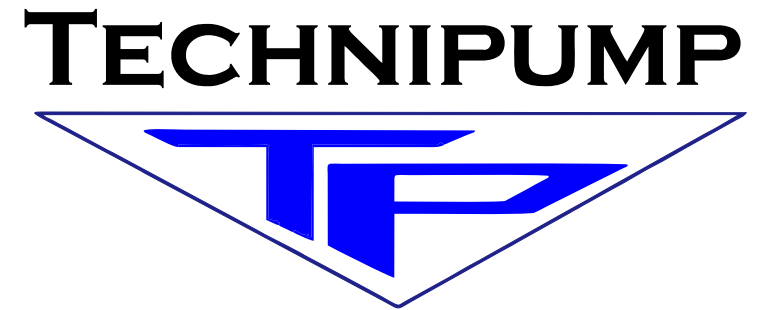
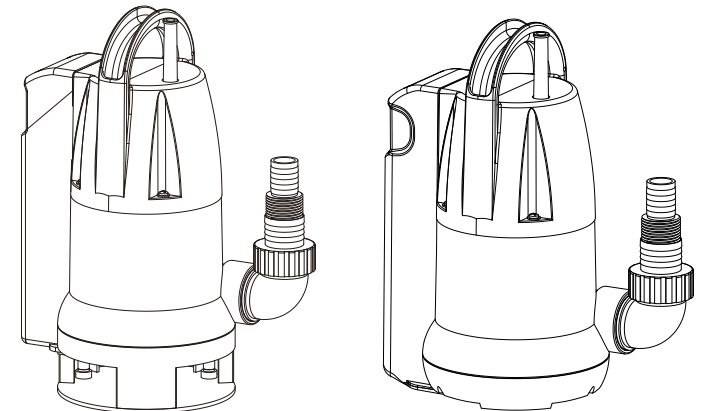
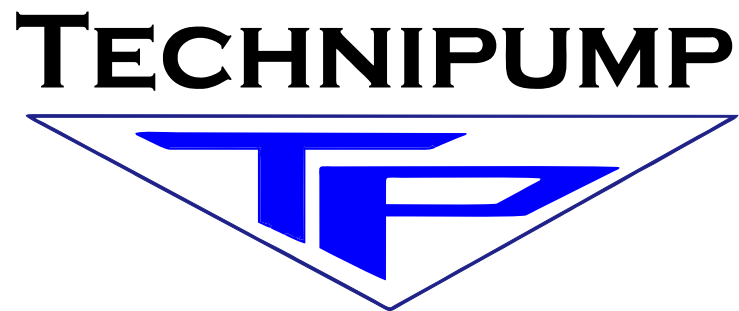




Submersible Pump

Instruction Manual



• TPO series

Introduction

Thank you very much for purchasing this quality product. To minimise the risk of injury, we ask you to comply with basic safety precautions, when using this product. Please read this operating manual thoroughly and ensure you have understood them. Keep this operating manual for future reference.

Please note before starting:

The pump can be attached to any protective contact socket, which has been installed properly. The socket needs a supply voltage of 230 V and a fuse of at least 6 A.

Warning! If the pump is meant to be used near swimming pools or garden ponds and in their protective area, it needs to be equipped with an earth fault circuit breaker with a normal tripping current of max. 30 mA. The pump must not be operated if there are people within the pool or pond. Please contact an electrician.

Safety notes for the pump

General safety notes

- Know the application of the pump and ensure to be familiar with the limitations and potential dangers.
- Make sure that the electricity source corresponds to the requirements of the device.
- Disconnect the pump from the electricity supply before carrying out any maintenance work.
- Release the pressure from the system before maintaining a part.
- Release the liquid from the system before maintaining the pump.
- Secure the pressure line before starting the pump. An unsecured pressure line can retaliate and thus lead to injuries and/or damages.
- Check the hose for wear and damage before every use. Ensure that all connections are secured.
- Occasionally check the pump and the system components. Keep the pump and the system free of residues and foreign bodies. If necessary, carry out a routine maintenance.
- Keep a remedy for pressure relief near pumps, the pressure lines of which can be closed off or clogged.

Personal safety

- Always wear protective glasses when working with the pump.
- Keep your working area clean, tidy, and well illuminated. Store tools and equipment when the pump is not in use.
- Keep bystanders away from your working area.
- Make sure to make the working area safe for children by using padlocks and main switches and by removing ignition keys.
- When connecting an electrically powered pump, all electrical and safety instructions need to be regarded.
- The pump motor is equipped with an automatic resetting thermal protection and can unexpectedly re-start.
- Danger of electric shock: This device is designed to only be operated with 230 V. To reduce the risk of electric shock, ensure that the pump is connected to a safety plug properly installed.
- The entire wiring should be done by a qualified technician.
- Protect the power cable from sharp objects, hot surfaces, oil, and chemicals. Avoid bending the cable. Damaged or worn cables need to be replaced immediately.
- Use cables with a sufficient size to minimise a voltage drop to the motor.

Additional safety precautions

Have the following checked by an expert before using the pump (important for your own safety, too):

- Ground connection
- Neutral conductor
- Fault-current circuit breaker needs to comply with the safety regulations of the power plants and needs to work faultless.
- The electrical connections need to be protected from humidity.
- When a danger of flooding occurs, the electrical connections need to be placed in a high area.
- The circulation of aggressive liquids as well as the circulation of abrasive substances is to be avoided.
- The motorised waste water pump needs to be protected from frost.
- The pump needs to be protected from dry-running. The pump should be kept away from children.

Resistance

- The waste water pump is suited for a circulation of water with a maximal temperature of 35 °C.
- The pump might not be suited for other liquids, especially motor oils, cleaning detergents, and other chemical products.

Assembly

The waste water pump is installed the following way:

- in stationary position with a fixed pipeline or
- in stationary position with a flexible pipe.

Warning! Please note!

- The pump should never be installed hanging self-supporting of the pressure line or the electricity cable. The waste water pump needs to be hung up by the designated handle or placed on the floor of the shaft. To ensure the impeccable functioning of the pump, the shaft floor needs to be kept free of mud and dirt of any kind.
- When the water level has sunk too low, the mud in the shaft dries fast and stops the pump from starting. It is necessary to regularly check the pump (by performing tests before operation).
- The float switch is adjusted to allow the pump to start immediately.

Note! The pump shaft should have a minimum size of 40×40×50 cm, so that the floater can move freely.

Power supply

The pump is equipped with a proper protective contact plug. The pump is meant to be connected to a 220/230 V~50 Hz safety socket. Ensure that the socket is sufficiently secured (at least 6 A) and is in an excellent condition. Place the electricity plug into the socket and the pump is ready for use.

Important note! If the main cable or the socket has been damaged due to external influences, repairs on the cable are prohibited. Repair-work may only be carried out by a qualified technician.

Areas of application

This pump is mainly used as a cellar pump. When placing this into a shaft, the pump provides protection from flooding. Additionally, the pump can be used, where water needs to be transported from one area to another, e.g., at home, in agriculture, in gardening, for sanitary work and so forth.

Work settings

After thoroughly reading the operating manual and understanding it, the pump can be put into operation. Please note the following things in advance:

- The pump is on the floor of the shaft.
- Ensure that the pressure line is attached properly.
- Check if the electrical connection has 230 V and 50 Hz. All fibre particles possibly collected in the pump casing should be removed with a water stream.
- Check if the socket is in a good condition.
- Make sure that water and humidity never reach the main components.
- Avoid any running dry of the pump.

Maintenance instructions

- This waste water pump is an approved, maintenance-free, high-quality product subject to a strict final inspection.
- We recommend a regular inspection and maintenance to ensure a longer lifespan of the device and an interruption-free operation.

Important notes!

- Before every maintenance work, pull out the plug.
- In case the pump should be transported frequently, it needs to be cleaned with clear water after every use.
- When installing the pump stationary, the function of the float switch should be checked every 3 months.
- All fibre particles possibly collected in the pump casing should be removed with a water stream.
- Every 3 months, the serrated blade should be freed from mud.
- Remove the residues on the float switch with clear water.

Cleaning the drive wheel

If there are excessive residues collected in the pump casing, the bottom part of the pump needs to be demounted the following:

1. Loosen the 4 screws on the bottom of the inlet cage.
2. Remove the suction cage from the pump casing.
3. Clean the drive wheel with clear water.
Important! The pump must not be placed on the drive wheel.
4. Build the pump back together in the reversed order.

Adjusting the on/off of the operating point

The on/off switching point and the shut-off point of the floating switch can be adjusted via the floating switch and its snap holder. Before putting the pump into operation, check the following:

1. The float switch needs to be installed so that the filling level of the shut-off point and the filling level of the switch-on point can be activated with little effort.
To check this, place the pump into a container filled with water. Carefully lift the float switch by hand and sink it again. Then check if the pump switches on and off.
2. Ensure that the distance between the float switch head and the snap holder is not too small. A proper operation cannot be guaranteed if the gap is too small.
3. When adjusting the float switch, ensure that it does not touch the basis before switching the pump off. Attention! Danger of dry-running.

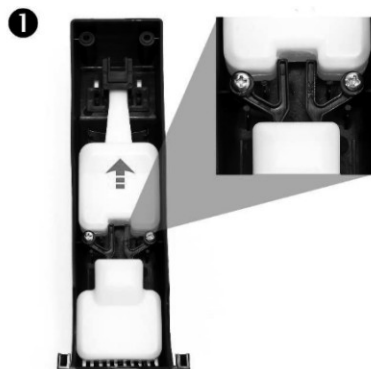
To modify the pump and allow a lower suction point, first of all remove the two screws of the back float switch cover.



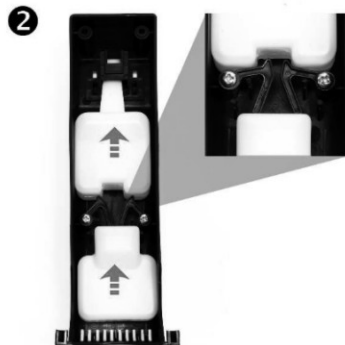
The cover can then be pushed away downward. We recommend tilting the pump sideways to more easily remove the cover.

There are two different mounting possibilities of both float switches. Fig. 1 shows the factory setting of the float switch and bracket mounting. Here the upper float switch can only move. With this way of mounting the switch-on point is at 120 mm/140 mm water level depending on the pump variation. See the following table:

Item number	Switch-on point (mm)
51537	120
51538	
51539	
51540	140
51541	



To reassemble the pump to version 2, both screws need to be loosened and the brackets to be turned. This allows both float switches to move and the switch-on point to sink.



Tighten the screws up again carefully.

With this assembly, the switch-on point is at 40 mm water level/60 mm depending on the pump adjustment. See the following table.

Item number	Switch-on point (mm)
51537	40
51538	
51539	
51540	60
51541	



Troubleshooting

Problem	Reason	Solution
Pump does not start	No power supply	Check power supply.
	Float switch does not switch	Place float switch in a higher position.
No flow	Inlet filter clogged	Clean inlet filter with water stream.
	Compressed air hose bent	Adjust hose.
Pump does not switch off	Float switch cannot sink down	Place pump properly on the shaft floor.
Inefficient flow	Inlet filter clogged	Clean inlet filter.
	Reduced pumping performance due to dirty water or grinding water	Clean pump and replace worn parts.
The pump switches itself off after short running period	Thermal switch stops pump due to waste water.	Pull power plug, clean pump and shaft.
	Water too hot, thermal switch stops pump	Ensure that the maximal water temperature does not exceed 35 °C.