TYPES OF WATER PUMPS FOR CONSTRUCTION

Water pumps are commonly used on construction sites for dewatering, or removing excess water accumulation. Water can build up due to heavy rains or from a high water table, and pumps allow you to move the water quickly to minimize downtime. Water pumps suitable for this application come in two main types and can be electric, gas-powered, hydraulic, or manual.

TYPES OF WATER PUMPS



WATER PUMP TYPES

There are two basic types of water pumps: centrifugal and positive displacement. Both types are designed to move water from one place to another continuously.

A centrifugal water pump uses a rotating impeller to move water into the pump and pressurize the discharge flow. Centrifugal water pumps come in several different types, including standard, trash, and submersible models. All liquids can be pumped using centrifugal water pumps, even those with low viscosity. These pumps work well with thin liquids and offer high flow rates.

Positive displacement water pumps deliver a fixed amount of flow through the mechanical contraction and expansion of a flexible diaphragm. Positive displacement pumps are used in many industries that manage high-viscosity liquids and where sensitive solids may be present. They are recommended for applications requiring a combination of low flow and high pressure.

TYPES OF WATER PUMPS



CONSIDERATIONS FOR CENTRIFUGAL WATER PUMPS

Centrifugal pumps are used in many construction and water system applications, in addition to dewatering. They are employed to pump water supplies in buildings and are compatible with pneumatic systems and where no suction lift is required. They are also used to pump water from domestic wells and to boost pressure in water intake lines. Centrifugal pumps can provide a continuous pressure source for fire protection systems, and they can serve as sump pumps in either vertical or horizontal configurations.

Centrifugal pumps are prone to several common problems. Some pumps may need recirculating liquid to prevent overheating caused by low flows. Centrifugal pumps must be primed, or filled with the pumped fluid, to operate properly. When the positive suction head of a system is too low for the selected pump, it can result in cavitation, a condition where air bubbles form near the impeller, leading to shockwaves inside the pump. Finally, wear of the pump impeller can be worsened by suspended solids in the liquid.



CONSIDERATIONS FOR POSITIVE DISPLACEMENT WATER PUMPS

Positive displacement water pumps, sometimes called rotary pumps, are very efficient due to the fact that they remove air from the lines and thus eliminate the need to bleed the air. These pumps are also effective for dealing with high-viscosity liquids.

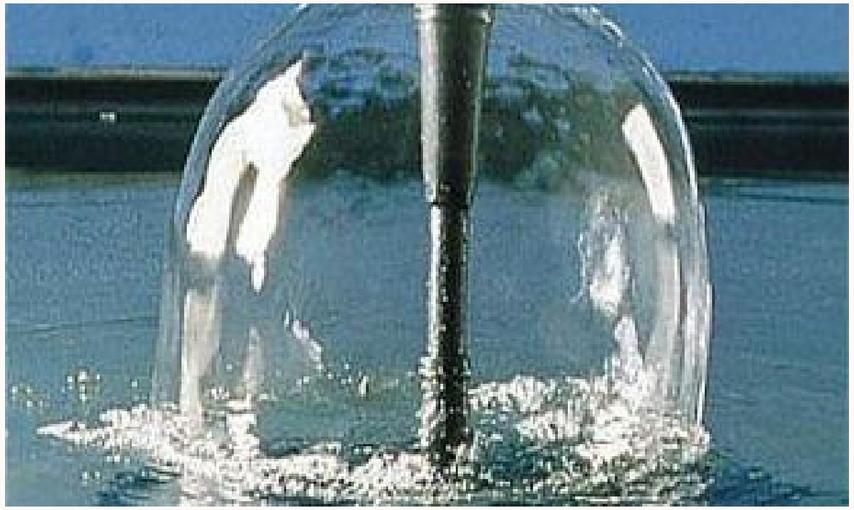
The primary drawback of positive displacement pumps is that they require a very small clearance between the rotating pump and the outer edge of the unit. As a result, the rotation must occur at very slow speeds. If the pump is operated at higher speeds, the liquids can erode and eventually reduce the efficiency of the water pump.



WATER PUMP FEATURES AND SPECS

There are several important factors to consider when choosing a water pump:

- Power—including the flow rate and horsepower
- Material—weather-resistant materials required for exposed applications
- Motor type/fuel type: electric, gas, diesel, hydraulic, or manual
- Head—total head discharge, or maximum pump power, suitable for the intended application



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