

SUMP PUMP SAVVY

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Recently one of our customers expressed surprise at the number of sump pumps we have on display in our show room. Why so many ? Although it does seem that the 20 different models we stock might be overkill, it really isn't. It takes that many to meet a variety of applications efficiently and cost effectively.

SUMP PUMP DESIGNS

Sump pumps can be broken down into two major categories -- clear or gray water pumps and solids handling pumps. Within these two broad categories, they are further differentiated by the type of impeller employed, the design of the motor, and the expected duty cycle.

Although we could probably find four or five models that could satisfy 90% of the most common applications, their cost could be several times the cost of a correctly sized and selected pump.

A brief description of the various types of sump pumps and their proper application follows.

CLEAR OR GRAY WATER PUMPS

Often referred to as effluent pumps, clear or gray water sump pumps are designed to pump water that is free of trash, sewage, and other large solids. The solids handling capability, for most models, ranges from 1/4" to 3/4". Flow rates range from 10 to 100 GPM and normal pumping heads (vertical pumping height) range from 12' to 30'. Special high head models can produce heads of 70' or more.

Most effluent pumps employ oil filled motors. Oil transfers heat from the motor to the pump case and also lubricates the bearings and mechanical seal. Motors are

rated for either intermittent or continuous duty. Intermittent duty pumps are the most common and are found in many elevator and rainwater sumps. They are designed for an average duty cycle of 20 min. per hour. Although they can run for longer periods, their life will be shortened. Continuous duty pumps can run 24 hours per day as long as they are located in a sump where incoming water can flow over the motor. These pumps are often found in water features or ponds where 24 hour circulation is required. They are also used for pool draining and other extended dewatering applications. Special high temperature models are available for laundry and boiler sumps.

Water lubricated motors are also available and are often used in water features where aquatic life could be harmed by a leaking oil filled motor.

SOLIDS HANDLING PUMPS

The typical small solids handling sump pump is designed to pass a 2" spherical solid. They are used for domestic sewage and other applications where trash and debris might be present in the water. Flow rates range from 40 to 200 GPM and normal pumping heads range from 12' to 35' although special high head models can produce heads of 50' or more.

Almost all use oil filled motors and are rated as intermittent or continuous duty. The same duty cycle that applies to effluent pumps also applies to solids pumps. Continuous duty models are often used in water feature applications where relatively large flows are required.

The major difference in small solids handling pumps is the impeller design employed. The two types are recessed (vortex) and semi enclosed (two port).

Two port impellers allow the solids to pass through the impeller and offer the best efficiency, flow, and head for a given horsepower. Since solids must pass through the impeller, occasional clogging can occur.

Recessed impellers use a vortex action to pass solids through the pump without touching the impeller. This reduces clogging; however, performance will be lower than an equivalent two port impeller pump.

If you would like to learn more about sump pumps and their applications, please come by and spend some time at our display.



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