



ISTRUZIONI D'USO E MANUTENZIONE
USER AND MAINTENANCE INSTRUCTIONS
MODE D'EMPLOI ET D'ENTRETIEN
GEBRAUCHS- UND WARTUNGSHANDBUCH
INSTRUCCIONES DE USO Y MANTENIMIENTO
INSTRUÇÕES DE USO E MANUTENÇÃO
INSTRUCTIES VOOR GEBRUIK EN ONDERHOUD

SÄKERHETSINSTRUKTIONER OCH UNDERHÅLL
BRUGS- OG VEDLIGEHOLDELSESMANUAL
KÄYTTÖ- JA HUOLTO-OHJEKIRJA
INSTRUKSJONER FOR BRUK OG VEDLIKEHOLD
ΟΔΗΓΙΕΣ ΧΡΗΣΗΣ ΚΑΙ ΣΥΝΤΗΡΗΣΗΣ
ИНСТРУКЦИИ ПО ЭКСПЛУАТАЦИИ И
ТЕХОБСЛУЖИВАНИЮ

Questo manuale deve essere letto e compreso in accordo al libretto specifico della motopompa.

This manual should be read in conjunction with the manual provided with the motor pumps.

Ce manuel doit être lu et compris en accord avec la notice spécifique de la motopompe.

Dieses Handbuch muss zusammen mit der speziellen Bedienungsanleitung der Motorpumpen gelesen und verstanden werden.

Este manual debe leerse y entenderse de acuerdo con el manual específico de la motobombas.

Este manual deve ser lido e compreendido de acordo com o manual específico da motobombas.

Deze handleiding dient te worden gelezen en begrepen in samenhang met het specifiek bij de pompen geleverde instructieboekje.

Denna manual ska läsas och förstås tillsammans med motorpumpar specifika manual.

Denne manual skal læses og forstås i overensstemmelse med den specifikke manual til motorpumpen.

Tätä ohjekirjaa on luettava ja tulkittava yhdenmukaisesti moottoripumput käyttöohjeen kanssa.

Denne håndboken må leses og forstås i samsvar med motorpumper spesielle håndbok.

Το εγχειρίδιο αυτό πρέπει να διαβαστεί και να κατανοηθεί σύμφωνα με το ειδικό εγχειρίδιο της αντλίας.

Данная информация должна быть прочтена и исполнена в соответствии с инструкцией на конкретный аппарат.



- Original Instructions -

THIS MANUAL CONTAINS THE INSTRUCTIONS FOR INSTALLING, OPERATING AND MAINTAINING INTERPUMP PUMPS. IT THUS FORMS AN INTEGRAL PART OF THE INSTRUCTIONS AND SHOULD BE READ CAREFULLY BEFORE PROCEEDING TO PERFORM ANY OPERATIONS, AND KEPT WITH CARE.

FOLLOW THE INSTRUCTIONS SCRUPULOUSLY IN ORDER TO ENSURE SAFE AND EFFICIENT OPERATION OF THE PRODUCT. FAILURE TO DO SO MAY CAUSE FAULTS TO OCCUR PREMATURELY AND CREATE HAZARDS, AS WELL AS RENDERING THE GUARANTEE NULL AND VOID.

1 - GENERAL INFORMATION

1.1 - INTERPUMP GROUP motor-driven pumps are comprised of a piston pump with an electric motor, and are designed for pumping water under pressure.

1.2 - Improper use of pumps and high-pressure systems in general, and failure to respect installation and maintenance regulations may cause serious injury to persons and/or damage to property. In the interests of safety, no reasonably applicable safety precaution must be omitted by the Installation engineer or the Operator.

1.3 - Before installing and using the pump, we recommend you check its condition and make sure that its ratings (see the ratings plate) correspond to the required performance levels. If its condition and/or ratings are not up to standard, do not use the pump and contact the Interpump Group Customer Assistance Service for further instructions.

1.4 - Installation and operation must be carried out by qualified personnel with the mechanical and technical knowledge necessary to understand the operating & safety instructions contained in this manual and in the specific manual for the pump.

1.5 - High-pressure system components, particularly those of systems that are operated mainly outdoors, must be adequately protected against the rain, frost and heat.

1.6 - Use only and exclusively filtered, soft water. Using salty water and/or water containing excessively large solid particles will cause rapid wearing of the internal parts of the pump, and will compromise its correct functioning. If desired you can add chemical additives to the water (see Chapter 10).

1.7 - The high-pressure pipes and connections must be correctly sized for the planned pressures and flow rates and used exclusively within the working pressure range indicated by the pipe manufacturer.



1.8 - **WARNING:** During operation, NEVER exceed the maximum values for pressure, flow rate and/or water temperature indicated on the technical specification plate.

If in doubt, do not hesitate to contact the Interpump Group Customer Assistance Service.

2 - RESPONSIBILITY OF THE MAKER

The maker declines all responsibility for the correct functioning and safety of the product in the event of:

2.1 - Purpose of use not scrupulously observed.

2.2 - Use for improper purposes.

2.3 - Unauthorised modifications and/or tampering.

2.4 - Failure to observe the operating instructions.

2.5 - Repair using third-party spare parts.

- 2.6** - Incorrect installation.
 - 2.7** - Defective or incorrect electrical and/or hydraulic power supply.
 - 2.8** - Pumping of explosive or inflammable liquids, or liquids that are aggressive to the pump materials.
 - 2.9** - Operation at values above the maximum declared plate rating values.
 - 2.10** - Interventions by unqualified and/or unauthorised personnel.
 - 2.11** - Operation and/or storage in environments with a potentially explosive atmosphere.
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3 - PRODUCT IDENTIFICATION PLATE

- 3.1** - Before installing and operating the pump, make sure that the plate with the technical specifications is present, undamaged and perfectly legible. Check that the electricity at the mains (V/Hz) corresponds to the levels indicated on the plate. If they do not, do NOT use the pump, and contact the Interpump Group Customer Assistance Service for further instructions.
 - 3.2** - The plate attached to the product in a clearly-visible position shows the name of the maker, the pump model, the electrical specifications of the motor and the hydraulic specifications of the pump.
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4 - PACKAGING AND MOVEMENT

- 4.1** - Remove the packaging, following the instructions printed on the packaging and/or provided by the maker.
 - 4.2** - Some packaging components are significantly heavy, and to remove these we recommend using mechanical lifting gear specially designed for this purpose, in order to avoid injury to persons and/or damage to property.
 - 4.3** - If the pumps are not used immediately then they must be stored in their packaging, intact, and in areas protected from bad weather, from excessive humidity and from direct sunlight. In addition the packaged pumps should be raised from the ground by inserting wooden beams, pallets or similar between the packaging and the ground, so that the packaging is not in direct contact with the ground.
 - 4.4** - Dispose of the packaging in accordance with the applicable legislative regulations.
 - 4.5** - Lifting and movement of the pumps during installation must be done with the utmost care and without sudden acceleration or changes of direction. Avoid excessive oscillations, and keep the pumps horizontal in order to prevent loss of stability and to avoid overturning.
 - 4.6** - To lift the pumps, use accessories like snap-hooks, slings, cables, hooks etc. that are certified and rated for the mass to be lifted. The weight of the pumps can be found in the manuals for the specific models.
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5 - INSTALLATION

- 5.1** - Carefully and thoroughly clean the coupling parts and/or surfaces.
- 5.2** - Position the pump horizontally with the oil plug facing upwards and affix it to the surface via the feet of the motor. The support base must be flat, rigid and strong to prevent flexion, sagging or falls.
- 5.3** - To avoid transmission of excessive vibrations during operation, we recommend inserting anti-vibration plastic pads between the feet and the surface, when affixing the pump.
- 5.4** - DO NOT, UNDER ANY CIRCUMSTANCES, allow the pump to operate, even for short periods, without water. If necessary, install appropriate safety systems to prevent this from happening.
- 5.5** - For pumps that do not have the TOTAL STOP device (which automatically arrests the motor when

there is an interruption in the water flow in the delivery line), avoid operating the pump in BYPASS mode for more than 3 minutes by switching off the motor. Overheating of the recirculating water inside the pump head will cause damage to the seals and to the valves.

5.6 - Allow space for ventilating the engine and for the pump's hydraulic connections.

5.7 - For special applications contact the Interpump Group Technical Office or Customer Assistance Service.

6 - FEED LINE

For the pump to operate optimally the FEED line must meet the following specifications:

6.1 - It must have an internal diameter the same as the input diameter (IN) on the pump head.

2.2 - It must have no 90° elbows, offtakes with other pipes, bottlenecks, T-connections, siphons, or zones with air locks, to avoid loss of load and cavitation.

6.3 - It must be connected to the water mains or be set up in such a way as to ensure, under all operating conditions, a minimum positive water head of 0.20 m (0.02 bar) and a maximum positive water head of 80 m (8 bar) measured at the inlet aperture of the pump. The minimum value of 0.02 bar is valid for cold water of temperature up to 40°C. For temperatures over this level, contact the Interpump Group Customer Assistance Service. **NEVER exceed the maximum water input temperature shown on the technical specifications plate.**

6.4 - It must be perfectly, hermetically sealed and executed in such a way as to ensure the seal over time.

6.5 - As an alternative to using the filter inserted inside the pump water supply connection, you can use an external filter positioned on the feed line, near the point of entry of water to the pump. We recommend a filter with a filtration grade of at least 300µm.

N.B. Even if you use clean water, you still need the to have a filter present to prevent foreign bodies from accidentally being introduced into the water and hence into the pump, such as sand, wood shavings, welding dross or flakes of limescale etc.

6.6 - It must be executed in such a way that, when the pump is stopped, it does not empty (even partially).

6.7 - WARNING: If you are using a connection to the water mains, we recommend installing a device on the feed line to prevent the used water from being returned to the mains.

7 - DELIVERY LINE

To install the DELIVERY line correctly the following must be closely observed:

7.1 - The pipes and connections must be correctly dimensioned for the expected maximum pressure and water flow, so as to guarantee the correct speed of the fluid and to limit instances of load loss. Indicatively, their internal diameters must be the same as the internal diameter of the outlet connection.

7.2 - Use high-pressure pipes and connections of a type that will withstand the maximum working pressures.

7.3 - The first length of piping connected to the pump must be flexible. This prevents straining of the connections, and it also isolates the system from vibrations produced by the pump.

7.4 - If you intend to measure the pressure directly at the pump head, use pressure gauges that are designed to withstand the pulsing loads typical of piston pumps.

7.5 - If the hydraulic pulsations produced by the pump on the delivery line are damaging or undesired, install a suitably-dimensioned pulsation damper.

7.6 - Tighten the connection on the pump outlet nipple as follows:

Threading	Metal/metal seal	Conical threading	Revolving ferrule on flexible high-pressure pipe
	Nm ($\pm 5\%$)	* T.A.M.T.	
G3/8	45		
3/8NPT		2-3	
M22x1.5			** M.T.

* Turns After Manual Tightening

** Manual Tightening

7.7 - If necessary, to ensure the seal on the thread, a suitable sealant material can be inserted.



WARNING: If the water flow in the delivery line is blocked during operation, then the water is circulated by the valve inside the pump, and the part of the system after the valve remains under operating pressure.

8 - CONNECTION TO THE ELECTRICITY MAINS

Verify and observe the following specifications:

8.1 - The mains voltage must correspond to the voltage indicated on the identification plate on the machine.

8.2 - The electricity socket must conform to the legal standards in the country of use and in particular it must be earthed.

8.3 - The socket must be protected with an automatic cut-out switch (a differential magnetothermic circuit breaker with sensitivity lower than 30 mA.)

8.4 - Do not connect other electrical devices to the same socket.

8.5 - Plugless electrical cable.

8.5.1 - Some models of pump are sold without a plug for connection to the electricity mains. In these cases installing the plug must conform to the IEC 60364-1 standard and must be carried out by qualified personnel and in observance of the following prescriptions:

8.5.2 - The plug must conform to the standards in the country of use and must in any case be earthed.

8.5.3 - The cable-plug connection must be watertight.

8.5.4 - The plug must have electrical characteristics that meet the rating data indicated on the plate.

8.5.5 - If you use a direct connection, i.e. without a plug and socket, then the connection to the electricity mains must conform to the IEC 60364-1 standard and it must be done by a qualified installation engineer.

8.5.6 - In tri-phase models the three power supply conductors in the electrical cable can be connected to the three phases of the electricity mains in any order without distinction. The fourth conductor (yellow/green in colour) must be connected to earth.

8.6 - Use of extension cables.

8.6.1 - If you use an extension cable, then the connection between the plug and the socket must be of the watertight type, and raised above the ground, in order to prevent possible contact with water.

8.6.2 - **WARNING:** Using an inadequate extension cable may be dangerous.



SELECTION TABLE			
Voltage Volts	Length of extension cable	Section of cables	
		mm ²	AWG
230-240	Up to 20 m	2,5	14
230-240	From 20 to 50 m	4	12
400-415	Up to 50 m	2,5	14

8.7 - Warnings.

8.7.1 - The machine is built in conformance with safety criteria laid down by law. The use of electrical equipment still requires you to follow a number of basic rules.

8.7.2 - Do not come into contact with live electrical parts of the machine.

8.7.3 - Before every inspection and/or movement of the machine, disconnect the plug from the socket.

8.7.4 - Do not pull the electrical cable to disconnect the plug from the socket.

8.7.5 - Do not crush the power supply cable.

8.7.6 - Do not start the machine if the power cable is damaged. Instead, replace the cable. It must be installed by a qualified engineer and you must use a cable that is the same as the original cable, with the same specifications as the ones printed on the external sheath of the cable.

8.7.7 - During operation, unroll the power cable completely to avoid overheating.

8.7.8 - During operation do not cover the machine or place it in areas where it will not be adequately ventilated.

8.7.9 - The machine is equipped with a thermal protector that electrically disconnects the motor if it overheats. If this happens, switch off the machine by bringing the switch to the "OFF" position. Allow the motor to cool for a few minutes before restarting the machine. If the machine does not restart wait a few more minutes and try again.



8.7.10 - WARNING: If there is a power cut during operation, for safety reasons switch off the machine. (Set switch to "OFF")

9 - STARTING UP

To start up the pump, follow these instructions:

9.1- Replace the RED-coloured transport cap with the cap with the oil level dipstick supplied.

9.2 - Check the level of oil in the pump is correct, using the oil level light or using the dipstick in the cap. If necessary top up the oil.

9.3 - Make sure that all connections are properly tightened and that the water supply to the pump is connected and/or open.

9.4 - To expel the air in the pump/system and facilitate entry of the water into the pump, we recommend you carry out a first startup, as follows:

9.4.1 - Remove appliances (nozzles, accessories etc.) from the delivery line or simply disconnect the delivery pipe from the pump.

9.4.2 - Start the pump for 5-10 seconds until a flow of liquid comes out from the pump outlet aperture that is constant and homogeneous. If this does not occur, switch off the pump for a few seconds and repeat the operation.

9.5 - Prepare the pump/system by bringing it into its condition of use.

9.6 - Start the machine and, if necessary, adjust the operating pressure as needed, by rotating the

pressure knob on the pump valve (the direction of rotation is clearly indicated on the knob).

9.7 - All Interpump Group pumps are tested and checked before being shipped. The installation engineer is still required, however, to test the complete system for a period long enough to check for any leaks and/or overheating, and to verify that it maintains performance levels.



9.8 - WARNING: Pumps with the TOTAL STOP device arrest the motor after around 20 seconds when there is an interruption in the water flow in the delivery line, and begin recirculating water inside the pump head. The motor restarts automatically as soon as the water flow on the delivery line resumes.

9.10 - WARNING: During normal operation some external surfaces of the pump may reach high temperatures. Take precautionary measures to prevent contact.

9.11 - During operation, do not cover the pump so as not to affect its ventilation and proper operation.

10 - INTAKE OF CHEMICAL PRODUCTS

10.1 - Some models of pump are designed to premix the water with detergents or other general liquid chemical products.

10.2 - To get the product into the pump, you must use a pipe to connect the container of the chemical product to the intake device located on the pump.

10.3 - Intake takes place with the pump in operation at low pressure. Low pressure can be obtained by using certain devices on the high-pressure delivery line.

10.4 - You can adjust the quantity of chemical product taken in by adjusting the corresponding selector/knob on the intake device.



10.5 - WARNING: Use only chemical products that are not highly aggressive, which are biodegradable and which in any case conform to the legislation and regulations of the country of use.

10.6 - For further information contact the Interpump Group Customer Assistance Service.

11 - MAINTENANCE



11.1 - Maintenance and repairs of the pump must be carried out only and exclusively by qualified and authorised personnel. Before each intervention disconnect the machine from the electricity mains and make sure that the machine is “out of service”.

11.2 - Proper maintenance means the machine will have a longer operational life and will maintain higher performance levels for longer.

11.3 - Dismantling and assembling the parts that make up the pump must be done using the correct equipment in order to prevent damage and to not compromise the correct operation and proper safety of the machine.

11.4 - Regularly check that the outside of the pump is clean, and check for any water leaks, oil leaks, malfunctions and/or excessive noise. If necessary, replace the parts concerned. If in doubt, contact the Interpump Group Customer Assistance Service.



11.5 - WARNING: To ensure total reliability and safety, always and exclusively use original branded parts.

11.6 - After maintenance has been carried out, make sure to reassemble the pump correctly in order to reproduce the initial conditions.

11.7 - The oil level must be regularly checked using the oil level light or the oil dip stick in the cap.

11.8 - Scheduled maintenance:

After the first 50 hours	Every 500 hours	Every 1000 hours (average interval, reduce for heavy use)
Oil change	Oil change	Check/replace valve assemblies and pumping seals

11.9 - For the recommended oils to use, please see the table on the last page of this manual.



11.10 - WARNING: The spent oil must be collected in receptacles and disposed of at authorised centres, in accordance with legislation. Do NOT under any circumstances discard it in the environment.

12 - PRECAUTIONS AGAINST FREEZING

12.1 - If the machine is kept in environments that are at risk of freezing, we recommend you suck some antifreeze liquid, similar to that used for cars, into the pump beforehand. In all cases, however, we recommend placing the machine in a warm location for a few minutes before use.



12.2 - WARNING: If ice is present, DO NOT start the pump. Starting the pump when it is blocked by ice will cause serious damage to the motor and also to the pump itself.

13 - GUARANTEE CONDITIONS

13.1 - The guarantee period and conditions are indicated in the purchase agreement.

13.2 - The guarantee will be considered null and void if one or more of the situations listed in paragraph 2 occur.

14 - SCRAPPING THE MACHINE

14.1 - If you decide to decommission and scrap the machine, we recommend making it inoperative by removing the electrical power cable.

14.2 - This machine is categorised as special waste and must not be disposed of with normal waste. Dismantle it and sort similar parts together for disposal in accordance with legislation.

14.3 - Do not use scrapped parts as spare parts.



Information on the disposal of electric and electronic equipment in compliance with directive 2002/96 CE (RAEE).

1. Within the European Union

Warning: do not use the normal house trash bin to dispose of this product.

Used electric and electronic equipment must be handled separately and in compliance with the regulations relating to the treatment, recovery and recycling of the said products.

In accordance with the regulations applied in the member States, private users resident in the EU can take used electric and electronic equipment free of charge to designated collection centers*. In some countries * the local dealer, too, can withdraw the old product free of charge if the user purchases a new, similar product.

** For more information contact your local competent authorities.*

If you experience difficulties in locating an authorized disposal center, consult the dealer from whom you purchased the product.

The correct disposal of this product will contribute to ensure that the waste is submitted to the required treatment, recovery and recycling, preventing the potential negative impact on environment and human health, which could be caused by an unsuitable disposal of the waste.

The national regulations provide sanctions against whoever unlawfully disposes of or abandons waste of electric or electronic equipment.

2. In countries outside the European Union.

If you wish to dispose of this product, contact your local authorities to get information about the correct disposal method.

Warning: the product is marked with this symbol, which means that electric and electronic products should not be disposed of with the normal house-hold waste. A separate collection system is foreseen for these products.

15 - TROUBLESHOOTING GUIDE

(FOR USE BY QUALIFIED PERSONNEL)

At start-up, the pump makes no noise.	• The pump is not primed and is operating dry. • The water supply is off. • The valves are blocked. • The delivery line is closed and does not let the air flow out of the pump.
The pipes pulsate in an irregular fashion.	• There is insufficient air suction and/or supply. • Bends, elbows, fittings/connections on the feed line are slowing down the flow of the liquid. • The feed filter is dirty or too small. • The booster pump, if installed, is providing an insufficient pressure and/or flow capacity. • The pump is not primed due to an insufficient head, the delivery pipe is closed during priming and/or a valve is sticking. • Worn pressure valves and/or seals. • The pressure regulating valves are not working properly.
The pump does not give the rated capacity and makes excessive noise.	• There is an insufficient supply and/or the number of revolutions is less than the rated value. • Excessive leaking from the pressure regulating valve and/or the pressure seals. • Worn valves. • Cavitation due to: undersized feed pipes and/or filter, insufficient flow capacity, high water temperature, clogged filter.
The pressure supplied by the pump is insufficient.	• The appliance (nozzle) is too large or is worn. • Excessive leaking from the pressure seals. • The pressure regulating valve is not working properly and/or the valves are worn.
The pump overheats.	• The pressure and/or the number of revolutions is higher than the rated value. • The oil in the sump of the pump is not at the required level or is not of the recommended type.
With the switch in the "ON" position (machine switched on) the motor makes noise but does not start.	• The mains voltage level is lower than the minimum level required. • The flow is blocked or frozen. • Electrical extension cable does not have a large enough section.
With the switch in the "ON" position (machine switched on) the motor makes no noise and does not start.	• The plug is not correctly inserted. • There is no electrical current.
During operation the motor stops suddenly.	• The thermal protector has kicked in because of overheating.

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The information given in this document may be modified at any time without notice.

OLI CONSIGLIATI - Salvo diverse indicazioni sul libretto specifico pompa.

RECOMMENDED OILS - Unless otherwise indicated in the manual provided with the pump.

HUILES CONSEILLÉES - Sauf indications différentes sur le livret spécifique de la pompe.

EMPFOHLENE ÖLSORTEN - Vorbehaltlich anders lautender Angaben in der speziellen Bedienungsanleitung der Pumpe.

ACEITES RECOMENDADOS - Salvo indicaciones diversas en el manual específico de la bomba.

ÓLEOS ACONSELHADOS - Salvo indicações diferentes no manual específico da bomba.

AANBEVOLEN OLIESOORTEN - Behoudens andere vermeldingen in het specifieke bij de pomp horende instructieboekje.

ANBEFALET OLIER - Med mindre andet er angivet i den specifikke brugsanvisning for pumpen.

REKOMMENDERADE OLJOR - undantaget specifika angivelser i pumpens specifika manual.

SUOSITELLUT ÖLJYT - Ellei pumpun käyttöohjeessa muuta ilmoiteta.

ANBEFALTE OLJER - Hvis ikke annet angis i pumpens spesielle håndbok.

ΠΡΟΤΕΙΝΟΜΕΝΑ ΛΑΔΙΑ - Εκτός κι αν υποδεικνύεται διαφορετικά στο ειδικό εγχειρίδιο αντλίας.

РЕКОМЕНДУЕМЫЕ МАСЛА - Если не указывается иначе в инструкциях на конкретный насос.



F°	14°	23°	32°	41°	50°	59°	68°	77°	86°	95°	104°	113°	122°
C°	-10°	-5°	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°



SAE 15 W-40 MINERAL - ISO VG100 DIN 51524 - INTERPUMP X 9.9

SAE 80 W-90 - ISO VG220 DIN 51524



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