

**Professional submersible
pumps**

**Pompes immergées
professionnelles**

**Pompe Sommerse
professionali**

**Bombas sumergibles
profesionales**

**ПРОФЕССИОНАЛЬНЫЕ
ПОГРУЖНЫЕ НАСОСЫ**

مضخات غاطسة مهنية

CE

GB Instruction manual

F Notice d'instructions

I Libretto istruzioni

E Manual de instrucciones

RUS Инструкция по эксплуатации

AR كتيب التعليمات

ECM-ECT/D - ECM-ECT/V
SEM-SET/V - SEM-SET/M
PRM-PRT/V - PRM-PRT/M
PRF/V - PRF/M
CUTTY



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This symbol precedes the instructions related to operator safety. Not following these instructions exposes the operator to serious health risks.

ATTENTION

Instructions preceded by the word ATTENTION are related to the correct operation, integrity, and conservation of the submersible pump.



This symbol precedes all instructions that concern electrical risks.



Keep this manual in a safe place for future reference.
Read the manual carefully before operating the submersible pump.

1. General safety instructions



This manual contains the main safety rules and precautions.

Please read all these instructions carefully before of installing and using the device.

Keep this manual in a clean and easily accessible place.

In the event that the pump is sold, be sure to transfer all the documentation to the new owner.

- Carry out the repair or maintenance; always replace worn or broken parts with original spare parts.

For any doubt about repairs or replacements to be done, contact the manufacturer or retailer.

1.2. MAINTENANCE IN WELLS OR SEPTIC TANKS



Further precautions to follow in the case of installation in wells and/or septic tanks containing harmful gasses:

- NEVER stay alone when carrying out maintenance in these environments.
- Before starting the work, allow air to circulate in the well.
- Make sure that the safety ropes and hooks are in perfect condition before letting personnel down into the wells; also make sure that there are no obstacles to an immediate return upward in the case of emergency.
- **DANGER OF EXPLOSION!** It is absolutely prohibited to install the pumps in wells, tanks, or basins with the presence of GAS, as there is a danger of explosion.

1.3. CUTTY VERSIONS



Pay special attention in manoeuvring the CUTTY version pumps, as they contain chopping blades in the lower inlet mouth!

1.4. PROTECTIVE DEVICES TO BE USED



When you are going to be handling a submersible pump, it is necessary to wear suitable clothing and devices to protect your personal safety:

protective gloves, safety shoes, safety goggles, leather apron or analogous protection.

If you are carrying out maintenance or repairs on pumps already installed, it is necessary to clean them carefully all over before starting the work, especially if they have been immersed in biological or dangerous liquids.

1.5. RESIDUAL RISKS



Like any other device connected to a source of electricity, the submersible pump has the residual risk of:

DANGER OF ELECTRICAL DISCHARGE!



During electric pump installation and electrical hookup, carefully follow the instructions in the section "Installation", remembering that these operations must only be performed by competent technical personnel. This device complies with the safety regulations currently in force.

Improper use may cause harm to people and things; therefore, do not use the device for any purposes not expressly indicated in Section 4 of this manual: "Using the submersible pump".

Do not tamper with the device to modify its characteristics, performances or type of use: any operation of this kind not only immediately invalidates the warranty, but also implies the full liability of the user for any damage that may occur during operation. Never put the submersible pump into operation in the air.

Pay **ATTENTION** to the free ends of the power cables, which must never come into contact with any type of liquid.

Do not introduce any object and/or your hands into the inlet and outlet holes (or grilles), as this could cause serious injury.

KEEP OUT OF CHILDREN'S REACH

1.1. INSTRUCTIONS FOR SAFE INSTALLATION AND MAINTENANCE



Before proceeding to any type of maintenance operation, make sure that these basic safety rules are followed:

- Use qualified technicians for any maintenance operation that requires the replacement of mechanical or electrical parts.
- Switch off the main switch of the electric pump and close the inlet and outlet shutters.
- Disconnect the pump from the power supply source.
- If the pump is submerged, bring it out.
- If the pump was in operation, first allow it to cool outside until it reaches a temperature lower than 40° C.

BURN DANGER!

2. Identification plate

The plate applied on the pump contains all the technical characteristics of the product.

Always make reference to this data before asking for information or making requests regarding the pump.

3. Technical specifications

The technical specifications of the submersible pump in your possession are shown on the plate and on the packing material.

The pump body and the rotor are made of ENGJL 200 cast iron UNI EN1561, as are the other parts.

4. Using the submersible pump

- Power supply voltage: SINGLE-PHASE or THREE-PHASE depending on the model, in any case shown on the plate applied to the pump. The maximum variation allowed is -5% with respect to the rated values on the plate.
- Maximum depth of pump immersion: 20 metres below the level of the liquid (10 metres for ECT-ECM).
- Maximum temperature of the liquid to be conveyed: 60° C (35° C for ECT-ECM).
- Number of hourly startups allowed: up to 20, equally distributed. The dimensions of the wells or collection basins must be suitable to prevent an excessive number of hourly startups.
- The level of the liquid must never go below the motor body of the submersible pump.
- Do not allow the pump to aspirate air created by the turbulence of the flows; make sure that the liquids do not fall directly onto the inlet mouth and that the mouth is sufficiently immersed not to cause a vortex.
- Protection index: IP68.
- Applications: draining, conveyance of dirty waters, sewage slurry containing solid bodies, and with fibre, mud and organic material, and generic conveyance of liquids.
- Pumps with SINGLE-CHANNEL ROTOR (M): mainly indicated in the presence of short-fibre solid bodies.
- Pumps with VORTEX ROTOR (V): indicated in the presence of long-fibre solid bodies and in the presence of liquids containing gasses, raw or fermented muds.
- CRUSHER DURING SUCTION (CUTTY): mainly indicated when there are small outlet diameters and when the residues of the liquid aspirated must be chopped up to prevent clogging.

ATTENTION



These pumps may not be used for conveying liquids for foodstuff use. It is absolutely prohibited to use these pumps for pumping inflammable and/or explosive liquids; it is also prohibited to install these pumps in areas that are saturated with explosive gasses.

Make sure that the pump, when in operation, does not enter into contact with parts of the human body; therefore, don't install it in basins where this danger is present.

5. Installation

Before installing the pump, read the instructions in sections 1 and 2 carefully and follow them to the letter.

5.1. TRANSPORT



For pumps equipped with support handle at the top, this handle must be used when transporting and lifting the pump. For pumps equipped with eyelet, the transport and lifting must take place using a chain fixed to this eyelet, which is located at the top of the pump, and in any case a mechanical lifting means must be used which is suitable to the weight of the pump.

ATTENTION



Never use the power cable or the float cable to lift or move the pump; always use the handle or eyelet.

As soon as you have removed the pump from its packing, check it to make sure that it is not damaged.

Notify the retailer or the manufacturer immediately of any damage.



Before using the pump for the first time, check the hookup data shown on the rating plate (voltage and frequency) with that of the electrical mains. These values must absolutely correspond in order to prevent damage to the pump.

5.2. POSITIONING

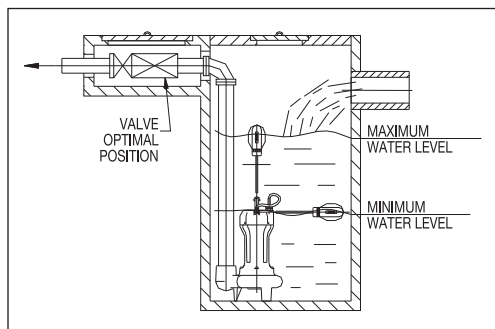
ATTENTION



The pump must only be installed and connected to the electrical mains by competent technical personnel.

The pump may be installed only after suitable, simple checks have been made:

- 1) Before proceeding to any manoeuvre, make sure that the pump is not connected to the electrical mains.
- 2) For three-phase motors, check for the correct rotor rotation direction, as described in section 5.3.
- 3) The pumps can be installed for either mobile use and in a fixed position.



5.3. ELECTRICAL HOOKUP AND ROTATION DIRECTION CHECK



The connection of the pump to the electrical mains must be carried out by specialised personnel and in compliance with the regulations in force.

ATTENTION: When making the electrical hookup, first connect the yellow-green cable to earth, then the other cables as described in section 5.4 "Electrical connections"; when disconnecting, on the other hand, the yellow-green cable must be the last one to be disconnected. Check that the voltage and frequency shown on the rating plate on the pump correspond to those of the power supply line and that the pump does not absorb more current than the maximum deliverable. Pay special attention to the condition of the cables! Before installing the pump, make sure that the cables are not damaged in any way; the free ends of the cables must be protected against possible infiltration of water or moisture, especially during installation.

The pump must be equipped with a thermal cutoff device appropriate to the electrical characteristics shown on the identification plate.

Section 5.4 "Electrical connections" shows the overall diagram for the electrical connection of the pump.

Before proceeding to the three-phase electrical connection it is necessary to check the rotation direction, above all at the moment of the first startup of the pump and whenever the installation changes. An incorrect rotation direction causes a significant reduction in the flow rate and will damage the pump.

To check the rotation direction, proceed as follows:

- First of all, follow the instructions given in section 1 "General safety instructions" to the letter.
- Lay the pump on one side and release it.
- Make a temporary connection, first connecting the yellow-green cable to earth and then connecting the power cables to the remote switch.
- Make sure that no damage can be caused to personnel by the effect of the rotation; keep persons and objects out of the range of action of the pump (at least one metre away).
- Do not bring your hands or other body parts near the outlet or the inlet mouth.
- Start up the pump for a few seconds.
- Observe the rotor from the inlet mouth and check to make sure that the rotation direction is anticlockwise.

If the rotation direction is not correct, invert the two phase cables of the power supply and then try again. Once the rotation direction has been established, **MARK** the correct connection position of the cables, remove the temporary connection and position the pump in its final location.

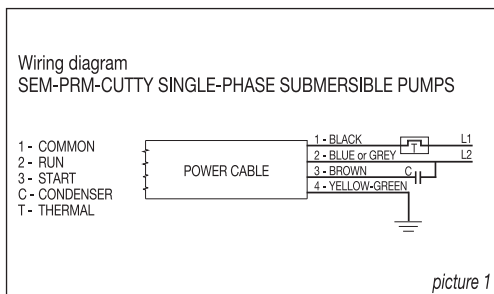
5.4. ELECTRICAL CONNECTIONS



The electrical connections must only be made by qualified personnel, following all the international rules of installation to the letter.

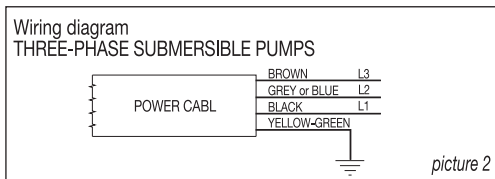
Single-phase electrical hookup

For the single-phase pumps, which have a Shuko plug, the hookup is made by inserting the plug into the current socket. (See wiring diagram, picture 1).



Three-phase electrical hookup

ATTENTION! Make the earth connection before any other connection (yellow-green cable). The three wires must be connected to a three-phase line with voltage and frequency equivalent to those indicated on the plate, or to an electrical starting board with breakaway starting current reduction devices where necessary (see wiring diagram, picture 2).



5.5. INSTALLING THE FLOATS

If the pump is equipped with a float, its operation is automatic. It is important to fix the switches in such a way that the related cables do not get tangled or get caught in protuberances of the well, making sure that no object can obstruct their movement. The minimum level of the float must always and in any case be higher than the motor body.

5.6. THERMAL PROBES

The single-phase motors have a built-in thermal protection device that resets automatically.

In the three-phase motors, this thermal protection of the motor must be ensured by an external remote switch.

5.7. CHECK FOR CORRECT OPERATION



When the pump, electrical board, and float have been installed, it is important to perform a test of the system to ensure that it is operating correctly.

Also check that the float intervenes at established levels and that the absorption on the phases is congruous with the values shown on the pump rating plate.

6. Maintenance

Before proceeding to any check or maintenance operation, follow the instructions in section 1 “General safety instructions” to the letter.

To ensure perfect operation of the pump over time, the user must carry out routine checks and periodic maintenance, replacing worn parts where necessary. We recommend performing these preliminary testings and maintenance at least once a month, or every 500-600 hours of operation.

- Check that the power supply voltage is within the values shown on the rating plate.
- Check that there are no anomalous noises or vibrations with respect to the optimal levels of the first startup.
- For three-phase motors, use amperometric pliers to check that the absorption levels on the three phases are balanced and do not exceed the rating plate values.

6.1. OIL CHECK AND CHANGE

Before proceeding to any check or maintenance operation, follow the instructions in section 1 “General safety instructions” to the letter.

Under normal operating conditions, the oil should be changed every 7500 working hours; in more heavy-duty conditions every 5000 hours, or at least once a year.

This operation must be carried out as follows:

- With the pump in a horizontal position, unscrew the lid of the oil chamber located on the opposite side of the pump body from the delivery mouth, and let the oil drain out into a suitable container.
- ATTENTION!** If the oil is replaced, do not disperse the used oil in the environment but take it to the specialised disposal bodies.
- Check that the oil is free of water; this means that the mechanical seal is still firm and in order, and the new oil can be poured in.
- If there are small drops of water on the bottom of the catch basin and on the motor body, this should be considered normal, as it is simply due to the elimination of condensation.
- If there is water along with oil in the collection receptacle, the mechanical seal should be replaced.
- Fill the oil chamber with biodegradable oil “PAO ISO 100” type according to the quantity indicated on the plate near the oil lid.
- When the oil has been changed, make sure that the cap is thoroughly tightened and then re-install the pump.

Pump repair must only be carried out by the manufacturer or by specialised technicians. Lack of respect for this measure invalidates the warranty and jeopardises the safety of the machine.

6.2. CHECKING THE PARTS SUBJECT TO WEAR

Before proceeding to any check or maintenance operation, follow the instructions in section 1 “General safety instructions” to the letter.

During scheduled maintenance or in the event of excessive noise, vibrations, or reduced pump performance with respect to the original installation situation, the hydraulic parts that are subject to wear must be checked and if necessary replaced.



DICHIARAZIONE DI CONFORMITÀ

GB	EC declaration of conformity We declare that articles present in this handbook comply with the following Directives: <ul style="list-style-type: none">• 2006/42/CE• 2006/95/CE• 2004/108/CE Applied harmonized standards: <ul style="list-style-type: none">• EN 60335-1/EN 60335-2-41/EN 12100/EN 61000-6-3/EN 62233
F	Déclaration CE de Conformité Nous déclarons que les articles de ce livret sont déclarés conformes aux Directives suivantes: <ul style="list-style-type: none">• 2006/42/CE• 2006/95/CE• 2004/108/CE Normes harmonisées appliquées: <ul style="list-style-type: none">• EN 60335-1/EN 60335-2-41/EN 12100/EN 61000-6-3/EN 62233
I	Dichiarazione CE di conformità Si dichiara che gli articoli del presente libretto sono conformi alle seguenti Direttive: <ul style="list-style-type: none">• 2006/42/CE• 2006/95/CE• 2004/108/CE Norme armonizzate applicate: <ul style="list-style-type: none">• EN 60335-1/EN 60335-2-41/EN 12100/EN 61000-6-3/EN 62233
E	Declaración CE de conformidad Se declara que los artículos del presente libro son conformes a las siguientes Directivas: <ul style="list-style-type: none">• 2006/42/CE• 2006/95/CE• 2004/108/CE Normas Armonizadas aplicadas: <ul style="list-style-type: none">• EN 60335-1/EN 60335-2-41/EN 12100/EN 61000-6-3/EN 62233
RUS	СЕРТИФИКАТ СООТВЕТСТВИЯ ЕС Заявляю, что изделия, упомянуты в настоящей инструкции, соответствуют следующим Директивам: <ul style="list-style-type: none">• 2006/42/CE• 2006/95/CE• 2004/108/CE Используемые гармонизированные стандарты: <ul style="list-style-type: none">• EN 60335-1/EN 60335-2-41/EN 12100/EN 61000-6-3/EN 62233
إعلان مطابقة	<p>إعلان مطابقة نحن نعلن بأن بنود هذا الكتيب مطابقة للتوجيهات التالية: • CE/42/2006 • CE/95/2006 • CE/108/2004 التوجيهات المنسقة المطابقة : • EN 60335-1/EN 60335-2-41/EN 12100/EN 61000-6-3/EN 62233</p>