

## PUMP SEARCH ON-LINE DATABASE DESIGN

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What criteria are important and useful to the user to help him find a suitable pump? A pump is a very general and versatile piece of equipment; there are thousands of uses and thousands of types, cataloguing them is a challenge.

The first criterion to consider is the **pump type**. From now on all bold characters denote a field or column in the search results. There are many terms that identify a particular pump type. The one adopted is the term that most users will identify as the function or main construction feature of the pump. Certain criterion associated with each pump are not searchable (selectable via drop down box), an asterisk \* identifies the ones that are.

For \***Pump type**, these are the available identifiers: Air Piston, Archimedes Screw, Axial Flow, Barrel Emptying, Bellows, Canned Motor, Circumferential piston, Concrete Volute, Diaphragm single/double Acting, Double Suction, Eccentric disc, External Gear, Flexible Vane, In-Line , Jet, Internal Gear, Lobe, Manual, Magnetic Drive, Mixed Flow, Multi-Stage Horiz., Multi-Stage Vert., Pedestal Sump, Peristaltic (tube), Piston, Plunger Ram, Progressive Cavity, Propeller, Reactor, Reciprocating, Regenerative, Rotary, Screw Impeller, Self-Priming, Side Channel, Sliding Vane, Slurry, Standard volute close coupled, Standard volute separately coupled, Submersible, Submersible Sump, Submersible Vert., Turbine, Two/three screw, Thruster, Vertical Sump, Vertical Turbine.

Obviously the \***manufacturer** has to be listed. Sometimes a company has become a division of another and this is stated in the **Parent Co.** field.

Since a large number of companies have been bought out it is useful to list the name that the pump used to be known as, this is known as the **legacy brand**.

The pump is further identified by its **model** designation.

The pump \***service** is a flexible term that can contain the type of liquid to be pumped (i.e. water) or the activity (i.e. dewatering, irrigation) or the location (i.e. sump, deep well) or a particular ability (i.e. high head, low volume) or liquid density and viscosity (sludge, slurry, viscous liquids) or just a statement "general use". This is useful information but probably not the best way to search. Why? Pumps are very versatile and a manufacturer may not identify all the uses for his pumps. If you were to type in the keyword "irrigation" you will not get all the results possible if a manufacturer has not identified this service. Also many manufacturers only say that the pump is suitable for general service.

\* **Service specialty** is a criterion that helps identify the particular application that the pump is suited for. It's another grab bag criterion that has the following values: API process, Aquarium, Bilge, Chopper, Corrosion resistance, Fire systems, Fountain, grinder, High pressure, High pressure low flow, Hydronic heating & cooling, Low pressure high flow, Manual, nuclear, multiphase, pond, pressure testing, sanitary, Sewage, Shower (industrial), Sludge, Solar powered, Solids handling, Swimming pool.

This criterion comes to the rescue when the **pump type** criterion is insufficient. It has similar properties to the **service** criterion in that it can be related to location, application, market, etc. It should not be repeated in the pump type category unless one feature from each category is required to better describe the pump.

**Discharge diameter** provides a range of pump outlet sizes and helps identify the physical size of the pump.

\* **Head range** provides the approximate head range as stated by the manufacturer. It is useful to distinguish between the physical sizes of the pumps. *Note that the maximum head does not occur at the maximum flow, at the maximum head the pump will normally operate at its minimum flow and vice versa for the minimum head.*

\* **Flow range** provides the approximate flow range as stated by the manufacture. It is useful to distinguish between the physical sizes of the pumps. *Note that the maximum flow does not occur at the maximum head at the maximum flow the pump will normally operate at its minimum head and vice versa for the minimum flow.*

\* **Usage** helps determine what category of use the pump is designed for: Agricultural, Fire protection, Industrial, laboratory, Marine, Municipal, Nuclear, Residential, various. This helps identify some odd ball categories that perhaps would go unlisted such as *marine*.

\* **Search term** provides the ability to search for a pump suited to a given service or application. So that if you are looking for dewatering pumps, all the pumps with dewatering in the service field will be retrieved.

**Construction standard** refers to either ANSI or ISO standard.

**ANSI flange** gives the rating of the flange when available.

**Impeller style** provides information on the type of impeller, the values are: Axial flow, Double suction, Enclosed, Mixed flow axial, Open, inducer, Propeller, Recessed, single vane.

**Speed** is the rotating speed of the impeller.

\* **Drive type** refers to the different types of drive devices or motive power used: AC motor, Compressed air, DC motor, engine, Hydraulic motor, Manual, Renewable energy, Steam, Variable frequency.

\* **Legacy brands** refers to brand names are often the names of products that use the original equipment manufacturers name. Sometimes these manufacturers have been purchased by others and the brand name is kept.

\* **Features** is another of those grab bag categories that help differentiate pumps and highlight their uniqueness and special characteristics. They are: center line mounted, double volute, entrained air, explosion proof motor, impeller agitator, inducer, jacketed, low NPSHR, mobile, piggy back, portable, rubber lined, sealless.

**Materials** refer to the casing material.

**Liquids** to the type of liquid the pump is most suited for.

**Industry** is a list of the main industries where pumps play a large role: agricultural, Chemical, cryogenic, Desalinization, Food and beverage, Mining and mineral processing, Oil and gas, Petroleum refinery, Pharmaceutical, Pulp and paper, Sugar cane processing.

**Pump family** is divided into two major categories: positive displacement and kinetic. All centrifugal pumps fall into the kinetic category. See the Hydraulic Institute for a description of what constitutes the [kinetic](#) sub-family. The positive displacement pump sub-family is reciprocating, blow case and rotary. The sub-sub-family of rotary includes: vane, piston, tube, lobe, gear, circumferential and screw type pumps.