Menu

# Serie ST-TR
# HIGH FLOW

Pratissoli

## SR50-SR65-SR75
## TR50-TR60-TR70-
## TR75



SR-TR ORIZZONTALE




SR-TR VERTICALE

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
دليل الاستخدام والصيانة

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# 1 INTRODUZIONE

Questo manuale descrive le istruzioni per l'uso e la manutenzione delle pompe serie SR-TR 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



**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.



**Simbolo relativo alla protezione contro l'esplosione.**
Definisce particolari prescrizioni di sicurezza per l'utilizzo delle pompe in zone identificate secondo la Direttiva ATEX.
**Quando le pompe sono ordinate in configurazione ATEX** perché destinate a lavorare in zone con atmosfera potenzialmente esplosiva, è necessario rispettare **RIGOROSAMENTE le note riportate nei paragrafi con questo simbolo e le indicazioni presenti nel manuale istruzioni integrative "PROTEZIONE ANTIDEFLAGRANTE ATEX"**.

# 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 punto 9.4).
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.

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 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 dopodiché 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 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

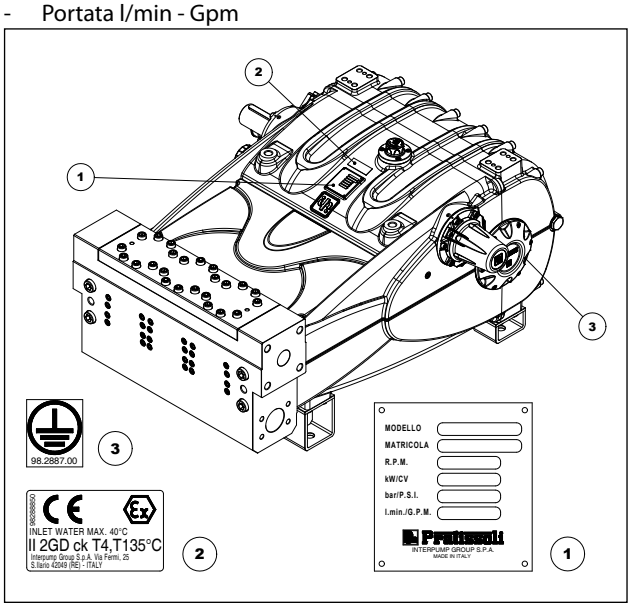



Fig. 1

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

Per le pompe ordinate in configurazione **ATEX**:
Pos. 2 - targhetta con **marcatura specifica ATEX di protezione dalle esplosioni**.
Pos. 3 - targhetta per individuare **vite di messa a terra**.

# 5 CARATTERISTICHE TECNICHE POMPE HIGH FLOW

**CARATTERISTICHE TECNICHE POMPE SR (@ RPM 520)**

| Modello | Giri/1' | Portata | | Pressione | | Potenza | |
|---|---|---|---|---|---|---|---|
| | | l/min | Gpm | bar | Psi | kW | Hp |
| SR 50 | 1500 | 276 | 73 | 400 | 5800 | 211 | 287 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 65 | 1500 | 466 | 123 | 250 | 3625 | 222.5 | 302.5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 75 | 1500 | 620 | 164 | 200 | 2900 | 236.8 | 322 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

**CARATTERISTICHE TECNICHE POMPE TR (@ RPM 520)**

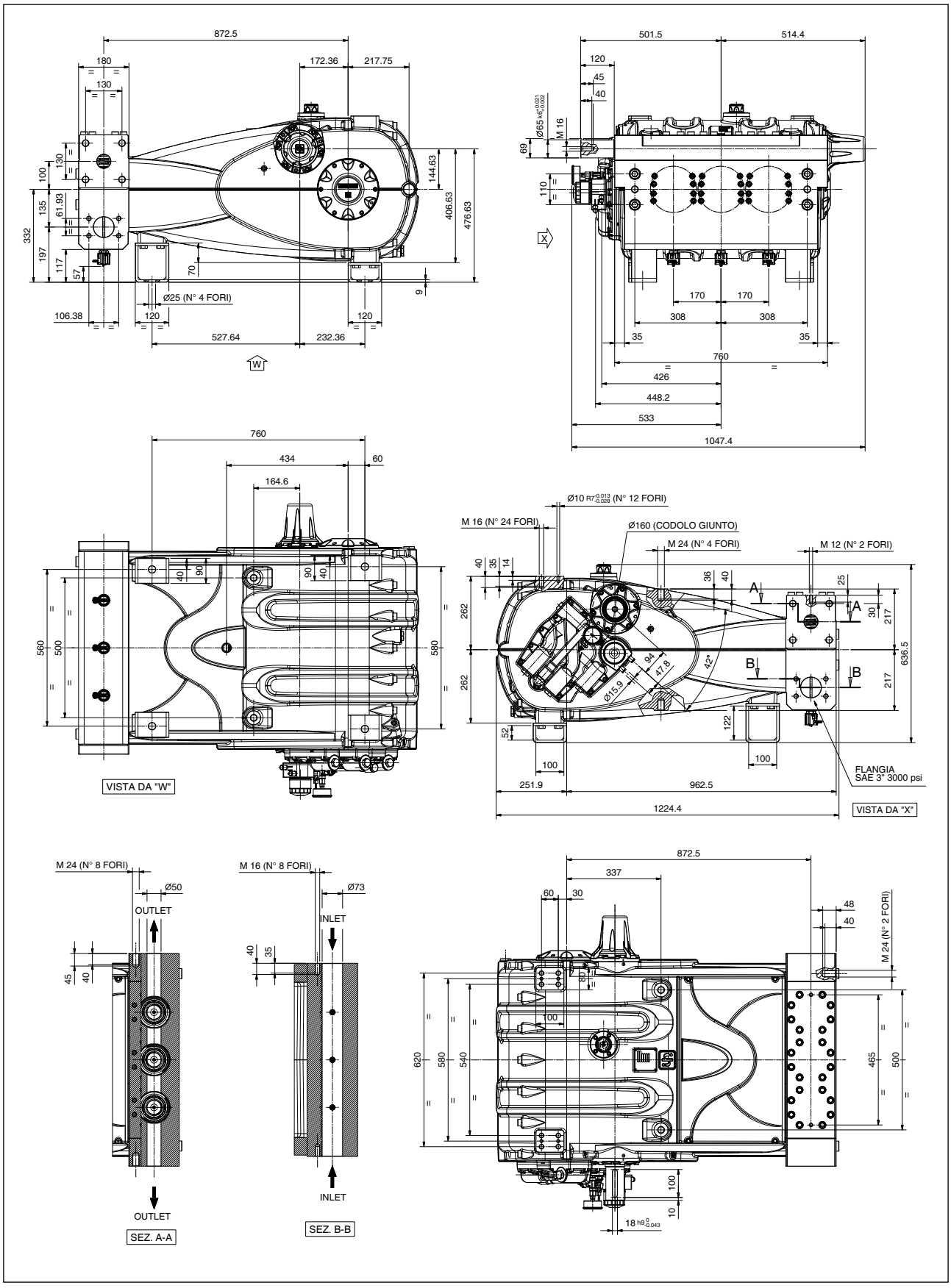
| Modello | Giri/1' | Portata | | Pressione | | Potenza | |
|---|---|---|---|---|---|---|---|
| | | l/min | Gpm | bar | Psi | kW | Hp |
| TR 50 | 1500 | 398 | 105 | 400 | 5800 | 304 | 413.5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 60 | 1500 | 573 | 151.4 | 300 | 4350 | 328.3 | 446.5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 70 | 1500 | 780.5 | 206 | 220 | 3190 | 328 | 446 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 75 | 1500 | 896 | 236.7 | 200 | 2900 | 342 | 465 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

## 5.1 Momenti di inerzia della pompa ridotti alla PTO

| POMPA SERIE | RPM | J (kg mm$^2$) |
|---|---|---|
| SR | 1500 | 231600 |
| | 1800 | 182400 |
| | 2200 | 140700 |
| TR | 1500 | 241200 |
| | 1800 | 189100 |
| | 2200 | 145200 |

## 6 DIMENSIONI E PESI POMPE SR HIGH FLOW

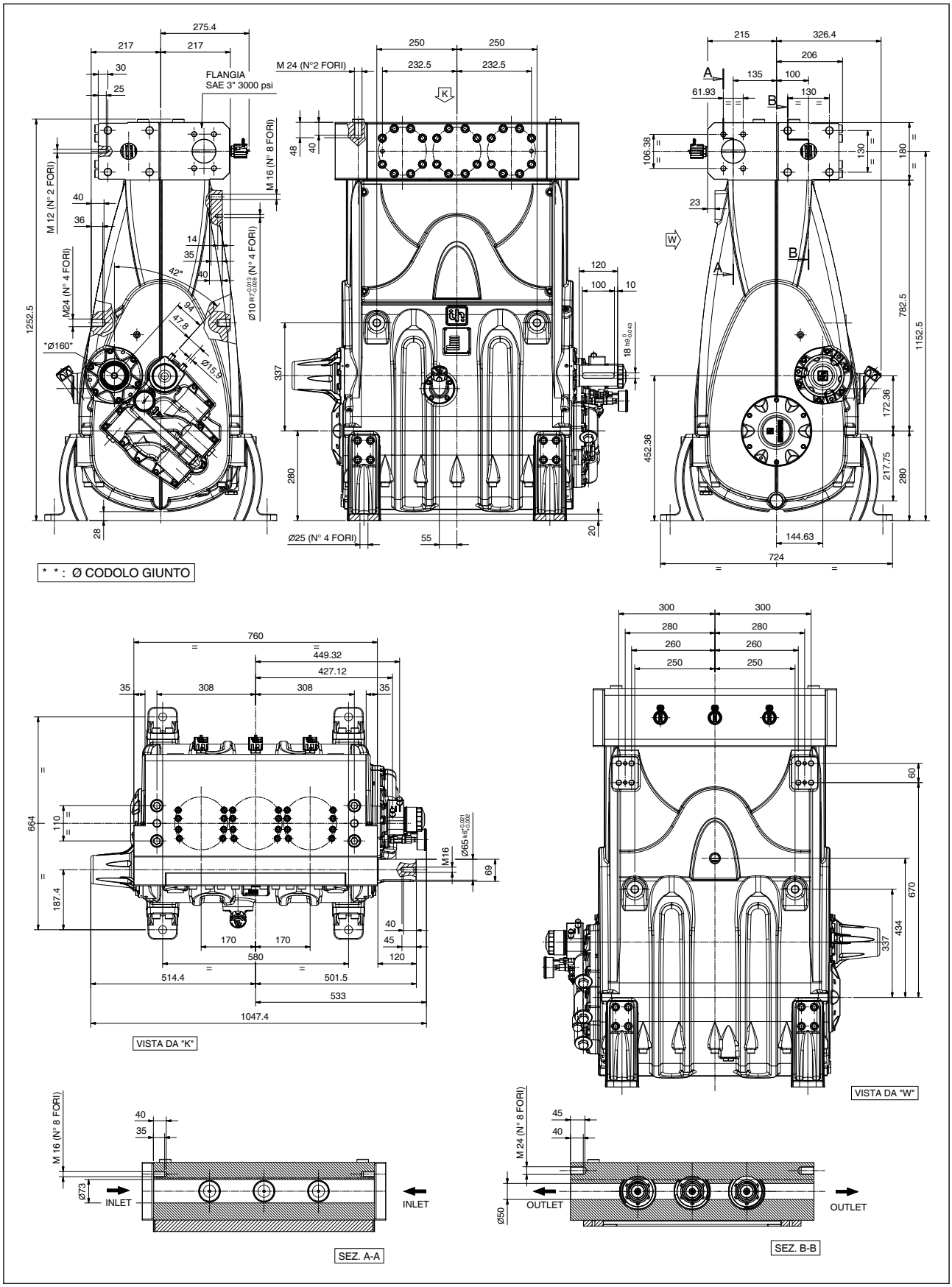
Per dimensioni e pesi delle pompe Serie SR ORIZZONTALE fare riferimento alla Fig. 2.




**Peso a secco 1150 Kg.**

Fig. 2

Per dimensioni e pesi delle pompe Serie SR VERTICALE fare riferimento alla Fig. 2/a.

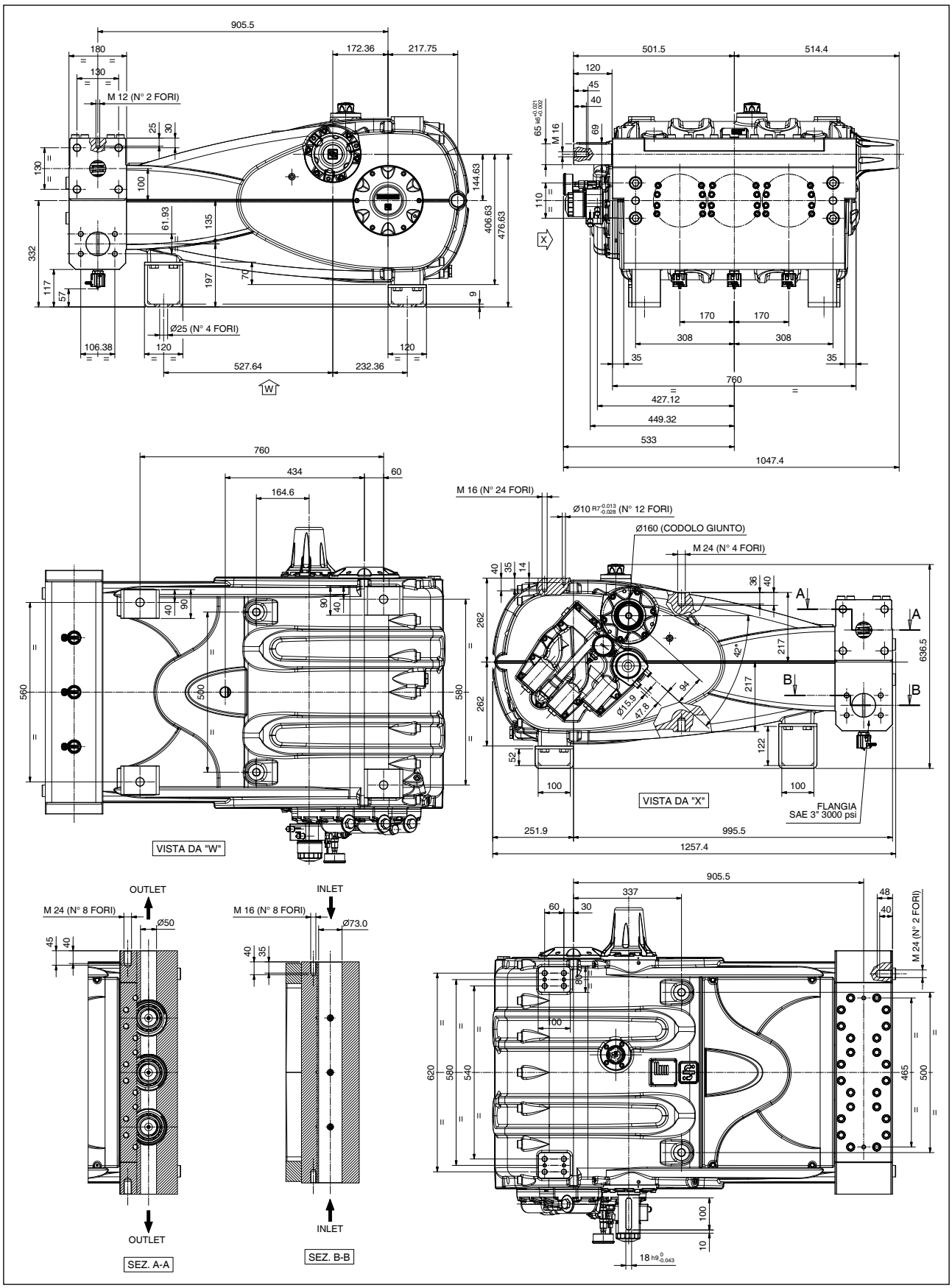



**Peso a secco 1160 Kg.**

Fig. 2/a

## 6.1 DIMENSIONI E PESI POMPE TR HIGH FLOW

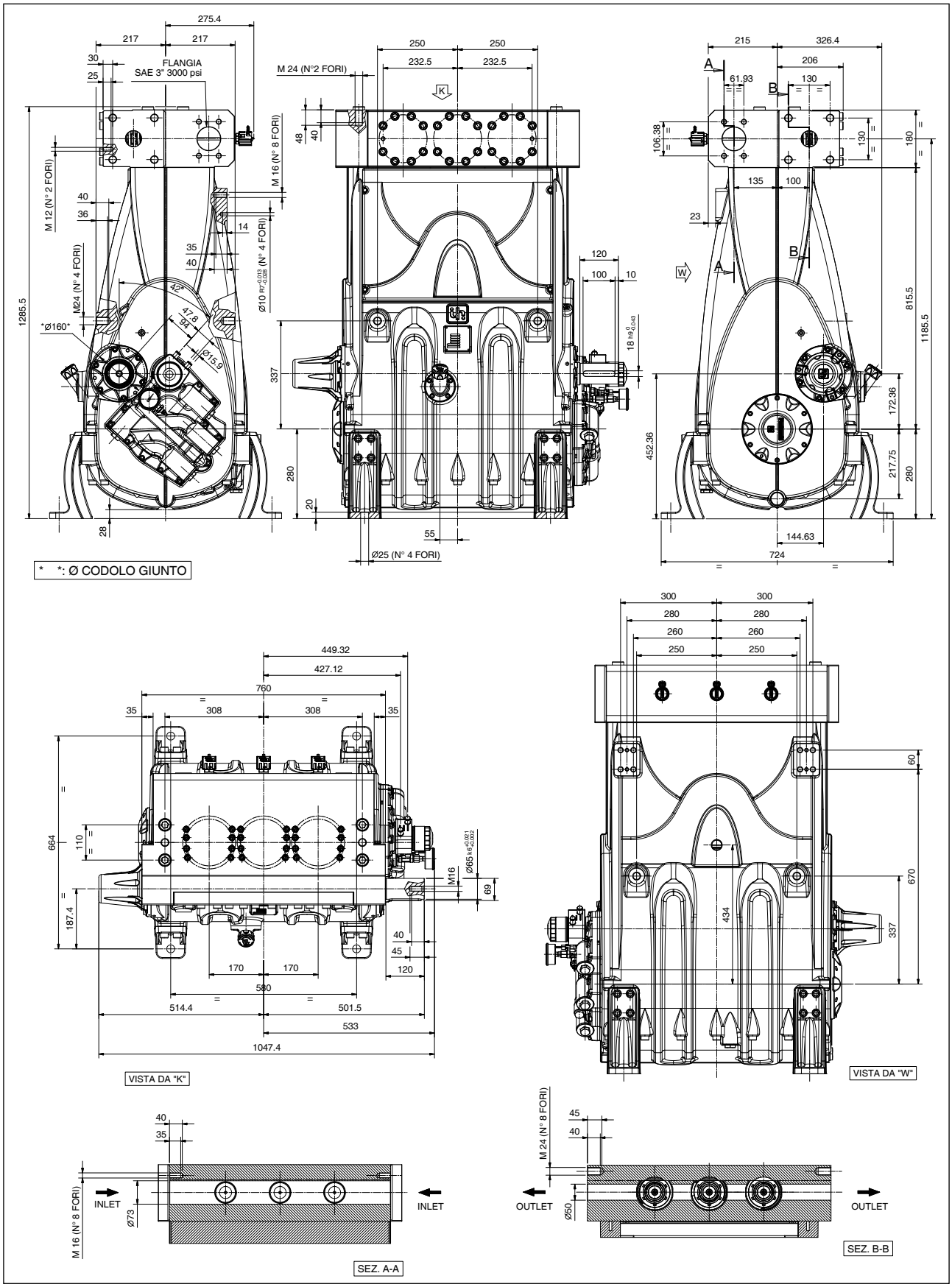
Per dimensioni e pesi delle pompe Serie TR ORIZZONTALE fare riferimento alla Fig. 3.




**Peso a secco 1185 Kg.**

Fig. 3

Per dimensioni e pesi delle pompe Serie TR VERTICALE fare riferimento alla Fig. 3/a.




**Peso a secco 1195 Kg.**

Fig. 3/a

# 7 INDICAZIONI PER L'UTILIZZO

Le pompe Serie SR - TR, se non ordinate in configurazione ATEX, sono state progettate per operare in ambienti con atmosfera **non** potenzialmente esplosiva e con acqua filtrata (vedere punto 9.6).
Altri liquidi potranno essere utilizzati soltanto previo benestare formale dell'***Ufficio Tecnico*** o ***Servizio Assistenza Clienti***.

## 7.1 Temperatura acqua

La 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***.

Versione ***ATEX***: La massima temperatura dell'acqua ammessa è **40°C**.

## 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 **250 giri/min. all'albero a gomiti**; qualsiasi regime di rotazione diverso 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 tipologia degli oli lubrificanti consigliati

### 7.6.1 Tipo olio

La pompa è fornita con l'olio lubrificante TOTAL-ERG MISOLA MAP SH-150 che garantisce il corretto utilizzo della pompa per temperature ambiente che vanno da -10°C a +40°C.
Per temperature differenti utilizzare oli lubrificanti unigradi con adeguata viscosità.
Per utilizzi della pompa a temperature rigide si raccomanda l'utilizzo di adeguati riscaldatori.
La lubrificazione forzata è fornita dalla pompa dell'olio che garantisce la corretta quantità di olio in ogni punto richiesto delle parti in movimento.
La necessità di utilizzare l'olio multigrado è duplice:

- Facilitare gli utilizzatori a non dover cambiare la viscosità dell'olio in relazione alla temperatura esterna o alle stagioni.
- Aumentare in modo consistente il tempo di intervallo tra un cambio d'olio e l'altro riducendo di conseguenza gli interventi per la manutenzione, vedere tabella "manutenzione preventiva" al capitolo 11.

### 7.6.2 Marche olio consigliate

TOTAL-ERG MISOLA MAP SH-150.
MOBIL SHC 629.

### 7.6.3 Caratteristiche dell'olio richieste

In caso di mancata o difficile reperibilità delle marche consigliate si potranno utilizzare olii alternativi che dovranno però rispondere alle seguenti caratteristiche tecniche:

- Viscosità a -10°C ≤4000 cSt.
- Viscosità a 40°C ≤200 cSt.
- Viscosità a 100°C ≥18 cSt.
- Indice di viscosità: ≥135 cSt.
- Punto di scorrimento: ≥ -25°C
- Grado di additivazione GL1 - GL2.

Qualora si rendesse necessario, interpellare il **Servizio Assistenza Clienti**.
Controllare il livello dell'olio tramite l'asta livello olio ①, Fig. 4.
Se necessario rabboccare dal tappo olio ①, Fig. 4.
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. 4. (Utilizzare il tappo pos. 2/a per versione verticale.)
Il controllo dell'olio e il cambio va effettuato come indicato nel capitolo 11.
Il quantitativo di olio necessario è: **52 litri SR-TR in versione orizzontale; 37 litri SR-TR in versione verticale**.

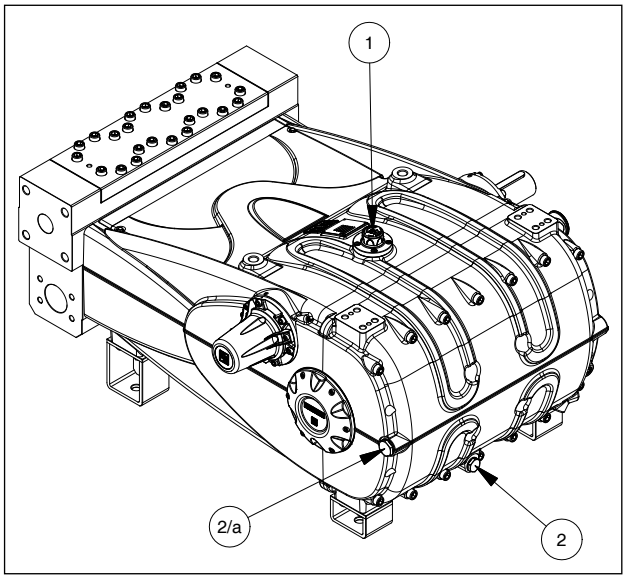



Fig. 4

Predisporre l'impianto in modo tale da non superare in nessun caso i 110°C (230°F) di temperatura olio durante il funzionamento della pompa.
Utilizzare a tale scopo l'indicatore di temperatura olio richiamato al punto 9.10.
**ATTENZIONE:** utilizzare olio con grado di infiammabilità superiore ai 200°C.

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

**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 della serie SR-TR sono dotate di (vedere Fig. 5 e Fig. 6):
Nº 2 prese d'aspirazione "IN": SAE G3" - 3000 PSI, vedere "ESPLOSO FLANGE ASP. - MAND. SR-TR" COD.65950900 (Fig. 7).
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.
Nº 2 prese di mandata "OUT": vedere "ESPLOSO FLANGE ASP. - MAND. SR-TR" COD.65950900 (Fig. 7).
Nº 1 presa "DRAIN": con foro G1" ricavato nella parte inferiore del carter per monitorare l'eventuale perdita di acqua dovuta all'usura delle guarnizioni di pressione. Qualora si presentassero perdite fare riferimento al manuale di riparazione.
**Detto foro deve sempre essere mantenuto aperto, ed eventualmente collegato con un sistema di rilevamento.**

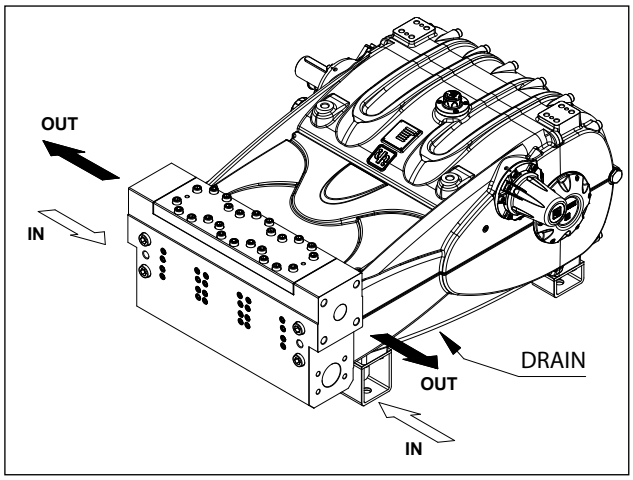



Fig. 5

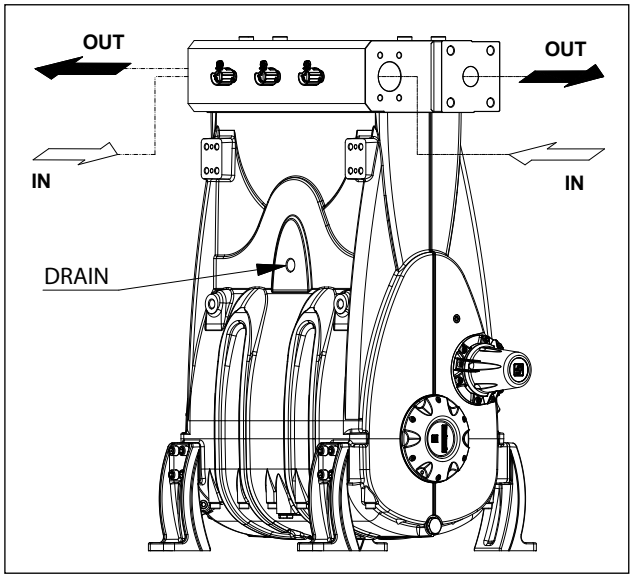
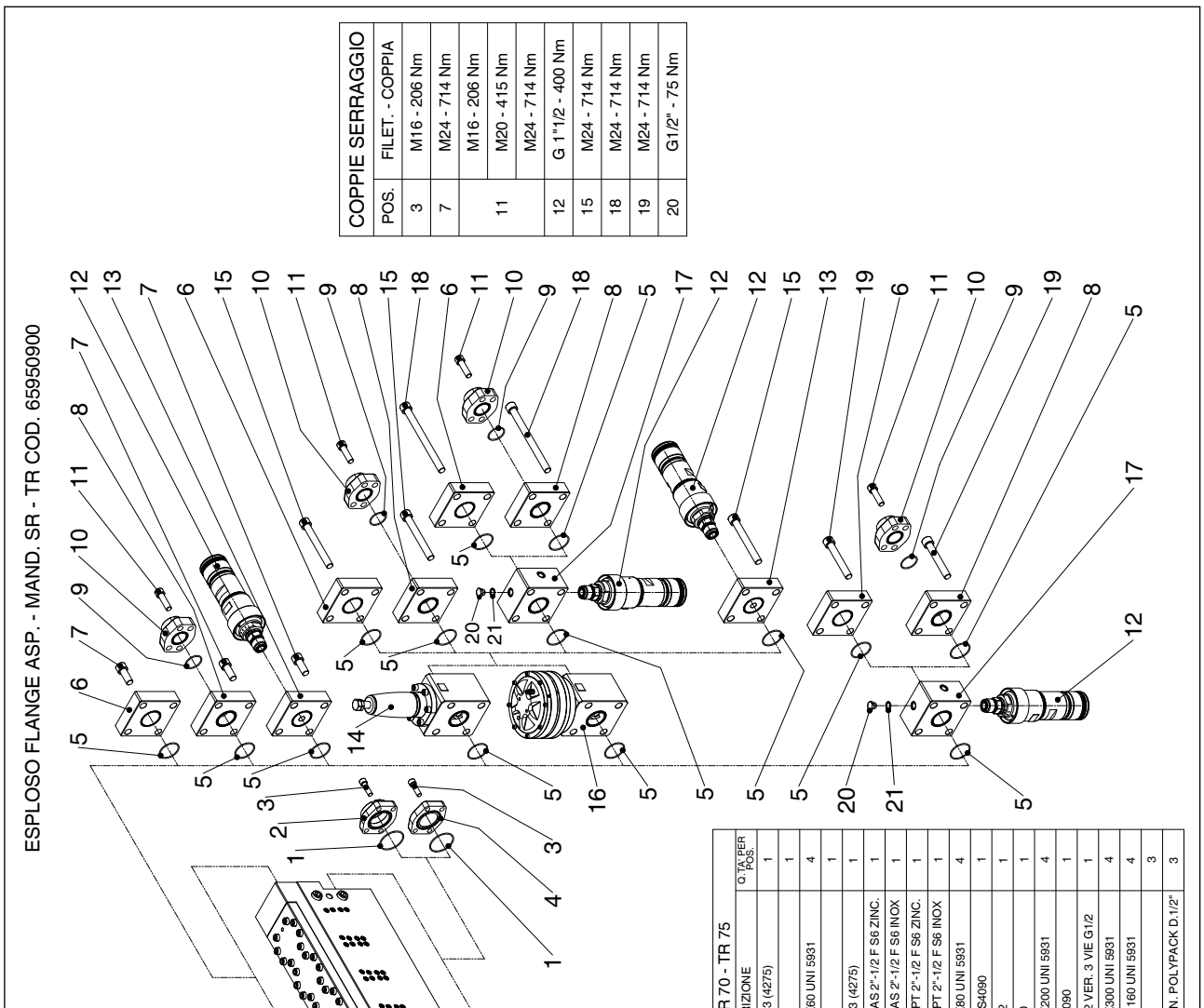



Fig. 6

## 8.1 Schema composizione Aspirazione e Mandata




| COPPIE SERRAGGIO | | |
|---|---|---|
| POS. | FILET. - COPPIA | |
| 3 | M16 - 206 Nm | |
| 7 | M24 - 714 Nm | |
| 11 | M16 - 206 Nm | |
| | M20 - 415 Nm | |
| | M24 - 714 Nm | |
| 12 | G 1"1/2 - 400 Nm | |
| 15 | M24 - 714 Nm | |
| 18 | M24 - 714 Nm | |
| 19 | M24 - 714 Nm | |
| 20 | G1/2" - 75 Nm | |

POMPE SR - TR TUTTE LE VERSIONI

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| ASPIRAZIONE | 1 | 90414100 | OR D. 85.32X3.53 (4337) | 1 |
| | 2 | 96458500 | FLANGIA DIR. GAS 3" F S3 ZINC. | 1 |
| | | 96459000 | FLANGIA DIR. GAS 3" F S3 INOX | 1 |
| | | 96459500 | FLANGIA DIR. NPT 3" F S3 ZINC. | 1 |
| | | 96460000 | FLANGIA DIR. NPT 3" F S3 INOX | 1 |
| | 3 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 4 | 96489500 | FLANGIA CIECA 3" S3 ZINC. | 1 |
| | | 96490000 | FLANGIA CIECA 3" S3 INOX | 1 |

POMPE SR 50 - TR 50

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021466 | FLANGIA 1"1/2 | 1 |
| | 9 | 90407900 | OR D. 47.22X3.53 (4187) | 1 |
| | 10 | 96468500 | FLANGIA DIR. GAS 1"-1/2 F S6 ZINC. | 1 |
| | | 96469000 | FLANGIA DIR. GAS 1"-1/2 F S6 INOX | 1 |
| | | 96469500 | FLANGIA DIR. NPT 1"-1/2 F S6 ZINC. | 1 |
| | | 96470000 | FLANGIA DIR. NPT 1"-1/2 F S6 INOX | 1 |
| | 11 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA PNR4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

POMPE SR 65 - TR 60

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021366 | FLANGIA 2" | 1 |
| | 9 | 90409900 | OR D. 56.74X3.53 (4225) | 1 |
| | 10 | 96473500 | FLANGIA DIR. GAS 2" F S6 ZINC. | 1 |
| | | 96474000 | FLANGIA DIR. GAS 2" F S6 INOX | 1 |
| | | 96474500 | FLANGIA DIR. NPT 2" F S6 ZINC. | 1 |
| | | 96475000 | FLANGIA DIR. NPT 2" F S6 INOX | 1 |
| | 11 | 99529000 | VITE TCEI M20X70 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

POMPE SR 75 - TR 70 - TR 75

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021266 | FLANGIA 2"1/2 | 1 |
| | 9 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 10 | 96478500 | FLANGIA DIR. GAS 2"-1/2 F S6 ZINC. | 1 |
| | | 96479000 | FLANGIA DIR. GAS 2"-1/2 F S6 INOX | 1 |
| | | 96479500 | FLANGIA DIR. NPT 2"-1/2 F S6 ZINC. | 1 |
| | | 96480000 | FLANGIA DIR. NPT 2"-1/2 F S6 INOX | 1 |
| | 11 | 99532000 | VITE TCEI M24X80 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

Fig. 7

# 9 INSTALLAZIONE POMPA

## 9.1 Installazione

I fori di fissaggio presenti sui piedi hanno il diametro di 25 mm.
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 presenti Nº 4 fori M24 per golfari di sollevamento per facilitarne l'installazione, come da figure sottostanti.

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






**Messa a terra:** è necessario fissare un cavo di messa a terra alla pompa tramite la vite M8 INOX e la rosetta dentellata INOX opportunamente segnalate dall'etichetta colore GIALLO.
Vedere manuale "PROTEZIONE ANTIDEFLAGRANTE ATEX".

**Sostituire il tappo di servizio di chiusura foro introduzione olio posizionato sul carter con l'asta di livello olio.**
L'asta livello 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).

In tutti i casi il montaggio della trasmissione deve essere a regola d'arte per evitare funzionamenti errati o gravosi dei particolari di collegamento e impedire usure eccessive, aumento di temperatura e/o rotture pericolose tali da generare potenziali sorgenti di accensione ed esplosione. *Vedere manuale "PROTEZIONE ANTIDEFLAGRANTE ATEX".*

## 9.2 Senso di rotazione

Il senso di rotazione può essere orario o antiorario indifferentemente sul lato destro o sinistro (vedere Fig. 8).

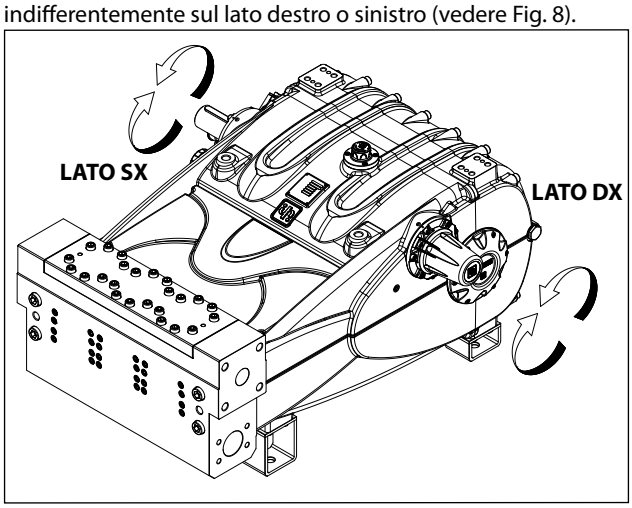



Fig. 8

Il collegamento alla pompa è indifferentemente da entrambi i lati; prestare attenzione sul **LATO SX** al tratto di ingombro dovuto alla pompa olio di lubrificazione.
Il coperchio di estremità andrà montato sulla PTO non collegata.

## 9.3 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 un tratto di tubazione flessibile. La consistenza del tratto di aspirazione dovrà essere tale da impedire deformazioni causate dalla depressione prodotta dalla pompa.

## 9.4 Alimentazione pompa

Le pompe serie SR-TR devono essere sempre installate mediante alimentazione forzata per mezzo di una pompa booster.
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 pompa 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.**

## 9.5 Linea d'aspirazione

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

1. Diametro interno minimo come indicato nelle tabelle al punto 9.8 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.

### 9.6 Filtrazione

Sulla linea di aspirazione pompa è necessario installare due filtri posizionati come indicato in Fig. 9 e Fig. 9/a.

**Con valvola di regolazione ad azionamento manuale.**

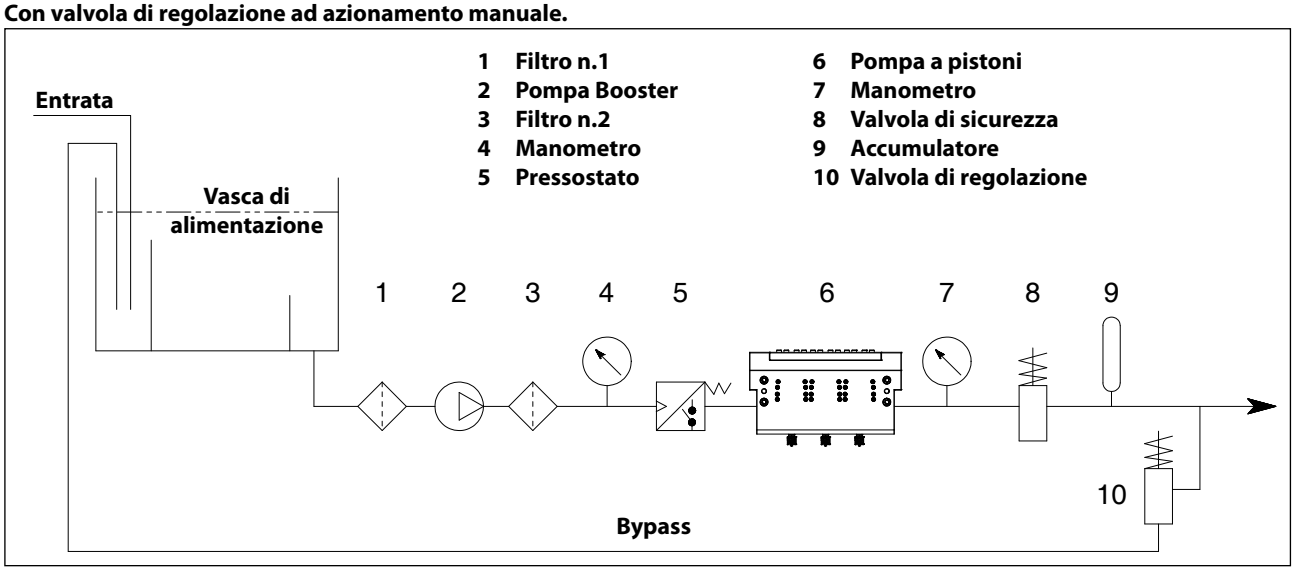



Fig. 9

**Con valvola di regolazione ad azionamento pneumatico**

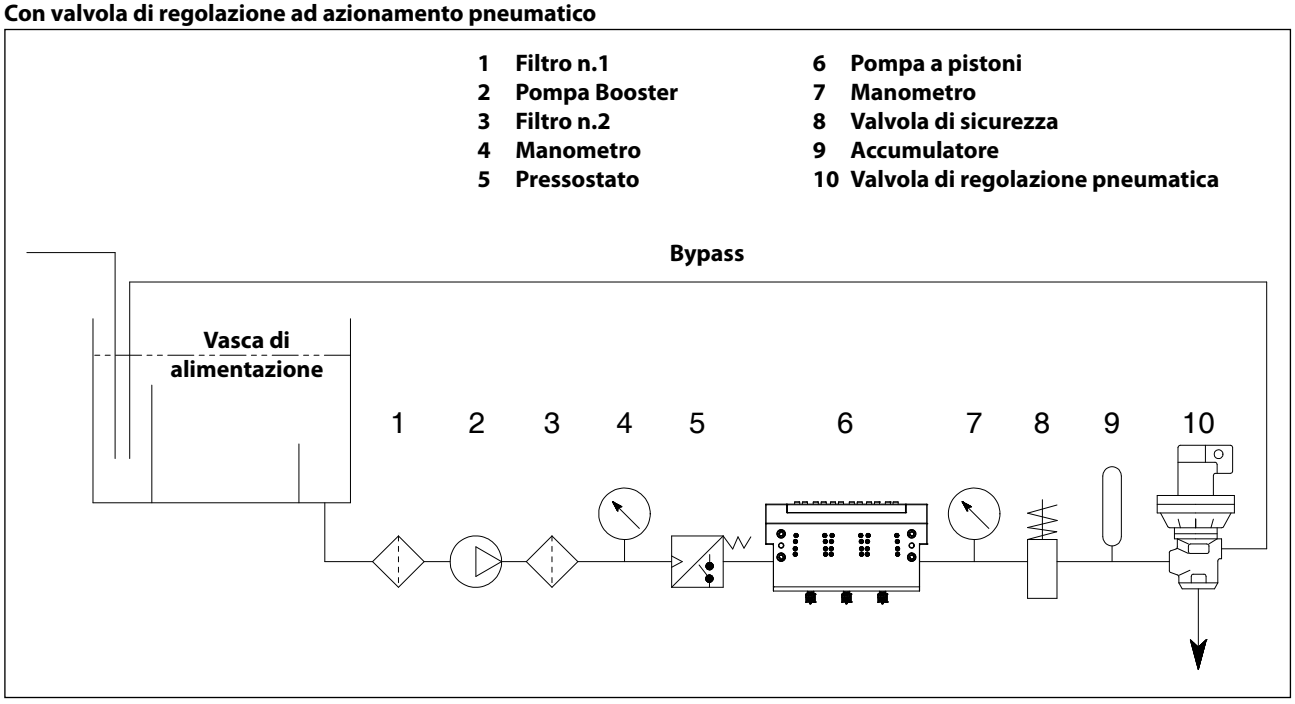



Fig. 9/a

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 ed alle reali condizioni di intasamento.**

### 9.7 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 tabelle al punto 9.8.
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.

### 9.8 Diametro interno dei tubi delle condotte

Nella tabella sottostante sono riportati i valori dei diametri interni delle condotte di aspirazione e mandata.

| POMPA SR | | |
|---|---|---|
| **MODELLO** | **ASPIRAZIONE** | **MANDATA** |
| SR 50 | SAE 3" - 3000 PSI | SAE 1"1/2 - 6000 PSI |
| SR 65 | SAE 3" - 3000 PSI | SAE 2" - 6000 PSI |
| SR 75 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |

| POMPA TR | | |
|---|---|---|
| **MODELLO** | **ASPIRAZIONE** | **MANDATA** |
| TR 50 | SAE 3" - 3000 PSI | SAE 1"1/2 - 6000 PSI |
| TR 60 | SAE 3" - 3000 PSI | SAE 2" - 6000 PSI |
| TR 70 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |
| TR 75 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |

Per la composizione flange aspirazione e mandata, vedere "ESPLOSO FLANGE ASP.-MAND. SR-TR" Fig. 7. Se necessario contattare l' Ufficio Tecnico o Servizio Assistenza Clienti.

### 9.9 Collegamento scambiatore acqua/olio

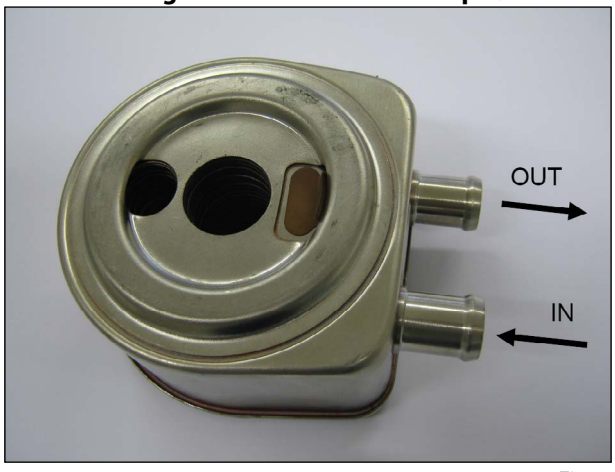



Fig. 10

Per la migliore performance collegare lo scambiatore in direzione controcorrente, (vedere Fig. 10).
Portata acqua:

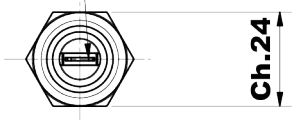
a) Max. efficienza 25 l/min.
b) Media efficienza 20 l/min.
c) Min. efficienza 12 l/min.

Se la pompa lavora ad una temperatura ambiente inferiore a 5°C (41°F), si può evitare di collegare lo scambiatore.
Per la manutenzione vedere capitolo 11.

### 9.10 Gruppo pompa olio

1) Cartuccia filtro olio - va serrata a mano; per manutenzione vedere capitolo 11.
2) Manometro - 0÷16 bar per controllo periodico pressione olio lubrificazione.
3) Pressostato: NORMALMENTE APERTO (è disponibile a richiesta normalmente chiuso); tensione 12 V.
   Per gruppi stazionari si consiglia di collegarlo sotto sistema di protezione.
4) Termostato olio: NORMALMENTE CHIUSO; tensione 12 V.

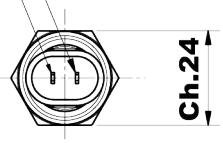
**Terminale 6.5x0.8**




**CONNESSIONE PRESSOSTATO**

**PRESSIONE INTERVENTO: 0.3 ±0.15 BAR**

**N.2 terminali 2.8x0.8**




**CONNESSIONI INT. SPIA TEMPERATURA**

**TEMP. INTERVENTO: 105°C±5°C**

**ATTENZIONE: realizzare il collegamento elettrico dei due sensori con un carico NON INDUTTIVO, oppure sostituire il pressostato ed il termostato con componenti di uguali caratteristiche omologati ATEX.**

## 10 AVVIAMENTO E FUNZIONAMENTO

### 10.1 Controlli preliminari (primo avviamento)

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, ecc.) restino entro i limiti previsti dal costruttore della trasmissione.
5. L'olio nel carter pompa sia al livello previsto verificandolo con l' apposita asta di livello olio posta sulla parte sup. del carter (posiz. 1 Fig. 11 e Fig. 11/a).

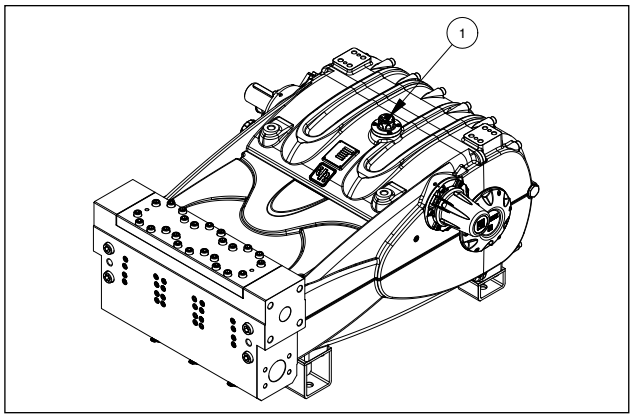



Fig. 11

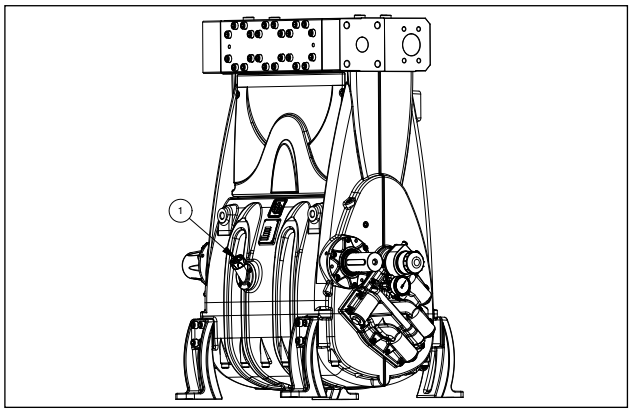



Fig. 11/a

**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. 12). Accertarsi di aver richiuso le valvole prima dell'avviamento della pompa. Per le posizioni di "lavoro" e di "riposo" vedere Fig. 12/a.**

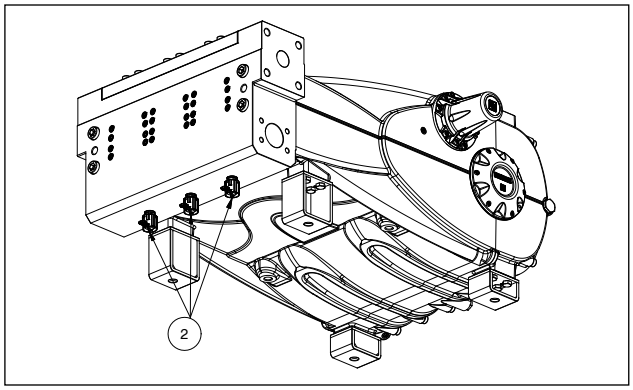



Fig. 12

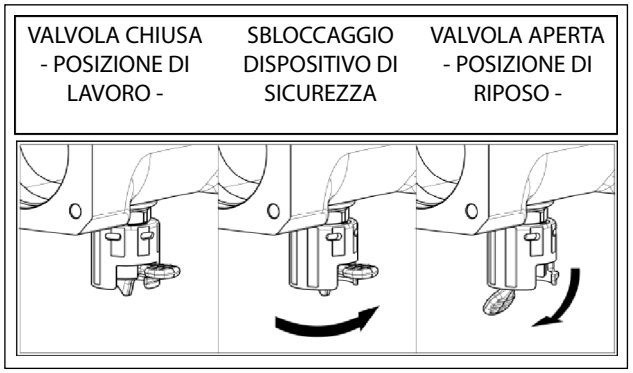



Fig. 12/a

### 10.2 Avviamento

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

## 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 1000 ore** | **Ogni 1500 ore** | **Ogni 3000 ore** |
| Verifica livello olio | | |
| | Verifica/Sostituzione *:<br>Valvole<br>Sedi valvola<br>Molle valvola<br>Guide valvola | Cambio olio e filtro olio<br>Sostituzione soffietti (versione verticale) |
| | Sostituzione *:<br>Tenute di H.P.<br>Tenute di L.P. | |

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

### 11.1 Soffietto (versione SR - TR verticale)

Controllare il serraggio delle fascette fissaggio soffietti dopo le prime **1000 ore** di funzionamento.
**Sostituire i soffietti ogni 3000 ore di funzionamento.**
Per la sostituzione attenersi alle indicazioni riportate nel **manuale di riparazione**.

### 11.2 Scambiatore acqua/olio

Gli intervalli di pulizia dello scambiatore vanno definiti in relazione alla durezza dell'acqua utilizzata. Si consiglia di pulire lo scambiatore **ogni 2000 ore se la durezza dell'acqua è ≤ 30° Francesi; ogni 1000 ore se la durezza dell'acqua è > 30° e ≤ 40° Francesi. Oltre i 40° Francesi si consiglia la pulizia ogni 500 ore**.
La pulizia va eseguita utilizzando prodotti anticalcare reperibili dal commercio; non è necessario smontarlo.
N.B.: il materiale dello scambiatore è **INOX (AISI 303)**.

**Protezione circuito lubrificazione parti meccaniche:** predisporre l'impianto affinché il pressostato istallato sulla pompa olio per la lubrificazione forzata, blocchi il funzionamento della pompa SR-TR in caso di diminuzione della pressione olio

| MANUTENZIONE PREVENTIVA | |
|---|---|
| **OGGETTO** | **FREQUENZA CONTROLLO** |
| Verifica taratura manometro pressione olio lubrificazione | Ogni 10000 ore |
| Verifica visiva perdite acqua dalla testata | Ogni 500 ore |

## 12 RIMESSAGGIO DELLA POMPA

### 12.1 Metodo di riempimento della pompa con emulsione anticorrosiva o soluz. anti-freeze usando una pompa esterna a membrana sulla base del layout espletato al punto 9.6

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 la si vede uscire dal tubo di scarico di alta pressione.
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 punto 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 di acquisto.
La garanzia sarà 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) non corretto 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 da portata:**
- 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 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 della valvola di regolazione di pressione.
- Problemi sulla trasmissione.





**La pompa non fornisce la portata di targa / rumore eccessivo:**
- Alimentazione insufficiente (vedi 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 guarnizione di pressione.
- Cavitazione dovuta a:
  1) Errato 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 della 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 è del tipo consigliato, riportato nel capitolo 7 (vedere punto 7.6).
- L'allineamento del giunto è imperfetto.
- L'inclinazione della pompa durante il lavoro è eccessiva.



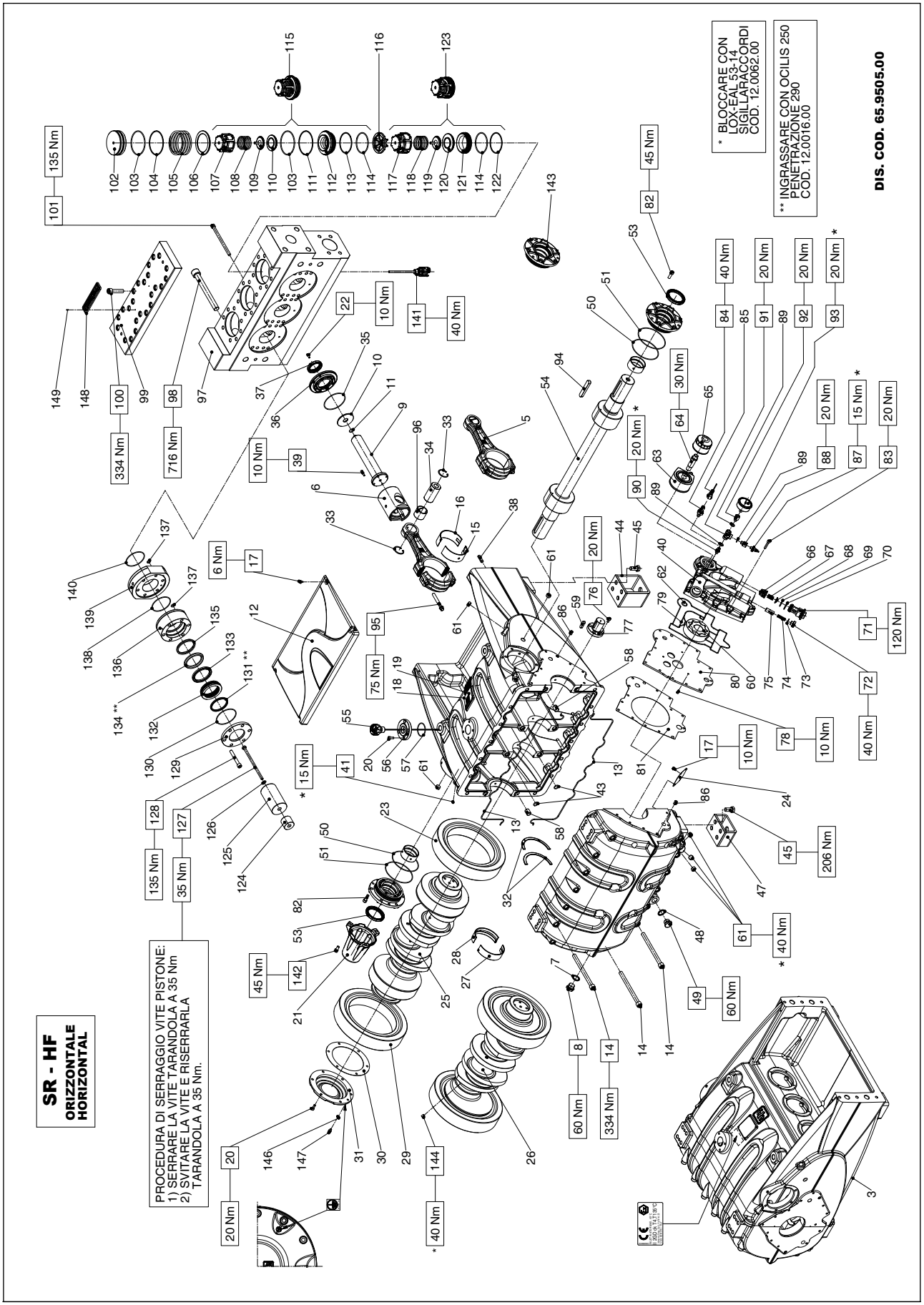
**Vibrazioni o colpi sui tubi:**
- Aspirazione aria.
- Imperfetto funzionamento della valvola di regolazione pressione.
- Malfunzionamento delle valvole.
- Non uniformità di moto nella trasmissione.

## 15.1 RICERCA DEI GUASTI E RIMEDI

| GUASTO | POSSIBILE CAUSA | RIMEDIO |
|---|---|---|
| All'avviamento la pompa non produce nessun rumore | Manca acqua in alimentazione.<br>Le valvole sono bloccate.<br>La linea di mandata è chiusa e non permette all'aria presente nella pompa di fuoriuscire. | Controllare il funzionamento e portata della pompa booster.<br>Controllare il funzionamento delle valvole.<br>Accertarsi di eventuali anomalie presenti sulla linea di mandata. |
| Pressione troppo bassa | La pompa sta aspirando aria | Individuare la perdita e riparare |
| | Perdita della valvola di regolazione della pressione o settaggio pressione errato | Eliminare la perdita o resettare |
| | Set guarnizioni valvola difettosi | Montare nuove guarnizioni |
| | Valvola/e di aspirazione o scarico danneggiata/e | La/e valvola/e di aspirazione e scarico devono essere sostituite. Controllare le condizioni delle molle valvola. |
| | Perdite dalla testata | Controllare le guarnizioni della testata e all'occorrenza sostituirle; montare una nuova testata |
| Pompa rumorosa | Valvole usurate.<br>Condotti di aspirazione e/o filtro sottodimensionati.<br>Portata insufficiente, temp. dell'acqua elevata, filtro intasato. | Controllare l'istallazione ed i componenti della linea di aspirazione; rilevare temp. acqua |
| Pulsazioni irregolari delle tubazioni | Aspirazione d'aria e/o alimentazione insufficiente.<br>Curve, gomiti, raccordi sulla linea d'alimentazione che strozzano il passaggio del liquido.<br>Il filtro di alimentazione è sporco o sottodimensionato.<br>La pompa booster fornisce una pressione e/o una portata insufficiente. | Controllare l'istallazione ed i componenti della linea di aspirazione.<br>Controllare il funzionamento e portata della pompa booster.<br>Pulire o sostituire il filtro di alimentazione. |
| Perdita acqua dal supporto guarnizioni | Guarnizione di bassa pressione difettosa/usurata | Sostituire la guarnizione di bassa pressione |
| La pompa si surriscalda | La pressione e/o il numero di giri è superiore a quello di targa.<br>L'olio nel carter pompa non è a livello oppure non è del tipo consigliato.<br>Il giunto o la trasmissione non è allineato. | Ripristinare pressione e/o numero di giri.<br>Ripristinare il livello dell'olio, se necessario sostituirlo.<br>Controllare la trasmissione. |
| Perdita olio dal carter pompa | Paraolio stelo guida pistone difettoso/usurato.<br>Guarnizioni varie carter difettose/usurate.<br>Per le versioni verticali controllare lo stato del soffietto. | Sostituzione del paraolio, del soffietto o delle guarnizioni |
| Olio emulsionato emesso dallo sfiato.<br>L'asta livello olio mostra segni di emulsione. | Contaminazione dell'olio lubrificante col liquido pompato. | Verificare il corretto funzionamento dei paraoli guida pistone (o dei soffietti) e sostituire l'olio lubrificante |

# 16 ESPLOSI E DISTINTE RICAMBI

## 16.1 ESPLOSO E DISTINTA RICAMBI SR IN VERSIONE ORIZZONTALE



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

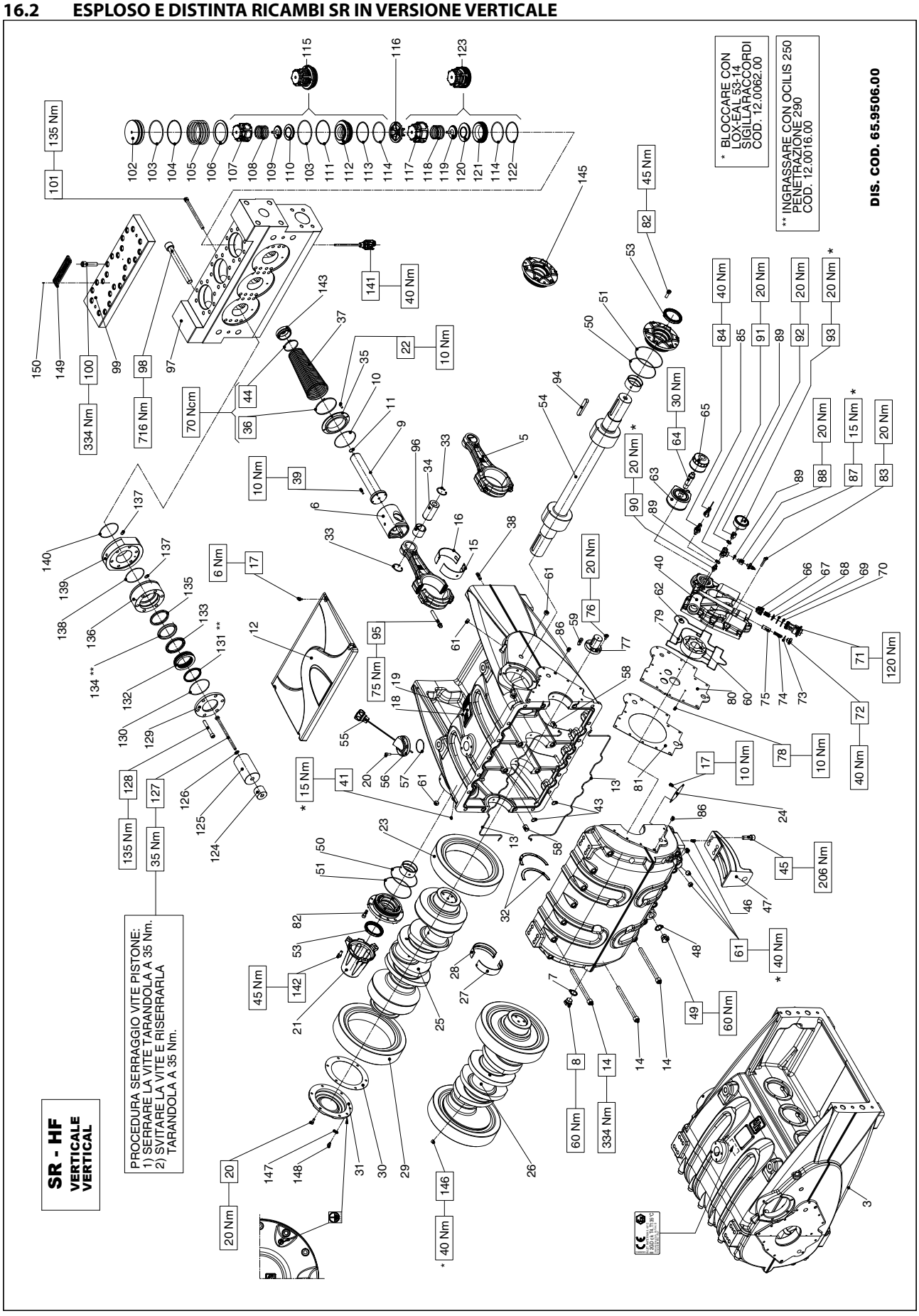
Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **93** | **94.6070.00** | **MANOMETRO ATT. POST. 0-16 D. 63** | | **1** |
| **94** | **91.5050.00** | **LINGUETTA 18x11x100 UNI 6604** | | **1** |
| **95** | **99.4410.00** | **VITE SERRAGGIO BIELLA** | | **6** |
| **96** | **90.9185.00** | **BOCCOLA PIEDE BIELLA** | | **3** |
| **97** | **65.1205.56** | **TESTATA LP** | | **1** |
| **98** | **99.5355.00** | **VITE M24x2x220 UNI 5931 8,8** | | **4** |
| **99** | **65.2120.56** | **COPERCHIO VALVOLE LP** | | **1** |
| **100** | **99.5149.00** | **VITE M16x65 UNI 5931 12,9** | | **24** |
| **101** | **99.4495.00** | **VITE M12x180 UNI 5931 12,9** | | **24** |
| **102** | **65.2121.56** | **TAPPO VALVOLA** | | **3** |
| **103** | **90.4146.00** | **OR D. 104,4x3,53 NBR SH. 70 4412** | **B** | **6** |
| **104** | **90.5345.00** | **ANELLO ANTIEST. D. 105,4x111,2x1,5** | **B** | **3** |
| **105** | **94.8050.00** | **MOLLA Dm. 103x87,5** | | **3** |
| **106** | **65.2139.56** | **ANELLO SEDE VALVOLA DI MANDATA** | | **3** |
| **107** | **36.2131.05** | **GUIDA VALVOLA DI MANDATA** | | **3** |
| **108** | **94.7745.00** | **MOLLA Dm. 56x57,3** | | **3** |
| **109** | **36.2129.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **110** | **36.2126.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **111** | **90.5340.00** | **ANELLO ANTIESTR. D. 105,2x111x1,5** | | **3** |
| **112** | **36.2121.56** | **SEDE VALVOLA DI MANDATA** | | **3** |
| **113** | **90.5315.00** | **ANELLO ANTIEST. D. 89,4x95,2x1,5** | | **3** |
| **114** | **90.4144.00** | **OR D. 88,5x3,53 NBR SH. 70 4350** | | **6** |
| **115** | **36.7227.01** | **GRUPPO VALVOLA DI MANDATA** | **B** | **3** |
| **116** | **65.2122.51** | **DISTANZIALE GUIDA VALVOLA** | **B** | **3** |
| **117** | **36.2130.05** | **GUIDA VALVOLA D'ASPIRAZIONE** | | **3** |
| **118** | **94.7755.00** | **MOLLA Dm. 58,5x103,1** | | **3** |
| **119** | **36.2128.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **120** | **36.2127.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **121** | **36.2120.56** | **SEDE VALVOLA D'ASPIRAZIONE** | | **3** |
| **122** | **90.5310.00** | **ANELLO ANTIEST. D. 89,2x95x1,5** | | **3** |
| **123** | **36.7226.01** | **GRUPPO VALVOLA D'ASPIRAZIONE** | **B** | **3** |
| **124** | **65.2119.66** | **DISTANZIALE PISTONE** | | **3** |
| 125 | 74.0402.09 | PISTONE D. 50x127 | | 3 |
| | 74.0405.09 | PISTONE D. 65x127 | | |
| | 65.0409.09 | PISTONE D. 70x127 | | |
| **126** | **96.7105.00** | **ROSETTA D. 10x18x0,9** | | **3** |
| **127** | **99.3865.00** | **VITE M10x200 UNI 5737 A2-70** | | **24** |
| **128** | **99.4418.00** | **VITE M12x90 UNI 5931 12,9** | | **18** |
| 129 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2132.56 | ANELLO SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 130 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A | |
| 131 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2890.00 | ANELLO TEN. ALT. D. 65x73x5,5 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 132 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2131.70 | SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 133 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2895.00 | ANELLO 'RESTOP' D. 65x80x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 134 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2893.00 | ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 135 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1005.92 | ANELLO DI TESTA D. 65 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 136 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0607.56 | CAMICIA PISTONE D. 65 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| **137** | **90.3830.00** | **OR D. 12,1x2,62 NBR SH. 70 117** | **A** | **6** |
| 138 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A | |
| 139 | 65.2123.56 | SUPPORTO CAMICIA D. 50 | | 3 |
| | 65.2124.56 | SUPPORTO CAMICIA D. 65-75 | | |
| **140** | **90.3917.00** | **OR D. 88,57x2,65 NBR SH. 70 3350** | **A** | **3** |
| **141** | **10.7449.01** | **DISPOSITIVO APERTURA VALVOLE** | | **1** |
| **142** | **99.3652.00** | **VITE M10x20 UNI 5931 12,9** | | **3** |
| **143** | **65.7005.01** | **COPERCHIO PTO + BOCCOLA PIGNONE** | | **2** |
| **144** | **99.4250.00** | **VITE M12x12 UNI 5923 12,9** | | **2** |
| **146** | **96.7017.50** | **ROSETTA D. 8,4x15x0,8 - ATEX** | | **1** |
| **147** | **99.3019.00** | **VITE M8x10 UNI 5931 A2-70 - ATEX** | | **1** |
| **148** | **97.8276.00** | **MARCHIO PRATISSOLI** | | **1** |
| **149** | **91.57030.0** | **RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346** | | **2** |

## 16.2 ESPLOSO E DISTINTA RICAMBI SR IN VERSIONE VERTICALE



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 92.8100.00 | FASCETTA D. 58-69 | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 46 | 97.6230.00 | SPINA D. 10x24 UNI 6364 | | 8 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 47 | 65.2007.13 | PIEDE VERTICALE | | 4 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 10 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 12 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 76 | 99.3039.00 | VITE M8x16 UNI 5931 8,8 | | 4 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 35 | 65.2107.66 | FLANGIA PER SOFFIETTO | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 36 | 92.8110.00 | FASCETTA D. 98-109 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 37 | 65.2110.47 | SOFFIETTO | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

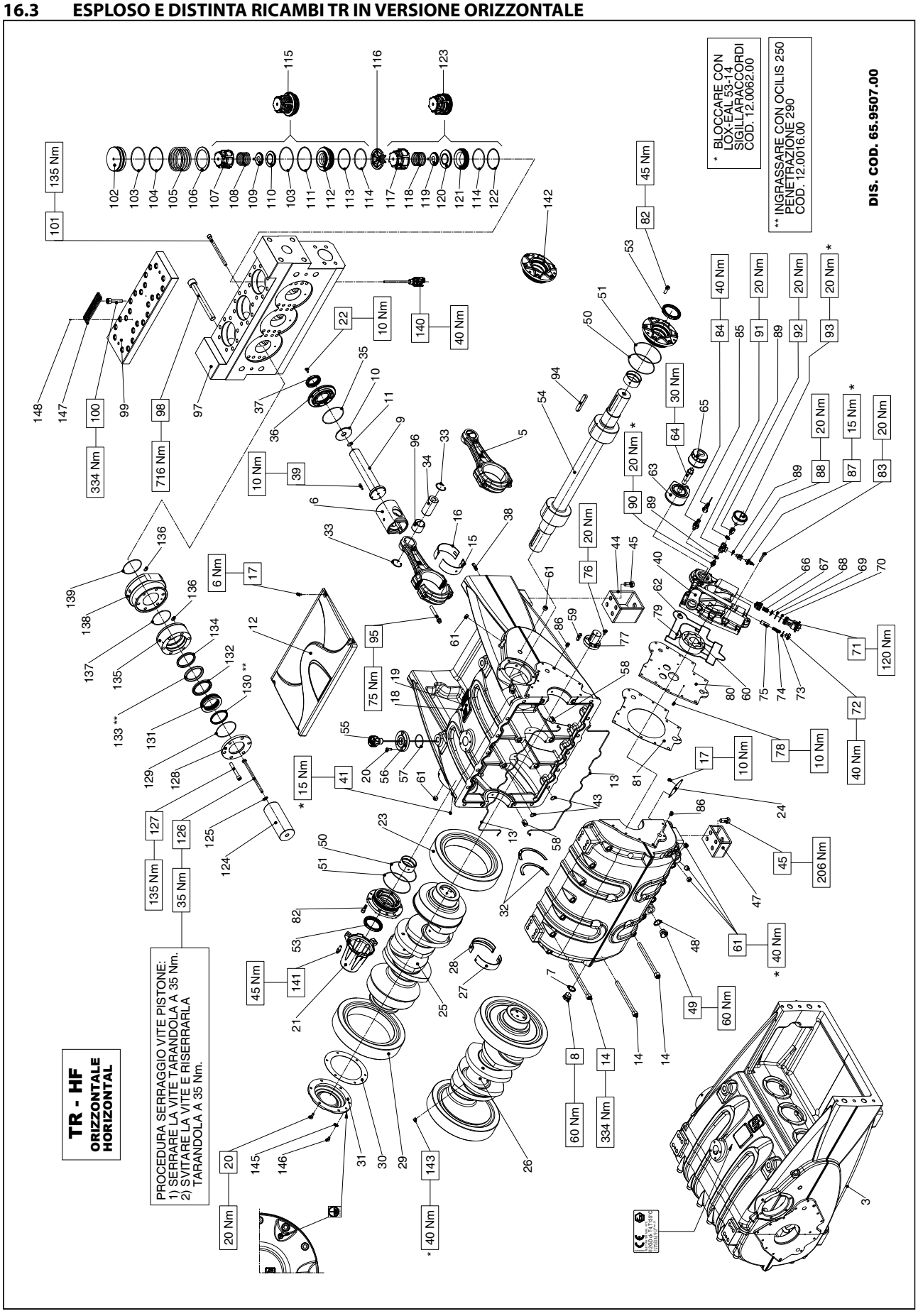
Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.2119.66 | DISTANZIALE PISTONE | | 3 |
| 125 | 74.0402.09 | PISTONE D. 50x127 | | 3 |
| | 74.0405.09 | PISTONE D. 65x127 | | |
| | 65.0409.09 | PISTONE D. 70x127 | | |
| 126 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 127 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 128 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 129 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2132.56 | ANELLO SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 130 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A | |
| 131 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2890.00 | ANELLO TEN. ALT. D. 65x73x5,5 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 132 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2131.70 | SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 133 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2895.00 | ANELLO 'RESTOP' D. 65x80x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 134 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2893.00 | ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 135 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1005.92 | ANELLO DI TESTA D. 65 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 136 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0607.56 | CAMICIA PISTONE D. 65 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 137 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 138 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A | |
| 139 | 65.2123.56 | SUPPORTO CAMICIA D. 50 | | 3 |
| | 65.2124.56 | SUPPORTO CAMICIA D. 65-75 | | |
| 140 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 141 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 142 | 99.3652.00 | VITE M10x20 UNI 5931 12,9 | | 3 |
| 143 | 65.2106.66 | PARASPRUZZI PER SOFFIETTO | | 3 |
| 145 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 146 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 147 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 148 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 149 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 150 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 16.3 ESPLOSO E DISTINTA RICAMBI TR IN VERSIONE ORIZZONTALE



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0109.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 25 | 65.0206.55 | ALBERO A GOMITI C. 130 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

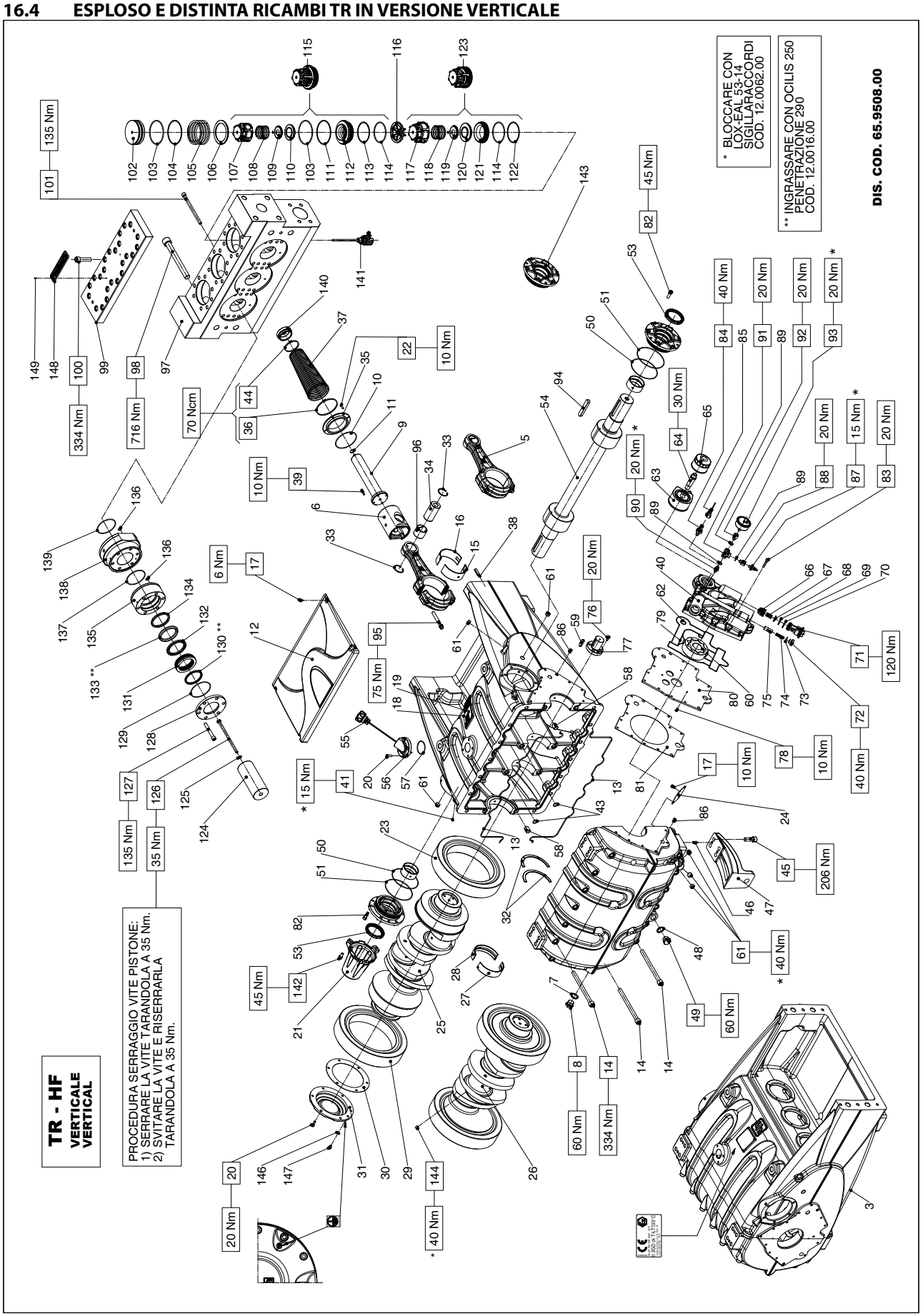
Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| 125 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 126 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 127 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 136 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 62.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| 139 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 140 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 141 | 99.3652.01 | VITE M10x20 UNI 5931 12,10 | | 4 |
| 142 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 143 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 145 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 146 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 147 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 148 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 16.4 ESPLOSO E DISTINTA RICAMBI TR IN VERSIONE VERTICALE



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 3 | 65.0109.01 | CARTER - COMPLETO | | 1 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 |
| 10 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 12 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 |
| 25 | 65.0206.55 | ALBERO A GOMITI C. 130 | | 1 |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 |
| 35 | 65.2107.66 | FLANGIA PER SOFFIETTO | | 3 |
| 36 | 92.8110.00 | FASCETTA D. 98-109 | | 3 |
| 37 | 65.2110.47 | SOFFIETTO | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 |
| 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 44 | 92.8100.00 | FASCETTA D. 58-69 | | 3 |
| 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 46 | 97.6230.00 | SPINA D. 10x24 UNI 6364 | | 8 |
| 47 | 65.2007.13 | PIEDE VERTICALE | | 4 |
| 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| 125 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 126 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 127 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 136 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 65.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| 139 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 140 | 65.2106.66 | PARASPRUZZI PER SOFFIETTO | | 3 |
| 141 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 142 | 99.3652.00 | VITE M10x20 UNI 5931 12,9 | | 3 |
| 143 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 144 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 146 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 147 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 148 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 149 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 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: | SR50 - SR65 - SR75<br>TR50 - TR60 - TR70 - TR75 |

Risulta essere conforme alla Direttiva Macchine 2006/42/CE
Norme applicate: UNI EN ISO 12100:2010 - UNI EN 809:2000

La pompa sopra identificata rispetta i seguenti 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.

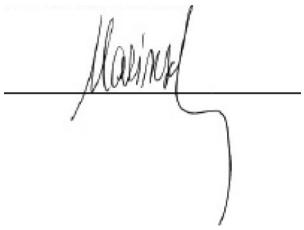
Inoltre il produttore si impegna a rendere disponibile, a seguito di una richiesta adeguatamente motivata, copia della documentazione tecnica pertinente la pompa nei modi e nei termini da definire.

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

Persona autorizzata a redigere la dichiarazione: L'amministratore delegato Ing. Paolo Marinsek

Reggio Emilia - Febbraio 2014 — Firma:



## SOLO PER POMPE IN CONFIGURAZIONE ATEX

## DICHIARAZIONE CE DI CONFORMITÀ

(Ai sensi dell'allegato X della Direttiva Europea 94/4/CE - ATEX)

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

| | |
|---|---|
| Denominazione: | POMPA |
| Tipo: | Pompa alternativa a pistoni per acqua ad alta pressione |
| Marchio di fabbrica: | INTERPUMP GROUP - PRATISSOLI |
| Modello: | SR50 - SR65 - SR75<br>TR50 - TR60 - TR70 - TR75 |

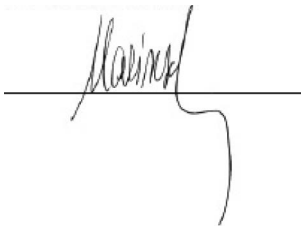
contrassegnate con Ex gruppo II, categoria 2 GD, protezione ck e con classe di temperatura T4/T135°C, quando ordinate come pompe ATEX, risultano essere conformi alla Direttiva 94/9/CE ATEX e possono essere utilizzate in atmosfera potenzialmente esplosiva nei limiti delle zone classificate, nell'osservanza delle prestazioni dichiarate ed installate e utilizzate nel rispetto delle indicazioni del presente libretto, di quello generale e/o di quello specifico di ogni pompa.

Il produttore utilizza tutte le misure necessarie per garantire che le pompe prodotte siano conformi a quanto dichiarato.

Norme europee applicate:
UNI EN 1127-1:2011; UNI EN 13463-1:2009; UNI EN 13463-5:2011; UNI EN 13463-8:2003

Fascicolo tecnico depositato presso DNV ITALIA (**N° 0496**)

L'amministratore delegato Ing. Paolo Marinsek
Reggio Emilia - Febbraio 2014 — Firma:



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# 1 INTRODUCTION

This manual contains the instructions for use and maintenance of SR-TR series pumps and must be read carefully 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



**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.



**Symbol for protection against explosion.**
This defines special safety requirements for the use of the pumps in areas identified in accordance with the ATEX Directive.
**When pumps are ordered in the ATEX configuration** because they are going to work in areas with a potentially explosive atmosphere, you must **STRICTLY comply with the notes given under the headings with this symbol and the instructions in the supplementary instructions manual "ATEX EXPLOSION PROTECTION"**.

# 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 injury to people and/or damage to property.
Anyone assembling or using high pressure systems must possess the necessary competence to do so, knowing the characteristics of the components that will assemble/use and take all precautions necessary 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 guards 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 unauthorised personnel and, wherever possible, restricted or fenced. Personnel authorised 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 check that:

1. The high pressure system is properly powered (see point 9.4).
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.

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/her safety 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 conduct must be dictated by common sense and responsibility.
2. The operator must always wear a helmet with a protective visor, waterproof apparel and boots that are appropriate for the application 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 generally best to organise 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 all access and free from objects that if inadvertently struck by a pressure jet may 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 may be 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 at 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 authorised personnel.
3. Assembly and disassembly of the pump and the various components must only be carried out by authorised 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 - Gpm

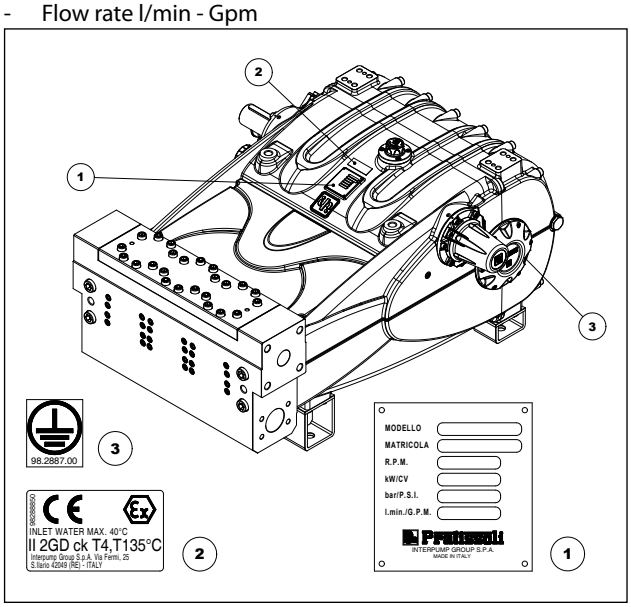



Fig. 1

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

For pumps ordered with the **ATEX** configuration:
Pos. 2 - plate with **specific ATEX marking for explosion protection**.
Pos. 3 - plate for locating the **grounding screw**.

# 5 HIGH FLOW PUMP TECHNICAL CHARACTERISTICS

**SR PUMP TECHNICAL CHARACTERISTICS (@ 520 RPM)**

| Model | Rpm | Flow rate | | Pressure | | Power | |
|---|---|---|---|---|---|---|---|
| | | l/min | Gpm | bar | Psi | kW | HP |
| SR 50 | 1500 | 276 | 73 | 400 | 5800 | 211 | 287 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 65 | 1500 | 466 | 123 | 250 | 3625 | 222.5 | 302.5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 75 | 1500 | 620 | 164 | 200 | 2900 | 236.8 | 322 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

**TR PUMP TECHNICAL CHARACTERISTICS (@ 520 RPM)**

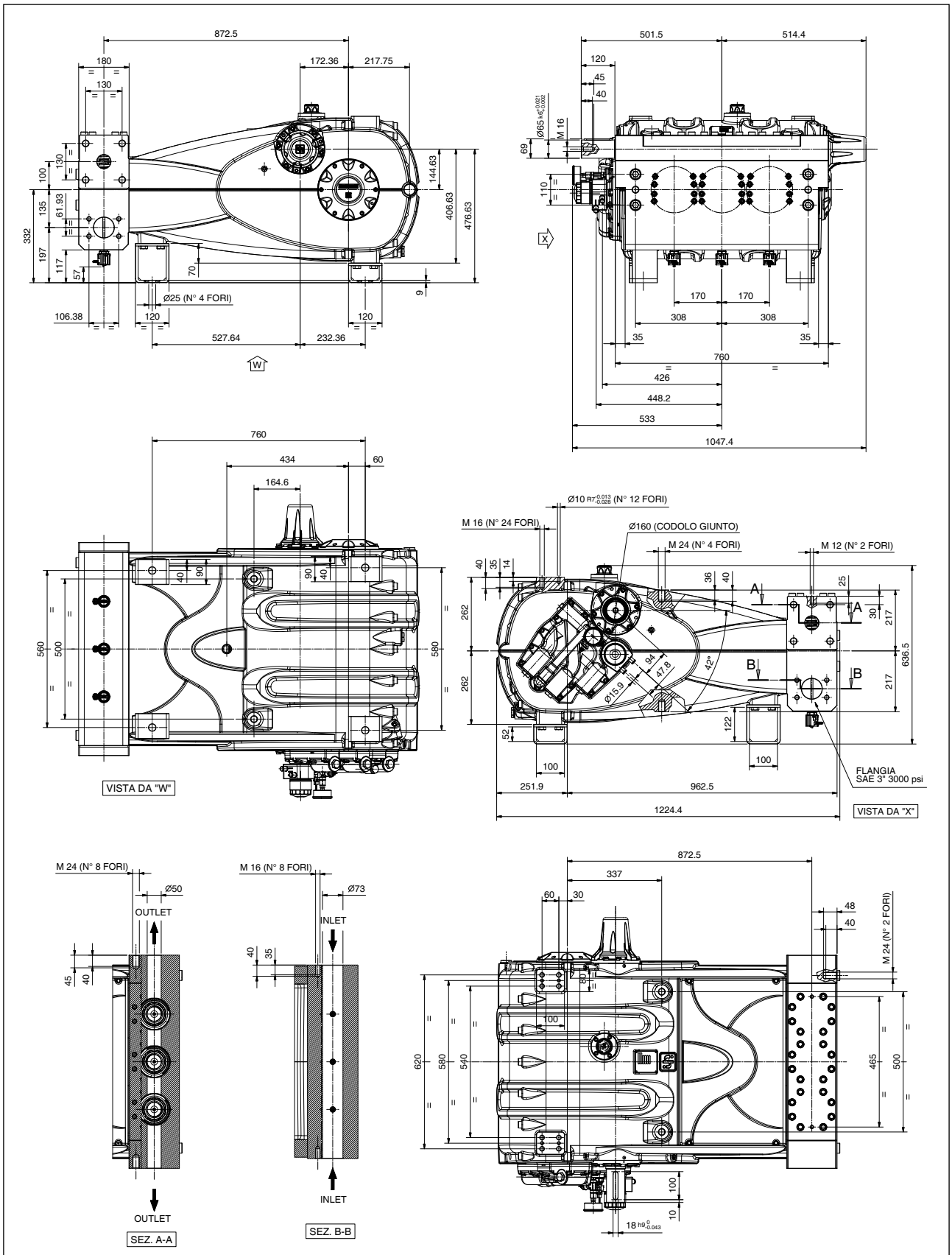
| Model | Rpm | Flow rate | | Pressure | | Power | |
|---|---|---|---|---|---|---|---|
| | | l/min | Gpm | bar | Psi | kW | HP |
| TR 50 | 1500 | 398 | 105 | 400 | 5800 | 304 | 413.5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 60 | 1500 | 573 | 151.4 | 300 | 4350 | 328.3 | 446.5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 70 | 1500 | 780.5 | 206 | 220 | 3190 | 328 | 446 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 75 | 1500 | 896 | 236.7 | 200 | 2900 | 342 | 465 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

## 5.1 Pump moments of inertia reduced at the PTO

| PUMP SERIES | RPM | J (kg mm$^2$) |
|---|---|---|
| SR | 1500 | 231600 |
| | 1800 | 182400 |
| | 2200 | 140700 |
| TR | 1500 | 241200 |
| | 1800 | 189100 |
| | 2200 | 145200 |

## 6 DIMENSIONS AND WEIGHTS OF SR HIGH FLOW PUMPS

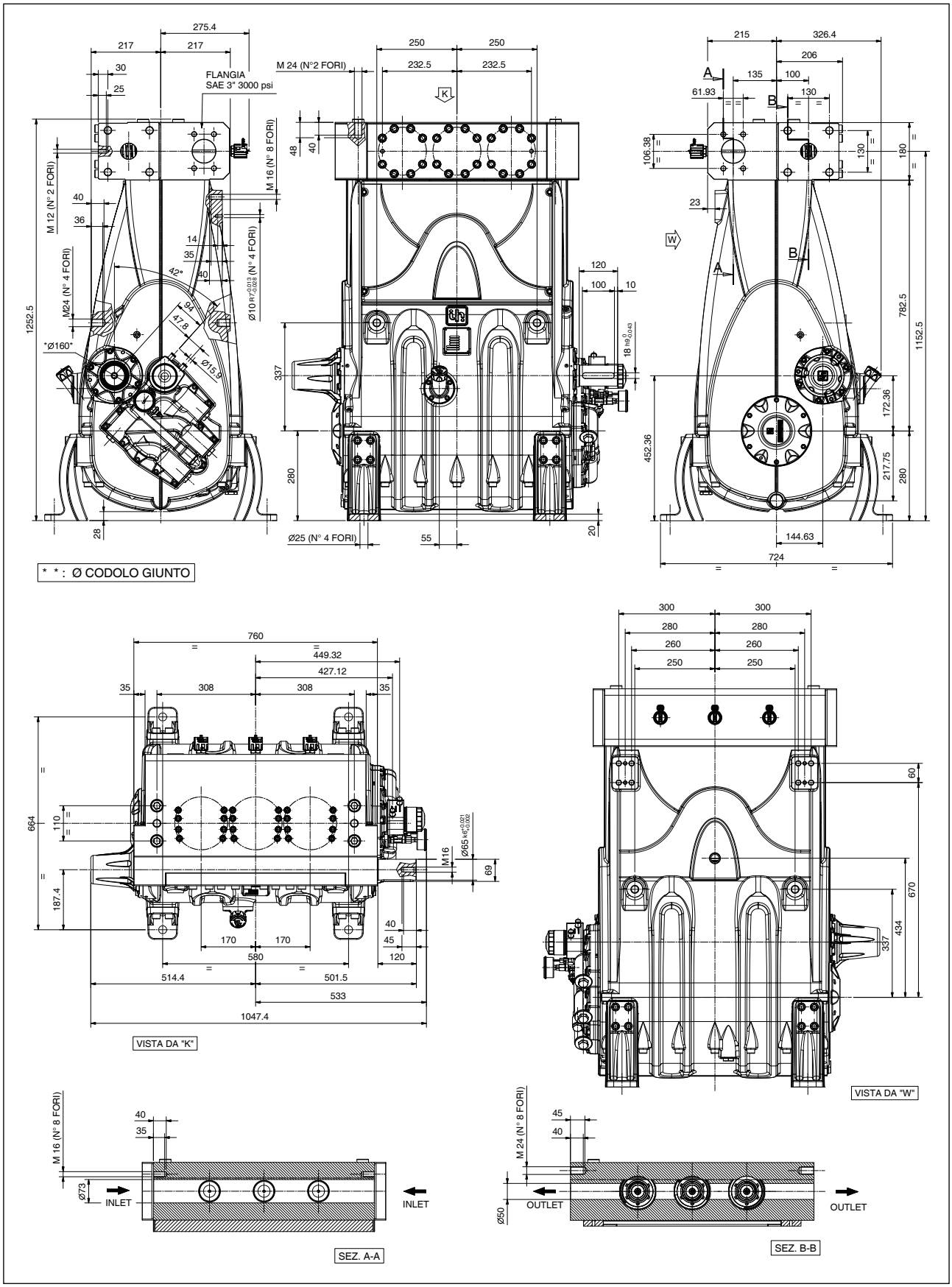
For dimensions and weights of SR series HORIZONAL pumps, refer to Fig. 2.




**Dry weight 1150 kg.**

Fig. 2

For dimensions and weights of SR series VERTICAL pumps, refer to Fig. 2/a.

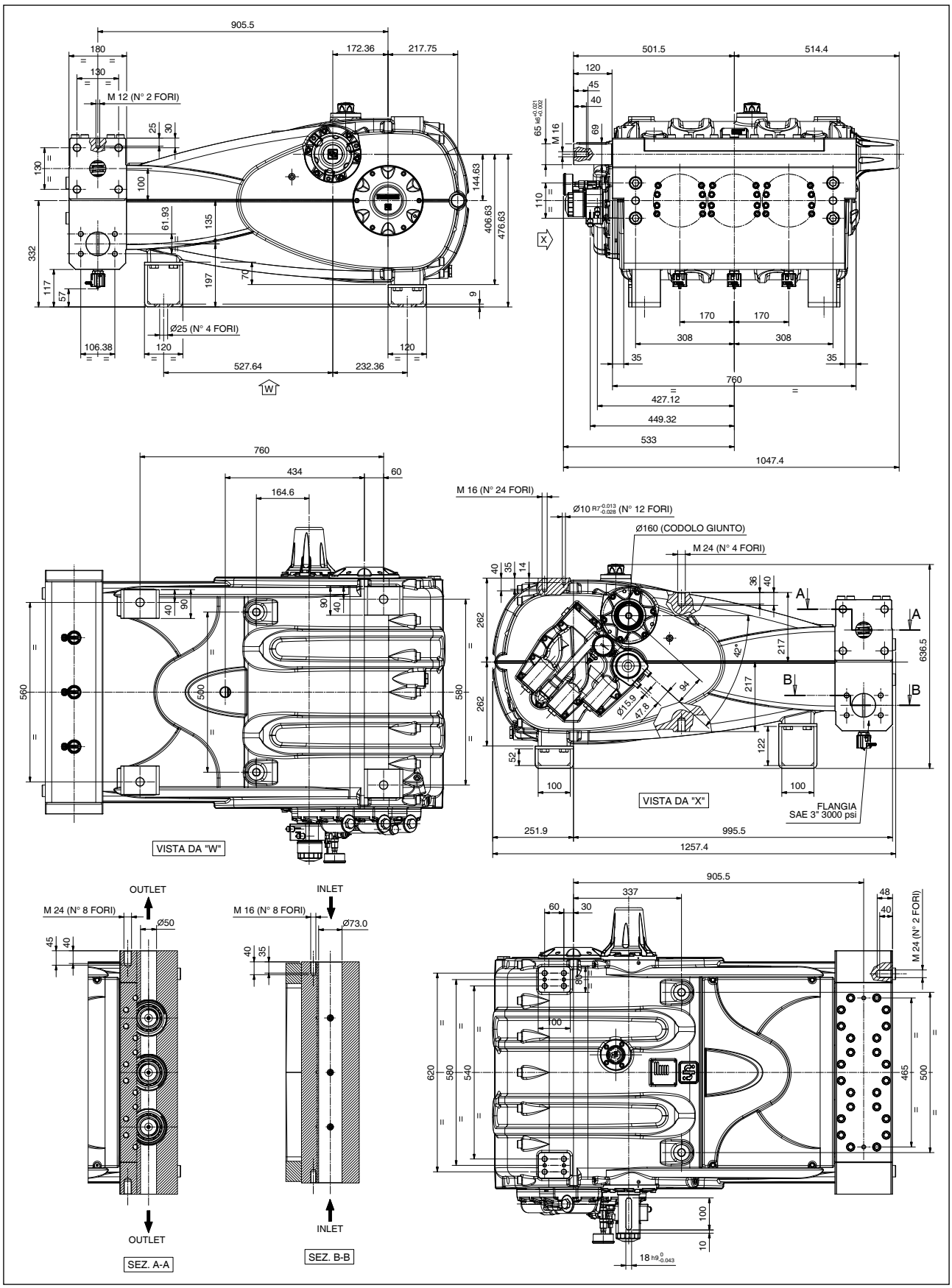



**Dry weight 1160 kg.**

Fig. 2/a

## 6.1 DIMENSIONS AND WEIGHTS OF TR HIGH FLOW PUMPS

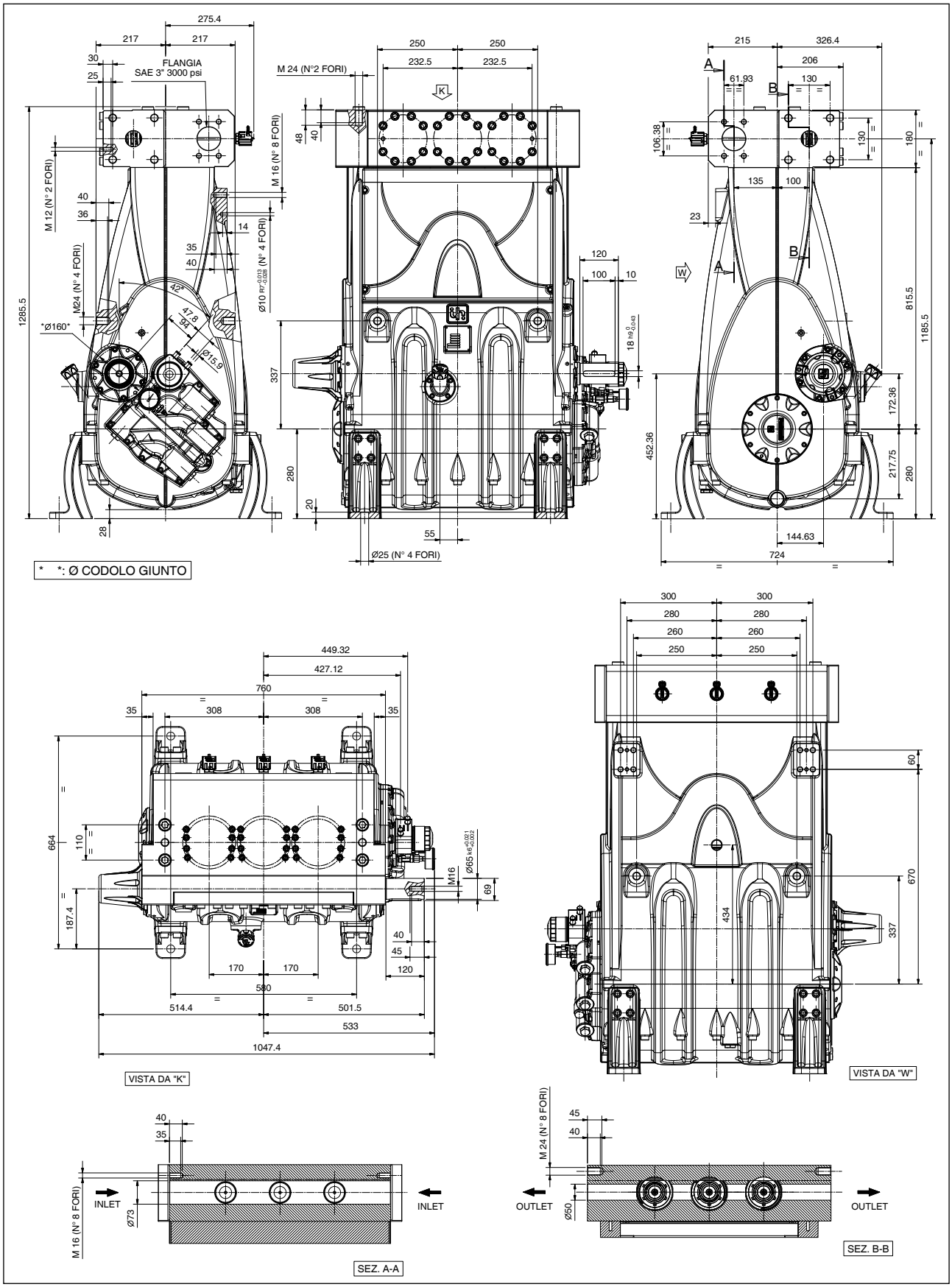
For dimensions and weights of TR series HORIZONAL pumps, refer to Fig. 3.




**Dry weight 1185 kg.**

Fig. 3

For dimensions and weights of TR series VERTICAL pumps, refer to Fig. 3/a.




**Dry weight 1195 kg.**

Fig. 3/a

# 7 OPERATING INSTRUCTIONS

SR - TR pumps, when not ordered with the ATEX configuration, are designed to operate in environments with atmospheres that are **not** potentially explosive and with filtered water (see point 9.6).
Other liquids can be used only upon formal approval by the ***Engineering Department*** or ***Customer Service Department***.

## 7.1 Water temperature

Although the maximum permissible water temperature is 40°C, the pump can be used with water at up to 60°C, but only for short periods. In this case we recommend consulting the ***Engineering Department*** or ***Customer Service Department***.

***ATEX*** version: The maximum permissible water temperature is **40°C**.

## 7.2 Maximum pressure and flow rate

The rated specifications stated in our catalogue are the maximum that can be obtained by the pump. **Independently** of the power used, the maximum pressure and rpm indicated in the specification label can never be exceeded except upon prior formal authorisation by our ***Engineering Department*** or ***Customer Service Department***.

## 7.3 Minimum operating speed

The minimum speed allowed for these types of pumps is **250 rpm at the crankshaft**; any speed other than the value shown in the performance table (see chapter 5) must be expressly and formally authorised by the ***Engineering Department*** or ***Customer Service Department***.

## 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.
If the operator is at a distance of less than 1 metre, he/she must use appropriate hearing protection 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 Recommended lubricating oil brands and type

### 7.6.1 Oil type

The pump is shipped with TOTAL-ERG MISOLA MAP SH-150 lubricating oil, which ensures correct use of the pump in ambient temperatures from -10°C to +40°C.
For alternative temperatures use single viscosity lubricating oil with adequate viscosity.
For pump applications in low temperature conditions use suitable heaters.
Forced lubrication is provided by the lube pump, which ensures the correct quantity of oil in all points required by the moving parts.
The need to use single viscosity oil is due to two reasons:

- To assist users in avoiding to have to change oil viscosity to comply with ambient temperature or seasonal changes.
- To significantly increase the time between oil changes, consequently reducing the need for maintenance work; refer to the "preventive maintenance" table in chapter 11.

### 7.6.2 Recommended oil brands

TOTAL-ERG MISOLA MAP SH-150.
MOBIL SHC 629.

### 7.6.3 Required oil characteristics

If the recommended oil brands are unavailable or difficult to find, use alternative oils provided they comply with the following technical specifications:

- Viscosity at -10°C ≤4000 cSt.
- Viscosity at 40°C ≤200 cSt.
- Viscosity at 100°C ≤18 cSt.
- Viscosity index: ≥135 cSt.
- Pour point: ≥ -25°C
- Additive grade GL1 - GL2.

If necessary, consult the **Customer Service Department**.
Check the oil level using the dipstick ①, Fig. 4.
If necessary, top up via the oil cap ①, Fig. 4.
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. 4. (Use the plug in pos. 2/a for the vertical version).
The oil check and change must be carried out as indicated in chapter 11.
The required oil quantity is: **52 litres for SR-TR horizontal version; 37 litres for SR-TR vertical version**.

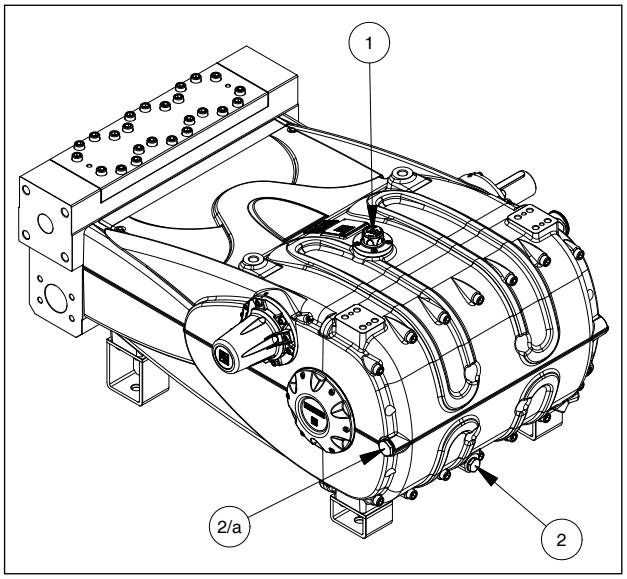



Fig. 4

Set up the plant so that the oil temperature never exceeds 110°C (230°F) during pump operation under any circumstances.
For this purpose use the oil temperature indicator described in point 9.10.
**CAUTION:** Use only oil with a flash point higher than 200°C.

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

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

## 8 PORTS AND CONNECTIONS

SR-TR series pumps are equipped with (see Fig. 5 and Fig. 6):
2 inlet ports ("IN"): SAE G3" - 3000 PSI, see "EXPLODED VIEW OF INLET - OUTLET FLANGES. SR-TR" CODE 65950900 (Fig. 7).
Line connection to any of the two ports is indifferent for proper pump functioning. The unused ports must be hermetically closed.
2 outlet ports ("OUT"): see "EXPLODED VIEW OF INLET - OUTLET FLANGES. SR-TR" CODE 65950900 (Fig. 7).
1 DRAIN port: with G1" hole in the bottom of the cover to monitor any leakage of water due to pressure seals wear. If you find evidence of leaks, refer to the repair manual.
**The port must always remain open and may be connected to a detection system if required.**

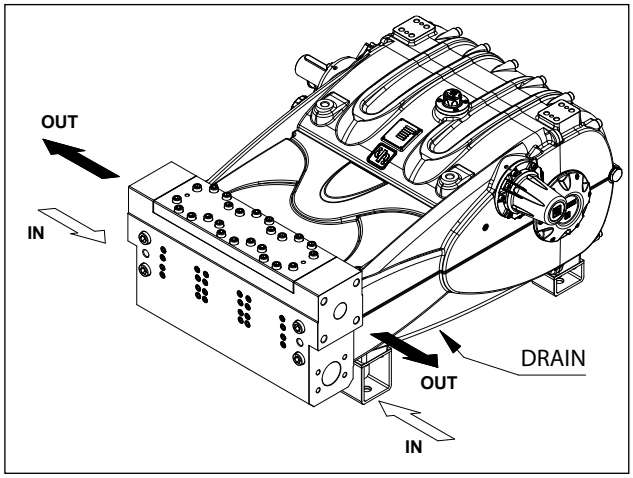



Fig. 5

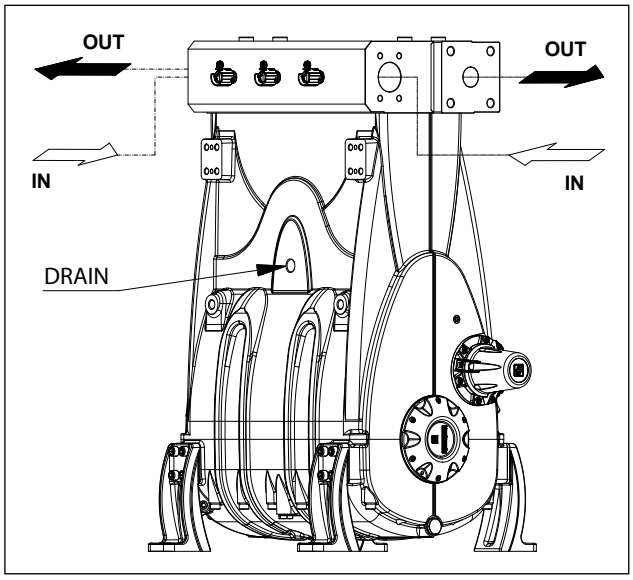
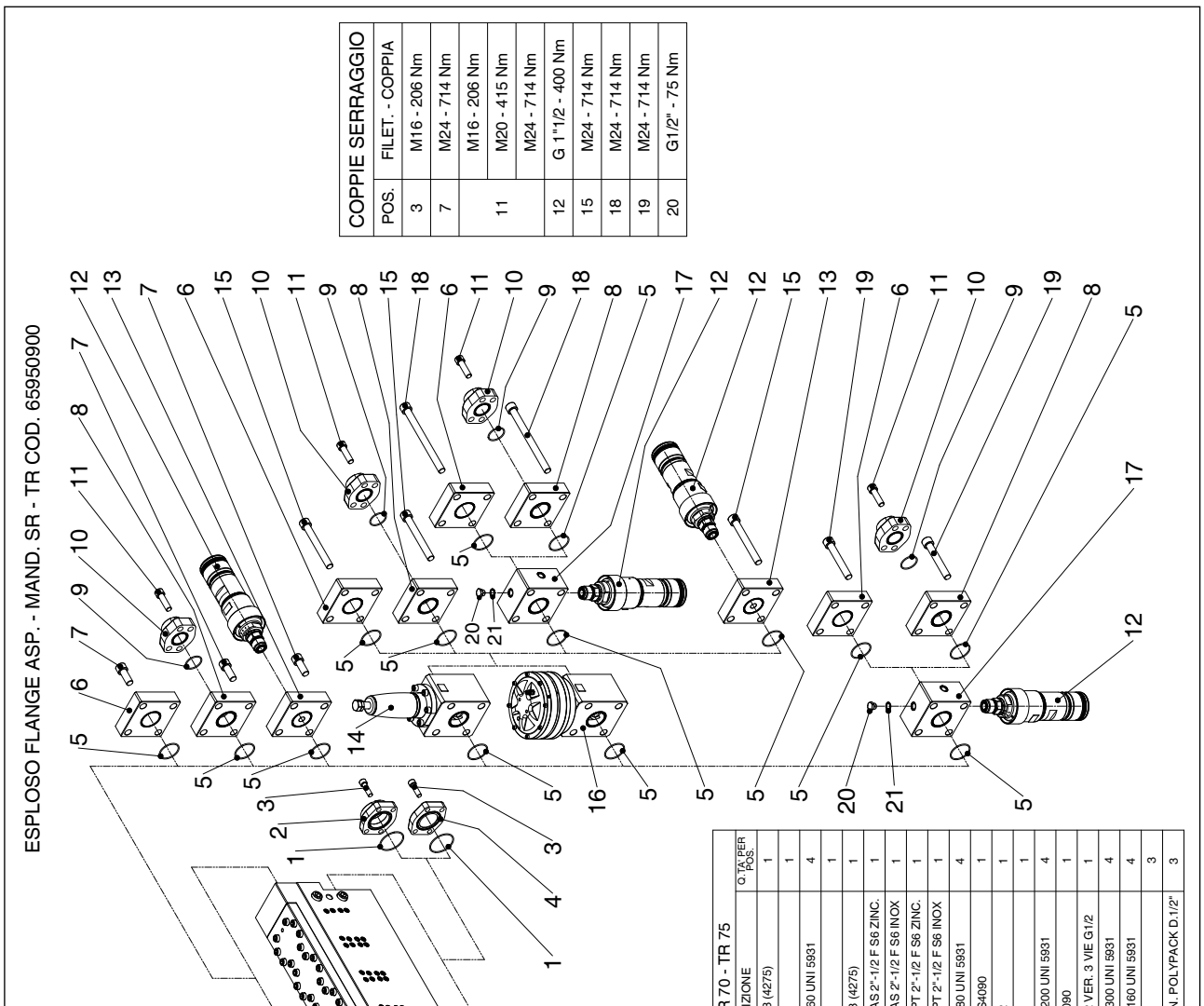



Fig. 6

## 8.1 Inlet and Outlet layout diagram




| COPPIE SERRAGGIO | |
|---|---|
| POS. | FILET. - COPPIA |
| 3 | M16 - 206 Nm |
| 7 | M24 - 714 Nm |
| 11 | M16 - 206 Nm |
| | M20 - 415 Nm |
| | M24 - 714 Nm |
| 12 | G 1"1/2 - 400 Nm |
| 15 | M24 - 714 Nm |
| 18 | M24 - 714 Nm |
| 19 | M24 - 714 Nm |
| 20 | G1/2" - 75 Nm |

POMPE SR - TR TUTTE LE VERSIONI

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| ASPIRAZIONE | 1 | 90414100 | OR D. 85.32X3.53 (4337) | 1 |
| | 2 | 96458500 | FLANGIA DIR. GAS 3" F S3 ZINC. | 1 |
| | | 96459000 | FLANGIA DIR. GAS 3" F S3 INOX | 1 |
| | | 96459500 | FLANGIA DIR. NPT 3" F S3 ZINC. | 1 |
| | | 96460000 | FLANGIA DIR. NPT 3" F S3 INOX | 1 |
| | 3 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 4 | 96489500 | FLANGIA CIECA 3" S3 ZINC. | 1 |
| | | 96490000 | FLANGIA CIECA 3" S3 INOX | 1 |

POMPE SR 50 - TR 50

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021466 | FLANGIA 1"1/2 | 1 |
| | 9 | 90407900 | OR D. 47.22X3.53 (4187) | 1 |
| | 10 | 96468500 | FLANGIA DIR. GAS 1"-1/2 F S6 ZINC. | 1 |
| | | 96469000 | FLANGIA DIR. GAS 1"-1/2 F S6 INOX | 1 |
| | | 96469500 | FLANGIA DIR. NPT 1"-1/2 F S6 ZINC. | 1 |
| | | 96470000 | FLANGIA DIR. NPT 1"-1/2 F S6 INOX | 1 |
| | 11 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA PNR4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 17 | 36273156 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 18 | 99537000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 19 | 99534000 | TAPPO G1/2X13 | 3 |
| | 20 | 98218100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |
| | 21 | 93197100 | | |

POMPE SR 65 - TR 60

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021366 | FLANGIA 2" | 1 |
| | 9 | 90409900 | OR D. 56.74X3.53 (4225) | 1 |
| | 10 | 96473500 | FLANGIA DIR. GAS 2" F S6 ZINC. | 1 |
| | | 96474000 | FLANGIA DIR. GAS 2" F S6 INOX | 1 |
| | | 96474500 | FLANGIA DIR. NPT 2" F S6 ZINC. | 1 |
| | | 96475000 | FLANGIA DIR. NPT 2" F S6 INOX | 1 |
| | 11 | 99529000 | VITE TCEI M20X70 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

POMPE SR 75 - TR 70 - TR 75

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021266 | FLANGIA 2"1/2 | 1 |
| | 9 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 10 | 96478500 | FLANGIA DIR. GAS 2"-1/2 F S6 ZINC. | 1 |
| | | 96479000 | FLANGIA DIR. GAS 2"-1/2 F S6 INOX | 1 |
| | | 96479500 | FLANGIA DIR. NPT 2"-1/2 F S6 ZINC. | 1 |
| | | 96480000 | FLANGIA DIR. NPT 2"-1/2 F S6 INOX | 1 |
| | 11 | 99532000 | VITE TCEI M24X80 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

Fig. 7

# 9 PUMP INSTALLATION

## 9.1 Installation

The fixing holes on the feet are 25 mm in diameter.
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.
There are 4 M24 holes on the pump to accept lifting eyebolts to facilitate installation of the unit, as shown in the figures below.

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






**Earthing:** the pump must be connected to an earth conductor using the stainless steel M8 screw and stainless steel serrated washer marked with a YELLOW label.
See "ATEX EXPLOSION PROTECTION" manual.

**Remove the oil filler plug located on the cover and replace it with the oil level dipstick.**
The dipstick must always be accessible, also when the unit is installed.

**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).

In all cases the transmission must be assembled correctly to avoid incorrect or harsh operation of the connection parts and to prevent excessive wear, temperature rise and/or hazardous breakages that may create potential sources of ignition and explosion. *See "ATEX EXPLOSION PROTECTION" manual.*

## 9.2 Rotation direction

The rotation direction can be clockwise or anticlockwise either on the left or right side (see Fig. 8).

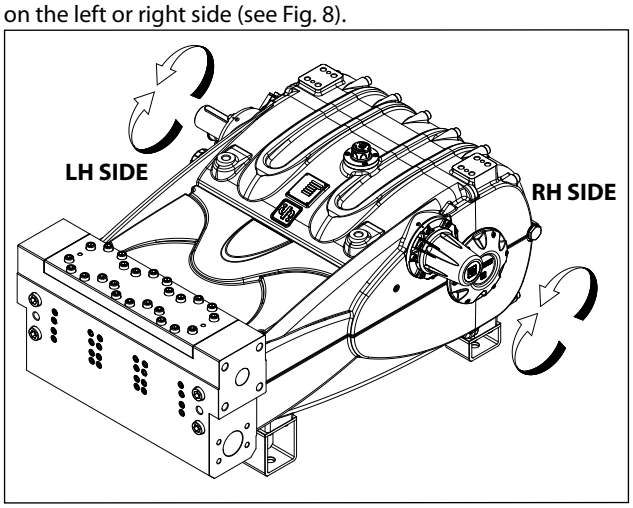



Fig. 8

Drive can be connected to the pump on either side; on the **LEFT SIDE** pay attention to the protrusion of the lube pump.
The end cover must be fitted over the unused PTO.

## 9.3 Hydraulic connections

In order to isolate the circuit from vibrations produced by the pump the first section of the piping adjoining the pump (both suction and outlet) must be composed of a flexible hose. The suction hose must be sufficiently rigid to prevent deformation due to the negative pressure exerted by the action of the pump.

## 9.4 Pump supply

SR-TR series pumps must always be installed with a pressure supply delivered by a booster pump.
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 before the plunger pump.**
**It is advisable to install a pressure switch on the supply line downstream of the filters protecting the pump.**

## 9.5 Suction line

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

1. Minimum inside diameter as indicated in the tables in point 9.8 and anyway equal to or greater than the diameter at the pump manifold

   Localised restrictions should be avoided along the suction line as these can cause pressure drops with resulting cavitation. Avoid 90° elbows, connections with other piping, restrictions, reverse gradients, inverted U-curves and Tee connections.

2. The layout must be designed with the aim of preventing cavitation.
3. Ensure the line is perfectly hermetic and constructed so it remains perfectly airtight over time.
4. Ensure that the suction line will not empty, even partially, when the pump is stopped.

5. Do not use hydraulic fittings, 3 or 4-way unions, adapters, swivel joints, etc. as they could impair pump performance.
6. Do not install Venturi tubes or injectors for detergent intake.
7. Do not use foot valves or other types of unidirectional valves.
8. Do not recirculate the bypass valve outlet directly into the suction line.
9. Install suitable baffles inside the tank to prevent the water flow from the bypass and the tank supply line creating vortices or turbulence near the pump supply outlet 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.

### 9.6 Filtration

Two filters must be installed on the pump suction line, positioned as indicated in Fig. 9 and Fig. 9/a.

**With manual control valve.**

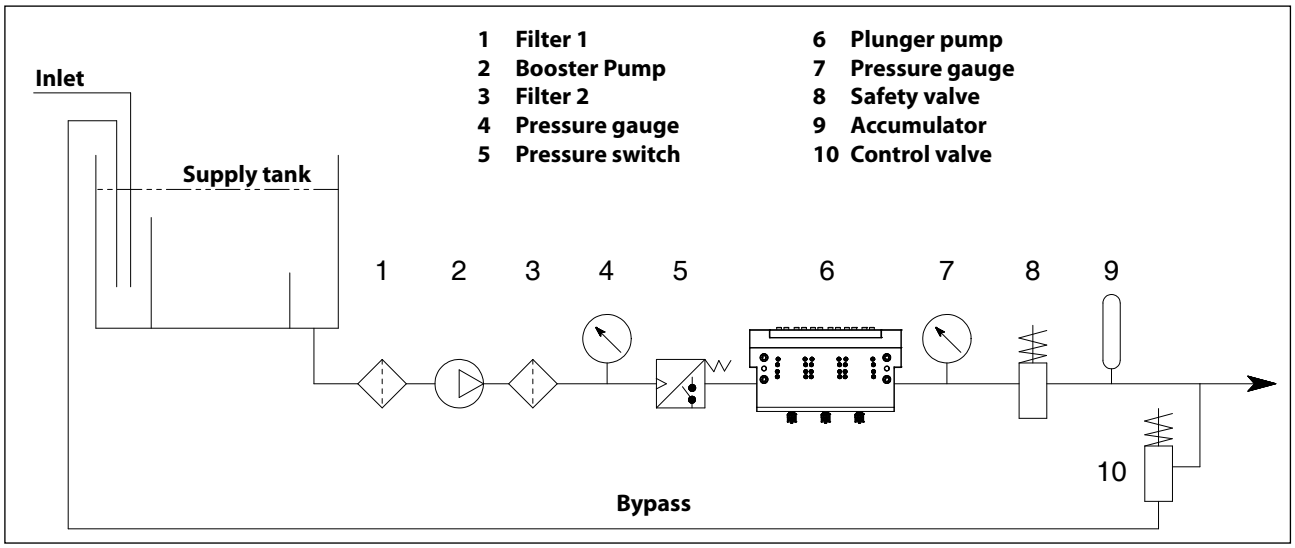



Fig. 9

**With pneumatic control valve**

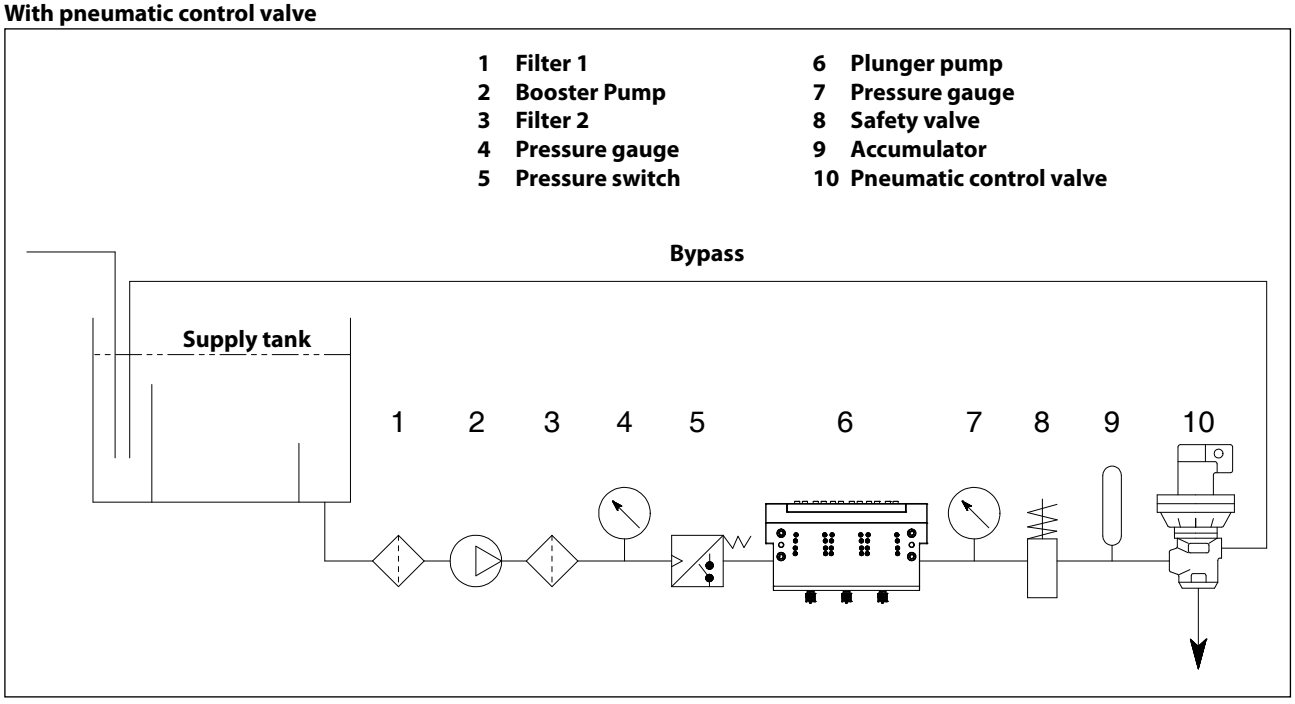



Fig. 9/a

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 pump nominal flow rate.
2. Inlet/outlet port diameters no smaller than the pump suction line.
3. Filtration grade between 200 and 360 µm.

**For smooth pump operation plan for regular filter cleaning according to the actual use of the pump, the pumped water quality and the effective clogging conditions.**

### 9.7 Outlet line

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

1. The inside piping diameter must be sufficient to ensure correct fluid velocity, see tables in point 9.8.
2. The first section of the line connected to the pump outlet must be a flexible hose in order to isolate the vibrations produced by the pump from the other parts of the installation.
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 pressure relief valve.
5. Use pressure gauges able to withstand the pulsating loads typical of plunger pumps.
6. During the design stage take account of outlet line pressure drops, resulting in lower pressure at the supplied service than the pressure measured at the pump.
7. For applications in which pulses produced by the pump on the outlet line may prove harmful or are otherwise undesirable, install a pulsation dampener of sufficient size.

### 9.8 Circuit piping internal diameter

The following table shows the internal diameter values for the suction and outlet piping.

| PUMP SR | | |
|---|---|---|
| **MODEL** | **SUCTION** | **OUTLET** |
| SR 50 | SAE 3" - 3000 PSI | SAE 1"1/2 - 6000 PSI |
| SR 65 | SAE 3" - 3000 PSI | SAE 2" - 6000 PSI |
| SR 75 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |

| PUMP TR | | |
|---|---|---|
| **MODEL** | **SUCTION** | **OUTLET** |
| TR 50 | SAE 3" - 3000 PSI | SAE 1"1/2 - 6000 PSI |
| TR 60 | SAE 3" - 3000 PSI | SAE 2" - 6000 PSI |
| TR 70 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |
| TR 75 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |

For the composition of inlet and outlet flanges refer to the "EXPLODED VIEW OF SR-TR INLET-OUTLET FLANGES" Fig. 7.
If necessary, contact the Engineering Department or Customer Service Department.

### 9.9 Water/oil heat exchanger connection

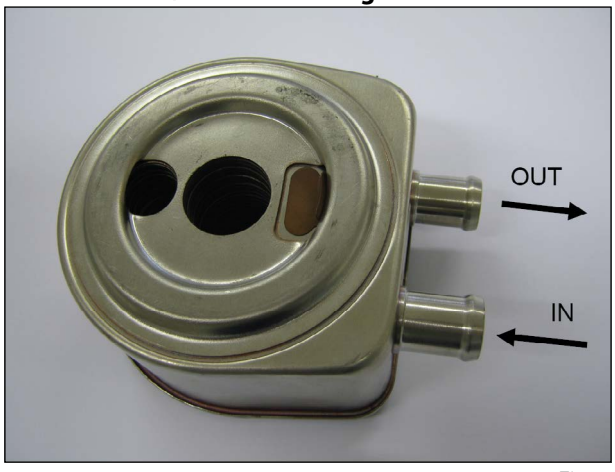



Fig. 10

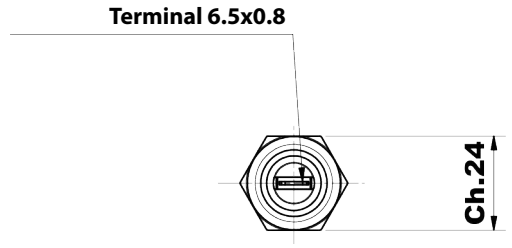
For optimal performance connect the exchanger in the reverse flow direction (see Fig. 10).
Water flow rate:

a) Maximum efficiency 25 l/min.
b) Medium efficiency 20 l/min.
c) Minimum efficiency 12 l/min.

If the pump operates in ambient temperatures below 5°C (41°F) the heat exchanger is not essential.
Refer to chapter 11 for maintenance information.

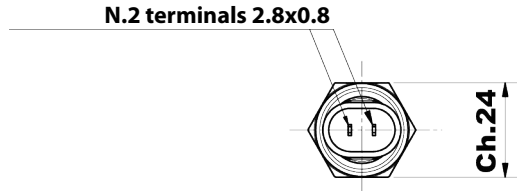
### 9.10 Lube pump assy

1) Oil filter cartridge - to be hand-tightened. Refer to chapter 11 for maintenance information.
2) 0...16 bar pressure gauge for periodic lube oil pressure checks.
3) Pressure switch: NORMALLY OPEN (normally closed on request); 12 V.
   For stationary units it is good practice to connect the pressure switch via a protection system.
4) Oil thermostat: NORMALLY CLOSED; 12 V.




**PRESSURE SWITCH CONNECTION**

**TRIP PRESSURE: 0.3 ±0.15 BAR**




**TEMPERATURE INDICATOR SWITCH CONNECTIONS**

**TRIP TEMPERATURE: 105°C±5°C**

**WARNING: connect the two sensors to a NON INDUCTIVE LOAD; alternatively replace the pressure switch and thermostat with ATEX approved components having equivalent characteristics.**

## 10 START-UP AND OPERATION

### 10.1 Preliminary checks (commissioning)

Before start-up, ensure that:

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

1. The suction line guarantees a durable hermetic seal.
2. Any shut-off valves between the supply source and the pump are fully open. During start-up the outlet line must have free discharge to facilitate the expulsion of air from the pump manifold and assist rapid priming of the pump.
3. All suction and outlet fittings and connections must be properly tightened.
4. The coupling tolerances on the pump/transmission driveline (half-coupling misalignment, angle of universal joint, etc.) must remain within the limits prescribed by the transmission manufacturer.
5. The oil in the pump crankcase is at the recommended level, as checked with the dipstick on the top of the crankcase (pos. 1 Fig. 11 and Fig. 11/a).

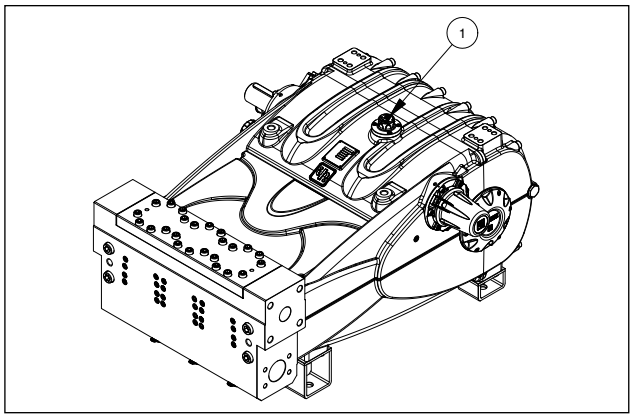



Fig. 11

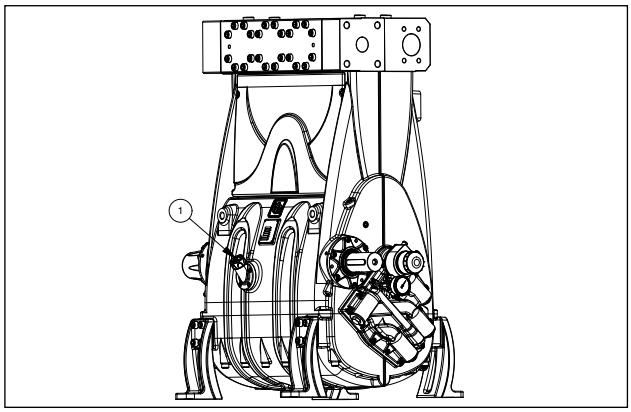



Fig. 11/a

**In case of prolonged storage or long-term inactivity of the pump, restore proper operation of the suction valves by opening the three valve-lifters.**
**(See pos.② Fig. 12). Make sure you have closed the valves before starting the pump. For the "work" and "rest" positions, see Fig. 12/a.**

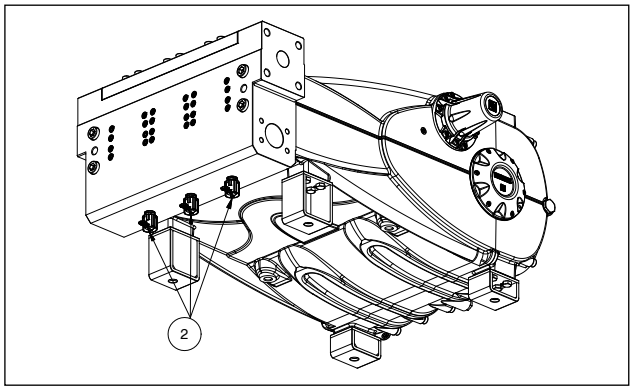



Fig. 12

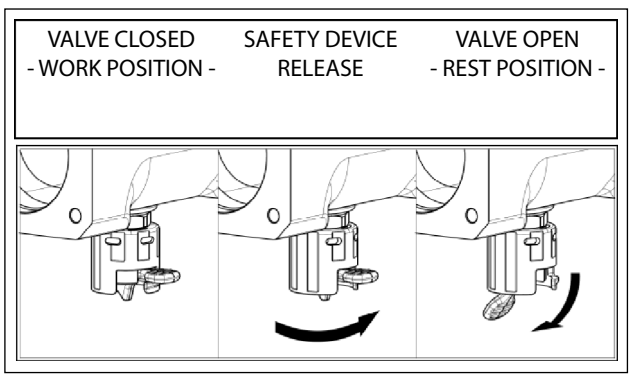



Fig. 12/a

### 10.2 Start-up

1. Check the pump is supplied correctly.
2. Start-up the pump in no-load conditions.
3. Check that the rotation rpm during operation does not exceed the nominal rpm of the pump.
4. Let the pump run for no less than 3 minutes, before putting it under pressure.
5. Before each pump stop, discharge pressure by means of the control valve or with any pressure discharge devices.

## 11 PREVENTIVE MAINTENANCE

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

| PREVENTIVE MAINTENANCE | | |
|---|---|---|
| **Every 1000 hours** | **Every 1500 hours** | **Every 3000 hours** |
| Check oil level | | |
| | Check/Replace*:<br>Valves<br>Valve seats<br>Valve springs<br>Valve guides | Oil and oil filter change<br>Bellows replacement (vertical version) |
| | Replacement *:<br>H.P. seals<br>L.P. seals | |

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

### 11.1 Bellows (SR - TR vertical version)

Check that the bellows fastening clamps are properly tightened after the first **1000 hours** of operation.
**Replace the bellows every 3000 hours of operation.**
To replace, follow the instructions given in the **repair manual**.

### 11.2 Water/oil heat exchanger

The heat exchanger cleaning intervals must be established on the basis of the water hardness of the application. It is good practice to clean the exchanger **every 2000 hours if water hardness is ≤ 30°f; every 1000 hours for hardness > 30°f and ≤ 40°f. Above 40°f water hardness the exchanger should be cleaned every 500 hours**.
Flush the exchanger using commercial antiscale products; it is not necessary to dismantle the unit.
N.B.: the heat exchanger is constructed of **STAINLESS STEEL (AISI 303)**.

**Mechanical parts lubrication circuit protection:** set up the system so that the pressure switch on the forced lubrication pump causes the SR-TR pump to stop if the oil pressure falls

| PREVENTIVE MAINTENANCE | |
|---|---|
| **SUBJECT** | **INTERVAL** |
| Check lubrication pressure gauge calibration | Every 10000 hours |
| Visually inspect the manifold for possible water leaks | Every 500 hours |

# 12 PUMP STORAGE

## 12.1 Method for filling pump with anti-corrosion emulsion or anti-freeze solution using an external diaphragm pump based on the layout shown in point 9.6

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 a transmission fluid such as Shell Donax 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 too tightly; ensure that there are no folds.

# 13 PRECAUTIONS AGAINST FROST



Follow the instructions in chapter 12 (see point 12.1) in areas and times of the year at risk of sub-zero temperatures.



**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 warranty period and conditions are contained in the purchase agreement.
The warranty will 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 device settings have been tampered with or the devices have been 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) incorrect positioning or sizing of pipes
   7) unauthorised design modifications
   8) cavitation

# 15 OPERATING FAULTS AND THEIR POSSIBLE CAUSES



**No flow from pump at start-up:**
- Pump is not primed and is running dry.
- No suction water.
- Valves are jammed.
- Outlet line is closed and thus prevents the release of air trapped 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 fouled or too small.
- Booster pump supplies insufficient pressure or flow rate.
- Pump is not primed due to insufficient suction pressure or outlet is closed during priming.
- The pump is not primed due to valve jamming.
- Worn valves.
- Worn pressure seals.
- Faulty operation of pressure control valve.
- Problems on the transmission.





**Pump does not supply nominal flow rate / excessive noise:**
- Insufficient supply (see causes described above).
- Pump speed is below the rated speed.
- Excessive internal leakage of pressure control valve.
- Worn valves.
- Excessive internal leakage of pressure seals.
- Cavitation due to:
  1) Improper sizing of suction pipes / undersized diameters.
  2) Insufficient flow rate.
  3) High water temperature.



**Insufficient pressure supplied by pump:**
- Service (nozzle) demand is or has become higher than pump capacity.
- Insufficient pump speed.
- Excessive internal leakage from pressure seals.
- Faulty operation of pressure control valve.
- Worn valves.



**Pump overheats:**
- The pump is working at excess pressure or pump speed is higher than the rated speed.
- Low oil level in the pump crankcase or oil not of recommended type shown in chapter 7 (see point 7.6).
- Incorrect coupling alignment.
- Excessive pump tilt during operation.



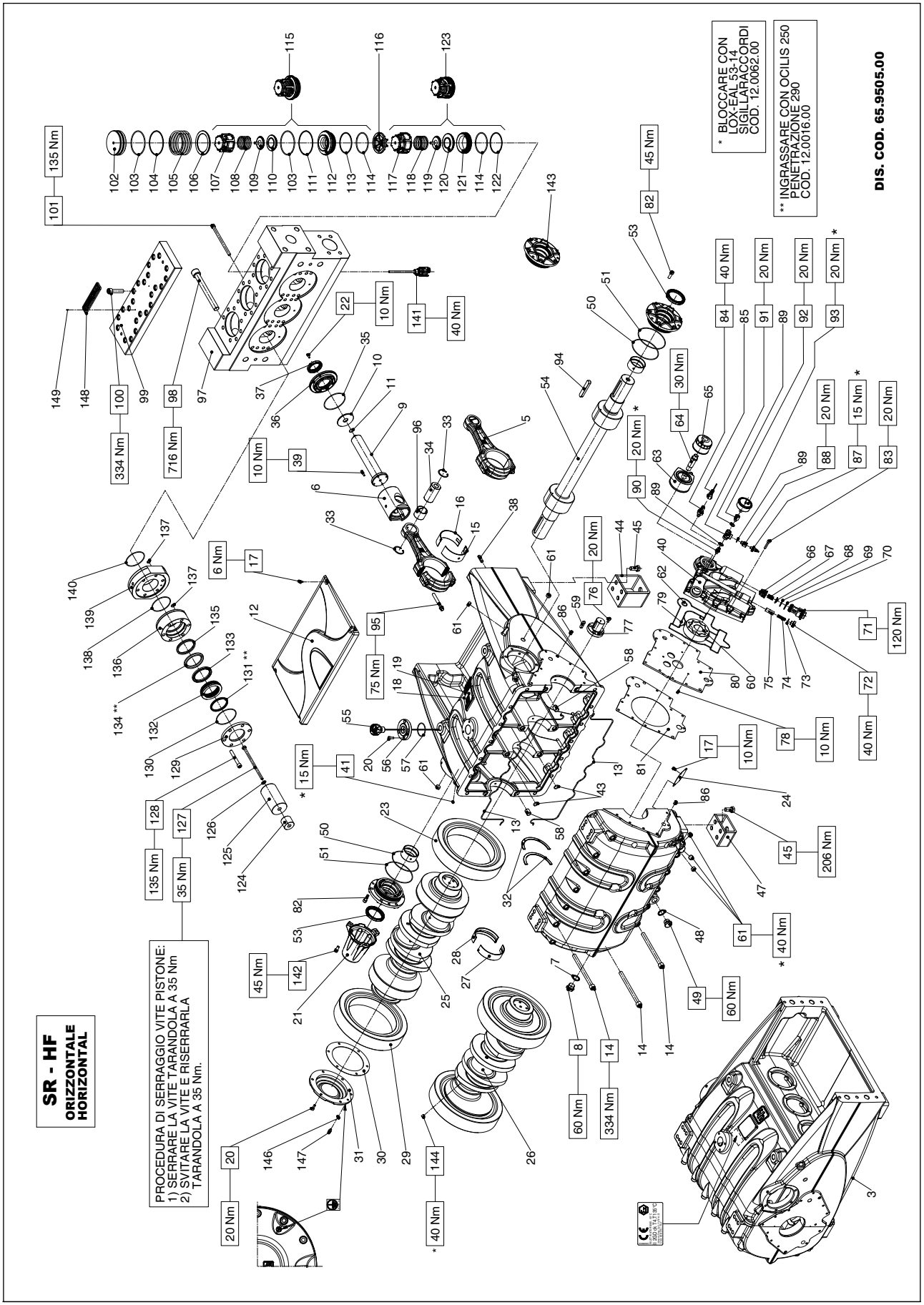
**Vibration or hammering on pipes:**
- Air suction.
- Faulty operation of pressure control valve.
- Valves malfunction.
- Irregular drive transmission.

## 15.1 TROUBLESHOOTING

| FAULT | POSSIBLE CAUSE | CORRECTIVE ACTION |
|---|---|---|
| No noise from pump at start-up | No water at inlet.<br>Valves jammed.<br>Outlet line is closed and thus prevents the release of air trapped in the pump manifold. | Check booster pump operation and flow rate.<br>Check operation of the valves.<br>Check for possible problems on the outlet line. |
| Insufficient pressure | Pump is drawing in air | Identify leak and repair |
| | Leaks from pressure control valve or incorrect pressure setting | Repair leaks or restore pressure setting |
| | Defective set of valve seals | Fit new seals |
| | Suction or discharge valve(s) damaged | Renew suction and discharge valve(s).<br>Check condition of valve springs. |
| | Leaks from manifold | Check manifold seals and renew if necessary; fit new manifold |
| Excess pump running noise | Worn valves.<br>Undersized suction pipes and/or filters.<br>Insufficient flow rate, high water temperature, clogged filter. | Check installation and components on suction line; measure water temperature |
| Irregular hammering of pipes | Air suction and/or insufficient water supply.<br>Bends, elbows, and fittings on the suction line are choking the passage of liquid.<br>Supply filter is clogged or undersized.<br>Booster pump supplies insufficient pressure and/or flow rate. | Check installation and components on suction line.<br>Check booster pump operation and flow rate.<br>Clean or replace supply filter. |
| Water leak from gaskets support | Low pressure gasket defective/worn | Renew low pressure gasket |
| Pump overheats | Pump pressure and/or speed are higher than rated pressure/speed.<br>Low oil level in pump crankcase or oil not of recommended type.<br>Coupling or driveline not aligned. | Restore correct pressure and/or speed.<br>Top up oil level; change oil if necessary.<br>Check transmission. |
| Oil leaks from pump crankcase | Piston guide rod oil seal defective/worn.<br>Various crankcase gaskets defective/worn.<br>For vertical versions check condition of bellows. | Renew oil seal, bellows and gaskets |
| Emulsified oil ejected from breather.<br>Oil dipstick shows signs of emulsion. | Lube oil contaminated with pumped liquid. | Check correct operation of piston guide oil seals (or of bellows) and change lube oil |

# 16 EXPLODED DRAWINGS AND PARTS LISTS

## 16.1 HORIZONTAL SR VERSION EXPLODED DRAWINGS AND PARTS LISTS



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

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**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

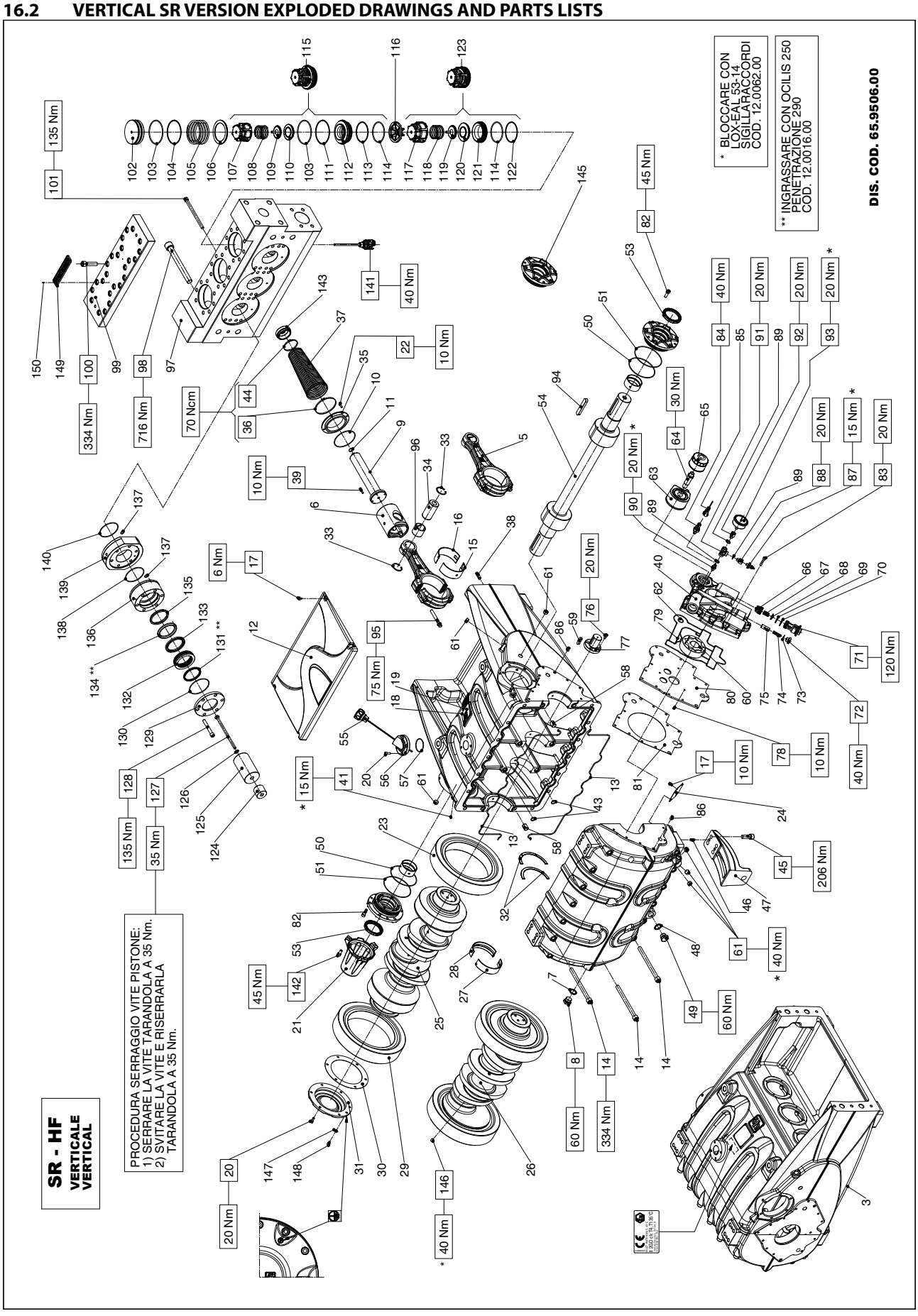
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**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **93** | **94.6070.00** | **MANOMETRO ATT. POST. 0-16 D. 63** | | **1** |
| **94** | **91.5050.00** | **LINGUETTA 18x11x100 UNI 6604** | | **1** |
| **95** | **99.4410.00** | **VITE SERRAGGIO BIELLA** | | **6** |
| **96** | **90.9185.00** | **BOCCOLA PIEDE BIELLA** | | **3** |
| **97** | **65.1205.56** | **TESTATA LP** | | **1** |
| **98** | **99.5355.00** | **VITE M24x2x220 UNI 5931 8,8** | | **4** |
| **99** | **65.2120.56** | **COPERCHIO VALVOLE LP** | | **1** |
| **100** | **99.5149.00** | **VITE M16x65 UNI 5931 12,9** | | **24** |
| **101** | **99.4495.00** | **VITE M12x180 UNI 5931 12,9** | | **24** |
| **102** | **65.2121.56** | **TAPPO VALVOLA** | | **3** |
| **103** | **90.4146.00** | **OR D. 104,4x3,53 NBR SH. 70 4412** | **B** | **6** |
| **104** | **90.5345.00** | **ANELLO ANTIEST. D. 105,4x111,2x1,5** | **B** | **3** |
| **105** | **94.8050.00** | **MOLLA Dm. 103x87,5** | | **3** |
| **106** | **65.2139.56** | **ANELLO SEDE VALVOLA DI MANDATA** | | **3** |
| **107** | **36.2131.05** | **GUIDA VALVOLA DI MANDATA** | | **3** |
| **108** | **94.7745.00** | **MOLLA Dm. 56x57,3** | | **3** |
| **109** | **36.2129.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **110** | **36.2126.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **111** | **90.5340.00** | **ANELLO ANTIESTR. D. 105,2x111x1,5** | | **3** |
| **112** | **36.2121.56** | **SEDE VALVOLA DI MANDATA** | | **3** |
| **113** | **90.5315.00** | **ANELLO ANTIEST. D. 89,4x95,2x1,5** | | **3** |
| **114** | **90.4144.00** | **OR D. 88,5x3,53 NBR SH. 70 4350** | | **6** |
| **115** | **36.7227.01** | **GRUPPO VALVOLA DI MANDATA** | **B** | **3** |
| **116** | **65.2122.51** | **DISTANZIALE GUIDA VALVOLA** | **B** | **3** |
| **117** | **36.2130.05** | **GUIDA VALVOLA D'ASPIRAZIONE** | | **3** |
| **118** | **94.7755.00** | **MOLLA Dm. 58,5x103,1** | | **3** |
| **119** | **36.2128.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **120** | **36.2127.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **121** | **36.2120.56** | **SEDE VALVOLA D'ASPIRAZIONE** | | **3** |
| **122** | **90.5310.00** | **ANELLO ANTIEST. D. 89,2x95x1,5** | | **3** |
| **123** | **36.7226.01** | **GRUPPO VALVOLA D'ASPIRAZIONE** | **B** | **3** |
| **124** | **65.2119.66** | **DISTANZIALE PISTONE** | | **3** |
| 125 | 74.0402.09 | PISTONE D. 50x127 | | 3 |
| | 74.0405.09 | PISTONE D. 65x127 | | |
| | 65.0409.09 | PISTONE D. 70x127 | | |
| **126** | **96.7105.00** | **ROSETTA D. 10x18x0,9** | | **3** |
| **127** | **99.3865.00** | **VITE M10x200 UNI 5737 A2-70** | | **24** |
| **128** | **99.4418.00** | **VITE M12x90 UNI 5931 12,9** | | **18** |
| 129 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2132.56 | ANELLO SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 130 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A | |
| 131 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2890.00 | ANELLO TEN. ALT. D. 65x73x5,5 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 132 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2131.70 | SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 133 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2895.00 | ANELLO 'RESTOP' D. 65x80x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 134 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2893.00 | ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 135 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1005.92 | ANELLO DI TESTA D. 65 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 136 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0607.56 | CAMICIA PISTONE D. 65 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| **137** | **90.3830.00** | **OR D. 12,1x2,62 NBR SH. 70 117** | **A** | **6** |
| 138 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A | |
| 139 | 65.2123.56 | SUPPORTO CAMICIA D. 50 | | 3 |
| | 65.2124.56 | SUPPORTO CAMICIA D. 65-75 | | |
| **140** | **90.3917.00** | **OR D. 88,57x2,65 NBR SH. 70 3350** | **A** | **3** |
| **141** | **10.7449.01** | **DISPOSITIVO APERTURA VALVOLE** | | **1** |
| **142** | **99.3652.00** | **VITE M10x20 UNI 5931 12,9** | | **3** |
| **143** | **65.7005.01** | **COPERCHIO PTO + BOCCOLA PIGNONE** | | **2** |
| **144** | **99.4250.00** | **VITE M12x12 UNI 5923 12,9** | | **2** |
| **146** | **96.7017.50** | **ROSETTA D. 8,4x15x0,8 - ATEX** | | **1** |
| **147** | **99.3019.00** | **VITE M8x10 UNI 5931 A2-70 - ATEX** | | **1** |
| **148** | **97.8276.00** | **MARCHIO PRATISSOLI** | | **1** |
| **149** | **91.57030.0** | **RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346** | | **2** |

## 16.2 VERTICAL SR VERSION EXPLODED DRAWINGS AND PARTS LISTS



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

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**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 92.8100.00 | FASCETTA D. 58-69 | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 46 | 97.6230.00 | SPINA D. 10x24 UNI 6364 | | 8 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 47 | 65.2007.13 | PIEDE VERTICALE | | 4 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 10 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 12 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 76 | 99.3039.00 | VITE M8x16 UNI 5931 8,8 | | 4 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 35 | 65.2107.66 | FLANGIA PER SOFFIETTO | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 36 | 92.8110.00 | FASCETTA D. 98-109 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 37 | 65.2110.47 | SOFFIETTO | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

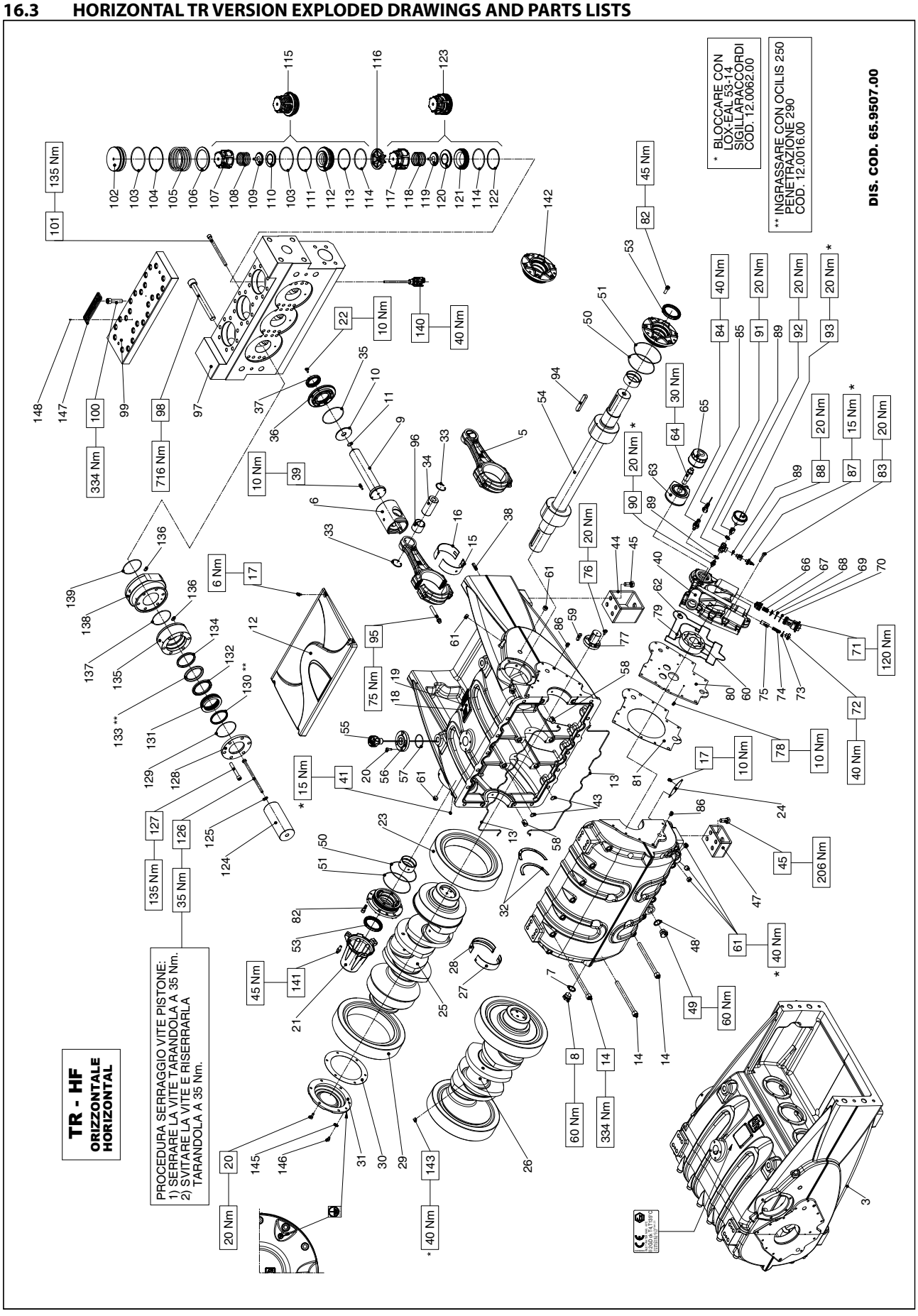
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**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **92** | **95.2566.00** | **NIPPLO DI RIDUZIONE M-F G 1/4"** | | **1** |
| **93** | **94.6070.00** | **MANOMETRO ATT. POST. 0-16 D. 63** | | **1** |
| **94** | **91.5050.00** | **LINGUETTA 18x11x100 UNI 6604** | | **1** |
| **95** | **99.4410.00** | **VITE SERRAGGIO BIELLA** | | **6** |
| **96** | **90.9185.00** | **BOCCOLA PIEDE BIELLA** | | **3** |
| **97** | **65.1205.56** | **TESTATA LP** | | **1** |
| **98** | **99.5355.00** | **VITE M24x2x220 UNI 5931 8,8** | | **4** |
| **99** | **65.2120.56** | **COPERCHIO VALVOLE LP** | | **1** |
| **100** | **99.5149.00** | **VITE M16x65 UNI 5931 12,9** | | **24** |
| **101** | **99.4495.00** | **VITE M12x180 UNI 5931 12,9** | | **24** |
| **102** | **65.2121.56** | **TAPPO VALVOLA** | | **3** |
| **103** | **90.4146.00** | **OR D. 104,4x3,53 NBR SH. 70 4412** | **B** | **6** |
| **104** | **90.5345.00** | **ANELLO ANTIEST. D. 105,4x111,2x1,5** | **B** | **3** |
| **105** | **94.8050.00** | **MOLLA Dm. 103x87,5** | | **3** |
| **106** | **65.2139.56** | **ANELLO SEDE VALVOLA DI MANDATA** | | **3** |
| **107** | **36.2131.05** | **GUIDA VALVOLA DI MANDATA** | | **3** |
| **108** | **94.7745.00** | **MOLLA Dm. 56x57,3** | | **3** |
| **109** | **36.2129.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **110** | **36.2126.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **111** | **90.5340.00** | **ANELLO ANTIESTR. D. 105,2x111x1,5** | | **3** |
| **112** | **36.2121.56** | **SEDE VALVOLA DI MANDATA** | | **3** |
| **113** | **90.5315.00** | **ANELLO ANTIEST. D. 89,4x95,2x1,5** | | **3** |
| **114** | **90.4144.00** | **OR D. 88,5x3,53 NBR SH. 70 4350** | | **6** |
| **115** | **36.7227.01** | **GRUPPO VALVOLA DI MANDATA** | **B** | **3** |
| **116** | **65.2122.51** | **DISTANZIALE GUIDA VALVOLA** | **B** | **3** |
| **117** | **36.2130.05** | **GUIDA VALVOLA D'ASPIRAZIONE** | | **3** |
| **118** | **94.7755.00** | **MOLLA Dm. 58,5x103,1** | | **3** |
| **119** | **36.2128.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **120** | **36.2127.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **121** | **36.2120.56** | **SEDE VALVOLA D'ASPIRAZIONE** | | **3** |
| **122** | **90.5310.00** | **ANELLO ANTIEST. D. 89,2x95x1,5** | | **3** |
| **123** | **36.7226.01** | **GRUPPO VALVOLA D'ASPIRAZIONE** | **B** | **3** |
| **124** | **65.2119.66** | **DISTANZIALE PISTONE** | | **3** |
| 125 | 74.0402.09 | PISTONE D. 50x127 | | 3 |
| | 74.0405.09 | PISTONE D. 65x127 | | |
| | 65.0409.09 | PISTONE D. 70x127 | | |
| **126** | **96.7105.00** | **ROSETTA D. 10x18x0,9** | | **3** |
| **127** | **99.3865.00** | **VITE M10x200 UNI 5737 A2-70** | | **24** |
| **128** | **99.4418.00** | **VITE M12x90 UNI 5931 12,9** | | **18** |
| 129 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2132.56 | ANELLO SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 130 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A | |
| 131 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2890.00 | ANELLO TEN. ALT. D. 65x73x5,5 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 132 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2131.70 | SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 133 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2895.00 | ANELLO 'RESTOP' D. 65x80x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 134 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2893.00 | ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 135 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1005.92 | ANELLO DI TESTA D. 65 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 136 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0607.56 | CAMICIA PISTONE D. 65 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| **137** | **90.3830.00** | **OR D. 12,1x2,62 NBR SH. 70 117** | **A** | **6** |
| 138 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A | |
| 139 | 65.2123.56 | SUPPORTO CAMICIA D. 50 | | 3 |
| | 65.2124.56 | SUPPORTO CAMICIA D. 65-75 | | |
| **140** | **90.3917.00** | **OR D. 88,57x2,65 NBR SH. 70 3350** | **A** | **3** |
| **141** | **10.7449.01** | **DISPOSITIVO APERTURA VALVOLE** | | **1** |
| **142** | **99.3652.00** | **VITE M10x20 UNI 5931 12,9** | | **3** |
| **143** | **65.2106.66** | **PARASPRUZZI PER SOFFIETTO** | | **3** |
| **145** | **65.7005.01** | **COPERCHIO PTO + BOCCOLA PIGNONE** | | **2** |
| **146** | **99.4250.00** | **VITE M12x12 UNI 5923 12,9** | | **2** |
| **147** | **96.7017.50** | **ROSETTA D. 8,4x15x0,8 - ATEX** | | **1** |
| **148** | **99.3019.00** | **VITE M8x10 UNI 5931 A2-70 - ATEX** | | **1** |
| **149** | **97.8276.00** | **MARCHIO PRATISSOLI** | | **1** |
| **150** | **91.5703.00** | **RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346** | | **2** |

## 16.3 HORIZONTAL TR VERSION EXPLODED DRAWINGS AND PARTS LISTS



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

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**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 3 | 65.0109.01 | CARTER - COMPLETO | | 1 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 |
| 25 | 65.0206.55 | ALBERO A GOMITI C. 130 | | 1 |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 |
| 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

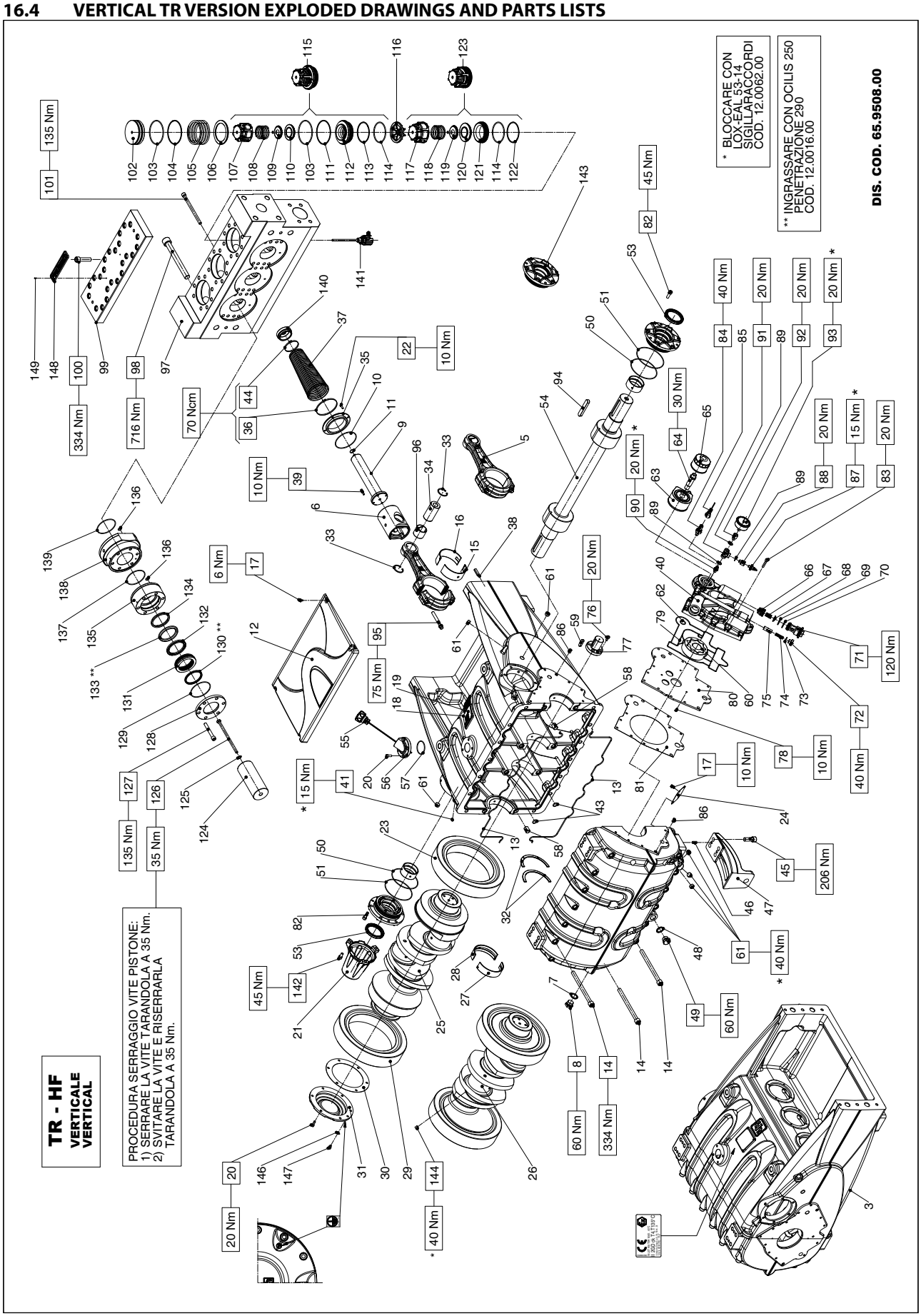
Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| 125 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 126 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 127 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 136 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 62.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| 139 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 140 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 141 | 99.3652.01 | VITE M10x20 UNI 5931 12,10 | | 4 |
| 142 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 143 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 145 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 146 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 147 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 148 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 16.4 VERTICAL TR VERSION EXPLODED DRAWINGS AND PARTS LISTS



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 3 | 65.0109.01 | CARTER - COMPLETO | | 1 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 |
| 10 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 12 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 |
| 25 | 65.0206.55 | ALBERO A GOMITI C. 130 | | 1 |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 |
| 35 | 65.2107.66 | FLANGIA PER SOFFIETTO | | 3 |
| 36 | 92.8110.00 | FASCETTA D. 98-109 | | 3 |
| 37 | 65.2110.47 | SOFFIETTO | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 |
| 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 44 | 92.8100.00 | FASCETTA D. 58-69 | | 3 |
| 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 46 | 97.6230.00 | SPINA D. 10x24 UNI 6364 | | 8 |
| 47 | 65.2007.13 | PIEDE VERTICALE | | 4 |
| 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| 125 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 126 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 127 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 136 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 65.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| 139 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 140 | 65.2106.66 | PARASPRUZZI PER SOFFIETTO | | 3 |
| 141 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 142 | 99.3652.00 | VITE M10x20 UNI 5931 12,9 | | 3 |
| 143 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 144 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 146 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 147 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 148 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 149 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 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**, under its sole responsibility, that the product identified and described as follows:

| | |
|---|---|
| Designation: | Pump |
| Type: | Reciprocating plunger pump for high pressure water |
| Trademark: | INTERPUMP GROUP |
| Model: | SR50 - SR65 - SR75<br>TR50 - TR60 - TR70 - TR75 |

Is in compliance with the Machinery Directive 2006/42/EC
Standards applied: UNI EN ISO 12100:2010 - UNI EN 809:2000

The pump identified above meets the following 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.

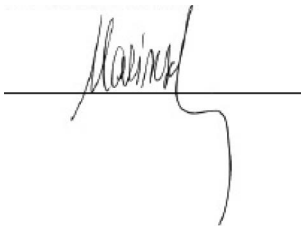
In addition, the manufacturer undertakes to make available, following a motivated request, a copy of the relevant pump technical documentation in the manner and terms to be defined.

The pump must not be put into service until the plant to which the pump is to be incorporated has been declared in accordance with the provisions of the relevant directives and/or standards.

Person authorised 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

Person authorised to draw up the declaration: Chief Executive Officer Paolo Marinsek

Reggio Emilia - February 2014 — Signed:



## ONLY FOR PUMPS ORDERED WITH THE ATEX CONFIGURATION

## EC DECLARATION OF CONFORMITY

(In accordance with Annex X of European Directive 94/4/EC - ATEX)

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

| | |
|---|---|
| Designation: | PUMP |
| Type: | Reciprocating plunger pump for high pressure water |
| Trademark: | INTERPUMP GROUP - PRATISSOLI |
| Model: | SR50 - SR65 - SR75<br>TR50 - TR60 - TR70 - TR75 |

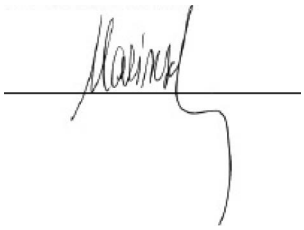
marked with Ex group II, category 2 GD, ck protection and temperature class T4/T135°C, when ordered as ATEX pumps, are in conformity with the ATEX Directive 94/9/EC and can be used in potentially explosive atmospheres within the limits of classified areas, in compliance with the declared performance and installed and used in accordance with the guidelines of this manual, of the general manual and/or the specific manual of each pump.

The manufacturer uses all the necessary measures to ensure that the pumps are produced in accordance with the statements.

European standards applied:
UNI EN 1127-1:2011; UNI EN 13463-1:2009; UNI EN 13463-5:2011; UNI EN 13463-8:2003

Technical documentation filed at DNV ITALIA (**N° 0496**)

Chief Executive Officer Paolo Marinsek
Reggio Emilia - February 2014 — Signed:



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# 1 INTRODUCTION

Ce manuel décrit les instructions d'utilisation et d'entretien des pompes séries SR-TR. Il doit être lu attentivement et compris avant l'utilisation de 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



**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 *spécifiques*.



**Symbole de protection contre les explosions.**
Définit les exigences de sécurité spécifiques de l'utilisation des pompes dans les zones identifiées selon la directive ATEX.
**Lorsque les pompes sont commandées en configuration ATEX (**fonctionnement dans les zones à risque d'explosion), respecter **STRICTEMENT les notes figurant dans les sections marquées de ce symbole et les indications de la notice complémentaire « PROTECTION ANTIDÉFLAGRANTE ATEX ».**

# 3 SÉCURITÉ

## 3.1 Mises en garde 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, dans l'intérêt 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 systèmes 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 giclées d'eau, doivent être conformes aux réglementations spécifiques en vigueur.
4. Les tuyaux à haute pression doivent avoir les dimensions requises pour supporter la pression d'exercice maximale du système, et doivent toujours être utilisés uniquement dans le champ des pressions de travail 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 haute pression 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 et 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 est prié de vérifier que :

1. Le système à haute pression est correctement alimenté (voir point 9.4).
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 à haute pression ne présentent pas de signes d'abrasion, et les raccords sont installés correctement.

Toute anomalie ou 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 avant toute autre considération son intégrité et sa sécurité, ainsi que celle des personnes qui pourraient être directement concernées par ses actions ; ses interventions devront être dictées par son bon sens et sa responsabilité.
2. L'opérateur doit toujours porter un casque avec visière de protection, des vêtements imperméables, et chausser des bottes adaptées au travail et en mesure d'assurer une bonne adhérence au sol si ce dernier est mouillé.

**Remarque :** *une tenue appropriée protège efficacement contre les giclées d'eau, mais pas autant contre l'impact direct du jet ou des giclées 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 concernée par le champ d'action du jet doit être strictement interdite 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 devant accéder à la zone devront attendre que l'opérateur interrompe personnellement le travail, puis communiquer immédiatement leur présence.
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 aux échéances prévues par le constructeur, qui est responsable légal de tout le groupe.
2. L'entretien doit toujours être confié à un personnel spécialisé et autorisé.
3. Le montage et le démontage de la pompe et de ses composants doivent être effectués exclusivement par un personnel autorisé, qui utilisera des équipements appropriés afin d'éviter d'endommager les composants et en particulier les connexions, branchements et raccordements.
4. Pour garantir fiabilité et sécurité maximales, utiliser exclusivement des pièces de rechange originales.

## 4 IDENTIFICATION DE LA POMPE

Chaque pompe dispose d'une plaquette d'identification indiquant :

- Modèle et version de la pompe
- Numéro de série
- Régime maxi
- Puissance absorbée ch - kW
- Pression en bars – P.S.I.
- Débit l/min - Gpm (t/min)

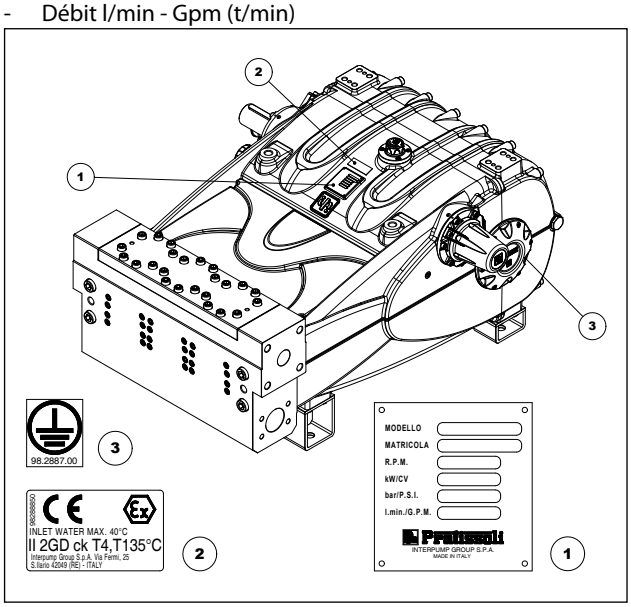



Fig. 1

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

Pour les pompes en configuration **ATEX** :
rep. 2 - plaque avec **marquage spécifique ATEX de protection contre les explosions.**
rep. 3 - plaque de localisation de la **vis de mise à la terre.**

# 5 CARACTÉRISTIQUES TECHNIQUES POMPES HIGH FLOW (haut débit)

**CARACTÉRISTIQUES TECHNIQUES POMPES SR (@ RPM 520)**

| Modèle | Tours/min | Débit | | Pression | | Puissance | |
|---|---|---|---|---|---|---|---|
| | | l/min | Gpm | bar | Psi | kW | ch |
| SR 50 | 1500 | 276 | 73 | 400 | 5800 | 211 | 287 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 65 | 1500 | 466 | 123 | 250 | 3625 | 222,5 | 302,5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 75 | 1500 | 620 | 164 | 200 | 2900 | 236,8 | 322 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

**CARACTÉRISTIQUES TECHNIQUES POMPES TR (@ RPM 520)**

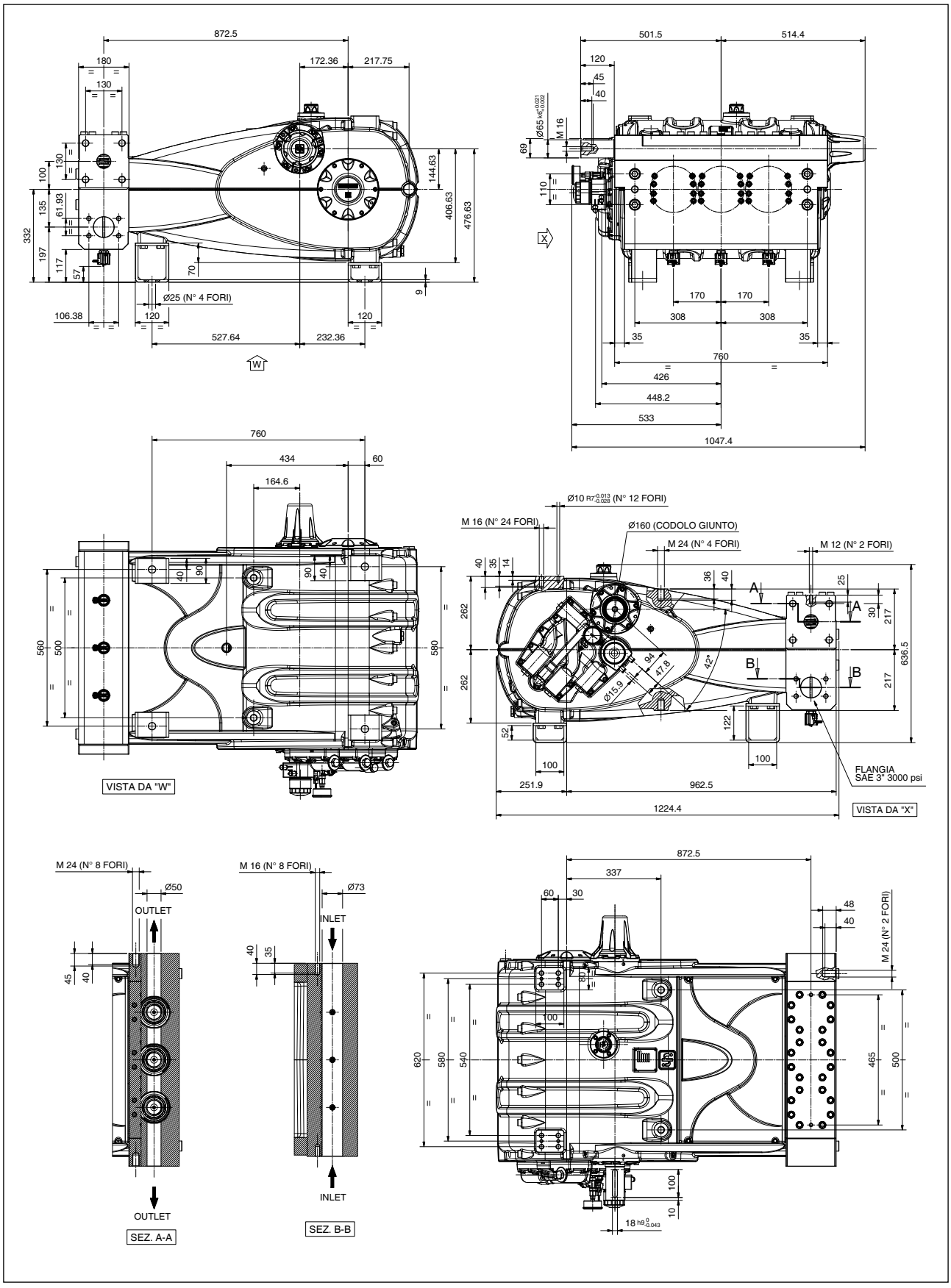
| Modèle | Tours/min | Débit | | Pression | | Puissance | |
|---|---|---|---|---|---|---|---|
| | | l/min | Gpm | bar | Psi | kW | ch |
| TR 50 | 1500 | 398 | 105 | 400 | 5800 | 304 | 413,5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 60 | 1500 | 573 | 151,4 | 300 | 4350 | 328,3 | 446,5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 70 | 1500 | 780,5 | 206 | 220 | 3190 | 328 | 446 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 75 | 1500 | 896 | 236,7 | 200 | 2900 | 342 | 465 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

## 5.1 Moments d'inertie de la pompe réduits à la PDF

| POMPE SÉRIE | t/min | J (kg mm$^2$) |
|---|---|---|
| SR | 1500 | 231600 |
| | 1800 | 182400 |
| | 2200 | 140700 |
| TR | 1500 | 241200 |
| | 1800 | 189100 |
| | 2200 | 145200 |

## 6 DIMENSIONS ET POIDS POMPES SR HIGH FLOW

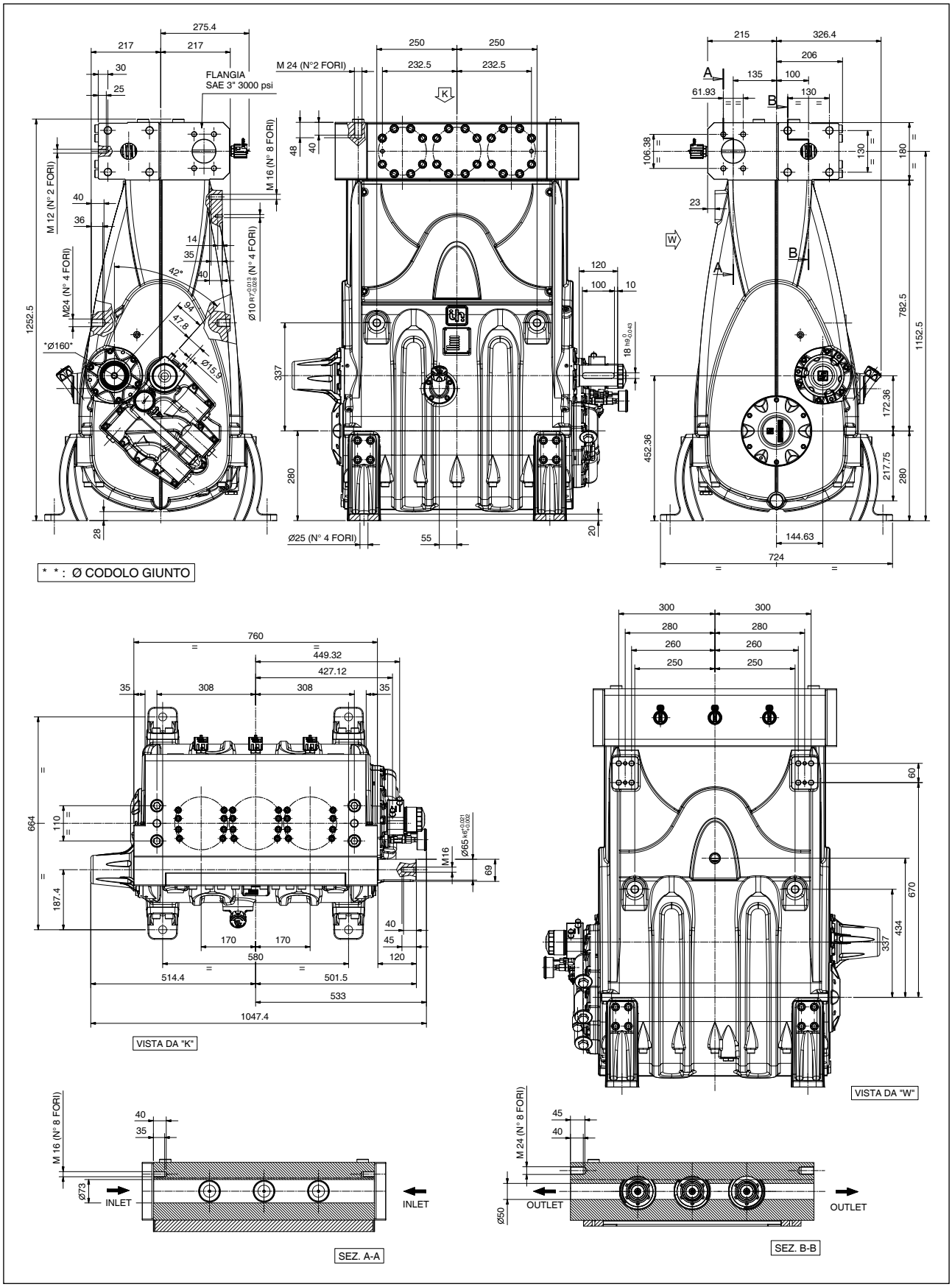
Pour les dimensions et les poids des pompes en Version SR HORIZONTALE, voir Fig. 2.




**Poids à vide 1150 kg**

Fig. 2

Pour les dimensions et le poids des pompes en Version SR VERTICALE, voir Fig. 2/a.

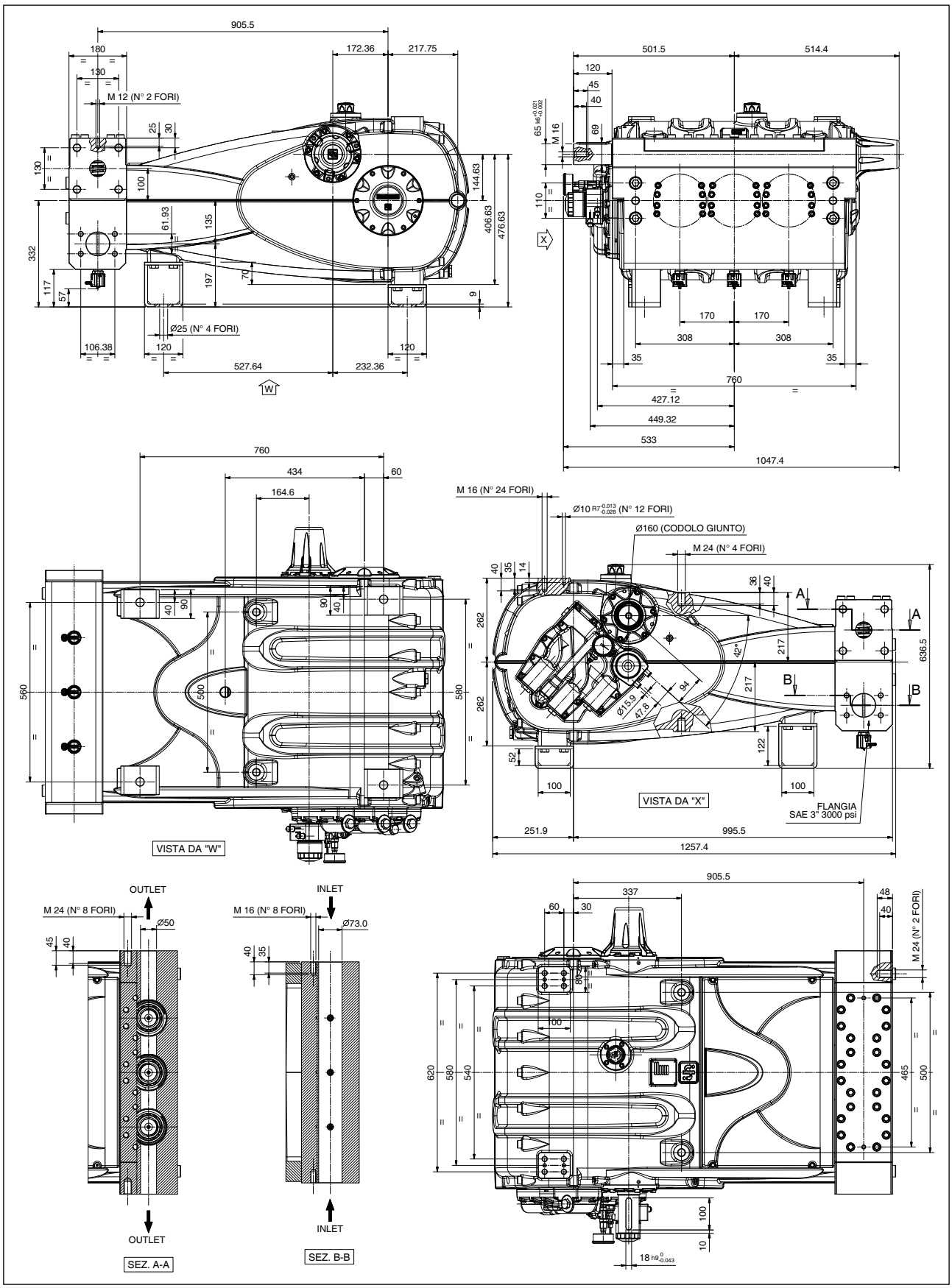



**Poids à vide 1160 kg**

Fig. 2/a

## 6.1 DIMENSIONS ET POIDS POMPES TR HIGH FLOW

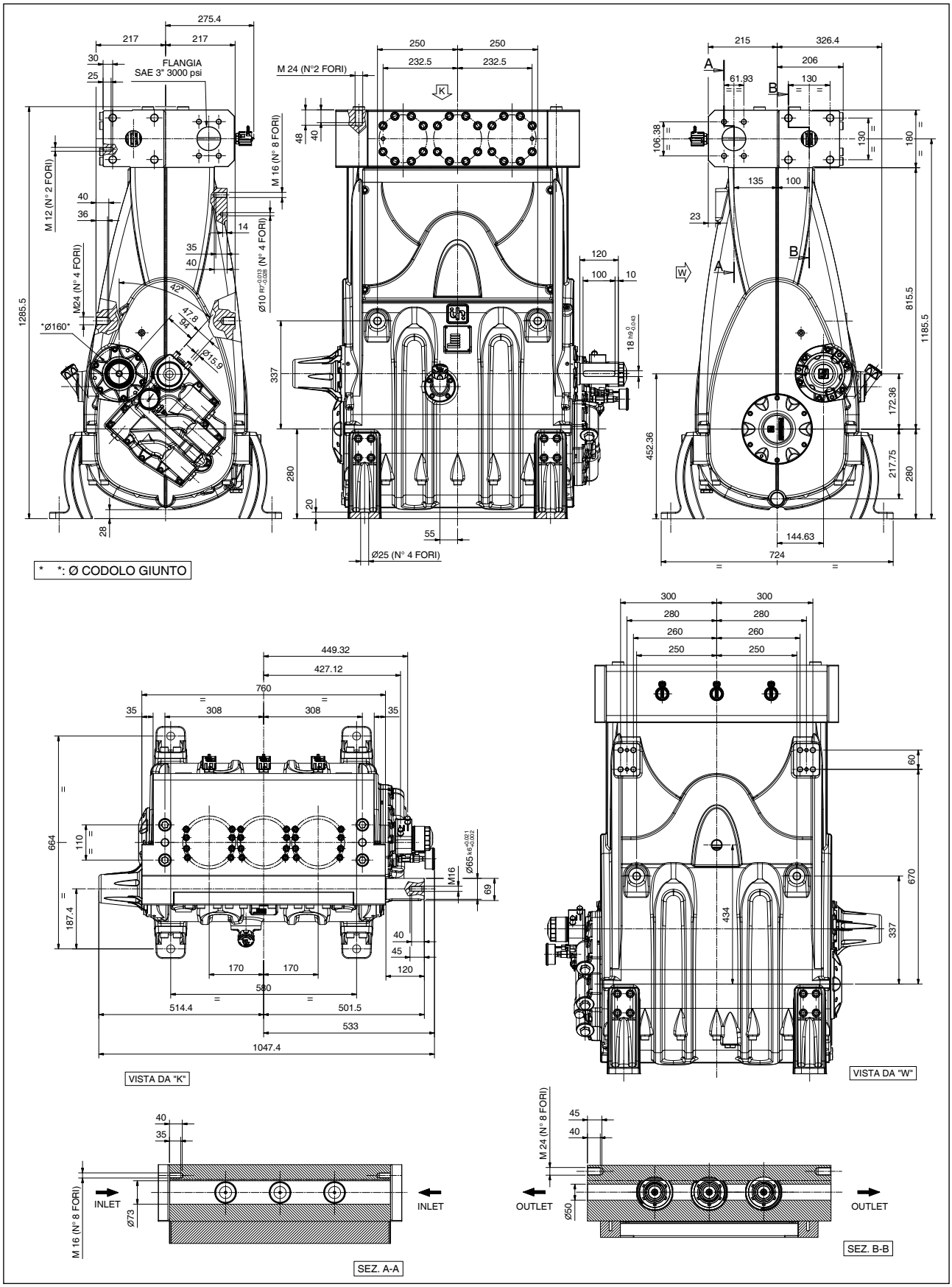
Pour les dimensions et le poids des pompes en Version TR HORIZONTALE, voir Fig. 3.




**Poids à vide 1185 kg**

Fig. 3

Pour les dimensions et le poids des pompes en Version TR VERTICALE, voir Fig. 3/a.




**Poids à vide 1195 kg**

Fig. 3/a

# 7 INSTRUCTIONS D'UTILISATION

Les pompes Séries SR - TR, commandées sans configuration ATEX, ont été conçues pour fonctionner dans des atmosphères potentiellement **non** déflagrantes, et avec de l'eau filtrée (voir par. 9.6). D'autres liquides pourront être utilisés seulement après l'approbation du ***Bureau Technique*** ou du ***Service d'assistance Clients***.

## 7.1 Température de l'eau

La température maximale autorisée de l'eau est de 40°C. Il est toutefois possible d'utiliser la pompe avec de l'eau à une température pouvant atteindre 60°C, mais seulement durant de courtes périodes. Dans ce cas, contacter le ***Bureau Technique*** ou le ***Service d'assistance Clients***.

Version ***ATEX*** : La température maximale autorisée de l'eau correspond à **40°C.**

## 7.2 Débit et pression maximums

Les performances indiquées dans le catalogue se réfèrent aux performances maximales de la pompe. **Indépendamment** de la puissance utilisée, la pression et le régime maximums indiqués sur la plaque d'identification ne peuvent pas être dépassés sauf autorisation expresse du ***Bureau Technique*** ou le ***Service d'assistance Clients***.

## 7.3 Régime minimum de rotation

Le régime minimum du vilebrequin pour ces types de pompes est de **250 tours/1'** ; tout régime autre que ceux indiqués dans le tableau des performances (voir chapitre 5) doivent être expressément autorisés 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 relevé final de la pression sonore 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 relevé 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 de lubrification recommandées

### 7.6.1 Type d'huile

La pompe est livrée avec l'huile de lubrification TOTAL-ERG MISOLA CARTE SH-150 qui assure l'utilisation correcte de la pompe à des températures ambiantes allant de -10°C à + 40°C.
Pour des températures différentes utilisez des huiles lubrifiantes unigrades ayant une viscosité correcte.
Pour utiliser la pompe à des températures extrêmes, il est recommandé d'utiliser des radiateurs adéquats.
La lubrification forcée est fournie par la pompe à huile qui garantit la quantité d'huile correcte à chaque point requis par les pièces en mouvement.
La nécessité d'utiliser l'huile multigrade dérive d'une double exigence :

- Ne pas obliger les utilisateurs à changer la viscosité de l'huile en fonction de la température ou de la saison.
- Augmenter de manière significative l'intervalle de temps entre les vidanges d'huile, en réduisant ainsi l'entretien, voir le tableau « Maintenance préventive » au chapitre 11.

### 7.6.2 Marques huile recommandées

TOTAL-ERG MISOLA MAP SH-150.
MOBIL SHC 629.

### 7.6.3 Caractéristiques de l'huile

En cas de marques manquantes ou difficiles à trouver, vous pouvez utiliser d'autres huiles qui doivent cependant répondre aux spécifications suivantes :

- Viscosité à -10°C ≤4000 cSt.
- Viscosité à 40°C ≤200 cSt.
- Viscosité à 100°C ≥18 cSt.
- Indice de viscosité : ≥135 cSt.
- Point de goutte : ≥ -25°C
- Degré d'additivation GL1 - GL2.

Si nécessaire, contacter le **Service d'assistance Clients**.
Vérifiez le niveau d'huile à l'aide de la jauge d'huile ①, Fig. 4.
Si nécessaire, faire l'appoint à travers le bouchon ①, Fig. 4.
Pour contrôler le niveau d'huile, la pompe doit être à température ambiante ; pour la vidange de l'huile, la pompe doit être à température d'exercice. Retirer le bouchon rep. ②, Fig. 4. (Utiliser le bouchon pos. 2/a pour la version verticale).
Procéder au contrôle de l'huile et à la vidange comme indiqué au chapitre 11.
La quantité d'huile nécessaire est : **52 litres SR-TR en version horizontale ; 37 litres SR-TR en version verticale**.

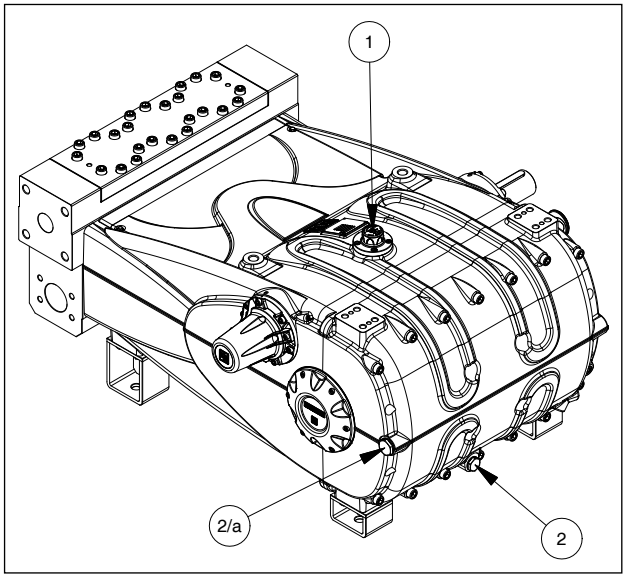



Fig. 4

Installer le système de sorte à ne jamais dépasser 110°C (230°F) de température de l'huile pendant le fonctionnement de la pompe.
Utilisez à cet effet l'indicateur de température d'huile indiqué au point 9.10.
**ATTENTION :** utilisez une huile possédant un degré d'inflammabilité supérieure à 200°C.

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

**Verser l'huile usagée dans un récipient spécial et l'éliminer auprès des centres autorisés.**
**Elle ne doit en aucun cas être déversée dans l'environnement.**

## 8 PRISES ET CONNEXIONS

Les pompes de la série SR-TR sont équipées de (voir Fig. 5 et Fig. 6) :
2 orifices d'aspiration « IN » : SAE G3" - 3000 PSI, voir « ÉCLATÉ BRIDES ASP. - REFOUL. SR-TR" COD.65950900 (Fig. 7). 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 » : voir « ÉCLATÉ BRIDES ASP. - REFOUL. SR-TR" COD.65950900 (Fig. 7).
1 orifice « DRAIN » : G1" sur le couvercle inférieur, permettant de vérifier qu'il n'y ait pas de fuite d'eau due à l'usure des joints de pression. En cas de fuites, suivre les conseils du manuel de réparation.
**Le trou doit toujours être maintenu ouvert, et relié à un système de détection.**

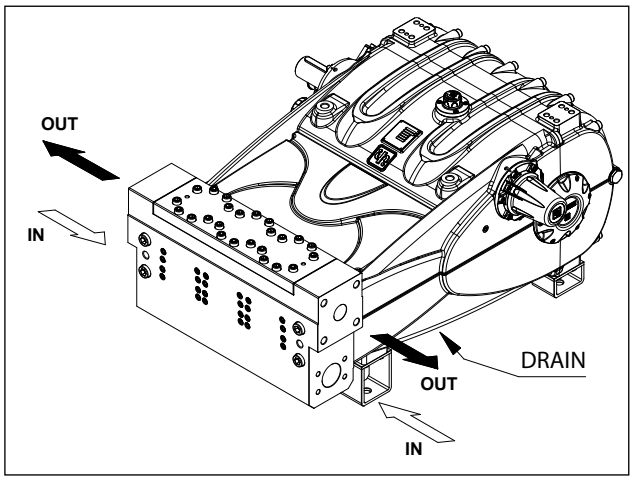



Fig. 5

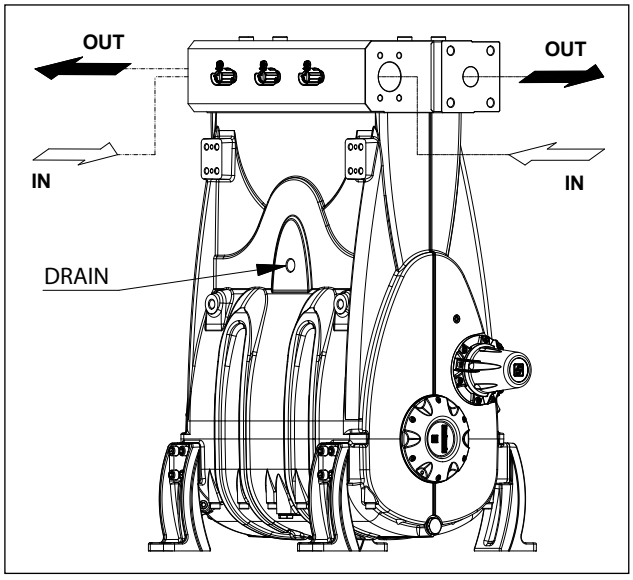
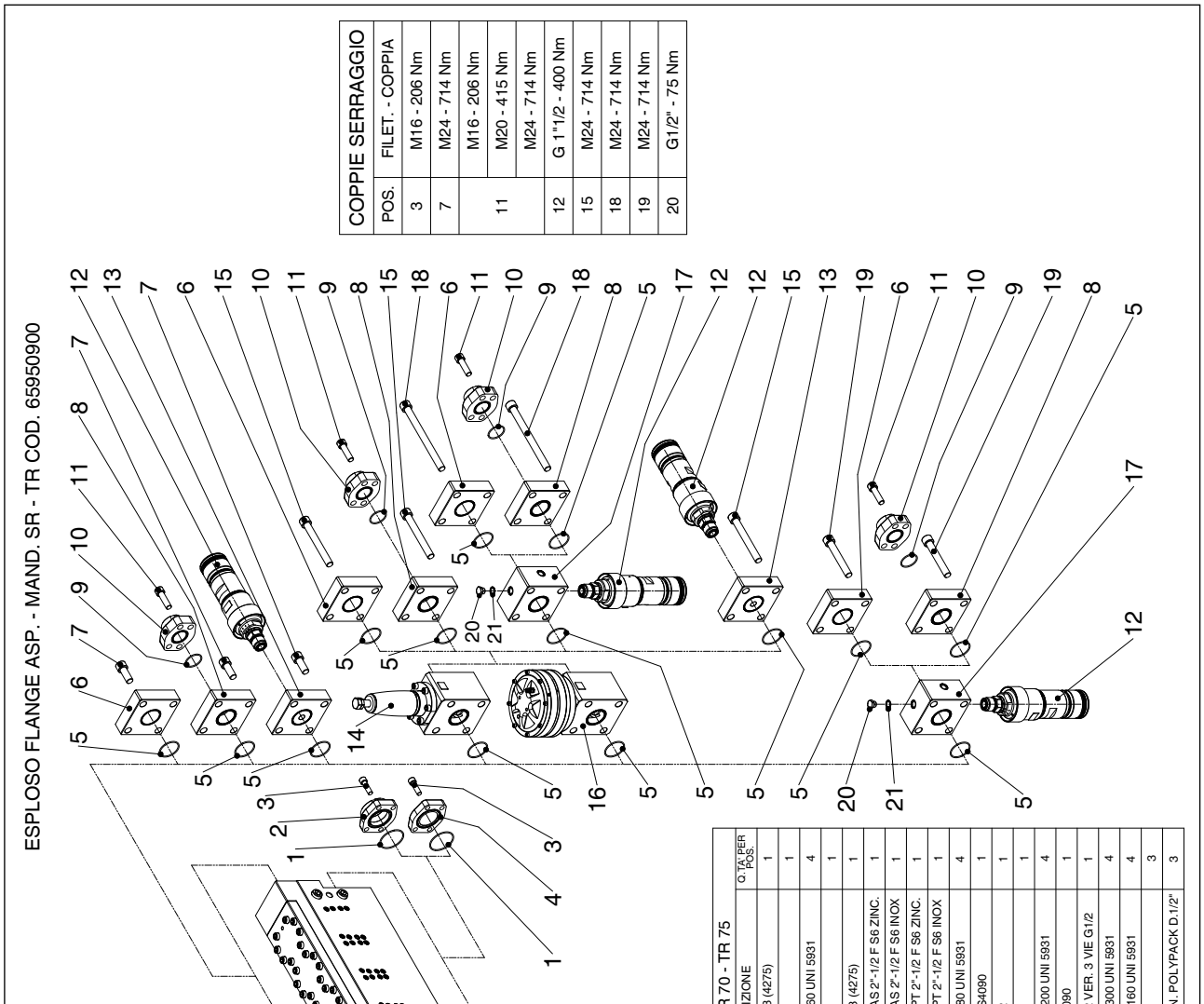



Fig. 6

## 8.1 Schéma composition aspiration et refoulement




| COPPIE SERRAGGIO | |
|---|---|
| POS. | FILET. - COPPIA |
| 3 | M16 - 206 Nm |
| 7 | M24 - 714 Nm |
| 11 | M16 - 206 Nm |
| | M20 - 415 Nm |
| | M24 - 714 Nm |
| 12 | G 1"1/2 - 400 Nm |
| 15 | M24 - 714 Nm |
| 18 | M24 - 714 Nm |
| 19 | M24 - 714 Nm |
| 20 | G1/2" - 75 Nm |

POMPE SR - TR TUTTE LE VERSIONI

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| ASPIRAZIONE | 1 | 90414100 | OR D. 85.32X3.53 (4337) | 1 |
| | 2 | 96458500 | FLANGIA DIR. GAS 3" F S3 ZINC. | 1 |
| | | 96459000 | FLANGIA DIR. GAS 3" F S3 INOX | 1 |
| | | 96459500 | FLANGIA DIR. NPT 3" F S3 ZINC. | 1 |
| | | 96460000 | FLANGIA DIR. NPT 3" F S3 INOX | 1 |
| | 3 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 4 | 96489500 | FLANGIA CIECA 3" S3 ZINC. | 1 |
| | | 96490000 | FLANGIA CIECA 3" S3 INOX | 1 |

POMPE SR 50 - TR 50

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021466 | FLANGIA 1"1/2 | 1 |
| | 9 | 90407900 | OR D. 47.22X3.53 (4187) | 1 |
| | 10 | 96468500 | FLANGIA DIR. GAS 1"-1/2 F S6 ZINC. | 1 |
| | | 96469000 | FLANGIA DIR. GAS 1"-1/2 F S6 INOX | 1 |
| | | 96469500 | FLANGIA DIR. NPT 1"-1/2 F S6 ZINC. | 1 |
| | | 96470000 | FLANGIA DIR. NPT 1"-1/2 F S6 INOX | 1 |
| | 11 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA PNR4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

POMPE SR 65 - TR 60

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021366 | FLANGIA 2" | 1 |
| | 9 | 90409900 | OR D. 56.74X3.53 (4225) | 1 |
| | 10 | 96473500 | FLANGIA DIR. GAS 2" F S6 ZINC. | 1 |
| | | 96474000 | FLANGIA DIR. GAS 2" F S6 INOX | 1 |
| | | 96474500 | FLANGIA DIR. NPT 2" F S6 ZINC. | 1 |
| | | 96475000 | FLANGIA DIR. NPT 2" F S6 INOX | 1 |
| | 11 | 99529000 | VITE TCEI M20X70 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

POMPE SR 75 - TR 70 - TR 75

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021266 | FLANGIA 2"1/2 | 1 |
| | 9 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 10 | 96478500 | FLANGIA DIR. GAS 2"-1/2 F S6 ZINC. | 1 |
| | | 96479000 | FLANGIA DIR. GAS 2"-1/2 F S6 INOX | 1 |
| | | 96479500 | FLANGIA DIR. NPT 2"-1/2 F S6 ZINC. | 1 |
| | | 96480000 | FLANGIA DIR. NPT 2"-1/2 F S6 INOX | 1 |
| | 11 | 99532000 | VITE TCEI M24X80 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

Fig. 7

# 9 INSTALLATION DE LA POMPE

## 9.1 Installation

Les trous de fixation des pieds ont un diamètre de 25 mm.
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 4 orifices M24 pour œillets de levage, pour faciliter son installation, voir la figure ci-dessous.

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






**Mise à la terre :** fixer un câble de terre à la pompe par la vis M8 INOX et la rondelle dentée INOX identifiées par l'étiquette JAUNE.
Voir le manuel « PROTECTION ANTIDÉFLAGRANTE ATEX ».

**Remplacer le bouchon de fermeture de l'orifice de remplissage d'huile situé sur le carter par la tige de jauge.**
La jauge 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 :

- Joint élastique.
- À cardan (respecter les angles maxi conseillés par les constructeurs).

Dans tous les cas, le montage de la transmission doit être fait dans les règles de l'art afin d'éviter les dysfonctionnements des éléments de raccordement et empêcher l'usure excessive, l'augmentation de la température et/ou les ruptures dangereuses susceptibles de représenter des sources potentielles d'incendie et d'explosion. *Voir le manuel « PROTECTION ANTIDÉFLAGRANTE ATEX ».*

## 9.2 Sens de rotation

Le sens de rotation peut être horaire ou anti-horaire, indifféremment sur la droite ou la gauche (voir Fig. 8).

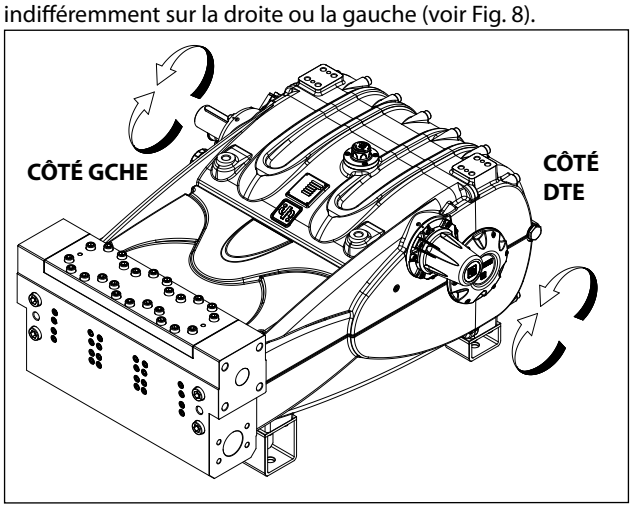



Fig. 8

La connexion de la pompe est indifféremment des deux côtés ; prêter attention sur le **CÔTÉ GAUCHE** à l'espace réservé à la pompe à huile de lubrification.
L'embout sera monté sur la PDF non reliée.

## 9.3 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.

## 9.4 Alimentation de la pompe

Les pompes série SR-TR doivent toujours être installées avec alimentation forcée au moyen d'une pompe booster.
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.**

## 9.5 Ligne d'aspiration

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

1. Diamètre intérieur minimum comme indiqué dans les tableaux au point 9.8 et en tout cas égal ou supérieur à celui de la tête de 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 circuler à nouveau le rejet 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.

### 9.6 Filtration

Sur la ligne d'aspiration de la pompe, il est nécessaire d'installer deux filtres comme le montrent les Fig. 9 et Fig. 9/a.

**Avec soupape de régulation à actionnement manuel.**

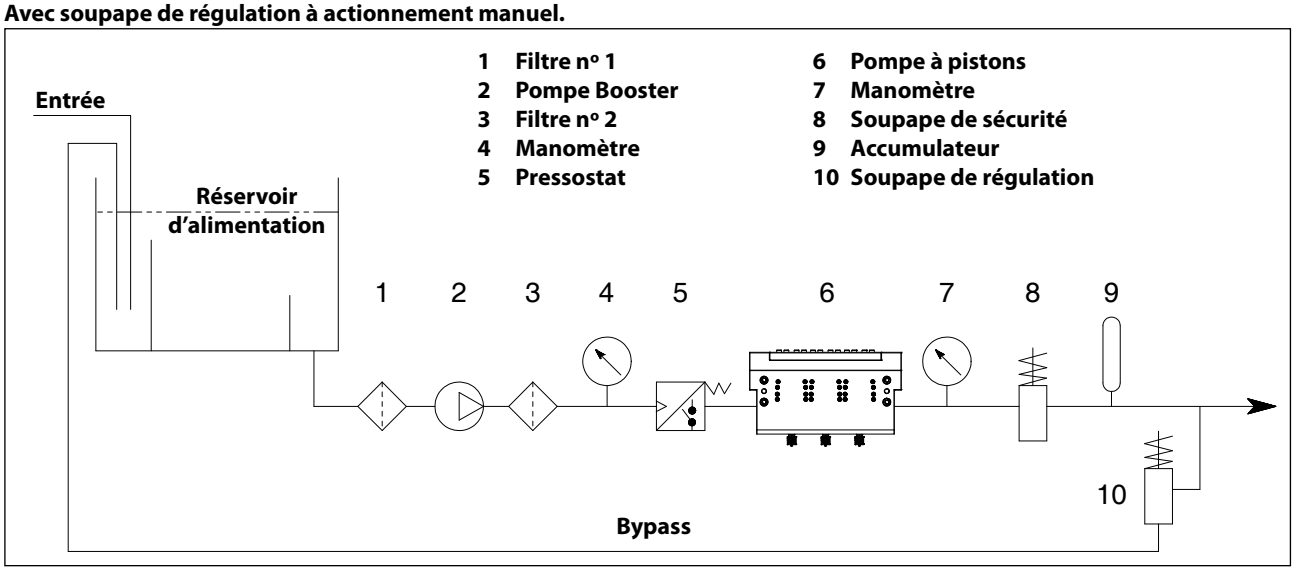



Fig. 9

**Avec soupape de régulation à actionnement pneumatique.**

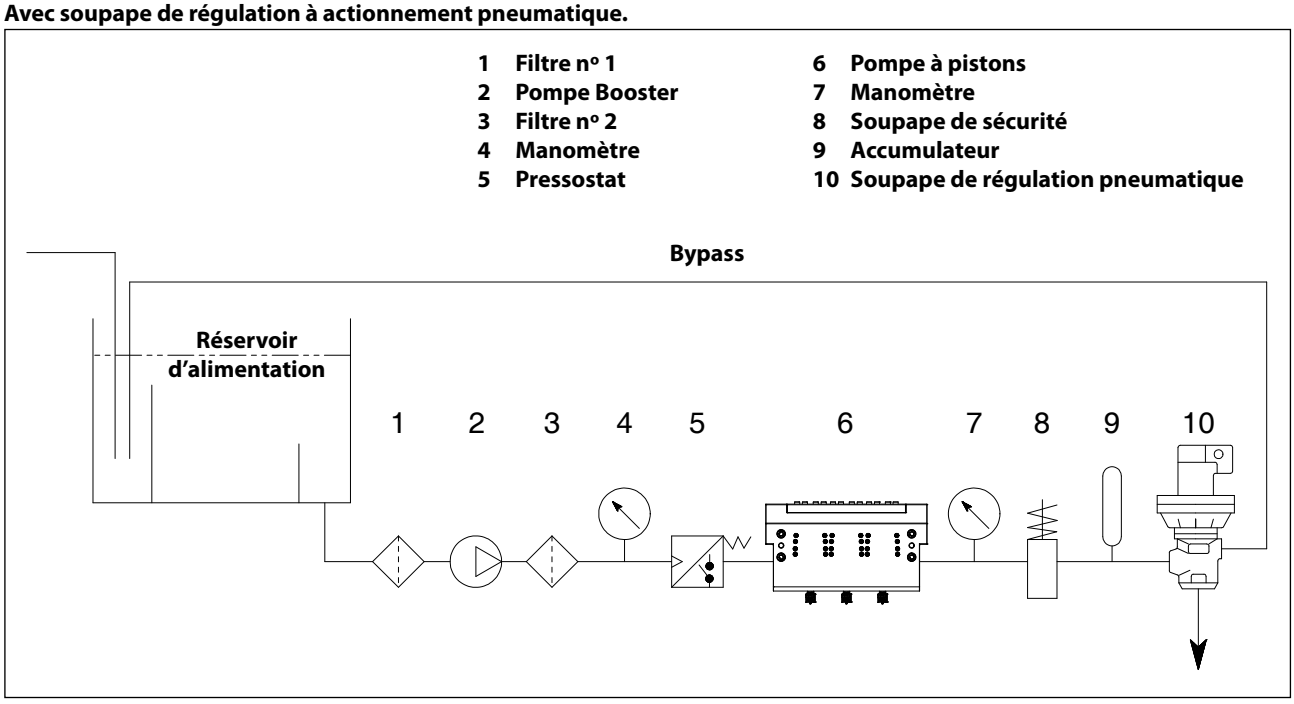



Fig. 9/a

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, en fonction de la qualité de l'eau utilisée et des réelles conditions de colmatage.**

### 9.7 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 tableau point 9.8.
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 en 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.

### 9.8 Diamètre interne des tuyaux des conduites

Le tableau ci-dessous indique les diamètres intérieurs des conduits d'entrée et de sortie.

| POMPE SR | | |
|---|---|---|
| **MODÈLE** | **ASPIRATION** | **REFOULEMENT** |
| SR 50 | SAE 3" - 3000 PSI | SAE 1"1/2 - 6000 PSI |
| SR 65 | SAE 3" - 3000 PSI | SAE 2" - 6000 PSI |
| SR 75 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |

| POMPE TR | | |
|---|---|---|
| **MODÈLE** | **ASPIRATION** | **REFOULEMENT** |
| TR 50 | SAE 3" - 3000 PSI | SAE 1"1/2 - 6000 PSI |
| TR 60 | SAE 3" - 3000 PSI | SAE 2" - 6000 PSI |
| TR 70 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |
| TR 75 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |

Pour la composition des brides d'admission et de refoulement, voir « ÉCLATÉ BRIDES ASP-REFOUL ». SR-TR" Fig. 7.
En cas de besoin, contacter le Bureau Technique ou le Service d'assistance Clients.

### 9.9 Raccordement échangeur eau/huile

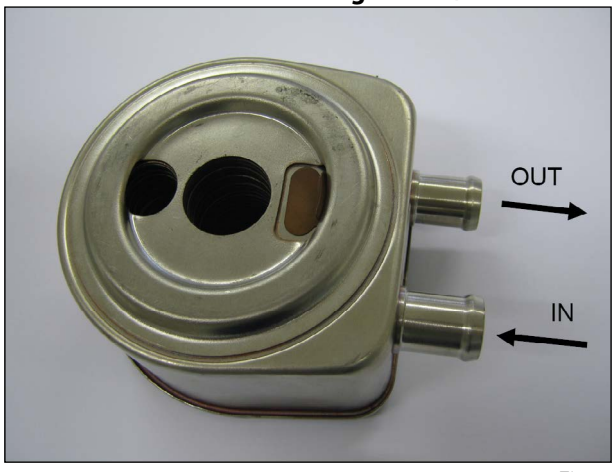



Fig. 10

Pour la meilleure performance, connecter l'échangeur de chaleur à contre-courant (voir Fig. 10).
Débit d'eau :

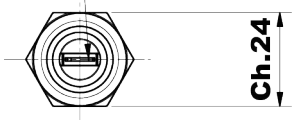
a) Efficacité Max. 25 l/min.
b) Efficacité Moyenne 20 l/min.
c) Efficacité Min. 12 l/min.

Si la pompe fonctionne à une température ambiante inférieure à 5°C (41°F), vous pouvez éviter de connecter l'échangeur de chaleur.
Pour l'entretien voir chapitre 11.

### 9.10 Groupe pompe huile

1) Cartouche de filtre à huile - serrer à la main ; pour l'entretien, voir chapitre 11.
2) Manomètre - 0÷16 bar pour la surveillance périodique de pression d'huile de lubrification.
3) Pressostat : NORMALEMENT OUVERT (disponible sur demande normalement fermé) ; tension de 12 V.
   Pour les équipements fixes, le fixer sous le système de protection.
4) Thermostat huile : NORMALEMENT FERMÉ ; tension de 12 V.

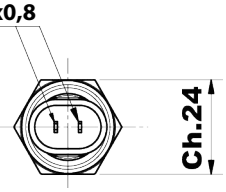
**Terminal 6,5x0,8**




**CONNEXION PRESSOSTAT**

**PRESSION INTERVENTION : 0,3 ±0,15 BAR**

**2 terminaux 2,8x0,8**




**CONNEXIONS INT. VOYANT TEMPÉRATURE**

**TEMP. INTERVENTION : 105°C±5°C**

**ATTENTION : connecter électriquement les deux capteurs avec une charge NON INDUCTIVE, ou remplacer le pressostat et le thermostat par des composants du même type approuvés ATEX.**

## 10 DÉMARRAGE ET FONCTIONNEMENT

### 10.1 Contrôles préliminaires (premier démarrage)

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 de sectionnement 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 les connexions, en aspiration et en refoulement, sont serrés à fond.
4. Les tolérances de couplage sur l'axe pompe/transmission (désalignement des demi-accouplements, inclinaison du cardan, etc.) restent dans les limites prévues par le constructeur de la transmission.
5. L'huile du carter de la pompe est au niveau prévu, en vérifiant par la jauge située sur la partie supérieure du carter (rep. 1 Fig. 11 et Fig. 11/a).

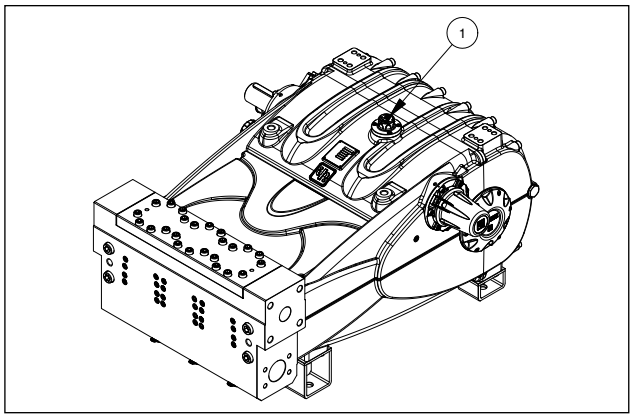



Fig. 11

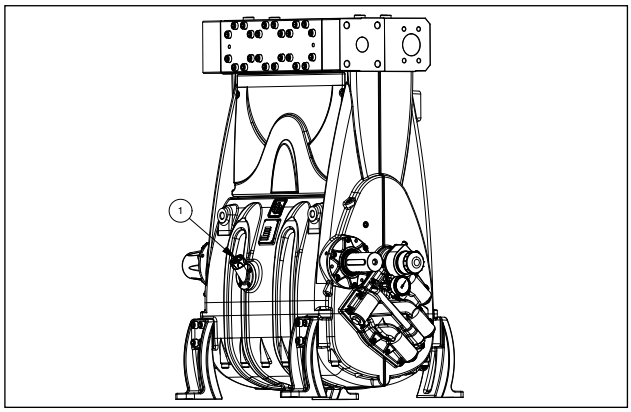



Fig. 11/a

**En cas de stockage ou arrêt prolongé, remettre les soupapes d'aspiration en état de fonctionner en ouvrant les trois pousseurs de soupapes.**
**(Voir rep.② Fig. 12). S'assurer d'avoir refermé les soupapes avant d'amorcer la pompe.**
**Pour les positions de « travail » et de « repos », voir Fig. 12/a.**

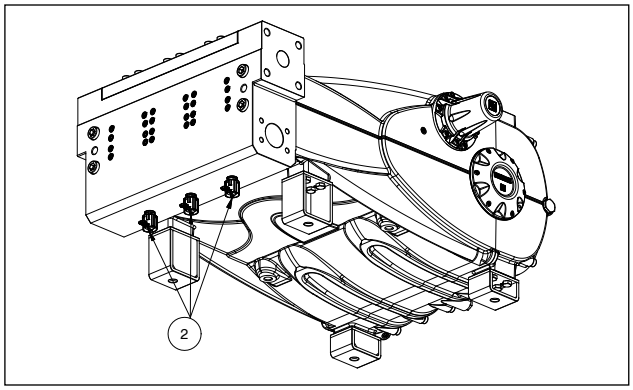



Fig. 12

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

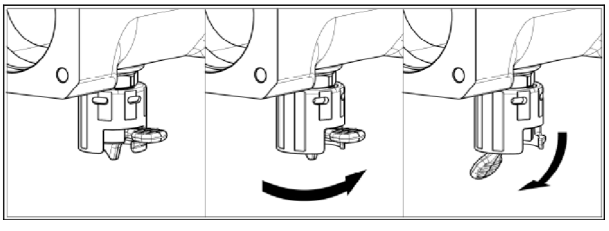


Fig. 12/a

### 10.2 Démarrage

1. Vérifier si la pompe est alimentée correctement.
2. Démarrer la pompe sans aucune charge.
3. Vérifier qu'en phase d'exercice, le régime de rotation ne dépasse pas celui indiqué sur la plaque d'identification.
4. Laisser fonctionner la pompe pendant un délai d'au moins 3 minutes avant de la mettre sous pression.
5. 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.

## 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 1000 heures** | **Toutes les 1500 heures** | **Toutes les 3000 heures** |
| Vérification du niveau d'huile | | |
| | Vérification / Vidange * : Soupapes Sièges de soupape Ressorts de soupape Guides de soupape | Changement d'huile et filtre Remplacement soufflets (version verticale) |
| | Remplacement *: Joints H.P. Joints L.P. | |

* Pour le remplacement/vidange, suivre les indications du ***Manuel de réparation***.

### 11.1 Soufflet (version SR - TR verticale)

Vérifiez le serrage des colliers de fixation des soufflets après les premières **1000 heures** de fonctionnement.
**Remplacer les soufflets toutes les 3000 heures de fonctionnement.**
Pour le remplacement/vidange, suivre les indications du **Manuel de réparation**.

### 11.2 Échangeur eau/huile

Les intervalles de nettoyage de l'échangeur doivent être définis en fonction de la dureté de l'eau utilisée. Nettoyer l'échangeur **toutes les 2000 heures si la dureté de l'eau est ≤ 30° français ; 1000 heures si la dureté de l'eau est > 30° et ≤ 40 ° français. Au-dessus de 40° français procéder au nettoyage toutes les 500 heures.**
Le nettoyage doit être fait en utilisant les produits de détartrage du marché ; il n'est pas nécessaire de procéder au démontage.
Note : le matériau de l'échangeur est de l'acier **inoxydable (AISI 303).**

**Protection du circuit de lubrification des pièces mécaniques :** configurer le système de sorte que le pressostat de la pompe à huile de lubrification forcée bloque la pompe SR-TR en cas de diminution de la pression d'huile

| ENTRETIEN PRÉVENTIF | |
|---|---|
| **OBJET** | **FRÉQUENCE DES CONTRÔLES** |
| Vérifier l'étalonnage du manomètre de pression d'huile de lubrification | Toutes les 10000 heures |
| Contrôle visuel des fuites d'eau de la tête | Toutes les 500 heures |

## 12 REMISAGE DE LA POMPE

### 12.1 Méthode de remplissage de la pompe avec une émulsion anticorrosive ou une solution antigel en utilisant une pompe externe à membrane sur la base du schéma décrit au point 9.6.

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 qu'elle 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 durant les périodes de l'année à risque de gel, suivre les indications du chapitre 12 (voir point 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 se trouvent dans le contrat d'achat.
La garantie sera 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 ont été déréglés ou débranchés.
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



**La pompe n'amorce pas au démarrage :**
- 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 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 d'identification.
- Fuite excessive de la soupape de régulation de pression.
- Soupapes usagées.
- Fuite excessive des joints de pression.
- 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 de pression.
- Fonctionnement anormal de la soupape de régulation de pression.
- Soupapes usagées.



**La pompe surchauffe :**
- La pompe fonctionne sous une pression excessive ou le régime est supérieur à celui indiqué sur la plaque d'identification.
- L'huile dans le carter de la pompe est insuffisante ou bien ne correspond pas au type recommandé au chapitre 7 (voir point 7.6).
- L'alignement du joint n'est pas précis.
- L'inclinaison de la pompe durant le travail est excessive.



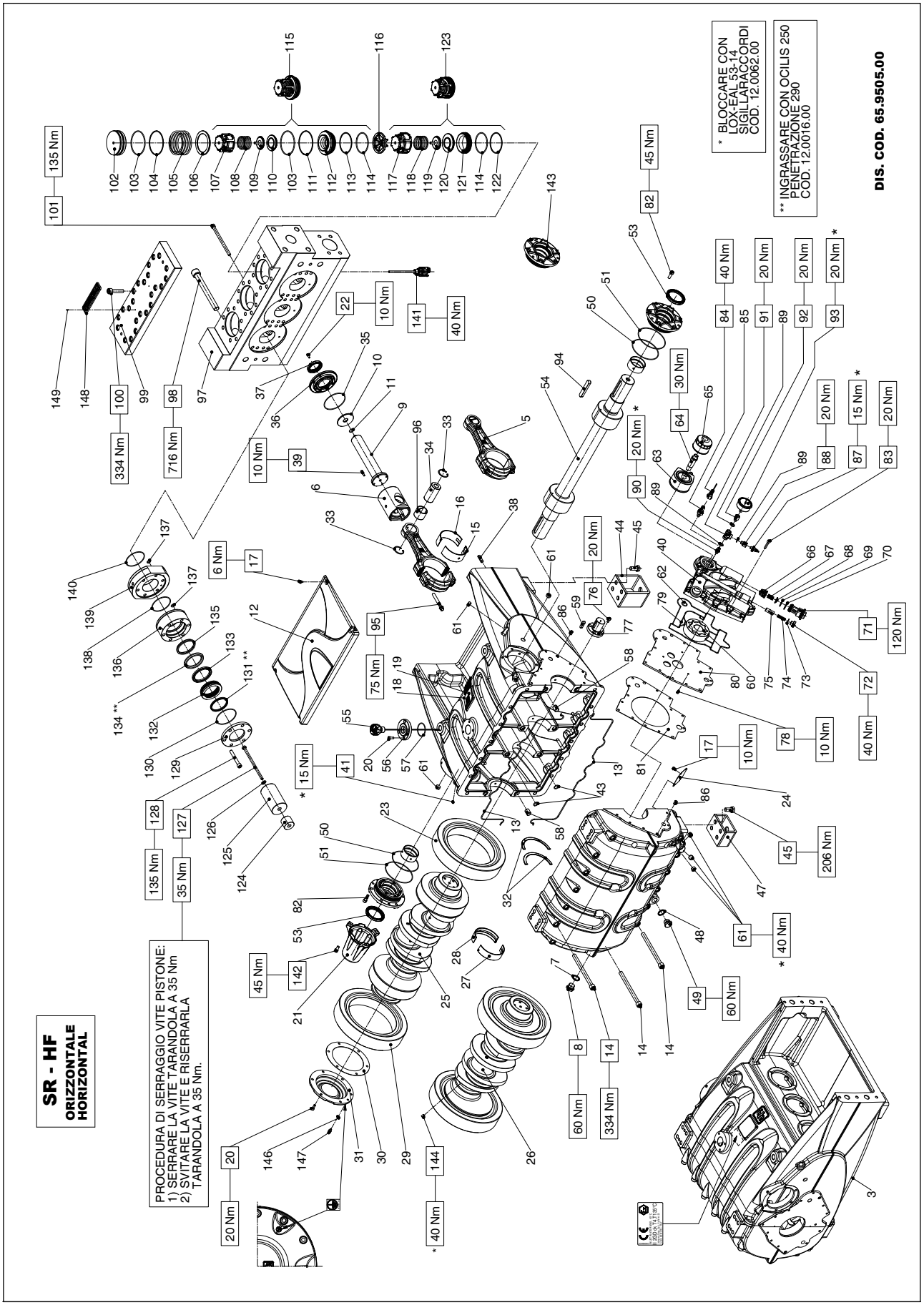
**Vibrations ou à-coups dans les tuyaux :**
- Aspiration d'air.
- Fonctionnement anormal de la soupape de régulation de pression.
- Dysfonctionnement des soupapes.
- Mouvement irrégulier dans la transmission.

### 15.1 RECHERCHE DES PANNES ET SOLUTIONS

| PANNE | CAUSE POSSIBLE | SOLUTION |
|---|---|---|
| Au démarrage de la pompe, aucun bruit ne s'est produit | Absence d'eau en alimentation.<br>Les soupapes sont bloquées.<br>La ligne de refoulement est fermée et ne permet pas à l'air présent dans la tête de la pompe de ressortir. | Vérifier le fonctionnement et le débit de la pompe booster.<br>Vérifier le fonctionnement des soupapes.<br>Contrôler toute anomalie sur la conduite de refoulement. |
| La pression est trop basse | La pompe aspire de l'air | Trouver la fuite et réparer |
| | Fuite de la soupape de régulation de pression ou réglage de pression incorrect | Réparer la fuite ou réinitialiser |
| | Set joints soupape défectueux | Installer de nouveaux joints |
| | Soupape/s d'aspiration ou de refoulement endommagée/s | La/les soupape/s d'aspiration et de refoulement doivent être remplacées. Vérifier l'état des ressorts de soupape. |
| | Fuites sur tête | Vérifiez les joints de tête et remplacer si nécessaire |
| Pompe bruyante | Soupapes usagées.<br>Conduits d'aspiration et/ou filtre sous-dimensionnés.<br>Faible débit, température de l'eau élevée, filtre bouché. | Vérification de l'installation et des composants de la ligne d'aspiration ; relever température eau |
| Pulsations irrégulières des tuyaux | Aspiration d'air et/ou alimentation insuffisante.<br>Les courbes, coudes, raccords présents le long de la ligne d'alimentation rétrécissent le passage du liquide.<br>Le filtre d'alimentation est sale ou trop petit.<br>La pompe booster fournit une pression et/ou un débit insuffisants. | Vérification de l'installation et ses composants de la ligne d'aspiration.<br>Vérifier le fonctionnement et le débit de la pompe booster.<br>Nettoyez ou remplacez le filtre d'alimentation. |
| Fuite d'eau par les joints | Joint de basse pression défectueux/ usé | Remplacer le joint basse pression |
| La pompe surchauffe | La pression et/ou le nombre de tours est supérieur à celui indiqué sur la plaque d'identification.<br>L'huile dans le carter de la pompe est insuffisante ou bien ne correspond pas au type recommandé.<br>Le joint ou la transmission ne sont pas alignés. | Rétablir la pression et/ou le régime.<br>Contrôler le niveau d'huile, faire l'appoint si nécessaire.<br>Vérifiez la transmission. |
| Fuite d'huile par le carter de pompe | Bavette guide de piston défectueuse/usée.<br>Joints de carter défectueux/usés.<br>Pour les versions verticales vérifier l'état du soufflet. | Remplacement de la bavette, du soufflet ou des joints |
| Huile émulsionnée émise par l'évent.<br>La jauge montre des signes d'émulsion. | Contamination de l'huile de lubrification avec le liquide pompé. | Vérifier le fonctionnement correct des bavettes guide de piston (ou soufflets) et remplacer l'huile de graissage |

# 16 VUE ÉCLATÉE ET LISTE DES PIÈCES DE RECHANGE

## 16.1 VUE ÉCLATÉE ET LISTE DES PIÈCES DE RECHANGE SR EN VERSION HORIZONTALE



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

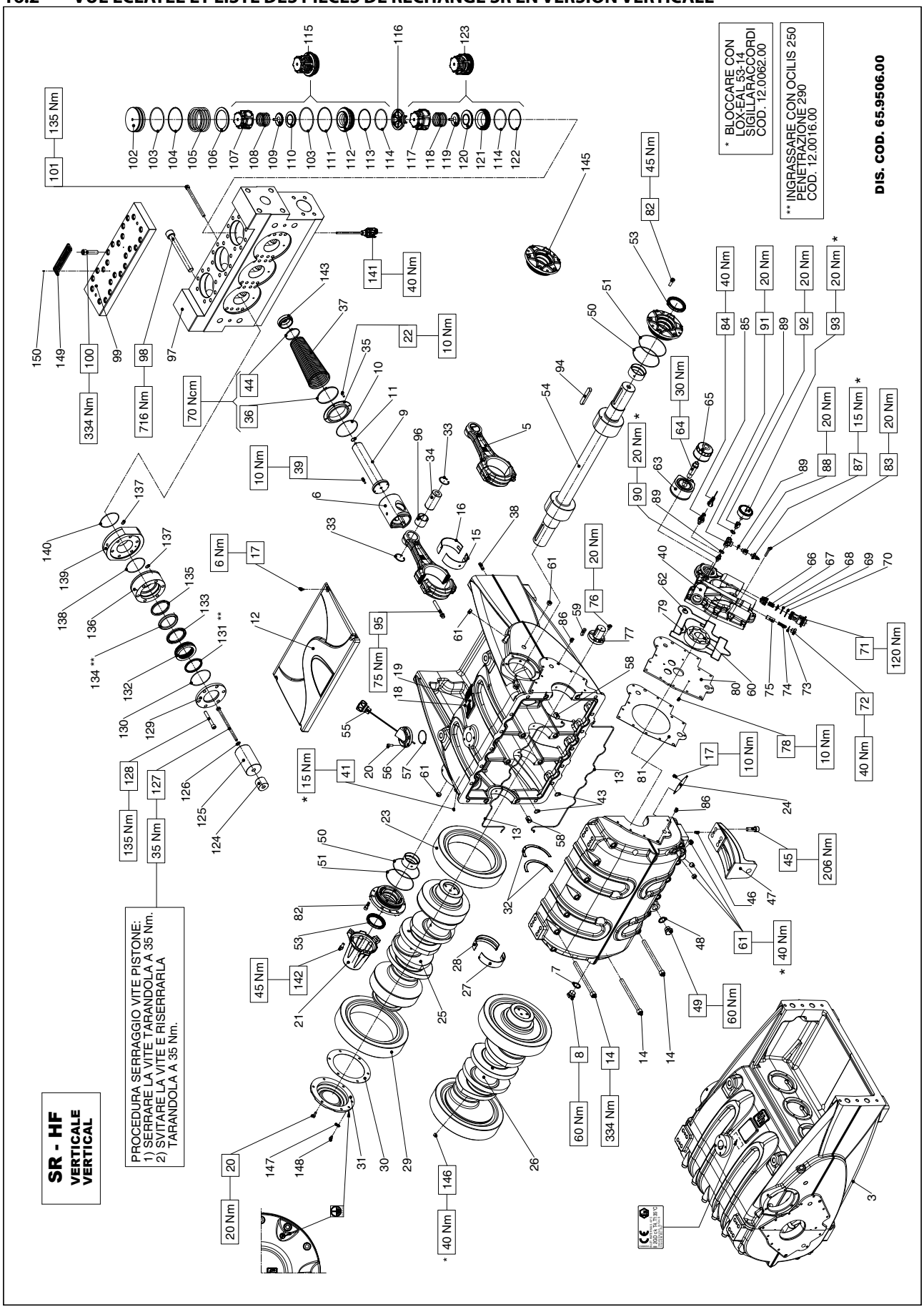
Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **93** | **94.6070.00** | **MANOMETRO ATT. POST. 0-16 D. 63** | | **1** |
| **94** | **91.5050.00** | **LINGUETTA 18x11x100 UNI 6604** | | **1** |
| **95** | **99.4410.00** | **VITE SERRAGGIO BIELLA** | | **6** |
| **96** | **90.9185.00** | **BOCCOLA PIEDE BIELLA** | | **3** |
| **97** | **65.1205.56** | **TESTATA LP** | | **1** |
| **98** | **99.5355.00** | **VITE M24x2x220 UNI 5931 8,8** | | **4** |
| **99** | **65.2120.56** | **COPERCHIO VALVOLE LP** | | **1** |
| **100** | **99.5149.00** | **VITE M16x65 UNI 5931 12,9** | | **24** |
| **101** | **99.4495.00** | **VITE M12x180 UNI 5931 12,9** | | **24** |
| **102** | **65.2121.56** | **TAPPO VALVOLA** | | **3** |
| **103** | **90.4146.00** | **OR D. 104,4x3,53 NBR SH. 70 4412** | **B** | **6** |
| **104** | **90.5345.00** | **ANELLO ANTIEST. D. 105,4x111,2x1,5** | **B** | **3** |
| **105** | **94.8050.00** | **MOLLA Dm. 103x87,5** | | **3** |
| **106** | **65.2139.56** | **ANELLO SEDE VALVOLA DI MANDATA** | | **3** |
| **107** | **36.2131.05** | **GUIDA VALVOLA DI MANDATA** | | **3** |
| **108** | **94.7745.00** | **MOLLA Dm. 56x57,3** | | **3** |
| **109** | **36.2129.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **110** | **36.2126.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **111** | **90.5340.00** | **ANELLO ANTIESTR. D. 105,2x111x1,5** | | **3** |
| **112** | **36.2121.56** | **SEDE VALVOLA DI MANDATA** | | **3** |
| **113** | **90.5315.00** | **ANELLO ANTIEST. D. 89,4x95,2x1,5** | | **3** |
| **114** | **90.4144.00** | **OR D. 88,5x3,53 NBR SH. 70 4350** | | **6** |
| **115** | **36.7227.01** | **GRUPPO VALVOLA DI MANDATA** | **B** | **3** |
| **116** | **65.2122.51** | **DISTANZIALE GUIDA VALVOLA** | **B** | **3** |
| **117** | **36.2130.05** | **GUIDA VALVOLA D'ASPIRAZIONE** | | **3** |
| **118** | **94.7755.00** | **MOLLA Dm. 58,5x103,1** | | **3** |
| **119** | **36.2128.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **120** | **36.2127.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **121** | **36.2120.56** | **SEDE VALVOLA D'ASPIRAZIONE** | | **3** |
| **122** | **90.5310.00** | **ANELLO ANTIEST. D. 89,2x95x1,5** | | **3** |
| **123** | **36.7226.01** | **GRUPPO VALVOLA D'ASPIRAZIONE** | **B** | **3** |
| **124** | **65.2119.66** | **DISTANZIALE PISTONE** | | **3** |
| 125 | 74.0402.09<br>74.0405.09<br>65.0409.09 | PISTONE D. 50x127<br>PISTONE D. 65x127<br>PISTONE D. 70x127 | | 3 |
| **126** | **96.7105.00** | **ROSETTA D. 10x18x0,9** | | **3** |
| **127** | **99.3865.00** | **VITE M10x200 UNI 5737 A2-70** | | **24** |
| **128** | **99.4418.00** | **VITE M12x90 UNI 5931 12,9** | | **18** |
| 129 | 65.2128.56<br>65.2132.56<br>65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 50<br>ANELLO SUPPORTO GUARNIZIONI D. 65<br>ANELLO SUPPORTO GUARNIZIONI D. 75 | | 3 |
| 130 | 90.3913.50<br>90.3916.00<br>90.3918.00 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50<br>OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65<br>OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A<br>A<br>A | 3 |
| 131 | 90.2860.00<br>90.2890.00<br>90.2910.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP<br>ANELLO TEN. ALT. D. 65x73x5,5 LP<br>ANELLO TEN. ALT. D. 75x85x5,5 LP | A<br>A<br>A | 3 |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 132 | 65.2127.70<br>65.2131.70<br>65.2135.70 | SUPPORTO GUARNIZIONI D. 50<br>SUPPORTO GUARNIZIONI D. 65<br>SUPPORTO GUARNIZIONI D. 75 | | 3 |
| 133 | 90.2865.00<br>90.2895.00<br>90.2912.00 | ANELLO 'RESTOP' D. 50x58x8/4,5<br>ANELLO 'RESTOP' D. 65x80x8/4,5<br>ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A<br>A<br>A | 3 |
| 134 | 90.2863.00<br>90.2893.00<br>90.2914.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP<br>ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP<br>ANELLO TEN. ALT. D. 75x95x10/6 HP | A<br>A<br>A | 3 |
| 135 | 74.1002.92<br>74.1005.92<br>65.1006.92 | ANELLO DI TESTA D. 50<br>ANELLO DI TESTA D. 65<br>ANELLO DI TESTA D. 75 | | 3 |
| 136 | 65.0605.56<br>65.0607.56<br>65.0609.56 | CAMICIA PISTONE D. 50<br>CAMICIA PISTONE D. 65<br>CAMICIA PISTONE D. 75 | | 3 |
| **137** | **90.3830.00** | **OR D. 12,1x2,62 NBR SH. 70 117** | **A** | **6** |
| 138 | 90.3913.50<br>90.3917.00 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50<br>OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A<br>A | 3 |
| 139 | 65.2123.56<br>65.2124.56 | SUPPORTO CAMICIA D. 50<br>SUPPORTO CAMICIA D. 65-75 | | 3 |
| **140** | **90.3917.00** | **OR D. 88,57x2,65 NBR SH. 70 3350** | **A** | **3** |
| **141** | **10.7449.01** | **DISPOSITIVO APERTURA VALVOLE** | | **1** |
| **142** | **99.3652.00** | **VITE M10x20 UNI 5931 12,9** | | **3** |
| **143** | **65.7005.01** | **COPERCHIO PTO + BOCCOLA PIGNONE** | | **2** |
| **144** | **99.4250.00** | **VITE M12x12 UNI 5923 12,9** | | **2** |
| **146** | **96.7017.50** | **ROSETTA D. 8,4x15x0,8 - ATEX** | | **1** |
| **147** | **99.3019.00** | **VITE M8x10 UNI 5931 A2-70 - ATEX** | | **1** |
| **148** | **97.8276.00** | **MARCHIO PRATISSOLI** | | **1** |
| **149** | **91.57030.0** | **RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346** | | **2** |

## 16.2 VUE ÉCLATÉE ET LISTE DES PIÈCES DE RECHANGE SR EN VERSION VERTICALE



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 |
| 10 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 12 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 |
| 35 | 65.2107.66 | FLANGIA PER SOFFIETTO | | 3 |
| 36 | 92.8110.00 | FASCETTA D. 98-109 | | 3 |
| 37 | 65.2110.47 | SOFFIETTO | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 |
| 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 44 | 92.8100.00 | FASCETTA D. 58-69 | | 3 |
| 45 | 99.5133.00 | VITE M16x35 UNI 5739 8,8 | | 16 |
| 46 | 97.6230.00 | SPINA D. 10x24 UNI 6364 | | 8 |
| 47 | 65.2007.13 | PIEDE VERTICALE | | 4 |
| 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 76 | 99.3039.00 | VITE M8x16 UNI 5931 8,8 | | 4 |
| 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

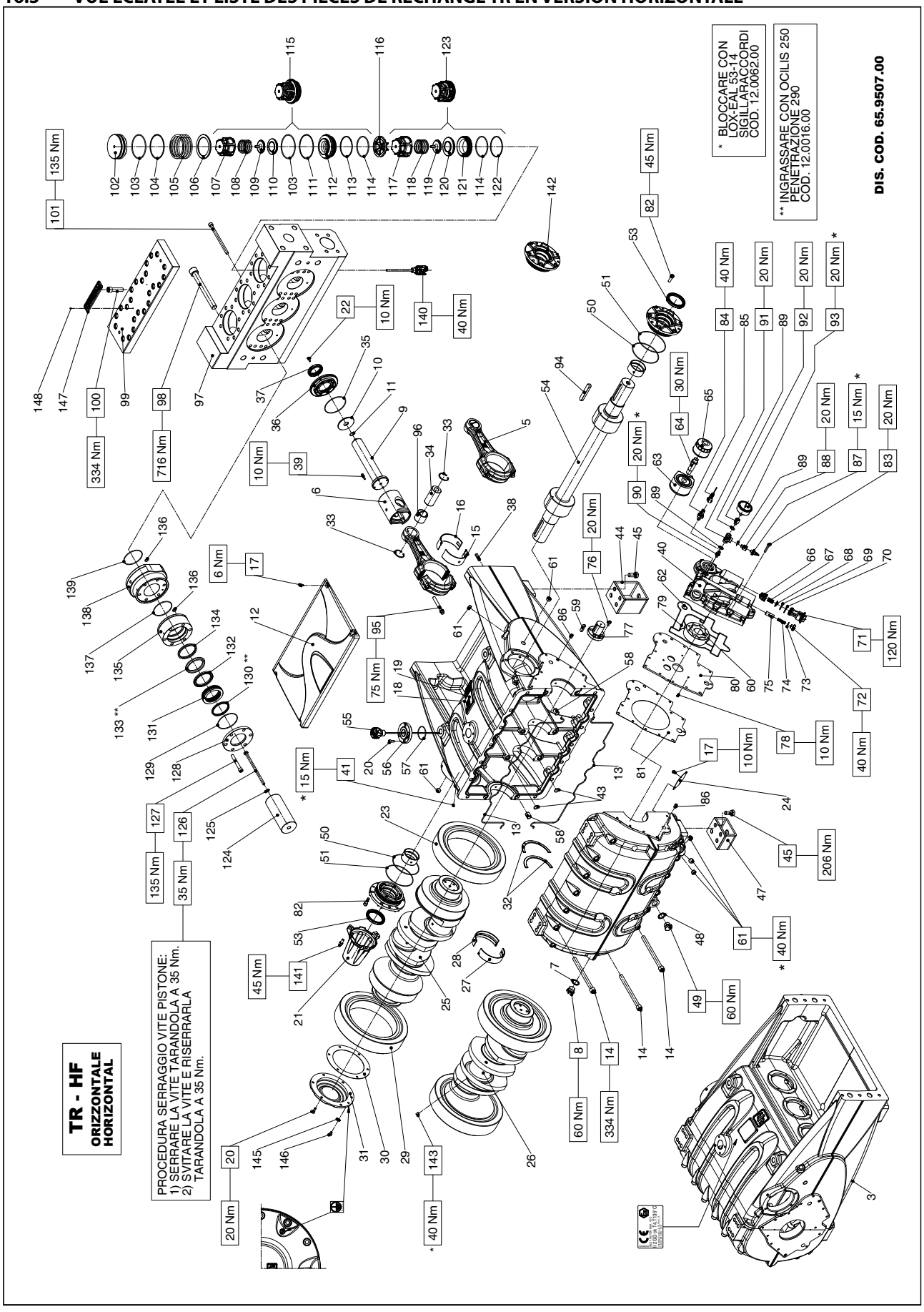
Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.2119.66 | DISTANZIALE PISTONE | | 3 |
| 125 | 74.0402.09 | PISTONE D. 50x127 | | 3 |
| | 74.0405.09 | PISTONE D. 65x127 | | |
| | 65.0409.09 | PISTONE D. 70x127 | | |
| 126 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 127 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 128 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 129 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2132.56 | ANELLO SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 130 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A | |
| 131 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2890.00 | ANELLO TEN. ALT. D. 65x73x5,5 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 132 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2131.70 | SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 133 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2895.00 | ANELLO 'RESTOP' D. 65x80x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 134 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2893.00 | ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 135 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1005.92 | ANELLO DI TESTA D. 65 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 136 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0607.56 | CAMICIA PISTONE D. 65 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 137 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 138 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A | |
| 139 | 65.2123.56 | SUPPORTO CAMICIA D. 50 | | 3 |
| | 65.2124.56 | SUPPORTO CAMICIA D. 65-75 | | |
| 140 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 141 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 142 | 99.3652.00 | VITE M10x20 UNI 5931 12,9 | | 3 |
| 143 | 65.2106.66 | PARASPRUZZI PER SOFFIETTO | | 3 |
| 145 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 146 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 147 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 148 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 149 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 150 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 16.3 VUE ÉCLATÉE ET LISTE DES PIÈCES DE RECHANGE TR EN VERSION HORIZONTALE



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

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**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0109.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 25 | 65.0206.55 | ALBERO A GOMITI C. 130 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

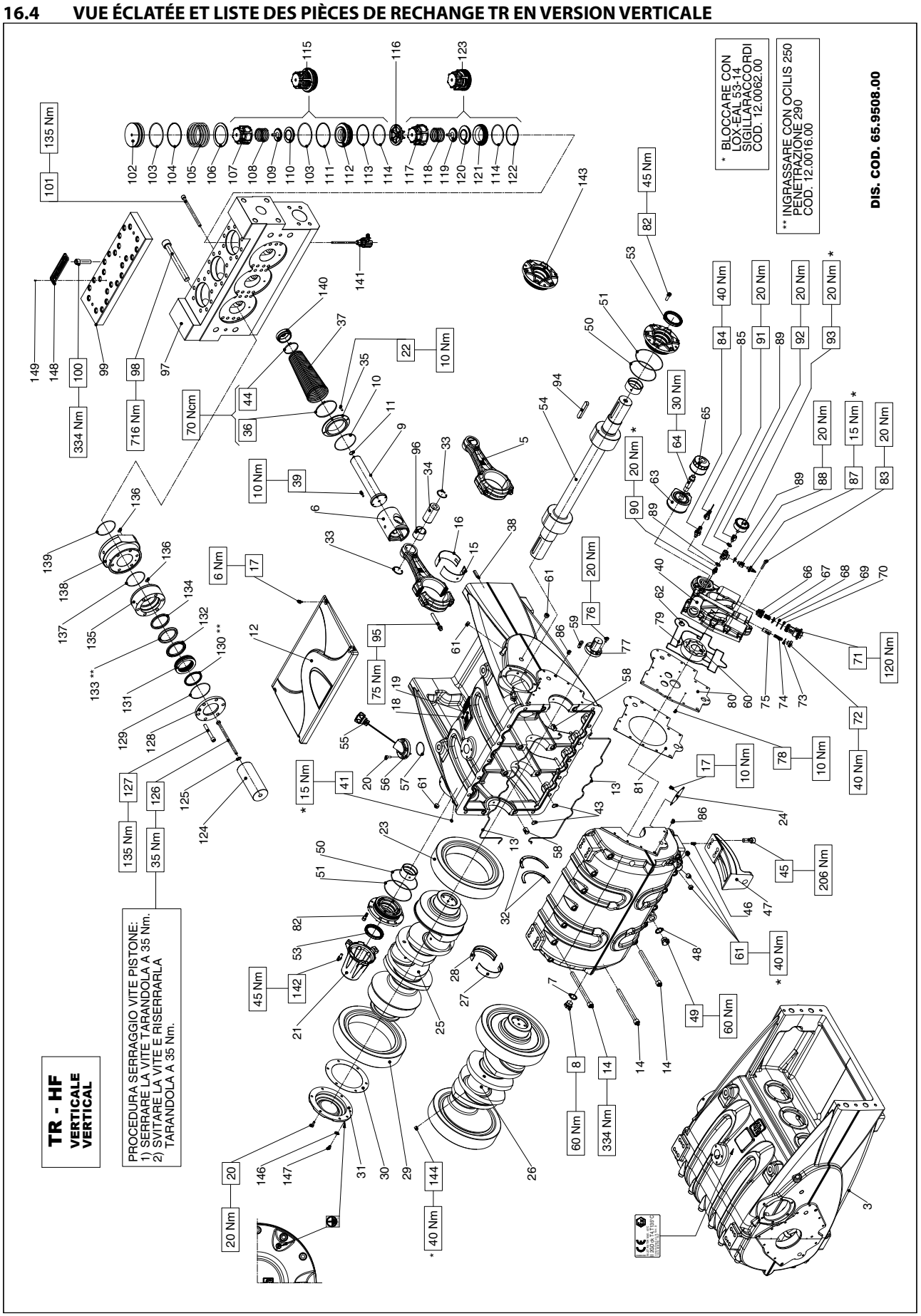
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**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **93** | **94.6070.00** | **MANOMETRO ATT. POST. 0-16 D. 63** | | **1** |
| **94** | **91.5050.00** | **LINGUETTA 18x11x100 UNI 6604** | | **1** |
| **95** | **99.4410.00** | **VITE SERRAGGIO BIELLA** | | **6** |
| **96** | **90.9185.00** | **BOCCOLA PIEDE BIELLA** | | **3** |
| **97** | **65.1205.56** | **TESTATA LP** | | **1** |
| **98** | **99.5355.00** | **VITE M24x2x220 UNI 5931 8,8** | | **4** |
| **99** | **65.2120.56** | **COPERCHIO VALVOLE LP** | | **1** |
| **100** | **99.5149.00** | **VITE M16x65 UNI 5931 12,9** | | **24** |
| **101** | **99.4495.00** | **VITE M12x180 UNI 5931 12,9** | | **24** |
| **102** | **65.2121.56** | **TAPPO VALVOLA** | | **3** |
| **103** | **90.4146.00** | **OR D. 104,4x3,53 NBR SH. 70 4412** | **B** | **6** |
| **104** | **90.5345.00** | **ANELLO ANTIEST. D. 105,4x111,2x1,5** | **B** | **3** |
| **105** | **94.8050.00** | **MOLLA Dm. 103x87,5** | | **3** |
| **106** | **65.2139.56** | **ANELLO SEDE VALVOLA DI MANDATA** | | **3** |
| **107** | **36.2131.05** | **GUIDA VALVOLA DI MANDATA** | | **3** |
| **108** | **94.7745.00** | **MOLLA Dm. 56x57,3** | | **3** |
| **109** | **36.2129.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **110** | **36.2126.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **111** | **90.5340.00** | **ANELLO ANTIESTR. D. 105,2x111x1,5** | | **3** |
| **112** | **36.2121.56** | **SEDE VALVOLA DI MANDATA** | | **3** |
| **113** | **90.5315.00** | **ANELLO ANTIEST. D. 89,4x95,2x1,5** | | **3** |
| **114** | **90.4144.00** | **OR D. 88,5x3,53 NBR SH. 70 4350** | | **6** |
| **115** | **36.7227.01** | **GRUPPO VALVOLA DI MANDATA** | **B** | **3** |
| **116** | **65.2122.51** | **DISTANZIALE GUIDA VALVOLA** | **B** | **3** |
| **117** | **36.2130.05** | **GUIDA VALVOLA D'ASPIRAZIONE** | | **3** |
| **118** | **94.7755.00** | **MOLLA Dm. 58,5x103,1** | | **3** |
| **119** | **36.2128.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **120** | **36.2127.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **121** | **36.2120.56** | **SEDE VALVOLA D'ASPIRAZIONE** | | **3** |
| **122** | **90.5310.00** | **ANELLO ANTIEST. D. 89,2x95x1,5** | | **3** |
| **123** | **36.7226.01** | **GRUPPO VALVOLA D'ASPIRAZIONE** | **B** | **3** |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| **125** | **96.7105.00** | **ROSETTA D. 10x18x0,9** | | **3** |
| **126** | **99.3865.00** | **VITE M10x200 UNI 5737 A2-70** | | **24** |
| **127** | **99.4418.00** | **VITE M12x90 UNI 5931 12,9** | | **18** |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| **136** | **90.3830.00** | **OR D. 12,1x2,62 NBR SH. 70 117** | **A** | **6** |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 62.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| **139** | **90.3917.00** | **OR D. 88,57x2,65 NBR SH. 70 3350** | **A** | **3** |
| **140** | **10.7449.01** | **DISPOSITIVO APERTURA VALVOLE** | | **1** |
| **141** | **99.3652.01** | **VITE M10x20 UNI 5931 12,10** | | **4** |
| **142** | **65.7005.01** | **COPERCHIO PTO + BOCCOLA PIGNONE** | | **2** |
| **143** | **99.4250.00** | **VITE M12x12 UNI 5923 12,9** | | **2** |
| **145** | **96.7017.50** | **ROSETTA D. 8,4x15x0,8 - ATEX** | | **1** |
| **146** | **99.3019.00** | **VITE M8x10 UNI 5931 A2-70 - ATEX** | | **1** |
| **147** | **97.8276.00** | **MARCHIO PRATISSOLI** | | **1** |
| **148** | **91.5703.00** | **RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346** | | **2** |

## 16.4 VUE ÉCLATÉE ET LISTE DES PIÈCES DE RECHANGE TR EN VERSION VERTICALE



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 3 | 65.0109.01 | CARTER - COMPLETO | | 1 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 |
| 10 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 12 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 |
| 25 | 65.0206.55 | ALBERO A GOMITI C. 130 | | 1 |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 |
| 35 | 65.2107.66 | FLANGIA PER SOFFIETTO | | 3 |
| 36 | 92.8110.00 | FASCETTA D. 98-109 | | 3 |
| 37 | 65.2110.47 | SOFFIETTO | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 |
| 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 44 | 92.8100.00 | FASCETTA D. 58-69 | | 3 |
| 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 46 | 97.6230.00 | SPINA D. 10x24 UNI 6364 | | 8 |
| 47 | 65.2007.13 | PIEDE VERTICALE | | 4 |
| 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| 125 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 126 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 127 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 136 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 65.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| 139 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 140 | 65.2106.66 | PARASPRUZZI PER SOFFIETTO | | 3 |
| 141 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 142 | 99.3652.00 | VITE M10x20 UNI 5931 12,9 | | 3 |
| 143 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 144 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 146 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 147 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 148 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 149 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 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 : | SR50 - SR65 - SR75<br>TR50 - TR60 - TR70 - TR75 |

est conforme à la Directive Machines 2006/42/CE.
Normes appliquées : UNI EN ISO 12100:2010 - UNI EN 809:2000

La pompe identifiée ci-dessus respecte les qualités requises essentielles de sécurité et de protection de la santé suivantes 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.

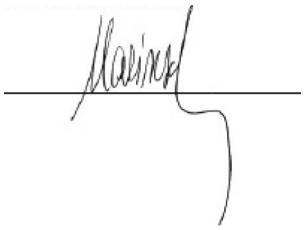
De plus, le fabricant s'engage à rendre disponible, suite à une demande adéquatement motivée, une copie de la documentation technique relative à la pompe dans les modes et les termes à définir.

La pompe ne doit pas être mise en marche tant que l'installation à laquelle elle doit être incorporée n'a pas été déclarée conforme aux dispositions des directives et / ou normes relatives.

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

Personne autorisée à rédiger la déclaration : L'administrateur délégué Ing. Paolo Marinsek

Reggio Emilia - Février 2014 — Signature :



## UNIQUEMENT POMPES EN CONFIGURATION ATEX

## DÉCLARATION CE DE CONFORMITÉ

(Conformément à l'annexe X de la Directive Européenne 94/4/CE - ATEX)

Le fabricant **INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 - 42049 - S- ILARIO D'ENZA - Italie DÉCLARE** sous sa responsabilité exclusive, que les pompes identifiées et décrites ci-après :

| | |
|---|---|
| Désignation : | POMPE |
| Type : | Pompe alternative à pistons pour eau à haute pression |
| Marque de fabrique : | INTERPUMP GROUP - PRATISSOLI |
| Modèle : | SR50 - SR65 - SR75<br>TR50 - TR60 - TR70 - TR75 |

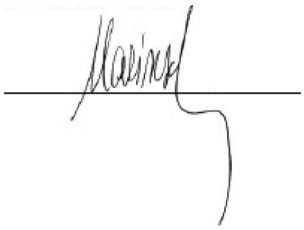
étiquetées comme ⟨Ex⟩ groupe II, catégorie 2 GD protection ck et classe de température T4/T135°C, commandées comme pompes ATEX, sont conformes à la directive 94/9/CE ATEX, et peuvent être utilisées dans des atmosphères potentiellement déflagrantes dans les limites de zones classées, en conformité avec les performances déclarées, installées et utilisées conformément aux instructions contenues dans ce livret, le manuel général et/ou spécifique de chaque pompe.

Le fabricant prend toutes les mesures nécessaires pour s'assurer que les pompes sont fabriquées en conformité avec les déclarations.

Normes européennes appliquées :
UNI EN 1127-1:2011 ; UNI EN 13463-1:2009 ; UNI EN 13463-5:2011 ; UNI EN 13463-8:2003

Dossier technique déposé auprès de DNV ITALIE **(n ° 0496)**

L'administrateur délégué Ing. Paolo Marinsek
Reggio Emilia - Février 2014 — Signature :



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# 1 EINLEITUNG

Diese Anleitung enthält die Anweisungen für den Betrieb und die Wartung der Pumpen der Serie SR-TR 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



**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.



**Symbol des Explosionsschutzes.**
Definiert besondere Schutzvorschriften für die Verwendung der Pumpen in den lt. ATEX-Produktrichtlinie identifizierten Zonen.
**Bei den in ATEX-Auslegung für die Verwendung** in explosionsgefährdeter Umgebung bestellten Pumpen müssen **die Hinweise in den mit diesem Symbol gekennzeichneten Abschnitten und die Angaben in der ergänzenden Anleitung „ATEX-EXPLOSIONSSCHUTZ“ STRIKT befolgt werden**.

# 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 Punkt9.4).
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.

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

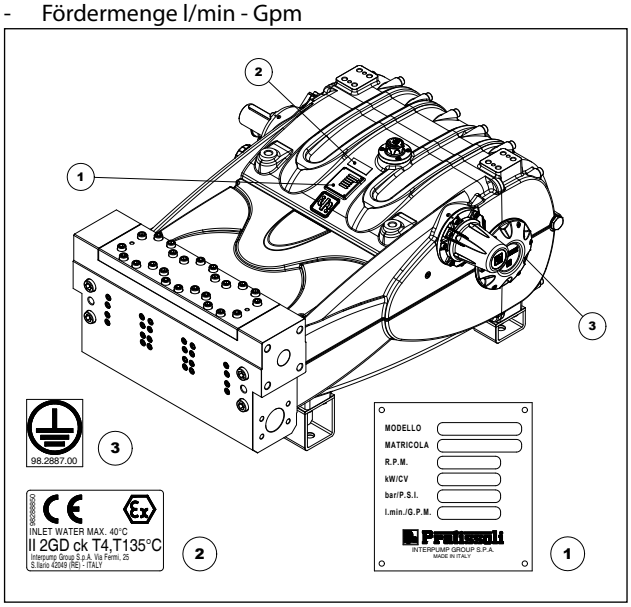



Abb. 1

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

Für die in **ATEX**-Auslegung bestellten Pumpen:
Pos. 2 - Typenschild **mit ATEX-Kennzeichnung zum Explosionsschutz**.
Pos. 3 - Schild für die Identifizierung der **Erdungsschraube**.

# 5 TECHNISCHE EIGENSCHAFTEN DER HIGH FLOW PUMPEN

**TECHNISCHE EIGENSCHAFTEN DER SR-PUMPEN (@ RPM 520)**

| Modell | 1/min | Fördermenge | | Druck | | Leistung | |
|---|---|---|---|---|---|---|---|
| | | l/min | Gpm | bar | Psi | kW | PS |
| SR 50 | 1500 | 276 | 73 | 400 | 5800 | 211 | 287 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 65 | 1500 | 466 | 123 | 250 | 3625 | 222,5 | 302,5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 75 | 1500 | 620 | 164 | 200 | 2900 | 236,8 | 322 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

**TECHNISCHE EIGENSCHAFTEN DER TR-PUMPEN (@ RPM 520)**

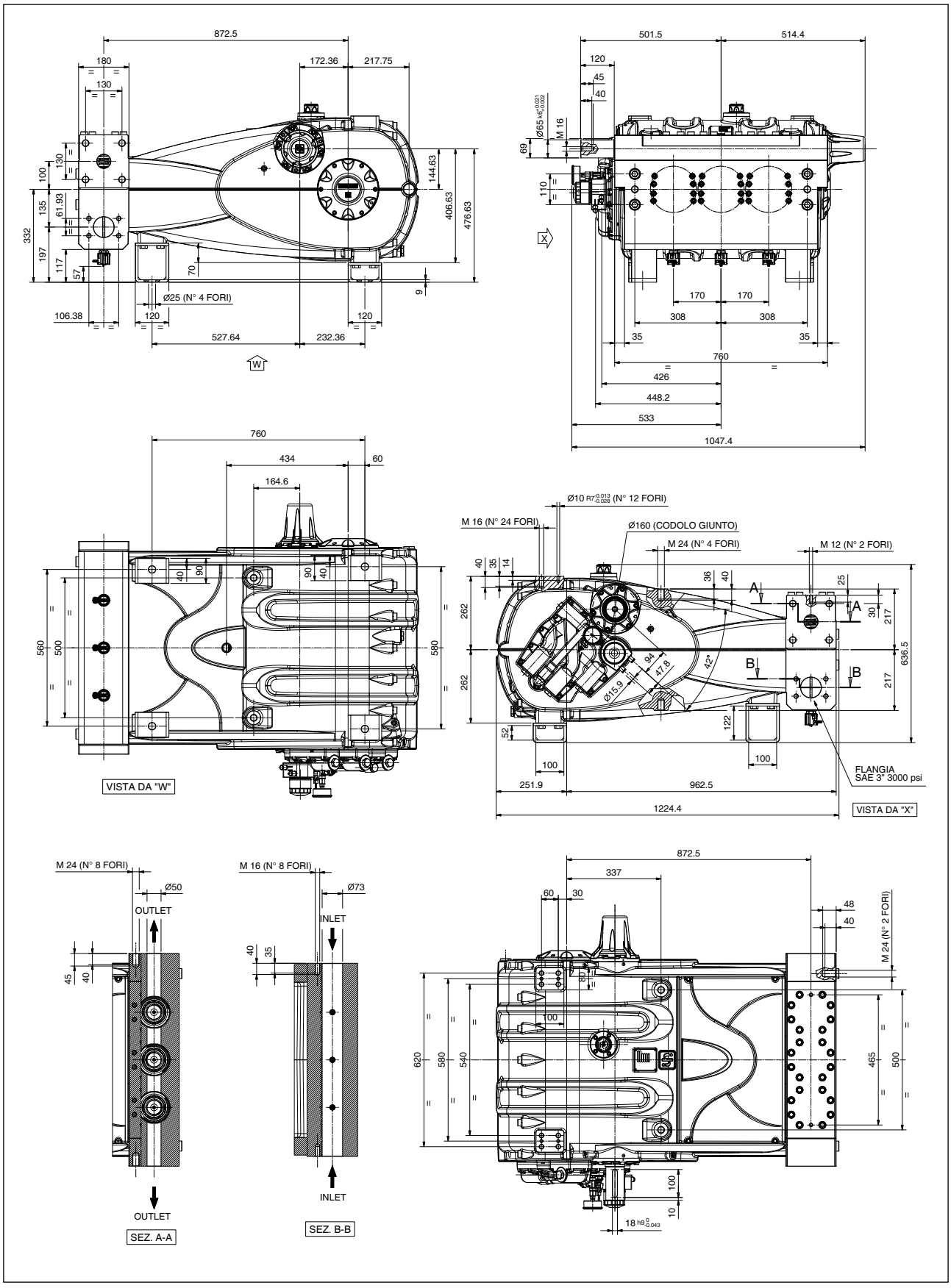
| Modell | 1/min | Fördermenge | | Druck | | Leistung | |
|---|---|---|---|---|---|---|---|
| | | l/min | Gpm | bar | Psi | kW | PS |
| TR 50 | 1500 | 398 | 105 | 400 | 5800 | 304 | 413,5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 60 | 1500 | 573 | 151,4 | 300 | 4350 | 328,3 | 446,5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 70 | 1500 | 780,5 | 206 | 220 | 3190 | 328 | 446 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 75 | 1500 | 896 | 236,7 | 200 | 2900 | 342 | 465 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

## 5.1 Reduzierte Trägheitsmomente der Pumpe an der Zapfwelle

| PUMPE SERIE | U/min | J (kg mm$^2$) |
|---|---|---|
| SR | 1500 | 231600 |
| | 1800 | 182400 |
| | 2200 | 140700 |
| TR | 1500 | 241200 |
| | 1800 | 189100 |
| | 2200 | 145200 |

## 6 ABMESSUNGEN UND GEWICHT DER SR HIGH-FLOW-PUMPEN

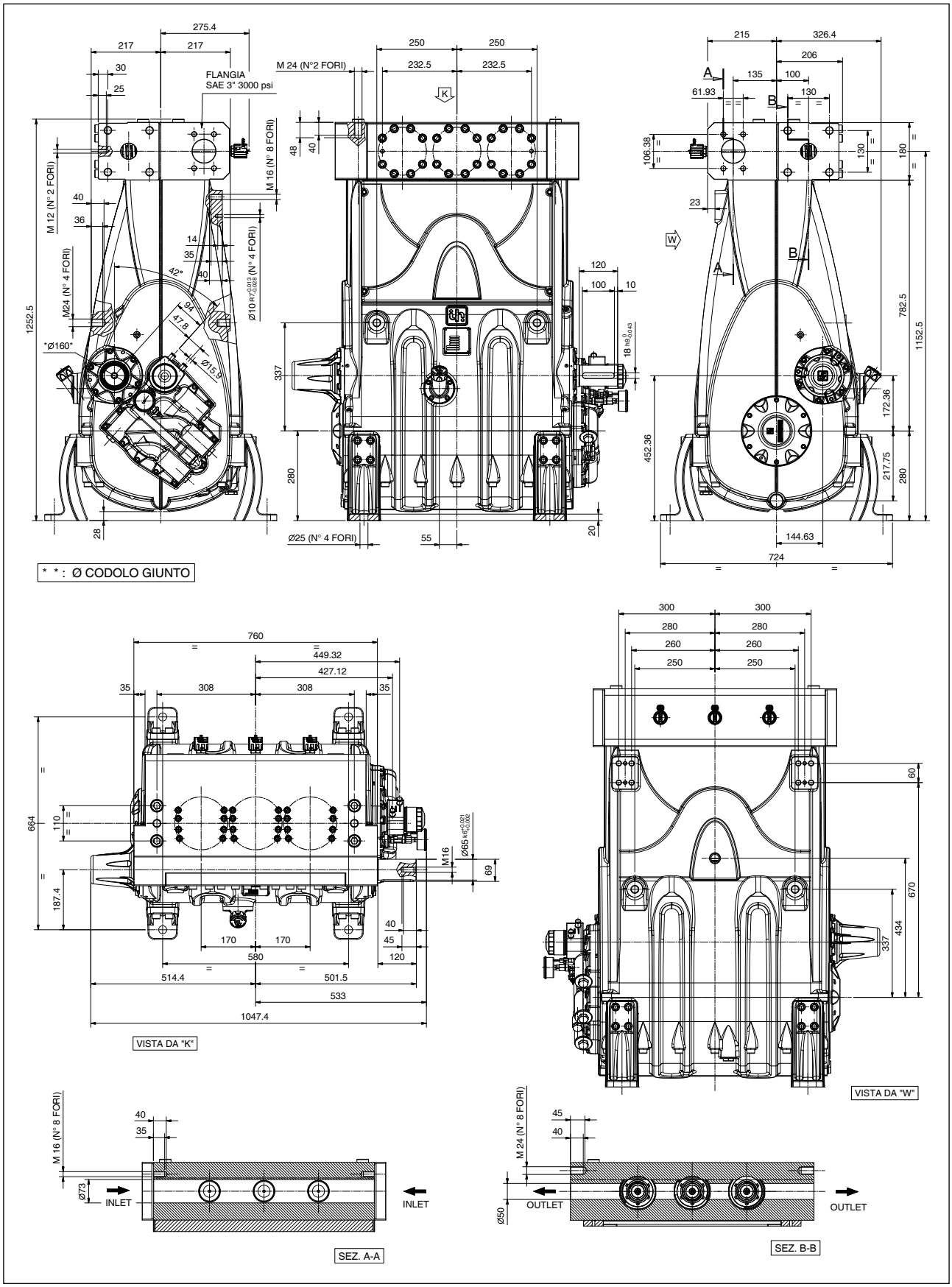
Für die Abmessungen und das Gewicht der Pumpen der Serie SR HORIZONTAL siehe Abb. 2.




**Trockengewicht 1150 kg.**

Abb. 2

Für die Abmessungen und das Gewicht der Pumpen der Serie SR VERTIKAL siehe Abb. 2/a.

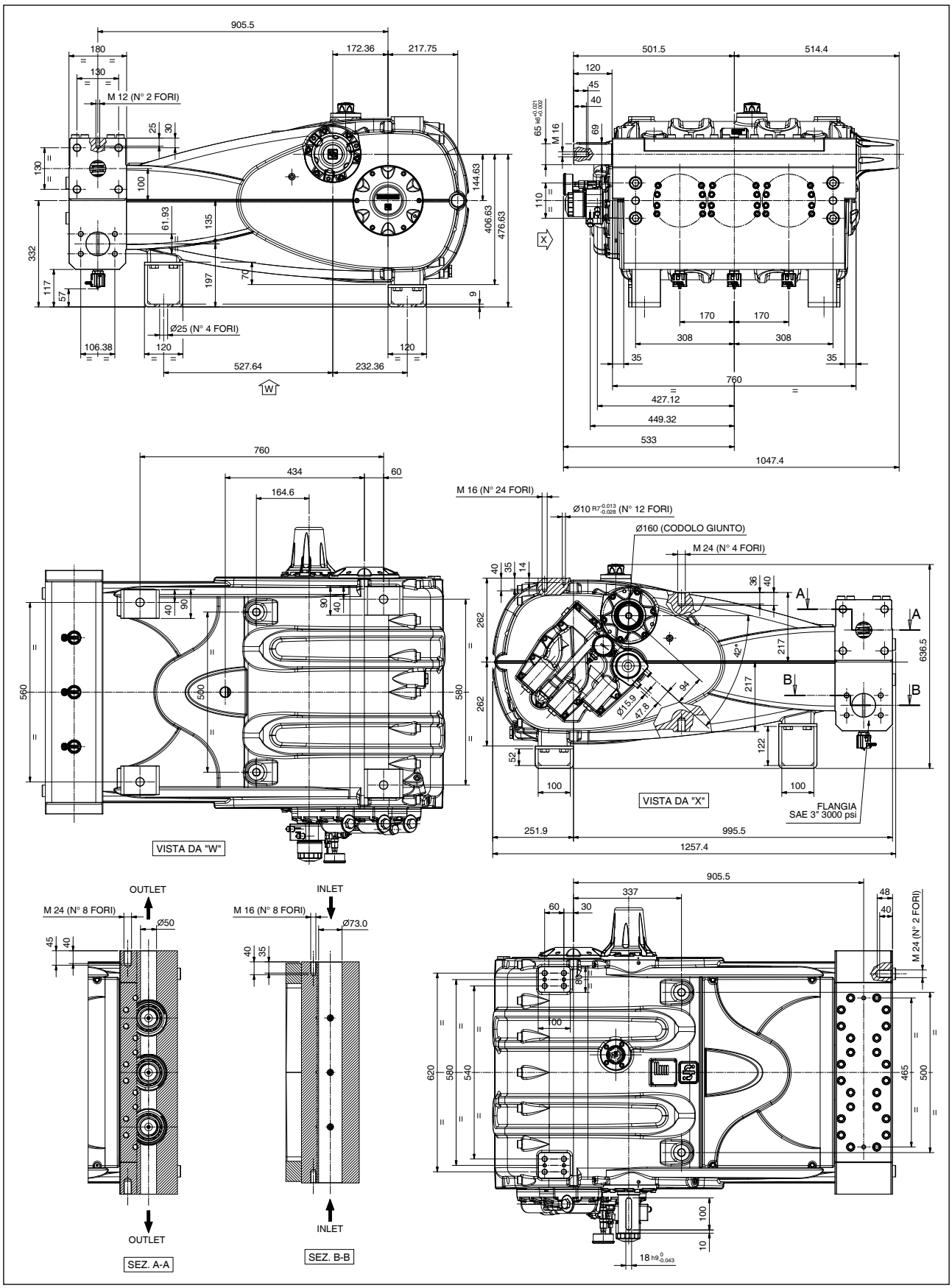



**Trockengewicht 1160 kg.**

Abb. 2/a

## 6.1 ABMESSUNGEN UND GEWICHT DER TR HIGH-FLOW-PUMPEN

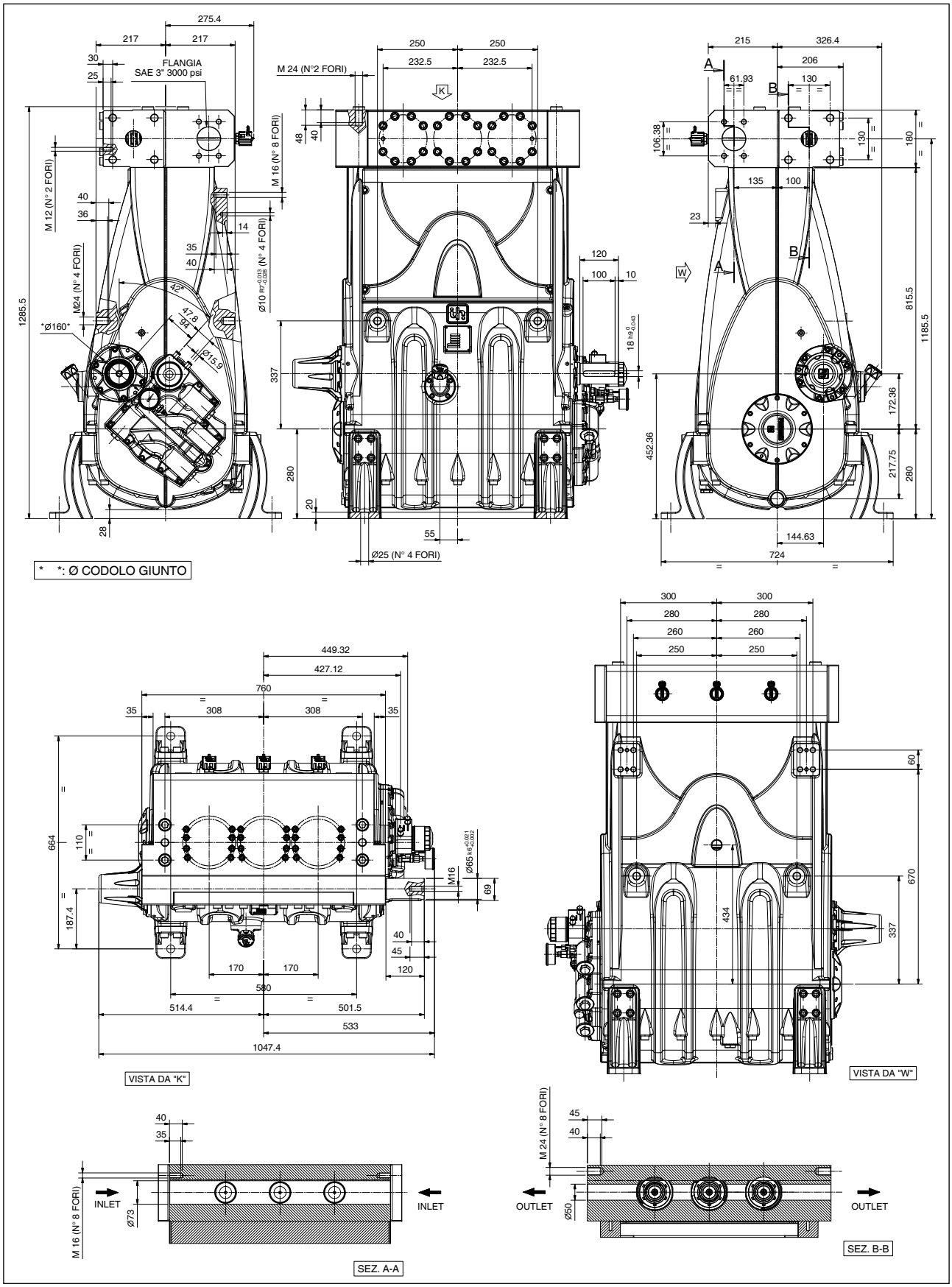
Für die Abmessungen und das Gewicht der Pumpen der Serie TR HORIZONTAL siehe Abb. 3.




**Trockengewicht 1185 kg.**

Abb. 3

Für die Abmessungen und das Gewicht der Pumpen der Serie TR VERTIKAL siehe Abb. 3/a.




**Trockengewicht 1195 kg.**

Abb. 3/a

# 7 GEBRAUCHSANWEISUNGEN

Sofern nicht in ATEX-Auslegung bestellt, sind die Pumpen der Serie SR - TR für den Betrieb in **nicht** explosionsgefährdeten Umgebungen mit gefiltertem Wasser entwickelt (siehe Punkt 9.6). 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***.

***ATEX***-Ausführung Die zulässige Höchsttemperatur des Wassers beträgt **40° C.**

## 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 **250 U/min an der Kolbenwelle**. Jede von der in der Tabelle der technischen Daten (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 Marken und Typen der empfohlenen Schmieröle

### 7.6.1 Öltyp

Die Pumpe wird mit dem Schmieröl TOTAL-ERG MISOLA MAP SH-150 geliefert, das eine korrekte Benutzung der Pumpe in Umgebungstemperaturen von -10° C bis +40° C garantiert.
Bei hiervon abweichenden Temperaturen müssen Einzelbereichsschmieröle mit zweckmäßiger Viskosität verwendet werden.
Bei Verwendung der Pumpe unter sehr kalten Temperaturbedingungen wird die Benutzung zweckmäßiger Heizvorrichtungen empfohlen.
Die Zwangsschmierung wird durch die Ölpumpe gewährleistet, die an jeder erforderlichen Stelle der in Bewegung befindlichen Teile eine korrekte Ölmenge gewährleistet.
Die Verwendung von Mehrbereichsöl kann aus zweierlei Gründen sinnvoll sein:

- Es erleichtert die Tätigkeit der Anwender, die die Ölviskosität nicht in Abhängigkeit von der Außentemperatur oder Jahreszeit wechseln müssen.
- Es erhöht deutlich die Abstände zwischen den Ölwechseln und reduziert somit die Wartungseingriffe, siehe die Tabelle „Vorbeugende Wartung" im Kapitel 11.

### 7.6.2 Empfohlene Ölmarken

TOTAL-ERG MISOLA MAP SH-150.
MOBIL SHC 629.

### 7.6.3 Erforderliche Öleigenschaften

Sollte es sich als unmöglich oder schwierig erweisen, die empfohlenen Marken zu beziehen, können Alternativöle verwendet werden, die jedoch folgende technische Eigenschaften aufweisen müssen:

- Viskosität bei -10° C ≤4000 cSt.
- Viskosität bei 40° C ≤200 cSt.
- Viskosität bei 100° C ≤18 cSt.
- Viskositätsindex: ≥135 cSt.
- Gleitpunkt: ≥ -25° C
- Additivierungsgrad GL1 - GL2.

Wenden Sie sich bei **Bedarf an den Kundendienst**.
Überprüfen Sie den Ölstand mithilfe des Ölmessstabs ①, Abb. 4.
Füllen Sie bei Bedarf über den Ölverschluss ①, Abb. 4 nach.
Die Ölstandprüfung hat mit der Pumpe auf Umgebungstemperatur zu erfolgen, für den Ölwechsel soll die Pumpe dagegen auf Betriebstemperatur sein. Entfernen Sie dazu den Verschluss Pos. ②, Abb. 4. (Den Verschluss in Pos. (2/a) verwenden – bei der vertikalen Ausführung.
Für die Ölstandprüfung und den Ölwechsel siehe Angaben in Kapitel 11.
Die erforderliche Ölmenge beträgt **52 Liter SR-TR bei der horizontalen Ausführung; 37 Liter SR-TR bei der vertikalen Ausführung**.

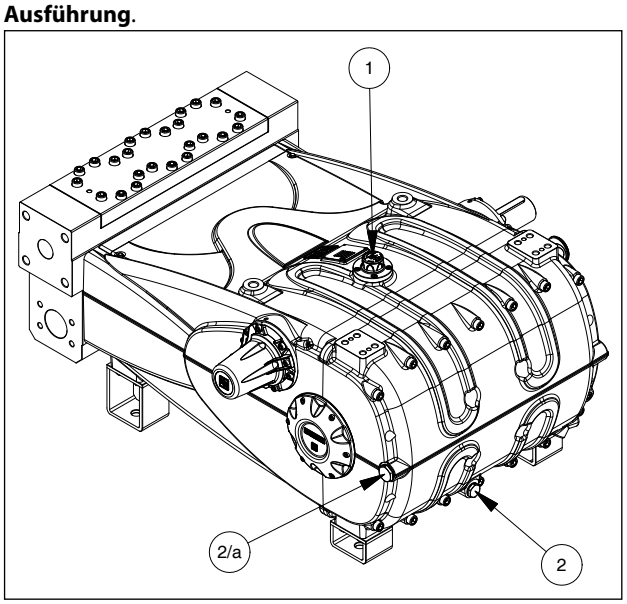



Abb. 4

Richten Sie die Anlage so ein, dass eine Öltemperatur von 110° C (230°F) beim Betrieb der Pumpe auf keinen Fall überschritten wird.
Benutzen Sie hierzu die unter Punkt 9.10 genannte Öltemperaturanzeige.
**ACHTUNG:** Verwenden Sie Öl mit einem Flammpunkt von über 200° C.

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

**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 der Serie SR-TR verfügen über (siehe Abb. 5 und Abb. 6):
2 Sauganschlüsse "IN": SAE G3" - 3000 PSI,
siehe "EXPLOSIONSZEICHNUNG SAUGFLANSCH – DRUCKFLANSCH SR-TR" ART.-NR. 65950900 (Abb. 7).
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": siehe „EXPLOSIONSZEICHNUNG SAUGFLANSCH – DRUCKFLANSCH SR-TR" ART.-NR. 65950900 (Abb. 7).
1 „ABLASS"-Anschluss: mit im unteren Gehäuseteil eingearbeiteter Bohrung G1/2" zur Überprüfung etwaiger Wasserlecks durch Verschleiß der Druckdichtungen.
Bei auftretenden Lecks siehe die Reparaturanleitung.
**Diese Bohrung muss immer offen und gegebenenfalls mit einem Erfassungssystem verbunden sein.**

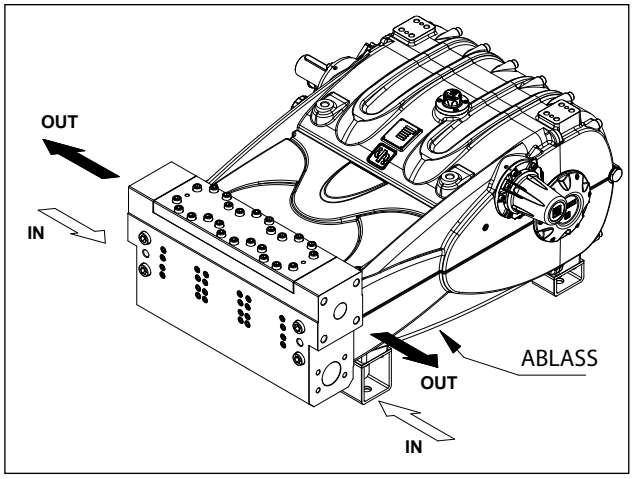



Abb. 5

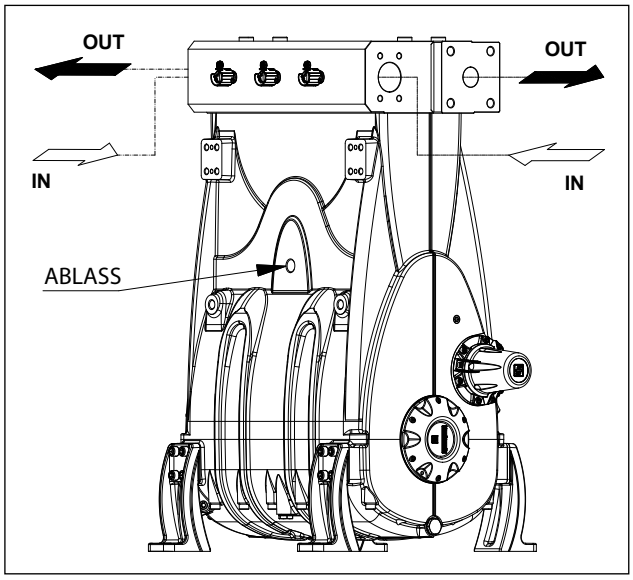
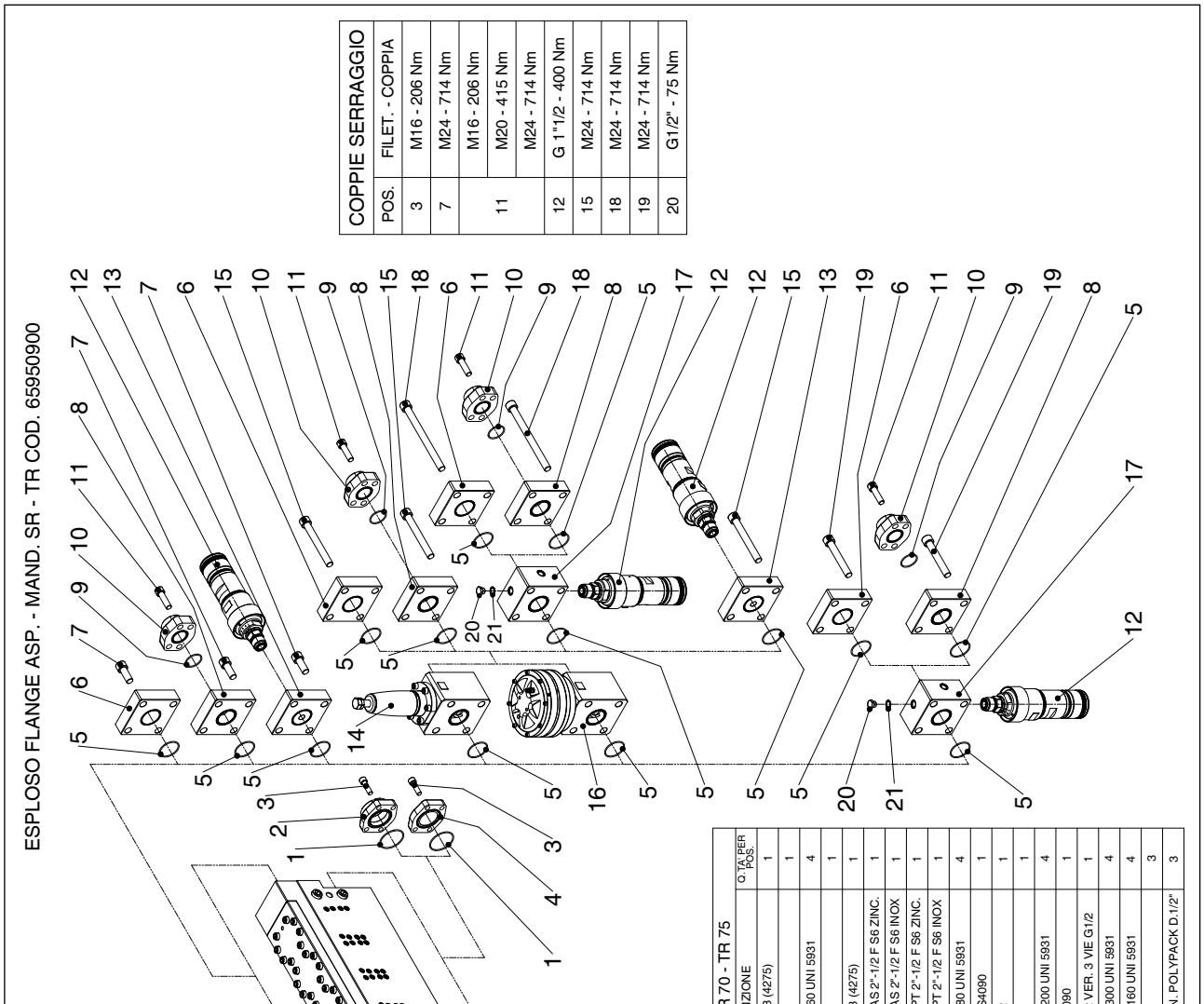



Abb. 6

## 8.1 Schema Zusammensetzung Saug- und Druckflansch




| COPPIE SERRAGGIO | | |
|---|---|---|
| POS. | FILET. - COPPIA | |
| 3 | M16 - 206 Nm | |
| 7 | M24 - 714 Nm | |
| 11 | M16 - 206 Nm | |
| | M20 - 415 Nm | |
| | M24 - 714 Nm | |
| 12 | G 1"1/2 - 400 Nm | |
| 15 | M24 - 714 Nm | |
| 18 | M24 - 714 Nm | |
| 19 | M24 - 714 Nm | |
| 20 | G1/2" - 75 Nm | |

POMPE SR - TR TUTTE LE VERSIONI

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| ASPIRAZIONE | 1 | 90414100 | OR D. 85.32X3.53 (4337) | 1 |
| | 2 | 96458500 | FLANGIA DIR. GAS 3" F S3 ZINC. | 1 |
| | | 96459000 | FLANGIA DIR. GAS 3" F S3 INOX | 1 |
| | | 96459500 | FLANGIA DIR. NPT 3" F S3 ZINC. | 1 |
| | | 96460000 | FLANGIA DIR. NPT 3" F S3 INOX | 1 |
| | 3 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 4 | 96489500 | FLANGIA CIECA 3" S3 ZINC. | 1 |
| | | 96490000 | FLANGIA CIECA 3" S3 INOX | 1 |

POMPE SR 50 - TR 50

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021466 | FLANGIA 1"1/2 | 1 |
| | 9 | 90407900 | OR D. 47.22X3.53 (4187) | 1 |
| | 10 | 96468500 | FLANGIA DIR. GAS 1"-1/2 F S6 ZINC. | 1 |
| | | 96469000 | FLANGIA DIR. GAS 1"-1/2 F S6 INOX | 1 |
| | | 96469500 | FLANGIA DIR. NPT 1"-1/2 F S6 ZINC. | 1 |
| | | 96470000 | FLANGIA DIR. NPT 1"-1/2 F S6 INOX | 1 |
| | 11 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 17 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 18 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 19 | 99534400 | TAPPO G1/2X13 | 3 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

POMPE SR 65 - TR 60

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021366 | FLANGIA 2" | 1 |
| | 9 | 90409900 | OR D. 56.74X3.53 (4225) | 1 |
| | 10 | 96473500 | FLANGIA DIR. GAS 2" F S6 ZINC. | 1 |
| | | 96474000 | FLANGIA DIR. GAS 2" F S6 INOX | 1 |
| | | 96474500 | FLANGIA DIR. NPT 2" F S6 ZINC. | 1 |
| | | 96475000 | FLANGIA DIR. NPT 2" F S6 INOX | 1 |
| | 11 | 99529000 | VITE TCEI M20X70 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

POMPE SR 75 - TR 70 - TR 75

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021266 | FLANGIA 2"1/2 | 1 |
| | 9 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 10 | 96478500 | FLANGIA DIR. GAS 2"-1/2 F S6 ZINC. | 1 |
| | | 96479000 | FLANGIA DIR. GAS 2"-1/2 F S6 INOX | 1 |
| | | 96479500 | FLANGIA DIR. NPT 2"-1/2 F S6 ZINC. | 1 |
| | | 96480000 | FLANGIA DIR. NPT 2"-1/2 F S6 INOX | 1 |
| | 11 | 99532000 | VITE TCEI M24X80 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

Abb. 7

# 9 INSTALLATION DER PUMPE

## 9.1 Installation

Die an den Füßen positionierten Befestigungsbohrungen haben einen Durchmesser von 25 mm.
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 vier Bohrungen M24 für Hubösen an der Pumpe angebracht, siehe folgende Abbildung.

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






**Erdung**: Hierzu müssen Sie anhand der GELB etikettierten Edelstahlschraube M8 und Zahnscheibe ein Erdungskabel an die Pumpe befestigen.
Siehe Anleitung „ATEX-EXPLOSIONSSCHUTZ".

**Ersetzen Sie den Schraubverschluss der Öleinfüllöffnung am Gehäuse durch den Ölmessstab.**
Der Ölmessstab 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).

Der Einbau des Antriebs hat in jedem Fall fachgerecht zu erfolgen, um fehlerhafte oder für die Verbindungselemente belastende Betriebsbedingungen sowie übermäßigen Verschleiß, Temperaturanstieg bzw. gefährliche Brucherscheinungen zu vermeiden, die mögliche Zünd- und Explosionsquellen darstellen können.
*Siehe Anleitung „ATEX-EXPLOSIONSSCHUTZ".*

## 9.2 Drehrichtung

Die Drehrichtung kann im Uhrzeigersinn oder gegen den Uhrzeigersinn, rechts- oder linksseitig erfolgen (siehe Abb. 8).

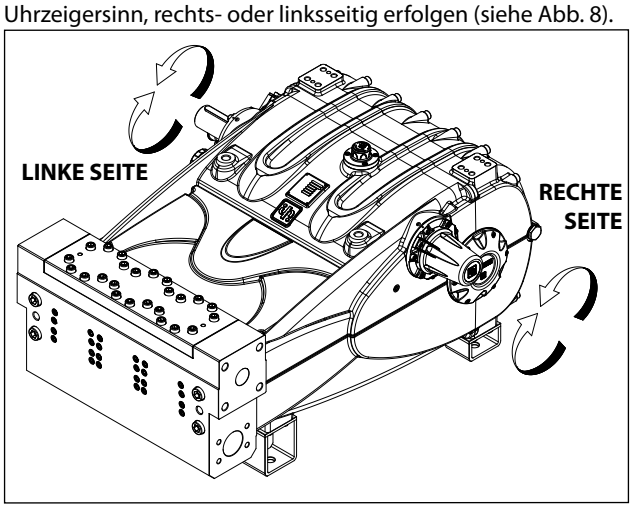



Abb. 8

Der Anschluss an die Pumpe ist beidseitig möglich; beachten Sie auf der **LINKEN SEITE** den von der Schmierpumpe benötigten Raumbedarf.
Der Enddeckel wird auf die nicht angeschlossene Zapfwelle montiert.

## 9.3 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.

## 9.4 Versorgung der Pumpe

Die Pumpen der Serie SR-TR müssen immer anhand einer Zwangsversorgung über eine Boosterpumpe installiert werden.
Die Boosterpumpe 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.**

## 9.5 Saugleitung

Für den einwandfreien Pumpenbetrieb muss die Saugleitung folgende Eigenschaften aufweisen:

1. Der min. Innendurchmesser muss den Tabellen unter Punkt 9.8 entsprechen und in jedem Fall größer oder gleich dem des Pumpenkopfs 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.

### 9.6 Filterung

In der Saugleitung der Pumpe müssen zwei Filter installiert werden, siehe Einbauposition in Abb. 9 und Abb. 9/a.

**Mit manuell betätigtem Regelventil.**

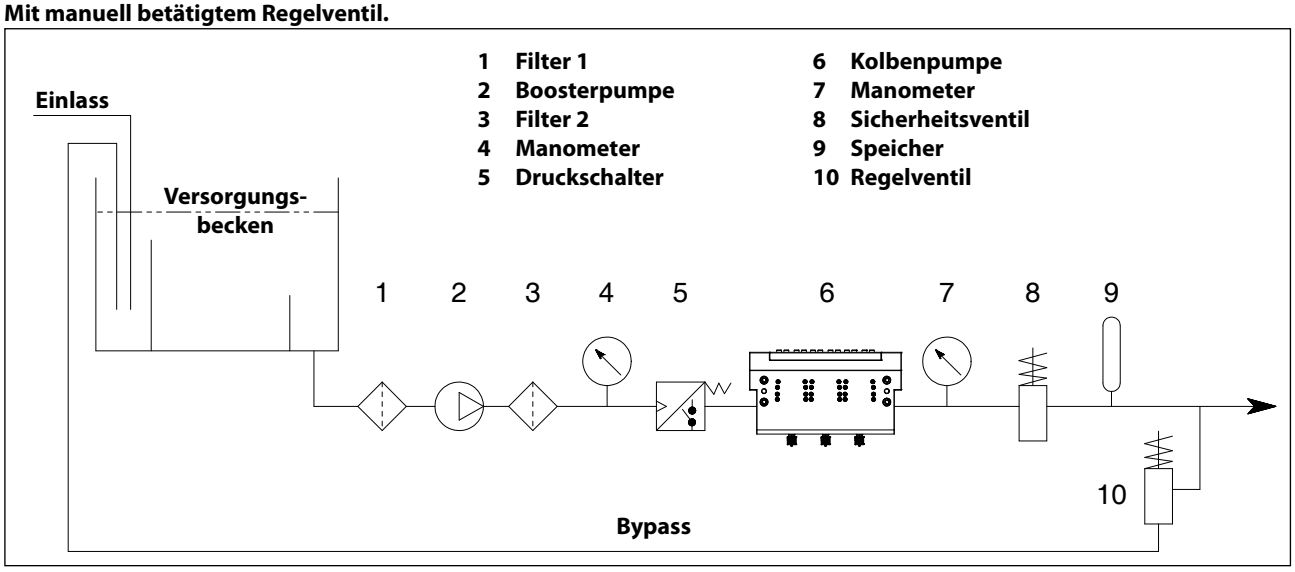



Abb. 9

**Mit pneumatisch betätigtem Regelventil**

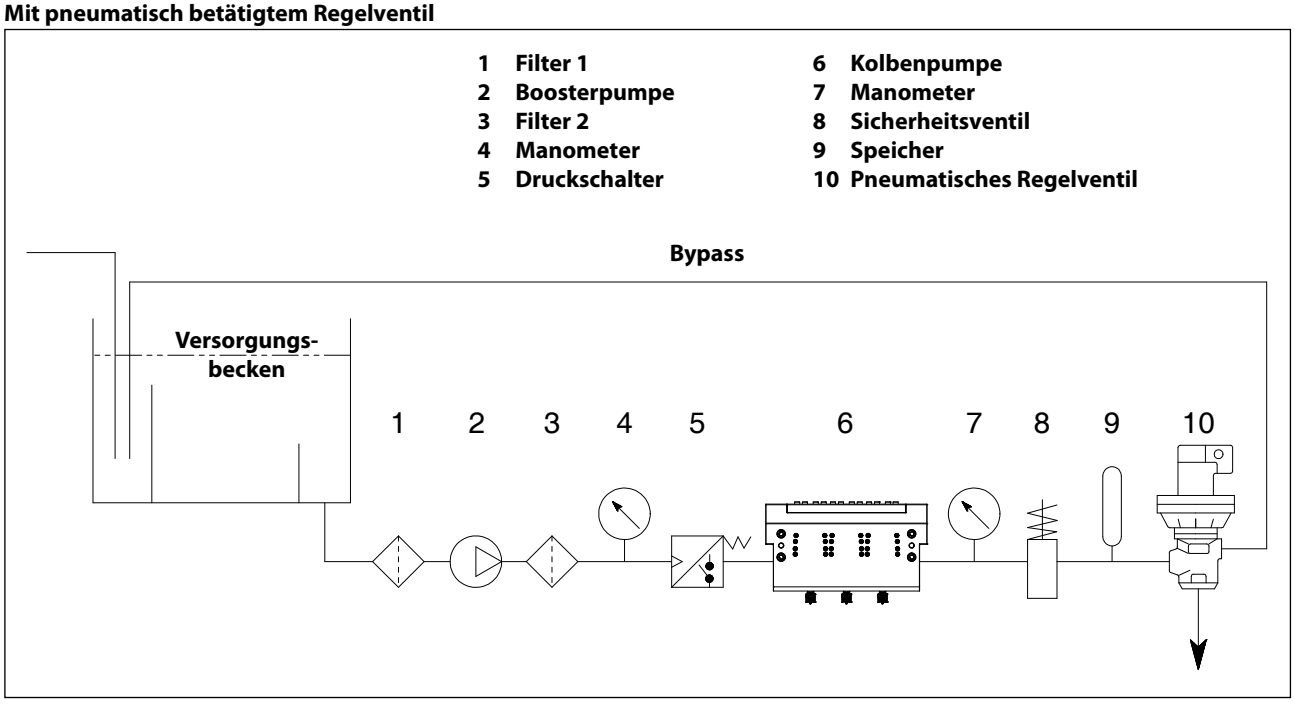



Abb. 9/a

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.**

### 9.7 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 Tabellen unter Punkt 9.8.
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.

### 9.8 Innendurchmesser der Rohrleitungen

Nachstehende Tabellen zeigen die Werte der Innendurchmesser der Saug- und Druckleitungen.

| PUMPE SR | | |
|---|---|---|
| **MODELL** | **SAUGLEITUNG** | **DRUCKLEITUNG** |
| SR 50 | SAE 3" - 3000 PSI | SAE 1"1/2 - 6000 PSI |
| SR 65 | SAE 3" - 3000 PSI | SAE 2" - 6000 PSI |
| SR 75 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |

| PUMPE TR | | |
|---|---|---|
| **MODELL** | **SAUGLEITUNG** | **DRUCKLEITUNG** |
| TR 50 | SAE 3" - 3000 PSI | SAE 1"1/2 - 6000 PSI |
| TR 60 | SAE 3" - 3000 PSI | SAE 2" - 6000 PSI |
| TR 70 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |
| TR 75 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |

Für den Zusammensetzung der Saug- und Druckflansche siehe „EXPLOSIONSZEICHNUNG SAUGFLANSCH – DRUCKFLANSCH SR-TR" Abb. 7. Wenden Sie sich bei Bedarf an die technische Abteilung oder den Kundendienst.

### 9.9 Anschluss Wasser-/Ölaustauscher

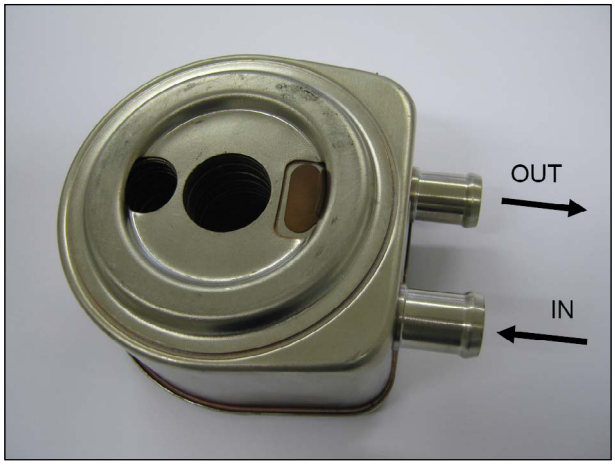



Abb. 10

Zur Gewährleistung einer bestmöglichen Leistungsabgabe schließen Sie den Austauscher in Gegenstromrichtung an (siehe Abb. 10).

Wasserdurchfluss:

a) Max. Effizienz 25 l/min
a) Mittlere Effizienz 20 l/min
a) Min. Effizienz 12 l/min

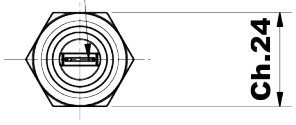
Arbeitet die Pumpe in einer Umgebungstemperatur von unter 5°C (41°F) kann auf den Anschluss des Austauschers verzichtet werden.

Bezüglich der Wartung siehe Kapitel 11.

### 9.10 Ölpumpengruppe

1) Ölfilterkartusche - muss von Hand angezogen werden; bezüglich der Wartung siehe Kapitel 11.
2) Manometer - 0÷16 bar zur regelmäßigen Kontrolle des Schmieröldrucks.
3) Druckschalter: NORMAL OFFEN (auf Anfrage auch normal geschlossen erhältlich); Spannung 12 V.
   Bei stationären Gruppen wird der Anschluss unter dem Schutzsystem empfohlen.
4) Ölthermostat: NORMAL GESCHLOSSEN; Spannung 12 V.

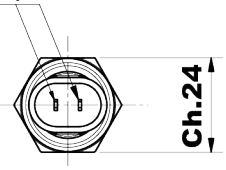
**Endverschluss 6,5x0,8**




**VERBINDUNG DRUCKSCHALTER**

**EINGRIFFSDRUCK: 0,3 ±0,15 BAR**

**2 Endverschlüsse 2,8x0,8**




**INT. VERBINDUNGEN KONTROLLLEUCHTE TEMPERATUR**

**EINGRIFFS TEMP. 105° C±5° C**

**ACHTUNG: Die elektrische Verbindung der zwei Sensoren muss auf einer NICHT INDUKTIVEN Verbindung basieren oder der Druckschalter und das Thermostat müssen durch Komponenten mit gleichwertigen Eigenschaften und ATEX-Zulassung ersetzt werden.**

## 10 START UND BETRIEB

### 10.1 Vorabkontrollen (vor dem Start)

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 usw.) innerhalb der vom Hersteller des Antriebs vorgegebenen Grenzen befinden.
5. Der Ölstand im Pumpengehäuse korrekt ist, u.z. über den entsprechenden Ölmessstab am oberen Gehäuseteil (Pos. 1 Abb. 11 und Abb. 11/a).

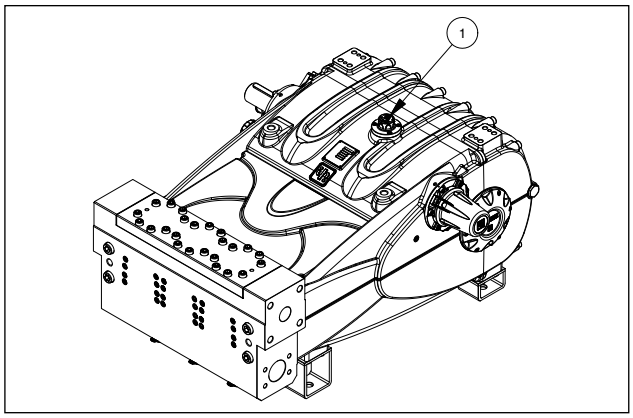



Abb. 11

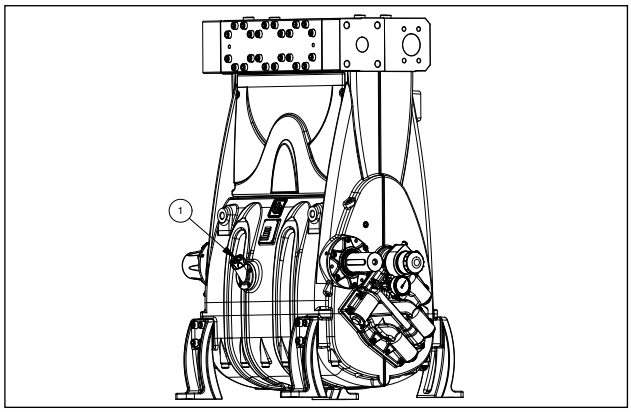



Abb. 11/a

**Stellen Sie nach längerer Lagerung oder Stillstand die Funktionstüchtigkeit der Saugventile wieder her, indem Sie die drei Ventilheber öffnen.**
**(Siehe Pos.② Abb. 12). Schließen Sie die Ventile vor Start der Pumpe wieder. Für die „Arbeits"- und „Ruhe"-Positionen siehe Abb. 12/a.**

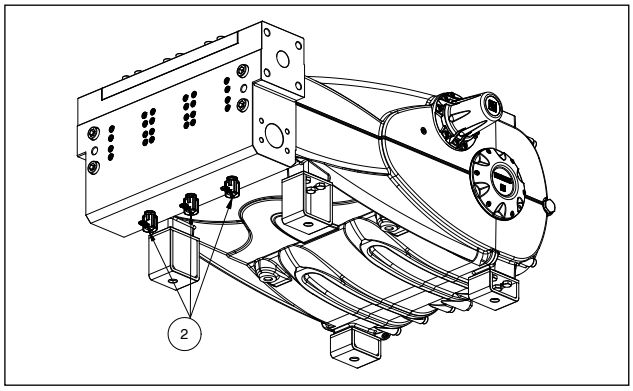



Abb. 12

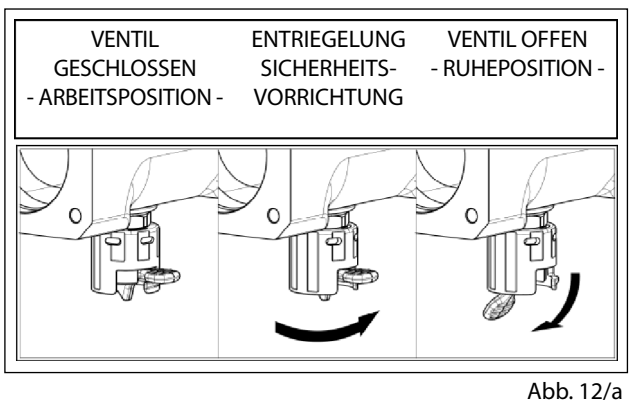



Abb. 12/a

### 10.2 Start

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

## 11 VORBEUGENDE WARTUNG

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

| VORBEUGENDE WARTUNG | | |
|---|---|---|
| **Alle 1000 Stunden** | **Alle 1500 Stunden** | **Alle 3000 Stunden** |
| Ölstandprüfung | | |
| | Überprüfung / Austausch *: Ventile Ventilsitze Ventilfedern Ventilführungen | Öl- und Ölfilterwechsel Austausch der Faltenbälge (vertikale Ausführung) |
| | Austausch *: HD-Dichtungen ND-Dichtungen | |

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

### 11.1 Faltenbalg (Ausführung SR - TR vertikal)

Prüfen Sie den Anzug der Schellen zur Faltenbalgbefestigung nach den ersten **1000 Betriebsstunden.**
**Tauschen Sie die Faltenbälge alle 3000 Betriebsstunden aus.**
Beachten Sie zum Austausch die Anweisungen in der **Reparaturanleitung**.

### 11.2 Wasser-/Ölaustauscher

Die Reinigungsintervalle des Austauschers sind in Abhängigkeit der Wasserhärte festzulegen. Es wird empfohlen, den Austauscher **alle 2000 Stunden zu reinigen, wenn die Wasserhärte ≤ 30° Französische Härtegrade beträgt; alle 1000 Stunden bei einer Wasserhärte von > 30° und ≤ 40° Französischen Härtegraden. Bei mehr als 40° Französischen Härtegraden wird eine alle 500 Stunden auszuführende Reinigung empfohlen.**
Die Reinigung ist unter Verwendung von handelsüblichem Entkalkungsprodukten auszuführen; ein Ausbau ist nicht erforderlich.
HINWEIS: Das Material des Austauschers besteht aus **INOX (AISI 303).**

**Schutz des Schmierkreislaufs der mechanischen Teile**: Bereiten Sie die Anlage so vor, dass der an der Ölpumpe für die Zwangsschmierung installierte Druckschalter die Funktion der SR-TR Pumpe im Fall einer Öldruckverringerung blockiert.

| VORBEUGENDE WARTUNG | |
|---|---|
| **BETREFF** | **KONTROLLHÄUFIGKEIT** |
| Prüfung der Eichung des Manometers für den Schmieröldruck | Alle 10000 Stunden |
| Sichtkontrolle bezüglich Wasserlecks am Kopf | Alle 500 Stunden |

## 12 EINLAGERUNG DER PUMPE

### 12.1 Füllung der Pumpe mit Korrosions- oder Frostschutzlösung anhand einer externen Membranpumpe, lt. Anordnung unter Punkt 9.6

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 den Jahreszeiten mit Frostgefahr die Anweisungen in Kapitel 12 (siehe Punkt 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 liefert die Pumpe keinen Durchfluss:**
- 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 Boosterpumpe 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 Punkt 7.6).
- Die Ausrichtung der Kupplung ist nicht perfekt.
- Die Neigung der Pumpe beim Betrieb ist zu groß.



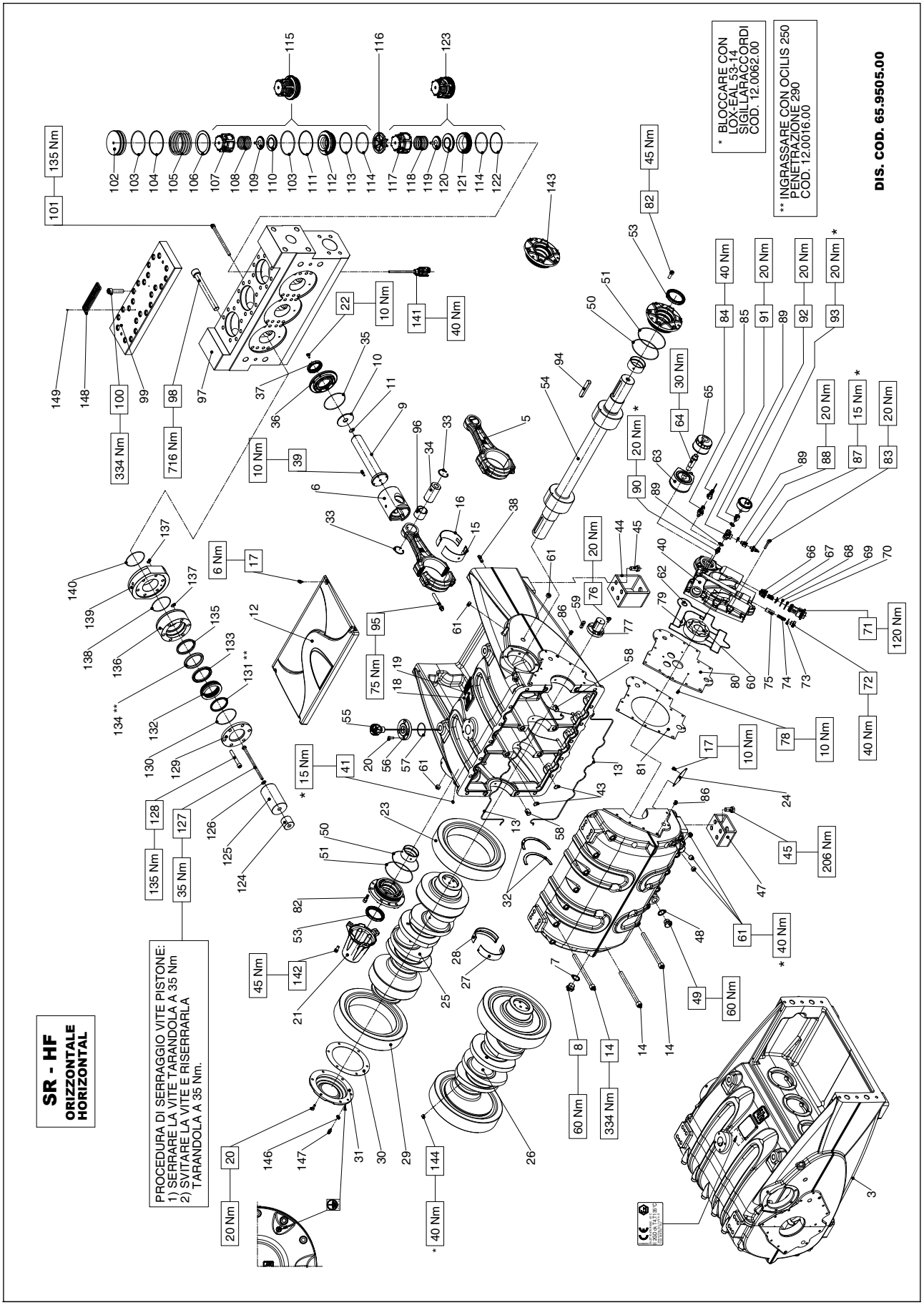
**Vibrationen oder Stöße in den Leitungen:**
- Ansaugung von Luft.
- Fehlfunktion des Druckregelventils.
- Fehlfunktion der Ventile.
- Ungleichmäßige Antriebsbewegung.

## 15.1 FEHLERSUCHE UND ABHILFEN

| FEHLER | MÖGLICHE URSACHE | ABHILFE |
|---|---|---|
| Beim Start erzeugt die Pumpe keinerlei Geräusche | Kein Wasser im Zulauf.<br>Die Ventile sind verklemmt.<br>Die Druckleitung ist geschlossen, so dass die in der Pumpe vorhandene Luft nicht entweichen kann. | Kontrollieren Sie die Funktion und die Förderleistung der Boosterpumpe.<br>Kontrollieren Sie die Funktionsfähigkeit der Ventile.<br>Prüfen Sie die Druckleitung auf mögliche Anomalien. |
| Zu niedriger Druck. | Die Pumpe saugt Luft an | Suchen Sie das Leck und reparieren Sie es |
| | Verlust des Druckregelventils oder fehlerhafte Druckeinstellung | Beheben Sie den Verlust oder stellen Sie das Ventil neu ein |
| | Ventildichtungsset fehlerhaft | Montieren Sie neue Dichtungen |
| | Saug- oder Auslassventil/e beschädigt | Das/Die Saug- und Auslassventil/e muss/müssen ausgetauscht werden. Kontrollieren Sie die Ventilfederbedingungen. |
| | Leck am Kopf | Prüfen Sie die Kopfdichtungen und ersetzen Sie diese bei Bedarf; montieren Sie einen neuen Kopf |
| Geräuschintensive Pumpe | Abgenutzte Ventile.<br>Saugleitungen und/oder Filter zu klein.<br>Unzureichender Durchfluss, hohe Wassertemperatur, Filter verstopft. | Prüfen Sie die Installation und die Komponenten der Saugleitung; erfassen Sie die Wassertemperatur |
| Unregelmäßige Pulsationen der Leitungen | Unzureichende Luftabsaugung und/oder Versorgung.<br>Kurven, Bögen oder Anschlüsse in der Versorgungsleitung drosseln den Durchfluss der Flüssigkeit.<br>Der Versorgungsfilter ist verschmutzt oder zu klein.<br>Die Boosterpumpe liefert unzureichenden Druck und/oder Durchfluss. | Prüfen Sie die Installation und die Komponenten der Saugleitung.<br>Kontrollieren Sie die Funktion und die Förderleistung der Boosterpumpe.<br>Reinigen oder ersetzen Sie den Versorgungsfilter. |
| Wasserleck an der Dichtungshalterung | ND-Dichtung fehlerhaft/abgenutzt | Tauschen Sie die ND-Dichtung aus |
| Die Pumpe läuft heiß | Der Druck und/oder Drehzahl ist höher als auf dem Typenschild angegeben.<br>Zu niedriger Ölstand im Pumpengehäuse oder das verwendete Öl entspricht nicht der empfohlenen Sorte.<br>Die Kupplung oder der Antrieb ist nicht gefluchtet. | Stellen Sie den Druck und/oder die Drehzahl wieder her.<br>Stellen Sie den Ölstand wieder her und wechseln Sie das Öl bei Bedarf.<br>Prüfen Sie den Antrieb. |
| Ölleck am Pumpengehäuse | Ölabstreifring Kolbenführungsschaft fehlerhaft/abgenutzt.<br>Diverse Dichtungen am Gehäuse fehlerhaft/abgenutzt.<br>Prüfen Sie bei den vertikalen Ausführungen den Zustand des Faltenbalgs. | Tauschen Sie den Ölabstreifring, den Faltenbalg oder Dichtungen aus |
| Emulgiertes Öl tritt aus dem Entlüfter aus.<br>Der Ölmessstab zeigt Emulationszeichen. | Kontaminierung des Schmieröls mit gepumpter Flüssigkeit. | Prüfen Sie die korrekte Funktion der Ölabstreifringe der Kolbenführung (oder Faltenbälge) und wechseln Sie das Schmieröl |

# 16 EXPLOSIONSZEICHNUNGEN UND ERSATZTEILLISTEN

## 16.1 ESPLOSIONSZEICHNUNG UND ERSATZTEILLISTE SR IN HORIZONTALER AUSFÜHRUNG



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

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**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

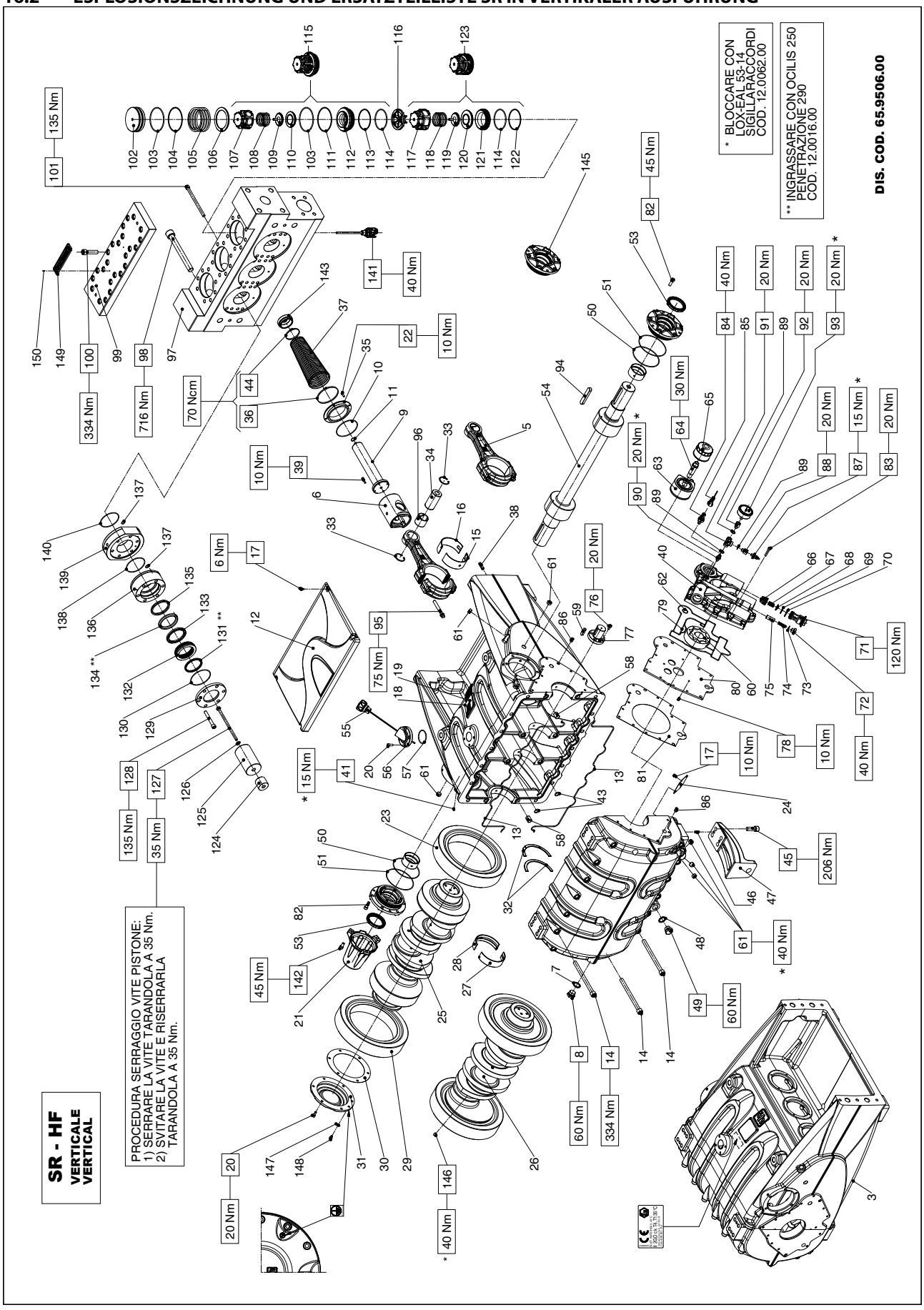
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**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.2119.66 | DISTANZIALE PISTONE | | 3 |
| 125 | 74.0402.09 | PISTONE D. 50x127 | | 3 |
| | 74.0405.09 | PISTONE D. 65x127 | | |
| | 65.0409.09 | PISTONE D. 70x127 | | |
| 126 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 127 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 128 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 129 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2132.56 | ANELLO SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 130 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A | |
| 131 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2890.00 | ANELLO TEN. ALT. D. 65x73x5,5 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 132 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2131.70 | SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 133 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2895.00 | ANELLO 'RESTOP' D. 65x80x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 134 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2893.00 | ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 135 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1005.92 | ANELLO DI TESTA D. 65 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 136 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0607.56 | CAMICIA PISTONE D. 65 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 137 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 138 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A | |
| 139 | 65.2123.56 | SUPPORTO CAMICIA D. 50 | | 3 |
| | 65.2124.56 | SUPPORTO CAMICIA D. 65-75 | | |
| 140 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 141 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 142 | 99.3652.00 | VITE M10x20 UNI 5931 12,9 | | 3 |
| 143 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 144 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 146 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 147 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 148 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 149 | 91.57030.0 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 16.2 ESPLOSIONSZEICHNUNG UND ERSATZTEILLISTE SR IN VERTIKALER AUSFÜHRUNG



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 92.8100.00 | FASCETTA D. 58-69 | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 46 | 97.6230.00 | SPINA D. 10x24 UNI 6364 | | 8 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 47 | 65.2007.13 | PIEDE VERTICALE | | 4 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 10 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 12 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 76 | 99.3039.00 | VITE M8x16 UNI 5931 8,8 | | 4 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 35 | 65.2107.66 | FLANGIA PER SOFFIETTO | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 36 | 92.8110.00 | FASCETTA D. 98-109 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 37 | 65.2110.47 | SOFFIETTO | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

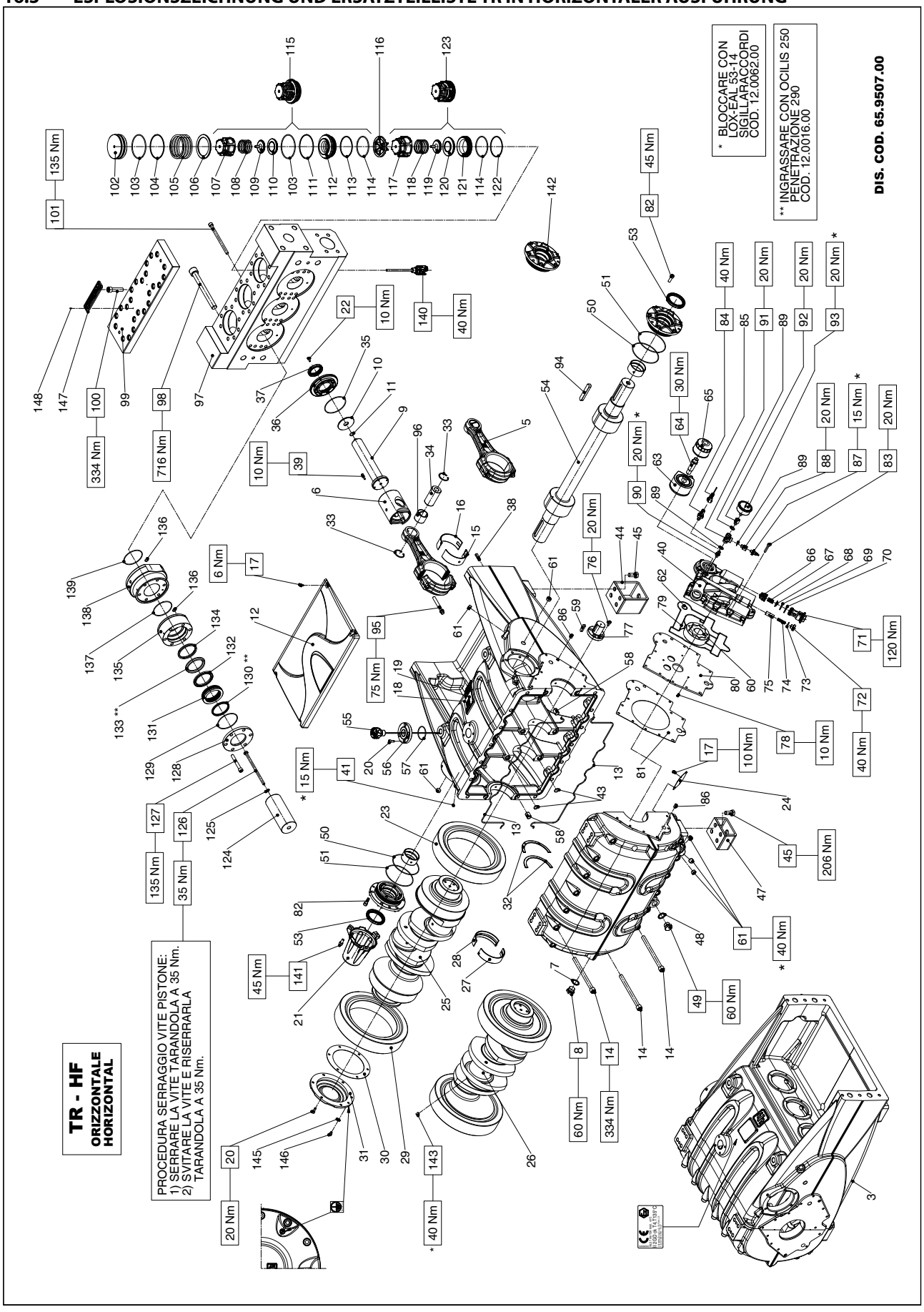
Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **92** | **95.2566.00** | **NIPPLO DI RIDUZIONE M-F G 1/4"** | | **1** |
| **93** | **94.6070.00** | **MANOMETRO ATT. POST. 0-16 D. 63** | | **1** |
| **94** | **91.5050.00** | **LINGUETTA 18x11x100 UNI 6604** | | **1** |
| **95** | **99.4410.00** | **VITE SERRAGGIO BIELLA** | | **6** |
| **96** | **90.9185.00** | **BOCCOLA PIEDE BIELLA** | | **3** |
| **97** | **65.1205.56** | **TESTATA LP** | | **1** |
| **98** | **99.5355.00** | **VITE M24x2x220 UNI 5931 8,8** | | **4** |
| **99** | **65.2120.56** | **COPERCHIO VALVOLE LP** | | **1** |
| **100** | **99.5149.00** | **VITE M16x65 UNI 5931 12,9** | | **24** |
| **101** | **99.4495.00** | **VITE M12x180 UNI 5931 12,9** | | **24** |
| **102** | **65.2121.56** | **TAPPO VALVOLA** | | **3** |
| **103** | **90.4146.00** | **OR D. 104,4x3,53 NBR SH. 70 4412** | **B** | **6** |
| **104** | **90.5345.00** | **ANELLO ANTIEST. D. 105,4x111,2x1,5** | **B** | **3** |
| **105** | **94.8050.00** | **MOLLA Dm. 103x87,5** | | **3** |
| **106** | **65.2139.56** | **ANELLO SEDE VALVOLA DI MANDATA** | | **3** |
| **107** | **36.2131.05** | **GUIDA VALVOLA DI MANDATA** | | **3** |
| **108** | **94.7745.00** | **MOLLA Dm. 56x57,3** | | **3** |
| **109** | **36.2129.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **110** | **36.2126.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **111** | **90.5340.00** | **ANELLO ANTIESTR. D. 105,2x111x1,5** | | **3** |
| **112** | **36.2121.56** | **SEDE VALVOLA DI MANDATA** | | **3** |
| **113** | **90.5315.00** | **ANELLO ANTIEST. D. 89,4x95,2x1,5** | | **3** |
| **114** | **90.4144.00** | **OR D. 88,5x3,53 NBR SH. 70 4350** | | **6** |
| **115** | **36.7227.01** | **GRUPPO VALVOLA DI MANDATA** | **B** | **3** |
| **116** | **65.2122.51** | **DISTANZIALE GUIDA VALVOLA** | **B** | **3** |
| **117** | **36.2130.05** | **GUIDA VALVOLA D'ASPIRAZIONE** | | **3** |
| **118** | **94.7755.00** | **MOLLA Dm. 58,5x103,1** | | **3** |
| **119** | **36.2128.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **120** | **36.2127.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **121** | **36.2120.56** | **SEDE VALVOLA D'ASPIRAZIONE** | | **3** |
| **122** | **90.5310.00** | **ANELLO ANTIEST. D. 89,2x95x1,5** | | **3** |
| **123** | **36.7226.01** | **GRUPPO VALVOLA D'ASPIRAZIONE** | **B** | **3** |
| **124** | **65.2119.66** | **DISTANZIALE PISTONE** | | **3** |
| 125 | 74.0402.09 | PISTONE D. 50x127 | | 3 |
| | 74.0405.09 | PISTONE D. 65x127 | | |
| | 65.0409.09 | PISTONE D. 70x127 | | |
| **126** | **96.7105.00** | **ROSETTA D. 10x18x0,9** | | **3** |
| **127** | **99.3865.00** | **VITE M10x200 UNI 5737 A2-70** | | **24** |
| **128** | **99.4418.00** | **VITE M12x90 UNI 5931 12,9** | | **18** |
| 129 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2132.56 | ANELLO SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 130 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A | |
| 131 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2890.00 | ANELLO TEN. ALT. D. 65x73x5,5 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 132 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2131.70 | SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 133 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2895.00 | ANELLO 'RESTOP' D. 65x80x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 134 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2893.00 | ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 135 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1005.92 | ANELLO DI TESTA D. 65 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 136 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0607.56 | CAMICIA PISTONE D. 65 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| **137** | **90.3830.00** | **OR D. 12,1x2,62 NBR SH. 70 117** | **A** | **6** |
| 138 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A | |
| 139 | 65.2123.56 | SUPPORTO CAMICIA D. 50 | | 3 |
| | 65.2124.56 | SUPPORTO CAMICIA D. 65-75 | | |
| **140** | **90.3917.00** | **OR D. 88,57x2,65 NBR SH. 70 3350** | **A** | **3** |
| **141** | **10.7449.01** | **DISPOSITIVO APERTURA VALVOLE** | | **1** |
| **142** | **99.3652.00** | **VITE M10x20 UNI 5931 12,9** | | **3** |
| **143** | **65.2106.66** | **PARASPRUZZI PER SOFFIETTO** | | **3** |
| **145** | **65.7005.01** | **COPERCHIO PTO + BOCCOLA PIGNONE** | | **2** |
| **146** | **99.4250.00** | **VITE M12x12 UNI 5923 12,9** | | **2** |
| **147** | **96.7017.50** | **ROSETTA D. 8,4x15x0,8 - ATEX** | | **1** |
| **148** | **99.3019.00** | **VITE M8x10 UNI 5931 A2-70 - ATEX** | | **1** |
| **149** | **97.8276.00** | **MARCHIO PRATISSOLI** | | **1** |
| **150** | **91.5703.00** | **RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346** | | **2** |

## 16.3 ESPLOSIONSZEICHNUNG UND ERSATZTEILLISTE TR IN HORIZONTALER AUSFÜHRUNG



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 3 | 65.0109.01 | CARTER - COMPLETO | | 1 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 |
| 25 | 65.0206.55 | ALBERO A GOMITI C. 130 | | 1 |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 |
| 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

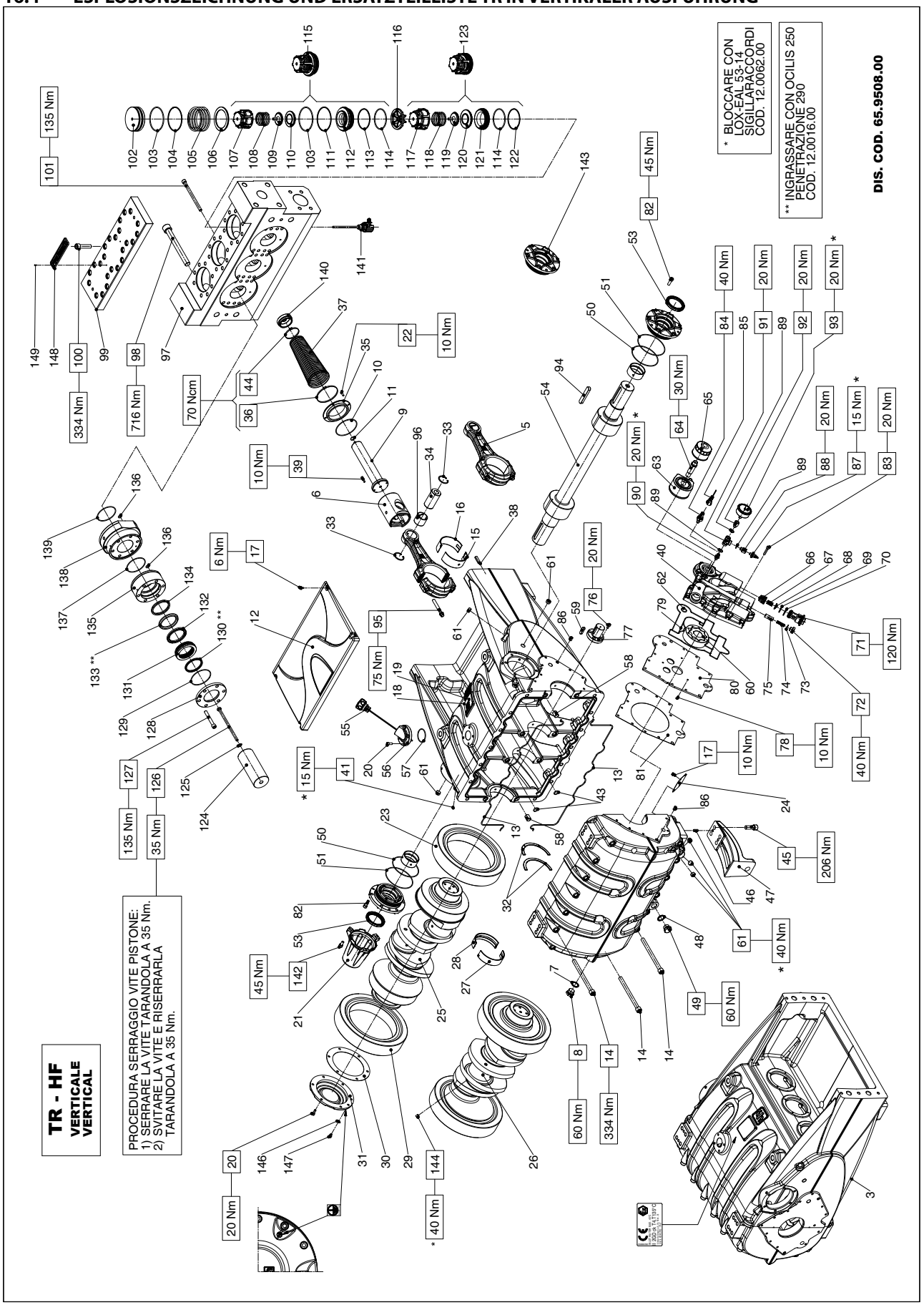
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**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| 125 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 126 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 127 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 136 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 62.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| 139 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 140 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 141 | 99.3652.01 | VITE M10x20 UNI 5931 12,10 | | 4 |
| 142 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 143 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 145 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 146 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 147 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 148 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 16.4 ESPLOSIONSZEICHNUNG UND ERSATZTEILLISTE TR IN VERTIKALER AUSFÜHRUNG



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

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**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 3 | 65.0109.01 | CARTER - COMPLETO | | 1 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 |
| 10 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 12 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 |
| 25 | 65.0206.55 | ALBERO A GOMITI C. 130 | | 1 |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 |
| 35 | 65.2107.66 | FLANGIA PER SOFFIETTO | | 3 |
| 36 | 92.8110.00 | FASCETTA D. 98-109 | | 3 |
| 37 | 65.2110.47 | SOFFIETTO | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 |
| 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 44 | 92.8100.00 | FASCETTA D. 58-69 | | 3 |
| 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 46 | 97.6230.00 | SPINA D. 10x24 UNI 6364 | | 8 |
| 47 | 65.2007.13 | PIEDE VERTICALE | | 4 |
| 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| 125 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 126 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 127 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 136 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 65.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| 139 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 140 | 65.2106.66 | PARASPRUZZI PER SOFFIETTO | | 3 |
| 141 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 142 | 99.3652.00 | VITE M10x20 UNI 5931 12,9 | | 3 |
| 143 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 144 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 146 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 147 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 148 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 149 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 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: | SR50 - SR65 - SR75<br>TR50 - TR60 - TR70 - TR75 |

der Maschinenrichtlinie 2006/42/EG entspricht
Angewandte Normen: UNI EN ISO 12100:2010 - UNI EN 809:2000

Die vorgenannte Pumpe erfüllt folgende 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.

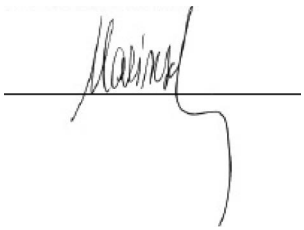
Die Inbetriebnahme der Pumpe ist so lange untersagt, bis festgestellt wurde, dass die Maschine, in die die Pumpe eingebaut wird, den Bestimmungen der einschlägigen Richtlinien bzw. Normen entspricht.

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

Bevollmächtigter für die Ausstellung der Einbauerklärung: Der Geschäftsführer Ing. Paolo Marinsek

Reggio Emilia - Februar 2014 — Unterschrift:



## NUR FÜR DIE IN ATEX-AUSLEGUNG BESTELLTEN PUMPEN

## EG-KONFORMITÄTSERKLÄRUNG

(Gemäß Anhang X der Europäischen Richtlinie 94/4/EG - ATEX)

Der Hersteller **INTERPUMP GROUP S.p.A. - Via E. Fermi, 25 - 42049 - S- ILARIO D'ENZA - Italien ERKLÄRT** eigenverantwortlich, dass die wie folgt identifizierten und beschriebenen Pumpen:

| | |
|---|---|
| Bezeichnung: | PUMPE |
| Typ: | Kolbenhubpumpe für Hochdruckwasser |
| Herstellermarke: | INTERPUMP GROUP - PRATISSOLI |
| Modell: | SR50 - SR65 - SR75<br>TR50 - TR60 - TR70 - TR75 |

Gekennzeichnet mit Ⓔx Gruppe II, Kategorie 2 GD, Schutz Ck und mit Temperaturklasse T4/T135°C, soweit als ATEX-Pumpen bestellt, die Richtlinie 94/9/EG ATEX erfüllen und im Rahmen der klassifizierten Zonen, der erklärten Leistungen und einer den Angaben in diesem Datenblatt, in der allgemeinen bzw. pumpenspezifischen Anleitung entsprechenden Installation sowie Verwendung in explosionsgefährdeter Umgebung verwendet werden können.

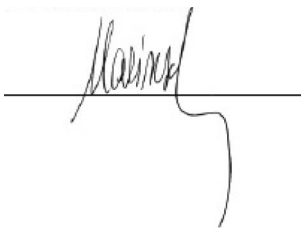
Der Hersteller trifft alle erforderlichen Maßnahmen, um die Konformität der hergestellten Pumpen mit der geleisteten Erklärung sicherzustellen.

Angewandte europäische Normen:
UNI EN 1127-1:2011; UNI EN 13463-1:2009; UNI EN 13463-5:2011; UNI EN 13463-8:2003

Relevante technische Unterlagen bei DNV ITALIA (**Nr. 0496**) hinterlegt

Der Geschäftsführer Ing. Paolo Marinsek

Reggio Emilia - Februar 2014 — Unterschrift:



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# 1 INTRODUCCIÓN

Este manual describe las instrucciones para el uso y el mantenimiento de las bombas de la serie SR-TR y debe ser atentamente leído y comprendido 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



**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*.



**Símbolo de protección contra el riesgo de explosión.**
Se refiere a medidas de seguridad para el uso de las bombas en las zonas identificadas según la Directiva ATEX.
**Cuando se realiza el pedido de bombas con configuración ATEX** destinadas a ser utilizadas en zonas con atmósfera potencialmente explosiva, es necesario respetar **RIGUROSAMENTE las instrucciones contenidas en los apartados que contienen este símbolo y en el manual de instrucciones integrantes "PROTECCIÓN ANTIDEFLAGRANTE ATEX"**.

# 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 el punto 9.4).
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.

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

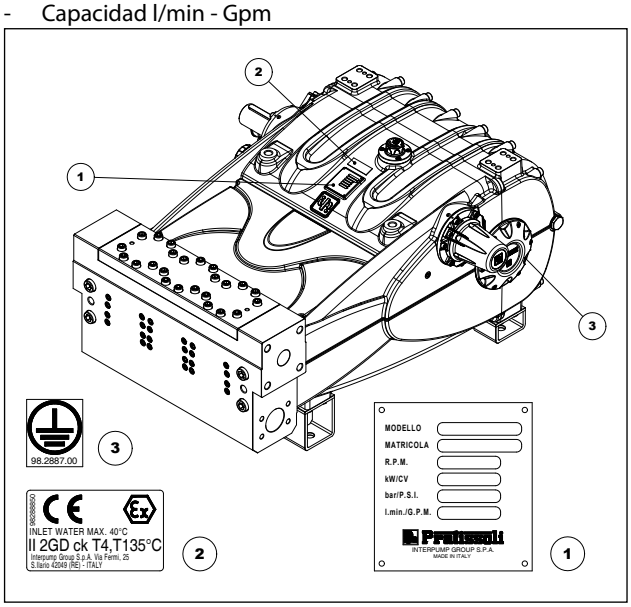



Fig. 1

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

Para bombas con configuración **ATEX** según pedido:
Pos. 2 - placa **con marca específica ATEX de protección contra explosiones**.
Pos. 3 - placa para localizar el **tornillo de puesta a tierra**.

# 5 CARACTERÍSTICAS TÉCNICAS DE LAS BOMBAS HIGH FLOW

**CARACTERÍSTICAS TÉCNICAS DE LAS BOMBAS SR (@ RPM 520)**

| Modelo | Vueltas/1' | Capacidad | | Presión | | Potencia | |
|---|---|---|---|---|---|---|---|
| | | l/min | Gpm | bar | Psi | kW | Hp |
| SR 50 | 1500 | 276 | 73 | 400 | 5800 | 211 | 287 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 65 | 1500 | 466 | 123 | 250 | 3625 | 222,5 | 302,5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 75 | 1500 | 620 | 164 | 200 | 2900 | 236,8 | 322 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

**CARACTERÍSTICAS TÉCNICAS DE LAS BOMBAS TR (@ RPM 520)**

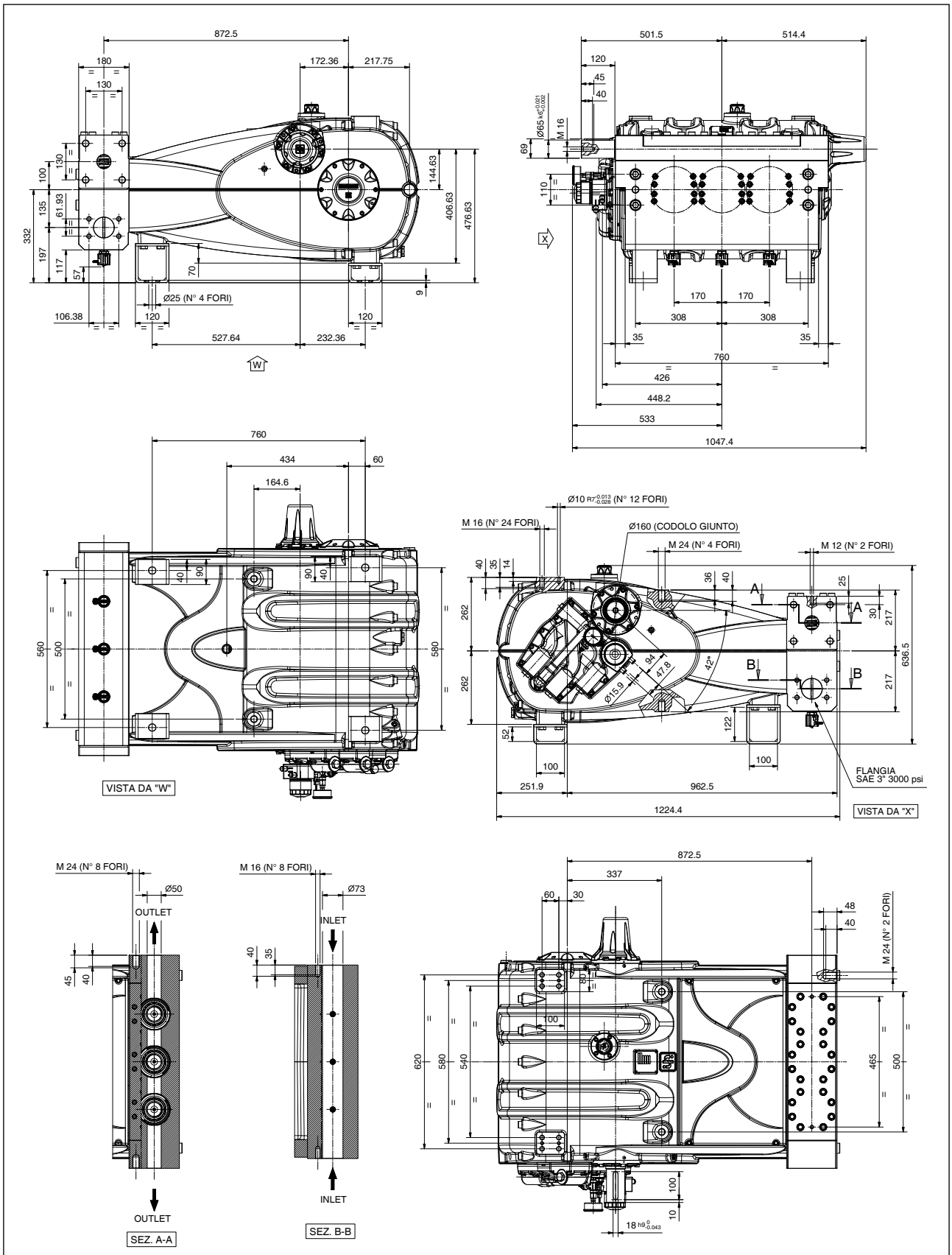
| Modelo | Vueltas/1' | Capacidad | | Presión | | Potencia | |
|---|---|---|---|---|---|---|---|
| | | l/min | Gpm | bar | Psi | kW | Hp |
| TR 50 | 1500 | 398 | 105 | 400 | 5800 | 304 | 413,5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 60 | 1500 | 573 | 151,4 | 300 | 4350 | 328,3 | 446,5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 70 | 1500 | 780,5 | 206 | 220 | 3190 | 328 | 446 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 75 | 1500 | 896 | 236,7 | 200 | 2900 | 342 | 465 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

## 5.1 Momentos de inercia de la bomba reducidos a la PTO

| BOMBA SERIE | RPM | J (kg mm$^2$) |
|---|---|---|
| SR | 1500 | 231600 |
| | 1800 | 182400 |
| | 2200 | 140700 |
| TR | 1500 | 241200 |
| | 1800 | 189100 |
| | 2200 | 145200 |

## 6 DIMENSIONES Y PESOS DE LAS BOMBAS SR HIGH FLOW

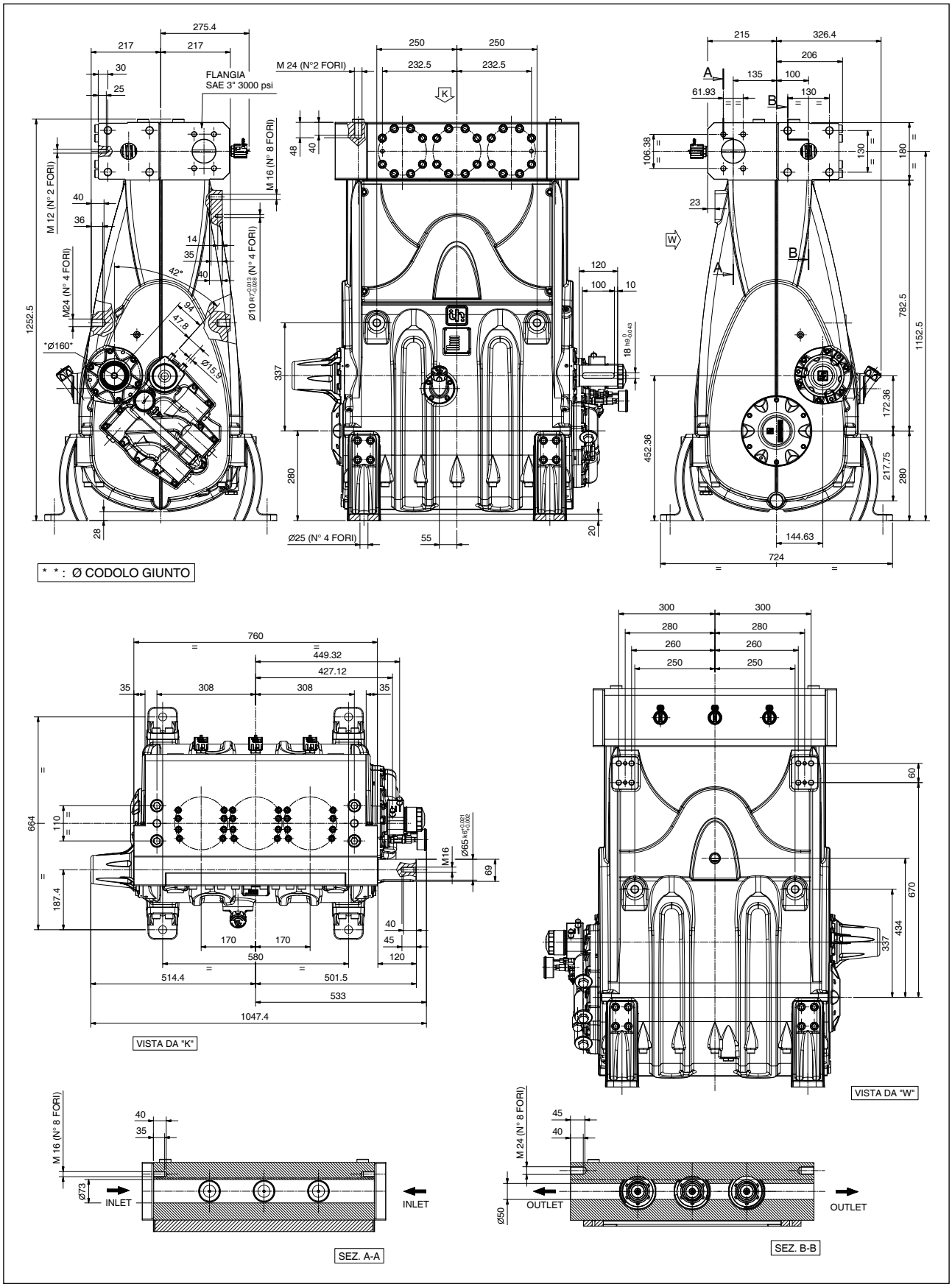
Para las dimensiones y los pesos de las bombas de la serie SR HORIZONTAL remitirse a la Fig. 2.




**Peso en seco 1150 kg.**

Fig. 2

Para las dimensiones y los pesos de las bombas de la serie SR VERTICAL remitirse a la Fig. 2/a.

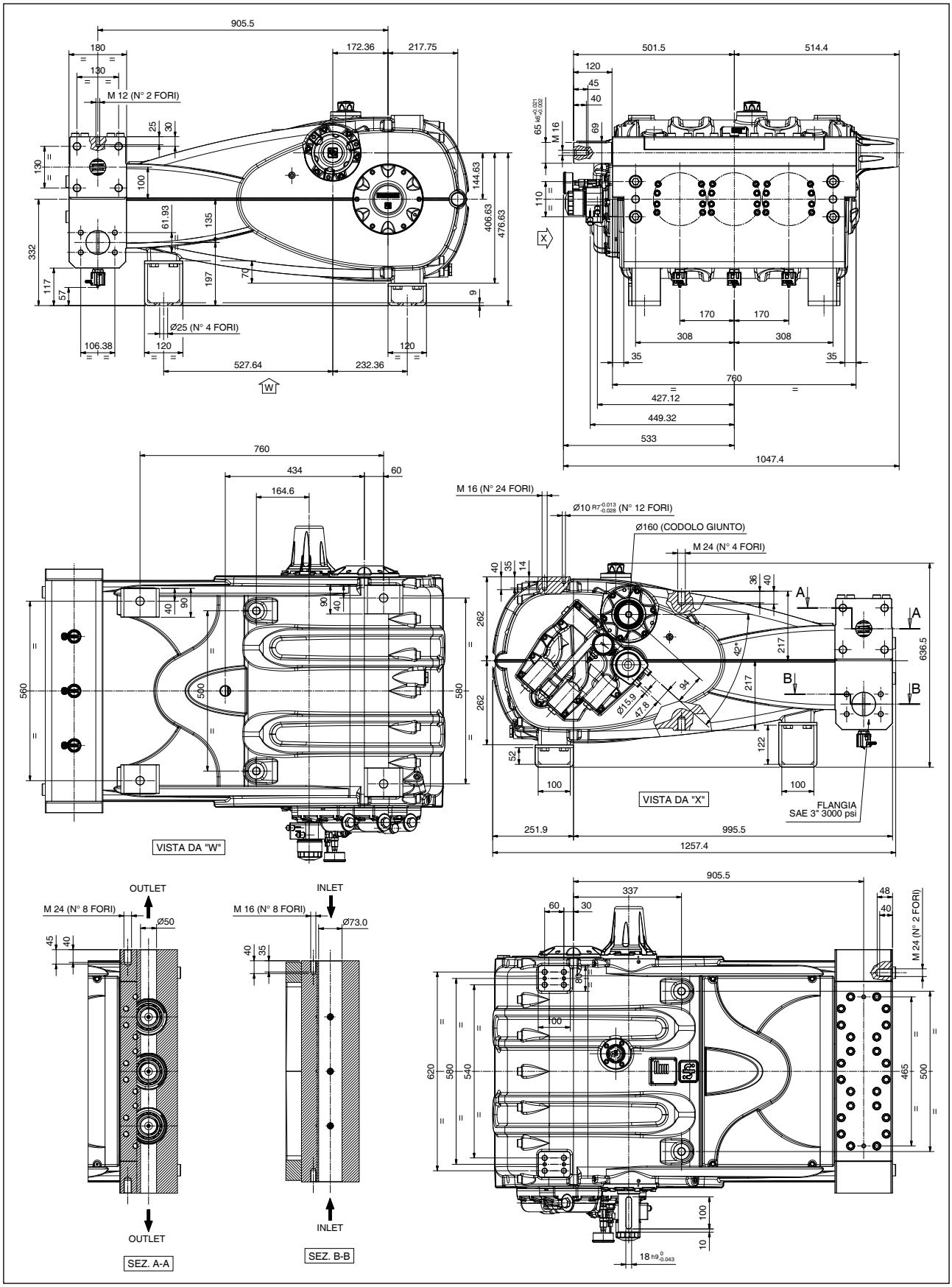



**Peso en seco 1160 kg.**

Fig. 2/a

## 6.1 DIMENSIONES Y PESOS DE LAS BOMBAS TR HIGH FLOW

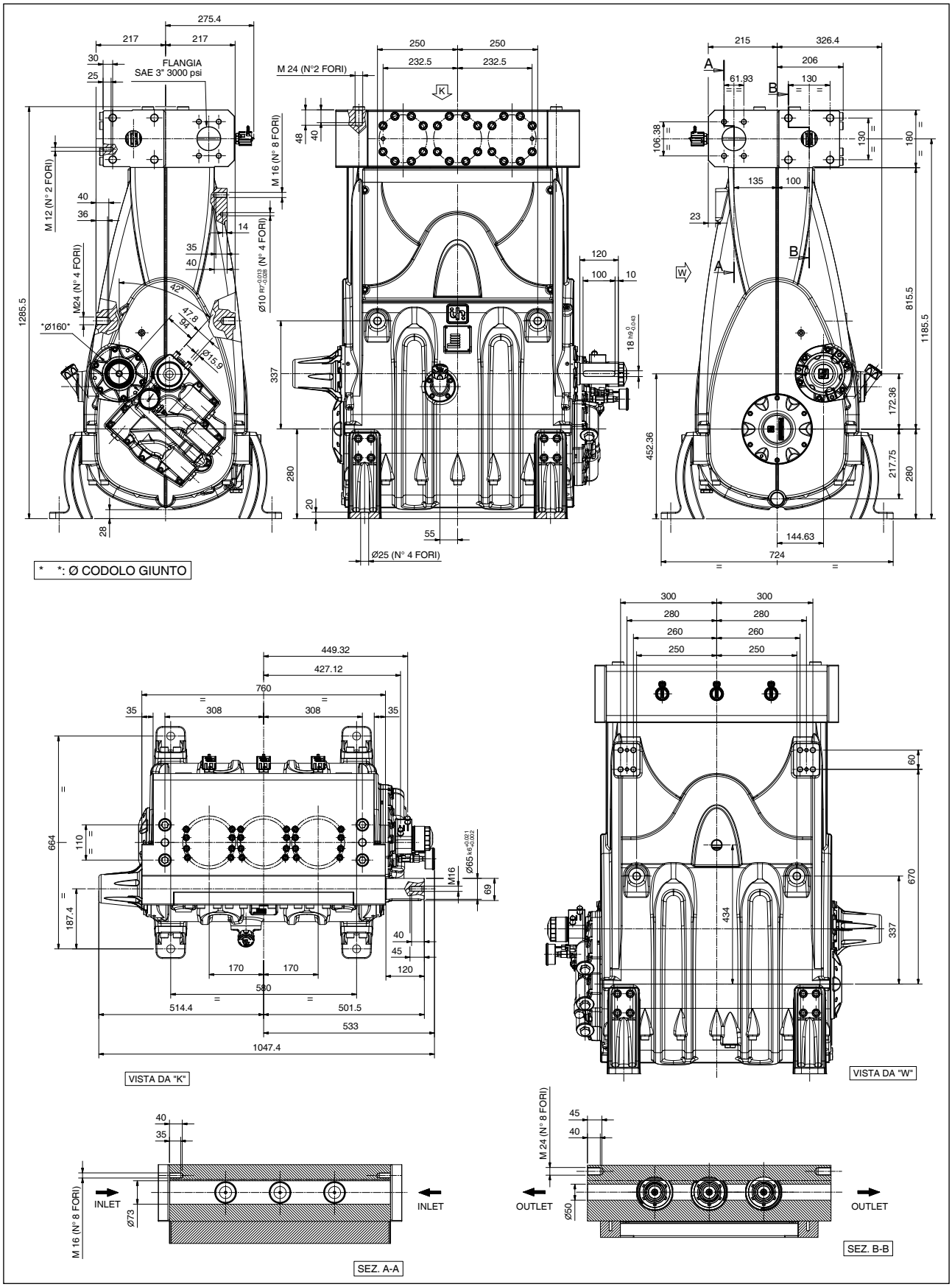
Para las dimensiones y los pesos de las bombas de la serie TR HORIZONTAL remitirse a la Fig. 3.




**Peso en seco 1185 kg.**

Fig. 3

Para las dimensiones y los pesos de las bombas de la serie TR VERTICAL remitirse a la Fig. 3/a.




**Peso en seco 1195 kg.**

Fig. 3/a

# 7 INDICACIONES PARA EL USO

Las bombas de las series SR - TR, sin configuración ATEX, han sido diseñadas para trabajar en ambientes con una atmósfera **no** potencialmente explosiva, con agua filtrada (ver punto 9.6).
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

La temperatura del agua admitida es de 40 °C.
A pesar de ello es posible utilizar la bomba con agua a una temperatura de hasta 60 °C, pero solamente durante breves periodos. En tal caso se recomienda consultar con la ***Oficina Técnica*** o el ***Servicio de Asistencia al Cliente***.

Versión ***ATEX***: La temperatura máxima del agua admitida es de **40°C**.

## 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 permitido para este tipo de bombas es de **250 rpm en el eje acodado**; cualquier otro régimen de rotación distinto del indicado en la tabla de prestaciones (ver capítulo 5) debe ser autorizado de manera formal 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 lubricantes recomendados

### 7.6.1 Tipo de aceite

La bomba se suministra con aceite lubricante TOTAL-ERG MISOLA MAP SH-150 para garantizar su correcto funcionamiento a temperaturas ambiente entre -10°C y +40°C.
Para temperaturas diferentes, utilizar aceites lubricantes monogrado que posean la viscosidad adecuada.
Para utilizar la bomba a temperaturas extremas, se recomienda utilizar calentadores adecuados.
La bomba de aceite gestiona la lubricación forzada para garantizar la correcta cantidad de aceite en cada punto de los componentes móviles que lo requiere.
Es necesario utilizar aceite multigrado por dos motivos:

- Evita a los usuarios tener que cambiar la viscosidad del aceite en función de la temperatura exterior o de las estaciones.
- Aumenta notablemente el intervalo de sustitución del aceite y reduce las intervenciones de mantenimiento, ver la tabla "mantenimiento preventivo" en el capitulo 11.

### 7.6.2 Marcas de aceite recomendadas

TOTAL-ERG MISOLA MAP SH-150.
MOBIL SHC 629.

### 7.6.3 Características del aceite

En caso de no disponer o no encontrar las marcas de aceite recomendadas, se podrán utilizar otras marcas alternativas siempre y cuando posean las siguientes características técnicas:

- Viscosidad a -10 °C ≤4000 cSt.
- Viscosidad a 40 °C ≤200 cSt.
- Viscosidad a 100 °C ≥18 cSt.
- Índice de viscosidad: ≥135 cSt.
- Punto de deslizamiento: ≥ -25 °C
- Grado de aditivación GL1 - GL2.

Si es necesario, contactar con el **Servicio de Atención al Cliente**.
Controlar el nivel de aceite con la varilla de nivel ①, Fig. 4.
Si es necesario, repostar a través del tapón de aceite ①, Fig. 4.
El control correcto del nivel de aceite se realiza con la bomba a temperatura ambiente, el cambio de aceite va realizado con la bomba a temperatura de funcionamiento retirando el tapón pos. ②, Fig. 4. (Utilizar el tapón pos. 2/a en la versión vertical)
El control del aceite y el cambio se han de realizar como se indica en el capítulo 11.
Cantidad de aceite requerida: **52 litros en las versiones SR y TR horizontales; 37 litros en las versiones SR y TR verticales.**

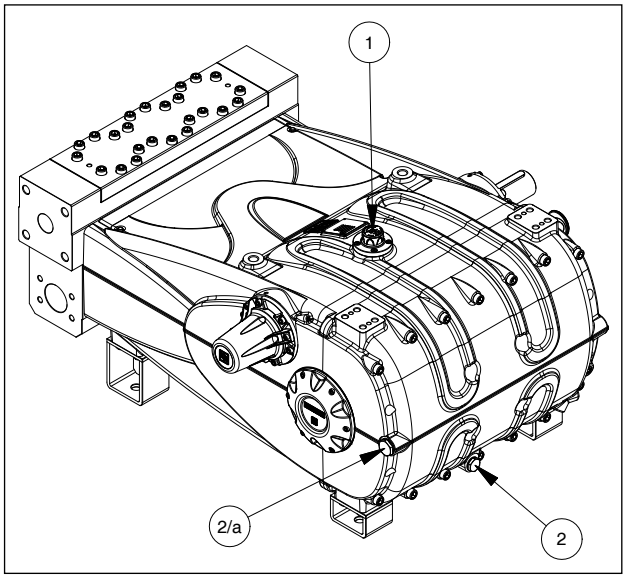



Fig. 4

Preparar la instalación de manera que el aceite no supere los 110 °C (230°F) de temperatura cuando la bomba esté funcionando.
Utilizar el indicador de temperatura del aceite descrito en el punto 9.10.
**ATENCIÓN:** utilizar aceite con un punto de inflamabilidad superior a 200 °C.

**El aceite se debe cambiar al menos una vez al año** ya que podría deteriorarse por oxidación.

**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 de la serie SR-TR están dotadas de (ver Fig. 5 y Fig. 6):
2 tomas de aspiración "IN": SAE G3" - 3000 PSI, ver "DIBUJO DESGLOSADO DE BRIDAS DE ASPIRACIÓN Y ENVÍO. SR-TR" CÓD.65950900 (Fig. 7).
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": ver "DIBUJO DESGLOSADO DE BRIDAS DE ASPIRACIÓN Y ENVÍO. SR-TR" CÓD.65950900 (Fig. 7).
1 toma "DRAIN " con orificio G1" en la parte inferior del cárter para controlar la pérdida de agua que se genera por desgaste de las juntas de presión. Si se detectan pérdidas, consultar el manual de reparación.
**Dicho orificio debe estar siempre abierto y, si es posible, conectado a un sistema de detección.**

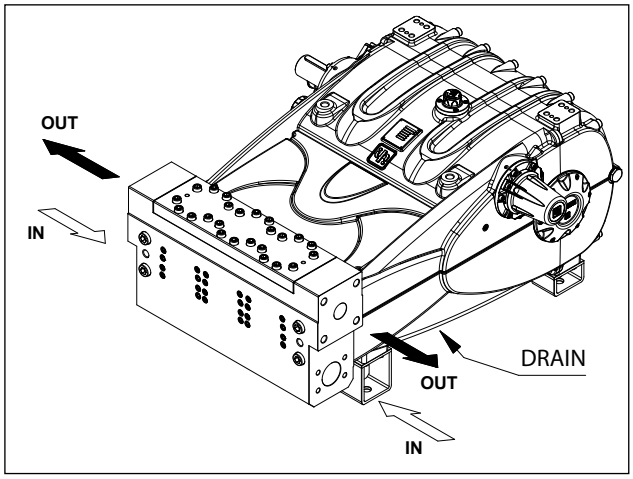



Fig. 5

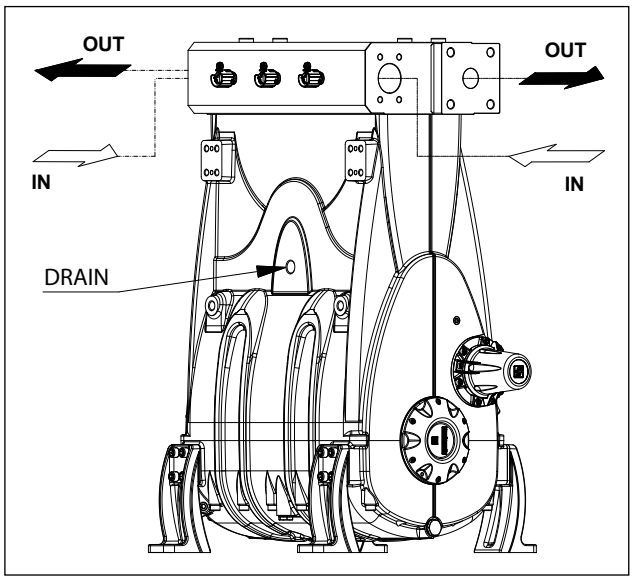
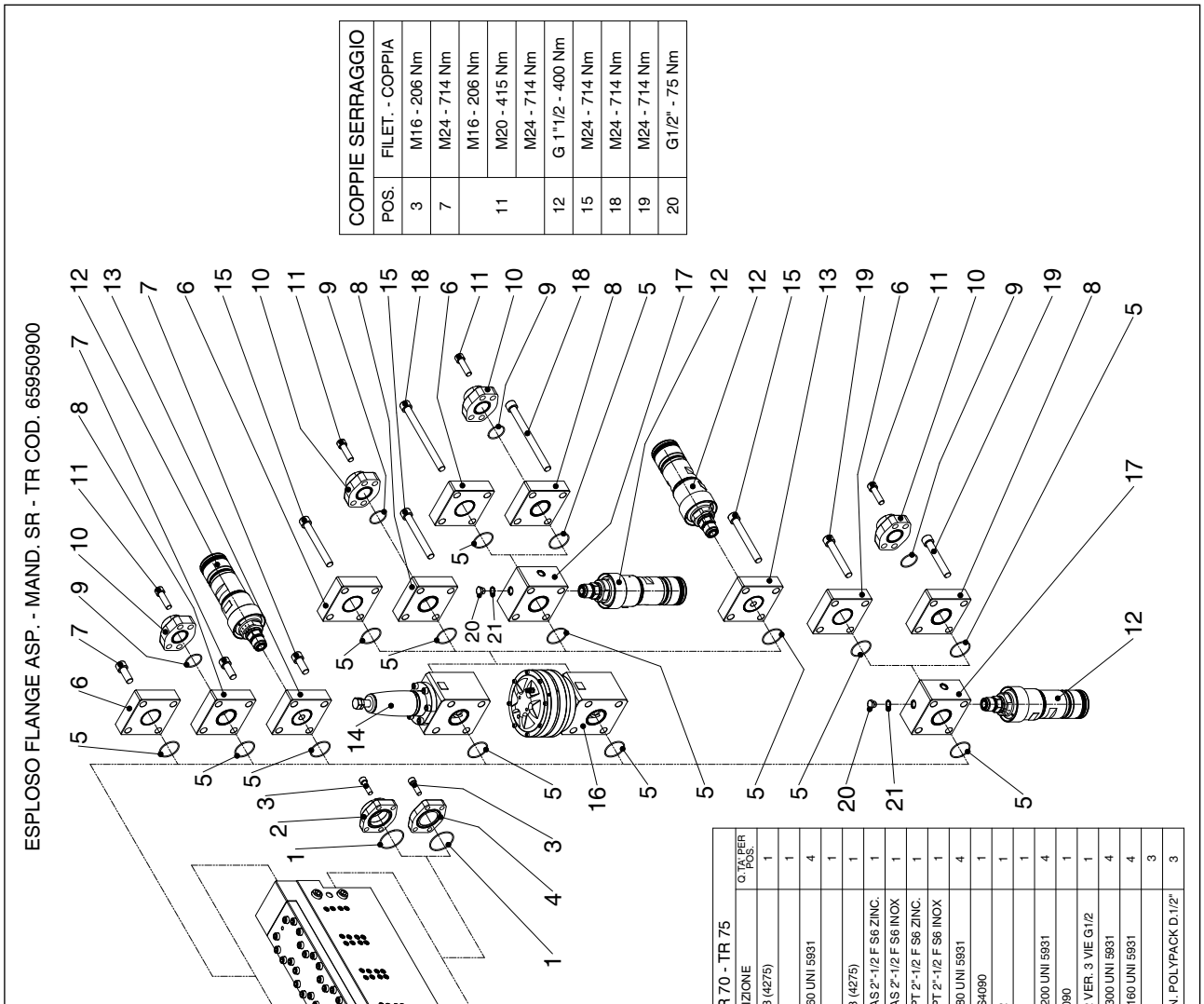



Fig. 6

## 8.1 Esquema de composición de la aspiración y el envío




| COPPIE SERRAGGIO | | |
|---|---|---|
| POS. | FILET. - COPPIA | |
| 3 | M16 - 206 Nm | |
| 7 | M24 - 714 Nm | |
| 11 | M16 - 206 Nm | |
| | M20 - 415 Nm | |
| | M24 - 714 Nm | |
| 12 | G 1"1/2 - 400 Nm | |
| 15 | M24 - 714 Nm | |
| 18 | M24 - 714 Nm | |
| 19 | M24 - 714 Nm | |
| 20 | G1/2" - 75 Nm | |

POMPE SR - TR TUTTE LE VERSIONI

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| ASPIRAZIONE | 1 | 90414100 | OR D. 85.32X3.53 (4337) | 1 |
| | 2 | 96458500 | FLANGIA DIR. GAS 3" F S3 ZINC. | 1 |
| | | 96459000 | FLANGIA DIR. GAS 3" F S3 INOX | 1 |
| | | 96459500 | FLANGIA DIR. NPT 3" F S3 ZINC. | 1 |
| | | 96460000 | FLANGIA DIR. NPT 3" F S3 INOX | 1 |
| | 3 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 4 | 96489500 | FLANGIA CIECA 3" S3 ZINC. | 1 |
| | | 96490000 | FLANGIA CIECA 3" S3 INOX | 1 |

POMPE SR 50 - TR 50

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021466 | FLANGIA 1"1/2 | 1 |
| | 9 | 90407900 | OR D. 47.22X3.53 (4187) | 1 |
| | 10 | 96468500 | FLANGIA DIR. GAS 1"-1/2 F S6 ZINC. | 1 |
| | | 96469000 | FLANGIA DIR. GAS 1"-1/2 F S6 INOX | 1 |
| | | 96469500 | FLANGIA DIR. NPT 1"-1/2 F S6 ZINC. | 1 |
| | | 96470000 | FLANGIA DIR. NPT 1"-1/2 F S6 INOX | 1 |
| | 11 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 17 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 18 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 19 | 98218100 | TAPPO G1/2X13 | 3 |
| | 20 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

POMPE SR 65 - TR 60

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021366 | FLANGIA 2" | 1 |
| | 9 | 90409900 | OR D. 56.74X3.53 (4225) | 1 |
| | 10 | 96473500 | FLANGIA DIR. GAS 2" F S6 ZINC. | 1 |
| | | 96474000 | FLANGIA DIR. GAS 2" F S6 INOX | 1 |
| | | 96474500 | FLANGIA DIR. NPT 2" F S6 ZINC. | 1 |
| | | 96475000 | FLANGIA DIR. NPT 2" F S6 INOX | 1 |
| | 11 | 99529000 | VITE TCEI M20X70 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

POMPE SR 75 - TR 70 - TR 75

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021266 | FLANGIA 2"1/2 | 1 |
| | 9 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 10 | 96478500 | FLANGIA DIR. GAS 2"-1/2 F S6 ZINC. | 1 |
| | | 96479000 | FLANGIA DIR. GAS 2"-1/2 F S6 INOX | 1 |
| | | 96479500 | FLANGIA DIR. NPT 2"-1/2 F S6 ZINC. | 1 |
| | | 96480000 | FLANGIA DIR. NPT 2"-1/2 F S6 INOX | 1 |
| | 11 | 99532000 | VITE TCEI M24X80 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

Fig. 7

# 9 INSTALACIÓN DE LA BOMBA

## 9.1 Instalación

Los orificios de fijación de los pies tienen un diámetro de 25 mm.
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 4 orificios M24 para los cáncamos de elevación que facilitan la instalación, como se muestra en las figuras inferiores.

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






**Puesta a tierra:** fijar el cable de puesta a tierra a la bomba con el tornillo M8 de ACERO INOXIDABLE y la arandela dentada de ACERO INOXIDABLE que están marcados con la etiqueta AMARILLA.
Consultar el manual "PROTECCIÓN ANTIDEFLAGRANTE ATEX".

**Sustituir el tapón de servicio de cierre del orificio de introducción del aceite, que está situado en el cárter, por la varilla de nivel de aceite.**
La varilla de nivel de 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).

La transmisión se debe montar siempre con profesionalidad para evitar el funcionamiento incorrecto de las conexiones y el desgaste excesivo, el aumento de temperatura y/o todo tipo de roturas peligrosas que puedan generar riesgo de ignición y explosión. *Consultar el manual "PROTECCIÓN ANTIDEFLAGRANTE ATEX".*

## 9.2 Sentido de rotación

El sentido de rotación puede ser horario o antihorario en el lado derecho o EN el izquierdo (ver Fig. 8).

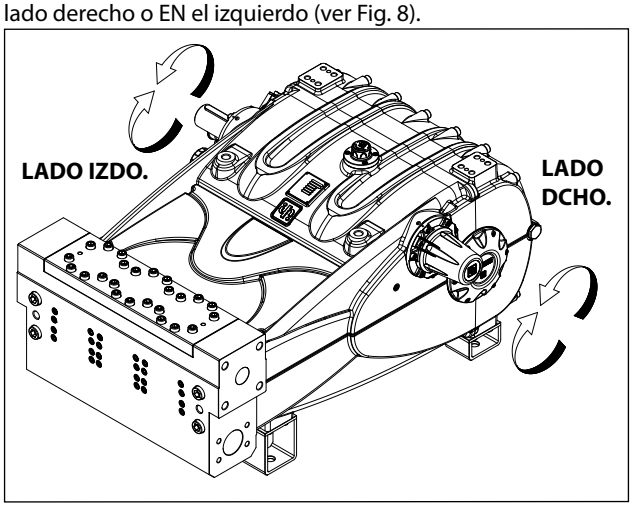



Fig. 8

La conexión se puede realizar desde cualquiera de los dos lados. En el **LADO IZQ.** es necesario tener en cuenta el espacio que ocupa la bomba del aceite de lubricación.
La tapa del extremo se ha de colocar en la PTO no conectada.

## 9.3 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 (tanto en aspiración como en envío) con un tramo de tubo flexible. La consistencia del tramo de aspiración deberá ser tal de impedir deformaciones causadas por la depresión producida por la bomba.

## 9.4 Alimentación de la bomba

Las bombas de la serie SR-TR se deben instalar siempre en modalidad de alimentación forzada utilizando una bomba booster.
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.**

## 9.5 Línea de aspiración

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

1. Diámetro interno mínimo como se indica en las tablas del punto 9.8 y, en cualquier caso, igual o superior al de la cabeza 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.

### 9.6 Filtración

Sobre la línea de aspiración de la bomba es necesario instalar 2 filtros posicionados como se indica en la Fig. 9 y la Fig. 9/a.

**Con válvula de regulación de accionamiento manual.**

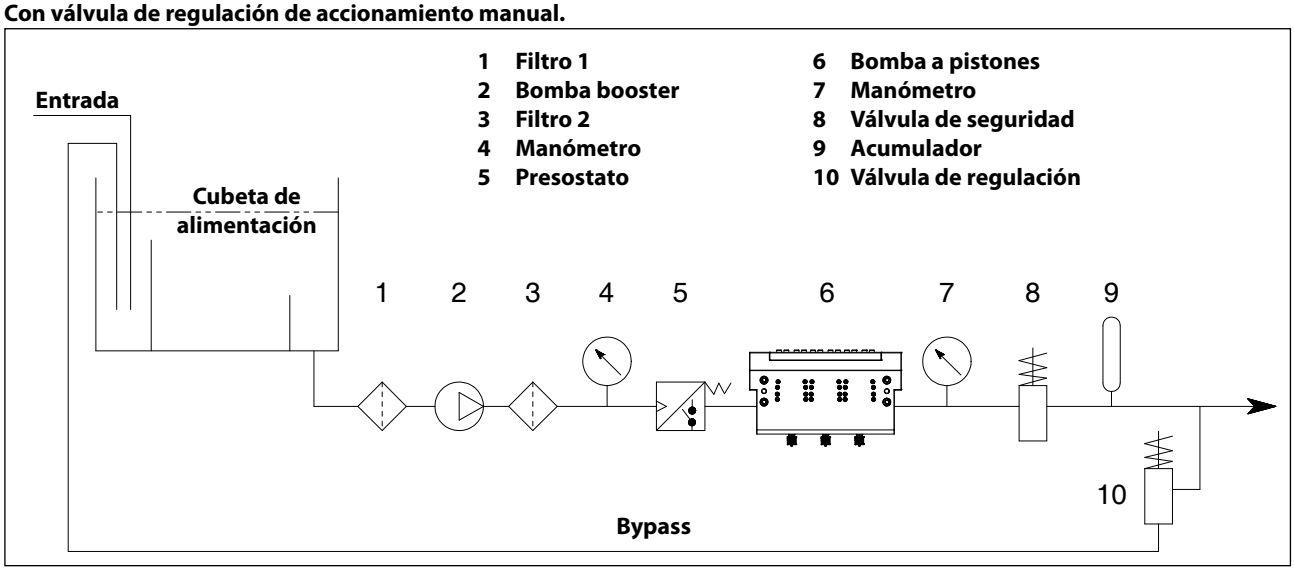



Fig. 9

**Con válvula de regulación de accionamiento neumático**

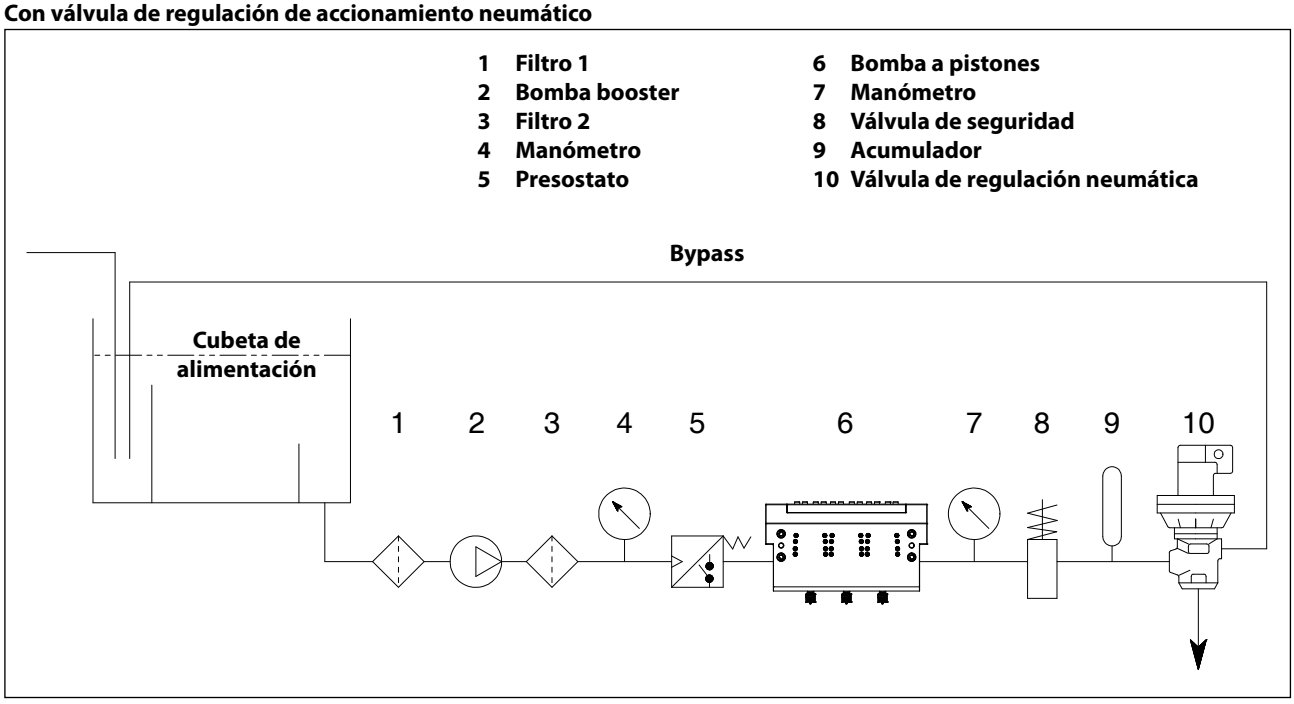



Fig. 9/a

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.**

### 9.7 Línea de envío

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

1. El tubo debe tener un diámetro lo suficientemente amplio como para garantizar una velocidad correcta del líquido, ver las tablas del punto 9.8.
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.

### 9.8 Diámetro interno de los tubos de los conductos

En la tabla siguiente se indican los valores de los diámetros internos de los conductos de aspiración y envío.

| BOMBA SR | | |
|---|---|---|
| **MODELO** | **ASPIRACIÓN** | **ENVÍO** |
| SR 50 | SAE 3" - 3000 PSI | SAE 1"1/2 - 6000 PSI |
| SR 65 | SAE 3" - 3000 PSI | SAE 2" - 6000 PSI |
| SR 75 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |

| BOMBA TR | | |
|---|---|---|
| **MODELO** | **ASPIRACIÓN** | **ENVÍO** |
| TR 50 | SAE 3" - 3000 PSI | SAE 1"1/2 - 6000 PSI |
| TR 60 | SAE 3" - 3000 PSI | SAE 2" - 6000 PSI |
| TR 70 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |
| TR 75 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |

Para la composición de las bridas de aspiración y envío, ver el "DIBUJO DESGLOSADO DE LAS BRIDAS DE ASPIRACIÓN Y ENVÍO SR-TR" Fig. 7.
Si es necesario ponerse en contacto con la Oficina Técnica o el Servicio de Asistencia al Cliente.

### 9.9 Conexión del intercambiador de agua y aceite




Fig. 10

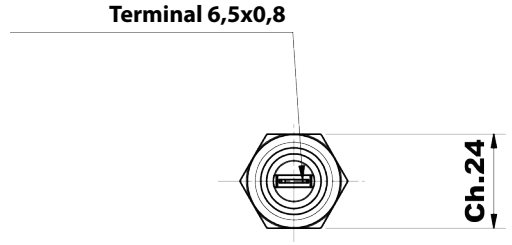
Para mejorar el rendimiento, conectar el intercambiador contracorriente (ver la Fig. 10).
Caudal de agua:

a) Eficiencia máx. 25 l/min.
b) Eficiencia media 20 l/min.
c) Eficiencia mín. 12 l/min.

Si la temperatura ambiente de trabajo de la bomba no supera los 5 °C (41 °F), no es necesario conectar el intercambiador.
Para el mantenimiento, consultar el capítulo 11.

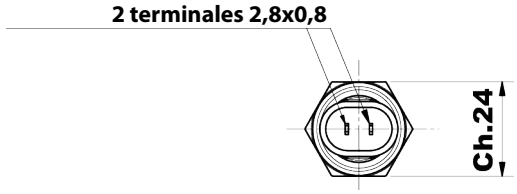
### 9.10 Grupo de la bomba de aceite

1) Cartucho del filtro de aceite - apretar a mano; para el mantenimiento, ver el capítulo 11.
2) Manómetro - 0 - 16 bar para el control periódico de la presión del aceite de lubricación.
3) Presostato: NORMALMENTE ABIERTO (disponible normalmente cerrado bajo pedido); tensión 12 V.
   En los grupos estacionarios, se recomienda conectarlo debajo del sistema de protección.
4) Termostato de aceite: NORMALMENTE CERRADO; tensión 12 V.




**CONEXIÓN DEL PRESOSTATO**

**PRESIÓN DE INTERVENCIÓN 0,3 ±0,15 BAR**




**CONEXIONES INT. PILOTO DE TEMPERATURA**

**TEMP. DE INTERVENCIÓN: 105 °C ±5 °C**

**ATENCIÓN: conectar los dos sensores con una carga NO INDUCTIVA o bien sustituir el presostato y el termostato por componentes homologados ATEX que posean las mismas características.**

## 10 PUESTA EN MARCHA Y FUNCIONAMIENTO

### 10.1 Controles previos (puesta en marcha por primera vez)

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, 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 la varilla de nivel de aceite situada en la parte superior del cárter (pos. 1 Fig. 11 y Fig. 11/a).

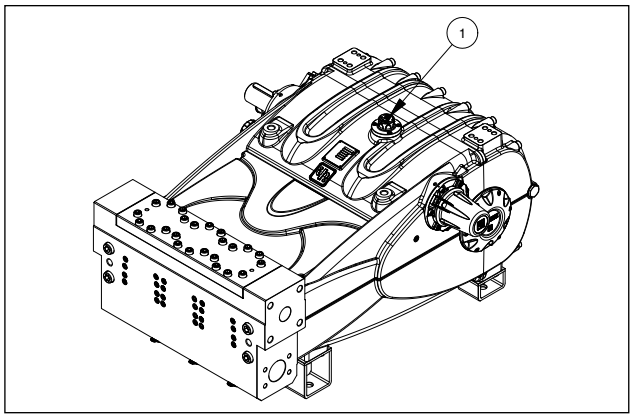



Fig. 11

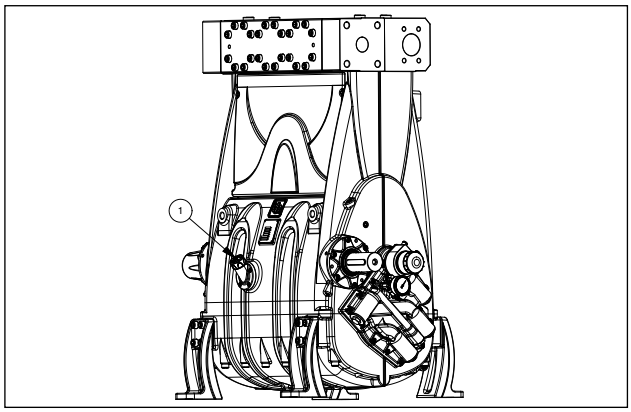



Fig. 11/a

**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. 12). Comprobar que las válvulas estén cerradas antes de poner en marcha la bomba. Ver las posiciones de "trabajo" y de "reposo" en la Fig. 12/a.**

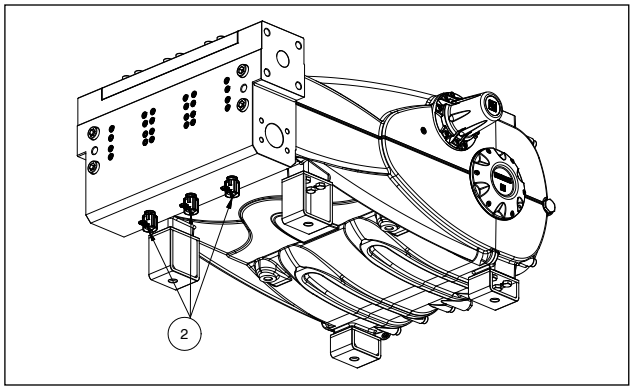



Fig. 12

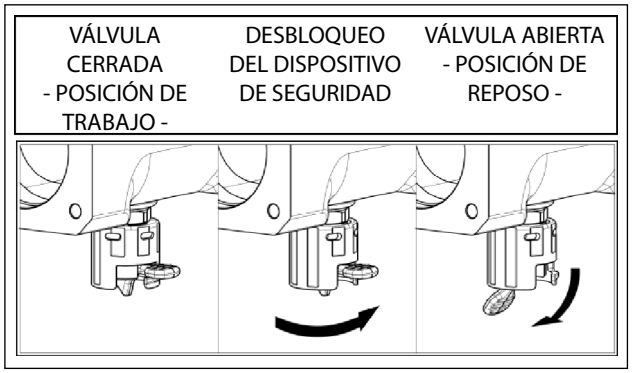



Fig. 12/a

### 10.2 Puesta en marcha

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

## 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 1000 horas** | **Cada 1500 horas** | **Cada 3000 horas** |
| Verificación del nivel de aceite | | |
| | Verificación/ Sustitución*: Válvulas Sedes de la válvula Muelles de la válvula Guías de la válvula | Cambio del aceite y del filtro de aceite Sustitución de los fuelles (versión vertical) |
| | Sustitución*: Juntas de H.P. Juntas de L.P. | |

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

### 11.1 Fuelle (versiones SR - TR verticales)

Controlar el apriete de las abrazaderas de fijación de los fuelles tras las primeras **1000 horas** de funcionamiento.
**Sustituir los fuelles cada 3000 horas de funcionamiento.**
Para realizar la sustitución seguir las indicaciones contenidas en el **manual de reparación**.

### 11.2 Intercambiador de agua y aceite

Los intervalos de limpieza del intercambiador se establecen en función de la dureza del agua utilizada. Se recomienda limpiar el intercambiador **cada 2000 horas si la dureza del agua es ≤ 30 °F; cada 1000 horas si la dureza del agua es > 30 °F y ≤ 40 °F. Por encima de los 40 °F se recomienda limpiar cada 500 horas**.
Limpiar con productos antical de venta en tiendas; no es necesario desmontarlo.
Nota: el intercambiador es de **ACERO INOXIDABLE (AISI 303)**.

**Protección del circuito de lubricación de las partes mecánicas:** preparar la instalación para que el presostato, montado en la bomba de aceite de lubricación forzada, bloquee el funcionamiento de las bombas SR y TR cuando se reduce la presión del aceite.

| MANTENIMIENTO PREVENTIVO | |
|---|---|
| **ASUNTO** | **FRECUENCIA DE CONTROL** |
| Controlar el ajuste del manómetro de presión del aceite de lubricación | Cada 10000 horas |
| Control visual de las pérdidas de agua en el cabezal | Cada 500 horas |

# 12 CONSERVACIÓN DE LA BOMBA

## 12.1 Método de llenado de la bomba con emulsión anticorrosiva o solución anticongelante utilizando una bomba externa con membrana sobre la base del layout descrito en el punto 9.6

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 punto 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 han sido 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 ponerla en marcha, la bomba suministra caudal:**
- 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 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) Error de 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 nivel del aceite contenido en el cárter de la bomba no es correcto o se ha utilizado un tipo de aceite no recomendado en el capítulo 7 (ver punto 7.6).
- La junta está mal alineada.
- La inclinación de la bomba durante el trabajo es excesiva.



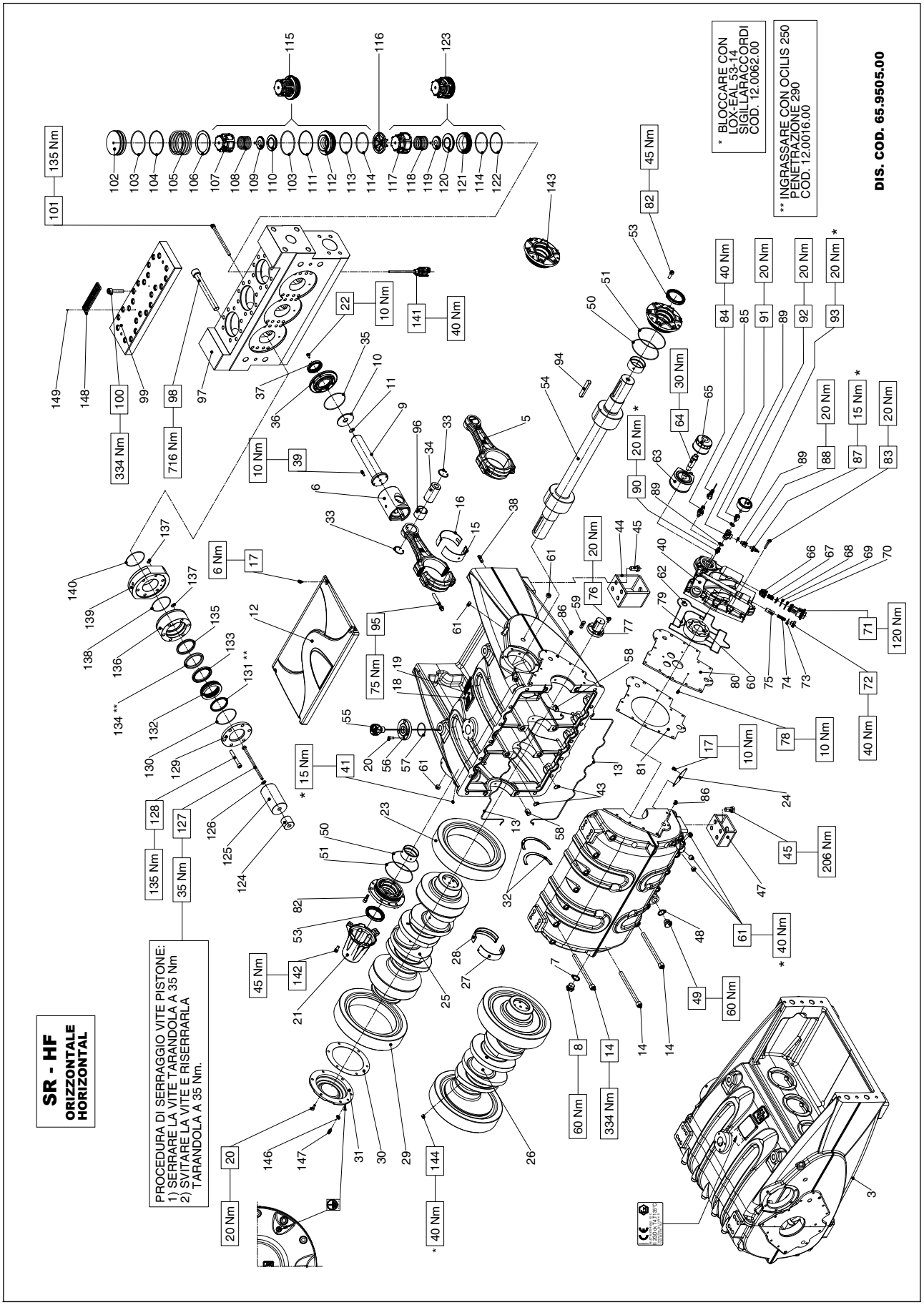
**Vibraciones o golpes sobre los tubos:**
- Aspiración de aire.
- Funcionamiento imperfecto de la válvula de regulación de presión.
- Malfuncionamiento de las válvulas.
- Movimiento en la transmisión no uniforme.

## 15.1 BÚSQUEDA DE AVERÍAS Y SOLUCIONES

| AVERÍA | CAUSA POSIBLE | SOLUCIÓN |
|---|---|---|
| Al poner en marcha la bomba no produce ningún ruido | Falta agua en la alimentación.<br>Las válvulas están bloqueadas.<br>La línea de envío está cerrada y no permite la salida del aire presente en la bomba. | Controlar el funcionamiento y el caudal de la bomba booster.<br>Controlar el funcionamiento de las válvulas.<br>Comprobar si hay alguna anomalía en la línea de envío. |
| Presión demasiado baja | La bomba esta aspirando aire | Localizar la pérdida y repararla |
| | Pérdida en la válvula de regulación de la presión o ajuste de presión incorrecto | Eliminar la pérdida o resetear |
| | Juego de juntas de la válvula defectuoso | Montar un juego de juntas nuevo |
| | Válvula/s de aspiración o descarga dañada/s | Es necesario sustituir la/s válvula/s de aspiración y descarga. Controlar las condiciones de los muelles de la válvula. |
| | Pérdidas en la cabeza | Controlar las juntas de la cabeza y sustituirlas si es necesario; montar una cabeza nueva. |
| Ruido en la bomba | Válvulas desgastadas.<br>Capacidad de los conductos de aspiración y/o del filtro insuficiente.<br>Capacidad insuficiente, temperatura del agua elevada o filtro saturado. | Controlar la instalación y los componentes de la línea de aspiración; detectar la temperatura del agua. |
| Pulsaciones irregulares en los tubos | Aspiración de aire y/o alimentación insuficiente.<br>Hay curvas, codos o acoplamientos a lo largo de la línea de alimentación que impiden el paso de líquido.<br>El filtro de alimentación está sucio o no posee la capacidad suficiente.<br>La bomba booster suministra una presión o un caudal insuficiente. | Controlar la instalación y los componentes de la línea de aspiración.<br>Controlar el funcionamiento y el caudal de la bomba booster.<br>Limpiar o sustituir el filtro de alimentación. |
| Pérdida de agua a través del soporte de las juntas | Junta de baja presión defectuosa o gastada | Sustituir la junta de baja presión |
| La bomba se recalienta | La presión y/o el número de vueltas es superior a los indicados en la matrícula.<br>El nivel del aceite contenido en el cárter de la bomba no es correcto o se ha utilizado un tipo de aceite no recomendado.<br>El empalme o la transmisión no están alineados. | Restablecer la presión y/o el número de vueltas.<br>Restablecer el nivel de aceite, si es necesario sustituirlo.<br>Controlar la transmisión. |
| Pérdida de aceite en el cárter de la bomba | Junta de retención del vástago de guía del pistón defectuoso o desgastado.<br>Juntas del cárter defectuosas o desgastadas.<br>En las versiones verticales, controlar el estado del fuelle. | Sustituir la junta de retención del fuelle o de las juntas. |
| Vertido de aceite emulsionado por el escape.<br>Hay restos de emulsión en la varilla de nivel del aceite. | El aceite lubricante ha contaminado el líquido bombeado. | Controlar la eficacia de las juntas de retención de la guía del pistón (o de los fuelles) y sustituir el aceite lubricante |

# 16 DIBUJOS DESGLOSADOS Y NOMENCLATURAS DE LAS PIEZAS DE RECAMBIO

## 16.1 DIBUJO DESGLOSADO Y NOMENCLATURA DE LAS PIEZAS DE RECAMBIO SR VERSIÓN HORIZONTAL



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

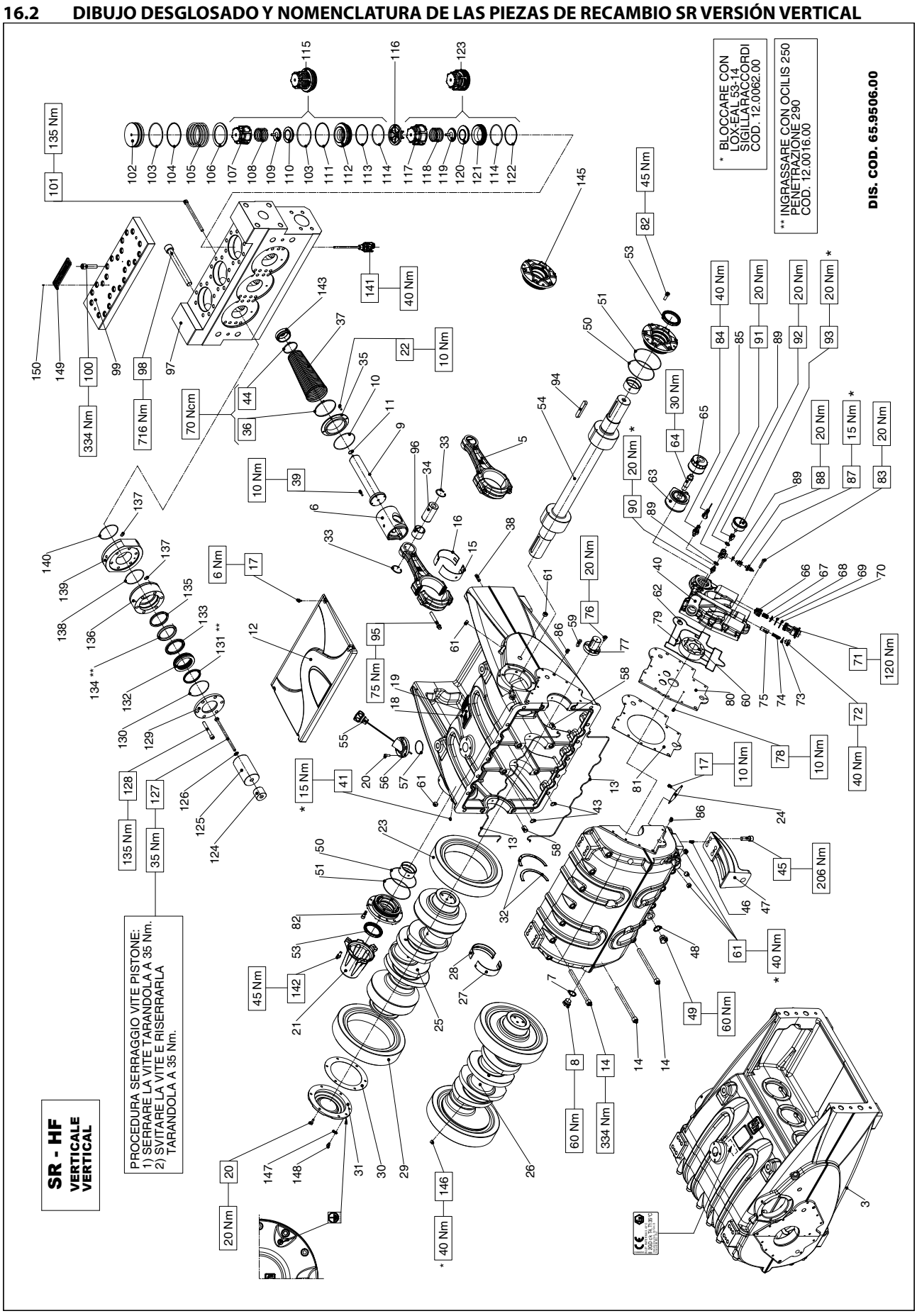
| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **93** | **94.6070.00** | **MANOMETRO ATT. POST. 0-16 D. 63** | | **1** |
| **94** | **91.5050.00** | **LINGUETTA 18x11x100 UNI 6604** | | **1** |
| **95** | **99.4410.00** | **VITE SERRAGGIO BIELLA** | | **6** |
| **96** | **90.9185.00** | **BOCCOLA PIEDE BIELLA** | | **3** |
| **97** | **65.1205.56** | **TESTATA LP** | | **1** |
| **98** | **99.5355.00** | **VITE M24x2x220 UNI 5931 8,8** | | **4** |
| **99** | **65.2120.56** | **COPERCHIO VALVOLE LP** | | **1** |
| **100** | **99.5149.00** | **VITE M16x65 UNI 5931 12,9** | | **24** |
| **101** | **99.4495.00** | **VITE M12x180 UNI 5931 12,9** | | **24** |
| **102** | **65.2121.56** | **TAPPO VALVOLA** | | **3** |
| **103** | **90.4146.00** | **OR D. 104,4x3,53 NBR SH. 70 4412** | **B** | **6** |
| **104** | **90.5345.00** | **ANELLO ANTIEST. D. 105,4x111,2x1,5** | **B** | **3** |
| **105** | **94.8050.00** | **MOLLA Dm. 103x87,5** | | **3** |
| **106** | **65.2139.56** | **ANELLO SEDE VALVOLA DI MANDATA** | | **3** |
| **107** | **36.2131.05** | **GUIDA VALVOLA DI MANDATA** | | **3** |
| **108** | **94.7745.00** | **MOLLA Dm. 56x57,3** | | **3** |
| **109** | **36.2129.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **110** | **36.2126.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **111** | **90.5340.00** | **ANELLO ANTIESTR. D. 105,2x111x1,5** | | **3** |
| **112** | **36.2121.56** | **SEDE VALVOLA DI MANDATA** | | **3** |
| **113** | **90.5315.00** | **ANELLO ANTIEST. D. 89,4x95,2x1,5** | | **3** |
| **114** | **90.4144.00** | **OR D. 88,5x3,53 NBR SH. 70 4350** | | **6** |
| **115** | **36.7227.01** | **GRUPPO VALVOLA DI MANDATA** | **B** | **3** |
| **116** | **65.2122.51** | **DISTANZIALE GUIDA VALVOLA** | **B** | **3** |
| **117** | **36.2130.05** | **GUIDA VALVOLA D'ASPIRAZIONE** | | **3** |
| **118** | **94.7755.00** | **MOLLA Dm. 58,5x103,1** | | **3** |
| **119** | **36.2128.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **120** | **36.2127.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **121** | **36.2120.56** | **SEDE VALVOLA D'ASPIRAZIONE** | | **3** |
| **122** | **90.5310.00** | **ANELLO ANTIEST. D. 89,2x95x1,5** | | **3** |
| **123** | **36.7226.01** | **GRUPPO VALVOLA D'ASPIRAZIONE** | **B** | **3** |
| **124** | **65.2119.66** | **DISTANZIALE PISTONE** | | **3** |
| 125 | 74.0402.09<br>74.0405.09<br>65.0409.09 | PISTONE D. 50x127<br>PISTONE D. 65x127<br>PISTONE D. 70x127 | | 3 |
| **126** | **96.7105.00** | **ROSETTA D. 10x18x0,9** | | **3** |
| **127** | **99.3865.00** | **VITE M10x200 UNI 5737 A2-70** | | **24** |
| **128** | **99.4418.00** | **VITE M12x90 UNI 5931 12,9** | | **18** |
| 129 | 65.2128.56<br>65.2132.56<br>65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 50<br>ANELLO SUPPORTO GUARNIZIONI D. 65<br>ANELLO SUPPORTO GUARNIZIONI D. 75 | | 3 |
| 130 | 90.3913.50<br>90.3916.00<br>90.3918.00 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50<br>OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65<br>OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A<br>A<br>A | 3 |
| 131 | 90.2860.00<br>90.2890.00<br>90.2910.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP<br>ANELLO TEN. ALT. D. 65x73x5,5 LP<br>ANELLO TEN. ALT. D. 75x85x5,5 LP | A<br>A<br>A | 3 |
| 132 | 65.2127.70<br>65.2131.70<br>65.2135.70 | SUPPORTO GUARNIZIONI D. 50<br>SUPPORTO GUARNIZIONI D. 65<br>SUPPORTO GUARNIZIONI D. 75 | | 3 |
| 133 | 90.2865.00<br>90.2895.00<br>90.2912.00 | ANELLO 'RESTOP' D. 50x58x8/4,5<br>ANELLO 'RESTOP' D. 65x80x8/4,5<br>ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A<br>A<br>A | 3 |
| 134 | 90.2863.00<br>90.2893.00<br>90.2914.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP<br>ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP<br>ANELLO TEN. ALT. D. 75x95x10/6 HP | A<br>A<br>A | 3 |
| 135 | 74.1002.92<br>74.1005.92<br>65.1006.92 | ANELLO DI TESTA D. 50<br>ANELLO DI TESTA D. 65<br>ANELLO DI TESTA D. 75 | | 3 |
| 136 | 65.0605.56<br>65.0607.56<br>65.0609.56 | CAMICIA PISTONE D. 50<br>CAMICIA PISTONE D. 65<br>CAMICIA PISTONE D. 75 | | 3 |
| **137** | **90.3830.00** | **OR D. 12,1x2,62 NBR SH. 70 117** | **A** | **6** |
| 138 | 90.3913.50<br>90.3917.00 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50<br>OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A<br>A | 3 |
| 139 | 65.2123.56<br>65.2124.56 | SUPPORTO CAMICIA D. 50<br>SUPPORTO CAMICIA D. 65-75 | | 3 |
| **140** | **90.3917.00** | **OR D. 88,57x2,65 NBR SH. 70 3350** | **A** | **3** |
| **141** | **10.7449.01** | **DISPOSITIVO APERTURA VALVOLE** | | **1** |
| **142** | **99.3652.00** | **VITE M10x20 UNI 5931 12,9** | | **3** |
| **143** | **65.7005.01** | **COPERCHIO PTO + BOCCOLA PIGNONE** | | **2** |
| **144** | **99.4250.00** | **VITE M12x12 UNI 5923 12,9** | | **2** |
| **146** | **96.7017.50** | **ROSETTA D. 8,4x15x0,8 - ATEX** | | **1** |
| **147** | **99.3019.00** | **VITE M8x10 UNI 5931 A2-70 - ATEX** | | **1** |
| **148** | **97.8276.00** | **MARCHIO PRATISSOLI** | | **1** |
| **149** | **91.57030.0** | **RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346** | | **2** |

## 16.2 DIBUJO DESGLOSADO Y NOMENCLATURA DE LAS PIEZAS DE RECAMBIO SR VERSIÓN VERTICAL



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 |
| 10 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 12 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 |
| 35 | 65.2107.66 | FLANGIA PER SOFFIETTO | | 3 |
| 36 | 92.8110.00 | FASCETTA D. 98-109 | | 3 |
| 37 | 65.2110.47 | SOFFIETTO | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 |
| 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 44 | 92.8100.00 | FASCETTA D. 58-69 | | 3 |
| 45 | 99.5133.00 | VITE M16x35 UNI 5739 8,8 | | 16 |
| 46 | 97.6230.00 | SPINA D. 10x24 UNI 6364 | | 8 |
| 47 | 65.2007.13 | PIEDE VERTICALE | | 4 |
| 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 76 | 99.3039.00 | VITE M8x16 UNI 5931 8,8 | | 4 |
| 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

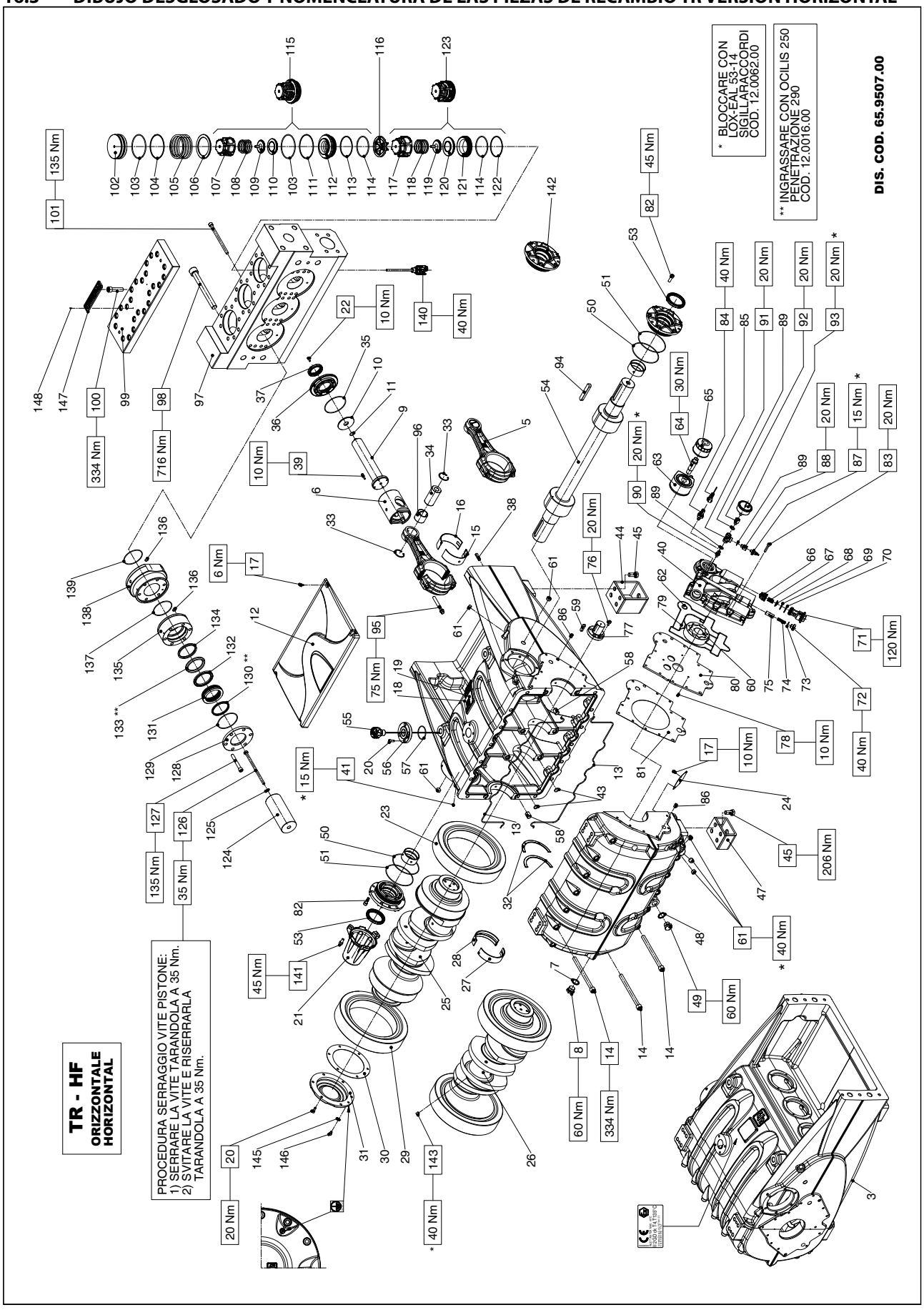
Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.2119.66 | DISTANZIALE PISTONE | | 3 |
| 125 | 74.0402.09 | PISTONE D. 50x127 | | 3 |
| | 74.0405.09 | PISTONE D. 65x127 | | |
| | 65.0409.09 | PISTONE D. 70x127 | | |
| 126 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 127 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 128 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 129 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2132.56 | ANELLO SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 130 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A | |
| 131 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2890.00 | ANELLO TEN. ALT. D. 65x73x5,5 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 132 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2131.70 | SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 133 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2895.00 | ANELLO 'RESTOP' D. 65x80x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 134 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2893.00 | ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 135 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1005.92 | ANELLO DI TESTA D. 65 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 136 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0607.56 | CAMICIA PISTONE D. 65 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 137 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 138 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A | |
| 139 | 65.2123.56 | SUPPORTO CAMICIA D. 50 | | 3 |
| | 65.2124.56 | SUPPORTO CAMICIA D. 65-75 | | |
| 140 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 141 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 142 | 99.3652.00 | VITE M10x20 UNI 5931 12,9 | | 3 |
| 143 | 65.2106.66 | PARASPRUZZI PER SOFFIETTO | | 3 |
| 145 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 146 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 147 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 148 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 149 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 150 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 16.3 DIBUJO DESGLOSADO Y NOMENCLATURA DE LAS PIEZAS DE RECAMBIO TR VERSIÓN HORIZONTAL



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0109.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 25 | 65.0206.55 | ALBERO A GOMITI C. 130 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

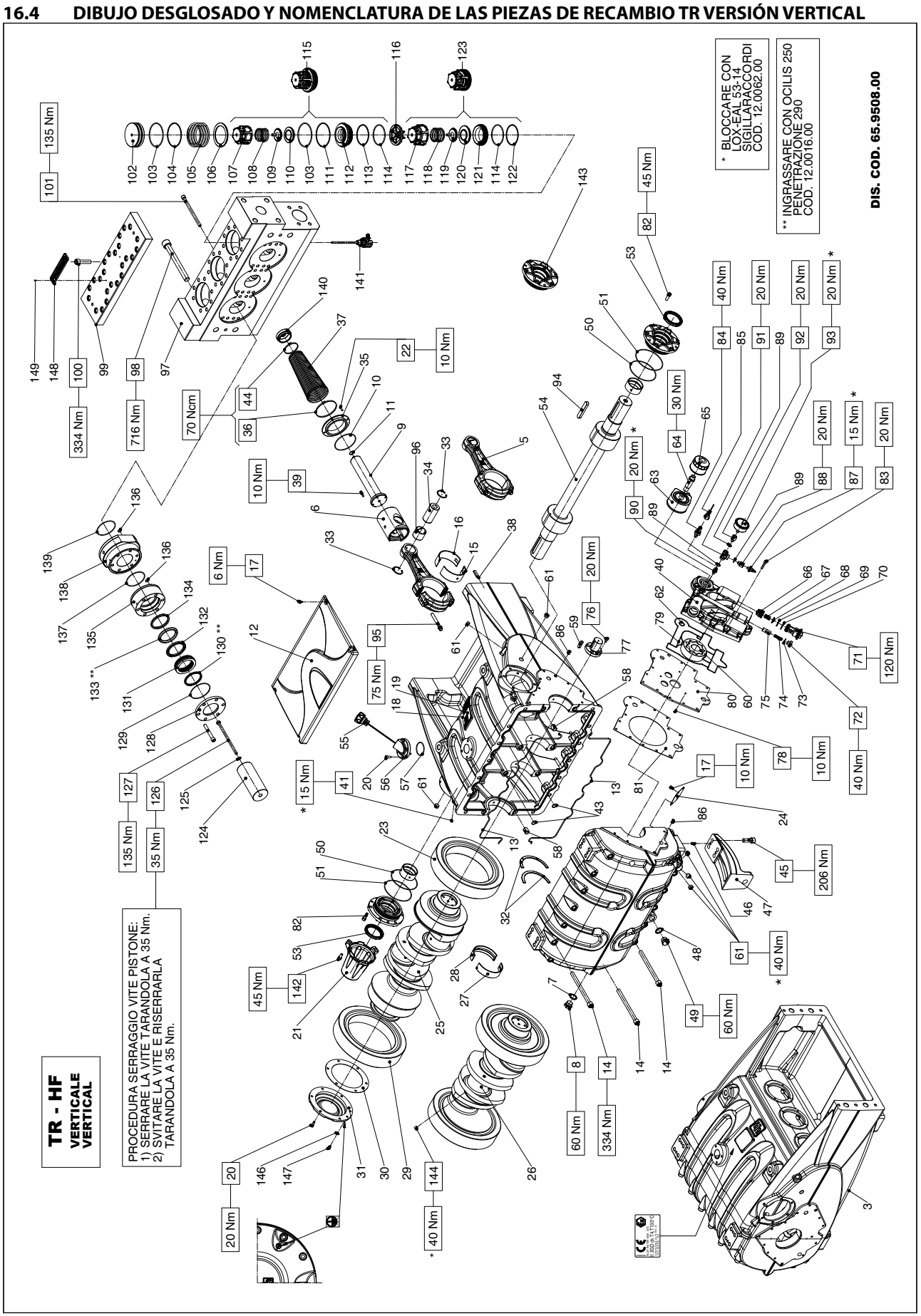
Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| 125 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 126 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 127 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 136 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 62.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| 139 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 140 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 141 | 99.3652.01 | VITE M10x20 UNI 5931 12,10 | | 4 |
| 142 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 143 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 145 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 146 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 147 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 148 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 16.4 DIBUJO DESGLOSADO Y NOMENCLATURA DE LAS PIEZAS DE RECAMBIO TR VERSIÓN VERTICAL



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **3** | **65.0109.01** | **CARTER - COMPLETO** | | **1** |
| **5** | **65.0306.01** | **BIELLA - COMPLETA** | | **3** |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | |
| **7** | **93.1980.00** | **ROSETTA DI TENUTA D. 3/4"** | | **1** |
| **8** | **98.2265.00** | **TAPPO G 3/4"x16** | | **1** |
| **9** | **65.0505.66** | **STELO GUIDA PISTONE** | | **3** |
| **10** | **90.3920.00** | **OR D. 101,27x2,62 NBR SH. 70 3400** | | **3** |
| **11** | **90.3596.00** | **OR D. 18,77x1,78 NBR SH. 70 2075** | | **3** |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | |
| **13** | **65.2140.82** | **GUARNIZIONE D. 3,53x530** | | **2** |
| **14** | **99.5224.00** | **VITE M16x200 UNI 5931 12,9** | | **22** |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | |
| **17** | **99.1820.00** | **VITE M6x12 DIN 6921 8,8** | | **8** |
| **18** | **91.5700.00** | **RIVETTO AUTOF. D. 2,5x5 UNI 7346** | | **4** |
| **19** | **97.8268.00** | **TARGHETTA POMPA** | | **1** |
| **20** | **99.3059.00** | **VITE M 8x20 UNI 5931 8,8** | | **10** |
| **21** | **65.1509.20** | **COPERCHIO ESTREMITA' ALBERO** | | **1** |
| **22** | **99.1853.00** | **VITE M6x16 UNI 5931 12,9** | | **12** |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | |
| **24** | **65.2108.74** | **RETINA FILTRO OLIO** | | **1** |
| **25** | **65.0206.55** | **ALBERO A GOMITI C. 130** | | **1** |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | |
| **30** | **65.2109.84** | **GUARNIZIONE COPERCHIO LATERALE** | | **1** |
| **31** | **65.1506.20** | **COPERCHIO ALBERO A GOMITI** | | **1** |
| **32** | **90.9353.00** | **SEMIANELLO DI SPALLAMENTO** | **C** | **2** |
| **33** | **90.0755.00** | **ANELLO SEEGER D. 45** | | **6** |
| **34** | **97.7470.00** | **SPINOTTO D. 45x86** | | **3** |
| **35** | **65.2107.66** | **FLANGIA PER SOFFIETTO** | | **3** |
| **36** | **92.8110.00** | **FASCETTA D. 98-109** | | **3** |
| **37** | **65.2110.47** | **SOFFIETTO** | | **3** |
| **38** | **97.6300.00** | **SPINA D. 12x40 UNI 6364** | | **2** |
| **39** | **99.1897.00** | **VITE M6x25 UNI 5931 8,8** | | **12** |
| **40** | **79.2124.20** | **CORPO POMPA OLIO** | | **1** |
| **41** | **98.1930.00** | **TAPPO CONICO M8x1 DIN 906** | | **2** |
| **43** | **90.3845.00** | **OR D. 18,72x2,62 NBR SH. 70 3075** | | **4** |
| **44** | **92.8100.00** | **FASCETTA D. 58-69** | | **3** |
| **45** | **99.5133.00** | **VITE M 16x35 UNI 5739 8,8** | | **16** |
| **46** | **97.6230.00** | **SPINA D. 10x24 UNI 6364** | | **8** |
| **47** | **65.2007.13** | **PIEDE VERTICALE** | | **4** |
| **48** | **93.1980.00** | **ROSETTA DI TENUTA G 3/4"** | | **1** |
| 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| **50** | **90.3926.50** | **OR D. 126,67x2,62 NBR SH. 70 3500** | | **2** |
| **51** | **90.3805.00** | **OR D. 132,00x2,50 NBR SH. 70** | | **2** |
| **53** | **90.1900.00** | **ANELLO RAD. D. 70x90x10** | | **2** |
| 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| **56** | **65.2112.54** | **SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE** | | **1** |
| **57** | **90.3898.00** | **OR D. 56,82x2,62 NBR SH. 70 3225** | | **1** |
| **58** | **79.2116.89** | **BUSSOLA CENTRAGGIO CARTER-SUPPORTO** | | **4** |
| **59** | **91.4995.00** | **LINGUETTA 12x8x40 UNI 6604** | | **1** |
| **60** | **79.2119.07** | **ASSIEME ROTORI POMPA OLIO H=35** | | **1** |
| **61** | **98.2155.00** | **TAPPO CONICO M20x1,5 DIN 906** | | **6** |
| **62** | **90.3852.00** | **OR D. 22,22x2,62 NBR SH. 70 130** | | **6** |
| **63** | **65.2137.00** | **SCAMBIATORE ACQUA-OLIO** | | **1** |
| **64** | **65.2138.64** | **RACCORDO SCAMBIATORE FILTRO OLIO** | | **1** |
| **65** | **92.8990.00** | **FILTRO OLIO M20** | | **1** |
| **66** | **36.2009.51** | **GUIDA VALVOLA ASPIRAZIONE / MANDATA** | | **4** |
| **67** | **94.7440.00** | **MOLLA Dm. 15,4x26,5** | | **4** |
| **68** | **36.2010.76** | **VALVOLA SFERICA** | | **4** |
| **69** | **90.3865.00** | **OR D. 29,82x2,62 NBR SH. 70 3118** | | **4** |
| **70** | **90.3873.00** | **OR D. 36,14x2,62 NBR SH. 70 3143** | | **4** |
| **71** | **79.2139.64** | **CARTUCCIA VALVOLA** | | **4** |
| **72** | **98.2137.80** | **TAPPO M18x11** | | **1** |
| **73** | **96.7410.00** | **RONDELLA D. 18,2x24x1,5** | | **1** |
| **74** | **94.7390.00** | **MOLLA Dm. 10,8x37,9** | | **1** |
| **75** | **79.2136.64** | **PISTONCINO VALVOLA SOVRAPRESSIONE** | | **1** |
| **76** | **99.3039.00** | **VITE M 8x16 UNI 5931 8,8** | | **4** |
| **77** | **79.2126.54** | **CODOLO COMANDO ROTORI POMPA OLIO** | | **1** |
| **78** | **99.1851.00** | **VITE M6x16 UNI 5933 8,8** | | **3** |
| **79** | **79.2127.47** | **GUARNIZIONE CORPO POMPA OLIO** | | **1** |
| **80** | **79.2128.74** | **PIASTRA POMPA OLIO** | | **1** |
| **81** | **79.2129.84** | **GUARNIZIONE PIASTRA POMPA OLIO** | | **1** |
| **82** | **99.3686.00** | **VITE M10x30 UNI 5931 8,8** | | **12** |
| **83** | **99.3116.00** | **VITE M8x40 UNI 5931 8,8** | | **15** |
| **84** | **93.5105.00** | **INTERRUTTORE SPIA TEMPERATURA** | | **1** |
| **85** | **93.5515.00** | **CONNETTORE INTER. SPIA TEMPERATURA** | | **1** |
| **86** | **79.2135.89** | **BUSSOLA CENTRAGGIO POMPA OLIO** | | **2** |
| **87** | **93.5555.00** | **PRESSOSTATO 0,3 N.A. 12V** | | **1** |
| **88** | **94.5131.00** | **RACCORDO M-F G 1/4"- M 10x1** | | **1** |
| **89** | **96.7230.00** | **ROSETTA D. 13,5x19x1,5** | | **3** |
| **90** | **95.2560.00** | **RACCORDO M-M NPT 1/4" - G 1/4"** | | **1** |
| **91** | **96.3100.00** | **RACCORDO T F-F-F G 1/4"** | | **1** |

| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

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**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| 125 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 126 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 127 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 136 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 65.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| 139 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 140 | 65.2106.66 | PARASPRUZZI PER SOFFIETTO | | 3 |
| 141 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 142 | 99.3652.00 | VITE M10x20 UNI 5931 12,9 | | 3 |
| 143 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 144 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 146 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 147 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 148 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 149 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 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: | SR50 - SR65 - SR75<br>TR50 - TR60 - TR70 - TR75 |

Es conforme con la Directiva de Máquinas 2006/42/CE
Normas aplicadas: UNI EN ISO 12100:2010 - UNI EN 809:2000

La bomba identificada en la parte superior respeta los siguientes 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.

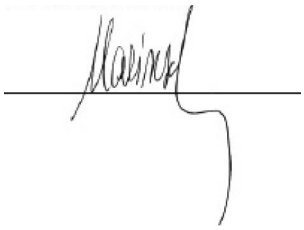
Asimismo, el fabricante se compromete a proporcionar, ante solicitud adecuadamente motivada, una copia de la documentación técnica relativa a la bomba con la modalidad y en el plazo por definir.

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

Persona autorizada a redactar la declaración: El Administrador Delegado Ing. Paolo Marinsek

Reggio Emilia - Febrero de 2014 — Firma:



## SÓLO PARA BOMBAS CON CONFIGURACIÓN ATEX

## DECLARACIÓN CE DE CONFORMIDAD

(De acuerdo con el anexo X de la Directiva Europea 94/4/CE - ATEX)

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

| | |
|---|---|
| Denominación: | BOMBA |
| Tipo: | Bomba alternativa de pistones para agua a alta presión |
| Marca de fábrica: | INTERPUMP GROUP - PRATISSOLI |
| Modelo: | SR50 - SR65 - SR75<br>TR50 - TR60 - TR70 - TR75 |

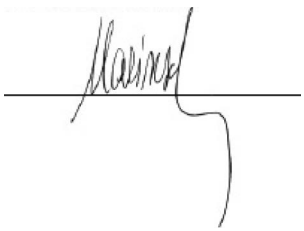
marcadas con Ex grupo II, categoría 2 GD, protección ck y clase de temperatura T4/T135 °C, configuradas según pedido como bombas ATEX, son conformes con las normas de la Directiva 94/9/CE ATEX y se pueden utilizar en atmósfera potencialmente explosiva de acuerdo con los límites previstos para las zonas clasificadas y siempre y cuando se respeten las prestaciones declaradas e instaladas y se utilicen de acuerdo con las instrucciones contenidas en este manual, en el manual general y/o en el manual específico de cada bomba.

El fabricante aplica todas las medidas necesarias para garantizar la conformidad de las bombas fabricadas con cuanto declarado.

Normas europeas aplicadas:
UNI EN 1127-1:2011; UNI EN 13463-1:2009; UNI EN 13463-5:2011; UNI EN 13463-8:2003

Fascículo técnico depositado en DNV ITALIA (**Nº 0496**)

El Administrador Delegado Ing. Paolo Marinsek
Reggio Emilia - Febrero de 2014 — Firma:



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# 1 INTRODUÇÃO

Este manual descreve as instruções para o uso e a manutenção das bombas da série SR-TR 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



**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*.



**Símbolo relativo à proteção contra explosão.**
Define os requisitos especiais de segurança para o uso das bombas em áreas identificadas, de acordo com a Diretriz ATEX.
**Quando as bombas são ordenadas na configuração ATEX**, porque elas estão destinadas a trabalhar em áreas com atmosferas potencialmente explosivas, é necessário respeitar **RIGOROSAMENTE as observações listadas nos parágrafos marcados com este símbolo e as indicações presentes no manual de instruções suplementar "PROTEÇÃO CONTRA EXPLOSÃO ATEX"**.

# 3 SEGURANÇA

## 3.1 Advertências gerais sobre segurança

O uso inadequado de bombas e sistemas de alta pressão, bem como o não cumprimento com a instalação e manutenção pode causar sérios danos a pessoas e/ou coisas. 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 montarão/usarão, e tomará todas as precauções possíveis para garantir a máxima segurança em todas as condições operacionais. Nenhuma precaução razoavelmente aplicável será 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 sempre deve fornecer uma válvula de segurança.
2. Os componentes do sistema de alta pressão, em particular para os que operam principalmente no exterior, devem ser adequadamente protegidos de chuva, gelo e calor.
3. As partes elétricas do sistema, bem como as que devem ser devidamente protegidas contra respingos d'água devem atender às normas específicas vigentes.
4. Os tubos de alta pressão devem ser corretamente dimensionados para que a pressão máxima de exercício do sistema e utilizados sempre e somente no interior do campo de pressão do trabalho indicado pelo Fabricante do mesmo tubo. O mesmo procedimento deve ser observado para todos os outros acessórios do sistema em relação à alta pressão.
5. As extremidades dos tubos de alta pressão devem ser revestidas e protegidas por uma estrutura sólida, a fim de evitar perigos em caso de estouro ou ruptura das conexões.
6. Carter adequado, de proteção, deve ser fornecido nos sistemas de transmissão da bomba (juntas, polias e correias, tomadas de energia auxiliar).

## 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 a acessar tal 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 do Operador, deve-se verificar se:

1. O sistema de alta pressão está corretamente alimentado (ver ponto 9.4).
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.

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 anteceder a sua proteção e segurança, bem como de terceiros que possam ser diretamente afetados pelas suas ações, por qualquer de suas ações ou em relação ao caso. A sua ação deverá ser ditada 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 uma necessidade novas 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 talvez alterar durante trabalhos longos e pesados.
4. A área do trabalho relacionada pelo raio de ação do jato deve ser absolutamente interditada e livre de objetos que, inadvertidamente, afetados pelo jato de pressão, possam danificar 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 para a trajetória dos detritos removidos pelo jato d'água. Se necessário, anteparos adequados deverão ser fornecidos pelo Operador para proteger o que pode ser exposto acidentalmente.
7. Durante o trabalho, o Operador não deve se distrair por nenhum motivo. Especialistas com a necessidade de acessar a área operacional deverão aguardar que o Operador suspenda o trabalho por iniciativa própria, após o que poderá fazer imediatamente a sua presença conhecida.
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 iniciado e trazido 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, para evitar danos aos componentes, e de modo particular às conexões.
4. Para garantir total confiabilidade e segurança, sempre use somente peças de reposição originais.

## 4 IDENTIFICAÇÃO DA BOMBA

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

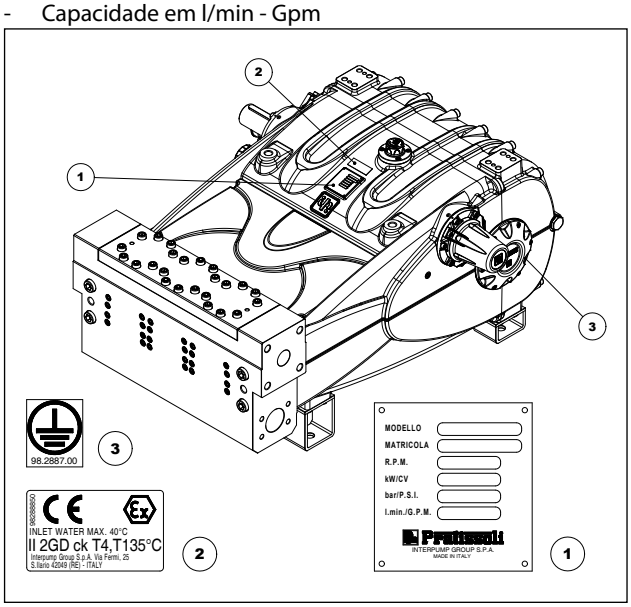



Fig. 1

**Modelo, versão e número de matrícula deverão ser sempre indicados em caso de pedido de peças de reposição.**

Para as bombas ordenadas na configuração **ATEX**:
Pos. 2 - placa **com marcação específica ATEX de proteção contra explosões**.
Pos. 3 - placa para identificar **parafusos de aterramento**.

# 5 CARACTERÍSTICAS TÉCNICAS DA BOMBA DE ALTO FLUXO

**CARACTERÍSTICAS TÉCNICAS DA BOMBA SR (@ RPM 520)**

| Modelo | Giros/1' | Capacidade | | Pressão | | Potência | |
|---|---|---|---|---|---|---|---|
| | | l/min | Gpm | bar | Psi | kW | Hp |
| SR 50 | 1500 | 276 | 73 | 400 | 5800 | 211 | 287 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 65 | 1500 | 466 | 123 | 250 | 3625 | 222,5 | 302,5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 75 | 1500 | 620 | 164 | 200 | 2900 | 236,8 | 322 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

**CARACTERÍSTICAS TÉCNICAS DA BOMBA TR (@ RPM 520)**

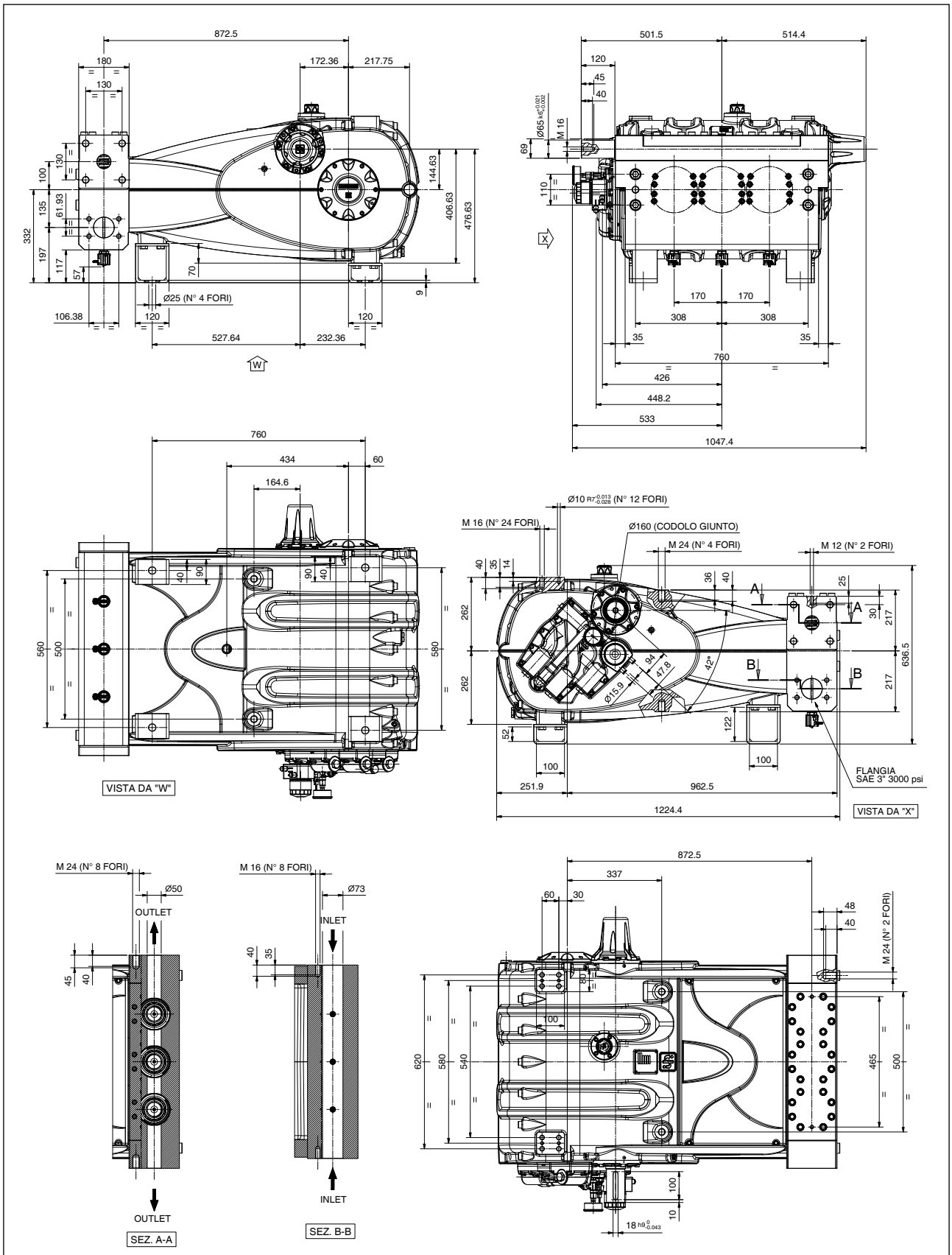
| Modelo | Giros/1' | Capacidade | | Pressão | | Potência | |
|---|---|---|---|---|---|---|---|
| | | l/min | Gpm | bar | Psi | kW | Hp |
| TR 50 | 1500 | 398 | 105 | 400 | 5800 | 304 | 413,5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 60 | 1500 | 573 | 151,4 | 300 | 4350 | 328,3 | 446,5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 70 | 1500 | 780,5 | 206 | 220 | 3190 | 328 | 446 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 75 | 1500 | 896 | 236,7 | 200 | 2900 | 342 | 465 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

## 5.1 Momentos de inércia da bomba reduzida à PTO

| BOMBA DE SÉRIE | RPM | J (kg mm$^2$) |
|---|---|---|
| SR | 1500 | 231600 |
| | 1800 | 182400 |
| | 2200 | 140700 |
| TR | 1500 | 241200 |
| | 1800 | 189100 |
| | 2200 | 145200 |

## 6 DIMENSÕES E PESOS DA BOMBA SR DE ALTO FLUXO

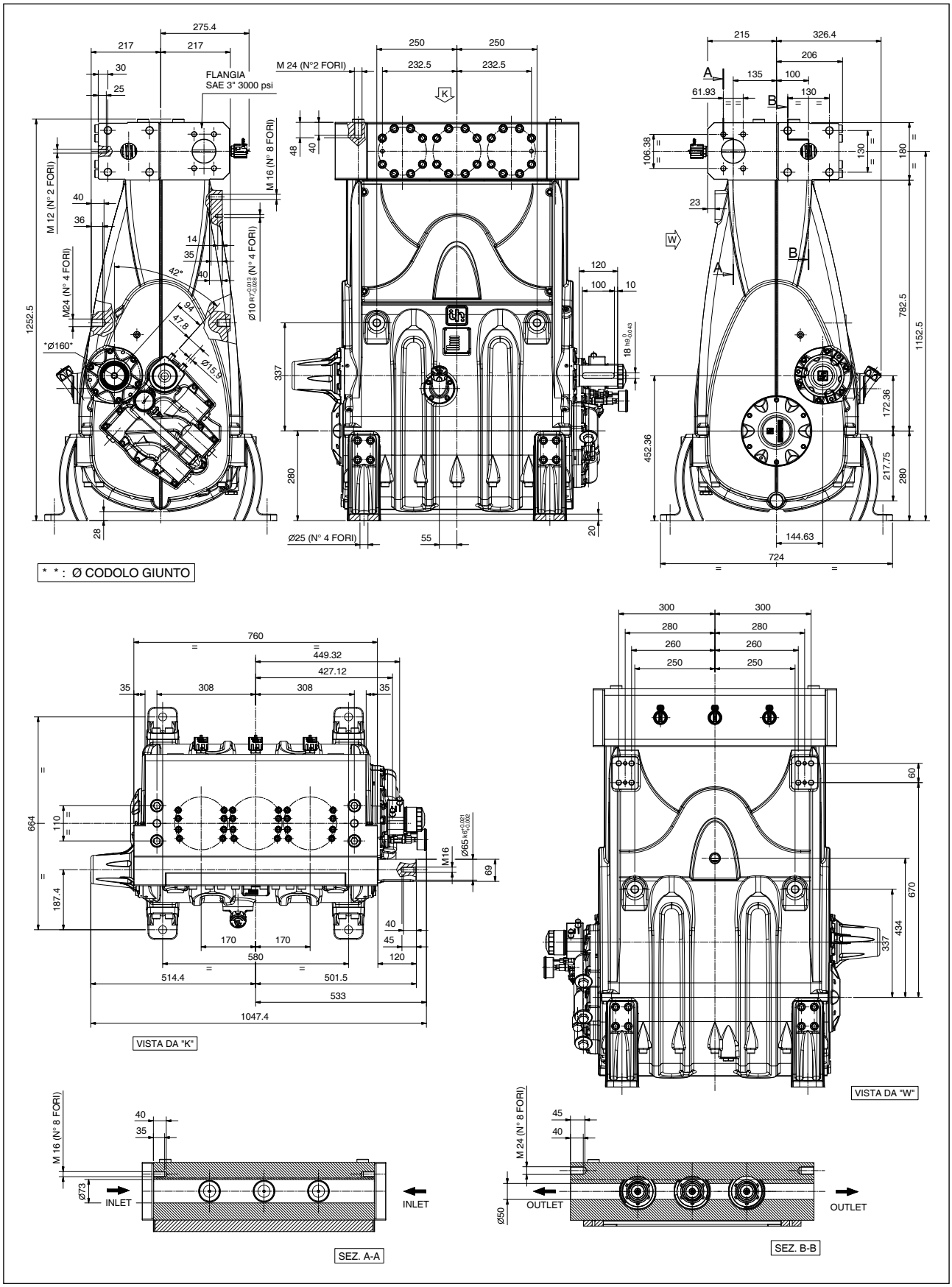
Para dimensões e pesos das bombas Série SR HORIZONTAL, consulte a Fig. 2.




**Peso a seco 1150 Kg.**

Fig. 2

Para dimensões e pesos das bombas Série SR VERTICAL, consulte a Fig. 2/a.

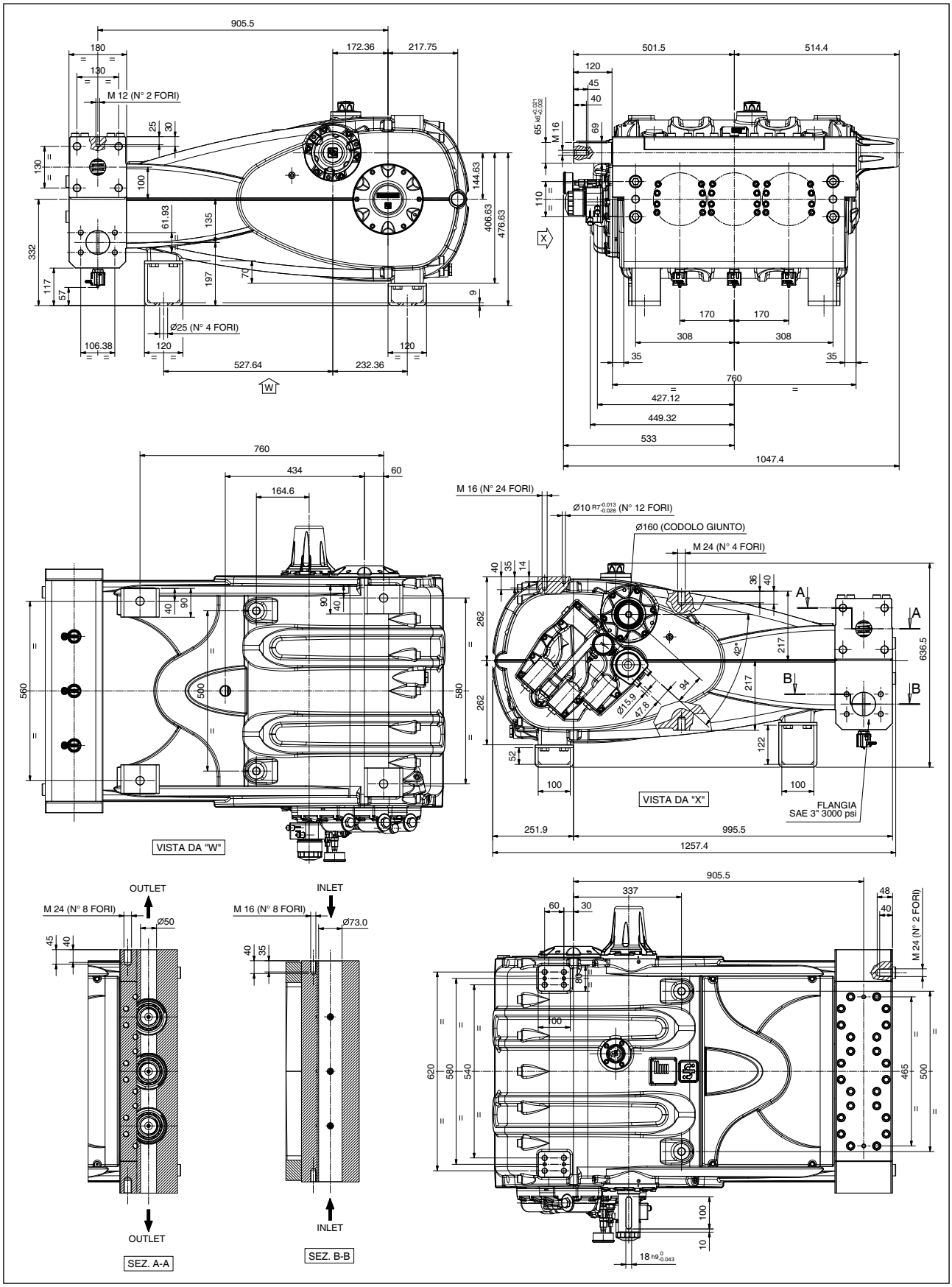



**Peso a seco 1160 Kg.**

Fig. 2/a

## 6.1 DIMENSÕES E PESOS DA BOMBA TR DE ALTO FLUXO

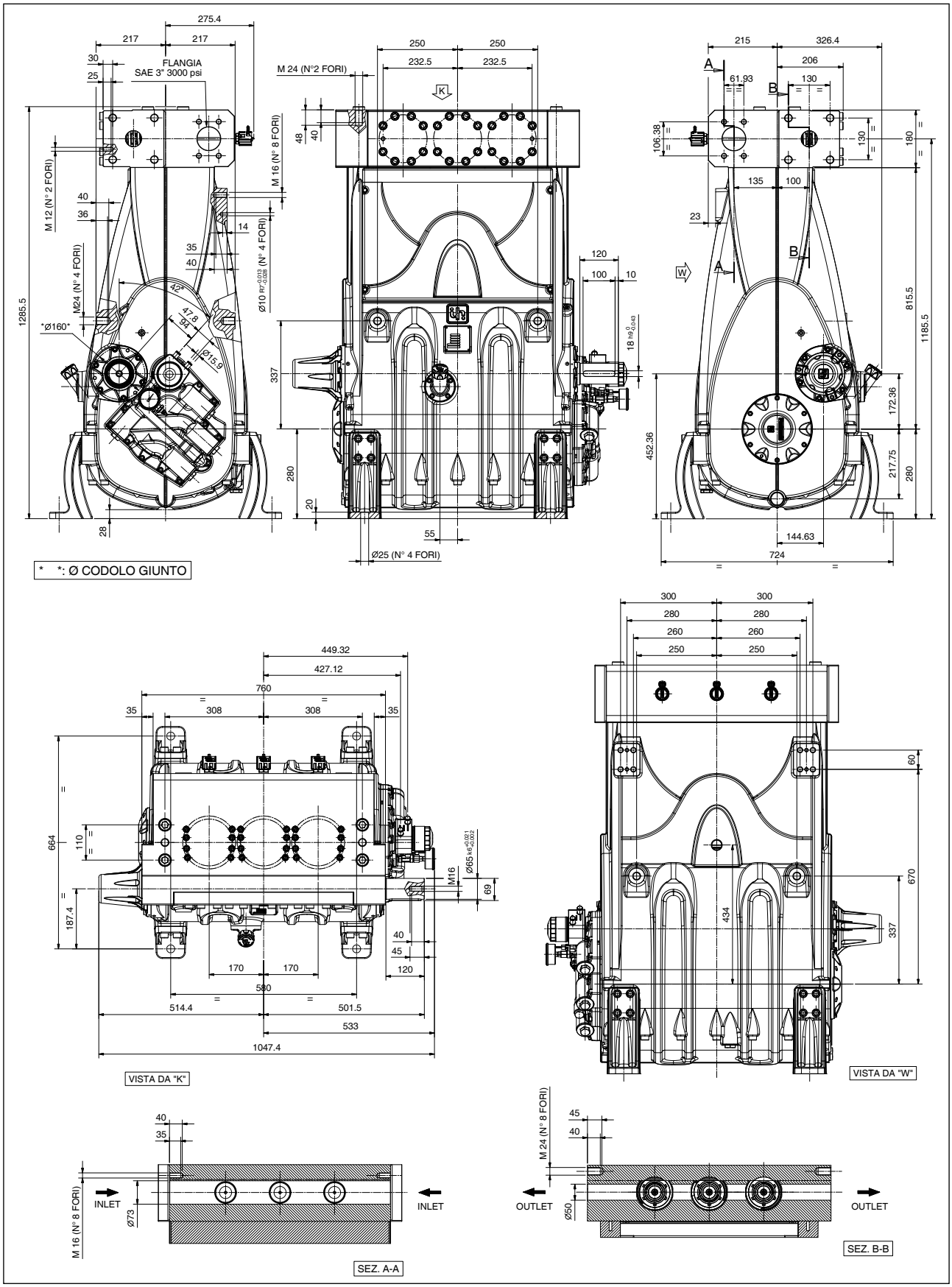
Para dimensões e pesos das bombas Série TR HORIZONTAL, consulte a Fig. 3.




**Peso a seco 1185 Kg.**

Fig. 3

Para dimensões e pesos das bombas Série TR VERTICAL, consulte a Fig. 3/a.




**Peso a seco 1195 Kg.**

Fig. 3/a

# 7 INDICAÇÕES PARA O USO

As bombas da Série SR-TR, se não ordenadas na configuração ATEX, foram projetadas para operar em ambientes com atmosfera **não** potencialmente explosiva, com água filtrada (ver ponto 9.6).
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 da água permitira é de 40°C. Todavia, é possível usar a bomba com água até a temperatura de 60°C, mas somente por períodos breves. Em tais casos, aconselha-se consultar o ***Departamento Técnico*** ou o ***Serviço de Assistência ao Cliente***.

Versão ***ATEX***: A temperatura máxima da água permitida é de **40°C**.

## 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 superados, se não expressamente autorizados formalmente pelo ***Departamento Técnico*** ou o ***Serviço de Assistência ao Cliente***.

## 7.3 Velocidade mínima de rotação

O regime mínimo permitido para estes tipos de bombas é de **250 Giros/1' no eixo de manivela**. Qualquer regime de rotação diferente do indicado na tabela de desempenho (ver capítulo 5) deve ser expressamente autorizado formalmente pelo ***Departamento Técnico*** ou ***Serviço de Atendimento ao Cliente***.

## 7.4 Emissão sonora

O teste para detecção da pressão sonora foi realizado de acordo com a diretriz 2000/14 do Parlamento e do Conselho Europeu (Diretriz da Máquina) e do 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

O alívio do valor deve ser feito somente com a bomba estabelecida na instalação e nas realizações declaradas pelo cliente. Os valores deverão estar de acordo com os regulamentos vigentes.

## 7.6 Marcas e tipos dos óleos lubrificantes aconselhados

### 7.6.1 Tipo do óleo

A bomba é fornecida com o óleo lubrificante TOTAL-ERG MISOLA MAP SH-150 que garante o uso correto da bomba para temperatura ambiente que vai de -10°C a +40°C.
Para temperaturas diferentes usar óleos lubrificantes de grau único com adequada viscosidade.
Para uso da bomba a temperaturas rígidas, recomenda-se o uso de aquecedores adequados.
A lubrificação forçada é fornecida pela bomba de óleo, que garante a quantidade correta de óleo em cada ponto solicitado das partes em movimento.
A necessidade de usar o óleo de multi-grau é dupla:

- Facilitar os usuários a não precisar trocar a viscosidade do óleo em relação à temperatura externa ou às estações.
- Aumentar, de modo consistente, o tempo de intervalo entre uma troca de óleo e outra, reduzindo consequentemente as intervenções para a manutenção, ver tabela "manutenção preventiva" no capítulo 11.

### 7.6.2 Marcas de óleo aconselhável

TOTAL-ERG MISOLA MAP SH-150.
MOBIL SHC 629.

### 7.6.3 Características do óleo solicitada

No caso de falta ou difícil disponibilidade das marcas aconselháveis, pode-se usar óleos alternativos que deverão, no entanto, responder às seguintes características técnicas:

- Viscosidade a -10°C ≤4000 cSt.
- Viscosidade a 40°C ≤200 cSt.
- Viscosidade a 100°C ≥18 cSt.
- Índice de viscosidade: ≥135 cSt.
- Ponto de deslizamento: ≥ -25°C
- Grau de aditivo GL1 - GL2.

Se for necessário, entre em contato com o **Serviço de Assistência ao Cliente**.
Verifique o nível do óleo através da haste do nível do óleo= ①, Fig. 4.
Se necessário, complete até a tampa do óleo. ①, Fig. 4.
O controle correto do nível do óleo é realizado com a bomba em temperatura ambiente, a troca do óleo é executado com bomba de temperatura de trabalho, removendo: a haste do nível do óleo pos. ②, Fig. 4. (Use a tampa, pos. 2/a para versão vertical.)
O controle do óleo e a troca são efetuados conforme indicado no capítulo 11.
A quantidade de óleo necessária é: **52 litros de SR-TR na versão horizontal; 37 litros de SR-TR na versão vertical**.

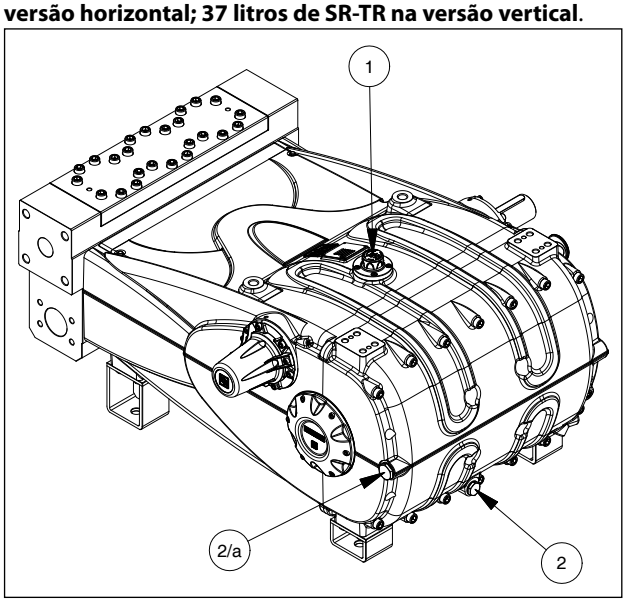



Fig. 4

Organize a instalação, de modo que não supere de modo algum os 110°C (230°F) de temperatura do óleo durante o funcionamento da bomba.
Use para tal escopo, o indicador de temperatura do óleo referido no ponto 9.10.
**ATENÇÃO:** Use óleo com grau de inflamabilidade acima de 200°C.

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

**O óleo esgotado deve ser colocado em um recipiente adequado e disposto em centrais adequadas.**
**Não deve ser, de forma nenhuma, disposto no meio ambiente.**

## 8 TOMADAS E CONEXÕES

As bombas da série SR-TR são equipadas de (ver Fig. 5 e Fig. 6):
Duas tomadas de aspiração "IN": SAE G3" - 3000 PSI, ver "EXPLOSÃO DA FLANGE ASP. - MAND. SR-TR" COD.65950900 (Fig. 7).
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": ver "EXPLOSÃO DA FLANGE ASP. - MAND. SR-TR" COD.65950900 (Fig. 7).
Uma tomada "DRAIN": com furo G1" formato na parte inferior do carter para monitorar a eventual perda de água devido ao desgaste das vedações de pressão. Se forem apresentadas perdas, consulte o manual de reparação.
**O referido furo deve ser sempre mantido aberto, e eventualmente conectado com um sistema de detecção.**

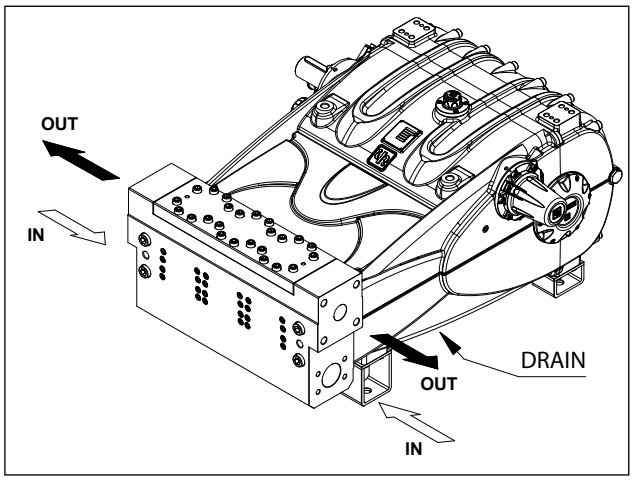



Fig. 5

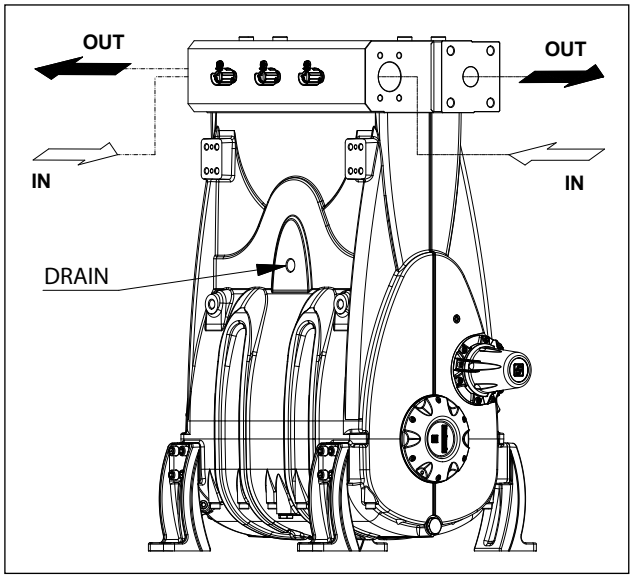
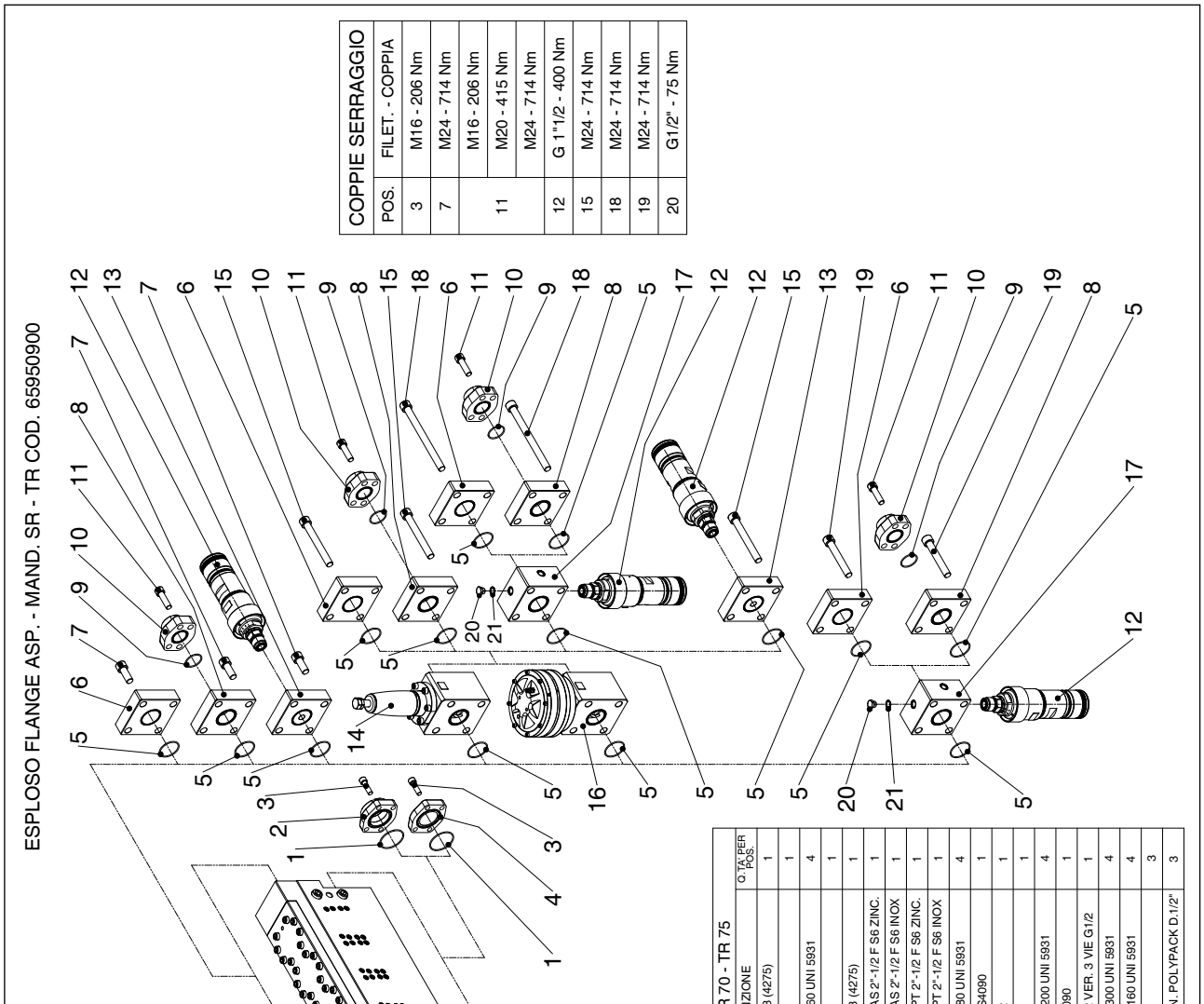



Fig. 6

## 8.1 Esquema de composição de Aspiração de Fluxo




| COPPIE SERRAGGIO | |
|---|---|
| POS. | FILET. - COPPIA |
| 3 | M16 - 206 Nm |
| 7 | M24 - 714 Nm |
| 11 | M16 - 206 Nm |
| | M20 - 415 Nm |
| | M24 - 714 Nm |
| 12 | G 1"1/2 - 400 Nm |
| 15 | M24 - 714 Nm |
| 18 | M24 - 714 Nm |
| 19 | M24 - 714 Nm |
| 20 | G1/2" - 75 Nm |

POMPE SR - TR TUTTE LE VERSIONI

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| ASPIRAZIONE | 1 | 90414100 | OR D. 85.32X3.53 (4337) | 1 |
| | 2 | 96458500 | FLANGIA DIR. GAS 3" F S3 ZINC. | 1 |
| | | 96459000 | FLANGIA DIR. GAS 3" F S3 INOX | 1 |
| | | 96459500 | FLANGIA DIR. NPT 3" F S3 ZINC. | 1 |
| | | 96460000 | FLANGIA DIR. NPT 3" F S3 INOX | 1 |
| | 3 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 4 | 96489500 | FLANGIA CIECA 3" S3 ZINC. | 1 |
| | | 96490000 | FLANGIA CIECA 3" S3 INOX | 1 |

POMPE SR 50 - TR 50

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021466 | FLANGIA 1"1/2 | 1 |
| | 9 | 90407900 | OR D. 47.22X3.53 (4187) | 1 |
| | 10 | 96468500 | FLANGIA DIR. GAS 1"-1/2 F S6 ZINC. | 1 |
| | | 96469000 | FLANGIA DIR. GAS 1"-1/2 F S6 INOX | 1 |
| | | 96469500 | FLANGIA DIR. NPT 1"-1/2 F S6 ZINC. | 1 |
| | | 96470000 | FLANGIA DIR. NPT 1"-1/2 F S6 INOX | 1 |
| | 11 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA PNR4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

POMPE SR 65 - TR 60

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021366 | FLANGIA 2" | 1 |
| | 9 | 90409900 | OR D. 56.74X3.53 (4225) | 1 |
| | 10 | 96473500 | FLANGIA DIR. GAS 2" F S6 ZINC. | 1 |
| | | 96474000 | FLANGIA DIR. GAS 2" F S6 INOX | 1 |
| | | 96474500 | FLANGIA DIR. NPT 2" F S6 ZINC. | 1 |
| | | 96475000 | FLANGIA DIR. NPT 2" F S6 INOX | 1 |
| | 11 | 99529000 | VITE TCEI M20X70 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

POMPE SR 75 - TR 70 - TR 75

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021266 | FLANGIA 2"1/2 | 1 |
| | 9 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 10 | 96478500 | FLANGIA DIR. GAS 2"-1/2 F S6 ZINC. | 1 |
| | | 96479000 | FLANGIA DIR. GAS 2"-1/2 F S6 INOX | 1 |
| | | 96479500 | FLANGIA DIR. NPT 2"-1/2 F S6 ZINC. | 1 |
| | | 96480000 | FLANGIA DIR. NPT 2"-1/2 F S6 INOX | 1 |
| | 11 | 99532000 | VITE TCEI M24X80 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

Fig. 7

# 9 INSTALAÇÃO DA BOMBA

## 9.1 Instalação

Os furos de fixação presentes nos pés têm o diâmetro de 25 mm.
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 quatro furos M24 para suportes de elevação para facilitar a instalação, conforme a figura abaixo.

Os olhais são dimensionados somente para a elevação da bomba, portanto não é permitido o seu uso para cargas adicionais.






**Aterramento**: é necessário fixar um cabo de aterramento à bomba através de parafusos M8 de INOX e arruela dentada de INOX corretamente marcados pela etiqueta de cor AMARELA.
Veja manual de "PROTEÇÃO CONTRA EXPLOSÃO ATEX".

**Substitua a tampa de serviço de fechamento do furo de introdução do óleo, posicionado no carter com a haste de nível do óleo.**
A haste do nível de óleo deverá ser sempre alcançada no grupo indicado.

**O eixo da bomba (PTO) não deve estar rigidamente conectado ao grupo do propulsor.**
Se aconselha os seguintes tipos de transmissão:
- Engate flexível.
- Suspensão tipo Cardan (preste atenção aos ângulos de trabalho máx. aconselhados pelos fabricantes).

Em todos os casos, a montagem da transmissão deve ser bem feita para evitar operações erradas ou graves dos detalhes da ligação e evitar o desgaste excessivo, aumento da temperatura e/ou rupturas perigosas, como por exemplo gerar potenciais fontes de ignição e explosão. *Veja manual de "PROTEÇÃO CONTRA EXPLOSÃO ATEX".*

## 9.2 Sentido de rotação

O sentido de rotação pode ser no sentido horário ou anti-horário, indiferente do lado direito ou esquerdo (ver Fig. 8).

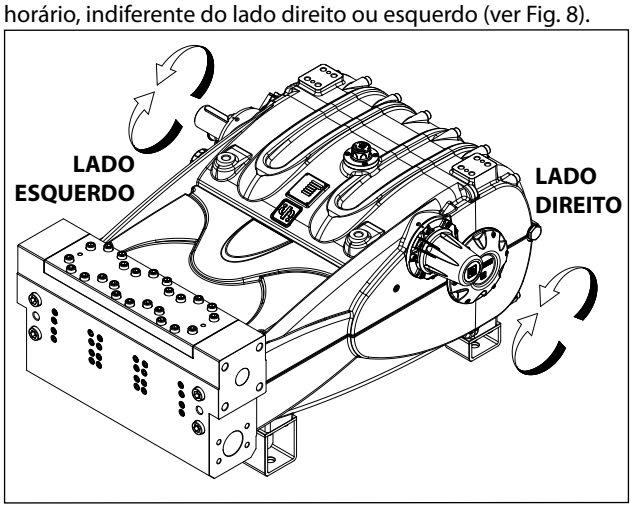



Fig. 8

A conexão à bomba é indiferente de ambos os lados; preste anteção do **LADO ESQUERDO**, do alongamento do espaço devido à bomba de óleo de lubrificação.
A cobertura de extremidade será montada na PTO não conectada.

## 9.3 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 alongamento das tubulações flexíveis. A consistência da área de aspiração deverá ser tal que possa impedir deformações causadas pela depressão produzida pela bomba.

## 9.4 Alimentação da bomba

As bombas de sérir SR-TR devem sempre ser instaladas mediante alimentação forçada, por meio de uma bomba auxiliar.
A bomba de reforço deverá ter uma capacidade pelo menos dupla da capacidade de etiqueta da bomba do pistão e uma pressão entre 2 e 3 bar.
Estas condições de alimentação deverão ser respeitadas com qualquer regime de trabalho.

**A inicialização da bomba de reforço deverá sempre preceder a da bomba do pistão.**
**É aconselhável instalar um pressostato na linha de alimentação a jusante dos filtros para proteção da bomba.**

## 9.5 Linha de aspiração

Para um bom funcionamento da bomba, a linha de aspiração deverá ter as seguintes características:

1. Diâmetro interno mínimo, conforme indicado nas tabelas no ponto 9.8, e em qualquer caso, igual ou superior ao do cabeçote da bomba

   Ao longo do percurso do condutor são localizadas para evitar restrições, que podem causar perdas de carga, resultando em cavitação. Evite completamente curvas de 90°, conexões com outras tubulações, gargalos, contra-inclinação, curva em "U" invertida, conexões em "T".

2. O layout deve ser realizado para evitar fenômenos de cavitação.
3. Esteja perfeitamente hermético e construído, de forma a garantir uma perfeita vedação ao longo do tempo.
4. Evite 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 re-circule 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 reforço, próximo à tomada de aspiração da bomba de pistão e sempre a jusante dos filtros.

### 9.6 Filtragem

Na linha de aspiração da bomba, é necessário instalar dois filtros, posicionados conforme indicado nas Fig. 9 e Fig. 9/a.

**Com válvula de regulação de acionamento manual.**

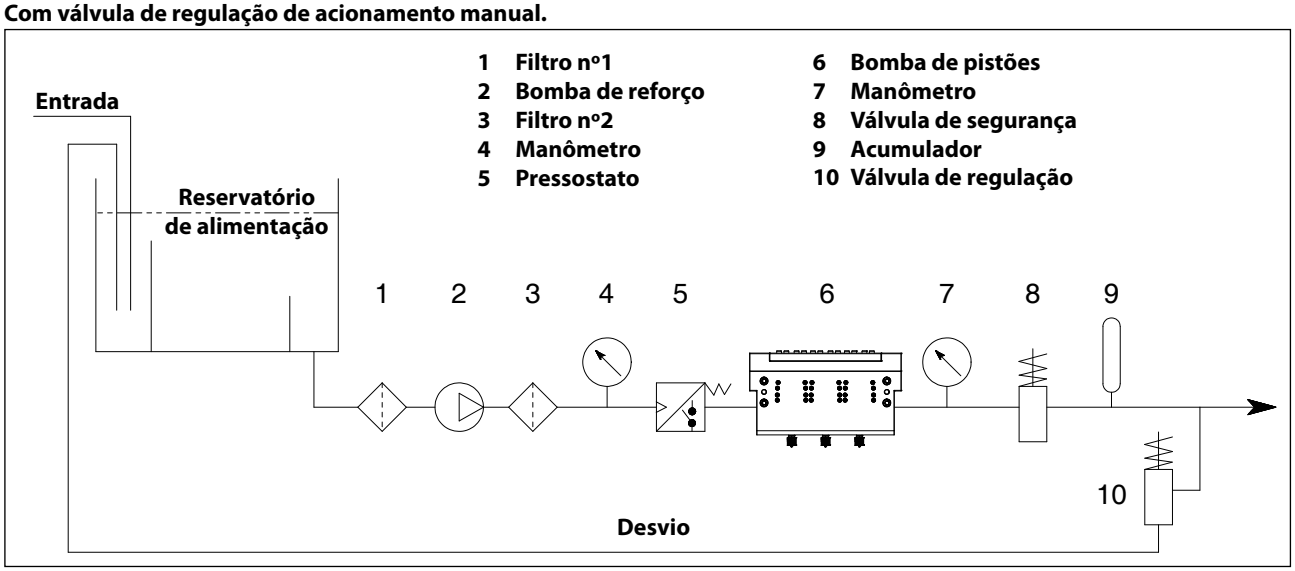



Fig. 9

**Com válvula de regulação de acionamento pneumático.**

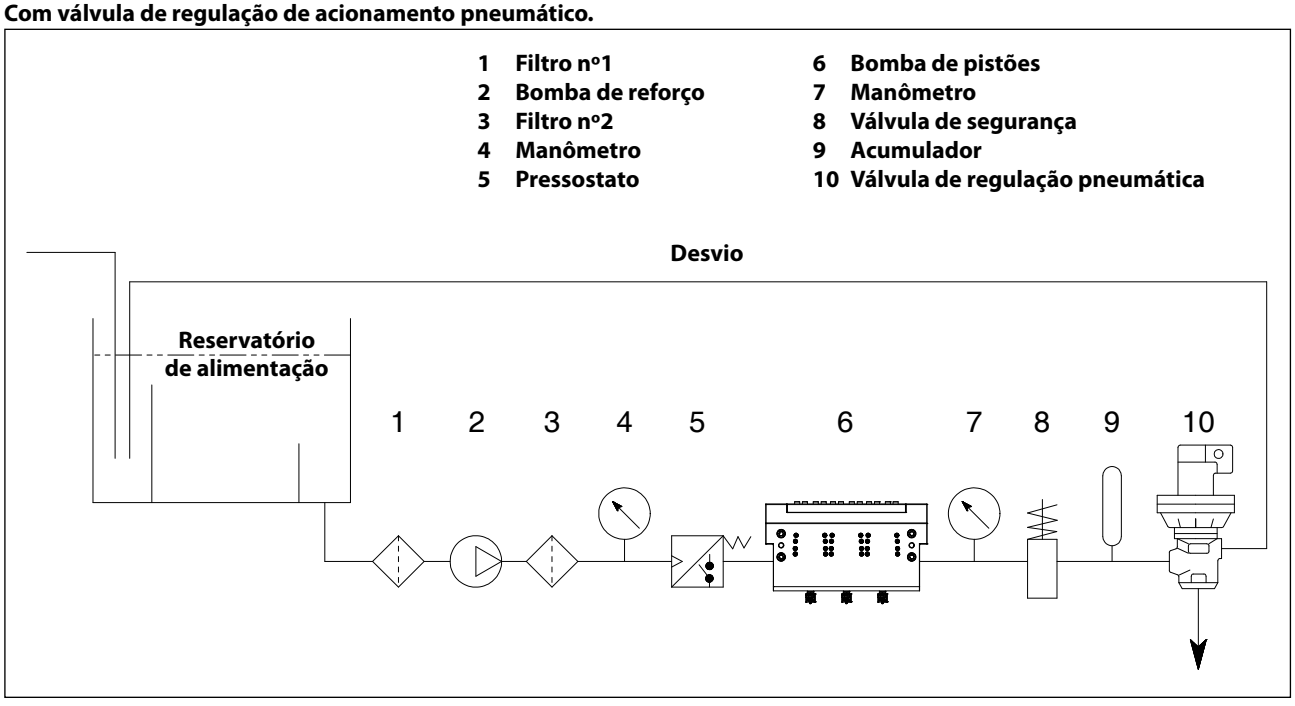



Fig. 9/a

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 etiqueta 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, forneça limpeza regular dos filtros, planejado segundo o uso efetivo da bomba em relação também à qualidade da água usada e às reais condições de entupimento.**

### 9.7 Linha de fluxo

Para a realização de uma linha de fluxo correta, observe as seguintes normas de instalação.

1. O diâmetro interno do tubo deve ser suficiente para garantir a velocidade correta do fluido. Veja a tabela no ponto 9.8.
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 fluxo, 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 fluxo resultam em dano ou resultado indesejado, instale um amortecedor de pulsação de dimensões adequadas.

### 9.8 Diâmetro interno dos tubos do condutor

Na tabela acima são relatados os valores dos diâmetros internos dos condutos de aspiração e de fluxo.

| BOMBA SR | | |
|---|---|---|
| **MODELO** | **ASPIRAÇÃO** | **FLUXO** |
| SR 50 | SAE 3" - 3000 PSI | SAE 1"1/2 - 6000 PSI |
| SR 65 | SAE 3" - 3000 PSI | SAE 2" - 6000 PSI |
| SR 75 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |

| BOMBA TR | | |
|---|---|---|
| **MODELO** | **ASPIRAÇÃO** | **FLUXO** |
| TR 50 | SAE 3" - 3000 PSI | SAE 1"1/2 - 6000 PSI |
| TR 60 | SAE 3" - 3000 PSI | SAE 2" - 6000 PSI |
| TR 70 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |
| TR 75 | SAE 3" - 3000 PSI | SAE 2"1/2 - 6000 PSI |

Para a composição da flange de aspiração e de fluxo, veja "EXPLOSÃO DA FLANGE ASP.-FLUX. SR-TR" Fig. 7. Se necessário, contate o Departamento Técnico ou o Serviço de Assistência ao Cliente.

### 9.9 Conexão do trocador de água/óleo




Fig. 10

Para um melhor desempenho, conecte o trocador no sentido inverso (ver Fig. 10).
Capacidade de água:

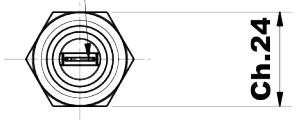
a) Eficiência máxima de 25 l/min.
b) Eficiência média de 20 l/min.
c) Eficiência mínima de 12 l/min.

Se a bomba trabalha a uma temperatura ambiente inferior a 5°C (41°F), pode-se evitar a conexão do trocador.
Para a manutenção, veja capítulo 11.

### 9.10 Grupo da bomba de óleo

1) Cartucho do filtro do óleo - é bloqueado à mão; para manutenção, veja capítulo 11.
2) Medidor de pressão - 0÷16 bar para controle periódico de pressão do óleo de lubrificação.
3) Pressostato: NORMALMENTE ABERTO (está disponível mediante solicitação normalmente fechado); tensão de 12 V. Para grupos fixos, aconselha-se conectá-lo sob sistema de proteção.
4) Termostato do óleo: NORMALMENTE FECHADO; tensão de 12 V.

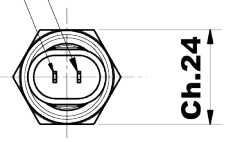
**Terminal 6,5x0,8**




**CONEXÃO DO PRESSOSTATO**

**PRESSÃO DE INTERVENÇÃO: 0,3 ±0,15 BAR**

**Dois terminais 2,8x0,8**




**CONEXÕES INT. LUZ DE TEMPERATURA**

**TEMP. INTERVENÇÃO: 105°C±5°C**

**ATENÇÃO: realize a conexão elétrica dos dois sensores com uma carga NÃO INDUTUVA, ou substitua o pressostato e o termostato com componentes de características iguais homologadas pela ATEX.**

## 10 INICIALIZAÇÃO E FUNCIONAMENTO

### 10.1 Controles preliminares (primeiro início)

Antes da inicialização, certifique-se de que:

**A linha de aspiração esteja conectada e com pressão (ver capítulo 9): a bomba nunca deve girar a seco.**

1. A linha de aspiração garanta também o tempo de vedação hermética.
2. Todas as eventuais válvulas de interceptação entre a fonte de alimentação e a bomba estejam completamente abertas. A linha de fluxo, 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 semi-articulações, inclinação do eixo de transmissão, aperto do cinto, etc.) permanece dentro dos limites previstos pelo fabricante da transmissão.
5. O óleo no carter da bomba esteja no nível previsto, verificando-o com a vareta de nível de óleo adequada, colocada na parte sup. do carter (pos. 1 Fig. 11 e Fig. 11/a).

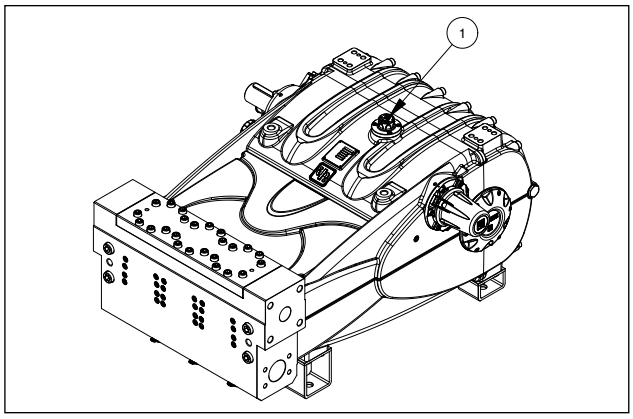



Fig. 11

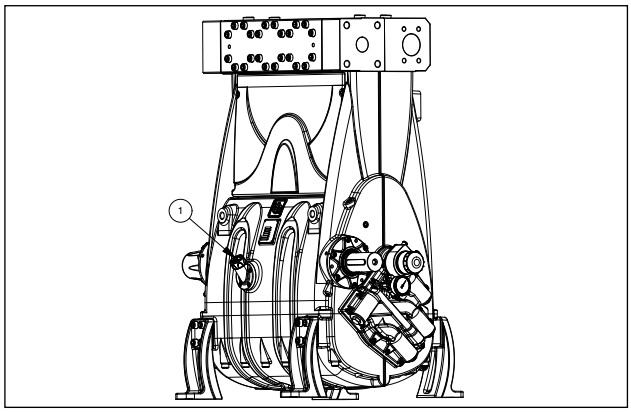



Fig. 11/a

**Em caso de armazenamento prolongado ou inatividade por longos períodos, verifique o bom funcionamento das válvulas de aspiração, abrindo os três dispositivos do elevador. (ver pos.② Fig. 12). Certifique-se de ter fechado as válvulas antes de inciar a bomba. Para as posições de "trabalho" e de "repouso", veja Fig. 12/a.**

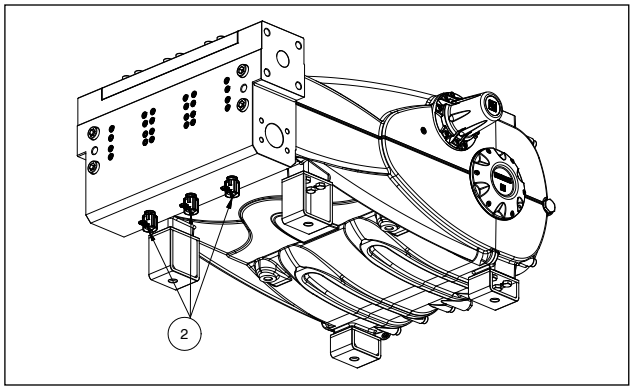



Fig. 12

| VÁLVULA FECHADA - POSIÇÃO DE TRABALHO - | DESBLOQUEIO DO DISPOSITIVO DE SEGURANÇA | VÁLVULA ABERTA - POSIÇÃO DE REPOUSO - |
|---|---|---|

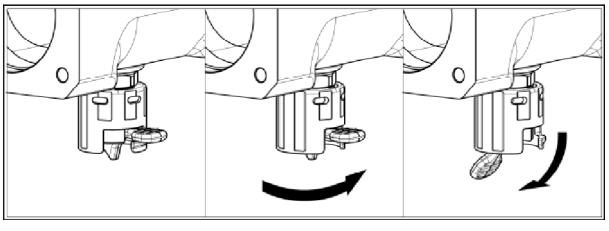


Fig. 12/a

### 10.2 Inicialização

1. Verifique a alimentação correta da bomba.
2. Inicialize a bomba sem nenhuma carga.
3. Verifique se na fase de funcionamento, o regime de rotação não está superior ao da etiqueta.
4. Deixe a bomba funcionar por um período não inferior a 3 minutos, antes de colocá-la sob pressão.
5. Antes de cada parada da bomba, zere a pressão, agindo sobre a válvula de regulação ou sobre eventuais dispositivos de colocação em descarga.

## 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 1000 horas** | **A cada 1500 horas** | **A cada 3000 horas** |
| Verifique o nível do óleo | | |
| | Verificação/ Substituição*: Válvula Locais da válvula Molas da válvula Guias da válvula | Troca de óleo e filtro de óleo Substituição dos foles (versão vertical) |
| | Substituição*: Vedações de H.P. Vedações de LP. | |

* Para a substituição, consulte as indicações relacionadas no ***Manual de reparação***.

### 11.1 Foles (versão SR-TR vertical)

Verifique o aperto das braçadeiras de fixação dos foles depois das primeiras **1000 horas** de funcionamento.
**Substitua os foles a cada 3000 horas de funcionamento.**
* Para a substituição, consulte as indicações relacionadas no **Manual de reparação**.

### 11.2 Trocador de água/óleo

Os intervalos de limpeza do trocador são definidos em relação à dureza da água usada. Aconselha-se limpar o trocador **a cada 2000 horas, se a dureza da água é ≤ 30° franceses; a cada 1000 horas se a dureza da água é > 30° e ≤ 40° franceses. Além de 40° franceses, aconselha-se a limpeza a cada 500 horas**.
A limpeza é realizada usando produtos de descalcificação disponíveis do mercado; não é necessário desmontá-lo.
N.B.: o material do trocador é de **INOX (AISI 303)**.

**Proteção do circuito de lubrificação das peças mecânicas:** prepara a instalação, de modo que o pressostato instaado na bomba de óleo para a lubrificação forçada bloqueie o funcionamento da bomba SR-TR no caso de diminuição da pressão do óleo

| MANUTENÇÃO PREVENTIVA | |
|---|---|
| **OBJETO** | **FREQUÊNCIA DE VERIFICAÇÃO** |
| Verifica a calibragem do medidor de pressão do óleo de lubrificação | A cada 10000 horas |
| Verificação visual da perda de água do cabeçote | A cada 500 horas |

# 12 ARMAZENAMENTO DA BOMBA

## 12.1 Método de preenchimento da bomba com emulsão anti-corrosão ou solução anti-gelo usando uma bomba externa no diafragma na base do layout concluído no ponto 9.6

a) Feche a drenagem do filtro, se aberto.
b) Certifique-se de que o tubo de ligação está limpo, espalme com lubrificação e se conecte 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) Preencha o recipiente de serviço com a solução/emulsão.
e) Coloque a extremidade livre do tubo de aspiração e o tubo de descarga de alta pressão no interior do recipiente.
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 zonas e nos períodos do ano, com risco de gelo, seguir as indicações relacionadas no capítulo 12 (ver ponto 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 contidos no contrato de compra.
A garantia 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 conseguer atingir:**
- A bomba não está preparada e funciona a seco.
- Falta água na aspiração.
- As válvulas estão bloqueadas.
- A linha de fluxo 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, acessórios, ao longo da linha de aspiração aceleram a passagem do líquido.
- O filtro de aspiração está sujo ou é muito pequeno.
- A bomba auxiliar 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 desgastadas.
- Forros de pressão desgastados.
- Funcionamento imperfeito da válvula de regulação da pressão.
- Problemas na transmissão.





**A bomba não fornece a capacidade da etiqueta/ ruído excessivo:**
- Alimentação insuficiente (ver várias causas, como acima).
- O número de giros é inferior ao da etiqueta.
- Vazamento excessivo da válvula de regulação de pressão.
- Válvulas desgastadas.
- Vazamento excessivo dos forros 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 da bomba é insuficiente:**
- O uso (bocal) é ou se tornou superior à capacidade da bomba.
- O número de giros é insuficiente.
- Vazamento excessivo das embalagens de pressão.
- Funcionamento imperfeito da válvula de regulação da pressão.
- Válvulas desgastadas.



**A bomba superaquece:**
- A bomba trabalha com excesso de pressão ou o número de giros é superior ao da etiqueta.
- O óleo no carter da bomba não está nivelado ou não é do tipo aconselhado no capítulo 7 (ver ponto 7.6).
- O alinhamento da junta é imperfeito.
- A inclinação da bomba durante o trabalho é excessiva.



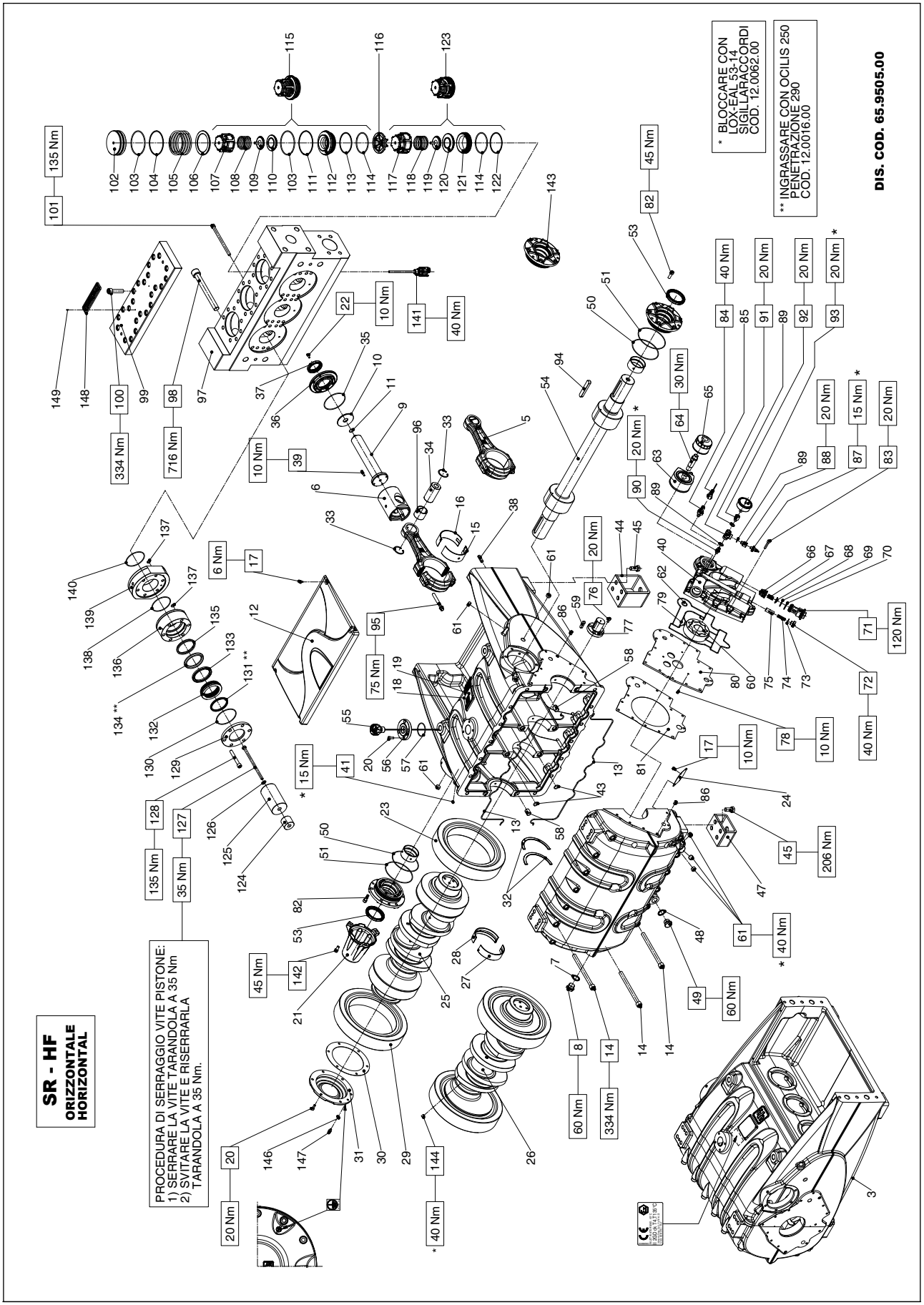
**Vibrações ou impactos nos tubos:**
- Aspiração de ar.
- Funcionamento imperfeito da válvula de regulação de pressão.
- Mal funcionamento das válvulas.
- Não conformidade de movimento na transmissão.

### 15.1 PESQUISA POR DESGASTES E SOLUÇÕES

| DESGASTE | POSSÍVEL CAUSA | SOLUÇÃO |
|---|---|---|
| Com o início da bomba, a mesma não produz nenhum ruído | Falta água na alimentação.<br>As válvulas estão bloqueadas.<br>A linha de fluxo está fechada e não permite que o ar presente na bomba escape. | Verifique o funcionamento e a capacidade da bomba auxiliar.<br>Verifique o funcionamento da válvula.<br>Certifique-se de eventuais anomalias presentes na linha de fluxo. |
| Pressão muito baixa | A bomba está aspirando ar | Localize a perda e repare |
| | Perda da válvula de regulação da pressão ou regulação da pressão errada | Elimine a perda ou reinicie |
| | Definição do forro da válvula com defeito | Monte novos forros |
| | Válvula(s) de aspiração ou descarga danificada(s) | A(s) válvula(s) de aspiração e descarga deve(m) ser substituída(s). Verifique as condições das molas da válvula. |
| | Perda do cabeçote | Verifique os forros do cabeçote e, na ocorrência, substitua-os; monte um novo cabeçote |
| Bomba com ruído | Válvulas desgastadas.<br>Condutos de aspiração e/ou filtros subdimensionados.<br>Capacidade insuficiente, temp. da água elevada, filtro entupido. | Verifique a instalação e os componentes da linha de aspiração; detectye a temp. da água |
| Pulsações irregulares das tubulações | Aspiração de ar e/ou alimentação insuficiente.<br>Curvas, cotovelos, acessórios na linha de alimentação que aceleram a passagem do líquido.<br>O filtro de alimentação está sujo ou é muito pequeno.<br>A bomba auxiliar fornece uma pressão e/ou uma capacidade insuficiente. | Verifique a instalação e os componentes da linha de aspiração.<br>Verifique o funcionamento e a capacidade da bomba auxiliar.<br>Limpe ou substitua o filtro de alimentação. |
| Perda de água do suporte do forro | Forro de baixa pressão com defeito/desgastado | Substitua o forro de baixa pressão |
| A bomba superaquece | A pressão e/ ou o número de giros é superior ao da etiqueta.<br>O óleo no carter da bomba não está nivelado ou não é do tipo aconselhado.<br>A junta ou a transmissão não estão alinhadas. | Restabeleça a pressão e/ou o número de giros.<br>Restabeleça o nível de óleo, e se necessário, substitua-o.<br>Verifique a transmissão. |
| Perda de óleo do carter da bomba | Vedação do óleo da haste da guia do pistão com defeito/desgastado.<br>Forros diversos do carter com defeitos/desgastados.<br>Para as versões verticais, verifique o estado do fole. | Substitua a vedação do óleo, do fole ou dos forros |
| Óleo emulsificado emitido pela abertura.<br>A haste do nível do óleo mostra sinais de emulsão. | Contaminação do óleo lubrificante com líquido bombeado. | Verifique o funcionamento correto das vedações do óleo da guia do pistão (ou dos foles) e substitua o óleo lubrificante |

# 16 EXPLOSÕES E PEÇAS DE REPOSIÇÃO DISTINTAS

## 16.1 EXPLOSÃO E PEÇAS DE REPOSIÇÃO DISTINTAS SR NA VERSÃO HORIZONTAL



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

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**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

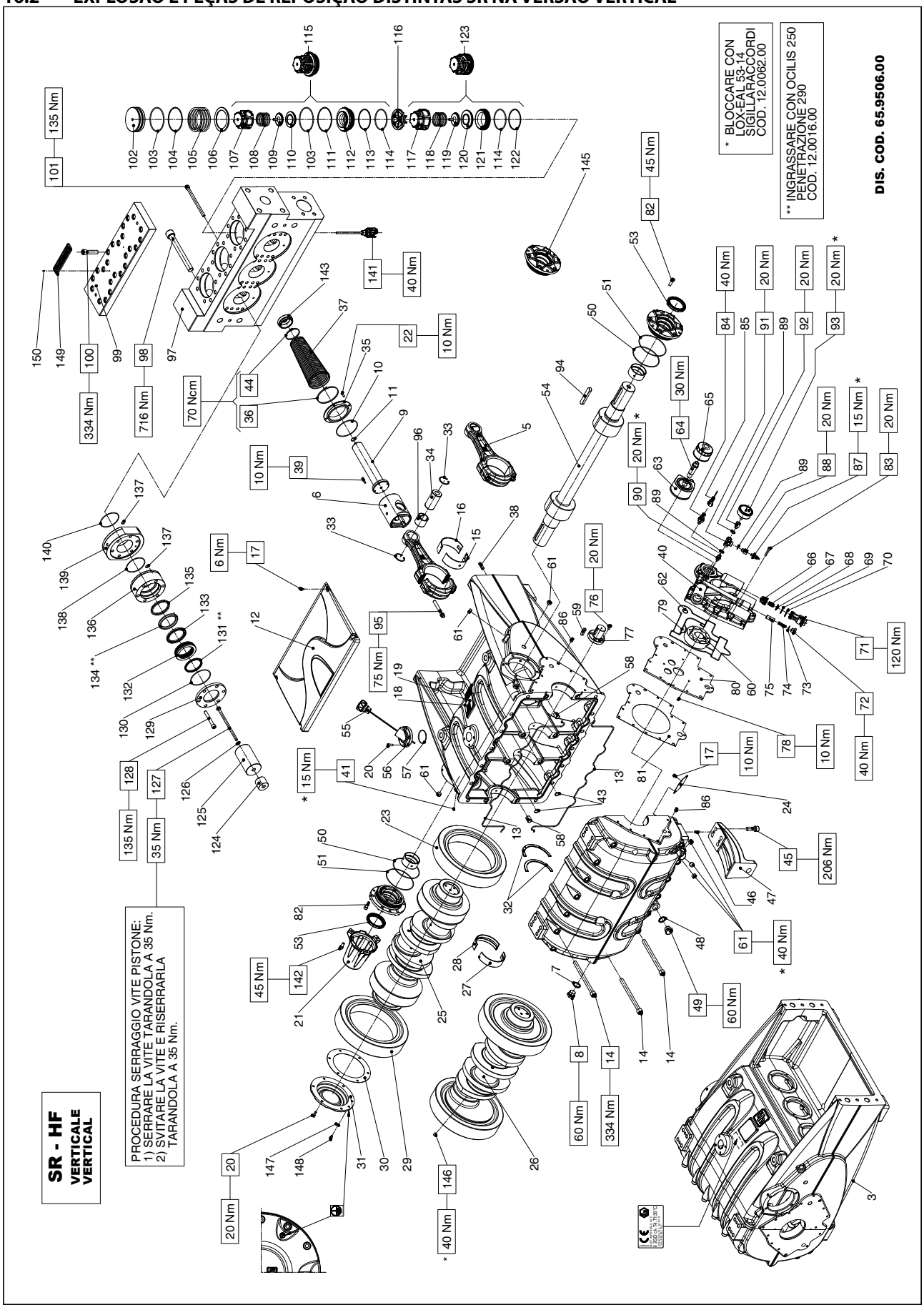
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**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **93** | **94.6070.00** | **MANOMETRO ATT. POST. 0-16 D. 63** | | **1** |
| **94** | **91.5050.00** | **LINGUETTA 18x11x100 UNI 6604** | | **1** |
| **95** | **99.4410.00** | **VITE SERRAGGIO BIELLA** | | **6** |
| **96** | **90.9185.00** | **BOCCOLA PIEDE BIELLA** | | **3** |
| **97** | **65.1205.56** | **TESTATA LP** | | **1** |
| **98** | **99.5355.00** | **VITE M24x2x220 UNI 5931 8,8** | | **4** |
| **99** | **65.2120.56** | **COPERCHIO VALVOLE LP** | | **1** |
| **100** | **99.5149.00** | **VITE M16x65 UNI 5931 12,9** | | **24** |
| **101** | **99.4495.00** | **VITE M12x180 UNI 5931 12,9** | | **24** |
| **102** | **65.2121.56** | **TAPPO VALVOLA** | | **3** |
| **103** | **90.4146.00** | **OR D. 104,4x3,53 NBR SH. 70 4412** | **B** | **6** |
| **104** | **90.5345.00** | **ANELLO ANTIEST. D. 105,4x111,2x1,5** | **B** | **3** |
| **105** | **94.8050.00** | **MOLLA Dm. 103x87,5** | | **3** |
| **106** | **65.2139.56** | **ANELLO SEDE VALVOLA DI MANDATA** | | **3** |
| **107** | **36.2131.05** | **GUIDA VALVOLA DI MANDATA** | | **3** |
| **108** | **94.7745.00** | **MOLLA Dm. 56x57,3** | | **3** |
| **109** | **36.2129.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **110** | **36.2126.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **111** | **90.5340.00** | **ANELLO ANTIESTR. D. 105,2x111x1,5** | | **3** |
| **112** | **36.2121.56** | **SEDE VALVOLA DI MANDATA** | | **3** |
| **113** | **90.5315.00** | **ANELLO ANTIEST. D. 89,4x95,2x1,5** | | **3** |
| **114** | **90.4144.00** | **OR D. 88,5x3,53 NBR SH. 70 4350** | | **6** |
| **115** | **36.7227.01** | **GRUPPO VALVOLA DI MANDATA** | **B** | **3** |
| **116** | **65.2122.51** | **DISTANZIALE GUIDA VALVOLA** | **B** | **3** |
| **117** | **36.2130.05** | **GUIDA VALVOLA D'ASPIRAZIONE** | | **3** |
| **118** | **94.7755.00** | **MOLLA Dm. 58,5x103,1** | | **3** |
| **119** | **36.2128.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **120** | **36.2127.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **121** | **36.2120.56** | **SEDE VALVOLA D'ASPIRAZIONE** | | **3** |
| **122** | **90.5310.00** | **ANELLO ANTIEST. D. 89,2x95x1,5** | | **3** |
| **123** | **36.7226.01** | **GRUPPO VALVOLA D'ASPIRAZIONE** | **B** | **3** |
| **124** | **65.2119.66** | **DISTANZIALE PISTONE** | | **3** |
| 125 | 74.0402.09 | PISTONE D. 50x127 | | 3 |
| | 74.0405.09 | PISTONE D. 65x127 | | |
| | 65.0409.09 | PISTONE D. 70x127 | | |
| **126** | **96.7105.00** | **ROSETTA D. 10x18x0,9** | | **3** |
| **127** | **99.3865.00** | **VITE M10x200 UNI 5737 A2-70** | | **24** |
| **128** | **99.4418.00** | **VITE M12x90 UNI 5931 12,9** | | **18** |
| 129 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2132.56 | ANELLO SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 130 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A | |
| 131 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2890.00 | ANELLO TEN. ALT. D. 65x73x5,5 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 132 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2131.70 | SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 133 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2895.00 | ANELLO 'RESTOP' D. 65x80x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 134 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2893.00 | ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 135 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1005.92 | ANELLO DI TESTA D. 65 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 136 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0607.56 | CAMICIA PISTONE D. 65 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| **137** | **90.3830.00** | **OR D. 12,1x2,62 NBR SH. 70 117** | **A** | **6** |
| 138 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A | |
| 139 | 65.2123.56 | SUPPORTO CAMICIA D. 50 | | 3 |
| | 65.2124.56 | SUPPORTO CAMICIA D. 65-75 | | |
| **140** | **90.3917.00** | **OR D. 88,57x2,65 NBR SH. 70 3350** | **A** | **3** |
| **141** | **10.7449.01** | **DISPOSITIVO APERTURA VALVOLE** | | **1** |
| **142** | **99.3652.00** | **VITE M10x20 UNI 5931 12,9** | | **3** |
| **143** | **65.7005.01** | **COPERCHIO PTO + BOCCOLA PIGNONE** | | **2** |
| **144** | **99.4250.00** | **VITE M12x12 UNI 5923 12,9** | | **2** |
| **146** | **96.7017.50** | **ROSETTA D. 8,4x15x0,8 - ATEX** | | **1** |
| **147** | **99.3019.00** | **VITE M8x10 UNI 5931 A2-70 - ATEX** | | **1** |
| **148** | **97.8276.00** | **MARCHIO PRATISSOLI** | | **1** |
| **149** | **91.57030.0** | **RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346** | | **2** |

## 16.2 EXPLOSÃO E PEÇAS DE REPOSIÇÃO DISTINTAS SR NA VERSÃO VERTICAL



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 92.8100.00 | FASCETTA D. 58-69 | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 46 | 97.6230.00 | SPINA D. 10x24 UNI 6364 | | 8 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 47 | 65.2007.13 | PIEDE VERTICALE | | 4 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 10 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 12 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 76 | 99.3039.00 | VITE M8x16 UNI 5931 8,8 | | 4 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 35 | 65.2107.66 | FLANGIA PER SOFFIETTO | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 36 | 92.8110.00 | FASCETTA D. 98-109 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 37 | 65.2110.47 | SOFFIETTO | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

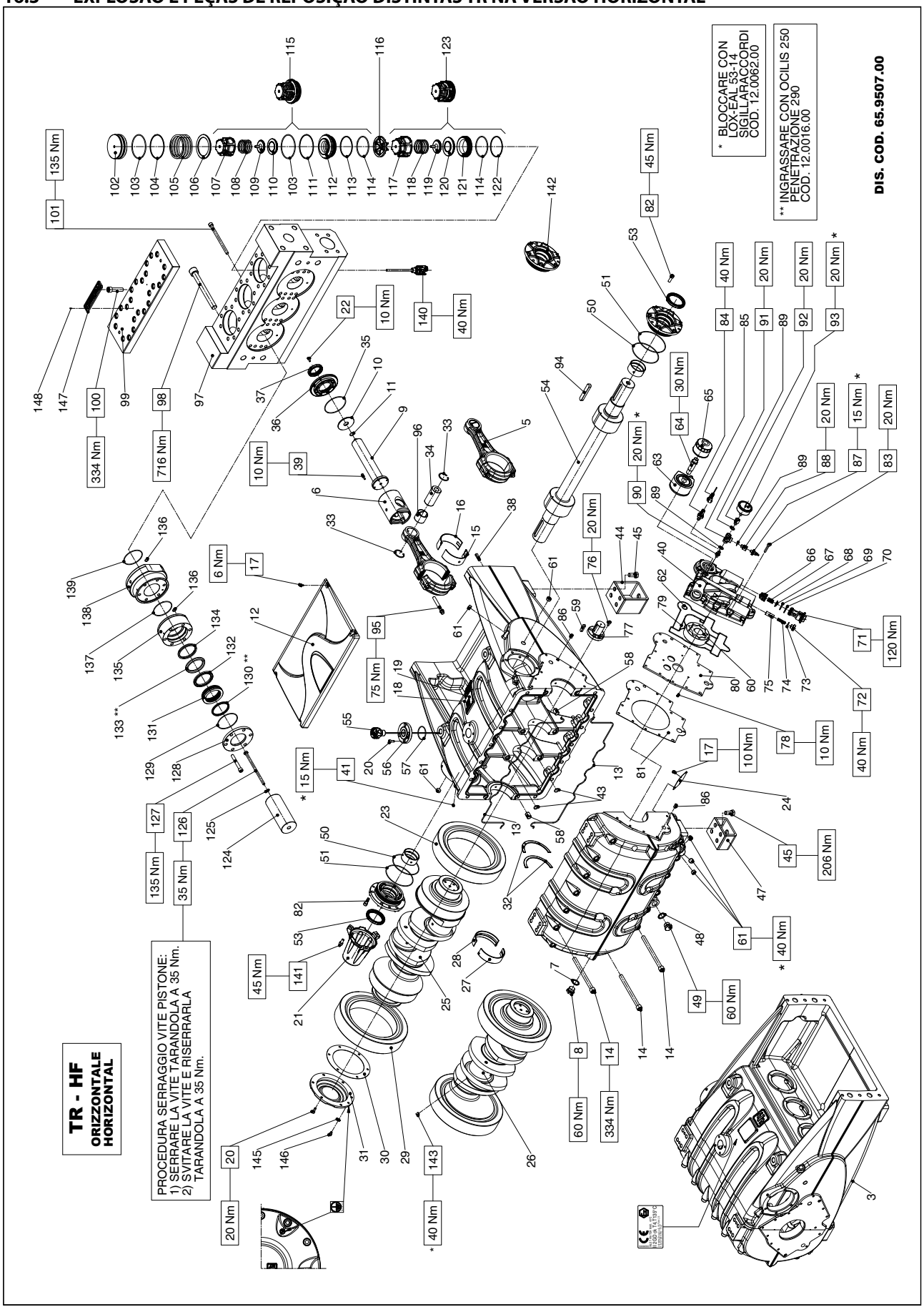
Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.2119.66 | DISTANZIALE PISTONE | | 3 |
| 125 | 74.0402.09 | PISTONE D. 50x127 | | 3 |
| | 74.0405.09 | PISTONE D. 65x127 | | |
| | 65.0409.09 | PISTONE D. 70x127 | | |
| 126 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 127 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 128 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 129 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2132.56 | ANELLO SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 130 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A | |
| 131 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2890.00 | ANELLO TEN. ALT. D. 65x73x5,5 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 132 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2131.70 | SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 133 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2895.00 | ANELLO 'RESTOP' D. 65x80x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 134 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2893.00 | ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 135 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1005.92 | ANELLO DI TESTA D. 65 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 136 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0607.56 | CAMICIA PISTONE D. 65 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 137 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 138 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A | |
| 139 | 65.2123.56 | SUPPORTO CAMICIA D. 50 | | 3 |
| | 65.2124.56 | SUPPORTO CAMICIA D. 65-75 | | |
| 140 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 141 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 142 | 99.3652.00 | VITE M10x20 UNI 5931 12,9 | | 3 |
| 143 | 65.2106.66 | PARASPRUZZI PER SOFFIETTO | | 3 |
| 145 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 146 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 147 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 148 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 149 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 150 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 16.3 EXPLOSÃO E PEÇAS DE REPOSIÇÃO DISTINTAS TR NA VERSÃO HORIZONTAL



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0109.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 25 | 65.0206.55 | ALBERO A GOMITI C. 130 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

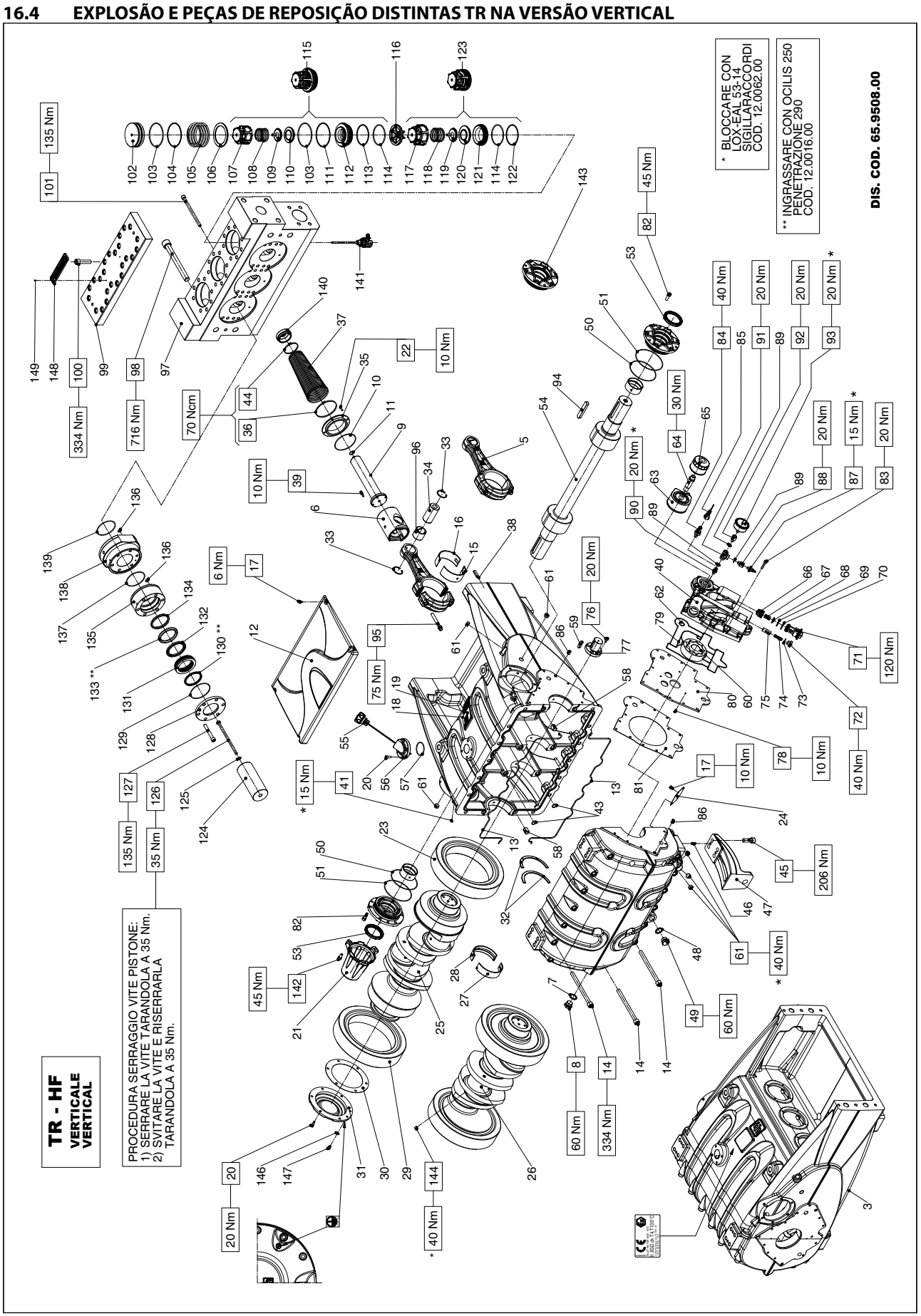
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**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| 125 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 126 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 127 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 136 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 62.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| 139 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 140 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 141 | 99.3652.01 | VITE M10x20 UNI 5931 12,10 | | 4 |
| 142 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 143 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 145 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 146 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 147 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 148 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 16.4 EXPLOSÃO E PEÇAS DE REPOSIÇÃO DISTINTAS TR NA VERSÃO VERTICAL



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

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**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **3** | **65.0109.01** | **CARTER - COMPLETO** | | **1** |
| **5** | **65.0306.01** | **BIELLA - COMPLETA** | | **3** |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | |
| **7** | **93.1980.00** | **ROSETTA DI TENUTA D. 3/4"** | | **1** |
| **8** | **98.2265.00** | **TAPPO G 3/4"x16** | | **1** |
| **9** | **65.0505.66** | **STELO GUIDA PISTONE** | | **3** |
| **10** | **90.3920.00** | **OR D. 101,27x2,62 NBR SH. 70 3400** | | **3** |
| **11** | **90.3596.00** | **OR D. 18,77x1,78 NBR SH. 70 2075** | | **3** |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | |
| **13** | **65.2140.82** | **GUARNIZIONE D. 3,53x530** | | **2** |
| **14** | **99.5224.00** | **VITE M16x200 UNI 5931 12,9** | | **22** |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | |
| **17** | **99.1820.00** | **VITE M6x12 DIN 6921 8,8** | | **8** |
| **18** | **91.5700.00** | **RIVETTO AUTOF. D. 2,5x5 UNI 7346** | | **4** |
| **19** | **97.8268.00** | **TARGHETTA POMPA** | | **1** |
| **20** | **99.3059.00** | **VITE M 8x20 UNI 5931 8,8** | | **10** |
| **21** | **65.1509.20** | **COPERCHIO ESTREMITA' ALBERO** | | **1** |
| **22** | **99.1853.00** | **VITE M6x16 UNI 5931 12,9** | | **12** |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | |
| **24** | **65.2108.74** | **RETINA FILTRO OLIO** | | **1** |
| **25** | **65.0206.55** | **ALBERO A GOMITI C. 130** | | **1** |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | |
| **30** | **65.2109.84** | **GUARNIZIONE COPERCHIO LATERALE** | | **1** |
| **31** | **65.1506.20** | **COPERCHIO ALBERO A GOMITI** | | **1** |
| **32** | **90.9353.00** | **SEMIANELLO DI SPALLAMENTO** | **C** | **2** |
| **33** | **90.0755.00** | **ANELLO SEEGER D. 45** | | **6** |
| **34** | **97.7470.00** | **SPINOTTO D. 45x86** | | **3** |
| **35** | **65.2107.66** | **FLANGIA PER SOFFIETTO** | | **3** |
| **36** | **92.8110.00** | **FASCETTA D. 98-109** | | **3** |
| **37** | **65.2110.47** | **SOFFIETTO** | | **3** |
| **38** | **97.6300.00** | **SPINA D. 12x40 UNI 6364** | | **2** |
| **39** | **99.1897.00** | **VITE M6x25 UNI 5931 8,8** | | **12** |
| **40** | **79.2124.20** | **CORPO POMPA OLIO** | | **1** |
| **41** | **98.1930.00** | **TAPPO CONICO M8x1 DIN 906** | | **2** |
| **43** | **90.3845.00** | **OR D. 18,72x2,62 NBR SH. 70 3075** | | **4** |
| **44** | **92.8100.00** | **FASCETTA D. 58-69** | | **3** |
| **45** | **99.5133.00** | **VITE M 16x35 UNI 5739 8,8** | | **16** |
| **46** | **97.6230.00** | **SPINA D. 10x24 UNI 6364** | | **8** |
| **47** | **65.2007.13** | **PIEDE VERTICALE** | | **4** |
| **48** | **93.1980.00** | **ROSETTA DI TENUTA G 3/4"** | | **1** |
| 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| **50** | **90.3926.50** | **OR D. 126,67x2,62 NBR SH. 70 3500** | | **2** |
| **51** | **90.3805.00** | **OR D. 132,00x2,50 NBR SH. 70** | | **2** |
| **53** | **90.1900.00** | **ANELLO RAD. D. 70x90x10** | | **2** |
| 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| **56** | **65.2112.54** | **SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE** | | **1** |
| **57** | **90.3898.00** | **OR D. 56,82x2,62 NBR SH. 70 3225** | | **1** |
| **58** | **79.2116.89** | **BUSSOLA CENTRAGGIO CARTER-SUPPORTO** | | **4** |
| **59** | **91.4995.00** | **LINGUETTA 12x8x40 UNI 6604** | | **1** |
| **60** | **79.2119.07** | **ASSIEME ROTORI POMPA OLIO H=35** | | **1** |
| **61** | **98.2155.00** | **TAPPO CONICO M20x1,5 DIN 906** | | **6** |
| **62** | **90.3852.00** | **OR D. 22,22x2,62 NBR SH. 70 130** | | **6** |
| **63** | **65.2137.00** | **SCAMBIATORE ACQUA-OLIO** | | **1** |
| **64** | **65.2138.64** | **RACCORDO SCAMBIATORE FILTRO OLIO** | | **1** |
| **65** | **92.8990.00** | **FILTRO OLIO M20** | | **1** |
| **66** | **36.2009.51** | **GUIDA VALVOLA ASPIRAZIONE / MANDATA** | | **4** |
| **67** | **94.7440.00** | **MOLLA Dm. 15,4x26,5** | | **4** |
| **68** | **36.2010.76** | **VALVOLA SFERICA** | | **4** |
| **69** | **90.3865.00** | **OR D. 29,82x2,62 NBR SH. 70 3118** | | **4** |
| **70** | **90.3873.00** | **OR D. 36,14x2,62 NBR SH. 70 3143** | | **4** |
| **71** | **79.2139.64** | **CARTUCCIA VALVOLA** | | **4** |
| **72** | **98.2137.80** | **TAPPO M18x11** | | **1** |
| **73** | **96.7410.00** | **RONDELLA D. 18,2x24x1,5** | | **1** |
| **74** | **94.7390.00** | **MOLLA Dm. 10,8x37,9** | | **1** |
| **75** | **79.2136.64** | **PISTONCINO VALVOLA SOVRAPRESSIONE** | | **1** |
| **76** | **99.3039.00** | **VITE M 8x16 UNI 5931 8,8** | | **4** |
| **77** | **79.2126.54** | **CODOLO COMANDO ROTORI POMPA OLIO** | | **1** |
| **78** | **99.1851.00** | **VITE M6x16 UNI 5933 8,8** | | **3** |
| **79** | **79.2127.47** | **GUARNIZIONE CORPO POMPA OLIO** | | **1** |
| **80** | **79.2128.74** | **PIASTRA POMPA OLIO** | | **1** |
| **81** | **79.2129.84** | **GUARNIZIONE PIASTRA POMPA OLIO** | | **1** |
| **82** | **99.3686.00** | **VITE M10x30 UNI 5931 8,8** | | **12** |
| **83** | **99.3116.00** | **VITE M8x40 UNI 5931 8,8** | | **15** |
| **84** | **93.5105.00** | **INTERRUTTORE SPIA TEMPERATURA** | | **1** |
| **85** | **93.5515.00** | **CONNETTORE INTER. SPIA TEMPERATURA** | | **1** |
| **86** | **79.2135.89** | **BUSSOLA CENTRAGGIO POMPA OLIO** | | **2** |
| **87** | **93.5555.00** | **PRESSOSTATO 0,3 N.A. 12V** | | **1** |
| **88** | **94.5131.00** | **RACCORDO M-F G 1/4"- M 10x1** | | **1** |
| **89** | **96.7230.00** | **ROSETTA D. 13,5x19x1,5** | | **3** |
| **90** | **95.2560.00** | **RACCORDO M-M NPT 1/4" - G 1/4"** | | **1** |
| **91** | **96.3100.00** | **RACCORDO T F-F-F G 1/4"** | | **1** |

| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| 125 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 126 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 127 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 136 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 65.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| 139 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 140 | 65.2106.66 | PARASPRUZZI PER SOFFIETTO | | 3 |
| 141 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 142 | 99.3652.00 | VITE M10x20 UNI 5931 12,9 | | 3 |
| 143 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 144 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 146 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 147 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 148 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 149 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## DECLARAÇÃO DE INCORPORAÇÃO

(Nos termos do anexo II da Diretriz 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: | SR50 - SR65 - SR75<br>TR50 - TR60 - TR70 - TR75 |

Parece estar em conformidade com a Diretriz da Máquina 2006/42/CE.
Normas aplicadas: UNI EN ISO 12100:2010 - UNI EN 809:2000

A bomba acima identificada respeita todos os requisitos essenciais de segurança e de proteção da saúde listados no ponto 1 do anexo I da Diretriz da Máquina:
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.

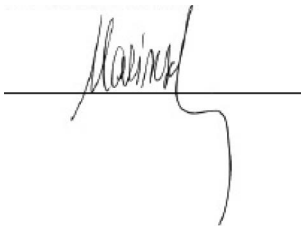
Além disso, o fabricante se compromete a disponibilizar, como resultado de uma solicitação adequadamente fundamentada, uma cópia da documentação técnica pertinente à bomba, na forma e nos termos a serem definidos.

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 da diretriz e/norma relativas.

Pessoa autorizada para constituir o arquivo técnico Nome: Maurizio Novelli
Endereço: INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 - 42049 - S- ILARIO D'ENZA (RE) - Itália

Pessoa autorizada a redigir a declaração: O diretor executivo Eng. Paolo Marinsek

Reggio Emilia - Fevereiro de 2014 Assinatura:



## SOMENTE PARA BOMBAS EM CONFIGURAÇÃO ATEX
## DECLARAÇÃO CE DE CONFORMIDADE

(Nos termos do anexo X da Diretriz Europeia 94/4/CE - ATEX)

O fabricante **INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 - 42049 - S- ILARIO D'ENZA - Itália DECLARA** sob sua inteira responsabilidade, que as bombas identificadas e descritas a seguir:

| | |
|---|---|
| Denominação: | BOMBA |
| Tipo: | Bomba alternativa de pistões para água de alta pressão |
| Marca registrada: | INTERPUMP GROUP - PRATISSOLI |
| Modelo: | SR50 - SR65 - SR75<br>TR50 - TR60 - TR70 - TR75 |

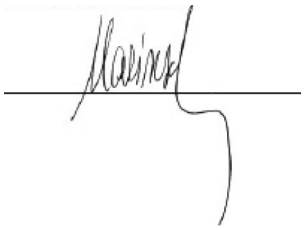
marcados com Ⓔx grupo II, categoria 2 GD, proteção ck e com classe de temperatura T4/T135°C, quando ordenou como bombas ATEX, resultam estar em conformidade com a Diretriz 94/9/CE ATEX e podem ser usados em atmosferas potencialmente explosivas dentro dos limites da áreas classificadas, de acordo com o desempenho declarado, instalado e usado de acordo com as instruções deste folheto, do geral e/ou específico de cada bomba.

O produtor usa todas as medidas necessárias para garantir que as bombas produzidas estejam de acordo com o declarado.

Normas europeias aplicadas:
UNI EN 1127-1:2011; UNI EN 13463-1:2009; UNI EN 13463-5:2011; UNI EN 13463-8:2003

Processo técnico arquivado em DNV ITALIA (**Nº 0496**)

O diretor executivo Eng. Paolo Marinsek
Reggio Emilia - Fevereiro de 2014 Assinatura:



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# 1 ВВЕДЕНИЕ

Данное руководство содержит инструкции по техобслуживанию и эксплуатации насосов серии SR-TR; его необходимо внимательно прочитать и усвоить перед тем, как выполнять какие-либо работы на насосе.
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



**Знак предупреждения**



Перед выполнением каких-либо операций внимательно прочитайте данное руководство.



**Знак опасности**
Опасность поражения электрическим током.



**Знак опасности**
Надевайте защитную маску.



**Знак опасности**
Надевайте защитные очки.



**Знак опасности**
Надевайте защитные перчатки перед началом любой операции.



**Знак опасности**
Надевайте *подходящую* обувь.



**Символ, обозначающий защиту от взрыва.**
Указывает на особые требования безопасности при эксплуатации насоса в зонах, определенных Директивой ATEX.
**При заказе насосов в исполнении ATEX** для работы в зонах с потенциально взрывоопасной атмосферой необходимо **СТРОГО соблюдать примечания в параграфах с данным символом, а также указания дополнительных инструкций «ВЗРЫВОЗАЩИТА ATEX»**.

# 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, собирающиеся проводить сборку или использовать системы высокого давления, должны обладать для этого необходимым опытом, знать характеристики собираемых или используемых компонентов, и принять все возможные меры предосторожности, чтобы обеспечить максимальную безопасность в любых условиях эксплуатации.
Как монтажник, 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 обнесено ограждением, с запретом на доступ 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 правильное питание (см. пункт 9.4).
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.

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 оказывать безотлагательную взаимную помощь и сменять друг друга в процессе долгой 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. При возникновении необходимости доступа в рабочую зону уполномоченный персонал должен сначала дождаться, пока оператор приостановит работу по собственной инициативе, после чего сразу же заявить о своем присутствии.
8. В целях безопасности является важным, чтобы все члены команды всегда прекрасно знали о намерениях друг друга во избежание опасных недоразумений.
9. Система высокого давления не должна запускаться и ставиться под 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 указаны:

- Модель и версия насоса
- Серийный номер
- Макс. количество оборотов
- Потребляемая мощность л.с. - кВт
- Давление бар - фунт на кв. дюйм
- Подача л/мин - галлонов в минуту

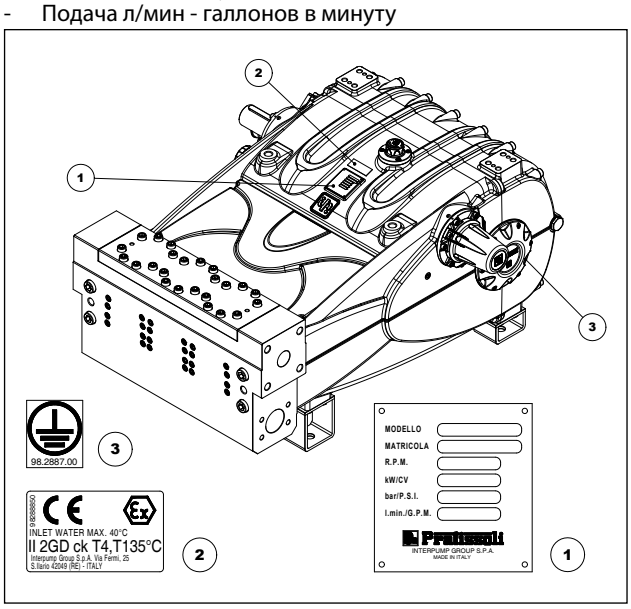



Рис. 1

**При заказе запчастей обязательно указывайте модель, исполнение и заводской номер.**

Для насосов, заказанных в исполнении **ATEX**:
Поз. 2 - табличка **со специальной маркировкой взрывозащиты ATEX**.
Поз. 3 - табличка для обозначения **винта заземления**.

# 5 ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ НАСОСОВ HIGH FLOW

**ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ НАСОСОВ SR (@ RPM 520)**

| Модель | Об/мин | Расход | | Давление | | Мощность | |
|---|---|---|---|---|---|---|---|
| | | л/мин | об/мин | бар | фунтов/кв. дюйм | кВт | л.с. |
| SR 50 | 1500 | 276 | 73 | 400 | 5800 | 211 | 287 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 65 | 1500 | 466 | 123 | 250 | 3625 | 222,5 | 302,5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 75 | 1500 | 620 | 164 | 200 | 2900 | 236,8 | 322 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

**ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ НАСОСОВ TR (@ RPM 520)**

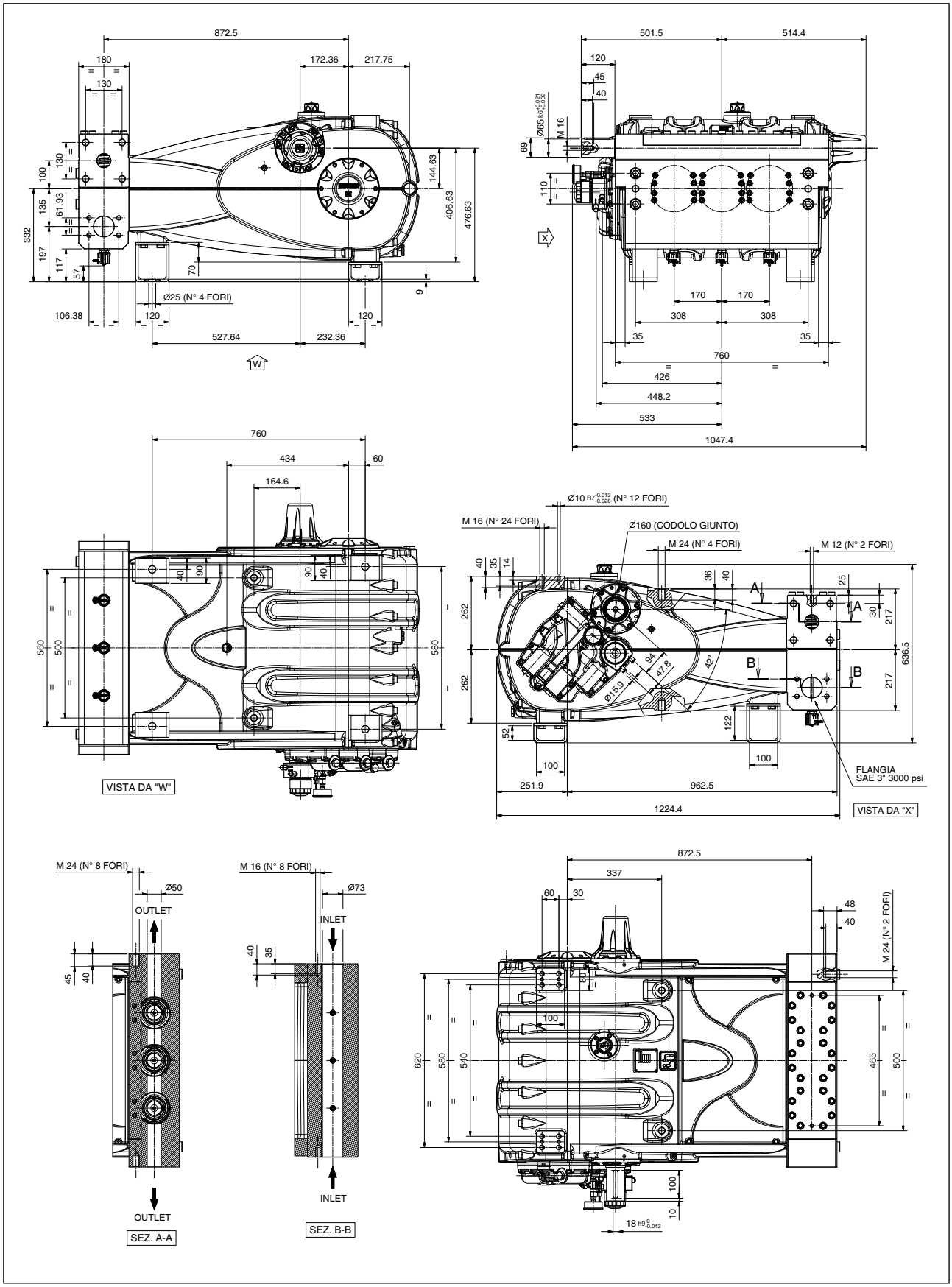
| Модель | Об/мин | Расход | | Давление | | Мощность | |
|---|---|---|---|---|---|---|---|
| | | л/мин | об/мин | бар | фунтов/кв. дюйм | кВт | л.с. |
| TR 50 | 1500 | 398 | 105 | 400 | 5800 | 304 | 413,5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 60 | 1500 | 573 | 151,4 | 300 | 4350 | 328,3 | 446,5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 70 | 1500 | 780,5 | 206 | 220 | 3190 | 328 | 446 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 75 | 1500 | 896 | 236,7 | 200 | 2900 | 342 | 465 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

## 5.1 Пониженные инерционные моменты насоса на BOM

| НАСОС СЕРИИ | ОБ/МИН | J (кг мм$^2$) |
|---|---|---|
| SR | 1500 | 231600 |
| | 1800 | 182400 |
| | 2200 | 140700 |
| TR | 1500 | 241200 |
| | 1800 | 189100 |
| | 2200 | 145200 |

## 6 РАЗМЕРЫ И ВЕС НАСОСОВ SR HIGH FLOW

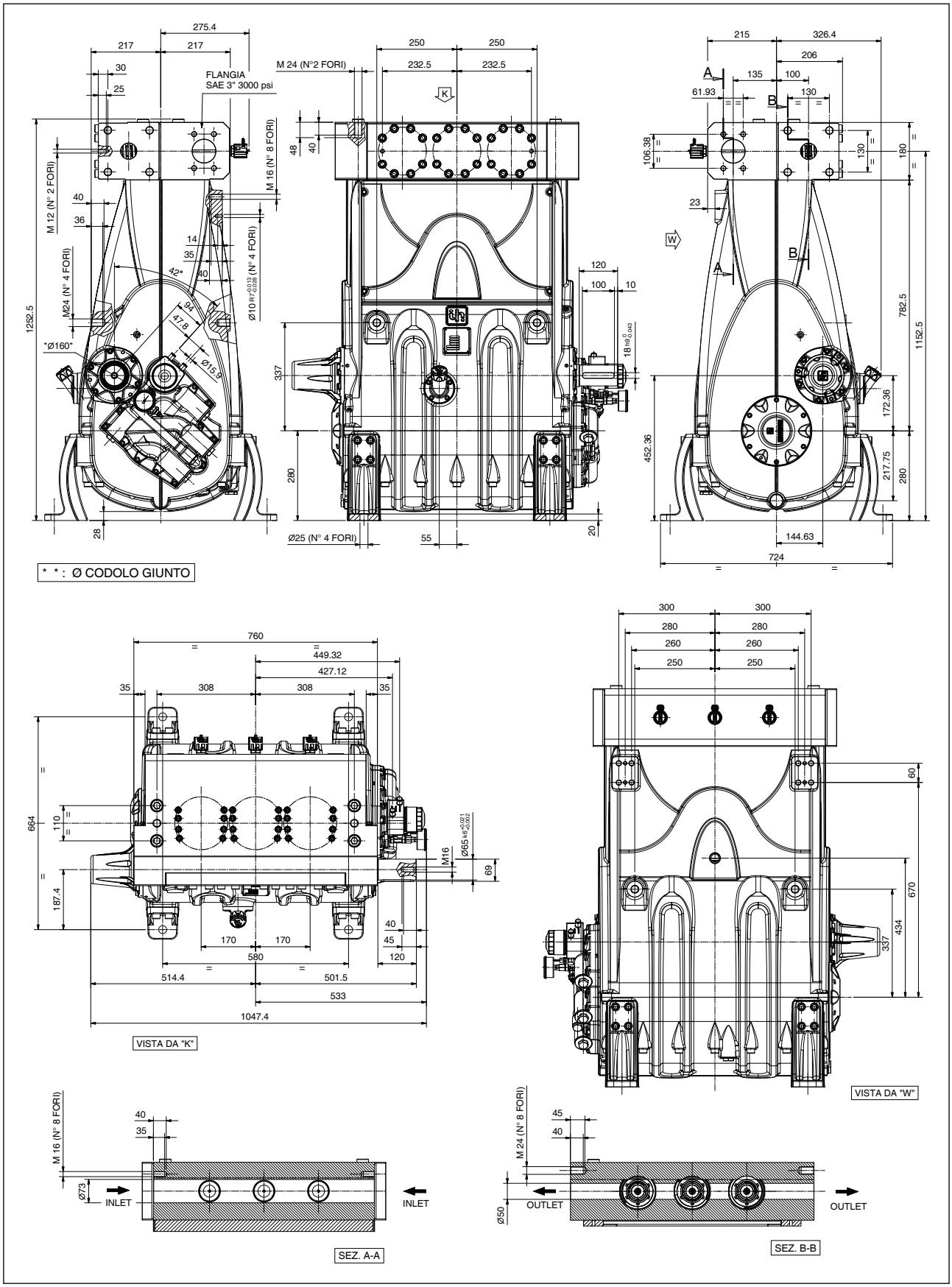
За информацией по размерам и весу насосов серии SR в ГОРИЗОНТАЛЬНОМ исполнении обращайтесь к Рис. 2.




**Сухой вес 1150 кг**

Рис. 2

За информацией по размерам и весу насосов серии SR в ВЕРТИКАЛЬНОМ исполнении обращайтесь к Рис. 2/a.

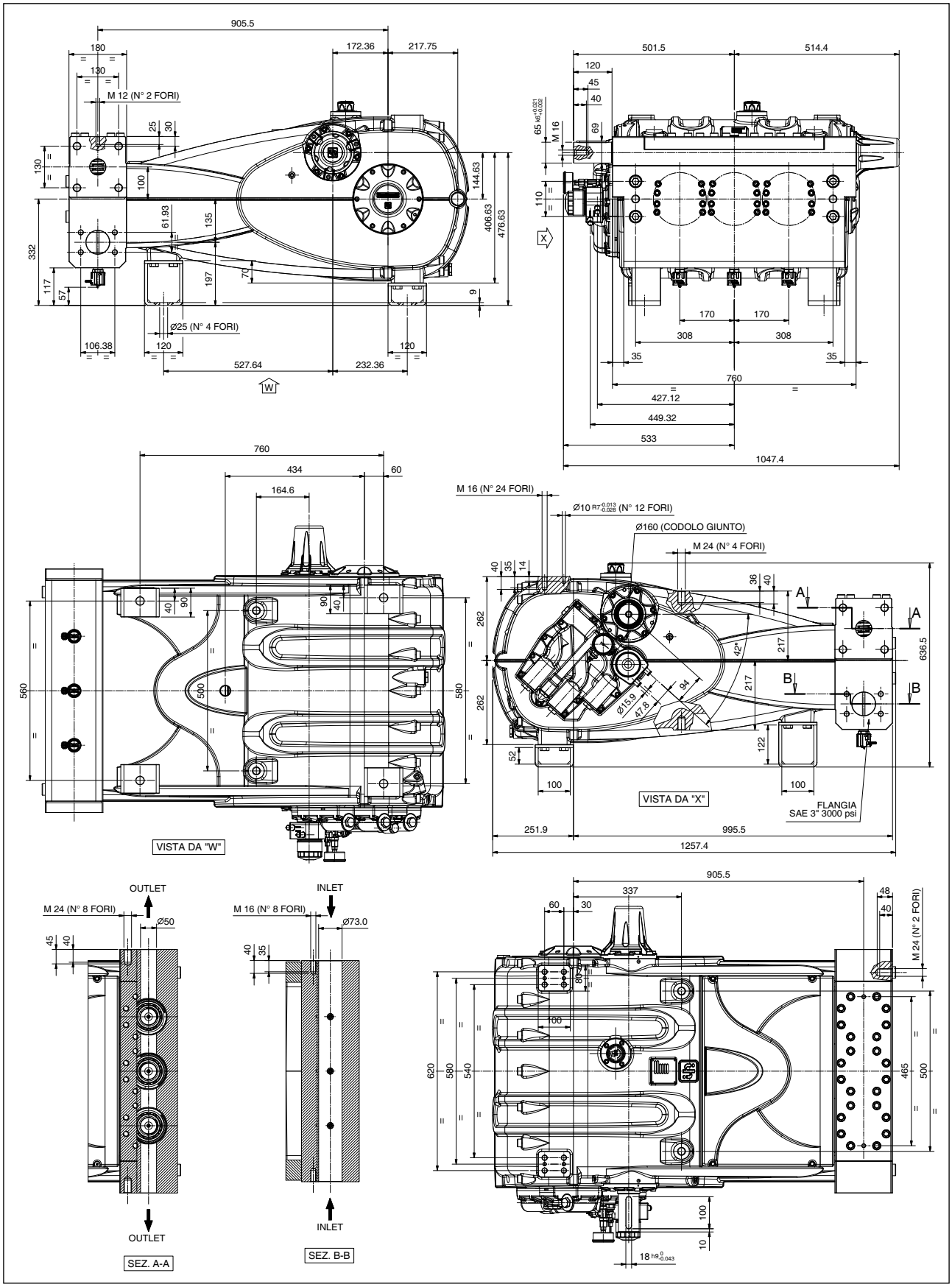



**Сухой вес 1160 кг**

Рис. 2/a

## 6.1 РАЗМЕРЫ И ВЕС НАСОСОВ TR HIGH FLOW

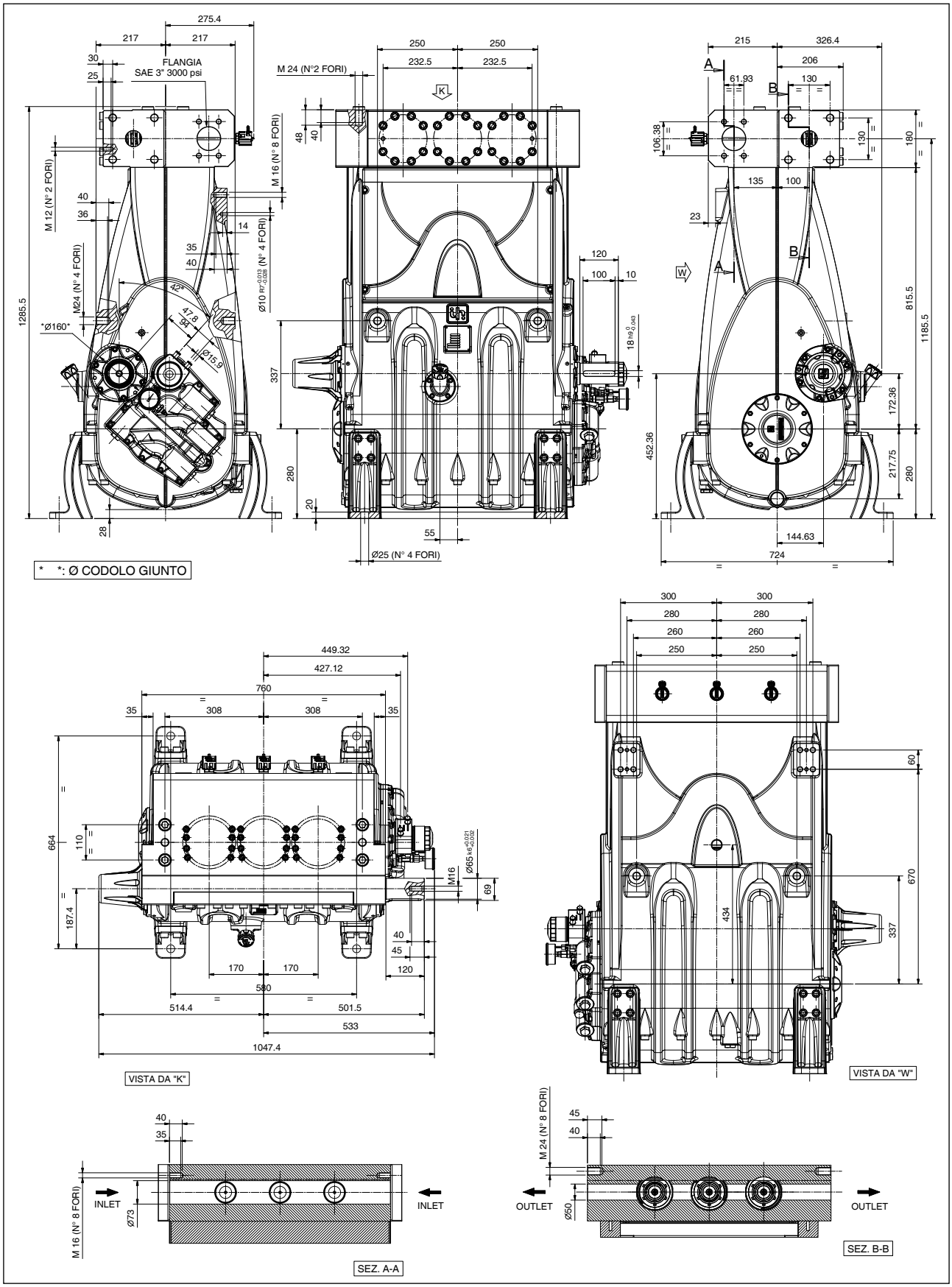
За информацией по размерам и весу насосов серии TR в ГОРИЗОНТАЛЬНОМ исполнении обращайтесь к Рис. 3.




**Сухой вес 1185 кг**

Рис. 3

За информацией по размерам и весу насосов серии TR в ВЕРТИКАЛЬНОМ исполнении обращайтесь к Рис. 3/a.




**Сухой вес 1195 кг**

Рис. 3/a

# 7 УКАЗАНИЯ ПО ЭКСПЛУАТАЦИИ

Насосы серии SR - TR, если они не заказаны в исполнении ATEX, предназначены для работы в потенциально **не**взрывоопасной атмосфере с фильтрованной водой (см. пункт 9.6).
Другие жидкости могут использоваться только по официальному одобрению ***Технического отдела*** или ***Службы обслуживания клиентов***.

## 7.1 Температура воды

Допустимая температура воды составляет 40°C. Тем не менее, насос может работать и с водой температурой до 60°C, но только в течение короткого времени. В этом случае рекомендуется проконсультироваться с ***Техническим отделом*** или ***Службой обслуживания клиентов***.

Исполнение ***ATEX***: Максимально допустимая температура воды составляет **40°C**.

## 7.2 Максимальное давление и подача

Указанные в каталоге параметры считаются максимально возможными характеристиками насоса. **Независимо** от используемой мощности запрещается превышать значение давления и максимальное число оборотов, указанные на идентификационной табличке, за исключением случаев получения на то официального разрешения от ***Технического отдела*** или ***Службы обслуживания клиентов***.

## 7.3 Минимальный режим вращения

Минимально допустимый режим вращения для данных категорий насосов составляет **250 об/мин по коленчатому валу**. Любой другой режим вращения, отличающийся от указанного в таблице эксплуатационных характеристик (см. главу 5), должен быть официально одобрен ***Техническим отделом*** или ***Службой обслуживания клиентов.***

## 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 оператору придется находится на расстоянии менее 1 метра, 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 смазочных масел

### 7.6.1 Тип масла

Насос поставляется со смазочным маслом TOTAL-ERG MISOLA MAP SH-150, что обеспечивает правильную эксплуатацию насоса при температуре окружающей среды от -10°C до +40°C. Для других температур используйте сезонные смазочные масла с соответствующей вязкостью.
Чтобы использовать насос в условиях очень низких температур, рекомендуется использовать подходящие обогреватели.
Принудительная смазка поступает из масляного насоса, который обеспечивает попадание нужного количества масла в каждую требуемую точку движущихся частей.
Использование всесезонного масла имеет два преимущества:

- Пользователям не придется менять вязкость масла в зависимости от температуры наружного воздуха или смены сезонов.
- Значительно увеличивается интервал между заменами масла и, как следствие, уменьшается частота технического обслуживания. См. таблицу «Профилактическое техобслуживание» в главе 11.

### 7.6.2 Марки рекомендуемых масел

TOTAL-ERG MISOLA MAP SH-150.
MOBIL SHC 629.

### 7.6.3 Требуемые характеристики масла

В случае отсутствия или труднодоступности рекомендуемых марок в продаже можно использовать альтернативные масла, которые однако должны обладать следующими техническими характеристиками:

- Вязкость при -10°C ≤4000 cCт.
- Вязкость при 40°C ≤200 cCт.
- Вязкость при 100°C ≥18 cCт.
- Индекс вязкости: ≥135 cCт.
- Точка текучести: ≥ -25°C
- Степень наличия присадок GL1 - GL2.

При необходимости обращайтесь в **Службу обслуживания клиентов**.
Проверьте уровень масла с помощью масломерного щупа ①, Рис. 4.
При необходимости долейте масло через пробку ①, Рис. 4.
Для того чтобы правильно измерить уровень масла, насос должен остыть до температуры окружающей среды.
Смену масла нужно выполнять при рабочей температуре насоса, вынув пробку поз. ②, Рис. 4. (Используйте пробку поз. 2/a для насосов вертикального исполнения.)
Масло необходимо проверять и заменять, как указано в разделе 11.
Необходимое количество масла: **52 литра SR-TR в горизонтальном исполнении; 37 литров SR-TR в вертикальном исполнении**.

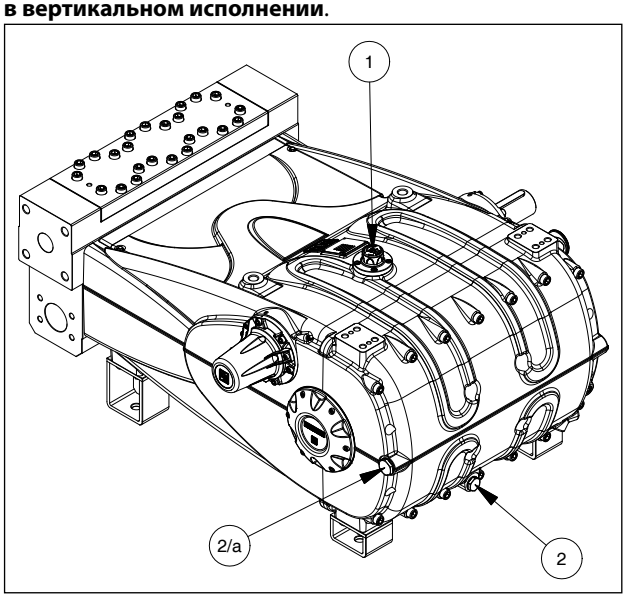



Рис. 4

Разместите установку таким образом, чтобы во время работы насоса температура масла ни в коем случае не превышала 110°C (230°F).
С этой целью используйте индикатор температуры масла, упоминаемый в пункте 9.10.
**ВНИМАНИЕ:** используйте масло с температурой воспламенения выше 200°C.

**В любом случае, замену масла необходимо производить минимум один раз в год**, поскольку в результате окисления оно может утратить свои свойства.

**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 серии SR-TR имеют (см. Рис. 5 и Рис. 6):
2 всасывающих патрубка "IN": SAE G3" - 3000 ФУНТОВ/КВ. ДЮЙМ, см. "ВЗРЫВ-СХЕМУ ФЛАНЦЕВ ВСАС. - НАГНЕТ. SR-TR" КОД 65950900 (Рис. 7).
Правильная работа насоса не зависит от того, к какому из двух патрубков подключается линия; неиспользуемые патрубки нужно герметично закрыть.
2 нагнетающих патрубка "OUT": см. "ВЗРЫВ-СХЕМУ ФЛАНЦЕВ ВСАС. - НАГНЕТ. SR-TR" КОД 65950900 (Рис. 7).
1 дренажный патрубок «DRAIN»: с отверстием G1" в нижней части картера для определения возможной утечки воды в случае износа прижимных уплотнений. При наличии утечек обращайтесь к руководству по ремонту.
**Вышеуказанное отверстие должно всегда оставаться открытым и, по возможности, подключенным к измерительной системе.**

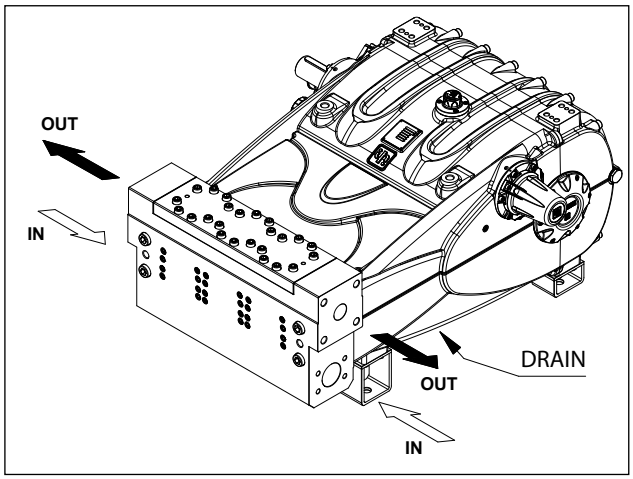



Рис. 5

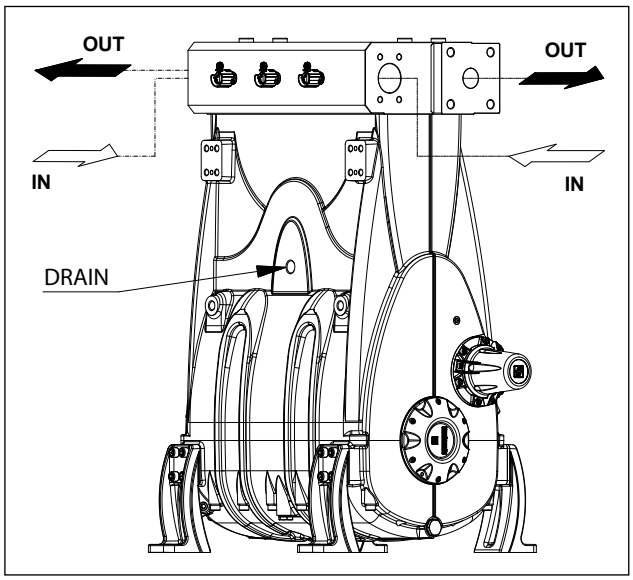
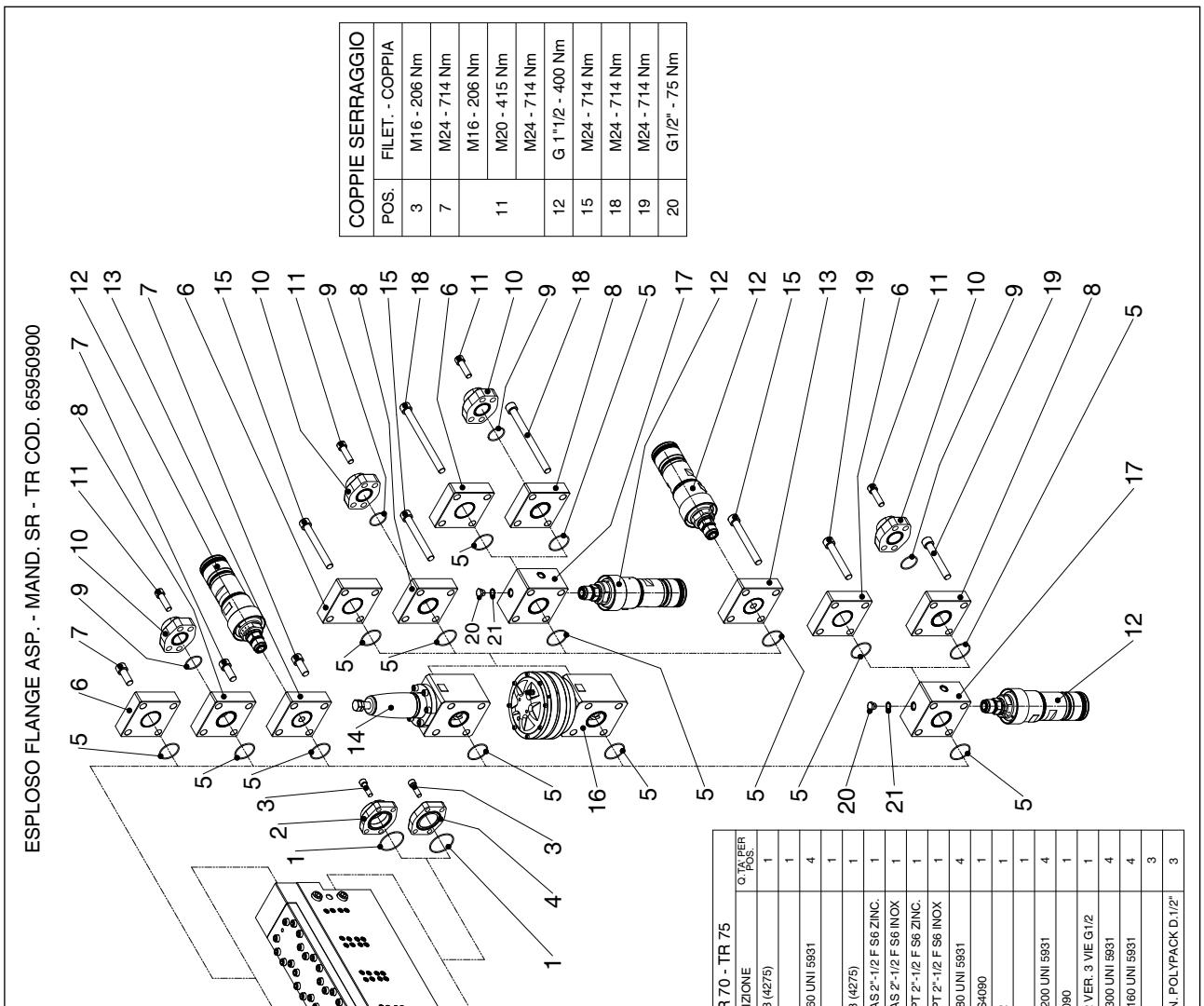



Рис. 6

## 8.1 Схема компоновки контуров всасывания и нагнетания




| COPPIE SERRAGGIO | |
|---|---|
| POS. | FILET. - COPPIA |
| 3 | M16 - 206 Nm |
| 7 | M24 - 714 Nm |
| 11 | M16 - 206 Nm |
| | M20 - 415 Nm |
| | M24 - 714 Nm |
| 12 | G 1"1/2 - 400 Nm |
| 15 | M24 - 714 Nm |
| 18 | M24 - 714 Nm |
| 19 | M24 - 714 Nm |
| 20 | G1/2" - 75 Nm |

POMPE SR - TR TUTTE LE VERSIONI

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| ASPIRAZIONE | 1 | 90414100 | OR D. 85.32X3.53 (4337) | 1 |
| | 2 | 96458500 | FLANGIA DIR. GAS 3" F S3 ZINC. | 1 |
| | | 96459000 | FLANGIA DIR. GAS 3" F S3 INOX | 1 |
| | | 96459500 | FLANGIA DIR. NPT 3" F S3 ZINC. | 1 |
| | | 96460000 | FLANGIA DIR. NPT 3" F S3 INOX | 1 |
| | 3 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 4 | 96489500 | FLANGIA CIECA 3" S3 ZINC. | 1 |
| | | 96490000 | FLANGIA CIECA 3" S3 INOX | 1 |

POMPE SR 50 - TR 50

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021466 | FLANGIA 1"1/2 | 1 |
| | 9 | 90407900 | OR D. 47.22X3.53 (4187) | 1 |
| | 10 | 96468500 | FLANGIA DIR. GAS 1"-1/2 F S6 ZINC. | 1 |
| | | 96469000 | FLANGIA DIR. GAS 1"-1/2 F S6 INOX | 1 |
| | | 96469500 | FLANGIA DIR. NPT 1"-1/2 F S6 ZINC. | 1 |
| | | 96470000 | FLANGIA DIR. NPT 1"-1/2 F S6 INOX | 1 |
| | 11 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA PNR4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

POMPE SR 65 - TR 60

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021366 | FLANGIA 2" | 1 |
| | 9 | 90409900 | OR D. 56.74X3.53 (4225) | 1 |
| | 10 | 96473500 | FLANGIA DIR. GAS 2" F S6 ZINC. | 1 |
| | | 96474000 | FLANGIA DIR. GAS 2" F S6 INOX | 1 |
| | | 96474500 | FLANGIA DIR. NPT 2" F S6 ZINC. | 1 |
| | | 96475000 | FLANGIA DIR. NPT 2" F S6 INOX | 1 |
| | 11 | 99529000 | VITE TCEI M20X70 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

POMPE SR 75 - TR 70 - TR 75

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021266 | FLANGIA 2"1/2 | 1 |
| | 9 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 10 | 96478500 | FLANGIA DIR. GAS 2"-1/2 F S6 ZINC. | 1 |
| | | 96479000 | FLANGIA DIR. GAS 2"-1/2 F S6 INOX | 1 |
| | | 96479500 | FLANGIA DIR. NPT 2"-1/2 F S6 ZINC. | 1 |
| | | 96480000 | FLANGIA DIR. NPT 2"-1/2 F S6 INOX | 1 |
| | 11 | 99532000 | VITE TCEI M24X80 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

Рис. 7

# 9 УСТАНОВКА НАСОСА

## 9.1 Установка

Крепежные отверстия на ножках имеют диаметр 25 мм. 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 монтажа на насосе предусмотрено 4 отверстия M24 для подъемных рым-болтов, как показано на нижеприведенных изображениях.

Данные рым-болты рассчитаны только на подъем насоса, поэтому категорически запрещается дополнительно перегружать их.






**Заземление:** необходимо прикрепить заземляющий кабель к насосу с помощью винта M8 из нержавеющей стали и зубчатой шайбы из нержавеющей стали, обозначенных этикеткой ЖЕЛТОГО цвета.
См. руководство «ВЗРЫВОЗАЩИТА ATEX».

**Замените служебную пробку для закрытия маслоналивного отверстия на картере на масломерный щуп.**
Масломерный щуп должен быть всегда доступен даже при установленном узле.

**Вал насоса (BOM) 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).

В любом случае монтаж трансмиссии должен соответствовать всем техническим правилам во избежание ошибок и сбоев в работе соединительных деталей, а также чрезмерного износа, повышения температуры и/или опасных поломок, создающих угрозу воспламенения и взрыва. *См. руководство «ВЗРЫВОЗАЩИТА ATEX».*

## 9.2 Направление вращения

Направление вращения может быть как по часовой, так и против часовой стрелки, как с левой, так и с правой стороны (см. Рис. 8).

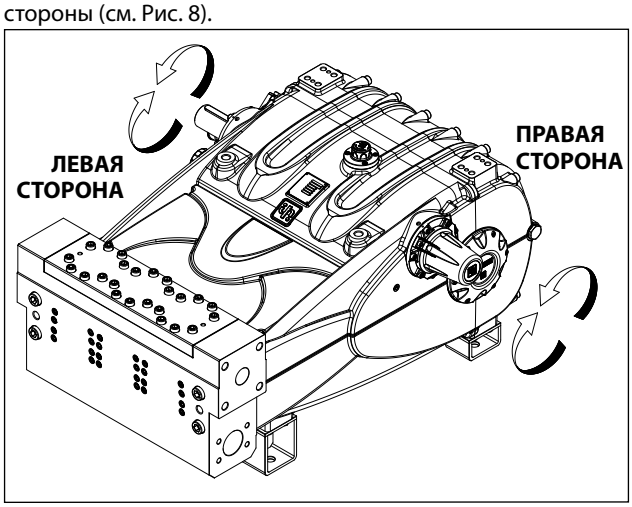



Рис. 8

Насос можно подключать с обеих сторон; обратите внимание, что с **ЛЕВОЙ СТОРОНЫ** имеется выступ из-за присутствия насоса смазочного масла.
Торцевая крышка монтируется на неподключенный BOM.

## 9.3 Подключение к сети водоснабжения

Чтобы изолировать оборудование от вибраций, производимых насосом, первый участок прилегающего к насосу трубопровода (как всасывающего, так и нагнетательного) рекомендуется изготовить из отрезка гибкой трубы. Участок всасывающей трубы должен быть настолько прочным, чтобы не деформироваться под воздействием создаваемого насосом разрежения.

## 9.4 Питание насоса

Насосы серии SR-TR всегда должны устанавливаться с использованием принудительной подачи с помощью дополнительного бустерного насоса.
Подача бустерного насоса должна, как минимум, в два раза превышать подачу поршневого насоса, указанную на его паспортной табличке, 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.**

## 9.5 Линия всасывания

Для исправной работы насоса линия всасывания должна иметь следующие характеристики:

1. Минимальный внутренний диаметр должен соответствовать указанному в таблицах в пункте 9.8, и в любом случае, быть равным или большим 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 всасывающие инжекторы 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.

### 9.6 Фильтрация

На линии всасывания насоса необходимо установить два фильтра, расположив их, как показано на Рис. 9 и Рис. 9/a.

**С регулирующим клапаном с ручным приводом.**

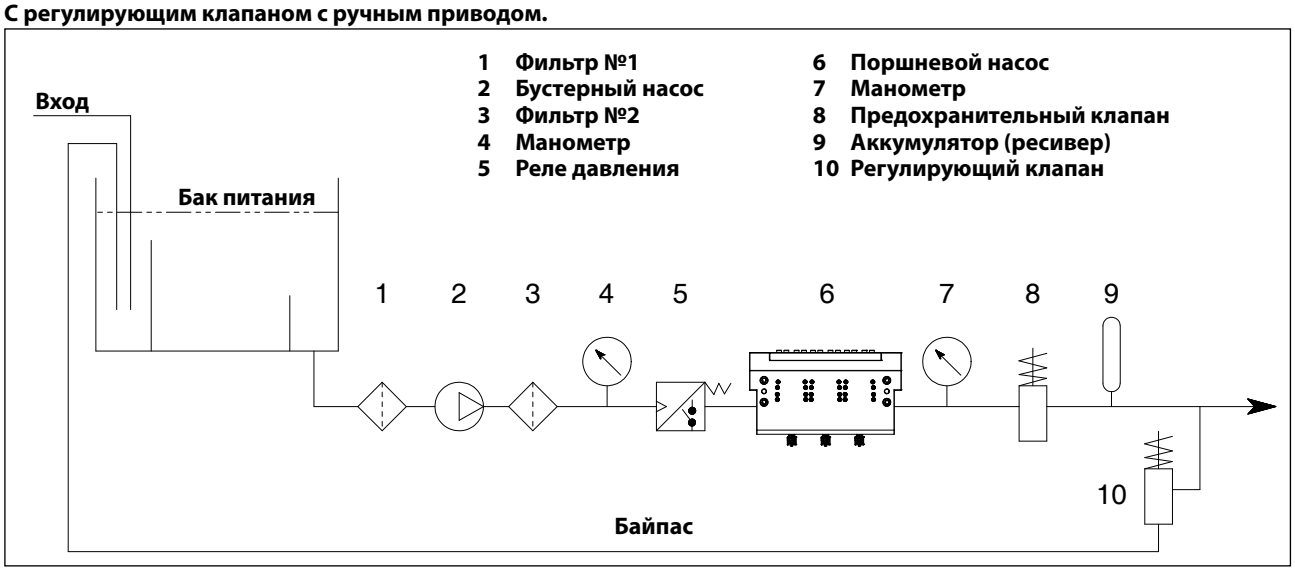



Рис. 9

**С регулирующим клапаном с пневмоприводом**

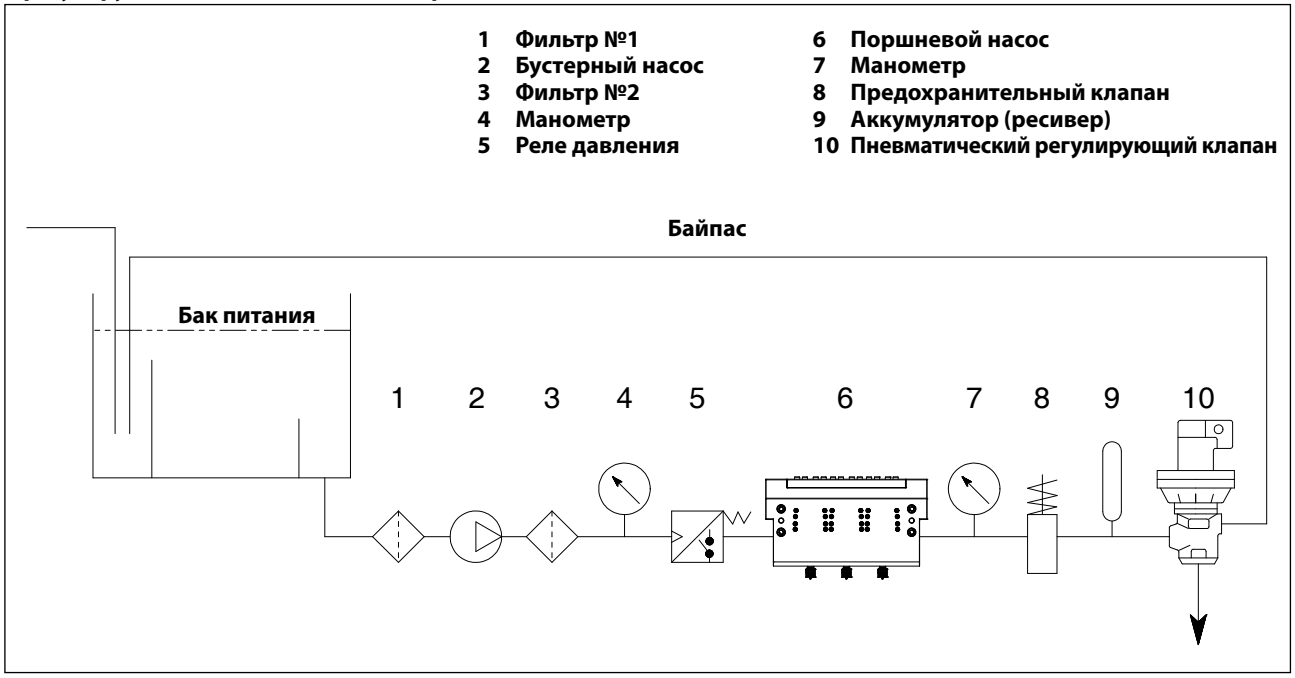



Рис. 9/a

Фильтр нужно установить как можно ближе к насосу, обеспечив простой доступ к нему для контроля. Он должен обладать следующими характеристиками:

1. Минимальная подача в 3 раза больше подачи насоса, указанной на его паспортной табличке.
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 обеспечьте периодическую чистку фильтра, планируя ее в зависимости от фактического пользования насосом, а также от качества используемой воды и реальных условий засорения.**

### 9.7 Линия нагнетания

Для правильной установки линии нагнетания соблюдайте следующие правила:

1. Внутренний диаметр трубы должен иметь достаточные размеры, чтобы обеспечивать правильную скорость жидкости, см. таблицы в пункте 9.8.
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.

### 9.8 Внутренний диаметр трубопроводов

В нижеприведенной таблице приведены значения внутренних диаметров трубопроводов всасывания и нагнетания.

| НАСОС SR | | |
|---|---|---|
| **МОДЕЛЬ** | **ВСАСЫВАНИЕ** | **НАГНЕТАНИЕ** |
| SR 50 | SAE 3" - 3000 фунтов на кв. дюйм | SAE 1"1/2 - 6000 фунтов на кв. дюйм |
| SR 65 | SAE 3" - 3000 фунтов на кв. дюйм | SAE 2" - 6000 фунтов на кв. дюйм |
| SR 75 | SAE 3" - 3000 фунтов на кв. дюйм | SAE 2"1/2 - 6000 фунтов на кв. дюйм |

| НАСОС TR | | |
|---|---|---|
| **МОДЕЛЬ** | **ВСАСЫВАНИЕ** | **НАГНЕТАНИЕ** |
| TR 50 | SAE 3" - 3000 фунтов на кв. дюйм | SAE 1"1/2 - 6000 фунтов на кв. дюйм |
| TR 60 | SAE 3" - 3000 фунтов на кв. дюйм | SAE 2" - 6000 фунтов на кв. дюйм |
| TR 70 | SAE 3" - 3000 фунтов на кв. дюйм | SAE 2"1/2 - 6000 фунтов на кв. дюйм |
| TR 75 | SAE 3" - 3000 фунтов на кв. дюйм | SAE 2"1/2 - 6000 фунтов на кв. дюйм |

За информацией по компоновке фланцев всасывания и нагнетания обращайтесь к «ВЗРЫВ-СХЕМЕ ФЛАНЦЕВ ВСАС.-НАГН. SR-TR» Рис. 7. При необходимости обращайтесь в Технический отдел или Службу обслуживания клиентов.

### 9.9 Подключение водно-масляного теплообменника




Рис. 10

Для получения оптимальных эксплуатационных характеристик подключайте теплообменник в противопоточном направлении (см. Рис. 10).
Расход воды:

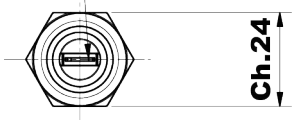
a) Макс. кпд 25 л/мин.
b) Средний кпд 20 л/мин.
c) Мин. кпд 12 л/мин.

Если насос работает при температуре окружающей среды ниже 5°C (41°F), можно избежать подключения теплообменника.
За информацией по техническому обслуживанию обращайтесь к главе 11.

### 9.10 Узел масляного насоса

1) Картридж масляного фильтра: должен затягиваться вручную; за информацией по техническому обслуживанию обращайтесь к главе 11.
2) Манометр: 0÷16 бар для периодического контроля давления смазочного масла.
3) Реле давления: НОРМАЛЬНО ОТКРЫТОЕ (по запросу может быть поставлено нормально закрытое); напряжение 12 В. В случае стационарного оборудования рекомендуется устанавливать его вместе с системой защиты.
4) Термостат масла: НОРМАЛЬНО ЗАКРЫТЫЙ; напряжение 12 В.

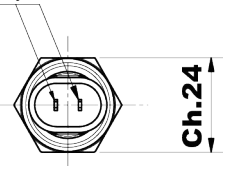
**Зажим 6,5x0,8**




**ПОДКЛЮЧЕНИЕ РЕЛЕ ДАВЛЕНИЯ**

**ДАВЛЕНИЕ СРАБАТЫВАНИЯ: 0,3 ±0,15 БАР**

**2 зажима 2,8x0,8**




**ВНУТ. ПОДКЛЮЧЕНИЯ ИНДИКАТОРА ТЕМПЕРАТУРЫ**

**ТЕМП. СРАБАТЫВАНИЯ: 105°C±5°C**

**ВНИМАНИЕ: выполняйте электрическое подключение двух датчиков с использованием НЕ ИНДУКТИВНОЙ нагрузки, либо замените реле давления и термостат на компоненты с аналогичными характеристиками, одобренные ATEX.**

## 10 ЗАПУСК И РАБОТА

### 10.1 Предварительные проверки (первый запуск)

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 посадки вдоль оси насос/передача (перекос полумуфт, наклон кардана и т.п.) остаются в пределах, предусмотренных изготовителем трансмиссии.

5. Масло в картере насоса находится на нужном уровне по результатам его проверки при помощи специального масломерного щупа, расположенного в верхней части картера (поз. 1 Рис. 11 и Рис. 11/a).

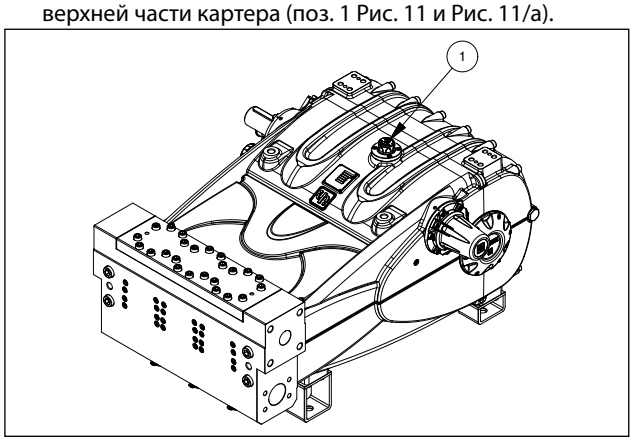



Рис. 11

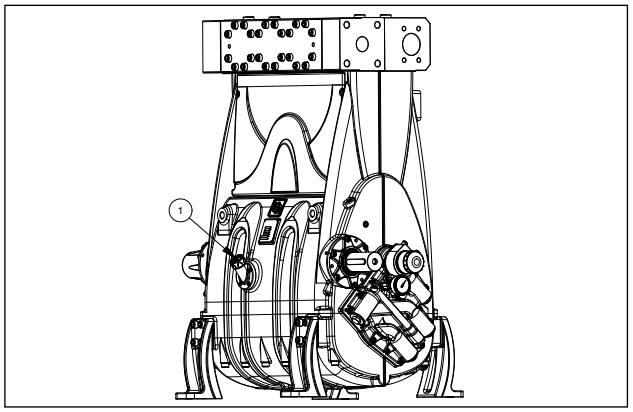



Рис. 11/a

**В случае длительного хранения на складе или продолжительного простоя необходимо восстановить исправную работу всасывающих клапанов, открыв три толкателя клапана. (см. поз.② Рис. 12). Перед следующим запуском насоса проверьте, закрыты ли клапаны. Рабочее и нерабочее положение см. на Рис. 12/a.**

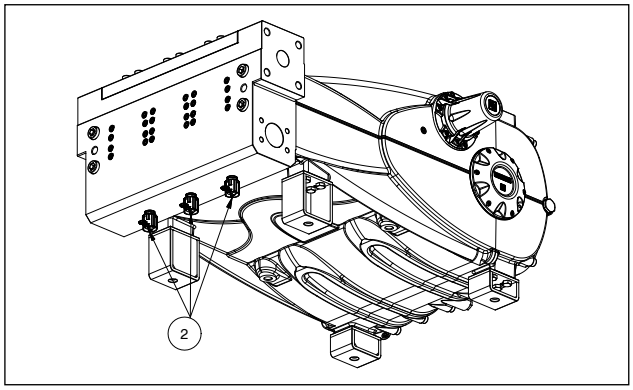



Рис. 12




Рис. 12/a

### 10.2 Запуск

1. Проверьте правильное питание насоса.
2. Запустите насос без какой-либо нагрузки.
3. Убедитесь в том, что во время работы режим вращения не превышает значений, указанных на заводской табличке.
4. Перед тем, как создавать давление в насосе, дайте ему поработать в течение минимум 3 минут.
5. Перед каждой остановкой насоса необходимо сбросить давление до нуля при помощи регулирующего клапана либо возможных устройств для сброса.

## 11 ПРОФИЛАКТИЧЕСКОЕ ТЕХОБСЛУЖИВАНИЕ

Для обеспечения надежной и эффективной работы насоса необходимо соблюдать установленные сроки проведения технического обслуживания, указанные ниже в таблице.

| **ПРОФИЛАКТИЧЕСКОЕ ТЕХОБСЛУЖИВАНИЕ** | | |
|---|---|---|
| **Через каждые 1000 часов** | **Через каждые 1500 часов** | **Через каждые 3000 часов** |
| Проверка уровня масла | | |
| | Проверка/замена*: Клапаны Седла клапанов Пружины клапанов Направляющие клапанов | Замена масла и масляного фильтра Замена сильфонов (вертикальное исполнение) |
| | Замена*: Уплотнения высокого давления Уплотнения низкого давления | |

* В случае замены соблюдайте указания, ***приведенные в руководстве по ремонту***.

### 11.1 Сильфон (вертикальное исполнение SR - TR)

Проверьте затяжку крепежных хомутов сильфонов через первые **1000 часов** работы.
**Заменяйте сильфоны через каждые 3000 часов работы.**
Относительно замены соблюдайте указания, приведенные в **руководстве по ремонту**.

### 11.2 Водно-масляный теплообменник

Интервалы чистки теплообменника должны определяться с учетом жесткости используемой воды. Рекомендуется проводить чистку теплообменника **каждые 2000 часов, если жесткость воды ≤30 французских градусов, и каждые 1000 часов, если жесткость воды >30 и ≤40 французских градусов. При жесткости выше 40 французских градусов чистку рекомендуется проводить через каждые 500 часов.**
Чистку следует проводить с использованием средств для удаления накипи, имеющихся в свободной продаже; нет необходимости разбирать теплообменник.
Примечание: теплообменник изготовлен из **НЕРЖАВЕЮЩЕЙ СТАЛИ (AISI 303)**.

**Защита контура смазки механических частей**: настройте систему таким образом, чтобы реле давления, установленное на масляном насосе для принудительной смазки, блокировало работу насоса SR-TR в случае снижения давления масла.

| **ПРОФИЛАКТИЧЕСКОЕ ТЕХОБСЛУЖИВАНИЕ** | |
|---|---|
| **ОПЕРАЦИЯ** | **ПЕРИОДИЧНОСТЬ ПРОВЕРКИ** |
| Проверка калибровки манометра давления смазочного масла | Через каждые 10000 часов |
| Визуальная проверка на предмет утечки воды из головки | Через каждые 500 часов |

# 12 ПОВТОРНЫЙ ЗАПУСК НАСОСА

## 12.1 Способ наполнения насоса антикоррозионной эмульсией или раствором антифриза с помощью внешнего мембранного насоса на основе компоновки, изложенной в пункте 9.6

a) Закройте дренажное отверстие фильтра, если оно открыто.
b) Проверьте чистоту соединительной трубы, нанесите консистентную смазку и подсоедините к выпуску высокого давления.
c) Закрепите всасывающую трубу на мембранном насосе; откройте всасывающий патрубок на насосе и закрепите трубу между ним и мембранным насосом.
d) Заполните емкость раствором / эмульсией.
e) Вставьте свободные концы всасывающей трубы и трубы для выпуска высокого давления внутрь емкости.
f) Включите мембранный насос.
g) Закачивайте эмульсию до тех пор, пока она не начнет выходить из трубы выпуска высокого давления.
h) Продолжайте закачку еще в течение минимум одной минуты; если потребуется усилить эмульсию, можно добавить к раствору, например, Shell Donax.
i) Остановите насос, отсоедините трубу от всасывающего патрубка и закройте его пробкой.
j) Отсоедините трубу от выпуска высокого давления. Очистите, смажьте и закройте пробками оба соединения и трубы.

## 12.2 Трубы

a) Перед тем как наносить смазку и защиту на трубы в вышеописанном порядке, осушите соединения сжатым воздухом.
b) Накройте полиэтиленом.
c) Не наматывайте их со слишком малым радиусом; убедитесь в отсутствии перегибов.

# 13 МЕРЫ ПРЕДОСТОРОЖНОСТИ ПРИ МОРОЗЕ



В холодных климатических зонах и в зимнее время года, когда возможны морозы, следуйте указаниям, приведенным в главе 12 (см. пункт 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 указаны в договоре купли-продажи.
Право на гарантийное обслуживание утрачивается, если:
a) Насос использовался не по согласованному назначению.
b) Насос был подсоединен к электрическому или эндотермическому двигателю с характеристиками, превышающими значения, указанные в таблице.
c) Предусмотренные предохранительные устройства были плохо отрегулированы либо отсоединены.
d) При эксплуатации насоса использовались комплектующие либо запчасти, приобретенные не в компании Interpump Group.
e) Если повреждения возникли по следующим причинам:
   1) неправильная эксплуатация
   2) несоблюдение указаний по техническому обслуживанию
   3) использование по назначению, отличному от указанного в инструкции по эксплуатации
   4) недостаточная подача
   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 насоса отсутствует расход:**
- 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.
- Бустерный насос не обеспечивает достаточное давление или подачу.
- 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 в трансмиссии.





**Насос не обеспечивает расход, указанный на заводской табличке/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.
- Слишком большая утечка из прижимных уплотнительных прокладок.
- Кавитация, возникшая в результате:
  1) Неправильного подбора размеров всасывающих труб/слишком малых диаметров.
  2) Недостаточного расхода.
  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.



**Насос перегревается:**
- Насос работает при избыточном давлении, либо число оборотов превышает значения, указанные в паспортных данных.
- Масло в картере насоса не находится на нужном уровне или его тип не входит в число рекомендуемых в главе 7 (см. пункт 7.6).
- Недостаточно выровнена муфта.
- Слишком сильный наклон насоса во время работы.



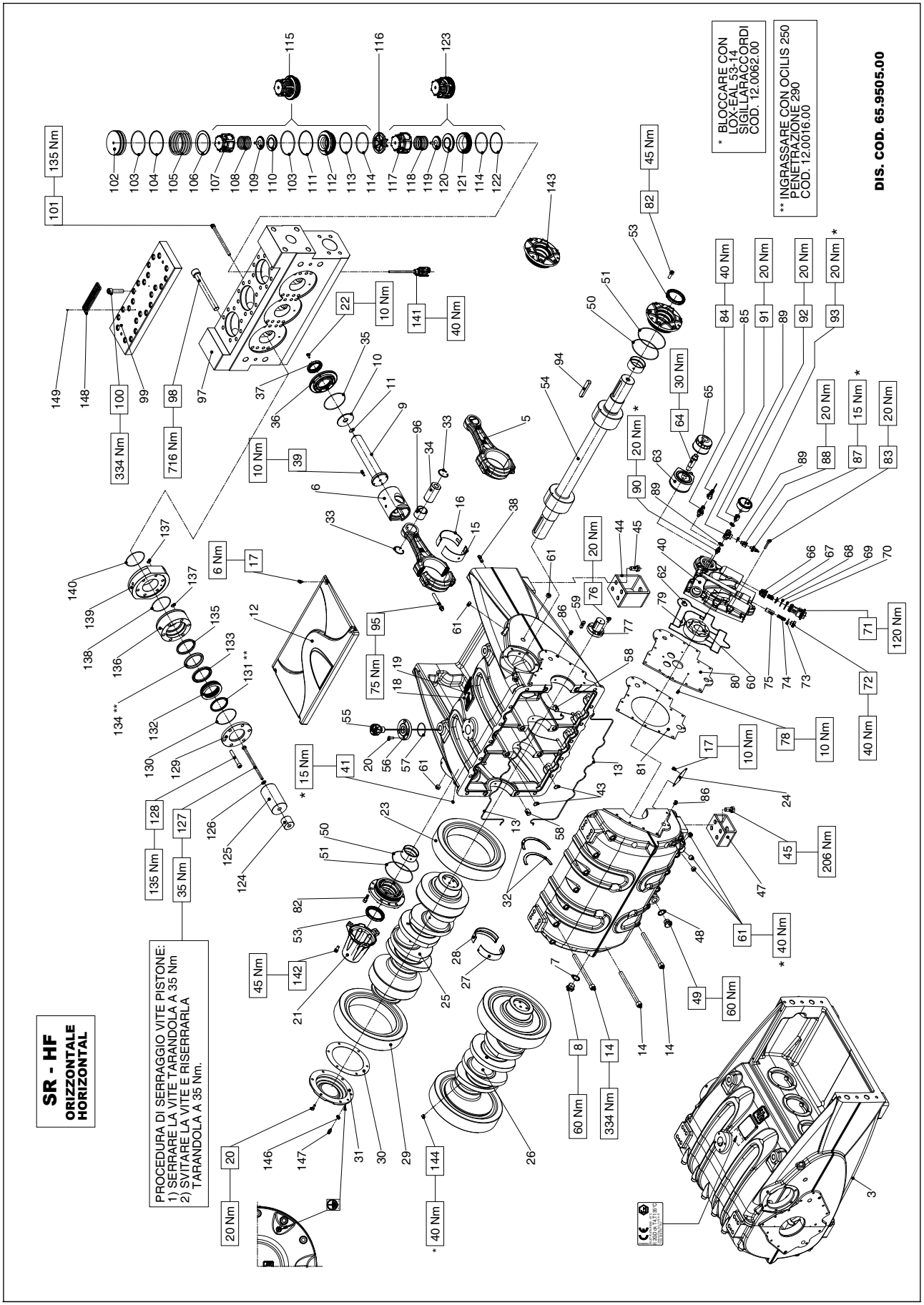
**Вибрация или толчки на трубах:**
- Всасывание воздуха.
- Неточная работа клапана регулировки давления.
- Неисправная работа клапанов.
- Неравномерная работа трансмиссии.

## 15.1 ПОИСК НЕИСПРАВНОСТЕЙ И СПОСОБЫ ИХ УСТРАНЕНИЯ

| НЕИСПРАВНОСТЬ | ВОЗМОЖНАЯ ПРИЧИНА | СПОСОБ УСТРАНЕНИЯ |
|---|---|---|
| При запуске насос не производит никаких звуков | Отсутствие подачи воды.<br>Клапаны заблокированы.<br>Линия нагнетания закрыта и препятствует выходу воздуха, присутствующего в насосе. | Проверьте работу и расход бустерного насоса.<br>Проверьте работу клапанов.<br>Проверьте линию подачи на наличие возможных аномалий. |
| Слишком низкое давление | Насос всасывает воздух | Определите утечку и произведите ремонт |
| | Утечки из клапана регулировки давления или неправильная настройка давления | Устраните утечку или произведите настройку |
| | Дефектный комплект клапанных уплотнений | Установите новые уплотнения |
| | Поврежденный/е клапан/ы всасывания или разгрузки | Необходима замена клапана/ов всасывания или разгрузки. Проверьте состояние пружин клапана. |
| | Утечки из головки | Проверьте состояние уплотнений головки и замените их при необходимости; установите новую головку |
| Насос производит шум | Износ клапанов.<br>Всасывающие трубы и/или фильтр слишком малого диаметра.<br>Недостаточный расход, повышенная температура воды, засоренный фильтр. | Проверьте монтаж и компоненты линии всасывания; замерьте температуру воды |
| Нерегулярные пульсации в трубах | Недостаточные всасывание воздуха и/или подача.<br>Изгибы, колена, фитинги по линии всасывания препятствуют свободному прохождению жидкости.<br>Фильтр подачи загрязнен или слишком мал.<br>Бустерный насос не обеспечивает достаточное давление и/или расход. | Проверьте монтаж и компоненты линии всасывания.<br>Проверьте работу и расход бустерного насоса.<br>Произведите чистку или замените фильтр подачи. |
| Утечка воды из опоры для уплотнений | Дефектное/изношенное уплотнение низкого давления | Замените уплотнение низкого давления |
| Насос перегревается | Давление и/или число оборотов превышает значения, указанные на заводской табличке.<br>Масло в картере насоса не находится на нужном уровне или его тип не входит в число рекомендуемых.<br>Муфта или трансмиссия не выровнены. | Восстановите давление и/или число оборотов.<br>Восстановите уровень масла; замените его при необходимости.<br>Проверьте трансмиссию. |
| Утечка масла из картера насоса | Дефектный/изношенный маслоотражатель штока направляющей поршня.<br>Имеют дефекты или изношены различные уплотнения картера.<br>В насосах вертикального исполнения проверьте состояние сильфона. | Замена маслоотражательного кольца, сильфона или уплотнений |
| Эмульгированное масло выходит из сапуна.<br>На масломерном щупе имеются следы эмульсии. | Загрязнение смазочного масла перекачиваемой жидкостью. | Проверьте правильность работы маслоотражателей направляющей поршня (или сильфонов) и замените смазочное масло |

# 16 ВЗРЫВ-СХЕМЫ И СПЕЦИФИКАЦИИ ЗАПЧАСТЕЙ

## 16.1 ВЗРЫВ-СХЕМА И СПЕЦИФИКАЦИЯ ЗАПЧАСТЕЙ SR В ГОРИЗОНТАЛЬНОМ ИСПОЛНЕНИИ



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

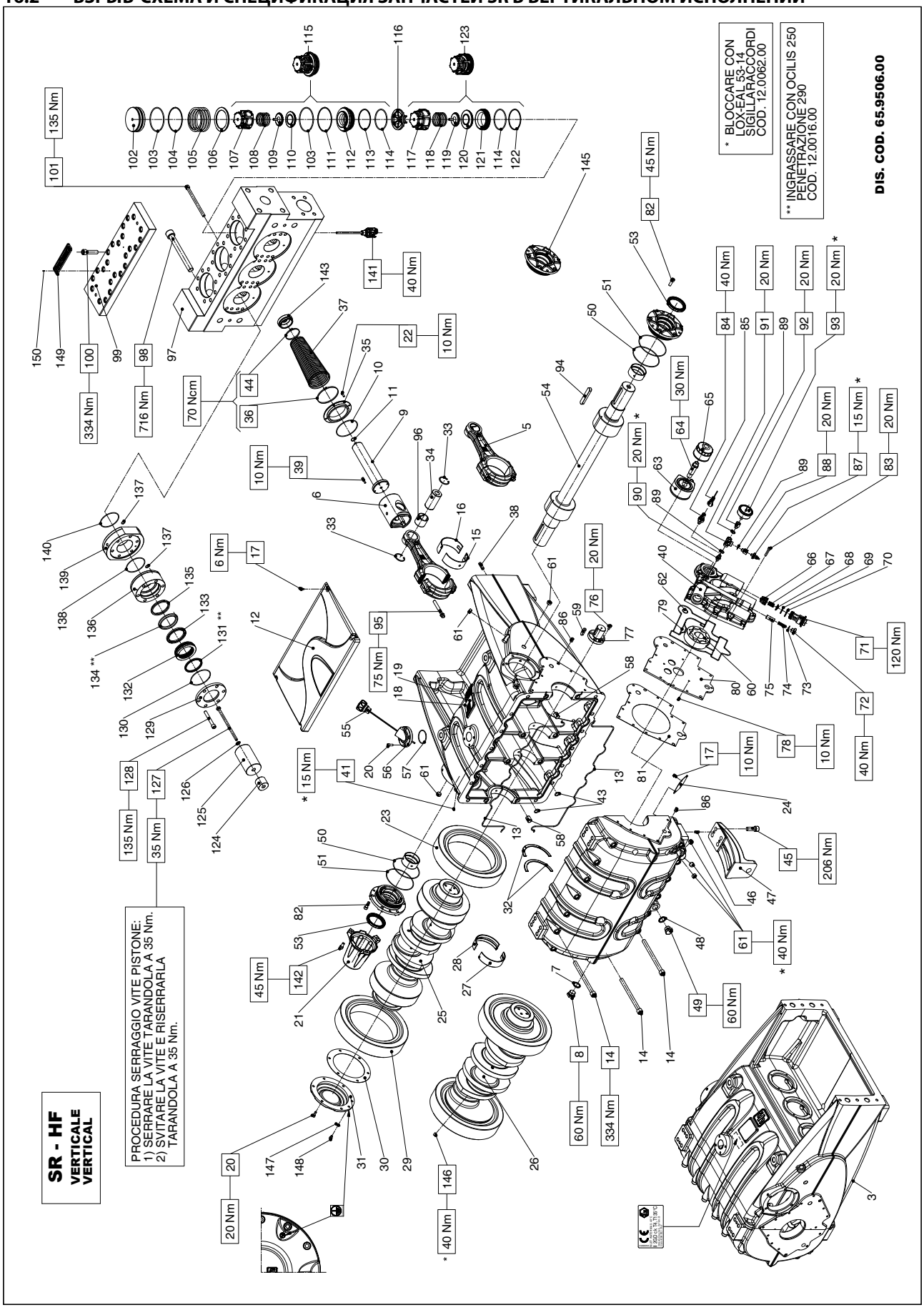
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**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **93** | **94.6070.00** | **MANOMETRO ATT. POST. 0-16 D. 63** | | **1** |
| **94** | **91.5050.00** | **LINGUETTA 18x11x100 UNI 6604** | | **1** |
| **95** | **99.4410.00** | **VITE SERRAGGIO BIELLA** | | **6** |
| **96** | **90.9185.00** | **BOCCOLA PIEDE BIELLA** | | **3** |
| **97** | **65.1205.56** | **TESTATA LP** | | **1** |
| **98** | **99.5355.00** | **VITE M24x2x220 UNI 5931 8,8** | | **4** |
| **99** | **65.2120.56** | **COPERCHIO VALVOLE LP** | | **1** |
| **100** | **99.5149.00** | **VITE M16x65 UNI 5931 12,9** | | **24** |
| **101** | **99.4495.00** | **VITE M12x180 UNI 5931 12,9** | | **24** |
| **102** | **65.2121.56** | **TAPPO VALVOLA** | | **3** |
| **103** | **90.4146.00** | **OR D. 104,4x3,53 NBR SH. 70 4412** | **B** | **6** |
| **104** | **90.5345.00** | **ANELLO ANTIEST. D. 105,4x111,2x1,5** | **B** | **3** |
| **105** | **94.8050.00** | **MOLLA Dm. 103x87,5** | | **3** |
| **106** | **65.2139.56** | **ANELLO SEDE VALVOLA DI MANDATA** | | **3** |
| **107** | **36.2131.05** | **GUIDA VALVOLA DI MANDATA** | | **3** |
| **108** | **94.7745.00** | **MOLLA Dm. 56x57,3** | | **3** |
| **109** | **36.2129.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **110** | **36.2126.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **111** | **90.5340.00** | **ANELLO ANTIESTR. D. 105,2x111x1,5** | | **3** |
| **112** | **36.2121.56** | **SEDE VALVOLA DI MANDATA** | | **3** |
| **113** | **90.5315.00** | **ANELLO ANTIEST. D. 89,4x95,2x1,5** | | **3** |
| **114** | **90.4144.00** | **OR D. 88,5x3,53 NBR SH. 70 4350** | | **6** |
| **115** | **36.7227.01** | **GRUPPO VALVOLA DI MANDATA** | **B** | **3** |
| **116** | **65.2122.51** | **DISTANZIALE GUIDA VALVOLA** | **B** | **3** |
| **117** | **36.2130.05** | **GUIDA VALVOLA D'ASPIRAZIONE** | | **3** |
| **118** | **94.7755.00** | **MOLLA Dm. 58,5x103,1** | | **3** |
| **119** | **36.2128.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **120** | **36.2127.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **121** | **36.2120.56** | **SEDE VALVOLA D'ASPIRAZIONE** | | **3** |
| **122** | **90.5310.00** | **ANELLO ANTIEST. D. 89,2x95x1,5** | | **3** |
| **123** | **36.7226.01** | **GRUPPO VALVOLA D'ASPIRAZIONE** | **B** | **3** |
| **124** | **65.2119.66** | **DISTANZIALE PISTONE** | | **3** |
| 125 | 74.0402.09 | PISTONE D. 50x127 | | 3 |
| | 74.0405.09 | PISTONE D. 65x127 | | |
| | 65.0409.09 | PISTONE D. 70x127 | | |
| **126** | **96.7105.00** | **ROSETTA D. 10x18x0,9** | | **3** |
| **127** | **99.3865.00** | **VITE M10x200 UNI 5737 A2-70** | | **24** |
| **128** | **99.4418.00** | **VITE M12x90 UNI 5931 12,9** | | **18** |
| 129 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2132.56 | ANELLO SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 130 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A | |
| 131 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2890.00 | ANELLO TEN. ALT. D. 65x73x5,5 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 132 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2131.70 | SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 133 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2895.00 | ANELLO 'RESTOP' D. 65x80x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 134 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2893.00 | ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 135 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1005.92 | ANELLO DI TESTA D. 65 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 136 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0607.56 | CAMICIA PISTONE D. 65 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| **137** | **90.3830.00** | **OR D. 12,1x2,62 NBR SH. 70 117** | **A** | **6** |
| 138 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A | |
| 139 | 65.2123.56 | SUPPORTO CAMICIA D. 50 | | 3 |
| | 65.2124.56 | SUPPORTO CAMICIA D. 65-75 | | |
| **140** | **90.3917.00** | **OR D. 88,57x2,65 NBR SH. 70 3350** | **A** | **3** |
| **141** | **10.7449.01** | **DISPOSITIVO APERTURA VALVOLE** | | **1** |
| **142** | **99.3652.00** | **VITE M10x20 UNI 5931 12,9** | | **3** |
| **143** | **65.7005.01** | **COPERCHIO PTO + BOCCOLA PIGNONE** | | **2** |
| **144** | **99.4250.00** | **VITE M12x12 UNI 5923 12,9** | | **2** |
| **146** | **96.7017.50** | **ROSETTA D. 8,4x15x0,8 - ATEX** | | **1** |
| **147** | **99.3019.00** | **VITE M8x10 UNI 5931 A2-70 - ATEX** | | **1** |
| **148** | **97.8276.00** | **MARCHIO PRATISSOLI** | | **1** |
| **149** | **91.57030.0** | **RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346** | | **2** |

## 16.2 ВЗРЫВ-СХЕМА И СПЕЦИФИКАЦИЯ ЗАПЧАСТЕЙ SR В ВЕРТИКАЛЬНОМ ИСПОЛНЕНИИ



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

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**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 92.8100.00 | FASCETTA D. 58-69 | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 46 | 97.6230.00 | SPINA D. 10x24 UNI 6364 | | 8 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 47 | 65.2007.13 | PIEDE VERTICALE | | 4 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 10 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 12 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 76 | 99.3039.00 | VITE M8x16 UNI 5931 8,8 | | 4 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 35 | 65.2107.66 | FLANGIA PER SOFFIETTO | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 36 | 92.8110.00 | FASCETTA D. 98-109 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 37 | 65.2110.47 | SOFFIETTO | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

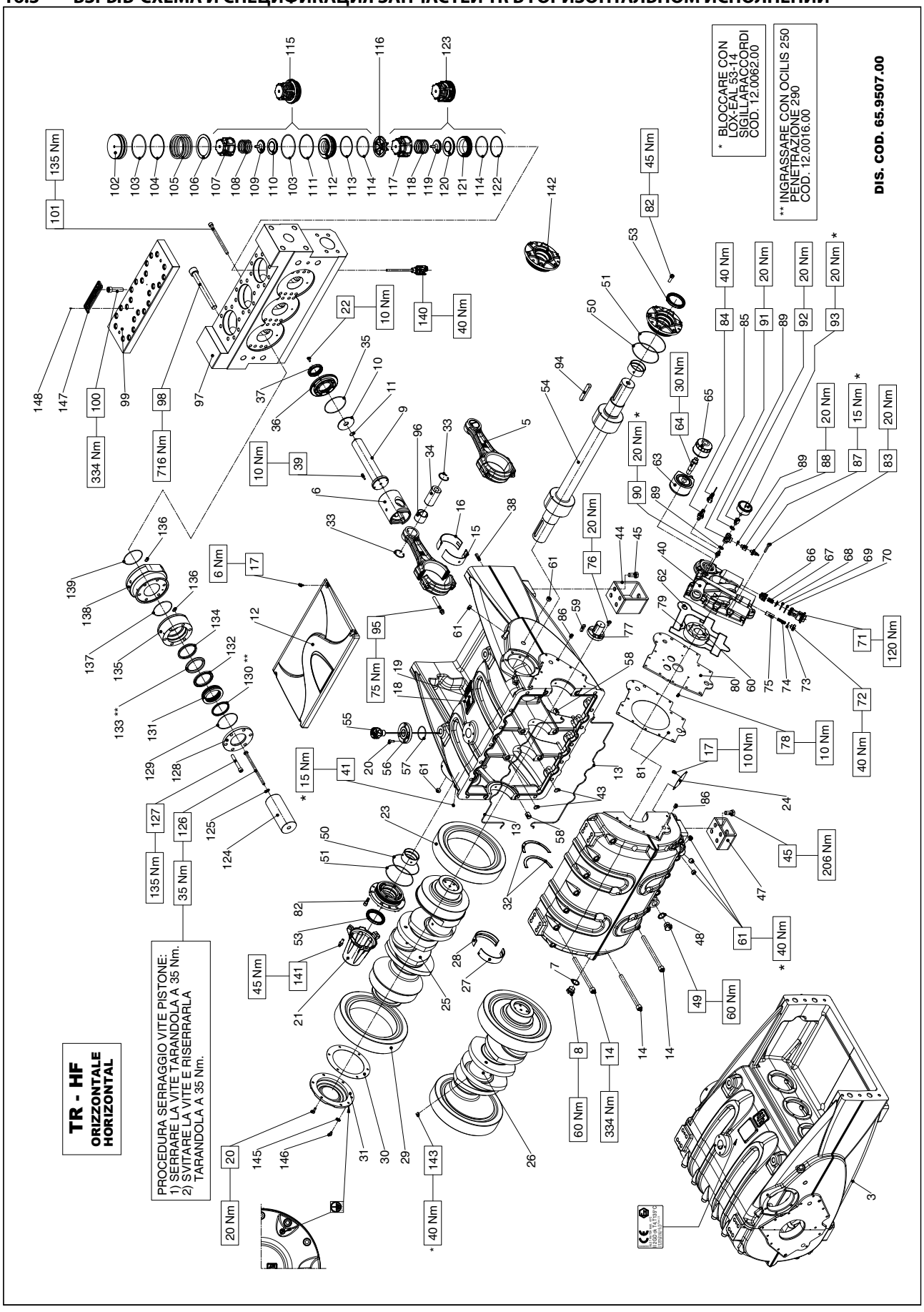
Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.2119.66 | DISTANZIALE PISTONE | | 3 |
| 125 | 74.0402.09 | PISTONE D. 50x127 | | 3 |
| | 74.0405.09 | PISTONE D. 65x127 | | |
| | 65.0409.09 | PISTONE D. 70x127 | | |
| 126 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 127 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 128 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 129 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2132.56 | ANELLO SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 130 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A | |
| 131 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2890.00 | ANELLO TEN. ALT. D. 65x73x5,5 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 132 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2131.70 | SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 133 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2895.00 | ANELLO 'RESTOP' D. 65x80x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 134 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2893.00 | ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 135 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1005.92 | ANELLO DI TESTA D. 65 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 136 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0607.56 | CAMICIA PISTONE D. 65 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 137 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 138 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A | |
| 139 | 65.2123.56 | SUPPORTO CAMICIA D. 50 | | 3 |
| | 65.2124.56 | SUPPORTO CAMICIA D. 65-75 | | |
| 140 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 141 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 142 | 99.3652.00 | VITE M10x20 UNI 5931 12,9 | | 3 |
| 143 | 65.2106.66 | PARASPRUZZI PER SOFFIETTO | | 3 |
| 145 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 146 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 147 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 148 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 149 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 150 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 16.3 ВЗРЫВ-СХЕМА И СПЕЦИФИКАЦИЯ ЗАПЧАСТЕЙ TR В ГОРИЗОНТАЛЬНОМ ИСПОЛНЕНИИ



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 3 | 65.0109.01 | CARTER - COMPLETO | | 1 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 |
| 25 | 65.0206.55 | ALBERO A GOMITI C. 130 | | 1 |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 |
| 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

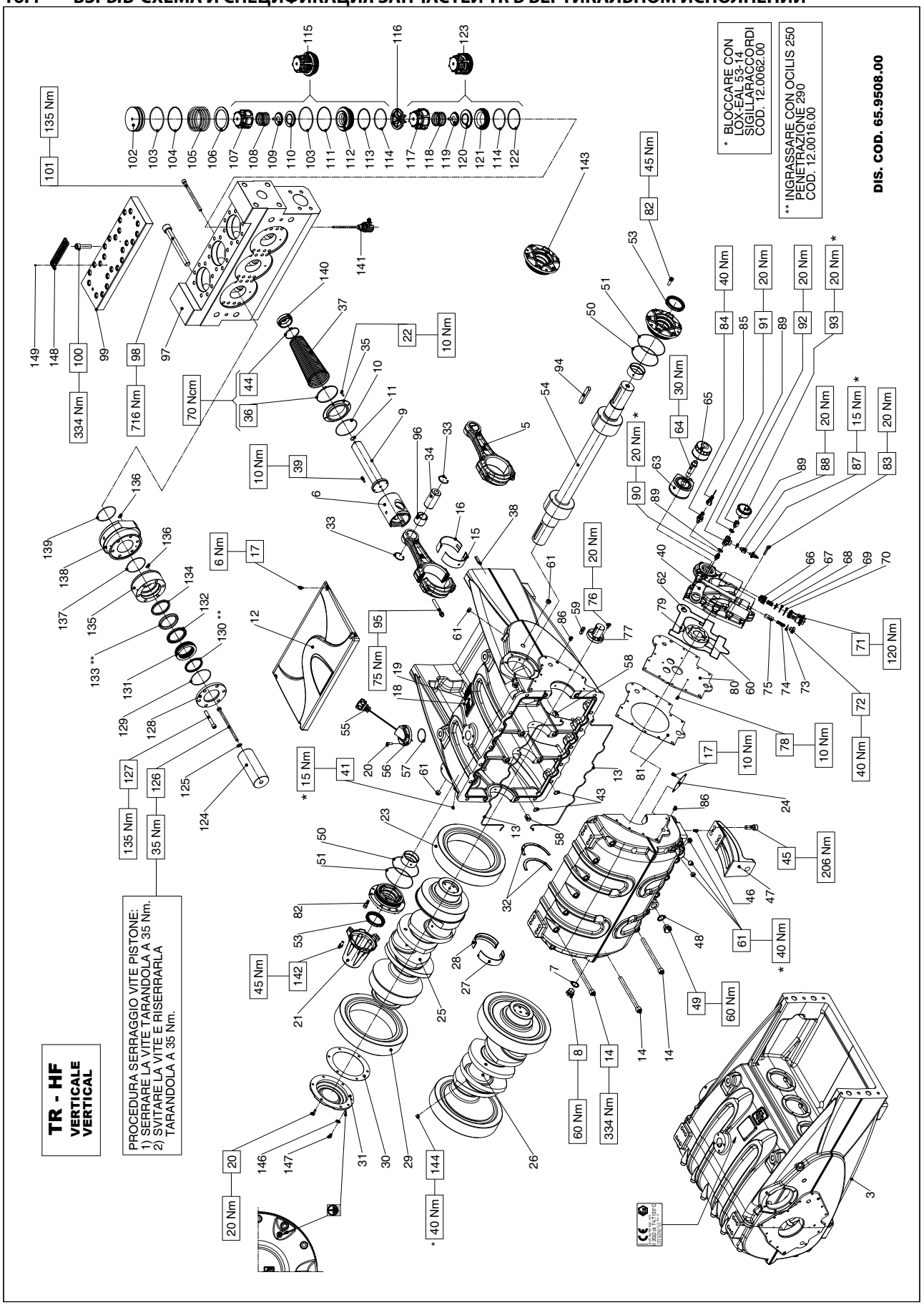
Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| 125 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 126 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 127 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 136 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 62.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| 139 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 140 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 141 | 99.3652.01 | VITE M10x20 UNI 5931 12,10 | | 4 |
| 142 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 143 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 145 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 146 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 147 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 148 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 16.4 ВЗРЫВ-СХЕМА И СПЕЦИФИКАЦИЯ ЗАПЧАСТЕЙ TR В ВЕРТИКАЛЬНОМ ИСПОЛНЕНИИ



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **3** | **65.0109.01** | **CARTER - COMPLETO** | | **1** |
| **5** | **65.0306.01** | **BIELLA - COMPLETA** | | **3** |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | |
| **7** | **93.1980.00** | **ROSETTA DI TENUTA D. 3/4"** | | **1** |
| **8** | **98.2265.00** | **TAPPO G 3/4"x16** | | **1** |
| **9** | **65.0505.66** | **STELO GUIDA PISTONE** | | **3** |
| **10** | **90.3920.00** | **OR D. 101,27x2,62 NBR SH. 70 3400** | | **3** |
| **11** | **90.3596.00** | **OR D. 18,77x1,78 NBR SH. 70 2075** | | **3** |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | |
| **13** | **65.2140.82** | **GUARNIZIONE D. 3,53x530** | | **2** |
| **14** | **99.5224.00** | **VITE M16x200 UNI 5931 12,9** | | **22** |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | |
| **17** | **99.1820.00** | **VITE M6x12 DIN 6921 8,8** | | **8** |
| **18** | **91.5700.00** | **RIVETTO AUTOF. D. 2,5x5 UNI 7346** | | **4** |
| **19** | **97.8268.00** | **TARGHETTA POMPA** | | **1** |
| **20** | **99.3059.00** | **VITE M 8x20 UNI 5931 8,8** | | **10** |
| **21** | **65.1509.20** | **COPERCHIO ESTREMITA' ALBERO** | | **1** |
| **22** | **99.1853.00** | **VITE M6x16 UNI 5931 12,9** | | **12** |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | |
| **24** | **65.2108.74** | **RETINA FILTRO OLIO** | | **1** |
| **25** | **65.0206.55** | **ALBERO A GOMITI C. 130** | | **1** |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | |
| **30** | **65.2109.84** | **GUARNIZIONE COPERCHIO LATERALE** | | **1** |
| **31** | **65.1506.20** | **COPERCHIO ALBERO A GOMITI** | | **1** |
| **32** | **90.9353.00** | **SEMIANELLO DI SPALLAMENTO** | **C** | **2** |
| **33** | **90.0755.00** | **ANELLO SEEGER D. 45** | | **6** |
| **34** | **97.7470.00** | **SPINOTTO D. 45x86** | | **3** |
| **35** | **65.2107.66** | **FLANGIA PER SOFFIETTO** | | **3** |
| **36** | **92.8110.00** | **FASCETTA D. 98-109** | | **3** |
| **37** | **65.2110.47** | **SOFFIETTO** | | **3** |
| **38** | **97.6300.00** | **SPINA D. 12x40 UNI 6364** | | **2** |
| **39** | **99.1897.00** | **VITE M6x25 UNI 5931 8,8** | | **12** |
| **40** | **79.2124.20** | **CORPO POMPA OLIO** | | **1** |
| **41** | **98.1930.00** | **TAPPO CONICO M8x1 DIN 906** | | **2** |
| **43** | **90.3845.00** | **OR D. 18,72x2,62 NBR SH. 70 3075** | | **4** |
| **44** | **92.8100.00** | **FASCETTA D. 58-69** | | **3** |
| **45** | **99.5133.00** | **VITE M 16x35 UNI 5739 8,8** | | **16** |
| **46** | **97.6230.00** | **SPINA D. 10x24 UNI 6364** | | **8** |
| **47** | **65.2007.13** | **PIEDE VERTICALE** | | **4** |
| **48** | **93.1980.00** | **ROSETTA DI TENUTA G 3/4"** | | **1** |
| 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| **50** | **90.3926.50** | **OR D. 126,67x2,62 NBR SH. 70 3500** | | **2** |
| **51** | **90.3805.00** | **OR D. 132,00x2,50 NBR SH. 70** | | **2** |
| **53** | **90.1900.00** | **ANELLO RAD. D. 70x90x10** | | **2** |
| 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| **56** | **65.2112.54** | **SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE** | | **1** |
| **57** | **90.3898.00** | **OR D. 56,82x2,62 NBR SH. 70 3225** | | **1** |
| **58** | **79.2116.89** | **BUSSOLA CENTRAGGIO CARTER-SUPPORTO** | | **4** |
| **59** | **91.4995.00** | **LINGUETTA 12x8x40 UNI 6604** | | **1** |
| **60** | **79.2119.07** | **ASSIEME ROTORI POMPA OLIO H=35** | | **1** |
| **61** | **98.2155.00** | **TAPPO CONICO M20x1,5 DIN 906** | | **6** |
| **62** | **90.3852.00** | **OR D. 22,22x2,62 NBR SH. 70 130** | | **6** |
| **63** | **65.2137.00** | **SCAMBIATORE ACQUA-OLIO** | | **1** |
| **64** | **65.2138.64** | **RACCORDO SCAMBIATORE FILTRO OLIO** | | **1** |
| **65** | **92.8990.00** | **FILTRO OLIO M20** | | **1** |
| **66** | **36.2009.51** | **GUIDA VALVOLA ASPIRAZIONE / MANDATA** | | **4** |
| **67** | **94.7440.00** | **MOLLA Dm. 15,4x26,5** | | **4** |
| **68** | **36.2010.76** | **VALVOLA SFERICA** | | **4** |
| **69** | **90.3865.00** | **OR D. 29,82x2,62 NBR SH. 70 3118** | | **4** |
| **70** | **90.3873.00** | **OR D. 36,14x2,62 NBR SH. 70 3143** | | **4** |
| **71** | **79.2139.64** | **CARTUCCIA VALVOLA** | | **4** |
| **72** | **98.2137.80** | **TAPPO M18x11** | | **1** |
| **73** | **96.7410.00** | **RONDELLA D. 18,2x24x1,5** | | **1** |
| **74** | **94.7390.00** | **MOLLA Dm. 10,8x37,9** | | **1** |
| **75** | **79.2136.64** | **PISTONCINO VALVOLA SOVRAPRESSIONE** | | **1** |
| **76** | **99.3039.00** | **VITE M 8x16 UNI 5931 8,8** | | **4** |
| **77** | **79.2126.54** | **CODOLO COMANDO ROTORI POMPA OLIO** | | **1** |
| **78** | **99.1851.00** | **VITE M6x16 UNI 5933 8,8** | | **3** |
| **79** | **79.2127.47** | **GUARNIZIONE CORPO POMPA OLIO** | | **1** |
| **80** | **79.2128.74** | **PIASTRA POMPA OLIO** | | **1** |
| **81** | **79.2129.84** | **GUARNIZIONE PIASTRA POMPA OLIO** | | **1** |
| **82** | **99.3686.00** | **VITE M10x30 UNI 5931 8,8** | | **12** |
| **83** | **99.3116.00** | **VITE M8x40 UNI 5931 8,8** | | **15** |
| **84** | **93.5105.00** | **INTERRUTTORE SPIA TEMPERATURA** | | **1** |
| **85** | **93.5515.00** | **CONNETTORE INTER. SPIA TEMPERATURA** | | **1** |
| **86** | **79.2135.89** | **BUSSOLA CENTRAGGIO POMPA OLIO** | | **2** |
| **87** | **93.5555.00** | **PRESSOSTATO 0,3 N.A. 12V** | | **1** |
| **88** | **94.5131.00** | **RACCORDO M-F G 1/4"- M 10x1** | | **1** |
| **89** | **96.7230.00** | **ROSETTA D. 13,5x19x1,5** | | **3** |
| **90** | **95.2560.00** | **RACCORDO M-M NPT 1/4" - G 1/4"** | | **1** |
| **91** | **96.3100.00** | **RACCORDO T F-F-F G 1/4"** | | **1** |

| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

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**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| 125 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 126 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 127 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 136 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 65.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| 139 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 140 | 65.2106.66 | PARASPRUZZI PER SOFFIETTO | | 3 |
| 141 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 142 | 99.3652.00 | VITE M10x20 UNI 5931 12,9 | | 3 |
| 143 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 144 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 146 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 147 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 148 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 149 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ КОМПОНЕНТОВ

(в соответствии с приложением II Европейской директивы 2006/42/EC)

Производитель **INTERPUMP GROUP S.p.a., находящийся по адресу: Виа Э. Ферми, д. 25 - 42049 - САНТ'ИЛАРИО Д'ЭНЦА - Италия,** под собственную исключительную ответственность **ЗАЯВЛЯЕТ**, что изделие, определенное и описанное следующим образом:

| | |
|---|---|
| Наименование: | Насос |
| Тип: | Возвратно-поступательный поршневой насос для воды высокого давления |
| Производственная марка: | INTERPUMP GROUP |
| Модель: | SR50 - SR65 - SR75<br>TR50 - TR60 - TR70 - TR75 |

Соответствует требованиям Директивы по машинному оборудованию 2006/42/EC.
Применимые стандарты: UNI EN ISO 12100:2010 - UNI EN 809:2000

Вышеозначенный насос соответствует следующим основным требованиям безопасности и охраны здоровья, указанным 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.

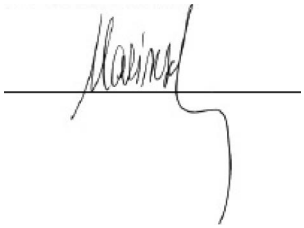
Лицо, ответственное за составление технической документации: Имя: Маурицио Новелли

Адрес: INTERPUMP GROUP S.p.a. - Виа Э.Ферми, д. 25 - 42049 – САНТ'ИЛАРИО Д'ЭНЦА (пров. Реджо-Эмилия) - Италия

Лицо, ответственное за составление декларации: Исполнительный директор инж. Паоло Маринсек

Реджо-Эмилия, февраль 2014 г.

Подпись:



## ТОЛЬКО ДЛЯ НАСОСОВ В ИСПОЛНЕНИИ ATEX

## ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ ЕС

(в соответствии с приложением X Европейской директивы 94/4/EC - ATEX)

Производитель **INTERPUMP GROUP S.p.a., находящийся по адресу: Виа Э. Ферми, д. 25 - 42049 - САНТ'ИЛАРИО Д'ЭНЦА - Италия,** под собственную исключительную ответственность **ЗАЯВЛЯЕТ**, что насосы, определенные и описанные следующим образом:

| | |
|---|---|
| Наименование: | НАСОС |
| Тип: | Возвратно-поступательный поршневой насос для воды высокого давления |
| Производственная марка: | INTERPUMP GROUP - PRATISSOLI |
| Модель: | SR50 - SR65 - SR75<br>TR50 - TR60 - TR70 - TR75 |

обозначенные символом ⟨Ex⟩, группы II, категории 2 GD, с защитой ck и классом температуры T4/T135°C, при заказе в исполнении ATEX соответствуют Европейской директиве 94/9/EC ATEX и могут эксплуатироваться в потенциально взрывоопасной атмосфере в пределах зон соответствующих классов с соблюдением заявленных характеристик и при условии установки и использования в соответствии с указаниями данной инструкции, основного руководства и/или специфического руководства на каждый отдельный насос.

Производитель применяет все необходимые меры для обеспечения соответствия изготовленных насосов заявленному.

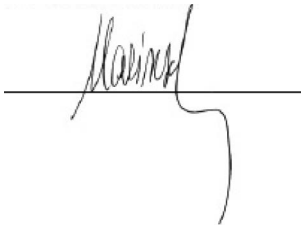
Применимые европейские стандарты:
UNI EN 1127-1:2011; UNI EN 13463-1:2009; UNI EN 13463-5:2011; UNI EN 13463-8:2003

Пакет технической документации подан в классификационное общество DNV ITALIA (**№ 0496**)

Исполнительный директор инж. Паоло Маринсек

Реджо-Эмилия, февраль 2014 г.

Подпись:



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# 1 介绍

本手册叙述SR-TR型泵的使用和维护说明，使用泵浦前应先仔细阅读本手册。
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



**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。



**防爆保护相关符号。**
在按照ATEX准则定义的区域中使用泵浦时必须采取的详细安全规则。
**当订购了ATEX配置的泵浦**并需要在具有潜在爆炸危险的区域使用时，则必须**严格遵守带有此符号的段落的附注和补充说明手册“ATEX防爆保护”的说明**。

# 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过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. 压力管线必须具备安全阀。
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门。

## 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9.4点)。
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。

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. 泵浦和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

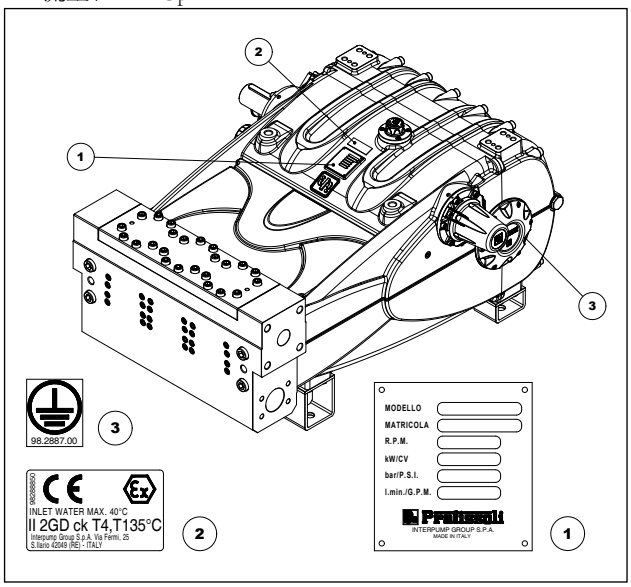



图 1

**订购配件时，应说明型号、版本和系列号。**

订购**ATEX**配置的泵浦：
位置 2 - **带有ATEX防爆印记**的标牌。
位置3 - **接地螺栓**识别标牌。

# 5 高流量泵技术特性

## SR型泵(@ RPM 520)技术特性

| 型号 | 转/分钟 | 流量 | | 压力 | | 功率 | |
|---|---|---|---|---|---|---|---|
| | | l/min | Gpm | 巴 | psi | kW | Hp |
| SR 50 | 1500 | 276 | 73 | 400 | 5800 | 211 | 287 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 65 | 1500 | 466 | 123 | 250 | 3625 | 222.5 | 302.5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 75 | 1500 | 620 | 164 | 200 | 2900 | 236.8 | 322 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

## TR型泵(@ RPM 520)技术特性

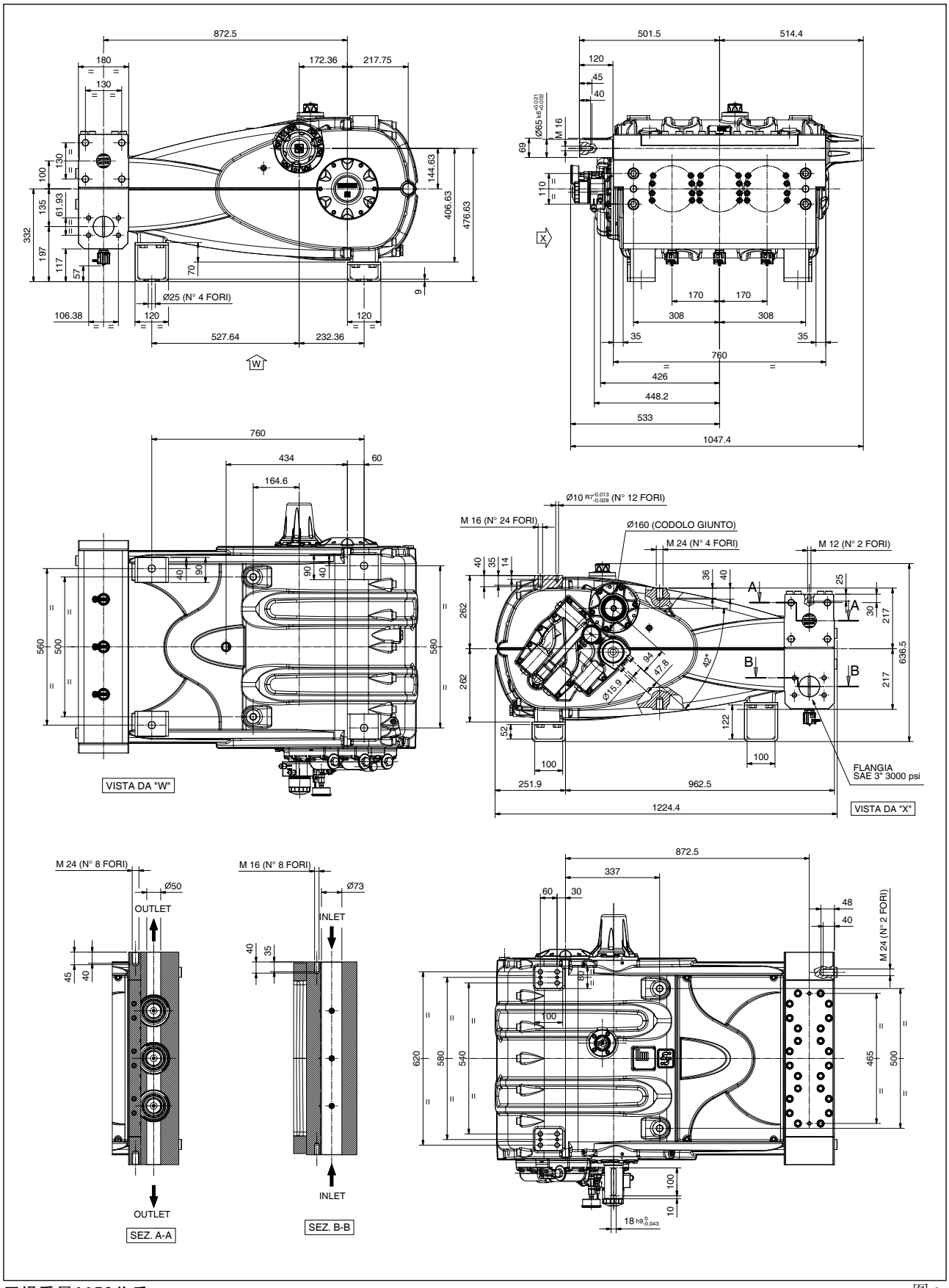
| 型号 | 转/分钟 | 流量 | | 压力 | | 功率 | |
|---|---|---|---|---|---|---|---|
| | | l/min | Gpm | 巴 | psi | kW | Hp |
| TR 50 | 1500 | 398 | 105 | 400 | 5800 | 304 | 413.5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 60 | 1500 | 573 | 151.4 | 300 | 4350 | 328.3 | 446.5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 70 | 1500 | 780.5 | 206 | 220 | 3190 | 328 | 446 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 75 | 1500 | 896 | 236.7 | 200 | 2900 | 342 | 465 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

## 5.1 PTO连接的泵浦转动惯量衰减

| 泵浦系列 | RPM | J (kg mm$^2$) |
|---|---|---|
| SR | 1500 | 231600 |
| | 1800 | 182400 |
| | 2200 | 140700 |
| TR | 1500 | 241200 |
| | 1800 | 189100 |
| | 2200 | 145200 |

# 6 SR高流量泵尺寸和重量

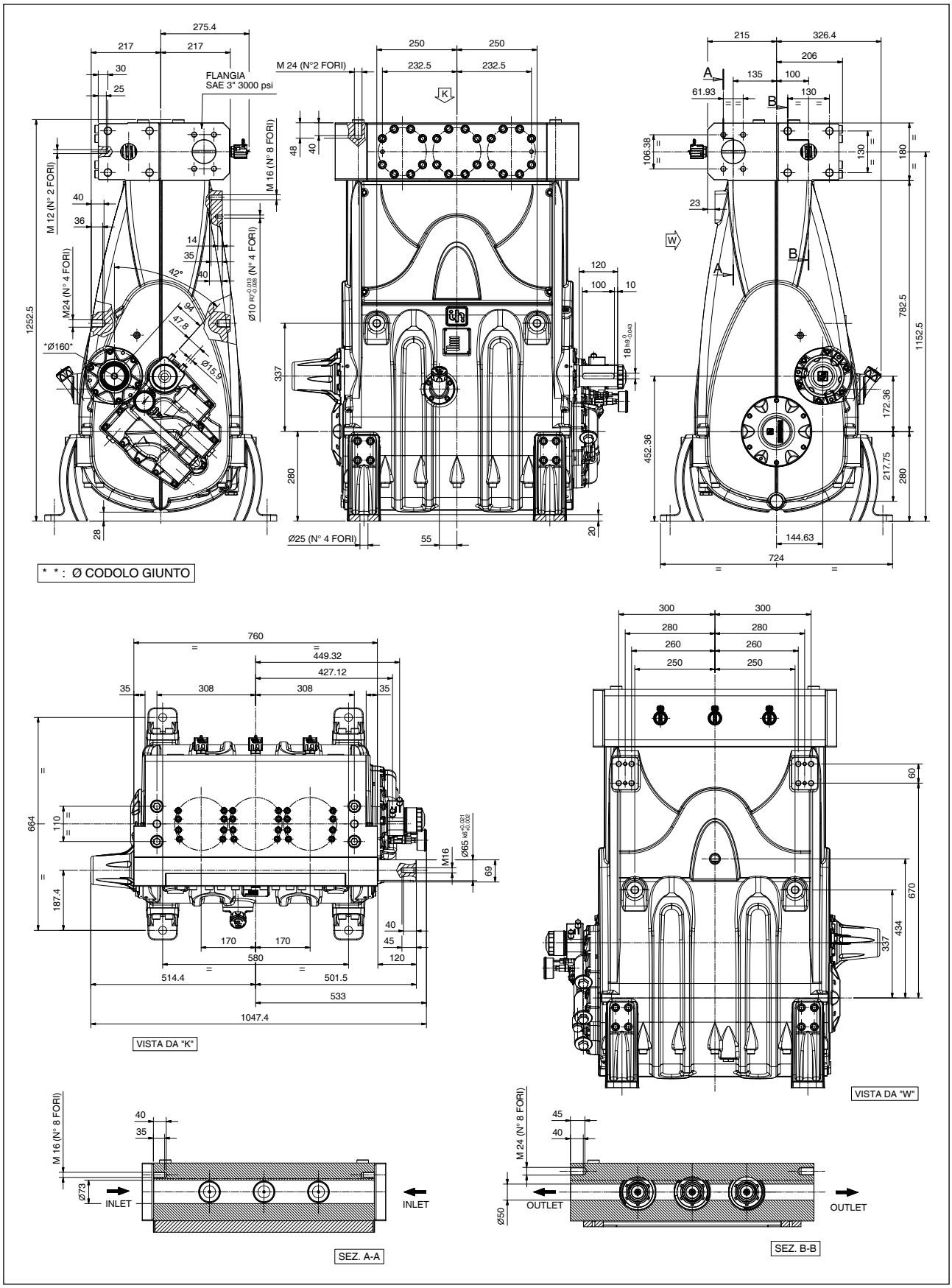
SR系列水平型泵浦的尺寸和重量请参阅图 2。




干燥重量1150公斤。

图 2

SR系列垂直型泵浦的尺寸和重量请参阅图2/a。

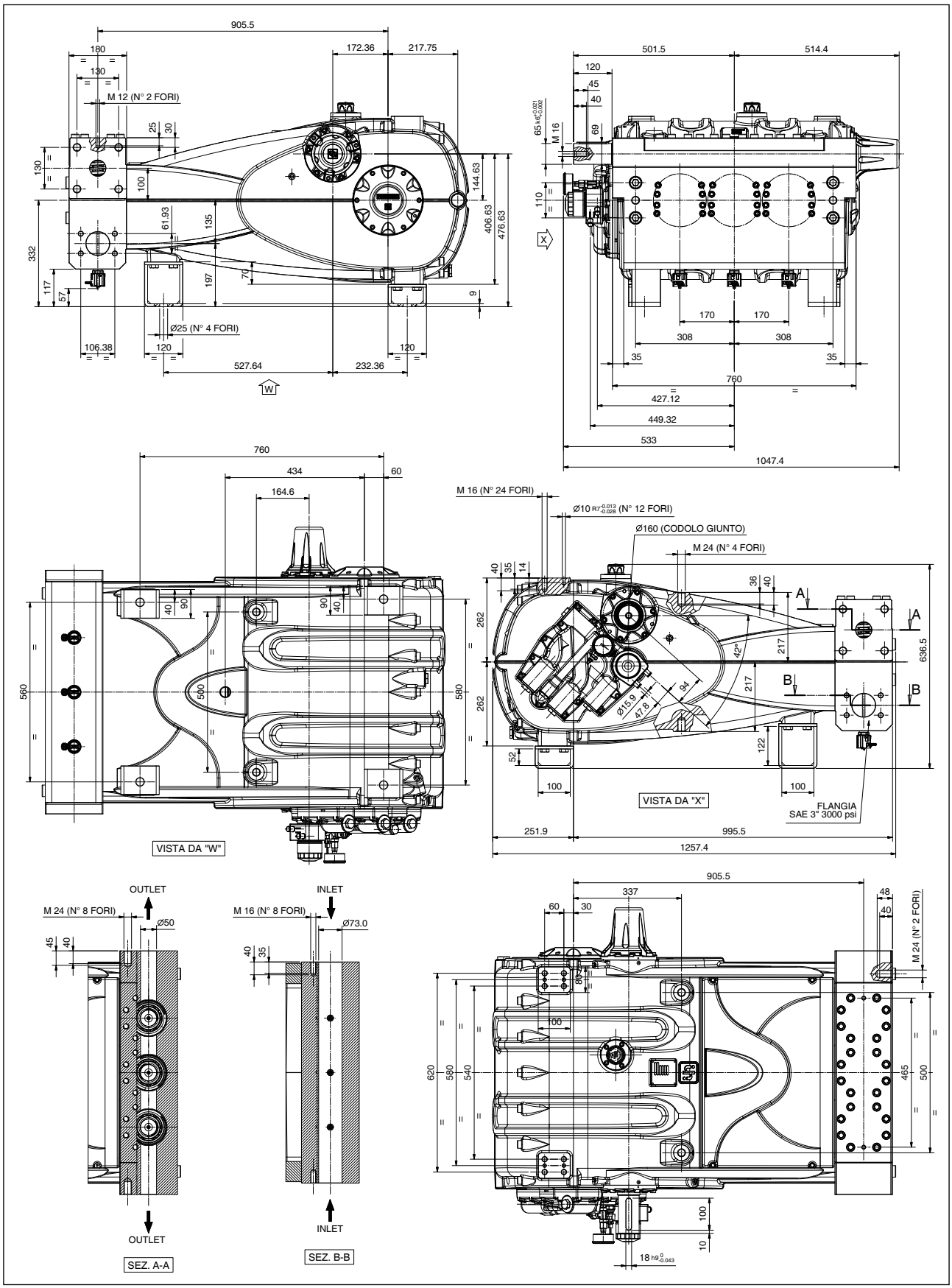



**干燥重量1160公斤。**

图2/a

## 6.1 TR高流量泵尺寸和重量

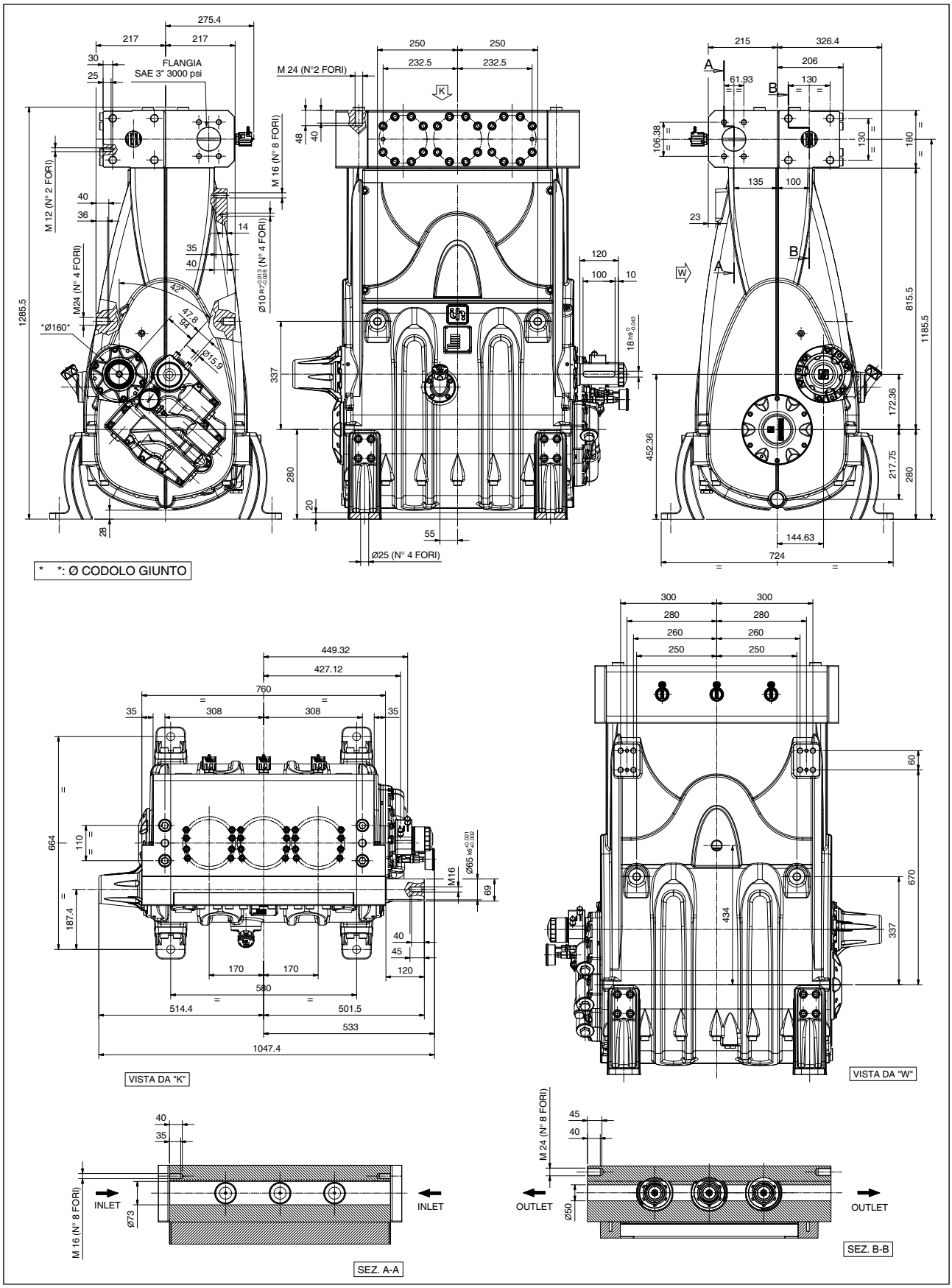
TR系列水平型泵浦的尺寸和重量请参阅图 3。




干燥重量1185公斤。

图 3

TR系列垂直型泵浦的尺寸和重量请参阅图3/a。




**干燥重量1195公斤。**

图3/a

# 7 用途

如订购的不是ATEX配置泵浦，则SR - TR型泵是专门为在**非**易爆环境中，利用经过滤的水运作而设计的(参阅9.6一节的内容)。
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。即使如此，泵浦也可以高达60°C的水温短暂运行。这种情况下应咨询**技术部**或**售后服务中心**。

**ATEX**型：允许的最高水温为**40°C**。

## 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

此类型泵浦允许的连接曲轴的最低转速为**250转/分(非连续时间间隔)**；任何有异于性能表格中指出的转速(请参阅章节5)均必须得到**技术部**或**客户服务中心**形式上的许可。

## 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 建议润滑剂品牌和类型

### 7.6.1 油料类型

泵浦是带有TOTAL-ERG MISOLA MAP SH-150润滑油供货，此润滑油可保证油泵能够在在-10°C到+40°C的常温下正常运作。
对于不同的温度，请使用稠度适当的单极机油。
如要在极端的环境下使用泵浦，建议使用适当的加热装置。
强制润滑是由油泵保证，这样可保证在每个需要润滑的部位能够到达正确的油量。
需要使用多级机油时是双份的：

- 令用户无需按照外部温度和季节来改变机油的稠度。
- 明显延长了机油更换的时间间隔，继而减少维护操作，请参阅第11章“预防性维护”的内容。

### 7.6.2 建议的润滑油品牌

TOTAL-ERG MISOLA MAP SH-150。
MOBIL SHC 629。

### 7.6.3 要求的机油特性

对于建议的品牌如无法买到或购买困难，建议使用其他替代机油，但必须具备以下技术特性：

- -10°C稠度 ≤4000 cSt.
- 40°C稠度 ≤200 cSt.
- 100°C稠度 ≤18 cSt.
- 稠度指数： ≥135 cSt.
- 滑点： ≥ -25°C
- 添加剂等级GL1 - GL2。

如有任何需求，请联系**售后服务中心**。
利用液面杆① - 图 4检查油面状况。
如有需要应从油盖① - 图 4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，通过拆下位置② - 图 4处的塞子来进行。(对于垂直型，请使用位置2/a的塞子。)
油料检查和更换应按照第11章的表格中指出的内容进行。
需要的油量为：**SR-TR水平型为52公升； SR-TR垂直型为37公升**。

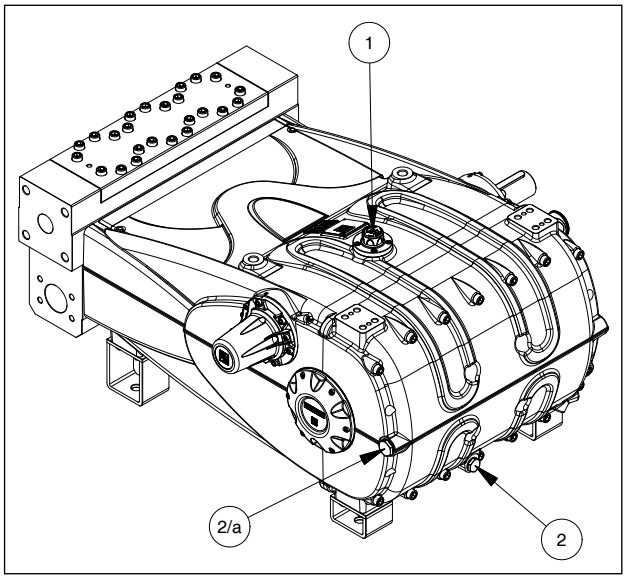



图 4

在泵浦运行期间，要把设备预备成在任何情况下都不超过110°C(230°F)的油温。
为了达到上述要求，请使用第9.10点描述的油温指示器。
**注意：**请使用闪点超过200°C的油料。

**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。

**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。**
**不得排放到环境中。**

## 8 接头和连接

SR-TR系列泵浦配备(请参阅图 5和图 6):
2个吸入口“IN”：SAE G3” - 3000 PSI，请参阅“SR-TR吸入-输送法兰剖析图”，图号为65950900 (图 7)。
在两个连接口上进行连接对良好运行毫无影响；不使用的吸取口应严密封闭。
2个输送口“OUT”：请参阅“SR-TR吸入-输送法兰剖析图”，图号为65950900 (图 7)。
1个排放口”“DRAIN”：G1"孔，位于曲轴箱盖下部，用于监控由于压力密封圈磨损而造成的泄漏。如存在泄漏，请参阅维修手册。
**该孔必须一致保持打开，或可连接一个探测系统进行探测。**

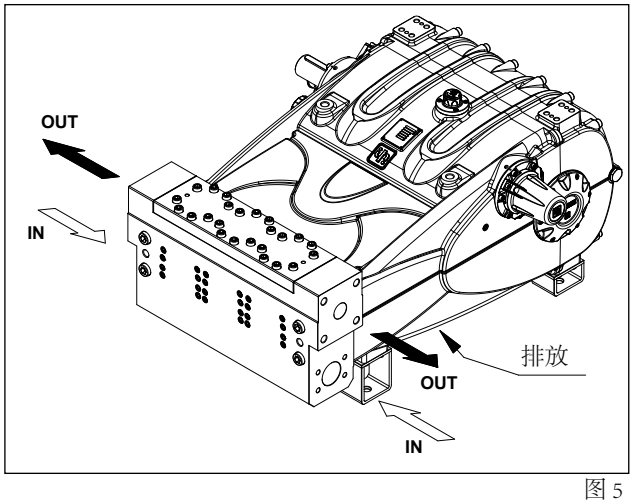



图 5

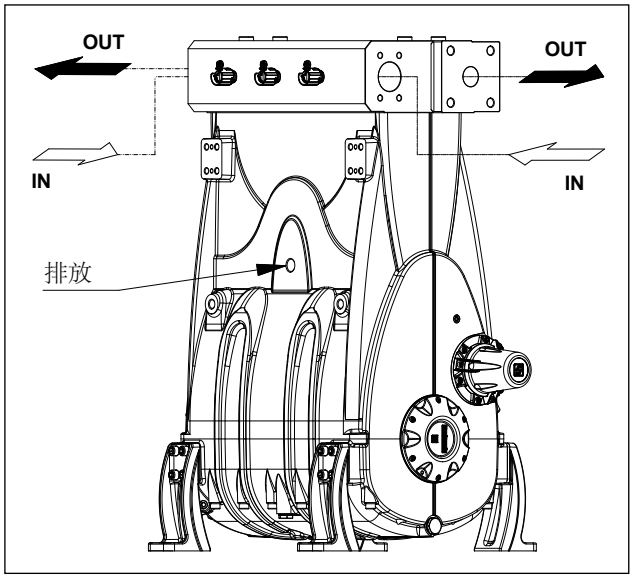
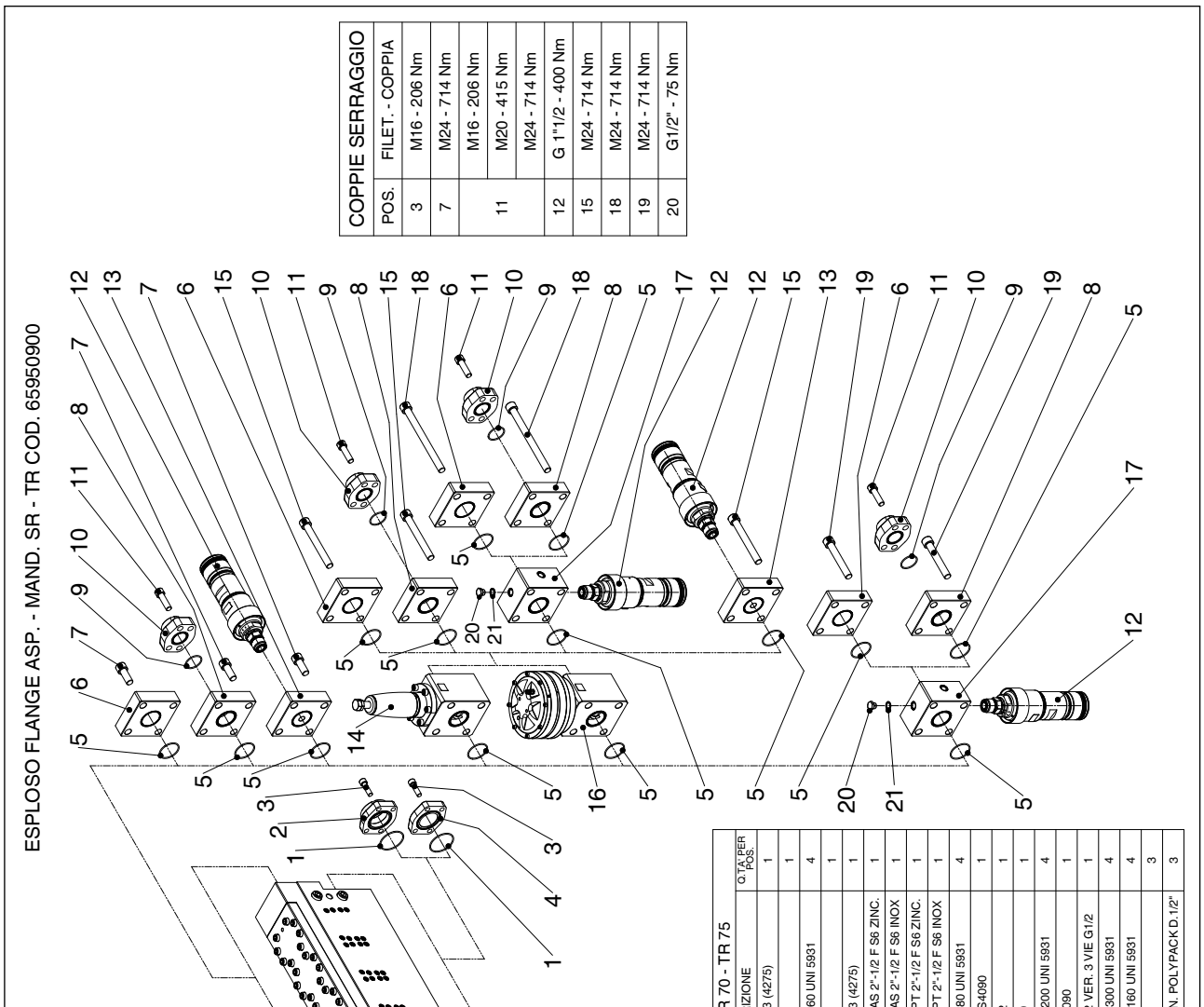



图 6

## 8.1 吸入和输送组合图示




| COPPIE SERRAGGIO | |
|---|---|
| POS. | FILET. - COPPIA |
| 3 | M16 - 206 Nm |
| 7 | M24 - 714 Nm |
| 11 | M16 - 206 Nm |
| | M20 - 415 Nm |
| | M24 - 714 Nm |
| 12 | G 1"1/2 - 400 Nm |
| 15 | M24 - 714 Nm |
| 18 | M24 - 714 Nm |
| 19 | M24 - 714 Nm |
| 20 | G1/2" - 75 Nm |

**POMPE SR - TR TUTTE LE VERSIONI**

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| ASPIRAZIONE | 1 | 90414100 | OR D. 85.32X3.53 (4337) | 1 |
| | 2 | 96458500 | FLANGIA DIR. GAS 3" F S3 ZINC. | 1 |
| | | 96459000 | FLANGIA DIR. GAS 3" F S3 INOX | 1 |
| | | 96459500 | FLANGIA DIR. NPT 3" F S3 ZINC. | 1 |
| | | 96460000 | FLANGIA DIR. NPT 3" F S3 INOX | 1 |
| | 3 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 4 | 96489500 | FLANGIA CIECA 3" S3 ZINC. | 1 |
| | | 96490000 | FLANGIA CIECA 3" S3 INOX | 1 |

**POMPE SR 50 - TR 50**

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021466 | FLANGIA 1"1/2 | 1 |
| | 9 | 90407900 | OR D. 47.22X3.53 (4187) | 1 |
| | 10 | 96468500 | FLANGIA DIR. GAS 1"-1/2 F S6 ZINC. | 1 |
| | | 96469000 | FLANGIA DIR. GAS 1"-1/2 F S6 INOX | 1 |
| | | 96469500 | FLANGIA DIR. NPT 1"-1/2 F S6 ZINC. | 1 |
| | | 96470000 | FLANGIA DIR. NPT 1"-1/2 F S6 INOX | 1 |
| | 11 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

**POMPE SR 65 - TR 60**

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021366 | FLANGIA 2" | 1 |
| | 9 | 90409900 | OR D. 56.74X3.53 (4225) | 1 |
| | 10 | 96473500 | FLANGIA DIR. GAS 2" F S6 ZINC. | 1 |
| | | 96474000 | FLANGIA DIR. GAS 2" F S6 INOX | 1 |
| | | 96474500 | FLANGIA DIR. NPT 2" F S6 ZINC. | 1 |
| | | 96475000 | FLANGIA DIR. NPT 2" F S6 INOX | 1 |
| | 11 | 99529000 | VITE TCEI M20X70 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

**POMPE SR 75 - TR 70 - TR 75**

| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
|---|---|---|---|---|
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021266 | FLANGIA 2"1/2 | 1 |
| | 9 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 10 | 96478500 | FLANGIA DIR. GAS 2"-1/2 F S6 ZINC. | 1 |
| | | 96479000 | FLANGIA DIR. GAS 2"-1/2 F S6 INOX | 1 |
| | | 96479500 | FLANGIA DIR. NPT 2"-1/2 F S6 ZINC. | 1 |
| | | 96480000 | FLANGIA DIR. NPT 2"-1/2 F S6 INOX | 1 |
| | 11 | 99532000 | VITE TCEI M24X80 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

图 7

# 9 泵浦安装

## 9.1 安装

底座的固定孔的直径为25毫米。
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。
泵浦上备有四个便于安装的M24吊环螺栓孔，以作提升用途，如下图所示。

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。






**地线：**必须利用M8不锈钢螺栓和黄色标签识别的不锈钢固定齿圈对泵浦进行地线连接。
请参阅“ATEX防爆保护”手册。

**更换曲轴箱盖上带有液面杆的注油孔塞。**
即使在组件安装后，也应该可以触及液面杆。

**泵轴(PTO)不能直接在动力机组上进行硬性连接。**
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)。

任何情况下，传动系的安装必须完美无缺，以避免运作不良、影响连接的部件以及防止过度磨损；温度升高和/或危险的爆裂而产生潜在的起火源和爆炸。请参阅“ATEX防爆保护”手册。

## 9.2 转动方向

转动方向在左或右方可为顺时针或逆时针(请参阅图 8)。

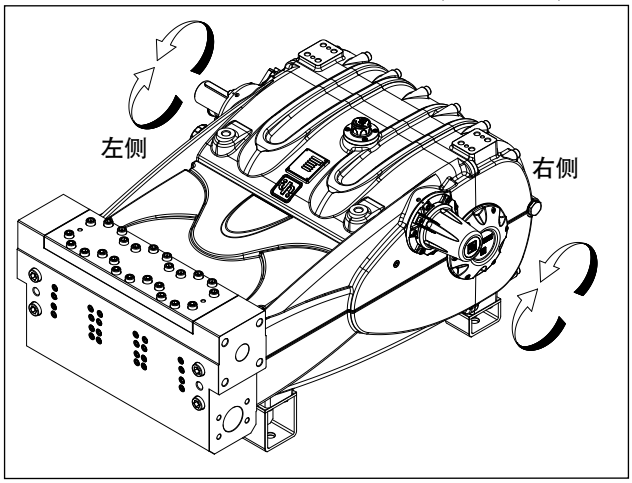



图 8

在两个方向连接泵浦毫无差别；在**左侧**安装时，应考虑润滑油泵的体积。
端盖必须在PTO脱离连接时安装。

## 9.3 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(吸入和输送)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。

## 9.4 泵浦供给

SR-TR系列泵浦必须通过一台升压泵进行强制供料安装。
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。**

## 9.5 吸入管线

为了确保泵浦的良好运作，吸入管线必须具备以下特性：

1. 内径起码有第9.8点图示指出的数值，也就是说大于或等于泵头。

   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、与其他管线的接头、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线内部洁净。
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。

## 9.6 过滤

在泵浦的吸入线上，应按照图 9和图9/a的指示安装一个过滤器。

**手动调节阀。**

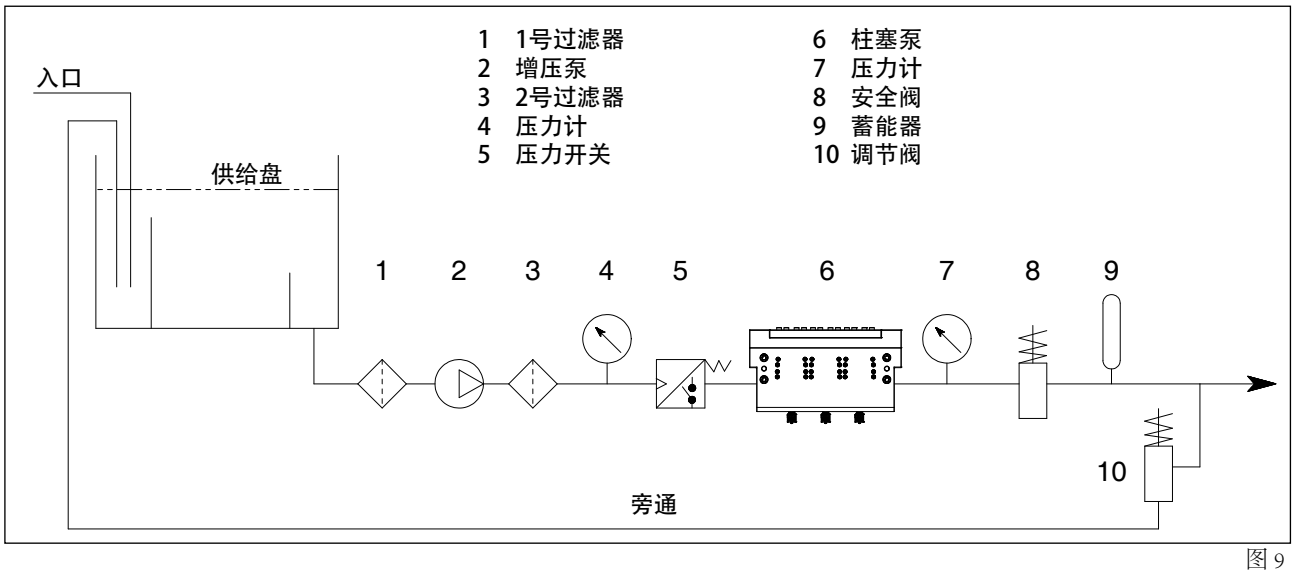



图 9

**气动调节阀。**

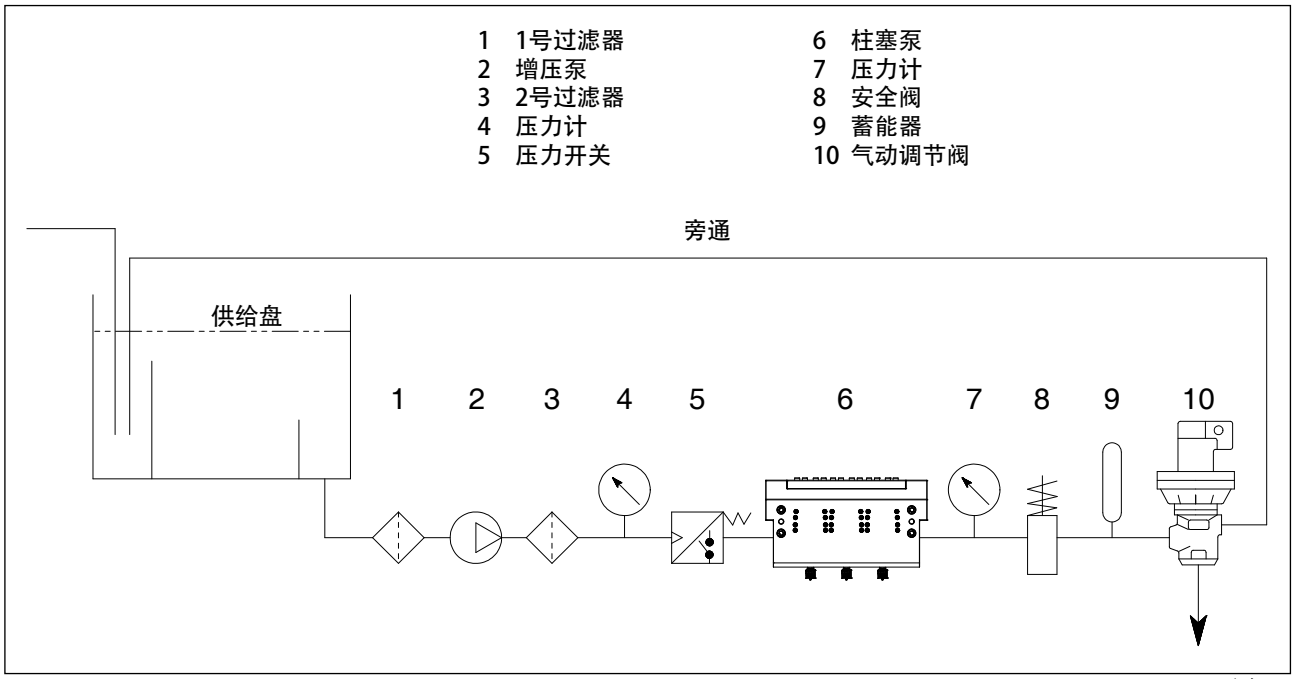



图9/a

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。**

## 9.7 输液线

为了铺设正确的输液管线，请遵守以下规定：

1. 管道内径必须能够保证正确的液体流速，请参阅9.8的表格。
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。

## 9.8 管道内径

下面的表格列出了吸入和输送管道的内径值。

| SR泵 | | |
|---|---|---|
| 型号 | 吸入 | 输送 |
| SR 50 | SAE 3” - 3000 PSI | SAE 1” 1/2 - 6000 PSI |
| SR 65 | SAE 3” - 3000 PSI | SAE 2” - 6000 PSI |
| SR 75 | SAE 3” - 3000 PSI | SAE 2” 1/2 - 6000 PSI |

| TR泵 | | |
|---|---|---|
| 型号 | 吸入 | 输送 |
| TR 50 | SAE 3” - 3000 PSI | SAE 1” 1/2 - 6000 PSI |
| TR 60 | SAE 3” - 3000 PSI | SAE 2” - 6000 PSI |
| TR 70 | SAE 3” - 3000 PSI | SAE 2” 1/2 - 6000 PSI |
| TR 75 | SAE 3” - 3000 PSI | SAE 2” 1/2 - 6000 PSI |

对于吸入和输送法兰的组合，请参阅“SR-TR吸入-输送法兰剖析图”图 7。
如有需要，请联系技术部或售后服务中心。

## 9.9 水/油交换器连接

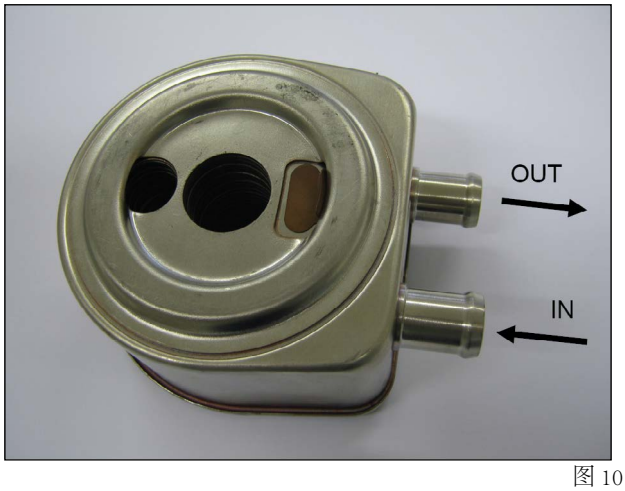
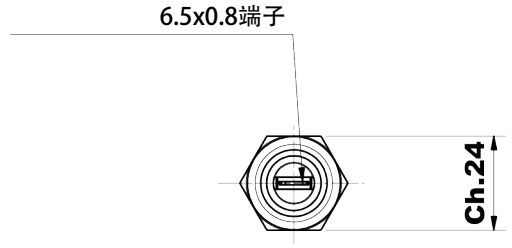



图 10

为了达到最佳的性能，应以逆流的方式连接交换器(请参阅图 10)。
水流量：
a) 最高效能25公升/分
b) 中等效能20公升/分
c) 最小效能12公升/分
如泵浦工作在5° C (41° F)以下的环境温度，可免除交换器的连接。
对于维护，请参阅第11章。

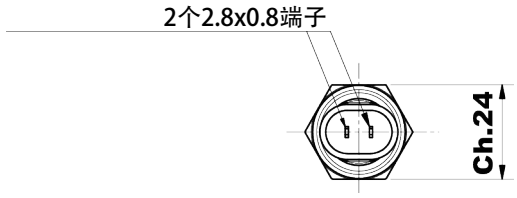
## 9.10 油泵组

1) 机油滤芯 - 用手拧紧；其维护请参阅第11章。
2) 0÷16巴压力计，用于定期检查润滑油。
3 压力开关：常开(常闭型为选配件)；电压12伏。
对于常驻机组，建议连接保护系统。
4) 机油恒温器：常闭；电压12伏。




**压力开关连接**

**介入压力：0.3 ±0.15巴**




**温度指示灯内部连接**

**介入温度：105° C±5° C**

**注意：两个传感器的电气连接应为非电磁式，或者以ATEX核准的等同特性的部件来替换压力开关和恒温器。**

# 10 起动和运行

## 10.1 预防性检查(起动前)

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. 吸入管线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. 利用曲轴箱盖上部的专用液面杆(位置1图 11和图11/a)来检查油泵曲轴箱盖内的油料是否应符合预期的水平。

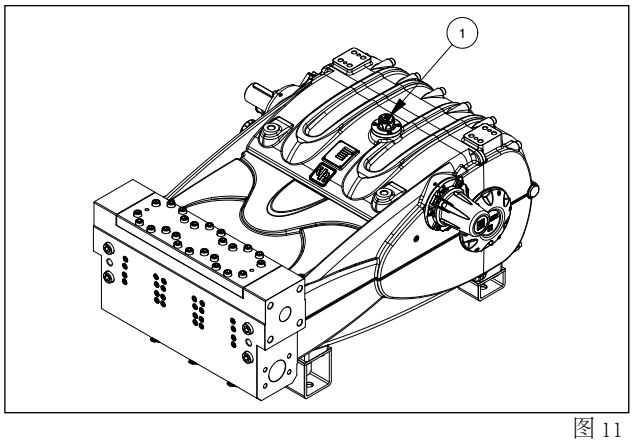



图 11

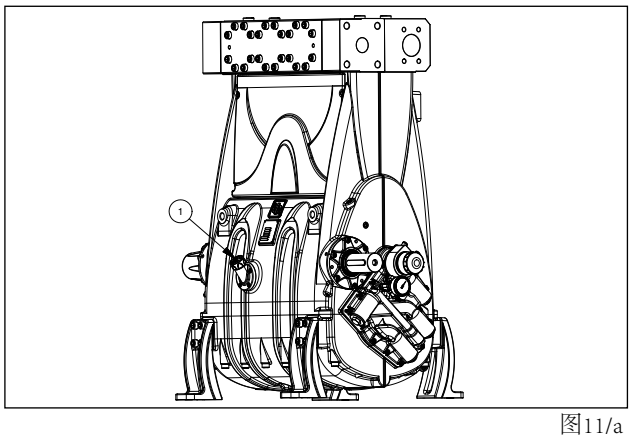



图11/a

**需要长时间存放或长时间不使用时，必须通过三个升阀装置检查吸入阀和输出阀的良好运作。(请参阅位置② 图 12)。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12/a。**

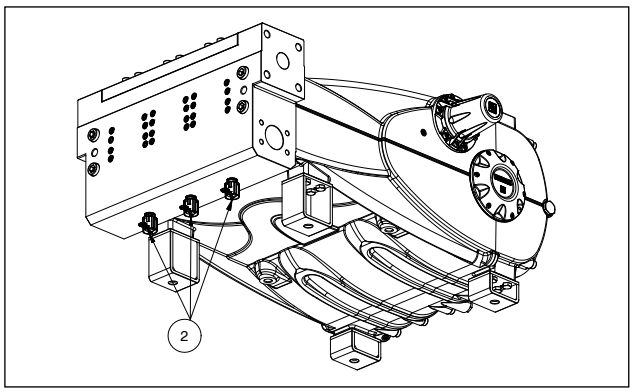



图 12

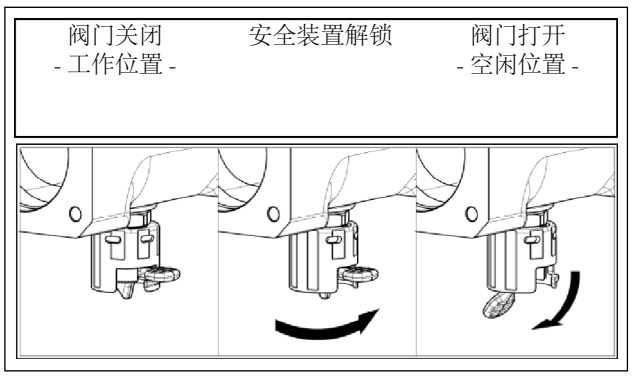



图12/a

## 10.2 起动

1. 检测泵浦的供给是否正确。
2. 无负载下起动泵浦。
3. 运行时检查转动转数是否超出标示数值。
4. 接通压力前，应让泵浦运行起码3分钟。
5. 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。

# 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1000小时** | **每1500小时** | **每3000小时** |
| 检查油面 | | |
| | 检查/更换*:<br>阀门<br>阀座<br>阀门弹簧<br>阀门导轨 | 更换机油和机油滤清器<br>更换膜盒(垂直型) |
| | 更换*:<br>高压密封<br>低压密封 | |

* 更换时请遵守**维修手册**中的指示进行。

## 11.1 膜盒(SR - TR垂直型)

在首**1000小时**的运行后，检查膜盒的固定箍的紧固状况。**每3000个工作小时应更换膜盒。**
更换时请遵守**维修手册**中的指示进行。

## 11.2 水/油交换器

交换器的清洁间隔应按照水质硬度来决定。建议**如水质硬度为≤ 30° 法国度的话每2000小时；如水质硬度为> 30° 和≤ 40° 法国度则每1000小时**进行清洁**超过40° 法国度的话建议每500小时进行清洁**。
清洁操作是以市面有售的除钙产品进行；无需进行拆卸。
备注：交换器的质料为**INOX (AISI 303)**。

**机械部分润滑环路保护：**应把设备预备成当油压降低时，油泵上安装的强制润滑压力开关就会停止SR-TR泵浦的运行

| 预防性维护 | |
|---|---|
| **主题** | **检查频繁度** |
| 检查润滑油压力计的调校 | 每10000小时 |
| 目视检查泵头的漏水状况 | 每500小时 |

## 12 泵浦存放

### 12.1 根据第9.6点的布局说明，利用外部膜泵来向泵浦加注防腐蚀乳剂或防冻剂

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



在一年里有可能结冰的时期，应遵循第12章(请参阅第12.1点)指出的内容进行。



**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) 预备的安全装置没有调节好或断开了连接。
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



**泵浦起动但没有流量：**
- 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。
- 安装的升压泵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。
- 压力密封圈泄漏过多。
- 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。
- 油泵曲轴箱盖里的油面不足或非第7章(参阅7.6一节)里所叙述的类型的油料。
- 联轴节或皮带轮校准不完美。
- 工作期间泵浦倾斜过度。



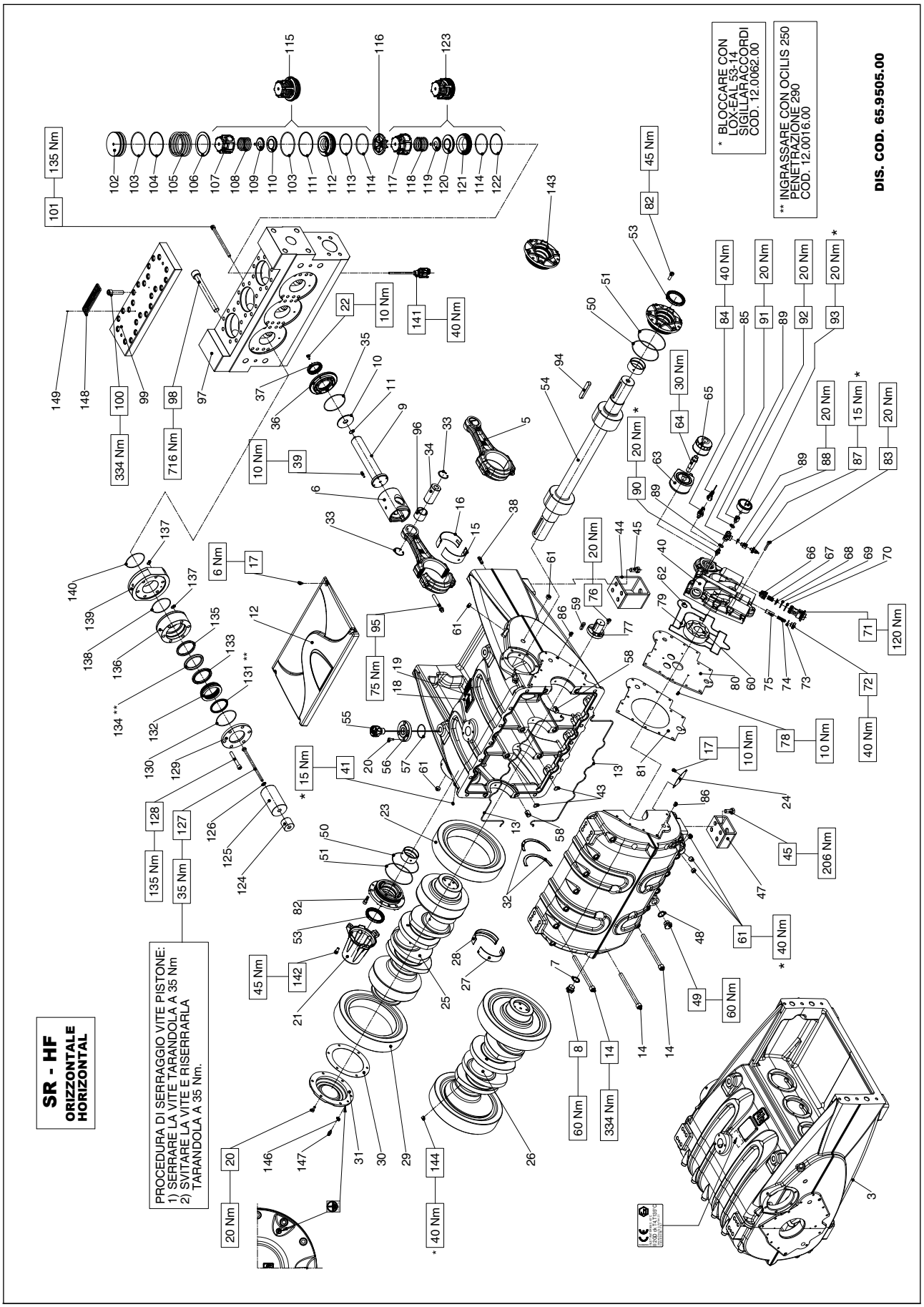
**管道震动或抖动：**
- 吸入空气。
- 压力调节阀运作不良。
- 阀门运作不良。
- 动力传动不协调。

## 15.1 故障查找和排障措施

| 故障 | 可能的原因 | 排障措施 |
|---|---|---|
| 起动泵浦时没有任何声音 | 没有供水。<br>阀门卡死。<br>输送线关闭且不允许泵头内的空气排除。 | 检查升压泵的运作和流量。<br>检查阀门的运作。<br>检查输送线上是否存在问题。 |
| 压力过低 | 泵浦正在吸入空气 | 查找泄漏并进行修理 |
| | 压力调节阀泄漏或压力设定错误。 | 排除泄漏并进行重设 |
| | 阀门密封圈套件存在缺陷 | 安装新密封圈 |
| | 吸入阀或排放阀受损 | 更换吸入或排放阀。检查阀门弹簧的状况。 |
| | 泵头泄漏 | 检查泵头密封圈，必须时予以更换；安装新泵头 |
| 泵浦噪音过大 | 阀门磨损。<br>吸入管道和/或滤清器太小。<br>流量不足、水温过高、滤清器堵塞。 | 检查吸入线路的安装和部件状况；检查水温 |
| 管道脉动 | 吸入空气和/或供料不足。<br>- 吸入线路的弯头、弯角、接头的液体被节流。<br>供料滤清器肮脏或太小。<br>升压泵提供的压力和/或流量不足。 | 检查吸入线路的安装和部件状况。<br>检查升压泵的运作和流量。<br>清洁或更换供料滤清器。 |
| 密封圈座泄漏 | 低压密封圈存在缺陷/磨损 | 更换低压密封圈 |
| 泵浦过热 | 压力和/或转速高于标定值。<br>油泵曲轴箱盖里的油面不足或非建议类型的油料。<br>联轴节或传动错位。 | 恢复压力和/或转速。<br>恢复液面水平，如有需要应予以添加。<br>检查传动部分。 |
| 泵浦曲轴箱盖漏油 | 活塞导杆油封存在缺陷/磨损。<br>曲轴箱盖的各个密封圈存在缺陷/磨损。<br>对于垂直型，检查膜盒的状况。 | 更换油封、膜盒或密封圈。 |
| 灌入的油从排放孔溢出。<br>液面杆可显示液面水平。 | 润滑油被泵送的液体污染。 | 检查活塞导杆(或膜盒)油封的正确运作并更换润滑油 |

# 16 剖析图和配件清单

## 16.1 SR水平型的剖析图和配件清单



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

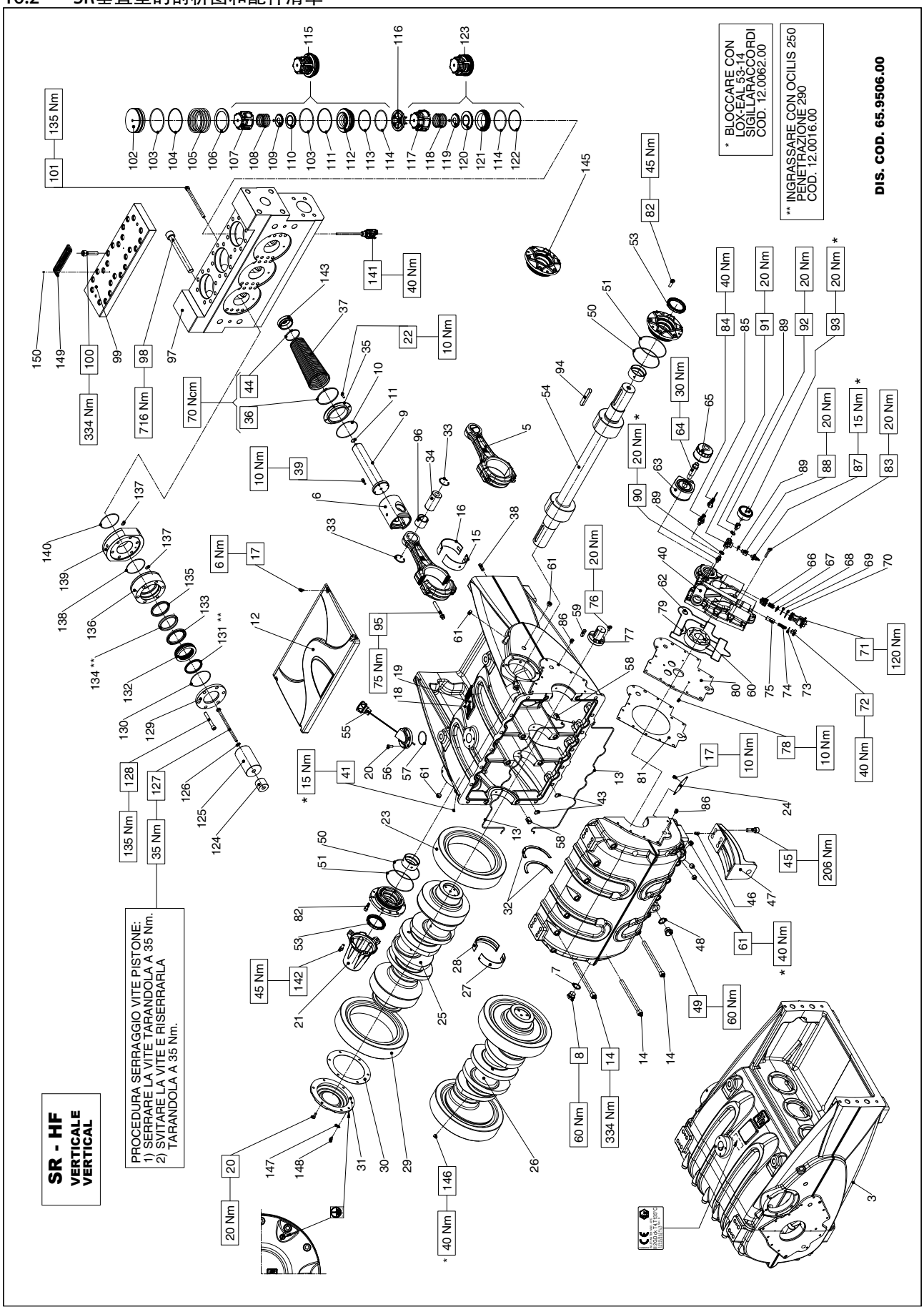
Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **93** | **94.6070.00** | **MANOMETRO ATT. POST. 0-16 D. 63** | | **1** |
| **94** | **91.5050.00** | **LINGUETTA 18x11x100 UNI 6604** | | **1** |
| **95** | **99.4410.00** | **VITE SERRAGGIO BIELLA** | | **6** |
| **96** | **90.9185.00** | **BOCCOLA PIEDE BIELLA** | | **3** |
| **97** | **65.1205.56** | **TESTATA LP** | | **1** |
| **98** | **99.5355.00** | **VITE M24x2x220 UNI 5931 8,8** | | **4** |
| **99** | **65.2120.56** | **COPERCHIO VALVOLE LP** | | **1** |
| **100** | **99.5149.00** | **VITE M16x65 UNI 5931 12,9** | | **24** |
| **101** | **99.4495.00** | **VITE M12x180 UNI 5931 12,9** | | **24** |
| **102** | **65.2121.56** | **TAPPO VALVOLA** | | **3** |
| **103** | **90.4146.00** | **OR D. 104,4x3,53 NBR SH. 70 4412** | **B** | **6** |
| **104** | **90.5345.00** | **ANELLO ANTIEST. D. 105,4x111,2x1,5** | **B** | **3** |
| **105** | **94.8050.00** | **MOLLA Dm. 103x87,5** | | **3** |
| **106** | **65.2139.56** | **ANELLO SEDE VALVOLA DI MANDATA** | | **3** |
| **107** | **36.2131.05** | **GUIDA VALVOLA DI MANDATA** | | **3** |
| **108** | **94.7745.00** | **MOLLA Dm. 56x57,3** | | **3** |
| **109** | **36.2129.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **110** | **36.2126.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **111** | **90.5340.00** | **ANELLO ANTIESTR. D. 105,2x111x1,5** | | **3** |
| **112** | **36.2121.56** | **SEDE VALVOLA DI MANDATA** | | **3** |
| **113** | **90.5315.00** | **ANELLO ANTIEST. D. 89,4x95,2x1,5** | | **3** |
| **114** | **90.4144.00** | **OR D. 88,5x3,53 NBR SH. 70 4350** | | **6** |
| **115** | **36.7227.01** | **GRUPPO VALVOLA DI MANDATA** | **B** | **3** |
| **116** | **65.2122.51** | **DISTANZIALE GUIDA VALVOLA** | **B** | **3** |
| **117** | **36.2130.05** | **GUIDA VALVOLA D'ASPIRAZIONE** | | **3** |
| **118** | **94.7755.00** | **MOLLA Dm. 58,5x103,1** | | **3** |
| **119** | **36.2128.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **120** | **36.2127.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **121** | **36.2120.56** | **SEDE VALVOLA D'ASPIRAZIONE** | | **3** |
| **122** | **90.5310.00** | **ANELLO ANTIEST. D. 89,2x95x1,5** | | **3** |
| **123** | **36.7226.01** | **GRUPPO VALVOLA D'ASPIRAZIONE** | **B** | **3** |
| **124** | **65.2119.66** | **DISTANZIALE PISTONE** | | **3** |
| 125 | 74.0402.09 | PISTONE D. 50x127 | | 3 |
| | 74.0405.09 | PISTONE D. 65x127 | | |
| | 65.0409.09 | PISTONE D. 70x127 | | |
| **126** | **96.7105.00** | **ROSETTA D. 10x18x0,9** | | **3** |
| **127** | **99.3865.00** | **VITE M10x200 UNI 5737 A2-70** | | **24** |
| **128** | **99.4418.00** | **VITE M12x90 UNI 5931 12,9** | | **18** |
| 129 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2132.56 | ANELLO SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 130 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A | |
| 131 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2890.00 | ANELLO TEN. ALT. D. 65x73x5,5 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 132 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2131.70 | SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 133 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2895.00 | ANELLO 'RESTOP' D. 65x80x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 134 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2893.00 | ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 135 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1005.92 | ANELLO DI TESTA D. 65 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 136 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0607.56 | CAMICIA PISTONE D. 65 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| **137** | **90.3830.00** | **OR D. 12,1x2,62 NBR SH. 70 117** | **A** | **6** |
| 138 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A | |
| 139 | 65.2123.56 | SUPPORTO CAMICIA D. 50 | | 3 |
| | 65.2124.56 | SUPPORTO CAMICIA D. 65-75 | | |
| **140** | **90.3917.00** | **OR D. 88,57x2,65 NBR SH. 70 3350** | **A** | **3** |
| **141** | **10.7449.01** | **DISPOSITIVO APERTURA VALVOLE** | | **1** |
| **142** | **99.3652.00** | **VITE M10x20 UNI 5931 12,9** | | **3** |
| **143** | **65.7005.01** | **COPERCHIO PTO + BOCCOLA PIGNONE** | | **2** |
| **144** | **99.4250.00** | **VITE M12x12 UNI 5923 12,9** | | **2** |
| **146** | **96.7017.50** | **ROSETTA D. 8,4x15x0,8 - ATEX** | | **1** |
| **147** | **99.3019.00** | **VITE M8x10 UNI 5931 A2-70 - ATEX** | | **1** |
| **148** | **97.8276.00** | **MARCHIO PRATISSOLI** | | **1** |
| **149** | **91.57030.0** | **RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346** | | **2** |

## 16.2 SR垂直型的剖析图和配件清单



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 |
| 10 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 12 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 |
| 35 | 65.2107.66 | FLANGIA PER SOFFIETTO | | 3 |
| 36 | 92.8110.00 | FASCETTA D. 98-109 | | 3 |
| 37 | 65.2110.47 | SOFFIETTO | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 |
| 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 44 | 92.8100.00 | FASCETTA D. 58-69 | | 3 |
| 45 | 99.5133.00 | VITE M16x35 UNI 5739 8,8 | | 16 |
| 46 | 97.6230.00 | SPINA D. 10x24 UNI 6364 | | 8 |
| 47 | 65.2007.13 | PIEDE VERTICALE | | 4 |
| 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 76 | 99.3039.00 | VITE M8x16 UNI 5931 8,8 | | 4 |
| 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |



中文

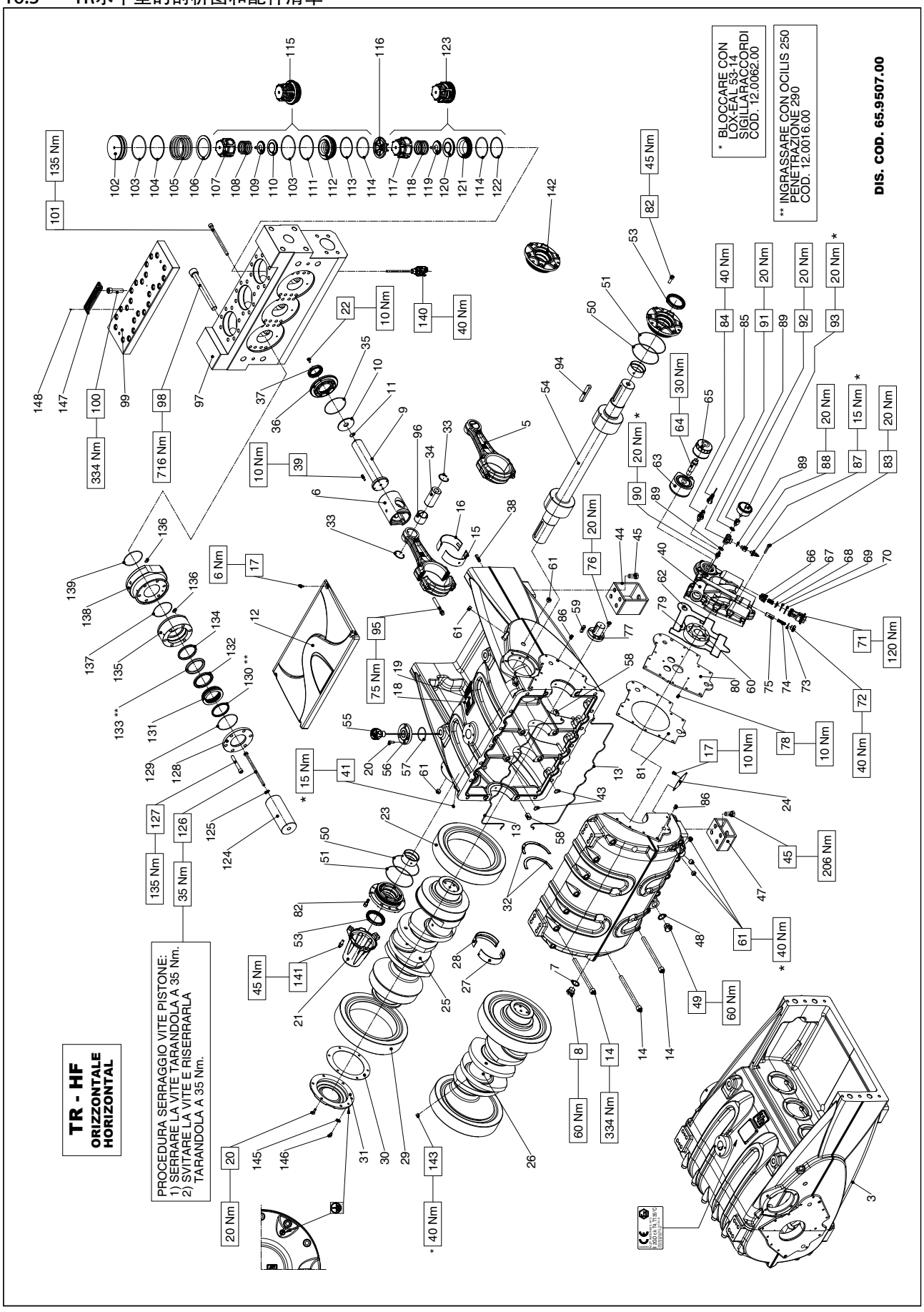
| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **92** | **95.2566.00** | **NIPPLO DI RIDUZIONE M-F G 1/4"** | | **1** |
| **93** | **94.6070.00** | **MANOMETRO ATT. POST. 0-16 D. 63** | | **1** |
| **94** | **91.5050.00** | **LINGUETTA 18x11x100 UNI 6604** | | **1** |
| **95** | **99.4410.00** | **VITE SERRAGGIO BIELLA** | | **6** |
| **96** | **90.9185.00** | **BOCCOLA PIEDE BIELLA** | | **3** |
| **97** | **65.1205.56** | **TESTATA LP** | | **1** |
| **98** | **99.5355.00** | **VITE M24x2x220 UNI 5931 8,8** | | **4** |
| **99** | **65.2120.56** | **COPERCHIO VALVOLE LP** | | **1** |
| **100** | **99.5149.00** | **VITE M16x65 UNI 5931 12,9** | | **24** |
| **101** | **99.4495.00** | **VITE M12x180 UNI 5931 12,9** | | **24** |
| **102** | **65.2121.56** | **TAPPO VALVOLA** | | **3** |
| **103** | **90.4146.00** | **OR D. 104,4x3,53 NBR SH. 70 4412** | **B** | **6** |
| **104** | **90.5345.00** | **ANELLO ANTIEST. D. 105,4x111,2x1,5** | **B** | **3** |
| **105** | **94.8050.00** | **MOLLA Dm. 103x87,5** | | **3** |
| **106** | **65.2139.56** | **ANELLO SEDE VALVOLA DI MANDATA** | | **3** |
| **107** | **36.2131.05** | **GUIDA VALVOLA DI MANDATA** | | **3** |
| **108** | **94.7745.00** | **MOLLA Dm. 56x57,3** | | **3** |
| **109** | **36.2129.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **110** | **36.2126.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **111** | **90.5340.00** | **ANELLO ANTIESTR. D. 105,2x111x1,5** | | **3** |
| **112** | **36.2121.56** | **SEDE VALVOLA DI MANDATA** | | **3** |
| **113** | **90.5315.00** | **ANELLO ANTIEST. D. 89,4x95,2x1,5** | | **3** |
| **114** | **90.4144.00** | **OR D. 88,5x3,53 NBR SH. 70 4350** | | **6** |
| **115** | **36.7227.01** | **GRUPPO VALVOLA DI MANDATA** | **B** | **3** |
| **116** | **65.2122.51** | **DISTANZIALE GUIDA VALVOLA** | **B** | **3** |
| **117** | **36.2130.05** | **GUIDA VALVOLA D'ASPIRAZIONE** | | **3** |
| **118** | **94.7755.00** | **MOLLA Dm. 58,5x103,1** | | **3** |
| **119** | **36.2128.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **120** | **36.2127.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **121** | **36.2120.56** | **SEDE VALVOLA D'ASPIRAZIONE** | | **3** |
| **122** | **90.5310.00** | **ANELLO ANTIEST. D. 89,2x95x1,5** | | **3** |
| **123** | **36.7226.01** | **GRUPPO VALVOLA D'ASPIRAZIONE** | **B** | **3** |
| **124** | **65.2119.66** | **DISTANZIALE PISTONE** | | **3** |
| 125 | 74.0402.09<br>74.0405.09<br>65.0409.09 | PISTONE D. 50x127<br>PISTONE D. 65x127<br>PISTONE D. 70x127 | | 3 |
| **126** | **96.7105.00** | **ROSETTA D. 10x18x0,9** | | **3** |
| **127** | **99.3865.00** | **VITE M10x200 UNI 5737 A2-70** | | **24** |
| **128** | **99.4418.00** | **VITE M12x90 UNI 5931 12,9** | | **18** |
| 129 | 65.2128.56<br>65.2132.56<br>65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 50<br>ANELLO SUPPORTO GUARNIZIONI D. 65<br>ANELLO SUPPORTO GUARNIZIONI D. 75 | | 3 |
| 130 | 90.3913.50<br>90.3916.00<br>90.3918.00 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50<br>OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65<br>OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A<br>A<br>A | 3 |
| 131 | 90.2860.00<br>90.2890.00<br>90.2910.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP<br>ANELLO TEN. ALT. D. 65x73x5,5 LP<br>ANELLO TEN. ALT. D. 75x85x5,5 LP | A<br>A<br>A | 3 |
| 132 | 65.2127.70<br>65.2131.70<br>65.2135.70 | SUPPORTO GUARNIZIONI D. 50<br>SUPPORTO GUARNIZIONI D. 65<br>SUPPORTO GUARNIZIONI D. 75 | | 3 |
| 133 | 90.2865.00<br>90.2895.00<br>90.2912.00 | ANELLO 'RESTOP' D. 50x58x8/4,5<br>ANELLO 'RESTOP' D. 65x80x8/4,5<br>ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A<br>A<br>A | 3 |
| 134 | 90.2863.00<br>90.2893.00<br>90.2914.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP<br>ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP<br>ANELLO TEN. ALT. D. 75x95x10/6 HP | A<br>A<br>A | 3 |
| 135 | 74.1002.92<br>74.1005.92<br>65.1006.92 | ANELLO DI TESTA D. 50<br>ANELLO DI TESTA D. 65<br>ANELLO DI TESTA D. 75 | | 3 |
| 136 | 65.0605.56<br>65.0607.56<br>65.0609.56 | CAMICIA PISTONE D. 50<br>CAMICIA PISTONE D. 65<br>CAMICIA PISTONE D. 75 | | 3 |
| **137** | **90.3830.00** | **OR D. 12,1x2,62 NBR SH. 70 117** | **A** | **6** |
| 138 | 90.3913.50<br>90.3917.00 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50<br>OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A<br>A | 3 |
| 139 | 65.2123.56<br>65.2124.56 | SUPPORTO CAMICIA D. 50<br>SUPPORTO CAMICIA D. 65-75 | | 3 |
| **140** | **90.3917.00** | **OR D. 88,57x2,65 NBR SH. 70 3350** | **A** | **3** |
| **141** | **10.7449.01** | **DISPOSITIVO APERTURA VALVOLE** | | **1** |
| **142** | **99.3652.00** | **VITE M10x20 UNI 5931 12,9** | | **3** |
| **143** | **65.2106.66** | **PARASPRUZZI PER SOFFIETTO** | | **3** |
| **145** | **65.7005.01** | **COPERCHIO PTO + BOCCOLA PIGNONE** | | **2** |
| **146** | **99.4250.00** | **VITE M12x12 UNI 5923 12,9** | | **2** |
| **147** | **96.7017.50** | **ROSETTA D. 8,4x15x0,8 - ATEX** | | **1** |
| **148** | **99.3019.00** | **VITE M8x10 UNI 5931 A2-70 - ATEX** | | **1** |
| **149** | **97.8276.00** | **MARCHIO PRATISSOLI** | | **1** |
| **150** | **91.5703.00** | **RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346** | | **2** |

## 16.3 TR水平型的剖析图和配件清单



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

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**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 3 | 65.0109.01 | CARTER - COMPLETO | | 1 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 |
| 25 | 65.0206.55 | ALBERO A GOMITI C. 130 | | 1 |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 |
| 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

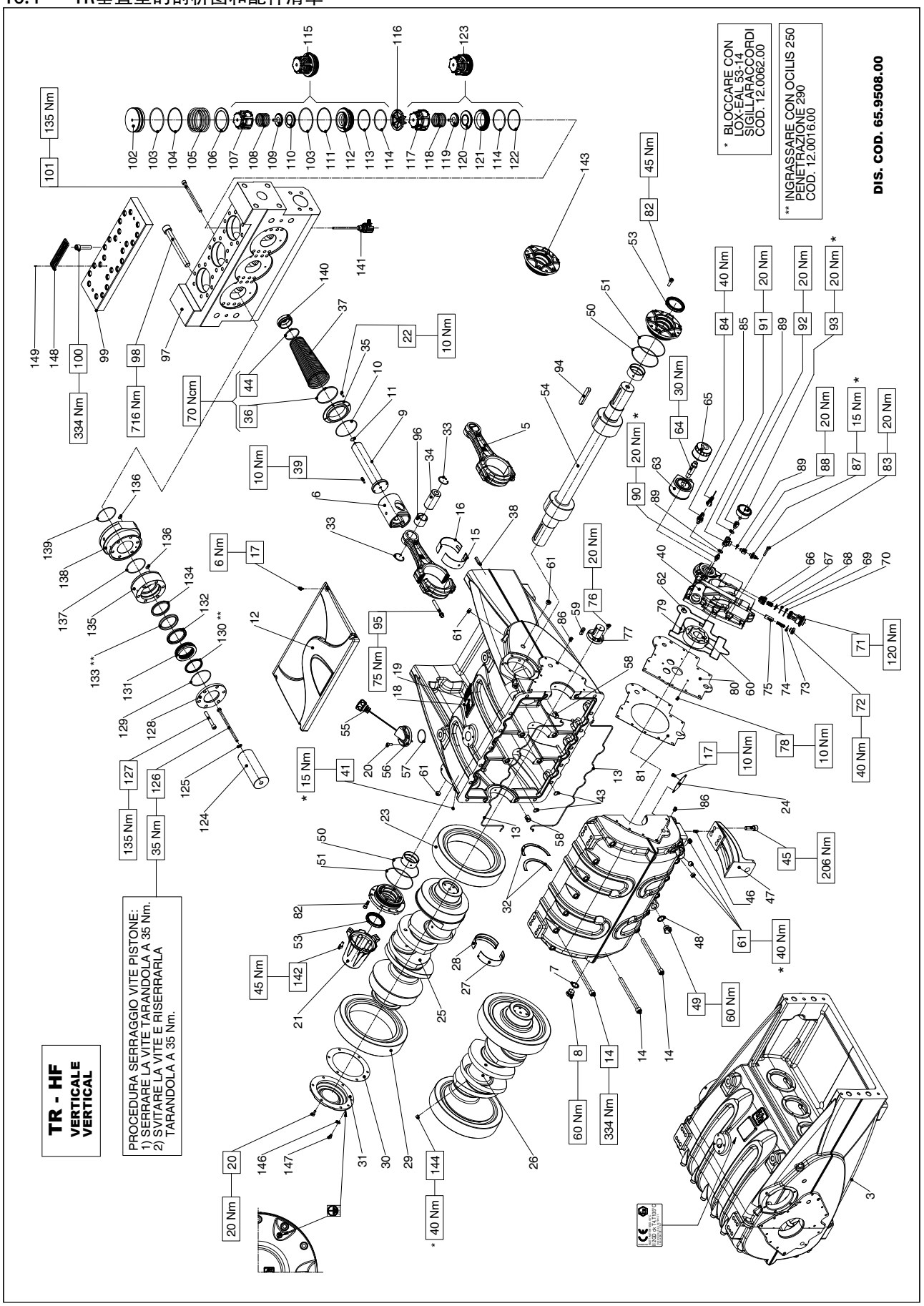
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**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **93** | **94.6070.00** | **MANOMETRO ATT. POST. 0-16 D. 63** | | **1** |
| **94** | **91.5050.00** | **LINGUETTA 18x11x100 UNI 6604** | | **1** |
| **95** | **99.4410.00** | **VITE SERRAGGIO BIELLA** | | **6** |
| **96** | **90.9185.00** | **BOCCOLA PIEDE BIELLA** | | **3** |
| **97** | **65.1205.56** | **TESTATA LP** | | **1** |
| **98** | **99.5355.00** | **VITE M24x2x220 UNI 5931 8,8** | | **4** |
| **99** | **65.2120.56** | **COPERCHIO VALVOLE LP** | | **1** |
| **100** | **99.5149.00** | **VITE M16x65 UNI 5931 12,9** | | **24** |
| **101** | **99.4495.00** | **VITE M12x180 UNI 5931 12,9** | | **24** |
| **102** | **65.2121.56** | **TAPPO VALVOLA** | | **3** |
| **103** | **90.4146.00** | **OR D. 104,4x3,53 NBR SH. 70 4412** | **B** | **6** |
| **104** | **90.5345.00** | **ANELLO ANTIEST. D. 105,4x111,2x1,5** | **B** | **3** |
| **105** | **94.8050.00** | **MOLLA Dm. 103x87,5** | | **3** |
| **106** | **65.2139.56** | **ANELLO SEDE VALVOLA DI MANDATA** | | **3** |
| **107** | **36.2131.05** | **GUIDA VALVOLA DI MANDATA** | | **3** |
| **108** | **94.7745.00** | **MOLLA Dm. 56x57,3** | | **3** |
| **109** | **36.2129.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **110** | **36.2126.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **111** | **90.5340.00** | **ANELLO ANTIESTR. D. 105,2x111x1,5** | | **3** |
| **112** | **36.2121.56** | **SEDE VALVOLA DI MANDATA** | | **3** |
| **113** | **90.5315.00** | **ANELLO ANTIEST. D. 89,4x95,2x1,5** | | **3** |
| **114** | **90.4144.00** | **OR D. 88,5x3,53 NBR SH. 70 4350** | | **6** |
| **115** | **36.7227.01** | **GRUPPO VALVOLA DI MANDATA** | **B** | **3** |
| **116** | **65.2122.51** | **DISTANZIALE GUIDA VALVOLA** | **B** | **3** |
| **117** | **36.2130.05** | **GUIDA VALVOLA D'ASPIRAZIONE** | | **3** |
| **118** | **94.7755.00** | **MOLLA Dm. 58,5x103,1** | | **3** |
| **119** | **36.2128.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **120** | **36.2127.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **121** | **36.2120.56** | **SEDE VALVOLA D'ASPIRAZIONE** | | **3** |
| **122** | **90.5310.00** | **ANELLO ANTIEST. D. 89,2x95x1,5** | | **3** |
| **123** | **36.7226.01** | **GRUPPO VALVOLA D'ASPIRAZIONE** | **B** | **3** |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| **125** | **96.7105.00** | **ROSETTA D. 10x18x0,9** | | **3** |
| **126** | **99.3865.00** | **VITE M10x200 UNI 5737 A2-70** | | **24** |
| **127** | **99.4418.00** | **VITE M12x90 UNI 5931 12,9** | | **18** |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| **136** | **90.3830.00** | **OR D. 12,1x2,62 NBR SH. 70 117** | **A** | **6** |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 62.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| **139** | **90.3917.00** | **OR D. 88,57x2,65 NBR SH. 70 3350** | **A** | **3** |
| **140** | **10.7449.01** | **DISPOSITIVO APERTURA VALVOLE** | | **1** |
| **141** | **99.3652.01** | **VITE M10x20 UNI 5931 12,10** | | **4** |
| **142** | **65.7005.01** | **COPERCHIO PTO + BOCCOLA PIGNONE** | | **2** |
| **143** | **99.4250.00** | **VITE M12x12 UNI 5923 12,9** | | **2** |
| **145** | **96.7017.50** | **ROSETTA D. 8,4x15x0,8 - ATEX** | | **1** |
| **146** | **99.3019.00** | **VITE M8x10 UNI 5931 A2-70 - ATEX** | | **1** |
| **147** | **97.8276.00** | **MARCHIO PRATISSOLI** | | **1** |
| **148** | **91.5703.00** | **RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346** | | **2** |

## 16.4 TR垂直型的剖析图和配件清单



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **3** | **65.0109.01** | **CARTER - COMPLETO** | | **1** |
| **5** | **65.0306.01** | **BIELLA - COMPLETA** | | **3** |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | |
| **7** | **93.1980.00** | **ROSETTA DI TENUTA D. 3/4"** | | **1** |
| **8** | **98.2265.00** | **TAPPO G 3/4"x16** | | **1** |
| **9** | **65.0505.66** | **STELO GUIDA PISTONE** | | **3** |
| **10** | **90.3920.00** | **OR D. 101,27x2,62 NBR SH. 70 3400** | | **3** |
| **11** | **90.3596.00** | **OR D. 18,77x1,78 NBR SH. 70 2075** | | **3** |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | |
| **13** | **65.2140.82** | **GUARNIZIONE D. 3,53x530** | | **2** |
| **14** | **99.5224.00** | **VITE M16x200 UNI 5931 12,9** | | **22** |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | |
| **17** | **99.1820.00** | **VITE M6x12 DIN 6921 8,8** | | **8** |
| **18** | **91.5700.00** | **RIVETTO AUTOF. D. 2,5x5 UNI 7346** | | **4** |
| **19** | **97.8268.00** | **TARGHETTA POMPA** | | **1** |
| **20** | **99.3059.00** | **VITE M 8x20 UNI 5931 8,8** | | **10** |
| **21** | **65.1509.20** | **COPERCHIO ESTREMITA' ALBERO** | | **1** |
| **22** | **99.1853.00** | **VITE M6x16 UNI 5931 12,9** | | **12** |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | |
| **24** | **65.2108.74** | **RETINA FILTRO OLIO** | | **1** |
| **25** | **65.0206.55** | **ALBERO A GOMITI C. 130** | | **1** |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | |
| **30** | **65.2109.84** | **GUARNIZIONE COPERCHIO LATERALE** | | **1** |
| **31** | **65.1506.20** | **COPERCHIO ALBERO A GOMITI** | | **1** |
| **32** | **90.9353.00** | **SEMIANELLO DI SPALLAMENTO** | **C** | **2** |
| **33** | **90.0755.00** | **ANELLO SEEGER D. 45** | | **6** |
| **34** | **97.7470.00** | **SPINOTTO D. 45x86** | | **3** |
| **35** | **65.2107.66** | **FLANGIA PER SOFFIETTO** | | **3** |
| **36** | **92.8110.00** | **FASCETTA D. 98-109** | | **3** |
| **37** | **65.2110.47** | **SOFFIETTO** | | **3** |
| **38** | **97.6300.00** | **SPINA D. 12x40 UNI 6364** | | **2** |
| **39** | **99.1897.00** | **VITE M6x25 UNI 5931 8,8** | | **12** |
| **40** | **79.2124.20** | **CORPO POMPA OLIO** | | **1** |
| **41** | **98.1930.00** | **TAPPO CONICO M8x1 DIN 906** | | **2** |
| **43** | **90.3845.00** | **OR D. 18,72x2,62 NBR SH. 70 3075** | | **4** |
| **44** | **92.8100.00** | **FASCETTA D. 58-69** | | **3** |
| **45** | **99.5133.00** | **VITE M 16x35 UNI 5739 8,8** | | **16** |
| **46** | **97.6230.00** | **SPINA D. 10x24 UNI 6364** | | **8** |
| **47** | **65.2007.13** | **PIEDE VERTICALE** | | **4** |
| **48** | **93.1980.00** | **ROSETTA DI TENUTA G 3/4"** | | **1** |
| 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| **50** | **90.3926.50** | **OR D. 126,67x2,62 NBR SH. 70 3500** | | **2** |
| **51** | **90.3805.00** | **OR D. 132,00x2,50 NBR SH. 70** | | **2** |
| **53** | **90.1900.00** | **ANELLO RAD. D. 70x90x10** | | **2** |
| 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| **56** | **65.2112.54** | **SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE** | | **1** |
| **57** | **90.3898.00** | **OR D. 56,82x2,62 NBR SH. 70 3225** | | **1** |
| **58** | **79.2116.89** | **BUSSOLA CENTRAGGIO CARTER-SUPPORTO** | | **4** |
| **59** | **91.4995.00** | **LINGUETTA 12x8x40 UNI 6604** | | **1** |
| **60** | **79.2119.07** | **ASSIEME ROTORI POMPA OLIO H=35** | | **1** |
| **61** | **98.2155.00** | **TAPPO CONICO M20x1,5 DIN 906** | | **6** |
| **62** | **90.3852.00** | **OR D. 22,22x2,62 NBR SH. 70 130** | | **6** |
| **63** | **65.2137.00** | **SCAMBIATORE ACQUA-OLIO** | | **1** |
| **64** | **65.2138.64** | **RACCORDO SCAMBIATORE FILTRO OLIO** | | **1** |
| **65** | **92.8990.00** | **FILTRO OLIO M20** | | **1** |
| **66** | **36.2009.51** | **GUIDA VALVOLA ASPIRAZIONE / MANDATA** | | **4** |
| **67** | **94.7440.00** | **MOLLA Dm. 15,4x26,5** | | **4** |
| **68** | **36.2010.76** | **VALVOLA SFERICA** | | **4** |
| **69** | **90.3865.00** | **OR D. 29,82x2,62 NBR SH. 70 3118** | | **4** |
| **70** | **90.3873.00** | **OR D. 36,14x2,62 NBR SH. 70 3143** | | **4** |
| **71** | **79.2139.64** | **CARTUCCIA VALVOLA** | | **4** |
| **72** | **98.2137.80** | **TAPPO M18x11** | | **1** |
| **73** | **96.7410.00** | **RONDELLA D. 18,2x24x1,5** | | **1** |
| **74** | **94.7390.00** | **MOLLA Dm. 10,8x37,9** | | **1** |
| **75** | **79.2136.64** | **PISTONCINO VALVOLA SOVRAPRESSIONE** | | **1** |
| **76** | **99.3039.00** | **VITE M 8x16 UNI 5931 8,8** | | **4** |
| **77** | **79.2126.54** | **CODOLO COMANDO ROTORI POMPA OLIO** | | **1** |
| **78** | **99.1851.00** | **VITE M6x16 UNI 5933 8,8** | | **3** |
| **79** | **79.2127.47** | **GUARNIZIONE CORPO POMPA OLIO** | | **1** |
| **80** | **79.2128.74** | **PIASTRA POMPA OLIO** | | **1** |
| **81** | **79.2129.84** | **GUARNIZIONE PIASTRA POMPA OLIO** | | **1** |
| **82** | **99.3686.00** | **VITE M10x30 UNI 5931 8,8** | | **12** |
| **83** | **99.3116.00** | **VITE M8x40 UNI 5931 8,8** | | **15** |
| **84** | **93.5105.00** | **INTERRUTTORE SPIA TEMPERATURA** | | **1** |
| **85** | **93.5515.00** | **CONNETTORE INTER. SPIA TEMPERATURA** | | **1** |
| **86** | **79.2135.89** | **BUSSOLA CENTRAGGIO POMPA OLIO** | | **2** |
| **87** | **93.5555.00** | **PRESSOSTATO 0,3 N.A. 12V** | | **1** |
| **88** | **94.5131.00** | **RACCORDO M-F G 1/4"- M 10x1** | | **1** |
| **89** | **96.7230.00** | **ROSETTA D. 13,5x19x1,5** | | **3** |
| **90** | **95.2560.00** | **RACCORDO M-M NPT 1/4" - G 1/4"** | | **1** |
| **91** | **96.3100.00** | **RACCORDO T F-F-F G 1/4"** | | **1** |

| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| 125 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 126 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 127 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 136 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 65.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| 139 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 140 | 65.2106.66 | PARASPRUZZI PER SOFFIETTO | | 3 |
| 141 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 142 | 99.3652.00 | VITE M10x20 UNI 5931 12,9 | | 3 |
| 143 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 144 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 146 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 147 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 148 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 149 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

## 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：SR50 - SR65 - SR75
TR50 - TR60 - TR70 - TR75

符合机械指令2006/42/CE。

适用标准：UNI EN ISO 12100:2010 - UNI EN 809:2000

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。

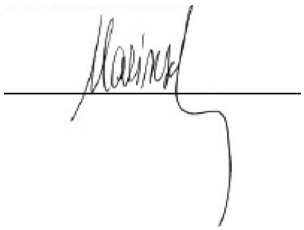
授权编写技术资料人

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

授权书写声明人：Paolo Marinsek工程师，执行董事

Reggio Emilia - 2014年2月

签名：



## 仅对以ATEX配置的泵浦

## CE标准符合声明

(根据欧洲标准94/4/CE - ATEX的附件X)

**INTERPUMP GROUP S.p.a.- Via E. Fermi, 25 - 42049 - S- ILARIO D'ENZA - Italia**

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 - PRATISSOLI

型号：SR50 - SR65 - SR75
TR50 - TR60 - TR70 - TR75

以 Ex II组，2 GD类别识别，ck防护并温度等级为T4/T135°C，当订购ATEX泵浦时，符合94/9/CE ATEX准则并可在带有潜在爆炸危险的限制区域中，按照性能指示以及安装和使用符合本手册、综合手册和/或每个泵浦的专用手册中的说明使用。

制造商将采取一切必须措施来保证生产的泵浦产品符合声明的内容。

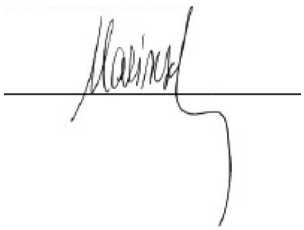
适用欧洲标准：
UNI EN 1127-1:2011；UNI EN 13463-1:2009；UNI EN 13463-5:2011；UNI EN 13463-8:2003

呈送DNV ITALIA的技术文献(**N° 0496**)

Paolo Marinsek工程师，执行董事

Reggio Emilia - 2014年2月

签名：



**شهادة وبيان**

(وفقاً للمرفق II الخاص بالتوجيه الأوروبي CE/42/2006)

الشركة المنتجة **INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 - 42049 - S- ILARIO D'ENZA - Italia تقر** على مسؤليتها الخاصة بأن المنتج المحدد والموصوف بما يلي:

الاسم: مضخة

النوع: مضخة تبادلية بمكابس لمياه بالضغط العالي

العلامة التجارية للمصنع: INTERPUMP GROUP

الموديل: SR50 - SR65 - SR75
TR50 - TR60 - TR70 - TR75

أنه مطابق للمواصفات وللتوجيه الأوربي الخاص بالآلات CE/2006/42

المعايير المطبّقة: UNI EN ISO 12100:2010 - UNI EN 809:2000

تحترم المضخة المذكورة والموصوفة أعلاه وتلبي جميع المتطلبات الأساسية الخاصة بالأمن والسلامة والمتعلقة بالمحافظة على الصحة المذكورة في النقطة 1 من المرفق I الخاص بالتوجيه الأوروبي للآلات:

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، بناءا 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. - Via E. Fermi, 25 - S- ILARIO D'ENZA (RE) - Italia - 42049

الشخص المصرح له إعادة صياغة البيان: المدير المفوض المهندس. Paolo Marinsek

Reggio Emilia - فبراير 2014 التوقيع:



**فقط للمضخات المطلوبة بتهيئة ATEX.**

**تصريح المطابقة EC**

(وفقاً للمرفق × الخاص بالتوجيه الأوروبي CE/4/94)

الشركة المنتجة **INTERPUMP GROUP S.p.a. - Via E. Fermi, 25 - 42049 - S- ILARIO D'ENZA - Italia تقر** على مسؤليتها الخاصة بأن المضخات المحددة والموصوفة بما يلي:

الاسم: مضخة

النوع: مضخة تبادلية بمكابس لمياه بالضغط العالي

العلامة التجارية للمصنع: INTERPUMP GROUP - PRATISSOLI

الموديل: SR50 - SR65 - SR75
TR50 - TR60 - TR70 - TR75

المحددة بـ ⟨Ex⟩ المجموعة||، الفئة 2 GD، الحماية ck مع صنف الحرارة T4/T135°C، عند طلبها كمضخات ATEX، هي مطابقة للتوجيه الأوروبي CE/94/9 ATEX ويمكن استخدامها في المناطق المعرضة للانفجارات بموجب حدود وقيود المناطق المصنفة، مع الالتزام بالأداءات المصرح بها والتي يتم تركيبها واستخدامها بموجب التعليمات الموجودة في هذا الدليل وفي الدليل العام و/أو في الدليل الخاص بكل مضخة.

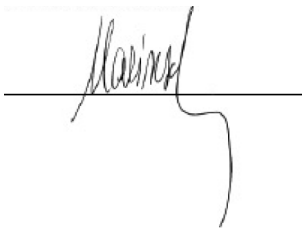
يلتزم المُصنع بجميع المعايير اللازمة لضمان تصنيع المضخة بشكل يطابق ما هو مُصرّح.

المعايير الأوروبية المطبّقة:
UNI EN 1127-1:2011; UNI EN 13463-1:2009; UNI EN 13463-5:2011; UNI EN 13463-8:2003

تم وضع الملف التقني لدى DNV ITALIA ( **تحت الرقم 0496**)

المدير المفوض المهندس. Paolo Marinsek

Reggio Emilia - فبراير 2014 التوقيع:



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| 125 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 126 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 127 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 136 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 65.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| 139 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 140 | 65.2106.66 | PARASPRUZZI PER SOFFIETTO | | 3 |
| 141 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 142 | 99.3652.00 | VITE M10x20 UNI 5931 12,9 | | 3 |
| 143 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 144 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 146 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 147 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 148 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 149 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

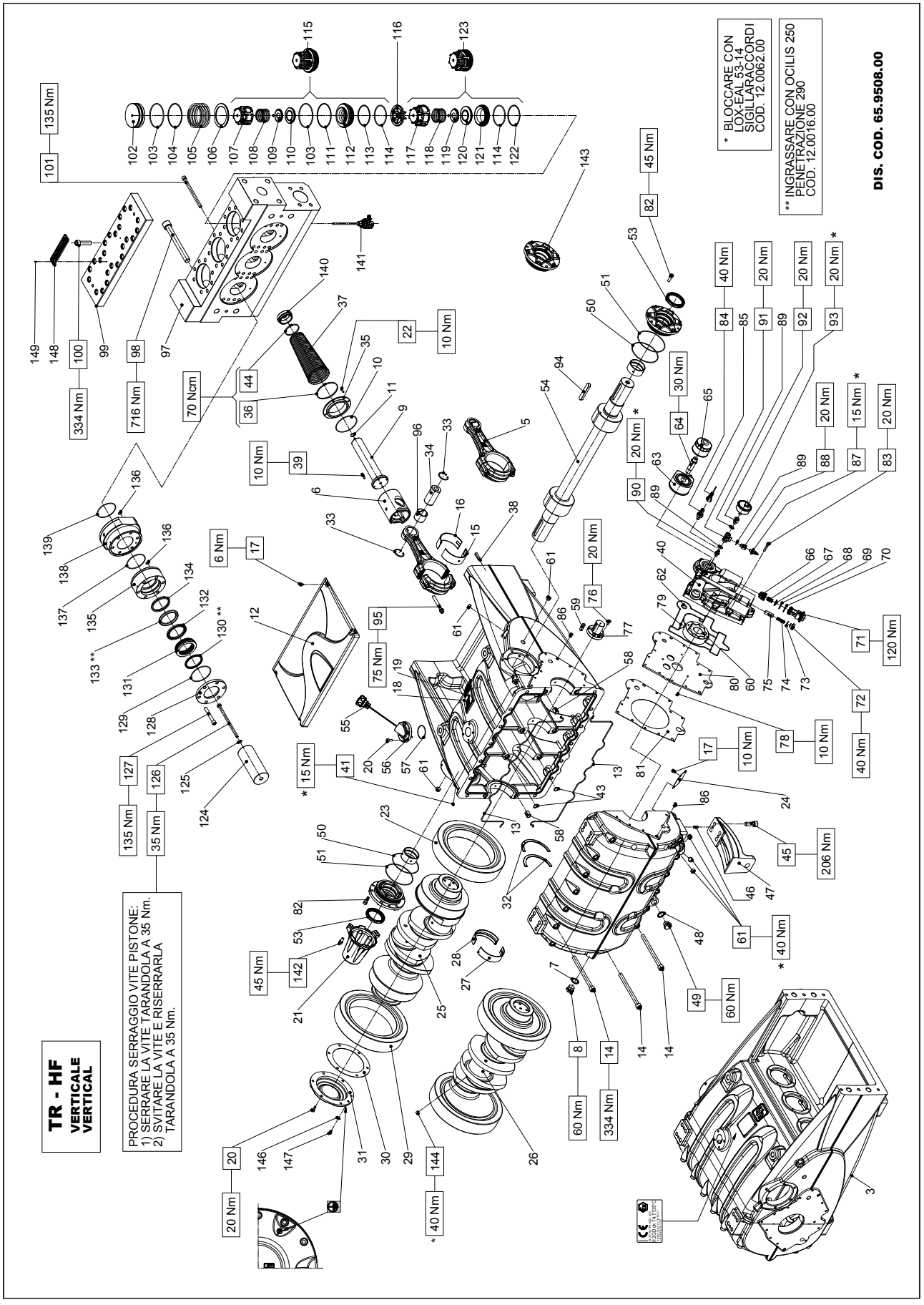
| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 3 | 65.0109.01 | CARTER - COMPLETO | | 1 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 |
| 10 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 12 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 |
| 25 | 65.0206.55 | ALBERO A GOMITI C. 130 | | 1 |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 |
| 35 | 65.2107.66 | FLANGIA PER SOFFIETTO | | 3 |
| 36 | 92.8110.00 | FASCETTA D. 98-109 | | 3 |
| 37 | 65.2110.47 | SOFFIETTO | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 |
| 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 44 | 92.8100.00 | FASCETTA D. 58-69 | | 3 |
| 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 46 | 97.6230.00 | SPINA D. 10x24 UNI 6364 | | 8 |
| 47 | 65.2007.13 | PIEDE VERTICALE | | 4 |
| 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |

## 4.16 شكل توضيحي لقطع الغيار المختلفة لـ TR في الإصدار الرأسي



| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.0405.09 | PISTONE D. 50x180 | | 3 |
| | 65.0406.09 | PISTONE D. 60x180 | | |
| | 65.0407.09 | PISTONE D. 70x180 | | |
| | 65.0408.09 | PISTONE D. 80x180 | | |
| 125 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 126 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 127 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 128 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2130.56 | ANELLO SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2134.56 | ANELLO SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 129 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 D. 60 | A | |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 D. 70 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 D. 75 | A | |
| 130 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2880.00 | ANELLO TEN. ALT. D. 60x68x5,5 LP | A | |
| | 90.2900.00 | ANELLO TEN. ALT. D. 70x80x5,4 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |
| 131 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2129.70 | SUPPORTO GUARNIZIONI D. 60 | | |
| | 65.2133.70 | SUPPORTO GUARNIZIONI D. 70 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 132 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2885.00 | ANELLO 'RESTOP' D. 60x76x8/4,5 | A | |
| | 90.2902.00 | ANELLO 'RESTOP' D. 70x85x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 133 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2883.00 | ANELLO TEN. ALT. D. 60x76x8/4,8 HP | A | |
| | 90.2904.00 | ANELLO TEN. ALT. D. 70x85x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 134 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1004.92 | ANELLO DI TESTA D. 60 | | |
| | 65.1005.92 | ANELLO DI TESTA D. 70 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 135 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0606.56 | CAMICIA PISTONE D. 60 | | |
| | 65.0608.56 | CAMICIA PISTONE D. 70 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 136 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 137 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50-60 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 70-75 | A | |
| 138 | 65.2125.56 | SUPPORTO CAMICIA D. 60 | | 3 |
| | 65.2126.56 | SUPPORTO CAMICIA D. 70-75 | | |
| | 62.2146.56 | SUPPORTO CAMICIA D. 50 | | |
| 139 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 140 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 141 | 99.3652.01 | VITE M10x20 UNI 5931 12,10 | | 4 |
| 142 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 143 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 145 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 146 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 147 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 148 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

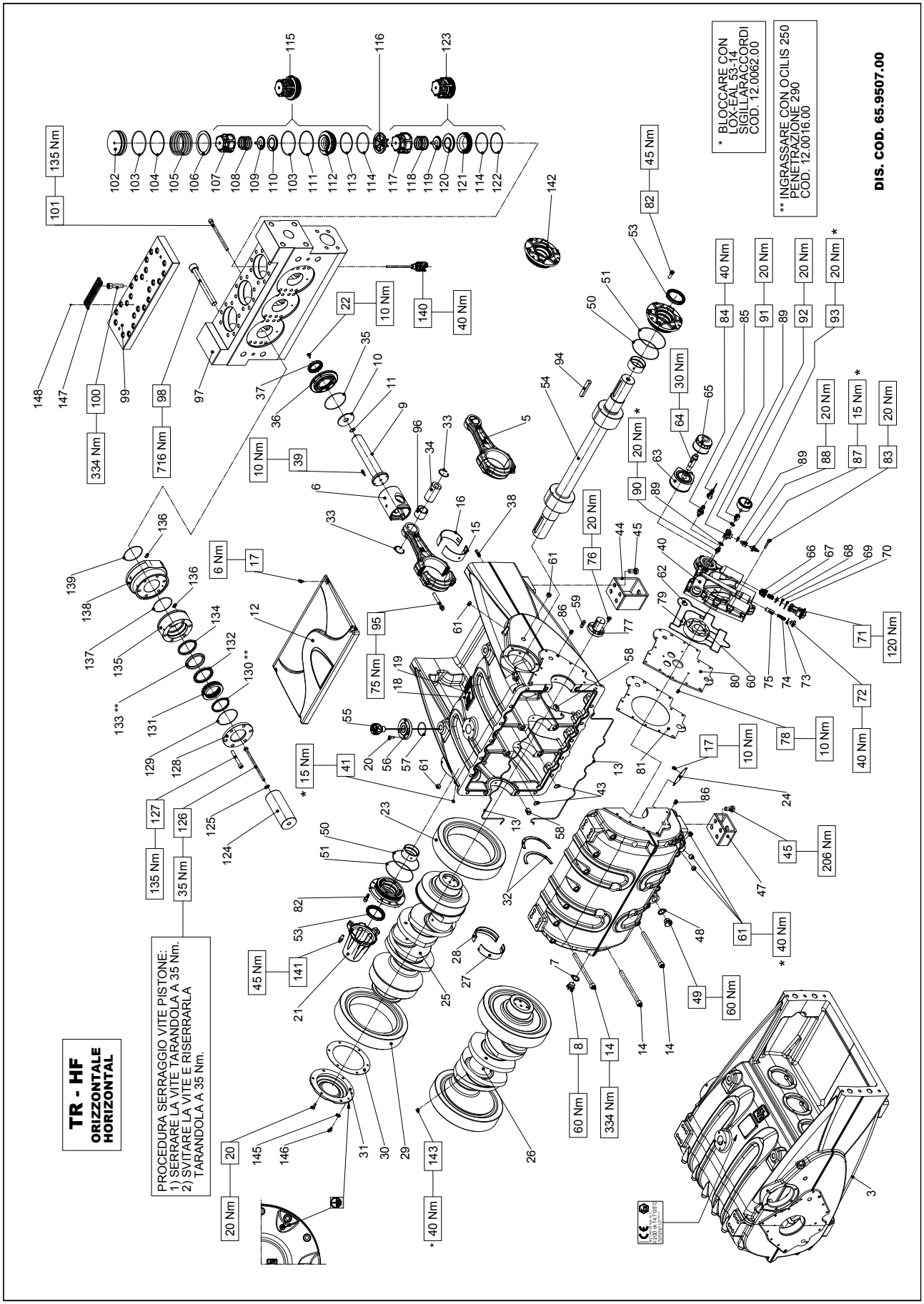
| KIT RICAMBIO – SPARE KIT | | TR50 (D.50) | TR60 (D.60) | TR70 (D.70) | TR75 (D.75) |
|---|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2268 | KIT 2269 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | | |

Pratissoli

**TR50 - TR60**
**TR70 - TR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0109.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 12 | 65.1507.53 | COPERCHIO SUPERIORE CARTER | | 1 | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| | 65.1510.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 25 | 65.0206.55 | ALBERO A GOMITI C. 130 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 26 | 65.0210.01 | COMPLESSIVO ALBERO C. 130 R. 2,90 | | 1 | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0211.01 | COMPLESSIVO ALBERO C. 130 R. 3,46 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| | 65.0212.01 | COMPLESSIVO ALBERO C. 130 R. 4,23 | | | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

## 3.16 شكل توضيحي لقطع الغيار المختلفة لـ TR في الإصدار الأفقي



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |
| 93 | 94.6070.00 | MANOMETRO ATT. POST. 0-16 D. 63 | | 1 |
| 94 | 91.5050.00 | LINGUETTA 18x11x100 UNI 6604 | | 1 |
| 95 | 99.4410.00 | VITE SERRAGGIO BIELLA | | 6 |
| 96 | 90.9185.00 | BOCCOLA PIEDE BIELLA | | 3 |
| 97 | 65.1205.56 | TESTATA LP | | 1 |
| 98 | 99.5355.00 | VITE M24x2x220 UNI 5931 8,8 | | 4 |
| 99 | 65.2120.56 | COPERCHIO VALVOLE LP | | 1 |
| 100 | 99.5149.00 | VITE M16x65 UNI 5931 12,9 | | 24 |
| 101 | 99.4495.00 | VITE M12x180 UNI 5931 12,9 | | 24 |
| 102 | 65.2121.56 | TAPPO VALVOLA | | 3 |
| 103 | 90.4146.00 | OR D. 104,4x3,53 NBR SH. 70 4412 | B | 6 |
| 104 | 90.5345.00 | ANELLO ANTIEST. D. 105,4x111,2x1,5 | B | 3 |
| 105 | 94.8050.00 | MOLLA Dm. 103x87,5 | | 3 |
| 106 | 65.2139.56 | ANELLO SEDE VALVOLA DI MANDATA | | 3 |
| 107 | 36.2131.05 | GUIDA VALVOLA DI MANDATA | | 3 |
| 108 | 94.7745.00 | MOLLA Dm. 56x57,3 | | 3 |
| 109 | 36.2129.51 | GUIDA INTERNA VALVOLA | | 3 |
| 110 | 36.2126.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 111 | 90.5340.00 | ANELLO ANTIESTR. D. 105,2x111x1,5 | | 3 |
| 112 | 36.2121.56 | SEDE VALVOLA DI MANDATA | | 3 |
| 113 | 90.5315.00 | ANELLO ANTIEST. D. 89,4x95,2x1,5 | | 3 |
| 114 | 90.4144.00 | OR D. 88,5x3,53 NBR SH. 70 4350 | | 6 |
| 115 | 36.7227.01 | GRUPPO VALVOLA DI MANDATA | B | 3 |
| 116 | 65.2122.51 | DISTANZIALE GUIDA VALVOLA | B | 3 |
| 117 | 36.2130.05 | GUIDA VALVOLA D'ASPIRAZIONE | | 3 |
| 118 | 94.7755.00 | MOLLA Dm. 58,5x103,1 | | 3 |
| 119 | 36.2128.51 | GUIDA INTERNA VALVOLA | | 3 |
| 120 | 36.2127.01 | VALVOLA SFERICA - COMPLETA | | 3 |
| 121 | 36.2120.56 | SEDE VALVOLA D'ASPIRAZIONE | | 3 |
| 122 | 90.5310.00 | ANELLO ANTIEST. D. 89,2x95x1,5 | | 3 |
| 123 | 36.7226.01 | GRUPPO VALVOLA D'ASPIRAZIONE | B | 3 |
| 124 | 65.2119.66 | DISTANZIALE PISTONE | | 3 |
| 125 | 74.0402.09 | PISTONE D. 50x127 | | 3 |
| | 74.0405.09 | PISTONE D. 65x127 | | |
| | 65.0409.09 | PISTONE D. 70x127 | | |
| 126 | 96.7105.00 | ROSETTA D. 10x18x0,9 | | 3 |
| 127 | 99.3865.00 | VITE M10x200 UNI 5737 A2-70 | | 24 |
| 128 | 99.4418.00 | VITE M12x90 UNI 5931 12,9 | | 18 |
| 129 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2132.56 | ANELLO SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 130 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A | |
| 131 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2890.00 | ANELLO TEN. ALT. D. 65x73x5,5 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 132 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2131.70 | SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 133 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2895.00 | ANELLO 'RESTOP' D. 65x80x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 134 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2893.00 | ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 135 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1005.92 | ANELLO DI TESTA D. 65 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 136 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0607.56 | CAMICIA PISTONE D. 65 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| 137 | 90.3830.00 | OR D. 12,1x2,62 NBR SH. 70 117 | A | 6 |
| 138 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A | |
| 139 | 65.2123.56 | SUPPORTO CAMICIA D. 50 | | 3 |
| | 65.2124.56 | SUPPORTO CAMICIA D. 65-75 | | |
| 140 | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 | A | 3 |
| 141 | 10.7449.01 | DISPOSITIVO APERTURA VALVOLE | | 1 |
| 142 | 99.3652.00 | VITE M10x20 UNI 5931 12,9 | | 3 |
| 143 | 65.2106.66 | PARASPRUZZI PER SOFFIETTO | | 3 |
| 145 | 65.7005.01 | COPERCHIO PTO + BOCCOLA PIGNONE | | 2 |
| 146 | 99.4250.00 | VITE M12x12 UNI 5923 12,9 | | 2 |
| 147 | 96.7017.50 | ROSETTA D. 8,4x15x0,8 - ATEX | | 1 |
| 148 | 99.3019.00 | VITE M8x10 UNI 5931 A2-70 - ATEX | | 1 |
| 149 | 97.8276.00 | MARCHIO PRATISSOLI | | 1 |
| 150 | 91.5703.00 | RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346 | | 2 |

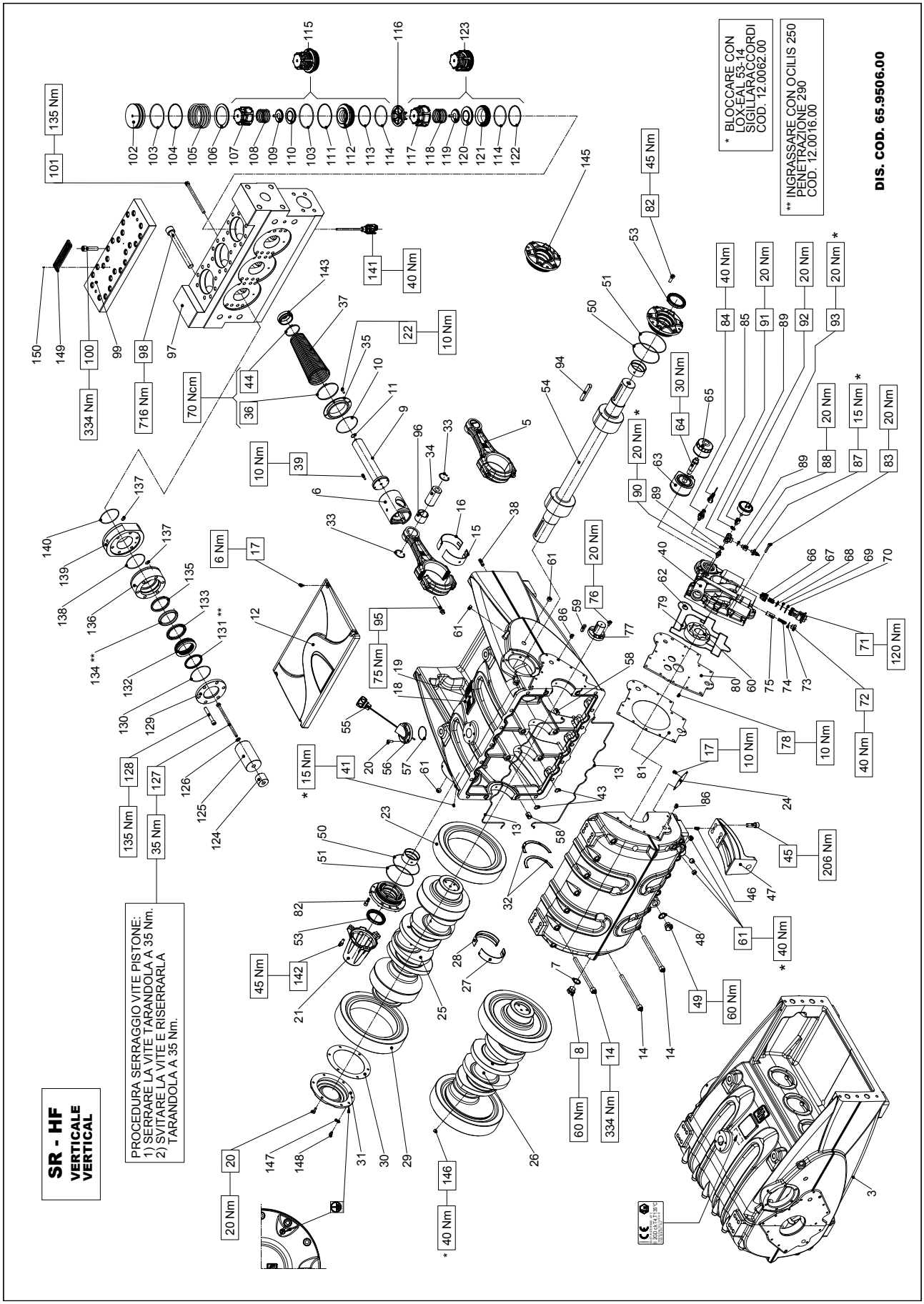
| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 92.8100.00 | FASCETTA D. 58-69 | | 3 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 46 | 97.6230.00 | SPINA D. 10x24 UNI 6364 | | 8 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 47 | 65.2007.13 | PIEDE VERTICALE | | 4 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 10 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | 55 | 98.2339.50 | TAPPO OLIO G 1"x275 CON ASTA | | 1 |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | | 98.2340.20 | TAPPO OLIO G 1"x275 CON ASTA - ATEX | | |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 12 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 76 | 99.3039.00 | VITE M8x16 UNI 5931 8,8 | | 4 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 35 | 65.2107.66 | FLANGIA PER SOFFIETTO | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 36 | 92.8110.00 | FASCETTA D. 98-109 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 37 | 65.2110.47 | SOFFIETTO | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |

## 2.16 شكل توضيحي لقطع الغيار المختلفة لـ SR في الإصدار الرأسي



| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| **93** | **94.6070.00** | **MANOMETRO ATT. POST. 0-16 D. 63** | | **1** |
| **94** | **91.5050.00** | **LINGUETTA 18x11x100 UNI 6604** | | **1** |
| **95** | **99.4410.00** | **VITE SERRAGGIO BIELLA** | | **6** |
| **96** | **90.9185.00** | **BOCCOLA PIEDE BIELLA** | | **3** |
| **97** | **65.1205.56** | **TESTATA LP** | | **1** |
| **98** | **99.5355.00** | **VITE M24x2x220 UNI 5931 8,8** | | **4** |
| **99** | **65.2120.56** | **COPERCHIO VALVOLE LP** | | **1** |
| **100** | **99.5149.00** | **VITE M16x65 UNI 5931 12,9** | | **24** |
| **101** | **99.4495.00** | **VITE M12x180 UNI 5931 12,9** | | **24** |
| **102** | **65.2121.56** | **TAPPO VALVOLA** | | **3** |
| **103** | **90.4146.00** | **OR D. 104,4x3,53 NBR SH. 70 4412** | **B** | **6** |
| **104** | **90.5345.00** | **ANELLO ANTIEST. D. 105,4x111,2x1,5** | **B** | **3** |
| **105** | **94.8050.00** | **MOLLA Dm. 103x87,5** | | **3** |
| **106** | **65.2139.56** | **ANELLO SEDE VALVOLA DI MANDATA** | | **3** |
| **107** | **36.2131.05** | **GUIDA VALVOLA DI MANDATA** | | **3** |
| **108** | **94.7745.00** | **MOLLA Dm. 56x57,3** | | **3** |
| **109** | **36.2129.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **110** | **36.2126.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **111** | **90.5340.00** | **ANELLO ANTIESTR. D. 105,2x111x1,5** | | **3** |
| **112** | **36.2121.56** | **SEDE VALVOLA DI MANDATA** | | **3** |
| **113** | **90.5315.00** | **ANELLO ANTIEST. D. 89,4x95,2x1,5** | | **3** |
| **114** | **90.4144.00** | **OR D. 88,5x3,53 NBR SH. 70 4350** | | **6** |
| **115** | **36.7227.01** | **GRUPPO VALVOLA DI MANDATA** | **B** | **3** |
| **116** | **65.2122.51** | **DISTANZIALE GUIDA VALVOLA** | **B** | **3** |
| **117** | **36.2130.05** | **GUIDA VALVOLA D'ASPIRAZIONE** | | **3** |
| **118** | **94.7755.00** | **MOLLA Dm. 58,5x103,1** | | **3** |
| **119** | **36.2128.51** | **GUIDA INTERNA VALVOLA** | | **3** |
| **120** | **36.2127.01** | **VALVOLA SFERICA - COMPLETA** | | **3** |
| **121** | **36.2120.56** | **SEDE VALVOLA D'ASPIRAZIONE** | | **3** |
| **122** | **90.5310.00** | **ANELLO ANTIEST. D. 89,2x95x1,5** | | **3** |
| **123** | **36.7226.01** | **GRUPPO VALVOLA D'ASPIRAZIONE** | **B** | **3** |
| **124** | **65.2119.66** | **DISTANZIALE PISTONE** | | **3** |
| 125 | 74.0402.09 | PISTONE D. 50x127 | | 3 |
| | 74.0405.09 | PISTONE D. 65x127 | | |
| | 65.0409.09 | PISTONE D. 70x127 | | |
| **126** | **96.7105.00** | **ROSETTA D. 10x18x0,9** | | **3** |
| **127** | **99.3865.00** | **VITE M10x200 UNI 5737 A2-70** | | **24** |
| **128** | **99.4418.00** | **VITE M12x90 UNI 5931 12,9** | | **18** |
| 129 | 65.2128.56 | ANELLO SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2132.56 | ANELLO SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2136.56 | ANELLO SUPPORTO GUARNIZIONI D. 75 | | |
| 130 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3916.00 | OR D. 82,22x2,62 NBR SH. 70 3325 - D. 65 | A | |
| | 90.3918.00 | OR D. 94,82X2,62 NBR SH. 70 3375 - D. 75 | A | |
| 131 | 90.2860.00 | ANELLO TEN. ALT. D. 50x58x5,5 LP | A | 3 |
| | 90.2890.00 | ANELLO TEN. ALT. D. 65x73x5,5 LP | A | |
| | 90.2910.00 | ANELLO TEN. ALT. D. 75x85x5,5 LP | A | |

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|
| 132 | 65.2127.70 | SUPPORTO GUARNIZIONI D. 50 | | 3 |
| | 65.2131.70 | SUPPORTO GUARNIZIONI D. 65 | | |
| | 65.2135.70 | SUPPORTO GUARNIZIONI D. 75 | | |
| 133 | 90.2865.00 | ANELLO 'RESTOP' D. 50x58x8/4,5 | A | 3 |
| | 90.2895.00 | ANELLO 'RESTOP' D. 65x80x8/4,5 | A | |
| | 90.2912.00 | ANELLO 'RESTOP' D. 75x95x9,5/4,5 | A | |
| 134 | 90.2863.00 | ANELLO TEN. ALT. D. 50x65x7,5/4,5 HP | A | 3 |
| | 90.2893.00 | ANELLO TEN. ALT. D. 65x80x7,5/4,5 HP | A | |
| | 90.2914.00 | ANELLO TEN. ALT. D. 75x95x10/6 HP | A | |
| 135 | 74.1002.92 | ANELLO DI TESTA D. 50 | | 3 |
| | 74.1005.92 | ANELLO DI TESTA D. 65 | | |
| | 65.1006.92 | ANELLO DI TESTA D. 75 | | |
| 136 | 65.0605.56 | CAMICIA PISTONE D. 50 | | 3 |
| | 65.0607.56 | CAMICIA PISTONE D. 65 | | |
| | 65.0609.56 | CAMICIA PISTONE D. 75 | | |
| **137** | **90.3830.00** | **OR D. 12,1x2,62 NBR SH. 70 117** | **A** | **6** |
| 138 | 90.3913.50 | OR D. 71,12x2,62 NBR SH. 70 3281 - D. 50 | A | 3 |
| | 90.3917.00 | OR D. 88,57x2,65 NBR SH. 70 3350 - D. 65-75 | A | |
| 139 | 65.2123.56 | SUPPORTO CAMICIA D. 50 | | 3 |
| | 65.2124.56 | SUPPORTO CAMICIA D. 65-75 | | |
| **140** | **90.3917.00** | **OR D. 88,57x2,65 NBR SH. 70 3350** | **A** | **3** |
| **141** | **10.7449.01** | **DISPOSITIVO APERTURA VALVOLE** | | **1** |
| **142** | **99.3652.00** | **VITE M10x20 UNI 5931 12,9** | | **3** |
| **143** | **65.7005.01** | **COPERCHIO PTO + BOCCOLA PIGNONE** | | **2** |
| **144** | **99.4250.00** | **VITE M12x12 UNI 5923 12,9** | | **2** |
| **146** | **96.7017.50** | **ROSETTA D. 8,4x15x0,8 - ATEX** | | **1** |
| **147** | **99.3019.00** | **VITE M8x10 UNI 5931 A2-70 - ATEX** | | **1** |
| **148** | **97.8276.00** | **MARCHIO PRATISSOLI** | | **1** |
| **149** | **91.57030.0** | **RIVETTO AUTOFILETTANTE D. 2,5x8 UNI 7346** | | **2** |

| KIT RICAMBIO – SPARE KIT | | SR50 (D.50) | SR65 (D.65) | SR75 (D.75) |
|---|---|---|---|---|
| A | Kit tenute pompanti – Plunger packing kit | KIT 2261 | KIT 2262 | KIT 2263 |
| B | Kit valvole – Valves kit | KIT 2264 | | |
| C | Kit bronzine banco – Shaft bushing kit | KIT 2165 - 2166 (+0,25) - 2167 (+0,50) | | |
| D | Kit bronzine bielle – Conrod bushing kit | KIT 2186 - 2187 (+0,25) - 2188 (+0,50) | | |

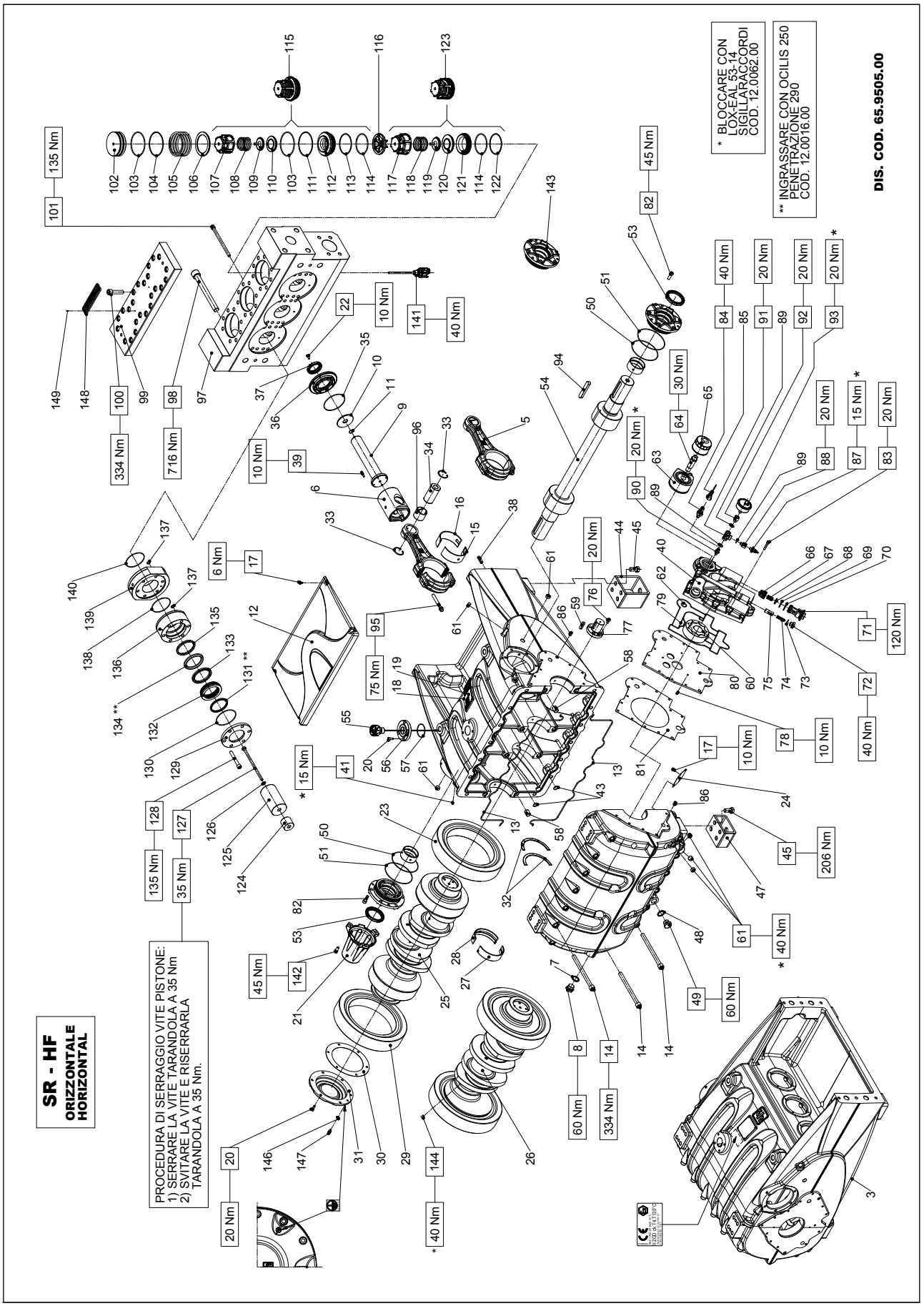
Pratissoli

**SR50 - SR65**
**SR75**

| POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. | POS | CODE CODICE | DESCRIPTION DESCRIZIONE | KIT | NR. PCS. |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 65.0108.01 | CARTER - COMPLETO | | 1 | 41 | 98.1930.00 | TAPPO CONICO M8x1 DIN 906 | | 2 |
| 5 | 65.0306.01 | BIELLA - COMPLETA | | 3 | 43 | 90.3845.00 | OR D. 18,72x2,62 NBR SH. 70 3075 | | 4 |
| 6 | 79.0500.43 | GUIDA PISTONE | | 3 | 44 | 65.2006.02 | PIEDE ANTERIORE POMPA ORIZZONTALE | | 2 |
| | 79.0503.43 | GUIDA PISTONE +1,0 | | | 45 | 99.5133.00 | VITE M 16x35 UNI 5739 8,8 | | 16 |
| 7 | 93.1980.00 | ROSETTA DI TENUTA D. 3/4" | | 1 | 47 | 65.2005.02 | PIEDE POSTERIORE POMPA ORIZZONTALE | | 2 |
| 8 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 | 48 | 93.1980.00 | ROSETTA DI TENUTA G 3/4" | | 1 |
| 9 | 65.0505.66 | STELO GUIDA PISTONE | | 3 | 49 | 98.2265.00 | TAPPO G 3/4"x16 | | 1 |
| 10 | 65.2105.66 | PARASPRUZZI | | 3 | | 98.2268.50 | TAPPO G 3/4"x16 PER SONDA D. 6 SS - ATEX | | |
| 11 | 90.3596.00 | OR D. 18,77x1,78 NBR SH. 70 2075 | | 3 | 50 | 90.3926.50 | OR D. 126,67x2,62 NBR SH. 70 3500 | | 2 |
| 12 | 65.1508.53 | COPERCHIO SUPERIORE CARTER | | 1 | 51 | 90.3805.00 | OR D. 132,00x2,50 NBR SH. 70 | | 2 |
| | 65.1511.76 | COPERCHIO SUPERIORE CARTER - ATEX | | | 53 | 90.1900.00 | ANELLO RAD. D. 70x90x10 | | 2 |
| 13 | 65.2140.82 | GUARNIZIONE D. 3,53x530 | | 2 | 54 | 10.0811.55 | PIGNONE Z28 R. 2,90 ELICOIDALE | | 1 |
| 14 | 99.5224.00 | VITE M16x200 UNI 5931 12,9 | | 22 | | 10.0812.55 | PIGNONE Z24 R. 3,46 ELICOIDALE | | |
| 15 | 90.9323.00 | SEMIBOCCOLA TESTA BIELLA - INF. | D | 3 | | 10.0813.55 | PIGNONE Z21 R. 4,23 ELICOIDALE | | |
| | 90.9324.00 | SEMIBOCCOLA TESTA BIELLA +0,25 - INF. | D | | 55 | 98.2340.50 | TAPPO OLIO G 1"x343 CON ASTA | | 1 |
| | 90.9325.00 | SEMIBOCCOLA TESTA BIELLA +0,50 - INF. | D | | | 98.2340.70 | TAPPO OLIO G 1"x343 CON ASTA - ATEX | | |
| 16 | 90.9320.00 | SEMICOCCOLA TESTA BIELLA - SUP. | D | 3 | 56 | 65.2112.54 | SUPPORTO ASTA LIVELLO OLIO - ORIZZONTALE | | 1 |
| | 90.9321.00 | SEMICOCCOLA TESTA BIELLA +0,25 - SUP. | D | | 57 | 90.3898.00 | OR D. 56,82x2,62 NBR SH. 70 3225 | | 1 |
| | 90.9322.00 | SEMICOCCOLA TESTA BIELLA +0,50 - SUP. | D | | 58 | 79.2116.89 | BUSSOLA CENTRAGGIO CARTER-SUPPORTO | | 4 |
| 17 | 99.1820.00 | VITE M6x12 DIN 6921 8,8 | | 8 | 59 | 91.4995.00 | LINGUETTA 12x8x40 UNI 6604 | | 1 |
| 18 | 91.5700.00 | RIVETTO AUTOF. D. 2,5x5 UNI 7346 | | 4 | 60 | 79.2119.07 | ASSIEME ROTORI POMPA OLIO H=35 | | 1 |
| 19 | 97.8268.00 | TARGHETTA POMPA | | 1 | 61 | 98.2155.00 | TAPPO CONICO M20x1,5 DIN 906 | | 6 |
| 20 | 99.3059.00 | VITE M 8x20 UNI 5931 8,8 | | 10 | 62 | 90.3852.00 | OR D. 22,22x2,62 NBR SH. 70 130 | | 6 |
| 21 | 65.1509.20 | COPERCHIO ESTREMITA' ALBERO | | 1 | 63 | 65.2137.00 | SCAMBIATORE ACQUA-OLIO | | 1 |
| 22 | 99.1853.00 | VITE M6x16 UNI 5931 12,9 | | 6 | 64 | 65.2138.64 | RACCORDO SCAMBIATORE FILTRO OLIO | | 1 |
| 23 | 10.0815.55 | CORONA SX Z81 R. 2,90 ELICOIDALE | | 1 | 65 | 92.8990.00 | FILTRO OLIO M20 | | 1 |
| | 10.0817.55 | CORONA SX Z83 R. 3,46 ELICOIDALE | | | 66 | 36.2009.51 | GUIDA VALVOLA ASPIRAZIONE / MANDATA | | 4 |
| | 10.0819.55 | CORONA SX Z89 R. 4,23 ELICOIDALE | | | 67 | 94.7440.00 | MOLLA Dm. 15,4x26,5 | | 4 |
| 24 | 65.2108.74 | RETINA FILTRO OLIO | | 1 | 68 | 36.2010.76 | VALVOLA SFERICA | | 4 |
| 25 | 65.0205.55 | ALBERO A GOMITI C. 90 | | 1 | 69 | 90.3865.00 | OR D. 29,82x2,62 NBR SH. 70 3118 | | 4 |
| 26 | 65.0207.01 | COMPLESSIVO ALBERO C. 90 R. 2,90 | | 1 | 70 | 90.3873.00 | OR D. 36,14x2,62 NBR SH. 70 3143 | | 4 |
| | 65.0208.01 | COMPLESSIVO ALBERO C. 90 R. 3,46 | | | 71 | 79.2139.64 | CARTUCCIA VALVOLA | | 4 |
| | 65.0209.01 | COMPLESSIVO ALBERO C. 90 R. 4,23 | | | 72 | 98.2137.80 | TAPPO M18x11 | | 1 |
| 27 | 90.9350.00 | SEMIBOCCOLA DI BANCO - INF. | C | 4 | 73 | 96.7410.00 | RONDELLA D. 18,2x24x1,5 | | 1 |
| | 90.9351.00 | SEMIBOCCOLA DI BANCO +0,254 - INF. | C | | 74 | 94.7390.00 | MOLLA Dm. 10,8x37,9 | | 1 |
| | 90.9352.00 | SEMIBOCCOLA DI BANCO +0,508 - INF. | C | | 75 | 79.2136.64 | PISTONCINO VALVOLA SOVRAPRESSIONE | | 1 |
| 28 | 90.9347.00 | SEMIBOCCOLA DI BANCO - SUP. | C | 4 | 76 | 99.3039.00 | VITE M 8x16 UNI 5931 8,8 | | 4 |
| | 90.9348.00 | SEMIBOCCOLA DI BANCO +0,254 - SUP. | C | | 77 | 79.2126.54 | CODOLO COMANDO ROTORI POMPA OLIO | | 1 |
| | 90.3949.00 | SEMIBOCCOLA DI BANCO +0,508 - SUP. | C | | 78 | 99.1851.00 | VITE M6x16 UNI 5933 8,8 | | 3 |
| 29 | 10.0814.55 | CORONA DX Z81 R. 2,90 ELICOIDALE | | 1 | 79 | 79.2127.47 | GUARNIZIONE CORPO POMPA OLIO | | 1 |
| | 10.0816.55 | CORONA DX Z83 R. 3,46 ELICOIDALE | | | 80 | 79.2128.74 | PIASTRA POMPA OLIO | | 1 |
| | 10.0818.55 | CORONA DX Z89 R. 4,23 ELICOIDALE | | | 81 | 79.2129.84 | GUARNIZIONE PIASTRA POMPA OLIO | | 1 |
| 30 | 65.2109.84 | GUARNIZIONE COPERCHIO LATERALE | | 1 | 82 | 99.3686.00 | VITE M10x30 UNI 5931 8,8 | | 12 |
| 31 | 65.1506.20 | COPERCHIO ALBERO A GOMITI | | 1 | 83 | 99.3116.00 | VITE M8x40 UNI 5931 8,8 | | 15 |
| 32 | 90.9353.00 | SEMIANELLO DI SPALLAMENTO | C | 2 | 84 | 93.5105.00 | INTERRUTTORE SPIA TEMPERATURA | | 1 |
| 33 | 90.0755.00 | ANELLO SEEGER D. 45 | | 6 | 85 | 93.5515.00 | CONNETTORE INTER. SPIA TEMPERATURA | | 1 |
| 34 | 97.7470.00 | SPINOTTO D. 45x86 | | 3 | 86 | 79.2135.89 | BUSSOLA CENTRAGGIO POMPA OLIO | | 2 |
| 35 | 90.3920.00 | OR D. 101,27x2,62 NBR SH. 70 3400 | | 3 | 87 | 93.5555.00 | PRESSOSTATO 0,3 N.A. 12V | | 1 |
| 36 | 79.2100.22 | COPERCHIO PARAOLIO GUIDA PISTONE | | 3 | 88 | 94.5131.00 | RACCORDO M-F G 1/4"- M 10x1 | | 1 |
| 37 | 90.1715.00 | ANELLO RAD. D. 50x70x10/11,5 | | 3 | 89 | 96.7230.00 | ROSETTA D. 13,5x19x1,5 | | 3 |
| 38 | 97.6300.00 | SPINA D. 12x40 UNI 6364 | | 2 | 90 | 95.2560.00 | RACCORDO M-M NPT 1/4" - G 1/4" | | 1 |
| 39 | 99.1897.00 | VITE M6x25 UNI 5931 8,8 | | 12 | 91 | 96.3100.00 | RACCORDO T F-F-F G 1/4" | | 1 |
| 40 | 79.2124.20 | CORPO POMPA OLIO | | 1 | 92 | 95.2566.00 | NIPPLO DI RIDUZIONE M-F G 1/4" | | 1 |

## 16 شكل توضيحي لقطع الغيار المختلفة

### 1.16 شكل توضيحي لقطع الغيار المختلفة لـ SR في الإصدار الأفقي



## 1.15 البحث عن الأعطال وإصلاحها

| العطل | الأسباب الممكنة | الإصلاح |
|---|---|---|
| لا تصدر المضخة أية ضوضاء عند بدء تشغيلها | غياب الماء في التغذية.<br>الصمامات مغلقة (محجوزة).<br>خط التدفق مغلق ولا يسمح لهواء الضغط العالي المتواجد داخل المضخة بالخروج. | تحقق من تشغيل وحمولة مضخة booster.<br>افحص تشغيل الصمامات.<br>تحقق من وجود أية أعطال على خط الطرد. |
| الضغط منخفض للغاية | المضخة تشفط الهواء | حدد مكان التسرب وأصلحه |
| | تسرب في صمام توزيع الضغط أو تعيين خاطئ للضغط | عالج التسرب أو قم بإعادة التعيين |
| | مجموعة حشوة الصمام معطوبة | ركب حشوات جديدة |
| | صمام/صمامات الشفط أو التصريف تالفة | يجب استبدال صمام/صمامات الشفط والتصريف افحص حالات زنبرك الصمام. |
| | تسرب في الرأس | افحص حشوات الرأس، واستبدلها إذا لزم الأمر، أو ركب رأس جديدة |
| المضخة تصدر ضجيجا | صمامات مستهلكة.<br>مقاسات أنابيب الشفط و/أو الفلتر أقل من المطلوب.<br>حمولة غير كافية، حرارة الماء مرتفعة، فلتر مسدود | افحص التركيب ومكونات خط الشفط؛ اكشف على حرارة الماء |
| نبضات شاذة في الأنابيب | شفط هواء و/أو تغذية غير كافية<br>أكواع توصيل وأذرع ووصلات على خط التغذية تخنق وتعوق مرور السوائل.<br>فلتر التغذية متسخ أو بأبعاد تقل عن الأبعاد المطلوبة.<br>- المضخة booster لا تقدم مستوى الضغط و/أو السعة التشغيلية المطلوبين منها. | افحص التركيب ومكونات خط الشفط؛<br>تحقق من تشغيل وحمولة مضخة booster.<br>نظف أو استبدل فلتر التغذية. |
| تسرب الماء من دعامة الحشوات | حشوة بضغط منخفض معطوبة/ بالية | استبدل الحشوة ذات الضغط المنخفض |
| المضخة تسخن بشكل مفرط | الضغط/ عدد اللفات أعلى مما هو محدد في لوحة بيانات المضخة؛<br>زيت غطاء حماية المضخة أقل من المستوى المطلوب أو ليس من النوع المنصوح به.<br>لا توجد محاذاة للوصلة والنقل. | استعد الضغط و/أو عدد اللفات.<br>استعد مستوى الزيت وقم باستبداله عند الحاجة.<br>افحص نقل الحركة. |
| تسرب الزيت من كارتيرة المضخة | ختم مكبس دليل البستون معطوب/بال<br>حشوات الكارتيرة المتنوعة معطوبة/بالية بالنسبة للإصدارات الرأسية افحص حالة الأنبوب المرن. | استبدل ختم المكبس، الأنبوب المرن أو الحشوات |
| زيت مستحلب صادر عن منفذ التنفيس.<br>مقياس مستوى الزيت يظهر علامات استحلاب. | تلوث في زيت التزليق من السائل المضخ. | تحقق من التشغيل الصحيح لختم المكبس لدليل البستون (أو الأنابيب المرنة)، استبدل زيت التزليق |

## 12 تخزين المضخة

### 1.12 طريقة ملء المضخة بمستحلب مضاد للتآكل أو بمحلول مضاد للتجمد باستخدام مضخة خارجية ذات غشاء وفقا للتخطيط التنسيقي المشروح في النقطة 6.9

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) قم بملء وعاء المحلول \ المستحلب.
هـ) ادخل الطرفي الحرين لأنبوب الشفط وأنبوب تصريف الضغط العالي داخل الوعاء.
و) شغّل المضخة ذات الغشاء.
ز) قم بضخ المستحلب حتى تراه يخرج من أنبوب التفريغ ذا الضغط العالي.
ح) استمر في عملية الضخ لمدة دقيقة أخرى على الأقل؛ يمكن للمستحلب أن يتم تقويته عند الضرورة بإضافة على سبيل المثال Shell Donax إلى المحلول.
ت) اوقف 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

أ) قبل القيام بتشحيم وحماية الأنابيب طبقا للإجراء الموضح سابقا، قم بتجفيف الوصلات مستخدما الهواء المضغوط.
ب) قم بالتغطية مستخدما البولي إثيلين.
ج) لا تقم بلفها وتغطيتها بشكل أضيق من اللازم؛ تأكد من عدم وجود أي انحناءات.

## 13 احتياطات ضد التجمد



في المناطق والأوقات التي يمكن فيها أن يحدث التجمد، اتبع الإرشادات والتعليمات الواردة في الفصل 12 (راجع النقطة 1.12).



**في حالة وجود ثلوج لا تقم بتشغيل 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 كهربي ماص للحرارة ذو قدرات وأداءات أكبر من القدرات والأداءات الموضحة في الجدول.
ج) في حالة عدم معايرة أجهزة الحماية بالشكل الصحيح أو في حالة فصلها.
د) في حالة استخدام المضخة مع كماليات 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 اتباع تعليمات وارشادات الصيانة بالشكل الصحيح
3) استخدام المضخة في غرض مختلف عن الموضح في تعليمات وارشادات الاستخدام
4) سعة استيعاب غير كافية
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



**عند التشغيل، لا تعطي المضخة أية حمولة:**
- المضخة غير مملوءة وتدور على الجاف.
- عدم وجود ماء للشفط.
- الصمامات مغلقة (محجوزة).
- خط التدفق مغلق ولا يسمح لهواء الضغط العالي المتواجد داخل رأس المضخة بالخروج.



**المضخة تقفز وتهتز 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 booster لا تقدم مستوى الضغط أو السعة التشغيلية المطلوبين منها.
- المضخة غير مملوءة لقدرة تشغيلية غير كافية أو التدفق مغلق أثناء الامتلاء.
- المضخة غير مملوءة نتيجة التصاق في بعض الصمامات.
- صمامات مستهلكة.
- سدادات وحشوت ضغط مستهلكة.
- 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 من ذلك المحدد في لوحة بيانات المضخة.
- تسرب مفرط في صمام ضبط الضغط.
- صمامات مستهلكة.
- تسرب مفرط في سدادات وحشوات الضغط.
- تكهف أو تجويف ناتج عن:

1) تحديد أبعاد خاطئ لأنابيب الشفط \ أقطار أقل من المطلوب.
2) سعة تشغيلية غير كافية.
3) درجة حرارة الماء مرتفعة للغاية.



**الضغط الذي تولده المضخة غير كافي:**
- استخدام (الفوهة) أعلى أو أصبح أعلى من القدرة التشغيلية للمضخة.
- عدد اللفات غير كافي.
- تسرب مفرط في سدادات وحشوات الضغط.
- 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 النقطة 6.7).
- محاذاة الوصلة ليست صحيحة.
- ميل المضخة بشكل مفرط أثناء تشغيلها.



**اهتزازات وخبطات على الأنابيب:**
- شفط هواء.
- عدم عمل صمامات ضبط الضغط بشكل سليم.
- عدم عمل الصمامات بالشكل الصحيح.
- عدم تساوي الحركة في عملية نقل الحركة.

### 2.10 بدء التشغيل

1. تحقق من سلامة تغذية المضخة.
2. قم بتركيب وتثبيت المضخة دون تحميلها بأي حمل إضافي.
3. تأكد من أنه في مرحلة التشغيل لا يتخطى عدد لفات الدوران الحد المسجل على لوحة بيانات الآلة.
4. اترك المضخة تعمل لمدة لا تقل عن 3 دقائق قبل أن تبدأ عمل الضغط فيها.
5. قبل أن تطفئ المضخة قم بتصفير الضغط وذلك باستخدام صمام الضبط أو أدوات التفريغ إذا ما وجدت.

## 11 الصيانة الوقائية

للحصول على موثوقية تشغيل عالية وكفاءة عمل جيدة للمضخة، يصبح من الضروري احترام عمليات الصيانة الدورية الموضحة في الجدول .

| صيانة وقائية | | |
|---|---|---|
| كل 1000 ساعة | كل 1500 ساعة | كل 3000 ساعة |
| التحقق من مستوى الزيت | | |
| | الفحص \ الاستبدال * :<br>صمامات<br>مواقع الصمام<br>نابض انضغاط الصمام<br>موجه مسار الصمام | تغيير الزيت وفلتر الزيت<br>استبدال الأنابيب المرنة (الإصدار الرأسي) |
| | الاستبدال*:<br>تماسك H.P.<br>تماسك L.P. | |

* للقيام بعملية الاستبدال احرص على مراعاة الإرشادات الموجودة في **دليل الإصلاح**.

### 1.11 أنبوب مرن (إصدار SR - TR الرأسي)

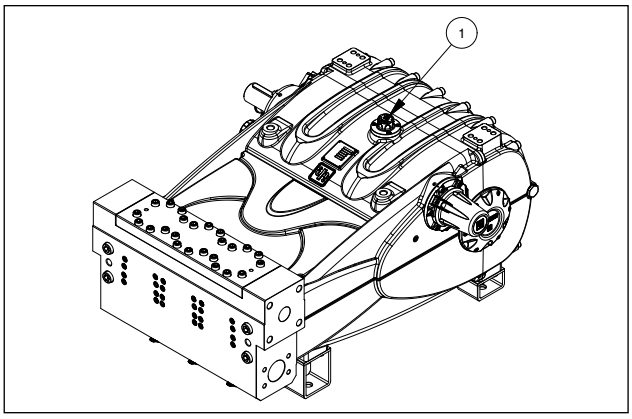
تحقق من ربط مشابك تثبيت الأنابيب المرنة بعد أول **1000 ساعة** من التشغيل.
**استبدل الأنابيب المرنة كل 3000 ساعة من التشغيل.**
للقيام بعملية الاستبدال احرص على مراعاة الإرشادات الموجودة في **دليل الإصلاح**.

### 2.11 مبادل الماء/الزيت

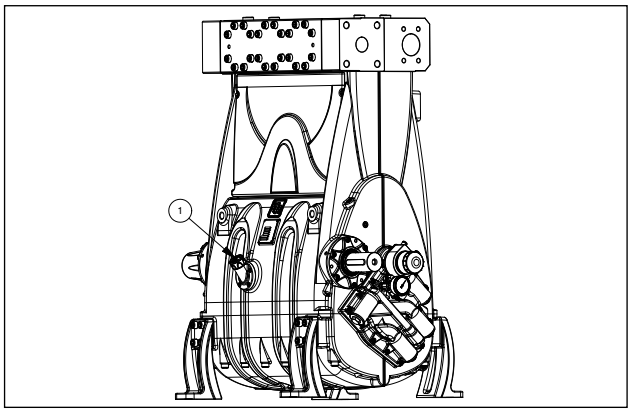
يتم تحديد تدخلات تنظيف المبادل في ضوء عسر الماء المستخدم. ننصح بتنظيف المبادل **كل 2000 ساعة إذا كان عسر الماء ≥ 30° فرنساي؛ كل 1000 ساعة إذا كان عسر الماء > 30° و ≥ 40° فرنساي. فوق 40° فرنساي ننصح بالتنظيف كل 500 ساعة**.
يتم التنظيف باستخدام منتجات مقاومة للتكلس متوفرة في الأسواق؛ لا داع للتفكيك.
ملاحظة: خامة المبادل هي **INOX - (AISI 303)**.

**حماية دائرة التزليق للأجزاء الميكانيكية: قم بإعداد النظام بحيث يوقف منظم الضغط المثبت على مضخة الزيت للتزليق الموجه تشغيل مضخة SR-TR في حالة انخفاض ضغط الزيت.**

| صيانة وقائية | |
|---|---|
| الموضوع | تواتر الفحص |
| تحقق من معايرة مقياس ضغط زيت التزليق | كل 10000 ساعة |
| تحقق بصريا من تسرب الماء من الرأس | كل 500 ساعة |

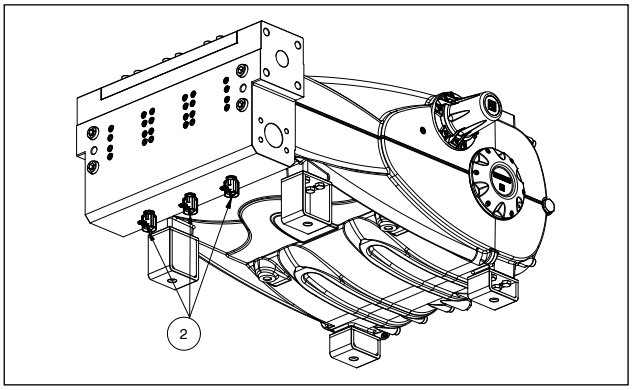



الشكل 11

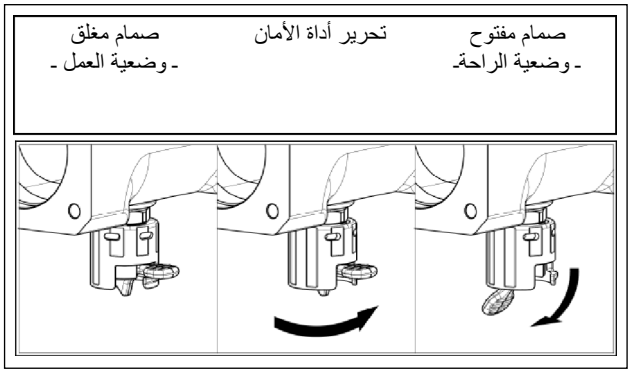



الشكل 11/a

**في حالة تخزين المضخة لمدة طويلة أو في حالة توقفها عن العمل لفترة طويلة فإنه يلزم في هذه الحالة استعادة التشغيل الصحيح لصمامات الشفط وذلك عن طريق فتح أدوات رفع الصمامات الثلاثة. (انظر الموضع② الشكل 12). تحقق من إغلاق الصمامات قبل تشغيل المضخة. لأوضاع "التشغيل" و"التوقف:، قم بمراجعة الشكل a/12.**




الشكل 12




الشكل 12/a

### 7.9 خط التدفق (الدفع)

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 الجدول في النقطة 8.9.
2. يجب أن يكون الأنبوب الذي يتم توصيله بالمضخة مرناً، كما يجب عزل الاهتزازات الناتجة من المضخة عن باقي الشبكة.
3. استخدم أنابيب ووصلات 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 نبضة التدفق التقليدية في المضخات ذات المكابس.
6. احرص في مرحلة التخطيط على مراقبة التسربات في الخط حيث تظهر نبضات التدفق على شكل انخفاض في الضغط المفروض تواجده عند الاستخدام مقارنة بالضغط الظاهر والمُقاس في المضخة.
7. بالنسبة للتطبيقات التي تصبح فيها الاهتزازات والنبضات الناتجة عن المضخة على خط التدفق مصدراً للخطورة أو تسبب نتائج غير مرغوب فيها، قم بتركيب مثبط مناسب للاهتزازات والنبضات.

### 8.9 القطر الداخلي لأنابيب خطوط التوصيل

في الجدول الوارد أدناه نذكر قيم الأقطار الداخلية لأنابيب الشفط والطرد.

| مضخة SR | | |
|---|---|---|
| الموديل | الشفط | الدخول |
| SR 50 | SAE 3” - 3000 PSI | SAE 1”1/2 - 6000 PSI |
| SR 65 | SAE 3” - 3000 PSI | SAE 2” - 6000 PSI |
| SR 75 | SAE 3” - 3000 PSI | SAE 2”1/2 - 6000 PSI |

| مضخة TR | | |
|---|---|---|
| الموديل | الشفط | الدخول |
| TR 50 | SAE 3” - 3000 PSI | SAE 1”1/2 - 6000 PSI |
| TR 60 | SAE 3” - 3000 PSI | SAE 2” - 6000 PSI |
| TR 70 | SAE 3” - 3000 PSI | SAE 2”1/2 - 6000 PSI |
| TR 75 | SAE 3” - 3000 PSI | SAE 2”1/2 - 6000 PSI |

لتكوين فلنشة الشفط والطرد، انظر "الشكل التوضيحي للشفط- الطرد لـ SR-TR" الشكل 7.
عند الضرورة قم بالاتصال بالمكتب الفني أو بمركز خدمة العملاء.

### 9.9 توصيل مبادل الماء/الزيت




الشكل 10

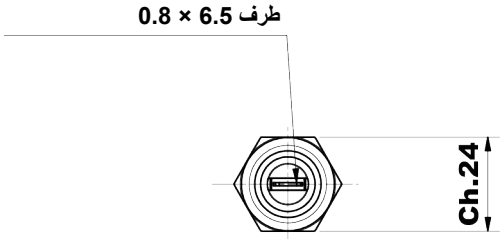
للحصول على أداء أفضل صل المبادل في اتجاه عكس التيار (انظر الشكل 10).
حمولة الماء:

أ) الكفاءة القصوى 25 ل/دق.
ب) الكفاءة المتوسطة 20 ل/دق.
ج) الكفاءة الدنيا 12 ل/دق.

إذا كانت المضخة تعمل في حرارة الوسط البيئي التي تقل عن 5 درجات مئوية (41 فهرنهايت)، يمكن تجنب توصيل المبادل.
للصيانة انظر الفصل 11.

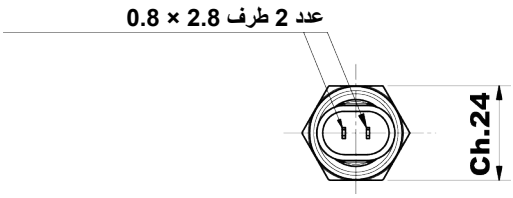
### 10.9 مجموعة مضخة الزيت

1) خرطوشة فلتر الزيت - يجب ربطها يدويا؛ للصيانة انظر الفصل 11.
2) مقياس الضغط - 0÷16 بار للفحص الدوري لضغط زيت التزليق.
3) منظم الضغط: مفتوح عادة (متوفر عند الطلب مغلق عادة)؛ الفلطية 12 فولت.
بالنسبة للمجموعات الثابتة ننصح بتوصيله تحت نظام الحماية.
4) ترموستات الزيت: مغلق عادة؛ الفلطية 12 فولت.




توصيل منظم الضغط

ضغط التدخل: 0.3 ± 0.15 بار




التوصيلات الداخلية مؤشر الحرارة

الحرارة التدخل: 105° درجة مئوية ± 5° درجة مئوية

**تنبيه: قم بالتوصيل الكهربائي لوحدتي استشعار بحمولة غير استقرائية، أو استبدل منظم الضغط والترموستات لتحمل محلهما مكونات مساوية في الخصائص ومتوافقة مع ATEX.**

## 10 بدء الاستخدام والتشغيل

### 1.10 الفحص الأولي (قبل بدء التشغيل)

قبل بدء التشغيل يرجى التأكد من الآتي:

**يجب أن يكون خط الشفط موصول وفي حالة ضغط (انظر الفصل 9): يجب ألا تعمل المضخة أبداً شكل جاف.**

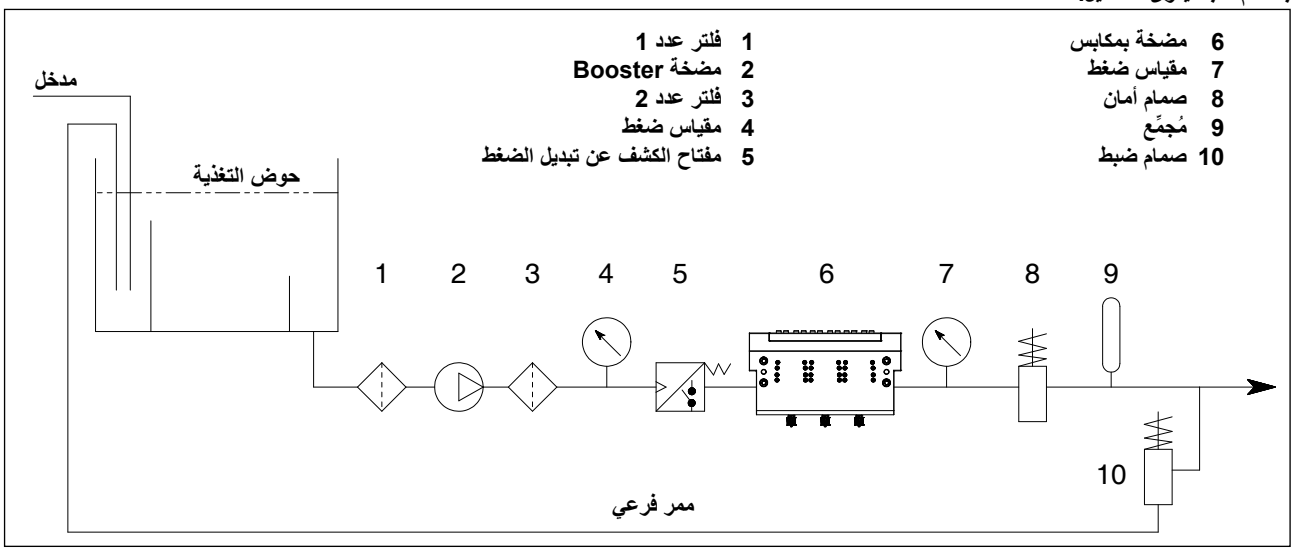
1. أن خط الشفط يضمن مع مرور الوقت الحصول على تماسك محكم (عدم التسرب).
2. أن جميع صمامات الاعتراض الواقعة بين مصدر التغذية والمضخة مفتوحة تماما. أن خط التدفق ذا تفريغ حر، أو يسمح للهواء الموجود في رأس المضخة بالخروج بسرعة مما يسمح بالتالي من الحصول على امتلاء سريع.
3. أن جميع الوصلات وأكواع التوصيل الخاصة بالشفط او بالتدفق مثبتة ومركبة ومغلقة بالشكل الصحيح.
4. أن نسب التسامح الخاصة بعمليات التوصيل على محور المضخة(النقل (اختلال أشباه الوصلات وميل عمود الكردان ...الخ). لا تزال في إطار الحدود المنصوص عليها من قبل الشركة المصنعة لمكونات شبكة لنقل الحركة.
5. يجب التأكد من أن مستوى الزيت في غطاء الحماية هو المطلوب والمحدد له لذا يجب التحقق من ذلك باستخدام مقياس مناسب لمستوى الزيت موجود على الجزء العلوي من الكارتيرة (الموضع 1 الشكل 11 و الشكل 11/a).

5. لا تستخدم تجهيزات من النوعية الهيدروليكية مثل وصلات ذات 3 أو 4 منافذ أو محولات أو حاملات...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 الصمام الفرعي بشكل مباشر في الشفط.
9. قم بتوفير حواجز مناسبة داخل الخزان لتجنب تدفقات المياه الناتجة عن الممر الفرعي وعن خط تغذية الخزان حيث يمكن لذلك أن يسبب دوامات أو اضطرابات بالقرب من مآخذ أنبوب تغذية المضخة.
10. تحقق بدقة وحرص من نظافة خط الشفط قبل توصيله بالمضخة.
11. قم بتركيب مقياس ضغط للتحكم في ضغط ال booster بالقرب من مأخذ شفط المضخة التي تعمل بالمكابس ودائما بعد المرشحات.

### 6.9 الترشيح

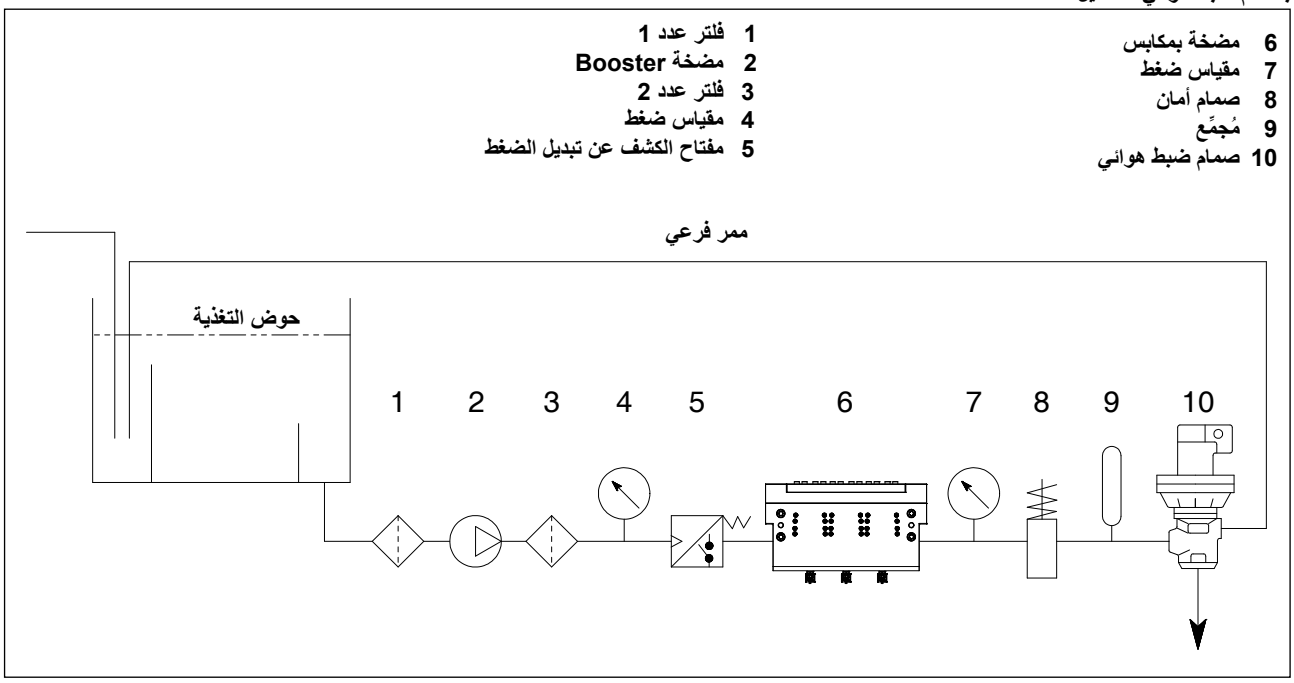
من الضروري تركيب مرشحين على خط شفط المضخة حيث يتم وضعه كما هو موضّح في الشكل 9 و الشكل a/9.

**بصمام ضبط يدوى التشغيل.**




الشكل 9

**بصمام ضبط هوائي التشغيل**




الشكل a/9

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 تقل عن قطر مأخذ شفط المضخة.
3. درجة ترشيح محصورة بين 200 و360 ميكرون م.

**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**

## 9 تركيب المضخة

### 1.9 التركيب

إن قطر فتحات التركيب الموجودة على الأقدام هو 25 ملم.
يجب أن تكون قاعدة ارتكاز المضخة مستوية وصلبة بالشكل الكافي بحيث لا تسمح بأي ارتخاء أو اختلال على محور ازدواج المضخةاناقل الحركة التي قد تنتج عن عزم الدوران أثناء عمل المضخة.
يوجد على المضخة عدد 4 فتحات M24 للدعامات لتسهيل التركيب، كما هو موضح في الشكل أدناه.

تم تصميم حلقات الرفع لتكون مناسبة من حيث أبعادها فقط لرفع المضخة، لذلك فإنه ممنوع منعاً باتاً استخدامها لرفع أحمال إضافية.






**التأريض:** يجب تثبيت كابل التأريض بالمضخة بواسطة البراغي M8 INOX والحلقة المسننة INOX المحددة في البطاقة باللون الأصفر. راجع الدليل "الحماية ضد الانفجار ATEX".

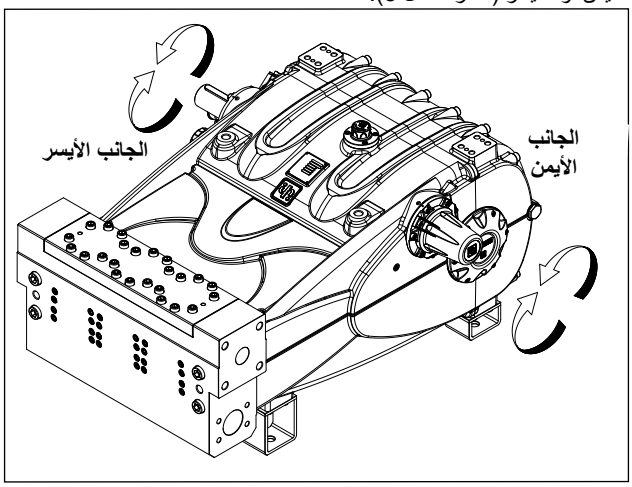
**استبدل غطاء غلق فتحة إدخال الزيت الموجود على الكارتيرة بمقياس مستوى الزيت.**
يجب أن يكون الوصول إلى قضيب تحديد مستوى الزيت سهلا حتى بعد إتمام تجميع وتركيب المجموعة.

**لا يجب ربط عمود التحريك المحوري في المضخة(PTO) بصلابة بمجموعة المحرك.**
ينصح بأنواع نقل الحركة التالية:
- بوصلة مرنة.
- بمفصل تحريك (انتبه لزوايا العمل القصوى التي تنصح بها الشركات المصنعة).

في جميع الحالات، يجب أن يتم تركيب ناقل الحركة بطريقة حرفية لتجنب التشغيل الخطأ أو المفرط للتوصيلات وتجنب الاستهلاك المفرط ودرجة الحرارة العالية و/أو الانكسارات الخطيرة التي تسبب خطر الاشتعال والانفجار. راجع الدليل "الحماية ضد الانفجار ATEX".

### 2.9 اتجاه الدوران

يمكن أن يكون اتجاه الدوران إما مع اتجاه عقارب الساعة أو عكسه على الجانب الأيمن أو الأيسر (انظر الشكل 8).




الشكل 8

توصيل المضخة على اتجاه واحد فقط على كلا الجانبين على **جانب SX** بامتداد الأبعاد بسبب مضخة زيت التزليق.
سوف يتم تركيب الطرف على PTO غير موصول.

### 3.9 توصيلات هيدروليكية

بهدف عزل الشبكة عن الاهتزازات الناتجة من المضخة، ينصح بعمل قناة وصل الأنابيب الملاصقة للمضخة (سواء أنابيب الشفط أو التدفق) باستخدام أنبوب مرن.
يجب أن يكون تماسك قناة الشفط بالدرجة التي تمكنها من منع حدوث أي تشوهات ناتجة عن الضغط الذي ينتج عن المضخة.

### 4.9 تغذية المضخة

يجب تركيب المضخات من سلسلة SR-TR دائما بواسطة التغذية الموجهة عن طريق مضخة booster.
يجب أن تتوافر في مضخة booster سعة تشغيلية تساوي على الأقل ضعف السعة التشغيلية المحددة في لوحة البيانات التعريفية الخاصة بمضخة المكابس مع مستوى ضغط بين 2 و 3 بار.
يجب احترام ومراعاة مواصفات التغذية هذه مهما كان نظام العمل.

**يجب أن تتم عملية تشغل المضخة booster دائماً قبل البدء في تشغيل المضخة التي تعمل بالمكابس.**
**من المستحسن تركيب مفتاح الكشف عن تبديل الضغط على خط التغذية بعد مرشحات حماية المضخة.**

### 5.9 خط الشفط

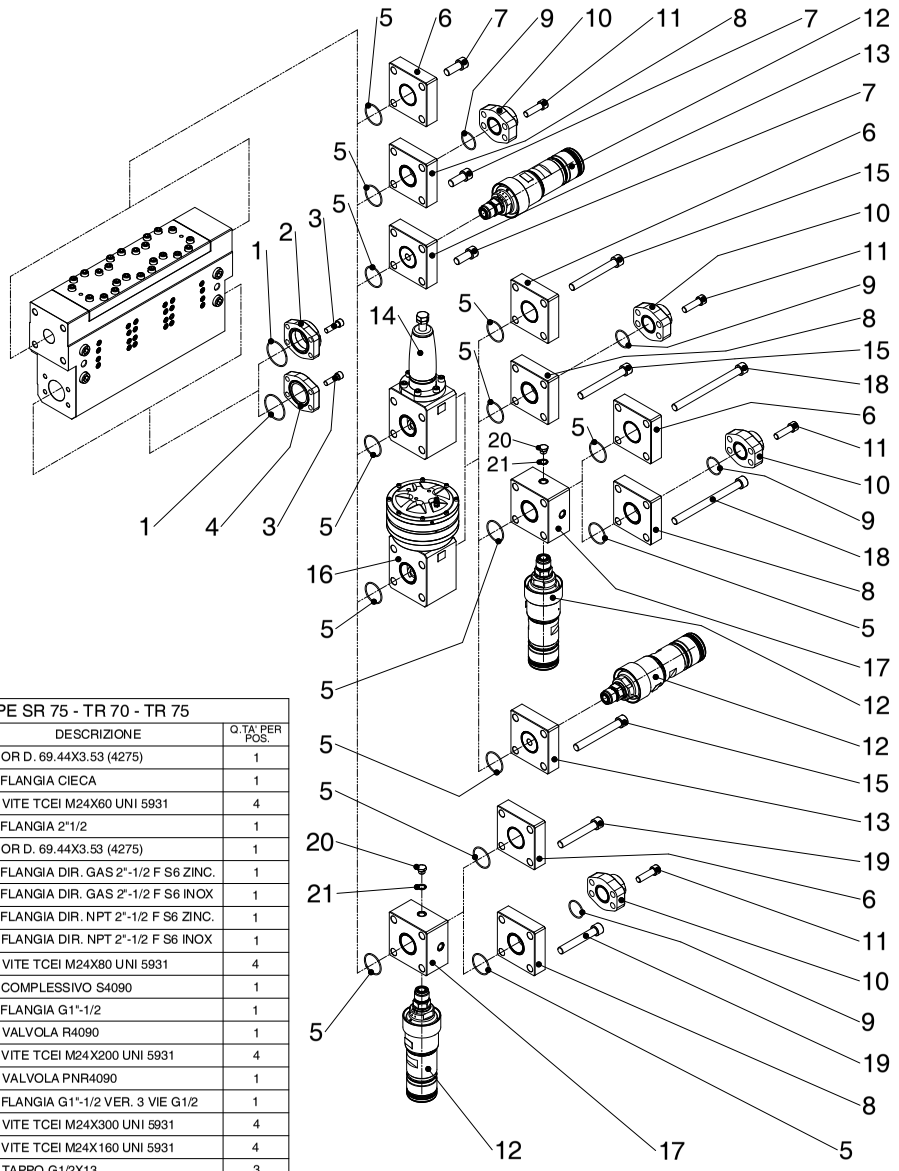
للحصول على أداء تشغيلي جيد للمضخة يجب على خط الشفط أن يكون به الخصائص الآتية:
1. القطر الداخلي الأدنى كما هو موضح في جداول النقطة 8.9 وهو على أية حال مساو أو أعلى من قطر رأس المضخة.

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 ال 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 تنفيذ تخطيط صحيح لتجنب حدوث ظواهر التكهف والتجويف.
3. يجب أن تكون مُحكمة الإغلاق بشكل كامل ومكوَّنة بالشكل الذي يضمن عدم التسرب عبر الزمن.
4. تجنب حدوث تفريغ عند توقف المضخة، حتى ولو كان تفريغاً جزئياً.

الشكل 7

## ESPLOSO FLANGE ASP. - MAND. SR - TR COD. 65950900



| POMPE SR - TR TUTTE LE VERSIONI | | | | |
|---|---|---|---|---|
| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
| ASPIRAZIONE | 1 | 90414100 | OR D. 85.32X3.53 (4337) | 1 |
| | 2 | 96458500 | FLANGIA DIR. GAS 3" F S3 ZINC. | 1 |
| | | 96459000 | FLANGIA DIR. GAS 3" F S3 INOX | 1 |
| | | 96459500 | FLANGIA DIR. NPT 3" F S3 ZINC. | 1 |
| | | 96460000 | FLANGIA DIR. NPT 3" F S3 INOX | 1 |
| | 3 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 4 | 96489500 | FLANGIA CIECA 3" S3 ZINC. | 1 |
| | | 96490000 | FLANGIA CIECA 3" S3 INOX | 1 |

| POMPE SR 50 - TR 50 | | | | |
|---|---|---|---|---|
| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021466 | FLANGIA 1"1/2 | 1 |
| | 9 | 90407900 | OR D. 47.22X3.53 (4187) | 1 |
| | 10 | 96468500 | FLANGIA DIR. GAS 1"-1/2 F S6 ZINC. | 1 |
| | | 96469000 | FLANGIA DIR. GAS 1"-1/2 F S6 INOX | 1 |
| | | 96469500 | FLANGIA DIR. NPT 1"-1/2 F S6 ZINC. | 1 |
| | | 96470000 | FLANGIA DIR. NPT 1"-1/2 F S6 INOX | 1 |
| | 11 | 99514700 | VITE TCEI M16X55 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

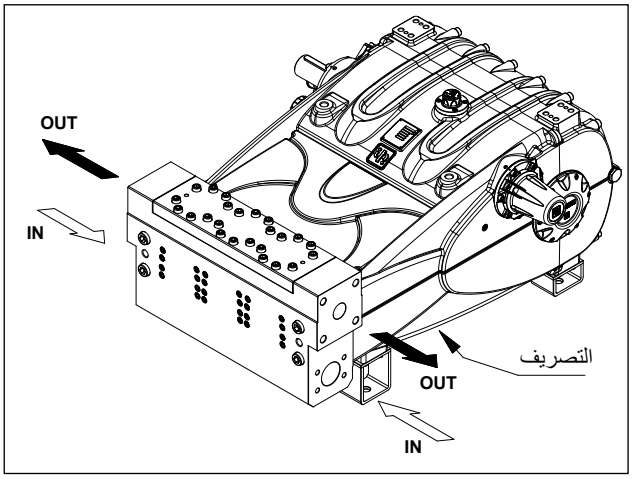
| POMPE SR 65 - TR 60 | | | | |
|---|---|---|---|---|
| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021366 | FLANGIA 2" | 1 |
| | 9 | 90409900 | OR D. 56.74X3.53 (4225) | 1 |
| | 10 | 96473500 | FLANGIA DIR. GAS 2" F S6 ZINC. | 1 |
| | | 96474000 | FLANGIA DIR. GAS 2" F S6 INOX | 1 |
| | | 96474500 | FLANGIA DIR. NPT 2" F S6 ZINC. | 1 |
| | | 96475000 | FLANGIA DIR. NPT 2" F S6 INOX | 1 |
| | 11 | 99529000 | VITE TCEI M20X70 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

| POMPE SR 75 - TR 70 - TR 75 | | | | |
|---|---|---|---|---|
| | POS. | CODICE | DESCRIZIONE | Q.TA' PER POS. |
| MANDATA | 5 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 6 | 36021966 | FLANGIA CIECA | 1 |
| | 7 | 99531000 | VITE TCEI M24X60 UNI 5931 | 4 |
| | 8 | 36021266 | FLANGIA 2"1/2 | 1 |
| | 9 | 90412200 | OR D. 69.44X3.53 (4275) | 1 |
| | 10 | 96478500 | FLANGIA DIR. GAS 2"-1/2 F S6 ZINC. | 1 |
| | | 96479000 | FLANGIA DIR. GAS 2"-1/2 F S6 INOX | 1 |
| | | 96479500 | FLANGIA DIR. NPT 2"-1/2 F S6 ZINC. | 1 |
| | | 96480000 | FLANGIA DIR. NPT 2"-1/2 F S6 INOX | 1 |
| | 11 | 99532000 | VITE TCEI M24X80 UNI 5931 | 4 |
| | 12 | 36722501 | COMPLESSIVO S4090 | 1 |
| | 13 | 36272856 | FLANGIA G1"-1/2 | 1 |
| | 14 | 36722101 | VALVOLA R4090 | 1 |
| | 15 | 99535000 | VITE TCEI M24X200 UNI 5931 | 4 |
| | 16 | 36722001 | VALVOLA PNR4090 | 1 |
| | 17 | 36273156 | FLANGIA G1"-1/2 VER. 3 VIE G1/2 | 1 |
| | 18 | 99537000 | VITE TCEI M24X300 UNI 5931 | 4 |
| | 19 | 99534000 | VITE TCEI M24X160 UNI 5931 | 4 |
| | 20 | 98218100 | TAPPO G1/2X13 | 3 |
| | 21 | 93197100 | ROSETTA DI TEN. POLYPACK D.1/2" | 3 |

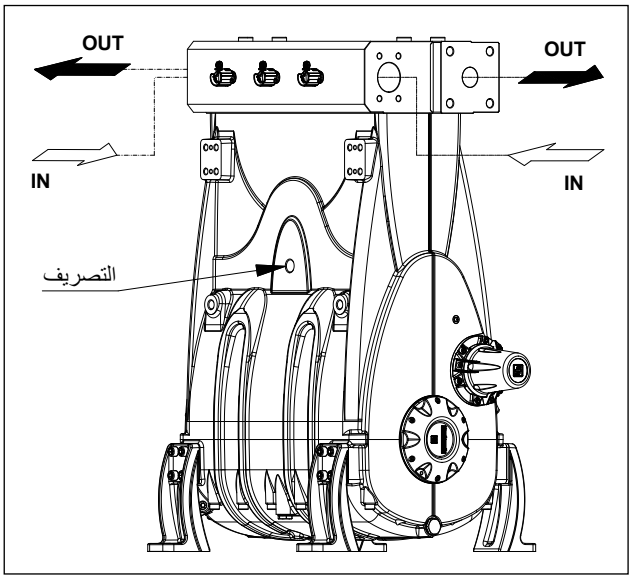
| COPPIE SERRAGGIO | |
|---|---|
| POS. | FILET. - COPPIA |
| 3 | M16 - 206 Nm |
| 7 | M24 - 714 Nm |
| 11 | M16 - 206 Nm |
| | M20 - 415 Nm |
| | M24 - 714 Nm |
| 12 | G 1"1/2 - 400 Nm |
| 15 | M24 - 714 Nm |
| 18 | M24 - 714 Nm |
| 19 | M24 - 714 Nm |
| 20 | G1/2" - 75 Nm |

## 8 مآخذ ووصلات

المضخات من النوع SR-TR مزودة بـ (انظرالشكل 5 و الشكل 6):
عدد 2 مآخذ شفط "IN, SAE G3" - 3000 PSI" انظر "الشكل التوضيحي للشفط. - الطرد. SR-TR" الرمز .65950900 (الشكل 7).
لا تختلف الوصلة الموجودة على الخط في أية مآخذ من ناحيتيها الاثنتين وذلك بهدف تشغيل المضخة بالشكل الصحيح؛ يجب غلق المآخذ غير المستخدمة بإحكام.
عدد 2 º مأخذ للطرد "OUT": انظر "الشكل التوضيحي للشفط - الطرد SR-TR" الرمز .65950900 (الشكل 7).
عدد 1 مأخذ تصريف "DRAIN": بثقب G1" الموجود في الجزء السفلي من الكارتيرة وذلك لمراقبة أي تسرب محتمل للمياه سببه تآكل وتلف حشوات الضغط. في حالة أي تسرب، يرجى مراجعة دليل الإصلاح.
**يجب أن تبقى هذه الفتحة المذكورة مفتوحة دائما، ومتصلة في نهاية المطاف بنظام الكشف.**




الشكل 5




الشكل 6

## 7 إرشادات وتعليمات الاستخدام

تم تصميم المضخات SR - TR الغير مطلوبة بتهيئة ATEX لكي تعمل في بيئة **غير** معرضة للانفجارات وبمياه مرشحة (أنظر النقطة 6.9).
يمكن استخدام سوائل أخرى ولكن فقط بعد تصريح رسمي مسبق من**المكتب الفني** أو **مركز خدمة العملاء**.

### 1.7 درجة حرارة الماء

درجة الحرارة المقبولة 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**.
الإصدار***ATEX***: أقصى درجة حرارة مسموح بها هي **40 درجة مئوية**.

### 2.7 القوة التشغيلية وأقصى ضغط

تشير الأداءات الموضحة في دليل العرض إلى الأداءات القصوى التي تم تزود المضخة بها. **بشكل مستقل** عن القوة التشغيلية المستخدمة، لا يمكن تجاوز مستوى الضغط أو العدد الأقصى من اللفات المحددة في لوحة البيانات إلا بعد تصريح رسمي مباشر من**المكتب الفني** أو **من مركز خدمة العملاء**.

### 3.7 الحد الأدنى لنظام الدوران

مجال العمل الأدنى المسوح به للعمل مع هذا النوع من المضخات **هو 250 لفة/دقيقة على محور بكوع**؛ أي دوران يختلف عن ما هو موضح في جدول الأداءات (أنظر الفصل 5) يجب أن يُصرّح به صراحة ورسميا من قبل '**المكتب التقني** أو **مركز خدمة العملاء**.

### 4.7 الضوضاء الصادرة

تم القيام بعمل اختبار فحص للضغط الصوتي وفقاً للتوجيه الأوروبي 2000/14 الصادر عن البرلمان الأوروبي والمجلس (التوجيه الخاص بالآلات) ووفقاً لـ 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 إرتداء أدوات مناسبة لحماية الأذنين وحاسة السمع 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 الماركات التجارية وأنواع زيوت التزليق الموصى بها

#### 1.6.7 نوع الزيت

المضخة مزودة بزيت تزليق TOTAL-ERG MISOLA MAP SH-150 الذي يضمن الاستخدام الصحيح للمضخة في درجة حرارة وسط بيئي تتراوح بين - 10 درجة مئوية و+ 40 درجة مئوية.
لدرجات الحرارة المختلفة استخدم زيوت تزليق أحادية الدرجة وذات لزوجة كافية.
لاستخدام المضخة في درجات الحرارة القصوى ننصح باستخدام سخانات كافية.
يتم تزويد التزليق الموجه بواسطة مضخة الزيت التي تؤمن الكمية الصحيحة من الزيت في كل نقطة مطلوبة للأجزاء المتحركة.
إن الحاجة لاستخدام زيت متعدد الدرجات ذات شقين:
- التسهيل على المستخدم بحيث لا يجب عليه تغيير لزوجة الزيت حسب الحرارة الخارجية أو حسب فصول السنة.
- الزيادة الثابتة لوقت الفاصل الزمني بين تغيير الزيت والفاصل الآخر وبالتالي تخفيض التدخلات من أجل الصيانة، انظر الجدول "الصيانة الوقائية" في الفصل 11.

#### 2.6.7 الماركات التجارية للزيت الموصى به

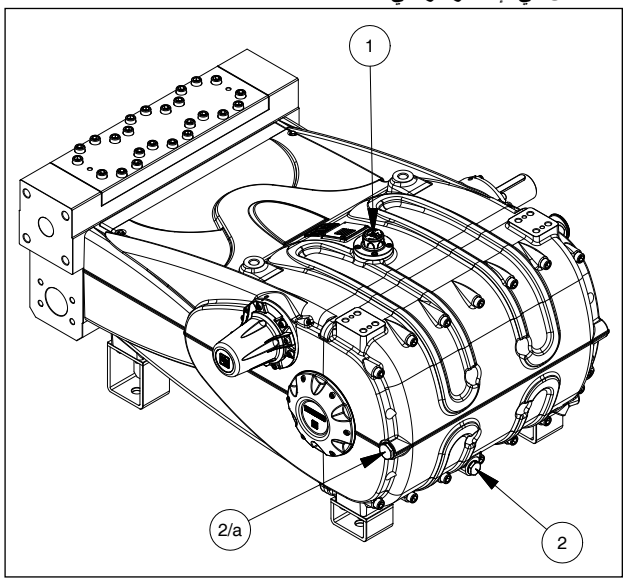
TOTAL-ERG MISOLA MAP SH-150.
MOBIL SHC 629.

#### 3.6.7 خصائص الزيت المطلوبة

في حالة العلامات التجارية الموصى بها للزيت المفقودة أو من الصعب العثور عليها يمكنك استخدام الزيوت البديلة، ومع ذلك، يجب أن تستوفي المواصفات التالية:

- اللزوجة حتى °10- درجة مئوية ≥4000 cSt.
- اللزوجة حتى °40 درجة مئوية ≥200 cSt.
- اللزوجة حتى °100درجة مئوية ≤18 cSt.
- مؤشر اللزوجة: ≤135 cSt.
- نقطة الصب: ≤ °25- درجة مئوية
- درجة الإضافة GL2 - GL1.

**عندما يكون ضروريا اتصل بخدمة الدعم التقني للعملاء**
**افحص مستوى الزيت بواسطة مقياس الزيت①. الشكل 4**
**إذا دعت الضرورة، أضف عن طريق سدادة الزيت ①. الشكل 4**
**يتم فحص الزيت بالشكل الصحيح عندما تكون درجة حرارة المضخة مساوية لدرجة حرارة البيئة. كما يجب تغيير الزيت عندما تكون المضخة في درجة حرارة العمل وذلك بإزالة سدادة الوضعية ②. الشكل 4 (استخدم السدادة في الموضع 2أ بالنسبة للإصدار الرأسي)**
**يجب أن تتم عملية فحص مستوى الزيت وعملية تغييره كما هو موضح في الفصل 11.**
**كمية الزيت الضرورية: 52 لتر لـ SR-TR في الإصدار الأفقي؛ 37 لتر لـ SR-TR في الإصدار الرأسي.**



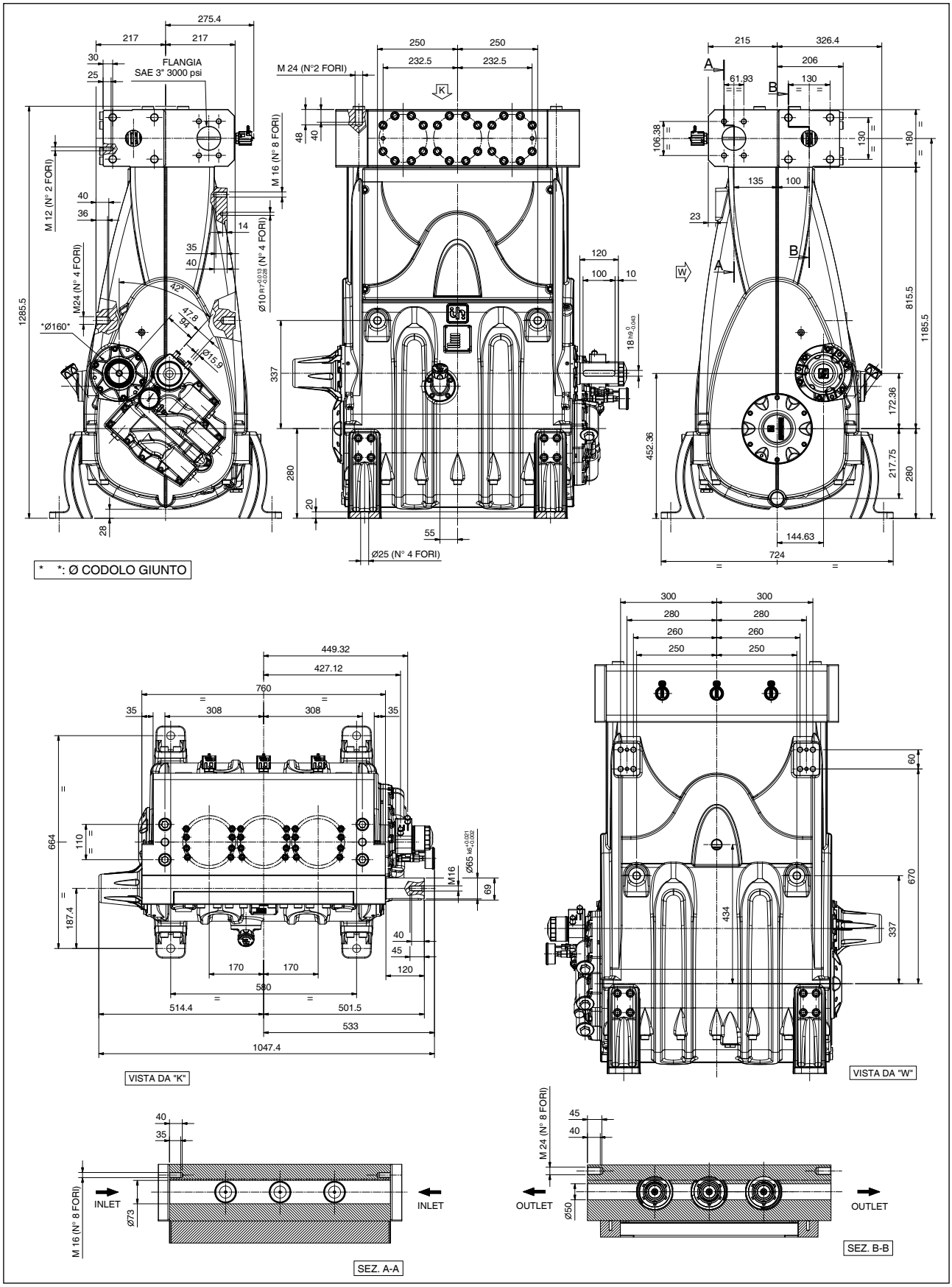

**الشكل 4**

يجب تجهيز الجهاز بطريقة لا تسمح بتجاوز حرارة الزيت 110°C - (230°F) أثناء عمل المضخة.
لهذا الغرض استخدم مؤشر حرارة الزيت المطلوب في النقطة 10.9.
**تنبيه** استخدم زيت بدرجة اشتعال تتجاوز 200° م.

**في كل الأحوال يجب تغيير الزيت على الأقل لمرة واحد كل عام** نظراً لأنه قد يتلف نتيجة لعملية الأكسدة.

**يجب وضع الزيت المستنفذ في وعاء مناسب ثم التخلص منه في المراكز المختصة بذلك.**
**لا يجب مطلقاً سكبه في البيئة المحيطة.**

بالنسبة لأبعاد وأوازن المضخات التي سلسلتها TR الرأسية يرجى الاسترشاد بالشكل a/3.

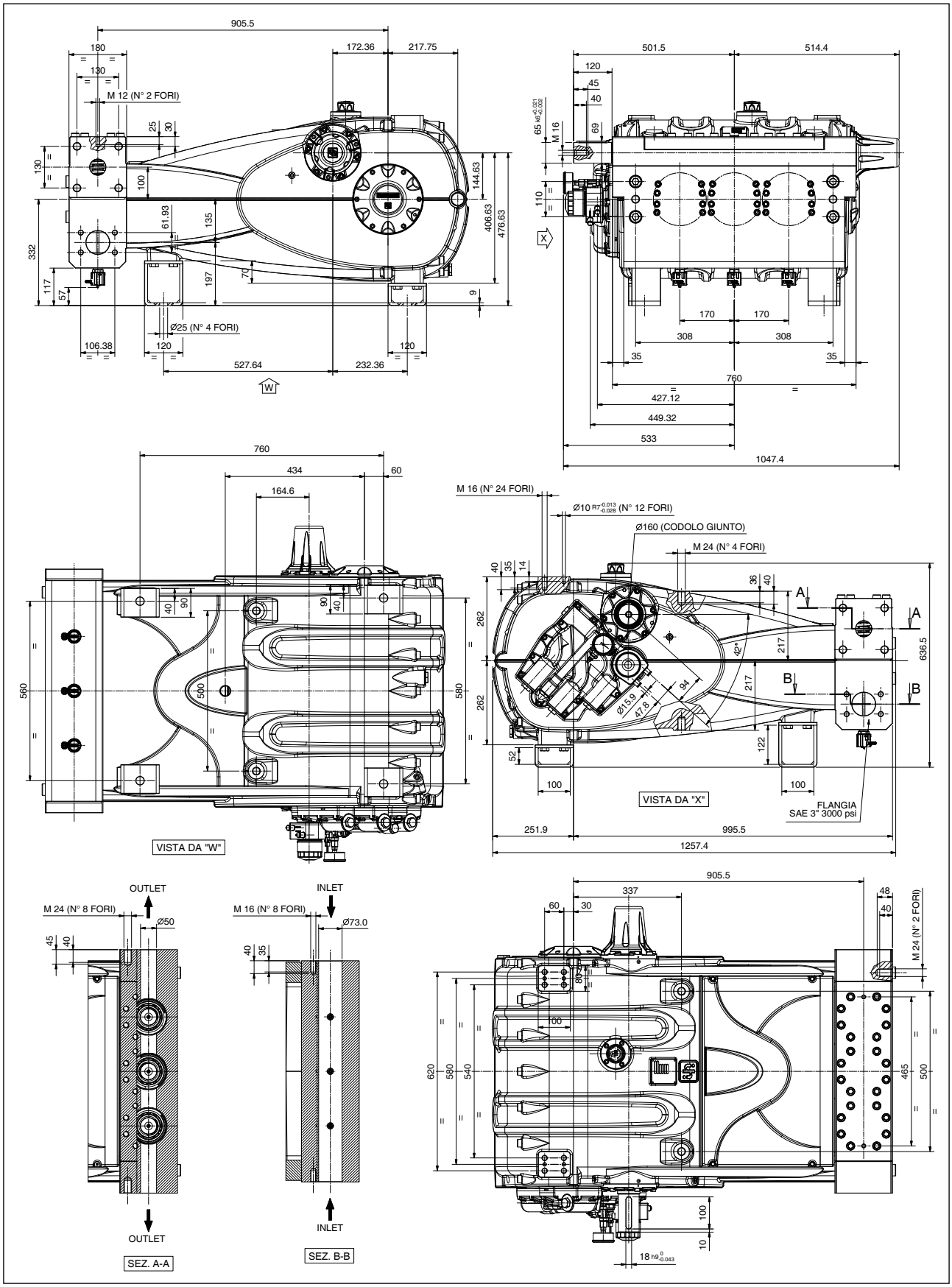



**الوزن الجاف 1195 كجم.**

الشكل a/3

### 1.6 أبعاد وأوزان مضخات TR عالية التدفق

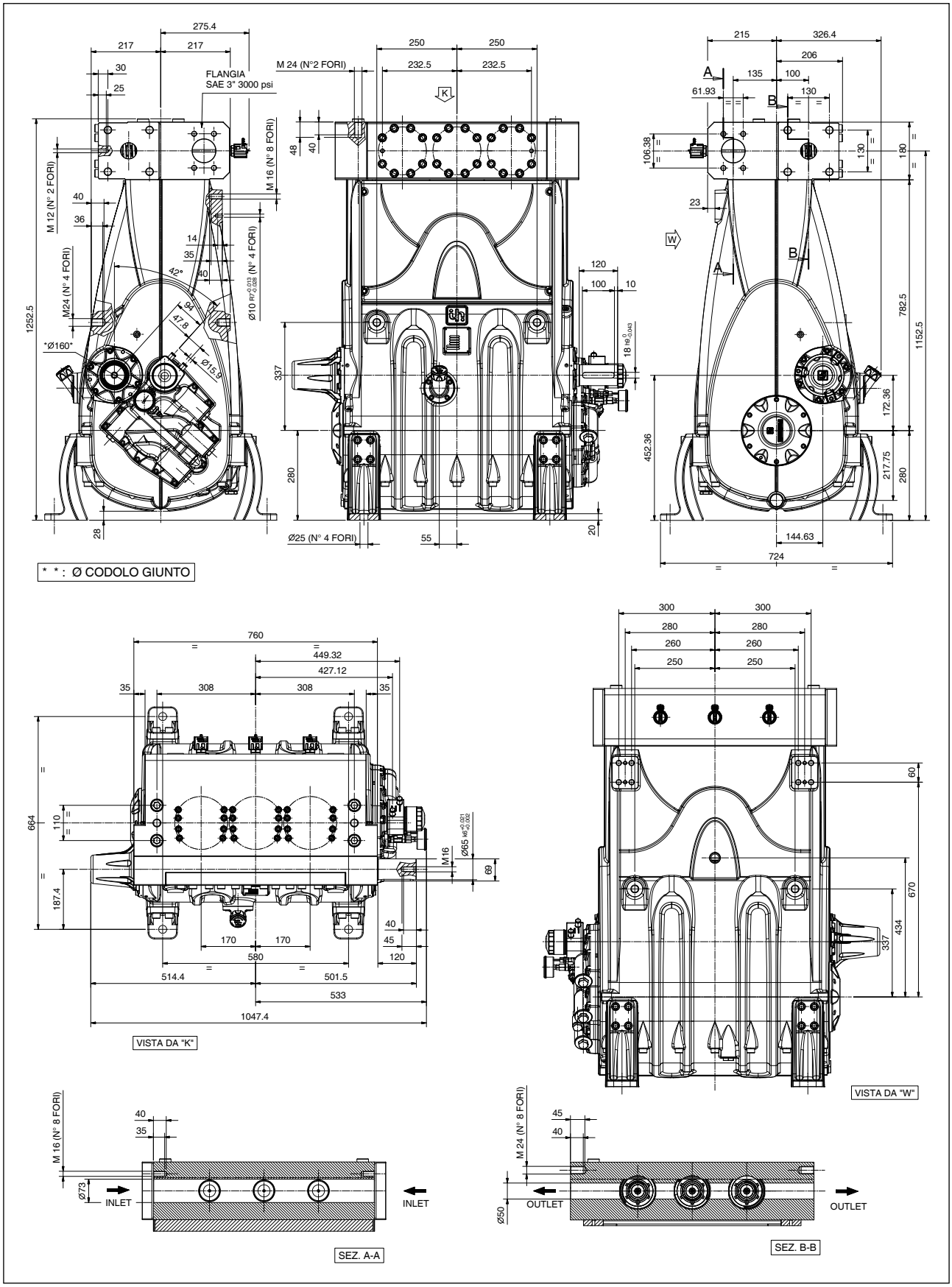
بالنسبة لأبعاد وأوازن المضخات التي سلسلتها TR الأفقية يرجى الاسترشاد بالشكل 3.




**الوزن الجاف 1185 كجم.**

الشكل 3

بالنسبة لأبعاد وأوازن المضخات التي سلسلتها SR الرأسية، يرجى الاسترشاد بالشكل a/2.

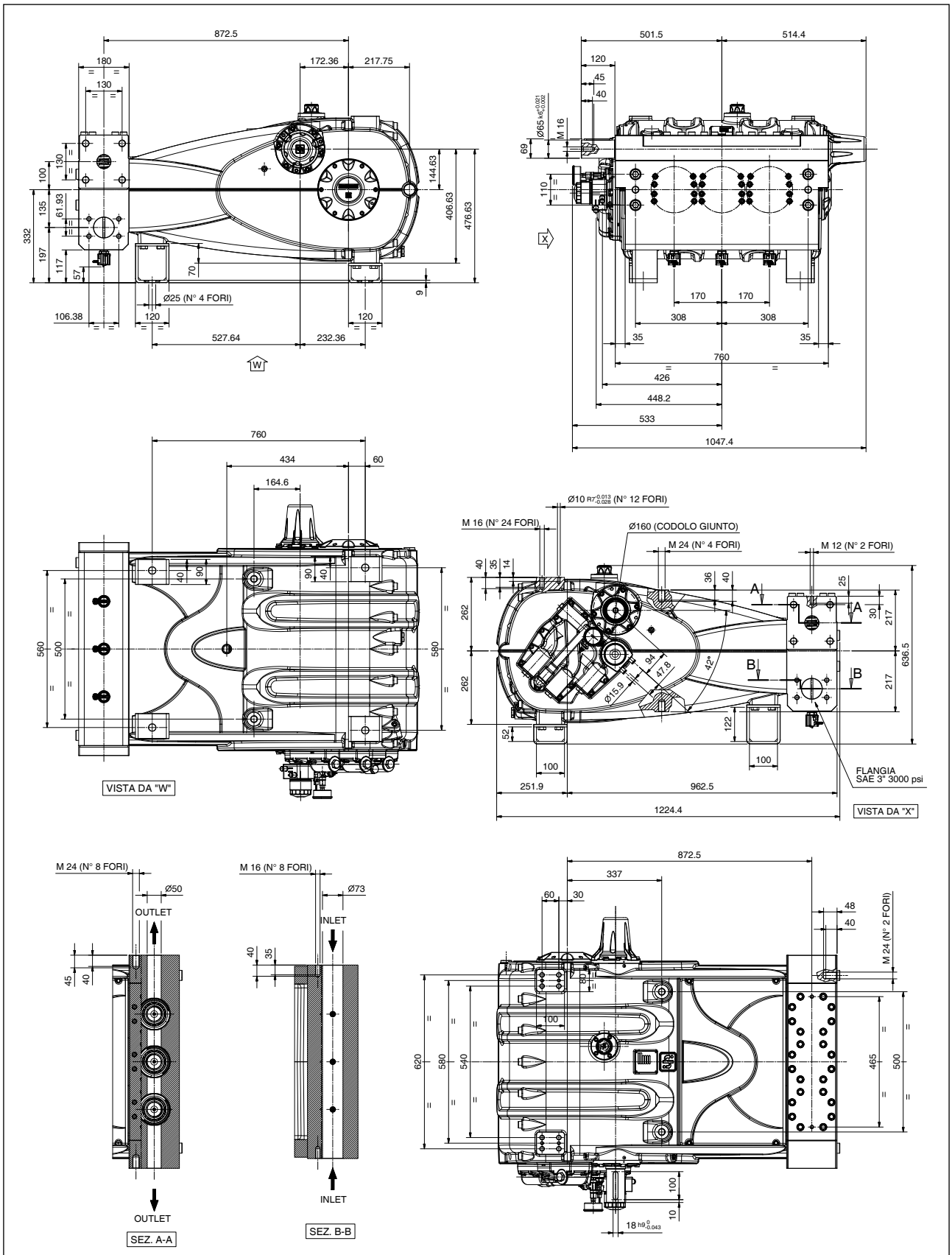



**الوزن الجاف 1160 كجم.**

الشكل a/2

## 6 أبعاد وأوزان مضخات SR عالية التدفق

بالنسبة لأبعاد وأوزان المضخات التي سلسلتها SR الأفقية يرجى الاسترشاد بالشكل 2.




**الوزن الجاف 1150 كجم.**

**الشكل 2**

## 5 الخصائص التقنية للمضخات عالية التدفق

**الخصائص التقنية لمضخات SR (بـ 520 لفة في الدقيقة)**

| الموديل | عدد اللفات \ دقيقة | السعة | | الضغط | | القوة | |
|---|---|---|---|---|---|---|---|
| | | لـ\دقيقة | Gpm | بار | psi | ك و | Hp |
| SR 50 | 1500 | 276 | 73 | 400 | 5800 | 211 | 287 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 65 | 1500 | 466 | 123 | 250 | 3625 | 222.5 | 302.5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| SR 75 | 1500 | 620 | 164 | 200 | 2900 | 236.8 | 322 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

**الخصائص التقنية لمضخات TR (بـ 520 لفة في الدقيقة)**

| الموديل | عدد اللفات \ دقيقة | السعة | | الضغط | | القوة | |
|---|---|---|---|---|---|---|---|
| | | لـ\دقيقة | Gpm | بار | psi | ك و | Hp |
| TR 50 | 1500 | 398 | 105 | 400 | 5800 | 304 | 413.5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 60 | 1500 | 573 | 151.4 | 300 | 4350 | 328.3 | 446.5 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 70 | 1500 | 780.5 | 206 | 220 | 3190 | 328 | 446 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |
| TR 75 | 1500 | 896 | 236.7 | 200 | 2900 | 342 | 465 |
| | 1800 | | | | | | |
| | 2200 | | | | | | |

### 1.5 الأوقات المنخفضة لخمول المضخة في PTO

| مضخة سلسلة | لفة في الدقيقة | J - (كجم مم²) |
|---|---|---|
| SR | 1500 | 231600 |
| | 1800 | 182400 |
| | 2200 | 140700 |
| TR | 1500 | 241200 |
| | 1800 | 189100 |
| | 2200 | 145200 |

6. يجب دائما على عامل التشغيل أن يولي اهتماما لمسار الرواسب والبقايا الناتجة عن الماء المضخ. 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 العامل المشغل 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 أن يتم البدء في استخدام نظام الضغط العالي دون أن يكون جميع أفراد الفريق كلٌ في مكانه الصحيح وكما لا يجب تشغيله قبل أن يكون العامل قد وجة فوهة التوجيه ناحية منطقة العمل.

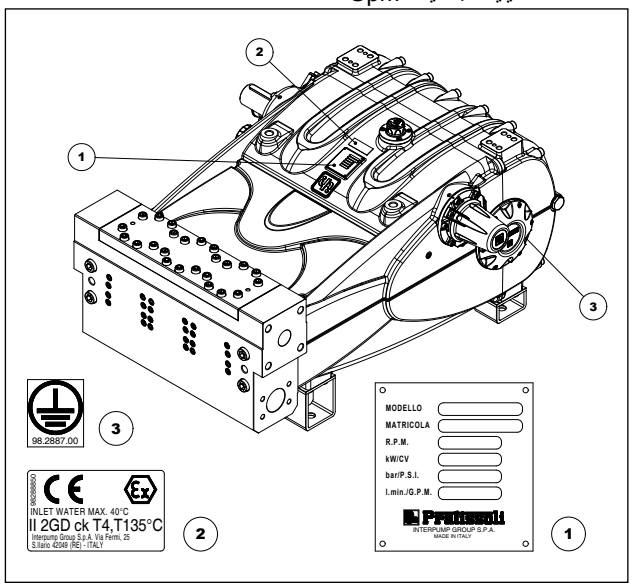
### 5.3 الأمن والسلامة في صيانة النظام

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 طاقم عمل متخصص مؤهل ومصرّح له القيام 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 لتجنب التسبب في أي تلفيات أو أضرار لمكونات المضخة، وبشكل خاص عندما يتعلق الأمر بالوصلات.
4. لضمان الحصول على موثوقية كاملة وأمن وحماية، يجب دائما استخدام فقط قطع غيار أصلية.

## 4 تعريف المضخة

يوجد على كل مضخة لوحة بيانات تعريفية تحتوي على ما يلي:

- موديل وإصدار المضخة
- الرقم التسلسلي
- الحد الأقصى لعدد اللفات
- قوة الامتصاص Hp – kW
- الضغط بار - P.S.I.
- السعة التشغيلية لـ \ دقيقة- Gpm




الشكل 1

**يجب دائما ذكر الموديل والإصدار والرقم التسلسلى في حالة طلب الحصول على قطع غيار.**

للمضخات المطلوبة بتهيئة **ATEX**:
وضع 2 - بطاقة **بعلامة ATEX الخاصة للحماية ضد الانفجار**.
وضع 3 - بطاقة تحديد **براغي التأريض**.

## 1 مقدمة

يصف هذا الدليل تعليمات الاستخدام والصيانة لسلسلة المضخات SR-TR، لذلك يجب قراءاتها وفهمها بدقة وحرص قبل استخدام المضخة.
يعتمد عمل المضخة بالشكل الصحيح واستمرارها عبر الزمن على الاستخدام السليم لهذه الآلة وعلى القيام بأعمال الصيانة المناسبة لها.
لا تتحمل شركة Interpump Group أي 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 أعطاب أو تلفيات قد تجدها قبل القيام بتركيب المضخة أو قبل بدء تشغيلها.

## 2 وصف الرموز

**إشارة التحذير**

يجب قراءة ما هو مدوّن في هذا الدليل قبل كل عملية.

**إشارة الخطر**
خطر الصعقة الكهربائية.

**إشارة الخطر**
ارتدي قناع الحماية.

**إشارة الخطر**
ارتدي نظارات الحماية.

**إشارة الخطر**
ارتدي قفازات الحماية قبل القيام بأية عملية.

**إشارة الخطر**
ارتدي أحذية الحماية المناسبة.

**الرمز الذي يتعلق بالحماية ضد الانفجار.**
يحدّد المواصفات الخاصة بالسلامة لاستخدام المضخات في المناطق المعينة بموجب توجيه ATEX.
**عند طلب المضخات بتهيئة ATEX** لأنها موجهة للعمل في مناطق معرضة للانفجار بشدة، يجب الالتزام **بدقة وحرص بالملاحظات المدونة في الفقرات بهذا الرمز وبالتعليمات المدونة في دليل التعليمات الإضافية "الحماية ضد الانفجار "ATEX**.

## 3 السلامة

### 1.3 تحذيرات السلامة العامة

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 بتجميعهاباستخدامها 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 التغاضى عن عمل أي احتياط واجب التطبيق بشكل عقلانى 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 ومأخذ 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 يلى:

1. إن نظام الضغط العالي تم تغذيته بالشكل الصحيح (انظر النقطة 4.9).
2. أن مرشحات شفط 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.

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 إرتداء 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 هو ليس الذي يحمى فقط من التعرض لرذاذ الماء بشكل فعّال ولكنه الذي يحمى أيضاً من ملامسة المياه بشكل مباشر ومن 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.
4. يجب أن تكون منطقة العمل والتي يعمل الضخ 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 تحديد مدى الماء المضخ كما يجب توجيهه فقط إلى منطقة العمل، أيضا في حالات التجريب أو في حالات الفحوصات الأولية.

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