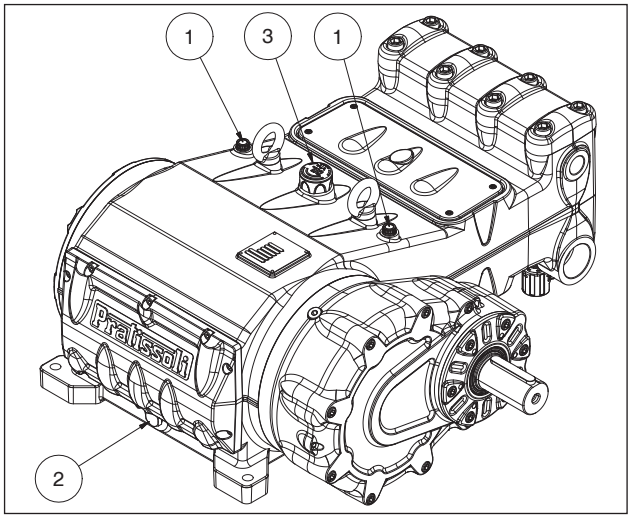
Bu değerin tespiti sadece pompa tesiste kurulu haldeyken ve müşteri tarafından beyan edilen performanstaylen yapılabilir. Değerler, yürürlükteki kanunlara uygun olmalıdır.

7.6 Önerilen yağ markaları ve tipleri

Pompa, 0 °C ile 30 °C arasındaki oda sıcaklıkları için geçerli tipte yağ ile birlikte teslim edilir.
Bazı önerilen yağ tipleri aşağıdaki tabloda verilmiştir.
Bu yağlara, paslanma direncini ve yorgunluk dayanıklılığını artırmak için katkı maddeleri ilave edilmiştir (DIN 51517 kısım 2).
Alternatif olarak, dişli yağlaması için Otomotiv Tipi SAE 85W-90 yağı da kullanabilirsiniz.

Üretici	Yağ
Agip	AGIP ACER220
ARAL	Aral Degol BG 220
BP	BP Energol HLP 220
Castrol	CASTROL HYSPIN VG 220 CASTROL MAGNA 220
DEA	Falcon CL220
elf	ELF POLYTELIS 220 REDUCTELF SP 220
Esso	NUTO 220 TERESSO 220
FINA	FINA CIRKAN 220
FUCHS	RENOLIN 212 RENOLIN DTA 220
Mobil	Mobil DTE Oil BB
Shell	Shell Tellus Öl C 220
SRS	Wintershall Ersolon 220 Wintershall Wiolan CN 220
TEXACO	RANDO HD 220
TOTAL	TOTAL Cortis 220

Üzerinde minimum ve maksimum seviye işaretleri olan yağ seviyesi ölçüm çubuğunu kullanarak yağ seviyesini kontrol edin, bkz. ①, Şek. 3.
Gerekirse, yağ kapağından yağ ekleyin ③, Şek. 3.
Yağ seviyesinin doğru şekilde kontrol edilmesi pompa çalışmıyorken ve oda sıcaklığında mümkündür, yağ değişimi yaparken pompa çalışma sıcaklığında olmalı ve tıpa çıkartılmalıdır - poz. ②, Şek. 3.
Yağ kontrolü ve değişimi işlemi için bkz. bölüm 11.
Gereken miktar ~ 13,5 litredir.



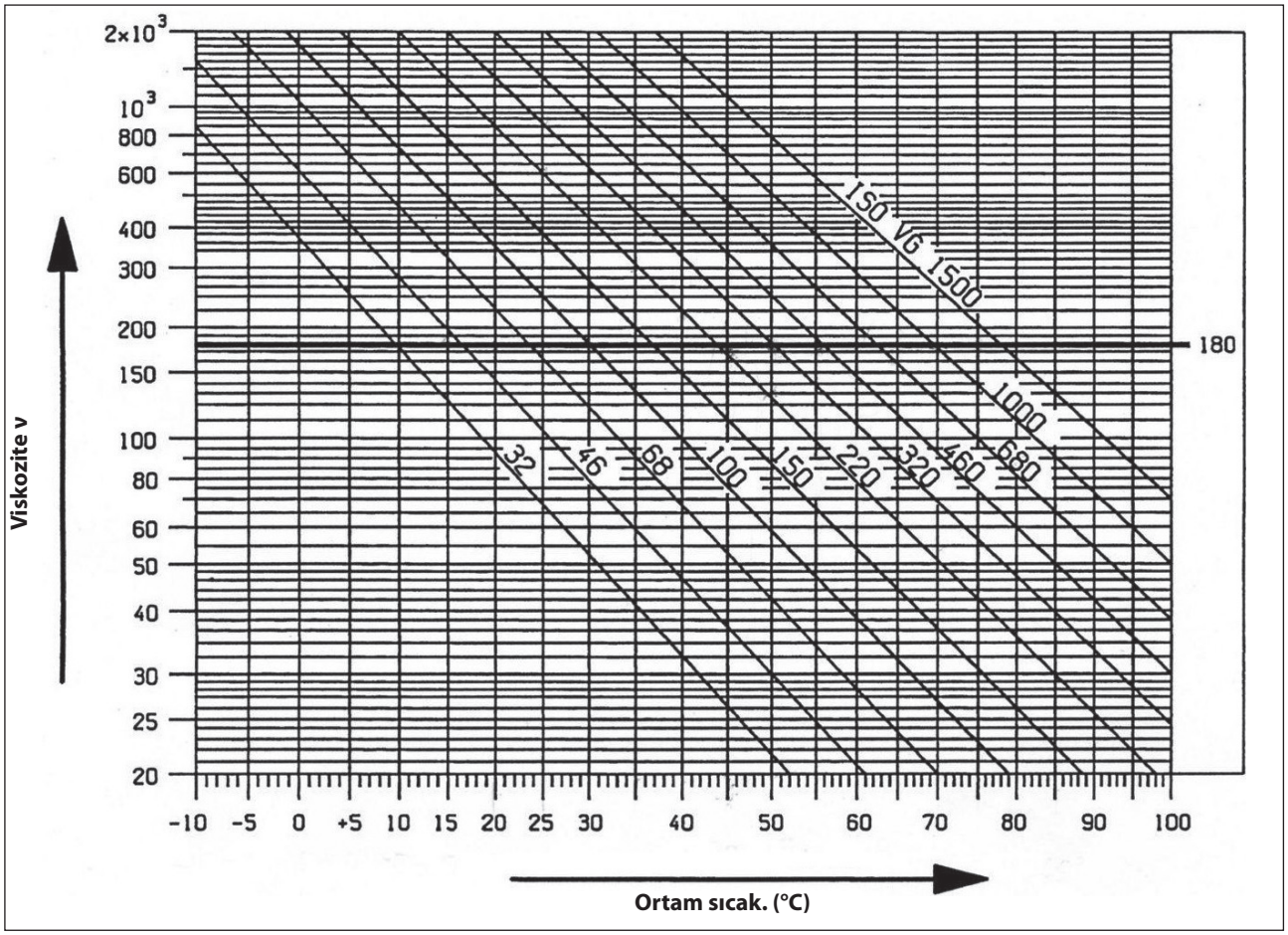
Şek. 3

Her halükarda, yağın en az yılda bir kez değiştirilmesi gereklidir, çünkü oksidasyon sonucu derecesi azalır.

Sıcaklığı 0 °C - 30 °C aralığında olmayan bir oda ısısı için, yağın minimum viskozitesinin 180 cSt olması gerektiğini unutmayarak aşağıdaki diyagramda verilen talimatları takip edin.

Viskozite / Oda sıcaklığı diyagramı

$mm^2/s = cSt$



Kullanılmış yağ uygun bir kaba boşaltılmalı ve yetkili bir geri dönüşüm tesisine gönderilmelidir. Kullanılmış yağı hiç bir zaman çevreye atmayınız.

8 PORTLAR VE BAĞLANTILAR

Pompalar şunlarla donatılmıştır:

2 Adet giriş portu "IN":

G2" (piston Ø değeri 40, 45, 50 olan versiyonlarda)

Ø80 mm (piston Ø değeri 55, 60, 65 olan versiyonlarda)

Hat bağlantısının iki porttan herhangi birine yapılmasının pompanın doğru çalışması ile bir alakası yoktur; kullanılmayan portlar hermetik olarak kapatılmalıdır.

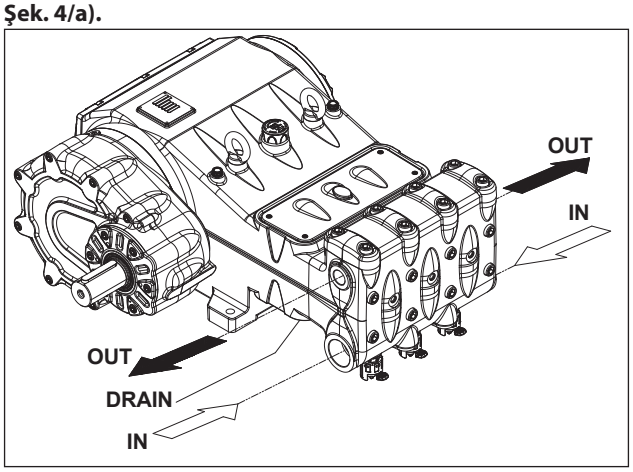
2 Adet çıkış "OUT" portu:

G1" (piston Ø değeri 40, 45, 50 olan versiyonlarda)

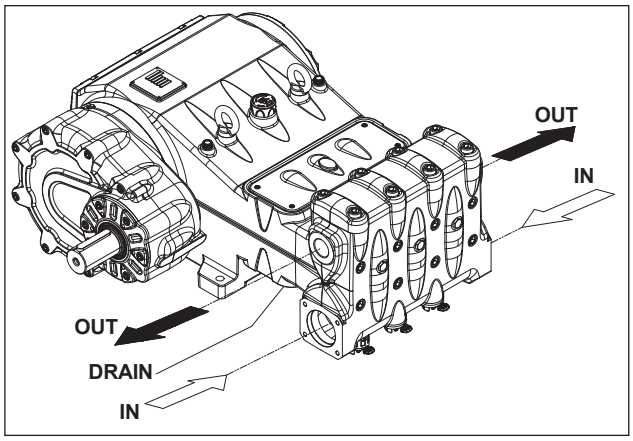
G1 ¼" (piston Ø değeri 55, 60, 65 olan versiyonlarda)

1 Adet "TAHLİYE" portu: basınç contalarının aşınması sebebiyle olabilecek herhangi bir sıvı sızıntısını gözlemek için alt kapaktaki G1/2" deliği ile. Eğer sızıntı/kaçak emareleri tespit ederseniz, ***Tamir kılavuzuna*** bakınız.

Bu orifis/ağız, her zaman açık tutulmalıdır (bkz. Şek. 4 ve Şek. 4/a).



Şek. 4



Şek. 4/a

9 POMPANIN MONTAJI

9.1 Montaj

Pompa, Ø16,5 delikli destek ayakları ile yatay pozisyonda sabitlenmelidir.
Taban, mükemmel derecede düz olmalı ve çalışma esnasında iletilen tork nedeniyle pompa kuplajı ekseni/transmisyonu üzerinde bükülme veya yanlış hizalama olmaması için yeterince sağlam olmalıdır.
Aşağıdaki şekilde gösterildiği gibi, montaj işlemini kolaylaştırmak için pompa üzerinde iki delikli kaldırma cıvatası mevcuttur.

Delikli kaldırma cıvataları sökülmemelidir.

Delikli cıvataların boyutu sadece pompayı kaldırmaya uygundur ve asla ek yükleri kaldırmak için kullanılmamalıdır



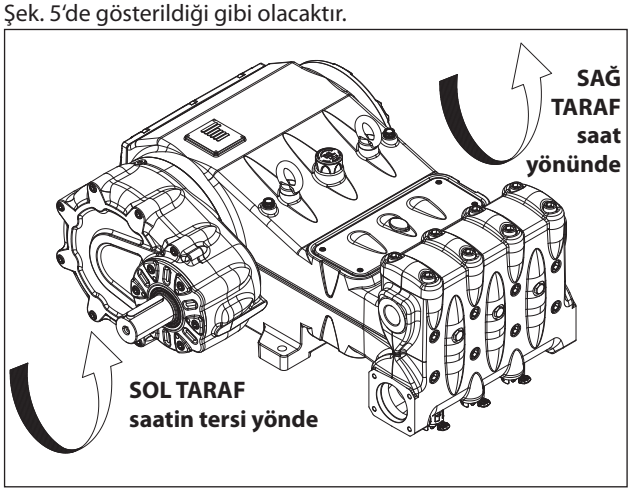
Karter üzerindeki yağ dolumu kapama tıpasını çıkartın ve yerine yağ dolum tıpasını takın.
Yağ dolum tıpası her zaman, ünite monte edildiği zaman bile, erişilebilir olmalıdır.

Pompa şaftı (PTO), tahrik ünitesine rijit/oynamaz bağlantılı olmamalıdır.
Aşağıdaki transmisyon tipleri önerilmektedir:

- Esnek kuplaj.
- Evrensel bağlantı (üretici tarafından önerilen maksimum çalışma açılarına uyunuz).
- Kayışlar; doğru bir uygulama için ***Teknik Departman*** veya ***Müşteri Hizmetleri Departmanına*** danışın.

9.2 Dönme yönü

PTO'nun dönme yönü, redüktör kapağı üzerindeki ok işareti ile gösterilmektedir.
Pompa manifolduna doğru bakan bir konumdan, dönme yönü Şek. 5'de gösterildiği gibi olacaktır.



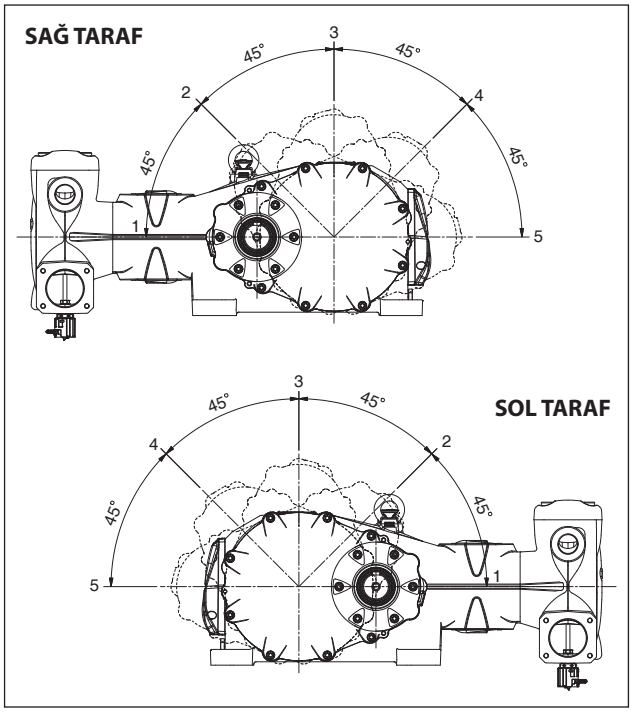
Şek. 5

9.3 Redüktör versiyonunun ve konumunun değiştirilmesi

Pompa versiyonu aşağıdaki durumlarda sağ olarak tanımlanır: pompa manifold tarafına doğru bakarken, pompa milinin PTO kavraması Sağ tarafta olmalıdır.
Pompa versiyonu aşağıdaki durumlarda sol olarak tanımlanır: pompa manifold tarafına doğru bakarken, pompa milinin PTO kavraması Sol tarafta olmalıdır (bkz. Şek. 5).

Versiyon sadece yetkili uzman personel tarafından ve *Tamir kılavuzunda* verilen talimatlara uyularak değiştirilebilir.

Buna ek olarak, redüktörü ister Sağ ister Sol tarafta olsun Şek. 6'da gösterildiği gibi 5 farklı konumda yerleştirmek mümkündür.



Şek. 6

Redüktörün pozisyonu sadece yetkili uzman personel tarafından ve *Tamir kılavuzunda* verilen talimatlara uyularak değiştirilebilir.

9.4 Hidrolik bağlantıları

Sistemi pompanın neden olduğu titreşimlerden izole etmek için, pompaya bağlanan borunun ilk bölümünün (hem giriş hem çıkış bölümünde) esnek hortumdan olması önerilir.
Giriş hortumu, pompanın hareketinden kaynaklanan negatif basıncın neden olacağı deformasyonu önlemek amacıyla yeterince rijit/sert olmalıdır.

9.5 Pompa beslemesi

MK2 pompaları, her zaman giriş basıncı ile monte edilmiş olmalıdır, yani suyu yer çekimi gücü ile ya da cebri besleme ile almalıdırlar ve asla daha düşük bir seviyeden çekmemelidirler.
Pompalar, 1 metrelik minimum giriş basıncına bile dayanabilirler, ancak, en iyi volumetrik verim ve herşeyden önce kavitasyon riskinden kaçınmak için, manifold giriş flanşında ölçülen mevcut pozitif giriş basıncı (NPSH mev.) aşağıda verilen değerlere eşit veya daha büyük olmalıdır:

	$NPSH_r$ (m)
MK240	4,5
MK245	5,5
MK250	6,5
MK255	7,5
MK260	8
MK265	9

Daha büyük silindir hacimli MK2 55 - 60 - 65 pompalarında, kavitasyon riskinden kaçınmak için, hidroliklerin geometrisini ve kayda değer debi oranlarını da hesaba katarak bir takviye pompası ile cebri besleme önerilir.
Takviye pompasının debisi, pistonlu pompanın nominal debisinin en az iki katı olmalı ve 2 ile 3 bar arası bir basınca sahip olmalıdır.
Bu besleme koşullarına, tüm işletim hızlarında riayet edilmelidir.

Takviye pompası, daima pistonlu pompadan önce çalıştırılmalıdır.
Pompayı koruyan filtrelerin besleme hattı çıkış tarafına bir basınç sivici monte edilmesi önerilir.

9.6 Giriş hattı

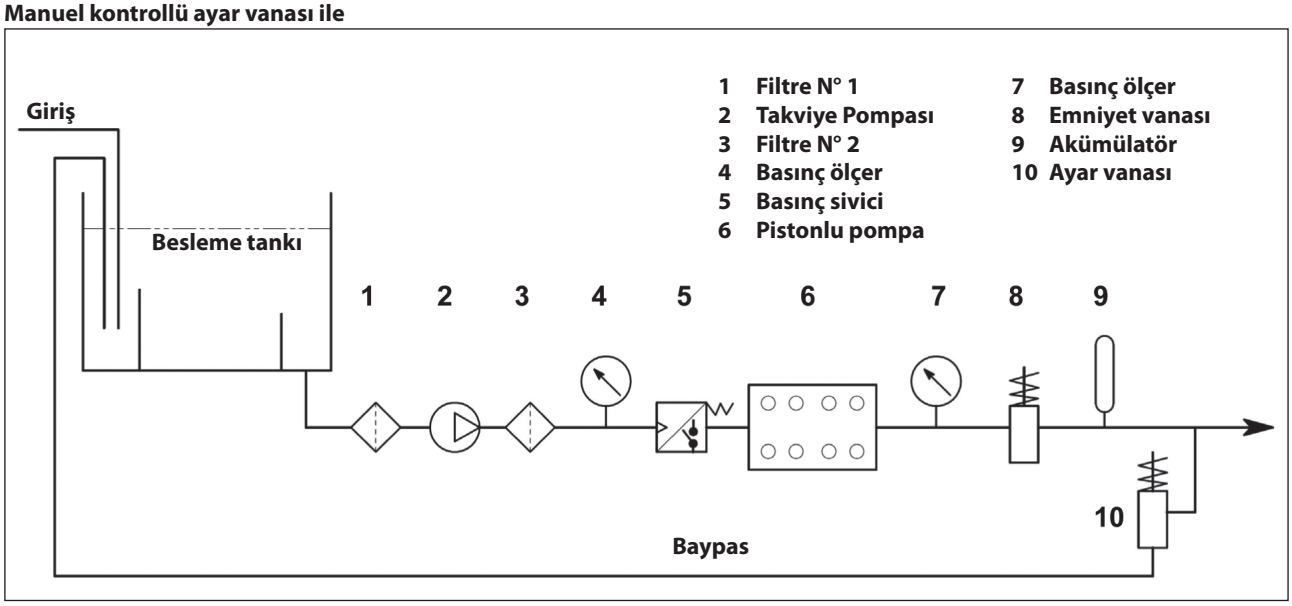
Pompanın düzgün çalışması için, giriş hattı aşağıdaki özelliklere sahip olmalıdır:

1. Minimum iç çapı, başlık 9.9'daki grafikte gösterildiği gibi olmalı ve her halükarda pompa manifoldunun çapına eşit veya daha büyük olmalıdır.

   Giriş hattı boyunca bölgesel/yerel kısıtlamalardan kaçınılmalıdır, çünkü bu kısıtlamalar kavitasyonla sonuçlanan basınç düşmelerine neden olabilir.
   90° Derecelik dirseklerden, diğer boru hatlarına bağlantılardan, kısıtlamalardan, ters eğimlerden, ters çevrilmiş U-eğimlerden ve T bağlantılardan kaçınınız.
2. Düzen, kavitasyon sorunları önlenecek şekilde yapılmalıdır.
3. Zaman içerisinde mükemmel bir hermetik sızdırmazlık elde etmek için, tamamen hava geçirmez şekilde olmalıdır.
4. Durduğunda, kısmi boşalma da dahil olmak üzere pompanın boşalmasını önlemelidir.
5. Pompanın performansını tehlikeye atabileceğinden, 3 veya 4 yollu hidrolik bağlantılar, adaptörler, döner mafsallar, vs. kullanmayın.
6. Deterjan girişi için venturi borular veya enjektörler takmayın.
7. Taban vanaları veya başka tipte tek yönlü vanalar kullanmaktan kaçınınız.
8. Baypas vanası tahliyesini giriş hattına devridaim yaptırmayın.
9. Baypas ve tank besleme hattından gelen su akışının pompa besleme borusu portu yakınında burgaç veya türbülans oluşturmasını önlemek için tank içerisine uygun deflektörler temin edin.
10. Giriş hattını pompaya bağlamadan önce, hattın içinin iyice temiz olduğundan emin olun.
11. Pistonlu pompa giriş portunun yakınındaki takviye basıncını kontrol etmek için, filtrelerin çıkışına bir basınç ölçer takın.

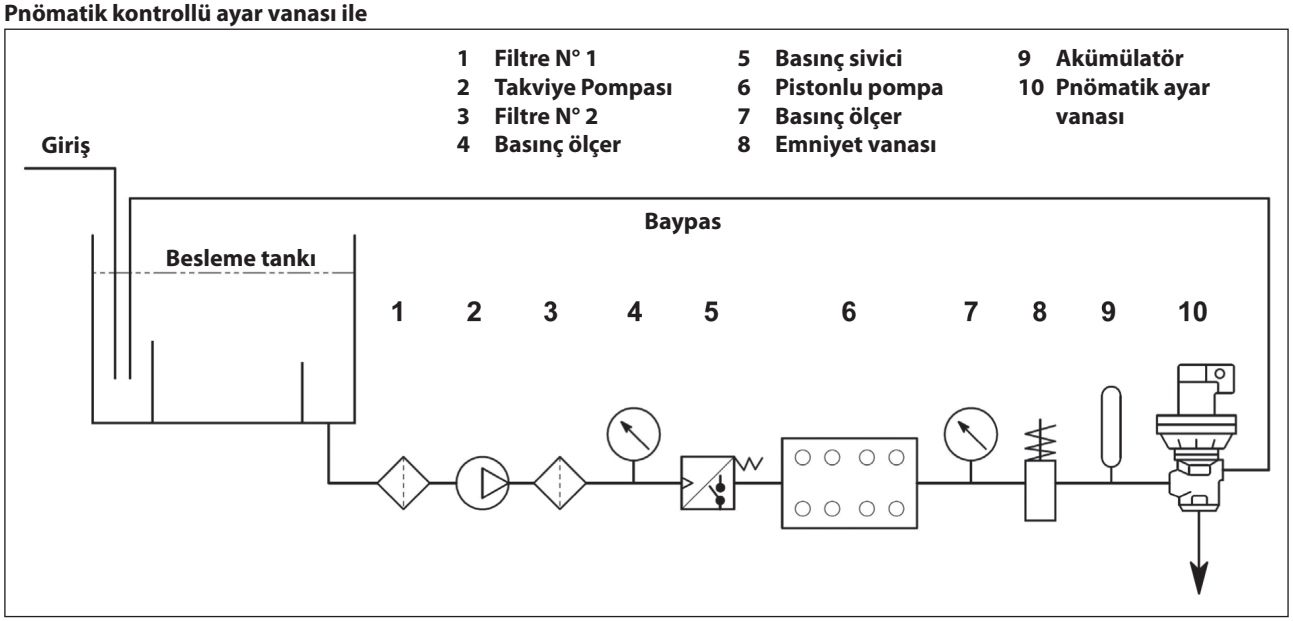
9.7 Filtreleme

Pompa giriş hattı üzerine iki filtre, Şek. 7 ve Şek. 7/a şekillerinde gösterildiği gibi konumlandırılarak monte edilmelidir.
Manuel kontrollü ayar vanası ile



Şek. 7

Pnömatik kontrollü ayar vanası ile



Şek. 7/a

Pompaya mümkün olduğunca yakın monte edilmesi gereken filtre, kolay denetlenebilir olmalı ve aşağıdaki özelliklere sahip olmalıdır:

1. Minimum debi, pompanın nominal debisinin en az 3 katı olmalıdır.
2. Giriş/çıkış portu çapları, pompanın giriş portunun çapından küçük olmamalıdır.
3. Filtreleme derecesi 200 ile 360 µm arasında olmalıdır.

Pompanın sorunsuz çalışabilmesi için, pompanın güncel kullanımına, pompalanan su miktarına ve etkin tıkanma koşullarına göre düzenli filtre temizliği planlayınız.

9.8 Çıkış hattı

Çıkış hattının doğru tasarımı için, aşağıdaki montaj talimatlarına riayet ediniz:

1. Boru iç çapı, doğru akışkan hızı elde etmeye yeterli olmalıdır, bkz. 9.9 başlığındaki grafik).
2. Pompa çıkışına bağlı olan hattın ilk kesiti/kısmı, pompanın neden olduğu titreşimin sistemin geriye kalan kısmına iletilmesini önlemek için esnek bir hortumdan olmalıdır.
3. Tüm çalışma koşullarında en yüksek güvenliği sağlamak için, yüksek basınç boruları ve bağlantıları kullanın.
4. Çıkış hattına daima bir emniyet vanası takılmalıdır.
5. Piston pompalarının tipik özelliği olan titreşim yüklerine dayanabilecek basınç ölçerler kullanın.
6. Tasarım aşamasında, pompada ölçülen basınca kıyasla kullanılan basınçta bir basınç düşmesine neden olan hat basıncı düşmelerini göz önünde bulundurun.
7. Çıkış hattında pompanın ürettiği darbelerin/titreşimlerin zarar verici olabildiği veya her halükarda istenmediği uygulamalar için, yeterli boyuta sahip bir titreşim sönümleyici monte edin.

9.9 İletim boruları iç çapı hesaplaması

Borunun/kanalın için çapını belirlemek için, aşağıdaki diyagrama bakınız:

Giriş kanalı

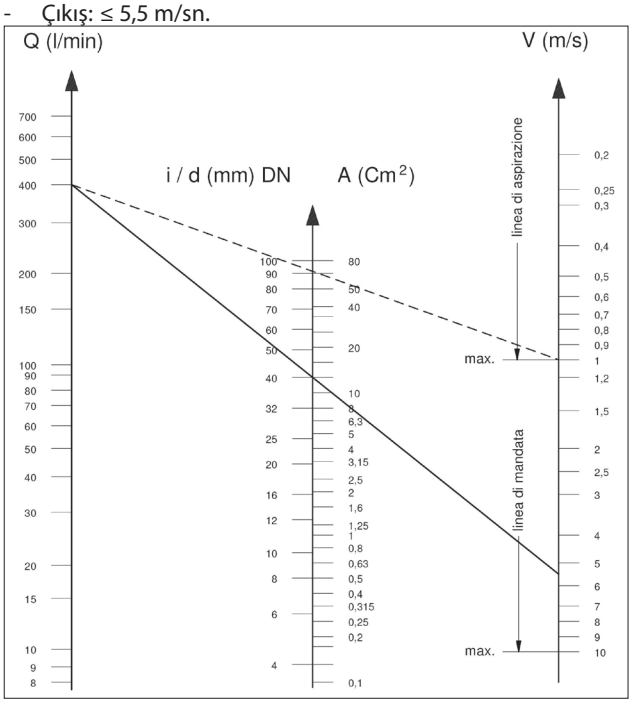
Yaklaşık 400 l/dak'lık bir debi ve 1 m/sn'lik bir su hızı ile. İki ölçeği birleştiren grafik çizgisi, orta/merkez ölçekte çap değerini göstermektedir, yani yaklaşık 90 mm.

Çıkış kanalı

Yaklaşık 400 l/dak'lık bir debi ve 5,5 m/sn'lik bir su hızı ile. İki ölçeği birleştiren grafik çizgisi, orta/merkez ölçekte çap değerini göstermektedir, yani yaklaşık 40 mm.

Takviye pompası ile elde edilebilen optimal hızlar:

- Giriş: ≤ 1 m/sn.
- Çıkış: ≤ 5,5 m/sn.



Grafikte, boru dirençleri, vanalar, kanalların uzunluğunun neden olduğu yük/basınç kayıpları, pompalanan sıvının viskozitesi veya sıcaklığı dikkate alınmamıştır.
Gerekirse, ***Teknik Departman*** veya ***Müşteri Hizmetleri Departmanı*** ile iletişime geçin.

9.10 V-kayışlı transmisyon

Par. 9.1'de belirtildiği gibi, sadece istisnai hallerde, pompa bir V-kayışlı sistem ile kontrol edilebilir.
Doğru düzen boyutlandırması hakkında bilgi için, ***Teknik Departmanımıza*** veya ***Müşteri Hizmetleri Departmanımıza*** danışın.

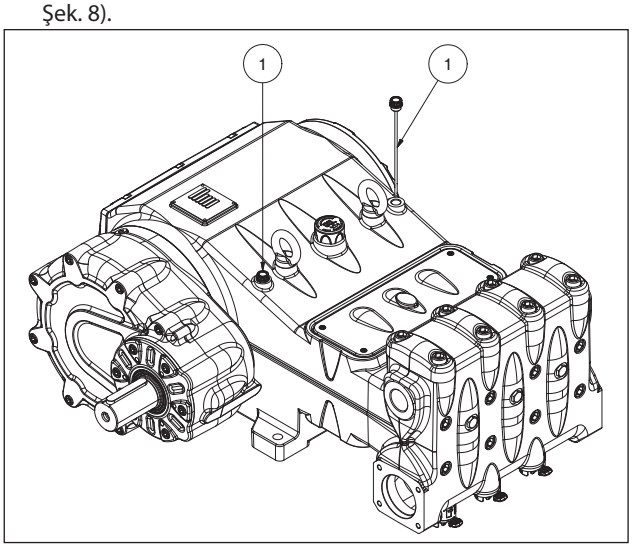
10 BAŞLATMA VE ÇALIŞTIRMA

10.1 Ön kontroller

Başlatmadan önce, aşağıdakilerden emin olunuz:

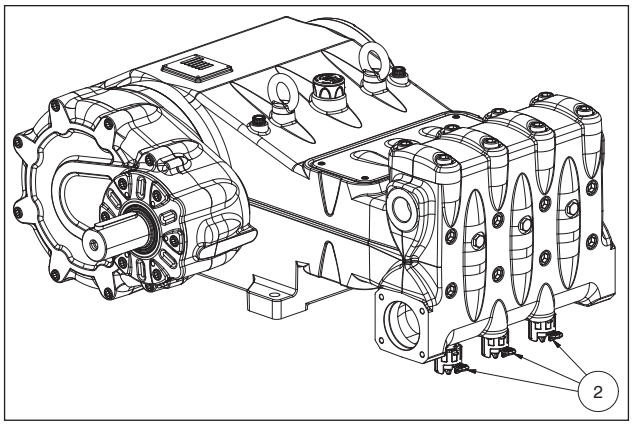
Giriş hattının bağlı ve basınçlı olduğundan (bkz. bölüm 9): pompa asla kuru çalışmamalıdır.

1. Giriş hattının zaman içerisinde hermetik bir sızdırmazlığı muhafaza ettiğinden.
2. Besleme kaynağı ile pompa arasındaki kapama vanalarının tamamen açık olduğundan. Çıkış hattının, pompa manifoldunun içerisinde bulunan havayı hızlı bir şekilde atılması ve dolayısıyla hızlı başlatmanın sağlanabilmesi için rahatça tahliye yapabildiğinden.
3. Tüm giriş ve çıkış eklemleri ve bağlantılarının doğru şekilde sıkılandığından.
4. Pompa/transmisyon şaftı üzerindeki kuplaj toleranslarının (yarım-eklem hizasızlığı, kardan eğim açısı, kayış çekme, vs.), transmisyon üreticisinin şart koştuğu limitler dahilinde olduğundan.
5. Yağ seviyesi ölçüm çubuğunu kullanarak, pompa karterindeki yağın doğru seviyede olduğundan (poz. ①, Şek. 8).

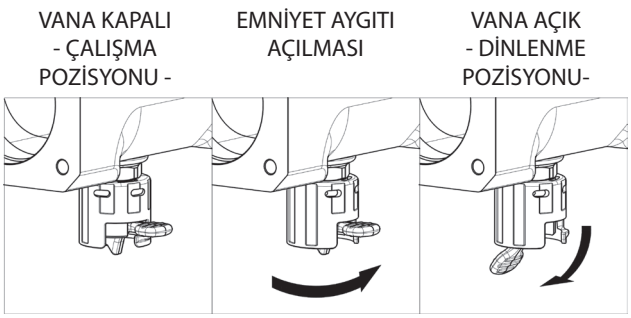


Şek. 8

Pompanın uzun süre depoda kalması veya uzun süre kullanılmaması durumunda, üç vana iticisini/kaldırıcısını açarak emme vanalarının doğru çalışmasını sağlayın (bkz. poz. ②, Şek. 9). Pompayı çalıştırmadan önce vanaları kapattığınızdan emin olun.
"Çalışma" ve "dinlenme" pozisyonları için, bkz. Şek. 10.



Şek. 9

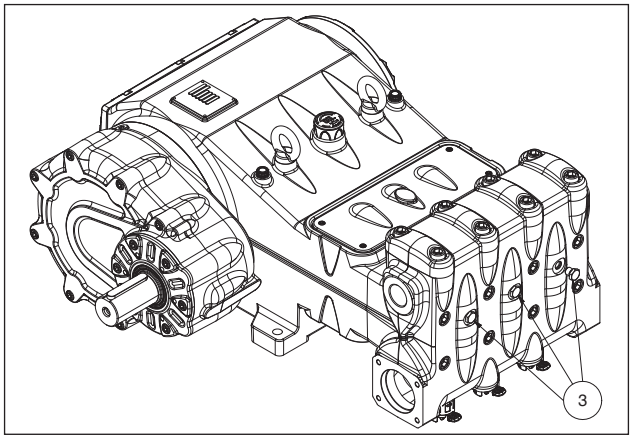


Şek. 10

10.2 Başlatma

1. İlk kez çalıştırıldığında, dönme yönünün doğru olup olmadığını kontrol edin.
2. Pompanın doğru bir şekilde beslendiğini kontrol edin.
3. Pompayı hiçbir yük altında olmadan başlatın.
4. Çalışma esnasındaki dönme hızının pompanın nominal hızını geçmediğinden emin olun.
5. Pompaya basınç yüklemeden önce en az 3 dakika çalışmasına izin verin.
6. Her bir pompa durdurmasından önce, ayar vanası ile veya herhangi bir basınç boşaltma aygıtı kullanarak basıncı sıfırlayın.

Yetersiz besleme sebebiyle başlatmada herhangi bir sorun yaşanırsa, manifoldun ön kısmında yer alan üç tıpayı çıkartmak mümkündür (MK240 versiyonu hariç), bkz. poz. ③ - Şek. 11.



Şek. 11

11 ÖNLEYİCİ BAKIM

Pompanın güvenilirliği ve etkinliği için, aşağıdaki tabloda verilen bakım aralıklarına riayet edin.

ÖNLEYİCİ BAKIM	
Her 500 saatte	**Her 1500 saatte**
Yağ seviyesinin kontrolü	Yağı değiştirin
	Kontrol/Değişim*: Vanalar Vana yatakları Vana yayları Vana kılavuzları
	Kontrol/Değişim*: Y.B. contaları D.B. contaları

* Değiştirmek için, ***Tamir Kılavuzunda*** verilen talimatları uygulayın.

12 POMPANIN MUHAFAZASI/ DEPOLANMASI

12.1 Pompaya paslanma önleyici emisyon veya antifriz çözeltisi doldurma yöntemi

Pompanın, düzene bağlı olarak harici bir diyaframlı pompa kullanılmak suretiyle paslanma önleyici emülsiyonla veya antifriz çözeltisi ile doldurulması yöntemi için bkz. par. 9.7:

a) Eğer açıksa, filtre tahliye hattını kapatın.
b) Bağlantı borusunun temiz olduğundan emin olun, gresle kaplayın ve yüksek basınçlı tahliyeye bağlayın.
c) Giriş borusunu diyaframlı pompaya bağlayın; pompa giriş bağlantısını açın ve bu nokta ile diyaframlı pompa arasına boruyu takın.
d) Hazneye çözeltiyi/emülsiyonu doldurun.
e) Giriş borusunun boştaki uçlarını ve yüksek basınçlı tahliye borusunu haznenin içine koyun.
f) Diyaframlı pompayı çalıştırın.
g) Yüksek basınçlı emülsiyon tahliye borusundan çıkana kadar emülsiyonu pompalayın.
h) En az bir dakika daha pompalamaya devam edin; gerekirse emülsiyon, örneğin Shell Donax eklenerek güçlendirilebilir.
i) Pompayı durdurun, boruyu giriş bağlantısından sökün ve bir tıpa ile kapatın
j) Hortumu/boruyu yüksek basınçlı tahliyeden çıkartın. Her iki boru bağlantısını da temizleyin, gresleyin ve tıpa ile kapatın.

12.2 Borular

a) Boruları yukarıda açıklanan prosedüre göre greslemeden ve korumaya almadan önce, tazyikli hava ile bağlantıları kurulayın.
b) Polietilen ile kaplayın.
c) Bunları çok sıkı sarmayın; bükülmeler olmadığından emin olun.

13 DONMAYA KARŞI ÖNLEMLER



Donma riskinin olduğu bölgelerde ve dönemlerde, bölüm 12'deki talimatları uygulayın (bkz. başlık 12.1).



Buz mevcudiyeti durumunda, devrenin buzu tamamen çözülene kadar pompayı hiçbir halükarda çalıştırmayın; eğer bu talimata riayet edilmezse, pompada ciddi hasarlar meydana gelebilir.

14 GARANTİ KOŞULLARI

Garanti süresi ve koşulları, satın alma sözleşmesinde yer almaktadır.

Aşağıdaki durumlarda garanti geçersiz kalacaktır:

a) Pompa mutabık kalınan amaçların dışında başka bir amaç için kullanılırsa.
b) Pompaya, performans değerleri tabloda verilenlerin üstünde olan bir elektrik motoru veya içten yanmalı bir motor ile güç verilirse.
c) Emniyet aygıtları kurcalanırsa veya bağlantıları kesilirse.
d) Pompa Interpump Group tarafından temin edilmemiş aksesuarlarla veya yedek parçalarla kullanılırsa.
e) Hasarın nedeni aşağıdakilerden birisi ise:
   1) yanlış kullanım
   2) bakım talimatlarına uyulmaması
   3) çalıştırma talimatlarında açıklananlardan farklı bir kullanım şekli
   4) yetersiz debi
   5) hatalı kurulum/montaj
   6) boruların hatalı konumlandırılması veya boyutlandırılması
   7) onaylanmamış tasarım değişiklikleri
   8) kavitasyon.

15 ÇALIŞMA ANORMALLİKLERİ VE BUNLARIN OLASI NEDENLERİ



Başlatma anında pompadan ses gelmiyor:
- Pompa hazır değildir ve kuru çalışıyordur.
- Girişte su yoktur.
- Vanalar sıkışmıştır.
- Çıkış hattı kapalıdır ve pompa manifoldunda mevcut havanın tahliyesine izin vermiyordur.



Pompanın düzensiz titremesi:
- Hava girmesi.
- Yetersiz besleme.
- Giriş hattındaki bükülmeler, dirsekler, eklemler sıvı geçişini tıkıyordur.
- Giriş filtresi kirlidir veya çok küçüktür.
- Takılı ise, takviye pompası yetersiz basınç veya debi besliyordur.
- Pompa, yetersiz kaynak nedeniyle veya çıkışın başlatma esnasında kapalı olması nedeniyle çalışmaya başlamıyordur.
- Pompa, vana sıkışması nedeniyle çalışmaya başlamıyordur.
- Vanalar aşınmıştır.
- Basınç contaları aşınmıştır.
- Basınç ayar vanası hatalı çalışıyordur.
- Transmisyon sorunları.



Pompa nominal debi sağlamıyor / aşırı gürültü:
- Yetersiz besleme (yukarıda açıklanan nedenlere bakın).



- Pompa hızı nominal hız değerinin altındadır;
- Basınç ayar vanasından aşırı dahili sızıntı/kaçak.
- Vanalar aşınmıştır.
- Basınç contalarından aşırı dahili sızıntı/kaçak.
- Aşağıdaki nedenlerden ötürü kavitasyon:
  1) Giriş borularının boyutlarının hatalı olması/yetersiz çapa sahip olması.
  2) Yetersiz debi.
  3) Yüksek su sıcaklığı.



Pompa tarafından sağlanan basınç yetersiz:
- Kullanım debisi (nozül) pompa kapasitesine göre büyüktür.
- Dakikadaki devir sayısı yetersizdir.
- Basınç contalarından aşırı dahili sızıntı/kaçak.
- Basınç ayar vanası hatalı çalışıyordur.
- Vanalar aşınmıştır.

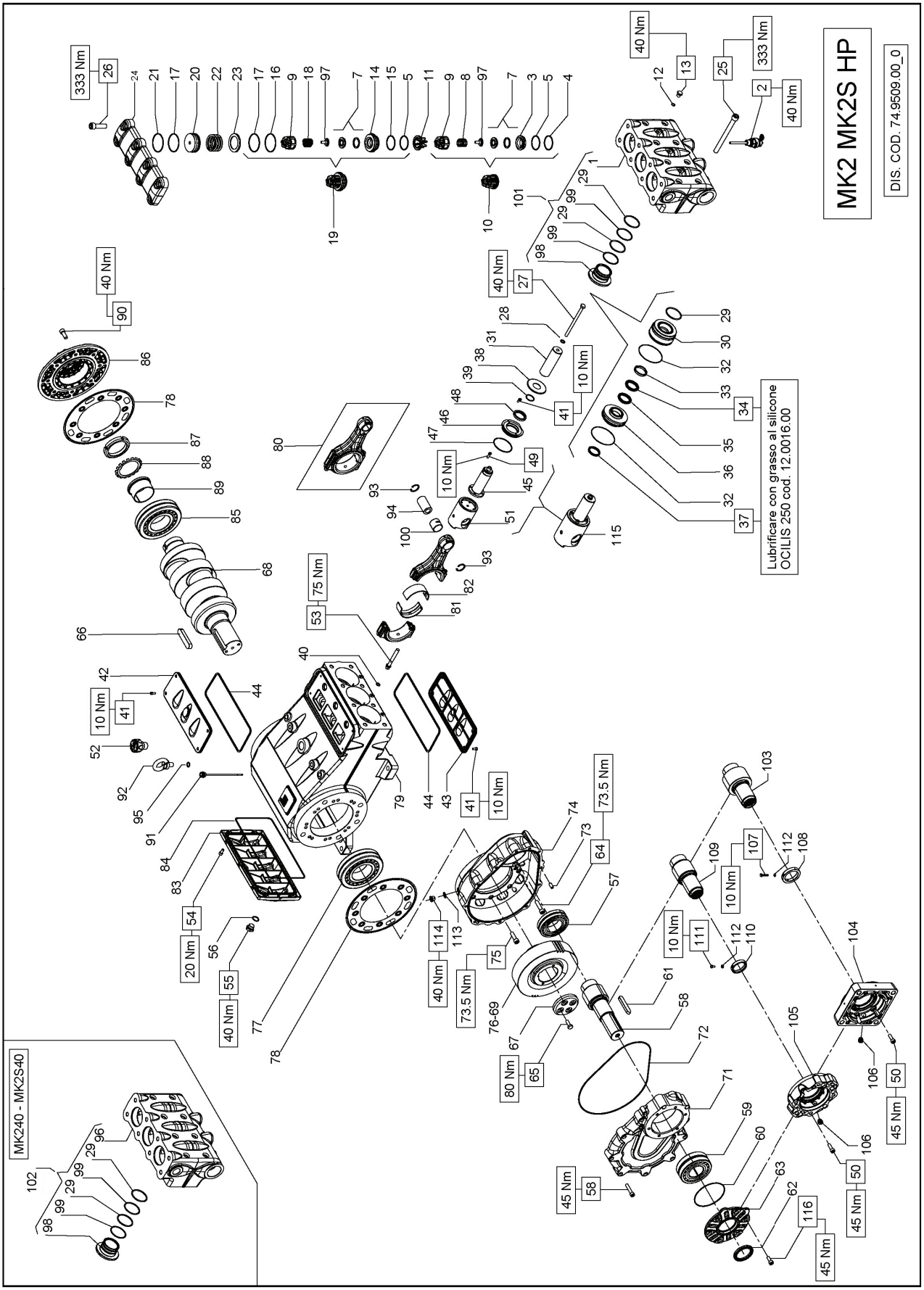


Pompa aşırı ısınıyor:
- Pompa aşırı basınç koşullarında çalışıyordur veya pompa devri nominal değerin üzerindedir.
- Pompa karterinde yağ seviyesi düşüktür veya yağ tipi bölüm 7'de açıklanan önerilen tiplerde değildir (bkz. Par. 7.6).
- Eklem veya makara hizalaması yanlıştır.
- Çalışma esnasında aşırı pompa eğilmesi.



Borularda titreşimler veya borularda vuruş/darbe etkisi:
- Hava girmesi.
- Basınç ayar vanasının hatalı çalışması.
- Vanalarda arıza.
- Transmisyon hareketinde düzensizlik.

16 AÇILIMLI ÇİZİM VE PARÇA LİSTESİ



KIT RICAMBIO – SPARE KIT

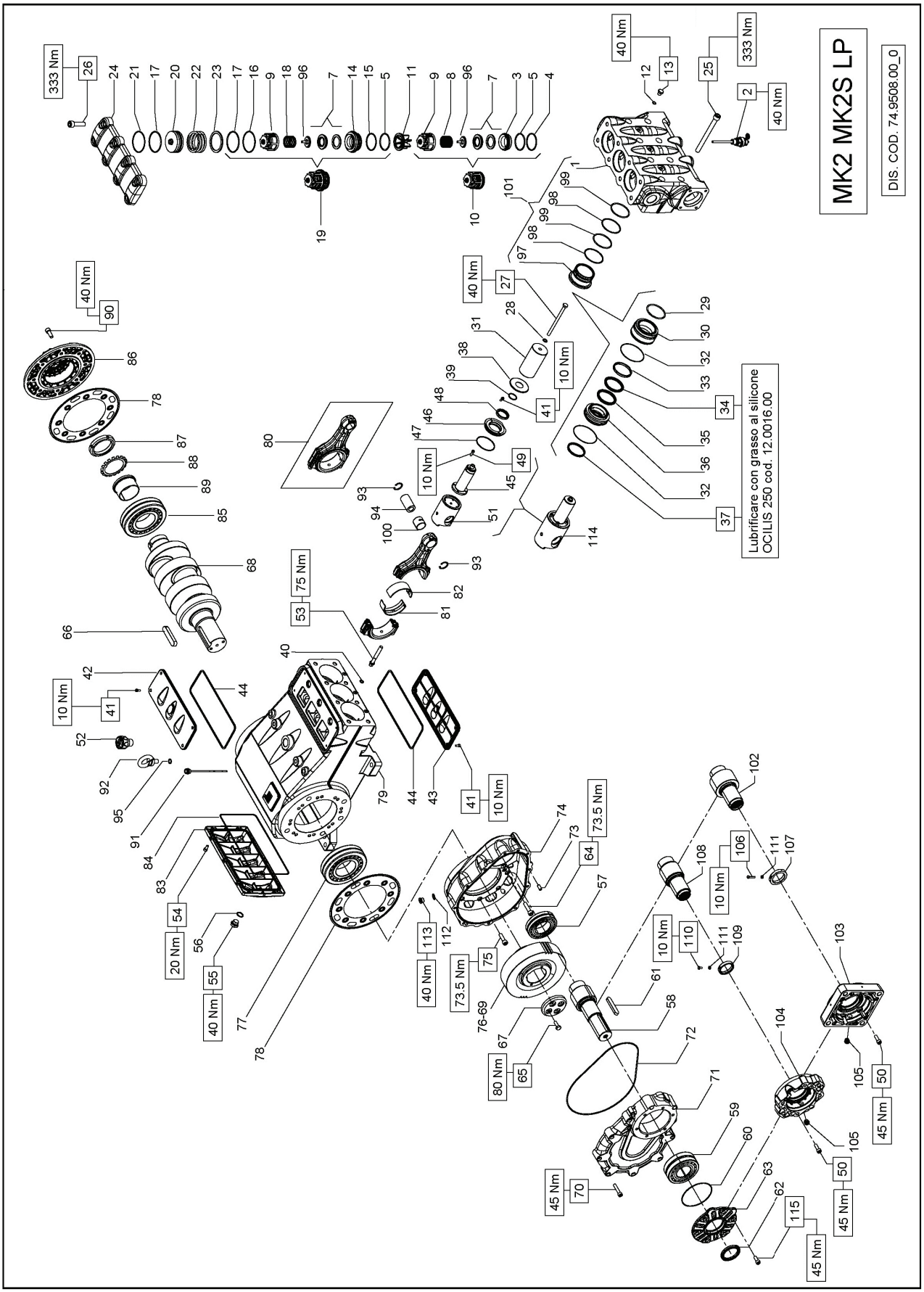
		MK240 - MK2S40 (D.40)	MK245 - MK2S45 (D.45)	MK250 - MK2S50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK240 - MK2S40
MK245 - MK2S45
MK250 - MK2S50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1


MK2 MK2S LP
DIS. COD. 74.9508.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK255 - MK2S55 (D.55)	MK260 - MK2S60 (D.60)	MK265 - MK2S65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2045	KIT 2046	KIT 2047
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2447	KIT 2448	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK255 - MK2S55
MK260 - MK2S60
MK265 - MK2S65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2114.56	CAMICIA PISTONE D. 55		3
	74.2115.56	CAMICIA PISTONE D. 60		
	74.2116.56	CAMICIA PISTONE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1003.92	ANELLO DI TESTA PISTONE D. 55		3
	74.1004.92	ANELLO DI TESTA PISTONE D. 60		
	74.1005.92	ANELLO DI TESTA PISTONE D. 65		
34	90.2873.00	ANELLO TEN. ALT. D. 55.0x70.0x7.5/4.5 HP	A-C	3
	90.2883.00	ANELLO TEN. ALT. D. 60.0x76.0x8.0/4.8 HP	A-C	
	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	
35	90.2875.00	ANELLO RESTOP D. 55.0x70.0x8.0/4.5	A-C	3
	90.2885.00	ANELLO RESTOP D. 60.0x76.0x8.0/4.5	A-C	
	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	
36	74.2120.68	SUPPORTO GUARNIZIONE D. 55		3
	74.2121.68	SUPPORTO GUARNIZIONE D. 60		
	74.2122.68	SUPPORTO GUARNIZIONE D. 65		

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
37	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		10
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.55	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	73.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK2		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2S		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	74.2150.56	BOCCOLA TESTATA		3
98	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
99	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1201.01	TESTATA CON BOCCOLA		1
112	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
113	98.2086.00	TAPPO G 3/8"x12		2
114	74.6062.01	GR. GUIDA PISTONE		3
115	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
102	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
103	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
107	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
111	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.750 - ELICOIDALE		1
104	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
108	10.0906.55	PIGNONE Z16 R. 3.750 - ELICOIDALE FEMM.		1
109	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
110	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
111	92.2025.00	DADO M6x5 UNI 5588		1

17 ÖZEL VERSİYONLAR

MK2 pompasının, aşağıdaki özel versiyonları da mevcuttur:

- MK2R (Devridaimli Su için)
- MK2SR (Devridaimli Su için)
- MK2C (Metanol için)
- MK2SC (Metanol için)
- MK2SH (AISI 420 manifoldlu)

Aşağıda, bu versiyonların nasıl seçileceği ve kullanılacağı hakkında faydalı bilgiler verilmiştir.
Aksi belirtilmedikçe, standart MK2 pompa versiyonu için yukarıdaki bilgileri dikkate alın.

17.1 MK2R-MK2SR versiyonu pompa

17.1.1 Kullanma talimatları

MK2R/MK2SR serisi pompalar, potansiyel açıdan patlayıcı olmayan ortamlarda ve partikül açısından zengin su kullanılarak çalışacak şekilde tasarlanmıştır, dolayısıyla sıvı devridaimli sistemler için uygun sistemlerdir.
Piston contalarının hizmet ömrü/dayanıklılığı, sıvıda bulunan katı partiküllerin hem boyut hem de yoğunluk olarak yüzdesinden doğrudan etkilenir. Contaların uzun ömürlü olması için, partikül büyüklüğünün 200 mikron değerini geçmemesi ve hacmen maks. %20 olması önerilir.
Diğer talimatlar ve sistem maksimum düzeni/ değerleri için, bkz. par. 17.2.6.

17.1.2 Maksimum debi ve basınç

Katalogda belirtilen performans değerleri, pompanın elde edebildiği maksimum değerlerdir. Kullanılan güçten **bağımsız olarak**, tanım etiketinde/plakasında belirtilen maksimum basınç ve devir sayısı/hızı, ***Teknik Departmanımız*** veya ***Müşteri Hizmetleri Departmanımızın*** önceden resmi izni alınmadan asla aşılamaz.

17.1.3 Teknik özellikler

Model	Devir/1'	Debi		Basınç		Güç	
		l/dak	Gpm	bar	psi	kW	Hp
MK2R 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2R 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2R 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2R 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2R 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2R 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Model	Devir/1'	Debi		Basınç		Güç	
		l/dak	Gpm	bar	psi	kW	Hp
MK2SR 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2SR 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SR 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2SR 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2SR 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2SR 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.1.4 Boyutlar ve ağırlıklar

Pompaların boyutları ve ağırlıkları hakkında bilgi için, bölüm 6'daki şemalara bakın.

17.1.5 Pompa beslemesi

Pompalar, her zaman giriş basıncı ile monte edilmiş olmalıdır, yani suyu yer çekimi gücü ile ya da cebri besleme ile almalıdırlar ve asla daha düşük bir seviyeden çekmemelidirler. Pompalar, 1 metrelik minimum giriş basıncına bile dayanabilirler, ancak, en iyi volumetrik verim ve herşeyden önce kavitasyon riskinden kaçınmak için, manifold giriş flanşında ölçülen mevcut pozitif giriş basıncı (NPSH mev.) aşağıda verilen değerlere eşit veya daha büyük olmalıdır.

	$NPSH_r$(m)
MK2R/MK2SR40	4,5
MK2R/MK2SR45	5,5
MK2R/MK2SR50	6,5
MK2R/MK2SR55	7,5
MK2R/MK2SR60	8
MK2R/MK2SR65	9

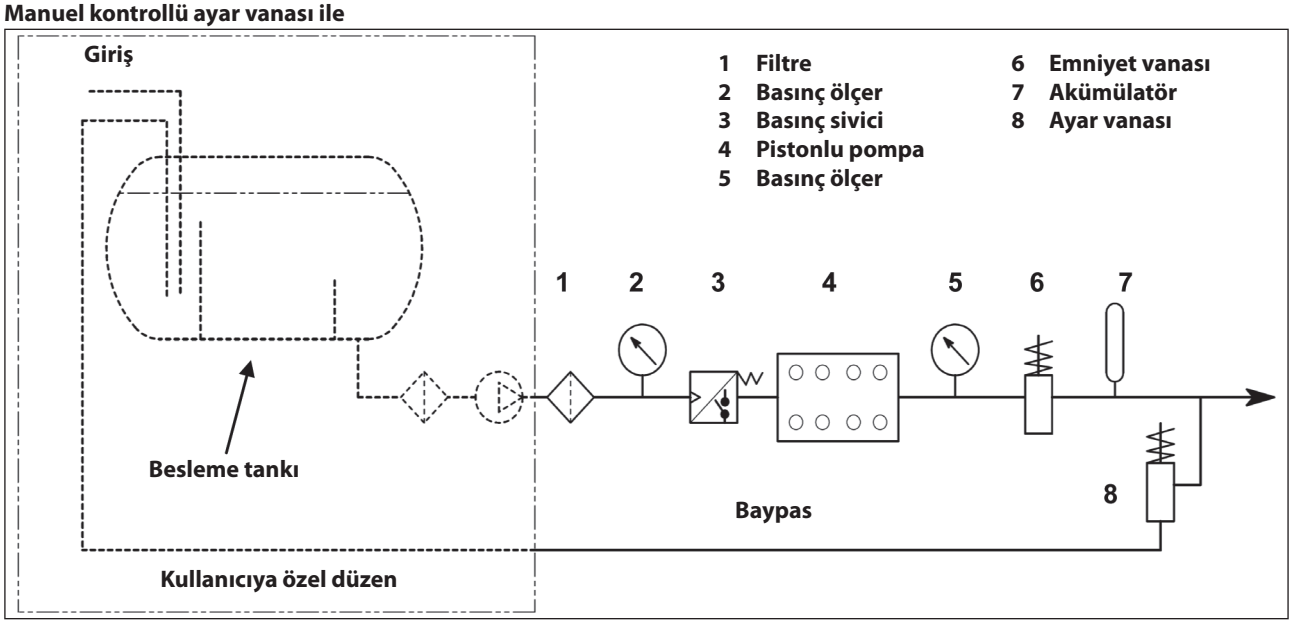
Piston Ø değeri 55 - 60 - 65 olan daha büyük silindir hacimli pompalarda, kavitasyon riskinden kaçınmak için, hidroliklerin geometrisini ve kayda değer debi oranlarını da hesaba katarak bir takviye pompası ile cebri besleme önerilir.
Takviye pompasının debisi, pistonlu pompanın nominal debisinin en az iki katı olmalı ve 2 ile 3 bar arası bir basınca sahip olmalıdır.
Bu besleme koşullarına, tüm işletim hızlarında riayet edilmelidir.

Takviye pompası, daima pistonlu pompadan önce çalıştırılmalıdır.
Pompayı koruyan filtrelerin besleme hattı çıkış tarafına bir basınç sivici monte edilmesi önerilir.

17.1.6 Filtreleme

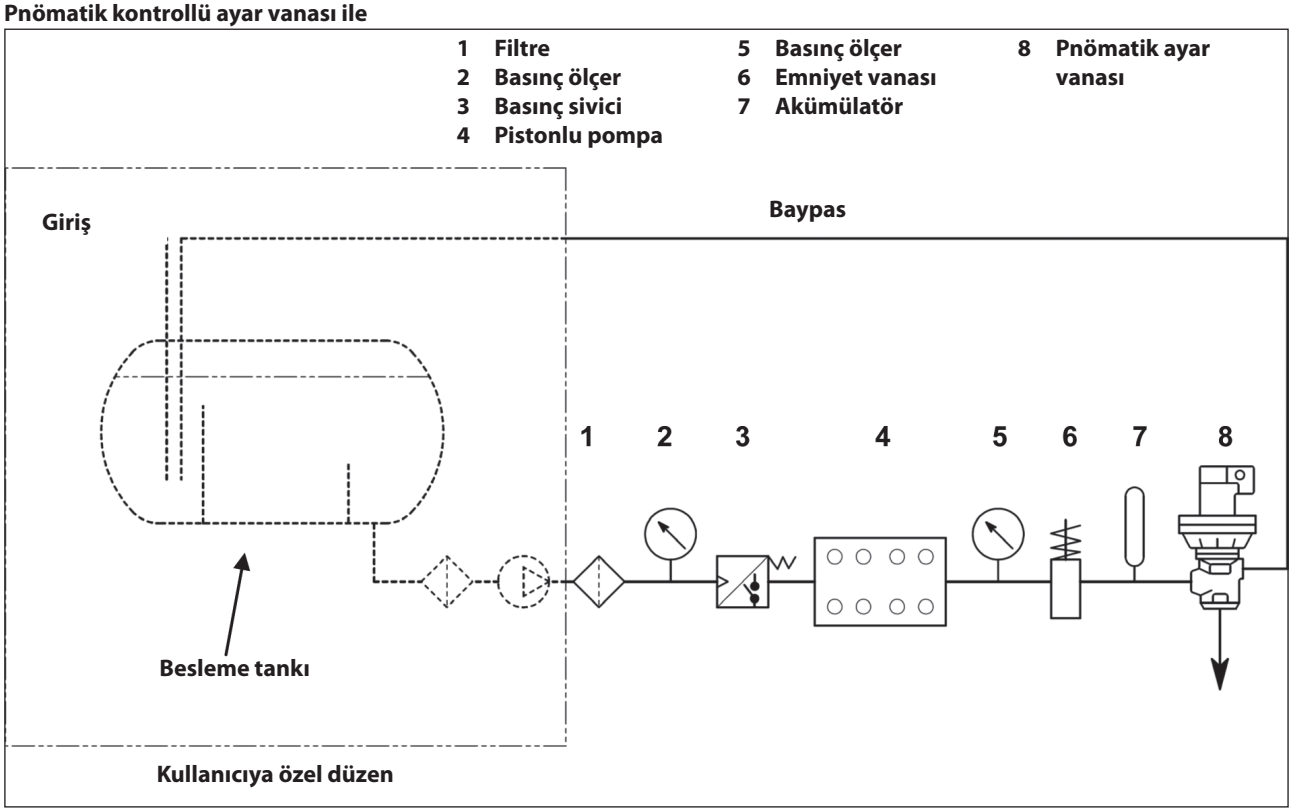
Teknik departmanımız veya müşteri hizmetleri departmanımız, sistemin daha iyi tanımlanması için müşterilerimizin hizmetindedir; örneğin, aşağıdaki düzenleri temin etmekteyiz (Şek. 12 ve Şek. 12/a).

Manuel kontrollü ayar vanası ile



Şek. 12

Pnömatik kontrollü ayar vanası ile



Şek. 12/a

Filtre, pompaya mümkün olduğunca yakın monte edilmeli ve kolay denetlenebilir olmalıdır.

Pompanın doğru bir şekilde çalışması için, filtreleme sisteminin filtrasyon derecesi ve biriktirme kapasitesi, pompa hidroliklerinin kullanım ömrü ve su ile yapılan her dolum arasındaki saat sayısı arasında en iyi uyum elde edilecek şekilde ayarlanmalıdır.
Önerilen en iyi uyum par. 17.1.1'de gösterilen gibidir.

Pompanın kullanılmasından sonra, her çalışma günü sonunda, partikül içermeyen su ile yıkanması zorunludur.

17.1.7 Önleyici bakım

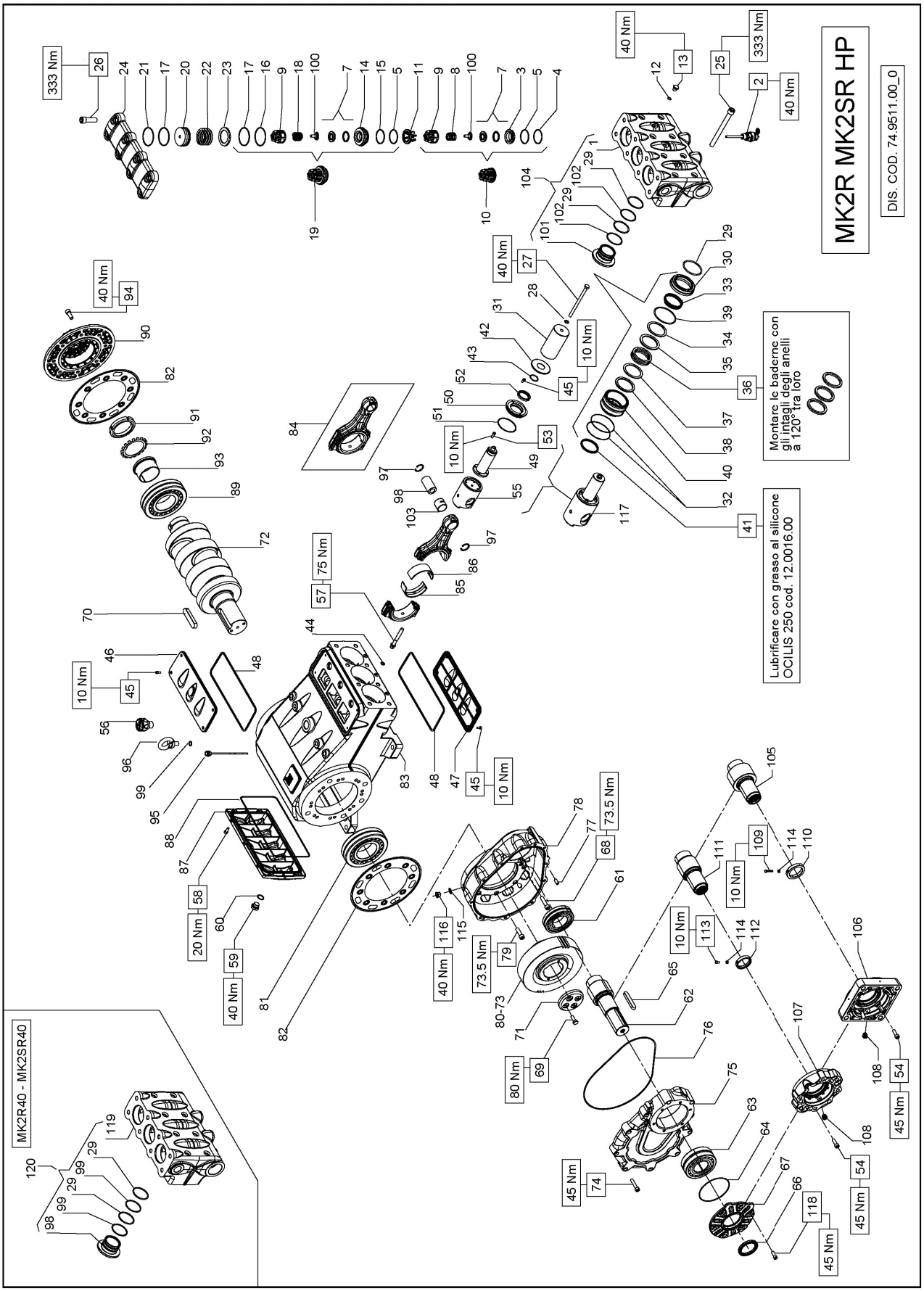
Pompanın güvenilirliği ve etkinliği için, aşağıdaki tabloda verilen bakım aralıklarına riayet edin.

ÖNLEYİCİ BAKIM	
Her 500 saatte	**Her 1000 saatte**
Yağ seviyesinin kontrolü	Yağı değiştirin
	Kontrol/Değişim*: Vanalar Vana yatakları Vana yayları Vana kılavuzları

YB-DB contaları: kullanım ömrü filtreleme derecesine, sıvının tipine ve hacimsel yüzdeye bağlıdır (bkz. bölüm 7).

* Değiştirmek için, ***Tamir Kılavuzunda*** verilen talimatları uygulayın.

17.1.8 Açılımlı çizim ve parça listesi

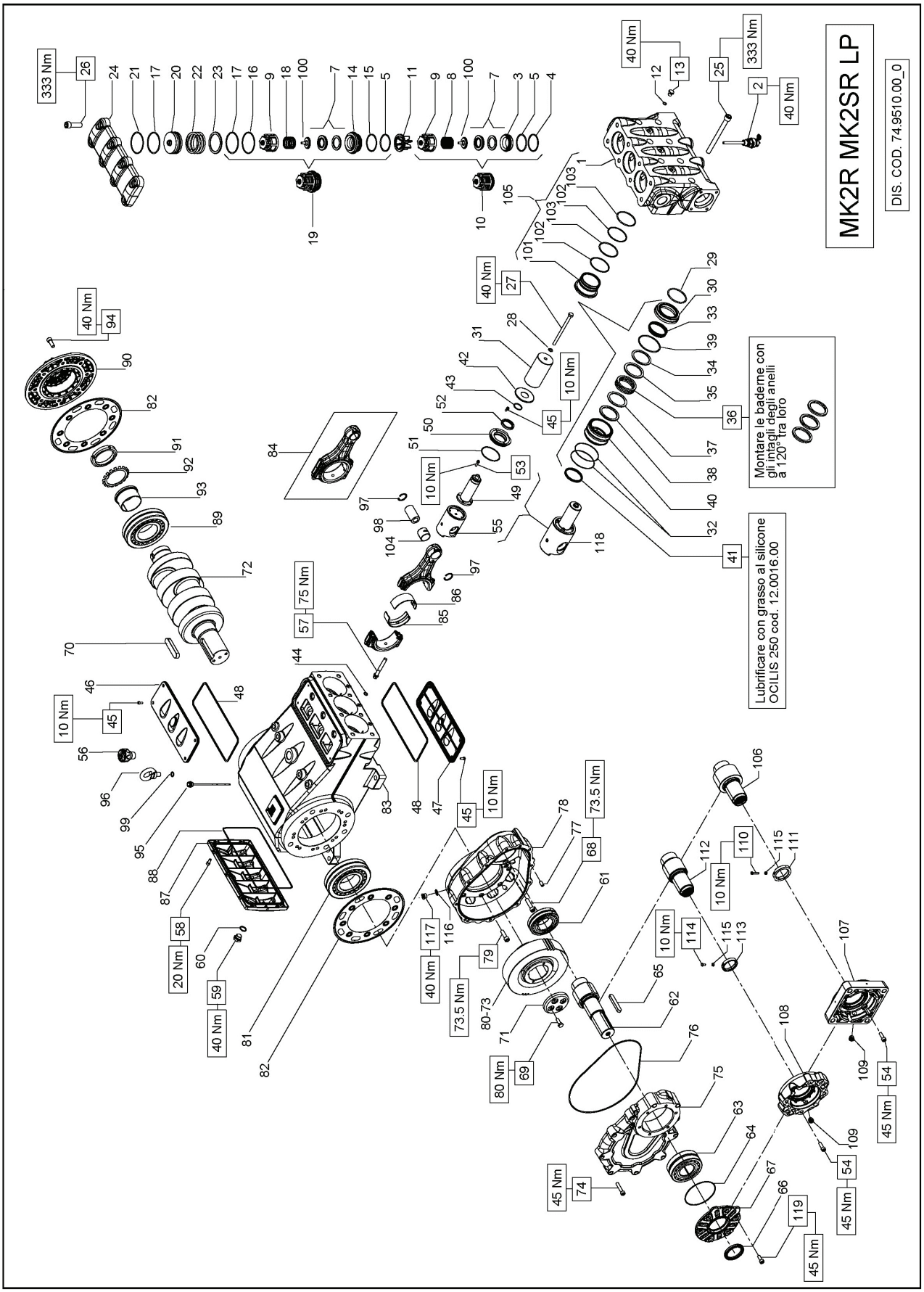


KIT RICAMBIO – SPARE KIT

		MK2R40 - MK2SR40 (D.40)	MK2R45 - MK2SR45 (D.45)	MK2R50 - MK2SR50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2430	KIT 2431	KIT 2100
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2456	KIT 2457	KIT 2458
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R40 - MK2SR40
MK2R45 - MK2SR45
MK2R50 - MK2SR50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.1010.56	ANELLO DI TESTA BADERNE D. 40		3
	74.1011.56	ANELLO DI TESTA BADERNE D. 45		
	74.1006.56	ANELLO DI TESTA BADERNE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	94.7730.00	MOLLA Dm. 51.5x36.0 - D. 40-45		3
	94.7770.00	MOLLA Dm. 61.5x35.0 - D. 50		
34	74.2165.56	ANELLO PER MOLLA D. 40		3
	74.2169.56	ANELLO PER MOLLA D. 45		
	74.2134.56	ANELLO PER MOLLA D. 50		
35	74.2164.72	ANELLO RASCHIATORE BADERNE D. 40	A-C	3
	74.2168.72	ANELLO RASCHIATORE BADERNE D. 45	A-C	
	74.2138.82	ANELLO RASCHIATORE BADERNE D. 50	A-C	
36	90.5655.00	ANELLO TEN. ALT. KC D. 40.0x56.0x19.5	A-C	3
	90.5680.00	ANELLO TEN. ALT. KC D. 45.0x61.0x19.5	A-C	
	90.5700.00	ANELLO TEN. ALT. KC D. 50.0x66.0x19.5	A-C	
37	90.5232.00	ANELLO ANTIEST. D. 40.0x56.0x2.5	A-C	3
	90.5236.00	ANELLO ANTIEST. D. 45.0x61.0x2.5	A-C	
	90.5245.00	ANELLO ANTIEST. D. 50.0x66.0x2.5	A-C	
38	74.2163.60	ANELLO DI SUPPORTO D. 40		3
	74.2167.60	ANELLO DI SUPPORTO D. 45		
	74.2142.60	ANELLO DI SUPPORTO D. 50		
39	90.4110.00	OR D. 61.91x3.53 NBR 70SH 165 - D. 40	A-C	3
	90.4117.00	OR D. 66.27x3.53 NBR 70SH 4262 - D. 45	A-C	
	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - D. 50	A-C	
40	74.2162.56	SUPPORTO BADERNE D. 40		3
	74.2166.56	SUPPORTO BADERNE D. 45		
	74.2146.56	SUPPORTO BADERNE D. 50		
41	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
42	74.2133.51	PARASPRUZZI		3
43	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
44	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
45	99.1837.00	VITE M6x14 UNI 5931		14
46	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
47	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
48	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
49	74.0503.36	STELO GUIDA PISTONE		3
50	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
51	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
52	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
53	99.1884.00	VITE M6x20 UNI 5931		12
55	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
56	98.2333.00	TAPPO CARICO OLIO G1"		1
57	99.4410.00	VITE SERRAGGIO BIELLA		6
58	99.3045.00	VITE M8x18 UNI 5931		6
59	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
60	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
61	91.8700.00	CUSCINETTO A RULLI		1
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	91.8610.00	CUSCINETTO A RULLI		1
64	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
65	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
66	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
67	74.2173.22	COPERCHIO PIGNONE		1
68	99.4335.00	VITE M12x50 UNI 5931		2
69	99.3684.00	VITE M10x30 UNI 5739		4
70	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
71	74.2252.55	FERMO CORONA		1
72	74.0202.35	ALBERO A GOMITI C. 72 - MKSR		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	99.3730.00	VITE M10x50 UNI 5931		10
75	74.2174.13	COPERCHIO RIDUTTORE		1
76	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
77	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
78	74.2175.13	SCATOLA RIDUTTORE		1
79	99.4305.00	VITE M12x40 UNI 5931		6
81	91.8850.00	CUSCINETTO A RULLI		1
82	74.2130.84	GUARNIZIONE LATERALE	C	2
83	74.0101.13	CARTER POMPA		1
84	74.0302.01	BIELLA COMPLETA		3
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
87	74.1600.22	COPERCHIO CARTER	C	1
88	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
89	91.8852.00	CUSCINETTO A RULLI		1
90	74.1500.22	COPERCHIO CUSCINETTO		1
91	93.0800.00	GHIERA DI BLOCCAGGIO		1
92	96.8300.00	ROSETTA DI SICUREZZA		1
93	91.8800.00	BUSSOLA DI PRESSIONE		1
94	99.4280.00	VITE M12x30 UNI 5931		8
95	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
96	93.1050.00	GOLFARE M16 UNI 2947		2
97	90.0697.00	ANELLO D'ARRESTO J35		6
98	97.7450.00	SPINOTTO D. 35x64		3
99	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
100	36.2090.51	GUIDA INTERNA VALVOLA		6
101	74.2151.56	BOCCOLA TESTATA		3
102	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
103	90.9173.00	BOCCOLA PIEDE BIELLA		3
104	74.1206.01	TESTATA CON BOCCOLA D. 40		1
	74.1203.01	TESTATA CON BOCCOLA D. 45-50		
115	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
116	98.2086.00	TAPPO G 3/8"x12		2
117	74.6062.01	GR. GUIDA PISTONE		3
118	99.3668.00	VITE M10x25 5931		6
119	74.1206.15	TESTATA D. 40 HP		1
	74.1207.15	TESTATA D. 40 HP - NPT		
120	74.1206.01	TESTATA CON BOCCOLA D. 40		1
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
105	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
106	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
108	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
110	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
114	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
107	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
108	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
111	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
112	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
113	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
114	92.2025.00	DADO M6x5 UNI 5588		1


MK2R MK2SR LP
DIS. COD. 74.9510.00_0
Montare le baderne con gli intagli degli anelli a 120° tra loro
Lubrificare con grasso al silicone OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT

		MK2R55 - MK2SR55 (D.55)	MK2R60 - MK2SR60 (D.60)	MK2R65- MK2SR65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2102	KIT 2103	KIT 2104
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2453	KIT 2454	KIT 2455
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R55 - MK2SR55
MK2R60 - MK2SR60
MK2R65 - MK2SR65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.1007.56	ANELLO DI TESTA BADERNE D. 55		3
	74.1008.56	ANELLO DI TESTA BADERNE D. 60		
	74.1009.56	ANELLO DI TESTA BADERNE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	94.7770.00	MOLLA Dm. 61.5x35.0 - MK2R MK2SR 55		3
	94.7900.00	MOLLA Dm. 71.5x35.0 - MK2R MK2SR 60-65		
34	74.2135.56	ANELLO PER MOLLA D. 55		3
	74.2136.56	ANELLO PER MOLLA D. 60		
	74.2137.56	ANELLO PER MOLLA D. 65		
35	74.2139.82	ANELLO RASCHIATORE D. 55	A-C	3
	74.2140.82	ANELLO RASCHIATORE D. 60	A-C	
	74.2141.82	ANELLO RASCHIATORE D. 65	A-C	
36	90.5725.00	BADERNE D. 55.0x71.0x19.5	A-C	3
	90.5750.00	BADERNE D. 60.0x76.0x19.5	A-C	
	90.5775.00	BADERNE D. 65.0x81.0x19.5	A-C	
37	90.5267.00	ANELLO ANTIEST. D. 55.0x71.0x2.5	A-C	3
	90.5269.00	ANELLO ANTIEST. D. 60.0x76.0x2.5	A-C	
	90.5275.00	ANELLO ANTIEST. D. 65.0x81.0x2.5	A-C	
38	74.2143.60	ANELLO DI SUPPORTO D. 55		3
	74.2144.60	ANELLO DI SUPPORTO D. 60		
	74.2145.60	ANELLO DI SUPPORTO D. 65		
39	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - MK2R MK2SR 55	A-C	3
	90.4141.00	OR D. 85.32x3.53 NBR 70SH 4337 - MK2R MK2SR 60-65	A-C	
40	74.2147.56	SUPPORTO BADERNE D. 55		3
	74.2148.56	SUPPORTO BADERNE D. 60		
	74.2149.56	SUPPORTO BADERNE D. 65		
41	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
42	74.2133.51	PARASPRUZZI		3
43	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
44	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
45	99.1837.00	VITE M6x14 UNI 5931		14
46	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
47	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
48	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
49	74.0503.36	STELO GUIDA PISTONE		3
50	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
51	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
52	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
53	99.1884.00	VITE M6x20 UNI 5931		12
55	79.0504.43	GUIDA PISTONE		3
	790.0505.43	GUIDA PISTONE +1.0		
56	98.2333.00	TAPPO CARICO OLIO G1"		1
57	99.4410.00	VITE SERRAGGIO BIELLA		6
58	99.3045.00	VITE M8x18 UNI 5931		6
59	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
60	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
61	91.8700.00	CUSCINETTO A RULLI		1
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	91.8610.00	CUSCINETTO A RULLI		1
64	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
65	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
66	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
67	74.2173.22	COPERCHIO PIGNONE		1
68	99.4335.00	VITE M12x50 UNI 5931		2
69	99.3684.00	VITE M10x30 UNI 5739		4
70	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
71	74.2252.55	FERMO CORONA		1
72	74.0202.35	ALBERO A GOMITI C. 72 - MK2R		1
	74.0201.35	ALBERO A GOMITI C. 72 - MK2SR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	99.3730.00	VITE M10x50 UNI 5931		10
75	74.2174.13	COPERCHIO RIDUTTORE		1
76	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
77	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
78	74.2175.13	SCATOLA RIDUTTORE		1
79	99.4305.00	VITE M12x40 UNI 5931		6
81	91.8850.00	CUSCINETTO A RULLI		1
82	74.2130.84	GUARNIZIONE LATERALE	C	2
83	74.0101.13	CARTER POMPA		1
84	74.0302.01	BIELLA COMPLETA		3
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0.50 - SUP.	D	
87	74.1600.22	COPERCHIO CARTER		1
88	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
89	91.8852.00	CUSCINETTO A RULLI		1
90	74.1500.22	COPERCHIO CUSCINETTO		1
91	93.0800.00	GHIERA DI BLOCCAGGIO		1
92	96.8300.00	ROSETTA DI SICUREZZA		1
93	91.8800.00	BUSSOLA DI PRESSIONE		1
94	99.4280.00	VITE M12x30 UNI 5931		8
95	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
96	93.1050.00	GOLFARE M16 UNI 2947		2
97	90.0697.00	ANELLO D'ARRESTO J35		6
98	97.7450.00	SPINOTTO D. 35x64		3
99	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
100	36.2089.51	GUIDA INTERNA VALVOLA		6
101	74.2150.56	BOCCOLA TESTATA		3
102	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
103	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
104	90.9173.00	BOCCOLA PIEDE BIELLA		3
105	74.1201.01	TESTATA CON BOCCOLA		1
116	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
117	98.2086.00	TAPPO G 3/8"x12		2
118	74.6062.01	GR. GUIDA PISTONE		3
119	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
109	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
110	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
111	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
115	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
108	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
109	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
112	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
113	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
114	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
115	92.2025.00	DADO M6x5 UNI 5588		1

17.2 MK2C-MK25C versiyonu pompa

17.2.1 Kullanma talimatları

Pompalar, potansiyel açıdan patlayıcı olmayan ortamlarda çalışacak şekilde tasarlanmıştır. ***Teknik Departmanımız*** ve ***Müşteri Hizmetleri Departmanımız***, sistemin daha iyi tanımlanması için müşterilerimizin hizmetindedir.

17.2.2 Çalışma sıcaklığı

İzin verilen sıvı sıcaklığı: -30 °C÷+30 °C. Farklı değerler için, ***Teknik Departman*** veya ***Müşteri Hizmetleri Departmanı*** ile iletişime geçin.

17.2.3 Maksimum debi ve basınç

Katalogda belirtilen performans değerleri, pompanın elde edebildiği maksimum değerlerdir. Kullanılan güçten **bağımsız olarak**, tanım etiketinde/plakasında belirtilen maksimum basınç ve devir sayısı/hızı, ***Teknik Departmanımız*** veya ***Müşteri Hizmetleri Departmanımızın*** önceden resmi izni alınmadan asla aşılamaz.

17.2.4 Teknik özellikler

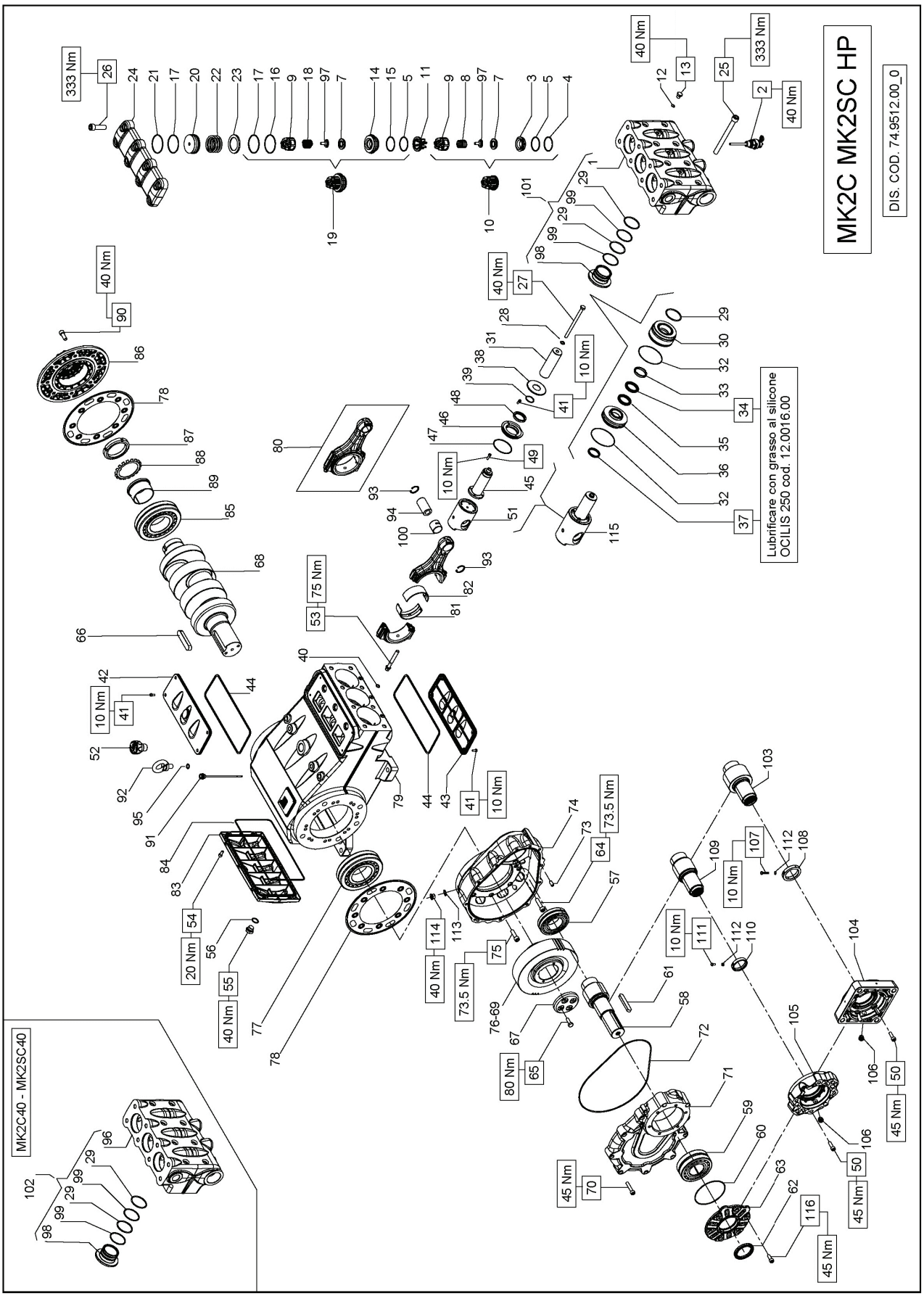
Model	Devir/1'	Debi		Basınç		Güç	
		l/dak	Gpm	bar	psi	kW	Hp
MK2SC 40	1500	153	40,4	400	5800	159	117
	1800	149	39,4	400	5800	155	114
MK2SC 45	1500	193	51,0	300	4350	150	110
	1800	189	49,9	300	4350	147	108
MK2SC 50	1500	239	63,1	250	3625	155	114
	1800	233	61,6	250	3625	151	111
MK2SC 55	1500	289	76,4	200	2900	150	110
	1800	282	74,5	200	2900	146	107
MK2SC 60	1500	343	90,6	170	2465	151	111
	1800	335	88,5	170	2465	148	109
MK2SC 65	1500	403	106,5	150	2175	157	115
	1800	394	104,1	150	2175	154	113

Model	Devir/1'	Debi		Basınç		Güç	
		l/dak	Gpm	bar	psi	kW	Hp
MK2SC 40	1500	184	48,6	400	5800	140,5	191
	1800	183	48,3	400	5800	140	190
	2200	182	48,1	400	5800	139	189
MK2SC 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SC 50	1500	288	76,1	250	3625	137,5	187
	1800	286	75,6	250	3625	137	186
	2200	285	75,3	250	3625	136	185
MK2SC 55	1500	349	92,2	200	2900	133	181
	1800	346	91,4	200	2900	132	180
	2200	344	90,9	200	2900	132	179
MK2SC 60	1500	415	109,6	170	2465	135	183
	1800	412	108,9	170	2465	134	182
	2200	410	108,3	170	2465	133	181
MK2SC 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.2.5 Boyutlar ve ağırlıklar

Pompaların boyutları ve ağırlıkları hakkında bilgi için, bölüm 6'daki şemalara bakın.

17.2.6 Açılımlı çizim ve parça listesi



KIT RICAMBIO – SPARE KIT

		MK2C40 - MK2SC40 (D.40)	MK2C45 - MK2SC45 (D.45)	MK2C50 - MK2SC50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2258		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2C40 - MK2SC40
MK2C45 - MK2SC45
MK2C50 - MK2SC50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIRAZ.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2118.56	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7222.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7223.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE HP		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE - FLANGIATO		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72 - MKSC		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKC		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1

17.3 MK2SH versiyonu pompa

17.3.1 Kullanma talimatları



Pompa, patlayıcı özelliği olmayan atmosfere sahip ortamlarda, filtrelenmiş (bkz. par. 9.7) su ile çalışacak şekilde tasarlanmıştır.
Diğer sıvılar sadece, ***Teknik Departmanının*** veya ***Müşteri Hizmetleri Departmanının*** resmi onayı ile kullanılabilir.

17.3.2 Su sıcaklığı



İzin verilen maksimum su sıcaklığı 40 °C'dir. Bununla birlikte pompa, su ile 60 °C'ye kadar kullanılabilir, fakat sadece kısa süreler için. Böyle bir durumda, ***Teknik Departmanımıza*** veya ***Müşteri Hizmetleri Departmanımıza*** danışmanızı öneririz.

17.3.3 Maksimum debi ve basınç

Katalogda belirtilen performans değerleri, pompanın elde edebildiği maksimum değerlerdir. Kullanılan güçten **bağımsız olarak**, tanım etiketinde/plakasında belirtilen maksimum basınç ve devir sayısı/hızı, ***Teknik Departmanımız*** veya ***Müşteri Hizmetleri Departmanımızın*** önceden resmi izni alınmadan asla aşılamaz.

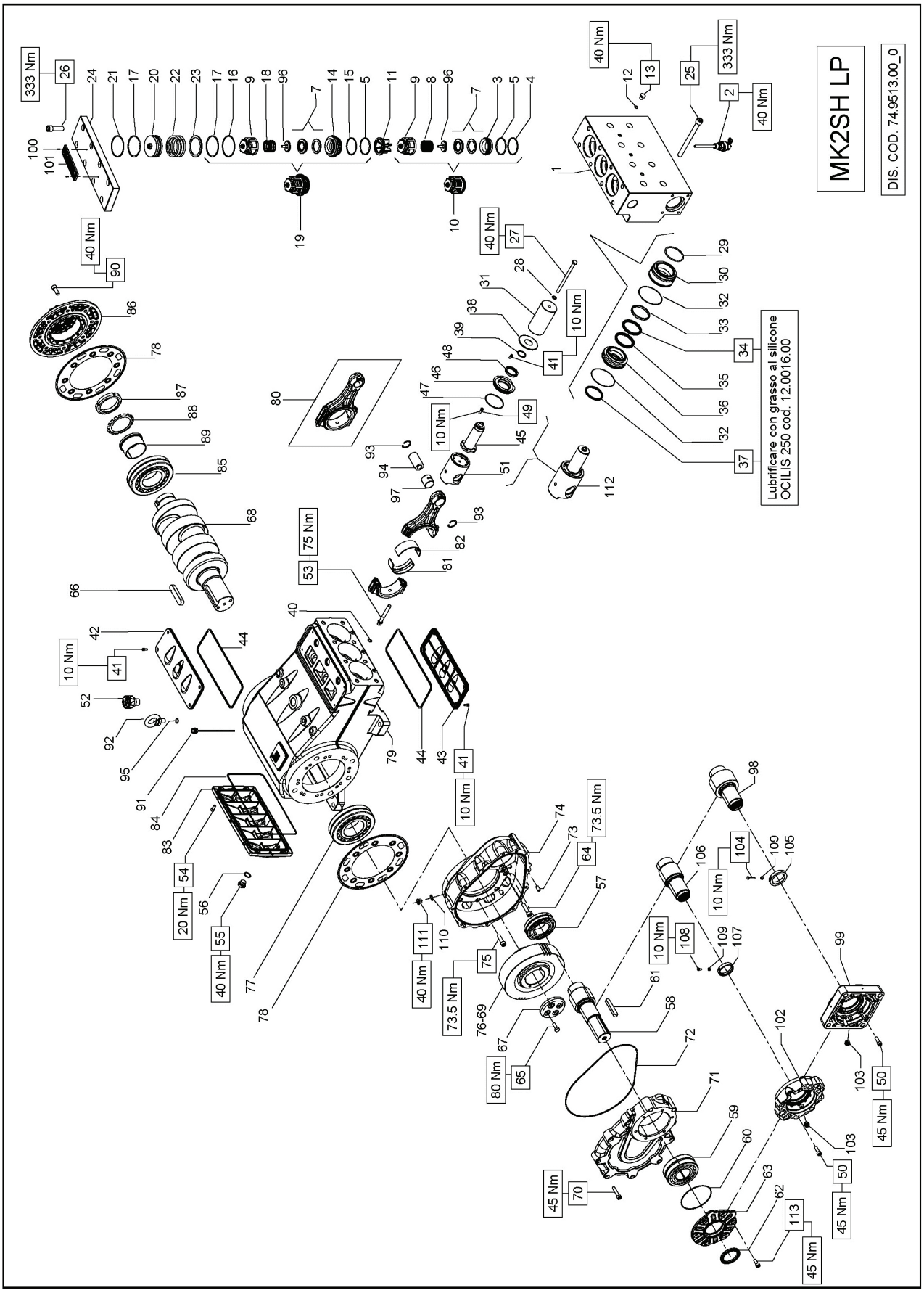
17.3.4 Teknik özellikler

Model	Devir/1'	Debi		Basınç		Güç	
		l/dak	Gpm	bar	psi	kW	Hp
MK2SH 45	1500	233	61,6	300	4350	134	182
	1800	232	61,3	300	4350	133	181
	2200	231	61,0	300	4350	132	180
MK2SH 65	1500	487	128,7	150	2175	140	190
	1800	484	127,9	150	2175	139	189
	2200	481	127,1	150	2175	137,5	187

17.3.5 Boyutlar ve ağırlıklar

Pompaların boyutları ve ağırlıkları hakkında bilgi için, bölüm 6'daki şemalara bakın.

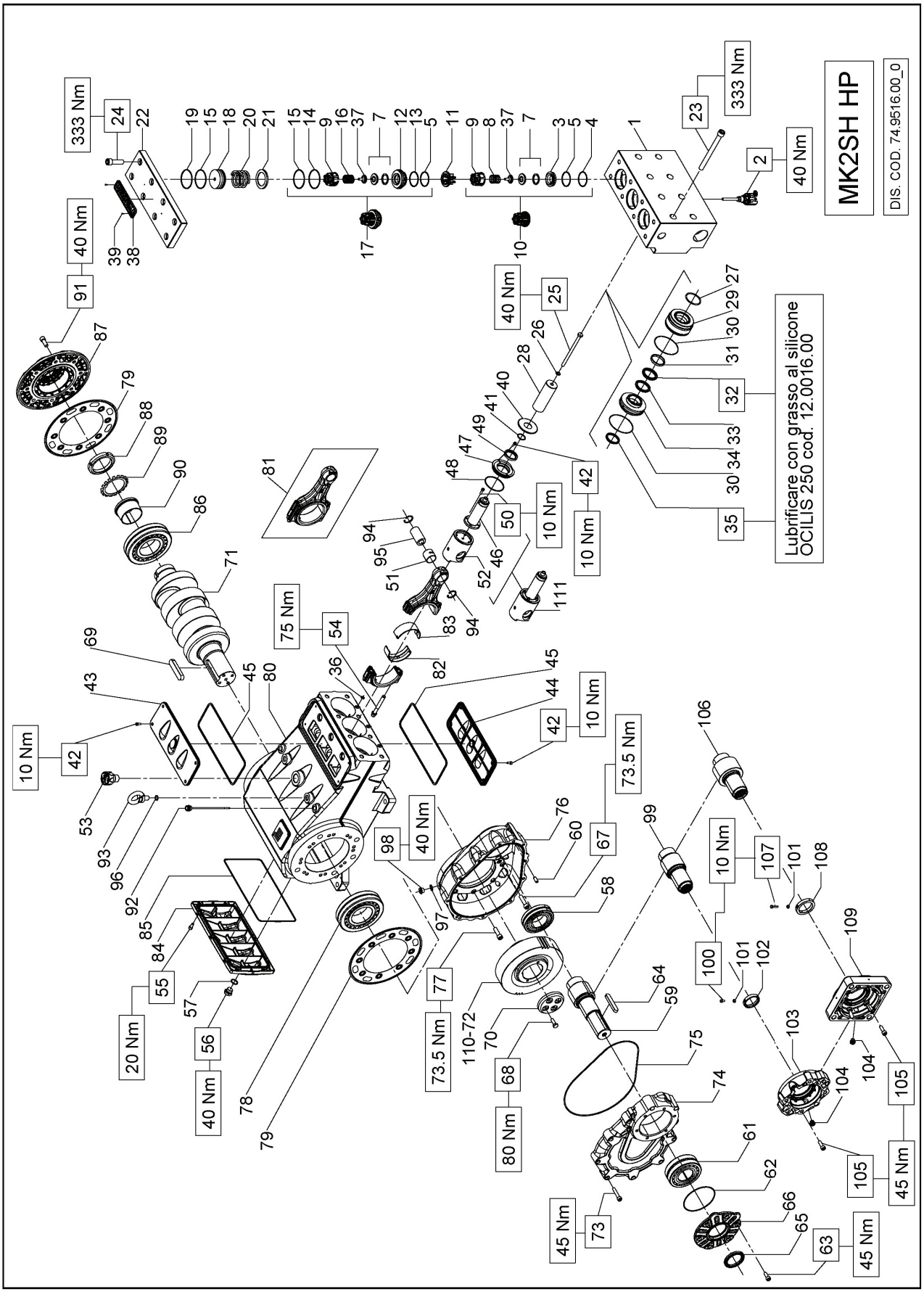
17.3.6 Açılımlı çizim ve parça listesi



KIT RICAMBIO – SPARE KIT		MK2S65H (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2047
B	Kit valvole – Valves kit	KIT 2048
C	Kit tenute complete – Complete seals kit	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)

MK2S65H

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1210.56	TESTATA LP		1
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2161.56	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2116.56	CAMICIA PISTONE D. 65		3
31	74.0405.09	PISTONE D. 65x127		3
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1005.92	ANELLO DI TESTA PISTONE D. 65		3
34	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	3
35	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	3
36	74.2122.68	SUPPORTO GUARNIZIONE D. 65		3
37	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	3
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72		1
69	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		3
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
82	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	90.9173.00	BOCCOLA PIEDE BIELLA		3
100	91.5703.00	RIVETTO AUTOF. D. 2.5x8 UNI 7346		2
101	97.8276.00	MARCHIO PRATISSOLI		1
110	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
111	98.2086.00	TAPPO G 3/8"x12		2
112	74.6062.01	GR. GUIDA PISTONE		3
113	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
98	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
99	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
104	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
105	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
102	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
107	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
108	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
109	92.2025.00	DADO M6x5 UNI 5588		1


MK2SH HP
DIS. COD. 74.9516.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK2SH45 (D.45)
A	Kit tenute pompanti – Plunger packing kit	KIT 2053
B	Kit valvole – Valves kit	KIT 2055
C	Kit tenute complete – Complete seals kit	KIT 2451
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0.25) - 2078 (+0.50)

MK2SH45

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1212.56	TESTATA POMPA D. 45		1
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	36.2069.66	SEDE VALVOLA DI MANDATA		3
13	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
14	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
15	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
16	94.7605.00	MOLLA Dm. 28.5x45.4		3
17	36.7153.01	GR. VALVOLA DI MANDATA	B	3
18	74.2110.70	TAPPO VALVOLE DI MANDATA		3
19	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
20	94.7750.00	MOLLA Dm. 58.0x45.4		3
21	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
22	74.2181.56	COPERCHIO VALVOLE		1
23	99.5222.00	VITE M16x180 UNI 5931		8
24	99.5147.00	VITE M16x55 UNI 5931		8
25	99.3850.00	VITE M10x160 UNI 5737		3
26	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
27	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	3
29	74.2112.56	CAMICIA PISTONE D. 45		3
28	74.0401.09	PISTONE D. 45x127		3
30	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
31	74.1001.92	ANELLO DI TESTA PISTONE D. 45		3
32	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	3
33	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	3
34	74.2118.68	SUPPORTO GUARNIZIONE D. 45		3
35	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	3
36	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
37	36.2090.51	GUIDA INTERNA VALVOLA		6
38	97.8276.00	MARCHIO PRATISSOLI		1
39	91.5703.00	RIVETTO AUTOFILETTANTE D. 2.5x8.0		2
40	74.2133.51	PARASPRUZZI		3
41	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
42	99.1837.00	VITE M6x14 UNI 5931		14
43	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
44	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
45	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
46	74.0503.36	STELO GUIDA PISTONE		3
47	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
48	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
49	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
50	99.1884.00	VITE M6x20 UNI 5931		12
51	90.9173.00	BOCCOLA PIEDE BIELLA		3
52	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
53	98.2333.00	TAPPO CARICO OLIO G1"		1
54	99.4410.00	VITE SERRAGGIO BIELLA		6
55	99.3045.00	VITE M8x18 UNI 5931		6
56	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
57	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
58	91.8700.00	CUSCINETTO A RULLI		1
59	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
60	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
61	91.8610.00	CUSCINETTO A RULLI		1
62	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
63	99.3668.00	VITE M10x25 5931		6
64	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
65	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
66	74.2173.22	COPERCHIO PIGNONE		1
67	99.4335.00	VITE M12x50 UNI 5931		2
68	99.3684.00	VITE M10x30 UNI 5739		4
69	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
70	74.2252.55	FERMO CORONA		1
71	74.0202.35	ALBERO A GOMITI C. 72		1
72	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
73	99.3730.00	VITE M10x50 UNI 5931		10
74	74.2174.13	COPERCHIO RIDUTTORE		1
75	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
76	74.2175.13	SCATOLA RIDUTTORE		1
77	99.4305.00	VITE M12x40 UNI 5931		6
78	91.8850.00	CUSCINETTO A RULLI		1
79	74.2130.84	GUARNIZIONE LATERALE	C	2
80	74.0101.13	CARTER POMPA		1
81	74.0302.01	BIELLA COMPLETA		3
82	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
83	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
84	74.1600.22	COPERCHIO CARTER		1
85	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
86	91.8852.00	CUSCINETTO A RULLI		1
87	74.1500.22	COPERCHIO CUSCINETTO		1
88	93.0800.00	GHIERA DI BLOCCAGGIO		1
89	96.8300.00	ROSETTA DI SICUREZZA		1
90	91.8800.00	BUSSOLA DI PRESSIONE		1
91	99.4280.00	VITE M12x30 UNI 5931		8
92	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
93	93.1050.00	GOLFARE M16 UNI 2947		2
94	90.0697.00	ANELLO D'ARRESTO J35		6
95	97.7450.00	SPINOTTO D. 35x64		3
96	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
97	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
98	98.2086.00	TAPPO G 3/8"x12		2
111	74.6062.01	GR. GUIDA PISTONE		3
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
101	92.2025.00	DADO M6x5 UNI 5588		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
110	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
99	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
100	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
101	92.2025.00	DADO M6x5 UNI 5588		1
102	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
103	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
110	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1

18 UYGUNLUK BEYANI

UYGUNLUK BEYANI

(Avrupa Direktifi 2006/42/EC Ek II Belgesi uyarınca)

Üretici şirket, **INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 - 42049 - S. ILARIO D'ENZA - İtalya**, işbu belge ile **BEYAN EDER Kİ**, aşağıda tanımlanan ve açıklanan ürün:

Tanım:	Pompa
Tip:	Yüksek basınçlı su için pistonlu alternatif pompa
Ticari marka:	INTERPUMP GROUP
Model:	74 MK2, MK2S, MK2R, MK2SR, MK2C, MK2SC, MK2SH Serisi

Makine Direktifi 2006/42/EC'ye uygundur
Geçerli standartlar: UNI EN ISO 12100- UNI EN 809

Yukarıda tanımlanan pompa, Makine Direktifinin Ek I belgesinin 1. bölümünde de listelenen tüm temel güvenlik ve sağlığın korunması gerekliliklerini karşılamaktadır:
1.1.2 - 1.1.3 - 1.1.5 - 1.3.1 - 1.3.2 - 1.3.3 - 1.3.4 - 1.5.4 - 1.5.5 - 1.6.1 - 1.7.1 - 1.7.2 - 1.7.4 - 1.7.4.1 - 1.7.4.2 ve ilgili teknik belgeler Ek VII B uyarınca derlenmiştir.

Buna ek olarak, talep üzerine üretici firma ilgili pompa teknik belgelerinin bir suretini tanımlanacak şekilde ve sürede temin etmeyi taahhüt eder.

Pompa, monte edileceği ve içinde kullanılacağı tesis/sistem ilgili direktiflerin ve/veya standartların hükümlerine uygunluk taşıdığı beyan edilene kadar devreye sokulmamalıdır.

Teknik dosyayı derlemekle sorumlu kişi

İsim: Maurizio Novelli
Adres: INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 - 42049 - S. ILARIO D'ENZA (RE) - İtalya

Yönetici:
Reggio Emilia - Ocak 2017

Ing. Massimiliano Bizzarri

18 شهادة وبيان

شهادة وبيان

(ووفقاً للمرفق II الخاص بالتوجيه الأوروبي 2006/42/CE)

الشركة المنتجة شركة **INTERPUMP GROUP S.p.a. شركة مساهمة - المقر: S. ILARIO D'ENZA - 42049 - Via E. Fermi, 25 - إيطاليا، تقر** تحت مسئوليتها الحصرية أن المنتج المعرف والموصوف على النحو التالي:

الاسم: مضخة

النوع: مضخة تبادلية بمكابس للمياه بالضغط العالي

العلامة التجارية للمصنع: INTERPUMP GROUP

الموديل: الموديلات MK2, MK2S, MK2R, MK2SR, MK2C, MK2SC, MK2SH 74

أنه مطابق للمواصفات وللتوجيه الأوروربي الخاص بالآلات 2006/42/CE

المعايير المطبّقة: UNI EN 809 - UNI EN ISO 12100

تلبي المضخة الموصوفة أعلاه جميع المتطلبات الأساسية الخاصة بالسلامة وحماية الصحة المذكورة في النقطة 1 من المرفق I الخاص بتوجيه الماكينات: 1.1.2 - 1.1.3 - 1.1.5 - 1.3.1 - 1.3.2 - 1.3.3 - 1.3.4 - 1.5.4 - 1.5.5 - 1.6.1 - 1.7.1 - 1.7.2 - 1.7.4 - 1.7.4.1 - 1.7.4.2 كما تم صياغة الوثائق الفنية المتعلقة بذلك بما يتطابق مع المرفق VII B.

تلتزم الشركة المصنعة أيضاً، بناء على طلب له أسبابه المقنعة المناسبة، بإتاحة نسخة من الوثائق الفنية الخاصة بالمضخة بالطرق والشروط التي يتم تحديدها.

لا يجب بدأ تشغيل المضخة حتى إتمام تركيب ودمج الشبكة التي سوف تعمل بها وحتى يتم إعلان مطابقة هذه الشبكة للمواصفات الخاصة بذلك و/أو التوجيهات المعمول بها في هذا الشأن.

الشخص المصرح له القيام بعمل الملف الفني

الاسم: Maurizio Novelli

العنوان: INTERPUMP GROUP S.p.a. شارع E. Fermi رقم 25 – صندوق بريد S. ILARIO D'ENZA – 42049 (ريجو إميليا) – إيطاليا

المسئول:

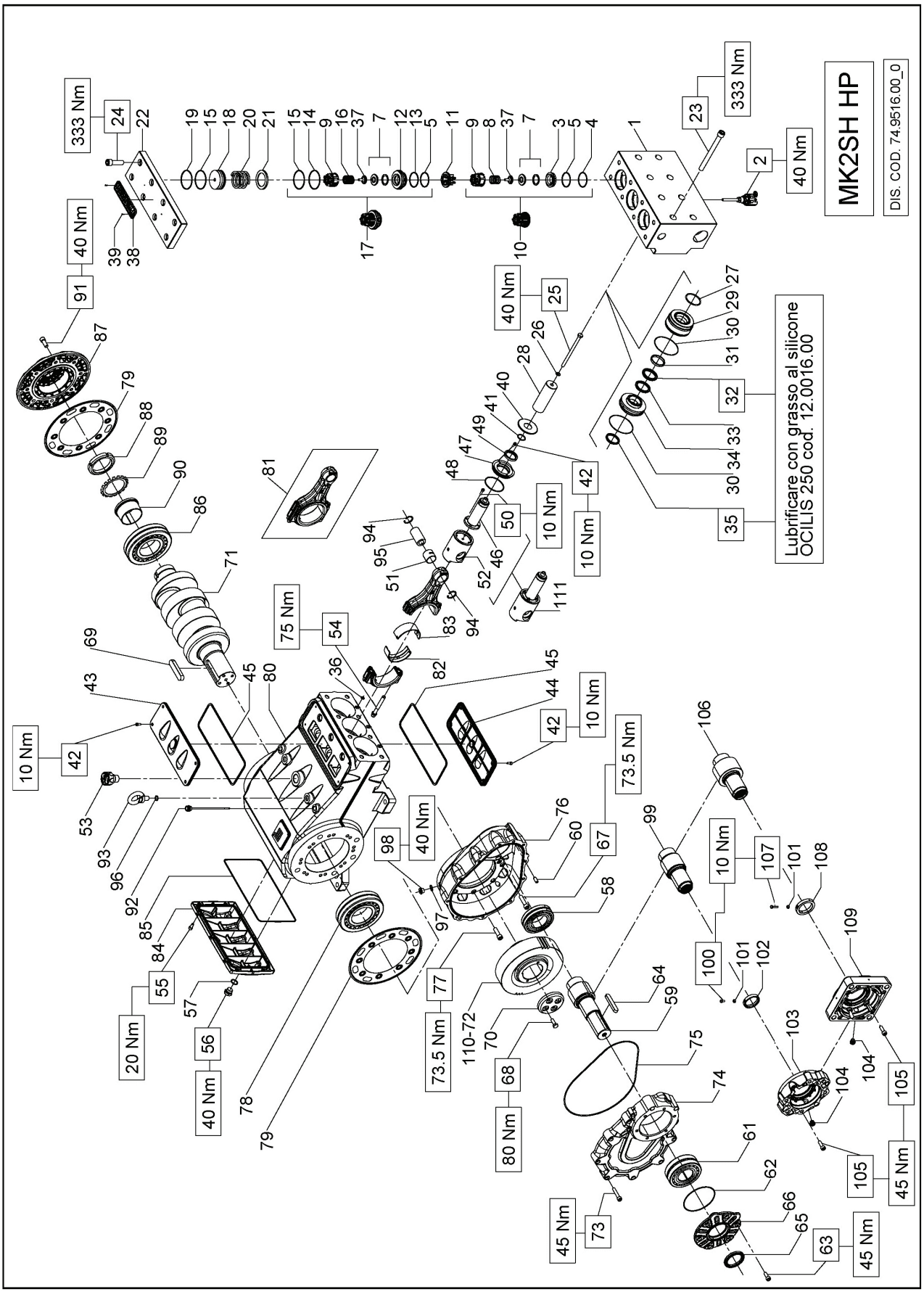
Reggio Emilia - يناير 2017

Ing. Massimiliano Bizzarri

KIT RICAMBIO – SPARE KIT		MK2SH45 (D.45)
A	Kit tenute pompanti – Plunger packing kit	KIT 2053
B	Kit valvole – Valves kit	KIT 2055
C	Kit tenute complete – Complete seals kit	KIT 2451
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0.25) - 2078 (+0.50)

MK2SH45

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1212.56	TESTATA POMPA D. 45		1
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	36.2069.66	SEDE VALVOLA DI MANDATA		3
13	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
14	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
15	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
16	94.7605.00	MOLLA Dm. 28.5x45.4		3
17	36.7153.01	GR. VALVOLA DI MANDATA	B	3
18	74.2110.70	TAPPO VALVOLE DI MANDATA		3
19	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
20	94.7750.00	MOLLA Dm. 58.0x45.4		3
21	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
22	74.2181.56	COPERCHIO VALVOLE		1
23	99.5222.00	VITE M16x180 UNI 5931		8
24	99.5147.00	VITE M16x55 UNI 5931		8
25	99.3850.00	VITE M10x160 UNI 5737		3
26	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
27	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	3
29	74.2112.56	CAMICIA PISTONE D. 45		3
28	74.0401.09	PISTONE D. 45x127		3
30	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
31	74.1001.92	ANELLO DI TESTA PISTONE D. 45		3
32	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	3
33	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	3
34	74.2118.68	SUPPORTO GUARNIZIONE D. 45		3
35	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	3
36	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
37	36.2090.51	GUIDA INTERNA VALVOLA		6
38	97.8276.00	MARCHIO PRATISSOLI		1
39	91.5703.00	RIVETTO AUTOFILETTANTE D. 2.5x8.0		2
40	74.2133.51	PARASPRUZZI		3
41	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
42	99.1837.00	VITE M6x14 UNI 5931		14
43	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
44	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
45	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
46	74.0503.36	STELO GUIDA PISTONE		3
47	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
48	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
49	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
50	99.1884.00	VITE M6x20 UNI 5931		12
51	90.9173.00	BOCCOLA PIEDE BIELLA		3
52	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
53	98.2333.00	TAPPO CARICO OLIO G1"		1
54	99.4410.00	VITE SERRAGGIO BIELLA		6
55	99.3045.00	VITE M8x18 UNI 5931		6
56	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
57	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
58	91.8700.00	CUSCINETTO A RULLI		1
59	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
60	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
61	91.8610.00	CUSCINETTO A RULLI		1
62	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
63	99.3668.00	VITE M10x25 5931		6
64	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
65	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
66	74.2173.22	COPERCHIO PIGNONE		1
67	99.4335.00	VITE M12x50 UNI 5931		2
68	99.3684.00	VITE M10x30 UNI 5739		4
69	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
70	74.2252.55	FERMO CORONA		1
71	74.0202.35	ALBERO A GOMITI C. 72		1
72	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
73	99.3730.00	VITE M10x50 UNI 5931		10
74	74.2174.13	COPERCHIO RIDUTTORE		1
75	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
76	74.2175.13	SCATOLA RIDUTTORE		1
77	99.4305.00	VITE M12x40 UNI 5931		6
78	91.8850.00	CUSCINETTO A RULLI		1
79	74.2130.84	GUARNIZIONE LATERALE	C	2
80	74.0101.13	CARTER POMPA		1
81	74.0302.01	BIELLA COMPLETA		3
82	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
83	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
84	74.1600.22	COPERCHIO CARTER		1
85	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
86	91.8852.00	CUSCINETTO A RULLI		1
87	74.1500.22	COPERCHIO CUSCINETTO		1
88	93.0800.00	GHIERA DI BLOCCAGGIO		1
89	96.8300.00	ROSETTA DI SICUREZZA		1
90	91.8800.00	BUSSOLA DI PRESSIONE		1
91	99.4280.00	VITE M12x30 UNI 5931		8
92	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
93	93.1050.00	GOLFARE M16 UNI 2947		2
94	90.0697.00	ANELLO D'ARRESTO J35		6
95	97.7450.00	SPINOTTO D. 35x64		3
96	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
97	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
98	98.2086.00	TAPPO G 3/8"x12		2
111	74.6062.01	GR. GUIDA PISTONE		3
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
101	92.2025.00	DADO M6x5 UNI 5588		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
106	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
110	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
99	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
100	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
101	92.2025.00	DADO M6x5 UNI 5588		1
102	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
103	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
104	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
105	99.3686.00	VITE M10x30 UNI 5931		6
110	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1

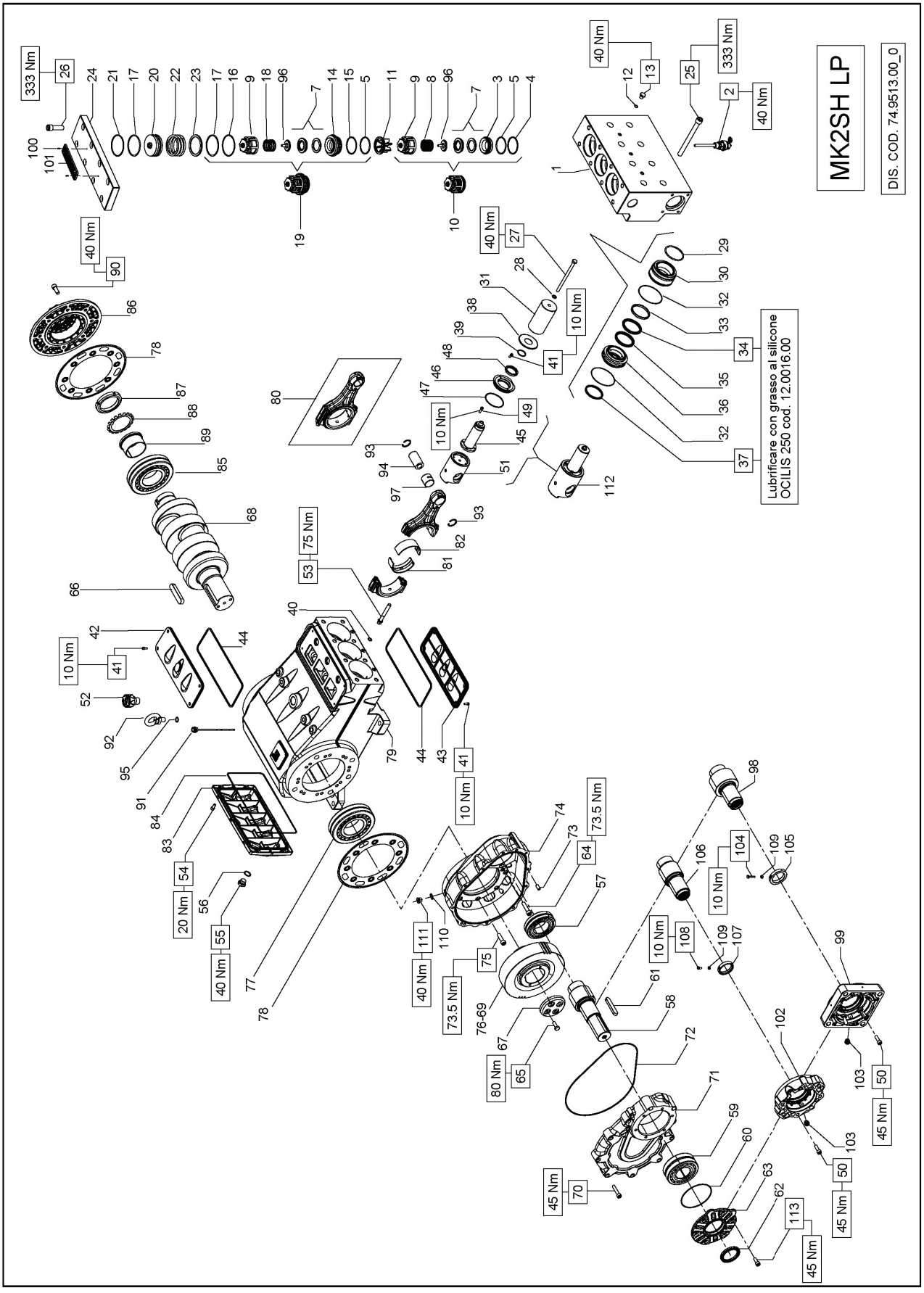

MK2SH HP
DIS. COD. 74.9516.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK2S65H (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2047
B	Kit valvole – Valves kit	KIT 2048
C	Kit tenute complete – Complete seals kit	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)

MK2S65H

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1210.56	TESTATA LP		1
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2161.56	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2116.56	CAMICIA PISTONE D. 65		3
31	74.0405.09	PISTONE D. 65x127		3
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1005.92	ANELLO DI TESTA PISTONE D. 65		3
34	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	3
35	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	3
36	74.2122.68	SUPPORTO GUARNIZIONE D. 65		3
37	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	3
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE		1
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72		1
69	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE		1
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		3
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
82	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	90.9173.00	BOCCOLA PIEDE BIELLA		3
100	91.5703.00	RIVETTO AUTOF. D. 2.5x8 UNI 7346		2
101	97.8276.00	MARCHIO PRATISSOLI		1
110	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
111	98.2086.00	TAPPO G 3/8"x12		2
112	74.6062.01	GR. GUIDA PISTONE		3
113	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
98	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
99	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
104	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
105	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
109	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
102	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
103	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
107	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
108	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
109	92.2025.00	DADO M6x5 UNI 5588		1

6.3.17 تصميم تفصيلي للأجزاء و قطع الغيار



3.17 المضخة إصدار MK2SH

1.3.17 إرشادات وتعليمات الاستخدام



تم تصميم المضخة لكي تعمل في بيئة غير معرضة للانفجارات وبمياه مرشحة (أنظر الوضعية 7.9).
يمكن استخدام سوائل أخرى ولكن فقط بعد تصريح رسمي مسبق من ***المكتب الفني*** أو ***مركز خدمة العملاء***.

2.3.17 درجة حرارة الماء



أقصى درجة حرارة مقبولة للمياه هي 40 درجة مئوية. يمكن مع ذلك استخدام المضخة مع مياه درجة حرارتها تصل حتى 60 درجة مئوية، ولكن فقط لفترات قصيرة. يُنصح في هذه الحالة بالاتصال **بالمكتب *الفني*** أو **بمركز *خدمة العملاء***.

3.3.17 القوة التشغيلية وأقصى ضغط

تشير معدلات الأداء الموضحة في دليل العرض إلى مستويات الأداء القصوى التي تم تزود المضخة بها. **بغض النظر** عن القوة التشغيلية المستخدمة، لا يمكن تجاوز مستوى الضغط أو العدد الأقصى من عدد اللفات المحددة في لوحة البيانات التعريفية إلا بعد تصريح مباشر من***المكتب الفني*** أو من **مركز *خدمة العملاء***.

4.3.17 مواصفات فنية

الموديل	عدد اللفات \ دقيقة	السعة		الضغط		القوة	
		ل\دقيقة	Gpm	بار	رطل على البوصة المربعة	ك و	Hp
MK2SH 45	1500	233	61.6	300	4350	134	182
	1800	232	61.3	300	4350	133	181
	2200	231	61.0	300	4350	132	180
MK2SH 65	1500	487	128.7	150	2175	140	190
	1800	484	127.9	150	2175	139	189
	2200	481	127.1	150	2175	137.5	187

5.3.17 الأبعاد والأوزان

لأبعاد وأوزان المضخات يرجى مراجعة المخططات المدونة في الفصل 6.

KIT RICAMBIO – SPARE KIT

		MK2C40 - MK2SC40 (D.40)	MK2C45 - MK2SC45 (D.45)	MK2C50 - MK2SC50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2258		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

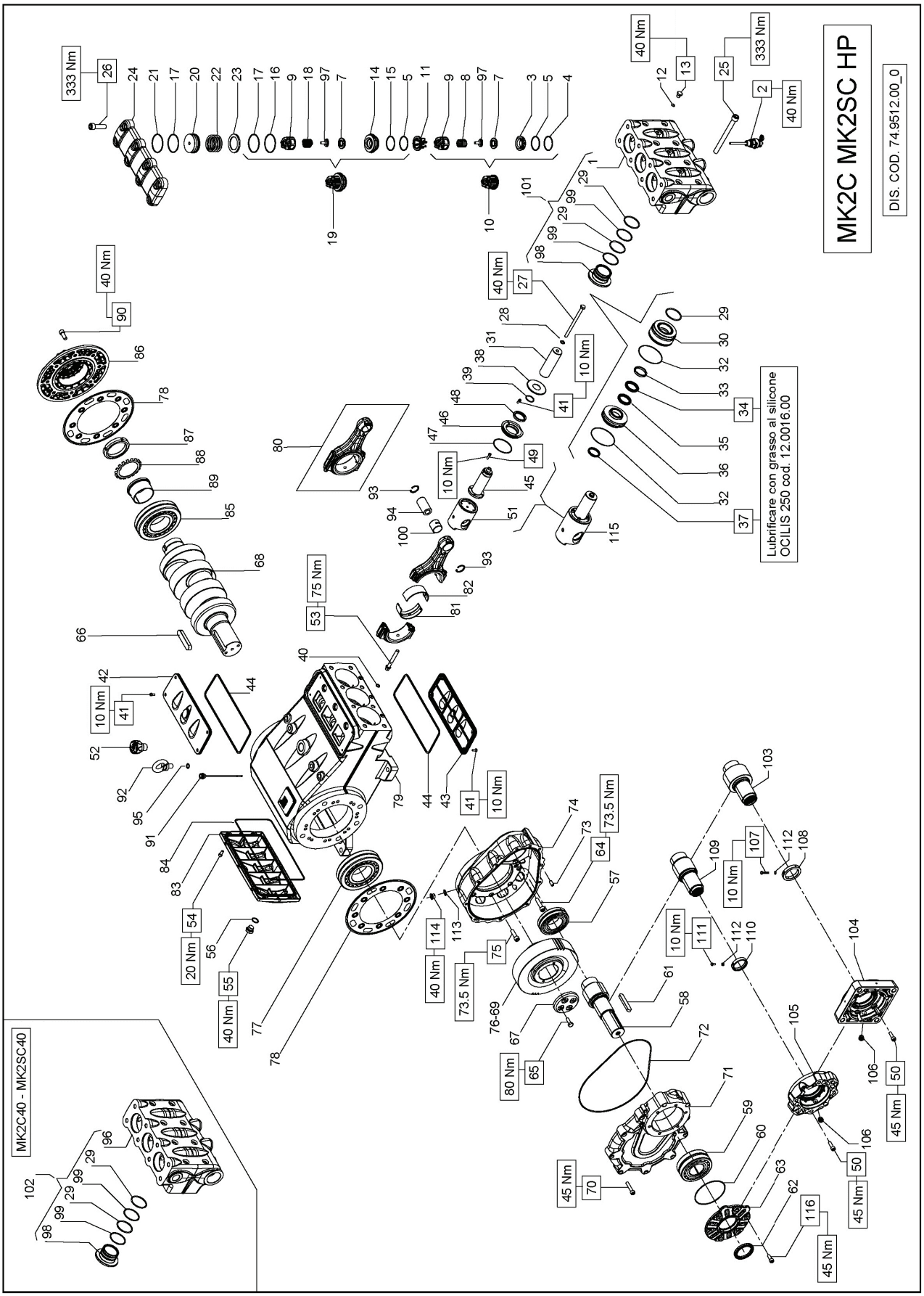
MK2C40 - MK2SC40
MK2C45 - MK2SC45
MK2C50 - MK2SC50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIRAZ.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2118.56	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7222.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7223.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE HP		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE - FLANGIATO		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"X13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0202.35	ALBERO A GOMITI C. 72 - MKSC		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKC		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1

6.2.17 تصميم تفصيلي للأجزاء و قطع الغيار



2.17 المضخة إصدار MK2C-MK25C

1.2.17 إرشادات وتعليمات الاستخدام



تم تصميم المضخات لكي تعمل في بيئة غير معرضة للانفجارات.
يعتبر***المكتب الفني*** أو ***مركز خدمة العملاء*** في خدمة العملاء وذلك من أجل الوصول لأفضل تحديد وتوصيف لشبكة التشغيل

2.2.17 درجة حرارة الاستخدام



درجة حرارة السائل المسموح بها: - 30 درجة مئوية ÷ + 30 درجة مئوية. للقيم المختلفة قم بالاتصال ***بالمكتب الفني*** أو ***بمركز خدمة العملاء***.

3.2.17 القوة التشغيلية وأقصى ضغط

تشير معدلات الأداء الموضحة في دليل العرض إلى مستويات الأداء القصوى التي تم تزود المضخة بها. **بغض النظر** عن القوة التشغيلية المستخدمة، لا يمكن تجاوز مستوى الضغط أو العدد الأقصى من عدد اللفات المحددة في لوحة البيانات التعريفية إلا بعد تصريح مباشر من***المكتب الفني*** أو من ***مركز خدمة العملاء***.

4.2.17 مواصفات فنية

الموديل	عدد اللفات \ دقيقة	السعة		الضغط		القوة	
		ل\دقيقة	Gpm	بار	رطل على البوصة المربعة	ك و	Hp
MK2SC 40	1500	153	40.4	400	5800	159	117
	1800	149	39.4	400	5800	155	114
MK2SC 45	1500	193	51.0	300	4350	150	110
	1800	189	49.9	300	4350	147	108
MK2SC 50	1500	239	63.1	250	3625	155	114
	1800	233	61.6	250	3625	151	111
MK2SC 55	1500	289	76.4	200	2900	150	110
	1800	282	74.5	200	2900	146	107
MK2SC 60	1500	343	90.6	170	2465	151	111
	1800	335	88.5	170	2465	148	109
MK2SC 65	1500	403	106.5	150	2175	157	115
	1800	394	104.1	150	2175	154	113

الموديل	عدد اللفات \ دقيقة	السعة		الضغط		القوة	
		ل\دقيقة	Gpm	بار	رطل على البوصة المربعة	ك و	Hp
MK2SC 40	1500	184	48.6	400	5800	140.5	191
	1800	183	48.3	400	5800	140	190
	2200	182	48.1	400	5800	139	189
MK2SC 45	1500	233	61.6	300	4350	134	182
	1800	232	61.3	300	4350	133	181
	2200	231	61.0	300	4350	132	180
MK2SC 50	1500	288	76.1	250	3625	137.5	187
	1800	286	75.6	250	3625	137	186
	2200	285	75.3	250	3625	136	185
MK2SC 55	1500	349	92.2	200	2900	133	181
	1800	346	91.4	200	2900	132	180
	2200	344	90.9	200	2900	132	179
MK2SC 60	1500	415	109.6	170	2465	135	183
	1800	412	108.9	170	2465	134	182
	2200	410	108.3	170	2465	133	181
MK2SC 65	1500	487	128.7	150	2175	140	190
	1800	484	127.9	150	2175	139	189
	2200	481	127.1	150	2175	137.5	187

5.2.17 الأبعاد والأوزان

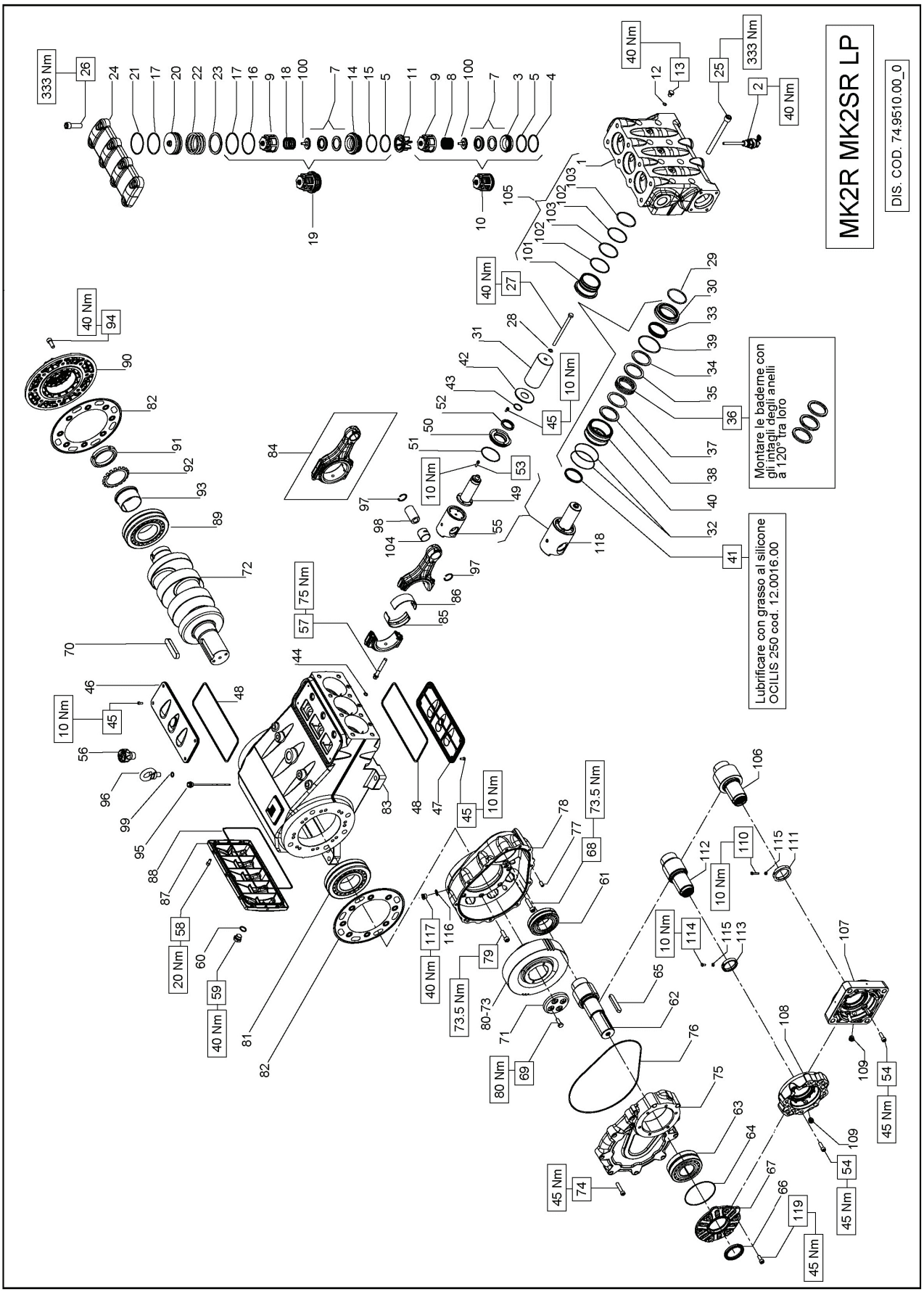
لأبعاد وأوزان المضخات يرجى مراجعة المخططات المدونة في الفصل 6.

KIT RICAMBIO – SPARE KIT

		MK2R55 - MK2SR55 (D.55)	MK2R60 - MK2SR60 (D.60)	MK2R65- MK2SR65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2102	KIT 2103	KIT 2104
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2453	KIT 2454	KIT 2455
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK2R55 - MK2SR55
MK2R60 - MK2SR60
MK2R65 - MK2SR65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	**10.7443.01**	**DISPOS. APERTURA VALVOLE ASPIR.**		**3**
3	**36.2066.66**	**SEDE VALVOLA ASPIRAZIONE**		**3**
4	**90.5270.00**	**ANELLO ANTIEST. D. 61.2x67.0x2.0**	**C**	**3**
5	**90.4105.00**	**OR D. 59.92x3.53 NBR 90SH 4237**	**C**	**6**
7	**36.2087.01**	**VALVOLA SFERICA**		**6**
8	**94.7698.00**	**MOLLA Dm. 41.5x37.9**		**3**
9	**36.2060.01**	**GUIDA VALVOLA**		**6**
10	**36.7150.01**	**GR. VALVOLA D'ASPIRAZIONE**	**B**	**3**
11	**74.2105.51**	**DISTANZIALE GUIDA VALVOLA**	**B**	**3**
12	**90.3584.00**	**OR D. 10.82x1.78 NBR 90SH 2043**	**C**	**3**
13	**98.2046.00**	**TAPPO G 1/4"x13**		**3**
14	**36.2068.66**	**SEDE VALVOLA DI MANDATA**		**3**
15	**90.5273.00**	**ANELLO ANTIEST. D. 61.4x67.5x1.5**	**C**	**3**
16	**90.5290.00**	**ANELLO ANTIEST. D. 77.2x83.0x1.5**	**C**	**3**
17	**90.4134.00**	**OR D. 75.80x3.53 NBR 70SH 4300**	**B-C**	**6**
18	**94.7700.00**	**MOLLA Dm. 41.5x38.3**		**3**
19	**36.7152.01**	**GR. VALVOLA DI MANDATA**	**B**	**3**
20	**74.2109.70**	**TAPPO VALVOLE DI MANDATA**		**3**
21	**90.5293.00**	**ANELLO ANTIEST. D. 77.4x83.2x1.5**	**B-C**	**3**
22	**94.8000.00**	**MOLLA Dm. 75.0x49.6**		**3**
23	**74.2107.66**	**ANELLO SEDE VALVOLA DI MANDATA**		**3**
24	**74.2101.15**	**COPERCHIO VALVOLE**		**1**
25	**99.5222.00**	**VITE M16x180 UNI 5931**		**8**
26	**99.5147.00**	**VITE M16x55 UNI 5931**		**8**
27	**99.3850.00**	**VITE M10x160 UNI 5737**		**3**
28	**96.7105.00**	**ROSETTA D. 10.0x18.0x0.9**	**C**	**3**
29	**90.4185.00**	**OR D. 72.00x4.00 NBR 70SH**	**A-C**	**3**
30	74.1007.56	ANELLO DI TESTA BADERNE D. 55		3
	74.1008.56	ANELLO DI TESTA BADERNE D. 60		
	74.1009.56	ANELLO DI TESTA BADERNE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	**90.3722.00**	**OR D. 96.00x2.00 NBR 70SH**	**A-C**	**6**
33	94.7770.00	MOLLA Dm. 61.5x35.0 - MK2R MK2SR 55		3
	94.7900.00	MOLLA Dm. 71.5x35.0 - MK2R MK2SR 60-65		
34	74.2135.56	ANELLO PER MOLLA D. 55		3
	74.2136.56	ANELLO PER MOLLA D. 60		
	74.2137.56	ANELLO PER MOLLA D. 65		
35	74.2139.82	ANELLO RASCHIATORE D. 55	A-C	3
	74.2140.82	ANELLO RASCHIATORE D. 60	A-C	
	74.2141.82	ANELLO RASCHIATORE D. 65	A-C	
36	90.5725.00	BADERNE D. 55.0x71.0x19.5	A-C	3
	90.5750.00	BADERNE D. 60.0x76.0x19.5	A-C	
	90.5775.00	BADERNE D. 65.0x81.0x19.5	A-C	
37	90.5267.00	ANELLO ANTIEST. D. 55.0x71.0x2.5	A-C	3
	90.5269.00	ANELLO ANTIEST. D. 60.0x76.0x2.5	A-C	
	90.5275.00	ANELLO ANTIEST. D. 65.0x81.0x2.5	A-C	
38	74.2143.60	ANELLO DI SUPPORTO D. 55		3
	74.2144.60	ANELLO DI SUPPORTO D. 60		
	74.2145.60	ANELLO DI SUPPORTO D. 65		
39	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - MK2R MK2SR 55	A-C	3
	90.4141.00	OR D. 85.32x3.53 NBR 70SH 4337 - MK2R MK2SR 60-65	A-C	
40	74.2147.56	SUPPORTO BADERNE D. 55		3
	74.2148.56	SUPPORTO BADERNE D. 60		
	74.2149.56	SUPPORTO BADERNE D. 65		
41	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
42	**74.2133.51**	**PARASPRUZZI**		**3**
43	**90.3865.00**	**OR D. 29.82x2.62 NBR 70SH 3118**	**C**	**3**
44	**90.3825.00**	**OR D. 10.78x2.62 NBR 70SH 3043**	**A-C**	**3**
45	**99.1837.00**	**VITE M6x14 UNI 5931**		**14**
46	**74.1501.22**	**COPERCHIO ISPEZIONE CHIUSO**		**1**
47	**74.1502.22**	**COPERCHIO ISPEZIONE APERTO**		**1**
48	**90.4500.00**	**OR D. 266.07x5.33 NBR 70SH**	**C**	**2**
49	**74.0503.36**	**STELO GUIDA PISTONE**		**3**
50	**74.2131.71**	**COPERCHIO PARAOLIO GUIDA PISTONE**		**3**
51	**90.3914.00**	**OR D. 72.69x2.62 NBR 90SH 3287**	**C**	**3**
52	**90.1679.00**	**ANELLO RAD. D. 40.0x52.0x7.0**	**C**	**3**
53	**99.1884.00**	**VITE M6x20 UNI 5931**		**12**
55	79.0504.43	GUIDA PISTONE		3
	790.0505.43	GUIDA PISTONE +1.0		
56	**98.2333.00**	**TAPPO CARICO OLIO G1"**		**1**
57	**99.4410.00**	**VITE SERRAGGIO BIELLA**		**6**
58	**99.3045.00**	**VITE M8x18 UNI 5931**		**6**
59	**98.2187.00**	**TAPPO G 1/2"X13 TE22 ZINC.**		**1**
60	**96.7514.00**	**ROSETTA D. 21.5x27.0x1.5**		**1**
61	**91.8700.00**	**CUSCINETTO A RULLI**		**1**
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	**91.8610.00**	**CUSCINETTO A RULLI**		**1**
64	**90.3926.50**	**OR D. 126.67x2.62 NBR 70SH 3500**	**C**	**1**
65	**91.5030.00**	**LINGUETTA 16.0x10.0x90.0**		**1**
66	**90.1800.00**	**ANELLO RAD. D. 60.0x80.0x8.0**	**C**	**1**
67	**74.2173.22**	**COPERCHIO PIGNONE**		**1**
68	**99.4335.00**	**VITE M12x50 UNI 5931**		**2**
69	**99.3684.00**	**VITE M10x30 UNI 5739**		**4**
70	**91.5120.00**	**LINGUETTA 22.0x14.0x100.0**		**1**
71	**74.2252.55**	**FERMO CORONA**		**1**
72	74.0202.35	ALBERO A GOMITI C. 72 - MK2R		1
	74.0201.35	ALBERO A GOMITI C. 72 - MK2SR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	**99.3730.00**	**VITE M10x50 UNI 5931**		**10**
75	**74.2174.13**	**COPERCHIO RIDUTTORE**		**1**
76	**90.4173.00**	**OR D. 338.00x3.60 NBR 70SH**	**C**	**1**
77	**97.6230.00**	**SPINA CILINDRICA D. 10.0x24.0**		**2**
78	**74.2175.13**	**SCATOLA RIDUTTORE**		**1**
79	**99.4305.00**	**VITE M12x40 UNI 5931**		**6**
81	**91.8850.00**	**CUSCINETTO A RULLI**		**1**
82	**74.2130.84**	**GUARNIZIONE LATERALE**	**C**	**2**
83	**74.0101.13**	**CARTER POMPA**		**1**
84	**74.0302.01**	**BIELLA COMPLETA**		**3**
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0.50 - SUP.	D	
87	**74.1600.22**	**COPERCHIO CARTER**		**1**
88	**90.4160.00**	**OR D. 304.39x3.53 NBR 70SH 41200**	**C**	**1**
89	**91.8852.00**	**CUSCINETTO A RULLI**		**1**
90	**74.1500.22**	**COPERCHIO CUSCINETTO**		**1**
91	**93.0800.00**	**GHIERA DI BLOCCAGGIO**		**1**
92	**96.8300.00**	**ROSETTA DI SICUREZZA**		**1**
93	**91.8800.00**	**BUSSOLA DI PRESSIONE**		**1**
94	**99.4280.00**	**VITE M12x30 UNI 5931**		**8**
95	**98.2092.00**	**TAPPO CON ASTA G 3/8"x163**		**2**
96	**93.1050.00**	**GOLFARE M16 UNI 2947**		**2**
97	**90.0697.00**	**ANELLO D'ARRESTO J35**		**6**
98	**97.7450.00**	**SPINOTTO D. 35x64**		**3**
99	**90.3833.00**	**OR D. 13.95x2.62 NBR 70SH 3056**	**C**	**2**
100	**36.2089.51**	**GUIDA INTERNA VALVOLA**		**6**
101	**74.2150.56**	**BOCCOLA TESTATA**		**3**
102	**90.5285.00**	**ANELLO ANTIEST. D. 72.5x78.5x1.5**		**6**
103	**90.4129.00**	**OR D. 72.62x3.53 NBR 70SH 4287**		**6**
104	**90.9173.00**	**BOCCOLA PIEDE BIELLA**		**3**
105	**74.1201.01**	**TESTATA CON BOCCOLA**		**1**
116	**96.7380.00**	**ROSETTA D. 17.5x23.0x1.5**		**2**
117	**98.2086.00**	**TAPPO G 3/8"x12**		**2**
118	**74.6062.01**	**GR. GUIDA PISTONE**		**3**
119	**99.3668.00**	**VITE M10x25 5931**		**6**
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
54	**99.3686.00**	**VITE M10x30 UNI 5931**		**6**
80	**10.0889.35**	**CORONA Z56 R. 2.667 - ELICOIDALE**		**1**
106	**10.0905.55**	**PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.**		**1**
107	**10.0909.20**	**FLANGIA MOTORE IDRAULICO SAE-D**		**1**
109	**90.2065.00**	**TAPPO PER FORO D. 17 - TTN19**		**2**
110	**74.2178.34**	**VITE M6x30 CON INCAVO COMPLETA**		**1**
111	**74.2176.71**	**ANELLO PER ALBERO D. 55 HYDR.PACK**		**1**
115	**92.2025.00**	**DADO M6x5 UNI 5588**		**1**
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
54	**99.3686.00**	**VITE M10x30 UNI 5931**		**6**
80	**10.0907.35**	**CORONA Z60 R. 3.375 - ELICOIDALE**		**1**
108	**10.0908.20**	**FLANGIA MOTORE IDRAULICO SAE-C**		**1**
109	**90.2065.00**	**TAPPO PER FORO D. 17 - TTN19**		**2**
112	**10.0906.55**	**PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.**		**1**
113	**74.2171.71**	**ANELLO PER ALBERO D. 50 HYDR.PACK**		**1**
114	**70.2270.34**	**VITE M6x12 CON INCAVO COMPLETA**		**1**
115	**92.2025.00**	**DADO M6x5 UNI 5588**		**1**


MK2R MK2SR LP
DIS. COD. 74.9510.00_0
Lubrificare con grasso al silicone OCILIS 250 cod. 12.0016.00
Montare le baderne con gli intagli degli anelli a 120° tra loro

KIT RICAMBIO – SPARE KIT

		MK2R40 - MK2SR40 (D.40)	MK2R45 - MK2SR45 (D.45)	MK2R50 - MK2SR50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2430	KIT 2431	KIT 2100
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2456	KIT 2457	KIT 2458
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

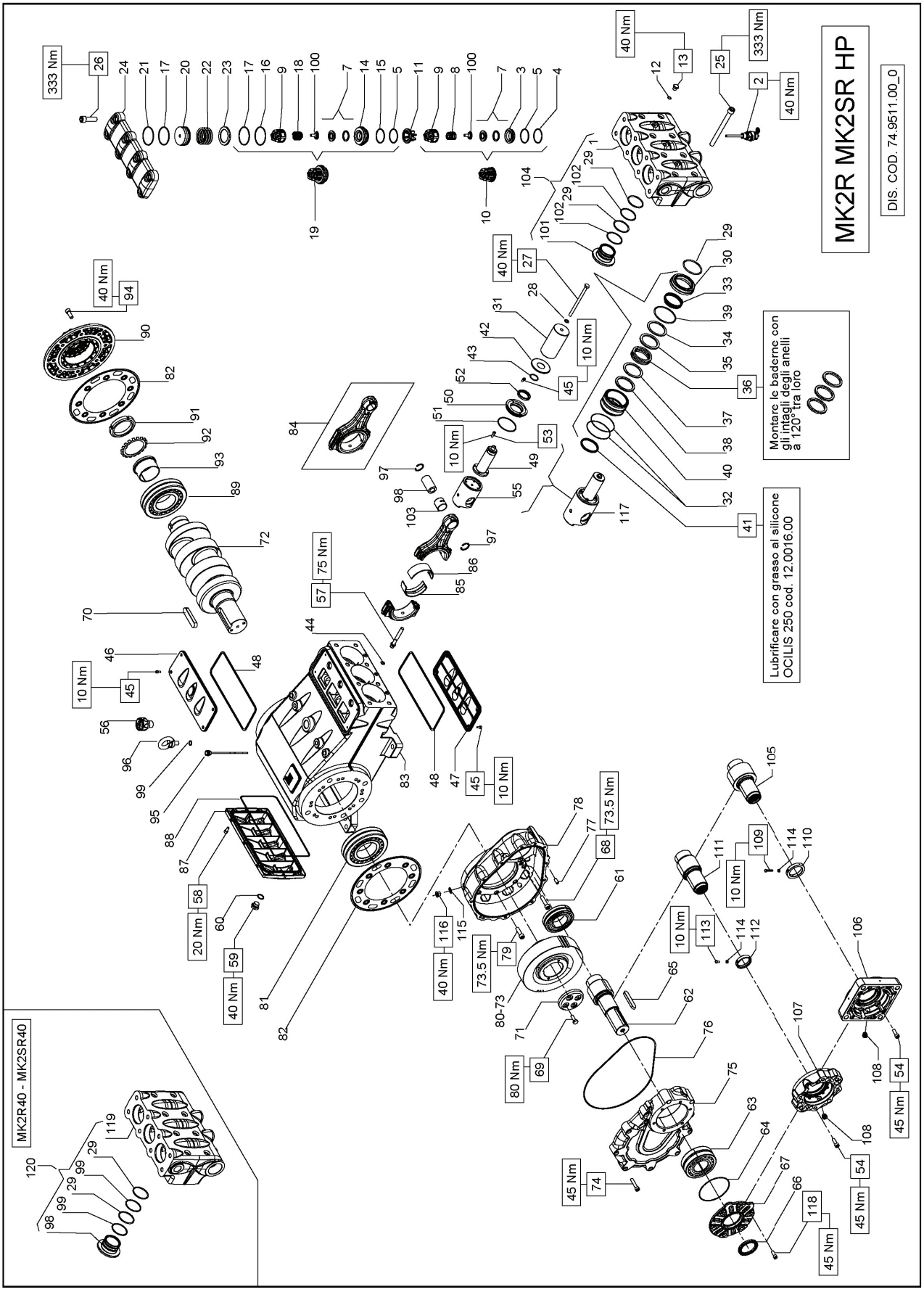
MK2R40 - MK2SR40
MK2R45 - MK2SR45
MK2R50 - MK2SR50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.1010.56	ANELLO DI TESTA BADERNE D. 40		3
	74.1011.56	ANELLO DI TESTA BADERNE D. 45		
	74.1006.56	ANELLO DI TESTA BADERNE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	94.7730.00	MOLLA Dm. 51.5x36.0 - D. 40-45		3
	94.7770.00	MOLLA Dm. 61.5x35.0 - D. 50		
34	74.2165.56	ANELLO PER MOLLA D. 40		3
	74.2169.56	ANELLO PER MOLLA D. 45		
	74.2134.56	ANELLO PER MOLLA D. 50		
35	74.2164.72	ANELLO RASCHIATORE BADERNE D. 40	A-C	3
	74.2168.72	ANELLO RASCHIATORE BADERNE D. 45	A-C	
	74.2138.82	ANELLO RASCHIATORE BADERNE D. 50	A-C	
36	90.5655.00	ANELLO TEN. ALT. KC D. 40.0x56.0x19.5	A-C	3
	90.5680.00	ANELLO TEN. ALT. KC D. 45.0x61.0x19.5	A-C	
	90.5700.00	ANELLO TEN. ALT. KC D. 50.0x66.0x19.5	A-C	
37	90.5232.00	ANELLO ANTIEST. D. 40.0x56.0x2.5	A-C	3
	90.5236.00	ANELLO ANTIEST. D. 45.0x61.0x2.5	A-C	
	90.5245.00	ANELLO ANTIEST. D. 50.0x66.0x2.5	A-C	
38	74.2163.60	ANELLO DI SUPPORTO D. 40		3
	74.2167.60	ANELLO DI SUPPORTO D. 45		
	74.2142.60	ANELLO DI SUPPORTO D. 50		
39	90.4110.00	OR D. 61.91x3.53 NBR 70SH 165 - D. 40	A-C	3
	90.4117.00	OR D. 66.27x3.53 NBR 70SH 4262 - D. 45	A-C	
	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300 - D. 50	A-C	

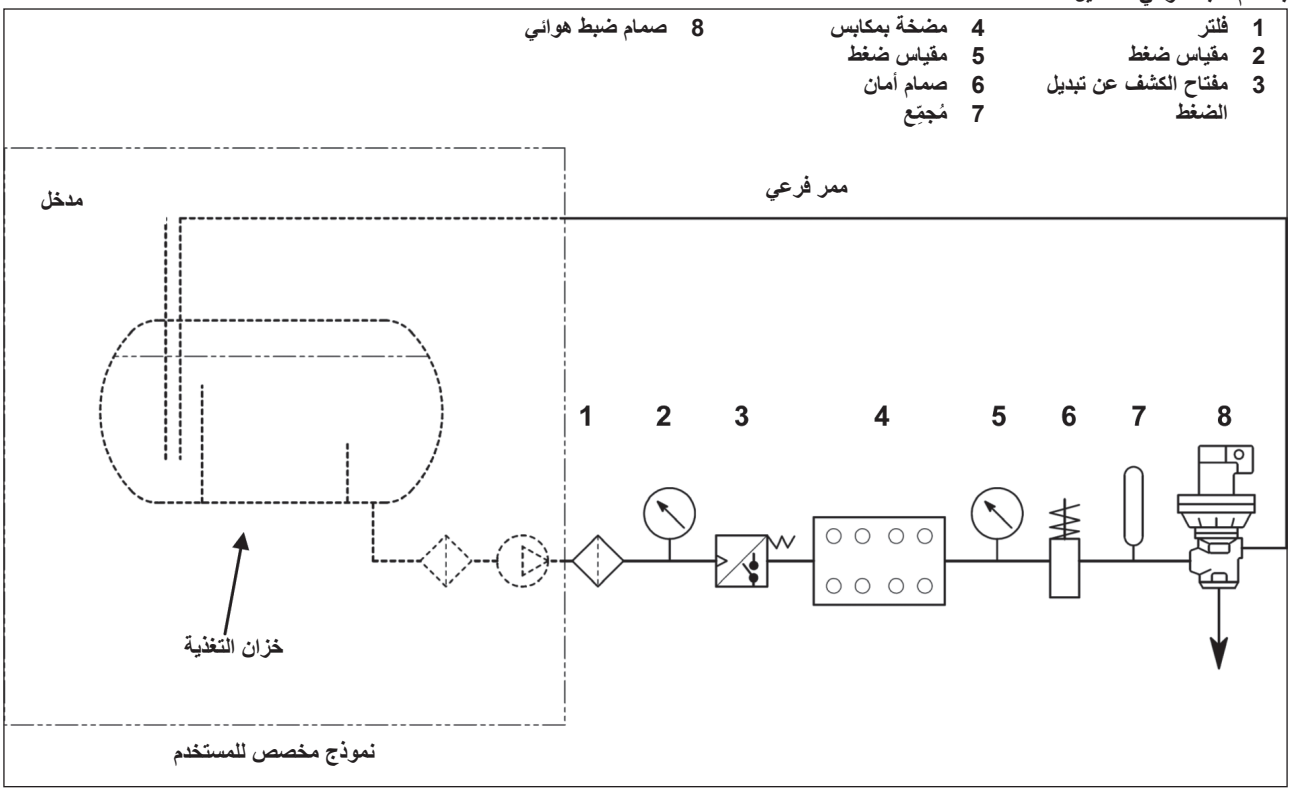
POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
40	74.2162.56	SUPPORTO BADERNE D. 40		3
	74.2166.56	SUPPORTO BADERNE D. 45		
	74.2146.56	SUPPORTO BADERNE D. 50		
41	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	
42	74.2133.51	PARASPRUZZI		3
43	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
44	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
45	99.1837.00	VITE M6x14 UNI 5931		14
46	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
47	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
48	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
49	74.0503.36	STELO GUIDA PISTONE		3
50	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
51	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
52	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
53	99.1884.00	VITE M6x20 UNI 5931		12
55	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
56	98.2333.00	TAPPO CARICO OLIO G1"		1
57	99.4410.00	VITE SERRAGGIO BIELLA		6
58	99.3045.00	VITE M8x18 UNI 5931		6
59	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
60	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
61	91.8700.00	CUSCINETTO A RULLI		1
62	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2R		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2SR		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2R MK2SR		
63	91.8610.00	CUSCINETTO A RULLI		1
64	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
65	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
66	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
67	74.2173.22	COPERCHIO PIGNONE		1
68	99.4335.00	VITE M12x50 UNI 5931		2
69	99.3684.00	VITE M10x30 UNI 5739		4
70	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
71	74.2252.55	FERMO CORONA		1
72	74.0202.35	ALBERO A GOMITI C. 72 - MKSR		1
	74.0201.35	ALBERO A GOMITI C. 72 - MKR		
73	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2R		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2SR		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2R MK2SR		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2R MK2SR		
74	99.3730.00	VITE M10x50 UNI 5931		10
75	74.2174.13	COPERCHIO RIDUTTORE		1
76	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
77	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
78	74.2175.13	SCATOLA RIDUTTORE		1
79	99.4305.00	VITE M12x40 UNI 5931		6
81	91.8850.00	CUSCINETTO A RULLI		1
82	74.2130.84	GUARNIZIONE LATERALE	C	2
83	74.0101.13	CARTER POMPA		1
84	74.0302.01	BIELLA COMPLETA		3

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
85	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
86	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
87	74.1600.22	COPERCHIO CARTER		1
88	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
89	91.8852.00	CUSCINETTO A RULLI		1
90	74.1500.22	COPERCHIO CUSCINETTO		1
91	93.0800.00	GHIERA DI BLOCCAGGIO		1
92	96.8300.00	ROSETTA DI SICUREZZA		1
93	91.8800.00	BUSSOLA DI PRESSIONE		1
94	99.4280.00	VITE M12x30 UNI 5931		8
95	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
96	93.1050.00	GOLFARE M16 UNI 2947		2
97	90.0697.00	ANELLO D'ARRESTO J35		6
98	97.7450.00	SPINOTTO D. 35x64		3
99	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
100	36.2090.51	GUIDA INTERNA VALVOLA		6
101	74.2151.56	BOCCOLA TESTATA		3
102	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
103	90.9173.00	BOCCOLA PIEDE BIELLA		3
104	74.1206.01	TESTATA CON BOCCOLA D. 40		1
	74.1203.01	TESTATA CON BOCCOLA D. 45-50		
115	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
116	98.2086.00	TAPPO G 3/8"x12		2
117	74.6062.01	GR. GUIDA PISTONE		3
118	99.3668.00	VITE M10x25 5931		6
119	74.1206.15	TESTATA D. 40 HP		1
	74.1207.15	TESTATA D. 40 HP - NPT		
120	74.1206.01	TESTATA CON BOCCOLA D. 40		1
PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D				
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
105	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
106	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
108	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
110	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
114	92.2025.00	DADO M6x5 UNI 5588		1
PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C				
54	99.3686.00	VITE M10x30 UNI 5931		6
80	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
107	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
108	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
111	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
112	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
113	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
114	92.2025.00	DADO M6x5 UNI 5588		1

8.1.17 تصميم تفصيلي للأجزاء و قطع الغيار



بصمام ضبط هوائي التشغيل



شكل a/12

يجب تركيب المرشح بأقرب مكان ممكن من المضخة، بحيث يمكن مراقبته بسهولة.

للحصول على أفضل أداء تشغيلي للمضخة فإنه يجب ضبط وتحديد أبعاد درجة الترشيح وقدرة التجميع الخاصة بنظام الترشيح وفقاً للهدف والغاية التى يُرغب في الوصول إليها والتى تهدف إلى تحقيق أفضل توازن بين مدة استخدام الجزء الهيدروليكي من المضخة وعدد ساعات العمل بين كل عملية ملء للمياه والعملية التالية لها. التوافق والتوازن المنصوح به هو ذلك الموضح تخطيطياً في الفقرة 1.1.17.

لا غنى بعد استخدام المضخة وفي نهاية كل يوم عمل عن القيام بغسل المضخة بالمياه الخالية من الجسيمات والجزئيات.

7.1.17 صيانة وقائية

للحصول على موثوقية تشغيل عالية وكفاءة عمل جيدة للمضخة، يصبح من الضروري احترام عمليات الصيانة الدورية الموضحة في الجدول.

الصيانة الوقائية	
كل 500 ساعة	**كل 1000 ساعة**
التحقق من مستوى الزيت	تغيير الزيت
	الفحص \ الاستبدال *: صمامات مواقع الصمام نابض انضغاط الصمام موجه مسار الصمام

القدرات التشغيلية LP-HP: تعتمد المدة على درجة الترشيح وعلى نوعية السائل وعلى النسبة المئوية الحجمية (انظر الفصل 7).

* للقيام بعملية الاستبدال احرص على مراعاة الإرشادات الموجودة في ***دليل الإصلاح***.

4.1.17 الأبعاد والأوزان

لأبعاد وأوزان المضخات يرجى مراجعة المخططات المدونة في الفصل 6.

5.1.17 تغذية المضخة

يجب أن يتم تركيب المضخات دائماً تحت طبقة إيجابية من المياه لحماية المضخة، أو يجب أن تستقبل المياه عن طريق السقوط أو عن طريق التغذية المدفوعة وليس أبداً عن طريق شفطها من مستوى أقل.
تعتبر المضخات قادرة على العمل بطبقة مياه حماية بمستواها الأدنى المقدر ب 1 متر، ولكن بالرغم من ذلك وللحصول على أفضل أداء تشغيلي حجمي للمضخة ولتجنب حدوث ظواهر التكهّف أو التجويف، فإن الطبقة الإيجابية الموجودة والمكونة من المياه لحماية المضخة (NPSH avail) والتى يجب قياسها من عند حافة الشفط الموجودة في رأس المضخة يجب أن تكون مساوية للقيم المحددة كالتالي أو أعلى منها:

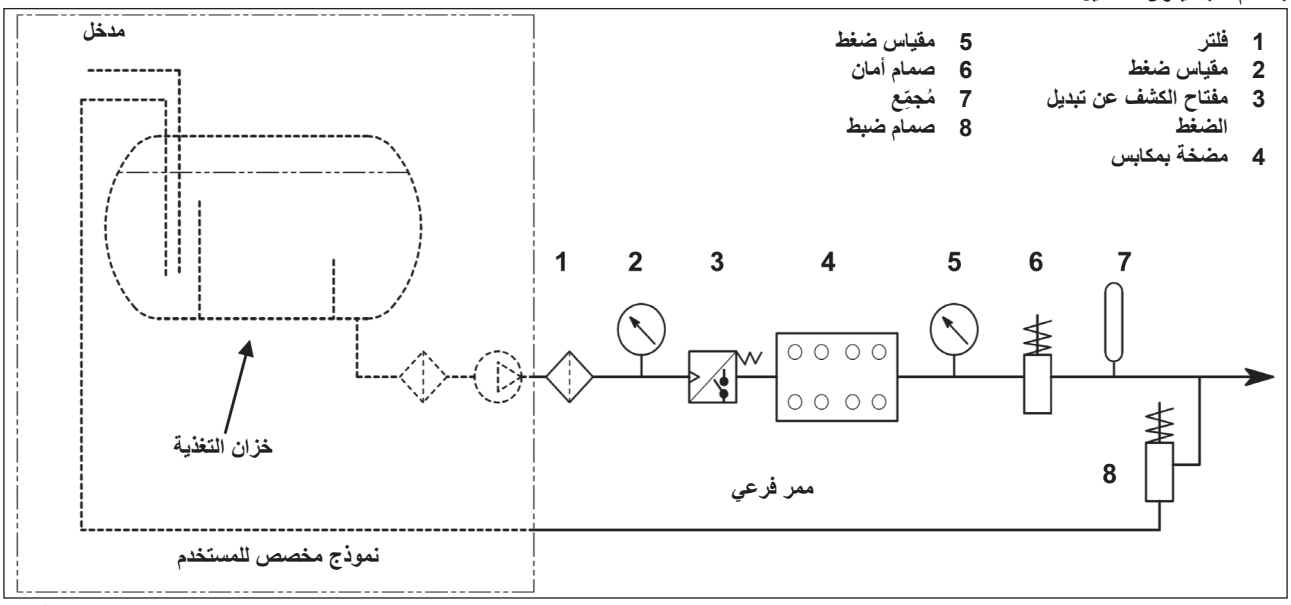
	$NPSH_r$(م)
MK2R/MK2SR40	4.5
MK2R/MK2SR45	5.5
MK2R/MK2SR50	6.5
MK2R/MK2SR55	7.5
MK2R/MK2SR60	8
MK2R/MK2SR65	9

بالنسبة لسِعات الإسطوانة الأكبر من ذلك، ولمضخات بمكابس قطرها 55 - 60 - 65، فإن التغذية المساعدة عن طريق استخدام مضخة booster هى مسألة موصى بها بشكل قوي ولذلك لتجنب ظواهر التكهّف مع الوضع في الإعتبار حجم الجزء الهيدروليكي والسعات التشغيلية الواضحة.
يجب أن يتوافر في المضخة المعززة معدل تدفق يساوي على الأقل ضعف معدل التدفق المحدد في لوحة البيانات التعريفية الخاص بمضخة المكابس مع مستوى ضغط بين 2 و 3 بار.
يجب احترام ومراعاة مواصفات التغذية هذه مهما كان نظام العمل.

يجب أن تتم عملية تشغيل المضخة المعززة دائماً قبل البدء في تشغيل المضخة التي تعمل بالمكابس.
من المستحسن تركيب مفتاح تبديل ضغط على خط التغذية عند مرشحات حماية المضخة.

6.1.17 الترشيح

يعتبر المكتب الفني ومركز تقديم الدعم الفني في خدمة العملاء وذلك من أجل الوصول لأفضل تحديد وتوصيف لشبكة التشغيل؛ وعلى سبيل المثال نحن نوفر التنسيقات التخطيطية التالية (شكل 12 و شكل 12/a).
بصمام ضبط يدوى التشغيل



شكل 12

17 إصدارات خاصة

المضخة MK2 متاحة أيضا في الإصدارات التالية:

- MK2R (للمياة معادة التدوير)
- MK2SR (للمياة معادة التدوير)
- MK2C (للميثانول)
- MK2SC (للميثانول)
- MK2SH (برأس AISI 420)

سوف يتم فيما يلي ذكر الإرشادات والتعليمات المتعلقة بكيفية اختيار واستخدام هذه الإصدارات.

حيث لم ينص على خلاف ذلك يرجى الرجوع إلى ما هو مذكور في السابق حول موديل المضخة MK2 القياسية.

1.17 المضخة إصدار MK2R-MK2SR

1.1.17 إرشادات وتعليمات الاستخدام

تم تصميم المضخة سلسلة MK2R/MK2SR لتعمل في الأمكان التى جوّها غير قابل للانفجار بشكل كبير وليتم استخدامها مع المياه الغنية بالجسيمات والجزئيات، لذلك فهي مناسبة لتعمل في شبكات اعادة تدوير السوائل.

تعتمد مدة القدرات التشغيلية للمكبس بشكل مباشر على مقدار النسبة المئوية للأجزاء الصلبة في السائل سواء من ناحية الحجم أو من ناحية الكثافة.

للحصول على مدة أطول للقدرات التشغيلية للمكبس فإننا ننصح بألا تتجاوز أبعاد حبيبات وجزئيات السائل مستوى ال 200 ميكرون و 20% كحد أقصى للحجم.

لمزيد من الإرشادات والتوجيهات و للإطلاع على التنسيق التخطيطي للشبكة في حدها الأقصى انظر الفقرة 6.2.17.

2.1.17 القوة التشغيلية وأقصى ضغط

تشير معدلات الأداء الموضحة في دليل العرض إلى مستويات الأداء القصوى التي تم تزود المضخة بها. **بغض النظر** عن القوة التشغيلية المستخدمة، لا يمكن تجاوز مستوى الضغط أو العدد الأقصى من عدد اللفات المحددة في لوحة البيانات التعريفية إلا بعد تصريح مباشر من***المكتب الفني*** أو من **مركز خدمة *العملاء***.

3.1.17 مواصفات فنية

الموديل	عدد اللفات \ دقيقة	السعة		الضغط		القوة	
		ل\دقيقة	Gpm	بار	رطل على البوصة المربعة	ك و	Hp
MK2R 40	1500	153	40.4	400	5800	159	117
	1800	149	39.4	400	5800	155	114
MK2R 45	1500	193	51.0	300	4350	150	110
	1800	189	49.9	300	4350	147	108
MK2R 50	1500	239	63.1	250	3625	155	114
	1800	233	61.6	250	3625	151	111
MK2R 55	1500	289	76.4	200	2900	150	110
	1800	282	74.5	200	2900	146	107
MK2R 60	1500	343	90.6	170	2465	151	111
	1800	335	88.5	170	2465	148	109
MK2R 65	1500	403	106.5	150	2175	157	115
	1800	394	104.1	150	2175	154	113

الموديل	عدد اللفات \ دقيقة	السعة		الضغط		القوة	
		ل\دقيقة	Gpm	بار	رطل على البوصة المربعة	ك و	Hp
MK2SR 40	1500	184	48.6	400	5800	140.5	191
	1800	183	48.3	400	5800	140	190
	2200	182	48.1	400	5800	139	189
MK2SR 45	1500	233	61.6	300	4350	134	182
	1800	232	61.3	300	4350	133	181
	2200	231	61.0	300	4350	132	180
MK2SR 50	1500	288	76.1	250	3625	137.5	187
	1800	286	75.6	250	3625	137	186
	2200	285	75.3	250	3625	136	185
MK2SR 55	1500	349	92.2	200	2900	133	181
	1800	346	91.4	200	2900	132	180
	2200	344	90.9	200	2900	132	179
MK2SR 60	1500	415	109.6	170	2465	135	183
	1800	412	108.9	170	2465	134	182
	2200	410	108.3	170	2465	133	181
MK2SR 65	1500	487	128.7	150	2175	140	190
	1800	484	127.9	150	2175	139	189
	2200	481	127.1	150	2175	137.5	187

KIT RICAMBIO – SPARE KIT

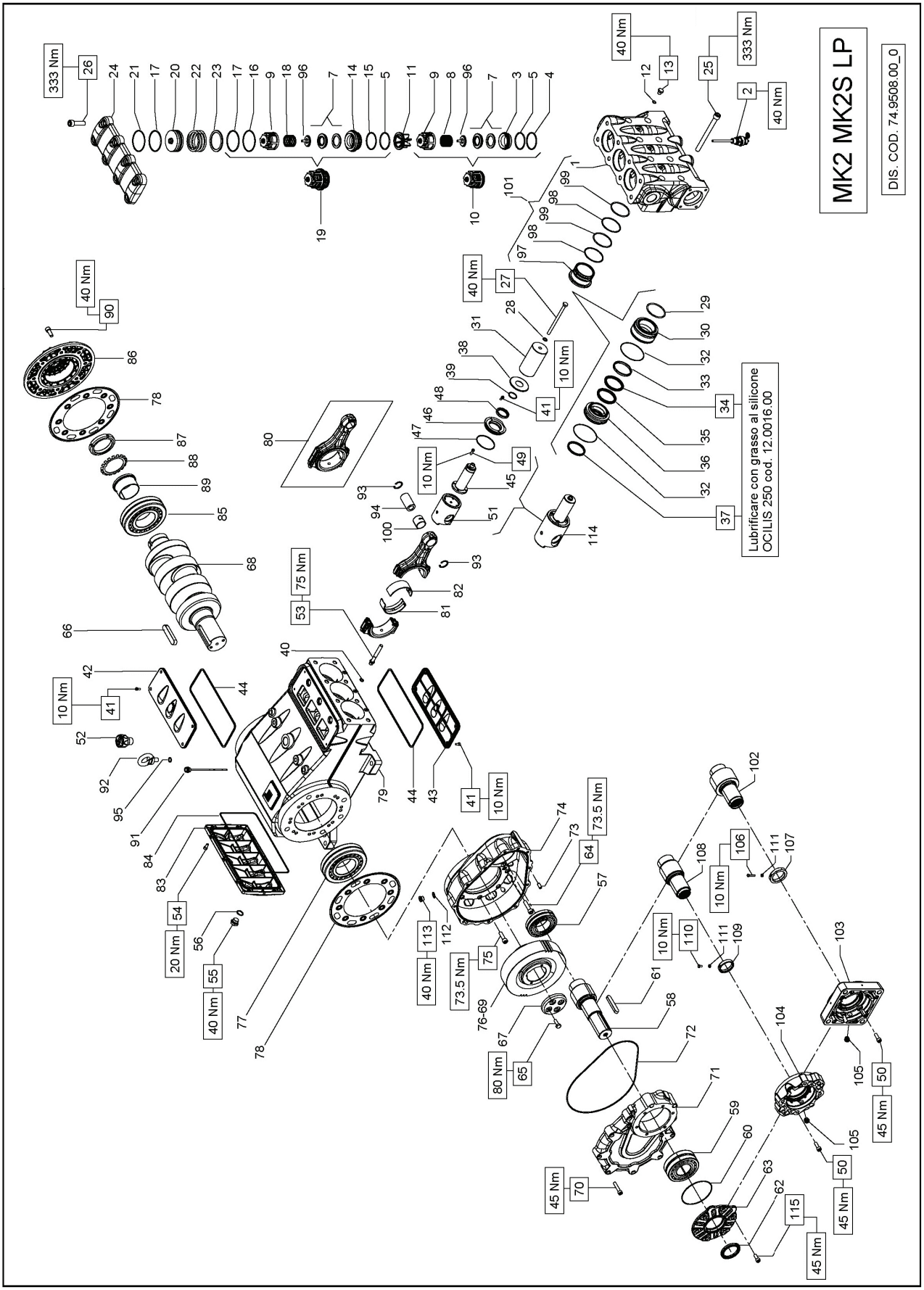
		MK255 - MK2S55 (D.55)	MK260 - MK2S60 (D.60)	MK265 - MK2S65 (D.65)
A	Kit tenute pompanti – Plunger packing kit	KIT 2045	KIT 2046	KIT 2047
B	Kit valvole – Valves kit	KIT 2048		
C	Kit tenute complete – Complete seals kit	KIT 2447	KIT 2448	KIT 2449
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

MK255 - MK2S55
MK260 - MK2S60
MK265 - MK2S65

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1201.15	TESTATA LP		1
	74.1204.15	TESTATA LP - NPT		
2	10.7443.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2066.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5270.00	ANELLO ANTIEST. D. 61.2x67.0x2.0	B-C	3
5	90.4105.00	OR D. 59.92x3.53 NBR 90SH 4237	B-C	6
7	36.2087.01	VALVOLA SFERICA		6
8	94.7698.00	MOLLA Dm. 41.5x37.9		3
9	36.2060.01	GUIDA VALVOLA		6
10	36.7150.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2105.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2068.66	SEDE VALVOLA DI MANDATA		3
15	90.5273.00	ANELLO ANTIEST. D. 61.4x67.5x1.5	C	3
16	90.5290.00	ANELLO ANTIEST. D. 77.2x83.0x1.5	C	3
17	90.4134.00	OR D. 75.80x3.53 NBR 70SH 4300	B-C	6
18	94.7700.00	MOLLA Dm. 41.5x38.3		3
19	36.7152.01	GR. VALVOLA DI MANDATA	B	3
20	74.2109.70	TAPPO VALVOLE DI MANDATA		3
21	90.5293.00	ANELLO ANTIEST. D. 77.4x83.2x1.5	B-C	3
22	94.8000.00	MOLLA Dm. 75.0x49.6		3
23	74.2107.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2101.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4185.00	OR D. 72.00x4.00 NBR 70SH	A-C	3
30	74.2114.56	CAMICIA PISTONE D. 55		3
	74.2115.56	CAMICIA PISTONE D. 60		
	74.2116.56	CAMICIA PISTONE D. 65		
31	74.0403.09	PISTONE D. 55x127		3
	74.0404.09	PISTONE D. 60x127		
	74.0405.09	PISTONE D. 65x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1003.92	ANELLO DI TESTA PISTONE D. 55		3
	74.1004.92	ANELLO DI TESTA PISTONE D. 60		
	74.1005.92	ANELLO DI TESTA PISTONE D. 65		
34	90.2873.00	ANELLO TEN. ALT. D. 55.0x70.0x7.5/4.5 HP	A-C	3
	90.2883.00	ANELLO TEN. ALT. D. 60.0x76.0x8.0/4.8 HP	A-C	
	90.2893.00	ANELLO TEN. ALT. D. 65.0x80.0x7.5/4.5 HP	A-C	
35	90.2875.00	ANELLO RESTOP D. 55.0x70.0x8.0/4.5	A-C	3
	90.2885.00	ANELLO RESTOP D. 60.0x76.0x8.0/4.5	A-C	
	90.2895.00	ANELLO RESTOP D. 65.0x80.0x8.0/4.5	A-C	
36	74.2120.68	SUPPORTO GUARNIZIONE D. 55		3
	74.2121.68	SUPPORTO GUARNIZIONE D. 60		
	74.2122.68	SUPPORTO GUARNIZIONE D. 65		

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
37	90.2870.00	ANELLO TEN. ALT. D. 55.0x63.0x5.5 LP	A-C	3
	90.2880.00	ANELLO TEN. ALT. D. 60.0x68.0x5.5 LP	A-C	
	90.2890.00	ANELLO TEN. ALT. D. 65.0x73.0x5.5 LP	A-C	
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		10
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.55	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	73.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK2		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2S		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	36.2089.51	GUIDA INTERNA VALVOLA		6
97	74.2150.56	BOCCOLA TESTATA		3
98	90.5285.00	ANELLO ANTIEST. D. 72.5x78.5x1.5		6
99	90.4129.00	OR D. 72.62x3.53 NBR 70SH 4287		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1201.01	TESTATA CON BOCCOLA		1
112	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
113	98.2086.00	TAPPO G 3/8"x12		2
114	74.6062.01	GR. GUIDA PISTONE		3
115	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
102	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
103	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
106	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
107	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
111	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.750 - ELICOIDALE		1
104	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
105	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
108	10.0906.55	PIGNONE Z16 R. 3.750 - ELICOIDALE FEMM.		1
109	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
110	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
111	92.2025.00	DADO M6x5 UNI 5588		1


MK2 MK2S LP
DIS. COD. 74.9508.00_0
Lubrificare con grasso al silicone
OCILIS 250 cod. 12.0016.00

KIT RICAMBIO – SPARE KIT		MK240 - MK2S40 (D.40)	MK245 - MK2S45 (D.45)	MK250 - MK2S50 (D.50)
A	Kit tenute pompanti – Plunger packing kit	KIT 2052	KIT 2053	KIT 2054
B	Kit valvole – Valves kit	KIT 2055		
C	Kit tenute complete – Complete seals kit	KIT 2450	KIT 2451	KIT 2452
D	Kit bronzine bielle – Conrod bushing kit	KIT 2076 - 2077 (+0,25) - 2078 (+0,50)		

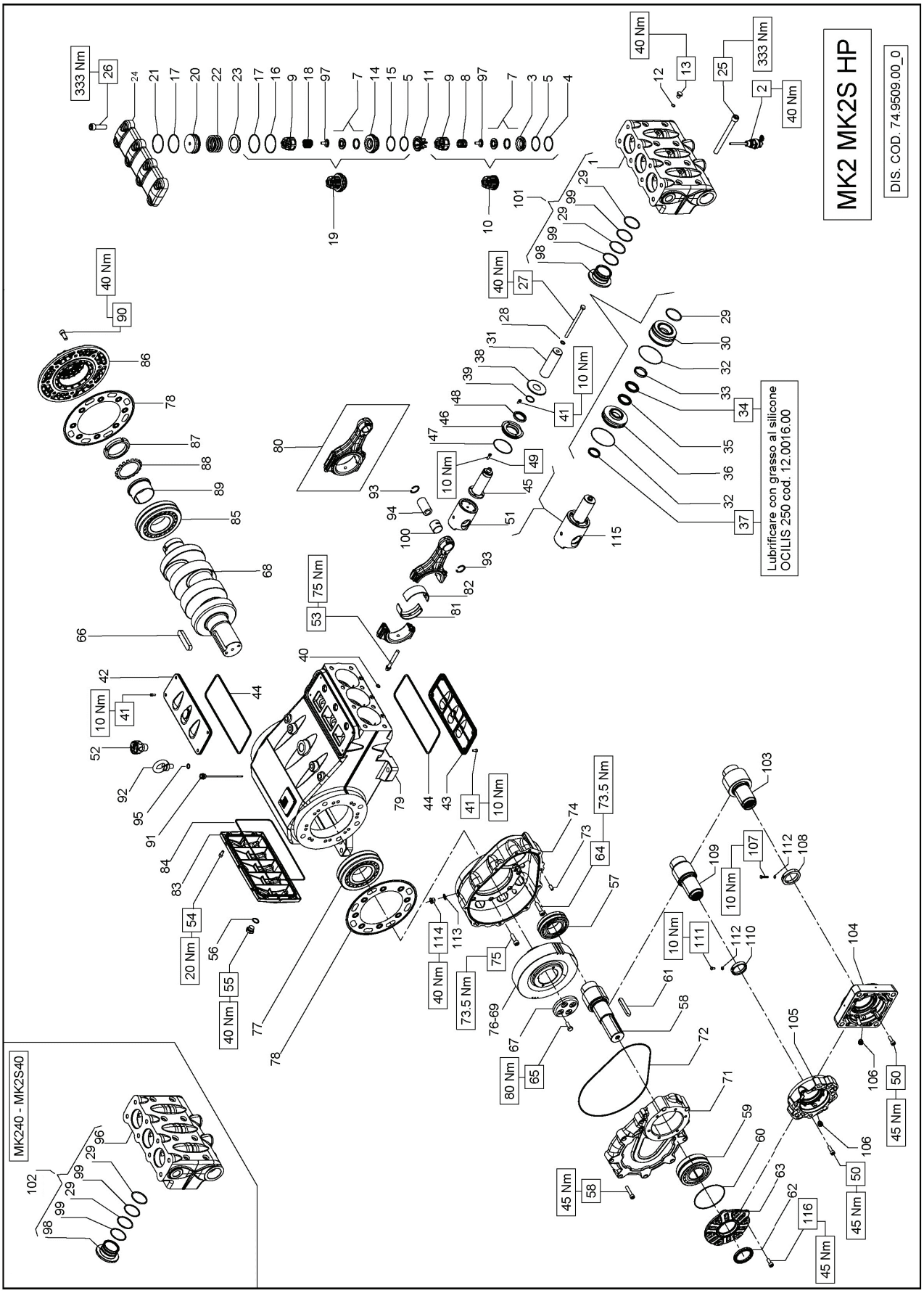
MK240 - MK2S40
MK245 - MK2S45
MK250 - MK2S50

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
1	74.1203.15	TESTATA D. 45-50 HP		1
	74.1205.15	TESTATA D. 45-50 HP - NPT		
2	10.7444.01	DISPOS. APERTURA VALVOLE ASPIR.		3
3	36.2067.66	SEDE VALVOLA ASPIRAZIONE		3
4	90.5260.00	ANELLO ANTIEST. D. 51.5x56.0x1.5	B-C	3
5	90.3890.00	OR D. 50.47x2.62 NBR 90SH 3200	B-C	6
7	36.2088.01	VALVOLA SFERICA		6
8	94.7600.00	MOLLA Dm. 28.3x30.7		3
9	36.2061.01	GUIDA VALVOLA		6
10	36.7151.01	GR. VALVOLA D'ASPIRAZIONE	B	3
11	74.2106.51	DISTANZIALE GUIDA VALVOLA	B	3
12	90.3584.00	OR D. 10.82x1.78 NBR 90SH 2043	C	3
13	98.2046.00	TAPPO G 1/4"x13		3
14	36.2069.66	SEDE VALVOLA DI MANDATA		3
15	90.5265.00	ANELLO ANTIEST. D. 51.7x56.2x1.5	C	3
16	90.5276.00	ANELLO ANTIEST. D. 67.5x72.0x1.5	C	3
17	90.3911.00	OR D. 66.35x2.62 NBR 70SH 3262	B-C	6
18	94.7605.00	MOLLA Dm. 28.5x45.4		3
19	36.7153.01	GR. VALVOLA DI MANDATA	B	3
20	74.2110.70	TAPPO VALVOLE DI MANDATA		3
21	90.5280.00	ANELLO ANTIEST. D. 67.7x72.2x1.5	B-C	3
22	94.7750.00	MOLLA Dm. 58.0x45.4		3
23	74.2108.66	ANELLO SEDE VALVOLA DI MANDATA		3
24	74.2103.15	COPERCHIO VALVOLE		1
25	99.5222.00	VITE M16x180 UNI 5931		8
26	99.5147.00	VITE M16x55 UNI 5931		8
27	99.3850.00	VITE M10x160 UNI 5737		3
28	96.7105.00	ROSETTA D. 10.0x18.0x0.9	C	3
29	90.4102.00	OR D. 58.74x3.53 NBR 70SH 162	A-C	9
30	74.2111.56	CAMICIA PISTONE D. 40		3
	74.2112.56	CAMICIA PISTONE D. 45		
	74.2113.56	CAMICIA PISTONE D. 50		
31	74.0400.09	PISTONE D. 40x127		3
	74.0401.09	PISTONE D. 45x127		
	74.0402.09	PISTONE D. 50x127		
32	90.3722.00	OR D. 96.00x2.00 NBR 70SH	A-C	6
33	74.1000.92	ANELLO DI TESTA PISTONE D. 40		3
	74.1001.92	ANELLO DI TESTA PISTONE D. 45		
	74.1002.92	ANELLO DI TESTA PISTONE D. 50		
34	90.2832.00	ANELLO TEN. ALT. D. 40.0x55.0x7.5/4.5 HP	A-C	3
	90.2850.00	ANELLO TEN. ALT. D. 45.0x60.0x7.5/4.5 HP	A-C	
	90.2863.00	ANELLO TEN. ALT. D. 50.0x65.0x7.5/4.5 HP	A-C	
35	90.2838.00	ANELLO RESTOP D. 40.0x55.0x8.0/4.5	A-C	3
	90.2848.00	ANELLO RESTOP D. 45.0x60.0x6.5/3.0	A-C	
	90.2865.00	ANELLO RESTOP D. 50.0x65.0x8.0/4.5	A-C	
36	74.2117.68	SUPPORTO GUARNIZIONE D. 40		3
	74.2118.68	SUPPORTO GUARNIZIONE D. 45		
	74.2119.68	SUPPORTO GUARNIZIONE D. 50		
37	90.2828.00	ANELLO TEN. ALT. D. 40.0x48.0x5.5 LP	A-C	3
	90.2846.00	ANELLO TEN. ALT. D. 45.0x53.0x5.5 LP	A-C	
	90.2860.00	ANELLO TEN. ALT. D. 50.0x58.0x5.5 LP	A-C	

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
38	74.2133.51	PARASPRUZZI		3
39	90.3865.00	OR D. 29.82x2.62 NBR 70SH 3118	C	3
40	90.3825.00	OR D. 10.78x2.62 NBR 70SH 3043	A-C	3
41	99.1837.00	VITE M6x14 UNI 5931		14
42	74.1501.22	COPERCHIO ISPEZIONE CHIUSO		1
43	74.1502.22	COPERCHIO ISPEZIONE APERTO		1
44	90.4500.00	OR D. 266.07x5.33 NBR 70SH	C	2
45	74.0503.36	STELO GUIDA PISTONE		3
46	74.2131.71	COPERCHIO PARAOLIO GUIDA PISTONE		3
47	90.3914.00	OR D. 72.69x2.62 NBR 90SH 3287	C	3
48	90.1679.00	ANELLO RAD. D. 40.0x52.0x7.0	C	3
49	99.1884.00	VITE M6x20 UNI 5931		12
51	79.0504.43	GUIDA PISTONE		3
	79.0505.43	GUIDA PISTONE +1.0		
52	98.2333.00	TAPPO CARICO OLIO G1"		1
53	99.4410.00	VITE SERRAGGIO BIELLA		6
54	99.3045.00	VITE M8x18 UNI 5931		6
55	98.2187.00	TAPPO G 1/2"x13 TE22 ZINC.		1
56	96.7514.00	ROSETTA D. 21.5x27.0x1.5		1
57	91.8700.00	CUSCINETTO A RULLI		1
58	10.0880.55	PIGNONE Z30 R. 1.600 - ELICOIDALE - MK2		1
	10.0882.55	PIGNONE Z24 R. 2.208 - ELICOIDALE - MK2S		
	10.0883.55	PIGNONE Z21 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0884.35	PIGNONE Z18 R. 3.278 - ELICOIDALE - MK2 MK2S		
59	91.8610.00	CUSCINETTO A RULLI		1
60	90.3926.50	OR D. 126.67x2.62 NBR 70SH 3500	C	1
61	91.5030.00	LINGUETTA 16.0x10.0x90.0		1
62	90.1800.00	ANELLO RAD. D. 60.0x80.0x8.0	C	1
63	74.2173.22	COPERCHIO PIGNONE		1
64	99.4335.00	VITE M12x50 UNI 5931		2
65	99.3684.00	VITE M10x30 UNI 5739		4
66	91.5120.00	LINGUETTA 22.0x14.0x100.0		1
67	74.2252.55	FERMO CORONA		1
68	74.0201.35	ALBERO A GOMITI C. 72 - MK		1
	74.0202.35	ALBERO A GOMITI C. 72 - MK2		
69	10.0886.35	CORONA Z48 R. 1.600 - ELICOIDALE - MK2		1
	10.0888.35	CORONA Z53 R. 2.208 - ELICOIDALE - MK2S		
	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE - MK2 MK2S		
	10.0890.35	CORONA Z59 R. 3.278 - ELICOIDALE - MK2 MK2S		
70	99.3730.00	VITE M10x50 UNI 5931		10
71	74.2174.13	COPERCHIO RIDUTTORE		1
72	90.4173.00	OR D. 338.00x3.60 NBR 70SH	C	1
73	97.6230.00	SPINA CILINDRICA D. 10.0x24.0		2
74	74.2175.13	SCATOLA RIDUTTORE		1
75	99.4305.00	VITE M12x40 UNI 5931		6
77	91.8850.00	CUSCINETTO A RULLI		1
78	74.2130.84	GUARNIZIONE LATERALE	C	2
79	74.0101.13	CARTER POMPA		1
80	74.0302.01	BIELLA COMPLETA		3

POS	CODE CODICE	DESCRIPTION DESCRIZIONE	KIT	NR. PCS.
81	90.9300.00	SEMIBOCCOLA TESTA BIELLA - INF.	D	3
	90.9301.00	SEMIBOCCOLA TESTA BIELLA +0.25 - INF.	D	
	90.9302.00	SEMIBOCCOLA TESTA BIELLA +0.50 - INF.	D	
82	90.9310.00	SEMIBOCCOLA TESTA BIELLA - SUP.	D	3
	90.9311.00	SEMIBOCCOLA TESTA BIELLA +0.25 - SUP.	D	
	90.9312.00	SEMIBOCCOLA TESTA BIELLA +0,.50 - SUP.	D	
83	74.1600.22	COPERCHIO CARTER		1
84	90.4160.00	OR D. 304.39x3.53 NBR 70SH 41200	C	1
85	91.8852.00	CUSCINETTO A RULLI		1
86	74.1500.22	COPERCHIO CUSCINETTO		1
87	93.0800.00	GHIERA DI BLOCCAGGIO		1
88	96.8300.00	ROSETTA DI SICUREZZA		1
89	91.8800.00	BUSSOLA DI PRESSIONE		1
90	99.4280.00	VITE M12x30 UNI 5931		8
91	98.2092.00	TAPPO CON ASTA G 3/8"x163		2
92	93.1050.00	GOLFARE M16 UNI 2947		2
93	90.0697.00	ANELLO D'ARRESTO J35		6
94	97.7450.00	SPINOTTO D. 35x64		3
95	90.3833.00	OR D. 13.95x2.62 NBR 70SH 3056	C	2
96	74.1206.15	TESTATA D. 40		1
	74.1207.15	TESTATA D. 40 - NPT		
97	36.2090.51	GUIDA INTERNA VALVOLA		6
98	74.2151.56	BOCCOLA TESTATA		3
99	90.5268.80	ANELLO ANTIEST. D. 59.0x65.0x1.5		6
100	90.9173.00	BOCCOLA PIEDE BIELLA		3
101	74.1203.01	TESTATA CON BOCCOLA D. 45-50		1
102	74.1206.01	TESTATA CON BOCCOLA D. 40		1
113	96.7380.00	ROSETTA D. 17.5x23.0x1.5		2
114	98.2086.00	TAPPO G 3/8"x12		2
115	74.6062.01	GR. GUIDA PISTONE		3
116	99.3668.00	VITE M10x25 5931		6
		PER MOTORE IDRAULICO SAE-D - FOR HYDRAULIC PACK SAE-D		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0889.35	CORONA Z56 R. 2.667 - ELICOIDALE		1
103	10.0905.55	PIGNONE Z21 R. 2.667 - ELICOIDALE FEMM.		1
104	10.0909.20	FLANGIA MOTORE IDRAULICO SAE-D		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
107	74.2178.34	VITE M6x30 CON INCAVO COMPLETA		1
108	74.2176.71	ANELLO PER ALBERO D. 55 HYDR.PACK		1
112	92.2025.00	DADO M6x5 UNI 5588		1
		PER MOTORE IDRAULICO SAE-C - FOR HYDRAULIC PACK SAE-C		
50	99.3686.00	VITE M10x30 UNI 5931		6
76	10.0907.35	CORONA Z60 R. 3.375 - ELICOIDALE		1
105	10.0908.20	FLANGIA MOTORE IDRAULICO SAE-C		1
106	90.2065.00	TAPPO PER FORO D. 17 - TTN19		2
109	10.0906.55	PIGNONE Z16 R. 3.375 - ELICOIDALE FEMM.		1
110	74.2171.71	ANELLO PER ALBERO D. 50 HYDR.PACK		1
111	70.2270.34	VITE M6x12 CON INCAVO COMPLETA		1
112	92.2025.00	DADO M6x5 UNI 5588		1

16 تصميم تفصيلي للأجزاء و قطع الغيار





الضغط الذي تولده المضخة غير كافي:
- استخدام (الفوهة) أعلى أو أصبح أعلى من القدرة التشغيلية للمضخة.
- عدد اللفات غير كافي.
- تسرب مفرط من حلقات الحشو الخاصة بالضغط.
- عدم عمل صمامات ضبط الضغط بشكل كامل.
- صمامات مستهلكة.



المضخة تسخن بشكل مفرط:
- المضخة تعمل بضغط مفرط أو عدد اللفات أعلى من العدد المحدد في لوحة البيانات.
- زيت غطاء حماية المضخة أقل من المستوى المطلوب أو ليس من النوع المنصوح به المحدد في الفصل 7 (راجع الفقرة 6.7).
- يجب أن تكون الموائمة والمحاذاة بين الوصلة والبكرات تامة.
- ميل المضخة أثناء تشغيلها مُفرط.



اهتزازات أو طرق على الأنابيب:
- شفط هواء.
- عدم عمل صمامات ضبط الضغط بشكل سليم.
- عدم عمل الصمامات بالشكل الصحيح.
- عدم تساوي الحركة في عملية نقل الحركة.

11 الصيانة الوقائية

للحصول على موثوقية تشغيل عالية وكفاءة عمل جيدة للمضخة، يصبح من الضروري احترام عمليات الصيانة الدورية الموضحة في الجدول.

الصيانة الوقائية	
كل 500 ساعة	**كل 1500 ساعة**
التحقق من مستوى الزيت	تغيير الزيت
	الفحص \ الاستبدال *: صمامات مواقع الصمام نابض انضغاط الصمام موجه مسار الصمام
	الفحص \ الاستبدال *: حواجز تثبيت .H.P حواجز تثبيت .L.P

* للقيام بعملية الاستبدال احرص على مراعاة الإرشادات الموجودة في ***دليل الإصلاح***.

12 تخزين المضخة

1.12 طريقة ملء المضخة بمستحلب مضاد للتآكل أو بمحلول مضاد للتجمد

طريقة ملء المضخة بمستحلب مضاد للتآكل أو بمحلول مضاد للتجمد باستخدام مضخة خارجية ذات غشاء وفقا للتخطيط التنسيقي المشروح في الفقرة 7.9:

أ) اغلق تصريف المرشح، إذا كان مفتوحا.
ب) تأكد من أن أنبوب التوصيل نظيفا وقم بتشحيمه ثم توصيله بمنفذ تفريغ الضغط العالي.
ج) ثبّت أنبوب الشفط في المضخة ذات الغشاء؛ قم بفتح وصلة الشفط في المضخة وقم بتثبيت الأنبوب بين هذه الوصلة وبين المضخة ذات الغشاء.
د) املأ وعاء المحلول\المستحلب.
ع) ضع طرفي أنبوب الشفط الحرين وأنبوب تصريف الضغط العالي داخل الحاوية.
و) شغِّل المضخة ذات الغشاء.
ز) قم بضخ المستحلب حتى تراه يخرج من أنبوب التفريغ ذا الضغط العالي للمستحلب.
ح) استمر في عملية الضخ لمدة دقيقة أخرى على الأقل؛ يمكن توقيف المستحلب عند الضرورة بإضافة على سبيل المثال Shell Donax إلى المحلول.
ت) أوقف المضخة ثم قم بإزالة أنبوب وصلة الشفط ثم قم بغلقها باستخدام سدادة
ي) انزع الأنبوب عن أنبوب تفريغ الضغط العالي. نظف الوصلات الموجودة على المضخة ثم قم بتشحيم وغلق هذه الوصلات.

2.12 الأنابيب

ا) قبل القيام بتشحيم وحماية الأنابيب طبقا للإجراء الموضح سابقا، قم بتجفيف الوصلات مستخدما الهواء المضغوط.
ب) قم بالتغطية مستخدما البولي إثيلين.
د) لا تقم بلفها وتغطيتها بشكل أضيق من اللازم؛ تأكد من عدم وجود أية انحناءات أو ثنايا.

13 احتياطات وتدابير للحماية ضد التجمد



في المناطق والأوقات التي يمكن فيها أن يحدث التجمد، اتبع الإرشادات والتعليمات الواردة في الفصل 12 (راجع الفقرة1.12).



عند وجود ثلوج لا تشغّل المضخة مهما كانت الأسباب حتى يتم فك تجمد الدائرة التشغيلية بشكل كامل، خلاف ذلك يمكن تعريض المضخة لأضرار وتلفيات خطيرة.

14 شروط الضمان

يتم تحديد فترة وشروط الضمان في عقد الشراء.
يسقط الضمان ويعتبر لاغياً في الحالات الآتية:

أ) في حالة استخدام المضخة في أغراض مختلفة عن غرض استخدامها المحدد والمتفق عليه.
ب) في حالة استخدام المضخة مع محرك كهربائي أو محرك ماص للحرارة يمتلك معدلات أداء أكبر من تلك الموضحة في الجدول.
ج) أجهزة الأمان المنصوص عليها تم تغيير معايرتها أو فصلها.
د) في حالة استخدام المضخة مع ملحقات تشغيلية أو مع قطع غيار غير أصلية وغير آتية من شركة Interpump Group.
هـ) في حالة أن التلف أو التضرر ناتج عن:
1) سوء الاستخدام
2) عدم إتباع تعليمات وإرشادات الصيانة بالشكل الصحيح
3) استخدام المضخة في غرض مختلف عن الموضح في تعليمات وإرشادات الاستخدام
4) السعة غير الكافية
5) التركيب الخاطئ
6) تركيب الأنابيب أو تقدير أبعادها بشكل خاطئ
7) القيام بتعديلات في المشروع دون تصريح
8) ظاهرة التكهف أو التجويف.

15 أعطال التشغيل وأسبابها المحتملة



لا تصدر المضخة أية ضوضاء عند بدء تشغيلها:
- المضخة غير مملوءة وتدور على الجاف.
- عدم وجود ماء للشفط.
- الصمامات مغلقة.
- خط التدفق مغلق ولا يسمح لهواء الضغط العالي المتواجد داخل رأس المضخة بالخروج.



المضخة تهتز بشكل كبير غير معتاد:
- شفط هواء.
- تغذية غير كافية.
- أكواع توصيل وأذرع ووصلات على طول خط الشفط تخنق وتعوق عبور السوائل.
- مرشح الشفط غير نظيف أو أصغر من اللازم.
- المضخة المعززة لا تقدم مستوى الضغط أو السعة التشغيلية المطلوبين منها في مكان تركيبها.
- المضخة غير مملوءة بالقدر الكافي أو التدفق مغلق أثناء الامتلاء.
- المضخة غير مملوءة نتيجة التصاق في بعض الصمامات.
- صمامات مستهلكة.
- سدادات وحشوت ضغط متآكلة.
- عدم عمل صمامات ضبط الضغط بشكل كامل.
- مشاكل متعلقة بنقل الحركة.



المضخة لا تقدم السعة التشغيلية المحددة في لوحة البيانات\ ضوضاء مفرطة:
- تغذية غير كافية (انظر الأسباب العديدة المذكورة أعلاه).



- عدد اللفات أقل مما هو محدد في لوحة بيانات المضخة؛
- تسرب مفرط من صمام ضبط الضغط.
- صمامات مستهلكة.
- تسرب مفرط من حلقات الحشو الخاصة بالضغط.
- تكهُّف ناتج عن:
1) تحديد أبعاد خاطئ لأنابيب الشفط \ أقطار أقل من المطلوب.
2) سعة تشغيلية غير كافية.
3) درجة حرارة الماء مرتفعة للغاية.

10.9 النقل باستخدام السيور شبه المنحرف

كما هو مدوّن في الفقرة 1.9 فقط في حالات استثنائية، يمكن التحكم بتشغيل المضخة عن طريق نظام سيور شبه منحرفة.
للقيام بعملية تحديد أبعاد التنسيق التخطيطي يرجى استشارة ***المكتب الفني*** أو ***مركز خدمة العملاء***.

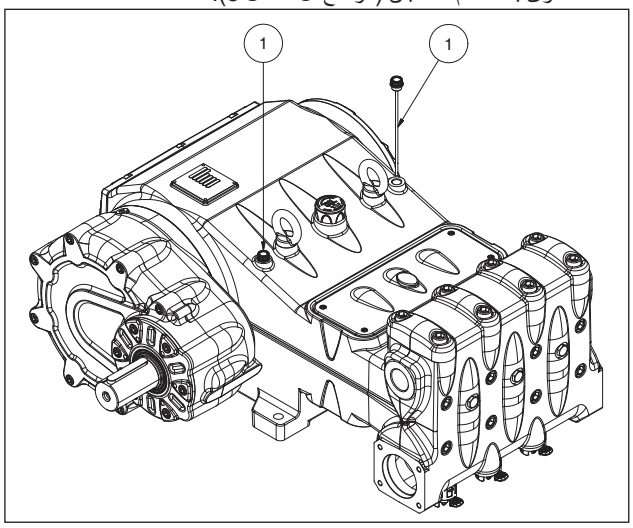
10 بدء التشغيل والاستخدام

1.10 فحوصات أولية

يرجى قبل بدء التشغيل التأكد من الآتي:

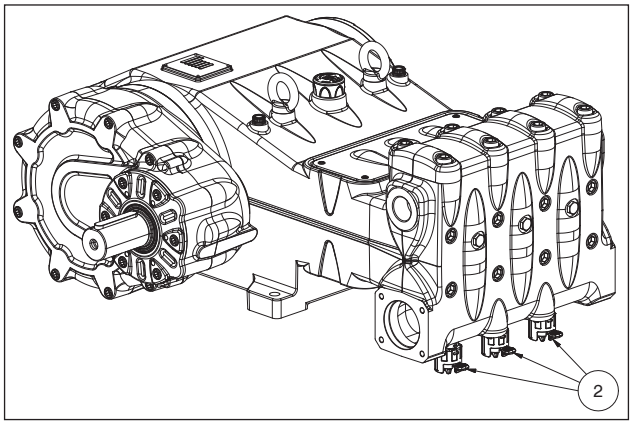
أن خط الشفط قد تم توصيله وأن به ضغط (انظر الفصل 9): المضخة لا يجب مطلقا أن تدور وهي جافة.

1. أن خط الشفط يضمن مع مرور الوقت الحصول على تماسك محكم.
2. أن جميع صمامات الاعتراض الواقعة بين مصدر التغذية والمضخة مفتوحة تماما. أن خط التدفق ذا تفريغ حر، أو يسمح للهواء الموجود في رأس المضخة بالخروج بسرعة مما يسمح بالتالي من الحصول على امتلاء سريع.
3. أن جميع الوصلات وأكواع التوصيل الخاصة بالشفط أو بالتدفق مثبتة ومركبة ومغلقة بالشكل الصحيح.
4. أن نسب التسامح الخاصة بعمليات التوصيل على محور المضخة\النقل (اختلال أشباه الوصلات وميل عمود الكردان وسحب السيور ...الخ). لا تزال في إطار الحدود المنصوص عليها من قبل الشركة المصنعة لمكونات شبكة لنقل الحركة.
5. أن الزيت في غطاء حماية المضخة في مستواه المطلوب وذلك بالتأكد من هذا المستوى باستخدام القضبان (الوضع ①، شكل 8).



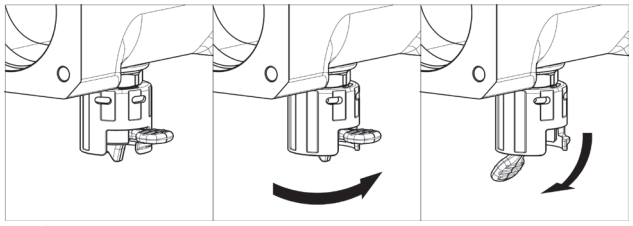
شكل 8

في حالة تخزين المضخة لمدة طويلة أو توقفها عن العمل لفترة طويلة فإنه يلزم استعادة التشغيل الصحيح لصمامات الشفط وذلك عن طريق فتح الأجهزة الثلاثة الخاصة برفع الصمامات (انظر الوضع ② شكل 9). تحقق من إغلاق الصمامات قبل تشغيل المضخة. لأوضاع "التشغيل" و"التوقف"، قم بمراجعة شكل 10.



شكل 9

صمام مغلق	صمام مفتوح
- وضعية العمل -	- وضعية التوقف -
تحرير أداة الأمان	

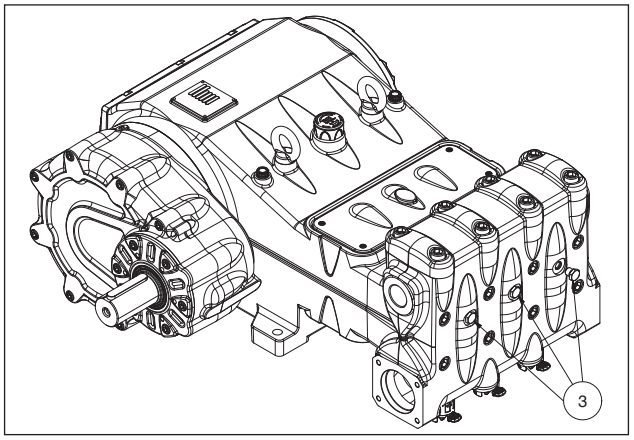


شكل 10

2.10 بدء التشغيل

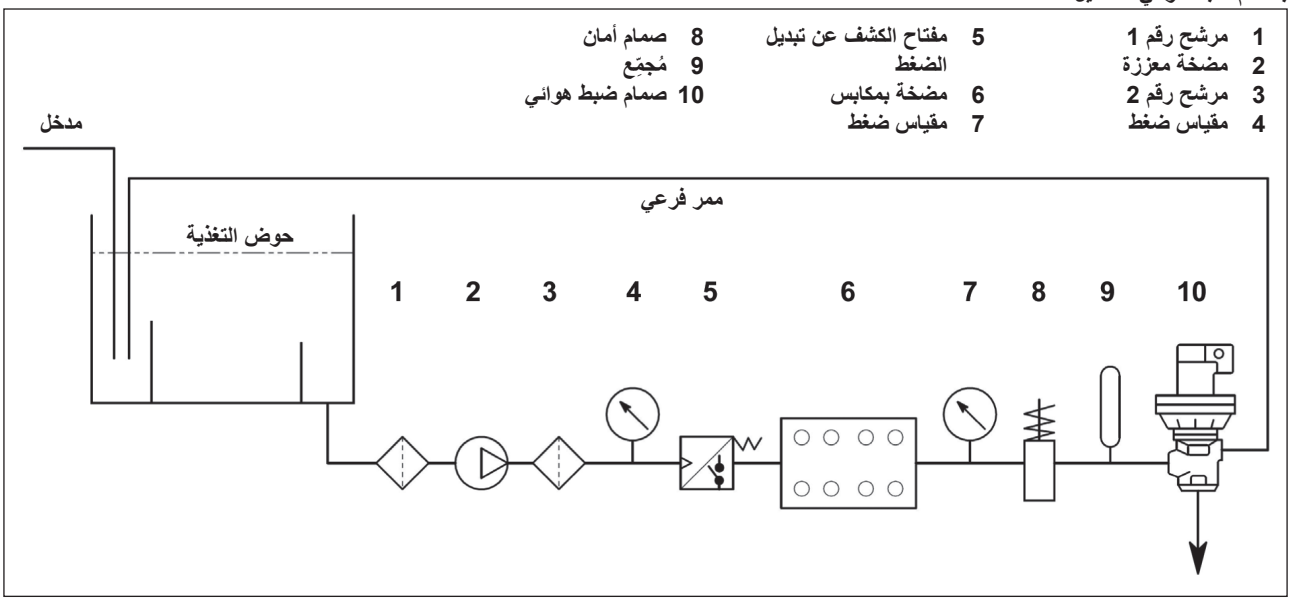
1. عند التشغيل لأول مرة، تحقق من الدوران بالاتجاه الصحيح.
2. تحقق من سلامة تغذية المضخة.
3. قم بتركيب وتثبيت المضخة دون تحميلها أي حمل إضافي.
4. تأكد من أنه في مرحلة التشغيل لا يتخطى عدد لفات الدوران الحد المسجل على لوحة بيانات الآلة.
5. اترك المضخة تعمل لمدة لا تقل عن 3 دقائق قبل أن تبدأ عمل الضغط فيها.
6. قبل أن تطفئ المضخة قم بتصفير الضغط وذلك باستخدام صمام الضبط أو أدوات التفريغ إذا ما وجدت.

إذا ما ظهرت مشاكل متعلقة بعملية الامتلاء نتيجة لوجود نقص في عملية التغذية فإنه من الممكن التدخل لمعالجة هذا الأمر عن طريق إزالة الأغطية الأمامية الثلاثة الموجودة في رأس المضخة (باستثناء الإصدار MK240) كما هو موضح بالوضع ③ شكل 11.



شكل 11

بصمام ضبط هوائي التشغيل



شكل a/7

يجب تركيب المرشح بأقرب مكان ممكن من المضخة، بحيث يمكن مراقبته بسهولة كما يجب أن يتمتع بالخصائص والمواصفات التالية:

1. سعة استيعابية 3 مرات أكبر من السعة الاستيعابية المحددة في لوحة بيانات المضخة.
2. قطر فتحات المدخل\المخرج لا يقل عن قطر مأخذ شفط المضخة.
3. درجة الترشيح تتراوح بين 200 و360 ميكرون.

للحصول على أداء تشغيلي جيد للمضخة يجب القيام بعمليات تنظيف دورية للمرشح، يتم ترتيبها وفقا للاستخدام الفعلي للمضخة ووفقا أيضا لجودة المياه المستخدمة ولحالات الانسداد الحقيقية

8.9 خط التدفق

للحصول على خط تدفق صحيح يجب مراعاة قواعد التركيب التالية:

1. يجب أن يكون القطر الداخلي للأنبوب كافي لضمان الحصول على سرعة التدفق الصحيحة للسوائل، انظر المخطط في الفقرة 9.9.
2. يجب أن يكون الأنبوب الذي يتم توصيله بالمضخة مرناً، كما يجب عزل الاهتزازات الناتجة من المضخة عن باقي الشبكة.
3. استخدم أنابيب ووصلات وتجهيزات مخصصة للضغط العالي والتي تضمن مجالات أوسع من الأمن والسلامة في كل المراحل التشغيلية.
4. قم بتركيب صمام الأمان على خط التدفق.
5. استخدم مقاييس ضغط قادرة على تحمل حمولات أزرار الانضغاط التقليدية في المضخات ذات المكابس.
6. احرص في مرحلة التخطيط على مراقبة التسريبات في حملة الخط حيث تظهر هذه التسريبات في شكل هبوط في الضغط المفروض تواجده عند الاستخدام مقارنة بالضغط الظاهر والمُقاس في المضخة.
7. بالنسبة للتطبيقات التي تصبح فيها الاهتزازات والدقّات الناتجة عن المضخة على خط التدفق مصدراً للخطورة وق تسبب نتائج غير مرغوب فيها، قم بتركيب مثبط مناسب للاهتزازات والدقّات.

9.9 حساب القطر الداخلي لأنابيب خطوط التوصيل

لتحديد القطر الداخلي للأنابيب، يرجى الاسترشاد بالرسم التخطيطي التالي:

أنابيب الشفط

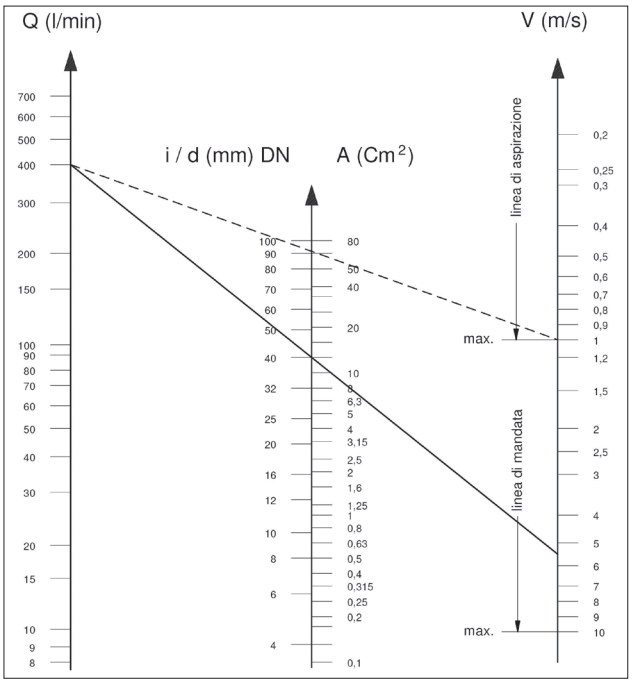
بسعة استيعابية ~ 400 لتر\دقيقة وبسرعة مياه 1 متر\ثانية. يتقابل الخط التوضيحي الذي يصل السلميّن التخطيطيين، بالسلم التخطيطي الأوسط الذي يشير إلى الأقطار، بقيمة ~ 90 مم.

أنابيب تدفق

بسعة استيعابية ~ 400 لتر\دقيقة وبسرعة مياه 5.5 متر\ثانية. يتقابل الخط التوضيحي الذي يصل السلميّن التخطيطيين، بالسلم التخطيطي الأوسط الذي يشير إلى الأقطار، بقيمة ~ 40 مم.

السرعة المثالية التي يمكن الحصول عليها مع مضخة معززة:

- الشفط: ≥ 1 متر\ثانية
- التدفق: ≥ 5.5 متر\ثانية



لا يوضح الرسم التوضيحي مقاومة الأنابيب والصمامات وانخفاض الضغط الناتج عن طول الأنابيب ولزوجة السائل المضخوخ ودرجة حرارته.

عند الضرورة قم بالاتصال ***بالمكتب الفني*** أو ***بمركز خدمة العملاء***.

4.9 التوصيلات الهيدروليكية

بهدف عزل الشبكة عن الاهتزازات الناتجة من المضخة، ينصح بعمل قناة وصل الأنابيب الملاصقة للمضخة (سواء أنابيب الشفط أو التدفق) باستخدام أنابيب مرنة. يجب أن يكون تماسك وصلابة قسم الشفط كافية بحيث تمكنها من منع حدوث أي تشوهات ناتجة عن الضغط المتولّد عن المضخة.

5.9 تغذية المضخة

يجب أن يتم تركيب المضخات MK2 دائماً تحت طبقة إيجابية من المياه لحماية المضخة، أو يجب أن تستقبل المياه عن طريق السقوط أو عن طريق التغذية المدفوعة وليس أبداً عن طريق شفطها من مستوى أقل.
تعتبر المضخات قادرة على العمل بطبقة مياه حماية بمستواها الأدنى المقدر ب 1 متر، ولكن بالرغم من ذلك وللحصول على أفضل أداء تشغيلي حجمي للمضخة ولتجنب حدوث ظواهر التكهّف أو التجويف، فإن الطبقة الإيجابية الموجودة والمكونة من المياه لحماية المضخة (NPSH avail) والتي يجب قياسها من عند حافة الشفط الموجودة في رأس المضخة يجب أن تكون مساوية للقيم المحددة كالتالي أو أعلى منها:

	$NPSH_r$(م)
MK240	4.5
MK245	5.5
MK250	6.5
MK255	7.5
MK260	8
MK265	9

بالنسبة لسِعات الأسطوانة الأكبر من ذلك، وللمضخات MK2 55 - 60 - 65, فإن التغذية المدفوعة عن طريق استخدام مضخة معززة هي مسألة موصى بها بشكل قوي ولذلك لتجنب ظواهر التكهّف، مع الوضع في الاعتبار الشكل الهندسي للتوصيلات الهيدروليكية ومعدلات التدفق الكبيرة.
يجب أن يتوافر في المضخة المعززة معدل تدفق يساوي على الأقل ضعف معدل التدفق المحدد في لوحة البيانات التعريفية الخاص بمضخة المكابس مع مستوى ضغط بين 2 و 3 بار.
يجب احترام ومراعاة مواصفات التغذية هذه مهما كان نظام العمل.

يجب أن تتم عملية تشغيل المضخة المعززة دائماً قبل البدء في تشغيل المضخة التي تعمل بالمكابس.
من المستحسن تركيب مفتاح تبديل ضغط على خط التغذية عند مرشحات حماية المضخة.

6.9 خط الشفط

حتى يتم الحصول على أداء تشغيلي جيد للمضخة يجب على خط الشفط أن يكون به المواصفات الآتية:

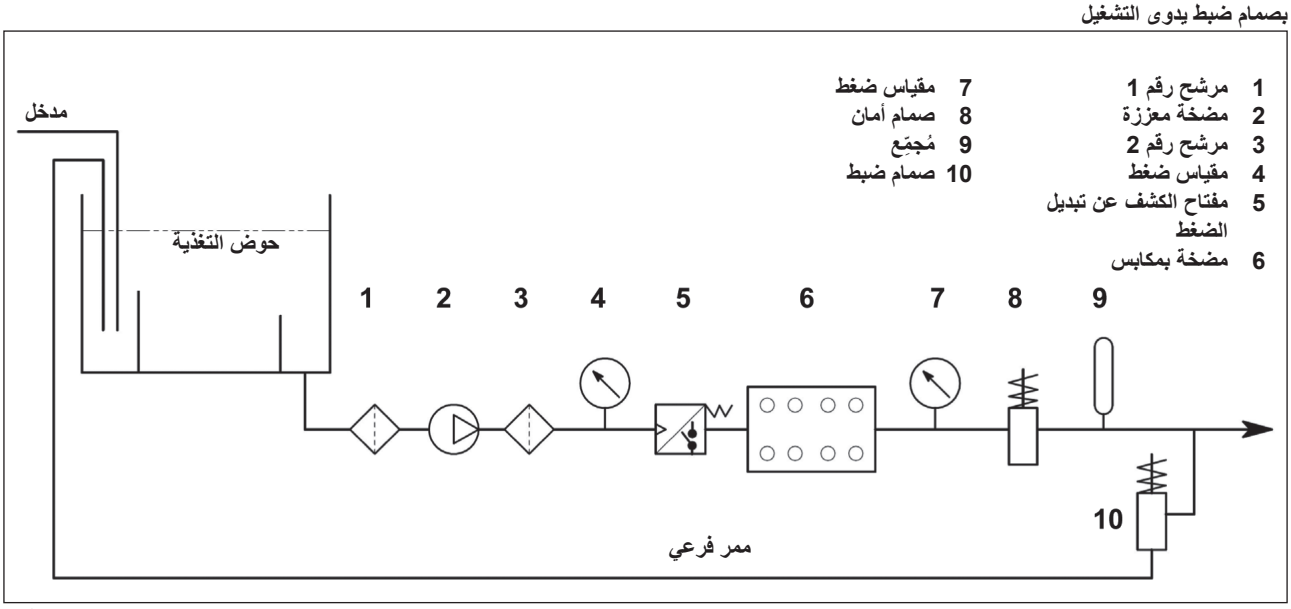
1. الحد الأدنى من القطر الداخلي كما هو موضح من المخطط في الفقرة 9.9 والذي على أي حال يساوي أو يتجاوز ذلك المحدد بالنسبة لرأس المضخة.

على طول الأنابيب، يجب تجنب وجود أية اختناقات موضعية (انسداد)، حيث يمكن لهذه الاختناقات التسبب في انخفاض الضغط أو تسرب في الحمولة الذي يسبب ظاهرة التكهف. تجنب بشكل دائم ومطلق استخدام أكواع توصيل ذات الـ 90° درجة، أو الوصلات مع أنابيب أخرى أو المسدودة أو المضادة للميل أو أكواع التوصيل على شكل "U" المقلوبة أو وصلات على شكل حرف "T".

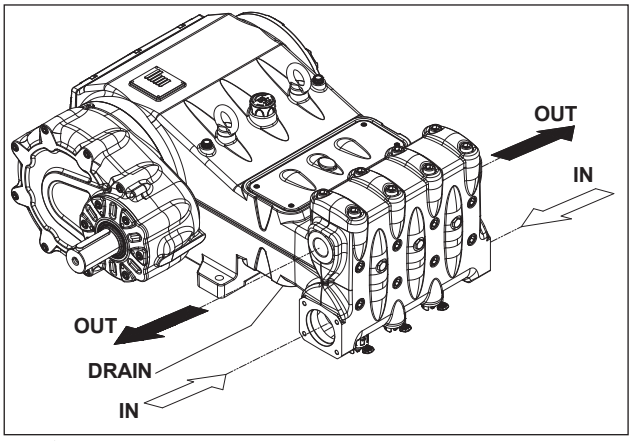
2. يجب وجود تخطيط صحيح لتجنب حدوث ظواهر التكهف والتجويف.
3. يجب أن تكون مُحكمة تماماً ومصنعة بالشكل الذي يضمن الإحكام التام مع الوقت.
4. تجنب حدوث تفريغ للضغط عند غلق المضخة، حتى ولو كان تفريغاً جزئياً.
5. لا تستخدم تجهيزات من النوعية الهيدروليكية مثل وصلات ذات 3 أو 4 منافذ أو محولات أو حمّالات...الخ. حيث يمكن أن يتسبب ذلك في التقليل من الأداء التشغيلي المطلوب للمضخة.
6. لا تقم بتركيب بخاخات أو حواقن لشفط المنظفات.
7. تجنب استخدام صمامات العمق أو أي صمامات أخرى أحادية الاتجاه.
8. لا تحاول إعادة دوران تفريغ صمام الالتفاف بشكل مباشر في الشفط.
9. قم بتوفير حواجز مناسبة داخل الصهريج لتجنب تدفقات المياه الناتجة عن المكوّن الالتفافي وعن خط تغذية الصهريج حيث يمكن لذلك أن يسبب دوامات أو اضطرابات بالقرب مأخذ أنبوب تغذية المضخة.
10. تأكد من أن خط الشفط نظيف بشكل كامل من الداخل قبل توصيله بالمضخة.
11. قم بتركيب مقياس ضغط للتحكم في ضغط المضخة المعززة (booster) بالقرب من مأخذ شفط المضخة التي تعمل بالمكابس ودائما عند المرشحات.

7.9 الترشيح

من الضروري تركيب مرشحين على خط شفط المضخة حيث يتم وضعه كما هو موضّح في الشكل 7 و شكل a/7.
بصمام ضبط يدوى التشغيل



شكل 7



شكل a/4

9 تركيب المضخة

1.9 التركيب

يجب وضع وتثبيت المضخة في وضعية أفقية وذلك باستخدام أقدام الإرتكاز المناسبة المثقوبة Ø 16.5.

يجب أن تكون قاعدة ارتكاز المضخة مستوية وصلبة بالشكل الكافي بحيث لا تسمح بأي ارتخاء أو اختلال على محور ازدواج المضخة/ناقل الحركة التي قد تنتج عن عزم الدوران أثناء العمل.

تم تركيب خطافين أو دعامتين رفع على المضخة لتسهيل التركيب، كما هو موضح في الشكل أدناه.

لا يجب إزالة حلقات الرفع في المضخة.

تم تصميم حلقات الرفع لتكون مناسبة من حيث أبعادها فقط لرفع المضخة، لذلك فإنه ممنوع منعاً باتاً استخدامها لرفع أحمال إضافية



استبدل غطاء غلق فتحة إدخال الزيت الموجودة على غطاء الحماية مع غطاء وضع الزيت.

يجب أن يكون الوصول إلى سدادة تعبئة الزيت سهلا حتى بعد إتمام تجميع وتركيب المجموعة.

لا يجب ربط عمود دوران المضخة (PTO) بصلابة بمجموعة المحرك.

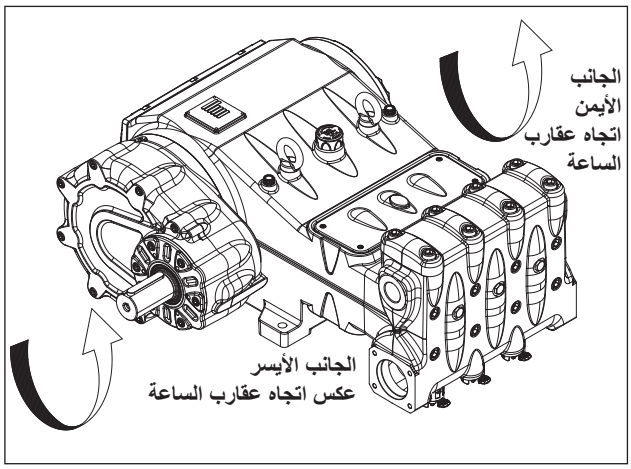
ينصح بأنواع نقل الحركة التالية:

- وصلة مرنة.
- بمفصل تحريك (انتبه لزوايا العمل القصوى التي تنصح بها الشركات المصنّعة).
- السيور؛ للاستخدام الصحيح يرجى استشارة ***المكتب الفني*** أو ***مركز خدمة العملاء***.

2.9 اتجاه الدوران

يتم الإشارة إلى اتجاه دوران PTO عن طريق سهم موضوع على غطاء منظم.

إذا ما وضعنا أنفسنا أمام رأس المضخة يكون اتجاه الدوران كما هو موجود في الشكل 5.



شكل 5

3.9 تغيير موديل ووضعية منظّم

يتم وصف المضخة بأن موديلها أيمن عندما:

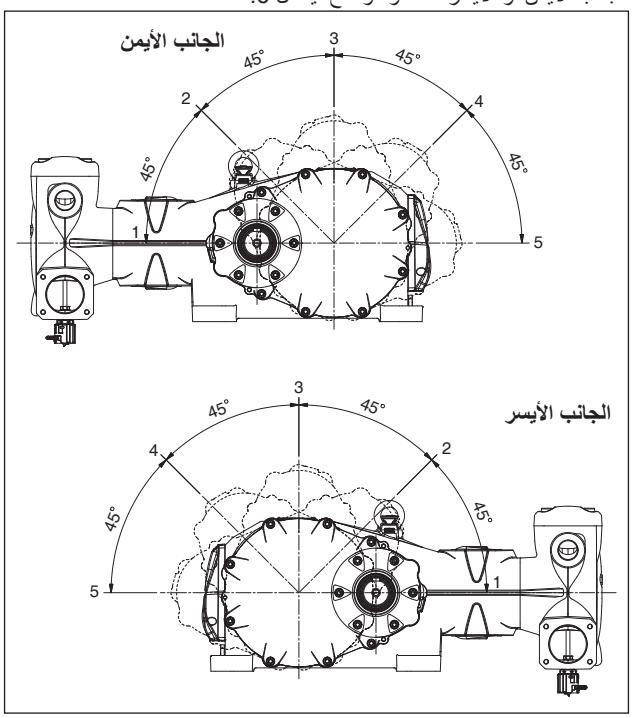
إذا ما شاهدنا المضخة من أمام رأسها، يجب أن يحمل عمود التحريك المحوري مسمار PTO من ناحية اليمين.

يتم وصف المضخة بأن موديلها أيسر عندما:

إذا ما شاهدنا المضخة من أمام رأسها، يجب أن يحمل عمود التحريك المحوري مسمار PTO من ناحية اليسار (انظر شكل 5).

يمكن تعديل الموديل فقط على يد طاقم عمل متخصص ومصرّح له مع إتباع بدقة وحذر ما هو مدون في *دليل الإصلاح*.

إضافة إلى ذلك يمكن وضع منظم المهايئة على خمسة أوضاع مختلفة سواء على الجانب الأيمن أو الأيسر كما هو موضح فيشكل 6.



شكل 6

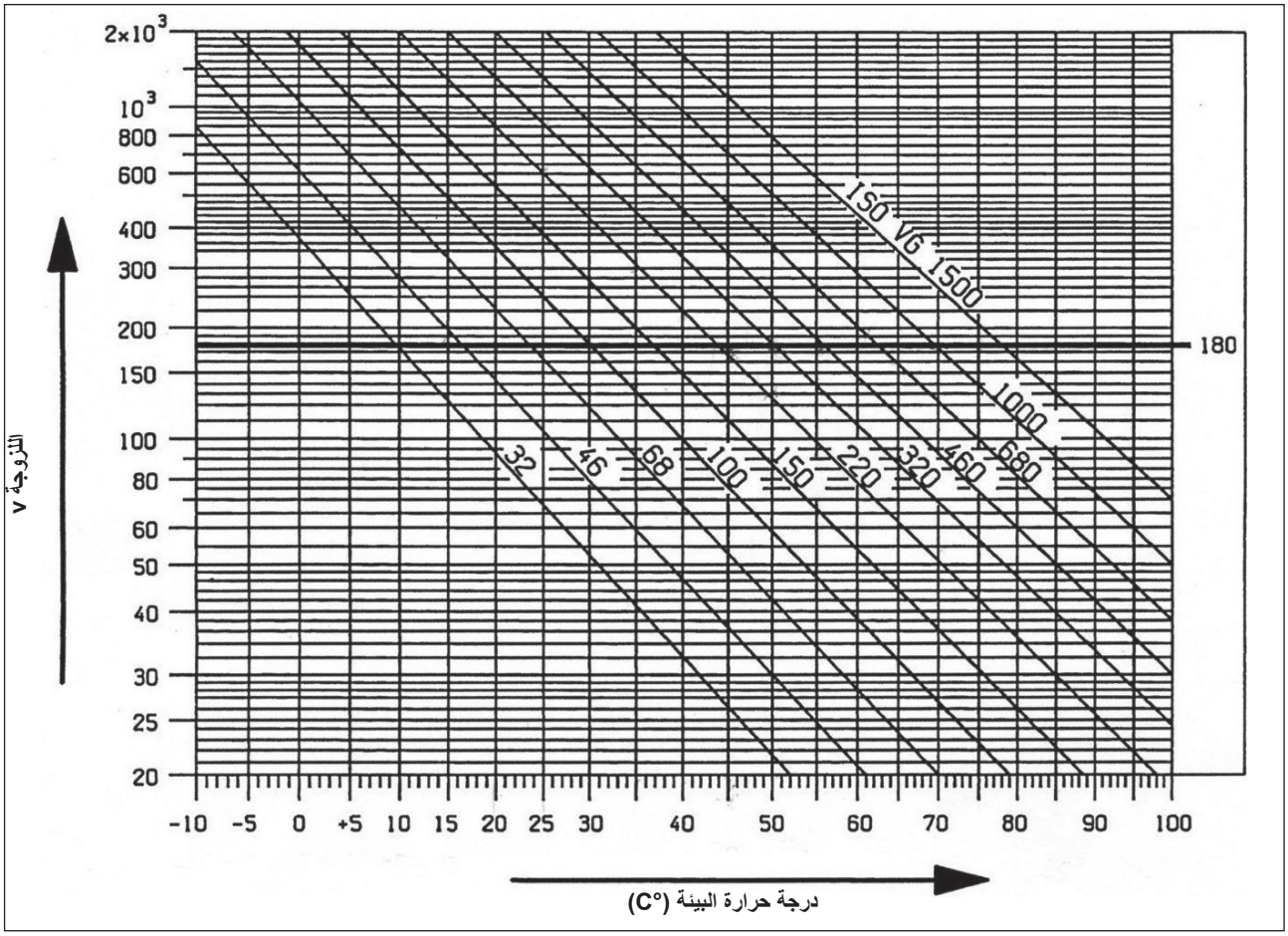
يمكن تعديل وضع المنظم فقط على يد طاقم عمل متخصص ومصرّح له مع إتباع بدقة وحذر ما هو مدون في *دليل الإصلاح*.

في كل الأحوال يجب تغيير الزيت على الأقل لمرة واحد كل عام نظراً لأنه قد يتلف نتيجة لعملية الأكسدة.

بالنسبة لدرجة الحرارة البيئة المختلفة عن °0 إلى °30 مئوية التزم بالإرشادات الواردة في المخطط التالي، مع الأخذ في الاعتبار أن سيولة الزيت يجب أن تكون 180 سنتي ستوك كحدٍ أدنى.

رسم تخطيطي للزوجة \ درجة حرارة البيئة

مم²/ثانية = سنتي ستوك



يجب وضع الزيت المستنفذ في وعاء مناسب ثم التخلص منه في المراكز المختصة بذلك.
لا يجب مطلقاً سكبه في البيئة المحيطة.

8 مآخذ ووصلات

المضخات مزودة بـ:

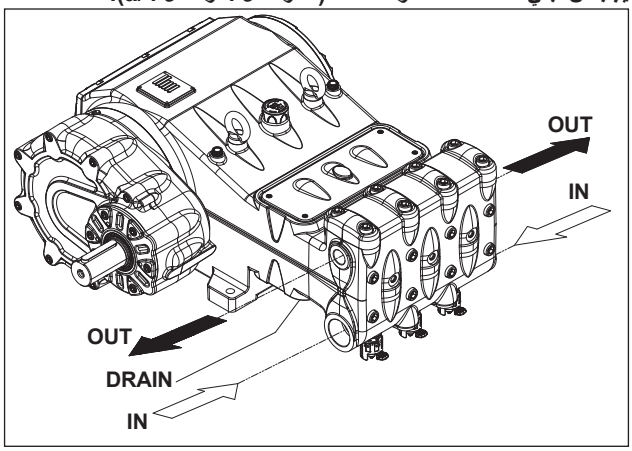
عدد 2 مآخذ شفط "IN"
2G" (في الإصدارات التى بها مكبس Ø 40، 45، 50)
Ø80 مم (في الإصدارات التى بها مكبس Ø 55، 60، 65)

يمكن توصيل الخط بأي من المآخذين الموجودين دون تمييز بهدف تشغيل المضخة بالشكل الصحيح؛ يجب غلق المآخذ غير المستخدمة بإحكام شديد.

عدد 2 مآخذ تدفق "OUT"
1G" (في الإصدارات التى بها مكبس Ø 40، 45، 50)
1G ¼" (في الإصدارات التى بها مكبس Ø 55، 60، 65)

عدد 1 مأخذ تصريف "DRAIN": بثقب 2/1G" الموجود في الغطاء السفلي وذلك لمراقبة أي تسرب محتمل للسوائل سببه تآكل وتلف حشوات الضغط. في حالة أي تسرب، يرجى مراجعة ***دليل الإصلاح***.

يجب أن تبقي هذه الفتحة مفتوحة دائماً (انظر شكل 4 و شكل a/4).



شكل 4

7 إرشادات وتعليمات الاستخدام

تم تصميم المضخة لكي تعمل في بيئة غير معرضة للانفجارات وبمياه مرشحة (أنظر الوضعية 7.9).
يمكن استخدام سوائل أخرى ولكن فقط بعد تصريح رسمي مسبق من ***المكتب الفني*** أو ***مركز خدمة العملاء***.

1.7 درجة حرارة الماء

أقصى درجة حرارة مقبولة للمياه هي 40 درجة مئوية. يمكن مع ذلك استخدام المضخة مع مياه درجة حرارتها تصل حتى 60 درجة مئوية، ولكن فقط لفترات قصيرة. يُنصح في هذه الحالة بالاتصال ***بالمكتب الفني*** أو ***بمركز خدمة العملاء***.

2.7 القوة التشغيلية وأقصى ضغط

تشير معدلات الأداء الموضحة في دليل العرض إلى مستويات الأداء القصوى التي تم تزود المضخة بها. **بغض النظر عن** القوة التشغيلية المستخدمة، لا يمكن تجاوز مستوى الضغط أو العدد الأقصى من عدد اللفات المحددة في لوحة البيانات التعريفية إلا بعد تصريح مباشر من ***المكتب الفني*** أو من ***مركز خدمة العملاء***.

3.7 الحد الأدنى لنظام الدوران

الحد الأدنى لنظام الدوران المسموح به لهذه النوعيات من المضخات هو 300 لفة \ د؛ يجب على أي نظام دوران مختلف عن النظام المحدد في لوحة البيانات والأداءات (انظر الفصل 5) أن يكون مصرح به رسميا من قبل ***المكتب الفني*** أو ***من قبل خدمة العملاء***.

4.7 الضوضاء الصادرة عن المضخة

تم القيام بعمل اختبار فحص للضغط الصوتي وفقاً للتوجيه الأوروبي 2000/14 الصادر عن البرلمان الأوروبي والمجلس (التوجيه الخاص بالآلات) ووفقاً لل EN-ISO 3744-2010 المتعلق بالآلات من الفئة 1.
يجب أن يتم الكشف النهائي عن مستوي الضغط الصوتي على الآلة \ النظام بشكل كامل.
إذا ما توجب على عامل التشغيل التواجد على بُعد مسافة أقل من 1 متر عن الآلة، يجب عليه ارتداء أدوات مناسبة لحماية الأذنين وذلك تطبيقاً للقواعد والقوانين المعمول بها في هذا الشأن.

5.7 الاهتزازات

يجب أن تتم عملية تقييم مستوى الاهتزازات فقط بعد إتمام تركيب المضخة في شبكة العمل ووفقاً للاستعدادات والتجهيزات التي يقرها العميل. يجب أن تكون القيم والنتائج متوافقة والتوجيهات والقوانين المعمول بها في هذا الشأن.

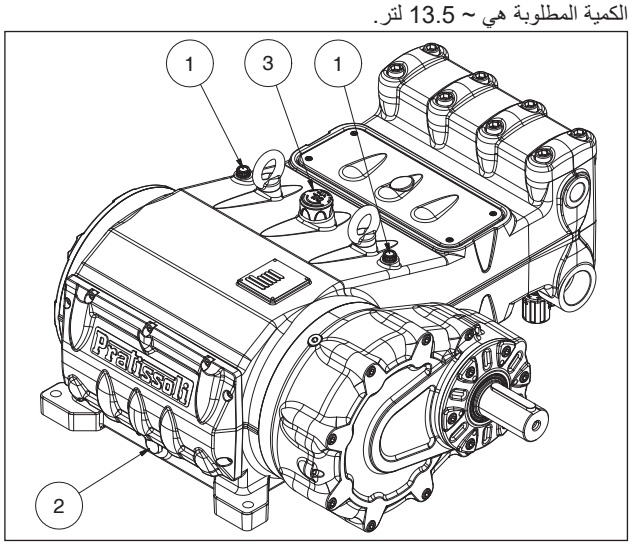
6.7 ماركات وأنواع الزيوت التي يُنصح بها

يتم تسليم المضخة بزيت صالح للاستعمال مع درجة حرارة الغرفة من 0 درجة مئوية حتى 30 درجة مئوية.
بعض أنواع الزيوت الموصى به مدونة في الجدول أدناه. هذه الزيوت هي عبارة عن إضافات لزيادة الحماية ضد التآكل ولمقاومة الجهد التشغيلي (وفقا لـ DIN 51517 الجزء 2).
يمكن كبديل أيضا استخدام زيوت التشحيم المستخدمة في تروس السيارات SAE 85W-90.

الشركة المنتجة	الشحم
Agip	AGIP ACER220
ARAL	Aral Degol BG 220
BP	BP Energol HLP 220
Castrol	CASTROL HYSPIN VG 220 CASTROL MAGNA 220

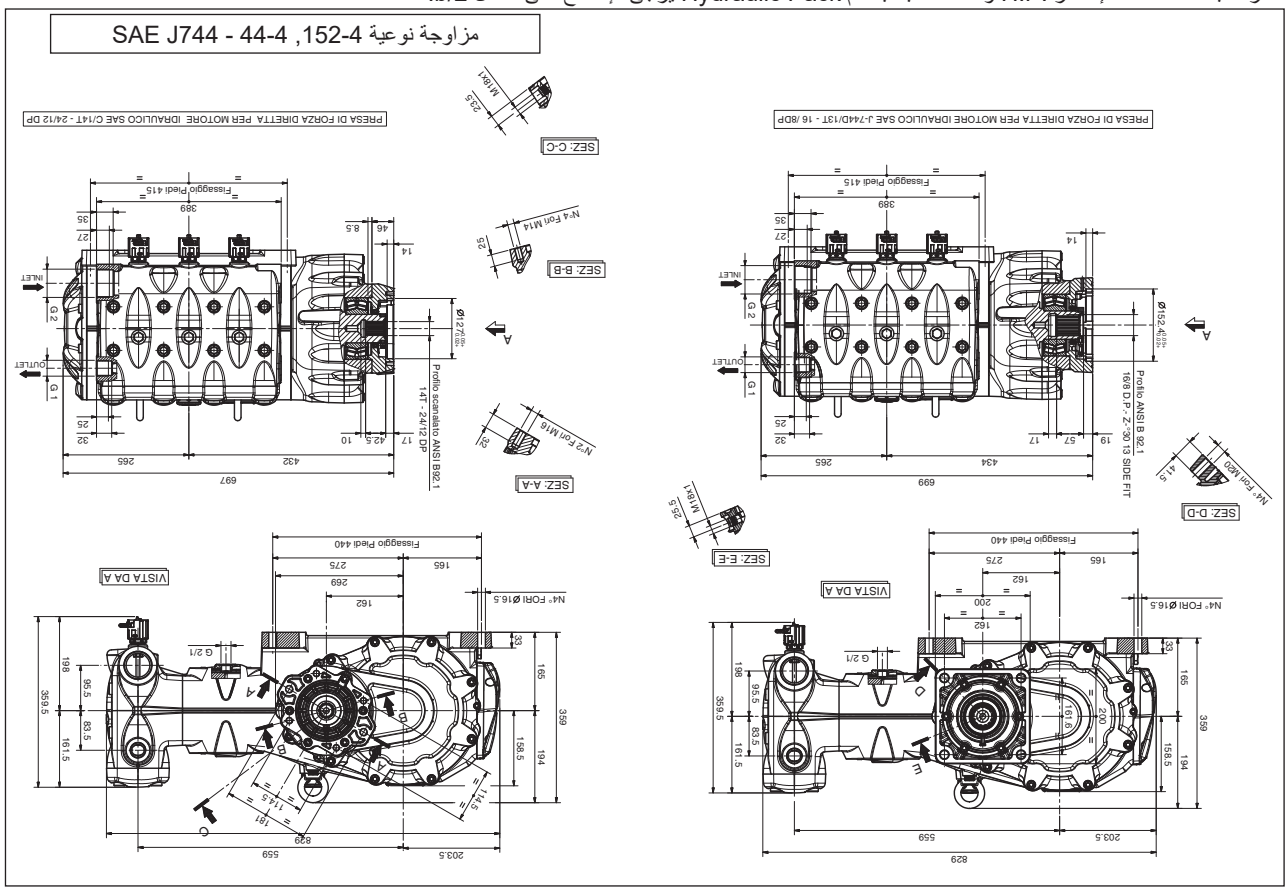
الشركة المنتجة	الشحم
DEA	Falcon CL220
elf	ELF POLYTELIS 220 REDUCTELF SP 220
Esso	NUTO 220 TERESSO 220
FINA	FINA CIRKAN 220
FUCHS	RENOLIN 212 RENOLIN DTA 220
Mobil	Mobil DTE Oil BB
Shell	Shell Tellus Öl C 220
SRS	Wintershall Ersolon 220 Wintershall Wiolan CN 220
TEXACO	RANDO HD 220
TOTAL	TOTAL Cortis 220

افحص مستوى الزيت عن طريق القضيب الخاص بذلك والمزود بخطوط تحديد للمستوى الأدنى والأقصى. الوضع ①، شكل 3.
إذا دعت الضرورة، أضف مزيد من زيت التشحيم عن طريق سدادة الزيت ③، شكل 3.
يتم فحص الزيت بالشكل الصحيح عندما تكون درجة حرارة المضخة مساوية لدرجة حرارة الغرفة، كما يجب تغيير الزيت عندما تكون المضخة في درجة حرارة العمل وذلك بإزالة السدادة الواردة بالوضع②, شكل 3.
يجب أن تتم عمليات فحص مستوى الزيت وتغييره كما هو موضح في الفصل 11.
الكمية المطلوبة هي ~ 13.5 لتر.



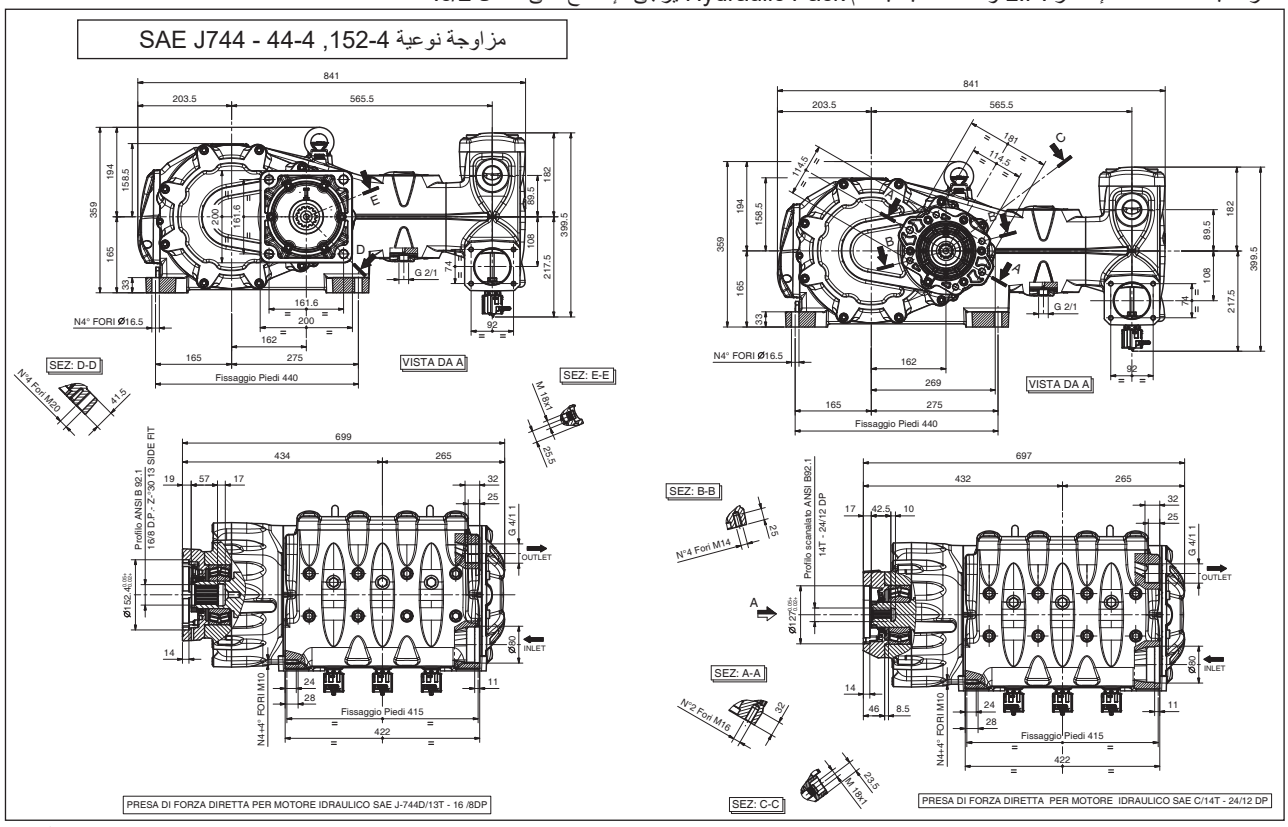
شكل 3

لمعرفة أبعاد المضخات إصدار .H.P والمعدة مسبقاً بنظام Hydraulic Pack يرجى الإطلاع على الشكل b/2.



شكل b/2

لمعرفة أبعاد المضخات إصدار .L.P والمعدة مسبقاً بنظام Hydraulic Pack يرجى الإطلاع على الشكل c/2.

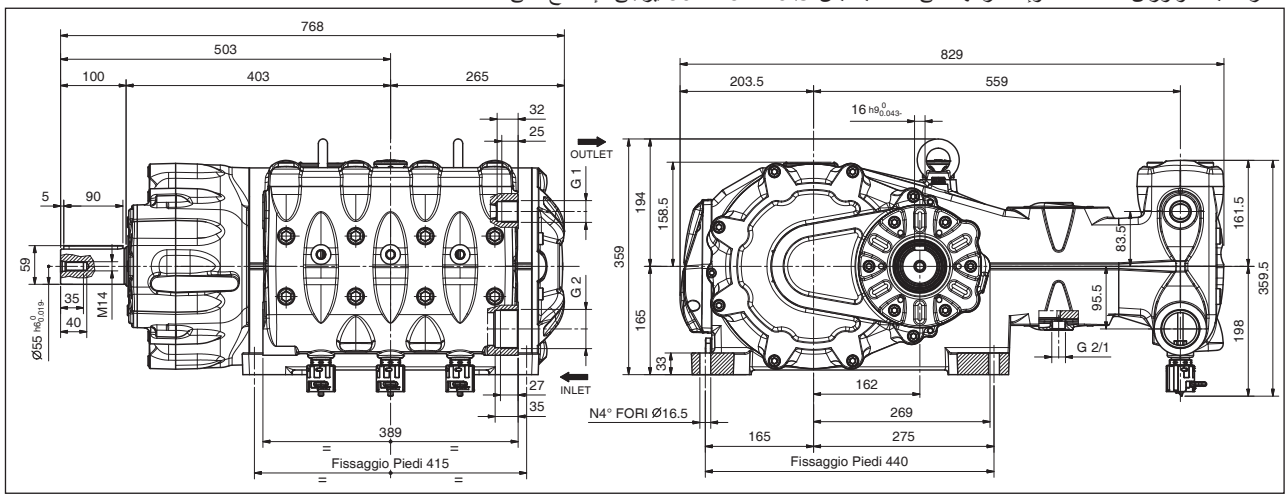


شكل c/2

الموديل	عدد اللفات \ دقيقة	السعة		الضغط		القوة	
		لادقيقة	Gpm	بار	رطل على البوصة المربعة	ك و	Hp
MK2S 40	1500	184	48.6	400	5800	140.5	191
	1800	183	48.3	400	5800	140	190
	2200	182	48.1	400	5800	139	189
MK2S 45	1500	233	61.6	300	4350	134	182
	1800	232	61.3	300	4350	133	181
	2200	231	61.0	300	4350	132	180
MK2S 50	1500	288	76.1	250	3625	137.5	187
	1800	286	75.6	250	3625	137	186
	2200	285	75.3	250	3625	136	185
MK2S 55	1500	349	92.2	200	2900	133	181
	1800	346	91.4	200	2900	132	180
	2200	344	90.9	200	2900	132	179
MK2S 60	1500	415	109.6	170	2465	135	183
	1800	412	108.9	170	2465	134	182
	2200	410	108.3	170	2465	133	181
MK2S 65	1500	487	128.7	150	2175	140	190
	1800	484	127.9	150	2175	139	189
	2200	481	127.1	150	2175	137.5	187

6 الأبعاد والأوزان

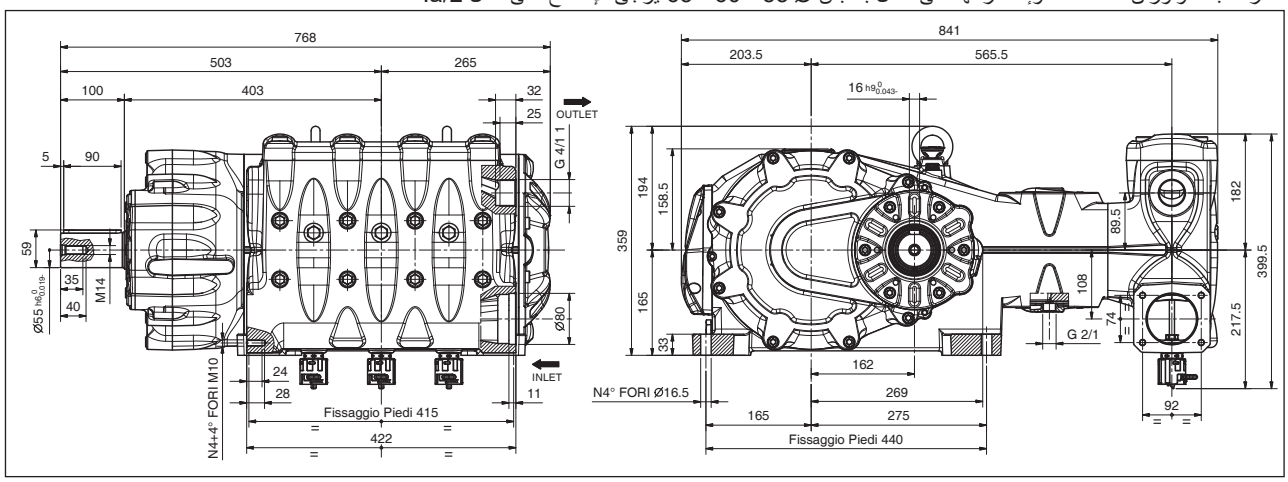
لمعرفة أبعاد وأوزان المضخات وإصداراتها التى تعمل بمكبس Ø 40 - 45 - 50 يرجى الإطلاع على شكل 2.



شكل 2

الوزن الجاف 398 كجم.

لمعرفة أبعاد وأوزان المضخات وإصداراتها التى تعمل بمكبس Ø 55 - 60 - 65 يرجى الإطلاع على شكل a/2.



شكل a/2

الوزن الجاف 411 كجم.

4. يجب أن تكون منطقة العمل والتي يعمل الضغط في نطاقها محددة ومحمية بشكل كامل وخالية من أية أشياء قد تتضرر أو قد تكون سببا لأي أخطار في حالة إصابتها بضغط المضخة على نحوي مفاجئ؛ يمكن أن تتضرر و/أو تسبب حالات خطر.
5. يجب توجيه الماء المضخوخ فقط إلى منطقة العمل حتى أيضا عند القيام بعمليات التجريب أو الفحوصات التشغيلية الأولية.
6. يجب دائما على عامل التشغيل أن يولي اهتماماً لمسار الرواسب والبقايا الناتجة عن الماء المضخوخ. يجب عند الضرورة أن يقوم عامل التشغيل بتوفير حواجز مناسبة لتحقق الحماية المطلوبة ضد ما قد يتعرض له عرضياً من أخطار.
7. لا يجب تشتيت انتباه عامل التشغيل أثناء العمل لأي سبب من الأسباب. يجب على العمال الذين يدخلون بشكل ضروري إلى منطقة العمل أن ينتظروا حتى يقوم عامل التشغيل بإيقاف العمل الخاص به ثم يسمح لهم بعد ذلك مباشرة بالدخول إلى مكان العمل.
8. يجب على أفراد طاقم العمل، لتحقيق الأمن والسلامة أثناء العمل، أن يكونوا دائما متفهمين لمهام كل فرد منهم ويجب توافر تناسق وتفاهم فيما بينهم لتجنب التضارب وسوء الفهم المتبادل أثناء العمل.
9. لا يجب البدء في استخدام نظام الضغط العالي دون أن يكون جميع أفراد الفريق كلٌ في مكانه الصحيح كما لا يجب تشغيله قبل أن يكون عامل التشغيل قد وجة فوهة التوجيه ناحية منطقة العمل.

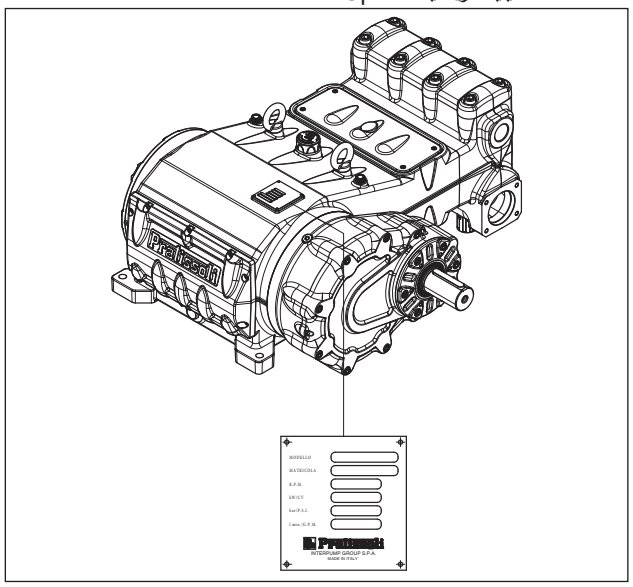
5.3 الأمن والسلامة في صيانة النظام

1. يجب أن تتم عملية صيانة نظام الضغط العالي في إطار الفترات الزمنية التي تحددها الشركة المصنعة المسئولة عن المجموعة بكاملها وفقا لما ينص عليه القانون.
2. يجب دائما أن تتم عملية الصيانة فقط على يد فنيين مختصين ومُعتمدين لقيام بهذه العملية.
3. يجب دائما أن تتم عملية تركيب أو تفكيك المضخة أو مكوناتها المتعددة فقط على يد طاقم عمل مؤهل مصرّح له، كما يجب أن تتم باستخدام معدات وأدوات مناسبة بهدف تجنب التسبب في أي تلفيات أو أضرار لمكونات المضخة، وبشكل خاص عندما يتعلق الأمر بالوصلات.
4. لضمان الحصول على موثوقية أداء كاملة ومستوى كافي من الأمن والحماية، يجب دائما وفقط استخدام قطع غيار أصلية.

4 التعريف بالمضخة

يوجد على كل مضخة لوحة بيانات تعريفية تحتوي على ما يلي:

- موديل المضخة وإصدارها
- الرقم التسلسلي
- الحد الأقصى لعدد اللفات
- معدل استهلاك الطاقة kW - Hp
- الضغط بار- P.S.I.
- السعة التشغيلية لتر\دقيقة - Gpm



شكل 1

يجب دائما ذكر الموديل والإصدار والرقم التسلسلى في حالة طلب الحصول على قطع غيار.

5 مواصفات فنية

الموديل	عدد اللفات \ دقيقة	السعة		الضغط		القوة	
		ل\دقيقة	Gpm	بار	رطل على البوصة المربعة	ك و	Hp
MK2 40	1500	153	40.4	400	5800	159	117
	1800	149	39.4	400	5800	155	114
MK2 45	1500	193	51.0	300	4350	150	110
	1800	189	49.9	300	4350	147	108
MK2 50	1500	239	63.1	250	3625	155	114
	1800	233	61.6	250	3625	151	111
MK2 55	1500	289	76.4	200	2900	150	110
	1800	282	74.5	200	2900	146	107
MK2 60	1500	343	90.6	170	2465	151	111
	1800	335	88.5	170	2465	148	109
MK2 65	1500	403	106.5	150	2175	157	115
	1800	394	104.1	150	2175	154	113

1 مقدمة

يصف هذا الدليل تعليمات الاستخدام والصيانة لمضخة MK2، لذلك يجب قراءاتها وفهمها بدقة وحرص قبل استخدام المضخة.
يعتمد عمل المضخة بالشكل الصحيح واستمرارها عبر الزمن على استخدامها بشكل سليم وعلى القيام بأعمال الصيانة المناسبة.
لا تتحمل شركة Interpump Group أية مسئولية أيا كانت عن أية أضرار أو تلفيات ناتجة عن الإهمال أو عن عدم مراعاة تطبيق القواعد والإرشادات الواردة في هذا الدليل.
تأكد عند استلام المضخة من أنها كاملة الأجزاء وسليمة.
قم بتسجيل أية أعطال أو تلفيات قد تجدها قبل القيام بتركيب المضخة أو قبل بدء تشغيلها.

2 وصف الرموز

يجب قراءة ما هو مدوّن في هذا الدليل قبل كل عملية.



إشارة تحذير



يجب قراءة ما هو مدوّن في هذا الدليل قبل كل عملية.



إشارة خطر
خطر الصعقة الكهربائية.



إشارة خطر
ارتدي قناع الحماية.



إشارة خطر
ارتدي نظارات الحماية.



إشارة خطر
ارتدي قفازات الحماية قبل القيام بأية عملية.



إشارة خطر
ارتدي أحذية الحماية المناسبة.

3 السلامة

1.3 تحذيرات عامة حول الأمن والسلامة

يمكن لسوء استخدام المضخات أو نظم الضغط العالي وعدم مراعاة قواعد وإرشادات التركيب والصيانة أن يتسببوا في أضرار وتلفيات خطيرة للأشخاص و\أو الأشياء. على أي شخص يقوم بتجميع واستخدام النظم التي تعمل بالضغط العالي أن يكون لديه الكفاءة والقدرة على القيام بذلك إضافة إلى أن يكون على معرفة ودراية بخصائص ومواصفات المكونات التي سيقوم بتجميعها\باستخدامها كما يجب عليه القيام بكل التدابير والاحتياطات الضرورية التي تضمن توفير أكبر مستوى ممكن من الأمن والسلامة في جميع ظروف التشغيل والاستخدام. لا يجب أبداً التغاضي عن عمل أي احتياط واجب التطبيق بشكل عقلاني لتوفير عنصري الأمن والسلامة سواء من قبل فني التركيب أو من قبل عامل التشغيل.

2.3 ضروريات أساسية لأمن وسلامة نظام الضغط العالي

1. يجب دائما أن يحتوي خط الضغط على صمام أمان.
2. يجب أن تكون مكونات نظام الضغط العالي، وبشكل خاص في النظم التي تعمل أكثر في الخارج، محمية بشكل مناسب من التعرض للأمطار أو الثلوج أو الحرارة.
3. يجب أن تلبي الأجزاء الكهربائية، إضافة إلى حمايتها بشكل مناسب ضد التعرض لرشات ورذاذ المياه، كل القواعد والقوانين المحددة المعمول بها في هذا الشأن.
4. يجب تحديد أبعاد أنابيب الضغط العالي بالشكل الصحيح لتتحمل أقصى قدر من الضغط يمكن للنظام العمل به، كما يجب استخدامها دائما وفقط داخل نطاق معدلات الضغط التي تحددها الشركة المنتجة لهذه الأنابيب نفسها. يجب مراعاة نفس قواعد وطرق الاستخدام هذه أيضا مع جميع الملحقات التشغيلية الأخرى الخاصة بنظام الضغط العالي.
5. يجب تغليف وتثبيت أطراف أنابيب الضغط العالي بشكل مناسب وآمن باستخدام هيكل صلب لتجنب التعرض إلى ضربات أو خبطات قد تكون خطيرة في حالة انفجار أو كسر الوصلات.
6. يجب توفير أغطية حماية مناسبة في أنظمة النقل الخاص بالمضخة (وصلات وبكرات رفع وسيور ومآخذ تيار مساعدة).

3.3 السلامة أثناء العمل



يجب بوضوح تحديد البيئة أو المنطقة التي في داخلها سوف يعمل نظام الضغط العالي ومنع الأشخاص غير المصرّح لهم بالتواجد بها، كما يجب أيضا، عند توافر الإمكانية لذلك، تحديد هذا المكان أو إحاطته بأسوار حماية. يجب على طاقم العمل المصرّح له الدخول إلى مكان العمل هذا أن يكون على معرفة ودراية كاملة مسبقاً بكيفية التعامل والتصرف داخل هذا المكان إضافة إلى ضرورة معرفته بجميع الأخطار التي قد تنتج عن عيوب أو تلفيات أو أعطال نظام الضغط.
قبل البدء في تشغيل النظام، يجب على عامل التشغيل أن يحرص على التأكد والتحقق مما يلي:

1. أن نظام الضغط العالي تم تغذيته بالشكل الصحيح، انظر الفصل 9 الفقرة 5.9.
2. أن مرشحات الشفط في المضخة تم تنظيفها بالشكل الصحيح؛ يعتبر من المناسب إدخال أي جهاز من شأنه أن يشير إلى مدى الانسداد عند وجوده.
3. أن الأجزاء الكهربائية محمية بشكل مناسب وأنها في حالة ممتازة.
4. أنه لا وجود لأية علامات تآكل واضحة على أنابيب الضغط العالي وأن التجهيزات والوصلات في حالة عمل جيدة.
5. بموجب التطبيق والاستخدام والظروف البيئية، يمكن أن تبلغ أسطح المضخة الخارجية درجات حرارة مرتفعة جداً خلال التشغيل. لذلك نوصي بعدم ملامسة الأجزاء الساخنة.

يجب أن يتم فوراً تحديد أي عطل أو تلف أو أي شك في سلامة عمل أي جزء سواء قبل أو أثناء العمل بالآلة بحيث يتم تنبيه طاقم العمل المختص ليقوم بفحصه على الفور. في هذه الحالات يجب فورا تصفير الضغط ويجب إيقاف نظام الضغط بشكل كامل.

4.3 قواعد التعامل الخاصة باستخدام فوهات التوجيه



1. يجب دائما على عامل التشغيل أن يجعل أولى اهتماماته هو توفير ما يلزم لتوفير عناصر الحماية والأمن والسلامة، ليس لنفسه فقط ولكن لأي أطراف أخرى قد تتواجد بشكل مباشر بالقرب منه أثناء عمله، كما يجب عليه تقييم وتقدير حالة العمل بشكل محدد؛ يجب أن يقوم بعمله متحلياً بحس العمل الجيد وبالمسؤلية.
2. يجب على عامل التشغيل ارتداء خوذة بها واجهة حماية للوجه، وملابس واقية من المياه وأحذية طويلة مناسبة لنوع العمل الذي يقوم به وقادرة على أن توفر له الحماية والثبات على أرضية العمل في حالة وجود أي بلل أو رطوبة.

ملاحظة: اللباس المناسب يحمي من التعرض لرذاذ الماء بشكل فعّال ولكنه لا يحمي من رشات المياه بشكل مباشر أو من الرذاذ المتقارب جدا. قد يصبح من الضروري في هذه الحالات استخدام وسائل حماية إضافية.

3. يعتبر من الجيد تنظيم عمال التشغيل وتقسيمهم إلى مجموعات عمل مكونة من شخصين على الأقل ليتمكن أفراد كل مجموعة من المساعدة المتبادلة والفورية عند الضرورة ولتبادل الأدوار والدوريات أثناء فترات العمل الطويلة والمرهقة.

المحتويات

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42049 S.Ilario—Reggio Emilia (Italy)
Tel. +39-0522-904311
Fax +39-0522-904444
E-mail : info@pratissolipompe.com
http://www.pratissolipompe.com

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