



E-Tech



Franklin Electric



POMPE SOMMERSE 4"- 6" E 8"
4"- 6" AND 8" SUBMERSIBLE PUMPS
TAUCHPUMPEN 4"- 6" UND 8"
POMPES SUBMERSIBLES 4"- 6" ET 8"
BOMBAS SUMERGIBLES 4"- 6" Y 8"
POMPY GŁĘBINOWE 4"- 6" I 8"
4"- 6" OG 8" UNDERVANDSPUMPER
URROPUMPUT, 4"- 6" JA 8"
ΥΠΟΒΡΥΧΙΕΣ ΑΝΤΛΙΕΣ 4"- 6" ΚΑΙ 8"
DOMPELPOMPEN, 4"- 6" EN 8"
4"- 6" OG 8" NEDSENKBARE PUMPER
BOMBAS SUBMERSÍVEIS DE 4"- 6" E 8"
4 - 6 OCH 8 TUMS DRÄNKBARA PUMPAR
4"- 6" И 8" ПОГРУЖНЫЕ НАСОСЫ

Manuale d'uso e installazione
Use and installation instructions
Gebrauchs- und Aufstellungshandbuch
Manuel pour l'emploi et installation
Manual de empleo e instalación
Instrukcja obsługi i instalacji
Brugs- og installationsanvisninger
Käyttö- ja asennus-ohjeet
Οδηγίες χρήσης και εγκατάστασης
Gebbruiks- en installatie-instructies
Instruks for bruk og installasjon
Instruções de utilização e instalação
Instruktioner för användning och installation
Руководство по монтажу и эксплуатации



These operating instructions contain relevant information and precautionary notes. Please read the manual carefully before assembling, electrical connection and commissioning.

General Observations

This pump has been developed according to the most advanced and recent technology, as well as in compliance with the regulations in force. Moreover, the pump is subject to a permanent quality control.

These operating instructions are intended to help you better understand the pump operation and to show you its possible applications.

The manual contains important information necessary for reliable and profitable operation. Compliance with the operating instructions is of vital importance to ensure the reliability and a long service life of the pump, as well as to avoid any accident risk due to improper use.

This pump must not be operated beyond the limit values quoted in the technical specification. Any indication concerning the nature, the density, the temperature, and the rate flow of the pumped liquid, as well as the rotation speed, the pressure and the power of the motor shall be observed. Any other instruction contained in this manual or in the documentation enclosed to the agreement shall be observed as well.

The rating plate bears the type series, the main operation data, and the serial number. Please, quote this information in all request of intervention or assistance, and when ordering spare parts.

Safety regulations

This manual contains essential instructions that must be observed during installation, operation and maintenance. Therefore, this operating handbook must be read and understood both by the person in charge of assembling the machine and by all qualified personnel appointed by the responsible for installation to perform its operation. These operating instructions must always be available on use site of the machine.

Marking of coded instructions within the manual

The safety instructions contained in this manual, whose inobservance might cause hazards to person, are marked with the general hazard sign, i.e.:



(hazard sign)

Risks due to inobservance of safety instructions

Inobservance of safety instructions may cause physical and material damages, as well as environmental pollution. Non-compliance with safety instructions will also lead to the complete loss of any warranty right.

In particular, the inobservance of the above mentioned instructions may for example result in:

- failure of main machine/unit functions;
- failure of maintenance procedures;

- hazard of electrical, mechanical or chemical nature.

Safety regulations

All safety instructions contained in this manual shall be observed, as well as any other national regulation on accident prevention, and any internal regulation on the use of machineries and on occupational safety.

Safety instructions for control, maintenance, and operation works

The person in charge must verify that all maintenance, inspection and installation works are performed by qualified and authorised personnel. Before performing these works, the personnel must be aware of the content of this manual.

All interventions on the machines must be carried out only during total standstill of the mentioned machines. Strictly observe the shutdown procedure described in this manual.

Pumps conveying fluids hazardous to health must be decontaminated.

Immediately after completion of work, all safety and protective devices must be re-installed and/or re-enabled.

Modification and manufacture of Spare parts

Any reconstruction or alteration of the machine must be performed by the manufacturer before being carried out. Original spare parts and accessories supplied by the manufacturer ensure safety. The manufacturer is not in any case liable for damages due to the use of non-original spare parts!

1. DELIVERY AND STORAGE

1.1 Delivery

These submersible pumps are supplied in their own original packing in which they should remain until installation.

Avoid the pump to be bent when it is not packed, since this may cause the misalignment and the damage of the pump itself.

The loose data plate supplied with the pump should be fixed close to the electric control equipment.

The pump shall not be exposed to unnecessary impacts and crashes.

1.2 Storage and Handling

Storage Temperature:

Pump: from -20°C to +60°C

The pump should not be exposed to direct sunlight.

If the pump has not been packed, it shall be stored horizontally, adequately supported, or vertically, to prevent the misalignment of the pump. During storage, the pump can be supported as shown in Fig. 1.

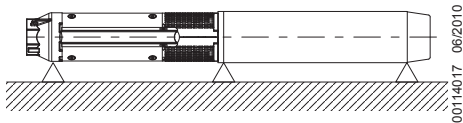


Fig. 1

If the pump is not used in vertical position, both the pump side and the motor side must be supported. Note that the centre of gravity will vary according to the pump type.

2. GENERAL DATA

2.1 General description

The submersible pumps are multistage pumps working with counterclockwise rotation direction (observing from the delivery side) directly coupled to special submersible motors (according to NEMA standards).

Pump identification code



2.2 Applications

These submersible pumps are designed for a wide range of applications, such as the supply of water to private homes, water systems and industries.

These pumps are necessary in case of lowering of the groundwater level, as well as for pressure increase.

Submerge the pump completely under the water level both if it is installed horizontally and vertically. See paragraph 3.1 *Positioning Limits*.

2.3 Pumped liquids

Pumped liquids must be clean, compatible with pump components and materials, without solid particles or fibres.

The maximum sand content in the water must not exceed 50 g/m³. A greater sand content in the water reduces the service life of the pump and increases the risk of blocking. When pumping liquids with a density higher than that of water, motors with correspondingly higher outputs must be used.

3. INSTALLATION / PREPARATION

3.1 Positioning limits



If the pump has to be installed in a position where it is accessible to people, any possibility of contact with the coupling must be avoided. The pump might for instance be equipped with a protective shield.

The pump is suitable for both vertical and horizontal installation, however, the pump should **never** be installed inclined downwards, see Fig. 2.

Note: During operation, the suction support must always be completely submerged.

In special conditions, it may be necessary to submerge the pump even deeper, depending on the operation conditions of the pump, as well as on temperature and NPSH values.

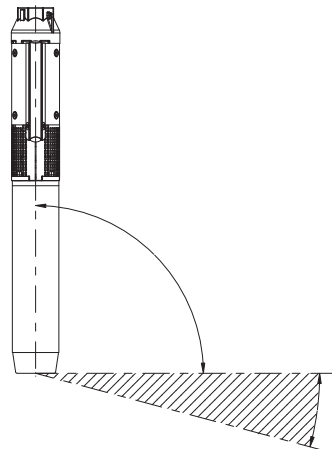


Fig. 2

3.2 Diameter of Pump/Motor

Check in the technical catalog the maximum diameter of the pump and the pump with motor.

Verify the borehole with an inside calliper to ensure unobstructed passage.

3.3 Check valve on the delivering piping

The pump is equipped with an embedded check valve in the delivery opening. However, it is recommended, especially if the pump directly feeds a distribution network subject to pressure, to install another check valve on the delivery piping at no more than 10 meters from the minimum well level. (If this latter is not known, use the delivery opening as minimum level).

Its presence reduces hydraulic shocks due to starts and stops.

4. ELECTRICAL CONNECTIONS



Before starting to work on the pump, make sure that the power supply has been disabled and that it cannot be accidentally switched on.

4.1 General remarks

The electrical connections should be carried out by an authorised electrician according to the regulations in

force.

Supply voltage, current and $\cos \phi$ are quoted on the motor plate that has to be kept within the electrical panel.



The motor must be earthed and connected to the electric panel.

4.2 Verification of Rotation Direction

When the pump has been connected to the power supply, establish the current direction of rotation as follows:

1. Start the pump and control the head provided with gate valve not fully closed.
2. Stop the pump and interchange two of the phase connections.
3. Start the pump and repeat step 1. with the gate valve in the same position.
4. Stop the pump.

Compare the results obtained after performing steps 1 and 3. The correct connection is the one that gives the highest head.

Note: The pump must not be started until the suction support has been completely submerged.

5. PUMP INSTALLATION



Before starting any work on the pump or on the motor, make sure that the power supply has been disabled and that it cannot be accidentally switched on.

5.1 Assembling of the pump with the motor

Place the pump on the motor in order that they are positioned along the same axis and insert the motor shaft in the pump shaft joint: the coupling must not be forced. Tighten the screws or the nuts that diagonally fix the pump-motor flanges with a driving torque as quoted in the following table.

Motor type	Screw	Driving torque Nm
Motor 4"	M8	18
Motor 6"	M12	100
Motor 8"	M16	200

5.2 Delivery piping

If the pump is already coupled to the delivery piping and you use a chain pipe wrench, tighten the pump, holding it only by the delivery opening.

The threaded pipes must be connected in such a way as to support the unscrewing action due to the starting and stopping of the pump.

The thread of the pipe, which has to be screwed into the pump, should not be longer than the thread of the pump. After screwing the pipe into the delivery opening, tighten the screw assembled to avoid the loosening of the first section of the pipe, see Fig. 3.

When plastic pipes are used, the pump should be secured by an unloaded rope to be fastened to the

delivery opening, see Fig. 3.

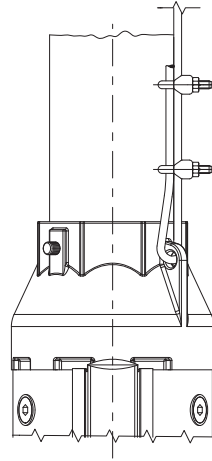


Fig. 3

5.3 Cable fitting

Use cable clips every 3 meters to fix the cable to the support rope or to the delivery pipe.

Use plastic cable clips as shown in Fig. 4.

Once the cable has been fastened, cut off the remaining part of the clip.

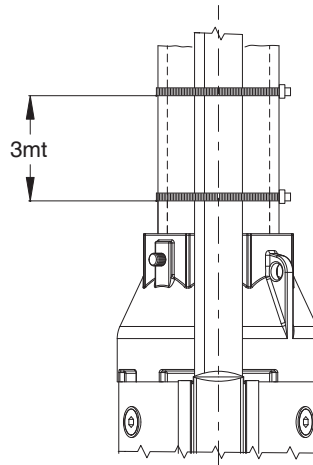


Fig. 4

In the case that the tube is plastic, it must leave the electric cable and the cable support not in tension to prevent the elongation of the tube, due to the weight of the water contained in it, tearing the electric cable.

When flanged pipes are used, the cable clips must be positioned before and after each flange.

5.4 Lowering of the pump

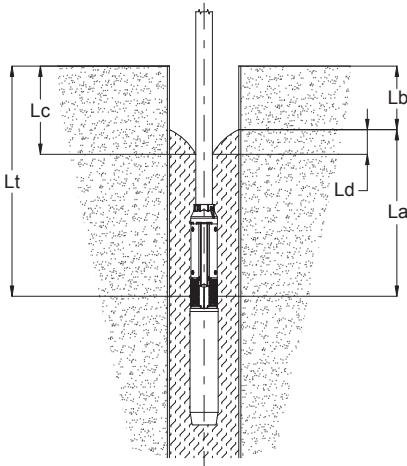
Verify that the well is not clogged along its total length. Lower the pump into the well, paying attention not to damage the electric cable.

Note: Do not lower the pump by means of the electric cable.

5.5 Installation depth

The dynamic water level must always be above the suction support of the pump, see paragraph 3.1 *Positioning Limits* and Fig. 5.

The minimum safety margin shall be 1 meter.



00114015 06/2010

Fig. 5

La: Minimum installation depth (suggested: minimum 1 mt).

Lb: Static water level

Lc: Dynamic water level

Ld: Difference between static and dynamic level

Lt: Installation depth

Block the delivery pipe with proper hangers on the well head.

Loosen the support rope and fix it to the groundwork.

6. START-UP

When the pump has been installed and submerged, it can be started with the gate valve closed to 1/3.

Check the direction of rotation as described in section 4.2 *Verification of Rotation Direction*.

If there are impurities in the water, the gate valve should be opened gradually until the water becomes clearer. The pump should not be stopped until the water is completely

clean again, since otherwise the pump parts and the non-return valve may be damaged.

If the pump flow rate is higher than that of the well, the use of a protection device against dry operation is recommended.

Without any protection against dry operation, the water level falls under the suction support and the pump sucks air. In the long term, this causes damages due to poor cooling and lubrication.

7. MAINTENANCE AND SERVICE

The pumps are maintenance-free.

All pumps are easy to service.

Use the Service Kits and the special tools for maintenance.

The Service Manual is available upon request.



Before performing any operation on the pump or on the motor, verify that the power supply is disabled and that it cannot accidentally be enabled again.

8. DISPOSAL

This product or parts of it must be disposed using the local public or private waste collection service.

