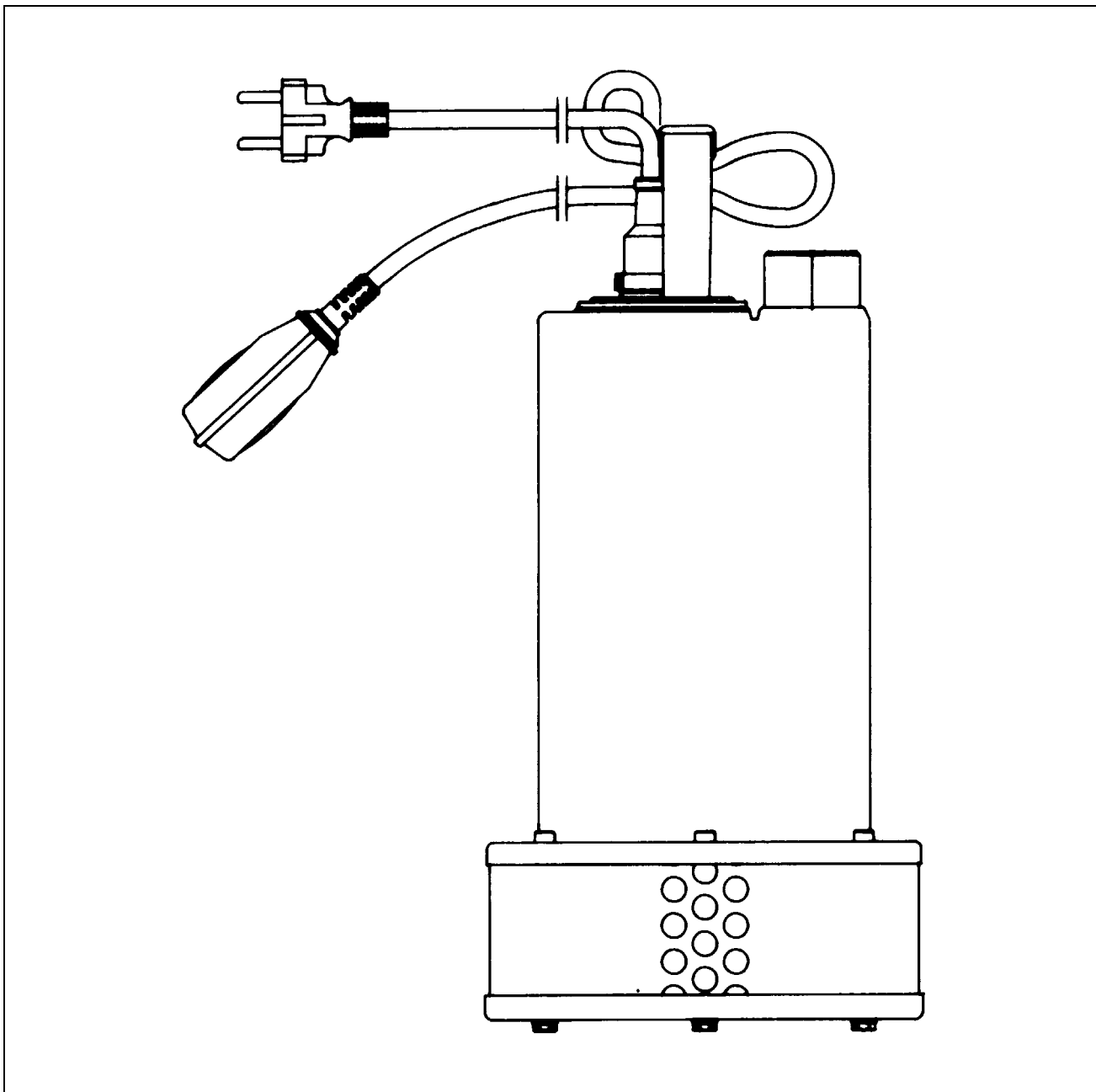


ISTRUZIONI PER L'INSTALLAZIONE E LA MANUTENZIONE
INSTRUCTIONS DE MISE EN SERVICE ET D'ENTRETIEN
INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE
INSTALLATIONSANWEISUNG UND WARTUNG
INSTRUCTIES VOOR INGEBRUIKNAME EN ONDERHOUD
ИНСТРУКЦИИ ПО МОНТАЖУ И ТЕХНИЧЕСКОМУ БСЛУЖИВАНИЮ
KULLANIM VE BAKIM TALİMATLARI
安装维护说明



DRENAG 900

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.

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/VR 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.

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.

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) -ITALYA'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 tamamlamalarına uygun olduklarını beyan eder.

Mestrino (PD), 07 Gennaio 1998

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.

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.

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.

ЗАЯВЛЕНИЕ О СООТВЕТСТВИИ

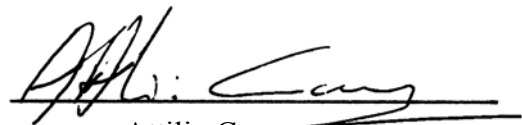
Фирма DAB PUMPS s.p.a. - Via Marco Polo, 14 Mestrino (PD) ИТАЛИЯ- под собственную исключительную ответственность заявляет, что вышеуказанные агрегаты соответствуют:

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

确认声明

DAB PUMPS s.p.a 公司, 位于意大利Via M. Polo,14 - Mestrino (PD), 声明其责任下的以上产品符合如下标准:

- 符合欧洲经济共同体成员国法规的修正中有关机械产品部分及随后所做的修改, 98/37/CE 号议会指令文件。
- 符合电磁兼容 89/336 号指令及其修正文件。
- 符合低电压 73/23 号指令及其修正文件。



Attilio Conca

Legale Rappresentante
Legal Representative

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INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE

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.

APPLICATIONS

The **DRENAG 900** pump is of submersible centrifugal type, made completely of stainless steel with a clearance impeller, designed and built to pump clear waste water, sandy, muddy and sludgy waters, without fibre, containing solid bodies with maximum dimensions up to 12 mm in diameter, but always non-aggressive waters. Suitable for domestic and building-site uses in fixed applications, with manual or automatic operation, for draining cellars and garages prone to flooding, for pumping drains, rainwater traps or infiltrations from gutters, excavations, etc. Thanks to their compact shape and easy manoeuvrability and to the vertical delivery mouth with male thread, they are also suitable for particular applications as portable pumps for emergency uses, such as for drawing water from tanks or rivers, draining swimming pools or fountains, excavations or underpasses. Also suitable for gardening and hobby uses in general.

The float, where fitted, allows fixed installation and guarantees automatic pumping operation.



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 inside the pump, to lubricate the seal device, is not toxic but it may alter the characteristics of the water (if it is pure water) if there is a leak in the seal device.

TECHNICAL DATA AND LIMITS ON USE

- **Supply voltage:** 1 X 220/240V 50Hz
3 X 400V 50Hz
3 X 230V 50Hz
- | see electric data plate

- **Delayed line fuses: indicative values**

Model	Line fuses		
	1x220-240V 50Hz	3x400V 50Hz	3x230V 50Hz
DRENAG 900	10	4	--

- **Flow rate:** from 3 to 21 m³/h
- **Hmax (m) - Head:** 14 mt.
- **Degree of motor protection:** IP68
- **Protection class:** F
- **Absorbed power** 1 kW (1.36 HP)
- **Liquid temperature range**
 - from 0°C to +35°C for domestic use (safety standards EN 60335-2-41)
 - from 0°C to +50°C for other uses
- **Maximum room temperature with pump operating with motor emerged** +40°C
- **Maximum immersion** 10 metres
- **Storage temperature:** -10°C to +40°C
- **Noise level** Falls within the limits envisaged by EC Directive 89/392/EEC and subsequent modifications.

WARNINGS

1. Use is allowed only if the electric system is in possession of safety precautions in accordance with the regulations in force.
2. The pump is provided with a carrying handle which may also be used to lower it into wells or deep holes with a rope or cable.

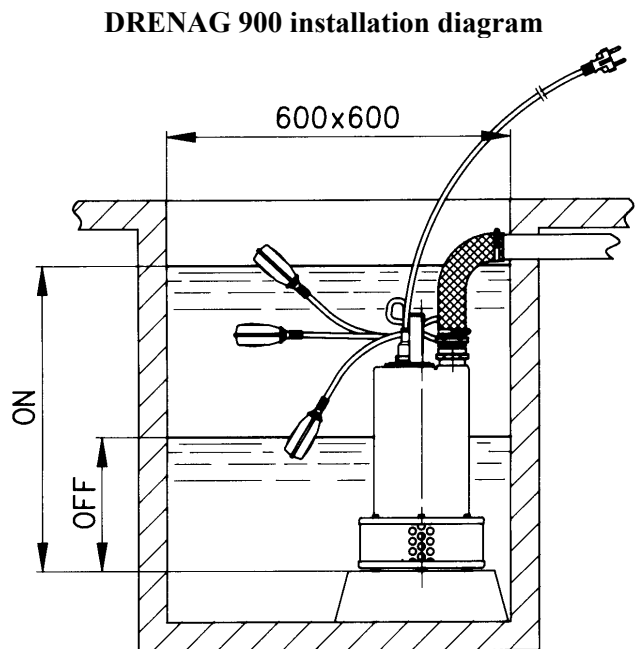


The pumps must never be carried, lifted or made to operate hanging from their power cable.

3. If the power cable is damaged in any way it must be **replaced and not repaired** (use cable type H07RN-F diam. 9 - 9.5 mm. with minimum length 10 metres for the portable version, with a UNEL 47166-68 plug for the SINGLE-PHASE version and with an EEC plug for the THREE-PHASE version).
This must be done by skilled personnel, in possession of the qualifications required by the regulations in force.
4. Qualified personnel must also be employed for all electrical repairs which, if badly carried out, could cause damage and accidents.
5. The pump must **never** be allowed to run dry.
6. **The Manufacturer does not vouch for correct operation of the pump if it is tampered with or modified.**

INSTALLATION

1. If the bottom of the well or borehole in which the pump is to operate is particularly dirty, it is advisable to provide a support for the pump to sit on so as to avoid clogging of the intake grid. (Fig. 2).
2. Before putting the pump in position, ensure that the strainer is not totally or partially blocked by mud, sediment or similar substances.
3. It is advisable to use pipes with an internal diameter at least equal to that of the delivery mouth, to avoid falls in pump performance and the possibility of clogging. In cases where the delivery pipe has long horizontal stretches, it is advisable for this pipe to have a larger diameter than that of the delivery mouth.
4. Totally immerse the pump in the water.
5. Connect the delivery pipe or hose directly to the pump mouth. If the pump is used in fixed installations it is advisable to connect it to the pipe with a coupling so as to facilitate disassembly and reinstallation. If a hose is used, fit a threaded hosetail on the pump mouth. Wrap the thread with suitable material to ensure an effective seal (teflon tape or similar).
6. On the version provided with a float switch, ensure that the float can move freely (SEE THE PARAGRAPH ON ADJUSTING THE FLOAT SWITCH). Ensure that the **minimum dimensions** of the borehole are as in Fig. 2. The dimensions of the borehole must also be calculated with relation to the quantity of water arriving and to the pump flow rate so as not to subject the motor to excessive starting operations.



(Fig.2)

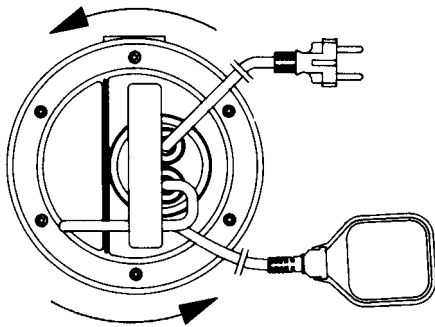
7. When the pump is to be in a fixed installation, with a float, a check valve must always be fitted in the delivery pipe. This is also advisable on pumps with manual operation.

ELECTRIC CONNECTION

CAUTION! ALWAYS FOLLOW THE SAFETY REGULATIONS.



1. Ensure that the mains voltage is the same as the value shown on the motor plate and that there is the possibility of **MAKING A GOOD EARTH CONNECTION**.
2. **Pumping stations must always be provided with an automatic switch with an intervention current of less than 30 mA.**
3. Single/ Three -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 any need for manual intervention.**
4. Do not damage or cut the power cable. If this should occur accidentally, have it repaired or replaced by skilled and qualified personnel.

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

(Fig.1)

The direction of rotation must be checked each time a new installation is made.

Proceed as follows (Fig. 1):

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 the motor side. 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.

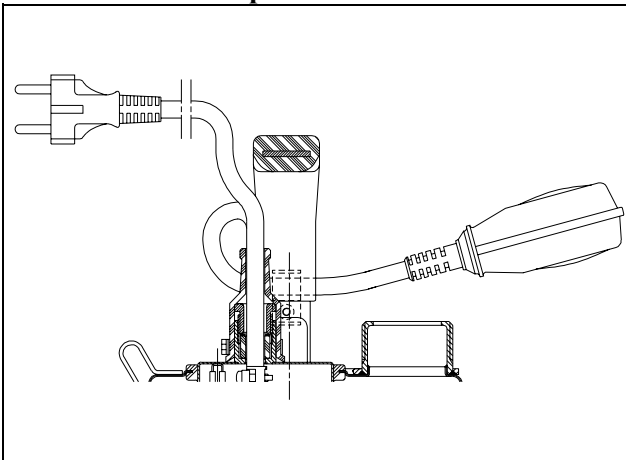
STARTING UP

Models with a float switch start up automatically when the water level rises; models without a float are started by means of a switch located upstream from the socket (not supplied).

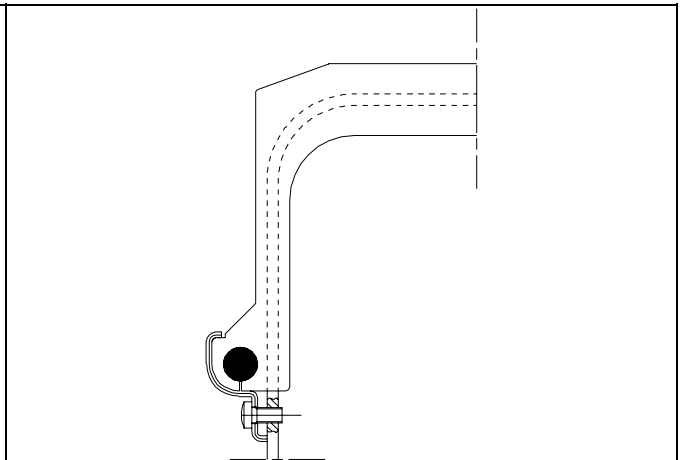
ADJUSTING THE FLOAT SWITCH

Lengthening or shortening the cable between the float and the fixed point (hole provided in the handle - Fig. 3, Fig. 4) adjusts the START or STOP level of the pump. Be sure that the float can move freely.

Ensure that the stop level does not uncover the strainer.



(Fig.3)



(Fig.4)

PRECAUTIONS

1. The intake strainer must always be in place during pump operation.
2. The pump should not be started more than 20 times in one hour so as not to subject the motor to excessive thermal shock.
3. **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 could freeze and cause cracking of the pump components.
4. If the pump has been used with substances which tend to form a 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 yield of the pump.

MAINTENANCE AND CLEANING



In normal operation, the pump does not require any specific maintenance, thanks to its mechanical seal lubricated in an oil chamber and to its sealed-for-life bearings. **The electropump must not be dismantled unless by skilled personnel in possession of the qualifications required by the regulations in force.** In any case, all repairs and maintenance jobs must be carried out only after having disconnected the pump from the power mains. During disassembly, pay attention to any sharp parts which could cause injury.

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.

CHECKING AND CHANGING THE SEALING OIL



For good pump operation the sealing oil must be checked about every 2000 working hours or at least once a year.

To perform this operation, slacken the six screws (45) so as to be able to remove the strainer cover (92), the strainer (42) and the pump body (1). Retain the O-ring (28) and the nuts (51). Using a suitable spanner, unscrew the impeller retaining nut (18), holding the impeller (4) still with your hand. Retain the key (17) and the sand guard (15). Now overturn the pump with the hydraulic part facing upwards, unscrew and remove the drainage cap (64).

Tilt the pump so as to let the oil flow out of the drainage hole (64) and catch it in a container. Analyse the oil: if you find any particles of water or abrasive materials (for example, sand) it is advisable to check the condition of the mechanical seal (16) and to have it changed if necessary (at a specialized centre). In this case change the oil too, with about 250 gr of oil type **MARCOL 172 ESSO**.

Top up the oil level inside the sealing oil chamber using a special funnel inserted in the hole in the cap (64). **The sealing oil chamber must never be completely filled.**

Screw the drainage cap (64) back on and perform the disassembly operations in inverse order to reassemble the pump after having spread a suitable amount of teflon grease in the seat of the sand guard (15).

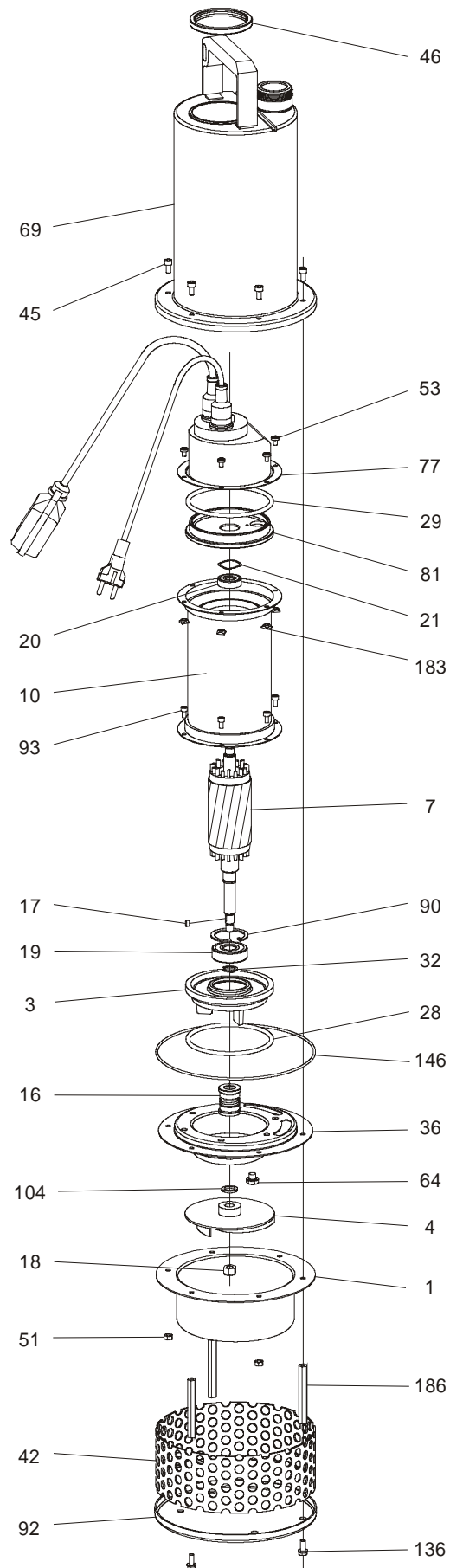
OLD OIL MUST BE DISPOSED OF AS REQUIRED BY THE REGULATIONS IN FORCE.

The manufacturer declines all responsibility for possible errors in this booklet, 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.

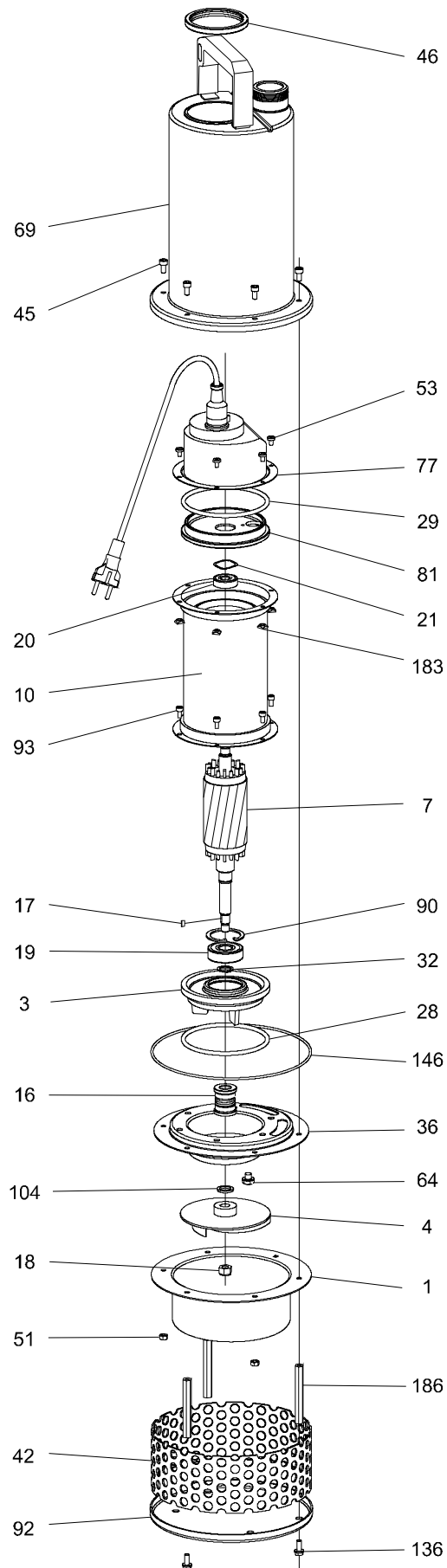
TROUBLESHOOTING

FAULT	CHECK (possible cause)	REMEDY
1. The motor does not start and makes no noise.	A. Check that the motor is live. B. Check the protection fuses. C. The float switch does not allow starting.	B. If they are burnt-out, change them. C. -Ensure that the float moves freely. -Ensure that the float is efficient (contact the supplier).
2. The pump does not deliver.	A. The intake grid or the pipes are blocked. B. The impeller is worn or blocked. C. The check valve, if installed on the delivery pipe, is blocked in closed position. D. The level of the liquid is too low. When starting, the level of the liquid must be higher than that of the strainer. E. The required head is higher than the pump characteristics.	A. Remove the blockage. B. Change the impeller or remove the blockage. C. Check that the valve is operating correctly and replace it if necessary. D. Adjust the length of the float switch cable (SEE THE PARAGRAPH ON "ADJUSTING THE FLOAT SWITCH").
3. The pump does not stop.	A. The switch is not deactivated by the float.	A. -Ensure that the float moves freely. -Check float efficiency (the contacts could be damaged - contact the supplier).
4. The flow is insufficient.	A. Ensure that the intake grid is not partly blocked. B. Ensure that the impeller or the delivery pipe are not partly blocked or encrusted. C. Ensure that the impeller is not worn. D. Ensure that the check valve (if fitted) is not partly clogged. E. On three-phase motors, check that the direction of rotation is correct (See the paragraph on "CHECKING THE DIRECTION OF ROTATION").	A. Remove any blockage. B. Remove any blockage. C. Change the impeller. D. Carefully clean the check valve. E. Invert the connection of two supply wires.
5. The thermal overload protection stops the pump.	A. Check that the liquid to be pumped is not too dense as this could cause overheating of the motor. B. Check that the water temperature is not too high. C. The pump is partly blocked by impurities. D. The pump is mechanically blocked.	C. Carefully clean the pump. D. Check whether there is rubbing between the moving and fixed parts; check the wear of the bearings (contact the supplier).

DRENAG 900



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