

Choosing the Right Pump



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Pumps are used to move fluid from one destination to another. They come in many different shapes, sizes, and operated by either electric motor, engine, by hand or solar power. They can be turned on and off by timers, detectors and other time and property-saving features. The below will assist on identifying what type of motor is needed for what application. This way you can get the pump you need to handle the job.

Consider these things for performance when picking a pump:

- **Capacity and power** – Capacity is how much fluid the pump can move, which is measured in gallons per minute or gallons per hour; power is measured in horsepower. Pumps with higher capacities and horsepower are suited to larger tasks.
- **Materials** – sheet metal, cast iron, stainless steel, cast iron, plastic and various other materials.
- **Power Sources** – Electricity, gasoline, diesel, hydraulics, natural gas, compressed air or manual.

Types of Pumps

Below are just a few of the pumps you can use for various applications around your home.

Sump Pumps

Sump pumps remove water that collects in basins from around a home’s foundation. They mainly used as a solution for basement that is flooded.

Pump Type	Description	Points to take under consideration
Pedestal	Motor is open and installed above water level.	Can be noisy Open motor is exposed to dust and moisture Should be positioned where motor cannot be submerged Easier to repair
Submersible	Motor is sealed and unit is installed below water level	Quiet Placed down in the sump pit Safer if children are in the house Functions even when submerged Sealed design prevents dust and moisture from affecting operation Less obtrusive Ideal for finished basements

Switches control turn the pump on and off.

- **Teather with piggy back plug and float** are designed to quickly replace your failed tethered switch on your submersible sump pump.
- **Capacitive switches** use a microprocessor to measure water level and engage the pump when the water level reaches a preset point in the sump basin. A benefit of capacitive or "water-sensing" switches is that there are no mechanical parts to wear out as with other switches.
- **Vertical switches** are mechanical devices designed to automatically turn a pump on and off when water reaches a preset level. These switches are not adjustable. Because these switches travel vertically they can be installed in relatively compact applications but must be free from obstructions. The switch needs to be installed 90 degrees from the incoming liquid.
- **Diaphragm switches** are mechanical devices that use water pressure levels to turn a pump on and off. As water rises in the unit air is released from a vent tube, activating the switch. As the water level drops, the air is pulled back into the switch to turn off the pump.

Sewage Pumps

Sewage pumps are designed to pump liquids and semi-solids in a basement or below-grade area from a sewage basin up to the main sewer line for removal. They are an essential element in any basement remodeling project that includes a bathroom. The switch on a sewage pump functions in a similar manner to that of sump pump. As the liquid in the basin reaches a specific point, the switch is activated, starting the pumping action. When the liquids lower to a certain point, the pump switches off.

- Sewage pumps may be submersible or above-ground and integrated into or outside a basin.
- They may be used in a sump pump application where clogging is an issue, but sump pumps should never be used in place of sewage pumps.
- Most models are capable of handling solids up to 2".
- Effluent pumps handle solids up to ¾" in diameter and are used for sink/laundry and septic discharge.
- The higher the lift or longer the distance the waste must be pumped, the more powerful the pump needs to be

When selecting a sewage or effluent pump, be sure to choose the appropriate horsepower. If you are replacing a sewage pump, use a model with the same horsepower. Horsepower is dictated by how many drains from toilets, showers, washing machines, and other fixtures and appliances feed into the sewage basin.

1-2 drains = 4/10 HP pump

3 or more drains = ½ HP pump

Well Pumps

Well pumps provide water from underground to your home. Refer to the table below for information about the types of well pumps available.

Well Type	Operation	Features
Shallow Well Jet Pump	Pump sits above ground and draws water out through one inlet pipe	For depths to water 25' deep or less Sits above the ground One-way check valve keeps pump primed
Deep Well Jet Pump	Pump sits above ground and draws water out of one pipe and pushes water through another pipe	For depths to water 25 to 110' deep Sits above the ground May include a ejector pipe to ensure well is never pumped out Requires a foot valve to prime the pump
Deep Well Submersible Pump	A single pipe comes up from the inside of the well into the home and connects to a pressure tank	Operate in depths to water 25' to 400' deep Must be pulled from well casing for repairs 2-wire pumps have built-in controls 3-wire pumps require a separate control box

Utility Pumps

Utility pumps are a broad classification of pumps available in a variety of configurations and used for short-term or emergency use to move liquids, often water, from one place to another. Refer to the table below for the most common utility pump types and functions they provide.

Note: Never use a pump to transfer flammable or corrosive materials, such as oil, gas, acid or other chemicals, unless it is specifically designed to handle such materials.

Well Type	Operation	Features
Submersible	<ul style="list-style-type: none">• Motor is housed in a water tight compartment so the pump can be fully immersed in liquid• Power ranges from 1/6 – 1/4 horsepower• Can have manual or semi-automatic activation	<ul style="list-style-type: none">• Dewaterers down to the bottom intake at 1/6” or 1/8” off the surface• Manual pumps turn on when plugged in• Semi-automatic units turn on when plugged in and detect water periodically for motor draw• For temporary dewatering use only
Transfer/Boosting	<ul style="list-style-type: none">• Non-submersible• Transfer models move water from location to location via hoses• In addition to transferring water, boosting units increase pressure where low or inadequate water pressure is an issue.	<ul style="list-style-type: none">• Available in a variety of sizes and power, from light aquarium applications to heavy dewatering.• Boosting units add pressure for car washing or sprinkling
HVAC Condensate	<ul style="list-style-type: none">• Non-submersible• Remove collected condensation from gas or electric furnaces or air conditioning units	<ul style="list-style-type: none">• Available as manual or automatic units for convenient operation.

Other Types of Pumps

- **Lawn sprinkler pumps:** Used to draw water from various sources, like wells, ponds, and tanks to lawn sprinkling systems.
- **Pond and Waterfall pumps:** Power water flow and circulation for decorative water features.
- **Swimming pool pump:** Circulates water through a swimming pool, filtering debris and cleansing the water to keep it clear and free of contaminants like bugs and algae.
- **Hot water recirculating pump:** They provides hot water at every faucet or shower when you need it and eliminates water. The pump circulates hot water loops for potable , or in steam heating or for radiator or baseboard. These units are often found in boiler recirculation loops in boiler rooms and as a booster in the other parts of the loop.

Pump Designs

- **Centrifugal** pumps accelerate liquids with a revolving device called an impeller, which pushes liquids out through an opening. They may be surface mounted or submersible, and are an economical choice for dewatering applications.
- **Diaphragm** pumps are a type of positive displacement pump that expand and contract a membrane in a regular rhythm to provide a steady, consistent flow. They are ideal for heavy duty tasks, like mud removal.
- **Submersible** pumps are designed to work while immersed in the fluid they are moving, like a sump pump in a sump pit.
- **Magnetic** pumps have no seals and use a magnetic coupling to power an impeller. They may have a rotating shaft or a stationary shaft. The lack of seals eliminates leaks.
- **Self-Priming**
Self-priming pumps require no manual supplying of fluid to the pumping chamber, for easier and more convenient operation.

Features to Consider

Adjustable Speed

Increases efficiency by allowing you to customize the speed for the difficulty of the job at hand.

Alarms

Alerts you when water becomes a problem.

Corrosion Resistance

If a pump is going to be placed in or around water, look for one that's made from corrosion-resistant materials to ensure longer life.

Battery Backup

Provide emergency power in the event of a power outage.

Note: This information was obtain by multiple sources and checked for suitability. However, a successful solution depends on individual accuracy, skill, and caution. For this reason, Electric Trading Company does not guarantee the result of procedure compliance or assume responsibility for personal injury or property damage to persons following these procedures.