# WATER PUMPS

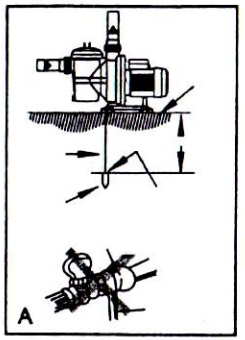
# INSTRUCTION MANUAL

**Please read these instructions carefully before using and keep this manual in a safe place for future rfrerence**

Read over this instruction manual before the first operation of your pump for the safe of its optimum efficiency. Please contact your local agent or relation technical service department if you have any problem.

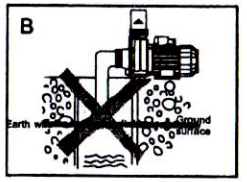
## OPERATION CONDITIONS

These pumps have been designed to pump neutral clean liquids in which no abrasive solids are suspended at temperatures of no more than 60℃ .The maximum permissible working pressure is up to 10 bar.




Connect the earth wire before use.(Fig.A)
This enables you to prevent an accident caused by electric shock When the electric insulation is not in order.

- For your safety from the danger of electric shock, please do not get the power plug stained with water.
- CAUTION IN CONNECTING THE EARTH WIRE
- Connect the earth wire after turning off the electric power
- Never connect with gas pipes, otherwise it can cause the Explosion

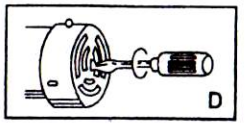



2.Never run the pump empty. If this happens by mistake, switching the pump off quickly, waiting for it to be cooled down and then priming it with clean water.(Fig.B)


3.Never wrap the motor or the pump head in a blanket or a cloth to prevent freezing in cold weather.(Fig.C) For it will cause fire.

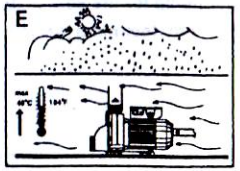
**WARNING**

1、Before installing the pump,you must check that the rotating parts turn freely. Insert a screwdriver in the notch on motor shaft from the ventilation side to move it. If there is a blockage, turn the screw driver, tapping in gently with a hammer. (F.ig.D)



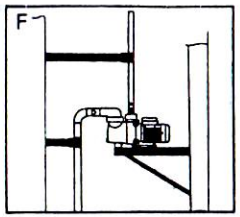

2、When the pump is reused after a long time, there is a possibility for the motor not to be operated in spite of switching on the Electric power because of the sticking and solidification of the dirt and filth in the water of the pump head. In that case, turn off the electric power and then turn the shaft in the back of the motor a few times with driver or something like that. After that, you can operate the pump as usual.

3、The manufacturer does not vouch for correct operation of the pump if it is tampered with or modified.



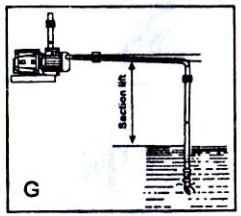

## INSTALLATION

1、The pump must be installed in a dry well ventilated place Protected against unfavorable weather conditions and with an ambient temperature not exceeding 40℃.**(F.Ig.E)**

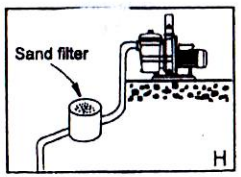



2、Fix the pump in place on a solid flat surface using suitable bolts To avoid vibration. The pump must be installed in a horizontal position to ensure that the bearings operate correctly.

3、The pipes must always be supported using the related brackets **(F.Ig.F)** to avoid transmitting stress to the pump body. Take care not to damage any part by over Tightening the pipes when fitting them.



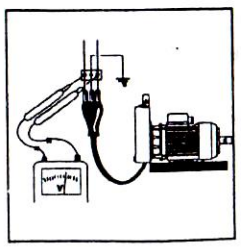

4、It is always good practice to install the pump as close as Possible To the liquid to be pumped. The inter diameters of the pipes must never be smaller than that of the mouth of the pump. For suction lift of over four meters or with long horizontal Stretches it is advisable to use an intake pipe or hose with a diameter larger than that of the intake aperture of the pump. to prevent the formation of air pockets, the intake pipe must slope slightly upwards towards the pump inlet.**(Fig.G)**




Make sure that the intake pipe is completely airtight and immersed In the water by at least half a meter to avoid vortexes. It is advisable to fit a foot valve at the bottom of the intake pipe.**(Fig.G)**

The diameter of the delivery pipe must be chosen to suit the flow rate and pressure at the take off points. It is advisable to fit a non-return valve between the delivery mouth and flow rate adjustment gate valve to avoid dangerous water hammering in the event of the pump suddenl· stopping. This measure is compulsory if the delivery water column is over 20 meters.

5、When this pump is pumping water from the well which is eas, to suck with sand, above all, sand filter is needed.**(F.Ig.H)** for it prevent the defacement of the impeller in the pump head for a short time, the fall of pressure and the decrease of the pumping water.



## ELECTRIC CONNECTION

CAUTION! Always follow the safety regulations. Scrupulously follow the wiring diagrams inside theterminal box.

1.Electric installation must be carried out by skilled and authorized Electrician who accepts all the responsibility for the job.

2.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 CONNECTING.**(Fig.I.Fig.A)**



3.For fixed installation, international Safety Standards require The use of isolating switches with a fuse-carrier base ensuring Omnipolar disconnection from the mains supply.

4.Single-phase motors are provided with built-in thermal overload protection and may be connected directly to the mains. Three-phase motor must be protected with special remote-control motor-protectors calibrated for the current shown on the plate.

5.The permitted voltage variation of this pump is ±10% of the rated voltage; otherwise it will be the reason shortening the service life of the pump.

## STATING UP

1.Before starting up, check that the pump is properly primed; fill it Completely with clean water by means of the hole provided after having removed the filler cap on the pump body. This Ensures that the mechanical seal is well lubricated and that the pump immediately Starts to work regularly.**(Fig.J)**. Dry operation Cause irreparable damage to the mechanical seal. The filling cap must then screwed back on carefully.

2.Switch on the power and check on the three-phase version If the motor is turning in the correct direction; This should be in a clockwise direction, when looking at the pump from the motor fan side**(F.Ig.K)** If it is turning in the wrong direction, invert the connections of any two wires on the terminal board after having disconnected the pump from the power mains.

## PRECAUTIONS

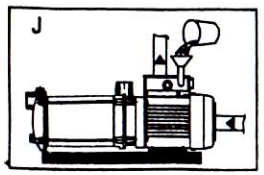
1、The pump should not be started more than 20 times in one hour so as not to subject the motor to excessive thermal shock.

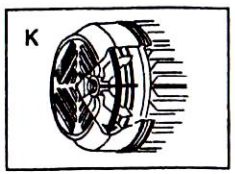
2、DANGER OF FROST: When the pump remains inactive for a long time at temperature of less than 0℃ the pump body must be completely emptied through the drain plug at the bottom of the pump body **(F.Ig.L)** to prevent possible cracking of the hydraulic components. Then rinse it with clean water and store it in a dry place. This operation is advisable even in the event of prolonged inactivity at normal temperature.Check regularly whether the foot of valve is clean.

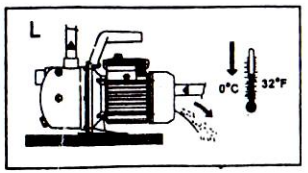
3、When starting after long periods of inactivity, the starting-up operations listed above must be repeated.

## MAINTENANCE AND CLEANING

In normal operation, the pump does not require any specific Maintenance. However, it may be necessary to clean the hydraulic parts when a fall in capacity is observed. The pump must not be dismantled unless by skilled personnel in possession of the qualifications required by the regulations if force. In any case, all repairs and maintenance jobs must be carried out only after having disconnected the pump from the power mains.



## TROUBLES AND COUTER-MEASURES

| Troubles | Causes | Counter-Measures(the indication • can be done by user) |
|---|---|---|
| Motor does not start | Thermal protector acting | • If the motor is overheated, it doesn't operate. Then, wait till getting cold. (20-30minutes) |
| | Thermal protector damaged | Replace a new one |
| | Faulty cord connection | • Insert the plug securely<br>• Connect the cord again |
| | Cord disconnected | Replace the new cord |
| | Trouble in motor | Repair or replace the motor |
| | Impeller stuck | Clean the impeller |
| | Too low power supply voltage | • Consult with the power supply company |
| Motor runs without pumping water | Water level of well is lower than standard level or suction lift too high | • Check the water level of well<br>• Move the pump closer to water intake level |
| | Trouble in non-return valve | Take off the non-return valve cover, then clean the valve, the valve seat and the valve hole |
| | Filter apparatus or foot valve blocked | Clean both of them |
| | Air drawn into suction pipe | • After checking the joints of piping, tighten them perfectly.<br>• Make sure the foot valve is immersed by at least 50cm |
| | Air drawn into pump from mechanical seal | Replace the new mechanical seal |
| Thermal protector for motor works too often. | Too low or high power supply voltage | • Consult with the power supply company |
| | Impeller is in contact with another part Impeller blocked | • Check and repair the defects<br>• Clean the impeller |
| | Short or open circuit of the capacitor | Repair the capacitor |
| Water does not come out from pump at the first few minutes after switch on. | Air drawn into suction pipe | Repair the defects of piping.<br>(To prevent air leaking) |
| Pump starts though no water is being used. | Water leaks at piping or pump | Repair piping, pump parts and faucets etc |
| | Water leaks at mechanical seal | Replace the mechanical seal |
| Flow rate insufficient | Suction lift reached the limit | • Check the suction lift |
| | Filter apparatus or foot valve Blocked partially dogged | Check valve or filter apparatus and check The whole suction piping if necessary |
| | Impeller blocked | Disassemble pump and carefully clean Pump body and impeller. |