DICHIARAZIONE DI CONFORMITÀ

La Ditta DAB PUMPS s.p.a. - Via M. Polo,14 - Mestrino (PD) - ITALY - sotto la propria esclusiva responsabilità dichiara che i prodotti summenzionati sono conformi a:

- Direttiva del Consiglio n° 98/37/CE concernente il riavvicinamento delle legislazioni degli Stati membri CEE relative alle macchine e successive modifiche.
- Direttiva della Compatibilità elettromagnetica 89/336 e successive modifiche.
- Direttiva Bassa Tensione 73/23 e successive modifiche.

DÈCLARATION DE CONFORMITÈ

L'entreprise DAB PUMPS s.p.a. - Via M. Polo,14 - Mestrino (PD) - ITALIE - déclare sous sa responsabilité exclusive que les produits susmentionnés sont conformes à:

- la Directive du Conseil n° 98/37/CE concernant l'harmonisation des législations des Etats membres de la CEE relatives aux machines et ses modifications successives.
- la Directive de la compatibilité électromagnétique 89/336 et ses modifications successives.
- la Directive basse tension 73/23 et ses modifications successives.

DECLARATION OF CONFORMITY

The Company DAB PUMPS s.p.a. - Via M. Polo,14 - Mestrino (PD) - ITALY - declares under its own responsibility that the above-mentioned products comply with:

- Council Directive no. 98/37/CE concerning the reconciliation of the legislations of EEC Member Countries with relation to machines and subsequent modifications.
- Directive on electromagnetic compatibility no. 89/336 and subsequent modifications.
- Directive on low voltage no. 73/23 and subsequent modifications.

KONFORMITÄTSERKLÄRUNG

Die Firma DAB PUMPS s.p.a. - Via M. Polo,14 - Mestrino (PD) - ITALY - erklärt unter ihrer eigenen, ausschließlichen Verantwortung, daß die genannten Produkte den folgenden Verordnungen entsprechen:

- Ratsverordnung Nr. 98/37/CE über die Angleichung der Gesetzgebung der CEE-Staaten über Maschinen und folgende Abänderungen.
- Verordnung über die elektromagnetische Kompatibilität 89/336 und folgende Abänderungen.
- Verordnung über Schwachstrom 73/23 und folgende Abänderungen.

CONFORMITEITSVERKLARING

De firma DAB PUMPS s.p.a. - Via M. Polo, 14 Mestrino (PD) - Italië, verklaart hierbij onder haar verantwoording dat hierbovengenoemde produkten conform zijn aan

- de Richtlijn van de Raad nr. 98/37/CE betreffende harmonisatie van de wetgeving in de EEG-lidstaten t.a.v. machines en daaropvolgende wijzigingen.
- De richtlijnen van de elektromagnetische overeenstemming 89/336 en latere veranderingen.
- De richtlijnen voor lage druk 73/23 en latere veranderingen.

DECLARACION DE CONFORMIDAD

La Empresa DAB PUMPS s.p.a. - Via M. Polo,14 - Mestrino (PD) - ITALY - bajo su propia y exclusiva responsabilidad declara que los productos anteriormente mencionados respetan:

- Las Directrices del Consejo n° 98/37/CE referentes a la homogeneización de las legislaciones de los Estados miembros de la CEE relativas a las máquinas y sucesivas modificaciones.
- Directriz de la Compatibilidad electromagnética 89/336 y sucesivas modificaciones.
- Directriz Baja Tensión 73/23 y sucesivas modificaciones.

FÖRSÄKRAN OM ÖVERENSSTÄMMELSE

Bolaget DAB PUMPS s.p.a. - Via M. Polo,14 - Mestrino (PD) - ITALIEN - intygar på eget ansvar att ovannämnda produkter är i enlighet med:

- Rådets direktiv nr. 98/37/CE och efterföljande ändringar som innehåller en jämkning av EU-ländernas lagstiftning beträffande maskiner.
- EMC-direktivet nr. 89/336 och efterföljande ändringar.
- Lågspänningsdirektiv nr. 73/23 och efterföljande ändringar.

UYGUNLUK BEYANI

Via M. Polo, 14 – Mestrino (PD) –İTALYA'da bulunan DAB PUMPS S.p.A., kendi sorumluluğunu üstüne alarak yukarıda belirtilen ürünlerin

- AET üyelerinin makinelerle ilgili normlar ile ilişkin tamamlamalarının uyumlaştırılmasına , 98/37/CE sayılı Avrupa Konseyi Yönetmeliğine.
- 89/336 sayılı AET Elektromanyetik Uyum Yönetmeliği ile ilişkin tamamlamalarına.
- 73/23 sayılı AET Alçak Gerilim Yönetmeliği ile ilişkin tamamlamalarınauygun olduklarını beyan eder.

ЗАЯВЛЕНИЕ О СООТВЕТСТВИИ

Фирма DAB PUMPS s.p.a. – Via Marco Polo, 14 Mestrino (PD) ИТАЛИЯ- под собственную исключительную ответственность заявляет, что вышеуказанные агрегаты соответствуют:

- Директиве Совета n° 98/37/CE касательно сближения законодательств Государств членов ЕЭС в области агрегатов и последющим поправкам.
- Директиве об Электромагнитной совместимости 89/336 и последующим поправкам.
- Директиве о низком напряжении 73/23 и последующим поправкам.

DECLARATIE DE CONFORMITATE

Firma DAB PUMPS s.p.a. – Via M. Polo, 14 – Mestrino (PD) – Italia – declara pe propria raspundere ca produsele mentionate mai sus in conformitate cu:

- Directiva Consiliului nr. 98/37/CE privind armonizarea legislatiilor Statelor membre CEE referitoare la masini cu modificarile sale ulterioare.
- Directiva referitoare la compatibilitatea electromagnetica 89/336 si modificarile ulterioare.
- Directiva referitoare la Joasa Tensiune 73/23 si modificarile ulterioare.

Mestrino (PD), 04 Settembre 2000

Attilio Conca
Legale Rappresentante
Legal Representative

1. GENERAL

Read this documentation carefully before installation. Installation and functioning must comply with the safety regulations in force in the country in which the product is installed. The entire operation must be carried out in a workmanlike manner.
Failure to comply with the safety regulations not only causes risk to personal safety and damage to the equipment, but invalidates every right to assistance under guarantee.
Keep this manual with care for further consultation even after the first installation.

2. APPLICATIONS

PULSAR electropumps are used in systems for lifting clear water from wells, first collection tanks or cisterns, Roman wells or streams, and are suitable for distributing pressurised water in domestic systems, small agricultural installations, sprinkling systems for gardens and allotments.
When installed in wells or tanks, the pump, which is particularly silent running, avoids all the problems linked with suction and loss of priming.
The pump may be supplied with a float switch which automatically cuts out operation in the event of an insufficient water level.

PULSAR DRY electropumps are used in pressurisation systems, domestic and industrial hydraulic systems. The pump may be installed for handling liquids in environments subject to flooding. In agriculture it is useful for sprinkling irrigation of small vegetable plots and gardens. Suitable for supplying fountains and water effects

These pumps cannot be used in swimming pools, ponds or tanks in which people are present, or for pumping hydrocarbons (petrol, diesel fuel, fuel oils, solvents, etc.) in accordance with the accident-prevention regulations in force.

N.B.: the liquid used in the pump for lubricating the sealing device is not toxic, but it could alter the features of the water (in the case of pure water) if there were any leaks in the seal.

3. PUMPED FLUIDS

The machine has been designed and built for pumping water, free from explosive substances and solid particles or fibres, with a density of 1000 kg/m³ and a kinematic viscosity of 1 mm²/s, and chemically non-aggressive liquids.

4. TECHNICAL DATA AND RANGE OF USE

- **Supply voltage:** see electric data plate
- **Absorbed power:** see electric data plate
- **Head up – Hmax (m):** pag. 91
- **Maximum working pressure:** 10 Bar
- **Pumped fluid:** clean, free from solids or abrasive substances, non aggressive.
- **Degree of motor protection:** IP 68
- **Thermal class:** F
- **Line fuses class:**

Model:	Line fuses (Amps)	
	1x220-240V 50/60Hz 1x230V 60Hz	3x400V 50/60Hz
PULSAR – PULSAR DRY 30/50	6	4
PULSAR – PULSAR DRY 40/50 – 40/506	8	4
PULSAR – PULSAR DRY 50/50 – 50/506	8	4
PULSAR – PULSAR DRY 65/50 – 65/506	10	4
PULSAR DRY 20/80 PULSAR – PULSAR DRY 30/80 – 30/806	8	4
PULSAR – PULSAR DRY 40/80 – 40/806	8	4
PULSAR – PULSAR DRY 50/80 – 50/806	10	4

- **Liquid temperature range:** from 0°C to +40°C
- **Maximum immersion PULSAR:** 20 metres
- **Storage temperature:** from -10°C to +40°C
- **Noise level:** falls within the limits envisaged by EC Directive 89/392/EEC and subsequent modifications.

Motor constructions: in accordance with standards CEI 2-3 – CEI 61-69 (EN 60335-2-41)

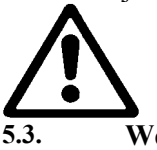
5. MANAGEMENT

5.1. Storage

All the pumps must be stored indoors, in a dry, vibration-free and dust-free environment, possibly with constant air humidity.
They are supplied in their original packaging and must remain there until the time of installation.

5.2. Transport

Avoid subjecting the products to needless jolts or collisions.



The electropumps must never be carried or lifted by their power cables.

5.3. Weight

The adhesive label on the package indicates the total weight of the electropump.

6. WARNINGS

6.1. Skilled technical personnel

It is advisable that installation be carried out by skilled personnel in possession of the technical qualifications required by the specific legislation in force.

The term **skilled personnel** means persons whose training, experience and instruction, as well as their knowledge of the respective standards and requirements for accident prevention and working conditions, have been approved by the person in charge of plant safety, authorizing them to perform all the necessary activities, during which they are able to recognize and avoid all dangers. (Definition for technical personnel IEC 364).

6.2. Safety

- Use is allowed only if the electric system is in possession of safety precautions in accordance with the regulations in force in the country where the product is installed (for Italy, CEI 64/2).
- The pump must **never** be allowed to run dry.
- The pump cannot be used in swimming pools, ponds or tanks in which people are present.
- The pump is provided with a hook to which a rope or cable may be connected to lower the machine into working position. **The pumps must never be carried, lifted or made to operate hanging from their power cables.**
- Qualified personnel must be employed for all electrical repairs which, if badly carried out, could cause damage and accidents.

6.3. Checking rotation of the PULSAR motor shaft.

If the motor does not work and the shaft does not turn when the switch and/or float is operated, you must check that the moving parts are turning freely.
To do this:

- Completely disconnect the pump from the power mains.
- Place the pump in a horizontal position.
- Remover the filter cover, slackening the three screws with a screwdriver.
- Using a size 13 box spanner, slacken the self-locking nut and turn the motor shaft in a clockwise direction.
- Replace the filter cover and install the pump as indicated in chapter 7.

6.4. Checking rotation of the PULSAR DRY motor shaft.

If the motor does not work and the shaft does not turn when you switch on the pump, you must check that the moving parts are turning freely.
To do this:

- Completely disconnect the electropump from the electric power mains.
- Place the electropump in horizontal position.
- Remove the steel base, slackening the eight screws and nuts with a spanner.
- Using a size 13 hexagonal box spanner, adjust the self-locking nut and turn the motor shaft in a clockwise direction.
- Replace the steel base and install the electropump as indicated in chapter 7.

6.5. Cleaning the PULSAR filter.

To clean the filter, proceed as follows:

- Place the pump in a horizontal position.
- Remover the filter cover, slackening the three screws with a screwdriver.
- Clean the inside of the filter, removing any particles that may have been sucked in.
- Check that the various filter slots are free from foreign bodies.
- Replace the filter cover and install the pump as indicated in chapter 7.

6.6. Responsibility

The Manufacturer does not vouch for correct operation of the pumps if they are tampered with or modified, run outside the recommended work range or in contrast with the other instructions given in this manual.

The Manufacturer declines all responsibility for possible errors in this instructions manual, if due to misprints or errors in copying. The company reserves the right to make any modifications to products that it may consider necessary or useful, without affecting the essential characteristics.

7. INSTALLATION PULSAR – PULSAR DRY

7.1. Site of installation of the PULSAR

- Before immersing the electropump in the pit or tank, ensure that the place is free from sand or solid sediment.
- If there is sediment, accurately clean the site where it is to be placed.
- Keep the pump raised at least 1 mt above the bottom of the pit so that any deposits that form after installation will not be sucked up.
- Remove the sediment periodically.
- It is very important to ensure that the water level never falls below the body of the pump. (Fig.1).

7.2. Working conditions of the PULSAR

- Water temperature: from 0°C to +40°C.
- Pump body always completely immersed.
- The pump cannot operate when dry.
- Installation in vertical or horizontal position.
- The housing pit must be frost-free.
- Maximum depth of immersion 20 mt. (below water level).

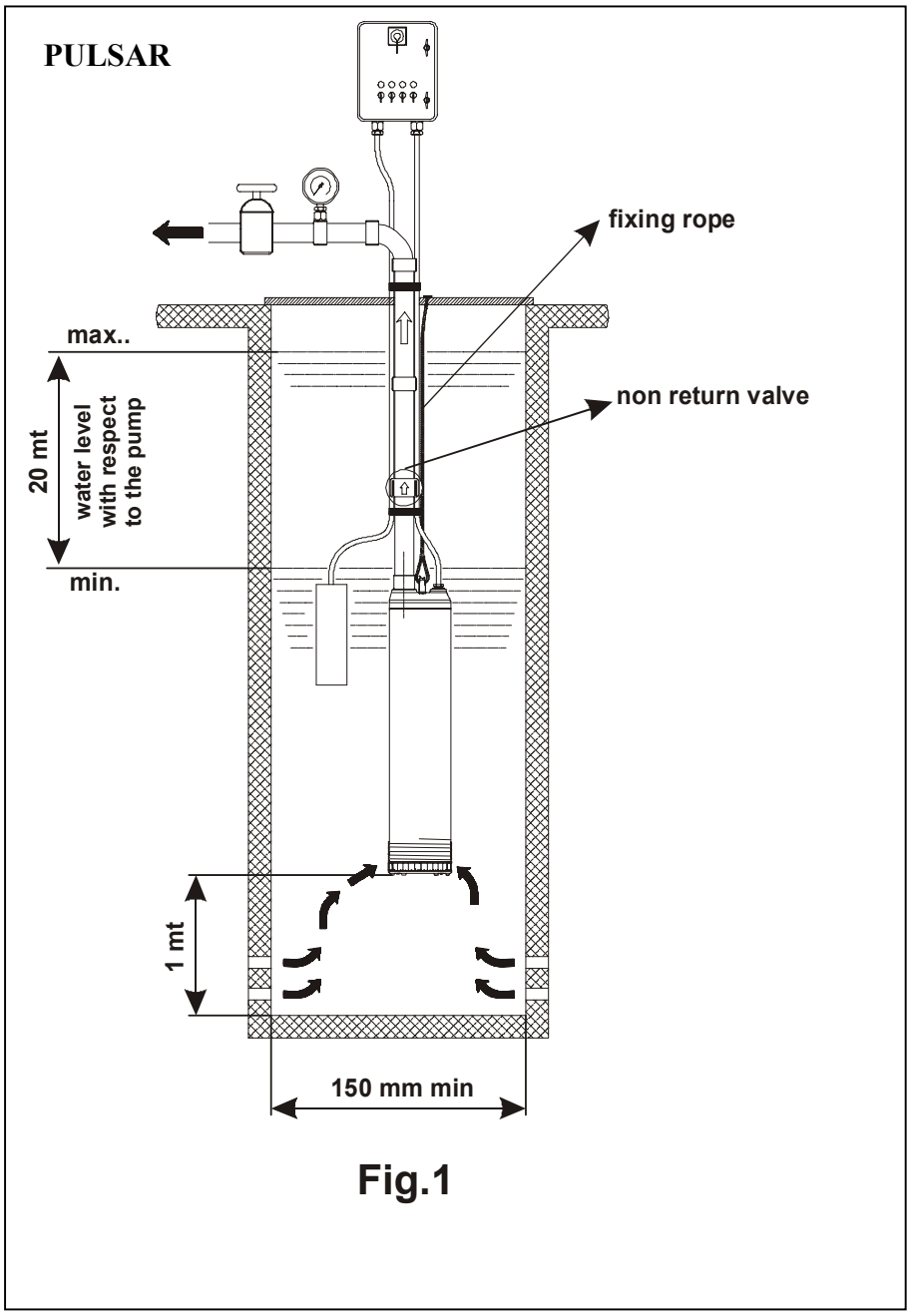


Fig.1

7.3. Site of installation of the PULSAR DRY

- A solid anchoring of the pump to its support base helps absorb any vibrations created by pump operation.
- Block the pipes with their own supports and connect them so that they do not exert strain, stress or vibration on the pump inlets.
- It is always good practice to position the pump as close as possible to the liquid to be pumped.
- It is recommended to fit a foot valve on intake. To avoid the formation of air pockets in the suction pipe, ensure that the suction pipe is tilted slightly towards the electropump.
- Provide a hole for priming the pump in the delivery pipe (see paragraph. 9.1).

7.4. Working conditions of the PULSAR DRY

- Water temperature: from 0°C to + 40°C.
- The electropump cannot operate when dry.
- Install in vertical position.
- If installed in a pit, the pit must be free from frost.

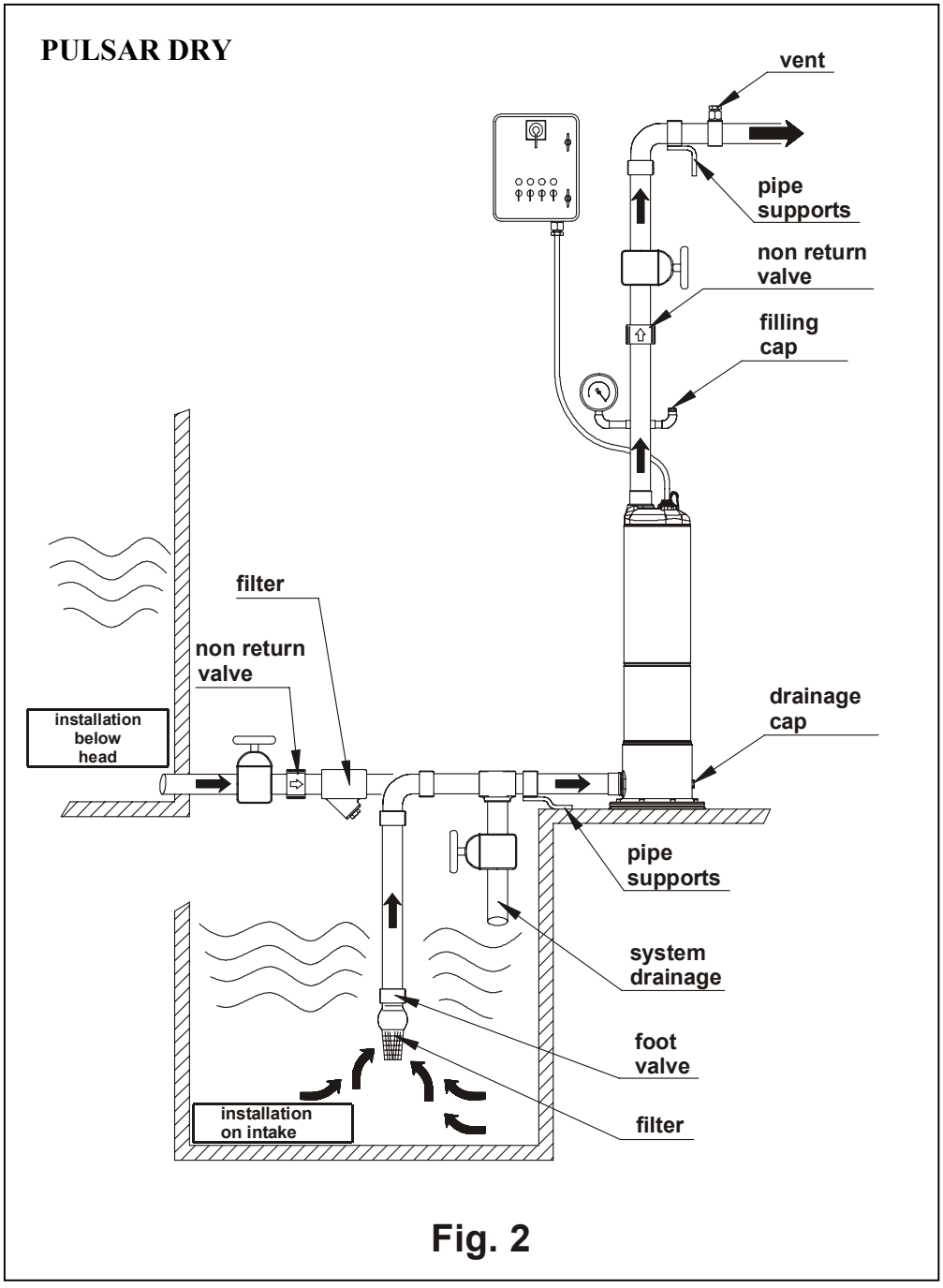


Fig. 2

7.5. **Hydraulic connection PULSAR – PULSAR DRY**

- The hydraulic connection of the electropump can be carried out with iron or rigid plastic parts.
- Avoid any kind of choking of the output pipe.
- It is advisable to use pipes with an internal diameter at least equal to that of the delivery pipe, so as to avoid a fall in the performance of the pump and the possibility of clogging.
- For the version with a float switch, ensure that the latter can move freely (see Paragraph 9.3. "REGULATING THE FLOAT SWITCH"). The size of the pit must always be calculated in relation to the quantity of incoming water and to the flow rate of the pump so as not so subject the motor to an excessive number of starts.
- To lower the pump, always use a rope or chain fixed beforehand to the hook on top of the pump (Fig.1).
  Never use the power cable to lift the electropump.
- When using in a well, it is recommended to secure the power cable to the delivery pipe with hose clamps, every two/three metres.

Install a non return valve on the delivery pipe at a distance of at least 2 mt from the delivery mouth of the electropump. (Fig.1)

The length of the power cable on the electropump limits the maximum depth of immersion at which the pump may be used.

Dry operation of the pump causes irreparable damage to the mechanical seal.

8. ELECTRICAL CONNECTION

CAUTION! ALWAYS FOLLOW THE SAFETY REGULATIONS!

8.1. **The electrical installation must be carried out by a skilled electrician who assumes all the responsibilities.**

8.2. Ensure that the mains voltage is the same as that shown on the plate of the motor to be fed and that there is the possibility of **MAKING A GOOD EARTH CONNECTION**.

8.3.

- Both the single-phase and the three-phase version of the electropump are supplied with an electric cable. If the power cable is damaged in any way it must be **replaced** and not **repaired**.
- It is advisable to reserve an electric power line exclusively for the pump connection.
- Upstream from the pump, fit a suitably sensitive magnetothermal differential switch.
- Switch off the power upstream from the system before making the electrical connection.
- Single-phase motors are provided with built-in thermal overload protection and may be connected directly to the mains.
  N.B. if the motor is overloaded it stops automatically.
  Once it has cooled down it starts again automatically without requiring any manual intervention.
- Three-phase pumps must be protected with motor protectors suitably calibrated according to the values on the data plate of the pump to be installed.

- Connect the cable of the pump to the electric panel, ensuring that the following parts correspond:

Yellow-green	→	⏚
Brown	→	**L1**
Blue	→	**N**

- Before making a test start, check the level of the water in the well.

8.4. CHECKING THE DIRECTION OF ROTATION (for three-phase motors)

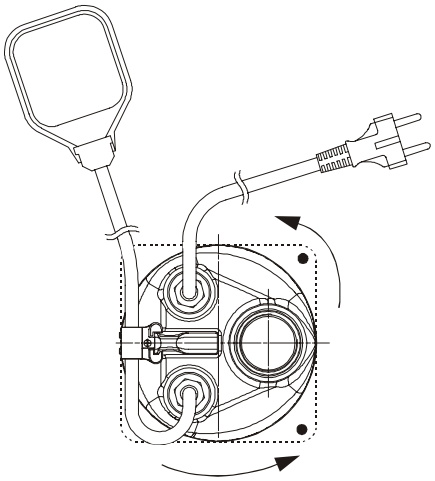


Fig. 3

The direction of rotation must be checked each time a new installation is made.
Proceed as follows (Fig.3):

1. Place the pump on a flat surface;
2. Start the pump and stop it immediately;
3. Carefully observe the kick-back on starting, looking at the pump from above. The direction of rotation is correct, that is clockwise, if the protection cap moves as in the drawing (anti-clockwise).

If it is not possible to check as described above because the pump is already installed, check as follows:

1. Start the pump and observe the water flow rate.
2. Stop the pump, switch off the power and invert two phases on the supply line.
3. Restart the pump and check the water flow rate again.
4. Stop the pump.

The correct direction of rotation is the one that gives the higher flow rate.

9. STARTING

9.1. Priming of the PULSAR DRY

Before starting, prime the pump, filling it with the liquid that is to be pumped through the hole to be made in the delivery pipe (Fig.2).

Priming must be repeated whenever the pump has remained out of use for long periods of time or when air has got into the system

9.2.

- Turn the differential magnetothermal switch upstream from the pump to position I (ON) and wait until the water comes out of the delivery pipe.
- If malfunctions are found, disconnect the pump from the power supply, turning the differential magnetothermal switch to position 0 (OFF) and consult the chapter on "TROUBLESHOOTING".
- The pump may be started and stopped:

- Manually by means of the differential magnetothermal switch upstream from the system.
- Automatically for versions with a float when water level rises.

9.3. REGULATING THE FLOAT SWITCH PULSAR

By lengthening or shortening the stretch of cable between the float and the fixed point (cable block on the handle - Fig.4) it is possible to regulate the level at which the pump switches off (STOP). Ensure that the float can move freely.

Ensure that the stop level does not uncover the filter.

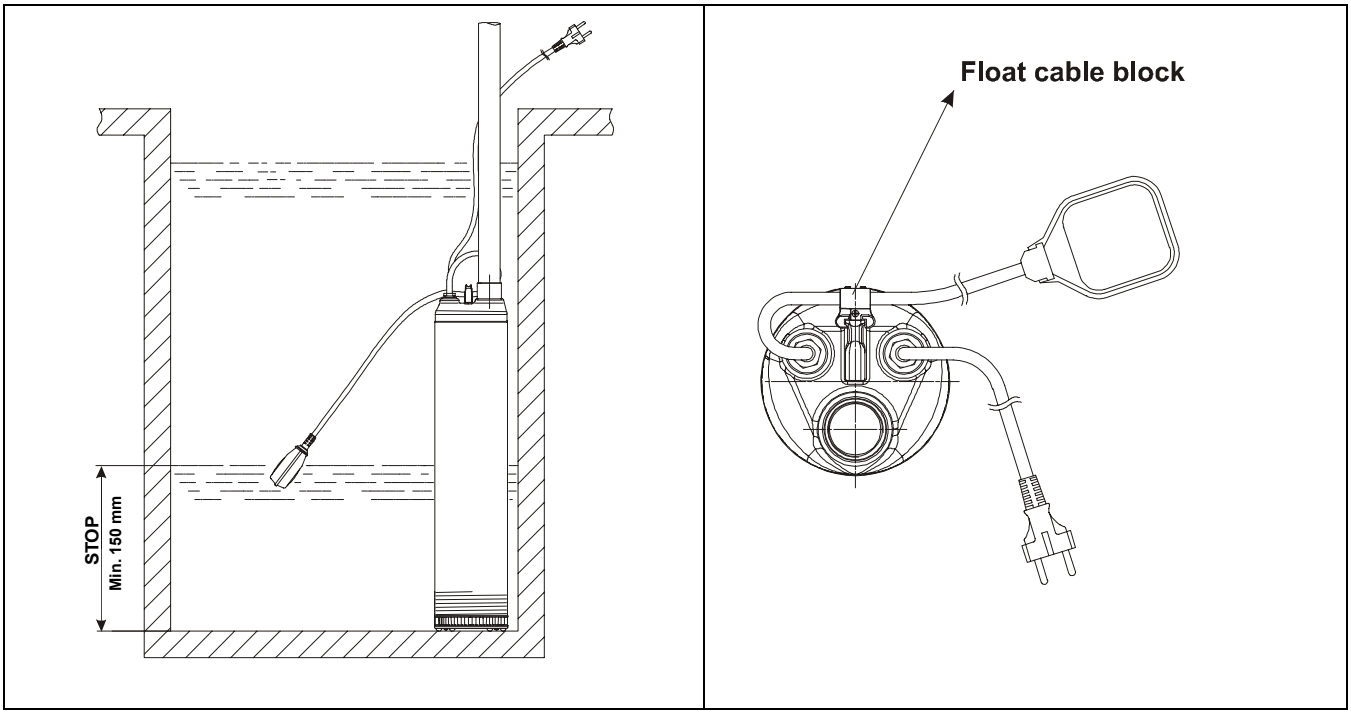


Fig.4

10. PRECAUTIONS

- The suction filter in PULSAR electropumps must always be present during pump operation.
- The pump must not be started more than 30 time in one hour so as not to subject the motor to excessive thermal stress.
- **DANGER OF FROST**: When the pump remains inactive for a long time at temperatures of less than 0°C, it is necessary to ensure that there is no water residue which might freeze, causing cracking of the pump components.
  For PULSAR DRY electropumps, drain the pump through the drainage cap located behind the intake coupling (Fig.2). This operation is also recommended in the case of prolonged inactivity of the pump at normal temperature.
- If the pump has been used with substances that tend to deposit, rinse it after use with a powerful jet of water so as to avoid the formation of deposits or scale which would, tend to reduce the pump characteristics.

11. MAINTENANCE AND CLEANING

In normal operation the pump does not require any type of maintenance, thanks to the mechanical seal lubricated in an oil bath and to the greased-for-life bearings. **The electropump can only be dismantled by competent skilled personnel, in possession of the qualifications required by the legislation in force.** In any case, all repair and maintenance jobs must be carried out only after having disconnected the pump from the power mains..

During dismantling it is necessary to pay great attention to sharp parts which may cause injury.

12. MODIFICATIONS AND SPARE PARTS

Any modification not authorized beforehand relieves the manufacturer of all responsibility. All the spare parts used in repairs must be original ones and the accessories must be approved by the manufacturer so as to be able to guarantee maximum safety of the machines and systems in which they may be fitted.

13. TROUBLESHOOTING

FAULT	CHECK (possible cause)	REMEDY
1. The motor does not start and makes no noise.	A. Check that the motor is live and that the mains voltage corresponds to the voltage on the data plate.	
	B. Check the protection fuses.	B. If they are burnt-out, change them.
	C. The float switch does not allow starting.	C. Check that the float moves freely and that it is efficient.
	D. The shaft is not turning.	D. Turn the shaft as indicated in the chapter on Warnings (Paragraph 6.3./6.4).
2. The pump does not deliver.	A. The suction filter or the pipes are blocked.	A. Remove the obstructions, as indicated in the chapter on Warnings (Paragraph 6.5.).
	B. The impellers are worn or blocked.	B. Change the impellers or remove the obstruction.
	C. The check valve, if installed on the delivery pipe, is blocked in closed position.	C. Check good operation of the valve and replace it if necessary.
	D. The fluid level is too low. On starting, the water level must be higher than the filter level.	D. Regulate the length of the float switch cable (See chapter on Warnings – Paragraph 9.3.).
	E. The head required is higher than the pump's characteristics.	
	F. In the PULSAR DRY versions the pump is not primed.	F. Prime the pump. (See Fig.2).
3. The pump does not stop.	A. The float does not interrupt pump operation.	A. Check that the float moves freely and that it is efficient.
4. The flow rate is insufficient	A. Check that the suction filter is not partially clogged in PULSAR pumps.	A. Remove any obstructions, as indicated in the chapter on Warnings (Paragraph 6.5.).
	B. Ensure that the impellers or the delivery pipe are not partly blocked or fouled with scale.	B. Remove any obstructions.
	C. Ensure that the impellers are not worn.	C. Change the impellers.
	D. Ensure that the check valve (if fitted) is not partly clogged.	D. Accurately clean the check valve.
	E. Check the direction of rotation in three-phase versions (See Chapter on Electrical connection - Paragraph 8.4.).	E. Invert two wires in the power cable.
5. The overload protection device stops the pump.	A. Ensure that the fluid to be pumped is not too dense because it would cause overheating of the motor.	
	B. Ensure that the water temperature is not too high (see liquid temperature range).	
	C. The pump is partly blocked by impurities..	C. Accurately clean the pump.
	D. The pump is mechanically blocked.	D. Check for the occurrence of rubbing between moving and fixed parts; check the state of wear of the bearings (contact the supplier).