



PUMPING STATION: WORKING AND SIZING

WORKING

1. Pump station with one pump, for pump a small flow rate, Standard model.

The liquid to be pumped enters the tank through the entrance pipe.

The pump is equipped with a floater which will activate the pump as soon as it detects water in the tank. As soon as the water level reaches the minimum level, the floater will descend and the pump will be deactivated.

The pump has a built-in thermal security system. No steering system is needed. The **pump is of the POMA-type** and is standing freely on the bottom of the pumping station.

2. Pump station with one pump, for pump a small flow rate, Standard model.

The liquid to be pump enters the tank through the entrance pipe.

In the tank you will find 1 pump and three floaters. As soon as there is enough water in the tank, the first floater will be lifted and the pump will be deactivated. As soon as the level of the water sinks beneath floater nº1, this floater will be deactivated and the pump will stop working. When the liquid reaches the third floater, the alarm system will be activated.

This steering system has a thermal security system for the pumps. The **pump is of the POMA-type** and is standing freely on the bottom of the pumping station.

3. Pumping station with 2 pumps, for pumping a small flow rate, standard model.

The liquid to be pumped enters the tank through the entrance pipe.

The pumping station is equipped with double tank, two pumps and three floaters. As soon as there is enough water in the tanks, the first floater will be lifted and pump nº 1 will be activated. As soon as the level of the water sinks beneath floater nº 1, this floater will be deactivated and pump nº 1 will stop working. In case the liquid level reaches floater nº 2, both pumps will be activated. When the liquid level reaches the third floater, the alarm system will be activated.

This pumping station comes with a steering system to which the floaters and the pumps should be connected. This steering system has a thermal security system for the pumps. The **pumps are of the POMA-type** and are standing freely on the bottom of the pumping station.

4. station with 1 pump, for pumping a moderate flow rate, standard model.

The liquid to be pumped enters the tank through the entrance pipe.

In the tank you will find 1 pump and 3 floaters. As soon as the level of the liquid in the tank reaches floater nº 2, the pump will start working. When the level of the liquid reaches the lowest floater, floater nº 1, the pump will be deactivated. When the liquid reaches floater No. 3 (in case of breakdown), the alarm activates.

This pumping station comes with a steering system to which the floaters and the pump should be connected. This steering system has a thermal security system for the pump. The **pump is of the type MTS40, TP50 or TP65** and is installed on a rail system.

5. Pumping station with 2 pumps, for pumping a moderate flow rate, standard model.

The liquid to be pumped enters the tank through the entrance pipe.

The pumping station is equipped with double tank, two pumps and three floaters. As soon as there is enough liquid in the tank, the first floater will be lifted and pump 1 will be activated. As soon as the level of the liquid sinks beneath floater nº1, this floater will be deactivated and pump nº1 will stop working. In case the liquid level reaches floater nr. 2, both pumps will be activated. When the liquid reaches the third floater, the alarm system will be activated.



This pumping station comes with a steering system to which the floaters and the pumps should be connected. The steering system has a thermal security system for the pumps. The **pumps are of the type MTS40, TP50 or TP65** and are installed on a rail system.

SIZING

In order to determine the right type of pump for your installation, the following data are of great importance:

1. The vertical distance (height) over which the liquid should be pumped.
2. The horizontal distance (length) over which the liquid should be pumped.
3. The type of liquid that should be pumped (rainwater, wastewater, fecal water ...).
4. The maximum flow rate m³/ h.
5. Available power supply (230 or 400V).
6. 1 or 2 pumps.

Then follow the steps as state below:

Determination of manometric height

The manometric height is the equivalent height to be considered in the choice of the pump, having taken into account the loss of charge along the length of travel of impulsion.

The manometric height is determined in the following table considering the height and length of impulsion travel.

Vertical distance	Horizontal distance								
	10	20	30	40	50	60	80	100	120
1	1.20	1.30	1.48	1.64	1.80	1.96	2.28	2.60	2.92
2	2.20	2.30	2.48	2.64	2.80	2.96	3.28	3.60	3.92
3	3.20	3.30	3.48	3.64	3.80	3.96	4.28	4.60	4.92
4	4.20	4.30	4.48	4.64	4.80	4.96	5.28	5.60	5.92
5	5.20	5.30	5.48	5.64	5.80	5.96	6.28	6.60	6.92
6	6.20	6.30	6.48	6.64	6.80	6.96	7.28	7.60	7.92
7	7.20	7.30	7.48	7.64	7.80	7.96	8.28	8.60	8.92
8	8.20	8.30	8.48	8.64	8.80	8.96	9.28	9.60	9.92
9	9.20	9.30	9.48	9.64	9.80	9.96	10.28	10.60	10.92
10	10.20	10.30	10.48	10.64	10.80	10.96	11.28	11.60	11.92

Type of liquid

Depending on the type of liquid that should be pumped, different pumps can be chosen.

a) Rainwater, slightly polluted water or treated water.

For these types of liquids, the **POMA pumps** can be used in case of a low flow rate. In case it concerns a moderate flow rate, the pumps of the **TP50 type and TP65 type** will be advised.

In case of flows not controllable, such as rainwater, is recommended the choice of a pumping station composed with **two pumps**.



b) Faecal water or wastewater that has not been treated.

For this case, **pumps of the MTS40 type** should be used.

The maximum flow rate

This is maximum flow rate given in m³/h or l/s which the pump should be able to manage.

Determination of the correct pump table and pump graphics

With the data obtained in previous sections: pump type and evacuation flow rate, you should enter the pump graphics (see technical data and pumps types) for the final choice of the pumping station.