

WITHOUT YOU
THERE IS NO US.



Pump Catalog
January 2020



MISSION STATEMENT

The mission of A.Y. McDonald Mfg. Co. in the words of our founder is

“To make good products and to sell them honestly.”

We, the stockholders and employees, accomplish this by extending the McDonald family culture through excellent customer service and by focusing on our customers’ needs.

WHO’S THE BOSS?

Here’s a question I’ll bet you could ask a thousand working people and never get the right answer. The question is: **“Who’s The Boss?”**

There’s only one boss, and whether a person shines shoes for a living or heads up the largest corporation in the world, the boss remains the same. **It’s The Customer!**

The customer is the person who pays everyone’s salary and who decides whether a business is going to succeed or fail. The customer doesn’t care if a business has been around a hundred years. The minute it starts treating them badly, the customer will put it out of business.

This boss, the customer, has bought and will buy everything you have or will ever have. The customer has bought all of your clothes, your home, your car, your children’s education, and your vacation. They pay all of your bills and they pay them in exact proportion to the way you treat them.

The man who works deep inside a big plant on an assembly line might think he’s working for the company that writes his pay check, but he is not. He’s working for the person who buys the product at the end of the line, the customer. In fact, this customer can fire everyone in the company from the president on down. And they can do it by simply spending their money someplace else. This is one of the reasons why taking pride in the work we do is so important to us personally. Doing an exceptionally good job will not only bring joy and satisfaction, it will help get more customers, keep the ones we’ve got, and ensure that we continue to get a pay check from our bosses.

Some of the largest companies that had flourishing businesses a few years ago are no longer in existence. They couldn’t - or didn’t - satisfy the customer. They forgot who the boss really was!

At A.Y. McDonald we remind ourselves every day that the customer is the boss. It’s one of our core values and the reason we provide the best customer service in the business.



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Pump Basics

Pump Catalog - January 2020

MORE THAN A BRAND. WE'RE A FAMILY.

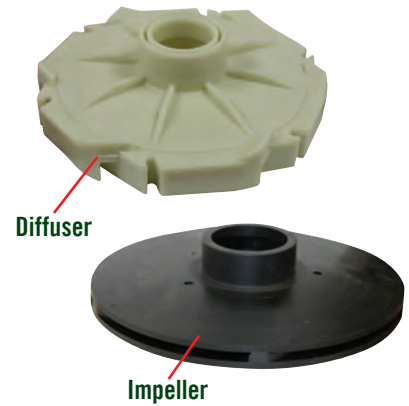
How a Centrifugal Pump Works

A centrifugal pump is a very simple design. The only moving part is an impeller attached to a shaft that is driven by the motor. The two main parts of the pump are the impeller and diffuser. The impeller can be made of bronze, stainless steel, cast iron, polycarbonate, and a variety of other materials. A diffuser or volute houses the impeller and captures the water off the impeller.

Water enters the eye of the impeller and is thrown out by centrifugal force. As water leaves the eye of the impeller, a low pressure area is created, causing more liquid to flow toward the inlet because of atmospheric pressure and centrifugal force. Velocity is developed as the liquid flows through the impeller while it is turning at high speeds on the shaft. The liquid velocity is collected by the diffuser or volute and converted to pressure by specially designed passageways that direct the flow to discharge into the piping system, or on to another impeller stage for further increasing of pressure.

The head or pressure that a pump will develop is in direct relation to the impeller diameter, the number of impellers, the eye or inlet opening size, and how much velocity is developed from the speed of the shaft rotation. Capacity is determined by the exit width of the impeller. All of these factors affect the horsepower size of the motor to be used; as the more water to be pumped or pressure to be developed, the more energy is needed.

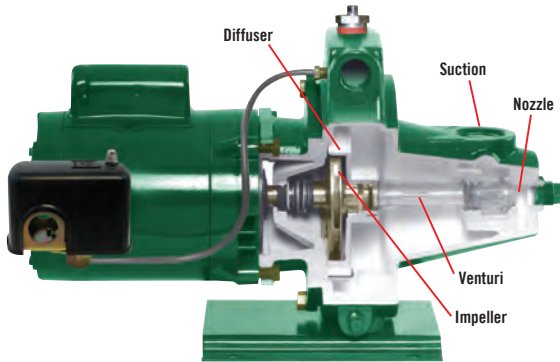
A centrifugal pump is not positive acting. As the depth to water increases, it pumps less and less water. Also, when it pumps against increasing pressure it pumps less water. For these reasons it is important to select a centrifugal pump that is designed to do a particular pumping job. For higher pressures or greater lifts, two or more impellers are commonly used; or a jet ejector is added to assist the impellers in raising the pressure.



Which Pump Do I Need?

The two most popular types of pumps used for private well systems or low flow irrigation applications are jet pumps and submersible pumps.

Jet Pump



Submersible Pump End



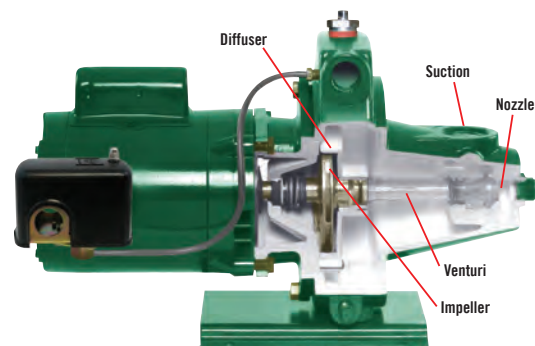
Jet Pumps

A deep well ejector is of particular value when you have a water level that is gradually lowering. The proper jet package will be required to work efficiently.

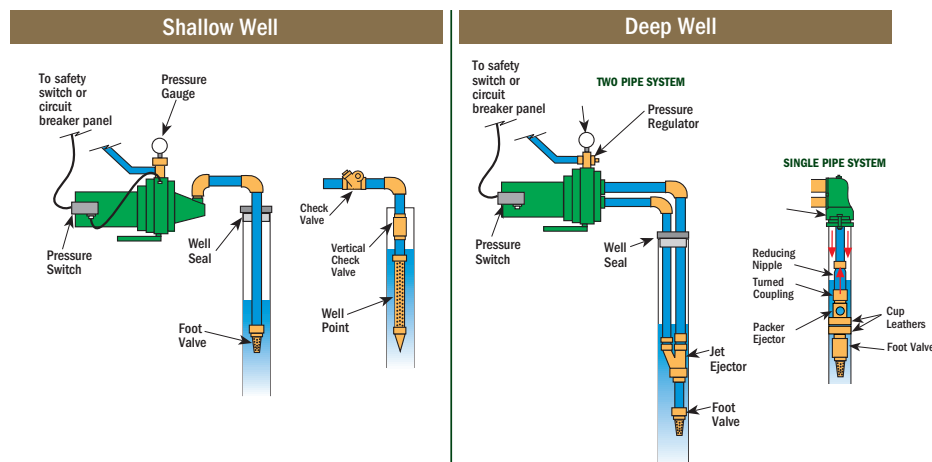
Because jet pumps are centrifugal pumps, the air handling characteristics are such that the pump should be started with the pump and piping connections to the water supply completely filled with water.

With a shallow-well jet pump, the ejector is mounted close to the pump impeller. With a deep well jet pump, the ejector is usually mounted just above the water level in the well, or else submerged below water level.

Centrifugal pumps, both the shallow-well and deep well types have little or no ability to pump air. When starting, the pump and suction line needs to have all of the air removed. An air leak in the suction line will cause the pump to quit pumping. This is or sometimes referred to as “losing its prime”.



Typical Jet Pump Installation



For a jet nozzle to be effective it must be combined with a venturi. The venturi changes the high-speed jet stream back to a high-pressure for delivery to the centrifugal pump. The jet and venturi are simple in appearance but they have to be well engineered and carefully matched to be efficient for various pumping conditions. The jet nozzle and venturi are also known as ejectors/ejector kits.

On a shallow-well jet pump the ejector kit (jet nozzle and venturi) is located in the pump housing in front of the impeller.

A portion of the suction water is recirculates through the ejector with the rest going to the

pressure tank. With the ejector located on the suction side of the pump, the suction is increased considerably. This enables a centrifugal pump to increase its effective suction lift from about 20 feet to as much as 28 feet, but the amount of water delivered to the storage tank becomes less as the distance from the pump to the water increases because more water has to recirculate to operate the ejector.

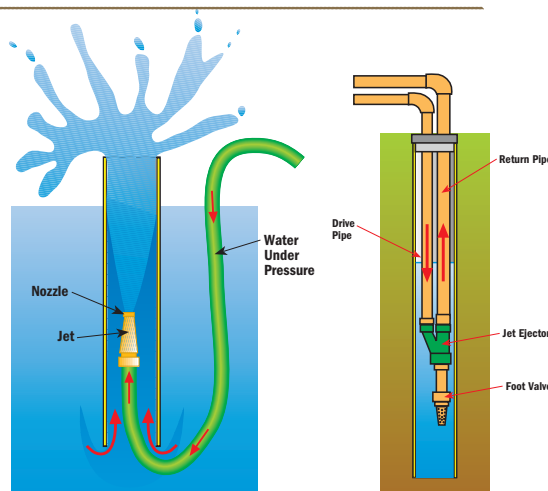
The difference between a deep-well jet pump and a shallow-well jet pump is the location of the ejector. The deep-well ejector is located in the well below the water level. The deep-well ejector works in the same way as the shallow-well ejector. Water is supplied to it under pressure from the pump. The ejector then returns the water plus an additional supply from the well, to a level where the centrifugal pump can lift it the rest of the way by suction.

A convertible jet pump allows for shallow-well operation with the ejector mounted on the end of the pump body. This type of pump can be converted to a deep-well jet pump by installing the ejector below the water level.

How a Jet Provides Pumping Action

Water is supplied to the Jet ejector under pressure. Water surrounding the jet stream is lifted and carried up the pipe as a result of the jet action.

When a jet is used with a centrifugal pump a portion of the water delivered by the pump is returned to the jet ejector to operate it. The jet lifts water from the well to a level where the centrifugal pump can finish lifting it by suction.



Submersible Pumps

The submersible pump is a centrifugal pump. Because all stages of the pump end (wet end) and the motor are joined and submerged in the water, it has a great advantage over other centrifugal pumps. There is no need to recirculate or generate drive water as there is with jet pumps, therefore, most of its energy goes toward “pushing” the water rather than fighting gravity and atmospheric pressure to draw water.

Virtually all submersibles are “multi-stage” pumps. All of the impellers of the multi-stage submersible pump are mounted on a single shaft and all rotate at the same speed. Each impeller passes the water to the eye of the next impeller through a diffuser. The diffuser is shaped to slow down the flow of water and convert velocity to pressure. Each impeller and matching diffuser is called a stage. As many stages are used as necessary to push the water out of the well at the required system pressure and capacity. Each time water is pumped from one impeller to the next, its pressure is increased.

The pump and motor assembly are lowered into the well by connecting piping to a position below the water level. In this way the pump is always filled with water (primed) and ready to pump. Because the motor and pump are under water they operate more quietly than above ground installations and pump freezing is not a concern.

A.Y. McDonald can stack as many impellers as needed; however, the horsepower of the motor is limited. For instance, numerous pumps have 1/2 HP ratings - pumps that are capable of pumping different flows at different pumping levels; they will, however, always be limited to 1/2 HP. Another way to look at it is that a pump will always operate somewhere along its design curve.

To get more flow, the exit width of the impeller is increased and there will then be less pressure (or head) that the pump will develop because there will be less impellers on a given HP size pump. Remember, the pump will always trade-off one for the other depending on the demand of the system. If the system demands more than a particular pump can produce, it will be necessary to go up in horsepower; thereby, allowing more impellers to be stacked or to go to a different design pump with wider impellers.



Pump Curves

A pump curve is a curved line drawn over a grid of vertical and horizontal lines. The curved line represents the performance of a given pump. The vertical and horizontal grid lines represent units of measure to display that performance.

Let's think of a well full of water. We want to use the water in a home. The home is at a higher level than the water in the well. Since gravity won't allow water to flow uphill, we use a pump. A pump is a machine used to move a volume of water a given distance. This volume is measured over a period of time expressed in gallons per minute (GPM) or gallons per hour (GPH).

The pump develops energy called discharge pressure or total dynamic head. This discharge pressure is expressed in units of measure called pounds per square inch (psi) or feet of head (ft).

NOTE: 1 psi will push a column of water up a pipe a distance of 2.31 feet. When measuring a pump's performance, we can use a curve to determine which pump is best to meet our requirements.

Figure 1 is a grid with the unit of measure in feet on the left hand side. We start with 0 at the bottom. The numbers printed as you go up the vertical axis relate to the ability of the pump to produce pressure expressed in feet. Always determine the value of each grid line. Sometimes the measure will say feet head, which is what most engineers call it.

With the pump running a reading was taken from the gauge in psi and converted to feet (1 psi = 2.31 feet).

We show another unit of measure in gallons per minute across the bottom. You start with 0 on the left. The numbers printed as you go to the right relate to the ability of the pump to produce flow of water expressed as capacity—in gallons per minute (GPM). Again, always determine the value of each grid line.

To establish a pump curve we run the pump using a gauge, valve, and flowmeter on the discharge pipe. We first run the pump with the valve closed and read the gauge. This gives us the pump's capability at 0 capacity and maximum head in feet.

Figure 2 - We mark the grid point 1. Next we open the valve to 8 GPM flow, and read the gauge. We again mark this point on the grid 2. We continue this process until we have marked all the points on the grid.

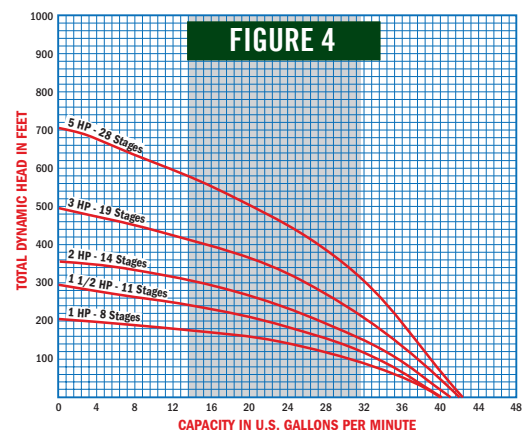
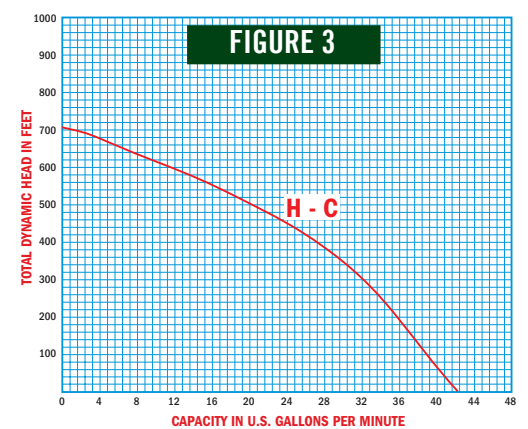
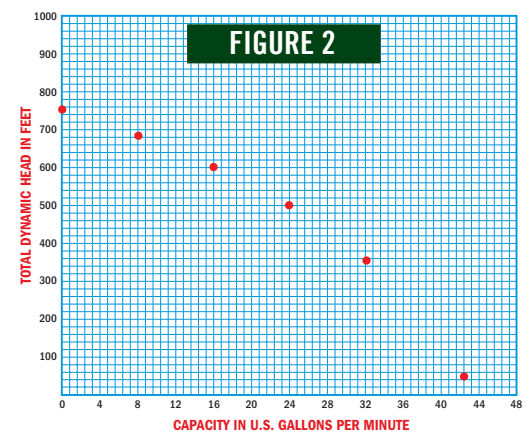
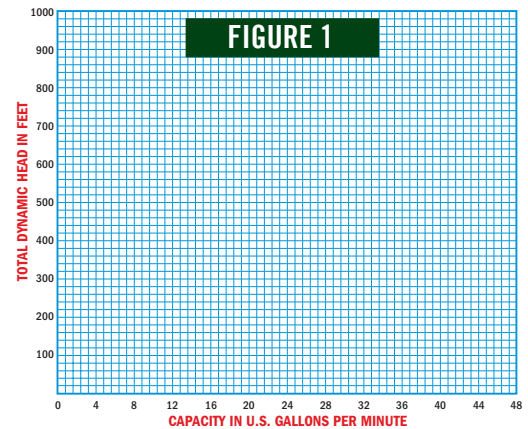
Figure 3 - We now connect all the points. This curved line is called a head/capacity curve. Head (H) is expressed in feet and capacity (C) is expressed in gallons per minute (GPM). The pump will always run somewhere on the curve.

When the total dynamic head (TDH) is known, read vertically up the left hand side of the curve to that requirement, for example, 300 feet. Then read horizontally to a point on a curve that connects to the capacity needed, for example 26 GPM. It is then determined that a 3 HP 19 stage pump is needed.

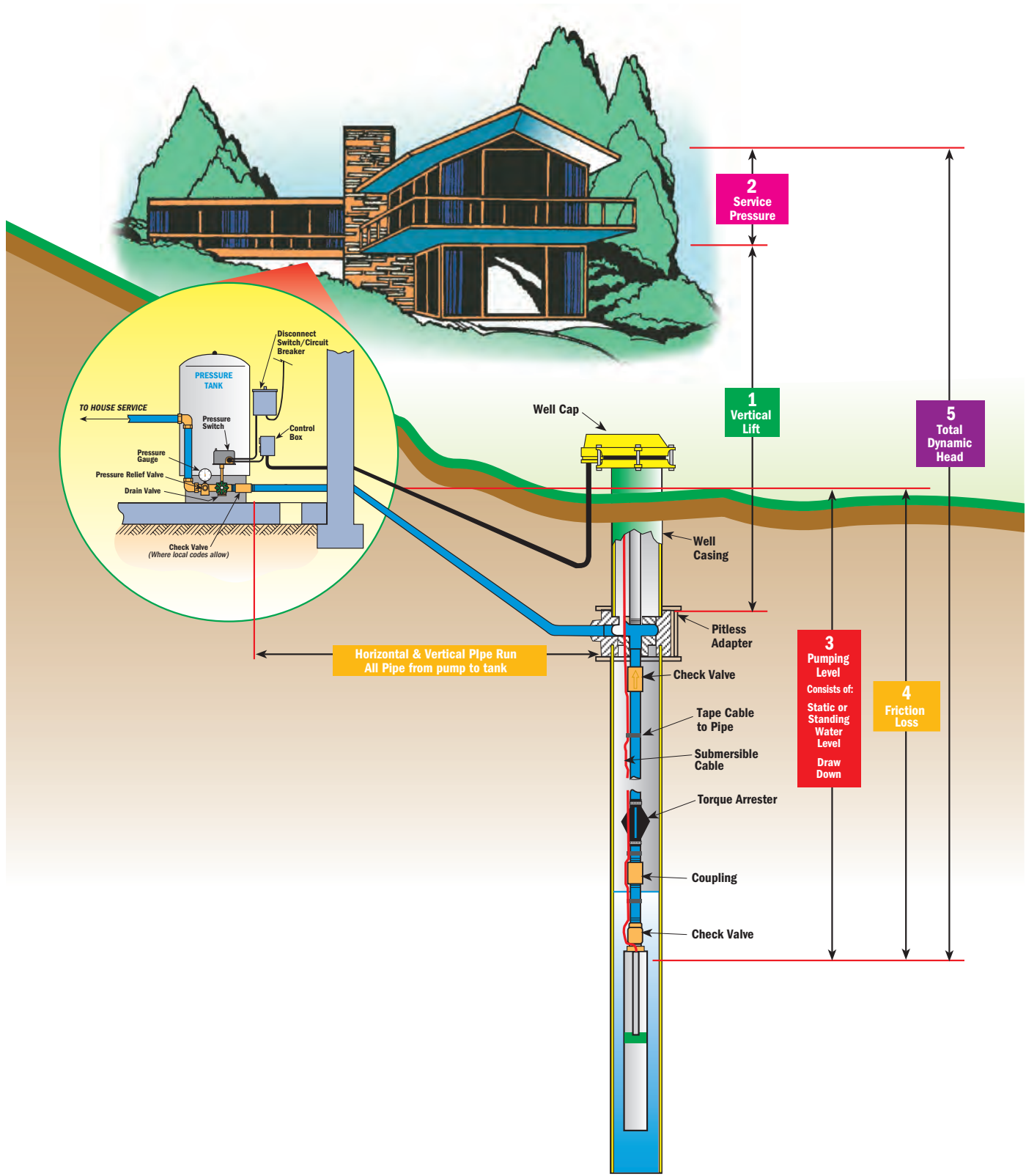
There are many different type curves shown in our catalog. Figure 4 is a composite performance curve (more than one pump) for the submersible. There is a separate curve for each horsepower size. Let's compare two sizes:

1. First look at the 1 HP, 8 stages (impellers and diffusers). At 20 GPM capacity this model will make 160 feet.
2. Now look at the 5 HP, 28 stages. At 20 GPM capacity this model will make 500 feet.

When you add impellers, the pump makes more pressure (expressed in feet). This allows the pump to go deeper in a well, but also takes more horsepower.



Typical Submersible Installation



Pump Sizing - Submersible Pumps

MORE ABOUT...

VERTICAL LIFT/ ELEVATION

The vertical distance between the well head and the level at the point of use. It must be added to the TOTAL DYNAMIC HEAD if the inlet is lower than the outlet and subtracted if the inlet is higher. As a rule of good installation practice, however, pipes should slope continuously upward from the inlet to the outlet to prevent entrapment of air.

SERVICE PRESSURE

The range of pressure in the pressure tank during the pumping cycle.

PUMPING LEVEL

The lowest water level reached during pumping operation. (Static level – draw-down)

STATIC OR STANDING WATER LEVEL

The undisturbed level of water in the well before pumping. Not as important as pumping level.

DRAWDOWN

The distance that the water level in the well is lowered by pumping. It is the difference between the STATIC WATER LEVEL and the PUMPING LEVEL.

FRICTION LOSS

The loss of pressure or head due to the resistance to flow in the pipe and fittings. Friction loss is influenced by pipe size and fluid velocity, and is usually expressed in feet of head.

HORIZONTAL RUN

The horizontal distance between the point where fluid enters a pipe and the point at which it leaves.

TOTAL DYNAMIC HEAD or TDH

TDH and capacity required determines pump size. The total pressure or head the pump must develop is the sum of the VERTICAL LIFT/ELEVATION, THE SERVICE PRESSURE, PUMPING LEVEL, and THE FRICTION LOSS. All of these measurements must be expressed in the same units, usually feet of head or pressure (PSI), before adding them together.

Determining Total Dynamic Head

1 Vertical Lift / Elevation
The vertical distance in feet from the pitless adapter to the top of the pressure tank

2 Service Pressure
The average (pump shut-off) pressure switch setting x 2.31'.
Example for a 30/50 switch: 40 x 2.31' = 92.4 feet

3 Pumping Level
The vertical distance in feet from the pitless adapter or well seal to the water drawdown level in the well that yields the flow rate required by the pump

4 Friction Loss
Water flowing through piping will lose head depending on the size, type and length of piping, number of fittings, and flow rate. Example: Pumping 20 GPM through 500 ft. of 1 1/4" plastic pipe with three elbows will cause a friction loss equal to:

$$\frac{500 \text{ ft.} + 21 \text{ ft. (elbow loss)}}{100 \text{ ft.}} \times 6.00 \text{ ft (loss per 100')} = 31.26 \text{ ft.}$$

Feet of Pipe _____ Diameter of Pipe _____

Type of Pipe _____

See Friction Loss Charts on Page 16

5 Total Dynamic Head
After determining TDH, match this number with capacity required on pump curves of specific pumps in this catalog to select the correct pump.

Gallons Per Minute (or Hour) Needed

Determining Flow Rate

Although methods will vary, in general, the Water Systems Council bases pump flow selection for a residential system on total gallon usage during a seven minute peak demand period. This can be supplemented by using a properly sized pressure tank.

Farms, irrigation, and lawn sprinklers demand more water.

Well Size
(inside diameter in inches)

HEAD

+

Convert PSI to feet
(X 2.31)

+

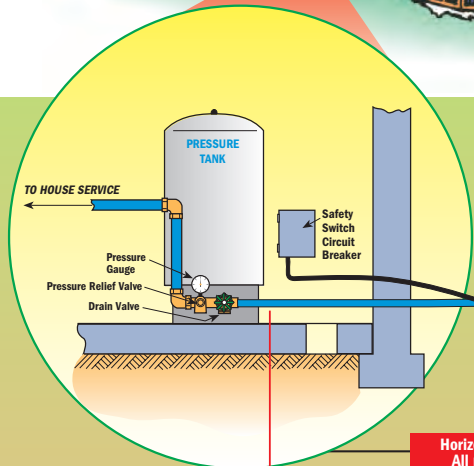
+

=

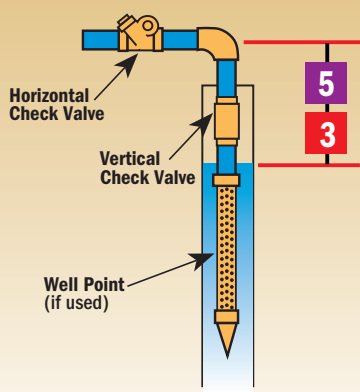
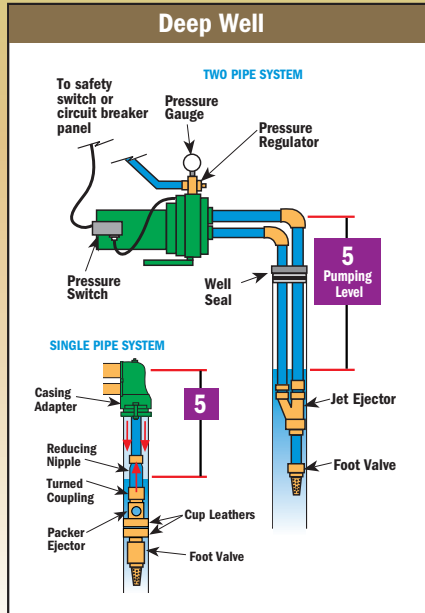
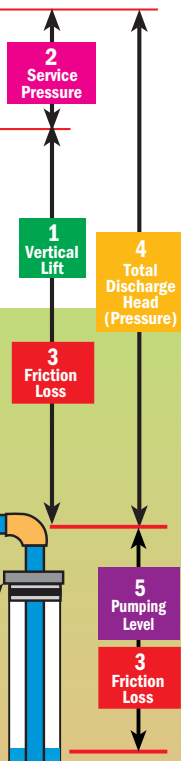
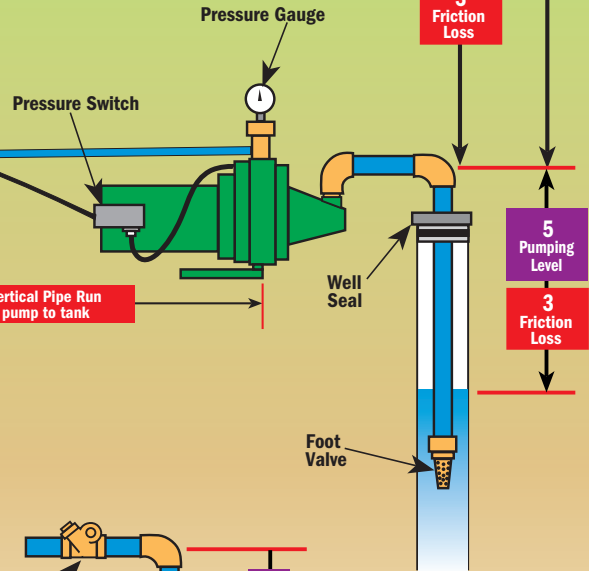
 Ft.

Typical Jet Pump Installation

SHALLOW WATER



Horizontal & Vertical Pipe Run
All pipe from pump to tank



Aboveground Pumps

The difference between submersible pump and surface pump sizing is that surface pumps, including jet pumps, show performance in “charted” form versus “curves” for submersibles. Except for the “pumping level” (which is shown in feet in the charts) all other head/lift requirements should be converted to PSIG for surface pump sizing. (Feet X .433 = PSIG (Pounds per Square Inch Gauge)).

MORE ABOUT...

VERTICAL LIFT/ ELEVATION

The vertical distance between the well head and the level at the point of use. It must be ADDED to the Total Dynamic/Total Discharge Head if the inlet is lower than the outlet and SUBTRACTED if the inlet is higher. As a rule of good installation practice, however, pipes should slope continuously upward from the inlet to the outlet to prevent entrapment of air.

SERVICE PRESSURE

The range of pressure in the pressure tank during the pumping cycle.

FRICTION LOSS

The loss of pressure or head due to the resistance to flow in the pipe and fittings. Friction loss is influenced by pipe size and fluid velocity, and is usually expressed in feet of head.

HORIZONTAL RUN

The horizontal distance between the point where fluid enters a pipe and the point at which it leaves.

TOTAL DYNAMIC/TOTAL DISCHARGE HEAD or TDH

TDH and capacity required determines pump size. The total pressure or head the pump must develop is the sum of Vertical Lift/Elevation, The Service Pressure, and The Friction Loss. All of these measurements must be expressed in the same units, usually feet of head or pressure (PSI), before adding them together. For aboveground pumps, distance to water in feet are shown in the respective charts.

PUMPING LEVEL

The lowest water level reached during pumping operation. (Static level minus drawdown)

STATIC OR STANDING WATER LEVEL

The undisturbed level of water in the well before pumping. Not as important as pumping level.

DRAWDOWN

The distance that the water level in the well is lowered by pumping. It is the difference between the STATIC WATER LEVEL and the PUMPING LEVEL.

1

Vertical Lift / Elevation

The vertical distance in feet from the location of the pump to the point of highest delivery (e.g. from a pump house near the well to the second floor of a two story house)

 Feet

X .433

Well Size
(inside diameter
in inches)

 PSIG

+

2

Service Pressure

The average pressure switch setting.
Example 20/40 switch (1/2 HP) = 30 PSIG average (3/4 HP and larger pumps have 30/50 switch settings) = 40 PSIG average

 PSIG

+

3

Friction Loss

Water flowing through piping will lose head depending on the size, type and length of piping, number of fittings, and flow rate. Example: Pumping 10 GPM through 100 ft. of 1" plastic pipe with 3 elbows will cause a friction loss equal to:

 Feet

X .433

 PSIG

$$\frac{100 \text{ ft.} + 18 \text{ ft. (elbow loss)}}{100 \text{ ft.}} \times 6.31 \text{ ft (loss per 100')} = 7.44' \times .433 = 3.2 \text{ PSIG}$$

Feet of Pipe _____ Diameter of Pipe _____

Type of Pipe _____

=

See Friction Loss Charts on Page 16

4

Total Dynamic/Discharge Head • 1 + 2 + 3 =

 PSIG

5

Pumping Level/Depth to Water

The vertical distance in feet from the pump to the water level including draw down level - if any. In Shallow Well systems, referred to as suction lift/head and is limited to 20 or 25 feet at sea level (deduct 1' suction capability for each 1000' above sea level).

No need to convert-
Charts are
in feet

If 25' or less,
use shallow
well charts
Ft.
If more than 25'
use deep
well charts

Note: Friction losses (3) in the suction piping must be added to the pumping level for total suction lift.

Deep Well jet pump charts include the friction losses in the vertical piping only. See page 21 if long horizontal, offset piping cannot be avoided.

Determining Flow Rate

Although methods will vary, in general, the Water Systems Council bases pump flow selection for a residential system on total gallon usage during a seven minute peak demand period. This can be supplemented by using a properly sized pressure tank.

Farms, irrigation, and lawn sprinklers demand more water.

Gallons Per Minute (or hour) Needed

See Page 20 for water demands

After determining TDH and flow requirements in GPM / GPH, match these numbers with surface pump charts in sections 3 and 4.

Friction Loss - Charts

LOSS OF HEAD IN FEET, DUE TO FRICTION PER 100 FEET OF PIPE

3/4" Pipe

FLOW US GAL MIN	STEEL C-100 ID .824"	PLASTIC C-140 ID .824"
1.5	1.13	.61
2.0	1.93	1.04
2.5	2.91	1.57
3.0	4.08	2.21
3.5	5.42	2.93
4.0	6.94	3.74
4.5	8.63	4.66
5.0	10.50	5.66
6.0	--	7.95
7.0	--	10.60

1" Pipe

FLOW US GAL MIN	STEEL C-100 ID 1.049"	PLASTIC C-140 ID 1.049"
2	.595	.322
3	1.26	.680
4	2.14	1.15
5	3.42	1.75
6	4.54	2.45
8	7.73	4.16
10	11.7	6.31
12	--	8.85
14	--	11.8

1 1/4" Pipe

FLOW US GAL MIN	STEEL C-100 ID 1.380"	PLASTIC C-140 ID 1.380"
4	.564	.304
5	.853	.460
6	1.20	.649
7	1.59	.860
8	2.04	1.10
10	3.08	1.67
12	4.31	2.33
14	5.73	3.10
16	7.34	3.96
18	9.13	4.93
20	11.10	6.00
25	--	9.06

1 1/2" Pipe

FLOW US GAL MIN	STEEL C-100 ID 1.61"	PLASTIC C-140 ID 1.61"
4	.267	.144
6	.565	.305
8	.962	.520
10	1.45	.785
12	2.04	1.10
14	2.71	1.46
16	3.47	1.87
18	4.31	2.33
20	5.24	2.83
25	7.90	4.26
30	11.1	6.0
35	--	7.94
40	--	10.20

2" Pipe

FLOW US GAL MIN	STEEL C-100 ID 2.067"	PLASTIC C-140 ID 2.067"
10	.431	.233
15	.916	.495
20	1.55	.839
25	2.35	1.27
30	3.29	1.78
35	4.37	2.36
40	5.60	3.03
45	6.96	3.76
50	8.46	4.57
55	10.10	5.46
60	11.90	6.44
70	--	8.53
80	--	10.90

2 1/2" Pipe

FLOW US GAL MIN	STEEL C-100 ID 2.469"	PLASTIC C-140 ID 2.469"
20	.654	.353
30	1.39	.750
40	2.36	1.27
50	3.56	1.92
60	4.99	2.69
70	6.64	3.58
80	8.50	4.59
90	10.60	5.72
100	--	6.90
110	--	8.25
120	--	9.71
130	--	11.30

3" Pipe

FLOW US GAL MIN	STEEL C-100 ID 3.0"	PLASTIC C-140 ID 3.068"
20	.149	.129
30	.316	.267
40	.541	.449
50	.825	.676
60	1.17	.912
70	1.57	1.22
80	2.03	1.56
90	2.55	1.95
100	3.12	2.37
110	3.75	2.84
120	4.45	3.35
130	5.19	3.90
140	6.00	4.50

4" Pipe

FLOW US GAL MIN	STEEL C-100 ID 4.0"	PLASTIC C-140 ID 4.026"
20	.038	.035
30	.076	.072
40	.128	.120
50	.194	.179
60	.273	.250
70	.365	.330
80	.470	.422
90	.588	.523
100	.719	.613
110	.862	.732
120	1.02	.861
130	1.19	1.00
140	1.37	1.15

Example:

10 GPM with 1' plastic pipe has 6.31' of loss per 100 ft. - if your run is 50 ft., multiply by .5, if 250 ft. multiply by 2.5, etc.

Loss through fittings in terms of equivalent lengths of pipe

TYPE FITTING & APPLICATION	PIPE & FTG. MATERIAL (Note 1)	EQUIVALENT LENGTH OF PIPE NOMINAL SIZE FITTING & PIPE								TYPE FITTING & APPLICATION	PIPE & FTG. MATERIAL (Note 1)	EQUIVALENT LENGTH OF PIPE NOMINAL SIZE FITTING & PIPE							
		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3			1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Insert coupling	Plastic	3	3	3	3	3	3	3	3	Standard tee Flow through side	Steel	4	5	6	8	9	11	14	
Threaded adapter Plastic or copper to thread	Copper	1	1	1	1	1	1	1	1		Copper	4	5	6	8	9	11	14	
	Plastic	3	3	3	3	3	3	3	3		Plastic	7	8	9	12	13	17	20	
90° standard elbow	Steel	2	3	3	4	4	5	6	6	Gate valve	Note 2	2	3	4	5	6	7	8	
	Copper	2	3	3	4	4	5	6	6		Swing check valve	Note 2	4	5	7	9	11	13	16
	Plastic	4	5	6	7	8	9	10	10										

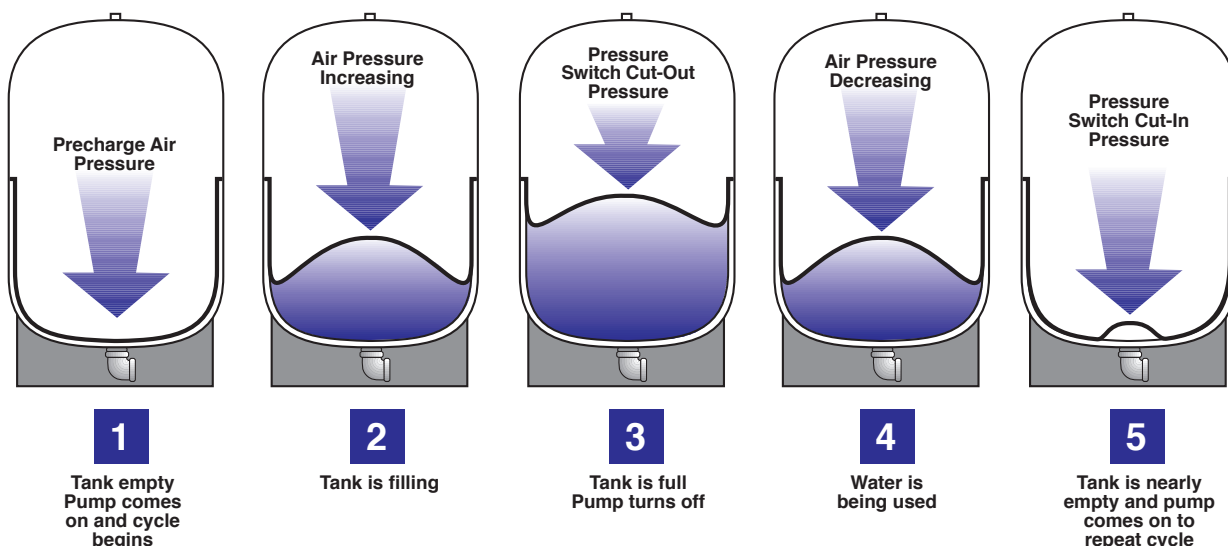
Note 1: Loss figures are based on equivalent lengths of indicated pipe material

Note 2: Loss figures are for screwed valves and are based on equivalent lengths of steel pipe

Note 3: Loss figures for copper lines are approximately 10% higher than shown for plastic

Pressure Tank - Sizing

TANK OPERATIONS



Why do I need a tank?

There are four main reasons to include a tank in your system:

1. To protect and extend the life of the pump by reducing the number of cycles.
2. To provide storage of water under pressure for delivery between cycles.
3. To have reserve capacity for periods of peak demand.
4. To reduce system maintenance.

How do I choose a tank for my system?

Choosing the proper tank for your pumping system will greatly reduce the risk of premature pump failure. Most manufacturers recommend a **minimum** run time of one minute in order to protect the pump and the pump motor. The larger the tank the longer the running time and fewer pump cycles will result in longer pump life. One HP and larger pumps require longer run times.

To determine the proper size of tank, there are three factors to consider:

1. Pump flow rate in gallons per minute
2. Desired run time of the pump
3. Cut-in and cut-out psi of the pressure switch

From these factors you can determine the tank drawdown with the following equation:

Pump flow rate X run time = tank drawdown capacity required.

Tank drawdown capacity is the minimum amount of water stored and/or delivered by the pressure tank between pump shut-off and pump re-start. This should not be confused with "tank volume." For example, a pre-charged tank with a tank volume of 20 gallons has only five to seven gallons drawdown capacity depending on the cut-in / cut-out (on/off) setting of the pressure switch.

Pumps with flow rates (capacities) up to 10 GPM should have a tank with a minimum of one gallon drawdown capacity for each GPM delivered by the pump. Example: 10 GPM pump = 10 gallon "drawdown".

Pump flow rates from 11 to 20 GPM should have tank drawdowns approximately 1.5 times the GPM rating.

For example, 20 GPM X 1.5 = 30 gallon "drawdown".

Pump flow rates above 20 GPM should have tank drawdowns approximately two times the GPM rating and multiple tanks should be considered.

(CHECK YOUR TANK MANUFACTURER'S CHARTS FOR TANK DRAWDOWN RATING.)

Technical Data - Glossary

ACIDITY - A condition of water when the pH is below 7. See pH.

ALKALINITY - A condition of water when the pH is above 7. See pH.

AQUIFER - A water-saturated geologic unit or system that yields water to wells or springs at a sufficient rate that the wells or springs can serve as practical sources of water.

ARTESIAN WELL (flowing and non-flowing) - Well in which the water rises above the surface of the water in the aquifer after drilling is completed. It is a flowing artesian well if the water rises above the surface of the earth.

CENTRIFUGAL - Consists of a fan-shaped impeller rotating in a circular housing, pushing liquid towards a discharge opening. Simple design, only wearing parts are the shaft seal and bearings (if so equipped). Usually used where a flow of liquid at relatively low pressure is desired. Not self-priming unless provided with a priming reservoir or foot valve: works best with the liquid source higher than the pump (flooded suction/gravity feed). As the discharge pressure (head) increases, flow and driven power requirements decrease. Maximum flow and motor loading occur at minimum head.

CHECK VALVE - Allows liquid to flow in one direction only. Generally used in suction and discharge line to prevent reverse flow.

CISTERN - A non-pressurized tank (usually underground) for storing water.

COAGULATION - The chemically combining of small particles suspended in water.

CONTAMINATED WATER - Water that contains a disease causing or toxic substances.

DEEP WELL - Use a pump (submersible or deep well jet) to force water upward from a pumping element below the well water level. Not restricted by suction lift limitations.

DRAWDOWN - The vertical distance the water level drops in a well pumped at a given rate.

DYNAMIC HEAD - Vertical distances (in feet) when the pump is running/producing water.

FLOODED SUCTION - Liquid source is higher than pump and liquid flows to pump by gravity (Preferable for centrifugal pump installations).

FLOW - The measure of the liquid volume capacity of a pump. Given in Gallons Per Hour (GPH) or Gallons Per Minute (GPM), as well as Cubic Meters Per Hour (CMPH), and Liters Per Minute (LPM).

FOOT VALVE - A type of check valve with a built-in strainer. Used at point of liquid intake to retain liquid in the system, preventing loss of prime when liquid source is lower than pump.

FRICTION LOSS - The loss of pressure or head due to the resistance to flow in the pipe and fittings. Friction loss is influenced by pipe size and fluid velocity, and is usually expressed in feet of head.

GRAINS PER GALLON - The weight of a substance, in grains, in a gallon. Commonly, grains of minerals per gallon of water as a measure of water hardness. 1 gpg = 17.1 mg/l.

GROUND WATER - Water that has filtered down to a saturated geologic formation beneath the earth's surface.

HARDNESS MINERALS - Minerals dissolved in water that increase the scaling properties and decrease cleansing action - usually calcium, iron, and magnesium.

HEAD - Another measure of pressure, expressed in feet. Indicates the height of a column of water being lifted by the pump neglecting friction losses in piping.

INCRUSTATION - A mineral scale chemically or physically deposited on wetted surfaces, such as well screens, gravel packs, and in tea kettles.

INTERMEDIATE STORAGE - A holding tank included in a water system when the water source does not supply the peak use rate.

JET PUMP - A pump combining two pumping principles - centrifugal operation and ejection. Can be used in shallow or deep wells.

MILLIGRAMS PER LITER (mg/l) - The weight of a substance, in milligrams in a liter. 1 mg/l = 1 oz. per 7500 gallons. It is equivalent to 1 ppm. See Parts per Million.

NEUTRALITY - A condition of water when the pH is at 7. See pH.

Technical Data - Glossary

OXIDATION - A chemical reaction between a substance and oxygen.

PALATABLE WATER - Water of acceptable taste. May also include non-offensive appearance and odor.

PARTS PER MILLION, ppm - A measure of concentration; one unit of weight or volume of one material dispersed in one million units of another; e.g., chlorine in water, carbon monoxide in air. Equivalent to indicate small size of this unit: 1 ppm = 1 oz. per 7500 gallons; 1 kernel of corn in 13 bushels 1/4 sq. in. in an acre.

PEAK USE RATE - The flow rate necessary to meet the expected maximum water demand in the system.

pH - A measure of the acidity or alkalinity of water. Below 7 is acid, above 7 is alkaline.

POLLUTED WATER - Water containing a natural or man-made impurity.

POTABLE WATER - Water safe for drinking.

PRESSURE - The force exerted on the walls of a container (tank pipe, etc.) by the liquid. Measured in pounds per square inch (PSI).

PRIME - A charge of liquid required to begin pumping action of centrifugal pumps when liquid source is lower than pump. May be held in pump by a foot valve on the intake line or a valve or chamber within the pump.

RELIEF VALVE - Usually used at the discharge of a pump. An adjustable, spring-loaded valve opens, or relieves pressure when a pre-set pressure is reached. Used to prevent excessive pressure and pump or motor damage if discharge line is closed off.

SHALLOW WELL - Use a pump located above ground to lift water out of the ground through a suction pipe. Limit is a lift of 33.9 feet at sea level.

SOFTENING - The process of removing hardness caused by calcium and magnesium minerals.

SPRING - A place on the earth's surface where ground water emerges naturally.

STATIC HEAD - Vertical Distance (in feet) from pump to point of discharge when the pump is not running.

STRAINERS - A device installed in the inlet of a pump to prevent foreign particles from damaging the internal parts.

SUBMERGENCE / SETTING - The vertical distance between PUMPING LEVEL and the bottom of the pump or jet assembly. Submergence must be sufficient to insure that the suction opening of the pump or jet assembly is always covered with water, while maintaining enough clearance from the bottom of the well to keep it out of sediment (at least 10 foot clearance is recommended). Could be useful when figuring friction loss.

SUBMERSIBLE - A pump which is designed to operate totally submersed in the fluid which is being pumped. With water-proof electrical connections, using a motor which is cooled by the liquid.

SUMP - A well or pit in which liquids collect below floor level.

SURGING - Forcing water back and forth rapidly and with more than normal force in a well or other part of the water system.

TOTAL HEAD - The sum of discharge head suction lift and friction losses.

VISCOSITY - The thickness of a liquid, or its ability to flow. Temperature must be stated when specifying viscosity, since most liquids flow more easily as they get warmer. The more viscous the liquid the slower the pump speed required.

WATER TABLE WELL - A well where the water level is at the surface of the aquifer.

WATER TREATMENT - A process to improve the quality of water.

WATER WELL - A man-made hole in the earth from which ground water is removed.

WELL DEVELOPMENT - A process to increase or maintain the yield of a well.

Technical Data

MEASUREMENT CONVERSION FACTORS (APPROXIMATE)

Metric	x	Conversion Factor	=	Customary	Customary	x	Conversion Factor	=	Metric
LENGTH					LENGTH				
mm	millimeter	..... 0.04	inches	in	in	inches	..... 2.54	centimeters	cm
cm	centimeters	..... 0.4	inches	in	ft	feet	..... 30.5	centimeters	cm
m	meters	..... 3.3	feet	ft	yd	yards	..... 0.9	meters	m
m	meters	..... 1.1	yards	yd	mi	miles	..... 1.6	kilometers	km
km	kilometers	..... 0.6	miles	mi					
AREA					AREA				
cm ²	square centimeters	..... 0.16	square inches	in ²	in ²	square inches	..... 6.5	square centimeters	cm ²
m ²	square meters	..... 1.2	square yards	yd ²	ft ²	square feet	..... 0.09	square meters	m ²
km ²	square kilometers	..... 0.4	square miles	mi ²	yd ²	square yards	..... 0.8	square meters	m ²
ha	hectares (10,000 m ²)	..... 2.5	acres	mi ²	mi ²	square miles	..... 2.6	square kilometers	km ²
					a acres 0.4 hectares ha				
MASS (weight)					MASS (weight)				
g	grams	..... 0.035	ounces	oz	oz	ounces	..... 28	grams	g
kg	kilograms	..... 2.2	pounds	lb	lb	pounds	..... 0.45	kilograms	kg
t	tonnes(1000kg)	..... 1.1	shorttons			short tons (2000 lb)	..... 0.9	tonnes	t
VOLUME					VOLUME				
ml	milliliters	..... 0.03	fluid ounces	n oz	tsp	teaspoons	..... 5	milliliters	ml
l	liters	..... 2.1	pints	pt	tbsp	tablespoons	..... 15	milliliters	ml
l	liters	..... 1.06	quarts	qt	fl oz	fluid ounces	..... 30	milliliters	ml
l	liters	..... 0.26	gallons	gal	c	cups	..... 0.24	liters	
m ³	cubic meters	..... 35.3	cubicfeet	ft ³	pt	pints	..... 0.47	liters	
m ³	cubic meters	..... 1.3	cubic yards	yd ³	qt	quarts	..... 0.95	liters	
m ³	cubic meters	..... 264.2	gallons	gal.	gal	gallons	..... 3.8	liters	
					ft ³ cubic feet 0.03 cubic meters m ³				
					yd ³ cubic yards 0.76 cubic meters m ³				
					gal gallons ..... .0038 cubic meters m ³				
FORCE/AREA					FORCE/AREA				
kPa	kilo paschals	..... .145	pound force/in ²	psi	psi	pound force/in ²	..... 6.89	kilo paschals	kPa
bar	bar	..... 14.5	pound force/in ²	psi	psi	pound force/in ²	..... .069	bar	bar

Average water requirements for general service around the home and farm

Each person, per day for all purposes	..... 100 gal.
Each horse, dry cow or beef animal	..... 12 gal.
Each milking cow	..... 35 gal.

Each hog per day	..... 4 gal.
Each sheep per day	..... 2 gal.
For 100 chickens per day	..... 4 gal.

Average amount of water required by various home and yard fixtures

Drinking fountain	..... 50-100 gal./day
Each shower	..... 25-60 gal. @ 5 GPM
To fill bathtub	..... 35 gal.
To flush toilet	..... 3-7 gal.
To fill lavatory	..... 1-2 gal.

To sprinkle 1/4" of water on each 1000 sq. ft. of lawn	..... 160 gal.
Dishwasher	..... 10-20 gal. @ 2 GPM
Washer	..... up to 50 gal. @ 4-6 GPM
Regeneration of water softener	..... up to 150 gal.

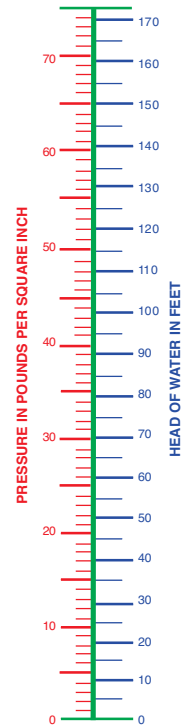
Average flow rate requirements by various fixtures GPM = Gal. per minute • GPH = Gal. per hour

Shower	..... 3-5 GPM
Bathtub	..... 3-5 GPM
Toilet	..... 4 GPM
Lavatory	..... 4 GPM
Kitchen sink	..... 5 GPM
1/2" hose & nozzle	..... 3 GPM
3/4" Hose & nozzle	..... 6 GPM
Lawn sprinkler	..... 3-7 GPM

Technical Data

CENTRIFUGAL PUMPS | FORMULAS | CONVERSION FACTORS

Pipe velocity (ft. per second) = $\frac{.408 \times \text{GPM}}{(\text{pipe diameter})^2} = \frac{.321 \times \text{GPM}}{\text{pipe area}}$
Velocity head (feet) = $\frac{(\text{pipe velocity ft. per second})^2}{64.4}$
Water horsepower = $\frac{\text{GPM} \times \text{head in ft.} \times \text{specific gravity}}{3960}$
Brake horsepower (pump) = $\frac{\text{GPM} \times \text{head in ft.} \times \text{specific gravity}}{3960 \times \text{pump efficiency}}$
Efficiency (pump) = $\frac{\text{GPM} \times \text{head in ft.} \times \text{specific gravity}}{3960 \times \text{BHP}} = \frac{\text{WHP}}{\text{BHP}}$
Brake horsepower (motor) = $\frac{\text{Watts input} \times \text{motor efficiency}}{746}$
Pressure (lbs. per sq. in.) = $\frac{\text{Head ft.} \times \text{specific gravity}}{2.31'} = \frac{\text{Head ft.} \times \text{specific gravity} \times .433}{}$
Head feet = $\frac{\text{Lbs. per sq. in.} \times 2.31'}{\text{Specific gravity}}$
Lbs. per square in. = Head in ft. x .433 • Head in ft. = lbs. per sq. in. x 2.31'



Offset Jet Pump - Pipe Friction

When the jet pump is offset horizontally from the well site, add the following distances to the vertical lift to approximate capacity to be received. **Friction loss in feet per 100 feet offset • Friction loss is to be added to vertical lift**

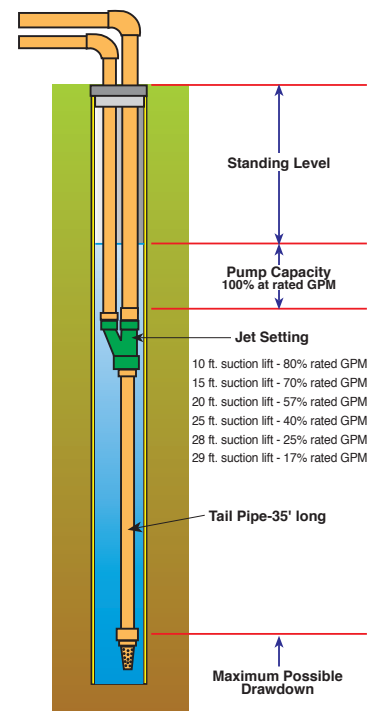
JET SIZE HP	1 1/4 x 1	1 1/4 x 1 1/4	1 1/2 x 1 1/4	1 1/2 x 1 1/2	2 x 1 1/2	2 x 2	2 1/2 x 2	2 1/2 x 2 1/2	3 x 2 1/2	3 x 3
1/3	12	8	6	4						
1/2	18	12	8	6	3	2				
3/4	30	22	16	11	6	4				
1		30	25	16	9	6				
1 1/2					13	8	5	3		
2					20	13	7	5		
3							13	9	6	4

Example: Vertical distance to water is 60 feet, but a 100 feet horizontal / offset (run of piping) is required. A 3/4 HP jet pump is used so the capacity should be taken from the “80’ depth to water” performance. For example: 60 feet to water + 22 feet friction loss (with 1 1/4 x 1 1/4 two pipe system) = 82 feet, which is approximately 80 feet.

Installation of a Long Tail Pipe on Deep Well Jet Pumps

The pumping capacity of a deep well jet pump can be reduced to equalize with the well flow by installing a 35 foot tail pipe below the jet assembly.

With a tail pipe, pump delivery remains at 100% of capacity down to the ejector level. If water level falls below that, flow decreases in proportion to drawdown as shown by figures. When delivery equals well inflow, the water level remains constant until the pump shuts off. The pump will not lose prime with this tail pipe arrangement.



Drop Cable Selection Chart

Single-Phase, Two or Three Wire Cable, 60 HZ (Service Entrance to motor)

Motor Rating			Copper Wire Size													
Volts	HP	KW	14	12	10	8	6	4	3	2	1	0	00	000	0000	
115	1/2	.37	100	160	250	390	620	960	1190	1460	1780	2160	2630	3140	3770	
	3/4	.55	300	480	760	1200	1870	2890	3580	4370	5330	6470	7870			
230	1	.75	250	400	630	990	1540	2380	2960	3610	4410	5360	6520			
	1.5	1.1	190	310	480	770	1200	1870	2320	2850	3500	4280	5240			
	2	1.5	150	250	390	620	970	1530	1910	2360	2930	3620	4480			
	3	2.2	120*	190	300	470	750	1190	1490	1850	2320	2890	3610			
	5	3.7	0	0	180*	280	450	710	890	1110	1390	1740	2170	2680		
	7.5	5.5	0	0	0	200*	310	490	610	750	930	1140	1410	1720		
	10	7.5	0	0	0	0	250*	390	490	600	750	930	1160	1430	1760	
	15	11	0	0	0	0	170*	270*	340	430	530	660	820	1020	1260	

1 foot - .3048 meter

Three-Phase, Three Wire Cable, 60 HZ 200 and 300 volts (Service Entrance to motor)

Motor Rating			Copper Wire Size (1)												
Volts	HP	KW	14	12	10	8	6	4	3	2	1	0	00	000	0000
200V 60 Hz	1/2	.37	710	1140	1800	2840	4420								
	3/4	.55	510	810	1280	2030	3160								
	1	.75	430	690	1080	1710	2670	4140	5140						
	1.5	1.1	310	500	790	1260	1960	3050	3780						
	2	1.5	240	390	610	970	1520	2360	2940	3610	4430	5420			
	3	2.2	180	290	470	740	1160	1810	2250	2760	3390	4130			
Three Phase	5	3.7	110*	170	280	440	690	1080	1350	1660	2040	2490	3050	3670	4440
	7.5	5.5	0	0	200	310	490	770	960	1180	1450	1770	2170	2600	3150
	10	7.5	0	0	0	230*	370	570	720	880	1090	1330	1640	1970	2390
	15	11	0	0	0	160*	250*	390	490	600	740	910	1110	1340	1630
	20	15	0	0	0	0	190*	300*	380	460	570	700	860	1050	1270
	25	18.5	0	0	0	0	0	240*	300*	370*	460	570	700	840	1030
30	22	0	0	0	0	0	0	250*	310*	380*	470	580	700	850	
230V 60 Hz	1/2	.37	930	1490	2350	3700	5760	8910							
	3/4	.55	670	1080	1700	2580	4190	6490	8060	9860					
	1	.75	560	910	1430	2260	3520	5460	6780	8290					
	1.5	1.1	420	670	1060	1670	2610	4050	5030	6160	7530	9170			
	2	1.5	320	510	810	1280	2010	3130	3890	4770	5860	7170	8780		
	3	2.2	240	390	620	990	1540	2400	2980	3660	4480	5470	6690	8020	9680
Three Phase	5	3.7	140*	230	370	590	920	1430	1790	2190	2690	3290	4030	4850	5870
	7.5	5.5	0	160*	260	420	650	1020	1270	1560	1920	2340	2870	3440	4160
	10	7.5	0	0	190*	310	490	760	950	1170	1440	1760	2160	2610	3160
	15	11	0	0	0	210*	330	520	650	800	980	1200	1470	1780	2150
	20	15	0	0	0	0	250*	400	500	610	760	930	1140	1380	1680
	25	18.5	0	0	0	0	0	320*	400	500	610	750	920	1120	1360
30	22	0	0	0	0	0	260*	330*	410*	510	620	760	930	1130	
460v 60 Hz	1/2	.37	3770	6020	9460										
	3/4	.55	2730	4350	6850										
	1	.75	2300	3670	5770	9070									
	1.5	1.1	1700	2710	4270	6730									
	2	1.5	1300	2070	3270	5150	8050								
	3	2.2	1000	1600	2520	3970	6200								
Three Phase	5	3.7	590	950	1500	2360	3700	5750							
	7.5	5.5	420	680	1070	1690	2640	4100	5100	6260	7680				
	10	7.5	310	500	790	1250	1960	3050	3800	4680	5750	7050			
	15	11	0	340*	540	850	1340	2090	2600	3200	3930	4810	5900	7110	
	20	15	0	0	410*	650	1030	1610	2000	2470	3040	3730	4580	5530	
	25	18.5	0	0	0	530*	830	1300	1620	1990	2450	3010	3700	4470	5430
Three Wire	30	22	0	0	0	430*	680	1070	1330	1640	2030	2490	3060	3700	4500
	40	30	0	0	0	0	500*	790	980	1210	1490	1830	2250	2710	3290
	50	37	0	0	0	0	0	640*	800	980	1210	1480	1810	2190	2650
	60	45	0	0	0	0	0	540*	670*	830*	1020	1250	1540	1850	2240
	75	55	0	0	0	0	0	0	680*	840*	1030	1260	1520	1850	
	100	75	0	0	0	0	0	0	0	620*	760*	940*	1130	1380	
	125	90	0	0	0	0	0	0	0	0	0	740*	890*	1000*	
	150	110	0	0	0	0	0	0	0	0	0	0	0	760*	920*
	175	130	0	0	0	0	0	0	0	0	0	0	0	0	810*
	200	150	0	0	0	0	0	0	0	0	0	0	0	0	0

Lengths marked * meet the U.S. National Electrical Code ampacity only for individual conductor 75°C cable. Only the lengths without * meet the code for jacketed 75°C cable. Local code requirements may vary.

CAUTION!! Use of wire sizes smaller than determined above will void warranty, since low starting voltage and early failure of the unit will result. Larger wire sizes (smaller numbers) may always be used to improve economy of operation.

(1) If aluminum conductor is used, multiply above lengths by 0.61. Maximum allowable length of aluminum wire is considerably shorter than copper wire of same size.



Submersible Pumps



Submersible Pumps

Pump Catalog - January 2020

MORE THAN A BRAND. WE'RE A FAMILY.

21000 Series No-Lead Brass

A.Y. McDonald offers a full line of four inch submersibles ranging from 1/3 through 5 horsepower, with flow rates ranging from 5 to 25 gallons per minute (GPM). Our 21000 submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM) models.

Powered by NEMA approved A.Y. McDonald stainless steel motors.

The charts on the following pages will assist you in choosing the pump that meets your needs.



Discharge Casting
No-Lead Brass Alloy

Cable Guard
Stainless steel cable guard protects motor leads. Angled top helps keep leads stationary when lowering and raising submersible pump.

Diffuser
Polycarbonate durable, corrosion, and abrasion resistant. Designed for efficient performance and superior sand handling capability.

Impeller
Glass Bead Acetal. This smooth and flexible material is precision engineered for maximum performance.

- Once assembled, each pump is individually tested to assure performance within design specifications.
- Each pump is stamped with the tester's "signature" marking to assure quality control.
- Non-corrosive in-take screen
- Cutaway illustrates features and is not indicative of specific model performance.

Check Valve
Acetal check valve poppet and seal housing, Buna-N O-ring, and stainless steel washer head retention screw. Threaded for easy installation or removal. Working pressure of 400 PSI.

Discharge Bearing
Rubber surrounding the stainless steel shaft provides superior wear resistance against the harshest conditions while maintaining shaft alignment. Self lubricating for long life.

A.Y. McDonald uses its **time proven captured stack design**. The captured stack design incorporates sand notches into the diffusers, which has proven, over time, to keep sand flowing thru the stack.

Polished Stainless Steel Shell
Heavy duty and threaded at both ends for easy field service.

Shaft
7/16" 300 series stainless steel, hex design for positive impeller drive. Each shaft individually measured for straightness with strict tolerances.

Stainless steel motor coupling.

Motor Bracket
No-Lead Brass Alloy

How to Order 4" Submersible Pumps

Order by Model Number - Example: 21050K3A

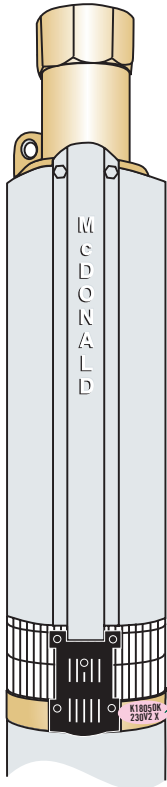
21	050	K	3	A	
Series 21 - No-Lead Brass 22 - Thermoplastic 23 - Domestic Stainless Steel 24 - Stainless Steel	Horsepower 030 - 1/3 HP 050 - 1/2 HP 075 - 3/4 HP 100 - 1 HP 150 - 1 1/2 HP 200 - 2 HP 300 - 3 HP 500 - 5 HP	GPM J - 5 GPM V - 7 GPM K - 10 GPM L - 15 GPM P - 20 GPM M - 25 GPM	Wires Two wire or Three wire	Other Leave blank for 230V 60 HZ, Single Phase (Standard) A - 115V Single Phase Other Options - Contact Factory Z - 230V Three Phase Y - 460V Three Phase	Controls Leave blank for Control (Standard) LB - Less box (Single Phase Option) LS - Less starter (Three Phase Option)

Model 21050K3A is a 1/2 HP, three wire, 115 volt, single phase no-lead brass 4" submersible pump, designed to pump in the 10 GPM range.

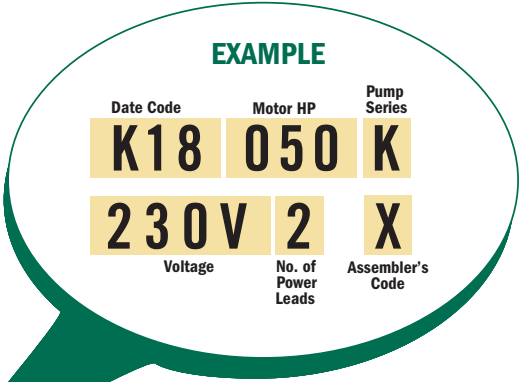
Submersible Pumps

NOTES

- Standard is 230V, Single Phase, 60 HZ (no suffix letter required)
- Two-Wire Single phase models include; pump, motor, leads
- Three-Wire Single phase models include; pump, motor, leads, and control box
- Three-Wire Three phase models include; pump, motor, leads, and starter kit
- All submersible pumps include internal check valves and ground lead on motor.



Locating the code number on the pump



A code is stamped on each A.Y. McDonald 21000 series submersible pump. Contained in this code is the following information:

- Date of manufacture
- Motor HP
- Pump Series
- Voltage
- Number of power leads
- Assembler's code

J - 5 GPM

A.Y. McDonald offers a full line of no-lead brass submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include no-lead discharge head with a built-in check valve, and stainless steel shaft and coupling.

All No-Lead Pumps come with a 1 1/4" discharge and sizes range from 1/3 to 1 1/2 horsepower (HP). Two or three wire models up to 1 1/2 horsepower (HP).

Two Wire Single Phase

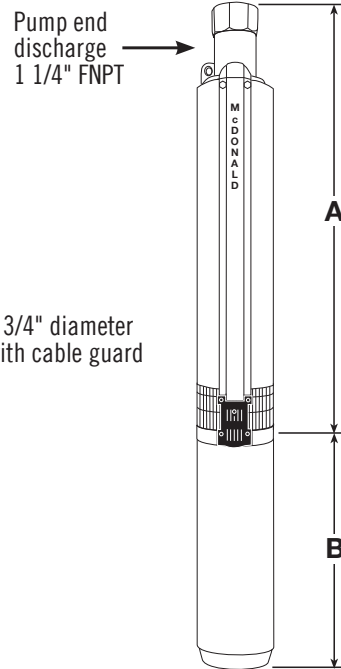
Model No.	HP	Stages	Volt	A	B	Wt.
21030J2A*	1/3	9	115	13.48"	9.53"	26
21030J2*	1/3	9	230	13.48"	9.53"	26
21050J2A	1/2	13	115	16.68"	9.53"	30
21050J2	1/2	13	230	16.68"	9.53"	30
21075J2	3/4	18	230	20.67"	10.66"	36
21100J2	1	23	230	25.93"	11.75"	41
21150J2	1 1/2	30	230	31.45"	15.12"	49

Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	Wt.
21030J3A*	1/3	9	115	13.48"	9.53"	26
21030J3*	1/3	9	230	13.48"	9.53"	26
21050J3A	1/2	13	115	16.68"	9.53"	30
21050J3	1/2	13	230	16.68"	9.53"	30
21075J3	3/4	18	230	20.67"	10.66"	36
21100J3	1	23	230	25.93"	11.75"	41
21150J3	1 1/2	30	230	31.45"	13.28"	41

Three Wire Three Phase

Model No.	HP	Stages	Volt	A	B	Wt.
21150J3Z	1 1/2	30	230	31.45"	11.75"	45



4" No-Lead Brass Pump Ends

Model No.	HP	Wt.
21030J	1/3	10
21050J	1/2	11
21075J	3/4	13
21100J	1	15
21150J	1 1/2	18

* All one-third horsepower pumps are furnished with one-half horsepower motors (and control boxes where applicable).

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

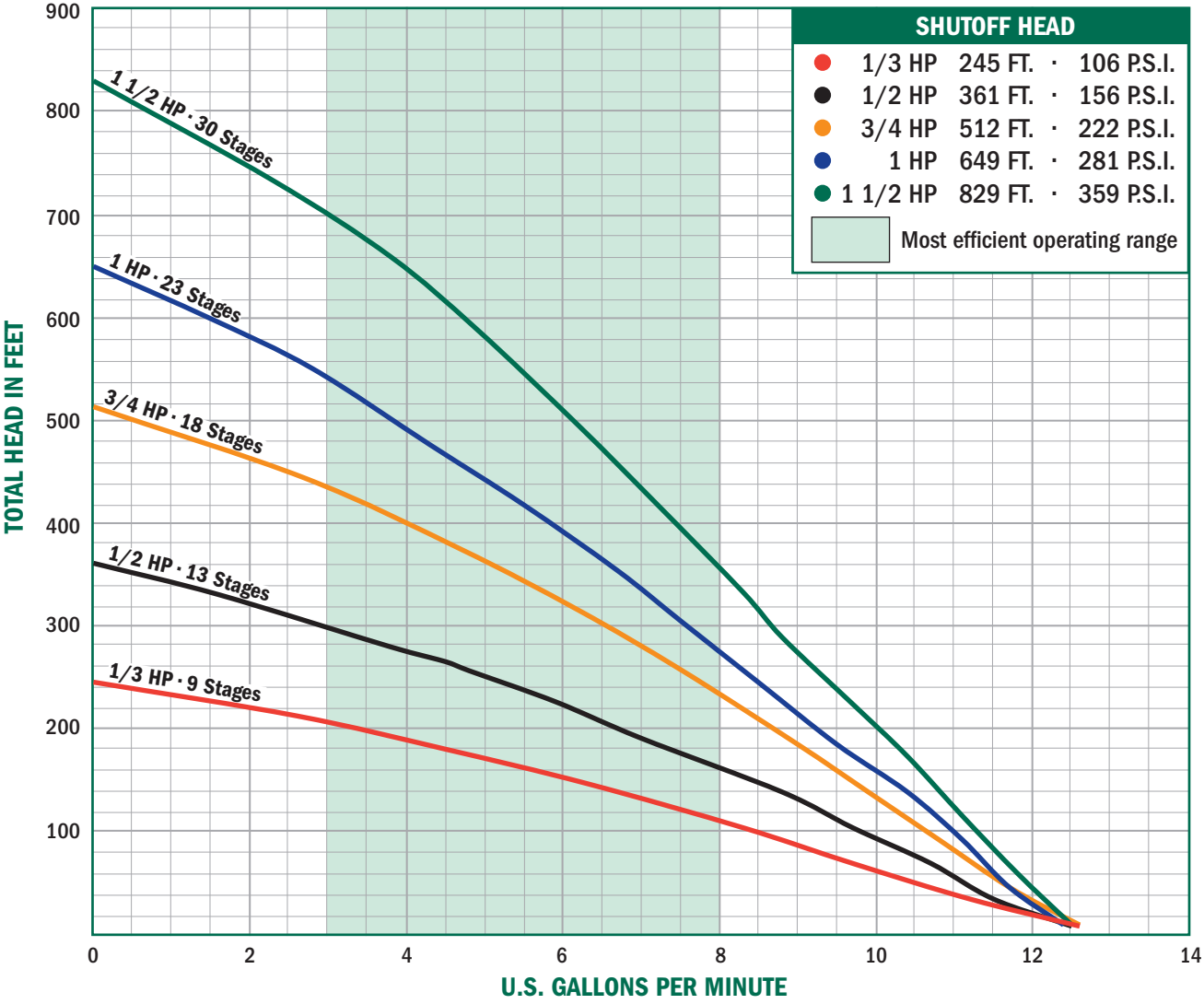
1/3 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'
	0	11.7	10.6	9.5	8.4	7.3	6.1	4.8	3.4	1.8
	30	8.6	7.5	6.4	5.1	3.8	2.2			
	40	7.6	6.4	5.2	3.9	2.3				
	50	6.5	5.3	4.0	2.5					

1/2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'
	0	11.9	11.2	10.5	9.8	9.1	8.4	7.6	6.8	6.0	5.0	4.1	3.0	1.8
	30	10.0	9.2	8.5	7.8	7.0	6.1	5.3	4.3	3.2	2.1			
	40	9.3	8.6	7.8	7.0	6.2	5.3	4.4	3.3	2.2				
	50	8.6	7.9	7.1	6.3	5.4	4.4	3.4	2.3					
60	7.9	7.2	6.3	5.5	4.5	3.5	2.3							

3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'	400'	425'	450'	
	0	12.2	11.7	11.2	10.7	10.2	9.7	9.2	8.7	8.1	7.6	7.1	6.5	5.9	5.3	4.7	4.0	3.3	2.6	
	30	10.8	10.3	9.8	9.3	8.8	8.3	7.7	7.2	6.6	6.1	5.5	4.9	4.2	3.5	2.7	1.9			
	40	10.3	9.8	9.3	8.8	8.3	7.8	7.2	6.7	6.1	5.5	4.9	4.3	3.6	2.8	2.0				
	50	9.9	9.4	8.9	8.3	7.8	7.3	6.7	6.2	5.6	4.9	4.3	3.6	2.9	2.0					
60	9.4	8.9	8.4	7.9	7.3	6.8	6.2	5.6	5.0	4.4	3.7	2.9	2.1							

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

J - 5 GPM



Submersible Pumps

PSI	1 HP											
	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'
0	11.7	10.9	10.1	9.3	8.4	7.6	6.7	5.8	4.9	3.9	2.7	1.5
30	10.6	9.8	9.0	8.1	7.3	6.4	5.5	4.5	3.4	2.3		
40	10.2	9.4	8.6	7.7	6.9	6.0	5.0	4.0	2.9	1.7		
50	9.9	9.0	8.2	7.3	6.4	5.5	4.6	3.5	2.4			
60	9.5	8.6	7.8	6.9	6.0	5.1	4.1	3.0	1.8			

PSI	1 1/2 HP												
	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'
0	15.9	15.1	14.3	13.4	12.4	11.4	10.4	9.2	7.9	6.5	5.0	3.4	1.6
30	14.8	13.9	13.0	12.1	11.0	9.9	8.7	7.4	5.9	4.4	2.7		
40	14.4	13.5	12.6	11.6	10.5	9.4	8.1	6.7	5.2	3.6	1.9		
50	14.0	13.1	12.1	11.1	10.0	8.8	7.5	6.0	4.5	2.8			
60	13.6	12.7	11.7	10.6	9.5	8.2	6.8	5.3	3.7	2.0			

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

V - 7 GPM

A.Y. McDonald offers a full line of no-lead brass submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include no-lead discharge head with a built-in check valve, and stainless steel shaft and coupling.

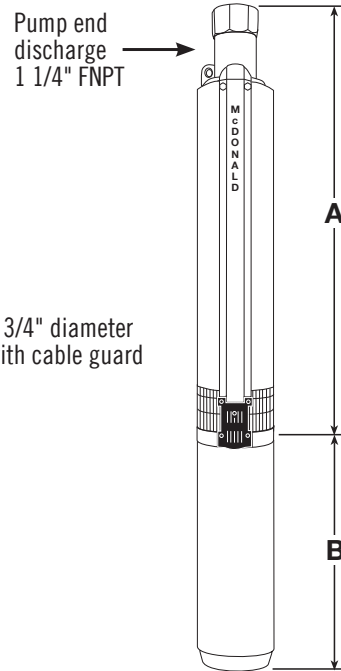
All No-Lead Pumps come with a 1 1/4" discharge and sizes range from 1/3 to 2 horsepower (HP). Two wire models up to 1 1/2 horsepower (HP) or three wire models up to 2 horsepower (HP).

Two Wire Single Phase

Model No.	HP	Stages	Volt	A	B	WT.
21030V2A*	1/3	6	115	11.1"	9.53"	24
21030V2*	1/3	6	230	11.1"	9.53"	25
21050V2A	1/2	9	115	13.48"	9.53"	26
21050V2	1/2	9	230	13.48"	9.53"	26
21075V2	3/4	12	230	15.92"	10.66"	31
21100V2	1	16	230	19.11"	11.75"	34
21150V2	1 1/2	21	230	23.58"	15.12"	46

Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	WT.
21030V3A*	1/3	6	115	11.1"	9.53"	25
21030V3*	1/3	6	230	11.1"	9.53"	25
21050V3A	1/2	9	115	13.48"	9.53"	26
21050V3	1/2	9	230	13.48"	9.53"	26
21075V3	3/4	12	230	15.92"	10.66"	30
21100V3	1	16	230	19.11"	11.75"	35
21150V3	1 1/2	21	230	23.58"	13.62"	41
21200V3	2	26	230	28.34"	15.12"	49



4" No-Lead Brass Pump Ends

Model No.	HP	WT.
21030V	1/3	9
21050V	1/2	10
21075V	3/4	13
21100V	1	11
21150V	1 1/2	16
21200V	2	18

* All one-third horsepower pumps are furnished with one-half horsepower motors (and control boxes where applicable).

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

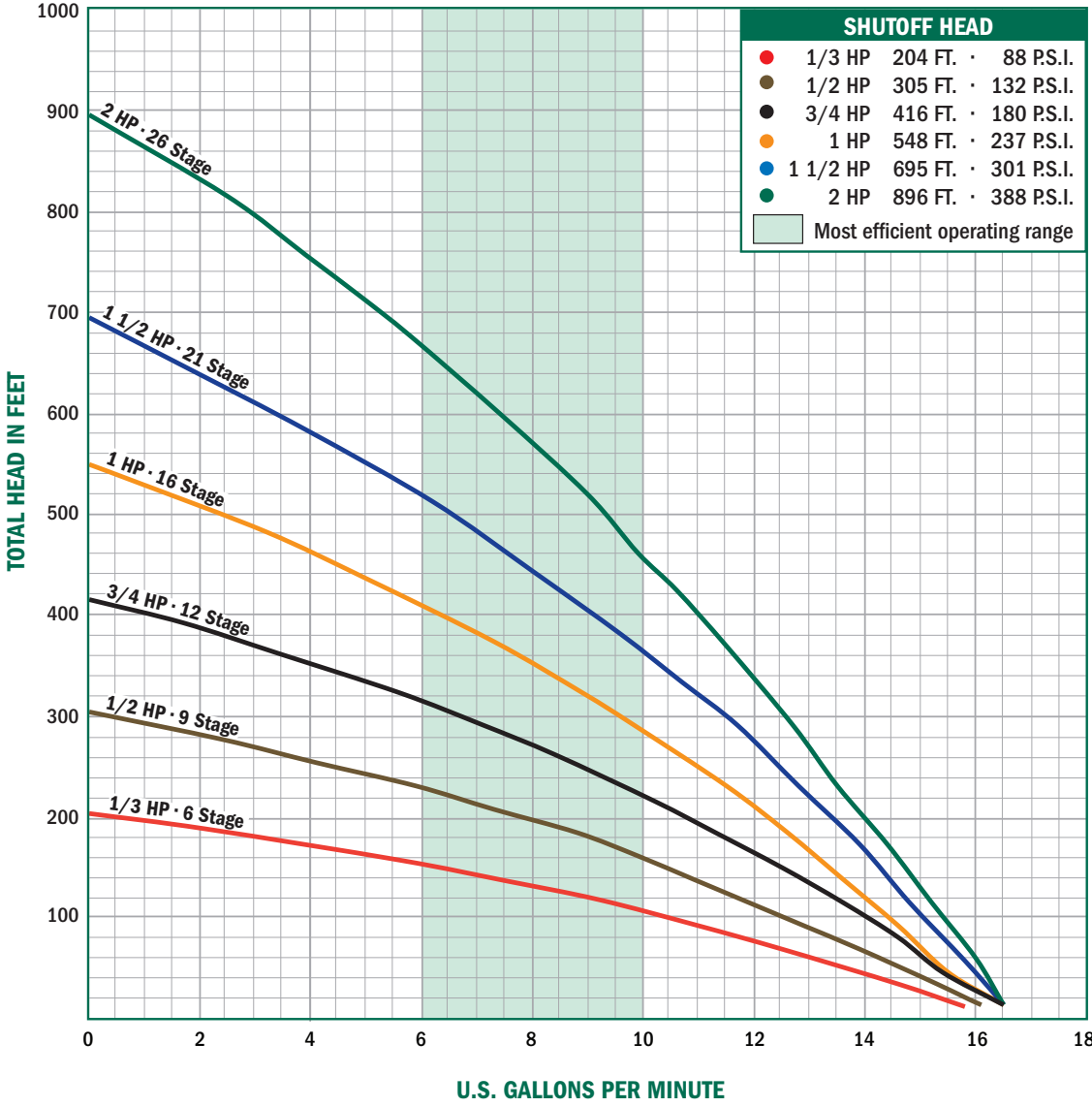
1/3 HP	PSI	25'	50'	75'	100'	125'	150'	175'
	0	15.1	13.7	12.2	10.5	8.6	6.4	3.8
	30	10.9	9.0	6.9	4.4	1.3		
	40	9.2	7.1	4.6	1.6			
	50	7.2	4.8	1.9				

1/2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'
	0	15.6	14.6	13.6	12.6	11.5	10.4	9.2	7.8	6.3	4.5	2.5
	30	12.8	11.8	10.7	9.5	8.2	6.7	5.0	3.0			
	40	11.9	10.8	9.6	8.3	6.8	5.1	3.1				
	50	10.9	9.7	8.4	6.9	5.2	3.3					
60	9.8	8.5	7.0	5.4	3.4	1.3						

3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'
	0	16.1	15.5	14.8	14.0	13.3	12.5	11.6	10.8	9.9	8.9	7.8	6.7	5.5	4.2	2.8
	30	14.2	13.4	12.7	11.8	11.0	10.1	9.1	8.1	7.0	5.8	4.5	3.1	1.5		
	40	13.5	12.7	11.9	11.0	10.1	9.2	8.2	7.1	5.9	4.6	3.2	1.7			
	50	12.8	12.0	11.1	10.2	9.3	8.2	7.2	6.0	4.7	3.3	1.8				
60	12.0	11.2	10.3	9.3	8.3	7.2	6.1	4.8	3.4	1.9						

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

V - 7 GPM



Submersible Pumps

1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'	400'	425'	450'	475'
	0	16.1	15.5	15.0	14.4	13.9	13.3	12.8	12.2	11.6	11.0	10.3	9.6	8.9	8.1	7.2	6.3	5.4	4.5	3.5
30	14.5	14.0	13.5	12.9	12.3	11.8	11.1	10.5	9.8	9.1	8.3	7.4	6.6	5.6	4.7	3.7	2.7			
40	14.0	13.5	12.9	12.4	11.8	11.2	10.5	9.9	9.1	8.3	7.5	6.6	5.7	4.7	3.8	2.8				
50	13.5	13.0	12.4	11.8	11.2	10.6	9.9	9.2	8.4	7.6	6.7	5.8	4.8	3.8	2.8					
60	13.0	12.5	11.9	11.3	10.6	10.0	9.2	8.5	7.6	6.8	5.8	4.9	3.9	2.9	1.9					

1 1/2 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'
	0	15.9	15.1	14.3	13.4	12.4	11.4	10.4	9.2	7.9	6.5	5.0	3.4	1.6
30	14.8	13.9	13.0	12.1	11.0	9.9	8.7	7.4	5.9	4.4	2.7			
40	14.4	13.5	12.6	11.6	10.5	9.4	8.1	6.7	5.2	3.6	1.9			
50	14.0	13.1	12.1	11.1	10.0	8.8	7.5	6.0	4.5	2.8				
60	13.6	12.7	11.7	10.6	9.5	8.2	6.8	5.3	3.7	2.0				

2 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'	850'
	0	16.1	15.4	14.7	14.0	13.3	12.6	11.8	11.0	10.2	9.3	8.4	7.4	6.4	5.3	4.1	2.9	1.5
30	15.1	14.5	13.8	13.0	12.3	11.5	10.7	9.8	8.9	8.0	7.0	6.0	4.9	3.7	2.3			
40	14.8	14.1	13.4	12.7	11.9	11.1	10.3	9.4	8.5	7.6	6.5	5.5	4.3	3.1	1.7			
50	14.5	13.8	13.1	12.3	11.5	10.7	9.9	9.0	8.1	7.1	6.1	4.9	3.8	2.4				
60	14.2	13.5	12.7	12.0	11.2	10.3	9.5	8.6	7.6	6.6	5.6	4.4	3.2	1.8				

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

K - 10 GPM

A.Y. McDonald offers a full line of no-lead brass submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include no-lead discharge head with a built-in check valve, and stainless steel shaft and coupling.

All No-Lead Pumps come with a 1 1/4" discharge and sizes range from 1/3 to 5 horsepower (HP). Two wire models up to 1 1/2 horsepower (HP) or three wire models up to 5 horsepower (HP).

Two Wire Single Phase

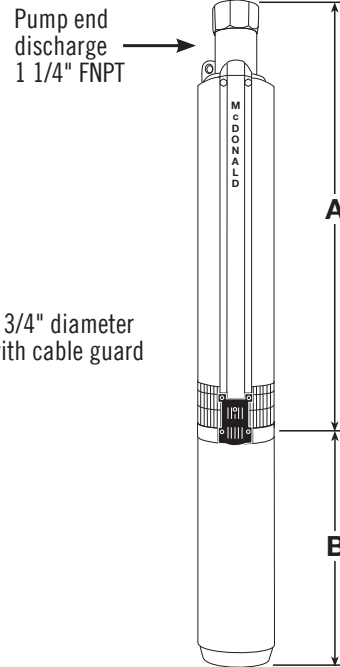
Model No.	HP	Stages	Volt	A	B	WT.
21030K2A*	1/3	5	115	12.01"	9.53"	19
21030K2*	1/3	5	230	12.01"	9.53"	19
21050K2A	1/2	7	115	13.65"	9.53"	19
21050K2	1/2	7	230	13.65"	9.53"	27
21075K2	3/4	9	230	15.34"	10.66"	29
21100K2	1	12	230	17.89"	11.75"	32
21150K2	1 1/2	16	230	22.55"	15.12"	42

Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	WT.
21030K3A*	1/3	5	115	12.01"	9.53"	19
21030K3*	1/3	5	230	12.01"	9.53"	19
21050K3A	1/2	7	115	13.65"	9.53"	19
21050K3	1/2	7	230	13.65"	9.53"	19
21075K3	3/4	9	230	15.34"	10.66"	29
21100K3	1	12	230	17.89"	11.75"	33
21150K3	1 1/2	16	230	22.55"	13.62"	38
21200K3	2	20	230	25.95"	15.12"	46
21300K3	3	26	230	31.06"	19.06"	70
21500K3	5	33	230	36.99"	29.62"	91

Three Wire** Three Phase

Model No.	HP	Stages	Volt	A	B	WT.
21150K3Z	1 1/2	16	230	22.55"	11.75"	35
21200K3Z	2	20	230	25.98"	13.62"	43
21300K3Z	3	26	230	31.06"	16.04"	60



4" No-Lead Brass Pump Ends

Model No.	HP	WT.
21030K	1/3	7
21050K	1/2	8
21075K	3/4	9
21100K	1	10
21150K	1 1/2	13
21200K	2	15
21300K	3	17
21500K	5	19

* All one-third horsepower pumps are furnished with one-half horsepower motors (and control boxes where applicable).

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

PSI	25'	50'	75'	100'	125'	150'	175'
0	18.78	16.62	14.27	11.68	8.75	5.31	0.93
30	12.29	9.45	6.16	2.06			
40	9.68	6.43	2.42				
50	6.70	2.76					
60	3.10						

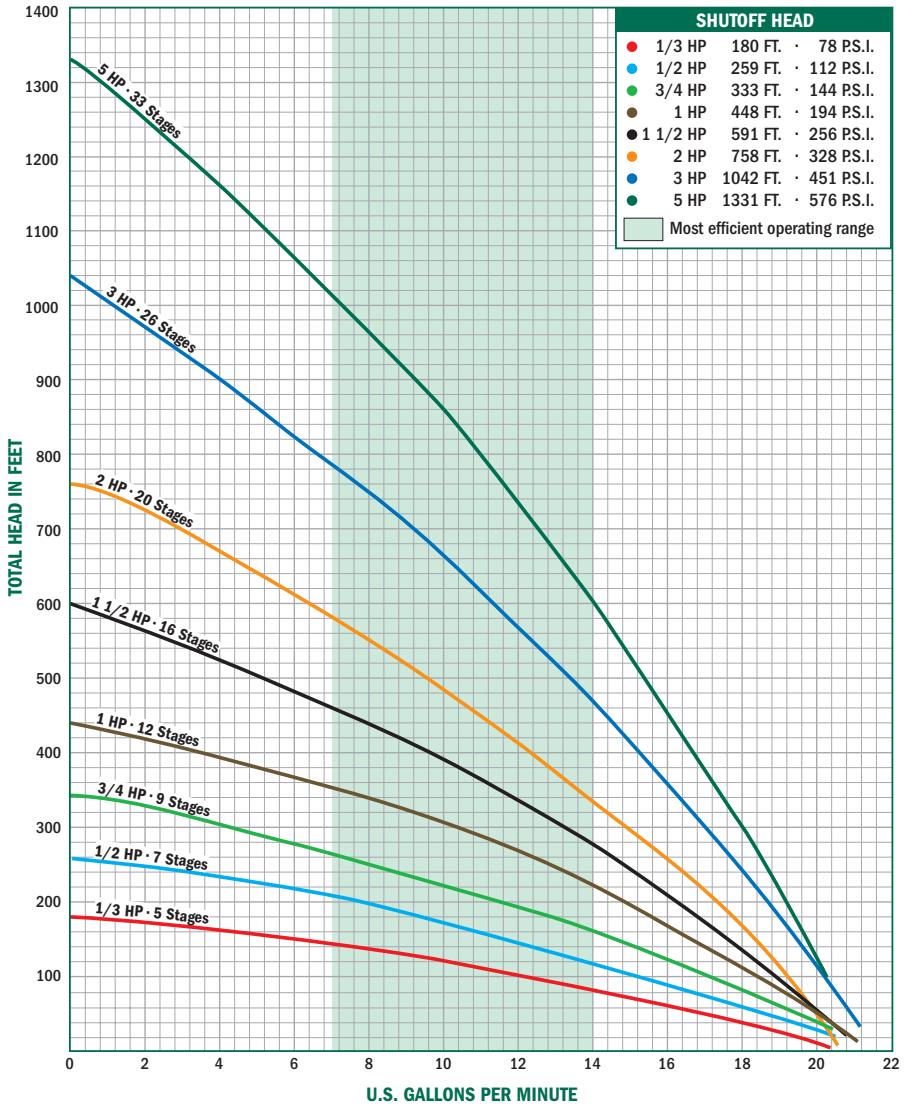
PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'
0	19.90	18.49	16.99	15.40	13.69	11.84	9.79	7.49	4.78	1.32
30	15.77	14.09	12.27	10.28	8.04	5.44	2.21			
40	14.22	12.42	10.44	8.22	5.66	2.49				
50	12.56	10.60	8.40	5.87	2.76					
60	10.75	8.58	6.08	3.03						

PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'
0	20.36	19.26	18.12	16.93	15.67	14.35	12.95	11.45	9.83	8.05	6.06	3.75	0.89
30	17.20	15.97	14.66	13.28	11.80	10.21	8.47	6.54	4.31	1.61			
40	16.06	14.76	13.39	11.92	10.34	8.61	6.69	4.49	1.84				
50	14.86	13.49	12.03	10.46	8.75	6.85	4.67	2.07					
60	13.60	12.15	10.59	8.89	7.00	4.85	2.29						

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'	400'	425'
0	20.86	20.05	19.22	18.36	17.47	16.55	15.60	14.61	13.57	12.48	11.33	10.10	8.79	7.37	5.81	4.06	2.00
30	18.56	17.68	16.77	15.82	14.84	13.81	12.73	11.59	10.39	9.10	7.71	6.18	4.48	2.51	0.09		
40	17.75	16.84	15.89	14.91	13.89	12.81	11.68	10.48	9.20	7.82	6.30	4.61	2.67	0.29			
50	16.91	15.97	14.99	13.97	12.90	11.77	10.58	9.30	7.93	6.42	4.75	2.83	0.50				
60	16.04	15.06	14.05	12.98	11.86	10.67	9.40	8.04	6.54	4.89	2.99	0.70					

K - 10 GPM



Submersible Pumps

Output - in Gallons Per Minute (Depth to Water) - Continued

PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	
1 1/2 HP	0	20.18	18.95	17.66	16.31	14.87	13.34	11.69	9.89	7.88	5.58	2.80
	30	18.46	17.15	15.76	14.29	12.72	11.01	9.14	7.03	4.58	1.51	
	40	17.86	16.52	15.09	13.58	11.95	10.17	8.20	5.95	3.27		
	50	17.25	15.87	14.41	12.84	11.15	9.29	7.20	4.78	1.78		
	60	16.62	15.21	13.70	12.08	10.31	8.36	6.14	3.49	0.02		

PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	
2 HP	0	19.85	18.89	17.89	16.85	15.78	14.66	13.49	12.26	10.96	9.59	8.11	6.51	4.75	2.77	0.46
	30	18.51	17.49	16.44	15.35	14.21	13.02	11.77	10.44	9.03	7.51	5.85	4.02	1.93		
	40	18.04	17.01	15.94	14.83	13.67	12.45	11.17	9.80	8.34	6.76	5.03	3.09	0.84		
	50	17.57	16.52	15.44	14.30	13.11	11.87	10.55	9.14	7.63	5.98	4.16	2.10			
	60	17.09	16.03	14.92	13.76	12.55	11.27	9.91	8.46	6.89	5.17	3.25	1.02			

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'	850'	900'	950'	1000'	
3 HP	0	21.05	20.27	19.48	18.67	17.84	16.99	16.11	15.22	14.30	13.35	12.36	11.35	10.30	9.20	8.05	6.85	5.59	4.24	2.81	1.26
	30	19.97	19.17	18.35	17.51	16.65	15.77	14.87	13.93	12.97	11.98	10.95	9.88	8.76	7.60	6.37	5.08	3.70	2.23	0.62	
	40	19.60	18.79	17.96	17.12	16.25	15.36	14.44	13.49	12.52	11.51	10.46	9.37	8.23	7.04	5.78	4.45	3.03	1.50		
	50	19.23	18.41	17.58	16.72	15.84	14.94	14.01	13.05	12.05	11.03	9.96	8.85	7.69	6.47	5.18	3.81	2.34	0.75		
	60	18.85	18.03	17.18	16.32	15.43	14.51	13.57	12.59	11.58	10.54	9.45	8.32	7.13	5.88	4.56	3.14	1.62			

PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'	850'	900'	950'	1000'	1050'	1100'	1150'	1200'	1250'	1300'	
5 HP	0	20.96	20.39	19.81	19.22	18.62	18.01	17.38	16.74	16.09	15.42	14.74	14.04	13.32	12.58	11.82	11.04	10.22	9.38	8.51	7.60	6.64	5.64	4.58	3.45	2.24	0.93
	30	20.17	19.59	18.99	18.39	17.77	17.14	16.49	15.84	15.16	14.47	13.77	13.04	12.29	11.52	10.73	9.90	9.05	8.16	7.23	6.26	5.24	4.15	3.00	1.75	0.39	
	40	19.90	19.31	18.71	18.10	17.48	16.84	16.19	15.53	14.85	14.15	13.43	12.70	11.94	11.16	10.35	9.51	8.64	7.74	6.79	5.80	4.75	3.63	2.43	1.14		
	50	19.63	19.04	18.43	17.82	17.19	16.54	15.89	15.21	14.53	13.82	13.09	12.35	11.58	10.79	9.97	9.11	8.23	7.31	6.34	5.32	4.24	3.09	1.85	0.50		
	60	19.36	18.76	18.15	17.53	16.89	16.24	15.58	14.90	14.20	13.49	12.75	12.00	11.22	10.41	9.58	8.71	7.81	6.86	5.87	4.83	3.72	2.53	1.24			

L - 15 GPM

A.Y. McDonald offers a full line of no-lead brass submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include no-lead discharge head with a built-in check valve, and stainless steel shaft and coupling.

All No-Lead Pumps come with a 1 1/4" discharge and sizes range from 1/3 to 5 horsepower (HP). Two wire models up to 1 1/2 horsepower (HP) or three wire models up to 5 horsepower (HP).

Two Wire Single Phase

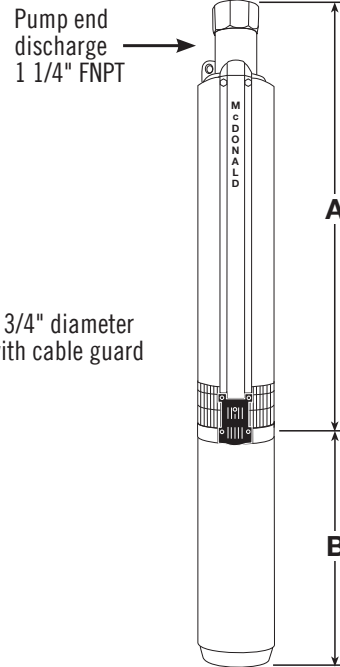
Model No.	HP	Stages	Volt	A	B	WT.
21030L2A*	1/3	5	115	13.52"	9.53"	26
21030L2*	1/3	5	230	13.52"	9.53"	26
21050L2A	1/2	6	115	14.59"	9.53"	26
21050L2	1/2	6	230	14.59"	9.53"	26
21075L2	3/4	8	230	16.75"	10.66"	30
21100L2	1	10	230	18.89"	11.75"	34
21150L2	1 1/2	13	230	22.11"	15.12"	42

Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	WT.
21030L3A*	1/3	5	115	13.52"	9.53"	26
21030L3*	1/3	5	230	13.52"	9.53"	26
21050L3A	1/2	6	115	14.59"	9.53"	26
21050L3	1/2	6	230	14.59"	9.53"	26
21075L3	3/4	8	230	16.75"	10.66"	30
21100L3	1	10	230	18.89"	11.75"	34
21150L3	1 1/2	13	230	22.11"	13.62"	39
21200L3	2	17	230	26.41"	15.12"	46
21300L3	3	23	230	34.23"	19.06"	60
21500L3	5	35	230	47.10"	29.62"	87

Three Wire** Three Phase

Model No.	HP	Stages	Volt	A	B	WT.
21200L3Z	2	17	230	26.41"	13.62"	43
21300L3Z	3	23	230	34.23"	16.04"	53
21500L3Z	5	35	230	47.10"	23.62"	74



4" No-Lead Brass Pump Ends

Model No.	HP	WT.
21030L	1/3	8
21050L	1/2	9
21075L	3/4	10
21100L	1	11
21150L	1 1/2	11
21200L	2	13
21300L	3	17
21500L	5	24

* All one-third horsepower pumps are furnished with one-half horsepower motors (and control boxes where applicable).

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

1/3 HP	PSI	25'	50'	75'	100'	125'
	0	27.82	24.66	21.05	16.70	10.79
30	17.79	12.38				
40	12.86	2.69				
50	4.29					

1/2 HP	PSI	25'	50'	75'	100'	125'	150'
	0	28.28	25.58	22.58	19.18	15.14	9.84
30	20.00	16.14	11.23	2.99			
40	16.46	11.66	3.99				
50	12.08	4.85					
60	5.63						

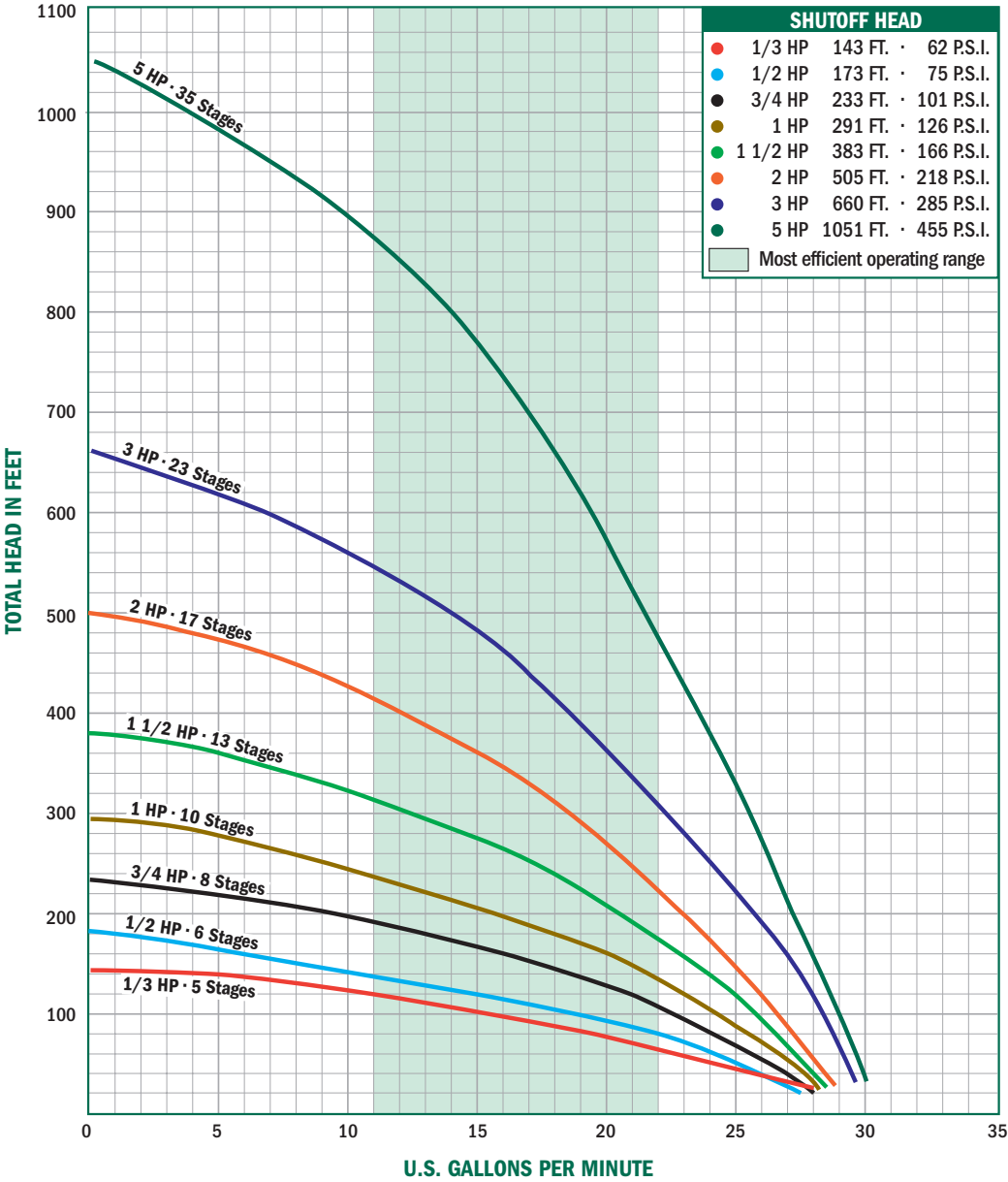
3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'
	0	28.58	26.69	24.66	22.46	20.05	17.33	14.17	10.21	4.08
30	22.98	20.62	17.98	14.94	11.22	5.91				
40	20.81	18.19	15.19	11.54	6.43					
50	18.40	15.44	11.85	6.92						
60	15.68	12.15	7.38							

1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	300'
	0	28.92	27.42	25.84	24.16	22.37	20.44	18.33	15.97	13.26	9.96	5.33
30	24.55	22.79	20.89	18.83	16.53	13.92	10.78	6.60				
40	22.93	21.04	18.99	16.72	14.13	11.05	6.99					
50	21.19	19.15	16.90	14.34	11.31	7.36						
60	19.31	17.08	14.55	11.56	7.71	0.50						

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

Submersible Pumps

L - 15 GPM



Submersible Pumps

1 1/2 HP	PSI	50'	100'	150'	200'	250'	300'	350'
	0	28.02	25.72	23.20	20.39	17.15	13.20	7.62
	30	24.78	22.16	19.20	15.74	11.35	4.06	
	40	23.60	20.84	17.68	13.87	8.68		
	50	22.37	19.44	16.03	11.73	4.93		
	60	21.06	17.94	14.19	9.16			

2 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'
	0	28.57	26.81	24.93	22.92	20.74	18.34	15.61	12.40	8.28	0.77
	30	26.10	24.18	22.11	19.84	17.33	14.44	10.96	6.18		
	40	25.23	23.24	21.09	18.72	16.05	12.93	9.00	2.66		
	50	24.33	22.27	20.02	17.53	14.68	11.25	6.63			
	60	23.40	21.26	18.91	16.27	13.19	9.34	3.38			

3 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'
	0	29.55	28.24	26.88	25.45	23.93	22.33	20.60	18.73	16.67	14.34	11.60	8.12	2.19
	30	27.72	26.34	24.87	23.33	21.67	19.90	17.96	15.80	13.34	10.38	6.38		
	40	27.09	25.67	24.17	22.58	20.87	19.02	16.99	14.71	12.05	8.72	3.56		
	50	26.44	24.99	23.45	21.80	20.04	18.11	15.98	13.54	10.63	6.75			
	60	25.78	24.29	22.70	21.01	19.17	17.16	14.90	12.27	9.01	4.12			

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

5 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'	850'	900'	950'	1000'
	0	29.70	28.91	28.10	27.27	26.42	25.54	24.62	23.68	22.69	21.67	20.59	19.47	18.27	17.00	15.63	14.14	12.49	10.61	8.38	5.43
	30	28.60	27.79	26.95	26.08	25.19	24.26	23.30	22.30	21.26	20.17	19.01	17.79	16.48	15.07	13.53	11.80	9.80	7.36	3.85	
	40	28.23	27.40	26.55	25.67	24.76	23.82	22.85	21.83	20.76	19.64	18.46	17.20	15.85	14.38	12.75	10.92	8.75	5.95	0.69	
	50	27.85	27.01	26.15	25.26	24.33	23.38	22.38	21.34	20.25	19.10	17.89	16.59	15.18	13.65	11.94	9.97	7.57	4.20		
	60	27.47	26.62	25.74	24.83	23.90	22.92	21.91	20.84	19.73	18.55	17.30	15.95	14.49	12.88	11.07	8.93	6.20	1.48		

P - 20 GPM

A.Y. McDonald offers a full line of no-lead brass submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include no-lead discharge head with a built-in check valve, and stainless steel shaft and coupling.

All No-Lead Pumps come with a 1 1/4" discharge and sizes range from 1/2 to 5 horsepower (HP). Two wire models up to 1 1/2 horsepower (HP) or three wire models up to 5 horsepower (HP).

Two Wire Single Phase

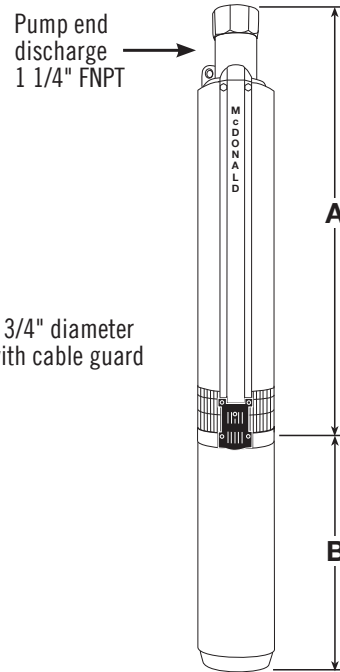
Model No.	HP	Stages	Volt	A	B	WT.
21050P2A	1/2	5	115	13.52"	9.53"	26
21050P2	1/2	5	230	13.52"	9.53"	26
21075P2	3/4	7	230	15.67"	10.66"	30
21100P2	1	9	230	17.82"	11.75"	34
21150P2	1 1/2	12	230	21.04"	15.12"	44

Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	WT.
21050P3A	1/2	5	115	13.52"	9.53"	26
21050P3	1/2	5	230	13.52"	9.53"	26
21075P3	3/4	7	230	15.67"	10.66"	29
21100P3	1	9	230	17.82"	11.75"	34
21150P3	1 1/2	12	230	21.04"	13.62"	40
21200P3	2	14	230	23.19"	15.12"	45
21300P3	3	20	230	31.00"	19.06"	58
21500P3	5	32	230	43.88"	29.62"	86

Three Wire** Three Phase

Model No.	HP	Stages	Volt	A	B	WT.
21150P3Z	1 1/2	12	230	21.04"	11.75"	37
21200P3Z	2	14	230	23.19"	13.62"	42
21300P3Z	3	20	230	31.00"	16.04"	51
21500P3Z	5	32	230	43.88"	23.62"	74



4" No-Lead Brass Pump Ends

Model No.	HP	WT.
21050P	1/2	7
21075P	3/4	8
21100P	1	9
21150P	1 1/2	11
21200P	2	12
21300P	3	16
21500P	5	24

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

1/2 HP	PSI	25'	50'	75'	100'	125'
	0	32.34	28.61	24.35	19.26	12.48
	30	20.53	14.28	2.68		
	40	14.83	4.36			
	50	5.68				

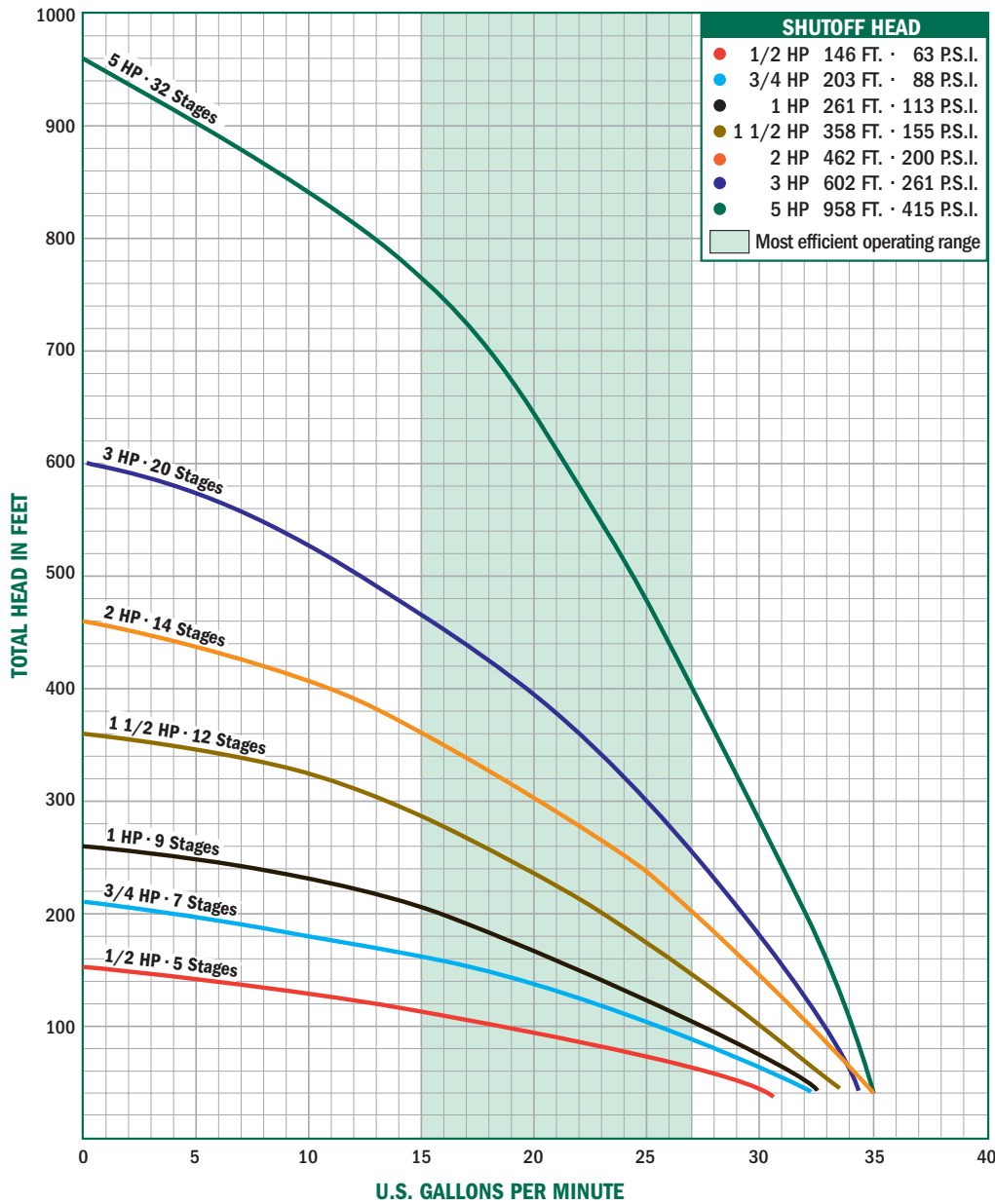
3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'
	0	32.36	29.82	27.06	24.01	20.58	16.54	11.39	2.53
	30	24.74	21.40	17.53	12.71	5.44			
	40	21.67	17.85	13.13	6.20				
	50	18.16	13.54	6.91					
	60	13.93	7.56						

1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'
	0	33.30	31.39	29.36	27.19	24.84	22.26	19.37	16.02	11.88	5.72
	30	27.70	25.39	22.87	20.06	16.84	12.92	7.49			
	40	25.57	23.07	20.29	17.10	13.26	8.01				
	50	23.27	20.51	17.36	13.58	8.50					
60	20.73	17.62	13.90	8.97							

1 1/2 HP	PSI	50'	100'	150'	200'	250'	300'	350'
	0	32.95	29.95	26.64	22.90	18.50	12.88	3.03
	30	28.71	25.26	21.30	16.53	10.04		
	40	27.17	23.50	19.23	13.86	5.38		
	50	25.53	21.62	16.93	10.65			
60	23.80	19.58	14.33	6.32				

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

P - 20 GPM



Submersible Pumps

2 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'
	0	34.88	32.45	29.85	27.04	23.94	20.46	16.41	11.33
	30	31.47	28.79	25.88	22.65	18.98	14.61	8.85	
	40	30.26	27.48	24.43	21.02	17.07	12.20	5.06	
	50	29.00	26.11	22.91	19.28	14.97	9.38		
	60	27.70	24.68	21.30	17.40	12.62	5.79		

3 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'
	0	34.31	32.64	30.88	29.03	27.05	24.92	22.61	20.06	17.16	13.72	9.23
	30	31.97	30.18	28.28	26.25	24.06	21.66	18.99	15.91	12.16	6.88	
	40	31.15	29.31	27.36	25.26	22.98	20.47	17.63	14.29	10.02	2.58	
	50	30.32	28.43	26.41	24.23	21.85	19.20	16.16	12.48	7.39		
	60	29.46	27.51	25.42	23.16	20.67	17.86	14.57	10.40	3.55		

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

5 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'	850'	900'	950'
	0	35.14	34.10	33.04	31.94	30.80	29.62	28.40	27.12	25.79	24.38	22.90	21.32	19.62	17.78	15.74	13.43	10.69	7.15	.01
	30	33.70	32.62	31.50	30.35	29.16	27.91	26.61	25.25	23.82	22.30	20.68	18.93	17.02	14.88	12.43	9.46	5.32		
	40	33.20	32.11	30.98	29.80	28.59	27.32	25.99	24.60	23.13	21.56	19.89	18.07	16.06	13.80	11.15	7.77	2.10		
	50	32.70	31.59	30.44	29.25	28.01	26.71	25.36	23.93	22.42	20.80	19.07	17.17	15.06	12.64	9.81	5.71			
	60	32.19	31.06	29.89	28.68	27.42	26.10	24.71	23.24	21.69	20.02	18.21	16.22	13.98	11.37	8.07	2.79			

M - 25 GPM

A.Y. McDonald offers a full line of no-lead brass submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include no-lead discharge head with a built-in check valve, and stainless steel shaft and coupling.

All No-Lead Pumps come with a 1 1/4" discharge and sizes range from 1/2 to 5 horsepower (HP). Two wire models up to 1 1/2 horsepower (HP) or three wire models up to 5 horsepower (HP).

Two Wire Single Phase

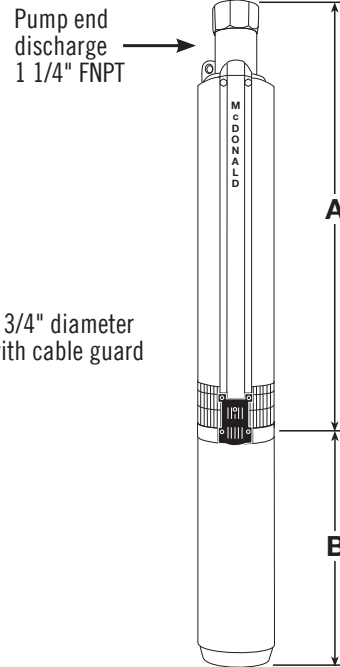
Model No.	HP	Stages	Volt	A	B	WT.
21050M2A	1/2	4	115	12.44"	9.53"	26
21050M2	1/2	4	230	12.44"	9.53"	26
21075M2	3/4	5	230	13.52"	10.66"	28
21100M2	1	7	230	15.67"	11.75"	33
21150M2	1 1/2	9	230	17.82"	15.12"	42

Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	WT.
21050M3A	1/2	4	115	12.44"	9.53"	26
21050M3	1/2	4	230	12.44"	9.53"	26
21075M3	3/4	5	230	13.52"	10.66"	28
21100M3	1	7	230	15.67"	11.75"	32
21150M3	1 1/2	9	230	17.82"	13.62"	38
21200M3	2	12	230	21.04"	15.12"	43
21300M3	3	16	230	25.33"	19.06"	55
21500M3	5	25	230	36.38"	29.62"	85

Three Wire** Three Phase

Model No.	HP	Stages	Volt	A	B	WT.
21150M3Z	1 1/2	9	230	17.82"	11.75"	34
21200M3Z	2	12	230	21.04"	13.62"	40
21300M3Z	3	16	230	25.33"	16.04"	48
21500M3Z	5	25	230	36.38"	23.62"	71
21500M3Y	5	25	460	36.38"	23.62"	71



3 3/4" diameter with cable guard

4" No-Lead Brass Pump Ends

Model No.	HP	WT.
21050M	1/2	9
21075M	3/4	9
21100M	1	10
21150M	1 1/2	11
21200M	2	11
21300M	3	14
21500M	5	19

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

1/2 HP	PSI	25'	50'	75'	100'
	0	34.97	29.23	22.43	13.64
	30	15.93	2.93		
	40	4.38			

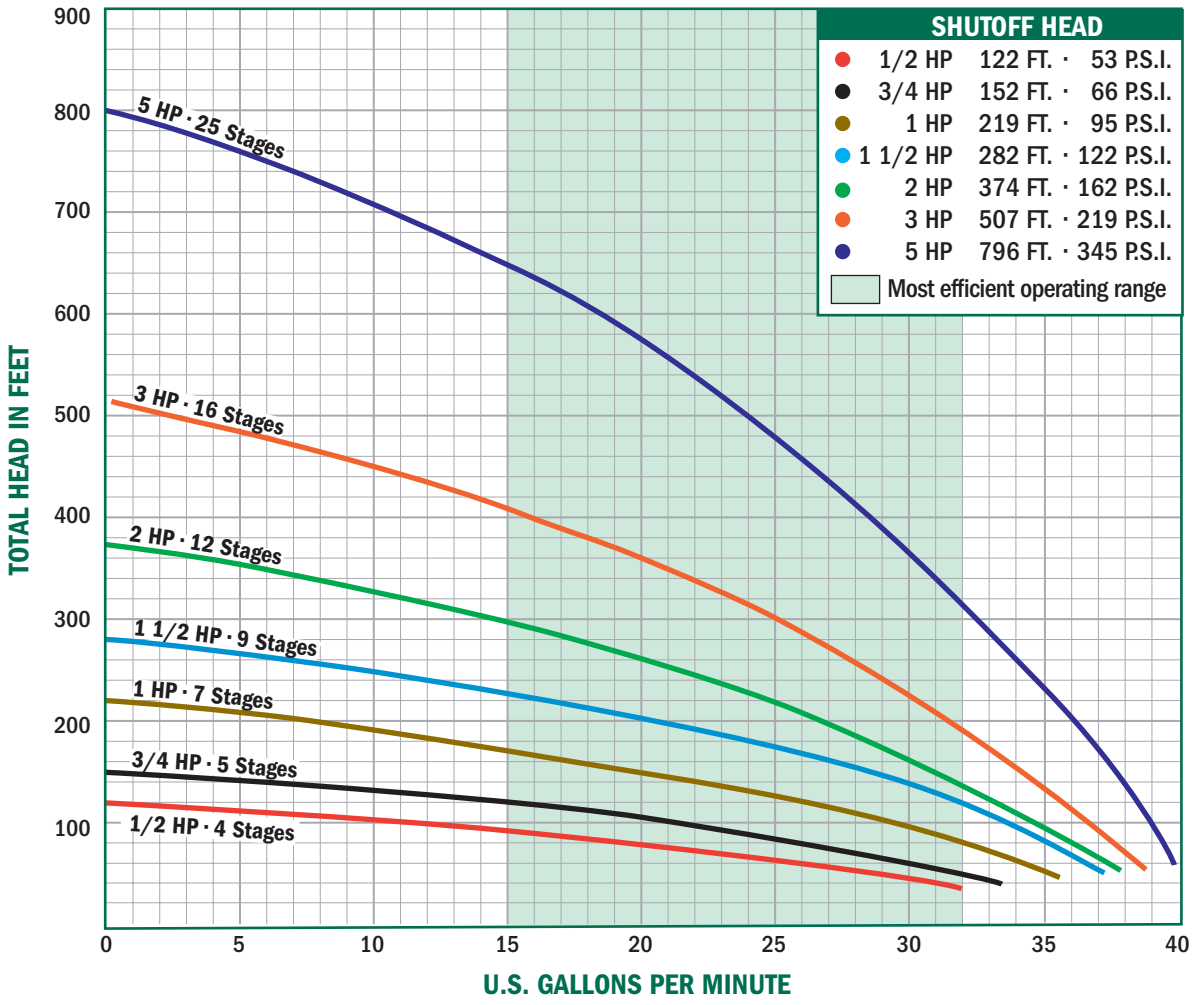
3/4 HP	PSI	25'	50'	75'	100'	125'	150'
	0	36.08	31.97	27.33	21.88	14.91	2.74
	30	23.22	16.71	6.80			
	40	17.27	7.85				
	50	8.81					

1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'
	0	38.23	35.39	32.34	29.02	25.34	21.13	16.10	9.38
	30	29.81	26.22	22.15	17.35	11.16			
	40	26.50	22.48	17.75	11.71	1.28			
	50	22.80	18.14	12.24	2.61				
	60	18.53		3.73					

1 1/2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'
	0	40.00	37.82	35.52	33.08	30.47	27.63	24.52	21.01	16.91	11.76	3.56
	30	33.65	31.08	28.30	25.26	21.85	17.91	13.07	6.06			
	40	31.28	28.52	25.50	22.13	18.24	13.49	6.76				
	50	28.74	25.74	22.40	18.56	13.90	7.42					
	60	25.98		18.87	14.29	8.04						

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

M - 25 GPM



Submersible Pumps

2 HP	PSI	50'	100'	150'	200'	250'	300'	350'
	0	38.07	34.66	30.92	26.74	21.91	15.98	7.38
30	33.26	29.37	24.97	19.79	13.16	1.33		
40	31.52	27.42	22.70	16.98	9.04			
50	29.68	25.33	20.23	13.75	2.92			
60	27.75	23.09	17.47	9.80				

3 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'
	0	39.30	36.84	34.22	31.42	28.38	25.02	21.23	16.75	11.09	1.27
30	35.85	33.16	30.28	27.12	23.62	19.61	14.78	8.24			
40	34.63	31.86	28.86	25.55	21.84	17.51	12.08	3.58			
50	33.38	30.50	27.37	23.90	19.94	15.19	8.85				
60	32.08	29.09	25.82	22.14	17.87	12.56	4.51				

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

5 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'
	0	40.4	38.9	37.4	35.8	34.1	32.4	30.6	28.6	26.5	24.2	21.6	18.7	15.2	11.0	5.8
30	38.3	36.8	35.2	33.5	31.7	29.8	27.8	25.6	23.2	20.5	17.4	13.7	9.2	3.5		
40	37.6	36.0	34.4	32.7	30.9	28.9	26.8	24.5	22.0	19.1	15.8	11.7	6.7			
50	36.9	35.3	33.6	31.9	30.0	28.0	25.8	23.4	20.7	17.7	14.0	9.5				
60	36.2	34.5	32.8	31.0	29.1	27.0	24.7	22.2	19.4	16.1	12.1	7.1				

22000 Series Thermoplastic

A.Y. McDonald offers a full line of four inch submersibles ranging from 1/2 through 1 1/2 horsepower (HP), with flow rates ranging from 5 through 25 gallons per minute (GPM).

Our 22000 submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM) models.

Powered by NEMA approved A.Y. McDonald stainless steel motors on all single phase pumps.

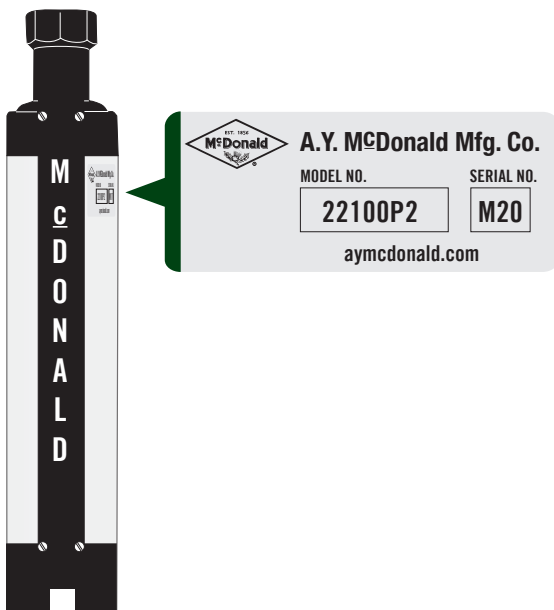
The charts on the following pages will assist you in choosing the pump that meets your needs.



Features:

- Sizes - 1/2, 3/4, 1, 1 1/2 HP
- Reinforced thermoplastic motor bracket and discharge with built-in guide bearing
- 300 series stainless steel motor coupling
- Stainless steel pump shell
- Thermoplastic diffusers
- Thermoplastic impellers
- Stainless steel pump shaft
- Internal, anti-spin check valve standard
- Thermoplastic intake screen and cable guard
- 1 1/4" FNPT discharge
- Standard is 230V, single phase, 60 Hz

Locating the code number on the pump



A code appears on each A.Y. McDonald 22000 series submersible pump. Contained in this code is the following information:

- Pump Model
- Serial Number

Features

Discharge Head

Incorporates built-in hex fluted guide bearing with rubber insert surrounding the stainless steel shaft which provides superior wear resistance against the harshest conditions. Self lubricating for long life. Large wrenching surfaces and 1 1/4" NPT female outlet threads standard. McDonald is molded into discharge head.

Rope Hook Attachments

Cable Guard

Cable guard fits into motor bracket to assure smooth entry into well casing.

Diffuser

Polycarbonate Durable and corrosion/abrasion resistant. Designed for efficient performance and superior sand handling capability.

Impeller

Glass Bead Acetal. This smooth and flexible material is precision engineered for maximum performance.

Pump Shaft

Large stainless steel 7/16" hex for strength and positive impeller drive.

Once assembled, each pump is individually tested to ensure performance within design specifications.

Check Valve

Internal anti-spin check valve with o-ring seal. Molded from engineered polymer.

Pump Shell

High grade, heavy wall stainless steel for excellent corrosion resistance. Left hand threaded at both ends to prevent loosening. Easily repairable in the field.

A.Y. McDonald uses it's time proven captured stack design. The captured stack design incorporates sand notches into the diffusers, which has proven, over time, to keep sand flowing thru the stack.

Motor Bracket

Rigid and accurate alignment to Nema standard fitted motors.

Hardware

All screws, washers, and assembly nuts are corrosion resistant stainless steel.

Intake Screen



J - 5 GPM

A.Y. McDonald offers a full line of thermoplastic submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include thermoplastic discharge head with a built-in check valve, and stainless steel shaft and coupling.

All Thermoplastic pumps have 1 1/4" discharge with internal check valve and sizes range from 1/2 to 1 horsepower (HP). Two or three wire models up to 1 horsepower (HP).

Two Wire Single Phase

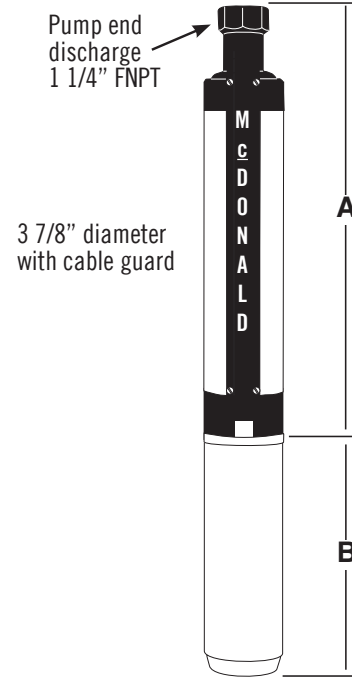
Model No.	HP	Stages	Volt	A	B	Wt.
22050J2	1/2	13	230	17.43"	9.53"	23
22075J2	3/4	18	230	21.42"	10.66"	28
22100J2	1	23	230	26.68"	11.75"	33

Three Wire Single Phase

Model No.	HP	Stages	Volt	A	B	Wt.
22050J3	1/2	13	230	17.43"	9.53"	28
22075J3	3/4	18	230	21.42"	10.66"	36
22100J3	1	23	230	26.68"	11.75"	39

4" Thermoplastic Pump Ends

Model No.	HP	Wt.
22050J	1/2	7
22075J	3/4	11
22100J	1	13



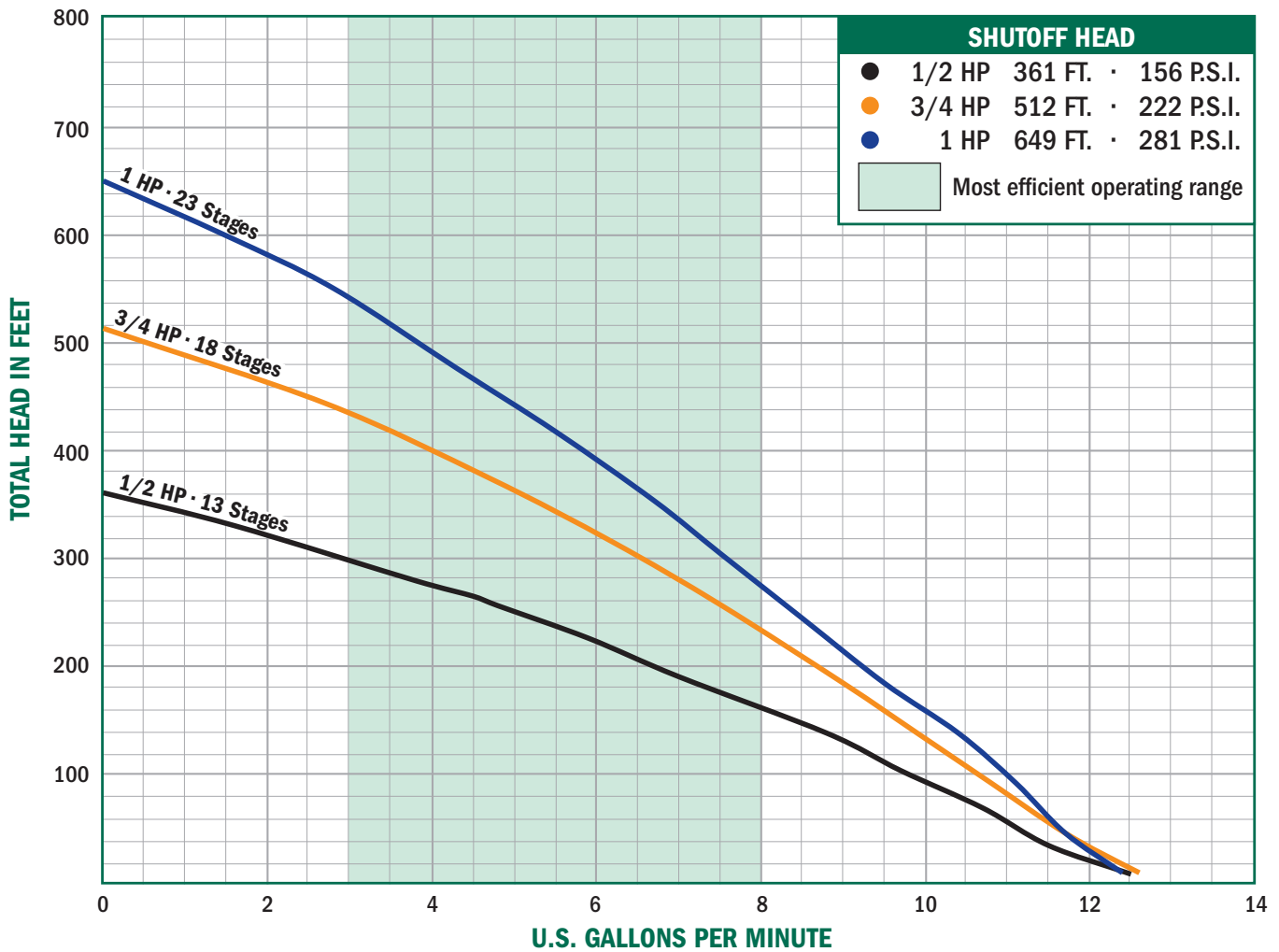
Output - in Gallons Per Minute (Depth to Water)

1/2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'
	0	11.9	11.2	10.5	9.8	9.1	8.4	7.6	6.8	6.0	5.0	4.1	3.0	1.8
30	10.0	9.2	8.5	7.8	7.0	6.1	5.3	4.3	3.2	2.1				
40	9.3	8.6	7.8	7.0	6.2	5.3	4.4	3.3	2.2					
50	8.6	7.9	7.1	6.3	5.4	4.4	3.4	2.3						
60	7.9	7.2	6.3	5.5	4.5	3.5	2.3							

3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'	400'	425'	450'
	0	12.2	11.7	11.2	10.7	10.2	9.7	9.2	8.7	8.1	7.6	7.1	6.5	5.9	5.3	4.7	4.0	3.3	2.6
30	0.8	10.3	9.8	9.3	8.8	8.3	7.7	7.2	6.6	6.1	5.5	4.9	4.2	3.5	2.7	1.9			
40	10.3	9.8	9.3	8.8	8.3	7.8	7.2	6.7	6.1	5.5	4.9	4.3	3.6	2.8	2.0				
50	9.9	9.4	8.9	8.3	7.8	7.3	6.7	6.2	5.6	4.9	4.3	3.6	2.9	2.0					
60	9.4	8.9	8.4	7.9	7.3	6.8	6.2	5.6	5.0	4.4	3.7	2.9	2.1						

FRICITION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

J - 5 GPM



Submersible Pumps

1 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'
	0	11.7	10.9	10.1	9.3	8.4	7.6	6.7	5.8	4.9	3.9	2.7	1.5
30	0.6	9.8	9.0	8.1	7.3	6.4	5.5	4.5	3.4	2.3			
40	10.2	9.4	8.6	7.7	6.9	6.0	5.0	4.0	2.9	1.7			
50	9.9	9.0	8.2	7.3	6.4	5.5	4.6	3.5	2.4				
60	9.5	8.6	7.8	6.9	6.0	5.1	4.1	3.0	1.8				

FRICITION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

V - 7 GPM

A.Y. McDonald offers a full line of thermoplastic submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include thermoplastic discharge head with a built-in check valve, and stainless steel shaft and coupling.

All Thermoplastic pumps have 1 1/4" discharge with internal check valve and sizes range from 1/2 to 1 1/2 horsepower (HP). Two or three wire models up to 1 1/2 horsepower (HP).

Two Wire Single Phase

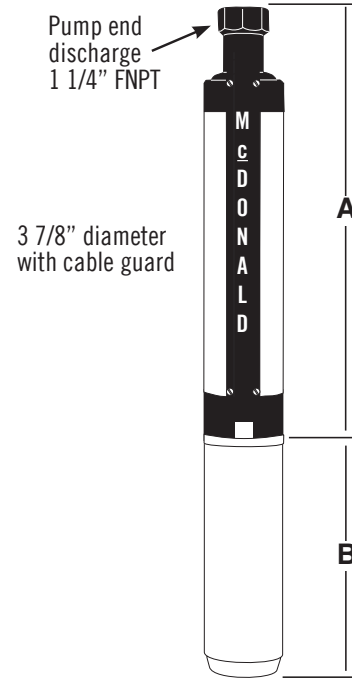
Model No.	HP	Stages	Volt	A	B	Wt.
22050V2A	1/2	9	115	14.23"	9.53"	23
22050V2	1/2	9	230	14.23"	9.53"	22
22075V2	3/4	12	230	16.67"	10.66"	26
22100V2	1	16	230	19.86"	11.75"	29
22150V2	1 1/2	21	230	24.33"	15.12"	40

Three Wire Single Phase

Model No.	HP	Stages	Volt	A	B	Wt.
22050V3A	1/2	9	115	14.23"	9.53"	23
22050V3	1/2	9	230	14.23"	9.53"	23
22075V3	3/4	12	230	16.67"	10.66"	26
22100V3	1	16	230	19.86"	11.75"	30
22150V3	1 1/2	21	230	24.33"	13.62"	38

4" Thermoplastic Pump Ends

Model No.	HP	Wt.
22050V	1/2	6
22075V	3/4	9
22100V	1	9
22150V	1 1/2	13



Output - in Gallons Per Minute (Depth to Water)

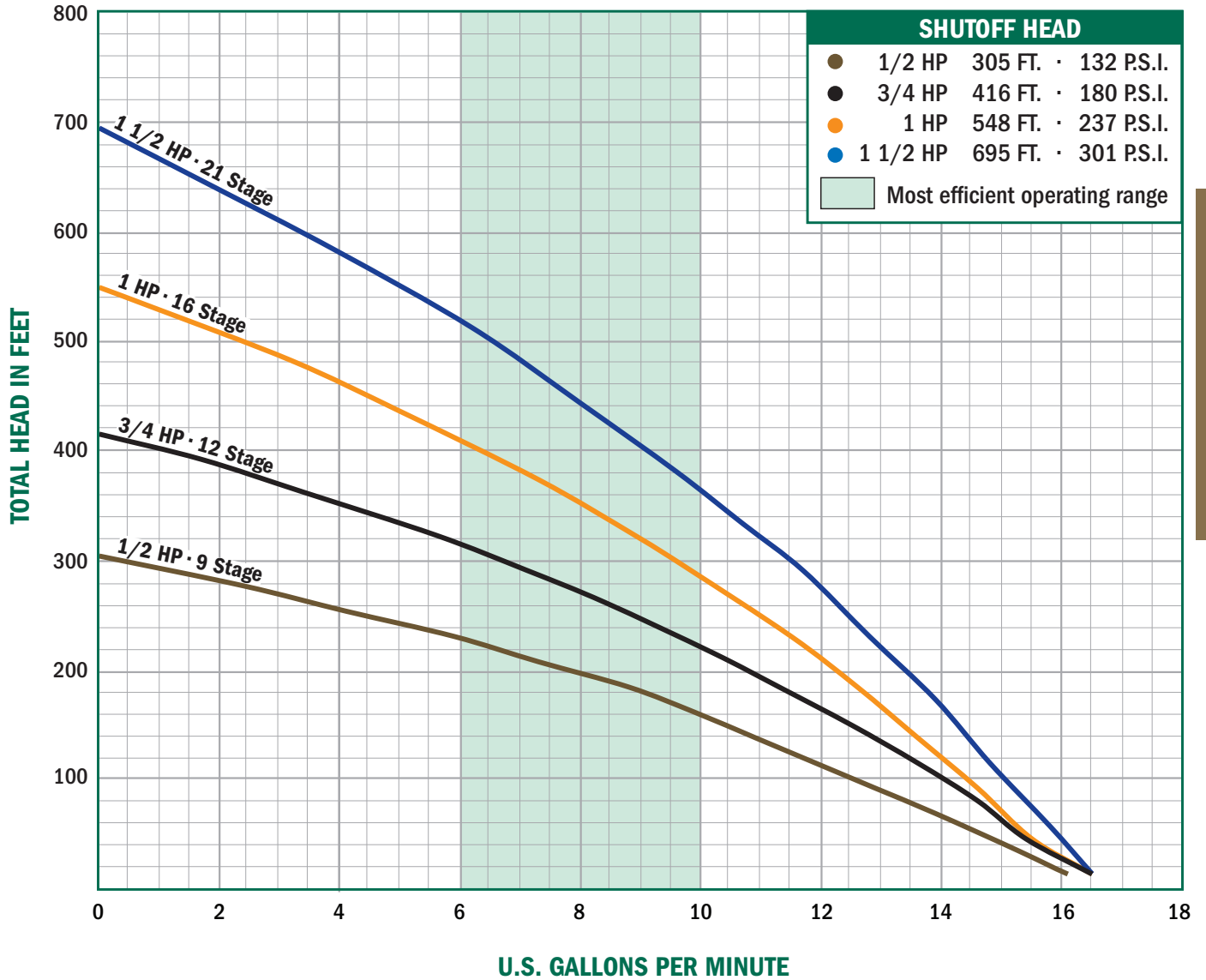
1/2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'
	0	15.6	14.6	13.6	12.6	11.5	10.4	9.2	7.8	6.3	4.5	2.5
30	12.8	11.8	10.7	9.5	8.2	6.7	5.0	3.0				
40	11.9	10.8	9.6	8.3	6.8	5.1	3.1					
50	10.9	9.7	8.4	6.9	5.2	3.3						
60	9.8	8.5	7.0	5.4	3.4	1.3						

3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'
	0	16.1	15.5	14.8	14.0	13.3	12.5	11.6	10.8	9.9	8.9	7.8	6.7	5.5	4.2	2.8
30	14.2	13.4	12.7	11.8	11.0	10.1	9.1	8.1	7.0	5.8	4.5	3.1	1.5			
40	13.5	12.7	11.9	11.0	10.1	9.2	8.2	7.1	5.9	4.6	3.2	1.7				
50	12.8	12.0	11.1	10.2	9.3	8.2	7.2	6.0	4.7	3.3	1.8					
60	12.0	11.2	10.3	9.3	8.3	7.2	6.1	4.8	3.4	1.9						

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

Submersible Pumps

V - 7 GPM



Submersible Pumps

1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'	400'	425'	450'	475'
	0	16.1	15.5	15.0	14.4	13.9	13.3	12.8	12.2	11.6	11.0	10.3	9.6	8.9	8.1	7.2	6.3	5.4	4.5	3.5
30	14.5	14.0	13.5	12.9	12.3	11.8	11.1	10.5	9.8	9.1	8.3	7.4	6.6	5.6	4.7	3.7	2.7			
40	14.0	13.5	12.9	12.4	11.8	11.2	10.5	9.9	9.1	8.3	7.5	6.6	5.7	4.7	3.8	2.8				
50	13.5	13.0	12.4	11.8	11.2	10.6	9.9	9.2	8.4	7.6	6.7	5.8	4.8	3.8	2.8					
60	13.0	12.5	11.9	11.3	10.6	10.0	9.2	8.5	7.6	6.8	5.8	4.9	3.9	2.9	1.9					

1 1/2 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'
	0	15.9	15.1	14.3	13.4	12.4	11.4	10.4	9.2	7.9	6.5	5.0	3.4	1.6
30	14.8	13.9	13.0	12.1	11.0	9.9	8.7	7.4	5.9	4.4	2.7			
40	14.4	13.5	12.6	11.6	10.5	9.4	8.1	6.7	5.2	3.6	1.9			
50	14.0	13.1	12.1	11.1	10.0	8.8	7.5	6.0	4.5	2.8				
60	13.6	12.7	11.7	10.6	9.5	8.2	6.8	5.3	3.7	2.0				

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

K - 10 GPM

A.Y. McDonald offers a full line of thermoplastic submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include thermoplastic discharge head with a built-in check valve, and stainless steel shaft and coupling.

All Thermoplastic pumps have 1 1/4" discharge with internal check valve and sizes range from 1/2 to 1 1/2 horsepower (HP). Two or three wire models up to 1 1/2 horsepower (HP).

Two Wire Single Phase

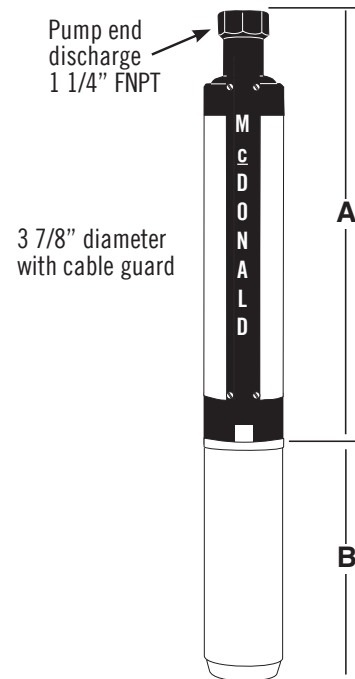
Model No.	HP	Stages	Volt	A	B	Wt.
22050K2A	1/2	7	115	12.3"	9.53"	23
22050K2	1/2	7	230	12.3"	9.53"	23
22075K2	3/4	9	230	13.7"	10.66"	27
22100K2	1	12	230	16.0"	11.75"	30
22150K2	1 1/2	16	230	19.7"	15.12"	41

Three Wire Single Phase

Model No.	HP	Stages	Volt	A	B	Wt.
22050K3A	1/2	7	115	12.3"	9.53"	27
22050K3	1/2	7	230	12.3"	9.53"	27
22075K3	3/4	9	230	13.7"	10.66"	29
22100K3	1	12	230	16.0"	11.75"	34
22150K3	1 1/2	16	230	19.7"	13.62"	42

4" Thermoplastic Pump Ends

Model No.	HP	Wt.
22050K	1/2	6
22075K	3/4	6
22100K	1	7
22150K	1 1/2	10



Output - in Gallons Per Minute (Depth to Water)

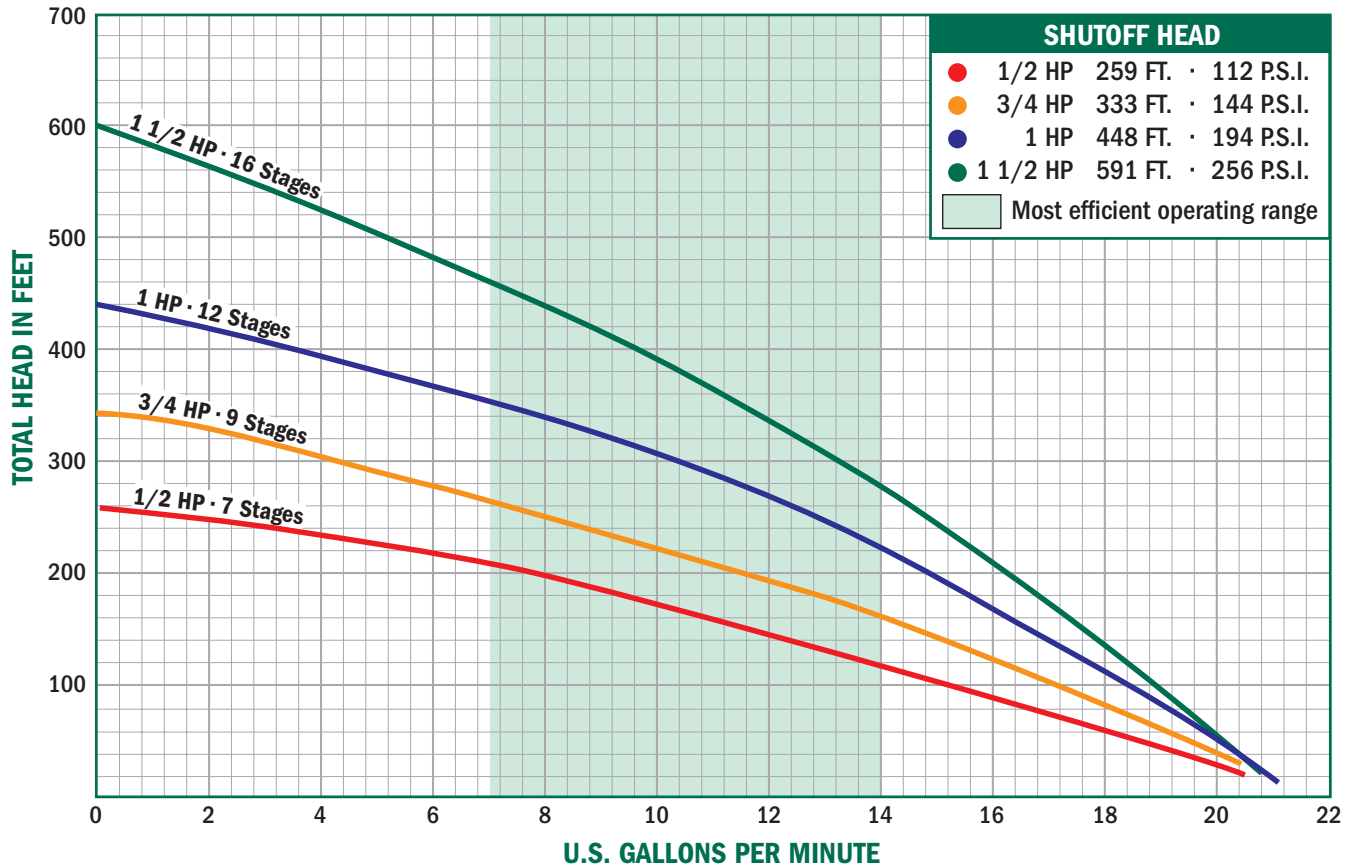
1/2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'
	0	19.90	18.49	16.99	15.40	13.69	11.84	9.79	7.49	4.78	1.32
30	15.77	14.09	12.27	10.28	8.04	5.44	2.21				
40	14.22	12.42	10.44	8.22	5.66	2.49					
50	12.56	10.60	8.40	5.87	2.76						
60	10.75	8.58	6.08	3.03							

3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'
	0	20.36	19.26	18.12	16.93	15.67	14.35	12.95	11.45	9.83	8.05	6.06	3.75	0.89
30	17.20	15.97	14.66	13.28	11.80	10.21	8.47	6.54	4.31	1.61				
40	16.06	14.76	13.39	11.92	10.34	8.61	6.69	4.49	1.84					
50	14.86	13.49	12.03	10.46	8.75	6.85	4.67	2.07						
60	13.60	12.15	10.59	8.89	7.00	4.85	2.29							

FRICION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

K - 10 GPM

Submersible Pumps



1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'	400'	425'
	0	20.86	20.05	19.22	18.36	17.47	16.55	15.60	14.61	13.57	12.48	11.33	10.10	8.79	7.37	5.81	4.06	2.00
30	18.56	17.68	16.77	15.82	14.84	13.81	12.73	11.59	10.39	9.10	7.71	6.18	4.48	2.51	0.09			
40	17.75	16.84	15.89	14.91	13.89	12.81	11.68	10.48	9.20	7.82	6.30	4.61	2.67	0.29				
50	16.91	15.97	14.99	13.97	12.90	11.77	10.58	9.30	7.93	6.42	4.75	2.83	0.50					
60	16.04	15.06	14.05	12.98	11.86	10.67	9.40	8.04	6.54	4.89	2.99	0.70						

1 1/2 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'
	0	20.18	18.95	17.66	16.31	14.87	13.34	11.69	9.89	7.88	5.58	2.80
30	18.46	17.15	15.76	14.29	12.72	11.01	9.14	7.03	4.58	1.51		
40	17.86	16.52	15.09	13.58	11.95	10.17	8.20	5.95	3.27			
50	17.25	15.87	14.41	12.84	11.15	9.29	7.20	4.78	1.78			
60	16.62	15.21	13.70	12.08	10.31	8.36	6.14	3.49	0.02			

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

L - 15 GPM

A.Y. McDonald offers a full line of thermoplastic submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include thermoplastic discharge head with a built-in check valve, and stainless steel shaft and coupling.

All Thermoplastic pumps have 1 1/4" discharge with internal check valve and sizes range from 1/2 to 1 1/2 horsepower (HP). Two or three wire models up to 1 1/2 horsepower (HP).

Two Wire Single Phase

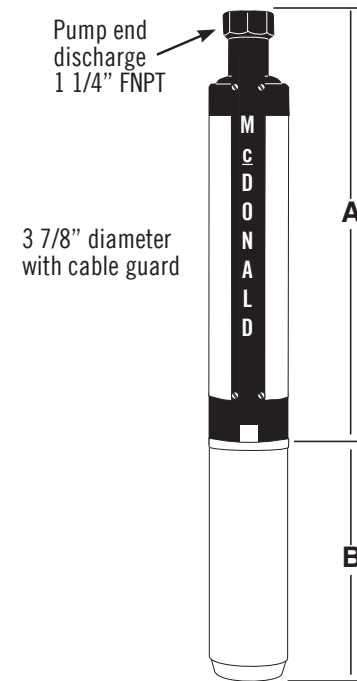
Model No.	HP	Stages	Volt	A	B	Wt.
22050L2A	1/2	6	115	13.55"	9.53"	23
22050L2	1/2	6	230	13.55"	9.53"	23
22075L2	3/4	8	230	15.71"	10.66"	27
22100L2	1	10	230	17.85"	11.75"	31
22150L2	1 1/2	13	230	21.07"	15.12"	39

Three Wire Single Phase

Model No.	HP	Stages	Volt	A	B	Wt.
22050L3A	1/2	6	115	13.55"	9.53"	23
22050L3	1/2	6	230	13.55"	9.53"	23
22075L3	3/4	8	230	15.71"	10.66"	27
22100L3	1	10	230	17.85"	11.75"	31
22150L3	1 1/2	13	230	21.07"	13.62"	36

4" Thermoplastic Pump Ends

Model No.	HP	Wt.
22050L	1/2	6
22075L	3/4	6
22100L	1	9
22150L	1 1/2	9



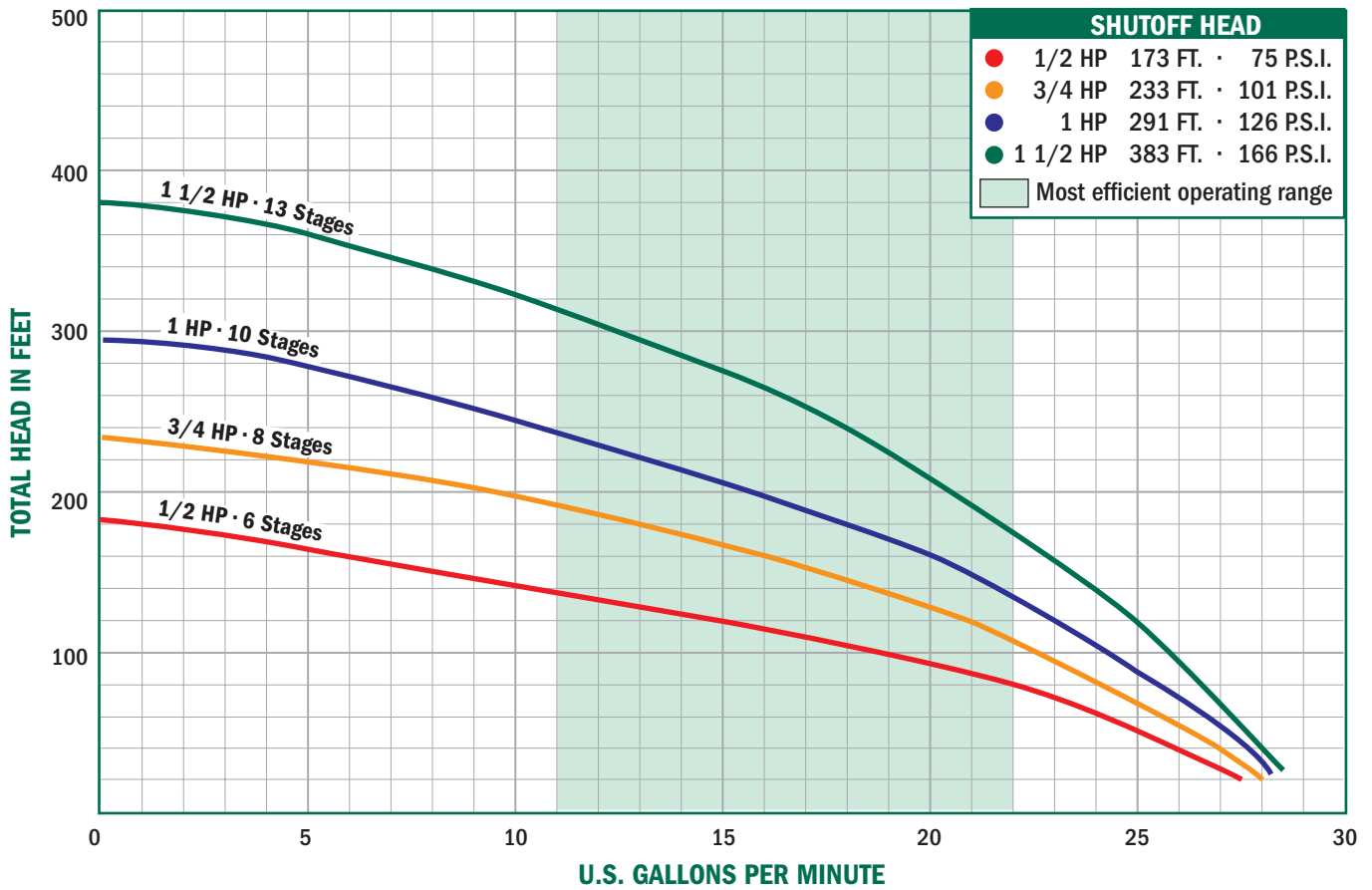
Output - in Gallons Per Minute (Depth to Water)

1/2 HP	PSI	25'	50'	75'	100'	125'	150'
	0	28.28	25.58	22.58	19.18	15.14	9.84
30	20.00	16.14	11.23	2.99			
40	16.46	11.66	3.99				
50	12.08	4.85					
60	5.63						

3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'
	0	28.58	26.69	24.66	22.46	20.05	17.33	14.17	10.21	4.08
30	22.98	20.62	17.98	14.94	11.22	5.91				
40	20.81	18.19	15.19	11.54	6.43					
50	18.40	15.44	11.85	6.92						
60	15.68	12.15	7.38							

FRICION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

L - 15 GPM



Submersible Pumps

1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	300'
	0	28.92	27.42	25.84	24.16	22.37	20.44	18.33	15.97	13.26	9.96	5.33
30	24.55	22.79	20.89	18.83	16.53	13.92	10.78	6.60				
40	22.93	21.04	18.99	16.72	14.13	11.05	6.99					
50	21.19	19.15	16.90	14.34	11.31	7.36						
60	19.31	17.08	14.55	11.56	7.71	0.50						

1 1/2 HP	PSI	50'	100'	150'	200'	250'	300'	350'
	0	28.02	25.72	23.20	20.39	17.15	13.20	7.62
30	24.78	22.16	19.20	15.74	11.35	4.06		
40	23.60	20.84	17.68	13.87	8.68			
50	22.37	19.44	16.03	11.73	4.93			
60	21.06	17.94	14.19	9.16				

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

P - 20 GPM

A.Y. McDonald offers a full line of thermoplastic submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include thermoplastic discharge head with a built-in check valve, and stainless steel shaft and coupling.

All Thermoplastic pumps have 1 1/4" discharge with internal check valve and sizes range from 1/2 to 1 1/2 horsepower (HP). Two or three wire models up to 1 1/2 horsepower (HP).

Two Wire Single Phase

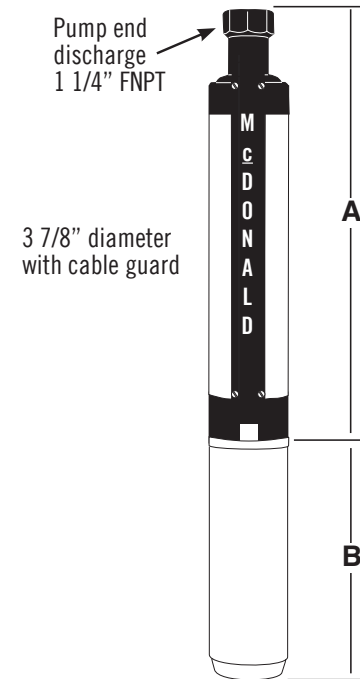
Model No.	HP	Stages	Volt	A	B	Wt.
22050P2A	1/2	5	115	12.48"	9.53"	23
22050P2	1/2	5	230	12.48"	9.53"	23
22075P2	3/4	7	230	14.63"	10.66"	27
22100P2	1	9	230	16.78"	11.75"	31
22150P2	1 1/2	12	230	20.00"	15.12"	41

Three Wire Single Phase

Model No.	HP	Stages	Volt	A	B	Wt.
22050P3A	1/2	5	115	12.02"	9.53"	23
22050P3	1/2	5	230	12.02"	9.53"	23
22075P3	3/4	7	230	14.17"	10.66"	26
22100P3	1	9	230	16.78"	11.75"	31
22150P3	1 1/2	12	230	20.00"	13.62"	37

4" Thermoplastic Pump Ends

Model No.	HP	Wt.
22050P	1/2	5
22075P	3/4	6
22100P	1	7
22150P	1 1/2	8



Output - in Gallons Per Minute (Depth to Water)

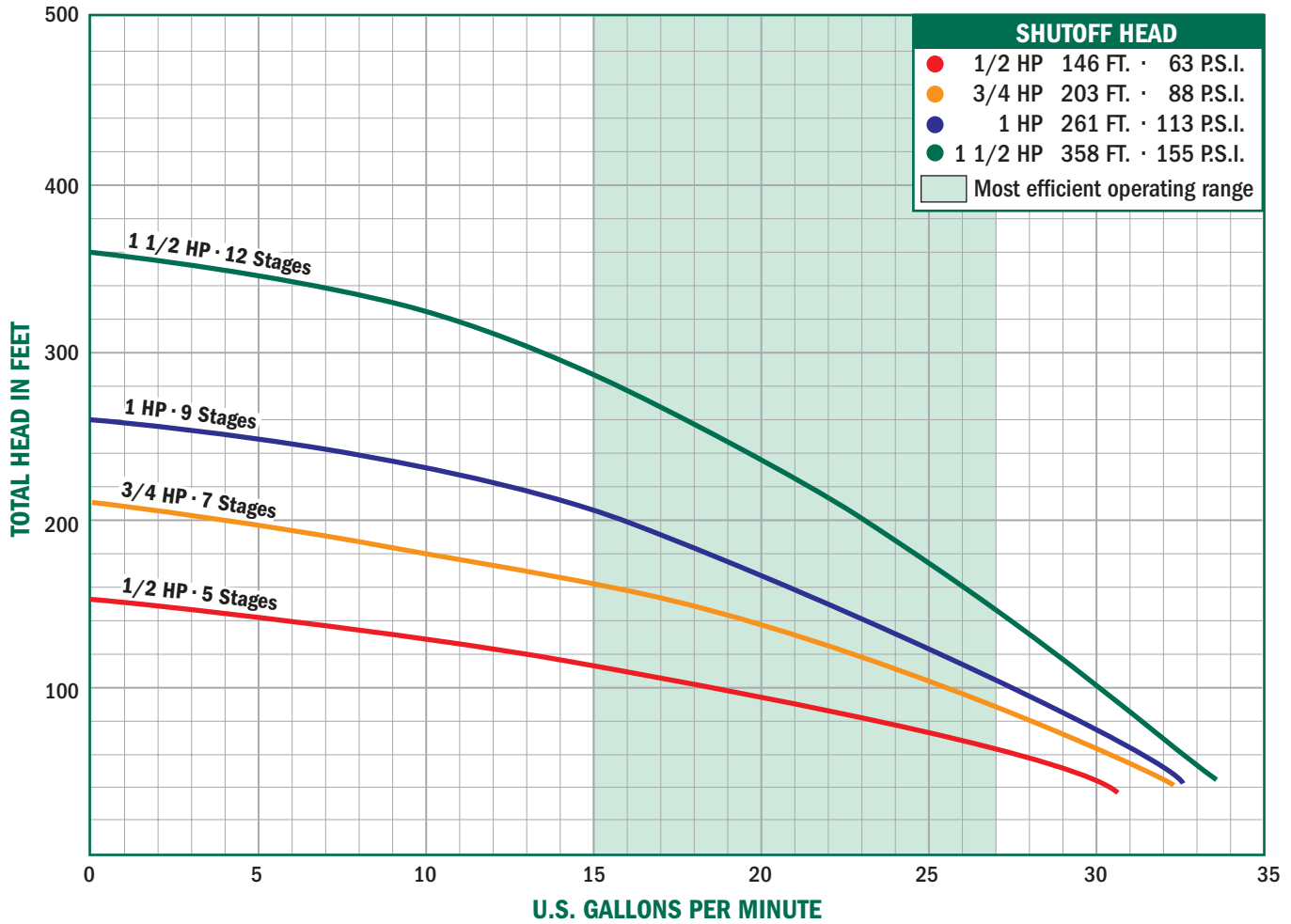
1/2 HP	PSI	25'	50'	75'	100'	125'
	0	32.34	28.61	24.35	19.26	12.48
	30	20.53	14.28	2.68		
	40	14.83	4.36			
	50	5.68				

3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'
	0	32.36	29.82	27.06	24.01	20.58	16.54	11.39	2.53
	30	24.74	21.40	17.53	12.71	5.44			
	40	21.67	17.85	13.13	6.20				
	50	18.16	13.54	6.91					
	60	13.93	7.56						

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

P - 20 GPM

Submersible Pumps



	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'
1 HP	0	33.30	31.39	29.36	27.19	24.84	22.26	19.37	16.02	11.88	5.72
	30	27.70	25.39	22.87	20.06	16.84	12.92	7.49			
	40	25.57	23.07	20.29	17.10	13.26	8.01				
	50	23.27	20.51	17.36	13.58	8.50					
	60	20.73	17.62	13.90	8.97						

	PSI	50'	100'	150'	200'	250'	300'	350'
1 1/2 HP	0	32.95	29.95	26.64	22.90	18.50	12.88	3.03
	30	28.71	25.26	21.30	16.53	10.04		
	40	27.17	23.50	19.23	13.86	5.38		
	50	25.53	21.62	16.93	10.65			
	60	23.80	19.58	14.33	6.32			

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

M - 25 GPM

A.Y. McDonald offers a full line of thermoplastic submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include thermoplastic discharge head with a built-in check valve, and stainless steel shaft and coupling.

All Thermoplastic pumps have 1 1/4" discharge with internal check valve and sizes range from 1/2 to 1 1/2 horsepower (HP). Two or three wire models up to 1 1/2 horsepower (HP).

Two Wire Single Phase

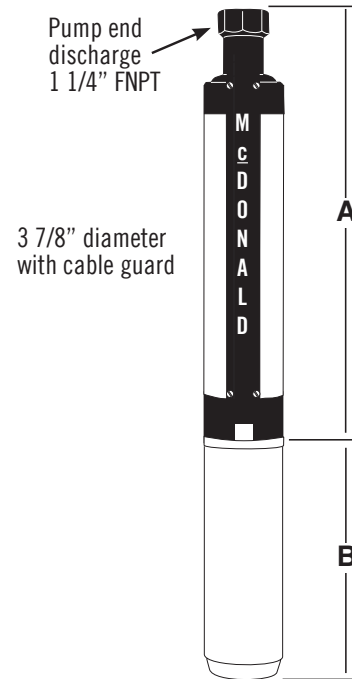
Model No.	HP	Stages	Volt	A	B	Wt.
22050M2A	1/2	4	115	10.94"	9.53"	23
22050M2	1/2	4	230	10.94"	9.53"	23
22075M2	3/4	5	230	12.48"	10.66"	25
22100M2	1	7	230	14.63"	11.75"	30
22150M2	1 1/2	9	230	16.78"	15.12"	39

Three Wire Single Phase

Model No.	HP	Stages	Volt	A	B	Wt.
22050M3A	1/2	4	115	10.94"	9.53"	23
22050M3	1/2	4	230	10.94"	9.53"	23
22075M3	3/4	5	230	12.48"	10.66"	25
22100M3	1	7	230	14.17"	11.75"	29
22150M3	1 1/2	9	230	16.78"	13.62"	35

4" Thermoplastic Pump Ends

Model No.	HP	Wt.
22050M	1/2	5
22075M	3/4	5
22100M	1	6
22150M	1 1/2	7



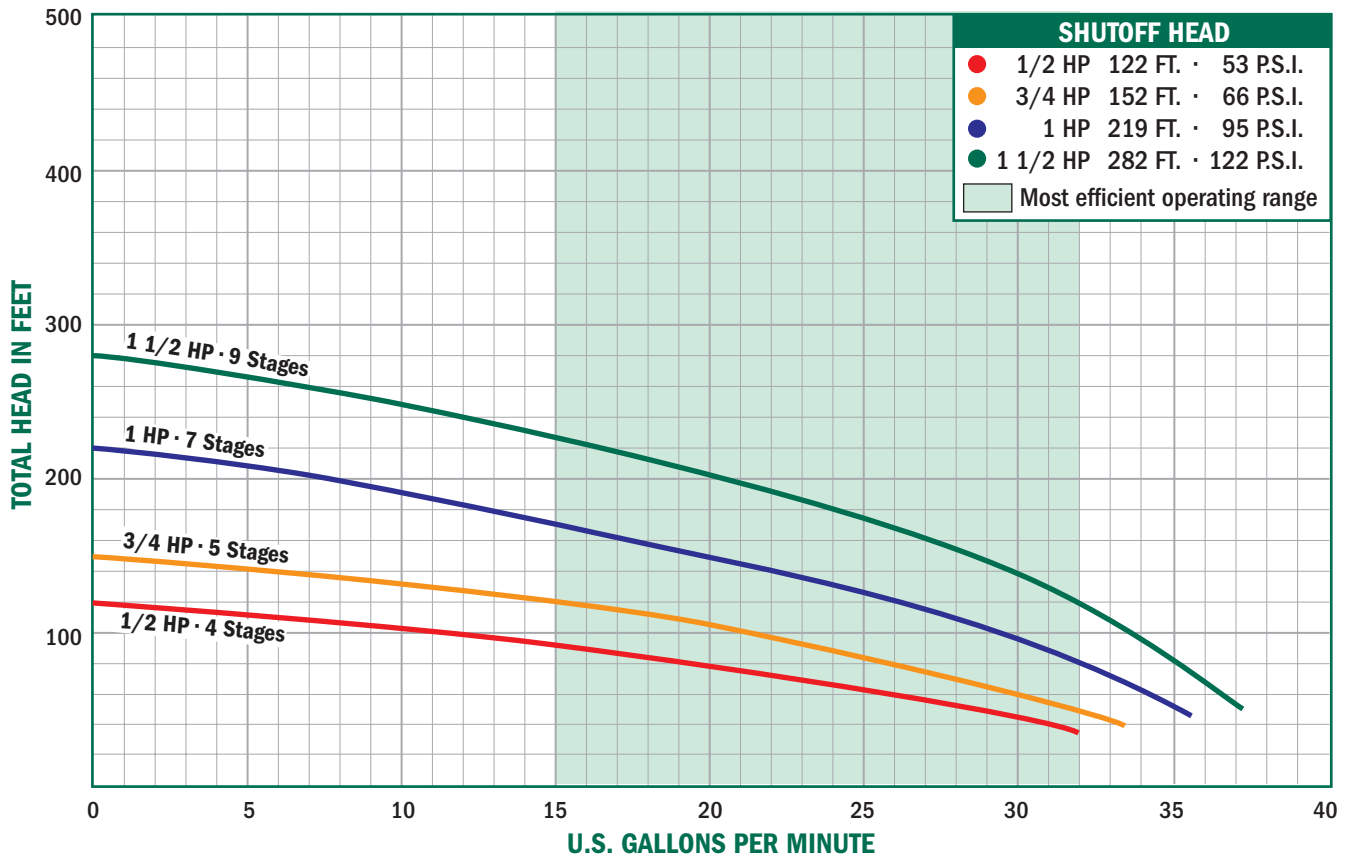
Output - in Gallons Per Minute (Depth to Water)

1/2 HP	PSI	25'	50'	75'	100'
	0	34.97	29.23	22.43	13.64
	30	15.93	2.93		
	40	4.38			

3/4 HP	PSI	25'	50'	75'	100'	125'	150'
	0	36.08	31.97	27.33	21.88	14.91	2.74
	30	23.22	16.71	6.80			
	40	17.27	7.85				
	50	8.81					

FRICITION LOSSES IN RISER PIPE HAVE
NOT BEEN CALCULATED

M - 25 GPM



PSI	25'	50'	75'	100'	125'	150'	175'	200'	
1 HP	0	38.23	35.39	32.34	29.02	25.34	21.13	16.10	9.38
	30	29.81	26.22	22.15	17.35	11.16			
	40	26.50	22.48	17.75	11.71	1.28			
	50	22.80	18.14	12.24	2.61				
	60	18.53		3.73					

PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	
1 1/2 HP	0	40.00	37.82	35.52	33.08	30.47	27.63	24.52	21.01	16.91	11.76	3.56
	30	33.65	31.08	28.30	25.26	21.85	17.91	13.07	6.06			
	40	31.28	28.52	25.50	22.13	18.24	13.49	6.76				
	50	28.74	25.74	22.40	18.56	13.90	7.42					
	60	25.98		18.87	14.29	8.04						

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

23000 Series Domestic Stainless Steel

A.Y. McDonald offers a full line of four-inch submersibles ranging from 1/3 through 5 horsepower, with flow rates ranging from 5 through 25 GPM. Our 23000 submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM) models.

Powered by NEMA approved A.Y. McDonald stainless steel motors.

The charts on the following page will assist you in choosing the pump that meets your needs.



Discharge

300 Series stainless steel, corrosion resistant, easy wrench design, built in safety eye, threads into shell.



Discharge Bearing

Rubber surrounding the stainless steel shaft provides superior wear resistance against the harshest conditions. Self-lubricating for long life.



Check Valve

A.Y. McDonald's "Diamond Design" check valve. Easy out design for maximum convenience and versatility.

Cable Guard

Stainless steel cable guard protects motor leads. Angled top helps keep leads stationary when lowering and raising submersible pump.

Diffuser

Polycarbonate durable corrosion/abrasion. Designed for efficient performance and superior sand handling capability.



Impeller

Glass bead acetal. This smooth and flexible material is precision engineered for maximum performance.



A.Y. McDonald uses its time proven captured stack design. The captured stack design incorporates sand notches into the diffusers, which is proven to keep sand flowing thru the stack over time.

Heavy Stainless Steel Shell

Threaded at both ends for easy field service.

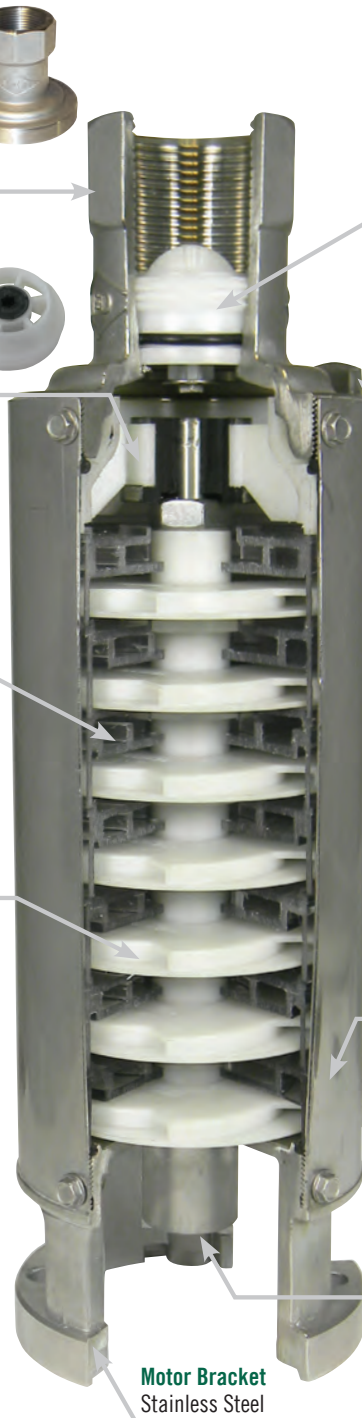
Stainless Steel Hex Shaft 7/16"

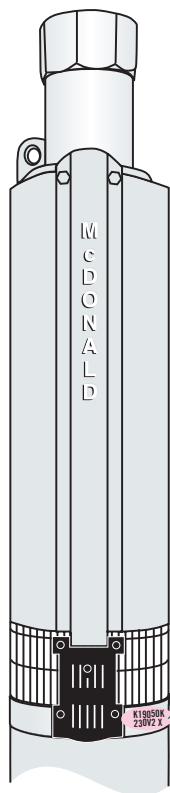
7/16" 300 Series Stainless Steel, hex design for positive impeller drive. Each shaft individually measured for straightness with strict tolerances. Achieves maximum corrosion resistance for longer life.



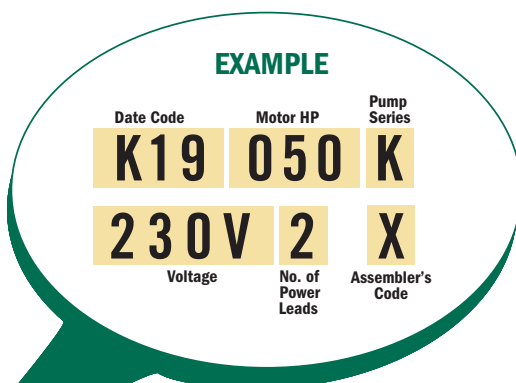
Motor Bracket Stainless Steel

- Once assembled, each pump is individually tested to assure performance within design specifications.
- Each pump is stamped with the tester's "signature" marking to assure quality control.





Locating the code number on the pump



A code is stamped on each A.Y. McDonald 23000 series submersible pump. Contained in this code is the following information:

- Date of manufacture
- Motor HP
- Pump Series
- Voltage
- Number of power leads
- Assembler's code

NOTES

- Standard is 230V, Single Phase, 60 HZ (no suffix letter required)
- **Two-Wire Single phase** models include; pump, motor, leads.
- **Three-Wire Single phase** models include; pump, motor, leads, and control box.
- **Three-Wire Three phase** models include; pump, motor, leads, and starter kit.
- All submersible pumps include **internal check valves and grounded lead on motor.**

J - 5 GPM

A.Y. McDonald offers a full line of stainless steel submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include stainless steel discharge head with a built-in check valve, and stainless steel shaft and coupling.

All Stainless Steel Pumps come with a 1 1/4" discharge and sizes range from 1/3 to 1 1/2 horsepower (HP). Two or three wire models up to 1 1/2 horsepower (HP).

Two Wire Single Phase

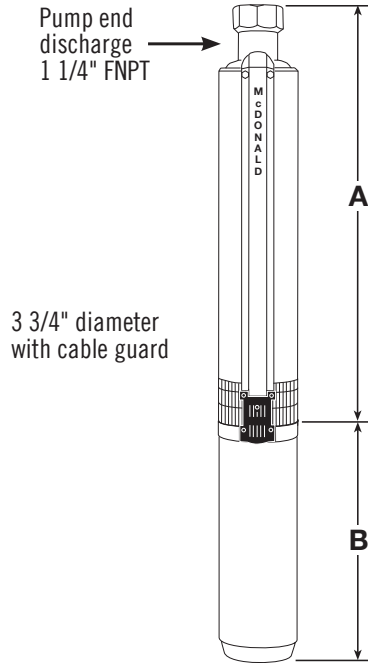
Model No.	HP	Stages	Volt	A	B	Wt.
23030J2A*	1/3	9	115	13.48"	9.53"	26
23030J2*	1/3	9	230	13.48"	9.53"	26
23050J2A	1/2	13	115	16.68"	9.53"	30
23050J2	1/2	13	230	16.68"	9.53"	30
23075J2	3/4	18	230	20.67"	10.66"	36
23100J2	1	23	230	25.93"	11.75"	41
23150J2	1 1/2	30	230	31.45"	15.12"	49

Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	Wt.
23030J3A*	1/3	9	115	13.48"	9.53"	26
23030J3*	1/3	9	230	13.48"	9.53"	26
23050J3A	1/2	13	115	16.68"	9.53"	30
23050J3	1/2	13	230	16.68"	9.53"	30
23075J3	3/4	18	230	20.67"	10.66"	36
23100J3	1	23	230	25.93"	11.75"	41
23150J3	1 1/2	30	230	31.45"	13.62"	41

Three Wire** Three Phase

Model No.	HP	Stages	Volt	A	B	Wt.
23150J3Z	1 1/2	30	230	31.45"	15.82"	45



4" Stainless Steel Pump Ends

Model No.	HP	Wt.
23030J	1/3	9
23050J	1/2	10
23075J	3/4	12
23100J	1	13
23150J	1 1/2	18

* All one-third horsepower pumps are furnished with one-half horsepower motors (and control boxes where applicable).

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

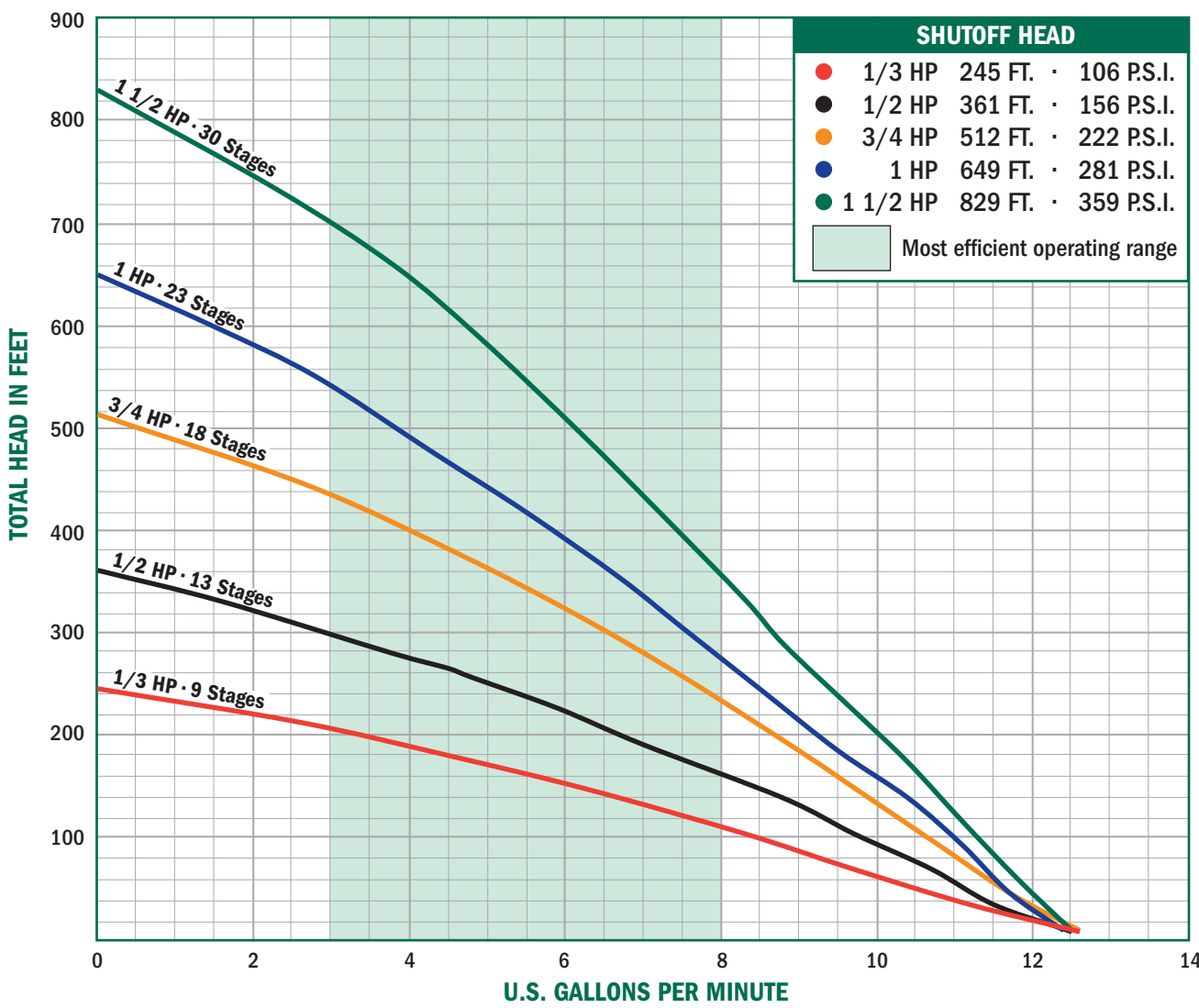
1/3 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'
	0	11.7	10.6	9.5	8.4	7.3	6.1	4.8	3.4	1.8
	30	8.6	7.5	6.4	5.1	3.8	2.2			
	40	7.6	6.4	5.2	3.9	2.3				
	50	6.5	5.3	4.0	2.5					

1/2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'
	0	11.9	11.2	10.5	9.8	9.1	8.4	7.6	6.8	6.0	5.0	4.1	3.0	1.8
	30	10.0	9.2	8.5	7.8	7.0	6.1	5.3	4.3	3.2	2.1			
	40	9.3	8.6	7.8	7.0	6.2	5.3	4.4	3.3	2.2				
	50	8.6	7.9	7.1	6.3	5.4	4.4	3.4	2.3					
60	7.9	7.2	6.3	5.5	4.5	3.5	2.3							

3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'	400'	425'	450'
	0	12.2	11.7	11.2	10.7	10.2	9.7	9.2	8.7	8.1	7.6	7.1	6.5	5.9	5.3	4.7	4.0	3.3	2.6
	30	10.8	10.3	9.8	9.3	8.8	8.3	7.7	7.2	6.6	6.1	5.5	4.9	4.2	3.5	2.7	1.9		
	40	10.3	9.8	9.3	8.8	8.3	7.8	7.2	6.7	6.1	5.5	4.9	4.3	3.6	2.8	2.0			
	50	9.9	9.4	8.9	8.3	7.8	7.3	6.7	6.2	5.6	4.9	4.3	3.6	2.9	2.0				
60	9.4	8.9	8.4	7.9	7.3	6.8	6.2	5.6	5.0	4.4	3.7	2.9	2.1						

FRICITION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

J - 5 GPM



Submersible Pumps

PSI	1 HP											
	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'
0	11.7	10.9	10.1	9.3	8.4	7.6	6.7	5.8	4.9	3.9	2.7	1.5
30	10.6	9.8	9.0	8.1	7.3	6.4	5.5	4.5	3.4	2.3		
40	10.2	9.4	8.6	7.7	6.9	6.0	5.0	4.0	2.9	1.7		
50	9.9	9.0	8.2	7.3	6.4	5.5	4.6	3.5	2.4			
60	9.5	8.6	7.8	6.9	6.0	5.1	4.1	3.0	1.8			

PSI	1 1/2 HP												
	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'
0	15.9	15.1	14.3	13.4	12.4	11.4	10.4	9.2	7.9	6.5	5.0	3.4	1.6
30	14.8	13.9	13.0	12.1	11.0	9.9	8.7	7.4	5.9	4.4	2.7		
40	14.4	13.5	12.6	11.6	10.5	9.4	8.1	6.7	5.2	3.6	1.9		
50	14.0	13.1	12.1	11.1	10.0	8.8	7.5	6.0	4.5	2.8			
60	13.6	12.7	11.7	10.6	9.5	8.2	6.8	5.3	3.7	2.0			

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

V - 7 GPM

A.Y. McDonald offers a full line of stainless steel submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include stainless steel discharge head with a built-in check valve, and stainless steel shaft and coupling.

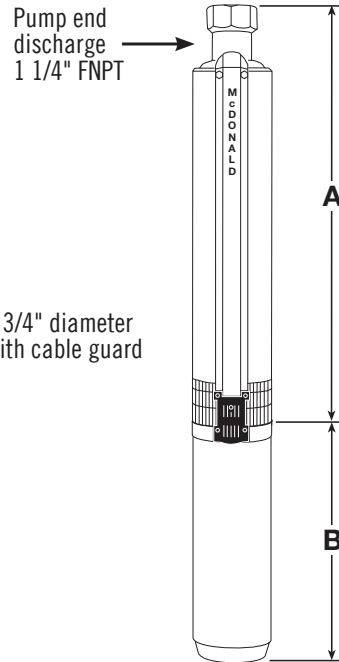
All Stainless Steel Pumps come with a 1 1/4" discharge and sizes range from 1/3 to 2 horsepower (HP). Two wire models up to 1 1/2 and three wire models up to 2 horsepower (HP).

Two Wire Single Phase

Model No.	HP	Stages	Volt	A	B	WT.
23030V2A*	1/3	6	115	11.1"	9.53"	24
23030V2*	1/3	6	230	11.1"	9.53"	25
23050V2A	1/2	9	115	13.48"	9.53"	26
23050V2	1/2	9	230	13.48"	9.53"	26
23075V2	3/4	12	230	15.92"	10.66"	30
23100V2	1	16	230	19.11"	11.75"	34
23150V2	1 1/2	21	230	23.58"	15.12"	46

Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	WT.
23030V3A*	1/3	6	115	11.1"	9.53"	25
23030V3*	1/3	6	230	11.1"	9.53"	25
23050V3A	1/2	9	115	13.48"	9.53"	26
23050V3	1/2	9	230	13.48"	9.53"	26
23075V3	3/4	12	230	15.92"	10.66"	30
23100V3	1	16	230	19.11"	11.75"	35
23150V3	1 1/2	21	230	23.58"	13.62"	41
23200V3	2	26	230	28.34"	15.12"	49



4" Stainless Steel Pump Ends

Model No.	HP	WT.
23030V	1/3	9
23050V	1/2	10
23075V	3/4	13
23100V	1	11
23150V	1 1/2	16
23200V	2	18

* All one-third horsepower pumps are furnished with one-half horsepower motors (and control boxes where applicable).

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

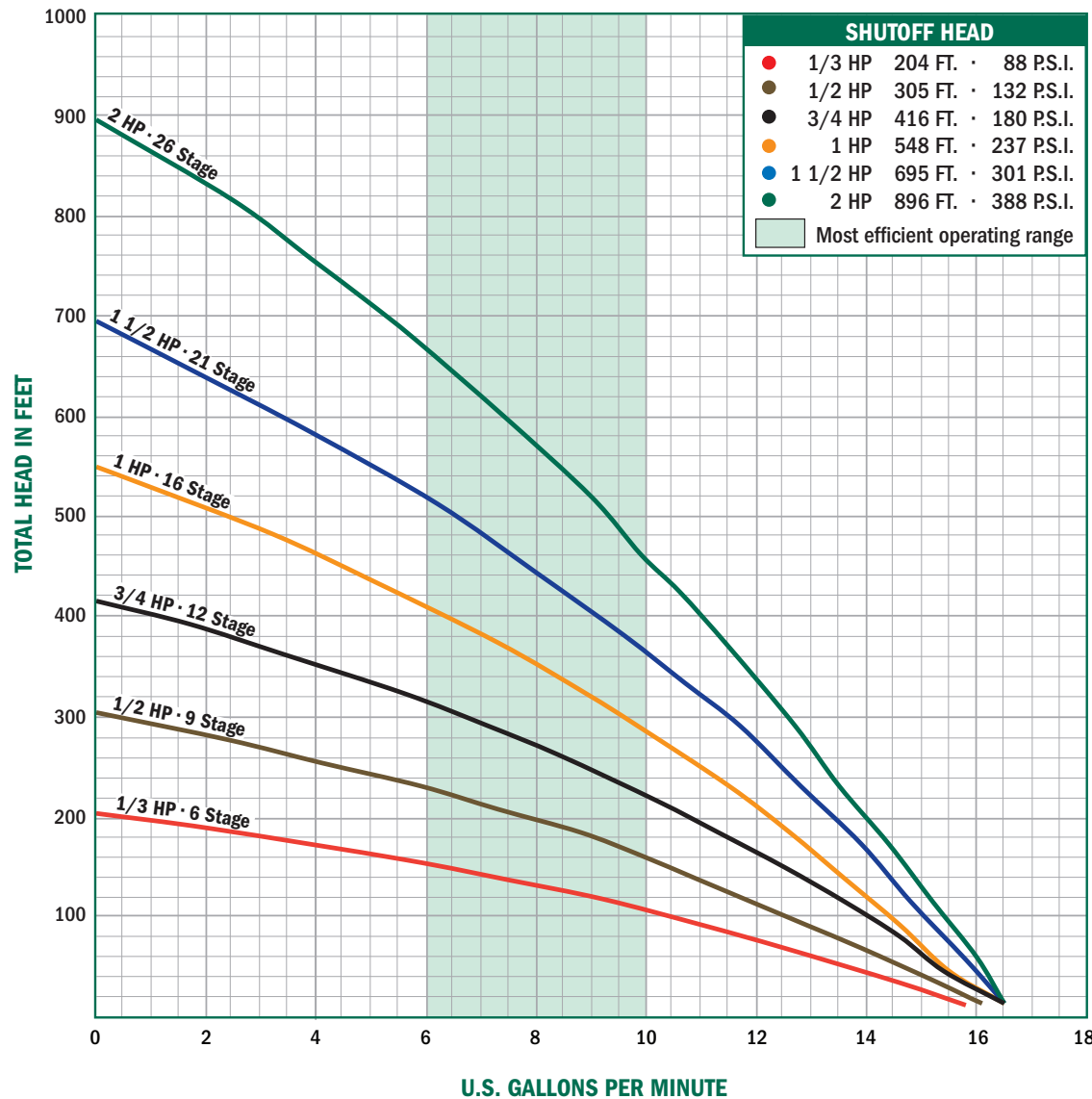
1/3 HP	PSI	25'	50'	75'	100'	125'	150'	175'
	0	15.1	13.7	12.2	10.5	8.6	6.4	3.8
	30	10.9	9.0	6.9	4.4	1.3		
	40	9.2	7.1	4.6	1.6			
	50	7.2	4.8	1.9				

1/2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'
	0	15.6	14.6	13.6	12.6	11.5	10.4	9.2	7.8	6.3	4.5	2.5
	30	12.8	11.8	10.7	9.5	8.2	6.7	5.0	3.0			
	40	11.9	10.8	9.6	8.3	6.8	5.1	3.1				
	50	10.9	9.7	8.4	6.9	5.2	3.3					
60	9.8	8.5	7.0	5.4	3.4	1.3						

3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'
	0	16.1	15.5	14.8	14.0	13.3	12.5	11.6	10.8	9.9	8.9	7.8	6.7	5.5	4.2	2.8
	30	14.2	13.4	12.7	11.8	11.0	10.1	9.1	8.1	7.0	5.8	4.5	3.1	1.5		
	40	13.5	12.7	11.9	11.0	10.1	9.2	8.2	7.1	5.9	4.6	3.2	1.7			
	50	12.8	12.0	11.1	10.2	9.3	8.2	7.2	6.0	4.7	3.3	1.8				
60	12.0	11.2	10.3	9.3	8.3	7.2	6.1	4.8	3.4	1.9						

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

V - 7 GPM



Submersible Pumps

1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'	400'	425'	450'	475'
	0	16.1	15.5	15.0	14.4	13.9	13.3	12.8	12.2	11.6	11.0	10.3	9.6	8.9	8.1	7.2	6.3	5.4	4.5	3.5
30	14.5	14.0	13.5	12.9	12.3	11.8	11.1	10.5	9.8	9.1	8.3	7.4	6.6	5.6	4.7	3.7	2.7			
40	14.0	13.5	12.9	12.4	11.8	11.2	10.5	9.9	9.1	8.3	7.5	6.6	5.7	4.7	3.8	2.8				
50	13.5	13.0	12.4	11.8	11.2	10.6	9.9	9.2	8.4	7.6	6.7	5.8	4.8	3.8	2.8					
60	13.0	12.5	11.9	11.3	10.6	10.0	9.2	8.5	7.6	6.8	5.8	4.9	3.9	2.9	1.9					

1 1/2 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'
	0	15.9	15.1	14.3	13.4	12.4	11.4	10.4	9.2	7.9	6.5	5.0	3.4	1.6
30	14.8	13.9	13.0	12.1	11.0	9.9	8.7	7.4	5.9	4.4	2.7			
40	14.4	13.5	12.6	11.6	10.5	9.4	8.1	6.7	5.2	3.6	1.9			
50	14.0	13.1	12.1	11.1	10.0	8.8	7.5	6.0	4.5	2.8				
60	13.6	12.7	11.7	10.6	9.5	8.2	6.8	5.3	3.7	2.0				

2 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'	850'
	0	16.1	15.4	14.7	14.0	13.3	12.6	11.8	11.0	10.2	9.3	8.4	7.4	6.4	5.3	4.1	2.9	1.5
30	15.1	14.5	13.8	13.0	12.3	11.5	10.7	9.8	8.9	8.0	7.0	6.0	4.9	3.7	2.3			
40	14.8	14.1	13.4	12.7	11.9	11.1	10.3	9.4	8.5	7.6	6.5	5.5	4.3	3.1	1.7			
50	14.5	13.8	13.1	12.3	11.5	10.7	9.9	9.0	8.1	7.1	6.1	4.9	3.8	2.4				
60	14.2	13.5	12.7	12.0	11.2	10.3	9.5	8.6	7.6	6.6	5.6	4.4	3.2	1.8				

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

K - 10 GPM

A.Y. McDonald offers a full line of stainless steel submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include stainless steel discharge head with a built-in check valve, and stainless steel shaft and coupling.

All Stainless Steel Pumps come with a 1 1/4" discharge and sizes range from 1/3 to 5 horsepower (HP). Two wire models up to 1 1/2 and three wire models up to 5 horsepower (HP).

Two Wire Single Phase

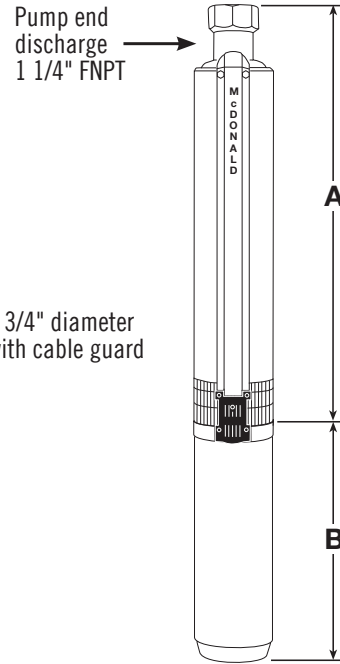
Model No.	HP	Stages	Volt	A	B	WT.
23030K2A*	1/3	5	115	10.51"	9.53"	18
23030K2*	1/3	5	230	10.51"	9.53"	18
23050K2A	1/2	7	115	12.15"	9.53"	25
23050K2	1/2	7	230	12.15"	9.53"	25
23075K2	3/4	9	230	13.84"	10.66"	28
23100K2	1	12	230	16.39"	11.75"	32
23150K2	1 1/2	16	230	21.05"	15.12"	40

Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	WT.
23030K3A*	1/3	5	115	10.51"	9.53"	21
23030K3*	1/3	5	230	10.51"	9.53"	21
23050K3A	1/2	7	115	12.15"	9.53"	28
23050K3	1/2	7	230	12.15"	9.53"	28
23075K3	3/4	9	230	13.84"	10.66"	31
23100K3	1	12	230	16.39"	11.75"	35
23150K3	1 1/2	16	230	21.05"	13.62"	44
23200K3	2	20	230	24.48"	15.12"	46
23300K3	3	26	230	29.56"	19.06"	70
23500K3	5	33	230	35.49"	29.62"	89

Three Wire** Three Phase

Model No.	HP	Stages	Volt	A	B	WT.
23150K3Z	1 1/2	16	230	21.05"	15.82"	41
23150K3Y	1 1/2	16	460	21.05"	15.82"	41
23200K3Z	2	20	230	24.48"	17.69"	43
23300K3Z	3	26	230	29.56"	19.20"	60
23500K3Z	5	33	230	35.49"	23.62"	74



3 3/4" diameter with cable guard

4" Stainless Steel Pump Ends

Model No.	HP	WT.
23030K	1/3	7
23050K	1/2	7
23075K	3/4	8
23100K	1	9
23150K	1 1/2	11
23200K	2	14
23300K	3	16
23500K	5	18

* All one-third horsepower pumps are furnished with one-half horsepower motors (and control boxes where applicable).

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

1/3 HP	PSI	25'	50'	75'	100'	125'	150'	175'
	0	18.78	16.62	14.27	11.68	8.75	5.31	0.93
	30	12.29	9.45	6.16	2.06			
	40	9.68	6.43	2.42				
	50	6.70	2.76					
60	3.10							

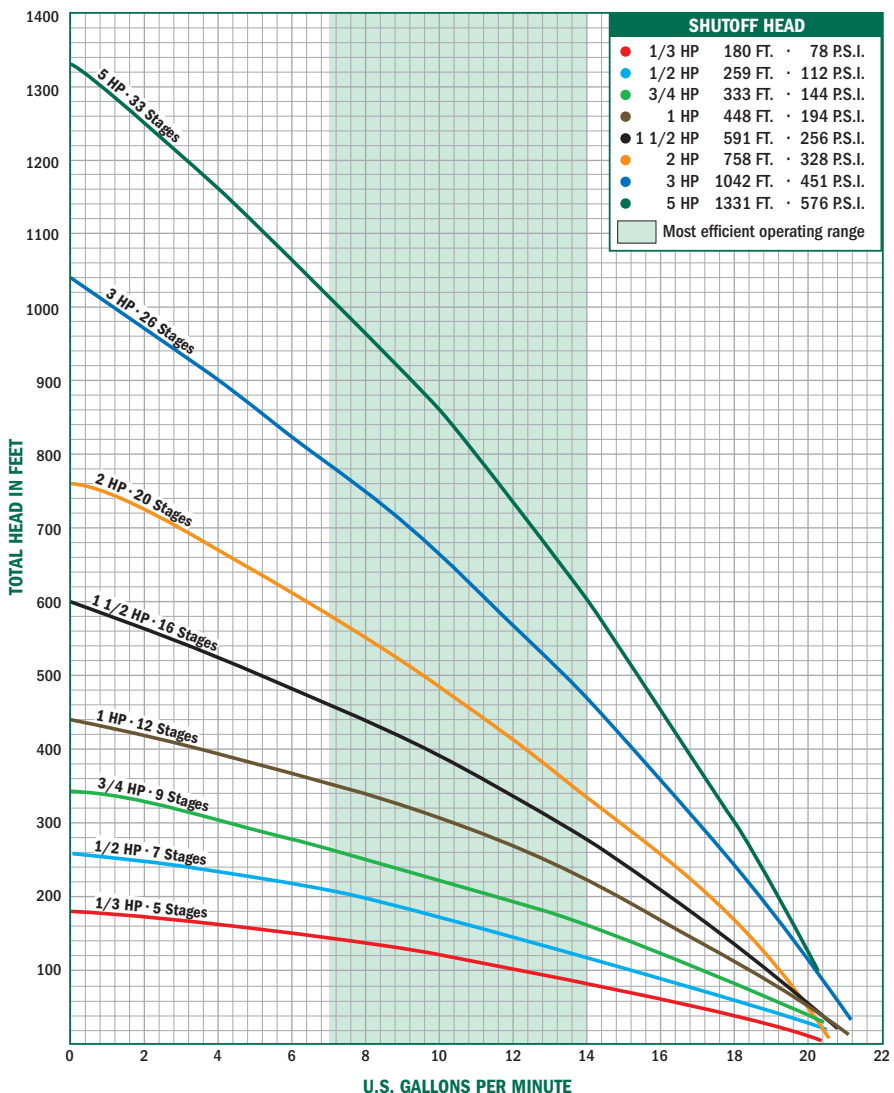
1/2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'
	0	19.90	18.49	16.99	15.40	13.69	11.84	9.79	7.49	4.78	1.32
	30	15.77	14.09	12.27	10.28	8.04	5.44	2.21			
	40	14.22	12.42	10.44	8.22	5.66	2.49				
	50	12.56	10.60	8.40	5.87	2.76					
60	10.75	8.58	6.08	3.03							

3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'
	0	20.36	19.26	18.12	16.93	15.67	14.35	12.95	11.45	9.83	8.05	6.06	3.75	0.89
	30	17.20	15.97	14.66	13.28	11.80	10.21	8.47	6.54	4.31	1.61			
	40	16.06	14.76	13.39	11.92	10.34	8.61	6.69	4.49	1.84				
	50	14.86	13.49	12.03	10.46	8.75	6.85	4.67	2.07					
60	13.60	12.15	10.59	8.89	7.00	4.85	2.29							

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'	400'	425'
	0	20.86	20.05	19.22	18.36	17.47	16.55	15.60	14.61	13.57	12.48	11.33	10.10	8.79	7.37	5.81	4.06	2.00
	30	18.56	17.68	16.77	15.82	14.84	13.81	12.73	11.59	10.39	9.10	7.71	6.18	4.48	2.51	0.09		
	40	17.75	16.84	15.89	14.91	13.89	12.81	11.68	10.48	9.20	7.82	6.30	4.61	2.67	0.29			
	50	16.91	15.97	14.99	13.97	12.90	11.77	10.58	9.30	7.93	6.42	4.75	2.83	0.50				
60	16.04	15.06	14.05	12.98	11.86	10.67	9.40	8.04	6.54	4.89	2.99	0.70						

K - 10 GPM



Submersible Pumps

Output - in Gallons Per Minute (Depth to Water) - Continued

PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'
0	20.18	18.95	17.66	16.31	14.87	13.34	11.69	9.89	7.88	5.58	2.80
30	18.46	17.15	15.76	14.29	12.72	11.01	9.14	7.03	4.58	1.51	
40	17.86	16.52	15.09	13.58	11.95	10.17	8.20	5.95	3.27		
50	17.25	15.87	14.41	12.84	11.15	9.29	7.20	4.78	1.78		
60	16.62	15.21	13.70	12.08	10.31	8.36	6.14	3.49	0.02		

PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'
0	19.85	18.89	17.89	16.85	15.78	14.66	13.49	12.26	10.96	9.59	8.11	6.51	4.75	2.77	0.46
30	18.51	17.49	16.44	15.35	14.21	13.02	11.77	10.44	9.03	7.51	5.85	4.02	1.93		
40	18.04	17.01	15.94	14.83	13.67	12.45	11.17	9.80	8.34	6.76	5.03	3.09	0.84		
50	17.57	16.52	15.44	14.30	13.11	11.87	10.55	9.14	7.63	5.98	4.16	2.10			
60	17.09	16.03	14.92	13.76	12.55	11.27	9.91	8.46	6.89	5.17	3.25	1.02			

FRICION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'	850'	900'	950'	1000'
0	21.05	20.27	19.48	18.67	17.84	16.99	16.11	15.22	14.30	13.35	12.36	11.35	10.30	9.20	8.05	6.85	5.59	4.24	2.81	1.26
30	19.97	19.17	18.35	17.51	16.65	15.77	14.87	13.93	12.97	11.98	10.95	9.88	8.76	7.60	6.37	5.08	3.70	2.23	0.62	
40	19.60	18.79	17.96	17.12	16.25	15.36	14.44	13.49	12.52	11.51	10.46	9.37	8.23	7.04	5.78	4.45	3.03	1.50		
50	19.23	18.41	17.58	16.72	15.84	14.94	14.01	13.05	12.05	11.03	9.96	8.85	7.69	6.47	5.18	3.81	2.34	0.75		
60	18.85	18.03	17.18	16.32	15.43	14.51	13.57	12.59	11.58	10.54	9.45	8.32	7.13	5.88	4.56	3.14	1.62			

PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'	850'	900'	950'	1000'	1050'	1100'	1150'	1200'	1250'	1300'
0	20.96	20.39	19.81	19.22	18.62	18.01	17.38	16.74	16.09	15.42	14.74	14.04	13.32	12.58	11.82	11.04	10.22	9.38	8.51	7.60	6.64	5.64	4.58	3.45	2.24	0.93
30	20.17	19.59	18.99	18.39	17.77	17.14	16.49	15.84	15.16	14.47	13.77	13.04	12.29	11.52	10.73	9.90	9.05	8.16	7.23	6.26	5.24	4.15	3.00	1.75	0.39	
40	19.90	19.31	18.71	18.10	17.48	16.84	16.19	15.53	14.85	14.15	13.43	12.70	11.94	11.16	10.35	9.51	8.64	7.74	6.79	5.80	4.75	3.63	2.43	1.14		
50	19.63	19.04	18.43	17.82	17.19	16.54	15.89	15.21	14.53	13.82	13.09	12.35	11.58	10.79	9.97	9.11	8.23	7.31	6.34	5.32	4.24	3.09	1.85	0.50		
60	19.36	18.76	18.15	17.53	16.89	16.24	15.58	14.90	14.20	13.49	12.75	12.00	11.22	10.41	9.58	8.71	7.81	6.86	5.87	4.83	3.72	2.53	1.24			

L - 15 GPM

A.Y. McDonald offers a full line of stainless steel submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include stainless steel discharge head with a built-in check valve, and stainless steel shaft and coupling.

All Stainless Steel Pumps come with a 1 1/4" discharge and sizes range from 1/3 to 5 horsepower (HP). Two wire models up to 1 1/2 and three wire models up to 5 horsepower (HP).

Two Wire Single Phase

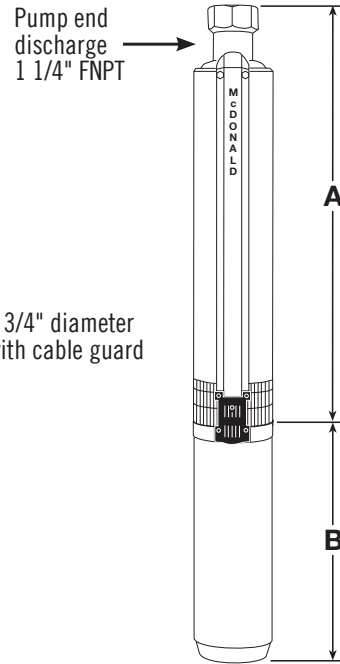
Model No.	HP	Stages	Volt	A	B	WT.
23030L2A*	1/3	5	115	12.02"	9.53"	24
23030L2*	1/3	5	230	12.02"	9.53"	24
23050L2A	1/2	6	115	13.09"	9.53"	24
23050L2	1/2	6	230	13.09"	9.53"	24
23075L2	3/4	8	230	15.25"	10.66"	28
23100L2	1	10	230	17.39"	11.75"	32
23150L2	1 1/2	13	230	20.61"	15.12"	40

Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	WT.
23030L3A*	1/3	5	115	12.02"	9.53"	24
23030L3*	1/3	5	230	12.02"	9.53"	24
23050L3A	1/2	6	115	13.09"	9.53"	24
23050L3	1/2	6	230	13.09"	9.53"	24
23075L3	3/4	8	230	15.25"	10.66"	28
23100L3	1	10	230	17.39"	11.75"	32
23150L3	1 1/2	13	230	20.61"	13.62"	37
23200L3	2	17	230	24.91"	15.12"	44
23300L3	3	23	230	32.73"	19.06"	58
23500L3	5	35	230	45.60"	29.62"	85

Three Wire** Three Phase

Model No.	HP	Stages	Volt	A	B	WT.
23150L3Z	1 1/2	13	230	20.61"	11.75"	34
23200L3Z	2	17	230	24.91"	13.62"	41
23300L3Z	3	23	230	32.73"	16.04"	51
23500L3Z	5	35	230	45.60"	23.62"	72



4" Stainless Steel Pump Ends

Model No.	HP	WT.
23030L	1/3	7
23050L	1/2	7
23075L	3/4	8
23100L	1	9
23150L	1 1/2	10
23200L	2	12
23300L	3	15
23500L	5	22

* All one-third horsepower pumps are furnished with one-half horsepower motors (and control boxes where applicable).

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

1/3 HP	PSI	25'	50'	75'	100'	125'
	0	27.82	24.66	21.05	16.70	10.79
30	17.79	12.38				
40	12.86	2.69				
50	4.29					

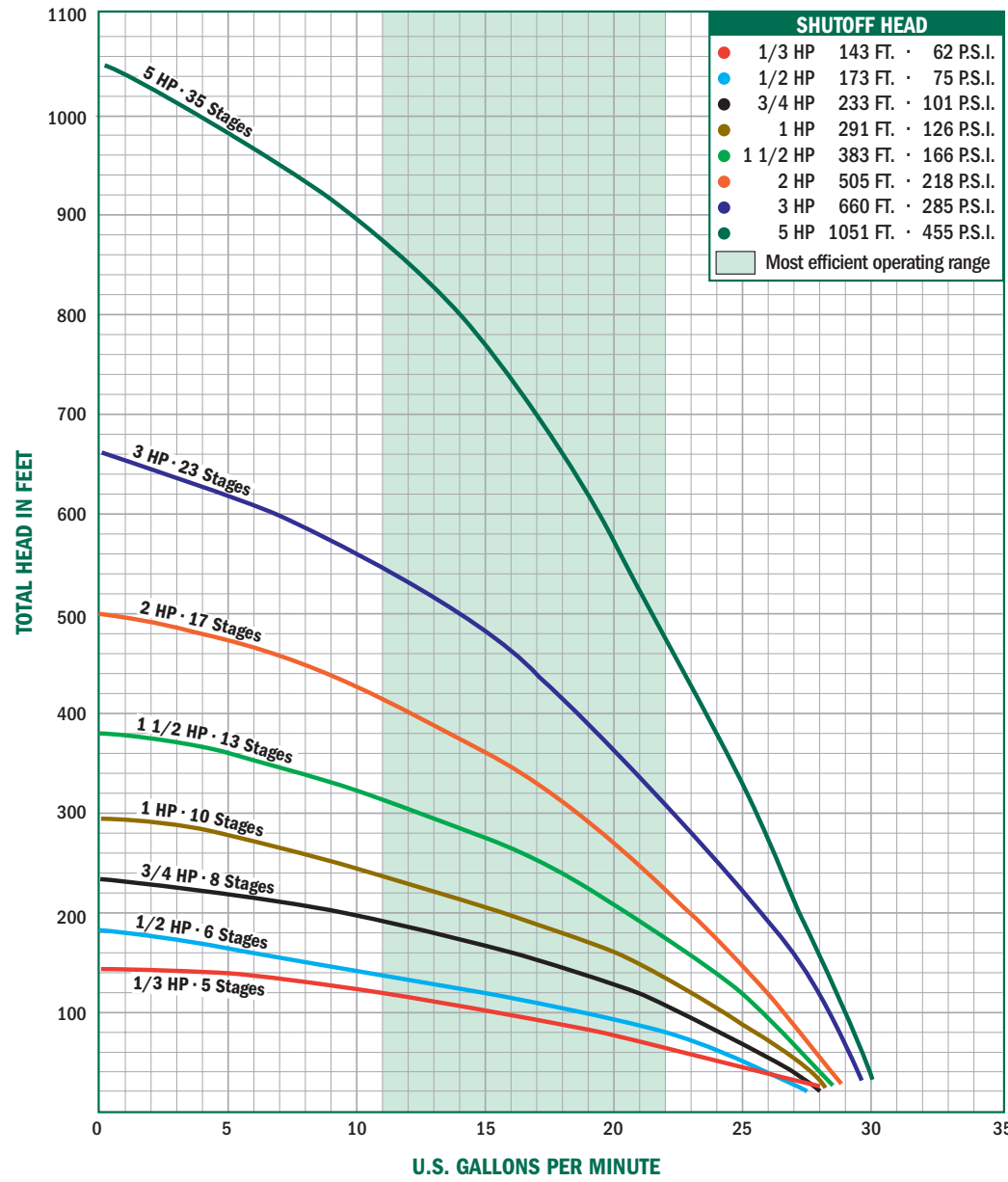
1/2 HP	PSI	25'	50'	75'	100'	125'	150'
	0	28.28	25.58	22.58	19.18	15.14	9.84
30	20.00	16.14	11.23	2.99			
40	16.46	11.66	3.99				
50	12.08	4.85					
60	5.63						

3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'
	0	28.58	26.69	24.66	22.46	20.05	17.33	14.17	10.21	4.08
30	22.98	20.62	17.98	14.94	11.22	5.91				
40	20.81	18.19	15.19	11.54	6.43					
50	18.40	15.44	11.85	6.92						
60	15.68	12.15	7.38							

1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	300'
	0	28.92	27.42	25.84	24.16	22.37	20.44	18.33	15.97	13.26	9.96	5.33
30	24.55	22.79	20.89	18.83	16.53	13.92	10.78	6.60				
40	22.93	21.04	18.99	16.72	14.13	11.05	6.99					
50	21.19	19.15	16.90	14.34	11.31	7.36						
60	19.31	17.08	14.55	11.56	7.71	0.50						

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

L - 15 GPM



Submersible Pumps

1 1/2 HP	PSI	50'	100'	150'	200'	250'	300'	350'
	0	28.02	25.72	23.20	20.39	17.15	13.20	7.62
	30	24.78	22.16	19.20	15.74	11.35	4.06	
	40	23.60	20.84	17.68	13.87	8.68		
	50	22.37	19.44	16.03	11.73	4.93		
	60	21.06	17.94	14.19	9.16			

2 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'
	0	28.57	26.81	24.93	22.92	20.74	18.34	15.61	12.40	8.28	0.77
	30	26.10	24.18	22.11	19.84	17.33	14.44	10.96	6.18		
	40	25.23	23.24	21.09	18.72	16.05	12.93	9.00	2.66		
	50	24.33	22.27	20.02	17.53	14.68	11.25	6.63			
	60	23.40	21.26	18.91	16.27	13.19	9.34	3.38			

3 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'
	0	29.55	28.24	26.88	25.45	23.93	22.33	20.60	18.73	16.67	14.34	11.60	8.12	2.19
	30	27.72	26.34	24.87	23.33	21.67	19.90	17.96	15.80	13.34	10.38	6.38		
	40	27.09	25.67	24.17	22.58	20.87	19.02	16.99	14.71	12.05	8.72	3.56		
	50	26.44	24.99	23.45	21.80	20.04	18.11	15.98	13.54	10.63	6.75			
	60	25.78	24.29	22.70	21.01	19.17	17.16	14.90	12.27	9.01	4.12			

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

5 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'	850'	900'	950'	1000'
	0	29.70	28.91	28.10	27.27	26.42	25.54	24.62	23.68	22.69	21.67	20.59	19.47	18.27	17.00	15.63	14.14	12.49	10.61	8.38	5.43
	30	28.60	27.79	26.95	26.08	25.19	24.26	23.30	22.30	21.26	20.17	19.01	17.79	16.48	15.07	13.53	11.80	9.80	7.36	3.85	
	40	28.23	27.40	26.55	25.67	24.76	23.82	22.85	21.83	20.76	19.64	18.46	17.20	15.85	14.38	12.75	10.92	8.75	5.95	0.69	
	50	27.85	27.01	26.15	25.26	24.33	23.38	22.38	21.34	20.25	19.10	17.89	16.59	15.18	13.65	11.94	9.97	7.57	4.20		
	60	27.47	26.62	25.74	24.83	23.90	22.92	21.91	20.84	19.73	18.55	17.30	15.95	14.49	12.88	11.07	8.93	6.20	1.48		

23000 Series - Domestic Stainless Steel

P - 20 GPM

A.Y. McDonald offers a full line of stainless steel submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include stainless steel discharge head with a built-in check valve, and stainless steel shaft and coupling.

All Stainless Steel Pumps come with a 1 1/4" discharge and sizes range from 1/2 to 5 horsepower (HP). Two wire models up to 1 1/2 and three wire models up to 5 horsepower (HP).

Two Wire Single Phase

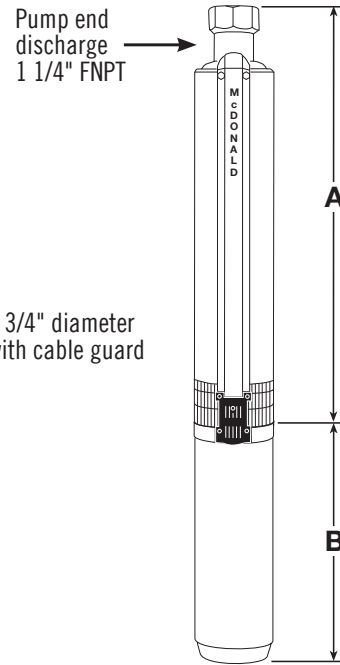
Model No.	HP	Stages	Volt	A	B	WT.
23050P2A	1/2	5	115	12.02"	9.53"	24
23050P2	1/2	5	230	12.02"	9.53"	24
23075P2	3/4	7	230	14.17"	10.66"	28
23100P2	1	9	230	16.32"	11.75"	32
23150P2	1 1/2	12	230	19.54"	15.12"	42

Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	WT.
23050P3A	1/2	5	115	12.02"	9.53"	24
23050P3	1/2	5	230	12.02"	9.53"	24
23075P3	3/4	7	230	14.17"	10.66"	27
23100P3	1	9	230	16.32"	11.75"	32
23150P3	1 1/2	12	230	19.54"	13.62"	38
23200P3	2	14	230	21.69"	15.12"	43
23300P3	3	20	230	29.50"	19.06"	56
23500P3	5	32	230	42.38"	29.62"	84

Three Wire Three Phase

Model No.	HP	Stages	Volt	A	B	WT.
23150P3Z	1 1/2	12	230	19.54"	11.75"	35
23200P3Z	2	14	230	21.69"	13.62"	40
23300P3Z	3	20	230	29.50"	16.04"	49
23500P3Z	5	32	230	42.38"	23.62"	72
23500P3Y	5	32	460	42.38"	23.62"	72



4" Stainless Steel Pump Ends

Model No.	HP	WT.
23050P	1/2	6
23075P	3/4	8
23100P	1	9
23150P	1 1/2	10
23200P	2	11
23300P	3	14
23500P	5	22

Submersible Pumps

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

1/2 HP	PSI	25'	50'	75'	100'	125'
	0	32.34	28.61	24.35	19.26	12.48
	30	20.53	14.28	2.68		
	40	14.83	4.36			
	50	5.68				

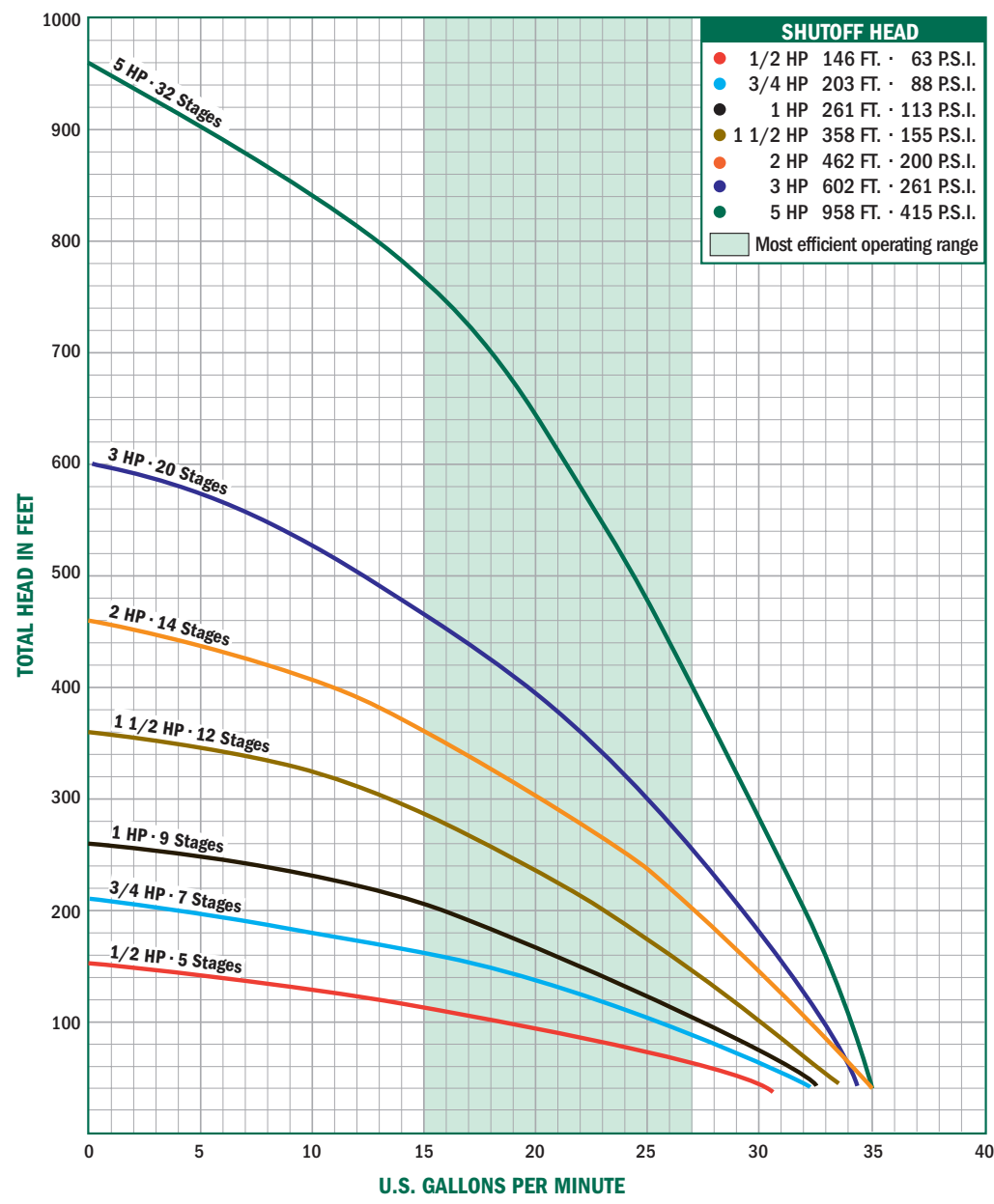
3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'
	0	32.36	29.82	27.06	24.01	20.58	16.54	11.39	2.53
	30	24.74	21.40	17.53	12.71	5.44			
	40	21.67	17.85	13.13	6.20				
	50	18.16	13.54	6.91					
	60	13.93	7.56						

1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'
	0	33.30	31.39	29.36	27.19	24.84	22.26	19.37	16.02	11.88	5.72
	30	27.70	25.39	22.87	20.06	16.84	12.92	7.49			
	40	25.57	23.07	20.29	17.10	13.26	8.01				
	50	23.27	20.51	17.36	13.58	8.50					
60	20.73	17.62	13.90	8.97							

1 1/2 HP	PSI	50'	100'	150'	200'	250'	300'	350'
	0	32.95	29.95	26.64	22.90	18.50	12.88	3.03
	30	28.71	25.26	21.30	16.53	10.04		
	40	27.17	23.50	19.23	13.86	5.38		
	50	25.53	21.62	16.93	10.65			
60	23.80	19.58	14.33	6.32				

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

P - 20 GPM



Submersible Pumps

2 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'
	0	34.88	32.45	29.85	27.04	23.94	20.46	16.41	11.33
30	31.47	28.79	25.88	22.65	18.98	14.61	8.85		
40	30.26	27.48	24.43	21.02	17.07	12.20	5.06		
50	29.00	26.11	22.91	19.28	14.97	9.38			
60	27.70	24.68	21.30	17.40	12.62	5.79			

3 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'
	0	34.31	32.64	30.88	29.03	27.05	24.92	22.61	20.06	17.16	13.72	9.23
30	31.97	30.18	28.28	26.25	24.06	21.66	18.99	15.91	12.16	6.88		
40	31.15	29.31	27.36	25.26	22.98	20.47	17.63	14.29	10.02	2.58		
50	30.32	28.43	26.41	24.23	21.85	19.20	16.16	12.48	7.39			
60	29.46	27.51	25.42	23.16	20.67	17.86	14.57	10.40	3.55			

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

5 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'	850'	900'	950'
	0	35.14	34.10	33.04	31.94	30.80	29.62	28.40	27.12	25.79	24.38	22.90	21.32	19.62	17.78	15.74	13.43	10.69	7.15	.01
30	33.70	32.62	31.50	30.35	29.16	27.91	26.61	25.25	23.82	22.30	20.68	18.93	17.02	14.88	12.43	9.46	5.32			
40	33.20	32.11	30.98	29.80	28.59	27.32	25.99	24.60	23.13	21.56	19.89	18.07	16.06	13.80	11.15	7.77	2.10			
50	32.70	31.59	30.44	29.25	28.01	26.71	25.36	23.93	22.42	20.80	19.07	17.17	15.06	12.64	9.81	5.71				
60	32.19	31.06	29.89	28.68	27.42	26.10	24.71	23.24	21.69	20.02	18.21	16.22	13.98	11.37	8.07	2.79				

M - 25 GPM

A.Y. McDonald offers a full line of stainless steel submersible pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. These submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM). Other features include stainless steel discharge head with a built-in check valve, and stainless steel shaft and coupling.

All Stainless Steel Pumps come with a 1 1/4" discharge and sizes range from 1/2 to 5 horsepower (HP). Two wire models up to 1 1/2 and three wire models up to 5 horsepower (HP).

Two Wire Single Phase

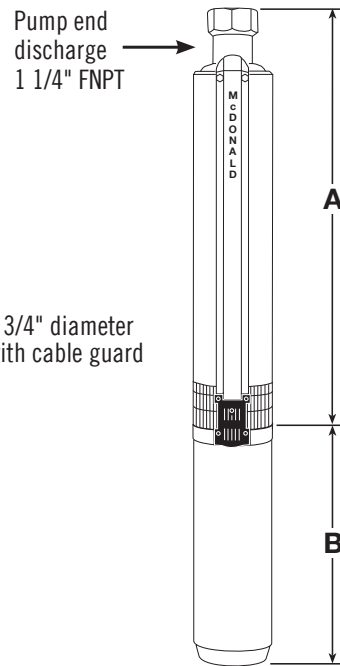
Model No.	HP	Stages	Volt	A	B	WT.
23050M2A	1/2	4	115	10.94"	9.53"	24
23050M2	1/2	4	230	10.94"	9.53"	24
23075M2	3/4	5	230	12.02"	10.66"	26
23100M2	1	7	230	14.17"	11.75"	31
23150M2	1 1/2	9	230	16.32"	15.12"	40

Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	WT.
23050M3A	1/2	4	115	10.94"	9.53"	24
23050M3	1/2	4	230	10.94"	9.53"	24
23075M3	3/4	5	230	12.02"	10.66"	26
23100M3	1	7	230	14.17"	11.75"	30
23150M3	1 1/2	9	230	16.32"	13.62"	36
23200M3	2	12	230	19.54"	15.12"	41
23300M3	3	16	230	23.83"	19.06"	53
23500M3	5	25	230	34.88"	29.62"	83

Three Wire Three Phase

Model No.	HP	Stages	Volt	A	B	WT.
23150M3Z	1 1/2	9	230	16.32"	11.75"	32
23150M3Y	1 1/2	9	460	16.32"	11.75"	33
23200M3Z	2	12	230	19.54"	13.62"	38
23200M3Y	2	12	460	19.54"	13.62"	38
23300M3Z	3	16	230	23.83"	16.04"	46
23300M3Y	3	16	460	23.83"	16.04"	46
23500M3Z	5	25	230	34.88"	23.62"	69
23500M3Y	5	25	460	34.88"	23.62"	69



4" Stainless Steel Pump Ends

Model No.	HP	WT.
23050M	1/2	7
23075M	3/4	7
23100M	1	8
23150M	1 1/2	9
23200M	2	10
23300M	3	11
23500M	5	18

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

1/2 HP	PSI	25'	50'	75'	100'
	0	34.97	29.23	22.43	13.64
	30	15.93	2.93		
	40	4.38			

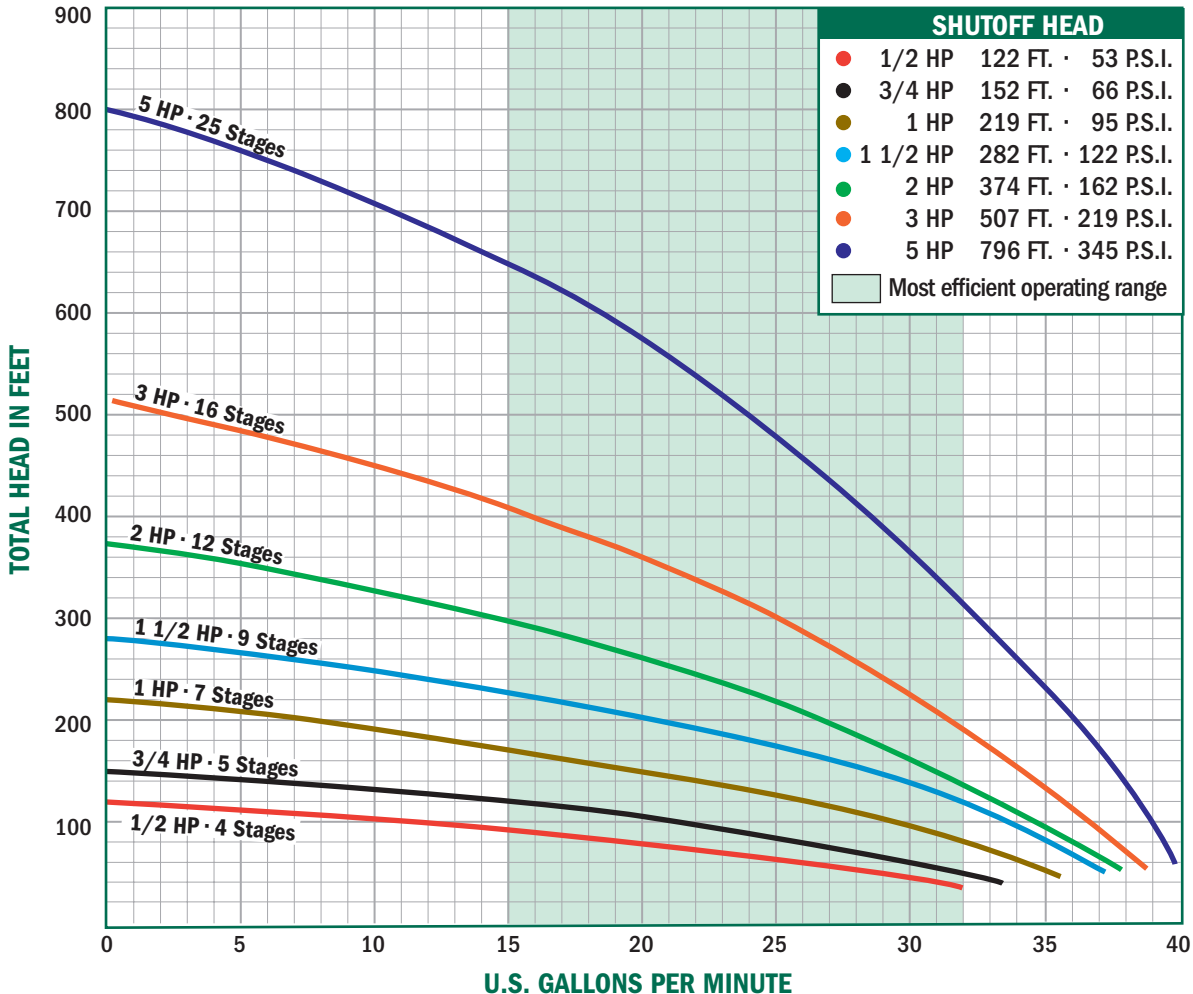
3/4 HP	PSI	25'	50'	75'	100'	125'	150'
	0	36.08	31.97	27.33	21.88	14.91	2.74
	30	23.22	16.71	6.80			
	40	17.27	7.85				
	50	8.81					

1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'
	0	38.23	35.39	32.34	29.02	25.34	21.13	16.10	9.38
	30	29.81	26.22	22.15	17.35	11.16			
	40	26.50	22.48	17.75	11.71	1.28			
	50	22.80	18.14	12.24	2.61				
	60	18.53		3.73					

1 1/2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'
	0	40.00	37.82	35.52	33.08	30.47	27.63	24.52	21.01	16.91	11.76	3.56
	30	33.65	31.08	28.30	25.26	21.85	17.91	13.07	6.06			
	40	31.28	28.52	25.50	22.13	18.24	13.49	6.76				
	50	28.74	25.74	22.40	18.56	13.90	7.42					
	60	25.98		18.87	14.29	8.04						

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

M - 25 GPM



Submersible Pumps

2 HP	PSI	50'	100'	150'	200'	250'	300'	350'
	0	38.07	34.66	30.92	26.74	21.91	15.98	7.38
30	33.26	29.37	24.97	19.79	13.16	1.33		
40	31.52	27.42	22.70	16.98	9.04			
50	29.68	25.33	20.23	13.75	2.92			
60	27.75	23.09	17.47	9.80				

3 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'
	0	39.30	36.84	34.22	31.42	28.38	25.02	21.23	16.75	11.09	1.27
30	35.85	33.16	30.28	27.12	23.62	19.61	14.78	8.24			
40	34.63	31.86	28.86	25.55	21.84	17.51	12.08	3.58			
50	33.38	30.50	27.37	23.90	19.94	15.19	8.85				
60	32.08	29.09	25.82	22.14	17.87	12.56	4.51				

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

5 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'
	0	40.4	38.9	37.4	35.8	34.1	32.4	30.6	28.6	26.5	24.2	21.6	18.7	15.2	11.0	5.8
30	38.3	36.8	35.2	33.5	31.7	29.8	27.8	25.6	23.2	20.5	17.4	13.7	9.2	3.5		
40	37.6	36.0	34.4	32.7	30.9	28.9	26.8	24.5	22.0	19.1	15.8	11.7	6.7			
50	36.9	35.3	33.6	31.9	30.0	28.0	25.8	23.4	20.7	17.7	14.0	9.5				
60	36.2	34.5	32.8	31.0	29.1	27.0	24.7	22.2	19.4	16.1	12.1	7.1				

24000 Series Stainless Steel

A.Y. McDonald offers a full line of 4" submersibles ranging from 1/2 through 5 horsepower, with flow rates ranging from 5 through 25 gallons per minute (GPM). Our 24000 submersibles offer peak capacity performance in 5, 7, 10, 15, 20, and 25 gallons per minute (GPM) models.

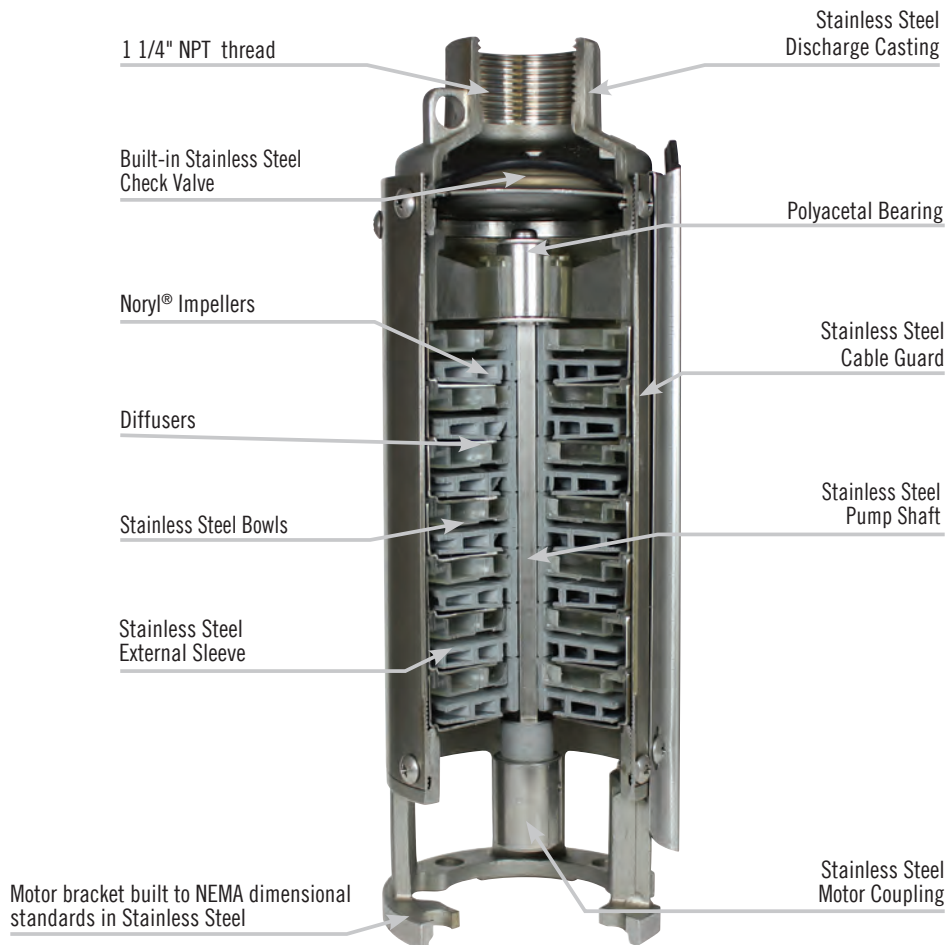
Powered by NEMA approved A.Y. McDonald stainless steel motors.

The charts on the following page will assist you in choosing the pump that meets your needs.



C US
Drinking Water
ANSI/NSF 61

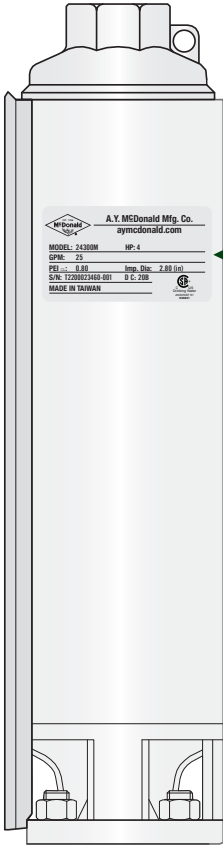
Submersible Pumps



Stainless Steel Motor Two or three wire models, with built-in lightning protection on all single phase pumps. Consult factory for three phase.

Cutaway illustrates features and is not indicative of specific model performance.

Locating the code number on the pump



A.Y. McDonald Mfg. Co.
aymcdonald.com


MODEL: 24300M **HP:** 3

GPM: 25

PEI_{CL}: 0.80 **Imp. Dia:** 2.80 (in)

S/N: T2200023460-001 **D C:** 20B

MADE IN TAIWAN



US
Drinking Water
ANSI/NSF 61
600631

A code appears on each A.Y. McDonald 24000 series submersible pump. Contained in this code is the following information:

- Pump Model
- Date of manufacture
- Motor HP
- Pump Series

MATERIALS OF CONSTRUCTION

Discharge Head	Stainless Steel 304, discharge 1 1/4" NPT from 5 GPM to 25 GPM series
Motor Adapter	Stainless Steel 304, NEMA standard
Check Valve	Stainless Steel 304
External Sleeve	Stainless Steel 304 polished
Impellers	Noryl
Diffusers	Polycarbonate
Bearing	Polyacetal
Shaft Coupling	Stainless Steel 304
Strainer	Thermoplastic
Shaft	Stainless Steel 304
Cable Guard	Stainless Steel 304

NOTES

- Standard is 230V, Single Phase, 60 HZ (no suffix letter required)
- Two-Wire Single phase models include; pump, motor, leads.
- Three-Wire Single phase models include; pump, motor, leads, and control box.
- Three-Wire Three phase models include; pump, motor, leads, and starter kit.
- All submersible pumps include **internal check valves and grounded lead on motor.**

Submersible Pumps

J - 5 GPM

All Stainless Steel Submersible Pumps are designed to pump within the 5 gallons per minute (GPM) range. Sizes are available from 1/2 to 1 1/2 HP. All models are standard with 1 1/4" NPT discharge.

Two Wire Single Phase

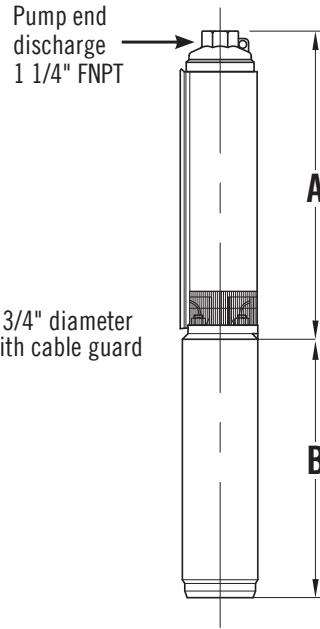
Model No.	HP	Stages	Volt	A	B	Wt.
24050J2A	1/2	12	115	14.1	9.5	26.0
24050J2	1/2	12	230	14.1	9.5	26.0
24075J2	3/4	15	230	16.2	10.6	30.1
24100J2	1	20	230	19.8	11.7	34.8
24150J2	1 1/2	26	230	25.3	15.1	43.8

Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	Wt.
24050J3A	1/2	12	115	14.1	9.5	27.0
24050J3	1/2	12	230	14.1	9.5	27.0
24075J3	3/4	15	230	16.2	10.6	30.1
24100J3	1	20	230	19.8	11.7	34.8
24150J3	1 1/2	26	230	25.3	13.6	40.8

Three Wire Three Phase

Model No.	HP	Stages	Volt	A	B	Wt.
24150J3Z	1 1/2	26	230	25.3	11.7	36.8



4" Stainless Steel Pump Ends

Model No.	HP	Wt.
24050J	1/2	8
24075J	3/4	9
24100J	1	11
24150J	1 1/2	13

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

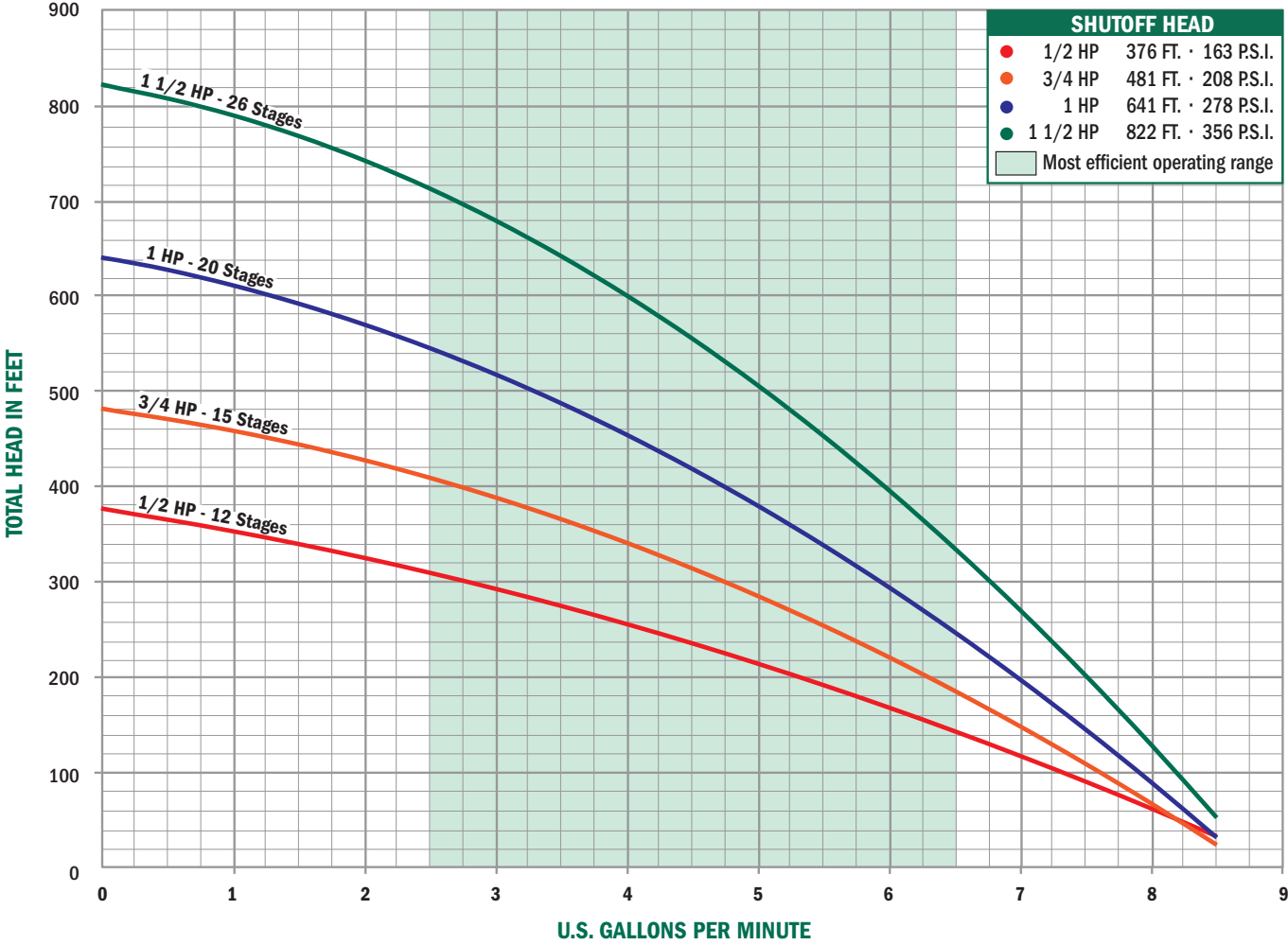
1/2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'
	0	8.6	8.2	7.8	7.3	6.8	6.4	5.8	5.3	4.7	4.1	3.5	2.8	2.0
30	7.4	7.0	6.5	6.0	5.4	4.9	4.3	3.6	2.9	2.2	1.3			
50	6.5	6.0	5.5	5.0	4.4	3.7	3.1	2.3	1.5					
60	6.1	5.6	5.0	4.4	3.8	3.1	2.4	1.5						

3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'	400'	425'	450'
	0	8.5	8.2	7.9	7.6	7.3	7.0	6.6	6.3	5.9	5.6	5.2	4.7	4.3	3.8	3.3	2.7	2.1	1.3
30	7.7	7.4	7.0	6.7	6.4	6.0	5.6	5.3	4.8	4.4	3.9	3.4	2.9	2.2	1.5				
50	7.1	6.8	6.4	6.1	5.7	5.3	4.9	4.5	4.0	3.5	3.0	2.3	1.6						
60	6.8	6.5	6.1	5.7	5.3	4.9	4.5	4.0	3.5	3.0	2.4	1.7							

FRICITION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

J - 5 GPM

Submersible Pumps



1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'	400'	425'	450'	475'	500'	525'	550'	575'	600'
	0	8.5	8.3	8.1	7.9	7.7	7.4	7.2	7.0	6.7	6.5	6.2	5.9	5.7	5.4	5.1	4.7	4.4	4.1	3.7	3.3	2.9	2.4	1.9	1.3
30	8.0	7.7	7.5	7.3	7.0	6.8	6.5	6.3	6.0	5.7	5.4	5.1	4.8	4.5	4.1	3.8	3.4	3.0	2.5	2.0	1.4				
50	7.5	7.3	7.1	6.8	6.6	6.3	6.0	5.8	5.5	5.2	4.9	4.5	4.2	3.8	3.5	3.0	2.6	2.1	1.5						
60	7.3	7.1	6.8	6.6	6.3	6.1	5.8	5.5	5.2	4.9	4.6	4.2	3.9	3.5	3.1	2.6	2.1	1.6							

1 1/2 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'	850'
	0	8.5	8.2	7.9	7.5	7.1	6.8	6.4	6.0	5.5	5.1	4.6	4.0	3.4	2.7	1.9		
30	8.1	7.7	7.4	7.0	6.6	6.2	5.8	5.4	4.9	4.4	3.8	3.1	2.4	1.5				
50	7.7	7.4	7.0	6.7	6.3	5.8	5.4	4.9	4.4	3.8	3.2	2.5	1.6					
60	7.6	7.2	6.9	6.5	6.1	5.6	5.2	4.7	4.1	3.5	2.9	2.1						

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

V - 7 GPM

All Stainless Steel Submersible Pumps are designed to pump within the 7 gallons per minute (GPM) range. Sizes are available from 1/2 to 2 HP. All models are standard with 1 1/4" NPT discharge.

Two Wire Single Phase

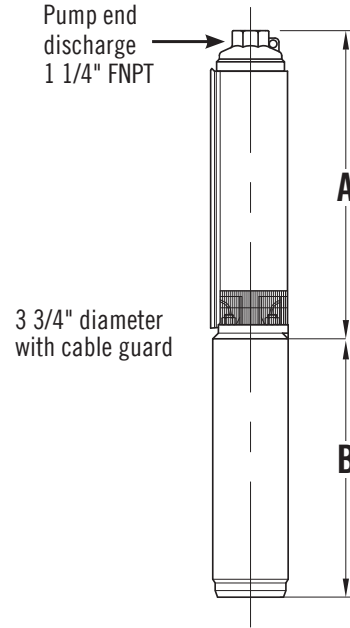
Model No.	HP	Stages	Volt	A	B	Wt.
24050V2A	1/2	10	115	13.0	9.5	25.3
24050V2	1/2	10	230	13.0	9.5	25.3
24075V2	3/4	13	230	15.2	10.6	29.4
24100V2	1	17	230	17.9	11.7	33.9
24150V2	1 1/2	22	230	21.4	15.1	42.9

Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	Wt.
24050V3A	1/2	10	115	13.0	9.5	26.3
24050V3	1/2	10	230	13.0	9.5	26.3
24075V3	3/4	13	230	15.2	10.6	29.4
24100V3	1	17	230	17.9	11.7	33.9
24150V3	1 1/2	22	230	21.5	13.6	39.9
24200V3	2	27	230	26.6	15.1	47.5

Three Wire Three Phase

Model No.	HP	Stages	Volt	A	B	Wt.
24150V3Z	1 1/2	22	230	21.5	11.7	35.9
24200V3Z	2	27	230	26.6	13.6	42.5



4" Stainless Steel Pump Ends

Model No.	HP	Wt.
24050V	1/2	8
24075V	3/4	9
24100V	1	10
24150V	1 1/2	12
24200V	2	15

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

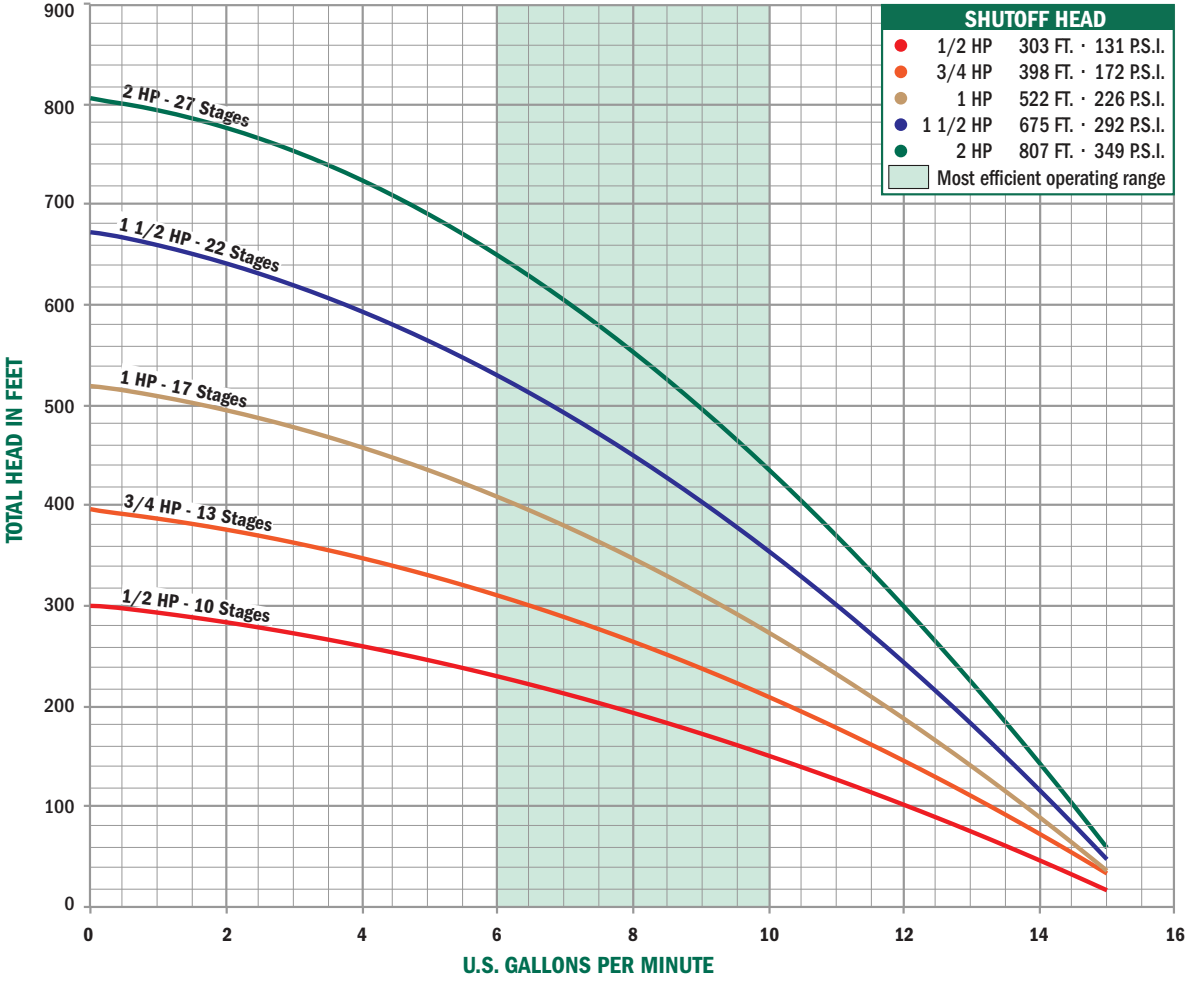
1/2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'
	0	14.8	14.0	13.1	12.2	11.2	10.1	9.0	7.8	6.4	4.9	3.0
30	12.4	11.4	10.4	9.3	8.1	6.7	5.2	3.5	1.1			
50	10.5	9.5	8.3	7.0	5.5	3.8	1.5					
60	9.5	8.4	7.1	5.6	3.9	1.7						

3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'
	0	15.3	14.6	14.0	13.4	12.7	11.9	11.2	10.4	9.5	8.6	7.7	6.6	5.4	4.0	2.3
30	13.5	12.8	12.1	11.4	10.6	9.7	8.9	7.9	6.8	5.7	4.3	2.7				
50	12.2	11.5	10.7	9.9	9.0	8.0	7.0	5.9	4.6	3.0						
60	11.5	10.8	9.9	9.1	8.1	7.1	6.0	4.7	3.1	1.0						

1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'	400'	425'	450'	475'	500'
	0	15.2	14.8	14.3	13.8	13.4	12.8	12.3	11.8	11.2	10.6	10.0	9.4	8.7	8.0	7.2	6.4	5.5	4.5	3.3	1.8
30	14.0	13.5	13.0	12.4	11.9	11.4	10.8	10.2	9.5	8.9	8.2	7.4	6.6	5.7	4.7	3.6	2.2				
50	13.0	12.5	12.0	11.4	10.9	10.3	9.6	9.0	8.3	7.5	6.7	5.8	4.9	3.7	2.4						
60	12.6	12.0	11.5	10.9	10.3	9.7	9.0	8.3	7.6	6.8	5.9	4.9	3.8	2.5							

FRICITION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

V - 7 GPM



Submersible Pumps

1 1/2 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'
	0	15.0	14.3	13.5	12.8	11.9	11.1	10.1	9.1	8.1	6.8	5.5	3.8	1.7
	30	14.0	13.2	12.4	11.6	10.7	9.8	8.7	7.6	6.3	4.9	3.1		
	50	13.3	12.5	11.7	10.8	9.8	8.8	7.7	6.4	5.0	3.2			
	60	12.9	12.1	11.3	10.4	9.4	8.3	7.1	5.8	4.2	2.2			

2 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'
	0	15.1	14.6	14.0	13.3	12.7	12.0	11.3	10.6	9.8	9.0	8.1	7.1	6.0	4.8	3.2	0.7
	30	14.3	13.7	13.1	12.4	11.8	11.0	10.3	9.5	8.7	7.7	6.7	5.6	4.2	2.4	0.8	
	50	13.8	13.1	12.5	11.8	11.1	10.4	9.6	8.7	7.8	6.8	5.7	4.3	2.6			
	60	13.5	12.8	12.2	11.5	10.8	10.0	9.2	8.3	7.4	6.3	5.1	3.6	1.5			

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

K - 10 GPM

All Stainless Steel Submersible Pumps are designed to pump within the 10 gallons per minute (GPM) range. Sizes are available from 1/2 to 5 HP. All models are standard with 1 1/4" NPT discharge.

Two Wire Single Phase

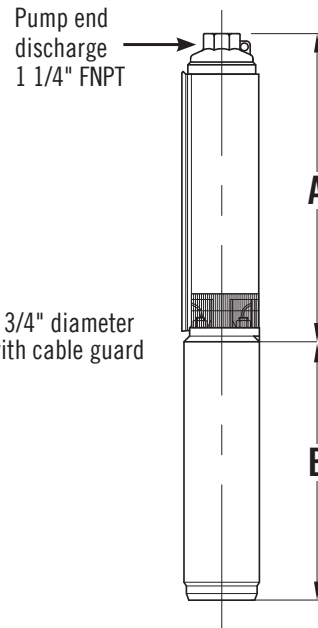
Model No.	HP	Stages	Volt	A	B	Wt.
24050K2A	1/2	7	115	10.7	9.5	24.2
24050K2	1/2	7	230	10.7	9.5	24.2
24075K2	3/4	10	230	12.8	10.6	28.3
24100K2	1	12	230	14.1	11.7	32.0
24150K2	1 1/2	17	230	17.6	15.1	40.7

Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	Wt.
24050K3A	1/2	7	115	10.7	9.5	25.2
24050K3	1/2	7	230	10.7	9.5	25.2
24075K3	3/4	10	230	12.8	10.6	28.3
24100K3	1	12	230	14.1	11.7	32.0
24150K3	1 1/2	17	230	17.6	13.6	37.7
24200K3	2	20	230	19.6	15.1	43.8
24300K3	3	27	230	26.0	19.0	54.3
24500K3	5	42	230	36.1	29.2	90.0

Three Wire Three Phase

Model No.	HP	Stages	Volt	A	B	Wt.
24150K3Z	1 1/2	17	230	17.6	11.7	33.7
24200K3Z	2	20	230	19.6	13.6	38.8
24300K3Z	3	27	230	26.0	16.0	48.3
24500K3Z	5	42	230	36.1	23.2	75.0



4" Stainless Steel Pump Ends

Model No.	HP	Wt.
24050K	1/2	8
24075K	3/4	9
24100K	1	10
24150K	1 1/2	12
24200K	2	15

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

1/2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'
	0	19.2	17.8	16.3	14.7	12.9	10.9	8.5	5.2
	30	15.1	13.4	11.4	9.1	6.1			
	50	11.7	9.5	6.6					
	60	9.7	6.9						

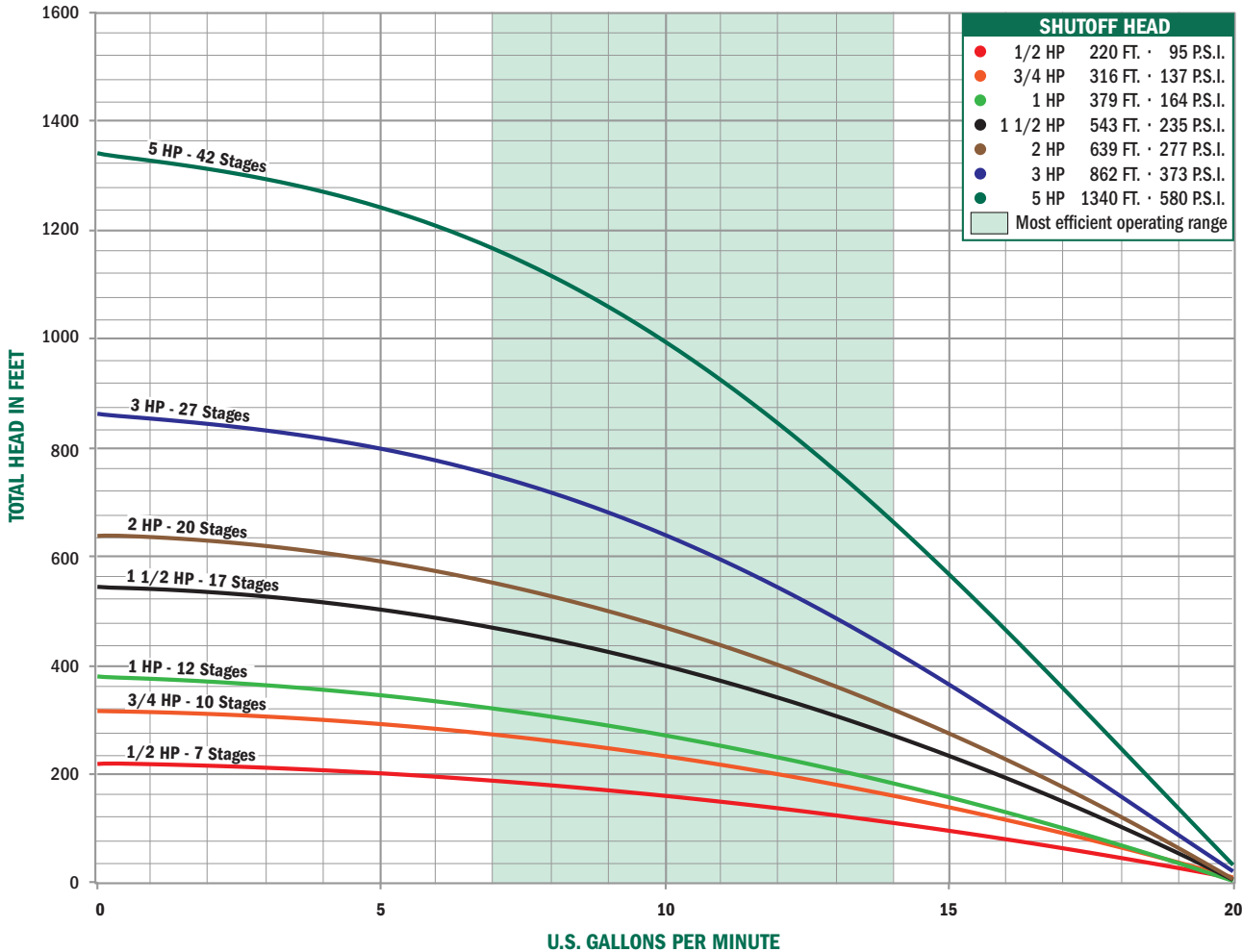
3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'
	0	19.5	18.6	17.6	16.7	15.6	14.5	13.3	12.0	10.5	8.8	6.8	3.9
	30	16.9	15.9	14.8	13.6	12.3	10.9	9.2	7.3	4.7			
	50	14.9	13.8	12.5	11.1	9.5	7.6	5.2					
	60	13.9	12.6	11.2	9.6	7.8	5.4						

1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'
	0	19.4	18.6	17.8	17.0	16.2	15.3	14.3	13.3	12.3	11.1	9.8	8.4	6.7	4.5	1.0
	30	17.2	16.4	15.5	14.6	13.6	12.5	11.4	10.1	8.7	7.1	5.1	2.1			
	50	15.6	14.7	13.7	12.7	11.5	10.3	8.9	7.3	5.4	2.7					
	60	14.8	13.8	12.8	11.6	10.4	9.0	7.5	5.6	3.0						

1 1/2 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'
	0	19.1	18.1	17.0	15.8	14.6	13.2	11.7	10.0	7.9	5.2
	30	17.7	16.6	15.4	14.1	12.6	11.1	9.2	7.0	3.7	
	50	16.6	15.5	14.2	12.8	11.2	9.4	7.2	4.0		
	60	16.1	14.9	13.5	12.1	10.4	8.4	5.9			

FRICION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

K - 10 GPM



Submersible Pumps

2 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'
	0	19.3	18.4	17.5	16.5	15.5	14.4	13.3	12.0	10.6	9.0	7.1	4.5
30	18.1	17.1	16.2	15.1	14.0	12.8	11.5	10.0	8.3	6.2	3.0		
50	17.2	16.2	15.2	14.1	12.9	11.6	10.1	8.4	6.4	3.3			
60	16.8	15.8	14.7	13.6	12.3	10.9	9.4	7.5	5.1				

3 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'	850'
	0	19.6	18.9	18.2	17.4	16.7	16.0	15.2	14.4	13.6	12.8	11.9	10.9	9.8	8.5	7.0	4.9	1.4
30	18.6	17.9	17.2	16.4	15.7	14.9	14.1	13.3	12.4	11.5	10.5	9.3	8.0	6.3	3.8			
50	17.9	17.2	16.5	15.8	15.0	14.2	13.4	12.5	11.6	10.5	9.4	8.1	6.4	4.1				
60	17.6	16.9	16.2	15.4	14.6	13.8	13.0	12.1	11.2	10.0	8.8	7.4	5.5					

5 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'	850'	900'	950'	1000'	1050'	1100'	1150'	1200'	1250'	1300'
	0	19.8	19.4	18.9	18.5	18.0	17.5	17.1	16.6	16.1	15.7	15.2	14.7	14.2	13.6	13.1	12.5	11.9	11.3	10.6	9.9	9.2	8.3	7.3	6.2	4.7	2.7
30	19.2	18.7	18.3	17.8	17.4	16.9	16.4	16.0	15.5	15.0	14.5	14.0	13.4	12.9	12.3	11.7	11.1	10.4	9.6	8.8	7.9	6.9	5.7	4.0	1.5		
50	18.8	18.3	17.9	17.4	16.9	16.5	16.0	15.5	15.0	14.5	14.0	13.5	12.9	12.3	11.7	11.1	10.4	9.7	8.9	8.0	7.0	5.8	4.2				
60	18.6	18.1	17.6	17.2	16.7	16.2	15.8	15.3	14.8	14.3	13.8	13.2	12.7	12.1	11.5	10.8	10.1	9.3	8.5	7.6	6.5	5.1	3.2				

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

L - 15 GPM

All Stainless Steel Submersible Pumps are designed to pump within the 15 gallons per minute (GPM) range. Sizes are available from 1/2 to 5 HP. All models are standard with 1 1/4" NPT discharge.

Two Wire Single Phase

Model No.	HP	Stages	Volt	A	B	Wt.
24050L2A	1/2	5	115	9.3	9.5	23.5
24050L2	1/2	5	230	9.3	9.5	23.5
24075L2	3/4	7	230	10.7	10.6	27.2
24100L2	1	10	230	12.8	11.7	31.1
24150L2	1 1/2	12	230	14.1	15.1	38.7

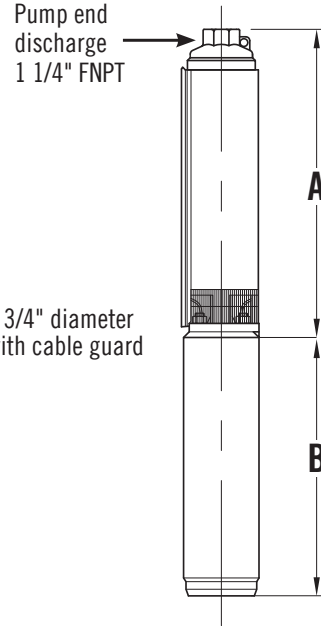
Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	Wt.
24050L3A	1/2	5	115	9.3	9.5	24.5
24050L3	1/2	5	230	9.3	9.5	24.5
24075L3	3/4	7	230	10.7	10.6	27.2
24100L3	1	10	230	12.8	11.7	31.1
24150L3	1 1/2	12	230	14.1	13.6	35.7
24200L3	2	17	230	17.6	15.1	42.5
24300L3	3	21	230	20.4	19.0	52.1
24500L3	5	35	230	31.6	29.2	88.0

Three Wire Three Phase

Model No.	HP	Stages	Volt	A	B	Wt.
24150L3Z	1 1/2	12	230	14.1	11.7	31.7
24200L3Z	2	17	230	17.6	13.6	37.5
24300L3Z	3	21	230	20.4	16.0	46.1
24500L3Z	5	35	230	31.6	23.2	73.0

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).



4" Stainless Steel Pump Ends

Model No.	HP	Wt.
24050L	1/2	6
24075L	3/4	7
24100L	1	8
24150L	1 1/2	9
24200L	2	10
24300L	3	12
24500L	5	17

Output - in Gallons Per Minute (Depth to Water)

1/2 HP	PSI	25'	50'	75'	100'	125'	150'
	0	22.7	20.4	17.8	14.6	10.6	3.1
	30	15.4	11.7	5.8	9.1	6.1	
	50	7.0	9.5	6.6			

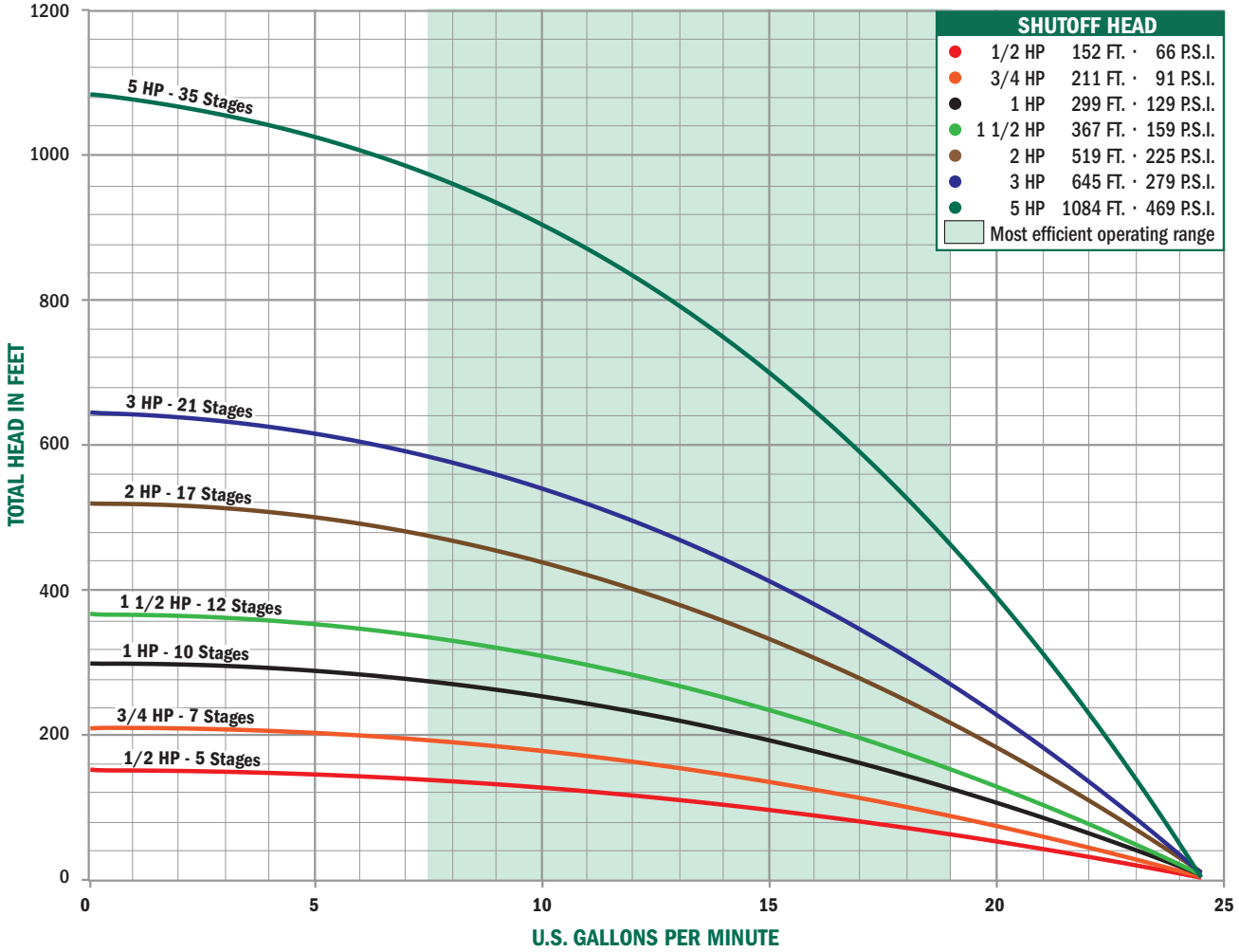
3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'
	0	23.3	21.7	20.0	18.1	16.0	13.6	10.5	6.0
	30	18.6	16.5	14.2	11.3	7.3			
	50	14.6	11.8	8.1					
60	12.0	8.4							

1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'
	0	23.8	22.7	21.6	20.4	19.1	17.7	16.2	14.5	12.6	10.4	7.4
	30	20.6	19.4	18.0	6.6	14.9	13.1	10.9	8.2	3.6		
	50	18.2	16.8	15.2	13.4	11.3	8.7	4.7				
60	16.9	15.3	13.5	11.5	8.9	5.1						

1 1/2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'
	0	23.9	23.1	22.1	21.2	20.2	19.1	18.0	16.8	15.5	14.1	12.6	10.8	8.6	5.6
	30	21.4	20.4	19.4	18.3	17.1	15.8	14.5	12.9	11.2	9.1	6.4			
	50	19.5	18.4	17.3	16.0	14.7	13.2	11.5	9.5	6.9					
60	18.5	17.4	16.1	14.8	13.3	11.6	9.6	7.1							

FRICITION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

L - 15 GPM



Submersible Pumps

2 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'
	0	23.6	22.3	21.0	19.5	17.9	16.2	14.3	12.1	9.3	5.1
	30	21.8	20.4	18.9	17.3	15.5	13.5	11.1	7.9		
	50	20.5	19.0	17.4	15.7	13.7	11.3	8.2			
	60	19.8	18.3	16.6	14.8	12.6	10.0	6.3			

3 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'
	0	23.8	22.8	21.7	20.6	19.5	18.2	16.9	15.4	13.7	11.8	9.5	6.4
	30	22.4	21.3	20.2	19.0	17.7	16.3	14.8	13.0	11.0	8.4	4.7	
	50	21.4	20.3	19.1	17.8	16.4	14.9	13.2	11.1	8.6	5.0		
	60	20.9	19.8	18.5	17.2	15.7	14.1	12.3	10.1	7.2	2.0		

5 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'	850'	900'	950'	1000'
	0	24.0	23.5	23.0	22.4	21.8	21.2	20.5	19.9	19.2	18.4	17.6	16.8	15.9	15.0	14.0	12.8	11.5	10.1	8.4	6.3
	30	23.3	22.7	22.2	21.6	20.9	20.3	19.6	18.9	18.1	17.3	16.5	15.6	14.6	13.5	12.3	11.0	9.5	7.7	5.3	
	50	22.8	22.2	21.6	21.0	20.3	19.7	18.9	18.2	17.4	16.6	15.6	14.7	13.6	12.4	11.1	9.6	7.8	5.5		
	60	22.5	21.9	21.3	20.7	20.0	19.3	18.6	17.8	17.0	16.1	15.2	14.2	13.1	11.9	10.5	8.8	6.8			

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

P - 20 GPM

All Stainless Steel Submersible Pumps are designed to pump within the 20 gallons per minute (GPM) range. Sizes are available from 1/2 to 5 HP. All models are standard with 1 1/4" NPT discharge.

Two Wire Single Phase

Model No.	HP	Stages	Volt	A	B	Wt.
24050P2A	1/2	5	115	10.1	9.5	24.0
24050P2	1/2	5	230	10.1	9.5	24.0
24075P2	3/4	6	230	11.0	10.6	27.2
24100P2	1	8	230	12.7	11.7	30.9
24150P2	1 1/2	11	230	15.2	15.1	39.0

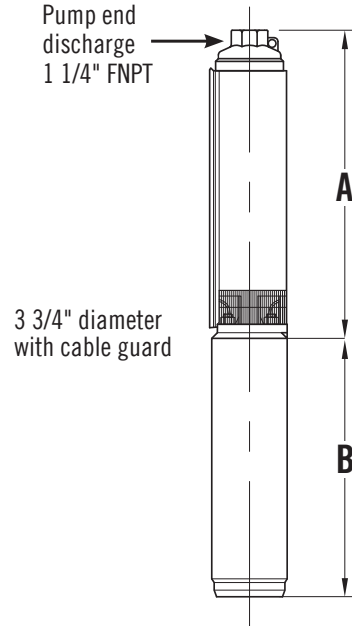
Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	Wt.
24050P3A	1/2	5	115	10.1	9.5	25.0
24050P3	1/2	5	230	10.1	9.5	25.0
24075P3	3/4	6	230	11.0	10.6	27.2
24100P3	1	8	230	12.7	11.7	30.9
24150P3	1 1/2	11	230	15.2	13.6	36.0
24200P3	2	14	230	17.8	15.1	42.1
24300P3	3	19	230	22.0	19.0	51.8
24500P3	5	30	230	32.6	29.2	87.0

Three Wire Three Phase

Model No.	HP	Stages	Volt	A	B	Wt.
24150P3Z	1 1/2	11	230	15.2	11.7	32.0
24200P3Z	2	14	230	17.8	13.6	37.1
24300P3Z	3	19	230	22.0	16.0	45.8
24500P3Z	5	30	230	32.6	23.2	72.0

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).



4" Stainless Steel Pump Ends

Model No.	HP	Wt.
24050P	1/2	6
24075P	3/4	7
24100P	1	8
24150P	1 1/2	9
24200P	2	10
24300P	3	12
24500P	5	17

Output - in Gallons Per Minute (Depth to Water)

1/2 HP	PSI	25'	50'	75'	100'	125'
	0	30.3	26.8	22.8	18.0	11.6
	30	19.2	13.3			
	50	4.8				

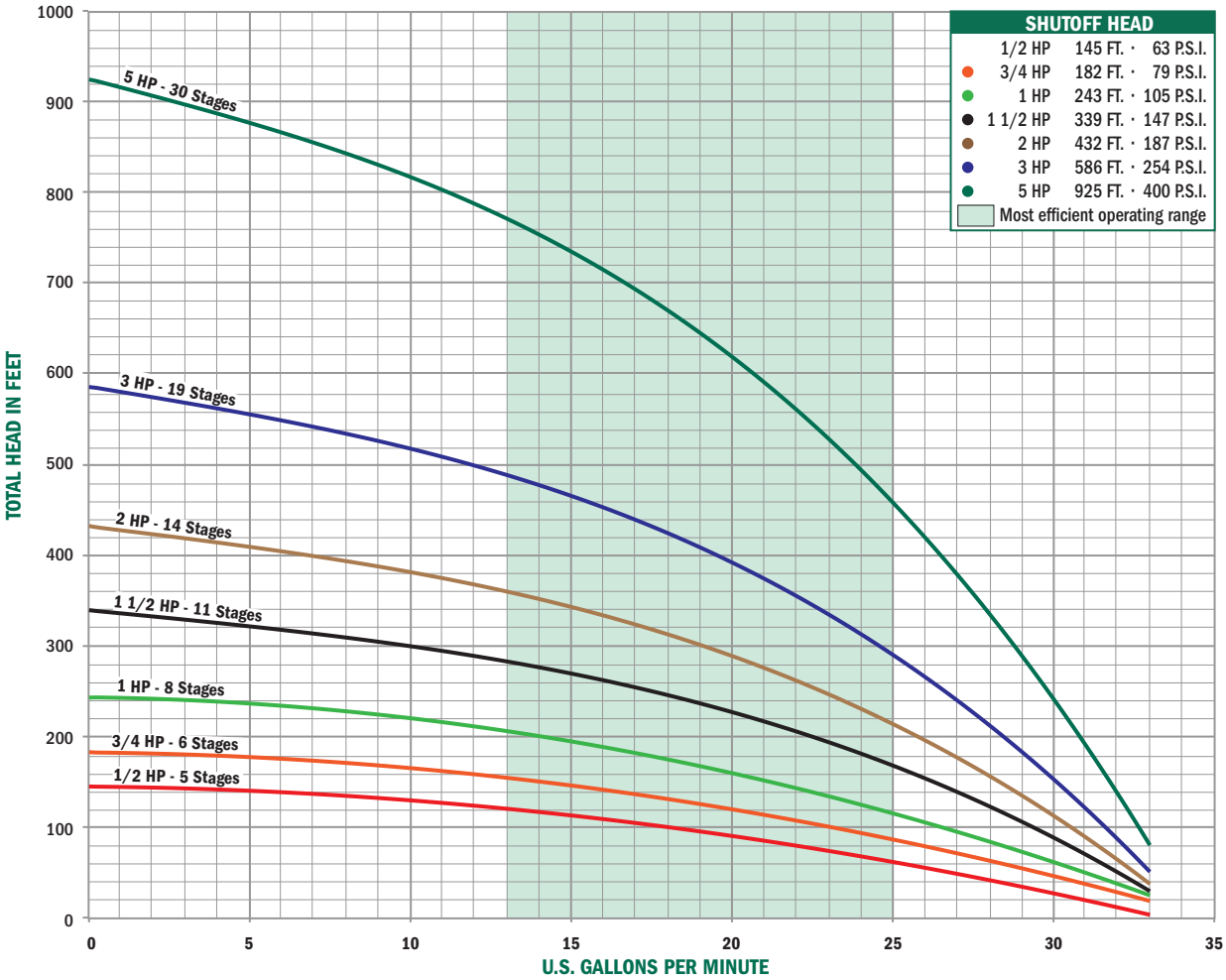
3/4 HP	PSI	25'	50'	75'	100'	125'	150'	175'
	0	32.3	29.6	26.5	23.1	19.1	14.1	6.2
	30	23.9	20.1	15.4	8.6			
	50	16.2	9.9					
60	10.5							

1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'
	0	33.0	31.0	28.8	26.5	24.0	21.2	18.0	14.1	8.8
	30	27.1	24.6	21.9	18.7	15.1	10.2			
	50	22.3	19.2	15.7	11.1					
60	19.5	16.0	11.5							

1 1/2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'
	0	33.2	32.0	30.7	29.4	27.9	26.3	24.5	22.5	20.2	17.5	14.2	9.9	4.1
	30	29.7	28.2	26.6	24.9	23.0	20.7	18.2	15.0	11.0	5.6			
	50	26.9	25.2	23.3	21.1	18.6	15.5	11.7	6.5					
60	25.3	23.4	21.3	18.8	15.8	12.0	7.0							

FRICION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

P - 20 GPM



Submersible Pumps

2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'	400'
	0	33.5	32.5	31.6	30.5	29.5	28.3	27.1	25.8	24.3	22.8	21.1	19.1	16.9	14.2	10.9	6.8
	30	30.8	29.7	28.6	27.4	26.1	24.7	23.2	21.5	19.6	17.4	14.8	11.8	7.8			
	50	28.8	27.6	26.3	24.9	23.4	21.7	19.9	17.7	15.3	12.3	8.5					
	60	27.7	26.4	25.0	23.5	21.9	20.0	17.9	15.5	12.5	8.8						

3 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'
	0	33.0	31.6	30.1	28.4	26.6	24.6	22.3	19.5	16.2	11.9	5.8
	30	31.0	29.5	27.8	25.9	23.7	21.3	18.3	14.7	9.8	2.8	
	50	29.6	27.9	26.0	23.9	21.5	18.6	15.0	10.2	3.4		
	60	28.8	27.1	25.1	22.8	20.2	17.0	13.0	7.4			

5 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'	850'	900'
	0	33.5	32.7	31.8	30.8	29.8	28.8	27.7	26.5	25.2	23.8	22.3	20.7	18.8	16.7	14.2	11.2	7.4	2.7
	30	32.3	31.4	30.4	29.4	28.4	27.2	26.0	24.7	23.3	21.7	20.0	18.0	15.8	13.1	9.8	5.7		
	50	31.5	30.5	29.5	28.4	27.3	26.1	24.8	23.4	21.8	20.1	18.2	16.0	13.3	10.1	6.0			
	60	31.0	30.1	29.0	27.9	26.8	25.5	24.2	22.7	21.1	19.3	17.2	14.8	11.9	8.4	3.8			

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

M - 25 GPM

All Stainless Steel Submersible Pumps are designed to pump within the 25 gallons per minute (GPM) range. Sizes are available from 1 to 5 HP. All models are standard with 1 1/4" NPT discharge.

Submersible Pumps

Two Wire Single Phase

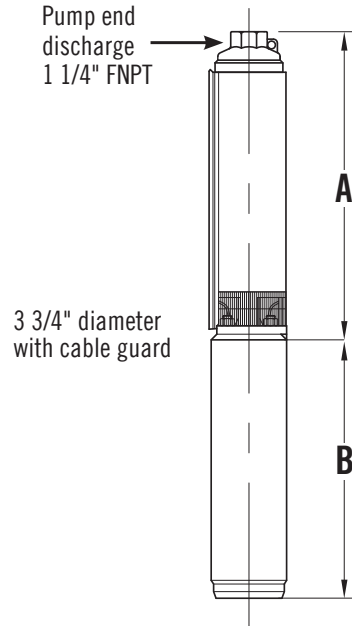
Model No.	HP	Stages	Volt	A	B	Wt.
24100M2	1	7	230	12.6	11.7	30.9
24150M2	1 1/2	9	230	14.6	15.1	38.7

Three Wire** Single Phase

Model No.	HP	Stages	Volt	A	B	Wt.
24100M3	1	7	230	12.6	11.7	30.9
24150M3	1 1/2	9	230	14.6	13.6	35.7
24200M3	2	11	230	16.5	15.1	41.6
24300M3	3	15	230	20.4	19.0	51.4
24500M3	5	26	230	32.5	29.2	86.7

Three Wire Three Phase

Model No.	HP	Stages	Volt	A	B	Wt.
24150M3Z	1 1/2	9	230	14.6	11.7	31.7
24200M3Z	2	11	230	16.5	13.6	36.6
24300M3Z	3	15	230	20.4	16.0	45.4
24500M3Z	5	26	230	32.5	23.2	71.7



4" Stainless Steel Pump Ends

Model No.	HP	Wt.
24100M	1	7
24150M	1 1/2	9
24200M	2	10
24300M	3	12
24500M	5	16

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

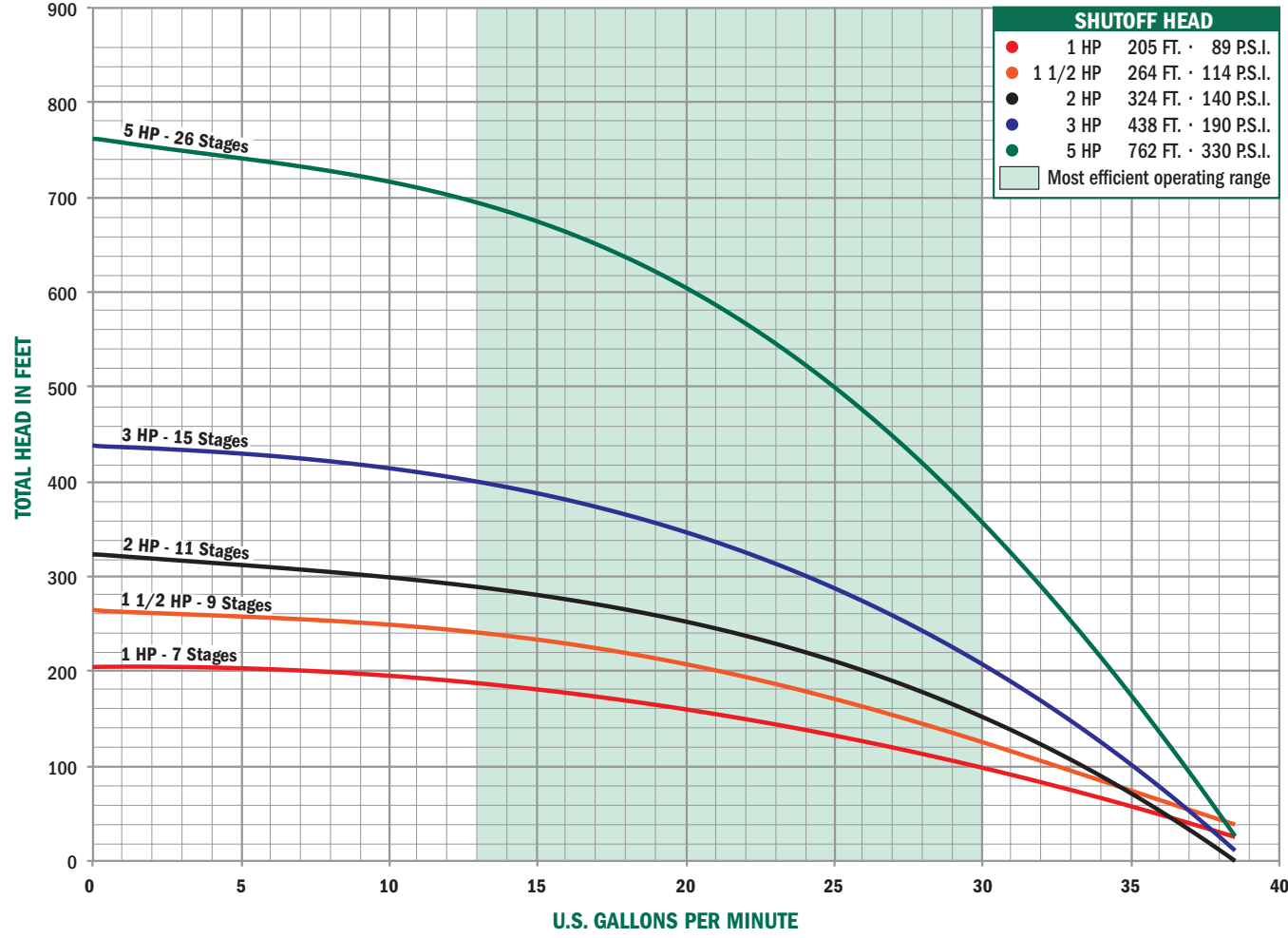
1 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'
	0	38.5	35.9	33.0	29.8	26.2	22.0	16.6	7.7
	30	30.5	27.0	23.0	18.0	10.5			
	50	23.7	18.8	12.0					

1 1/2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'
	0	39.9	37.4	34.9	32.5	30.0	27.4	24.5	21.2	16.9	9.7
	30	33.1	30.6	28.0	25.2	22.0	18.0	11.9			
	50	28.4	25.7	22.5	18.7	13.1					
60	25.9	22.8	19.0	13.7							

2 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'
	0	37.4	36.1	34.8	33.4	31.8	30.1	28.2	26.1	23.5	20.4	16.2	9.7
	30	33.7	32.2	30.5	28.7	26.6	24.1	21.1	17.3	11.5	1.9		
	50	30.8	29.0	26.9	24.5	21.6	17.9	12.6	3.6				
60	29.1	27.1	24.7	21.9	18.3	13.1	4.4						

FRICITION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

M - 25 GPM



Submersible Pumps

3 HP	PSI	25'	50'	75'	100'	125'	150'	175'	200'	225'	250'	275'	300'	325'	350'	375'	400'	425'
	0	38.0	37.1	36.1	35.1	34.0	32.9	31.7	30.4	29.0	27.5	25.9	24.1	22.0	19.7	16.8	13.0	6.9
30	35.3	34.2	33.1	31.9	30.7	29.3	27.9	26.3	24.5	22.5	20.0	17.5	14.0	8.7				
50	33.3	32.1	30.9	29.5	28.1	26.5	24.8	22.8	20.6	18.0	14.6	9.7						
60	32.2	31.0	29.7	28.2	26.7	24.9	23.0	20.8	18.2	14.9	10.2							

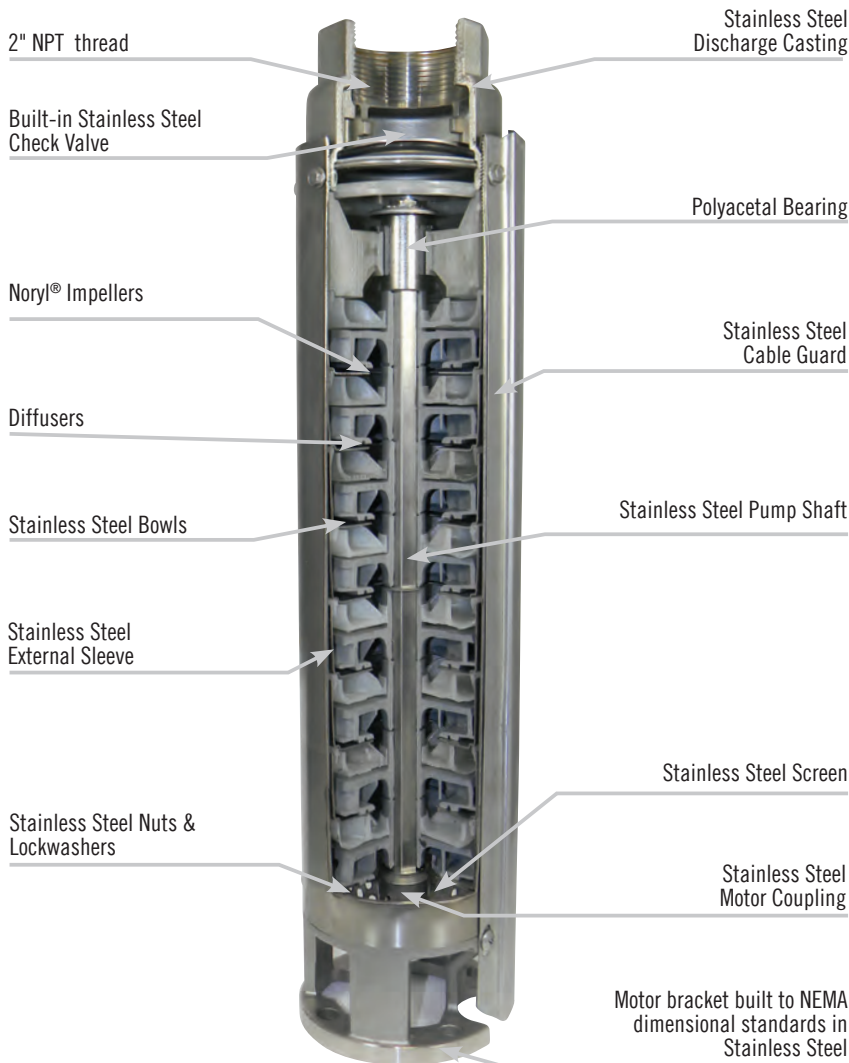
5 HP	PSI	50'	100'	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'
	0	38.0	36.8	35.6	34.4	33.1	31.7	30.2	28.6	26.9	25.0	22.8	20.2	17.0	12.3
30	36.4	35.1	33.9	32.5	31.1	29.6	28.0	26.2	24.2	21.9	19.1	15.4	9.5		
50	35.2	34.0	32.6	31.2	29.7	28.1	26.3	24.3	22.1	19.3	15.8	10.1			
60	34.7	33.4	32.0	30.5	29.0	27.3	25.4	23.3	20.9	17.8	13.6				

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

24000 Series High Flow

A.Y. McDonald offers a full line of 4" submersibles ranging from 1 through 10 horsepower, with flow rates ranging from 35 through 80 gallons per minute (GPM). Our 24000 high flow submersibles offer peak capacity performance in 35, 40, 55, 60, and 80 gallons per minute (GPM) models.

- Powered by NEMA approved A.Y. McDonald stainless steel motors
- Delivery: up to 124 GPM at 3450 rpm
- Head: up to 1300' at 3450 rpm
- The charts on the following page will assist you in choosing the pump that meets your needs.



How to Order 4" Submersible Pumps

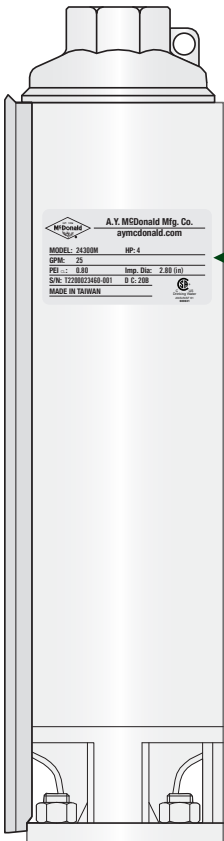
Order by Model Number - Example: 24200R3

24	200	R	3		
Series Stainless Steel	Horsepower 100 - 1 HP 150 - 1 1/2 HP 200 - 2 HP 300 - 3 HP 500 - 5 HP 750 - 7 1/2 HP 1000 - 10 HP	GPM R - 35 GPM G - 40 GPM S - 55 GPM Q - 60 GPM T - 80 GPM	Wires Two wire or Three wire	Other Leave blank for 230V 60 HZ, Single Phase (Standard) A - 115V Single Phase Other Options - Contact Factory Z - 230V Three Phase Y - 460V Three Phase	Controls Leave blank for Control (Standard) LB - Less box (Single Phase Option) LS - Less starter (Three Phase Option)

Model 24200R3 is a 2 HP, three wire, 230 volt, single phase stainless steel 4" high flow submersible pump, designed to pump in the 35 GPM range.

NOTES

- Standard is 230V, Single Phase, 60 HZ (no suffix letter required)
- **Two-Wire Single phase** models include; pump, motor, leads.
- **Three-Wire Single phase** models include; pump, motor, leads, and control box.
- **Three-Wire Three phase** models include; pump, motor, leads, and starter kit.
- All submersible pumps include **internal check valves and grounded lead on motor.**



Locating the code number on the pump

A.Y. McDonald Mfg. Co.
aymcdonald.com


MODEL: 24300M HP: 3

GPM: 25

PEI CL: 0.80 Imp. Dia: 2.80 (in)

S/N: T2200023460-001 D C: 20B

MADE IN TAIWAN


 C US
 Drinking Water
 ANS/NSF 61
 600651

A code appears on each A.Y. McDonald 24000 series submersible pump. Contained in this code is the following information:

- Pump Model
- Date of manufacture
- Motor HP
- Pump Series

MATERIALS OF CONSTRUCTION

Discharge Head	Stainless Steel 304, discharge 2" NPT from 35 GPM to 80 GPM series
Motor Adapter	Stainless Steel 304, NEMA standard
Check Valve	Stainless Steel 304
External Sleeve	Stainless Steel 304 polished
Impellers	Noryl
Diffusers	Polycarbonate
Bearing	Polyacetal
Shaft Coupling	Stainless Steel 304
Strainer	Stainless Steel 304
Shaft	Stainless Steel 304
Cable Guard	Stainless Steel 304

Submersible Pumps

R - 35 GPM

All Stainless Steel Submersible Pumps are designed to pump within the 35 gallons per minute (GPM) range. Sizes are available from 1 to 10 HP. All models are standard with 2" NPT discharge.

Two Wire Single Phase

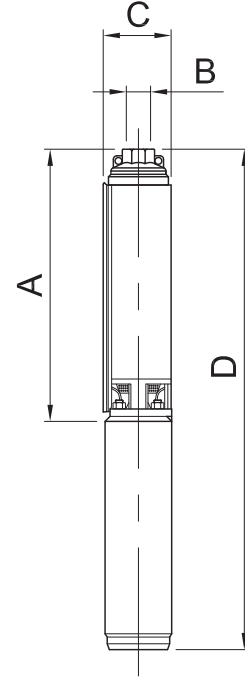
Model No.	HP	Stages	Volt	A	B	C	D	Wt.
24100R2	1	6	230	14.1"	2"	3.9"	29.1"	38
24150R2	1 1/2	8	230	16.6"	2"	3.9"	32.5"	40

Three Wire Single Phase

Model No.	HP	Stages	Volt	A	B	C	D	Wt.
24100R3	1	6	230	14.1"	2"	3.9"	29.1"	38
24150R3	1 1/2	8	230	16.6"	2"	3.9"	32.5"	48
24200R3	2	10	230	19.0"	2"	3.9"	36.3"	52
24300R3	3	14	230	23.9"	2"	3.9"	43.4"	75
24500R3	5	22	230	35.2"	2"	3.9"	62.0"	103

Three Wire Three Phase

Model No.	HP	Stages	Volt	A	B	C	D	Wt.
24150R3Z	1 1/2	8	230	16.6"	2"	3.9"	31.5"	42
24150R3Y	1 1/2	8	460	16.6"	2"	3.9"	31.5"	37
24200R3Z	2	10	230	19.0"	2"	3.9"	35.0"	62
24200R3Y	2	10	460	19.0"	2"	3.9"	35.0"	48
24300R3Z	3	14	230	23.9"	2"	3.9"	41.2"	60
24300R3Y	3	14	460	23.9"	2"	3.9"	41.2"	54
24500R3Z	5	22	230	35.2"	2"	3.9"	62.0"	79
24500R3Y	5	22	460	35.2"	2"	3.9"	62.0"	74
24750R3Z	7 1/2	34	230	49.5"	2"	3.9"	76.4"	98
24750R3Y	7 1/2	34	460	49.5"	2"	3.9"	76.4"	97
241000R3Y	10	43	460	51.9"	2"	3.9"	82.7"	159



4" Stainless Steel Pump Ends

Model No.	HP	Wt.
24100R	1	8
24150R	1 1/2	9
24200R	2	11
24300R	3	13
24500R	5	18
24750R	7 1/2	26
241000R	10	31

Output - in Gallons Per Minute (Depth to Water)

1 HP	PSI	20'	40'	60'	80'	100'	120'	140'
	0			43	39	34	27.5	17.5
	30	38	32	24	15	19		
	50	24	14					

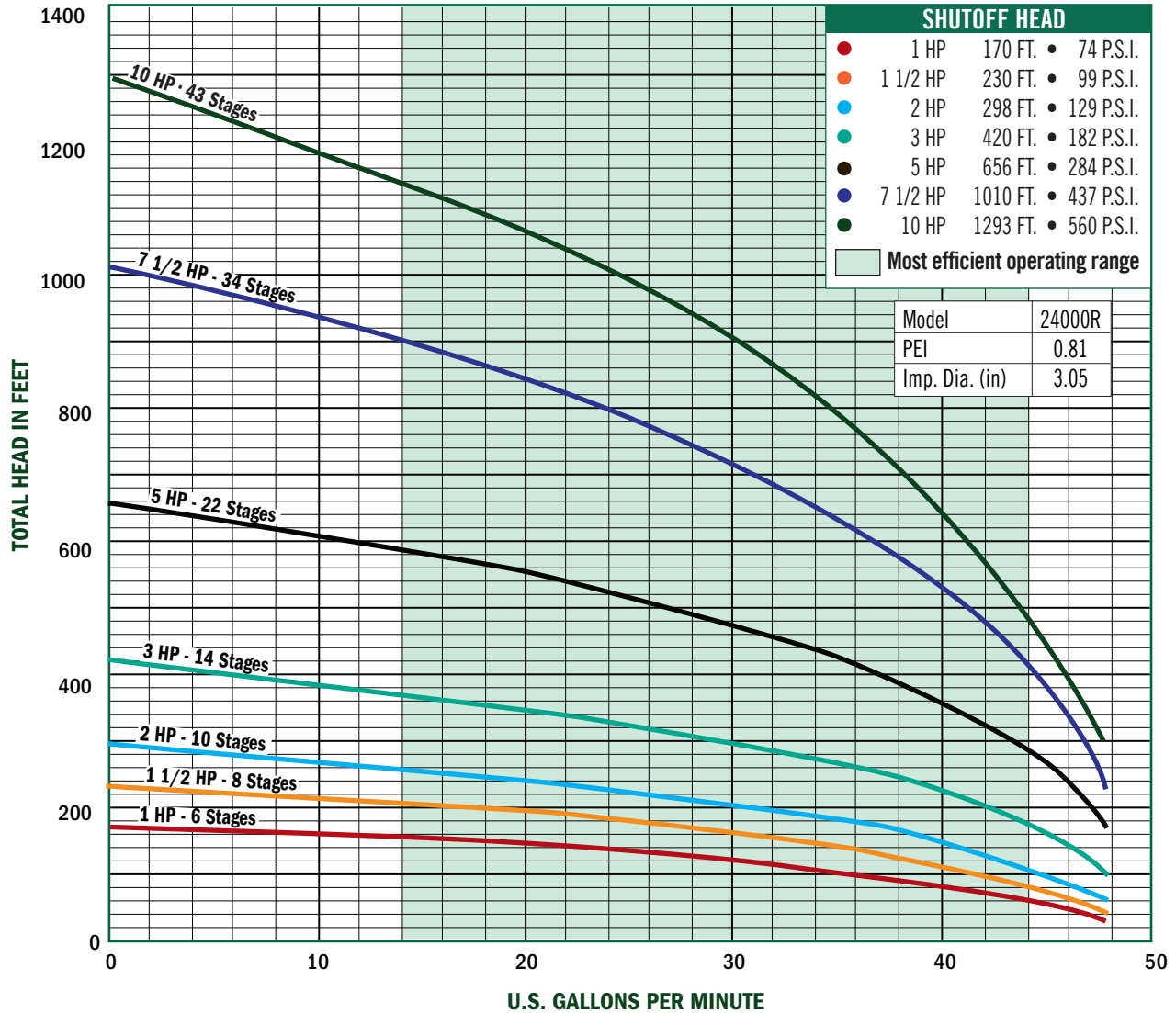
1 1/2 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'	200'
	0				44	42	38	34	30	24	16
	30		40	37	28	25	22	10			
	50	37	28	25	20	8					

2 HP	PSI	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'
	0				44.3	42.3	41	39	35	30	24	18	12
	30		42	41	39	35	30	21	16	9			
	50	41	39	35	30	21	16	8					

3 HP	PSI	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'
	0						44.5	43.5	42	40	38	35.8	32.2	28	20	10
	30			44	42.5	41	40	38	35	32	26	24	20	14		
	50	42.5	41	40.5	39	36	34	31	27	22	18	13				

FRICITION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

R - 35 GPM



Submersible Pumps

5 HP	PSI	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'
	0			45	43	40	36.5	32	26.8	20	11.8
	30		44.5	42	39	32	30	24	16.8		
	50	44.5	42.5	39.8	35.8	29.	25				

7 1/2 HP	PSI	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'	850'	900'
	0				41	39	36.5	34	31	27	23.5	19	12	
	30			41	40	38	35	32.3	29	25	22	17	12	
	50	43	42	40	37.8	5	31.3	29	26	21	16	12		

10 HP	PSI	450'	500'	550'	600'	650'	700'	750'	800'	850'	900'	950'	1000'	1050'	1100'	1150'	1200'
	0				43	41	40	38	36	34	31.5	28.5	26	22.3	18.2	14.2	10
	30		43.2	41.2	40.3	38.3	37	35	33	30	27.3	24	21	17	13		
	50	43.5	42.2	40.5	39.5	37	35.8	33	31	28	25	21	18				

FRICION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

G - 40 GPM

All Stainless Steel Submersible Pumps are designed to pump within the 40 gallons per minute (GPM) range. Sizes are available from 1 1/2 to 7 1/2 HP. All models are standard with 2" NPT discharge.

Two Wire Single Phase

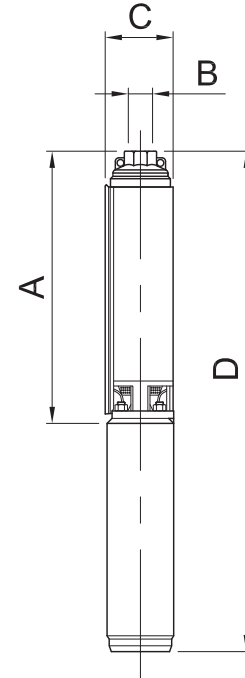
Model No.	HP	Stages	Volt	A	B	C	D	Wt.
24150G2	1 1/2	5	230	12.8"	2"	3.9"	28.7"	37

Three Wire Single Phase

Model No.	HP	Stages	Volt	A	B	C	D	Wt.
24150G3	1 1/2	5	230	12.8"	2"	3.9"	28.7"	48
24200G3	2	6	230	14.0"	2"	3.9"	31.3"	51
24300G3	3	8	230	16.5"	2"	3.9"	35.9"	73
24500G3	5	14	230	23.8"	2"	3.9"	50.7"	99

Three Wire Three Phase

Model No.	HP	Stages	Volt	A	B	C	D	Wt.
24150G3Z	1 1/2	5	230	12.8"	2"	3.9"	27.8"	47
24150G3Y	1 1/2	5	460	12.8"	2"	3.9"	27.8"	40
24200G3Z	2	6	230	14.0"	2"	3.9"	30.0"	47
24200G3Y	2	6	460	14.0"	2"	3.9"	30.0"	46
24300G3Z	3	8	230	16.5"	2"	3.9"	33.8"	60
24300G3Y	3	8	460	16.5"	2"	3.9"	33.8"	51
24500G3Z	5	14	230	23.8"	2"	3.9"	50.7"	75
24500G3Y	5	14	460	23.8"	2"	3.9"	50.7"	71
24750G3Z	7 1/2	21	230	33.8"	2"	3.9"	60.7"	93
24750G3Y	7 1/2	21	460	33.8"	2"	3.9"	60.7"	93



4" Stainless Steel Pump Ends

Model No.	HP	Wt.
24150G	1 1/2	7
24200G	2	8
24300G	3	9
24500G	5	13
24750G	7 1/2	18

Output - in Gallons Per Minute (Depth to Water)

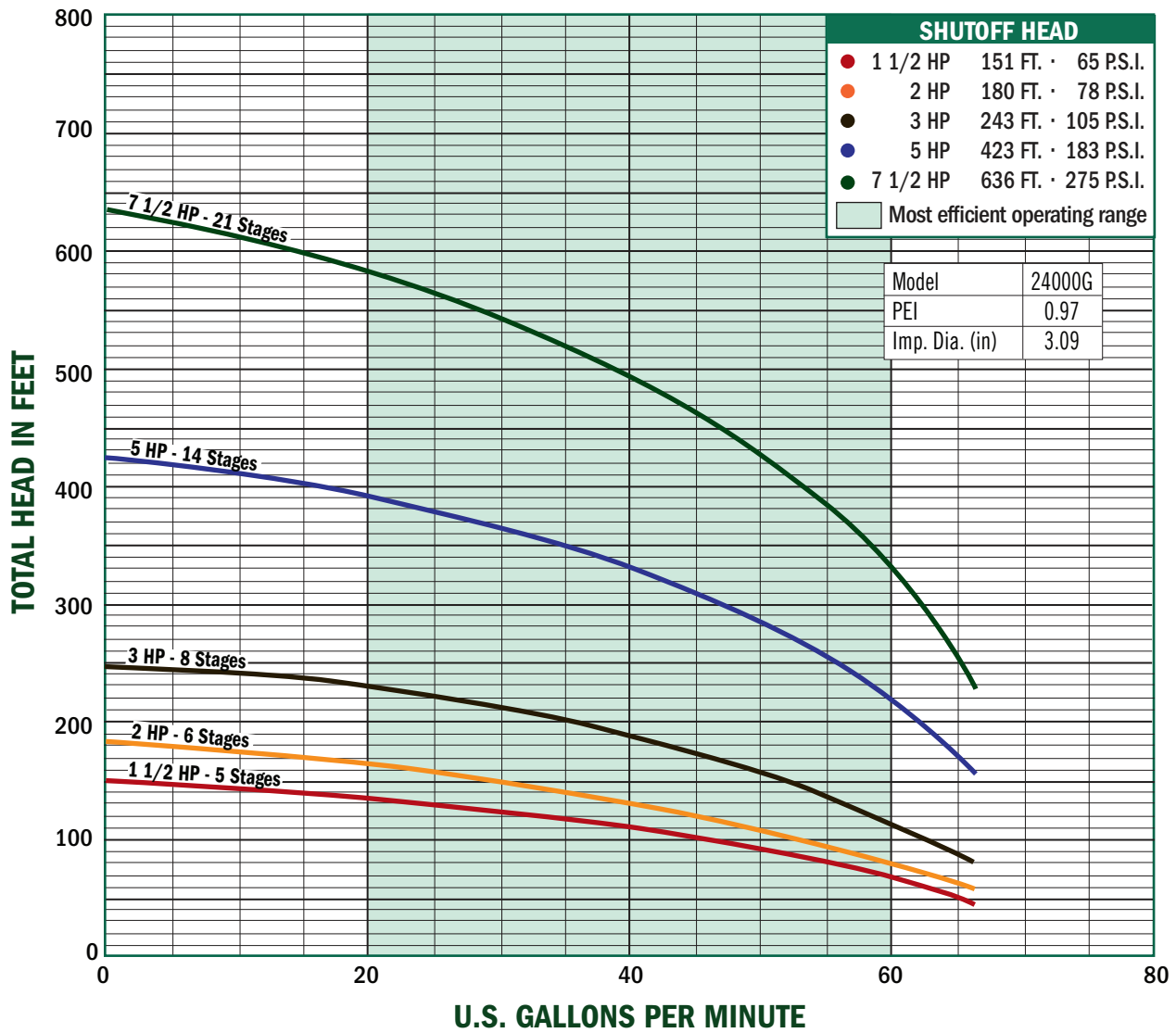
1 1/2 HP	PSI	20'	30'	40'	50'	60'	70'	80'	90'	100'	120'	140'
	0				65	63	57	54	50	45	32	15
	30			40	31	22	12					
	50	17	12									

2 HP	PSI	20'	30'	40'	50'	60'	70'	80'	90'	100'	120'	140'	160'
	0					66	63	58	56	53	43	34	22
	30	55	52.5	47.5	44	38	34	28	22	12			
	50	37.5	32	27	17.5	12							

3 HP	PSI	20'	30'	40'	50'	60'	70'	80'	90'	100'	120'	140'	160'	180'	200'	240'
	0							66	64	62.5	57	53	43	42	35	10
	30	66	62.5	60	58	57	55	53	43	42	38	31	20	5		
	50	55	52.5	50	47.5	44	41	38	33	27	20					

FRICITION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

G - 40 GPM



Submersible Pumps

5 HP	PSI	100'	120'	160'	180'	200'	220'	240'	260'	280'	300'	320'	340'	360'	380'	400'
	0					63	58	56	53	50	46	42	37	32	23	16
	30			57	56	52	48	44	40	34	27	18				
	50	60	57	51	47	43	38	33	26	22						

7 1/2 HP	PSI	220'	240'	260'	280'	300'	320'	340'	360'	380'	400'	420'	440'	460'	500'	540'
	0					63	61	58	57	55	53	51	48	45	38	30
	30			59	58	57	53	52	48	46	43	40	37	32	22	
	50	61	57	56	53	52	48	44	42	38	35	31	23			

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

S - 55 GPM

All Stainless Steel Submersible Pumps are designed to pump within the 55 gallons per minute (GPM) range. Sizes are available from 1 1/2 to 10 HP. All models are standard with 2" NPT discharge.

Two Wire Single Phase

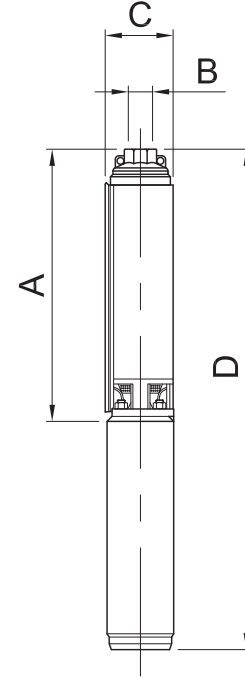
Model No.	HP	Stages	Volt	A	B	C	D	Wt.
24150S2	1 1/2	5	230	17.0"	2"	3.9"	33.0"	40

Three Wire Single Phase

Model No.	HP	Stages	Volt	A	B	C	D	Wt.
24150S3	1 1/2	5	230	17.0"	2"	3.9"	33.0"	44
24200S3	2	7	230	21.1"	2"	3.9"	38.5"	48
24300S3	3	9	230	25.2"	2"	3.9"	44.7"	60
24500S3	5	15	230	37.5"	2"	3.9"	64.4"	95

Three Wire Three Phase

Model No.	HP	Stages	Volt	A	B	C	D	Wt.
24150S3Z	1 1/2	5	230	17.0"	2"	3.9"	32.0"	38
24150S3Y	1 1/2	5	460	17.0"	2"	3.9"	32.0"	38
24200S3Z	2	7	230	21.1"	2"	3.9"	37.1"	44
24200S3Y	2	7	460	21.1"	2"	3.9"	37.1"	44
24300S3Z	3	9	230	25.2"	2"	3.9"	42.6"	51
24300S3Y	3	9	460	25.2"	2"	3.9"	42.6"	51
24500S3Z	5	15	230	37.5"	2"	3.9"	64.4"	74
24500S3Y	5	15	460	37.5"	2"	3.9"	64.4"	73
24750S3Z	7 1/2	22	230	53.0"	2"	3.9"	79.8"	97
24750S3Y	7 1/2	22	460	53.0"	2"	3.9"	79.8"	95
241000S3Y	10	29	460	67.2"	2"	3.9"	98.1"	106



4" Stainless Steel Pump Ends

Model No.	HP	Wt.
24150S	1 1/2	10
24200S	2	12
24300S	3	14
24500S	5	20
24750S	7 1/2	28
241000S	10	35

Output - in Gallons Per Minute (Depth to Water)

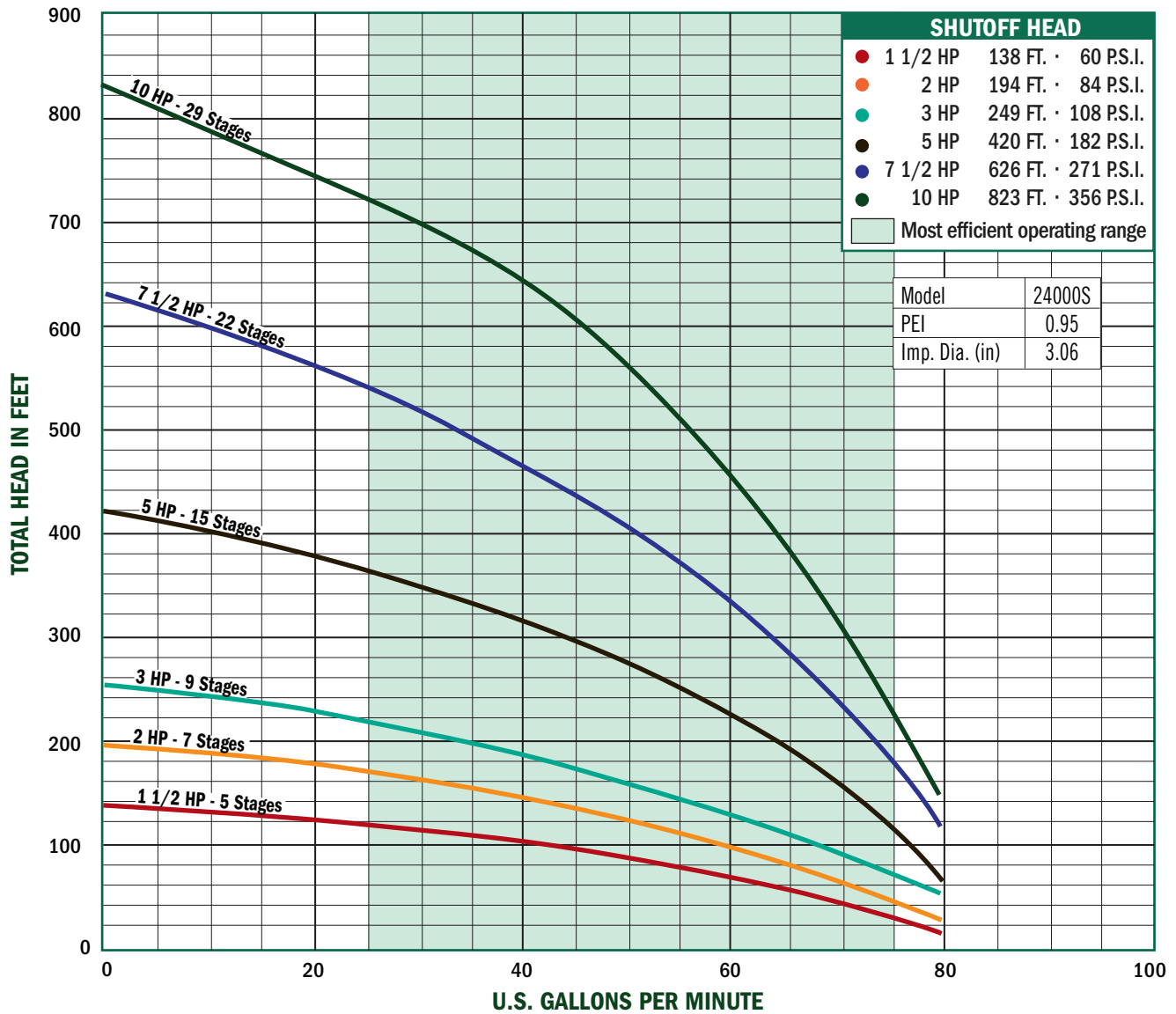
1 1/2 HP	PSI	20'	30'	40'	50'	60'	70'	80'	90'	100'	120'
	0			72.5	67.5	65	60	52.5	45	42.5	20
	30	47.5	42.5	32.5	20						

2 HP	PSI	10'	20'	30'	40'	50'	60'	70'	80'	90'	100'	120'	140'	160'	180'
	0				77.5	75	72.5	68	67	62.5	60	52	42.5	32	19
	30		62	60	55	52	47	43	37	32	25				

3 HP	PSI	20'	30'	40'	50'	60'	70'	80'	90'	100'	120'	140'	160'	180'	200'	240'
	0					79	76	73	70	68	62.5	57	50	42	34	24
	30			66	62.5	60	57	53	50	46	38	24	17			

FRICITION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

S - 55 GPM



Submersible Pumps

5 HP	PSI	40'	60'	80'	100'	120'	160'	180'	200'	220'	240'	260'	280'	300'	320'	340'	360'	380'
	0				77	75	70	67	65	61	58	53	49	44	38	33	26	18
	30		74	72	68	66	58	55	51	47	41	36	29	22				
50	71	68	65	62	58	51	46	41	35	30	22							

7 1/2 HP	PSI	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'	420'	460'	500'	540'
	0					77	75	74	72	70	68	66	64	58	54	47.5	40	33	25
	30			74	72.5	71	69	67	65	63	60	57	55	47	42	35	27		
50	74	72	71	68	67	65	62	60	57	55	52	48	42	35					

10 HP	PSI	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'	420'	460'	500'	540'	580'	620'	660'	700'	740'
	0					78	77	76	75	74	73	72	69	67	63	59	55	52	47	41	35	30	20
	30				77	76	75	74	72	71	70	67	66	62	60	57	53	47	43	37	31	23	
50	77	76	75	74	72	71	70	67	66	62	60	57	56	53	50	42	40	33					

FRICITION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

Q - 60 GPM

All Stainless Steel Submersible Pumps are designed to pump within the 60 gallons per minute (GPM) range. Sizes are available from 1 1/2 to 7 1/2 HP. All models are standard with 2" NPT discharge.

Two Wire Single Phase

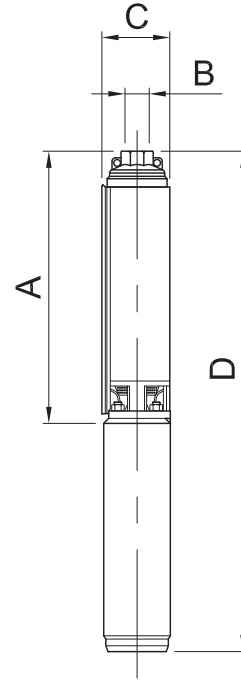
Model No.	HP	Stages	Volt	A	B	C	D	Wt.
24150Q2	1 1/2	4	230	14.9"	2"	3.9"	30.8"	40

Three Wire Single Phase

Model No.	HP	Stages	Volt	A	B	C	D	Wt.
24150Q3	1 1/2	4	230	14.9"	2"	3.9"	30.8"	44
24200Q3	2	5	230	16.9"	2"	3.9"	34.3"	48
24300Q3	3	7	230	21.0"	2"	3.9"	40.5"	60
24500Q3	5	11	230	29.2"	2"	3.9"	56.1"	95

Three Wire Three Phase

Model No.	HP	Stages	Volt	A	B	C	D	Wt.
24150Q3Z	1 1/2	4	230	14.9"	2"	3.9"	29.8"	38
24150Q3Y	1 1/2	4	460	14.9"	2"	3.9"	29.8"	38
24200Q3Z	2	5	230	16.9"	2"	3.9"	32.9"	44
24200Q3Y	2	5	460	16.9"	2"	3.9"	32.9"	44
24300Q3Z	3	7	230	21.0"	2"	3.9"	38.3"	51
24300Q3Y	3	7	460	21.0"	2"	3.9"	38.3"	51
24500Q3Z	5	11	230	29.2"	2"	3.9"	56.1"	74
24500Q3Y	5	11	460	29.2"	2"	3.9"	56.1"	73
24750Q3Z	7 1/2	17	230	43.0"	2"	3.9"	69.9"	97
24750Q3Y	7 1/2	17	460	43.0"	2"	3.9"	69.9"	95



4" Stainless Steel Pump Ends

Model No.	HP	Wt.
24150Q	1 1/2	9
24200Q	2	10
24300Q	3	12
24500Q	5	16
24750Q	7 1/2	23

Output - in Gallons Per Minute (Depth to Water)

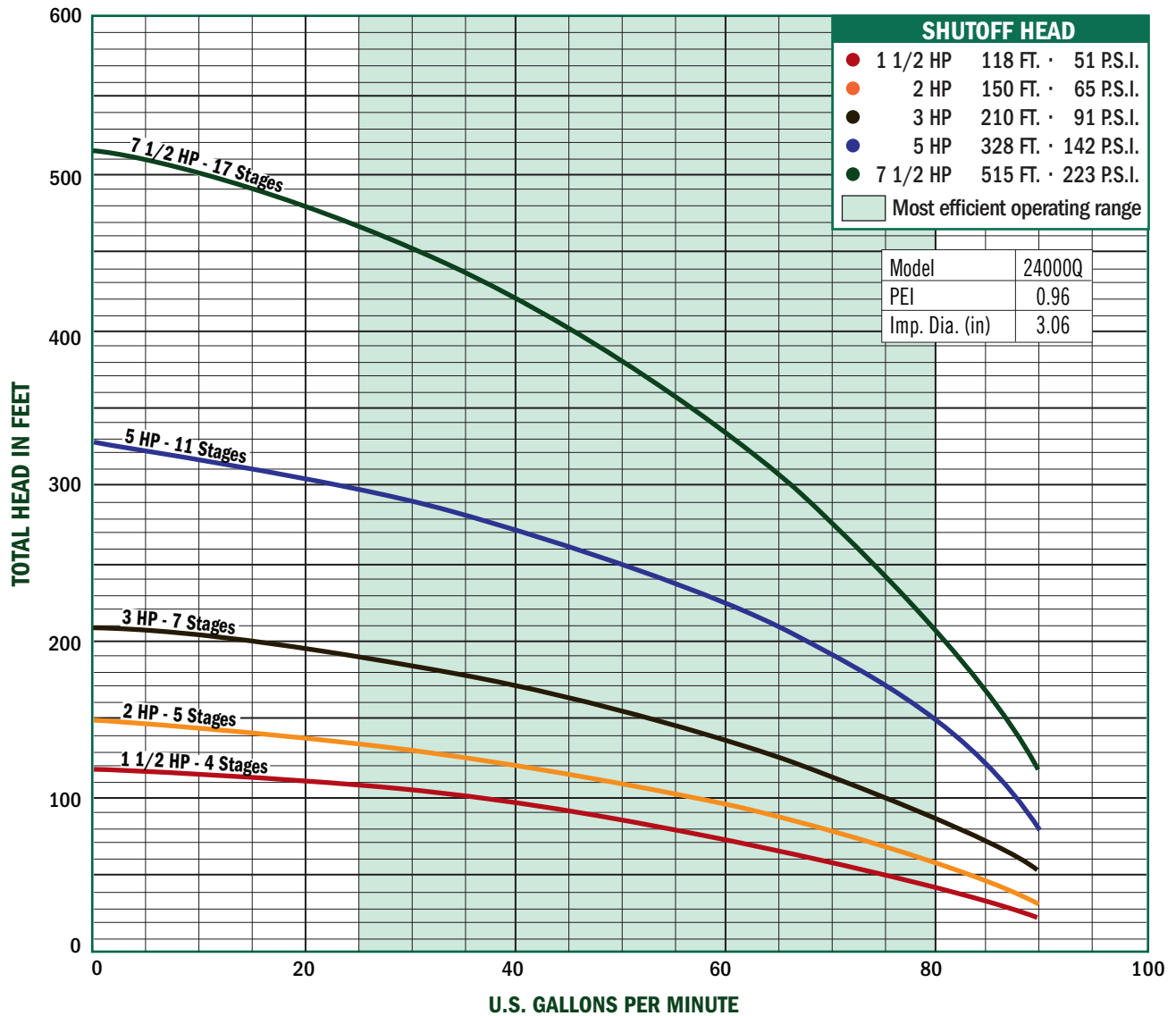
1 1/2 HP	PSI	10'	20'	30'	40'	50'	60'	70'	80'	90'	100'
	0			85	79	74	67	61	53	44	35
	30	53	44	35	18						

2 HP	PSI	10'	20'	30'	40'	50'	60'	70'	80'	90'	100'	120'
	0				84	82	78	73	67	62	55	39
	30		62	55	47.5	39	28	15				

3 HP	PSI	30'	40'	50'	60'	70'	80'	90'	100'	120'	140'	160'	180'
	0					84	81	77	73	66	57	46	33
	30			66	62	57	52	46	40				

FRICTION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

Q - 60 GPM



Submersible Pumps

5 HP	PSI	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'
	0					77	72.5	67	60	53	44	28.5
30			69	66	62.5	50	40	28	16			
50	69	62	55	47	38	26	15					

7 1/2 HP	PSI	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'	420'
	0					80	78	75	72	69	66	62	50	39
30			75	73	70.5	67.5	64	60	56	52.5	42			
50	76	73	69	67	63	57	55	50	46					

FRICITION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

T - 80 GPM

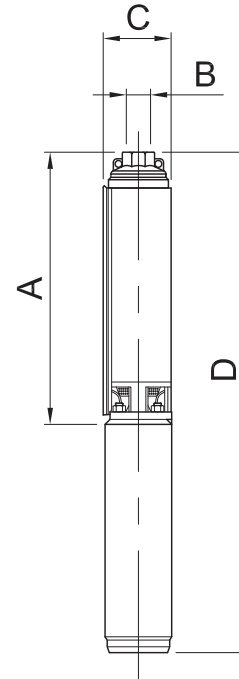
All Stainless Steel Submersible Pumps are designed to pump within the 80 gallons per minute (GPM) range. Sizes are available from 3 to 7 1/2 HP. All models are standard with 2" NPT discharge.

Three Wire Single Phase

Model No.	HP	Stages	Volt	A	B	C	D	Wt.
24300T3	3	5	230	18.6"	2"	3.9"	38.1"	58
24500T3	5	9	230	29.3"	2"	3.9"	56.1"	92

Three Wire Three Phase

Model No.	HP	Stages	Volt	A	B	C	D	Wt.
24300T3Z	3	5	230	18.6"	2"	3.9"	35.9"	49
24300T3Y	3	5	460	18.6"	2"	3.9"	35.9"	49
24500T3Z	5	9	230	29.3"	2"	3.9"	56.1"	71
24500T3Y	5	9	460	29.3"	2"	3.9"	56.1"	69
24750T3Z	7 1/2	14	230	42.6"	2"	3.9"	69.4"	93
24750T3Y	7 1/2	14	460	42.6"	2"	3.9"	69.4"	91



4" Stainless Steel Pump Ends

Model No.	HP	Wt.
24300T	3	10
24500T	5	16
24750T	7 1/2	22

Output - in Gallons Per Minute (Depth to Water)

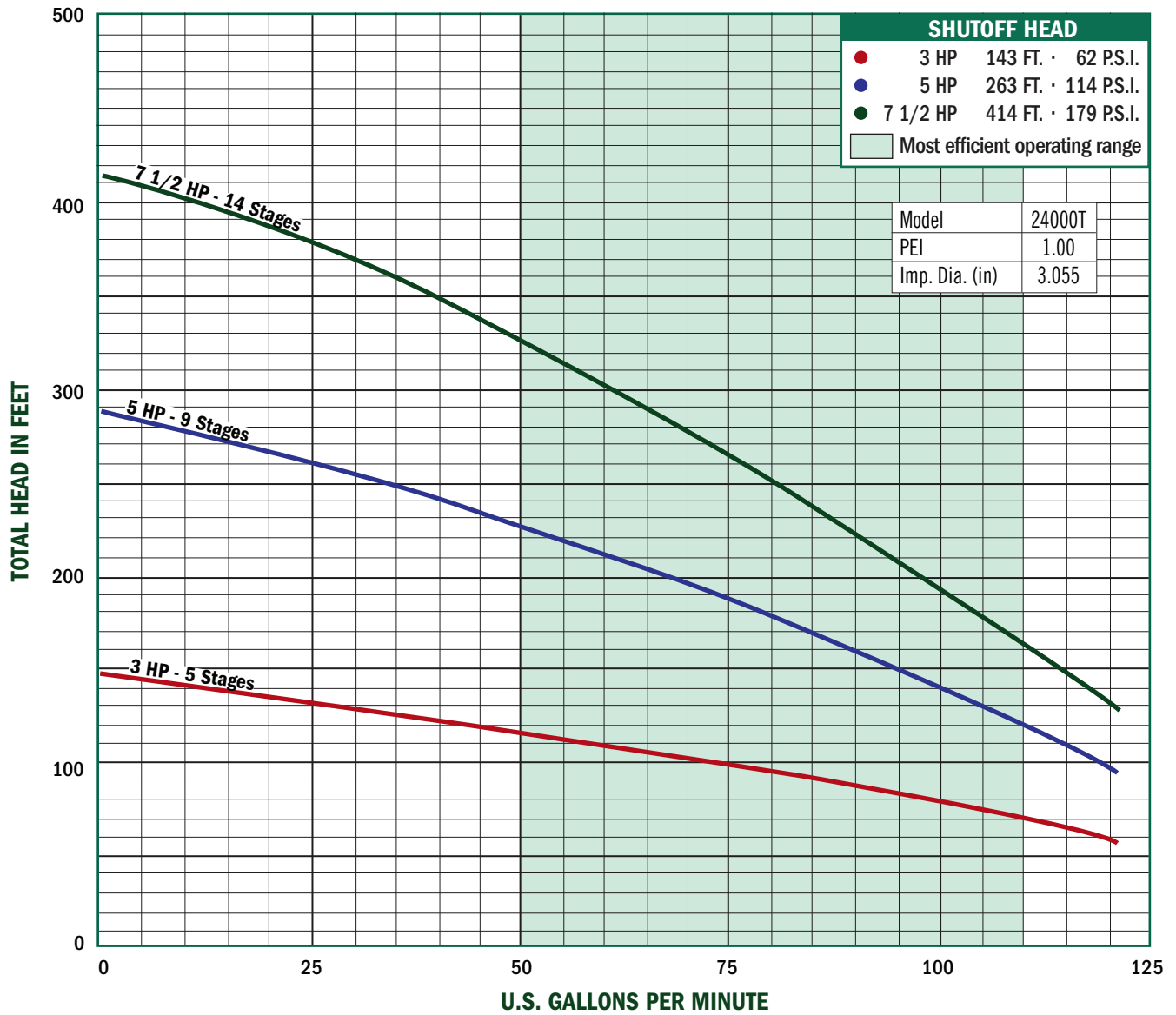
3 HP	PSI	60'	70'	80'	90'	100'	120'
	0			100	85	73	43
	30	100	58				
	50						

5 HP	PSI	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'
	0					95	83	72	59	45	27
	30			76	65	51	35	20			
	50	75	62	50	32	15					

7 1/2 HP	PSI	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	320'	340'	360'	380'
	0					96	90	83	75	68	60	52	43	34	25
	30			86	80	72.5	65	56	47	39	27				
	50	80	77	70	63	55	45	36	25						

FRICITION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

T - 80 GPM



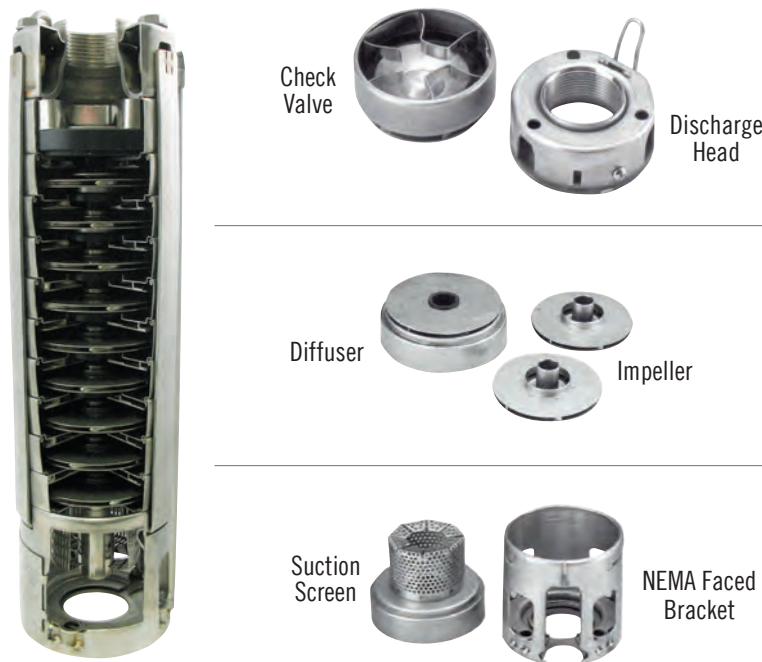
Submersible Pumps

26000 Series 4" Stainless Steel Pump End



A.Y. McDonald offers a full line of submersible pump ends ranging from 1/2 horsepower through 10 horsepower. Our submersibles offer peak capacity performance in 5, 10, 18, 25, 40, and 70 gallons per minute (GPM).

- Stainless steel construction designed and built for years of trouble free operation
- Stainless steel discharge head with built-in check valve
- Max. ambient temperature (Liquid): 140°F (60°C)
- High quality shaft bearings
- Pumped Liquids: clean, non-corrosive and non-abrasive liquids
- Shaft is made of 431 stainless steel, all other metal parts are made of 304 stainless steel
- High-efficiency stainless steel impellers & diffusers
- Stainless Steel suction screen and strainer
- Specifications for mounting are according to NEMA standards
- Powered by A.Y. McDonald Motors



How to Order 4" Stainless Steel Pump

Order by Model Number - Example: 26050K3ALB

26	050	K	3	A	LB
Series 4" Submersible Stainless Steel Pumps are Model 26	Horsepower 050 - 1/2 HP 075 - 3/4 HP 100 - 1 HP 150 - 1 1/2 HP 200 - 2 HP 300 - 3 HP 500 - 5 HP 750 - 7 1/2 HP 1000 - 10 HP	GPM J - 5 GPM K - 10 GPM P - 18 GPM M - 25 GPM G - 40 GPM H - 70 GPM	Wires Two wire or Three wire	Other Leave blank for 230V 60 HZ, Single Phase (Standard) A - 115V Single Phase Other Options - Contact Factory Z - 230V Three Phase Y - 460V Three Phase	Controls Leave blank for Control (Standard) LB - Less box (Single Phase Option) LS - Less starter (Three Phase Option)

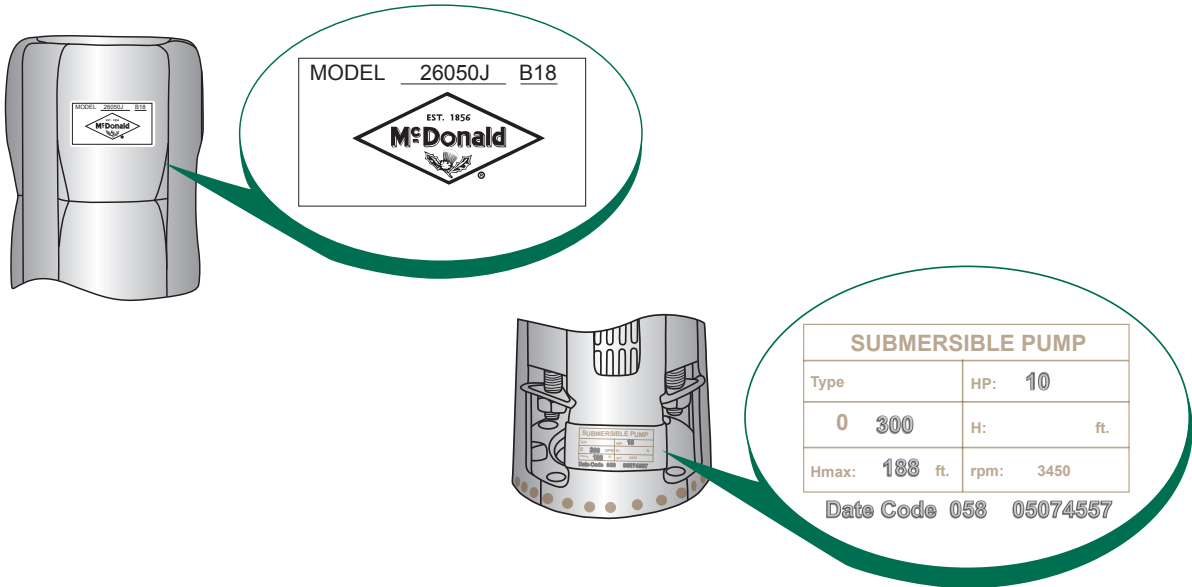
Submersible Pumps

Model 26050K3ALB is a 1/2 HP, three wire, 115 volt, single phase all stainless steel 4" submersible pump, less control box designed to pump in the 10 GPM range.

NOTES

- Standard is 230V, Single Phase, 60 HZ (no suffix letter required)
- Two-Wire Single phase models include; pump, motor, leads.
- Three-Wire Single phase models include; pump, motor, leads, and control box.
- Three-Wire Three phase models include; pump, motor, leads, and starter kit.
- All submersible pumps include internal check valves and grounded lead on motor.

How to Identify 26000 Series Pump Ends in the Field



J - 5 GPM

A.Y. McDonald offers a full line of submersible pump ends built for years of trouble free operation, with high-efficiency stainless steel impellers and diffusers. These submersibles offer peak capacity performance in 5, 10, 18, 25, 40, and 70 gallons per minute (GPM). Other features include stainless steel discharge head with a built-in check valve, stainless steel suction screen, and stainless steel shaft and coupling.

All Stainless Steel Pump Ends come with a 1 1/4" discharge and sizes range from 1/2 to 2 horsepower (HP).

Two Wire Single Phase

Model No.	HP	Stages	A	B	C	D	Pump Wt.	Motor Wt.	Total Wt.
26050J2	1/2	13	16.8	9.5	26.3	3.82	8.4	18	26.4
26050J2A	1/2	13	16.8	9.5	26.3	3.82	8.4	18	26.4
26075J2	3/4	18	21	10.6	31.6	3.82	10.6	21	31.6
26100J2	1	22	24.3	11.7	36	3.82	12.1	24	36.1
26150J2	1 1/2	26	27.5	15.1	42.6	3.82	13.7	31	44.7

Three Wire** Single Phase

Model No.	HP	Stages	A	B	C	D	Pump Wt.	Motor Wt.	Total Wt.
26050J3	1/2	13	16.8	9.5	26.3	3.82	8.4	19	27.4
26050J3A	1/2	13	16.8	9.5	26.3	3.82	8.4	19	27.4
26075J3	3/4	18	21	10.6	31.6	3.82	10.6	21	31.6
26100J3	1	22	24.3	11.7	36	3.82	12.1	24	36.1
26150J3	1 1/2	26	27.5	13.6	41.1	3.82	13.7	28	41.7
26200J3	2	31	31.7	15.1	46.8	3.82	15.9	33	48.9

Pump Ends

Model No.	HP	Stages	A	C	D	Wt.
26050J	1/2	13	16.8	16.8	3.82	8.4
26075J	3/4	18	21	21	3.82	10.6
26100J	1	22	24.3	24.3	3.82	12.1
26150J	1 1/2	26	27.5	27.5	3.82	13.7
26200J	2	31	31.7	31.7	3.82	15.9

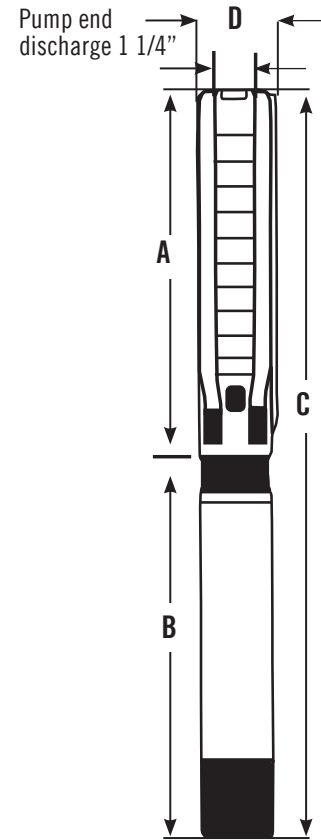


Fig. A

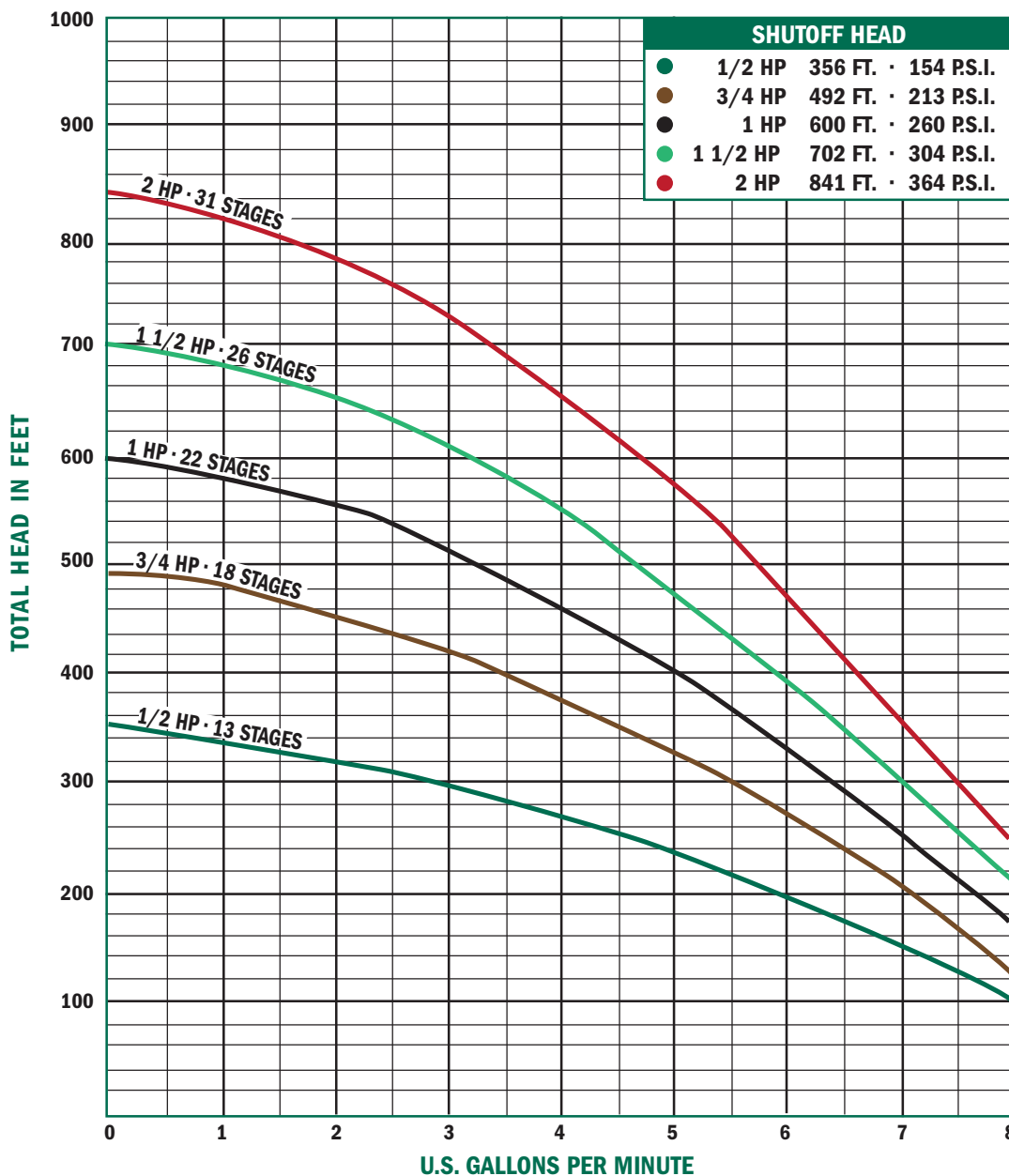
** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

1/2 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'		
	0							7.4	6.9	6.5	6.0	5.5	5.1	4.6	4.1	3.4		
	30				7.2	6.7	6.2	5.8	5.3	4.9	4.4	3.8	3.1	2.0				
	50	7.5	7.0	6.6	6.1	5.6	5.2	4.7	4.2	3.6	2.8	1.5						
3/4 HP	PSI	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'	420'	460'
	0						7.9	7.6	7.3	7.0	6.6	6.3	5.9	5.6	4.9	4.2	3.3	1.8
	30			7.8	7.5	7.1	6.8	6.5	6.1	5.8	5.4	5.1	4.8	4.4	3.6	2.3		
	50	7.7	7.4	7.0	6.7	6.3	6.0	5.7	5.3	5.0	4.7	4.3	3.9	3.4	2.0			
1 HP	PSI	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'	420'	460'	500'	540'	
	0						7.6	7.3	.1	6.8	6.5	6.0	5.4	4.9	4.3	3.6	2.6	
	30			7.5	7.2	6.9	6.7	6.4	6.1	5.8	5.6	5.0	4.5	3.8	2.9	1.5		
	50	7.4	7.1	6.9	6.6	6.3	6.0	5.7	5.5	5.2	4.9	4.4	3.7	2.7	1.2			

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

J - 5 GPM



Submersible Pumps

1 1/2 HP	PSI	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'	420'	460'	500'	540'	580'	620'	660'
	0					7.8	7.6	7.4	7.2	6.7	6.2	5.7	5.3	4.8	4.4	3.8	3.0	1.9
	30			7.5	7.3	7.1	6.8	6.6	6.3	5.9	5.4	5.0	4.5	4.0	3.3	2.3		
	50	7.4	7.2	7.0	6.7	6.5	6.3	6.0	5.8	5.3	4.9	4.4	3.9	3.1	2.1			

2 HP	PSI	200'	220'	240'	260'	280'	300'	340'	380'	420'	460'	500'	540'	580'	620'	660'	700'	740'	780'
	0						7.7	7.3	6.9	6.5	6.2	5.8	5.4	5.0	4.6	4.2	3.7	3.0	2.1
	30				7.4	7.2	7.0	6.7	6.3	5.9	5.5	5.1	4.7	4.3	3.8	3.2	2.4	1.2	
	50	7.5	7.4	7.2	7.0	6.8	6.6	6.2	5.8	5.4	5.0	4.7	4.2	3.7	3.1	2.2			

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

K - 10 GPM

A.Y. McDonald offers a full line of submersible pump ends built for years of trouble free operation, with high-efficiency stainless steel impellers and diffusers. These submersibles offer peak capacity performance in 5, 10, 18, 25, 40, and 70 gallons per minute (GPM). Other features include stainless steel discharge head with a built-in check valve, stainless steel suction screen, and stainless steel shaft and coupling.

All Stainless Steel Pump Ends come with a 1 1/4" discharge and sizes range from 1/2 to 3 horsepower (HP).

Two Wire Single Phase

Model No.	HP	Stages	A	B	C	D	Pump Wt.	Motor Wt.	Total Wt.
26050K2	1/2	9	13.5	9.5	23	3.82	6.9	8.4	15.3
26050K2A	1/2	9	13.5	9.5	23	3.82	6.9	8.4	15.3
26075K2	3/4	12	16	10.6	26.6	3.82	8	10.6	18.6
26100K2	1	15	18.5	11.7	30.2	3.82	9.3	12.1	21.4
26150K2	1 1/2	21	23.5	13.6	37.1	3.82	12.6	13.7	26.3

Three Wire** Single Phase

Model No.	HP	Stages	A	B	C	D	Pump Wt.	Motor Wt.	Total Wt.
26050K3	1/2	9	13.5	9.5	23	3.82	6.9	19	25.9
26050K3A	1/2	9	13.5	9.5	23	3.82	6.9	19	25.9
26075K3	3/4	12	16	10.6	26.6	3.82	8	21	29
26100K3	1	15	18.5	11.7	30.2	3.82	9.3	24	33.3
26150K3	1 1/2	21	23.5	13.6	37.1	3.82	12.6	28	40.6
26200K3	2	27	28.4	15.1	43.5	3.82	15.9	30	45.9
26300K3	3	34	34.2	23.5	57.7	3.82	19	54	73

Pump Ends

Model No.	HP	Stages	A	C	D	Wt.
26050K	1/2	9	13.5	13.5	3.82	6.9
26075K	3/4	12	16	16	3.82	8
26100K	1	15	18.5	18.5	3.82	9.3
26150K	1 1/2	21	23.5	23.5	3.82	12.6
26200K	2	27	28.4	28.4	3.82	15
26300K	3	34	34.2	34.2	3.82	19

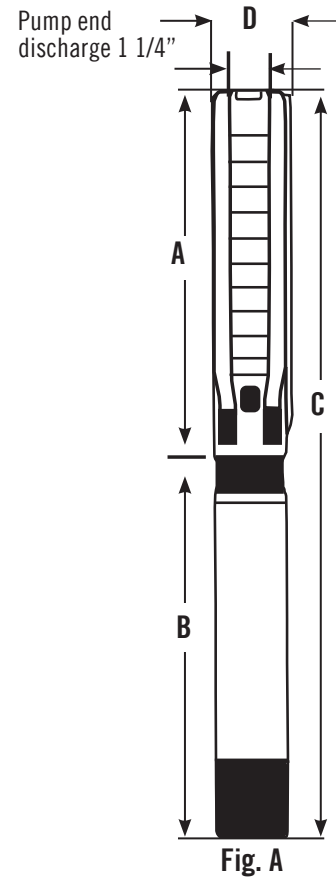


Fig. A

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

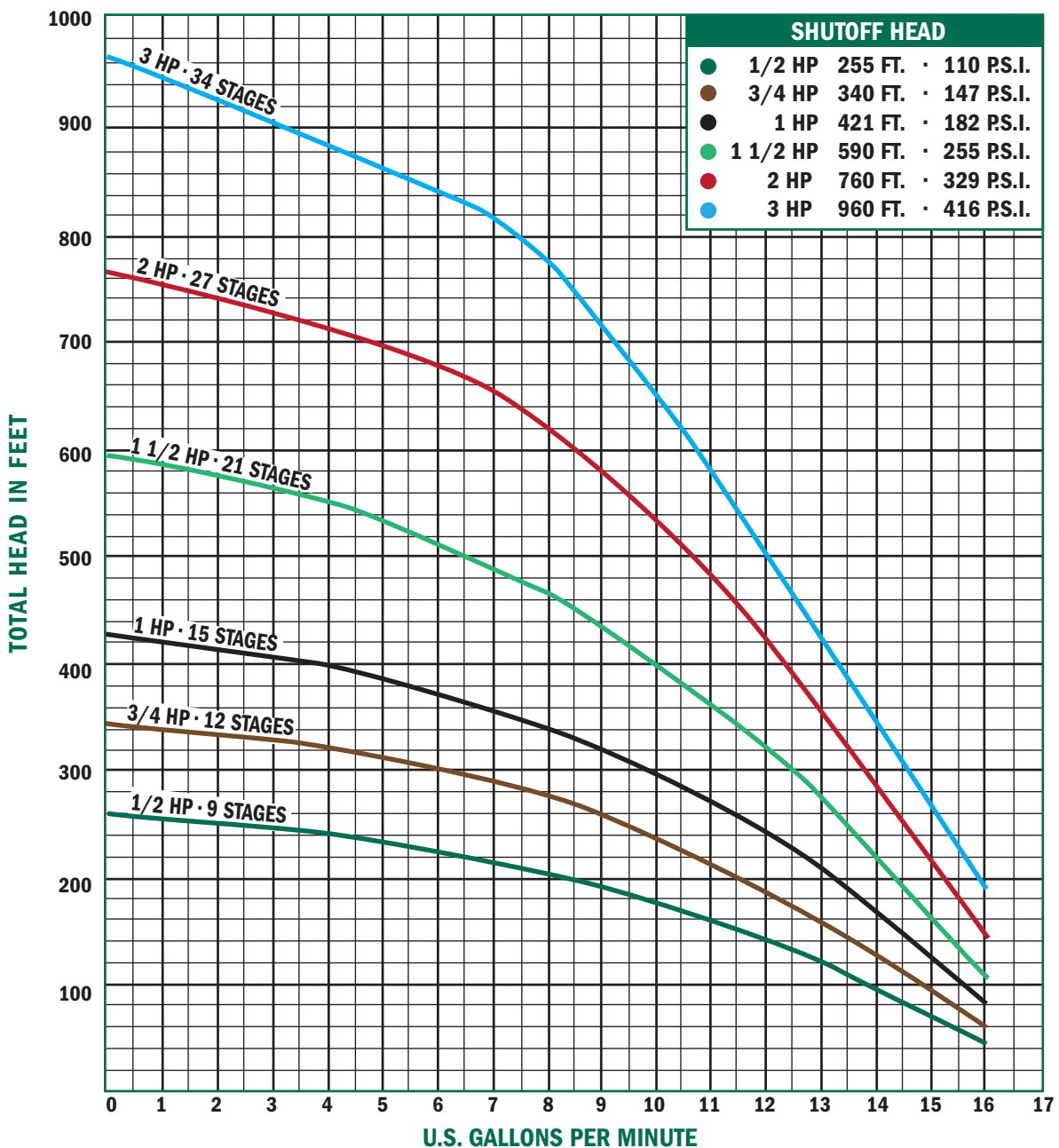
1/2 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'
	0		16.2	15.5	14.8	14.0	13.1	12.1	11.0	9.8	8.3	6.3	3.1
	30	14.4	13.6	12.6	11.6	10.4	9.1	7.5	5.0				
	50	12.3	11.2	10.1	8.7	6.8	4.0						

3/4 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'
	0			16.0	15.5	15.0	14.4	13.8	13.1	12.3	11.5	10.7	9.8	8.7	7.4	5.6
	30	15.3	14.7	14.1	13.4	12.7	12.0	11.1	10.3	9.3	8.1	6.6	4.6			
	50	13.9	13.2	12.5	11.7	10.9	10.0	9.0	7.7	6.0	3.8					

1 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'
	0				16.0	15.8	15.5	15.0	14.5	13.9	13.2	12.5	11.8	11.2	10.5	9.8	8.0	5.2
	30	15.9	15.6	15.3	14.8	14.2	13.6	12.9	12.2	11.5	10.8	10.1	9.4	8.5	7.4	6.1		
	50	15.1	14.6	14.0	13.4	12.7	12.0	11.3	10.6	9.9	9.1	8.2	7.1	5.6	3.6			

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

K - 10 GPM



Submersible Pumps

1 1/2 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'	420'	460'	500'	540'	
	0						15.8	15.5	15.2	14.9	14.6	14.2	13.9	13.5	13.1	12.6	11.8	10.8	9.8	8.5	6.9	4.6	
30			16.0	15.7	15.4	15.1	14.8	14.4	14.1	13.7	13.3	12.9	12.4	12.0	11.5	11.1	10.1	8.9	7.4	5.3	2.3		
50	15.6	15.3	15.0	14.7	14.3	13.9	13.6	13.2	12.7														

2 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'	420'	460'	500'	540'	580'	620'	660'	700'
	0					16.4	16.2	16.0	15.8	15.5	15.3	15.1	14.8	14.6	14.3	14.0	13.4	12.7	12.1	11.3	10.6	9.8	8.8	7.7	6.3	4.3
30					15.9	15.7	15.2	15.0	14.7	14.4	14.1	13.8	13.5	13.2	12.9	12.2	11.5	10.8	10.0	9.1	8.0	6.7	4.9	2.5		
50	16.0	15.8	15.6	15.4	15.1	14.9	14.6	14.3	14.1	13.8	13.4	13.1	12.8	12.5	12.1	11.4	10.7	9.9	9.0	7.8	6.4	4.6	2.1			

3 HP	PSI	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'	420'	460'	500'	540'	580'	620'	660'	700'	740'	780'	820'	860'	900'
	0							15.9	15.8	15.6	15.4	15.2	15.0	14.8	14.4	14.0	13.5	13.0	12.4	11.9	11.3	10.7	10.1	9.4	8.6	7.7	6.6	5.2	3.5
30				16.0	15.9	15.7	15.5	15.3	15.1	14.9	14.7	14.5	14.3	14.1	13.6	13.1	12.6	12.0	11.5	10.9	10.3	9.6	8.9	8.0	6.9	5.6	4.0		
50	16.0	15.8	15.6	15.5	15.3	15.1	14.9	14.7	14.5	14.2	14.0	13.8	13.5	13.0	12.5	12.0	11.4	10.8	10.2	9.5	8.7	7.8	6.7	5.4	3.7				

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

P - 18 GPM

A.Y. McDonald offers a full line of submersible pump ends built for years of trouble free operation, with high-efficiency stainless steel impellers and diffusers. These submersibles offer peak capacity performance in 5, 10, 18, 25, 40, and 70 gallons per minute (GPM). Other features include stainless steel discharge head with a built-in check valve, stainless steel suction screen, and stainless steel shaft and coupling.

All Stainless Steel Pump Ends come with a 1 1/4" discharge and sizes range from 1/2 to 5 horsepower (HP).

Two Wire Single Phase

Model No.	HP	Stages	A	B	C	D	Pump Wt.	Motor Wt.	Total Wt.
26050P2	1/2	5	10.3	9.5	19.8	3.82	5.1	19	24.1
26050P2A	1/2	5	10.3	9.5	19.8	3.82	5.1	19	24.1
26075P2	3/4	7	11.7	10.6	22.3	3.82	6	21	27
26100P2	1	9	13.4	11.7	25.1	3.82	6.9	24	30.9
26150P2	1 1/2	13	16.9	13.6	30.5	3.82	8.6	28	36.6

Three Wire** Single Phase

Model No.	HP	Stages	A	B	C	D	Pump Wt.	Motor Wt.	Total Wt.
26050P3	1/2	5	10.3	9.5	19.8	3.82	5.1	19	24.1
26050P3A	1/2	5	10.3	9.5	19.8	3.82	5.1	19	24.1
26075P3	3/4	7	11.7	10.6	22.3	3.82	6	21	27
26100P3	1	9	13.4	11.7	25.1	3.82	6.9	24	30.9
26150P3	1 1/2	13	16.9	13.6	30.5	3.82	8.6	28	36.6
26200P3	2	17	20.2	15.1	35.3	3.82	10.4	30	40.4
26300P3	3	23	25.1	23.5	48.6	3.82	13	54	67
26500P3	5	36	35.9	29.5	65.4	3.82	18.7	65	83.7

Pump Ends

Model No.	HP	Stages	A	C	D	Wt.
26050P	1/2	5	10.3	10.3	3.82	5.1
26075P	3/4	7	11.7	11.7	3.82	6
26100P	1	9	13.4	13.4	3.82	6.9
26150P	1 1/2	13	16.9	16.9	3.82	8.6
26200P	2	17	20.2	20.2	3.82	10.4
26300P	3	23	25.1	25.1	3.82	13
26500P	5	36	35.9	35.9	3.82	18.7

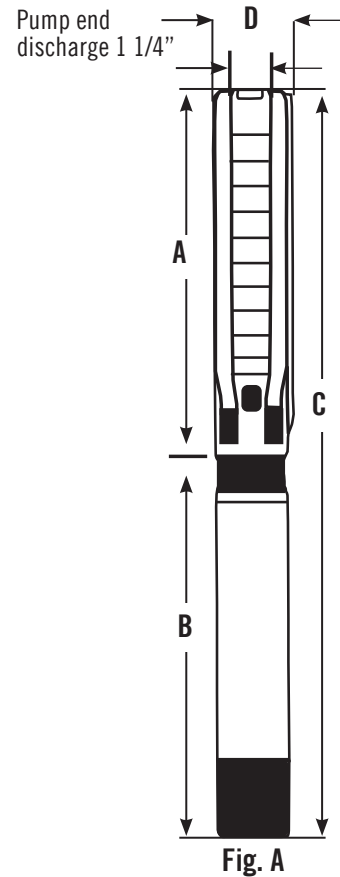


Fig. A

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

1/2 HP	PSI	20'	40'	60'	80'	100'	120'	140'
	0		24.0	22.1	20.0	17.0	13.0	7.0
	30	18.8	15.0	10.0	2.5			
	50	8.0	1.0					

3/4 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'
	0		25.4	23.6	22.7	21.2	19.3	17.1	14.5	10.5
	30	22.1	20.4	18.3	16.0	12.9	8.1			
	50	17.6	15.1	11.6	6.3					

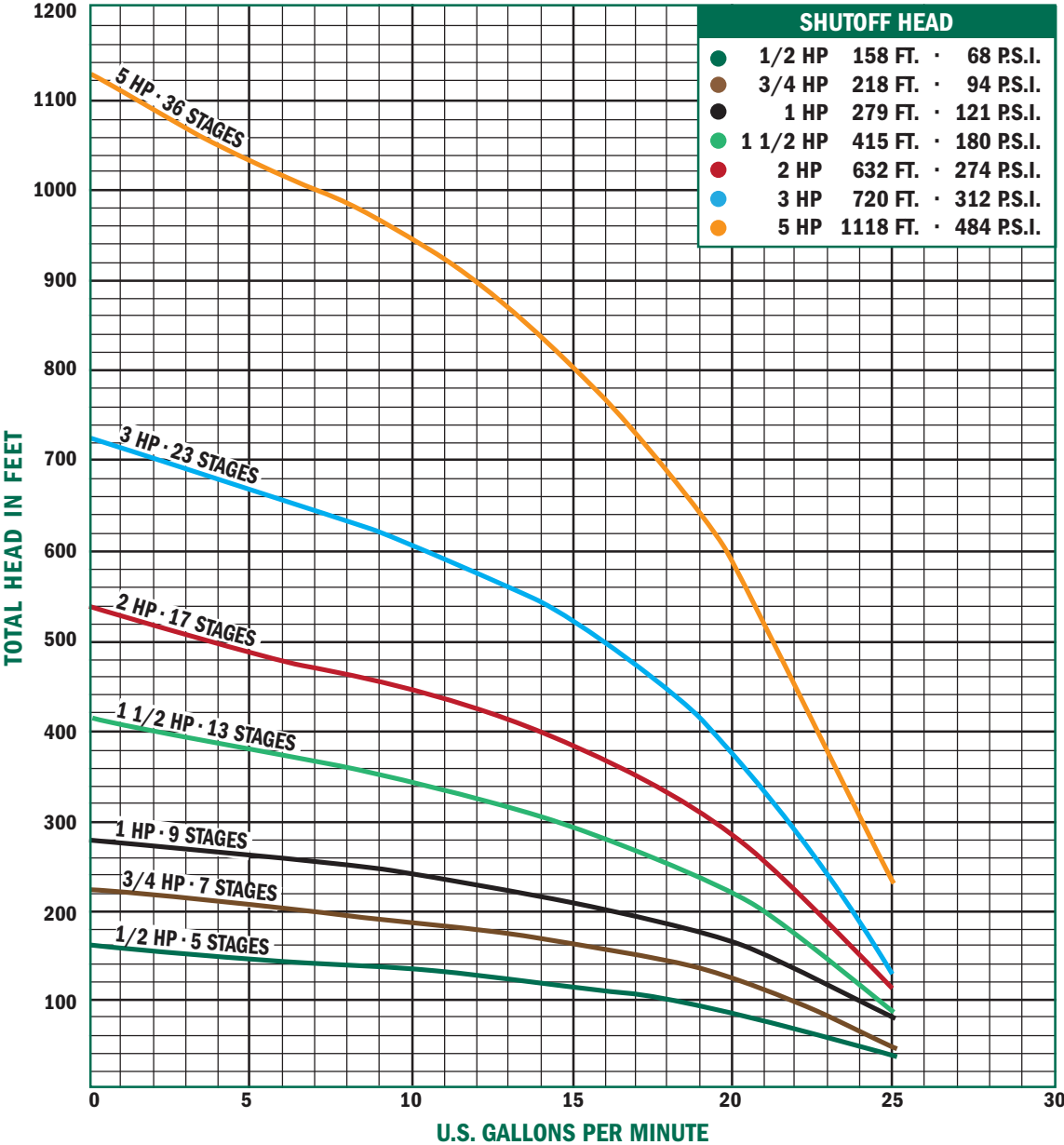
1 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'
	0			27.7	24.4	23.4	22.6	21.3	19.6	17.7	15.6	12.8	9.1
	30	23.8	23.1	22.1	20.6	18.8	16.8	14.4	11.2	7.0			
	50	21.7	20.0	18.2	16.1	13.5	10.0						

1 1/2 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'
	0			27.7	24.9	23.7	23.2	22.8	22.3	21.5	20.5	19.4	18.3	17.1	15.8	14.2	9.8
	30	24.2	23.5	23.1	22.6	21.9	21.0	20.0	18.9	17.8	16.5	15.1	13.4	11.2	8.5		
	50	22.9	22.4	21.7	20.7	19.7	18.6	17.4	16.1	14.6	12.7	10.4	7.5				

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

Submersible Pumps

P - 18 GPM



Submersible Pumps

2 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'	420'	460'
	0				27.4	25.2	24.1	23.6	23.2	22.9	22.5	22.0	21.3	20.6	19.8	18.9	17.1	15.0	12.1	8.1
	30	26.2	24.6	23.8	23.4	23.1	22.7	22.3	21.7	21.0	20.2	19.4	18.5	17.6	16.7	15.6	13.0	9.3		
	50	23.6	23.3	23.0	22.6	22.1	21.5	20.7	19.9	19.1	18.2	17.3	16.4	15.3	14.0	12.5	8.6			

3 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'	420'	460'	500'	540'	580'	620'
	0					28.3	26.2	24.9	24.2	23.7	23.4	23.2	23.0	22.7	22.3	21.9	20.9	19.7	18.5	17.1	15.6	13.8	11.4	8.3
	30		27.2	25.6	24.5	23.9	23.6	23.3	23.1	22.8	22.5	22.2	21.7	21.2	20.6	20.0	18.8	17.5	16.0	14.3	12.1	9.2		
	50	25.2	24.3	23.8	23.5	23.2	23.0	22.8	22.4	22.0	21.6	21.0	20.5	19.9	19.2	18.6	17.3	15.8	14.0	11.7	8.7			

5 HP	PSI	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'	420'	460'	500'	540'	580'	620'	660'	700'	740'	780'	820'	860'	900'	940'	980'
	0							28.1	26.7	25.7	24.9	24.4	24.0	23.7	23.5	23.2	22.9	22.6	22.1	21.5	20.8	20.0	19.2	18.4	17.6	16.7	15.7	14.6	13.2	11.7	9.9	7.8
	30				27.4	26.2	25.3	24.6	24.2	23.9	23.6	23.4	23.3	23.2	23.0	22.7	22.2	21.6	21.0	20.2	19.4	18.6	17.8	16.9	16.0	14.9	13.6	12.1	10.4	8.4	6.1	
	50	28.4	27.0	25.9	25.1	24.5	24.1	23.8	23.6	23.4	23.3	23.1	23.0	22.8	22.6	22.1	21.5	20.8	20.1	19.3	18.5	17.6	16.8	15.8	14.7	13.4	11.9	10.1	8.0			

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

M - 25 GPM

A.Y. McDonald offers a full line of submersible pump ends built for years of trouble free operation, with high-efficiency stainless steel impellers and diffusers. These submersibles offer peak capacity performance in 5, 10, 18, 25, 40, and 70 gallons per minute (GPM). Other features include stainless steel discharge head with a built-in check valve, stainless steel suction screen, and stainless steel shaft and coupling.

All Stainless Steel Pump Ends come with a 1 1/2" discharge and sizes range from 1/2 to 7 1/2 horsepower (HP).

Two Wire Single Phase

Model No.	HP	Stages	A	B	C	D	Pump Wt.	Motor Wt.	Total Wt.
26050M2	1/2	4	9.4	9.5	18.9	3.82	5.1	19	24.1
26050M2A	1/2	4	9.4	9.5	18.9	3.82	5.1	19	24.1
26075M2	3/4	5	10.3	10.6	20.9	3.82	5.3	21	26.3
26100M2	1	7	11.9	11.7	23.6	3.82	5.9	24	29.9
26150M2	1 1/2	9	13.5	13.6	27.1	3.82	6.8	28	34.8

Three Wire** Single Phase

Model No.	HP	Stages	A	B	C	D	Pump Wt.	Motor Wt.	Total Wt.
26050M3	1/2	4	9.4	9.5	18.9	3.82	5.1	19	24.1
26050M3A	1/2	4	9.4	9.5	18.9	3.82	5.1	19	24.1
26075M3	3/4	5	10.3	10.6	20.9	3.82	5.3	21	26.3
26100M3	1	7	11.9	11.7	23.6	3.82	5.9	24	29.9
26150M3	1 1/2	9	13.5	13.6	27.1	3.82	6.8	28	34.8
26200M3	2	11	15.2	15.1	30.3	3.82	8.1	30	38.1
26300M3	3	15	18.5	23.5	42	3.82	9.2	54	63.2
26500M3	5	26	27.6	29.5	57.1	3.82	14.3	65	79.3

Pump Ends

Model No.	HP	Stages	A	C	D	Wt.
26050M	1/2	4	9.4	9.4	3.82	5.1
26075M	3/4	5	10.3	10.3	3.82	5.3
26100M	1	7	11.9	11.9	3.82	5.9
26150M	1 1/2	9	13.5	13.5	3.82	6.8
26200M	2	11	15.2	15.2	3.82	8.1
26300M	3	15	18.5	18.5	3.82	9.2
26500M	5	26	27.6	27.6	3.82	14.3
26750M	7 1/2	39	39.3	39.3	3.82	20.3

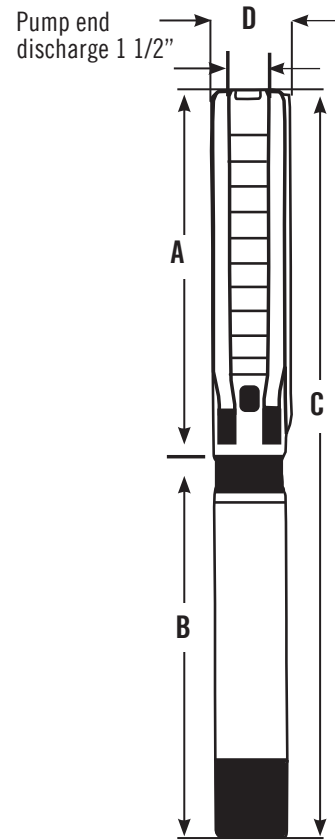


Fig. A

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

1/2 HP	PSI	20'	40'	60'	80'	100'
	0		37.1	32.6	25.8	17.5
	30	22.4	9.7			
	50					

3/4 HP	PSI	20'	40'	60'	80'	100'	120'	140'
	0			35.9	32.6	25.0	19.7	7.8
	30	28.4	22.6	14.8				
	50	11.4						

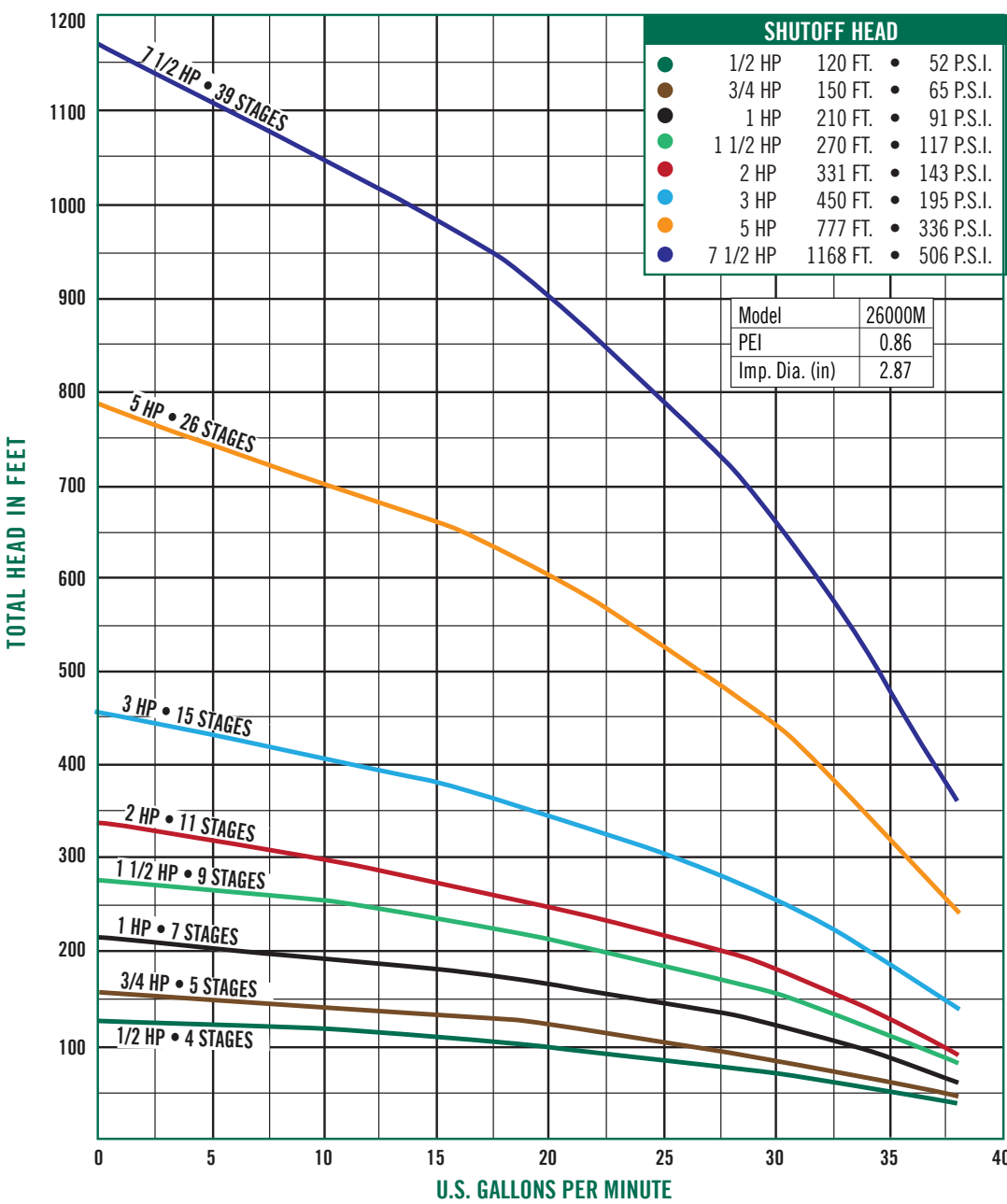
1 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'
	0					33.4	29.8	26.0	20.8	13.2
	30		31.8	28.1	23.8	17.6	8.9			
	50	25.9	22.2	15.2						

1 1/2 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'		
	0									31.8	29.0	26.0	22.1	16.9	10.1
	30					33.3	30.6	27.7	24.3	19.9	13.9				
	50	32.5	29.7	26.7	23.1	18.3	11.8								

2 HP	PSI	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'		
	0									32.3	29.9	27.3	24.5	21.2	17.3	12.5
	30				33.4	31.2	28.7	26.0	23.0	19.5	15.2	10.1				
	50	32.8	30.5	27.9	25.1	22.0	18.2	13.7	8.4							

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

M - 25 GPM



Submersible Pumps

3 HP	PSI	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'
	0								32.9	31.3	29.6	27.9	26.0	21.2	14.4
30				33.8	32.2	30.5	28.8	27.0	25.0	22.7	19.9	16.5	8.0	
50	33.3	31.7	30.0	28.3	26.4	24.3	21.9	18.9	15.3	11.1				

5 HP	PSI	260'	280'	300'	340'	380'	420'	460'	500'	540'	580'	620'	660'	700'
	0						33.0	31.1	29.1	27.1	24.8	22.0	18.5	14.2	9.3
30				33.5	31.6	29.7	27.6	25.4	22.8	19.5	15.5	10.6	8.0	
50	33.2	32.3	31.3	29.4	27.3	25.0	22.3	18.9	14.8	9.8				

7 1/2 HP	PSI	460'	500'	540'	580'	620'	660'	700'	740'	780'	820'	860'	900'	940'	980'	1020'	1060'
	0				33.9	32.7	31.4	30.1	28.8	27.4	26.0	24.3	22.5	20.3	17.9	15.0	11.8	8.4
30			33.0	31.8	30.5	29.2	27.8	26.4	24.8	23.0	20.9	18.6	15.8	12.7	9.3		
50	32.8	31.6	30.3	29.0	27.6	26.1	24.5	22.7	20.6	18.1	15.3	12.2	8.8				

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

G - 40 GPM

A.Y. McDonald offers a full line of submersible pump ends built for years of trouble free operation, with high-efficiency stainless steel impellers and diffusers. These submersibles offer peak capacity performance in 5, 10, 18, 25, 40, and 70 gallons per minute (GPM). Other features include stainless steel discharge head with a built-in check valve, stainless steel suction screen, and stainless steel shaft and coupling.

All Stainless Steel Pump Ends come with a 2" discharge and sizes range from 1 to 10 horsepower (HP).

Two Wire Single Phase

Model No.	HP	Stages	A	B	C	D	Pump Wt.	Motor Wt.	Total Wt.
26100G2	1	4	14.4	11.7	26.1	3.32	8.2	24	32.2
26150G2	1 1/2	5	16.1	13.6	29.7	3.82	9.3	28	37.3

Three Wire** Single Phase

Model No.	HP	Stages	A	B	C	D	Pump Wt.	Motor Wt.	Total Wt.
26100G3	1	4	14.4	11.7	26.1	3.82	8.2	24	32.2
26150G3	1 1/2	5	16.1	13.6	29.7	3.82	9.3	28	37.3
26200G3	2	7	19.4	15.1	34.5	3.82	11.5	30	41.5
26300G3	3	9	22.7	23.5	46.2	3.82	13.7	54	67.7
26500G3	5	12	27.7	29.5	57.2	3.82	17	65	82

Pump Ends

Model No.	HP	Stages	A	C	D	Wt.
26100G	1	4	14.4	14.4	3.82	8.2
26150G	1 1/2	5	16.1	16.1	3.82	9.3
26200G	2	7	19.4	19.4	3.82	11.5
26300G	3	9	22.7	22.7	3.82	13.7
26500G	5	12	27.7	27.7	3.82	17
26750G	7 1/2	21	42.5	42.5	3.82	26.7
261000G	10	30	57.6	57.6	3.82	37

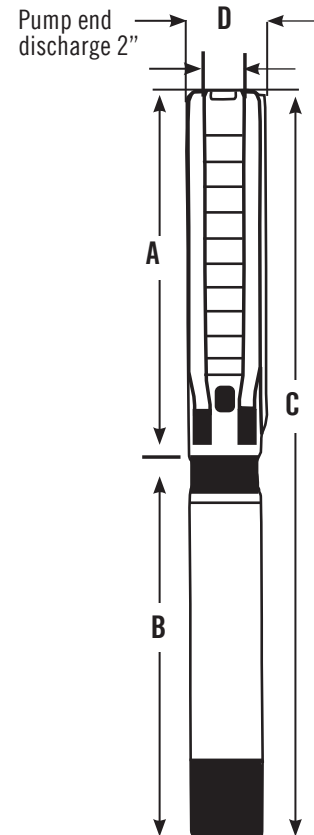


Fig. A

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

Output - in Gallons Per Minute (Depth to Water)

1/2 HP	PSI	20'	40'	60'	80'	100'
0			64.0	54.5	42.0	18.0
30	32.0	6.0				
50						

1 1/2 HP	PSI	20'	40'	60'	80'	100'	120'
0				60.1	54.0	43.2	23.4
30	50.0	35.0					
50							

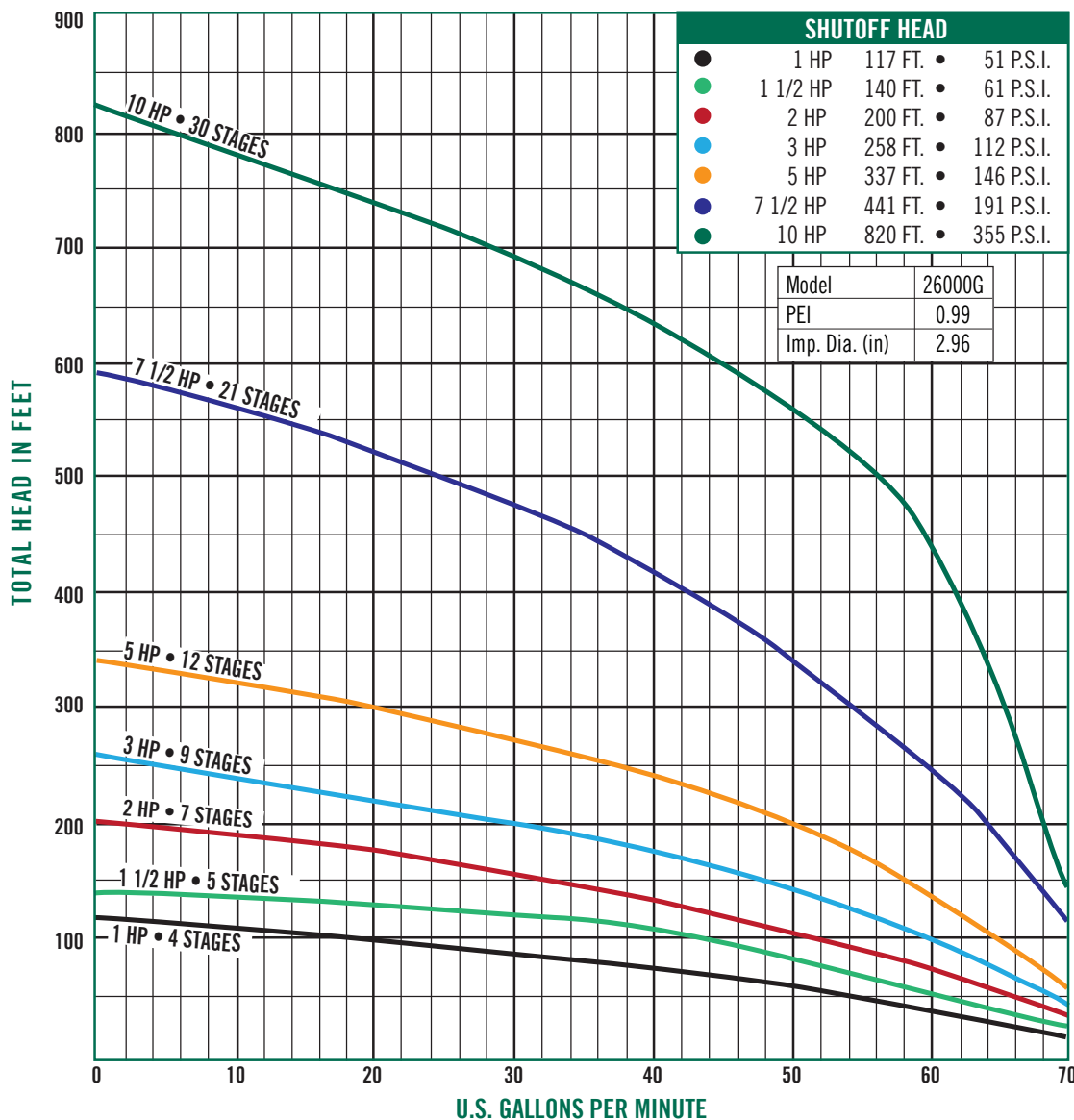
2 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'
0				61.0	56.7	51.7	43.2	29.9	
30	58.9	54.7	48.3	37.6	22.3				
50	45.5	33.2							

3 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'
0				65.6	61.5	58.1	54.8	50.2	43.2	33.2	20.8	
30	63.6	59.8	56.6	52.9	47.3	38.9	27.7					
50	55.6	51.4	45.0	35.7	23.7							

5 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'
0					63.2	60.6	58.3	55.8	52.6	48.2	42.2	34.6	25.6		
30		64.8	62.0	59.5	57.2	54.4	50.7	45.6	38.9	30.6	21.2				
50	61.2	58.8	56.4	53.4	49.3	43.7	36.5	27.8							

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

G - 40 GPM



Submersible Pumps

7 1/2 HP	PSI	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'	420'	460'	500'
	0								64.0	62.4	61.0	59.6	58.3	56.9	53.6	48.9	42.2	33.4	22.9
30				64.9	63.3	61.7	60.3	59.0	57.7	56.2	54.6	52.7	50.4	44.2	36.0	25.8		
50	64.4	62.8	61.3	59.9	58.6	57.2	55.8	54.0	52.0	49.5	46.6	43.1	34.5	24.2				

10 HP	PSI	150'	200'	250'	300'	350'	400'	450'	500'	550'	600'	650'	700'	750'	800'
	0	69.5	68.3	66.8	65.3	63.9	62.0	59.5	56.0	51	45	37.5	28	17.3	5
30	67.8	66.3	64.6	63.0	61.1	58.4	54.3	49.0	42	34.5	24.3	13			
50	66.4	64.8	63.2	61.3	58.9	55.1	49.8	43.2	35.6	25.8	14.4				

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

H - 70 GPM

A.Y. McDonald offers a full line of submersible pump ends built for years of trouble free operation, with high-efficiency stainless steel impellers and diffusers. These submersibles offer peak capacity performance in 5, 10, 18, 25, 40, and 70 gallons per minute (GPM). Other features include stainless steel discharge head with a built-in check valve, stainless steel suction screen, and stainless steel shaft and coupling.

All Stainless Steel Pump Ends come with a 2" discharge and sizes range from 2 to 10 horsepower (HP).

Three Wire** Single Phase

Model No.	HP	Stages	A	B	C	D	Pump Wt.	Motor Wt.	Total Wt.
26200H3	2	3	14.9	15.1	30	3.82	8.2	30	38.2
26300H3	3	5	20	23.5	43.5	3.82	10.4	54	64.4
26500H3	5	8	27.7	29.5	57.2	3.82	13.7	65	78.7

Pump Ends

Model No.	HP	Stages	A	C	D	Wt.
26200H	2	3	14.9	14.9	3.82	8.2
26300H	3	5	20	20	3.82	10.4
26500H	5	8	27.7	27.7	3.82	13.7
26750H	7 1/2	12	37.9	37.9	3.82	18
261000H	10	16	53	53	3.82	29

** All three wire pumps are available in three phase by selecting pump end and appropriate motor and starter kit (see pages 108-118).

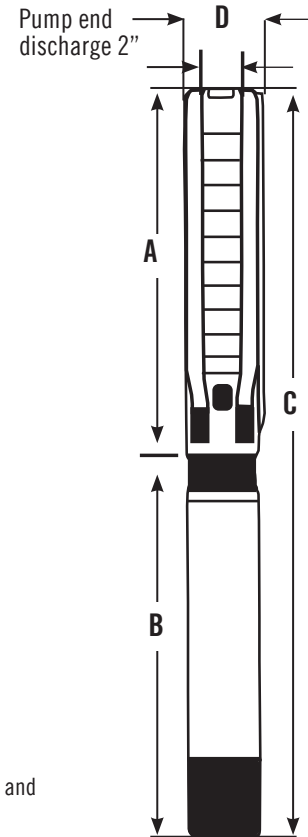


Fig. A

Output - in Gallons Per Minute (Depth to Water)

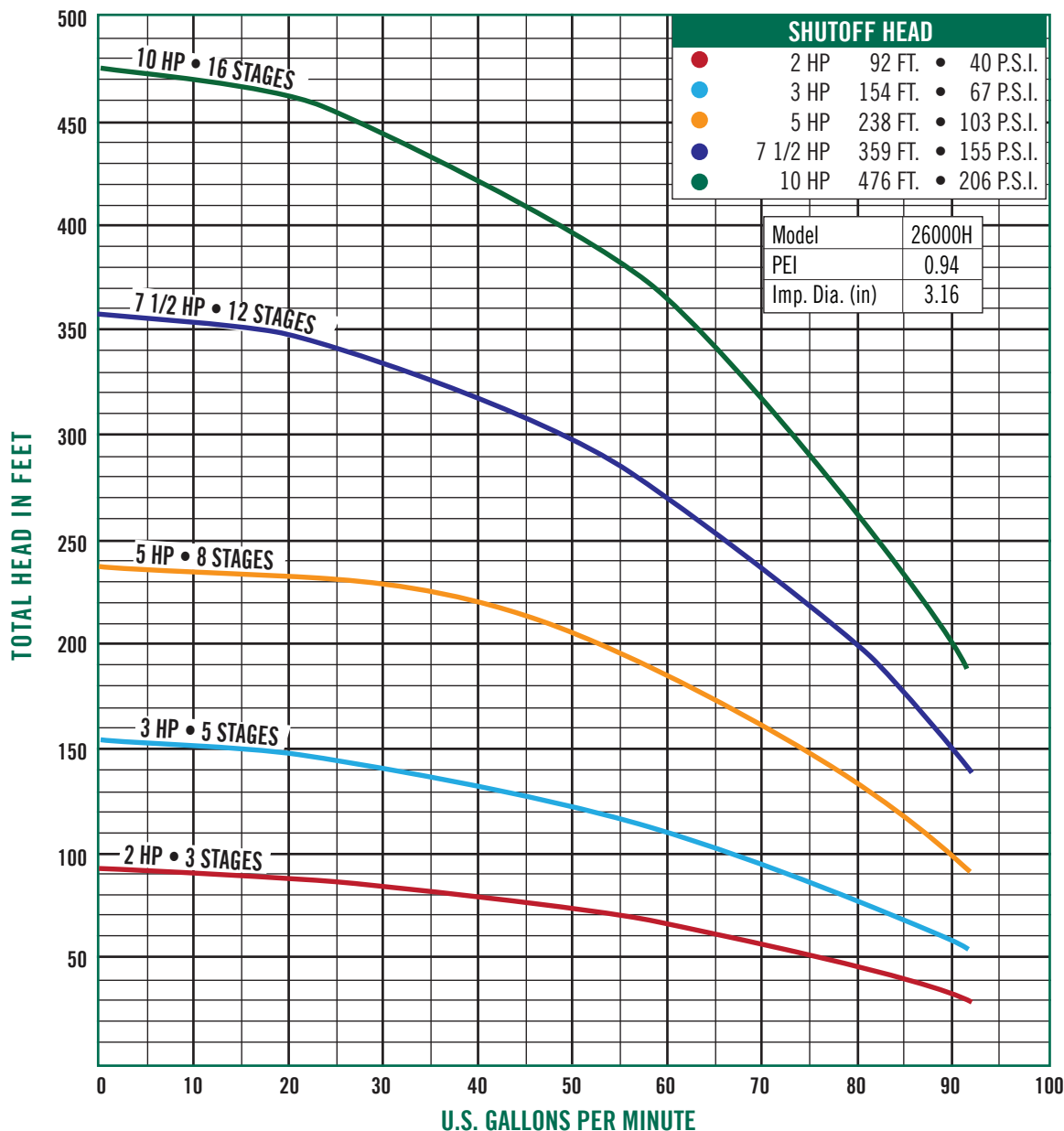
2 HP	PSI	20'	40'	60'	80'
	0		89.1	68.9	38.8
	30	60.8			
	50				

3 HP	PSI	20'	40'	60'	80'	100'	120'
	0			91.1	78.8	68.9	51.0
	30	74.1	61.8	42.1			
	50	37.1					

5 HP	PSI	20'	40'	60'	80'	100'	120'	140'	160'	180'	200'
	0					88.9	84.8	78.5	69.4	59.4	49.7
	30	91.0	87.2	82.3	74.6	64.7	54.9	44.4			
	50	80.2	71.6	61.6	51.9	39.8					

FRICTION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

H - 70 GPM



Submersible Pumps

7½ HP	PSI	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'
	0							90.2	87.7	84.8	81.0	75.7	69.4	62.7	56.1	49.7
30				89.0	86.4	83.2	78.7	72.9	66.3	59.6	53.2	46.3			
50	88.2	85.5	81.9	77.0	70.9	64.2	57.6	51.2	43.7						

10 HP	PSI	40'	60'	80'	100'	120'	140'	160'	180'	200'	220'	240'	260'	280'	300'	340'	380'	420'
	0								88.5	86.4	85.2	84.3	83.2	81.3	78.4	74.5	64.5	54.2	43.8
30				90.1	87.4	85.7	84.7	83.8	82.4	80.1	76.7	72.4	67.4	62.1	56.9	47.0		
50	89.2	86.8	85.4	83.5	81.8	79.2	75.5	70.9	65.7	60.4	55.4	50.5	45.2					

FRICITION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED

Bottom Suction Pump

The new A.Y. McDonald Bottom Suction-Cistern Pump is a durable product that delivers high performance for clear water, gray water, or filtered effluent service operations. Its unique bottom suction design provides maximum drawdown without decreasing the pump's overall longevity.

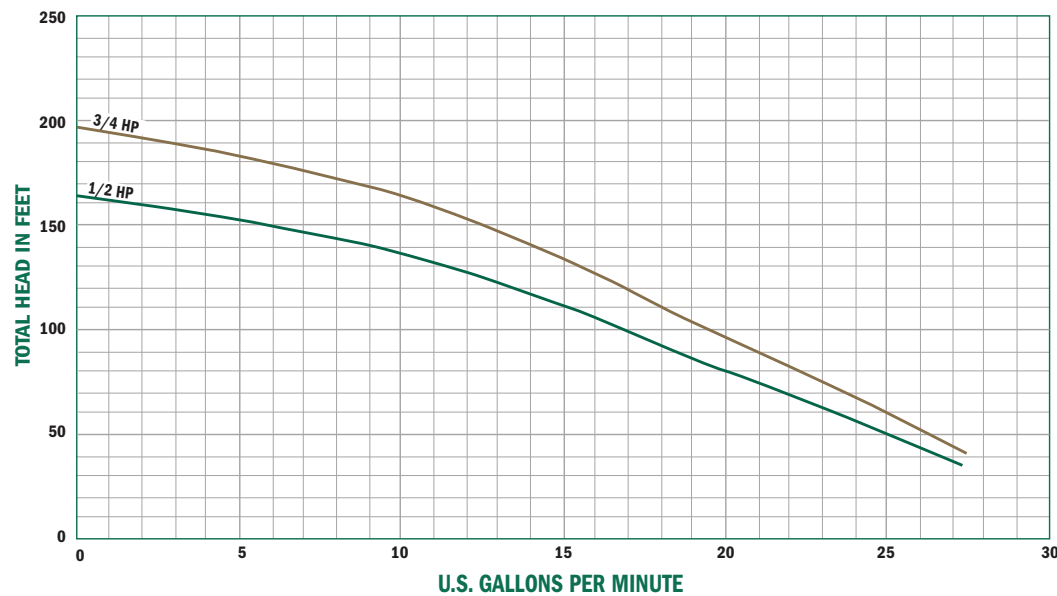
The Bottom Suction-Cistern pump can pass solids up to 1/8". The bottom suction pumps are intended for use in cistern or tank applications. These pumps are well suited to meet agricultural, residential, and commercial installation needs

Features:

- Bottom suction
- Quiet operation
- Corrosion resistant
- Available in 115V & 230V
- CSA listed

Applications:

- Dirty water applications
- Rain water collection
- Pond applications
- Cisterns for both clean & dirty water
- Potable water
- Vertical or Horizontal installation



Model No.	Description	HP	Carton Qty	Volt	Run Amp.	Wt.
22050L2AB	Bottom Suction Sub Pump 2W	1/2	1	115	9.5	19.00
22075L2AB	Bottom Suction Sub Pump 2W	3/4	1	115	12	23.00
22050L2B	Bottom Suction Sub Pump 2W	1/2	1	230	6.8	19.00
22075L2B	Bottom Suction Sub Pump 2W	3/4	1	230	6.8	23.00



4" Motors & Controls



4" Motors & Controls

Pump Catalog - January 2020

MORE THAN A BRAND. WE'RE A FAMILY.

4" A.Y. McDonald Submersible Motors

A.Y. McDonald offers a full line of four inch asynchronous two-pole submersible motors ranging from 1/2 HP through 10 HP. Cooling and lubrication of the thrust bearing assembly is provided by a mixture of water and Glycol. Our two-wire motors have the capacitor placed in a Noryl cartridge directly connected to the motor. Two-wire motors do not require an external control box.

Features:

- 304 Stainless Steel for all parts that come in contact with water.
- 304 Stainless Steel motor shaft.
- Squirrel-cage rotor mounted on a self-centering thrust bearing.
- Stator housed in an airtight 304L Stainless Steel casing (can-type)
- Temp Rating 95°F.
- Two-Wire - the controls are in the motor
- Three-Wire - requires the control box



A.Y. McDonald Submersible Motors



4" Water Well - Two Wire - Single Phase - 60 HZ

A.Y. McDonald Part No.	A.Y. McDonald Model No.	HP	Voltage	kw	Service Factor	AMP (in)	Downward Thrust	Cable length (ft.)
3132-008	SM0412 0.5HP115V	1/2	115	0.37	1.6	8.6	500	5 1/2
3132-005	SM0412 0.5HP230V	1/2	230	0.37	1.6	3.9	500	5 1/2
3132-006	SM0412 0.75HP230V	3/4	230	0.55	1.5	6.3	500	5 1/2
3132-007	SM0412 1HP230V	1	230	0.75	1.4	7.7	700	5 1/2
3132-009	SM0412 1.5HP230V	1 1/2	230	1.1	1.3	11.8	700	5 1/2



4" Water Well - Three Wire - Single Phase - 60 HZ (Control Box Required)

A.Y. McDonald Part No.	A.Y. McDonald Model No.	HP	Voltage	kw	Service Factor	AMP (in)	Downward Thrust	Cable length (ft.)
3132-003	SM0413 0.5HP115V	1/2	115	0.37	1.6	10	500	5 1/2
3132-004	SM0413 0.5HP230V	1/2	230	0.37	1.6	5.5	500	5 1/2
3132-000	SM0413 0.75HP230V	3/4	230	0.55	1.5	7.4	500	5 1/2
3132-001	SM0413 1HP230V	1	230	0.75	1.4	8.3	700	5 1/2
3132-002	SM0413 1.5HP230V	1 1/2	230	1.1	1.3	10.1	700	5 1/2
3132-510	SM0413 2HP230V	2	230	1.5	1.25	10.6	700	5 1/2
3132-512	SM0413 3HP230V	3	230	2.2	1.15	14.3	1500	5 1/2
3132-513	SM0413 5HP230V	5	230	3.7	1.15	22.2	1500	8 3/4



4" Water Well - Three Wire - Three Phase - 60 HZ (Starter Kit Required)

A.Y. McDonald Part No.	A.Y. McDonald Model No.	HP	Voltage	kw	Service Factor	AMP (in)	Downward Thrust	Cable length (ft.)
3132-525	SM0433 0.5HP230V	1/2	230	0.37	1.6	3.2	500	5 1/2
3132-526	SM0433 0.5HP460V		460	0.37	1.6	1.6	500	5 1/2
3132-527	SM0433 0.75HP230V	3/4	230	0.55	1.5	4.4	500	5 1/2
3132-528	SM0433 0.75HP460V		460	0.55	1.5	2.2	500	5 1/2
3132-529	SM0433 1HP230V	1	230	0.75	1.4	5.2	500	5 1/2
3132-530	SM0433 1HP460V		460	0.75	1.4	2.6	500	5 1/2
3132-531	SM0433 1.5HP230V	1 1/2	230	1.1	1.3	7.2	700	5 1/2
3132-532	SM0433 1.5HP460V		460	1.1	1.25	3.6	700	5 1/2
3132-533	SM0433 1.5HP575V		575				700	5 1/2
3132-534	SM0433 2HP230V	2	230	1.5	1.15	9.2	700	5 1/2
3132-535	SM0433 2HP460V		460	1.5	1.15	4.6	700	5 1/2
3132-536	SM0433 2HP575V		575	1.5	1.15		700	5 1/2
3132-514	SM0433 3HP230V	3	230	2.2	1.15	11.2	1500	5 1/2
3132-515	SM0433 3HP460V		460	2.2	1.15	5.6	1500	5 1/2
3132-516	SM0433 3HP575V		575	2.2	1.15		1500	5 1/2
3132-517	SM0433 5HP230V	5	230	4	1.15	17.8	1500	8 3/4
3132-518	SM0433 5HP460V		460	4	1.15	8.9	1500	8 3/4
3132-519	SM0433 5HP575V		575	4	1.15		1500	8 3/4
3132-520	SM0433 7.5HP230V	7 1/2	230	5.5	1.15	24	1500	8 3/4
3132-521	SM0433 7.5HP460V		460	5.5	1.15	12	1500	8 3/4
3132-522	SM0433 7.5HP575V		575	5.5	1.15		1500	8 3/4
3132-523	SM0433 10HP460V	10	460	7.5	1.15	15.4	1500	11 1/2
3132-524	SM0433 10HP575V		575	7.5	1.15		1500	11 1/2

Do not use motors in swimming areas

4" A.Y. McDonald Submersible Motors Two-Wire

4" Asynchronous two-pole submersible motor, made in AISI 304 stainless steel for parts in contact with water. Cooling and lubrication of the thrust bearing assembly and carbon bushes is provided by a mixture of water and glycol. Squirrel-cage rotor mounted on self-centering thrust bearing. Stator housed in an airtight stainless steel casing (canned-type) with both flanges and shell in AISI 304L stainless steel. Removable cable connector to allow fast and easy maintenance. The capacitor is placed in the Noryl cartridge directly connected to the motor, so the motor doesn't require an external control box. Thermal protection included in the motor from 1/2 HP to 1 HP in the 230V - 60 Hz version.



Technical Specification

Flange	NEMA 4"
Insulation class	F
Degree of protection	IP68
Cooling flow	1.0 ft/sec @ 95 °F
Voltage tolerance	+ 6% / -10%
Max starts	20/h
Max operating depth	984 ft
Horizontal operation	1/2 HP - 1 1/2 HP

Components



Canned stator with external shell and flanges made in AISI 304L stainless steel. The stator has 24 slots for better elasticity and regularity of operation. Class F double insulated copper wire. Thermal protection included in the motor from 1/2 HP to 1 HP in the 230V - 60 Hz version.



Kingsbury type thrust bearing unit consisting of tilting pads made of highly-resistant stainless steel and machined using the spherical lapping process.



Shafts with end part made of stainless steel AISI 304 with a special process of surface hardening and polishing of the working area of the bushes. Squirrel-cage rotor made in aluminium.

Electrical Data 60 Hz Single Phase Motors

P2	V	SF	In	In (SF)	Is/In	Cs/Cn	P1	N	Cos φ	η	C	Ø	LC	
[HP]	[kW]	[V]	[A]	[A]			[W]	[min ⁻¹]		%	[uF]	[AWG]	[ft]	
1/2	0.37	115	1.6	8.6	10	4.2	0.65	800	3450	0.88	46	80	3x14	5 1/2
		230	1.6	3.9	5	4.6	0.65	800	3450	0.88	46	20	3x14	5 1/2
3/4	0.55	230	1.5	6.3	6.9	4.3	0.65	1200	3450	0.82	47	25	3x14	5 1/2
1	0.75	230	1.4	7.7	8.8	4.8	0.68	1500	3450	0.84	50	35	3x14	5 1/2
1 1/2	1.1	230	1.3	11.8	12.7	4.7	0.70	2120	3450	0.85	53	40	3x14	5 1/2

P2: Rated output

In: Rated current

Cs/Cn: Locked rotor Torque/Rated Torque

Cos φ: Power factor

Ø: Cable section

V: Rated voltage

In (SF): Service factor current

P1: Power consumption

η: Efficiency

LC: Cable length

SF: Service factor

Is/In: Locked rotor current/Rated current

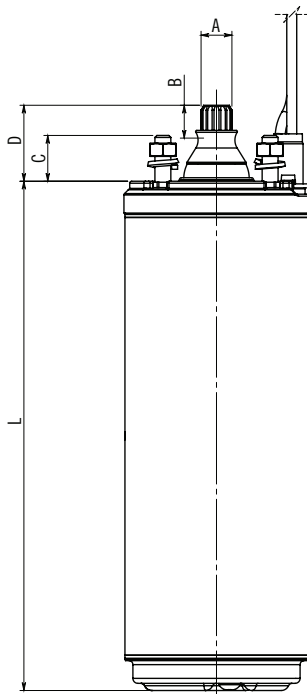
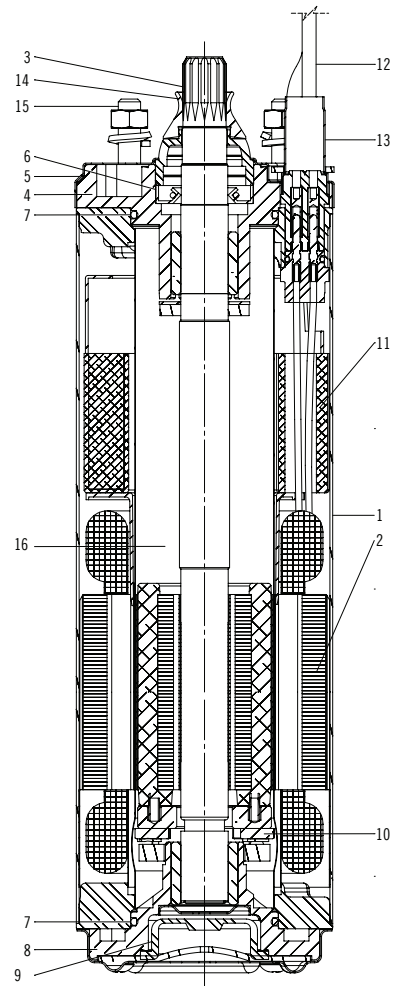
N: R.P.M

C: Capacitor

4" A.Y. McDonald Submersible Motors Two-Wire

Materials

COMPONENTS		
1	Int. and external sleeve	AISI 304
2	Stator	AISI 304L
3	Shaft	AISI 304
4	Upper bracket	Cast Iron
5	Bracket cover	AISI 304
6	Lip seal	NBR
7	Gasket	NBR
8	Lower Bracket	Cast Iron
9	Diaphragm	EPDM
10	Thrust Bearing	Stainless Steel - Graphite
11	Capacitor	Internal Capacitor
12	Cable	EPDM
13	Connecting Plug	AISI 316
14	Sand guard (fixed-removable)	NBR
15	Bolts & Screws	AISI 304
16	Cooling Liquid	Glycol + water

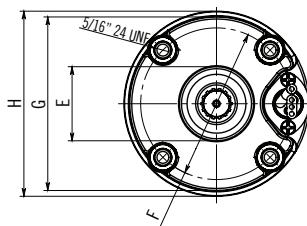


60 Hz Dimensions Single Phase Motors

Type			L	Wt.	Axial Thrust
	[HP]	[kW]	[inch]	[lbs]	[lbf]
60 Hz	1/2 / 115V	0.37	13.425	21.4	500
	1/2 / 230V	0.37	13.031	21.0	500
	3/4	0.55	13.819	23.2	500
	1	0.75	16.772	28.9	700
	1 1/2	1.1	18.543	33.3	700

60 Hz Dimensions

Pos.	inch	Pos.	inch
A	0.61 ^{+0.002} _{-0.003}	E	1.465 ^{+0.016} _{-0.016}
B	0.591 ^{+0.02} ₀	F	3 ^{+0.004} ₀
C	0.906 ^{+0.005} _{-0.005}	G	3.437 ⁺⁰ _{-0.004}
D	1 1/2 ^{+0.02} _{-0.02}	H	3.662 ^{+0.004} _{-0.004}



- CSA Certified



4" A.Y. McDonald Submersible Motors Three-Wire

4" Asynchronous two-pole submersible motor, made in AISI 304 stainless steel for parts in contact with water. Cooling and lubrication of the thrust bearing assembly and carbon brushes is provided by a mixture of water and glycol. Squirrel-cage rotor mounted on self-centering thrust bearing. Stator housed in an airtight stainless steel casing (canned-type) with both flanges and shell in AISI 304L stainless steel. Removable cable connector to allow fast and easy maintenance. Motor suitable for use with variable frequency drive (60 Hz). For the single-phase 60 Hz version the thermal protection is included in the motor (from 1/2 HP to 1 HP). Overload protection must be provided by user for the three-phase version.



Technical Specification

Flange	NEMA 4"
Insulation class	F
Degree of protection	IP68
Cooling flow	1.0 ft/sec @ 95 °F
Voltage tolerance	+ 6% / -10%
Max starts	20/h
Max operating depth	984 ft
Horizontal operation	1/2 HP - 10 HP

Components



Canned stator with external shell and flanges made in AISI 304L stainless steel. The stator has 24 slots for better elasticity and regularity of operation. Class F double insulated copper wire.



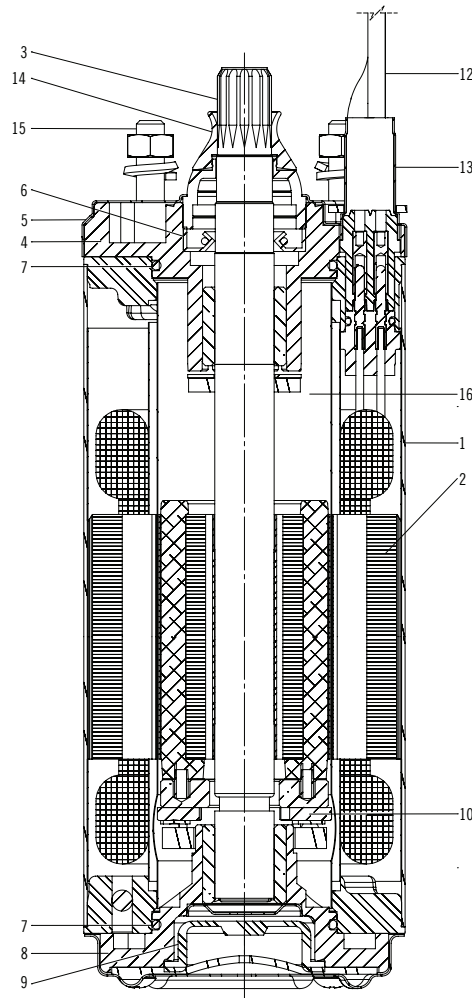
Kingsbury type thrust bearing unit consisting of tilting pads made of highly-resistant stainless steel and machined by using the spherical lapping process.



Shafts with end part made of stainless steel AISI 304/Duplex with a special process of surface hardening and polishing of the working area of the bushes. Squirrel-cage rotor made in aluminium for motor power 1/2HP through 3 HP and in copper for motor power 5 HP and above.

4" A.Y. McDonald Submersible Motors

Three-Wire

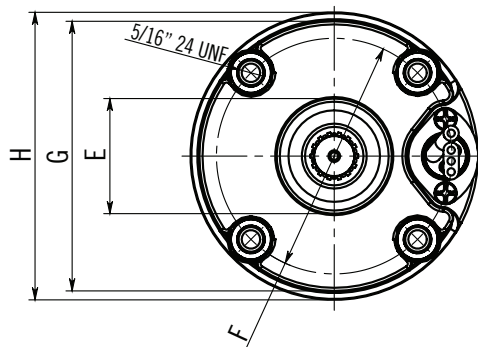
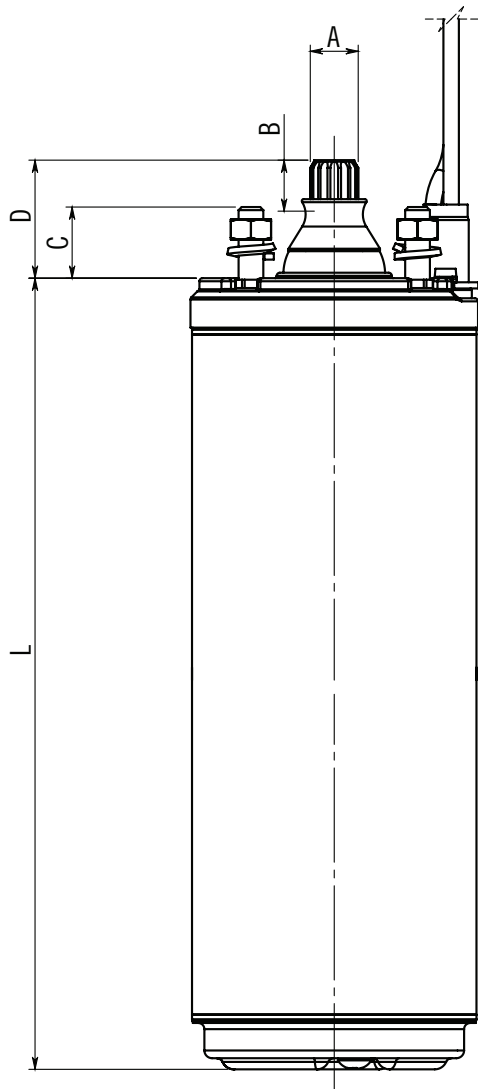


Materials

COMPONENTS		
1	Int. and external sleeve	AISI 304
2	Stator	AISI 304L / Duplex
3	Shaft end	AISI 304
4	Upper bracket	Cast Iron
5	Bracket cover	AISI 304
6	Lip seal	NBR
7	Gasket	NBR
8	Lower Bracket	Cast Iron
9	Diaphragm	EPDM
10	Thrust Bearing	Stainless Steel - Graphite
11	Valve	AISI 303
12	Cable	EPDM
13	Connecting Plug	AISI 316
14	Sand guard (fixed-removable)	NBR
15	Bolts & Screws	AISI 304
16	Cooling Liquid	Glycol + water

4" A.Y. McDonald Submersible Motors

Three-Wire



60 Hz Dimensions / Single Phase Motors

Type			L	WT	Axial Thrust
	[HP]	[kW]	[inch]	[lbs]	[lbf]
60 Hz 3W	1/2	0.37	10.472	19.4	500
	3/4	0.55	11.260	21.4	500
	1	0.75	13.622	27.8	700
	1 1/2	1.1	16.181	32.5	700
	2	1.5	16.181	32.7	700
	3	2.2	21.417	45.2	1500
	5	3.7	26.929	59.8	1500

60 Hz Dimensions / Three Phase Motors

Type			L	Wt.	Axial Thrust
	[HP]	[kW]	[inch]	[lbs]	[lbf]
60 Hz	1/2	0.37	9.291	16.3	500
	3/4	0.55	10.472	19.4	500
	1	0.75	11.260	21.4	500
	1 1/2	1.1	13.622	25.8	700
	2	1.5	15.394	30.5	700
	3	2.2	19.843	40.8	1500
	5	4	24.173	51.9	1500
	7 1/2	5.5	26.929	59.8	1500
	10	7.5	30.079	68.7	1500

60 Hz Dimensions

Pos.	inch	Pos.	inch
A	0.61 ^{+0.002} _{-0.003}	E	1.465 ^{+0.016} _{-0.016}
B	0.591 ^{+0.02} ₀	F	3 ^{+0.004} ₀
C	0.906 ^{+0.005} _{-0.005}	G	3.437 ⁺⁰ _{-0.004}
D	1 1/2 ^{+0.02} _{-0.02}	H	3.662 ^{+0.004} _{-0.004}

- CSA Certified



4" Motors & Controls

4" A.Y. McDonald Submersible Motors

Three-Wire

Electrical Data 60 Hz

Single Phase Motors

P2		V	SF	In	In (SF)	Is/In	Cs/Cn	P1	N	Cos φ	η	C1	C2	Ø	LC
[HP]	[kW]	[V]		[A]	[A]			[W]	[min ⁻¹]		%	[uF]	[uF]	[AWG]	[ft]
1/2	0.37	115	1.6	10	12.6	4.2	0.65	1050	3450	0.80	56	-	250-300	4x14	5 1/2
		230	1.6	5.5	6.6	4.6	0.65	1130	3450	0.78	54	-	59-71	4x14	5 1/2
3/4	0.55	230	1.5	7.4	8.6	4.0	0.65	1420	3450	0.80	56	-	86-103	4x14	5 1/2
1	0.75	230	1.4	8.3	9.8	4.9	0.68	1650	3450	0.80	62	-	105-126	4x14	5 1/2
1 1/2	1.1	230	1.3	10.1	11.5	4.6	0.70	2100	3450	0.88	67	10	105-126	4x14	5 1/2
2	1.5	230	1.25	10.6	13.0	5.4	0.65	2700	3450	0.95	70	20	105-126	4x14	5 1/2
3	2.2	230	1.15	14.3	16.2	3.6	0.50	3500	3450	0.94	71	45	208-250	4x14	5 1/2
5	3.7	230	1.15	22.2	24.3	3.3	0.50	5700	3450	0.98	76	2x40	270-324	4x14	8 3/4

Electrical Data 60 Hz

Three Phase Motors

P2		V	SF	In	In (SF)	Is/In	Cs/Cn	P1	N	Cos φ	η	C	Ø	LC
[HP]	[kW]	[V]		[A]	[A]			[W]	[min ⁻¹]		%	[uF]	[mm ²]	[ft]
1/2	0.37	230	1.6	3.2	3.8	4.4	3.2	870	3450	0.40	42	-	4x14	5 1/2
		460	1.6	1.6	1.9	5.0	3.2	870	3450	0.40	42	-	4x14	5 1/2
3/4	0.55	230	1.5	4.4	4.8	5.2	3.6	1140	3450	0.47	48	-	4x14	5 1/2
		460	1.5	2.2	2.4	5.5	3.6	1140	3450	0.47	48	-	4x14	5 1/2
1	0.75	230	1.4	5.2	5.6	6.4	4.2	1260	3450	0.59	59	-	4x14	5 1/2
		460	1.4	2.6	2.8	5.8	4.2	1260	3450	0.59	59	-	4x14	5 1/2
1 1/2	1.1	230	1.3	7.2	7.8	5.9	4.1	1875	3450	0.53	60	-	4x14	5 1/2
		460	1.25	3.6	3.9	6.7	4.1	1875	3450	0.53	60	-	4x14	5 1/2
2	1.5	230	1.15	9.2	9.8	6.1	3.8	2230	3450	0.57	67	-	4x14	5 1/2
		460	1.15	4.6	4.9	6.7	3.8	2230	3450	0.57	67	-	4x14	5 1/2
3	2.2	230	1.15	11.2	12.0	7.5	4.8	3160	3450	0.69	71	-	4x14	5 1/2
		460	1.15	5.6	6.0	7.1	4.8	3160	3450	0.69	71	-	4x14	5 1/2
5	4	230	1.15	17.8	19.2	7.4	4.0	5230	3450	0.70	77	-	4x14	8 3/4
		460	1.15	8.9	9.6	7.4	4.0	5230	3450	0.70	77	-	4x14	8 3/4
7 1/2	5.5	230	1.15	24.0	26.0	7.5	3.8	7100	3450	0.71	78	-	4x14	8 3/4
		460	1.15	12.0	13.0	7.5	3.8	7100	3450	0.71	78	-	4x14	8 3/4
10	7.5	460	1.15	15.4	16.6	7.1	3.9	9300	3450	0.78	80	-	4x14	11 1/2

P2: Rated output
In: Rated current
Cs/Cn: Locked rotor Torque/Rated Torque
Cos φ: Power factor
Ø: Cable section

V: Rated voltage
In (SF): Service factor current
P1: Power consumption
η: Efficiency
LC: Cable length

SF: Service factor
Is/In: Locked rotor current/Rated current
N: R.P.M
C: Capacitor

A.Y. McDonald Control Box

A.Y. McDonald offers a full line of control boxes to be used with our single phase three-wire pump/motor assemblies.

Features:

- Metal casing
- Auxiliary contacts for control by probes

Standard

- For use with three wire single phase submersible motors 1/2 through 1 HP. Capacitor start.

A.Y. M ^o Donald Part No.	A.Y. M ^o Donald Model No.	HP	Voltage	HZ	KW
6619-004	SC0413 0.5HP115VS	1/2	115	60	.37
6619-005	SC0413 0.5HP230VS	1/2	230	60	.37
6619-014	SC0413 0.75HP230VS	3/4	230	60	.55
6619-015	SC0413 1HP230VS	1	230	60	.75



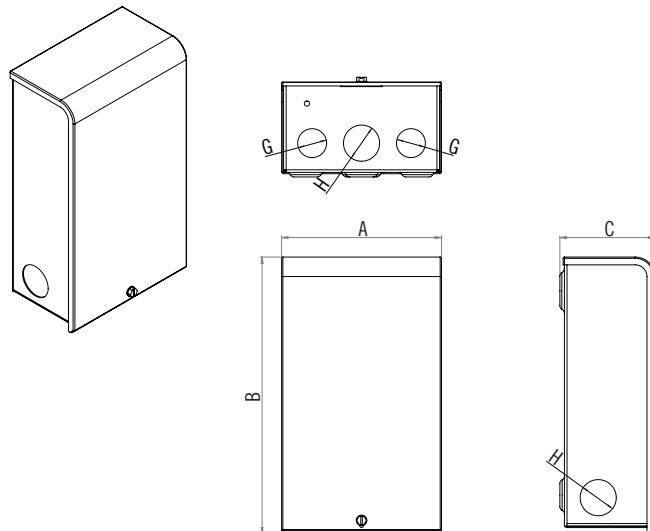
Electrical Data 60 Hz

For Motors Three-Wire

[HP]	[kW]	[V]	[μF]	[V]	A x B x C [inch]	W [lbs]
1/2	0.37	115	250-300	125	4.9" x 8.2" x 2.9"	2.8
1/2	0.37	230	59-71	250	4.9" x 8.2" x 2.9"	2.4
3/4	0.55	230	86-103	250	4.9" x 8.2" x 2.9"	2.4
1	0.75	230	105-126	250	4.9" x 8.2" x 2.9"	2.6

Standard Control Box & Knockout Dimension

Pos.	inch
A	4.9"
B	8.2"
C	2.9"
G	1/2" conduit
H	3/4" conduit



4" Motors & Controls

A.Y. McDonald Control Box

A.Y. McDonald offers a full line of control boxes to be used with our single phase three-wire pump/motor assemblies.

Features:

- Metal casing
- Auxiliary contacts for control by probes
- Thermal protection with external manual reset

Standard

- For use with three wire single phase submersible motors 1/2 through 5 HP. Capacitor start and Capacitor run.

A.Y. McDonald Part No.	A.Y. McDonald Model No.	HP	Voltage	HZ	KW
6619-012	SC0413 1.5HP230VS	1 1/2	230	60	1.1
6619-006	SC0413 2HP230VS	2	230	60	1.5
6619-007	SC0413 3HP230VS	3	230	60	2.2
6619-008	SC0413 5HP230VS	5	230	60	3

Deluxe

- For use with three wire single phase submersible motors 1/2 through 5 HP. Includes Magnetic Line Contactor, Capacitor start, and Capacitor run.

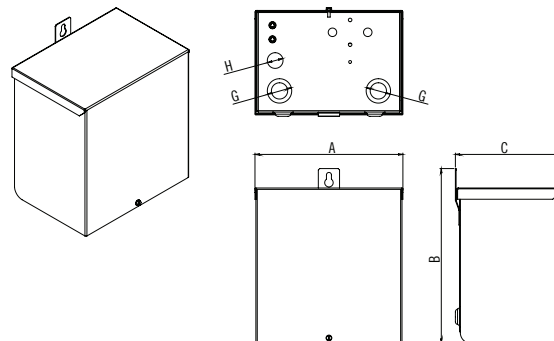
A.Y. McDonald Part No.	A.Y. McDonald Model No.	HP	Voltage	HZ	KW
6619-013	SC0413 1.5HP230VD	1 1/2	230	60	1 1/2
6619-010	SC0413 2HP230VD	2	230	60	1.5
6619-011	SC0413 3HP230VD	3	230	60	2.2
6619-009	SC0413 5HP230VD	5	230	60	3

Electrical Data 60 Hz For Motors Thire-Wire

Type	P2		V	C1	C1	C2	C2	A x B x C	W
	[HP]	[kW]							
Standard	1 1/2	1.1	230	10	370	105-126	250	8.3" x 9.8" x 5.9"	5.6
Standard	2	1.5	230	20	370	105-126	250	8.3" x 9.8" x 5.9"	5.8
Standard	3	2.2	230	45	370	208-250	250	8.3" x 9.8" x 5.9"	5.8
Standard	5	3.0	230	2x40	370	270-324	250	8.3" x 9.8" x 5.9"	5.8
Deluxe	1 1/2	1.1	230	10	370	105-126	250	8.3" x 9.8" x 5.9"	5.8
Deluxe	2	1.5	230	20	370	105-126	250	8.3" x 9.8" x 5.9"	5.9
Deluxe	3	2.2	230	45	370	208-250	250	8.3" x 9.8" x 5.9"	6.0
Deluxe	5	3.0	230	2x40	370	270-324	250	8.3" x 9.8" x 5.9"	6.0

Control Box Dimension

Pos.	inch
A	8.3"
B	9.8"
C	5.9"
G	1" conduit
H	1/2" conduit



Starter Kits

IEC Starter Kits for three phase motors

Each kit includes Nema 1 enclosure, contactor, and overload assembled with the correct voltage coil needed.



STARTER KITS WITH 230V COIL

A.Y. McDonald Part No.	HP	Volts	Wt.
3131-303	1/2	230	6
3131-304	3/4	230	6
3131-305	1	230	6
3131-306	1 1/2	230	6
3131-307	2	230	6
3131-308	3	230	6
3131-309	5	230	6
3131-310	7 1/2	230	6
3131-311	10	230	9

STARTER KITS WITH 460V COIL

A.Y. McDonald Part No.	HP	Volts	Wt.
3131-316	1/2	460	6
3131-317	3/4	460	6
3131-318	1	460	6
3131-319	1 1/2	460	6
3131-320	2	460	6
3131-321	3	460	6
3131-322	5	460	6
3131-323	7 1/2	460	6
3131-324	10	460	6

STARTER KITS WITH 575V COIL

A.Y. McDonald Part No.	HP	Volts	Wt.
3131-333	1 1/2	575	10
3131-334	2 & 3	575	10
3131-335	5	575	10
3131-336	7 1/2	575	10
3131-337	10	575	10

Pumptec



QD Pumptec

- For use with 4" single phase, three wire submersible motors 1/3 through 1 HP.

HP	Volts	HZ	Franklin Model No.	A.Y. McDonald Model No.
1/3 - 1	230	60	580 007 0600	6617-145

Protects against:

- Low yield wells - Low voltage - Power surges
- Air or gas locked pump - Drop in water level
- Clogged well screen - Broken shaft or coupling - Worn pump parts



Pumptec - with remote reading

- For use with 4" single phase submersible motors 1/3 through 1 1/2 HP.

HP	Volts	HZ	Franklin Model No.	A.Y. McDonald Model No.
1/3 - 1 1/2	115/230	60	580 002 0600	6617-425

Protects against:

- Low yield wells - Low voltage
- Air or gas locked pump - Drop in water level
- Clogged well screen - Broken shaft or coupling - Worn pump parts

WILL NOT WORK WITH TWO-WIRE AY MOTORS



Pumptec - Plus

- For use with 4" single phase submersible motors 1/2 through 5 HP.

HP	Volts	HZ	Franklin Model No.	A.Y. McDonald Model No.
1/2 - 5	230	60	580 006 0100	6617-143

Protects against:

- Over/under load - Over/under voltage
- Low yield wells - Mud or sand clogging
- Cavitation (air lock) - Drop in water level
- Rapid cycling - Faulty check valve



Submersible Pump Accessories

Submersible Pump Accessories

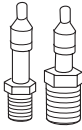
Pump Catalog - January 2020

MORE THAN A BRAND. WE'RE A FAMILY.

Pump Accessories

A.Y. McDonald offers a full line of accessories to complete your pumping system.

Snifter Valve



7891

No-Lead Brass

Size	Wt.
1/8"	1

7892

No-Lead Brass

Size	Wt.
1/4"	1

Torque Arrest



877H

Two Piece Rubber

Size	Wt.
4" - 8"	2

Electrical Instruments & Accessories

For Submersible Installations

Part Number	Description	Wt.
3132-538	Leads 2 Wire 10 Feet	
3132-539	Leads 2 Wire 25 Feet	
3132-540	Leads 2 Wire 50 Feet	
3132-541	Leads 2 Wire 100 Feet	
3132-544	Standard Leads 2 Wire with Ground 5 1/2', 67"	
3132-545	Standard Leads 3 Wire with Ground 5 1/2', 67"	
3132-546	Standard Leads 3 Wire with Ground 106"	
6617-255	Sta-Kons (#12 & #10)	1
6617-336	Sta-Kons (#8 & #6)	1
6617-115	Set (3) Mech. Connectors	1
6610-224	Lightning Arrestor	1
6610-260	Three-phase Lightning Arrestor	1
6617-135	Heat Shrink Splice Kit Three-wire (10/12/4 gauge)	1
6617-136	Heat Shrink Splice Kit Two-wire (12 gauge)	1

No-Lead Silicon Bronze Check Valves Spring Loaded

400 PSI working pressure. Bronze finished body



500SB

FNPT x FNPT - No tappings

Part No.	Size	Wt.
6814-031	1/2"	1
6814-005	3/4"	1
6814-006	1"	2
6814-007	1 1/4"	2
6814-008	1 1/2"	2
6814-009	2"	4
6814-197	2 1/2"	10

500MS

FNPT x MNPT - No tappings

Part No.	Size	Wt.
6814-192	1" x 1 1/4"	2
6814-193	1 1/4" x 1 1/4"	2
6814-194	2" x 2"	4

Stainless Steel Check Valves Spring Loaded

400 PSI working pressure.



500MSS

FNPT x MNPT - No tappings

Part No.	Size	Wt.
6814-195	1" x 1 1/4"	2
6814-196	1 1/4" x 1 1/4"	2

No-Lead Silicon Bronze Foot Valves

Perforated stainless steel strainer - Spring loaded
400 PSI working pressure



400SB

FNPT x FNPT - No tappings

Part No.	Size	Wt.
6814-000	3/4"	1
6814-001	1"	1
6814-002	1 1/4"	1
6814-003	1 1/2"	2
6814-004	2"	4

540SB

FNPT x FNPT - Doubled Tapped 1/8" & 1/4"

Part No.	Size	Wt.
6814-327	3/4"	1
6814-010	1"	2
6814-011	1 1/4"	2
6814-012	1 1/2"	2
6814-013	2"	4

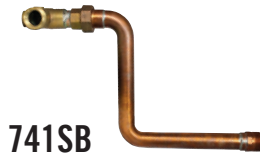
Pump Accessories

No-Lead Elevated Tank Tees

740SB

11" x 10" x 1" -
Length x Height x Connection
2 Taps

Size	Wt.
3/4" x 1"	3



741SB

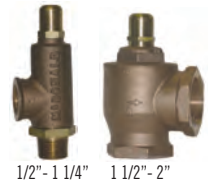
11" x 10" x 1 1/4" -
Length x Height x Connection
2 Taps

Size	Wt.
1" x 1 1/4"	5

For additional No-Lead Brass Tank Tees, see A.Y. McDonald Plumbing Products

No-Lead Pressure Relief Valves

- Factory set at 30, 65, 75, or 100 PSI
- No-Lead Brass Construction
- Composition Disc on Brass Seat
- 180°F Max. Temperature
- Field Adjusting Not Recommended



6214

No-Lead Pressure Relief Valves

Size	PSI	Wt.
1/2"	30#	1
1/2"	75#	1
3/4"	30#	2
3/4"	75#	2
3/4"	100#	2
1"	30#	2
1"	75#	2
1"	100#	2

Size	PSI	Wt.
1 1/4"	30#	3
1 1/4"	65#	3
1 1/4"	100#	3
1 1/2"	30#	4
1 1/2"	65#	4
2"	30#	6
2"	65#	6

Pipe Holder

- Solid cast iron construction
- Time proven design
- 2000 lb. non-shock load limit

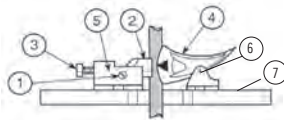


8871

Pipe Holder for 1", 1 1/4", 1 1/2" or 2" pipe

Part No.	Wt.
6814-110	25

Pipe Holder Repair Parts



Order	Part No.	Description	Wt.
1	3117-612	Set screw 1/2-13 x 3/4	0
2	6814-236	Adjusting slide	3
3	3117-611	Adjusting screw	1
4	6814-235	Pipe holder dog	5
5	6814-234	Body Casting (Holder)	14
6	6814-237	Pin	1
7	6814-238	Wood Base	4
	3122-104	Cotter Pin	0

Air Volume Controls

Float Type

Model No.	Part No.	Description	Wt.
894	3129-383	Deep Well	1



Diaphragm Type

Model No.	Part No.	Description	Wt.
30-AV	3129-378	1/4"	1
42-AV	3129-388	1/4"	2
80-AV	3129-379	1/4"	2
120-AV	3129-380	3/8"	3
45-AV	3129-389	1/4"	1
100-AV	3129-386	3/8"	1



Float & Valve

8713

18" long 3/4" or 1" Repair Parts available (see price list)

Part No.	Size	Wt.
6814-102	3/4"	2
6814-104	1"	2



Float Valve Repair Parts

Part No.	Description	Wt.
6814-326	Replacement Ball	0
6814-204	Screw - 3/4	0
6814-207	Lever Arm	1
6814-312	Float Body - 3/4	1
6814-313	Float Body - 1	1

8715

Floats for Float Valve
3" x 12" diameter float

Model No.	Part No.	Description	Wt.
8715	6813-199		25



Pump Accessories

Sanitary Well Seals

- Two-piece, cast iron construction
- Rubber Composition Seal

459S

One Pipe

Sizes	Wt.
4" x 1"	4
4" x 1 1/4"	4
4 1/2" x 1 1/4"	4
5" x 1"	6
5" x 1 1/4"	6
5 5/8" x 1"	8

Sizes	Wt.
5 5/8" x 1 1/4"	7
6" x 1"	8
6" x 1 1/4"	8
6" x 1 1/2"	8
6" x 2"	8



460S

Two Pipe

Sizes	Wt.
4" x 1 1/4" x 1"	3
5" x 1 1/4" x 1"	6
5 5/8" x 1 1/4" x 1	7
6" x 1 1/4" x 1"	8
6" x 1 1/2" x 1 1/4"	8



Pressure Gauge

0-100 lbs, - 2" dial - MPT. 1/4" Brass stem.

Steel case, Vertical installation



Part No.	Wt.
5999-897	.20

Plastic Sanitary Well Seals

- Two-piece, cast iron construction
- Rubber Composition Seal



Model No.	Sizes	Wt.
401S	4" x 1"	2
402S	4" x 1 1/4"	2
451S	4 1/2" x 1"	2
452S	4 1/2" x 1 1/4"	2
453S	4 1/2" x 1 1/2"	2
501S	5" x 1"	2
502S	5" x 1 1/4"	2
601S	6" x 1"	3
602S	6" x 1 1/4"	3

Stainless Steel Sanitary Well Seals

Model No.	Sizes	Wt.
359S	6" x 2"	4
359SWS	4" x 1"	2
359SWS	4" x 1 1/4"	2
359SWS	5" x 1"	3
359SWS	5" x 1 1/4"	3
359SWS	5" x 2"	3
359SWS	6" x 1"	4
359SWS	6" x 1 1/4"	4
359SWS	6" x 2"	4
359SWS	8" x 2"	8
359SWS	8" x 3"	8
359SWS	10" x 2"	17

Switches

"FSG" Pressure switches are rated to 1 1/2 HP, 115V, single phase and/or 2 HP, 230V, single phase or up to 3 HP, 230V, three phase. Submersible pumps above 2 HP, one phase require deluxe control boxes with these switches.



A.Y. McDonald Model No.	Size	Setting	Model	Wt.
3129-421	1/4"	20-40	(9013FSG2J20)	1
3129-423	1/4"	30-50	(9013FSG2J21)	1
3129-432	1/4"	40-60	(9013FSG2J24)	1
3129-442	1/4"	20-40	(9013FSG2J20C20) 20 pack	17
3129-443	1/4"	30-50	(9013FSG2J21C20) 20 pack	16
3129-448	1/4"	40-60	(9013FSG2J24C20) 20 pack	15

Switches with "M4" include auto cut-off if pressure drops to about 10 PSIG below cut-in pressure - requires manual reset with lever provided.

A.Y. McDonald Model No.	Size	Setting	Model	Wt.
3129-420	1/4"	20-40	(9013FSG2J20M4)	2
3129-433	1/4"	30-50	(9013FSG2J21M4)	1
3129-438	1/4"	40-60	(9013FSG2J24M4)	1

Switches with "P" include pulsation plug to dampen surges to the switch

A.Y. McDonald Model No.	Size	Setting	Model	Wt.
3129-414	1/4"	20-40	(9013FSG2J20P)	1
3129-436	1/4"	30-50	(9013FSG2J21P)	2

Switches with "M1" include manual cut-off lever to allow circuit interruption at the switch to service the pump.

A.Y. McDonald Model No.	Size	Setting	Model	Wt.
3129-439	1/4"	30-50	(9013FSG2J21M1)	1

"GSG" heavier duty switches are rated to 3 HP 230 V. Single phase and 5 HP 230 V. Three phase plus DC to 1 HP. They require use of deluxe control boxes on submersible pumps above 3 HP single phase.



A.Y. McDonald Model No.	Size	Setting	Model	Wt.
3129-430	1/4"	20-40	(9013GSG2J20)	3
3129-435	1/4"	30-50	(9013GSG2J21)	2
3129-434	1/4"	40-60	(9013GSG2J24)	3

A.Y. McDonald Model No.	Size	Setting	Wt.
3129-457	1/4"	20-40	1
3129-458	1/4"	30-50	1
3129-459	1/4"	40-60	1

Pump Accessories

Motor Adapter

- 4" pump end to 6" motor Stainless Steel
- Bolts included

A.Y. McDonald Model No.	Wt.
6180-326	6



- 6" pump end to 8" motor Stainless Steel

A.Y. McDonald Model No.	Wt.
6180-518	8

Motor Gauge

A.Y. McDonald Model No.	Wt.
3132-010	6



Check Valves

500D - Ductile Iron Check Valve with Break Off Plug

Bronze poppet. Stainless steel spring and nut. Painted. Breakoff plug is stainless steel. When manually broken, the break off plug allows for water drainage from drop pipe before removal of pump. Available in 3" and 4" sizes.



Part No.	Description
6814-314	3" Breakoff Plug
6814-315	4" Breakoff Plug
6814-316	Breakoff Plug Only

Ductile Iron Check Valve with Break Off Plug

Silicon bronze poppet. Stainless steel spring and nut. Non-toxic polyester powder coat paint. FNPT x FNPT, No tappings. For additional sizes, contact factory.



Part No.	Description
6200-188	6" x 6" Ductile Iron



Pressure Master



Pressure Masters

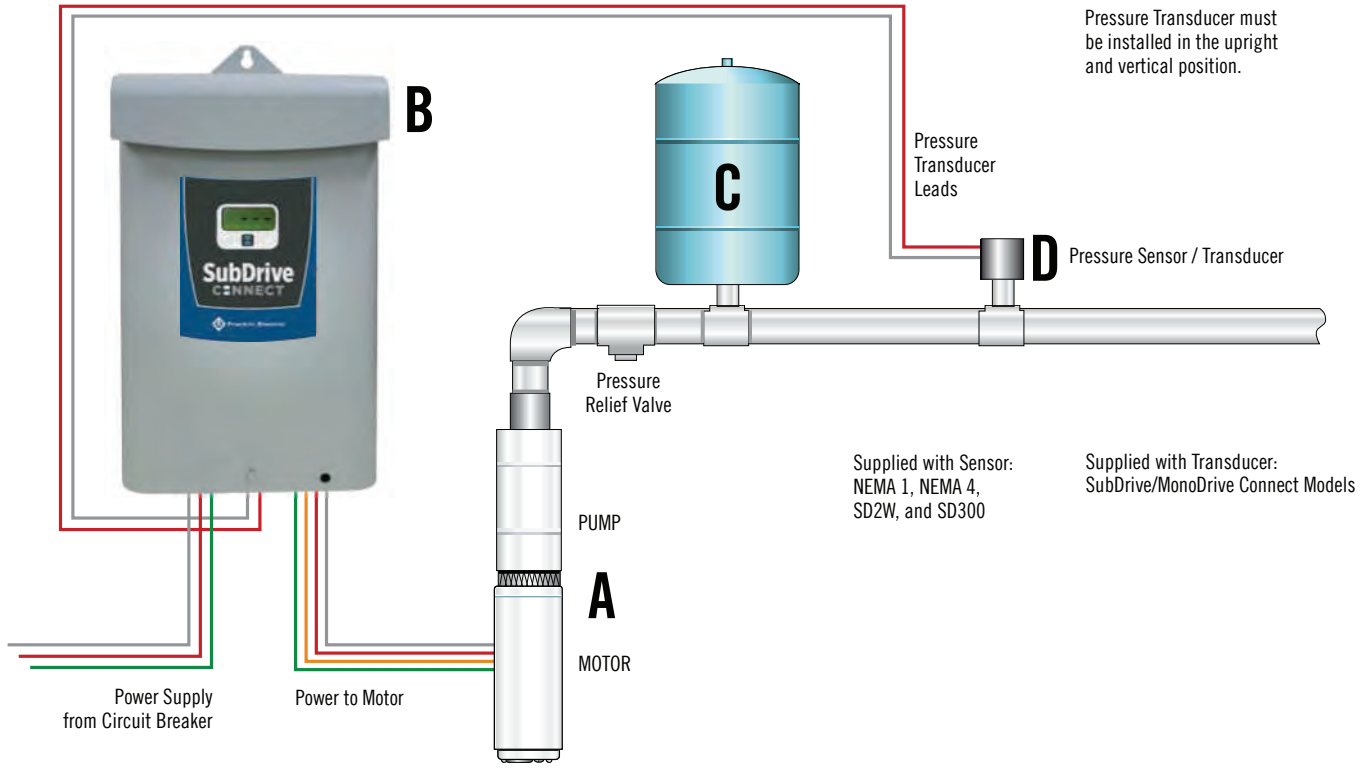
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MORE THAN A BRAND. WE'RE A FAMILY.

Pressure Master

SubDrive | MonoDrive | E-Z Pac

Pressure Master



Drive	Franklin Electric	A.Y. McDonald	Single-Phase (3-wire)					Three-Phase			
			1/2 HP	3/4 HP	1 HP	1 1/2 HP	2 HP	1 1/2 HP	2 HP	3 HP	5 HP
MonoDrive	587 020 5003C	6617-432	X	X	X						
MonoDriveXT	587 020 5203C	6617-434			X	X	X				
SubDrive15	587 020 5103C	6617-433	X	X	X			X			
SubDrive20	587 020 5303C	6617-435			X	X	X	X	X		
SubDrive30	587 020 5403C	6617-436			X	X	X	X	X	X	
SubDrive 50	587 020 5503C	6617-437									X

FEATURES

- Constant water pressure with a wide range of settings (0-100 pressure transducer)
- Single-phase input power
- FE Connect Smartphone app for advanced settings and monitoring (NEMA 3R only)
- User-configurable motor frequency range (NEMA 3R only)
- Easy installation
- Soft-start feature prevents water hammer and increases motor life
- Works with small pressure tanks or existing larger tanks
- Advanced filtering to remove radio frequency interference
- UL and cUL listed
- Built-in diagnostics and protection
 - Surge protection
 - Underload
 - Undervoltage
 - Locked pump
 - Open circuit
 - Short circuit
 - Overheated controller
 - Broken pipe detection (NEMA 3R only)

Easily Replaceable Fan Kits

Controller	Franklin Electric #	A.Y. McDonald #
SubDrive 75 NEMA 4	225635901	6617-161
SubDrive 100 NEMA 4	225635902	6617-162
SubDrive 150 NEMA 4	225635902	6617-162
MonoDrive NEMA 4	225635901	6617-161
MonoDrive XT NEMA 4	225635902	6617-162



Analog Pressure Transducer

4-20mA, 100 PSI, include 10 ft. cable

Franklin Electric #	A.Y. McDonald #
226905902	6617-439

For use with MonoDrive, MonoDrive XT, SubDrive 15, 20, 30, & 50.



Pressure Sensor

Included with all constant pressure controllers.

Controller	Franklin Electric #	A.Y. McDonald #
SubDrive 75 / 100 / 150 MD & XT	223995901	6627-088
SubDrive 300	225495901	6617-431

NEMA 3R

The NEMA 3R enclosure is rated for indoor and outdoor use. It provides a degree of protection against falling rain and sleet.

NEMA 4

The NEMA 4 weatherproof enclosure is designed for both indoor and outdoor use and offers robust protection against harsh environmental conditions.

MonoDrive - Pressure Master MD

This constant pressure controller provides the flexibility to convert a single phase conventional pump system to a constant pressure system with a simple replacement of the three wire control box and pressure switch. The MonoDrive can retrofit any existing 1/2 - 1 HP three wire single phase water well system which means that homeowners can enjoy the benefits of constant water pressure without purchasing a new pump.



APPLICATIONS

MonoDrive is designed for use in residential homes, schools, restaurants, car washes, farms, and landscape irrigation systems with a McDonald 1/2 - 1 HP submersible pump already in place with a A.Y. McDonald single phase three wire motor. The performance is the same as standard 1/2 - 1 HP pump/motor sets. It is great for homes that have a wide range of flow demands. The MonoDrive controller is equally effective on new installations.

The MonoDrive is design to convert a conventional 1/2 HP to 1 HP pump system to a variable speed constant pressure system by simply replacing the three-wire control box and pressure switch. They are easy to install, smooth running, just plug and play.

FEATURES

- Constant water pressure with a wide range of settings (0-100 pressure transducer)
- Single-phase input power
- Nema 4 enclosure
- Easy installation
- Soft-start feature prevents water hammer and increases motor life
- Works with small pressure tanks or existing larger tanks
- Advanced filtering to remove radio frequency interference
- UL and cUL listed
- Fan kit is easily replaceable
- Built-in diagnostics and protection
 - Surge protection
 - Underload
 - Undervoltage
 - Locked pump
 - Open circuit
 - Short circuit
 - Overheated controller

MonoDrive - 1/2, 3/4, & 1 HP

Controller Rating	Part No.
NEMA 4 (Outdoor)	6617-159

MONODRIVE (NEMA 4) - Outdoor		
Model No.	A.Y. Model # 6617-159 FE Model # 5870203114	
Input from Power Source	Voltage	190-260 VAC
	Phase In	Single-phase
	Frequency	60/50 Hz
	Current (max)	5.7 Amps (RMS) 1/2 hp, 0.37 kW system 8.7 Amps (RMS) 3/4 hp, 0.55 kW system 11 Amps (RMS) 1 hp, 0.75 kW system
	Power Factor	1.0 (constant)
	Power (idle)	35 Watts
	Power (max)	1150 Watts (1/2 hp, 0.37 kW) system 1750 Watts (3/4 hp, 0.55 kW) system 2150 Watts (1 hp, 0.75kW) system
Output to Motor	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations
	Voltage	Adjusts with Frequency
	Phase Out	Single-phase (three-wire)
	Frequency Range	30-60 Hz
	Current (max)	Main Phase: 6 Amps (RMS) 1/2 hp, 0.37 kW system Main Phase: 8 Amps (RMS) 3/4 hp, 0.55 kW system Main Phase: 10.4 Amps (RMS) 1 hp, 0.75 kW system
Pressure Setting	Wire Gauge Size(s)	#6 - #18* ga.
	Factory Present	50 psi (3.4 bar)
Operating Conditions⁽¹⁾	Adjustment Range	25-80 psi (1.7 - 5.5 bar)
	Temperature (at 230 VAC input)	-13°F to 125°F (-25°C to 50°C)
Controller Size⁽²⁾ (approximate)	Relative Humidity	0-100%, condensing
	Outer Dimensions Weight	17 1/2" x 16 3/8" x 11 3/8" (44.45 x 41.59 x 28.89 cm) 24.14 lbs (10.95 kg)
For Use With⁽³⁾	Pump (60 Hz)	1/2 hp submersible pumpend 3/4 hp submersible pumpend 1 hp submersible pumpend
	A.Y. McDonald Motor	1/2 hp single-phase, three-wire 3/4 hp single-phase, three-wire 1 hp single-phase, three-wire

MonoDrive XT - Pressure Master MD

This constant pressure controller provides the flexibility to convert a single phase conventional pump system to a constant pressure system with a simple replacement of the three wire control box and pressure switch. The MonoDriveXT can retrofit any existing 1 1/2 - 2 HP three wire single phase water well system which means that homeowners can enjoy the benefits of constant water pressure without purchasing a new pump.

APPLICATIONS

MonoDriveXT is designed for use in residential homes, schools, restaurants, car washes, farms, and landscape irrigation systems with a McDonald 1 1/2 - 2 HP submersible pump already in place with a A.Y McDonald single phase three wire motor. The performance is the same as standard 1 1/2 - 2 HP pump/motor sets. It is great for homes that have a wide range of flow demands. The MonoDrive controller is equally effective on new installations.

The MonoDriveXT is design to convert a conventional 1 1/2 HP to 2 HP pump system to a variable speed constant pressure system by simply replacing the three-wire control box and pressure switch. They are easy to install, smooth running, just plug and play.



Pressure Master

FEATURES

- Constant water pressure with a wide range of settings (0-100 pressure transducer)
- Single-phase input power
- Nema 4 enclosure
- Easy installation
- Soft-start feature prevents water hammer and increases motor life
- Works with small pressure tanks or existing larger tanks
- Advanced filtering to remove radio frequency interference
- UL and cUL listed
- Fan kit is easily replaceable
- Built-in diagnostics and protection
 - Surge protection
 - Underload
 - Undervoltage
 - Locked pump
 - Open circuit
 - Short circuit
 - Overheated controller
 - Broken pipe detection (NEMA 3R only)

MonoDrive XT - 1 1/2 & 2 HP

Controller Rating	Part No.
NEMA 4 (Outdoor)	6617-160

MONODRIVE XT (NEMA 4) - Outdoor		
Model No.	A.Y. Model # 6617-160 FE Model # 5870204114	
Input from Power Source	Voltage	190-260 VAC
	Phase In	Single-phase
	Frequency	60/50 Hz
	Current (max)	13 Amps (RMS) 1 1/2 hp, 1.1 kW system 16 Amps (RMS) 2 hp, 1.5 kW system
	Power Factor	1.0 (constant)
	Power (idle)	65 Watts
	Power (max)	2500 Watts (1 1/2 hp, 1.1 kW) system 3100 Watts (2 hp, 1.5 kW) system
	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations
Output to Motor	Voltage	Adjusts with Frequency
	Phase Out	Single-phase (three-wire)
	Frequency Range	30-60 Hz
	Current (max)	Main Phase: 11.5 Amps (RMS) 1 1/2 hp, 1.1 kW system Main Phase: 13.2 Amps (RMS) 2 hp, 1.5 kW system
	Wire Gauge Size(s)	#6 - #18* ga.
Pressure Setting	Factory Present	50 psi (3.4 bar)
	Adjustment Range	25-80 psi (1.7 - 5.5 bar)
Operating Conditions^(a)	Temperature (at 230 VAC input)	-13°F to 125°F (-25°C to 50°C)
	Relative Humidity	0-100%, condensing
Controller Size^(b) (approximate)	Outer Dimensions Weight	17 1/2" x 16 3/8" x 11 3/8" (44.45 x 41.59 x 28.89 cm) 28.32 lbs (12.84 kg)
For Use With^(c)	Pump (60 Hz)	1 hp submersible pumpend 1 1/2 hp submersible pumpend 2 hp submersible pumpend
	A.Y. McDonald Motor	1 hp single-phase, three-wire 1 1/2 hp single-phase, three-wire 2 hp single-phase, three-wire

SubDrive 15 / 75 - Pressure Controller

NEMA 3R NEMA 4

The SubDrive 15 is designed for three-phase motors to provide constant pressure with three-phase performance using single-phase input power. They have a high starting torque, easy to install, smooth running, just plug and play. Performance ranges from 3/4 hp to 5 hp. Indoor/outdoor NEMA 3R and NEMA 4 enclosure options. The fan kit is easily replaceable.

APPLICATIONS

SubDrive 15 constant pressure controller is designed for use in residential homes, schools, restaurants, car washes, farms, and landscape irrigation systems with a McDonald 3/4 HP pump end mounted to a 1½ HP, 230 volt A.Y. McDonald three phase motor.

FEATURES

- Constant water pressure with a wide range of settings (0-100 pressure transducer)
- Single-phase input power
- FE Connect Smartphone app for advanced settings and monitoring (NEMA 3R only)
- User-configurable motor frequency range (NEMA 3R only)
- Easy installation
- Soft-start feature prevents water hammer and increases motor life
- Works with small pressure tanks or existing larger tanks
- Advanced filtering to remove radio frequency interference
- UL and cUL listed
- Built-in diagnostics and protection
 - Surge protection
 - Undervoltage
 - Open circuit
 - Overheated controller
 - Underload
 - Locked pump
 - Short circuit
 - Broken pipe detection (NEMA 3R only)



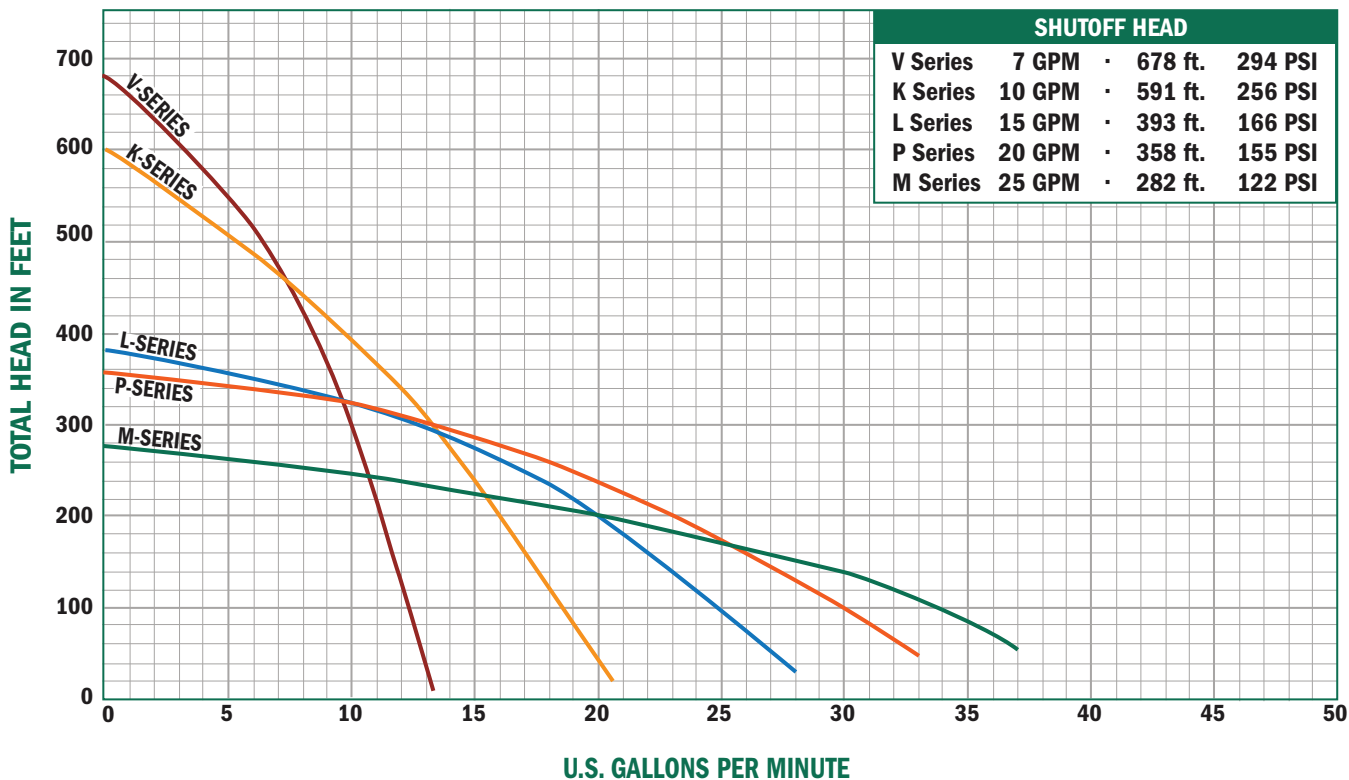
SubDrive15 (NEMA 3R) - Indoor/Outdoor

Model No.	Indoor/Outdoor	A.Y. Model # 6617-433 FE Model # 5870205103C	Pressure Setting	Factory Present	50 psi (3.4 bar)	
Input from Power Source	Voltage	208/230 VAC	Operating Conditions ^(A)	Adjustment Range	25-80 psi (1.7 - 5.5 bar)	
	Phase In	Single-phase		Temperature (at 230 VAC input)	-13°F to 122°F (-25°C to 50°C)	
	Frequency	60/50 Hz		Relative Humidity	20-95%, non-condensing	
	Current (max)	12 Amps	Controller Size ^(B) (approximate)	Outer Dimensions Weight	9 3/4" x 19 3/4" x 5 1/4" (25 x 50 x 13 cm) 26 lbs (11.8 kg)	
	Power Factor	~0.95		For Use With ^(C)	Pump (60 Hz)	1/2 hp submersible pumpend 3/4 hp submersible pumpend 1 hp submersible pumpend 1 1/2 hp submersible pumpend
	Power (idle)	4 Watts			A.Y. McDonald Motor	1/2 hp single-phase, three-wire 3/4 hp single-phase, three-wire 1 hp single-phase, three-wire 1 1/2 hp three-phase, three-wire
	Power (max)	2500 Watts				
Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations					
Output to Motor	Voltage	Adjusts with Frequency				
	Phase Out	Single-phase (three-wire) OR Three-phase				
	Frequency Range	30-77 Hz (3/4 hp, 0.55 kW) pump 30-72 Hz (1 hp, 0.75 kW) pump 30-60 Hz (1 1/2 hp, 1.1 kW) pump 30-63 Hz (Single-phase Motors)				
	Current (max)	5.9 A / phase				
Wire Gauge Size(s)	#6 - #14* ga.					

Controller Rating	Part No.	Model No.
NEMA 3R (Indoor/Outdoor)	6617-433	SubDrive 15
NEMA 4 (Outdoor)	6617-156	SubDrive 75

SubDrive 15 / 75 - 21000/23000 E-Z Pac Packages

NEMA 3R NEMA 4



NOTE: Performance shown does not include friction loss in drop pipe (for flow rates above 25 GPM, larger drop pipe is recommended.)

No-Lead Brass - 21000 Series

E-Z PAC (N3R)

N1 - (NEMA 3R), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
21075VCP1EZ	V	7	65
21075KCP1EZ	K	10	58
21075LCP1EZ	L	15	58
21075PCP1EZ	P	20	59
21075MCP1EZ	M	25	56

E-Z PAC (N4)

N4 - (NEMA 4), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
21075VCP4EZ	V	7	63
21075KCP4EZ	K	10	68
21075LCP4EZ	L	15	69
21075PCP4EZ	P	20	67
21075MCP4EZ	M	25	70

Stainless Steel - 23000 Series

E-Z PAC (N3R)

N1 - (NEMA 3R), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
23075VCP1EZ	V	7	59
23075KCP1EZ	K	10	57
23075LCP1EZ	L	15	56
23075PCP1EZ	P	20	55
23075MCP1EZ	M	25	57

E-Z PAC (N4)

N4 - (NEMA 4), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
23075VCP4EZ	V	7	61
23075KCP4EZ	K	10	67
23075LCP4EZ	L	15	67
23075PCP4EZ	P	20	64
23075MCP4EZ	M	25	59

The SubDrive 15 is designed to be part of a system that includes three main components:

1

Subdrive 15 controller
(pressure sensor included)
NEMA 3R - Part No. 6617-433
NEMA 4 - Part No. 6617-156
SubDrive 75



2

A.Y. McDonald 1 1/2 HP, 230V
three phase motor
Part No. 3132-531



3

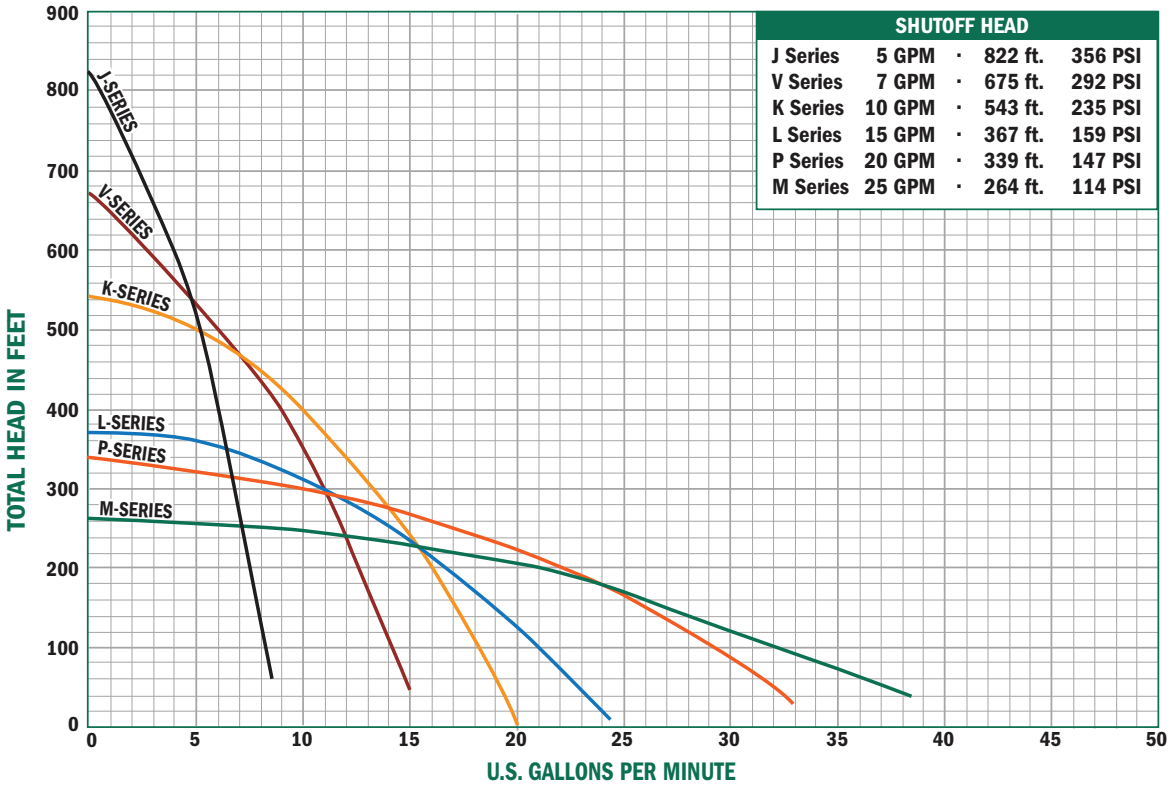
Appropriate pump end
Includes pump end 23075K
For example:
23075KCP1EZ



Pressure Master

SubDrive 15 / 75 - 24000 E-Z Pac Packages

NEMA 3R NEMA 4



NOTE: Performance shown does not include friction loss in drop pipe (for flow rates above 25 GPM, larger drop pipe is recommended.)

Stainless Steel - 24000 Series

E-Z PAC (N3R)

N1 - (NEMA 3R), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
24075JCP1EZ	J	5	
24075VCP1EZ	V	7	59
24075KCP1EZ	K	10	57
24075LCP1EZ	L	15	56
24075PCP1EZ	P	20	55

E-Z PAC (N4)

N4 - (NEMA 4), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
24075JCP4EZ	J	5	
24075VCP4EZ	V	7	61
24075KCP4EZ	K	10	67
24075LCP4EZ	L	15	67
24075PCP4EZ	P	20	64

The SubDrive 15 is designed to be part of a system that includes three main components:

1

Subdrive 15 controller
(pressure sensor included)
NEMA 3R - Part No. 6617-433
NEMA 4 - Part No. 6617-156
SubDrive 75



2

A.Y. McDonald 1 1/2 HP, 230V
three phase motor
Part No. 3132-531



3

Appropriate pump end
Includes pump end 24075K
For example:
24075KCP1EZ



SubDrive 20 / 100 - Pressure Controller

NEMA 3R NEMA 4

The SubDrive 20 is designed for three-phase motors to provide constant pressure with three-phase performance using single-phase input power. They have a high starting torque, easy to install, smooth running, just plug and play. Performance ranges from 3/4 hp to 5 hp. Indoor/outdoor NEMA 3R and NEMA 4 enclosure options. The fan kit is easily replaceable.

APPLICATIONS

SubDrive 20 constant pressure controller is designed for use in residential homes, schools, restaurants, car washes, farms, and landscape irrigation systems with a McDonald 1 HP pump end mounted to a 2 HP, 230 volt A.Y. McDonald three phase motor.

FEATURES

- Constant water pressure with a wide range of settings (0-100 pressure transducer)
- Single-phase input power
- FE Connect Smartphone app for advanced settings and monitoring (NEMA 3R only)
- User-configurable motor frequency range (NEMA 3R only)
- Easy installation
- Soft-start feature prevents water hammer and increases motor life
- Works with small pressure tanks or existing larger tanks
- Advanced filtering to remove radio frequency interference
- UL and cUL listed
- Built-in diagnostics and protection
 - Surge protection
 - Undervoltage
 - Open circuit
 - Overheated controller
 - Underload
 - Locked pump
 - Short circuit
 - Broken pipe detection (NEMA 3R only)



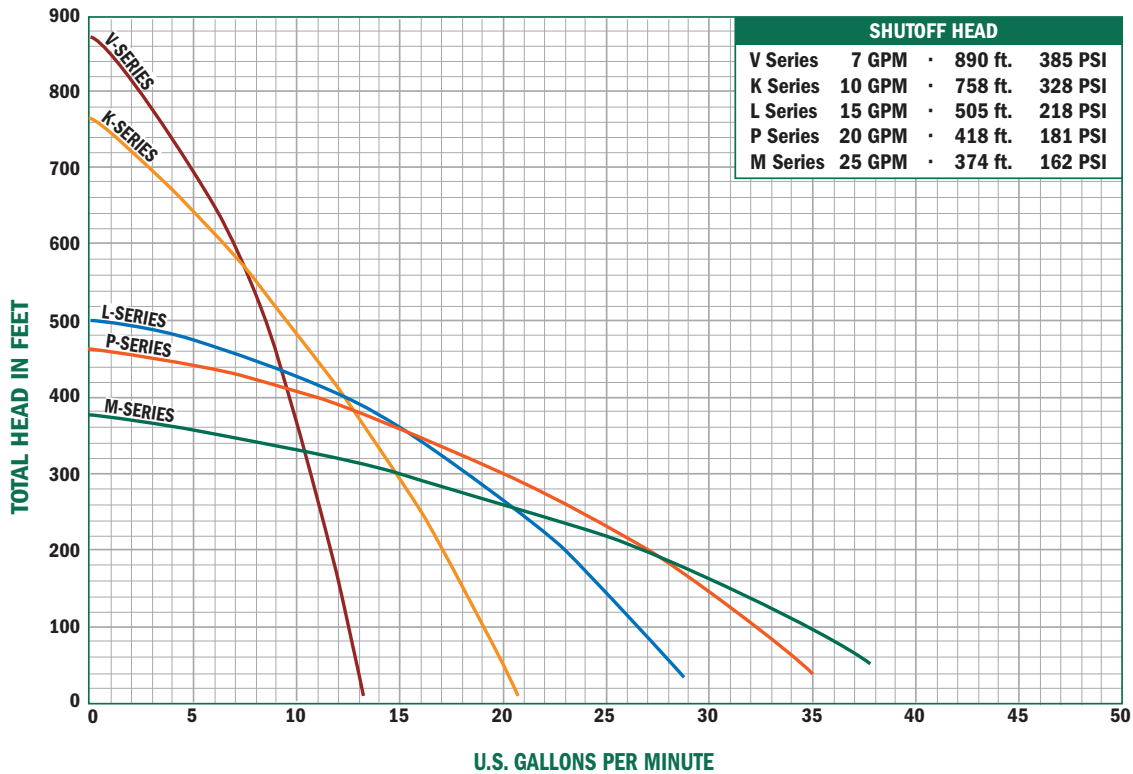
Pressure Master

SubDrive20 (NEMA 3R) - Indoor/Outdoor			
Model No.		A.Y. Model # 6617-435 FE Model # 5870205303C	
Input from Power Source	Voltage	208/230 VAC	Pressure Setting
	Phase In	Single-phase	Factory Present
	Frequency	60/50 Hz	Adjustment Range
	Current (max)	19 Amps	Operating Conditions ⁽¹⁾
	Power Factor	~0.95	Temperature (at 230 VAC input)
	Power (idle)	5 Watts	Relative Humidity
	Power (max)	4200 Watts	Controller Size ⁽²⁾ (approximate)
Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations	Outer Dimensions Weight	For Use With ⁽³⁾
Output to Motor	Voltage	Adjusts with Frequency	Pump (60 Hz)
	Phase Out	Single-phase (three-wire) OR Three-phase	A.Y. McDonald Motor
	Frequency Range	30-78 Hz (1 hp, 0.75 kW) pump 30-72 Hz (1 1/2 hp, 1.1 kW) pump 30-60 Hz (2 hp, 1.5 kW) pump 30-63 Hz (Single-phase Motors)	1 hp submersible pumpend 1 1/2 hp submersible pumpend 2 hp submersible pumpend
	Current (max)	8.1 A / phase	1 hp single-phase, three-wire 1 1/2 hp single-phase, three-wire 2 hp single-phase, three-wire 1 1/2 hp three-phase, three-wire 2 hp three-phase, three-wire
	Wire Gauge Size(s)	#6 - #14* ga.	

Controller Rating	Part No.	Model No.
NEMA 3R (Indoor/Outdoor)	6617-435	SubDrive 20
NEMA 4 (Outdoor)	6617-158	SubDrive 100

SubDrive 20 / 100 - 21000/23000 E-Z Pac Packages

NEMA 3R NEMA 4



NOTE: Performance shown does not include friction loss in drop pipe (for flow rates above 25 GPM, larger drop pipe is recommended.)

No-Lead Brass - 21000 Series

E-Z PAC (N3R)

N1 - (NEMA 3R), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
21100VCP1EZ	V	7	65
21100KCP1EZ	K	10	66
21100LCP1EZ	L	15	66
21100PCP1EZ	P	20	68
21100MCP1EZ	M	25	65

E-Z PAC (N4)

N4 - (NEMA 4), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
21100VCP4EZ	V	7	81
21100KCP4EZ	K	10	76
21100LCP4EZ	L	15	78
21100PCP4EZ	P	20	78
21100MCP4EZ	M	25	76

Stainless Steel - 23000 Series

E-Z PAC (N3R)

N1 - (NEMA 3R), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
23100VCP1EZ	V	7	68
23100KCP1EZ	K	10	64
23100LCP1EZ	L	15	63
23100PCP1EZ	P	20	64
23100MCP1EZ	M	25	62

E-Z PAC (N4)

N4 - (NEMA 4), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
23100VCP4EZ	V	7	80
23100KCP4EZ	K	10	73
23100LCP4EZ	L	15	75
23100PCP4EZ	P	20	75
23100MCP4EZ	M	25	75

The SubDrive 20 is designed to be part of a system that includes three main components:

1

Subdrive 20 controller
(pressure sensor included)
NEMA 3R - Part No. 6617-435
NEMA 4 - Part No. 6617-158
SubDrive 100



2

A.Y. McDonald 2 HP, 230V
three phase motor
Part No. 3132-534



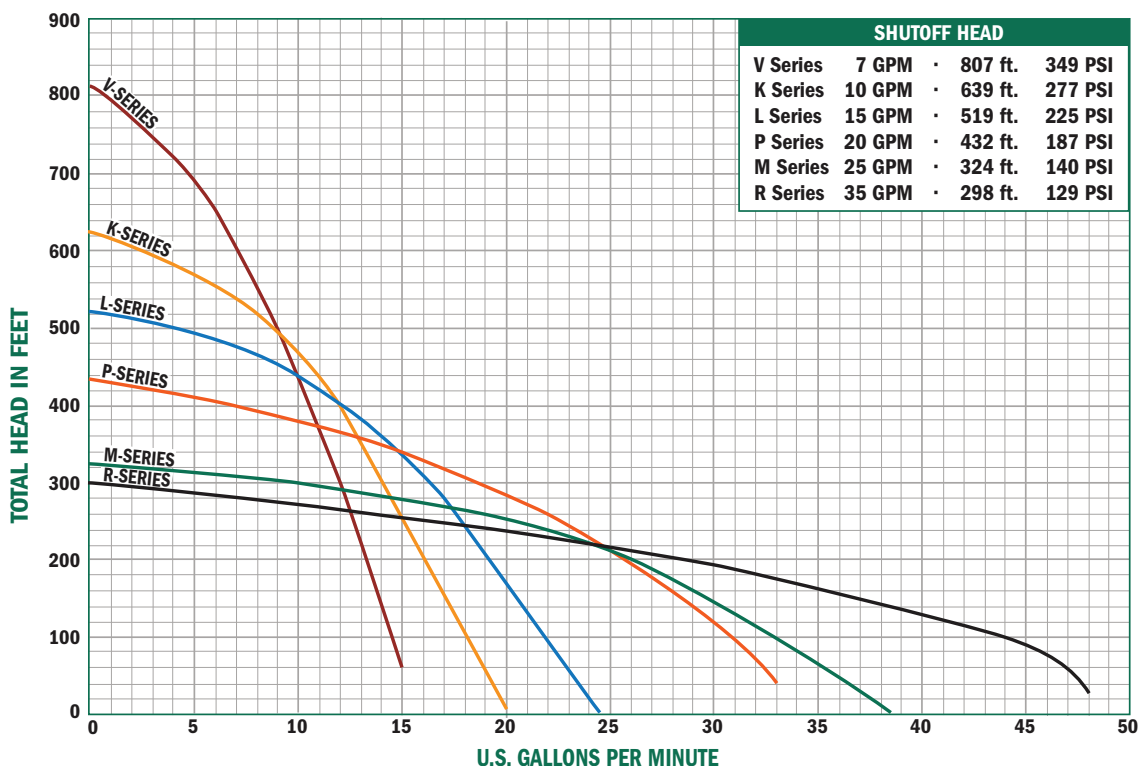
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Appropriate pump end
Includes pump end 23100K
For example:
23100KCP1EZ



SubDrive 20 / 100 - 24000 E-Z Pac Packages

NEMA 3R NEMA 4



NOTE: Performance shown does not include friction loss in drop pipe (for flow rates above 25 GPM, larger drop pipe is recommended.)

Stainless Steel - 24000 Series (7-25 GPM)

E-Z PAC (N3R)

N1 - (NEMA 3R), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
24100VCP1EZ	V	7	68
24100KCP1EZ	K	10	64
24100LCP1EZ	L	15	63
24100PCP1EZ	P	20	64
24100MCP1EZ	M	25	57

E-Z PAC (N4)

N4 - (NEMA 4), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
24100VCP4EZ	V	7	80
24100KCP4EZ	K	10	73
24100LCP4EZ	L	15	75
24100PCP4EZ	P	20	75
24100MCP4EZ	M	25	75

Stainless Steel - 24000 Series (35 GPM)

E-Z PAC (N3R)

N1 - (NEMA 3R), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
24100RCP1EZ	R	35	61

E-Z PAC (N4)

N4 - (NEMA 4), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
24100RCP4EZ	R	35	78

- 2" NPT connection on R Series

The SubDrive 20 is designed to be part of a system that includes three main components:

1

Subdrive 20 controller
(pressure sensor included)
NEMA 3R - Part No. 6617-435
NEMA 4 - Part No. 6617-158
SubDrive 100



2

A.Y. McDonald 2 HP, 230V
three phase motor
Part No. 3132-534



3

Appropriate pump end
Includes pump end 24100K
For example:
24100KCP1EZ



SubDrive 30 / 150 - Pressure Controller

NEMA 3R NEMA 4

The SubDrive 30 is designed for three-phase motors to provide constant pressure with three-phase performance using single-phase input power. They have a high starting torque, easy to install, smooth running, just plug and play. Performance ranges from 3/4 hp to 5 hp. Indoor/outdoor NEMA 3R and NEMA 4 enclosure options. The fan kit is easily replaceable.

APPLICATIONS

SubDrive 30 constant pressure controller is designed for use in residential homes, schools, restaurants, car washes, farms, and landscape irrigation systems with a McDonald 1 1/2 HP pump end mounted to a 3 HP, 230 volt A.Y. McDonald three phase motor.

FEATURES

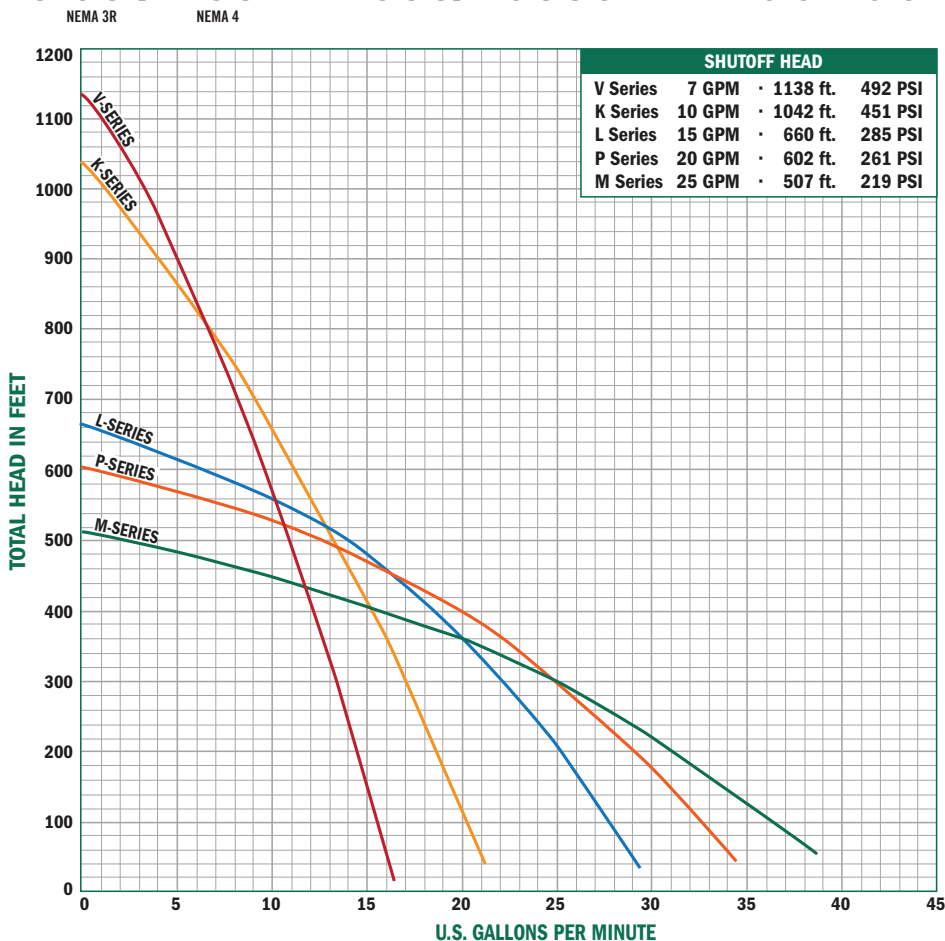
- Constant water pressure with a wide range of settings (0-100 pressure transducer)
- Single-phase input power
- FE Connect Smartphone app for advanced settings and monitoring (NEMA 3R only)
- User-configurable motor frequency range (NEMA 3R only)
- Easy installation
- Soft-start feature prevents water hammer and increases motor life
- Works with small pressure tanks or existing larger tanks
- Advanced filtering to remove radio frequency interference
- UL and cUL listed
- Built-in diagnostics and protection
 - Surge protection
 - Undervoltage
 - Open circuit
 - Overheated controller
 - Underload
 - Locked pump
 - Short circuit
 - Broken pipe detection (NEMA 3R only)



SubDrive30 (NEMA 3R) - Indoor/Outdoor						
Model No.		A.Y. Model # 6617-436 FE Model # 5870205403C	Pressure Setting	Factory Present	50 psi (3.4 bar)	
Input from Power Source	Voltage	208/230 VAC	Operating Conditions^(A)	Adjustment Range	25-80 psi (1.7 - 5.5 bar)	
	Phase In	Single-phase		Temperature (at 230 VAC input)	-13°F to 122°F (-25°C to 50°C)	
	Frequency	60/50 Hz		Relative Humidity	20-95%, condensing	
	Current (max)	23 Amps	Controller Size^(B) (approximate)	Outer Dimensions Weight		
	Power Factor	~0.95		9 3/4" x 19 3/4" x 5 1/4" (25 x 50 x 13 cm) 26 lbs (11.8 kg)		
	Power (idle)	5 Watts	For Use With^(C)	Pump (60 Hz)	1 hp submersible pumpend 1 1/2 hp submersible pumpend 2 hp submersible pumpend 3 hp submersible pumpend	
	Power (max)	4.2 kW		A.Y. McDonald Motor	1 hp single-phase, three-wire 1 1/2 hp single-phase, three-wire 2 hp single-phase, three-wire 1 1/2 hp three-phase, three-wire 2 hp three-phase, three-wire 3 hp three-phase, three-wire	
Output to Motor	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations				
	Voltage	Adjusts with Frequency				
	Phase Out	Single-phase (three-wire) OR Three-phase				
	Frequency Range	30-78 Hz (1 1/2 hp, 1.1 kW) pump 30-70 Hz (2 hp, 1.5 kW) pump 30-60 Hz (3 hp, 2.2 kW) pump 30-63 Hz (Single-phase Motors)				
	Current (max)	10.9 A / phase				
	Wire Gauge Size(s)	#6 - #14* ga.				

Controller Rating	Part No.	Model No.
NEMA 3R (Indoor/Outdoor)	6617-436	SubDrive 30
NEMA 4 (Outdoor)	6617-155	SubDrive 150

SubDrive 30 / 150 - 21000/23000 E-Z Pac Packages



NOTE: Performance shown does not include friction loss in drop pipe (for flow rates above 25 GPM, larger drop pipe is recommended.)

Pressure Master

No-Lead Brass - 21000 Series

E-Z PAC (N3R)

N1 - (NEMA 3R), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
21150VCP1EZ	V	7	78
21150KCP1EZ	K	10	72
21150LCP1EZ	L	15	69
21150PCP1EZ	P	20	76
21150MCP1EZ	M	25	75

E-Z PAC (N4)

N4 - (NEMA 4), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
21150VCP4EZ	V	7	95
21150KCP4EZ	K	10	85
21150LCP4EZ	L	15	84
21150PCP4EZ	P	20	87
21150MCP4EZ	M	25	86

Stainless Steel - 23000 Series

E-Z PAC (N3R)

N1 - (NEMA 3R), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
23150VCP1EZ	V	7	75
23150KCP1EZ	K	10	70
23150LCP1EZ	L	15	72
23150PCP1EZ	P	20	72
23150MCP1EZ	M	25	70

E-Z PAC (N4)

N4 - (NEMA 4), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
23150VCP4EZ	V	7	91
23150KCP4EZ	K	10	83
23150LCP4EZ	L	15	82
23150PCP4EZ	P	20	84
23150MCP4EZ	M	25	80

The SubDrive 30 is designed to be part of a system that includes three main components:

1

Subdrive 30 controller
(pressure sensor included)
NEMA 3R - Part No. 6617-436
NEMA 4 - Part No. 6617-155
SubDrive 150



2

A.Y. McDonald 3 HP, 230V
three phase motor
Part No. 3132-514



3

Appropriate pump end
Includes pump end 23150K
For example:
23150KCP1EZ

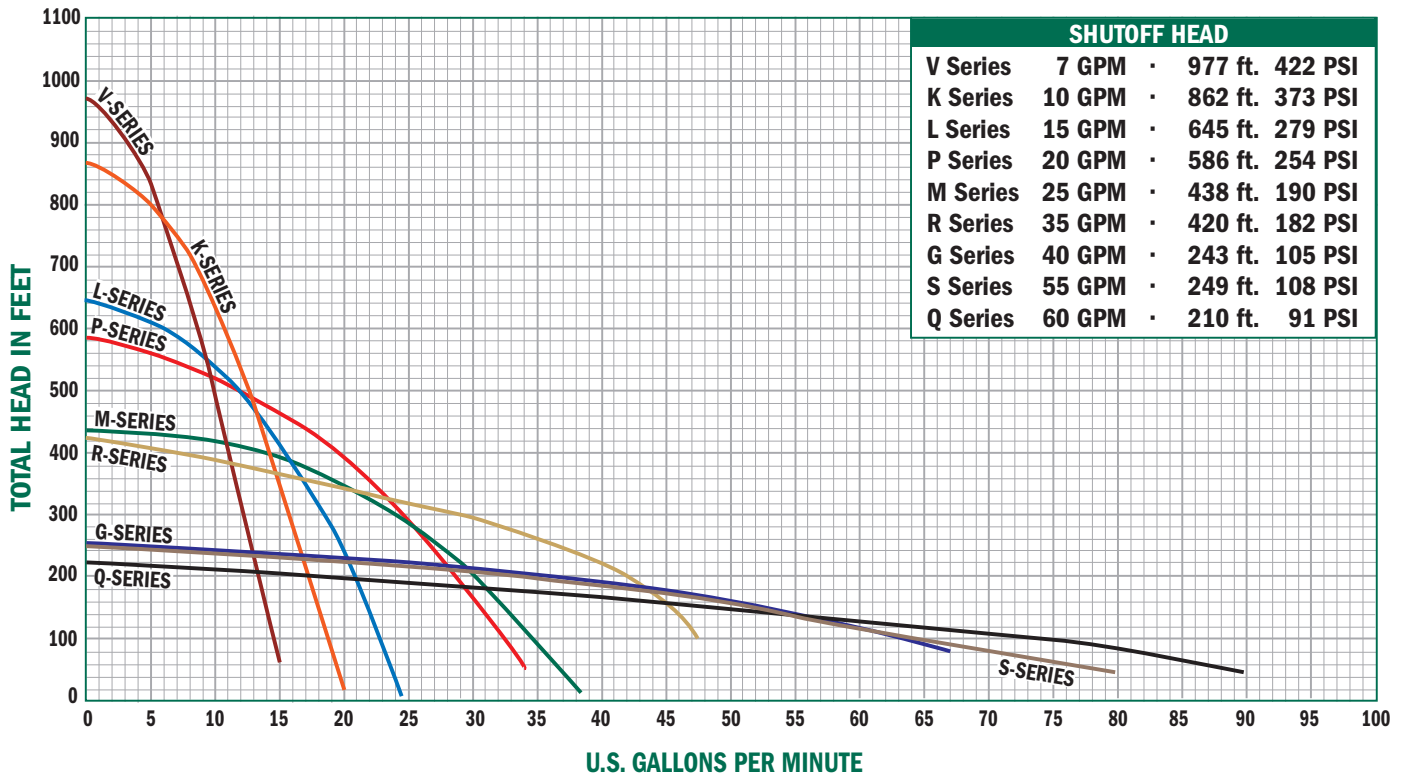


SubDrive 30 / 150 - 24000 E-Z Pac Packages

NEMA 3R

NEMA 4

Pressure Master



NOTE: Performance shown does not include friction loss in drop pipe (for flow rates above 25 GPM, larger drop pipe is recommended.)

Stainless Steel - 24000 Series (7-25 GPM)

E-Z PAC (N3R)

N1 - (NEMA 3R), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
24150VCP1EZ	V	7	75
24150KCP1EZ	K	10	70
24150LCP1EZ	L	15	72
24150PCP1EZ	P	20	72
24150MCP1EZ	M	25	70

E-Z PAC (N4)

N4 - (NEMA 4), 1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Wt.
24150VCP4EZ	V	7	91
24150KCP4EZ	K	10	83
24150LCP4EZ	L	15	82
24150PCP4EZ	P	20	84
24150MCP4EZ	M	25	80

Stainless Steel - 24000 Series (35-60 GPM)

E-Z PAC (N3R)

N1 - (NEMA 3R), 2" NPT Connection on All Series

Model No.	Series	GPM	Wt.
24150RCP1EZ	R	35	72
24150GCP1EZ	G	40	70
24150SCP1EZ	S	55	72
24150QCP1EZ	Q	60	71

E-Z PAC (N4)

N4 - (NEMA 4), 2" NPT Connection on All Series

Model No.	Series	GPM	Wt.
24150RCP4EZ	R	35	81
24150GCP4EZ	G	40	79
24150SCP4EZ	S	55	82
24150QCP4EZ	Q	60	81

The SubDrive 30 is designed to be part of a system that includes three main components:

1

Subdrive 30 controller
(pressure sensor included)
NEMA 3R - Part No. 6617-436
NEMA 4 - Part No. 6617-155
SubDrive 150



2

A.Y. McDonald 3 HP, 230V
three phase motor
Part No. 3132-514



3

Appropriate pump end
Includes pump end 24150K
For example:
24150KCP1EZ



SubDrive 50 / 300 - Pressure Controller

NEMA 3R NEMA 4

This controller provides constant water pressure using state of the art electronics to drive and enhance the performance of a standard submersible pump. The pressure in a well system is monitored and regulated by the pressure sensor to continually adjust the pump motor speed to meet water supply demands. It eliminates the pressure cycling associated with a conventional well system. SubDrive can deliver dependable constant pressure to provide water well owners with a premium water system.

APPLICATIONS

SubDrive 300 constant pressure controller is designed for use with a McDonald 3 HP pump end mounted to a 5 HP, 230 volt A.Y. McDonald three phase motor. Using single-phase input, this innovative variable speed controller can be used to provide constant pressure in applications with a wide range of flow demand including large homes, ground source heat pumps, and sprinkler systems. Also designed to handle high capacities, SubDrive 300 is perfect for larger applications where constant pressure is essential: commercial landscaping, small livestock operations, nurseries, even some rare residential applications.



FEATURES

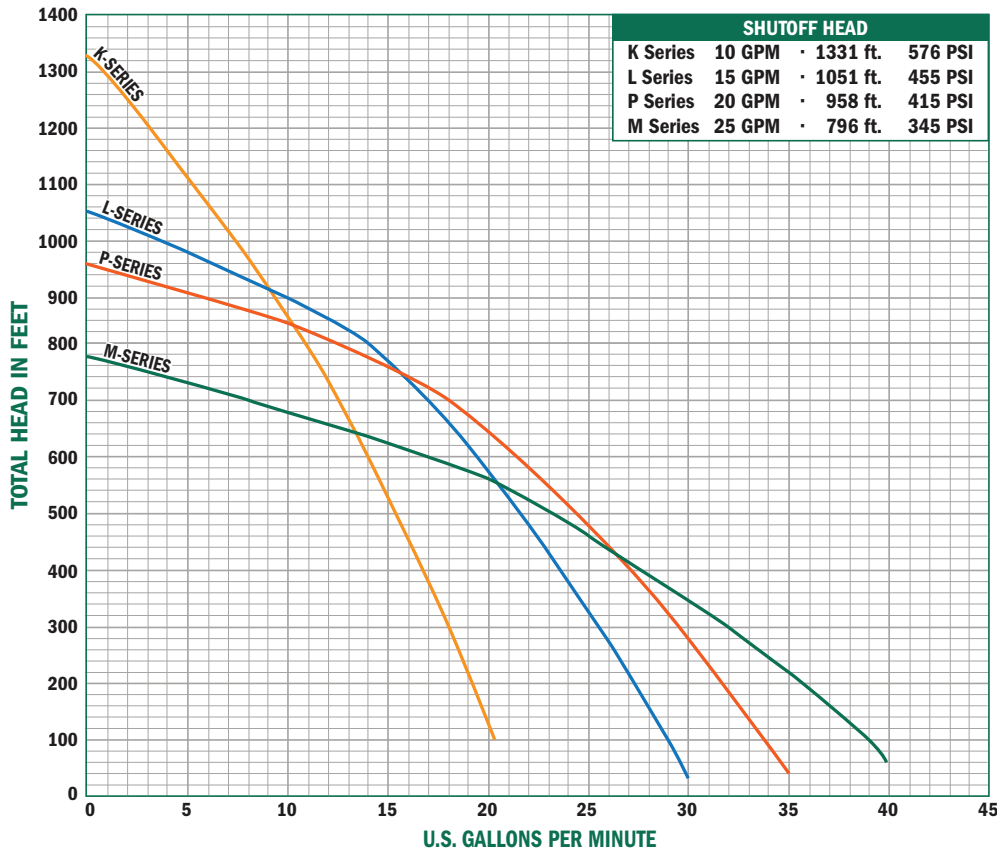
- Constant water pressure with a wide range of settings (0-100 pressure transducer)
- Works with a standard pump mounted to a three-phase A.Y. McDonald submersible motor
- NEMA 4 enclosure
- Smaller pressure tank or existing tank can be used
- Three-phase performance with single phase input
- Soft start means less stress and longer life on motor
- Smart Reset technology allows well recovery before restarting the pump
- Built in protection and diagnostics
 - Surge protection
 - Underload
 - Locked pump
 - Short circuit
 - Controllers are UL & cUL recognized for U.S.A. and Canada
 - Dry well conditions
 - Undervoltage
 - Open circuit
 - Overheated controller

SubDrive50 (NEMA 3R) - Indoor/Outdoor						
Model No.		A.Y. Model # 6617-437 FE Model # 5870205503C	Pressure Setting	Factory Present	50 psi (3.4 bar)	
				Adjustment Range	Analog Transducer: 5-95 psi (0.3 - 6.6 bar) Pressure Sensor: 25-80 PSI (1.7 - 5.5 bar)	
Input from Power Source	Voltage	208/230 +/- 10% VAC	Operating Conditions^(a)	Temperature (at 230 VAC input)	-13°F to 122°F (-25°C to 50°C)	
	Phase In	Single-phase		Relative Humidity	20-95%, non-condensing	
	Frequency	60/50 Hz	Controller Size^(b) (approximate)	Outer Dimensions Weight	26 1/8" x 15 3/8" x 11 1/2" (66 x 39 x 29 cm) 31 lbs (14.1 kg)	
	Current (max)	36 Amps		For Use With^(c)	Pump (60 Hz)	1/2 hp submersible pumpend 3/4 hp submersible pumpend 1 hp submersible pumpend 1 1/2 hp submersible pumpend 2 hp submersible pumpend 3 hp submersible pumpend
	Power Factor	~0.95			A.Y. McDonald Motor	Single-phase, three-wire: 1/2, 3/4, 1, 1 1/2, 2, or 3 hp
	Power (idle)	7 Watts	Three-phase: 1, 1 1/2, 2, 3, or 5 hp			
	Power (max)	7200 Watts				
Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations					
Output to Motor	Voltage	Variable based on Frequency				
	Phase Out	Single-phase (three-wire) OR three-phase				
	Frequency Range	30-78 Hz: 1/2 rated mismatched pump with three phase motor 30-70 Hz: 2/3 or 3/4 rated mismatched pump with three phase motor 30-60 Hz: Matched pump with three phase motor 30-63 Hz: Matched pump with single phase motor				
	Current (max)	17.8 Amps (three-phase), 17.0 A (single-phase)				
	Wire Gauge Size(s)	#6 - #12* ga.				
			Controller Rating	Part No.	Model No.	
			NEMA 3R (Indoor/Outdoor)	6617-437	SubDrive 50	
			NEMA 4 (Outdoor)	6617-153	SubDrive 300	

SubDrive 50 / 300 - Pressure Controller

NEMA 3R

NEMA 4



NOTE: Performance shown does not include friction loss in drop pipe (for flow rates above 25 GPM, larger drop pipe is recommended.)

No-Lead Brass - 21000 Series

E-Z PAC (N4)

1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Volts	Wt.
21300K3CP	K	10	230V	109
21300L3CP	L	15	230V	111
21300P3CP	P	20	230V	112
21300M3CP	M	25	230V	106

E-Z PAC (N3R)

1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Volts	Wt.
21300K3CP1EZ	K	10	230V	109
21300L3CP1EZ	L	15	230V	111
21300P3CP1EZ	P	20	230V	112
21300M3CP1EZ	M	25	230V	106

Stainless Steel - 23000 Series

E-Z PAC (N4)

1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Volts	Wt.
23300K3CP	K	10	230V	109
23300L3CP	L	15	230V	108
23300P3CP	P	20	230V	108
23300M3CP	M	25	230V	102

E-Z PAC (N3R)

1 1/4" NPT Connection on All Series

Model No.	Series	GPM	Volts	Wt.
23300K3CP1EZ	K	10	230V	109
23300L3CP1EZ	L	15	230V	108
23300P3CP1EZ	P	20	230V	108
23300M3CP1EZ	M	25	230V	102

The SubDrive 300 is designed to be part of a system that includes three main components:

1 Subdrive 300 controller (pressure sensor included)
NEMA 3R - Part No. 6617-437
NEMA 4 - Part No. 6617-153



2 A.Y. McDonald 5 HP, 230V three phase motor
Part No. 3132-517

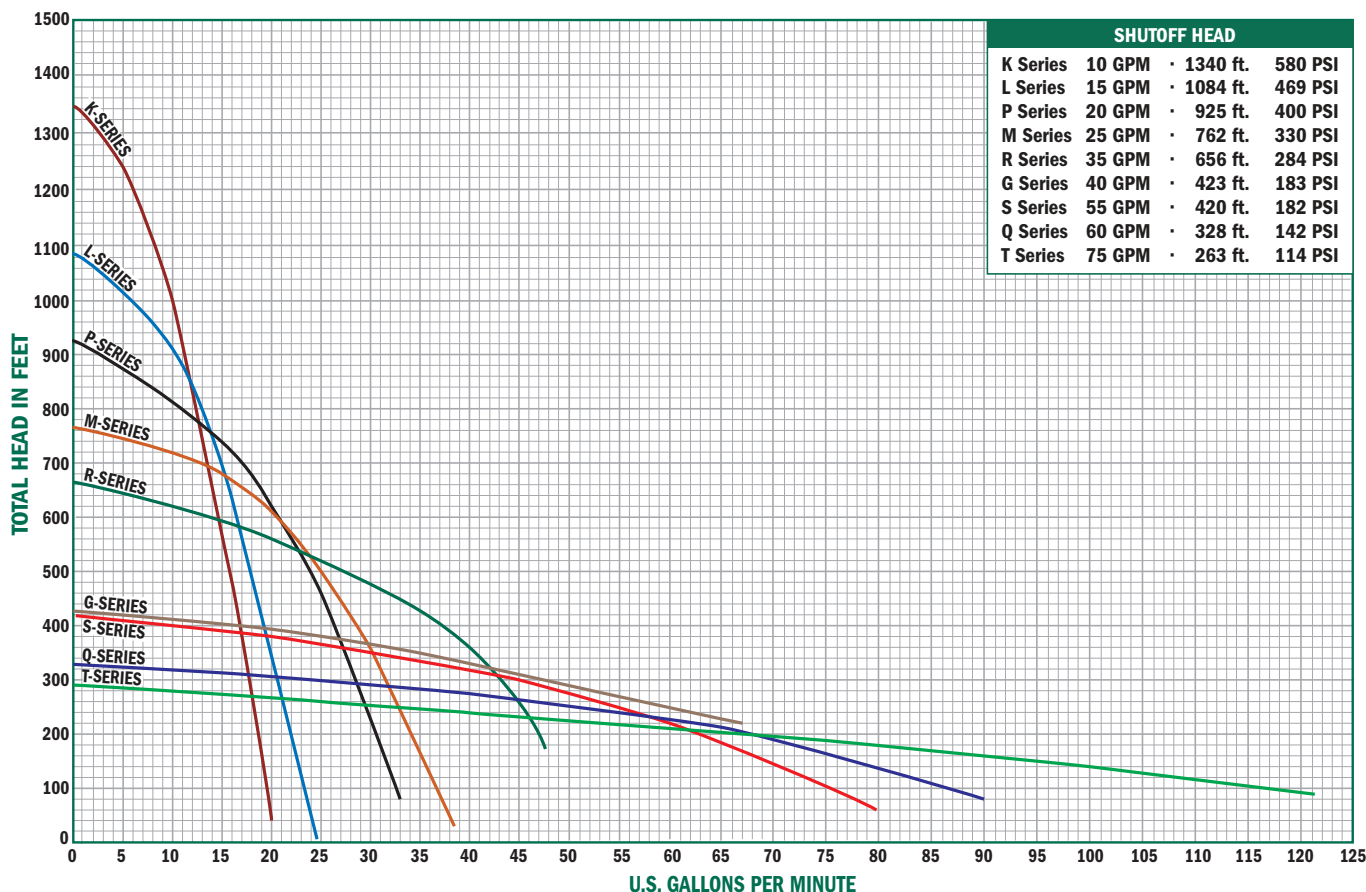


3 Appropriate pump end
Includes pump end 23300K
For example:
23300K3CP



SubDrive 50 / 300 - Pressure Controller

NEMA 3R NEMA 4



NOTE: Performance shown does not include friction loss in drop pipe (for flow rates above 25 GPM, larger drop pipe is recommended.)

Stainless Steel - 24000 Series (35-60 GPM)

E-Z PAC (N4)

2" NPT Connection on All Series

Model No.	Series	GPM	Wt.
24300R3CP	R	35	101
24300G3CP	G	40	97
24300S3CP	S	55	102
24300Q3CP	Q	60	100
24300T3CP	T	80	102

E-Z PAC (N3R)

2" NPT Connection on All Series

Model No.	Series	GPM	Wt.
24300R3CP1EZ	R	35	101
24300G3CP1EZ	G	40	97
24300S3CP1EZ	S	55	102
24300Q3CP1EZ	Q	60	100
24300T3CP1EZ	T	80	102

The SubDrive 300 is designed to be part of a system that includes three main components:

1

SubDrive 300 controller
(pressure sensor included)
NEMA 3R - Part No. 6617-437
NEMA 4 - Part No. 6617-153



2

A.Y. McDonald 5 HP, 230V
three phase motor
Part No. 3132-517



3

Appropriate pump end
Includes pump end 24300K
For example:
24300K3CP



SubDrive Utility UT2W

SubDrive Utility converts conventional A.Y. McDonald 2-wire submersible pumping systems, ranging from 1/3 HP up to 1 1/2 HP, into constant water pressure systems. These systems provide consistent water pressure throughout the chosen location, no matter how many fixtures are open at one time. Designed with a conveniently compact footprint, it features a sleek NEMA 3R (Type 3) enclosure rated for both indoor and outdoor use. SubDrive Utility retrofits to most 2-wire submersible pumping systems that utilize a A.Y. McDonald motor, making the transition seamless for current systems. Separate from the pump and motor, the drive makes troubleshooting and maintenance of the pumping system significantly easier.



FEATURES

- One unit is compatible with 115 and 230 volt A.Y. McDonald two-wire motors
- Provides constant pressure and motor/pump protection in a small and robust package
- User-defined underload protection, and several pressure control adjustments, to fit a wide range of pumping applications
- Motor soft start reduces inrush current during starts for longer motor life
- Robust SubDrive pressure sensor standard for ease of installation
- Additional input for optional analog pressure transducer for precise pressure control
- No programming required with easy DIP switch setup
- Three LED indicators allow for easy identification of system status and troubleshooting
- USB port allows for easy firmware updates
- UL and cUL listed

SubDrive Utility UT2W						
Model No.		A.Y. Model # 6617-438 FE Model # 5870202003	Pressure Setting	Factory Present	50 psi (3.4 bar)	
Input from Power Source	Voltage	115 / 208 / 230 +/- 10% VAC	Operating Conditions^(A)	Adjustment Range	Pressure Sensor 25-80 psi (0.3 - 6.6 bar) Analog Transducer 5 - 95% of transducer range	
	Phase In	Single-phase		Temperature (at 230 VAC input)	-13°F to 122°F (-25°C to 50°C)	
	Frequency	60/50 Hz	Relative Humidity	20-95%, non-condensing		
	Current (max)	20 Amps	Controller Size^(B) (approximate)	NEMA 3R	11 7/8" x 8 7/8" x 5 1/8" : 7.7 lbs (30 x 23 x 13 cm : 3.5 kg)	
	Power Factor	-0.52		For Use With	Pump (60 Hz)	1/3 HP - 1 1/2 HP submersible pumpend
	Power (idle)	3 Watts	Note: Drive input voltage and motor nameplate voltage MUST match.		A.Y. McDonald Motor	1/2 HP - 1 1/2 HP single phase 2-wire
	Power (max)	2.5 Watts				
	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations				
Output to Motor	Voltage	Variable based on frequency				
	Phase Out	Single-phase (two-wire)				
	Frequency Range	35-63 Hz				
	Current (max)	13.1 Amps (based on motor SFA)				
	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations				

Controller Rating	Part No.	Model No.
NEMA 3R (Indoor/Outdoor)	6617-438	SubDrive Utility UT2W

MonoDrive Utility

Looking for a product that provides constant pressure and motor/pump protection in a small and robust package? Find this in A.Y. McDonald's MonoDrive Utility Variable Frequency Drive as the solution easily replaces the control box in conventional 230 V single-phase, three-wire submersible systems. The MonoDrive requires only a small pressure tank, offering a more compact overall footprint compared to traditional water systems while also providing the added value of constant water pressure and built-in protection. Below are additional features and benefits surrounding this product:

FEATURES

- User-defined underload protection and several pressure control adjustments to fit a wide range of pumping applications
- Robust pressure sensor standard for ease of installation
- Additional input for optional analog pressure transducer for precise pressure control
- No programming required with easy DIP switch setup
- Three LED indicators allow for easy identification of system status and troubleshooting
- USB port that allows for easy firmware updates and fault history downloads
- UL and cUL listed



Pressure Master

MonoDrive Utility		
Model No.	NEMA 3R (indoor/outdoor)	A.Y. Model # 6617-438 FE Model # 5870202003 w/Pressure Sensor
Input from Power Source	Voltage	230 +/- 10% VAC
	Phase In	Single-phase
	Frequency	60 Hz
	Current (max)	20 Amps
	Power Factor	-0.52
	Power (idle)	3 Watts
	Power (max)	2.5 Watts
	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations
Output to Motor	Voltage	230VAC Maximum
	Phase Out	Single-phase (three-wire)
	Frequency Range	30-63 Hz Submersible
	Current (max)	13.2 Amps (based on motor SFA)
	Wire Gauge Size(s)	Consult Federal, State, and Local codes for branch circuit installations
Pressure Setting	Factory Present	50 psi (3.4 bar)
	Adjustment Range	Pressure Sensor 25-80 psi (1.7 - 5.5 bar) Transducer 5 - 95% of transducer range
Operating Conditions⁽¹⁾	Temperature (at 230 VAC input)	-13°F to 122°F (-25°C to 50°C)
	Relative Humidity	20-95%, non-condensing
Storage^{**}	Temperature	-13°F to 149°F (-25°C to 65°C)
	Shelf Life	1 1/2 Years
Controller Size⁽²⁾ (approximate)	NEMA 3R	9 3/4" x 16 3/4" x 5 1/4" : 20 lbs (25 x 42.5 x 13 cm : 9 kg)
	For Use With	Pump (60 Hz)	1/3 HP - 1 1/2 HP submersible pumpend
	A.Y. McDonald Motor	1/2 HP - 1 1/2 HP single phase 2-wire

Note: Drive input voltage and motor nameplate voltage MUST match.

** Shelf life can be extended one year by powering the drive for 60 minutes with no load.

Controller Rating	Part No.	Model No.
NEMA 3R (Indoor/Outdoor)	6617-440	MonoDrive Utility



6", 8", & 10" Pump Ends



6", 8", & 10" Pump Ends

Pump Catalog - January 2020

MORE THAN A BRAND. WE'RE A FAMILY.

Components of 6", 8", and 10" Stainless Steel Pump Ends

A.Y. McDonald offers a full line of submersible pump ends ranging from 2 horsepower through 250 horsepower (HP). Our submersibles offer peak capacity performance in 90, 150, 230, 300, 400, 500, 650, 800, and 1100 gallons per minute (GPM).

- Stainless Steel Construction designed and built for years of trouble free operation
- Stainless Steel discharge head with built-in check valve
- High-efficiency Stainless Steel impellers & diffusers
- Stainless Steel suction screen
- Stainless Steel shaft & coupling
- Stainless Steel NEMA faced mounting bracket



C US

Drinking Water
ANSI/NSF 61

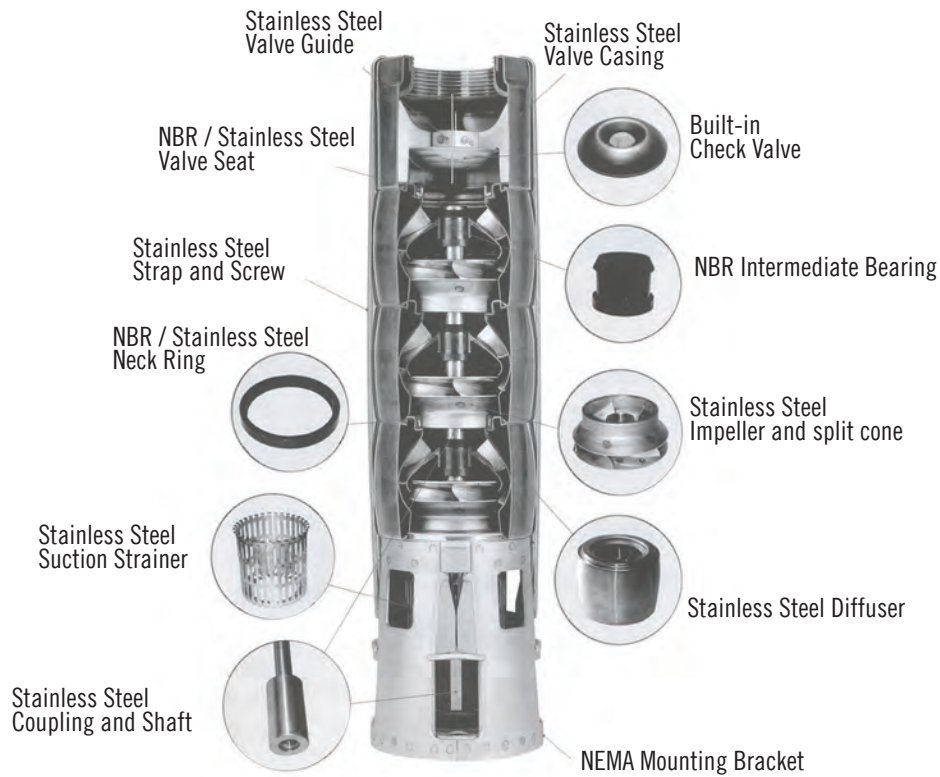


6", 8", & 10" Pump Ends

How to Order 6", 8", and 10" Stainless Steel Pump Ends

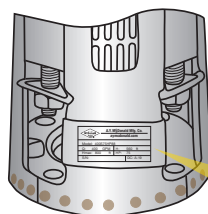
Order by Model Number - Example: 90S3HP64

90	S	050	6	4
Pump Model 6", 8", & 10" Submersible Stainless Steel Pumps	Stainless Steel	Horsepower	Pump Size	Motor Bracket
90 GPM 500 GPM		3 HP 25 HP 100 HP	6"	4"
150 GPM 650 GPM		5 HP 30 HP 125 HP	8"	6"
230 GPM 800 GPM		7 1/2 HP 40 HP 150 HP	10"	8"
300 GPM 1100 GPM		10 HP 50 HP 175 HP		10"
400 GPM		15 HP 60 HP 200 HP		
		20 HP 75 HP 250 HP		



6", 8", & 10" Pump Ends

How to Identify Pump Ends in the Field



A.Y. McDonald Mfg. Co.	
aymcdonald.com	
Model: 400S75HP88	
Q: 400 GPM	H: 560 ft
Hmax: 800 ft	HP: 75
S/N:	DC: A-19

90 GPM

A.Y. McDonald stainless steel pump ends offer peak capacity performance in its 90 gallons per minute (GPM). Each pump end includes cable guard, bolts, and washers. The 90 gallons per minute (GPM) is a 6" Stainless Steel Pump End that ranges in size from 3 to 40 horsepower (HP).

Models Available

Model No.	HP	Stages	Motor Size	Disch. Size	A	B	Wt.
90S3HP64	3	2	4"	3"	15.87	5.16	14.14
90S5HP64	5	4	4"	3"	20.63	5.16	20.55
90S7.5HP66	7.5	6	6"	3"	25.39	5.16	26.96
90S10HP66	10	9	6"	3"	32.56	5.59	36.69
90S15HP66	15	13	6"	3"	42.09	5.59	49.50
90S20HP66	20	18	6"	3"	53.98	5.59	65.42
90S25HP66	25	22	6"	3"	63.50	5.59	78.23
90S30HP66	30	26	6"	3"	73.03	5.59	91.05
90S40HP66	40	30	6"	3"	82.60	5.59	103.60

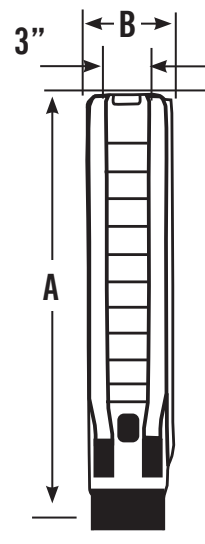
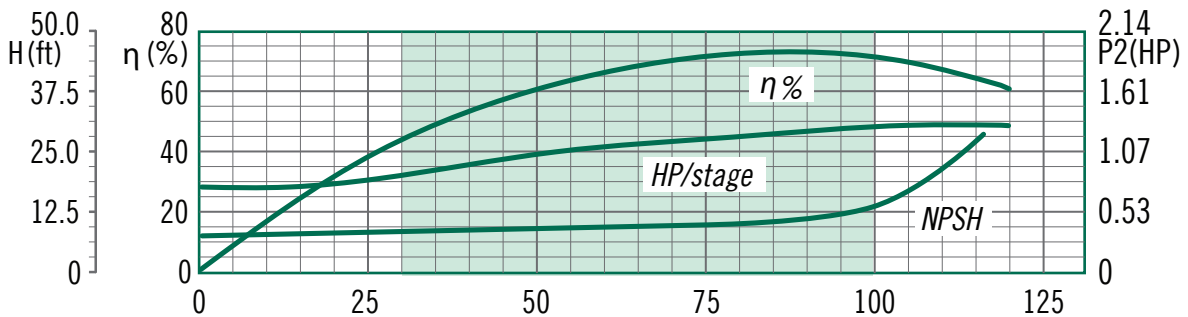
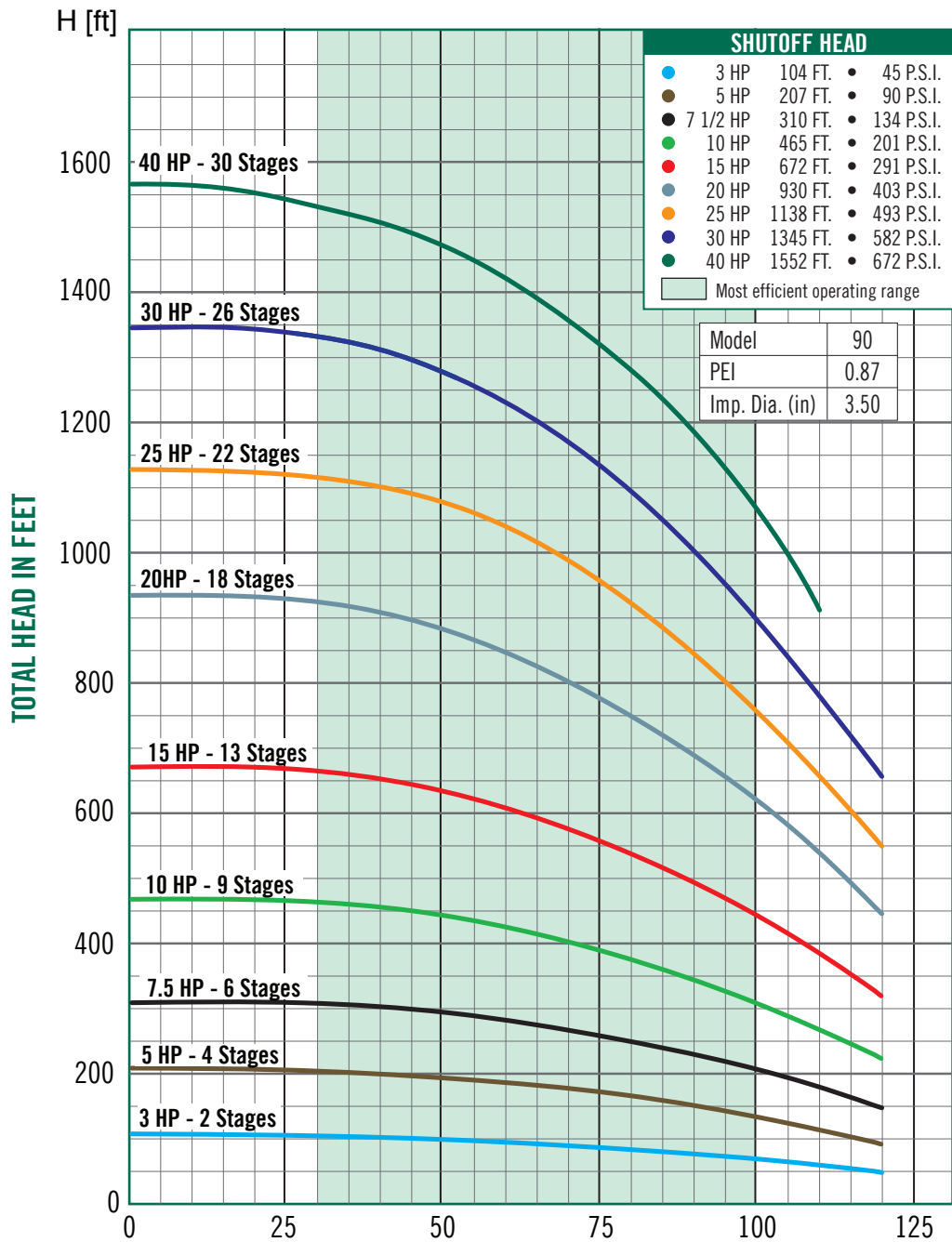


Fig. A

Component	Materials	Standard
Discharge	Stainless Steel	304
Valve Cone	Stainless Steel	304
Valve Seat	Stainless Steel / Rubber	304 / NBR
Top Diffuser	Stainless Steel	304
Upper Bearing	Stainless Steel / Rubber	304 / NBR
Neck Ring	Stainless Steel / Rubber	304 / NBR
Bearing	Rubber	NBR
Diffuser	Stainless Steel	304
Split Cone Nut	Stainless Steel	304
Split Cone	Stainless Steel	304
Ring of Impeller	Stainless Steel	304
Impeller	Stainless Steel	304
Bottom Diffuser	Stainless Steel	304
Lower Bearing	Stainless Steel / Rubber	304 / NBR
Stop Ring	Stainless Steel	304
Spacing Washer for Stop Ring	PTFE / CF	
Neck Ring Retainer	Stainless Steel	304
Strainer	Stainless Steel	304
Suction Interconnector	Stainless Steel	304
Pump Shaft	Stainless Steel	431
Coupling	Stainless Steel	304
Strap	Stainless Steel	304
Nut	Stainless Steel	304
Cable Guard	Stainless Steel	304

90 GPM



$\eta\%$ - Efficiency of motor
 NPSH - Ft. of water above the pump

6", 8", & 10" Pump Ends

150 GPM

A.Y. McDonald stainless steel pump ends offer peak capacity performance in its 150 gallons per minute (GPM). Each pump end includes cable guard, bolts, and washers. The 150 gallons per minute (GPM) is a 6" Stainless Steel Pump End that ranges in size from 5 to 50 horsepower (HP).

Models Available

Model No.	HP	Stages	Motor Size	Disch. Size	A	B	Wt.
150S5HP64	5	3	4"	3"	21.97	5.16	22.32
150S7.5HP66	7.5	4	6"	3"	25.75	5.16	26.08
150S10HP66	10	5	6"	3"	29.53	5.59	29.84
150S15HP66	15	8	6"	3"	40.87	5.59	41.11
150S20HP66	20	11	6"	3"	52.20	5.59	52.16
150S25HP66	25	14	6"	3"	59.76	5.59	63.43
150S30HP66	30	17	6"	3"	74.88	5.59	74.70
150S40HP66	40	23	6"	3"	97.56	5.59	97.24
150S50HP66	50	28	6"	3"	116.46	5.59	115.80

Component	Materials	Standard
Discharge	Stainless Steel	304
Valve Cone	Stainless Steel	304
Valve Seat	Stainless Steel / Rubber	304 / NBR
Top Diffuser	Stainless Steel	304
Upper Bearing	Stainless Steel / Rubber	304 / NBR
Neck Ring	Stainless Steel / Rubber	304 / NBR
Bearing	Rubber	NBR
Diffuser	Stainless Steel	304
Split Cone Nut	Stainless Steel	304
Split Cone	Stainless Steel	304
Ring of Impeller	Stainless Steel	304
Impeller	Stainless Steel	304
Bottom Diffuser	Stainless Steel	304
Lower Bearing	Stainless Steel / Rubber	304 / NBR
Stop Ring	Stainless Steel	304
Spacing Washer for Stop Ring	PTFE / CF	
Neck Ring Retainer	Stainless Steel	304
Strainer	Stainless Steel	304
Suction Interconnector	Stainless Steel	304
Pump Shaft	Stainless Steel	431
Coupling	Stainless Steel	304
Strap	Stainless Steel	304
Nut	Stainless Steel	304
Cable Guard	Stainless Steel	304

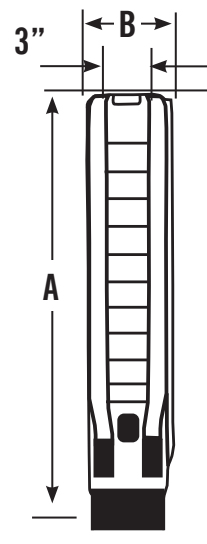
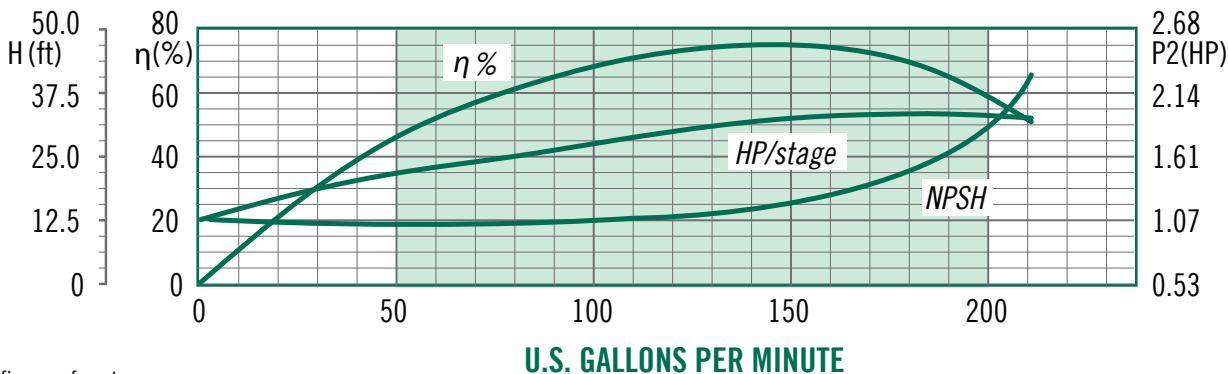
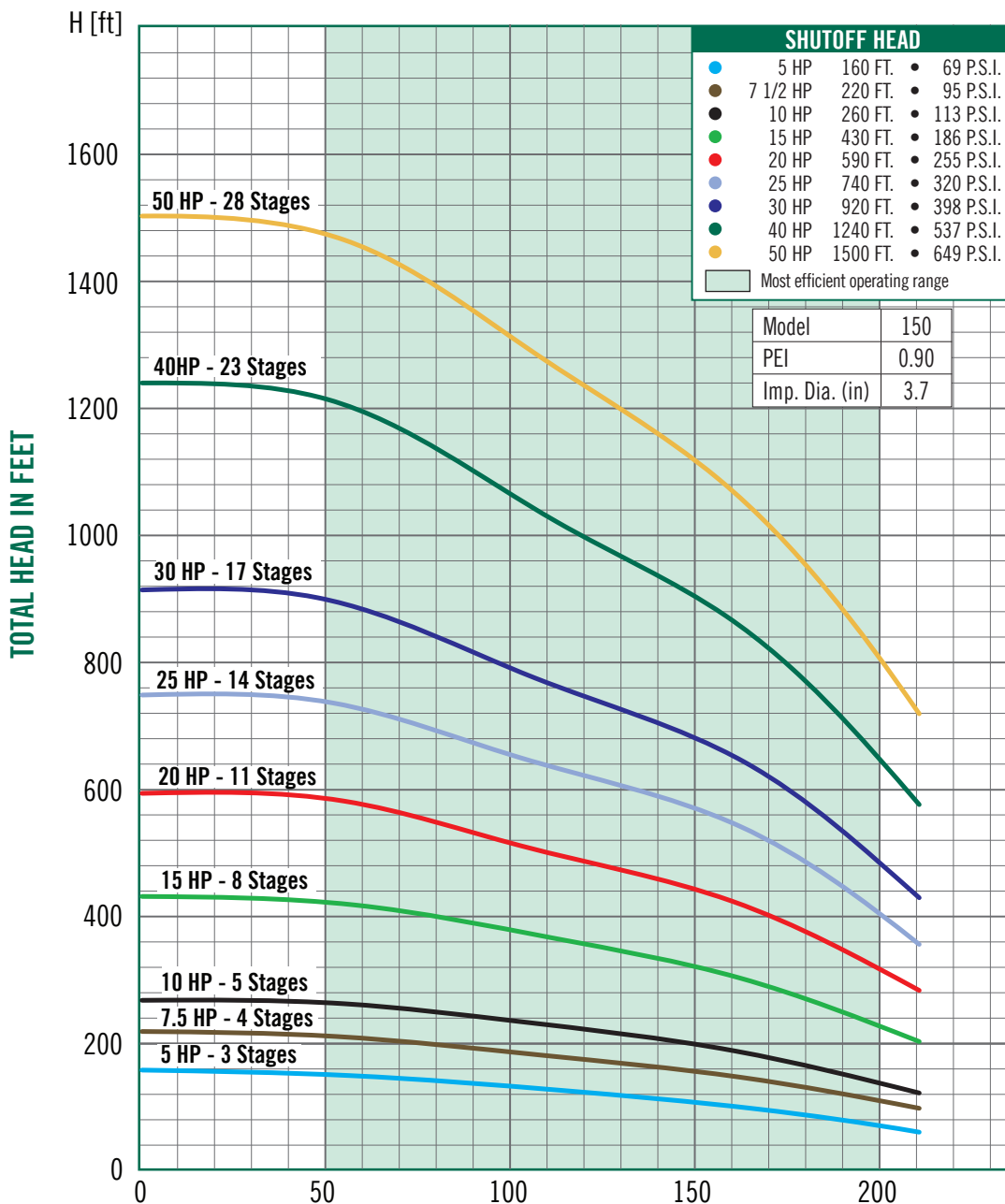


Fig. A

150 GPM



$\eta\%$ - Efficiency of motor
 NPSH - Ft. of water above the pump

6", 8", & 10" Pump Ends

230 GPM

A.Y. McDonald stainless steel pump ends offer peak capacity performance in its 230 gallons per minute (GPM). Each pump end includes cable guard, bolts, and washers. The 230 gallons per minute (GPM) is a 6" Stainless Steel Pump End that ranges in size from 5 to 60 horsepower (HP).

Models Available

Model No.	HP	Stages	Motor Size	Disch. Size	A	B	Wt.
230S5HP64	5	2	4"	3"	19.53	5.75	20.33
230S7.5HP66	7.5	3	6"	3"	23.98	5.75	25.42
230S10HP66	10	4	6"	3"	28.43	5.87	30.28
230S15HP66	15	5	6"	3"	32.87	5.87	35.36
230S20HP66	20	7	6"	3"	41.77	5.87	45.53
230S25HP66	25	8	6"	3"	46.22	5.87	50.61
230S30HP66	30	10	6"	3"	55.12	5.87	60.55
230S40HP66	40	13	6"	3"	68.46	5.87	75.80
230S50HP66	50	17	6"	3"	86.26	5.87	95.91
230S60HP66	60	20	6"	3"	99.81	5.87	110.94

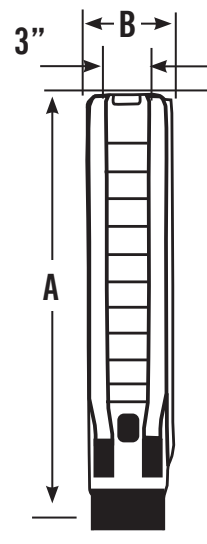
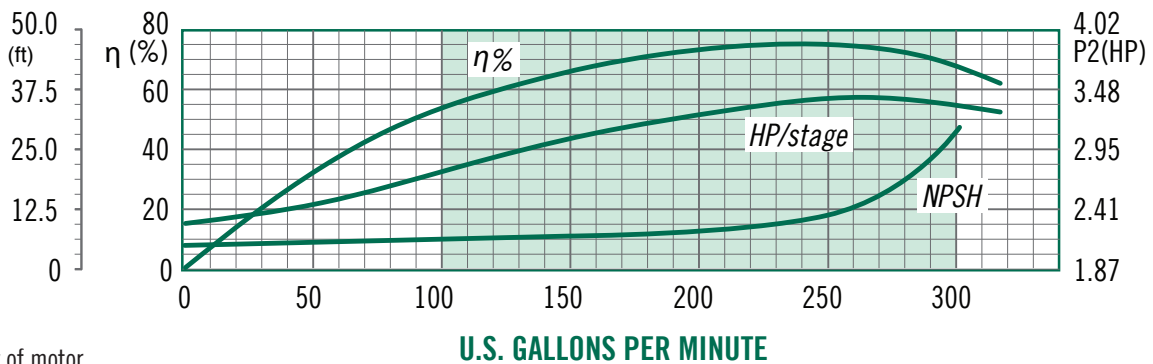
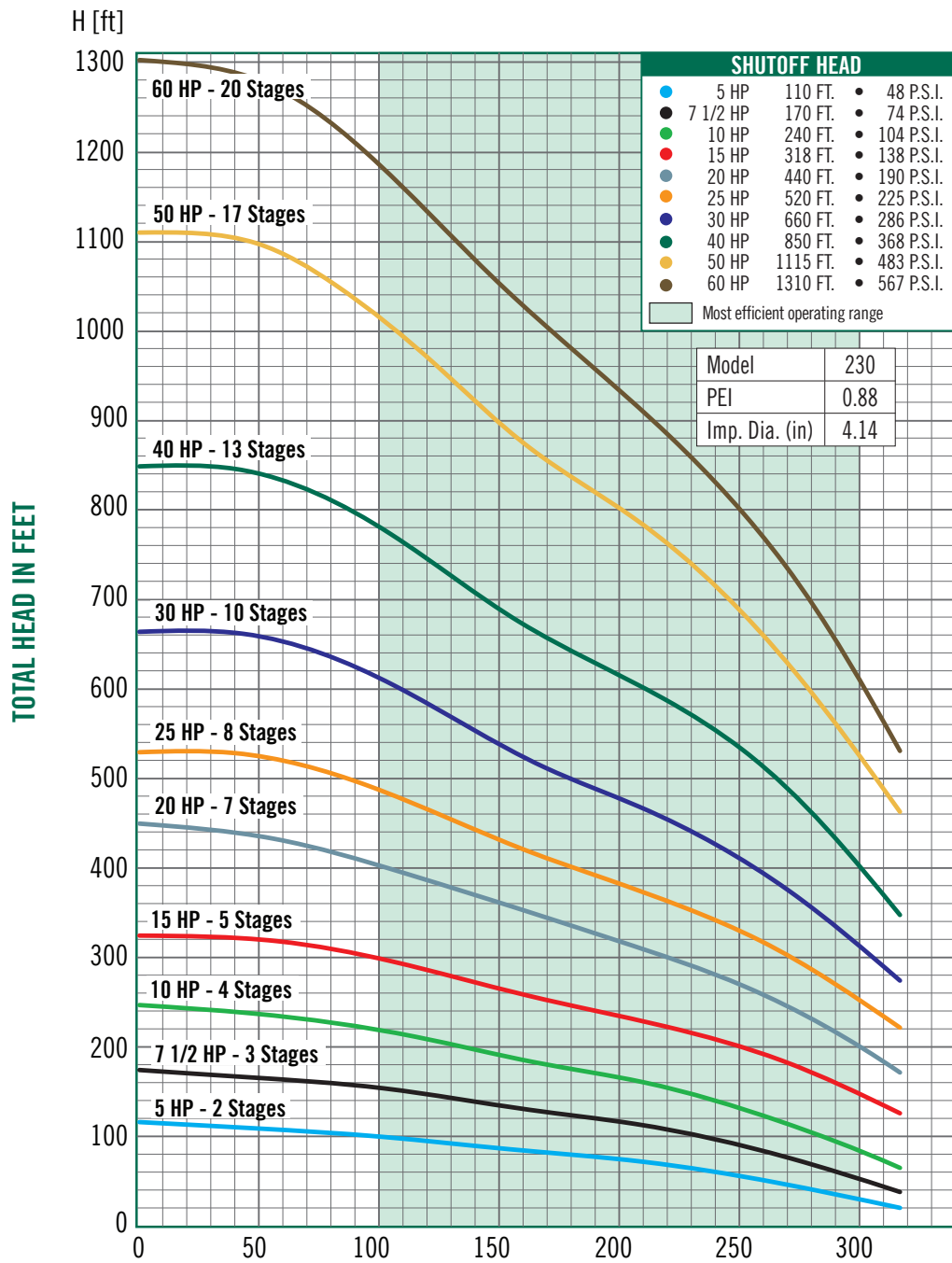


Fig. A

Component	Materials	Standard
Discharge	Stainless Steel	304
Valve Cone	Stainless Steel	304
Valve Seat	Stainless Steel / Rubber	304 / NBR
Top Diffuser	Stainless Steel	304
Upper Bearing	Stainless Steel / Rubber	304 / NBR
Neck Ring	Stainless Steel / Rubber	304 / NBR
Bottom Neck Ring	PTFE + CF	
Bearing	Rubber	NBR
Diffuser	Stainless Steel	304
Split Cone Nut	Stainless Steel	304
Nut for Stop Ring	Stainless Steel	304
Split Cone	Stainless Steel	304
Ring of Impeller	Stainless Steel	304
Impeller	Stainless Steel	304
Bottom Diffuser	Stainless Steel	304
Lower Bearing	Stainless Steel / Rubber	304 / NBR
Stop Ring	Stainless Steel	304
Spacing Washer for Stop Ring	PTFE / CF	
Strainer	Stainless Steel	304
Suction Interconnector	Stainless Steel	304
Pump Shaft	Stainless Steel	431
Coupling	Stainless Steel	304
Strap	Stainless Steel	304
Nut	Stainless Steel	304
Cable Guard	Stainless Steel	304
Strainer Cap	Stainless Steel	304

230 GPM



η% - Efficiency of motor
 NPSH - Ft. of water above the pump

6", 8", & 10" Pump Ends

300 GPM

A.Y. McDonald stainless steel pump ends offer peak capacity performance in its 300 gallons per minute (GPM). Each pump end includes cable guard, bolts, and washers. The 300 gallons per minute (GPM) is a 6" Stainless Steel Pump End that ranges in size from 5 to 60 horsepower (HP).

Models Available

Model No.	HP	Stages	Motor Size	Disch. Size	A	B	Wt.
300S5HP64	5	1	4"	4"	15.08	5.75	15.25
300S7.5HP66	7.5	2	6"	4"	19.53	5.75	20.33
300S10HP66	10	3	6"	4"	23.98	5.87	25.42
300S15HP66	15	4	6"	4"	28.43	5.87	30.28
300S20HP66	20	6	6"	4"	37.32	5.87	40.44
300S25HP66	25	7	6"	4"	41.77	5.87	45.53
300S30HP66	30	9	6"	4"	50.67	5.87	55.47
300S40HP66	40	11	6"	4"	59.57	5.87	65.64
300S50HP66	50	14	6"	4"	72.91	5.87	80.67
300S60HP66	60	17	6"	4"	86.26	5.87	95.91

Component	Materials	Standard
Discharge	Stainless Steel	304
Valve Cone	Stainless Steel	304
Valve Seat	Stainless Steel / Rubber	304 / NBR
Top Diffuser	Stainless Steel	304
Upper Bearing	Stainless Steel / Rubber	304 / NBR
Neck Ring	Stainless Steel / Rubber	304 / NBR
Bottom Neck Ring	PTFE + CF	
Bearing	Rubber	NBR
Diffuser	Stainless Steel	304
Split Cone Nut	Stainless Steel	304
Nut for Stop Ring	Stainless Steel	304
Split Cone	Stainless Steel	304
Ring of Impeller	Stainless Steel	304
Impeller	Stainless Steel	304
Bottom Diffuser	Stainless Steel	304
Lower Bearing	Stainless Steel / Rubber	304 / NBR
Stop Ring	Stainless Steel	304
Spacing Washer for Stop Ring	PTFE / CF	
Strainer	Stainless Steel	304
Suction Interconnector	Stainless Steel	304
Pump Shaft	Stainless Steel	431
Coupling	Stainless Steel	304
Strap	Stainless Steel	304
Nut	Stainless Steel	304
Cable Guard	Stainless Steel	304
Strainer Cap	Stainless Steel	304

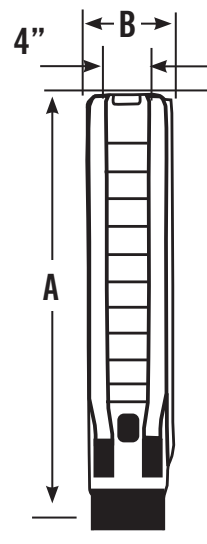
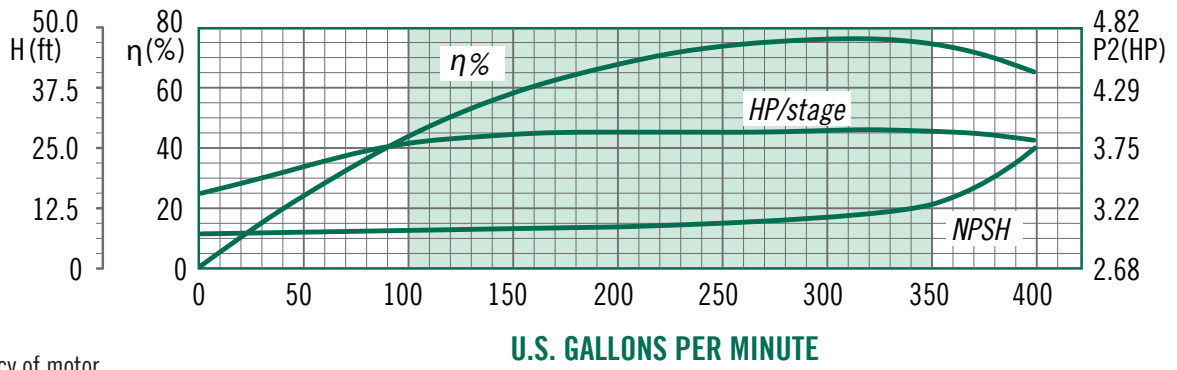
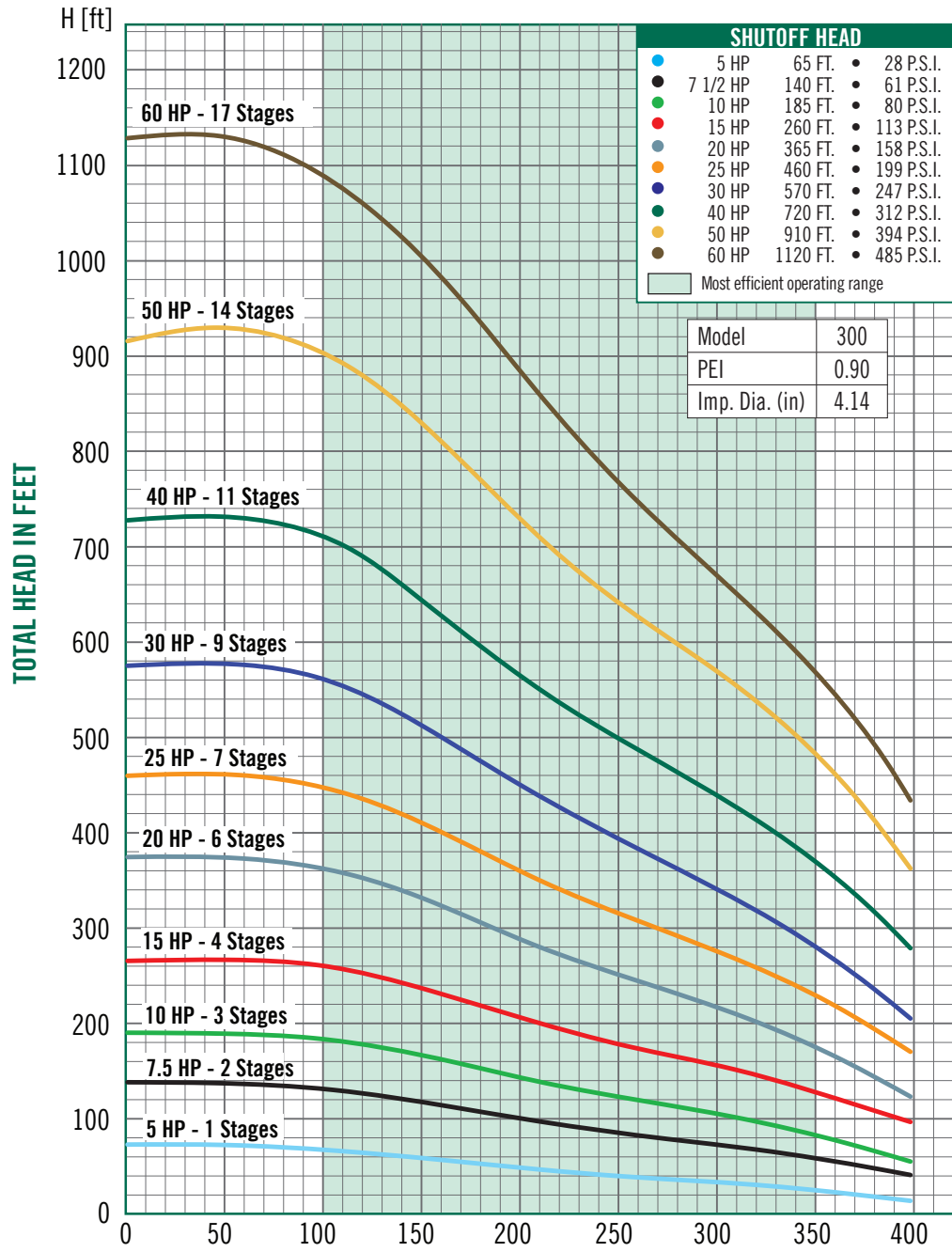


Fig. A

300 GPM



$\eta\%$ - Efficiency of motor
 NPSH - Ft. of water above the pump

6", 8", & 10" Pump Ends

400 GPM

A.Y. McDonald stainless steel pump ends offer peak capacity performance in its 400 gallons per minute (GPM). Each pump end includes cable guard, bolts, and washers. The 400 gallons per minute (GPM) is a 8" Stainless Steel Pump End that ranges in size from 5 to 100 horsepower (HP).

Models Available

Model No.	HP	Stages	Motor Size	Disch. Size	A	B	Wt.
400S5HP86	5	1	6"	5"	24.30	7.01	55.30
400S7.5HP86	7.5	1	6"	5"	24.33	7.01	55.47
400S10HP86	10	2	6"	5"	29.37	7.01	63.43
400S15HP86	15	2	6"	5"	29.37	7.01	63.43
400S20HP86	20	3	6"	5"	34.41	7.01	71.38
400S25HP86	25	4	6"	5"	39.49	7.01	79.34
400S30HP86	30	5	6"	5"	44.53	7.01	87.30
400S40HP86	40	6	6"	5"	49.57	7.01	95.03
400S50HP86	50	7	6"	5"	54.61	7.01	102.99
400S60HP86	60	8	6"	5"	60.12	7.87	114.04
400S75HP88	75	10	8"	5"	70.20	7.87	129.95
400S100HP88	100	13	8"	5"	85.35	7.87	153.82

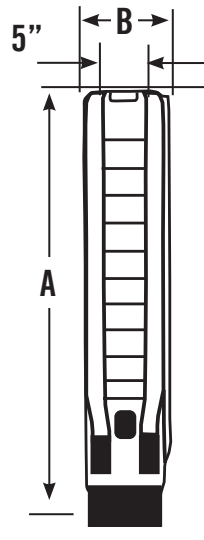
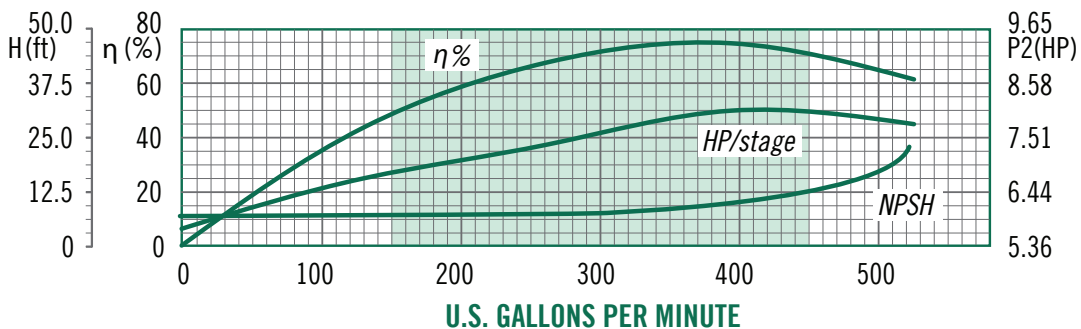
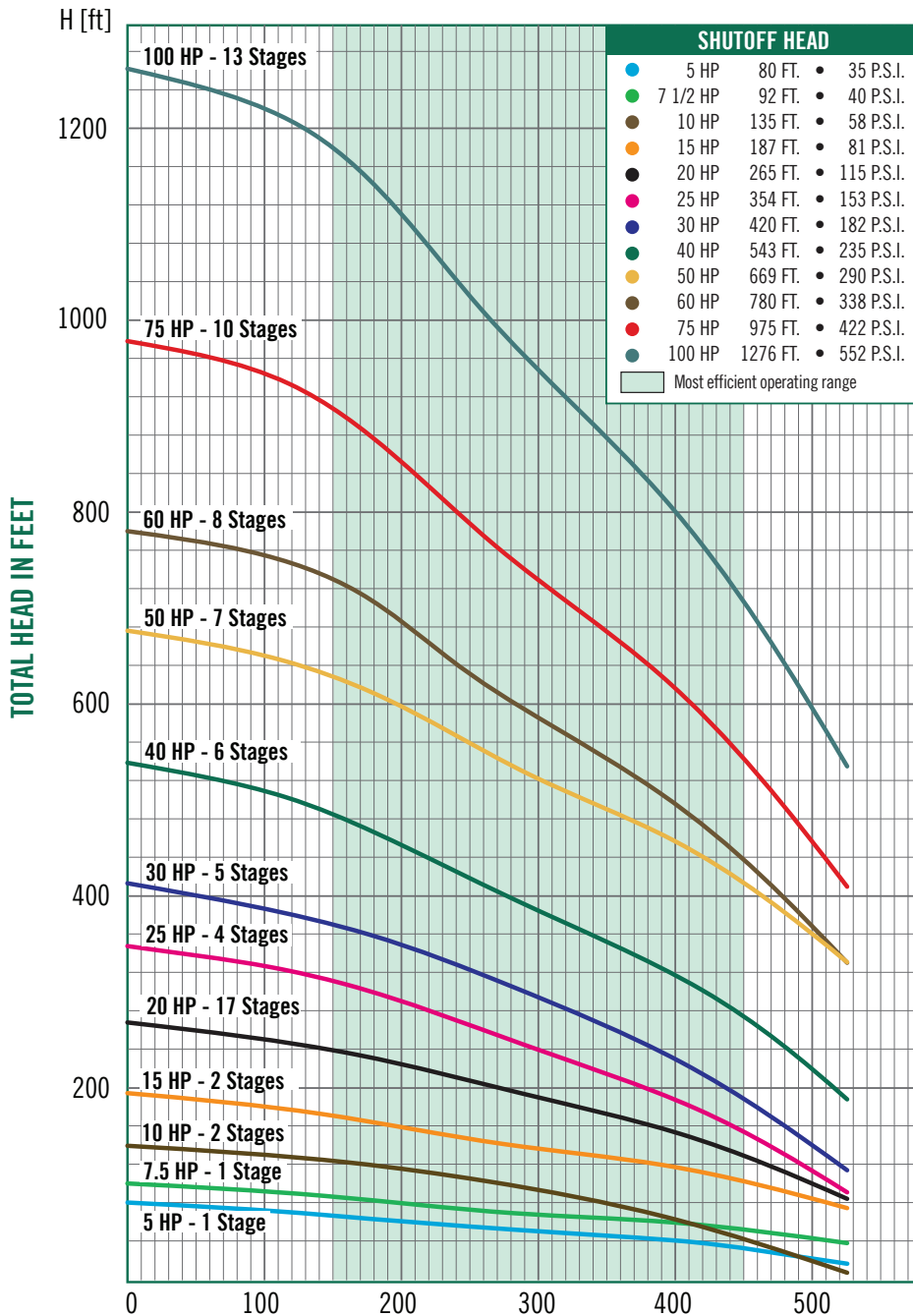


Fig. A

Component	Materials	Standard
Discharge	Stainless Steel	304
Valve Cone	Stainless Steel	304
Valve Seat	Stainless Steel / Rubber	304 / NBR
Top Diffuser	Stainless Steel	304
Upper Bearing	Stainless Steel / Rubber	304 / NBR
Neck Ring	Stainless Steel / Rubber	304 / NBR
Bottom Neck Ring	PTFE + CF	
Bearing	Rubber	NBR
Diffuser	Stainless Steel	304
Split Cone Nut	Stainless Steel	304
Nut for Stop Ring	Stainless Steel	304
Split Cone	Stainless Steel	304
Ring of Impeller	Stainless Steel	304
Impeller	Stainless Steel	304
Bottom Diffuser	Stainless Steel	304
Lower Bearing	Stainless Steel / Rubber	304 / NBR
Stop Ring	Stainless Steel	304
Spacing Washer for Stop Ring	PTFE / CF	
Strainer	Stainless Steel	304
Suction Interconnector	Stainless Steel	304
Pump Shaft	Stainless Steel	431
Coupling	Stainless Steel	304
Strap	Stainless Steel	304
Nut	Stainless Steel	304
Cable Guard	Stainless Steel	304
Strainer Cap	Stainless Steel	304

400 GPM



η % - Efficiency of motor
 NPSH - Ft. of water above the pump

- FRICTION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED
 - CONTACT FACTORY FOR CAPACITIES NOT CATALOGED

500 GPM

A.Y. McDonald stainless steel pump ends offer peak capacity performance in its 500 gallons per minute (GPM). Each pump end includes cable guard, bolts, and washers. The 500 gallons per minute (GPM) is a 8" Stainless Steel Pump End that ranges in size from 5 to 125 horsepower (HP).

Models Available

Model No.	HP	Stages	Motor Size	Disch. Size	A	B	Wt.
500S5HP86	5	1	6"	5"	24.30	7.05	55.30
500S7.5HP86	7.5	1	6"	5"	24.33	7.05	55.47
500S10HP86	10	1	6"	5"	24.33	7.05	55.47
500S15HP86	15	2	6"	5"	29.37	7.05	63.43
500S20HP86	20	3	6"	5"	34.41	7.05	71.38
500S25HP86	25	3	6"	5"	34.41	7.05	71.38
500S30HP86	30	4	6"	5"	39.49	7.05	79.34
500S40HP86	40	5	6"	5"	44.53	7.05	87.30
500S50HP86	50	6	6"	5"	49.57	7.05	95.03
500S60HP86	60	7	6"	5"	55.04	8.07	106.08
500S75HP88	75	8	8"	5"	60.12	8.07	114.04
500S100HP88	100	11	8"	5"	75.24	8.07	137.90
500S125HP88	125	13	8"	5"	85.35	8.07	153.82

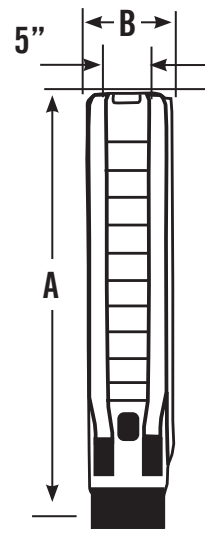
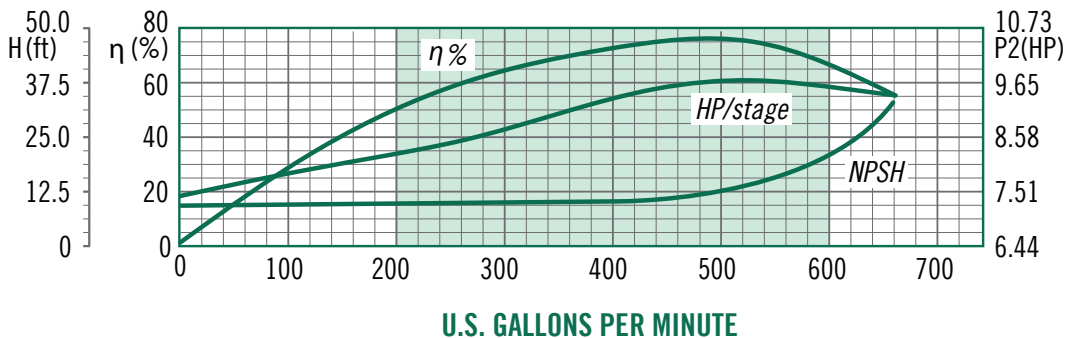
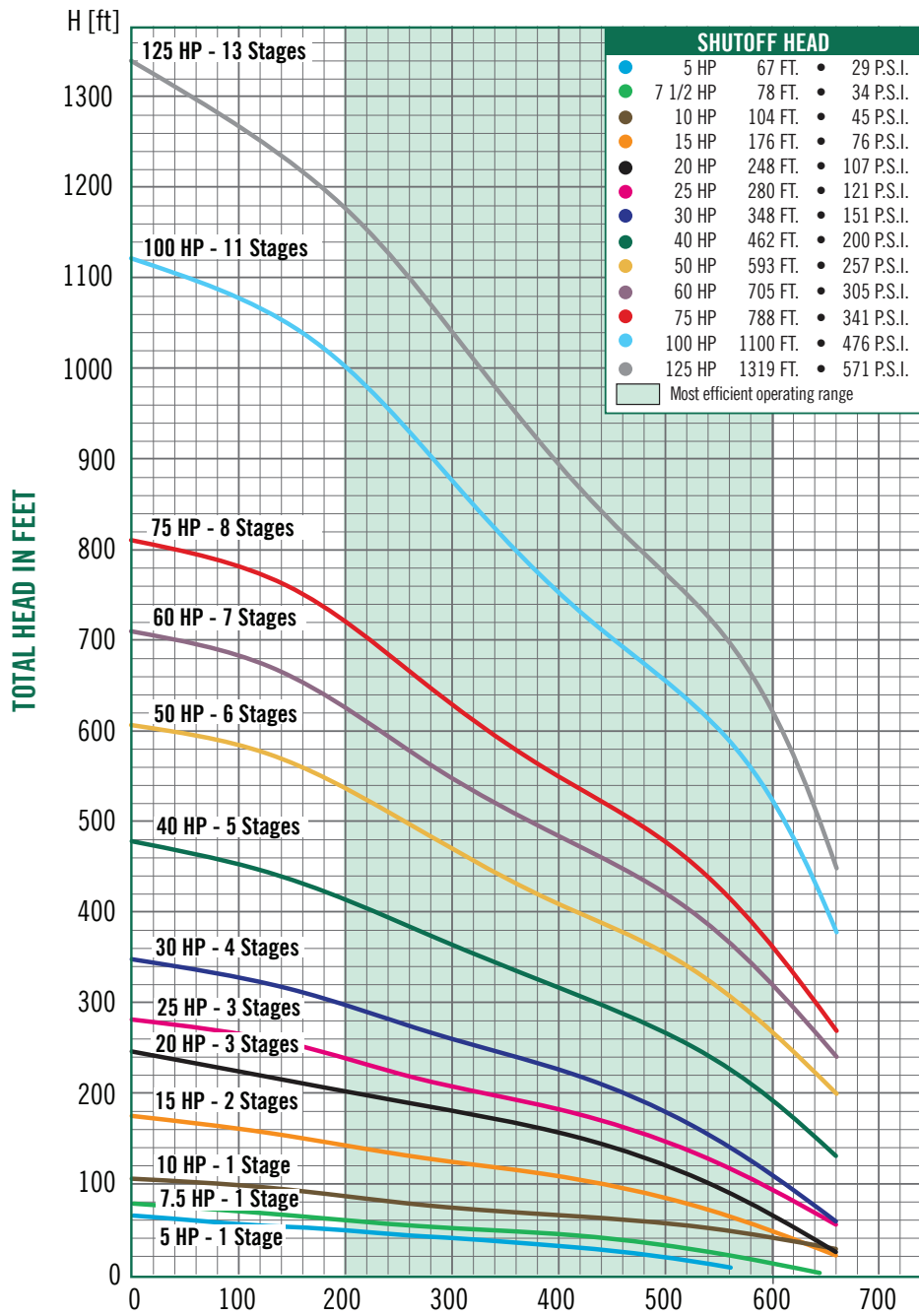


Fig. A

Component	Materials	Standard
Discharge	Stainless Steel	304
Valve Cone	Stainless Steel	304
Valve Seat	Stainless Steel / Rubber	304 / NBR
Top Diffuser	Stainless Steel	304
Upper Bearing	Stainless Steel / Rubber	304 / NBR
Neck Ring	Stainless Steel / Rubber	304 / NBR
Bottom Neck Ring	PTFE + CF	
Bearing	Rubber	NBR
Diffuser	Stainless Steel	304
Split Cone Nut	Stainless Steel	304
Nut for Stop Ring	Stainless Steel	304
Split Cone	Stainless Steel	304
Ring of Impeller	Stainless Steel	304
Impeller	Stainless Steel	304
Bottom Diffuser	Stainless Steel	304
Lower Bearing	Stainless Steel / Rubber	304 / NBR
Stop Ring	Stainless Steel	304
Spacing Washer for Stop Ring	PTFE / CF	
Strainer	Stainless Steel	304
Suction Interconnector	Stainless Steel	304
Pump Shaft	Stainless Steel	431
Coupling	Stainless Steel	304
Strap	Stainless Steel	304
Nut	Stainless Steel	304
Cable Guard	Stainless Steel	304
Strainer Cap	Stainless Steel	304

500 GPM



η % - Efficiency of motor
 NPSH - Ft. of water above the pump

- FRICTION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED
 - CONTACT FACTORY FOR CAPACITIES NOT CATALOGED

6", 8", & 10" Pump Ends

650 GPM

A.Y. McDonald stainless steel pump ends offer peak capacity performance in its 650 gallons per minute (GPM). Each pump end includes cable guard, bolts, and washers. The 650 gallons per minute (GPM) is a 10" Stainless Steel Pump End that ranges in size from 15 to 125 horsepower (HP).

Models Available

Model No.	HP	Stages	Motor Size	Disch. Size	A	B	Wt.
650S15HP106	15	1	6"	6"	25.67	8.31	64.53
650S25HP106	25	1	6"	6"	25.67	8.31	64.75
650S30HP106	30	2	6"	6"	31.77	8.31	78.68
650S40HP106	40	2	6"	6"	31.77	8.31	78.90
650S40HP106H	40	2	6"	6"	31.77	8.31	79.12
650S50HP106	50	3	6"	6"	31.77	8.39	93.04
650S60HP106	60	3	6"	6"	37.91	8.31	93.48
650S75HP108H	75	4	8"	6"	44.02	8.39	114.92
650S100HP108	100	4	8"	6"	44.02	8.39	115.14
650S100HP108H	100	5	8"	6"	50.16	8.39	125.97
650S100HP108SH	100	6	8"	6"	56.26	8.39	136.80
650S125HP108H	125	6	8"	6"	56.26	8.39	137.24
650S125HP108SH	125	7	8"	6"	62.40	8.39	148.07

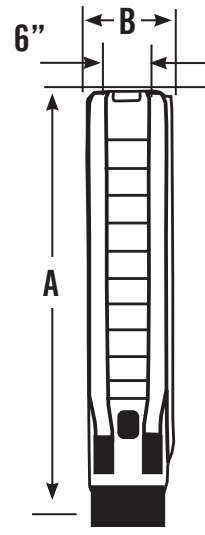
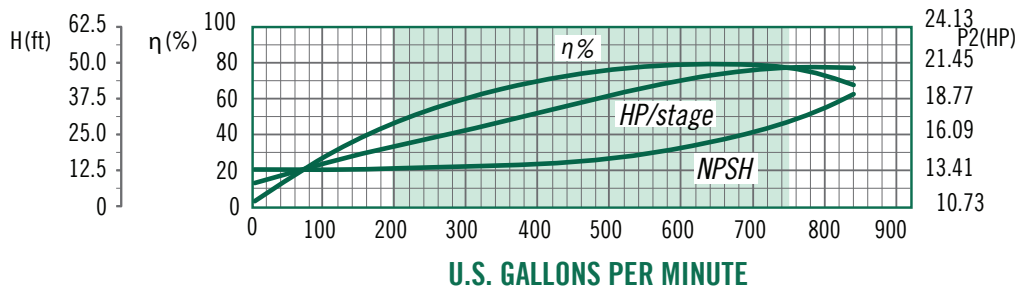
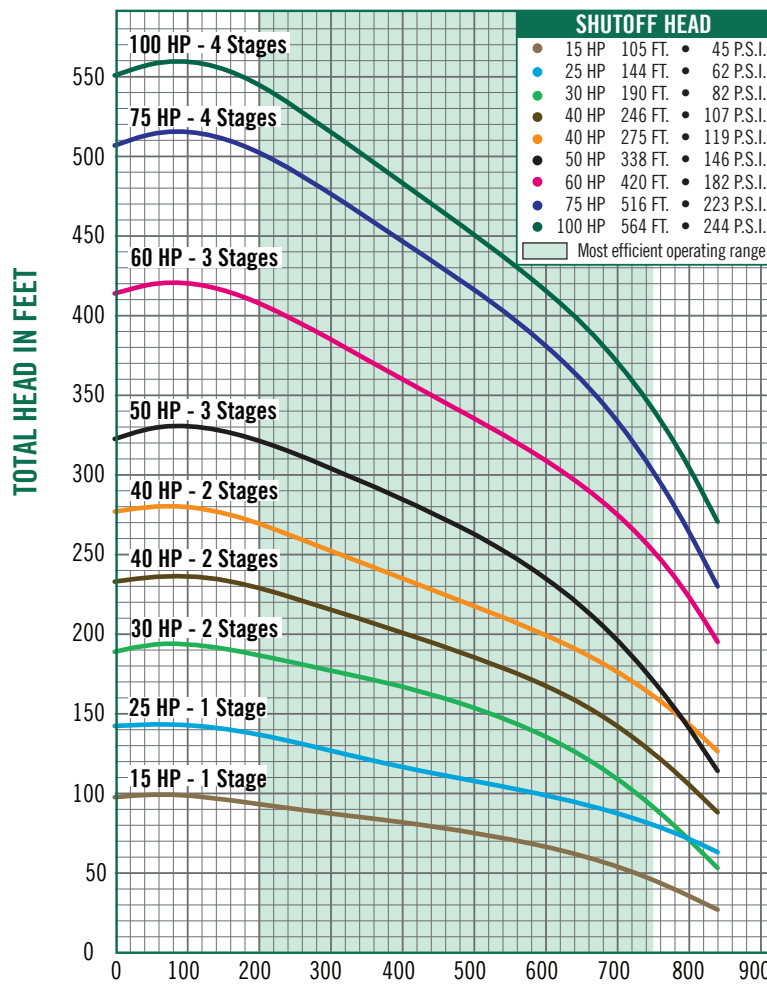
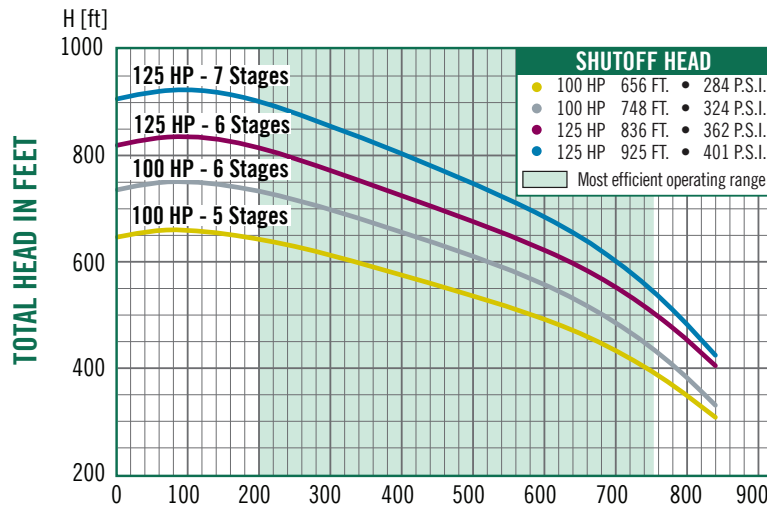


Fig. A

Component	Materials	Standard
Discharge	Stainless Steel	304
Valve Cone	Stainless Steel	304
Valve Seat	Stainless Steel / Rubber	304 / NBR
Top Diffuser	Stainless Steel	304
Upper Bearing	Stainless Steel / Rubber	304 / NBR
Neck Ring	Stainless Steel / Rubber	304 / NBR
Bottom Neck Ring	PTFE + CF	
Bearing	Rubber	NBR
Diffuser	Stainless Steel	304
Split Cone Nut	Stainless Steel	304
Nut for Stop Ring	Stainless Steel	304
Split Cone	Stainless Steel	304
Ring of Impeller	Stainless Steel	304
Impeller	Stainless Steel	304
Bottom Diffuser	Stainless Steel	304
Lower Bearing	Stainless Steel / Rubber	304 / NBR
Stop Ring	Stainless Steel	304
Spacing Washer for Stop Ring	PTFE / CF	
Strainer	Stainless Steel	304
Suction Interconnector	Stainless Steel	304
Pump Shaft	Stainless Steel	431
Coupling	Stainless Steel	304
Strap	Stainless Steel	304
Nut	Stainless Steel	304
Cable Guard	Stainless Steel	304
Strainer Cap	Stainless Steel	304

650 GPM



$\eta\%$ - Efficiency of motor
NPSH - Ft. of water above the pump

- FRICTION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED
 - CONTACT FACTORY FOR CAPACITIES NOT CATALOGED

800 GPM

A.Y. McDonald stainless steel pump ends offer peak capacity performance in its 800 gallons per minute (GPM). Each pump end includes cable guard, bolts, and washers. The 800 gallons per minute (GPM) is a 10" Stainless Steel Pump End that ranges in size from 20 to 125 horsepower (HP).

Models Available

Model No.	HP	Stages	Motor Size	Disch. Size	A	B	Wt.
800S20HP106	20	1	6"	6"	25.67	8.31	67.18
800S30HP106	30	1	6"	6"	25.67	8.31	67.18
800S40HP106	40	2	6"	6"	31.77	8.31	81.11
800S50HP106	50	2	6"	6"	31.77	8.31	81.33
800S50HP106H	50	2	6"	6"	31.77	8.31	81.33
800S60HP106	60	3	6"	6"	37.91	8.39	98.35
800S75HP108H	75	3	8"	6"	37.91	8.39	98.57
800S100HP108	100	4	8"	6"	44.02	8.39	112.49
800S100HP108H	100	4	8"	6"	44.02	8.39	112.71
800S125HP108	125	5	8"	6"	50.16	8.39	126.63
800S125HP108HH	125	5	8"	6"	50.16	8.39	126.85

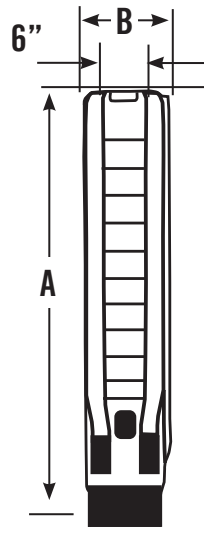
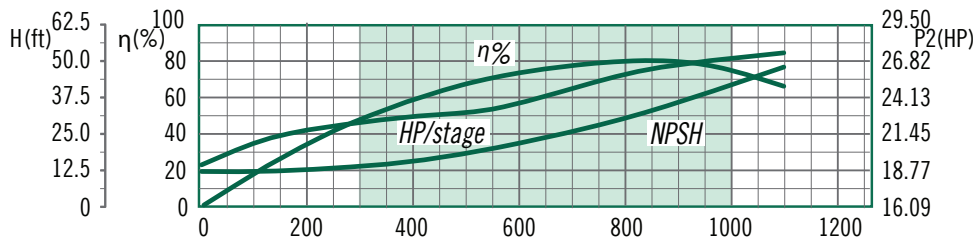
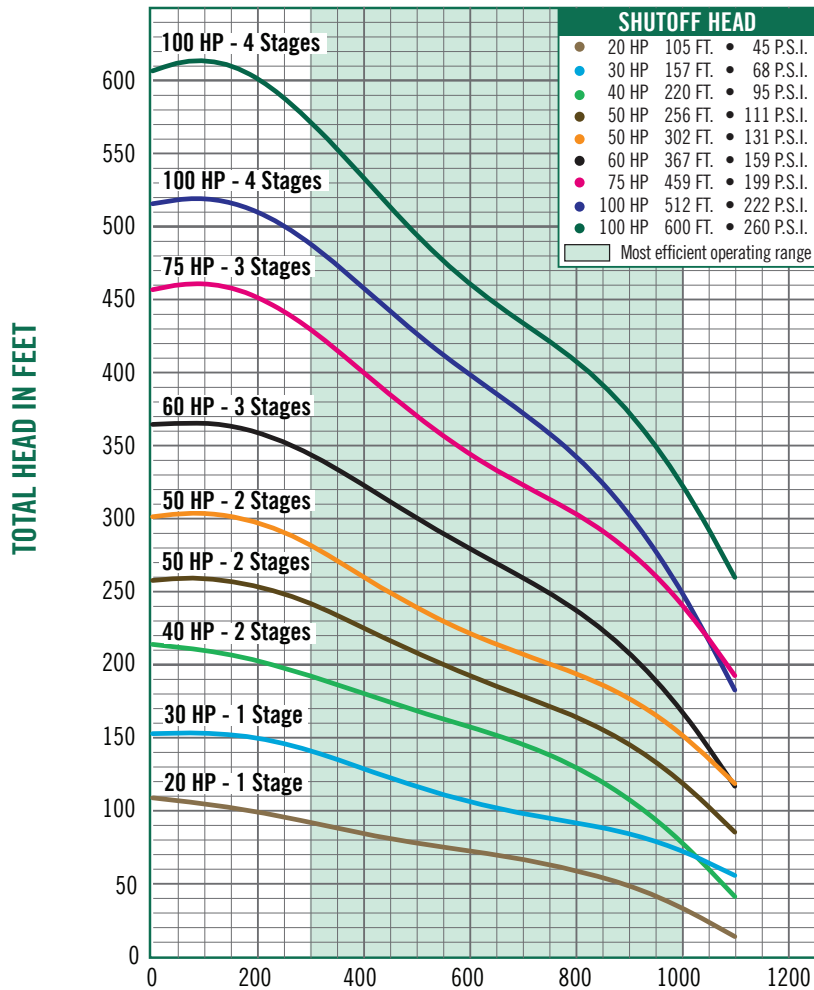
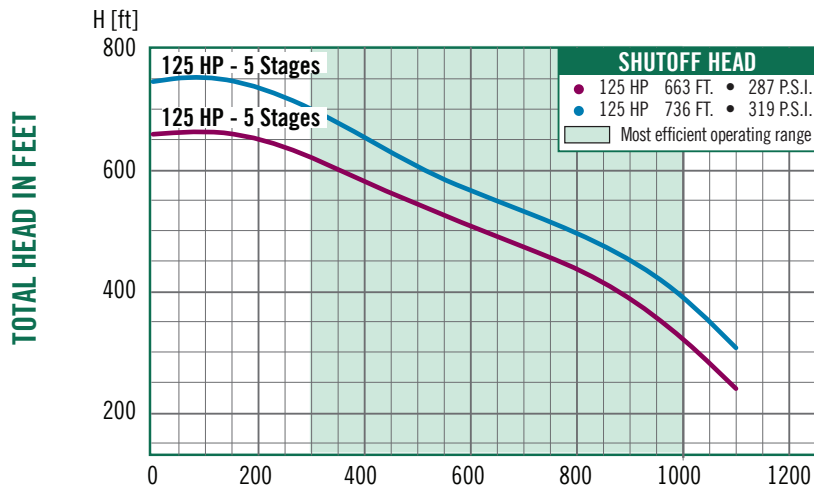


Fig. A

Component	Materials	Standard
Discharge	Stainless Steel	304
Valve Cone	Stainless Steel	304
Valve Seat	Stainless Steel / Rubber	304 / NBR
Top Diffuser	Stainless Steel	304
Upper Bearing	Stainless Steel / Rubber	304 / NBR
Neck Ring	Stainless Steel / Rubber	304 / NBR
Bottom Neck Ring	PTFE + CF	
Bearing	Rubber	NBR
Diffuser	Stainless Steel	304
Split Cone Nut	Stainless Steel	304
Nut for Stop Ring	Stainless Steel	304
Split Cone	Stainless Steel	304
Ring of Impeller	Stainless Steel	304
Impeller	Stainless Steel	304
Bottom Diffuser	Stainless Steel	304
Lower Bearing	Stainless Steel / Rubber	304 / NBR
Stop Ring	Stainless Steel	304
Spacing Washer for Stop Ring	PTFE / CF	
Strainer	Stainless Steel	304
Suction Interconnector	Stainless Steel	304
Pump Shaft	Stainless Steel	431
Coupling	Stainless Steel	304
Strap	Stainless Steel	304
Nut	Stainless Steel	304
Cable Guard	Stainless Steel	304
Strainer Cap	Stainless Steel	304

800 GPM



U.S. GALLONS PER MINUTE

η% - Efficiency of motor
 NPSH - Ft. of water above the pump

- FRICTION LOSSES IN RISER PIPE HAVE NOT BEEN CALCULATED
 - CONTACT FACTORY FOR CAPACITIES NOT CATALOGED

6", 8", & 10" Pump Ends

1100 GPM

A.Y. McDonald stainless steel pump ends offer peak capacity performance in its 1100 gallons per minute (GPM). Each pump end includes cable guard, bolts, and washers. The 1100 gallons per minute (GPM) is a 10" Stainless Steel Pump End that ranges in size from 30 to 250 horsepower (HP).

Models Available

Model No.	HP	Stages	Motor Size	Disch. Size	A	B	Wt.
1100S30HP106	30	1	6"	6"	30.38	9.33	101.88
1100S40HP106	40	1	6"	6"	30.38	9.33	101.88
1100S60HP106	60	2	6"	6"	37.31	9.33	123.32
1100S75HP108	75	2	8"	6"	37.31	9.33	123.32
1100S100HP108	100	2	8"	6"	37.31	9.33	123.32
1100S100HP108H	100	3	8"	6"	44.24	9.33	144.98
1100S125HP108	125	3	8"	6"	44.24	9.33	144.98
1100S150HP108	150	4	8"	6"	51.14	9.33	166.63
1100S150HP108HH	150	4	8"	6"	51.14	9.33	166.63
*1100S175HP1010	175	5	10"	6"	58.11	10.31	200.67
*1100S200HP1010	200	5	10"	6"	58.11	10.31	200.67
*1100S250HP1010	250	7	10"	6"			
*1100S250HP1010HH	250	7	10"	6"			

*Motor manufacture information needed when placing order.

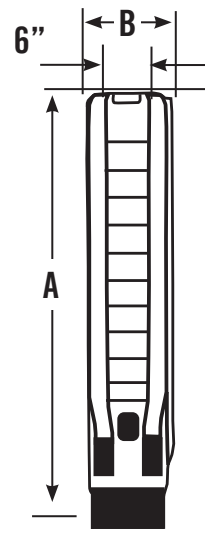
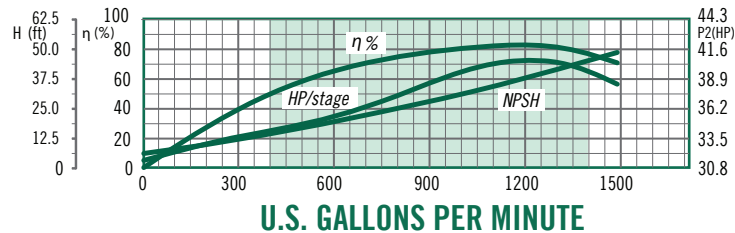
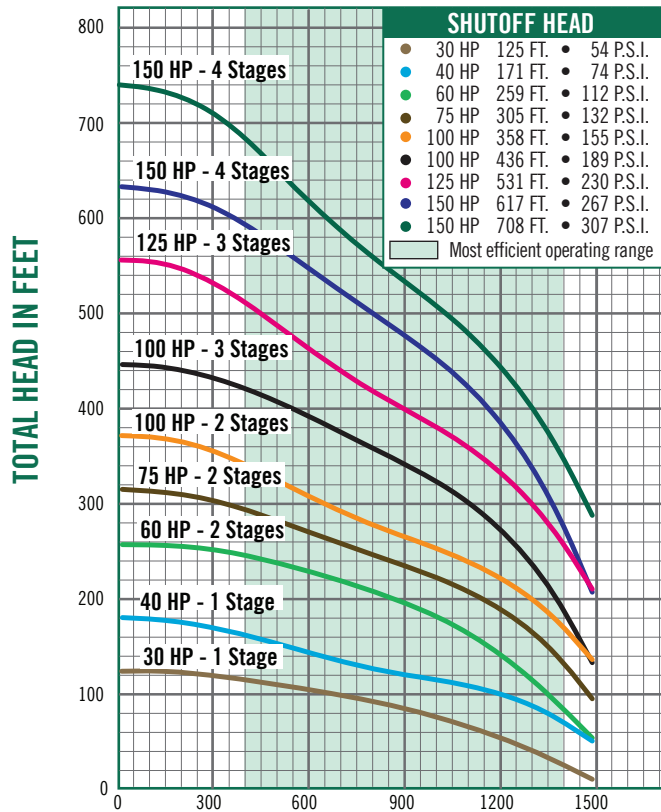
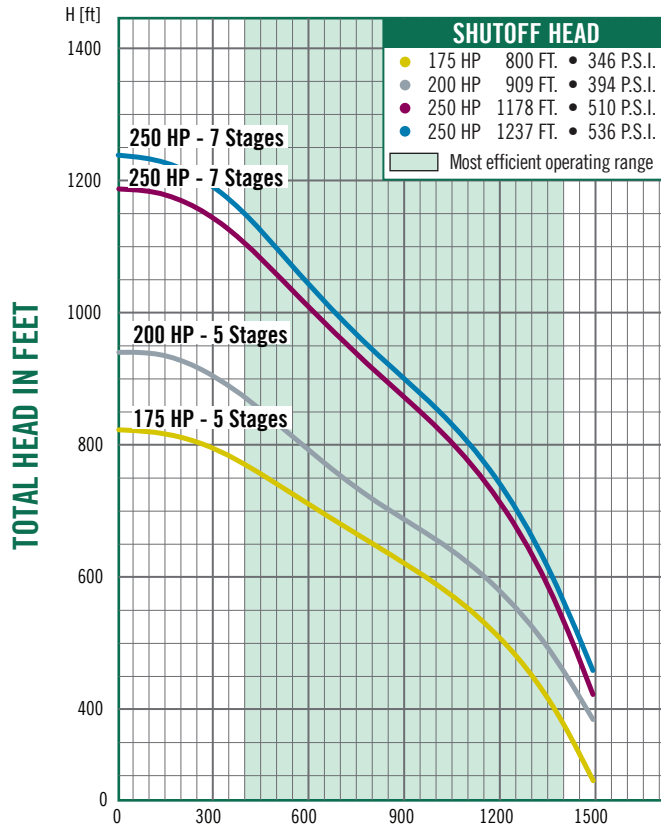


Fig. A

Component	Materials	Standard
Discharge	Stainless Steel	304
Valve Cone	Stainless Steel	304
Valve Seat	Stainless Steel / Rubber	304 / NBR
Top Diffuser	Stainless Steel	304
Upper Bearing	Stainless Steel / Rubber	304 / NBR
Neck Ring	Stainless Steel / Rubber	304 / NBR
Bottom Neck Ring	PTFE + CF	
Bearing	Rubber	NBR
Diffuser	Stainless Steel	304
Split Cone Nut	Stainless Steel	304
Nut for Stop Ring	Stainless Steel	304
Split Cone	Stainless Steel	304
Ring of Impeller	Stainless Steel	304
Impeller	Stainless Steel	304
Bottom Diffuser	Stainless Steel	304
Lower Bearing	Stainless Steel / Rubber	304 / NBR
Stop Ring	Stainless Steel	304
Spacing Washer for Stop Ring	PTFE / CF	
Strainer	Stainless Steel	304
Suction Interconnector	Stainless Steel	304
Pump Shaft	Stainless Steel	431
Coupling	Stainless Steel	304
Strap	Stainless Steel	304
Nut	Stainless Steel	304
Cable Guard	Stainless Steel	304
Strainer Cap	Stainless Steel	304

1100 GPM

6", 8", & 10" Pump Ends



η% - Efficiency of motor
NPSH - Ft. of water above the pump

- FRICTION LOSSES IN RISER PIPE
HAVE NOT BEEN CALCULATED

- CONTACT FACTORY FOR
CAPACITIES NOT CATALOGED



6", 8", & 10" Motors & Controls



6", 8", & 10" Motors & Controls

Pump Catalog - January 2020

MORE THAN A BRAND. WE'RE A FAMILY.

6", 8", & 10" A.Y. McDonald Submersible Motors

A.Y. McDonald offers a full line of 6", 8", & 10" submersible motors. Our 6" motors range from 5 HP to 60 HP. The 8" motors range from 40 HP to 150 HP and our 10" motors range from 100 HP up to 260 HP. Cooling and lubrication of the thrust bearing assembly is provided by a mixture of water and glycol.

Features:

- AISI 304 stainless steel shell, thrust bearings, shaft ends
- Removable cable connector to allow fast and easy maintenance
- Temperature Rating 104°F.



6", 8", & 10" A.Y. McDonald Submersible Motors



6" Water Well - Three Wire - Single Phase - 60 HZ (Control Box Required)

A.Y. McDonald Part No.	A.Y. McDonald Model No.	HP	Voltage	kw	Service Factor	AMP (in)	Downward Thrust	Cable length (ft.)
3132-549	SM0613 7.5HP230V	7.5	230	5.5	1.15	33.6	3600	13
3132-547	SM0613 10HP230V	10	230	7.5	1.15	43.2	3600	13
3132-548	SM0613 15HP230V	15	230	11	1.15	62.9	3600	13

6" Water Well - Three Wire - Three Phase - 60 Hz (Starter Kit Required)

A.Y. McDonald Part No.	A.Y. McDonald Model No.	HP	Voltage	kw	Service Factor	AMP (in)	Downward Thrust	Cable length (ft.)
3132-551	SM0633 5HP230V	5	230	4	1.15	18.5	3600	13
3132-552	SM0633 5HP460V		460	4	1.15	8.6	3600	13
3132-593	SM0633 5HP575V		575	4	1.15	6.9	3600	13
3132-553	SM0633 7.5HP230V	7.5	230	5.5	1.15	24.0	3600	13
3132-554	SM0633 7.5HP460V		460	5.5	1.15	12.0	3600	13
3132-594	SM0633 7.5HP575V		575	5.5	1.15	9.6	3600	13
3132-555	SM0633 10HP230V	10	230	7.5	1.15	34.0	3600	13
3132-556	SM0633 10HP460V		460	7.5	1.15	15.0	3600	13
3132-570	SM0633 10HP575V		575	7.5	1.15	12.0	3600	13
3132-557	SM0633 15HP230V	15	230	11	1.15	50.0	3600	13
3132-558	SM0633 15HP460V		460	11	1.15	21.0	3600	13
3132-572	SM0633 15HP575V		575	11	1.15	16.8	3600	13
3132-559	SM0633 20HP230V	20	230	15	1.15	63.0	3600	13
3132-560	SM0633 20HP460V		460	15	1.15	27.6	3600	13
3132-573	SM0633 20HP575V		575	15	1.15	22.1	3600	13
3132-561	SM0633 25HP230V	25	230	18.5	1.15	73.4	3600	13
3132-562	SM0633 25HP460V		460	18.5	1.15	36.7	3600	13
3132-591	SM0633 25HP575V		575	18.5	1.15	29.3	3600	13
3132-563	SM0633 30HP230V	30	230	22	1.15	95.0	3600	13
3132-564	SM0633 30HP460V		460	22	1.15	44.7	3600	13
3132-592	SM0633 30HP575V		575	22	1.15	35.7	3600	13
3132-565	SM0633 40HP460V	40	460	30	1.15	54.0	6000	13
3132-571	SM0633 40HP575V		575	30	1.15	43.2	6000	13
3132-566	SM0633 50HP460V	50	460	37	1.15	69.0	6000	13
3132-568	SM0633 50HP575V		575	37	1.15	55.0	6000	13
3132-567	SM0633 60HP460V	60	460	45	1.15	82.0	6000	13
3132-569	SM0633 60HP575V		575	45	1.15		6000	13

These motors are built for dependable operation in 6" diameter or larger water wells.

6", 8", & 10" Motors & Controls

- Refer to pages 181-182 for control panels and contactors.

Do not use motors in swimming areas

6", 8", & 10" A.Y. McDonald Submersible Motors



8" Water Well - Three Wire - Three Phase - 60 Hz (Starter Kit Required)

A.Y. McDonald Part No.	A.Y. McDonald Model No.	HP	Voltage	kw	Service Factor	AMP (in)	Downward Thrust	Cable length (ft).
3132-600	SM0833 40HP460V	40	460	30	1.15	61	13500	16
3132-601	SM0833 40HP575V		575	30	1.15		13500	16
3132-602	SM0833 50HP460V	50	460	37	1.15	74	13500	16
3132-603	SM0833 50HP575V		575	37	1.15		13500	16
3132-604	SM0833 60HP460V	60	460	45	1.15	88	13500	16
3132-605	SM0833 60HP575V		575	45	1.15		13500	16
3132-606	SM0833 75HP460V	75	460	55	1.15	107	13500	16
3132-607	SM0833 75HP575V		575	55	1.15		13500	16
3132-610	SM0833 100HP460V	100	460	75	1.15	143	13500	16
3132-611	SM0833 100HP575V		575	75	1.15		13500	16
3132-612	SM0833 125HP460V	125	460	92	1.15	175	13500	16
3132-613	SM0833 125HP575V		575	92	1.15		13500	16
3132-614	SM0833 150HP460V	150	460	110	1.15	210	13500	16
3132-615	SM0833 150HP575V		575	110	1.15		13500	16

These motors are built for dependable operation in 8" diameter or larger water wells.

6", 8", & 10" Motors & Controls



10" Water Well - Three Wire - Three Phase - 60 Hz (Starter Kit Required)

A.Y. McDonald Part No.	A.Y. McDonald Model No.	HP	Voltage	kw	Service Factor	AMP (in)	Downward Thrust	Cable length (ft).
3132-616	SM1033 100HP460V	100	460	75	1.15	146	13500	26
3132-617	SM1033 100HP575V		575	75	1.15		13500	26
3132-618	SM1033 125HP460V	125	460	92	1.15	181	13500	26
3132-619	SM1033 125HP575V		575	92	1.15		13500	26
3132-620	SM1033 150HP460V	150	460	110	1.15	213	13500	26
3132-621	SM1033 150HP575V		575	110	1.15		13500	26
3132-622	SM1033 180HP460V	180	460	132	1.15	252	13500	26
3132-623	SM1033 180HP575V		575	132	1.15		13500	26
3132-624	SM1033 200HP460V	200	460	147	1.15	290	13500	26
3132-625	SM1033 200HP575V		575	147	1.15		13500	26
3132-626	SM1033 230HP460V	230	460	170	1.15	338	13500	26
3132-627	SM1033 230HP575V		575	170	1.15		13500	26
3132-628	SM1033 260HP460V	260	460	190	1.15	386	13500	26
3132-629	SM1033 260HP575V		575	190	1.15		13500	26

These motors are built for dependable operation in 10" diameter or larger water wells.

- Refer to pages 181-182 for control panels and contactors.

Do not use motors in swimming areas

6" A.Y. McDonald Submersible Motors

6" Asynchronous two-pole submersible motor, made in AISI 304 stainless steel and cast iron with paint coating for parts in contact with water. Cooling and lubrication of the thrust bearing assembly and carbon bushes is provided by a mixture of water and glycol. Squirrel-cage rotor mounted on self-centering thrust bearing. Stator housed in an airtight stainless steel casing (canned-type). Removable cable connector to allow fast and easy maintenance. Motor suitable for use with variable frequency drive (60 Hz). Overload protection must be provided by user.



Technical Specification

Flange	NEMA 6"
Insulation class	F
Degree of protection	IP68
Cooling flow	1.0 ft/sec @ 95 °F
Voltage tolerance	+ 6% / -10%
Max starts	25/h
Max operating depth	984 ft
Horizontal operation	5 HP - 60 HP

Components



Canned stator with external shell made in AISI 304L stainless steel and flanges with an anti-corrosion treatment. The stator has 24 slots for better elasticity and regularity of operation. Class F double insulated copper wire.

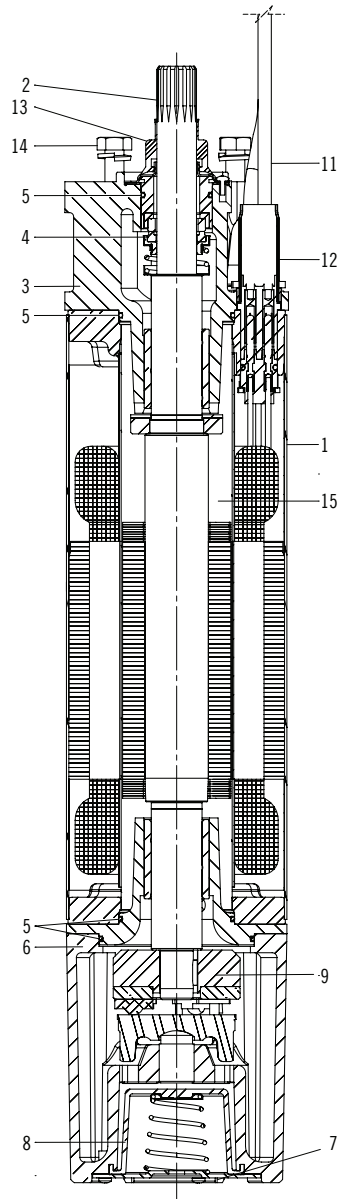


Kingsbury type thrust bearing unit consisting of tilting pads made of highly-resistant stainless steel and machined using the spherical lapping process.



Shafts with end part made of stainless steel "Duplex". Squirrel-cage rotor made in copper for all motor powers.

6" A.Y. McDonald Submersible Motors

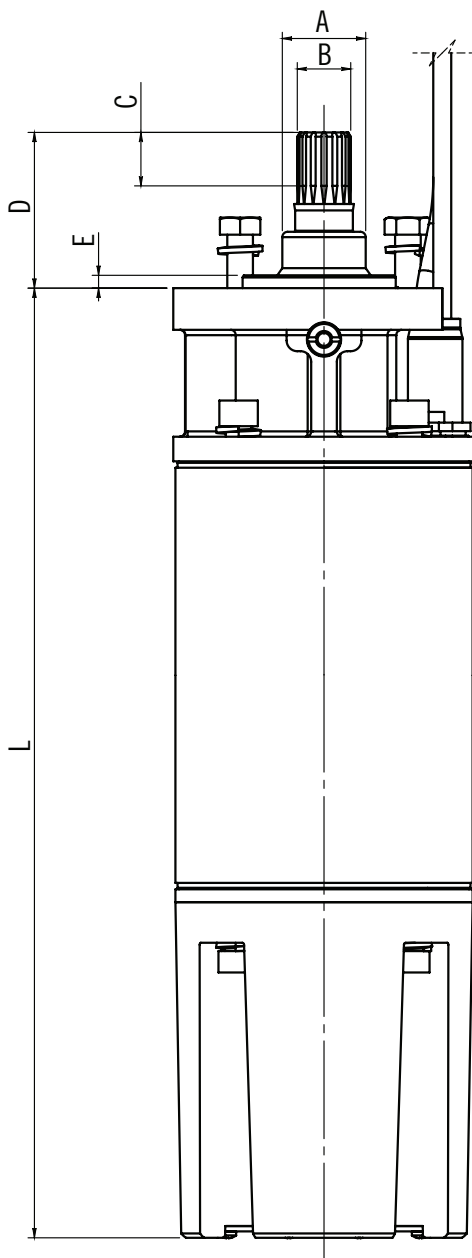


Materials

COMPONENTS		
1	Int. and external sleeve	AISI 304L
2	Shaft end	AISI 316
3	Upper bracket	Painted cast iron
4	Mechanical seal	Ceramic - carbon
5	Gasket	NBR
6	Lower bracket	Painted cast iron
7	Lower cover	AISI 304
8	Diaphragm	EPDM
9	Thrust bearing	Stainless steel - graphite
10	Valve	Brass
11	Cable	EPDM
12	Connecting plug	AISI 316
13	Sand guard (fixed-removable)	NBR
14	Bolts & screws	AISI 304
15	Cooling liquid	Glycol + water

6", 8", & 10" Motors & Controls

6" A.Y. McDonald Submersible Motors



60 Hz Dimensions Single Phase Motors

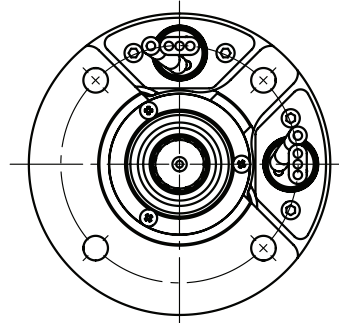
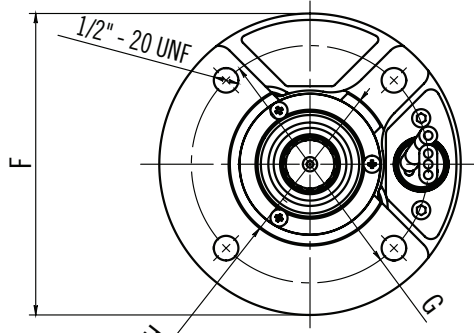
Type			L	Wt.	Axial Thrust
	[HP]	[kW]	[inch]	[lbs]	[lbf]
60 Hz	7 1/2	5.5	28.740	154.5	3600
	10	7.5	30.944	168	3600
	15	11	33.897	185.2	3600

60 Hz Dimensions Three Phase Motor

Type			L	Wt.	Axial Thrust
	[HP]	[kW]	[inch]	[lbs]	[lbf]
60 Hz	5	4	23.661	123.3	3600
	7 1/2	5.5	24.843	130.7	3600
	10	7.5	26.023	137.4	3600
	15	11	28.779	162.1	3600
	20	15	30.944	174.8	3600
	25	18.5	33.897	192.1	3600
	30	22	36.258	205.3	3600
	40	30	41.377	236.6	6000
	50	37	46.496	274.5	6000
	60	45	53.582	311.5	6000

60 Hz Dimensions

Pos.	inch	Pos.	inch
A	1.535	E	0.236
B	0.984	F	5.551
C	0.984	G	4.370
D	2.867	H	3.000



6" A.Y. McDonald Submersible Motors

Electrical Data 60 Hz

Single Phase Motors

P2		V	SF	In	In (SF)	Is/In	P1	N	Cos φ	η	C [uF]		Ø	LC
[HP]	[kW]	[V]		[A]	[A]		[W]	[min ⁻¹]		%	Start	Run	[AWG]	[ft]
7 1/2	5.5	230	1.15	33.6	37.0	5.0	7400	3480	0.72	74	324-389	138	4x11	13
10	7.5	230	1.15	43.2	48.8	4.8	9900	3465	0.76	77	324-389	138	4x11	13
15	11	230	1.15	62.9	72.3	4.4	13400	3495	0.77	76	324-389	160	4x9	13

Electrical Data 60 Hz

Three Phase Motors

P2		V	SF	In	In (SF)	Is/In	P1	N	Cos φ	η	Star*	Ø	LC
[HP]	[kW]	[V]		[A]	[A]		[W]	[min ⁻¹]		%		[AWG]	[ft]
5	4	230	1.15	18.5	20.0	5.1	5700	3450	0.77	70	Δ	4x11	13
		460	1.15	8.6	9.5	5.5	5700	3470	0.83	70	Y	4x11	13
		575	1.15	6.9	7.6	5.5	5700	3470	0.83	70	Y	4x11	13
7 1/2	5.5	230	1.15	24.0	26.6	5.0	7400	3480	0.77	74	Δ	4x11	13
		460	1.15	12.0	13.3	5.0	7400	3480	0.77	74	Y	4x11	13
		575	1.15	9.6	10.6	5.0	7400	3470	0.77	74	Y	4x11	13
10	7.5	230	1.15	34.0	37.0	4.8	9900	3465	0.73	76	Δ	4x11	13
		460	1.15	15.0	16.5	5.5	9900	3465	0.83	76	Y	4x11	13
		575	1.15	12.0	13.2	5.5	9900	3465	0.83	76	Y	4x11	13
15	11	230	1.15	50.0	54.0	4.4	13400	3495	0.67	82	Δ	4x9	13
		460	1.15	21.0	23.3	5.2	13400	3495	0.80	82	Y	4x11	13
		575	1.15	16.8	18.6	5.2	13400	3480	0.80	82	Y	4x11	13
20	15	230	1.15	63.0	68.0	4.8	18200	3475	0.73	82	Δ	4x9	13
		460	1.15	27.6	30.8	5.4	18200	3475	0.83	82	Y	4x11	13
		575	1.15	22.1	24.6	5.4	18200	3475	0.83	82	Y	4x11	13
25	18.5	230	1.15	73.4	80.0	5.7	22200	3475	0.76	83	Δ	4x8	13
		460	1.15	36.7	40.0	5.7	22200	3475	0.76	83	Y	4x9	13
		575	1.15	29.3	32.0	5.7	22200	3475	0.76	83	Y	4x9	13
30	22	230	1.15	95.0	105.0	5.5	26500	3480	0.70	83	Δ	4x8	13
		460	1.15	44.7	49.8	5.8	26500	3480	0.74	83	Y	4x9	13
		575	1.15	35.7	39.8	5.8	26500	3480	0.75	83	Y	4x9	13
40	30	460	1.15	54.0	62.0	6.3	35700	3480	0.83	84	Y	4x8	13
		575	1.15	43.2	49.6	6.3	35700	3480	0.83	84	Y	4x8	13
50	37	460	1.15	69.0	77.0	6.1	44800	3480	0.82	83	Y	4x8	13
		575	1.15	55.0	62.0	6.2	44800	3480	0.82	83	Y	4x8	13
60	45	460	1.15	82.0	92.0	6.5	53500	3450	0.83	84	Y	4x8	13

*Star-Delta (Δ) version 230/380V available

P2: Rated output
In: Rated current
Cs/Cn: Locked rotor Torque/Rated Torque
Cos φ: Power factor
Ø: Cable section

V: Rated voltage
In (SF): Service factor current
P1: Power consumption
η: Efficiency
LC: Cable length

SF: Service factor
Is/In: Locked rotor current/Rated current
N: R.P.M
C: Capacitor

8" A.Y. McDonald Submersible Motors

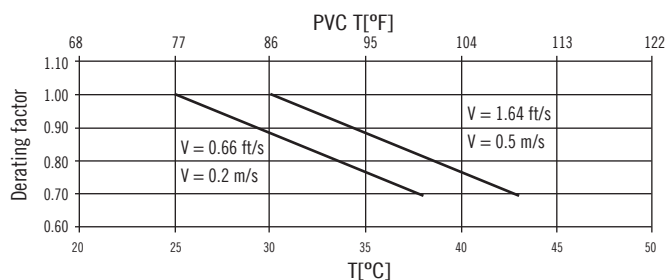
8" Asynchronous two-pole submersible motor, rewindable type, with external shell made in AISI 316 stainless steel and supports in cast iron with paint coating. Cooling and lubrication of the thrust bearing assembly and carbon bushes is provided by a mixture of water and glycol. Squirrel-cage rotor mounted on self-centering thrust bearing. Overload protection must be provided by user.

Four-pole submersible motors can be made available, contact factory for more information.



Technical Specification

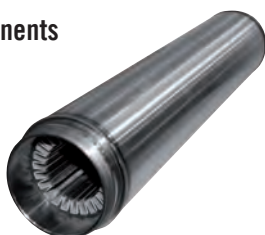
Flange	NEMA 8"
Degree of protection	IP58 - (IP68) optional
Cooling flow	1.64 ft/sec
Voltage tolerance	+ 6% / -10%
Max starts	10/h
Max operating depth	984 ft
Max operating pressure	870 PSI
Horizontal operation	40 HP - 150 HP



For SMO8 (150 HP) the maximum liquid temperature is 9°F (5°C) lower than the values stated in the table above.

6", 8", & 10" Motors & Controls

Components



The stator is rewindable type and it's inserted in an AISI 316 stainless steel outer shell. The windings are made in copper insulated by PVC.

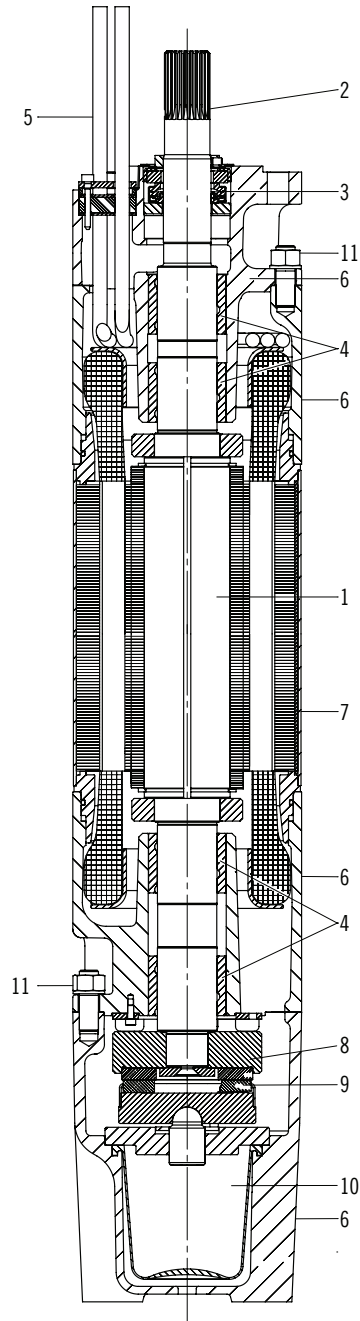


Mitchell type thrust bearing unit consisting of tilting pads in graphite and ceramic disc.



Shafts made of stainless steel with end part according to 8" NEMA norms. Squirrel-cage rotor made in copper. In the standard version the motor is equipped with a ceramic/carbon mechanical seal. On request it's available the silicon carbide (SiC/SiC) mechanical seal. On request the motor can be equipped also with a lip seal (granting the IP 68 insulation).

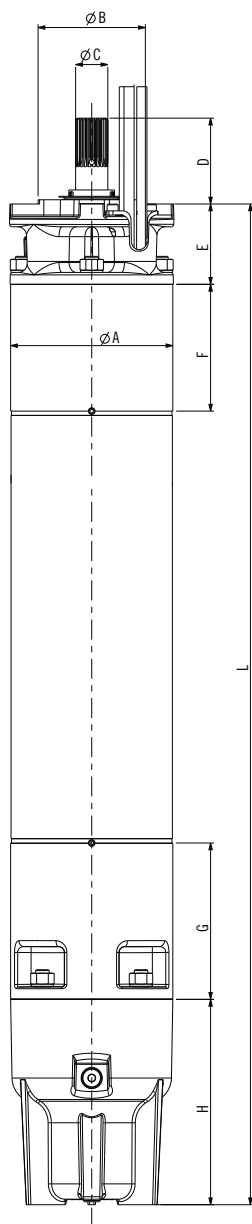
8" A.Y. McDonald Submersible Motors



Materials

COMPONENTS		
1	Shaft	Stainless Steel
2	Shaft End	Stainless Steel AISI 316
3	Mechanical Seal	Ceramic / Carbon
4	Bearing Ring	Graphite
5	Cable	EPDM
6	Structural Parts	Cast Iron
7	External Sleeve	Stainless Steel AISI 316
8	Thrust Bearing Rotating	Ceramic
9	Thrust Bearing Stationary	Graphite
10	Diaphragm	EPDM
11	Bolts & Screws	Stainless Steel AISI 304

8" A.Y. McDonald Submersible Motors

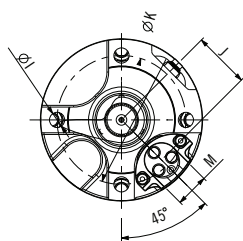


60 Hz Dimensions Single Phase Motors

Type	L		Wt.	Axial Thrust	
	[HP]	[kW]			[inch]	[lbs]	[lbf]
60 Hz	40	30	44	322	13500
	50	37	46	344	13500
	60	45	50	390	13500
	75	55	53	423	13500
	100	75	63	522	13500
	125	92	72	624	13500
150	110	81	734	13500	

60 Hz Dimensions

Pos.	inch	Pos.	inch
A	7.559	G	7.283
B	5	H	9.567
C	1 1/2	I	0.709
D	4	J	2.638
E	3.740	K	6.004
F	5.906	M	1.574



Electrical Data 60 Hz

Three Phase Motors / 2 Pole

P2		V*	SF	In (SF)	Is/In	P1	N	Cos φ	η	Ø	LC
[HP]	[kW]	[V]		[A]		[W]	[min ⁻¹]		%	{AWG}	[ft]
40	30	460	1.15	61	5.8	41566	3490	0.85	83	3x4+ 1 x4	16
50	37	460	1.15	74	5.5	50655	3490	0.85	84	3x4+ 1 x4	16
60	45	460	1.15	88	6.4	60174	3500	0.85	86	3x4+ 1 x4	16
75	55	460	1.15	107	5.8	73547	3500	0.86	86	3x4+ 1 x4	16
100	75	460	1.15	143	5.7	99138	3500	0.86	87	3x4+ 1 x4	16
125	92	460	1.15	175	6.0	121609	3480	0.87	87	3x4+ 1 x4	16
150	110	460	1.15	210	5.8	147093	3480	0.87	86	3x4+ 1 x4	16

P2: Rated output
In: Rated current
Cs/Cn: Locked rotor Torque/Rated Torque
Cos φ: Power factor
Ø: Cable section

V: Rated voltage
In (SF): Service factor current
P1: Power consumption
η: Efficiency
LC: Cable length

SF: Service factor
Is/In: Locked rotor current/Rated current
N: R.P.M
C: Capacitor

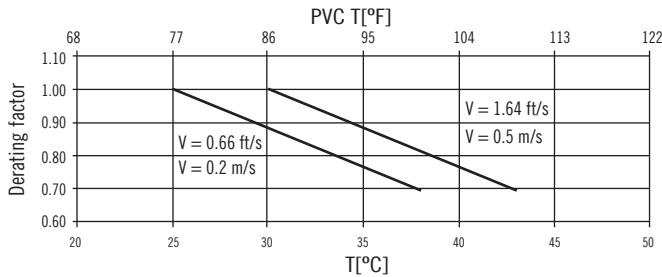
10" A.Y. McDonald Submersible Motors

10" Asynchronous two-pole submersible motor, rewindable type, with external shell made in AISI 316 stainless steel and supports in cast iron with paint coating (standard version). Cooling and lubrication of the thrust bearing assembly and carbon bushes is provided by a mixture of water and glycol. Squirrel-cage rotor mounted on self-centering thrust bearing. Overload protection must be provided by user.

Four-pole submersible motors can be made available, contact factory for more information.

Technical Specification

Flange	10"
Degree of protection	IP58 - (IP68) optional
Cooling flow	1.64 ft/sec
Voltage tolerance	+ 6% / -10%
Max starts	8/h
Max operating depth	984 ft
Max operating pressure	870 PSI
Horizontal operation	100 HP - 260 HP



For SM10 (230 HP) the maximum liquid temperature is 9°F (5°C) lower than the values stated in the table above.

6", 8", & 10" Motors & Controls

Components



The stator is rewindable type and it's inserted in an AISI 316 stainless steel outer shell. The windings are made in copper insulated by PVC (230 HP and 260 HP by PE2+PA).

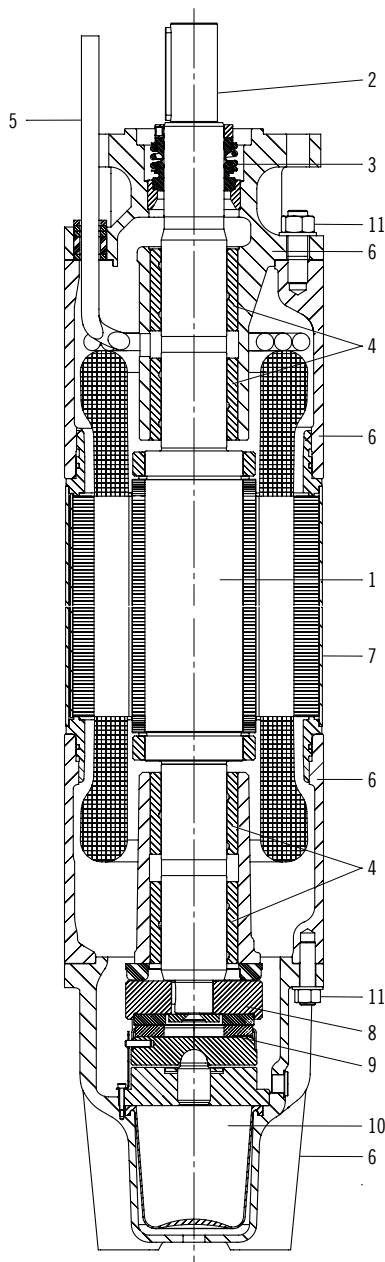


Mitchell type thrust bearing unit consisting of tilting pads in graphite and ceramic disc.



Shafts made of stainless steel with end part with key coupling. Squirrel-cage rotor made in copper. In the standard version the motor is equipped with a ceramic/carbon mechanical seal. On request it's available the silicon carbide (SiC/SiC) mechanical seal. On request the motor can be equipped also with a lip seal (granting the IP 68 insulation).

10" A.Y. McDonald Submersible Motors

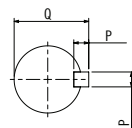
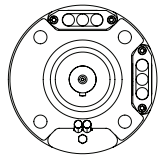
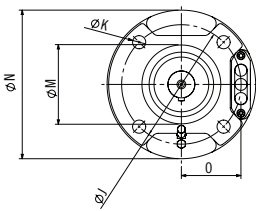
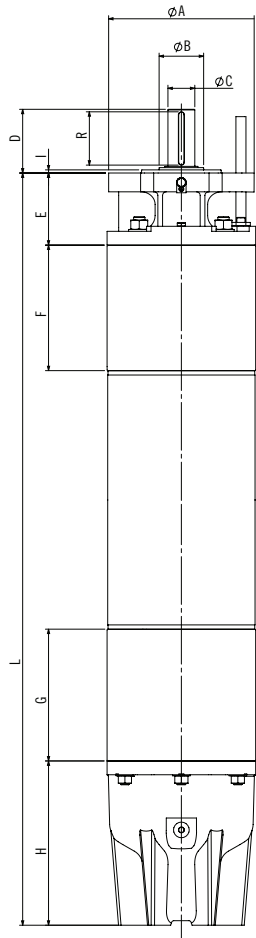


Materials

COMPONENTS		
1	Shaft	Stainless Steel
2	Shaft End	Stainless Steel AISI 316
3	Mechanical Seal	Ceramic / Carbon
4	Bearing Ring	Stainless Steel / NBR
5	Cable	EPDM
6	Structural Parts	Cast Iron
7	External Sleeve	Stainless Steel AISI 316
8	Thrust Bearing Rotating	Ceramic
9	Thrust Bearing Stationary	Graphite
10	Diaphragm	EPDM
11	Bolts & Screws	Stainless Steel AISI 304

10" A.Y. McDonald Submersible Motors

6", 8", & 10" Motors & Controls



60 Hz Dimensions Three Phase Motors

Type	Power		L [inch]	Wt. [lbs]	Axial Thrust [lbf]
	[HP]	[kW]			
60 Hz	100	75	55	617	13500
	125	92	59	728	13500
	150	110	67	849	13500
	180	132	74	959	13500
	200	147	81	1102	13500
	230	170	87	1190	13500
	260	190	94	1279	13500

60 Hz Dimensions

Pos.	inch	Pos.	inch
A	9.134	J	7 1/2
B	2 4/5	K	4 x 0.827
C	1.687	M	5
D	4	N	9.331
E	4.528	O	3.74
F	7.874	P	0.375
G	8.268	Q	1.874
H	10.315	R	3.346
I	0.197		

Electrical Data 60 Hz Three Phase Motors / 2 Pole

P2	V*	SF	In (SF)	Is/In	P1	N	Cos φ	η	φ	LC
[HP]	[kW]	[V]	[A]		[W]	[min ⁻¹]		%	{AWG}	[ft]
100	75	460	146	5.7	99138	3510	0.84	87	3x0+1x3	26
125	92	460	181	5.5	121609	3510	0.83	87	3x0+1x3	26
150	110	460	213	5.8	143750	3510	0.84	88	3x0+1x3	26
180	132	460	252	5.7	172500	3510	0.85	88	3x0+1x3	26
200	147	460	290	6.2	194310	3520	0.82	87	3x0+1x3	26
230	170	460	338	5.9	224713	3520	0.82	87	3x0+1x3	26
260	190	460	386	6.1	251149	3520	0.79	87	3x0+1x3	26

- | | | |
|--|--|--|
| P2: Rated output | V: Rated voltage | SF: Service factor |
| In: Rated current | In (SF): Service factor current | Is/In: Locked rotor current/Rated current |
| Cs/Cn: Locked rotor Torque/Rated Torque | P1: Power consumption | N: R.P.M |
| Cos φ: Power factor | η: Efficiency | C: Capacitor |
| φ: Cable section | LC: Cable length | |

Three Phase Control Panels

Siemens Pump Control Panels

Features:

- Three phase - 60 Cycle (Hz)
- Heavy Duty NEMA Starter
- ESP 100 Class 10 Overload
- Bold Pilot Legend On Front
- Generous Accessory Space

ESP 100 Features:

- Phase Loss Protection: Trips in 3 Seconds
- Self Powered Solid State Overload Relay
- Versatile Design with 2:1 Adjustment dial
- Ambient Insensitive



Prices do not include fuses.

Motor Rating					Without Submonitor		With Submonitor	
Max HP	Volts	Size	Fuse Clip Size	Approx. Wt.	Siemens Model No.	A.Y. McDonald Part No.	Siemens Model No.	A.Y. McDonald Part No.
3	230	1	30	55	87DUD6LC	6617-001	FS87DUD6LC	6201-197
5	230	1	30	55	87DUE6LC	6617-002	FS87DUD6LC	6201-197
7.5	230	1	30	55	87DUE6LC	6617-002	FS87DSE6FC	6201-198
10	230	1 3/4	60	55	87EUE6LC	6617-003	FS87EUE6LC	6201-199
15	230	2	60	55	87FUF6LC	6617-004	FS87FUF6LC	6201-200
20	230	2 1/2	100	90	87GUG6PC	6617-005	FS87GUG6PC	6201-201
25	230	3	100	90	87HUG6LC	6617-006	FS87HUG6LC	6201-202
30	230	3	100	90	87HUG6LC	6617-006	FS87HUG6LC	6201-203
5	460	1	30	55	87DUC6FC	6617-007	FS87DUD6FC	6201-204
7.5	460	1	30	55	87DUD6FC	6617-008	FS87DUD6FC	6201-205
10	460	1	30	55	87DUD6FC	6617-008	FS87DUD6FC	6201-206
15	460	1 3/4	30	55	87EUE6FC	6617-009	FS87EUE6FC	6201-207
20	460	2	60	55	87FUF6FC	6617-010	FS87FUF6FC	6201-208
25	460	2	60	55	87FUF6FC	6617-010	FS87FUF6FC	6201-209
30	460	2 1/2	60	90	87GUG6FC	6617-011	FS87GUG6FC	6201-210
40	460	3	100	90	87HUG6FC	6617-012	FS87HUG6FC	6201-211
50	460	3	100	90	87HUG6FC	6617-012	FS87HUG6FC	6201-212
60	460	3 1/2	200	90	87IUH6FC	6617-013	FS87IUH6FC	6201-213
75	460	3 1/2	200	90	87IUH6FC	6617-013	FS87IUH6FC	6201-214
100	460	4	200	170	87JUH6FC	6617-014	FS87JUH6FC	6201-215
125	460	5	400	350	87LPU6FH	6617-015	FS87LPU6FH	6201-216
150	460	5	400	350	87LPU6FH	6617-015	FS87LPU6FH	6201-217
200	460	5	400	350	87LPU6FH	6617-015	----	----

6", 8", & 10" Motors & Controls

Deluxe Single Phase Control Boxes

- For use with 3-wire, single phase submersible motors 7 1/2 hp - 15 hp.
- Includes Magnetic Line Contactor, Capacitor Start and Capacitor Run.

A.Y. M ^o Donald Part No.	A.Y. M ^o Donald Model No.	HP	Voltage	HZ	KW
6619-001	SC0613 7.5HP230VD	7 1/2	230	60	
6619-002	SC0613 10HP230VD	10	230	60	
6619-003	SC0613 15HP230VD	15	230	60	



Starter Kits

IEC Starter Kits for three phase motors

Each kit includes Nema 1 enclosure, contactor, and overload assembled with the correct voltage coil needed.



STARTER KITS WITH 230V COIL

A.Y. McDonald Part No.	HP	Volts	Wt.
3131-309	5	230	6
3131-310	7 1/2	230	6
3131-311	10	230	9
3131-312	15	230	9
3131-313	20	230	20
3131-314	25	230	20
3131-315	30	230	20

STARTER KITS WITH 460V COIL

A.Y. McDonald Part No.	HP	Volts	Wt.
3131-322	5	460	6
3131-323	7 1/2	460	6
3131-324	10	460	6
3131-325	15	460	6
3131-326	20	460	9
3131-327	25	460	9
3131-328	30	460	9
3131-329	40	460	9
3131-330	50	460	20
3131-331	60	460	20
3131-332	75	460	20

STARTER KITS WITH 575V COIL

A.Y. McDonald Part No.	HP	Volts	Wt.
3131-333	1 1/2	575	10
3131-334	2 & 3	575	10
3131-335	5	575	10
3131-336	7 1/2	575	10
3131-337	10	575	10
3131-338	15	575	10
3131-339	20	575	10
3131-340	25 & 30	575	10
3131-341	40	575	10
3131-342	50	575	10



Pressure Tanks

Pressure Tanks

Pump Catalog - January 2020

MORE THAN A BRAND. WE'RE A FAMILY.

How to Order DuraMAC™ Tanks

Order by Model Number - Example: 16002-V3M

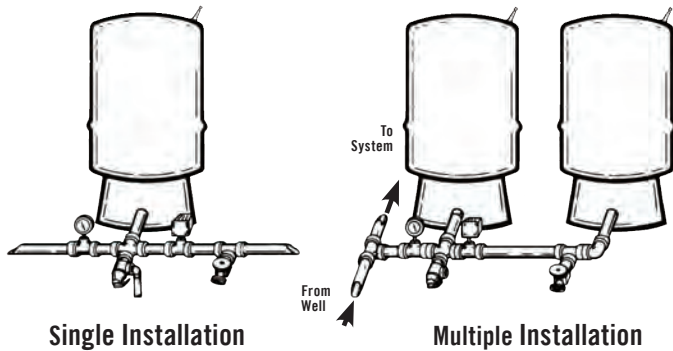
16	002	-	V	3	M	PI	X
Class #	Gallons	Base	Position	Connection Size	Male or Female	Expansion Tanks Only	Expansion Tanks Only
	2, 5, 7, 20, 32, 36, 52, 86, 96, 119	M = Metal - = No Base	V = Vertical H = Horizontal	3 = 3/4" 4 = 1" 5 = 1 1/4"	M = Male F = Female	PI = Potable H = Hydronic	X = Five Year Limited Warranty



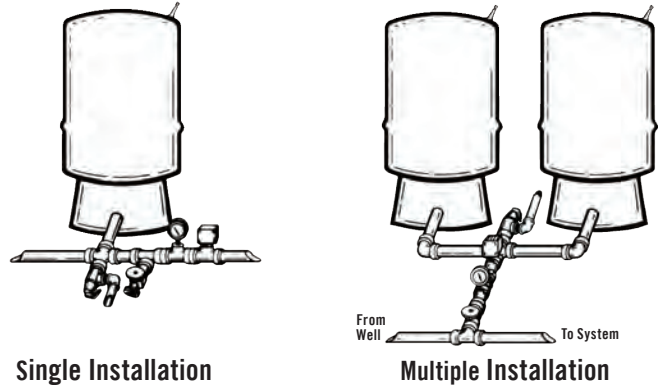
No "X" on Expansion Tanks Only have One Year Limited Warranty

Installations of Water Well Tanks

DuraMAC™ Free-Standing Series



The standard rear-entry installation. Gauge, relief valve, and pressure switch are installed in rear of tank. The piping is run behind the tank and the connection is made to standard tee.



The standard front-entry installation. Gauge, relief valve, and pressure switch are installed in front of tank.

Tank Sizing

The charts below allow you to easily select the right DuraMAC™ Series tank for standard-size pumps between 2 1/2 and 30 gallons in capacity, and for 20-40 PSI, 30-50 PSI and 40-60 PSI pressure ranges. Minimum run times shown (from start-up) are one minute, one and a half minutes and two minutes. For example, for a system that delivers ten gpm at 30-50 PSI, with a minimum run time of one minute, Chart 1 indicates that the proper tank is the 16036MV4F.

Chart 1 | DuraMAC™ Series Free-Standing Tank Selection Chart

Pump GPM	System Pressure Ranges-PSI								
	20-40			30-50			40-60		
	Minimum Run Times (Minutes)								
	1	1 1/2	2	1	1 1/2	2	1	1 1/2	2
2.5	16020MV4F	16020MV4F	16020MV4F	16020MV4F	16020MV4F	16020MV4F	16020MV4F	16020MV4F	16020MV4F
5	16020MV4F	16020MV4F	16036MV4F	16020MV4F	16036MV4F	16036MV4F	16020MV4F	16036MV4F	16052MV5F
7	16020MV4F	16036MV4F	16052MV5F	16036MV4F	16036MV4F	16052MV5F	16036MV4F	16052MV5F	16086MV5F
10	16036MV4F	16052MV5F	16086MV5F	16036MV4F	16052MV5F	16086MV5F	16052MV5F	16086MV5F	16086MV5F
12	16036MV4F	16052MV5F	16086MV5F	16052MV5F	16086MV5F	16086MV5F	16052MV5F	16086MV5F	16096MV5F
15	16052MV5F	16086MV5F	16086MV5F	16052MV5F	16086MV5F	16119MV5F	16086MV5F	16096MV5F	16119MV5F
20	16086MV5F	16086MV5F	16119MV5F	16086MV5F	16119MV5F	(2)16086MV5F	16086MV5F	16119MV5F	(2)16086MV5F
25	16086MV5F	16119MV5F	(2)16086MV5F	16086MV5F	(2)16086MV5F	(2)16086MV5F	16096MV5F	(2)16086MV5F	(2)16096MV5F
30	16086MV5F	(2)16086MV5F	(2)16086MV5F	16119MV5F	(2)16086MV5F	(2)16119MV5F	16119MV5F	(2)16096MV5F	(2)16119MV5F

Chart 2 | Drawdown Volume Multiplier (Approximate)

Pump Shut-Off Pressure-PSI	Pump Start-Up Pressure-PSI							
	10	20	30	40	50	60	70	80
20	0.26							
30	0.41	0.22						
40		0.37	0.18					
50		0.46	0.31	0.15				
60			0.40	0.27	0.13			
70			0.47	0.35	0.24	0.12		
80				0.42	0.32	0.21	0.11	
90				0.48	0.38	0.29	0.19	0.10
100					0.44	0.35	0.26	0.17

Pressure above those listed, exceed maximum tank acceptance volumes.

If proper tank selection cannot be made using Chart 1, follow this procedure. First, find the “drawdown multiplier” by matching the pump start-up and shut-off pressures on Chart 2. For example, the multiplier for a 30-50 PSI pressure range is .31.

Next, insert the pump GPM capacity and desired minimum run time into this formula:

$$\frac{\text{PUMP GPM} \times \text{Min. Run Time}}{\text{Multiplier}} = \text{Minimum Tank Volume Required}$$

To assume dependable drawdown volumes, and in keeping with present industry practice, drawdowns are based on Boyle’s Law.

Chart 3 | Drawdown in Gallons

Model No.	Vol. in Gals.	20-40	30-50	40-60
16002-H3M	2.0	0.7	0.6	–
16005-H3M	4.6	1.7	1.4	–
16007-H3M	7.3	2.7	2.3	–
16020MV4F	20.0	7.4	6.2	5.4
16032MV4F	32.0	11.5	9.6	8.4
16036MV4F	36.0	13.3	11.2	9.7
16052MV5F	52.0	19.2	16.1	14.0
16086MV5F	86.0	31.8	26.7	23.2
16096MV5F	96.0	35.5	29.8	25.9
16119MV5F	119.5	44.2	37.0	32.3

Horizontal Series has the same drawdown as the In-Line Series.

For example, using a 10 GPM pump, a one-minute minimum run time, and a 30-50 PSI pressure range, the formula is as follows:

$$\frac{10 \times 1}{.31} = 32.26 \text{ Minimum Tank Volume}$$

Then, using Chart 3, select the tank that has a minimum volume that meets or exceed your minimum volume requirement, and supplies adequate drawdown at the required pressure range. Minimum drawdown equals Pump GPM X Minimum Run Time. Therefore, in the above example, select the 16036MV4F 36-gallon tank. It provides adequate drawdown at 30-50 PSI.

For questions about proper tank sizing, contact the Factory.

Features & Benefits

When pump and tank are in different locations, the pressure switch should be at the tank location. Or, compensating adjustment must be made for pressure loss due to head of water. For example, one PSI for every two feet of elevation.

FEATURES

- ◆ Free Standing and In-line Models
- ◆ Diaphragm Pump Tanks
- ◆ Sizes 2 thru 119 gallons
- ◆ Pressure to 100 PSI

AIR CHARGE VALVE

- ◆ Conveniently-located for easy pressure adjustment
- ◆ Metal in metal bases
- ◆ Flexible rubber in plastic bases (replaceable on plastic)

DESIGNER FINISH

- ◆ An attractive addition to any home
- ◆ Provides positive protection against corrosion
- ◆ Two-part electrostatic finish
- ◆ Ideal for outside use

INSIDE FINISH

- ◆ Two-layer epoxy coating inside to protect against corrosion

DURABLE BUTYL DIAPHRAGM

- ◆ Strong and flexible, for smooth operation and long life

PLASTIC LINING

- ◆ Permanently bonded to the shell in two coat base on epoxy lining
- ◆ Proven protection against internal rust or corrosion

TANK CONSTRUCTION

- ◆ Pre-pressurized @ 38 PSI
- ◆ Lightweight drawn-steel construction
- ◆ Maximum working pressure 100 PSI
- ◆ Slotted and notched for air flow, reduces condensation build-up
- ◆ Gold Rolled drawing steel



How McDonald Diaphragm Tanks Operate



Start-Up Cycle

With water chamber empty, diaphragm is pressed against bottom of chamber.



Fill Cycle

As water is pumped into water chamber, diaphragm is forced upward into air chamber.



Hold Cycle

When pressure in air chamber reaches pump cut-off point, diaphragm is in uppermost position, water chamber is filled to rated capacity.



Delivery Cycle

When water is delivered to system, pump remains shut off. Air pressure in top chamber forces diaphragm downward.

Water Well Tanks

DuraMAC™ Free-Standing Series

A.Y. McDonald offers a full line of diaphragm tanks for all your water well needs. Our DuraMAC™ Tanks range in size from 2 gallons up to 119 gallons.

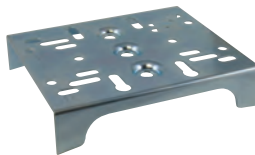


Universal pump mounting bracket

16000BRKT

Two Pipe

Part No.	Wt.
6127-365	2



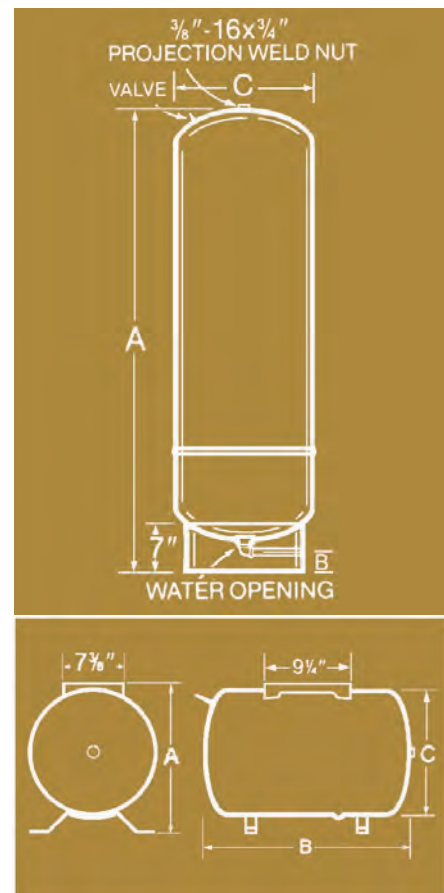
Standard on DuraMAC™ Horizontal models and optional on DuraMAC™ In-Line Series and DuraMAC™ Vertical models.

Volume, Dimension and Weight Specifications

Model Number	Volume Gallons	"A" Overall Height (IN.)	"B" to Center of Water Inlet (IN.)	"C" Diameter (IN.)	Weight (LBS.)
DuraMAC™ Series (Free-Standing)					
16020MV4F	20.0	32-3/4	2-1/4	15-3/8	30
16032MV4F	32.0	45-1/2	2-1/4	15-3/8	40
16036MV4F	36.0	32-5/8	2-1/4	20	45
16052MV5F	52.0	38-5/8	2-1/4	23-3/8	77
16086MV5F	86.0	59	2-1/4	23-3/8	105
16096MV5F	96.0	63-3/8	2-1/4	23-3/8	111
16119MV5F	119.5	61-1/4	2-1/4	26	165
DuraMAC™ Series (In-Line) No Base					
16002-V3M	2.0	12-9/16	—	8-3/8	4.5
16005-V3M	4.6	14-11/16	—	11-3/8	7.5
16007-V3M	7.3	21-1/8	—	11-3/8	10.5
DuraMAC™ Series Horizontal					
16014-H4M	14.0	17-3/8	21-3/4	15-3/8	23
16020-H4M	20.0	17-3/8	27-1/8	15-3/8	30

16020-H3M, 16020MV4F, 16032MV4F and 16036MV4F—connection is 1" Female.
 16052MV5F, 16086MV5F, 16096MV5F, 16119MV5F—connection is 1-1/4" Female.
 16002-V3M, 16005-V3M, 16007-V3M — connection is 3/4" Male.
 16014-H4M, 16020-H4M—connection is 1" Male.

Plastic bases, Glass lined, and Galvanized tanks are available in truckload quantities



Expansion Tanks - Potable Water

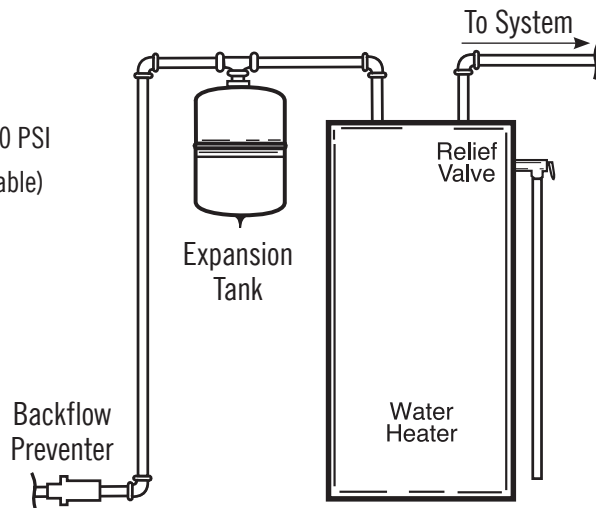
In many of today's potable hot water heating systems, back flow preventers are required by code. Since this seals off the system, an expansion tank is required or the relief valve will discharge on every heating cycle. DuraMAC™ Expansion Tanks eliminate this wasteful and costly practice.

The MPIX and MPI series has all the features of the MH series, but includes a powder coated liner in the water containing area. This unique bonded surface provides positive protection against rust and corrosion and meets today's sanitation requirements. For other conditions, please contact our Pump Department for assistance.

DuraMAC™ Expansion Tanks must be installed on the cold water supply side of the water heater and placed between the water heater and check valve or back flow prevention device.

Features:

- Drawn Steel Construction
- Butyl Diaphragm
- Maximum Working Pressure 150 PSI
- 40 PSI Air Charge (field adjustable)



TANK MODELS WITH 5-YEAR LIMITED WARRANTY

Two-Part Powder Coated Liner



Model No.	Max (PSIG) Working Pressure	Tank Volume (Gals)	Max. Accept Volume (Gals)		Conn. MPT Size	Dimensions		Ship Wt. (Lbs.)
			40 PSI	60 PSI		Diameter	Height	
16002-V3MPIX	150	2	1.27	1.03	3/4	8 3/8	12 1/2	5
16005-V3MPIX	150	5	3.05	2.19	3/4	11 3/8	14 3/4	8

TANK MODELS WITH 1-YEAR LIMITED WARRANTY

Two-Part Powder Coated Liner



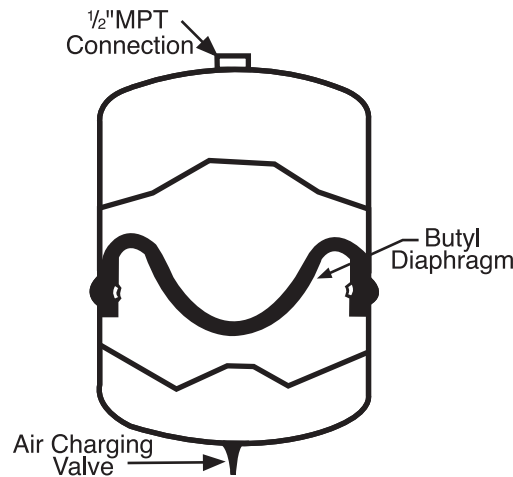
Model No.	Max (PSIG) Working Pressure	Tank Volume (Gals)	Max. Accept Volume (Gals) 20 PSI	Conn. MPT Size	Diameter (IN)	Height (IN)	Ship Wt. (Lbs.)
16005-V3MPI	150	4.4	2.19	3/4	11.0	14	10.0

Expansion Tanks - Hydronic Residential Space Water Heating Systems

DuraMAC™ Expansion Tanks are designed for the specific purpose of accommodating the natural expansion of water in a Hydronic Heating System. To eliminate the water logging that is troublesome but normal in a plain steel expansion tank, the air and water within the tank is permanently separated by a butyl diaphragm. The in-line series shown on this page are light in weight, easy to install, and afford many years of trouble-free service.

Features:

- Drawn Steel Construction
- Butyl Diaphragm
- In-line Installation
- Maximum Working Pressure 100 PSI
- Maximum Temperature 240°F
- 12 PSI Air Charge (field adjustable)
- Not for use with Potable Water Heating Systems



TANK MODELS WITH 1-YEAR LIMITED WARRANTY

Model No.	Max (PSIG) Working Pressure	Tank Volume (Gals)	Max. Accept Volume (Gals) 20 PSI	Conn. MPT Size	Dimensions		Ship Wt. (Lbs.)
					Diameter	Height	
16002-V2MH	100	2	1.53	1/2	8 3/8	12 1/2	5
16005-V2MH	100	5	3.75	1/2	11 3/8	14 3/4	8



Jet Pumps



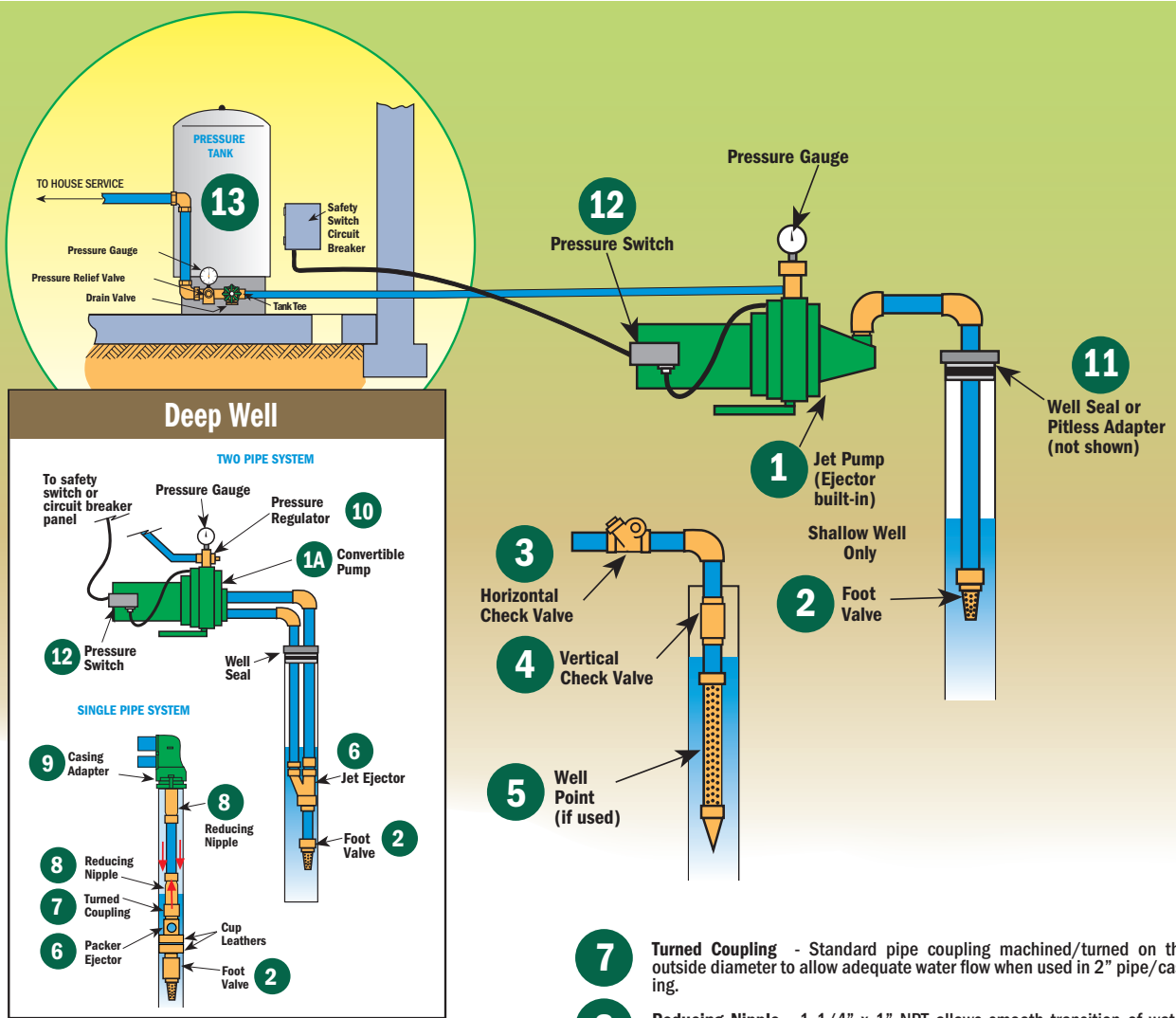
Jet Pumps

Pump Catalog - January 2020

MORE THAN A BRAND. WE'RE A FAMILY.

Typical Jet Pump Installations

Shallow Well Pump



- 1** **Jet Pump** - A pump combining two pumping principles - centrifugal operation and ejection. They can be used in shallow or deep wells. When well diameter is 2", a surface mounted pump with 2" packer jet ejector is one of the only ways to automatically draw water from more than 25' below ground.
- 1A** **Convertible Pump** - A pump that can be used in either a shallow or deep well.
- 2** **Foot Valve** - A type of check valve with built-in strainer. Used at point of liquid intake to retain liquid in the system, preventing loss of prime when liquid source is lower than pump. You must have a reliable foot valve for deep well jet pumps.
- 3** **Horizontal Check Valve** - Allows liquid to flow in one direction only. Generally used in suction and discharge line to prevent reverse flow.
- 4** **Vertical Check Valve** - Allows liquid to flow in one direction only. Generally used in suction and discharge line to prevent reverse flow.
- 5** **Well Point** - Sometimes called a Sand Point or Drive Point because they are driven/hammered into the water table. Equipped with various sized screens, water flows into the inside of the screen and is pumped (by vacuum) to the surface.
- 6** **Jet Ejector** - Jet ejectors are a combination of nozzle and venturi that works together to create a vacuum and thereby pull additional water along with the high velocity water provided.

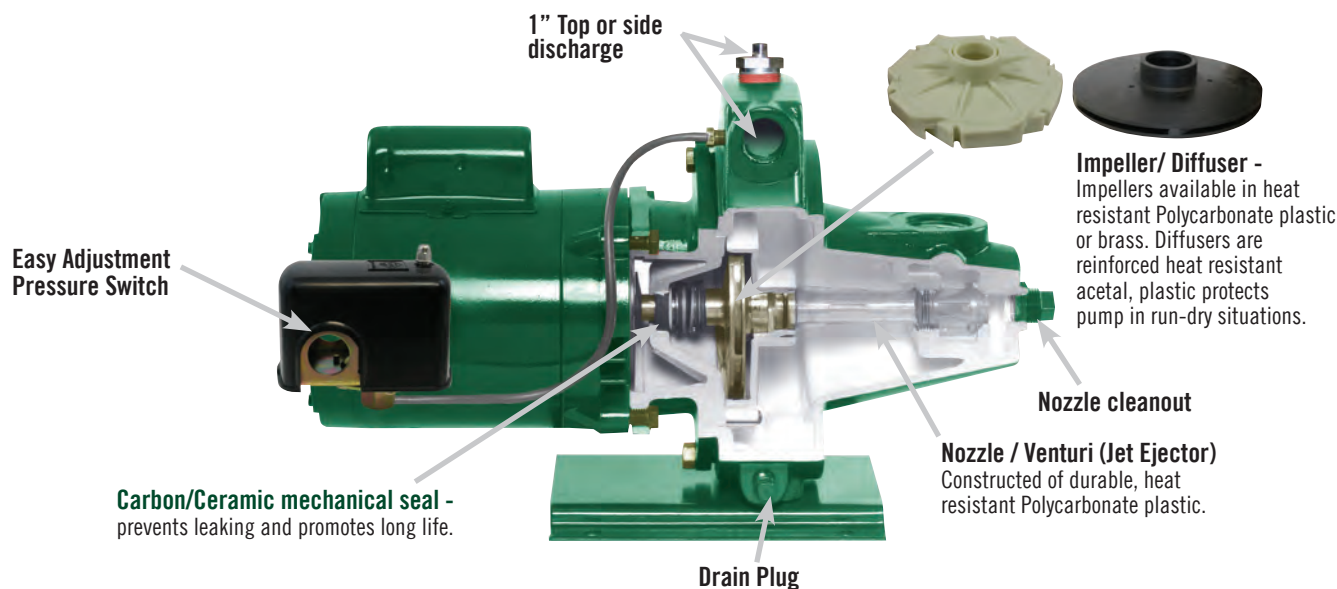
- 7** **Turned Coupling** - Standard pipe coupling machined/turned on the outside diameter to allow adequate water flow when used in 2" pipe/casing.
- 8** **Reducing Nipple** - 1 1/4" x 1" NPT allows smooth transition of water flowing from the jet ejector to the above ground pump.
- 9** **Casing Adapter** - Seals the top of the well casing and allows the water coming from the pump to reach a "packer-type" jet ejector using the casing as the "drive pipe".
- 10** **Regulating Valve/Pressure Regulator** - Attaches to the discharge of a jet pump (or is built-in) to recirculate some of the water in the pump through a jet ejector in the well. Required for deep well ONLY.
- 11** **Well Seal / Pitless Adapter** - Seals the well from contamination. Pitless adapters (not shown) are required in freezing climates.
- 12** **Pressure Switch** - Critical to the smooth operation of the system. As water pressure increases (from the pump filling a tank), a diaphragm in the pressure switch applies force to a spring loaded lever. As the pressure overcomes the spring tension, the contacts snap open interrupting the electrical circuit stopping the pump. The greater the spring pressure, the higher the pump ON/OFF settings.
- 13** **Pressure Tank** - Provides storage of water under pressure for delivery between cycles; allows for reserve capacity for periods of peak demand; protects and extends the life of the pump by reducing the number of on/off cycles; and, helps reduce overall system maintenance.

Features & Motors

Easily Serviceable

- No need to disturb piping when servicing. Working parts are integral to motor adapter/seal plate assembly.
- Nozzle clean out plug and drain plug in pump housing.
- Motor Adapter: Precision machined cast iron for positive alignment/concentricity on 8100/8200 series.
- Seal/Condensation Plate: Molded from heat resistant, acetal plastic for 8500/8600 series.
- All A.Y. McDonald Mfg. Co. Jet Pumps use standardized parts to minimize repair parts inventories.

**In the jet pumps the seal seats after the pump has been running awhile. It is normal for a jet pump to have a small drill. This should stop after about an hour or so of run time.



Nema J Motor

- 8100 & 8200 Series
- UL and CSA listed motors
- Standard service factors
- Dual voltage w/ Voltage Change Device
- Built-in thermal overload with automatic reset
- 7/16" - 20 thread



Square Flange Motor

- 8500 & 8600 Series
- UL and CSA listed motors
- High service factor
- Dual voltage w/ Voltage Change Device
- Built in thermal overload with automatic reset
- Easily accessible four bolt pattern
- Dual voltage switch, easily accessible.
- Screwdriver slot, in the motor shaft, easily accessible to remove the impeller on 8500/8600 Series.
- 7/16" - 20 thread



8100 Series - Shallow Well

A.Y. McDonald offers a full line of shallow well and convertible jet pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. The 8100 series shallow well capacity is up to 25 gallons per minute (GPM) and pressures to 80 PSI.

All 8100 Series Shallow Well Pumps come with a 1 1/4" suction pipe and 1" top or side discharge. The sizes range from 1/2 to 1 horsepower (HP).

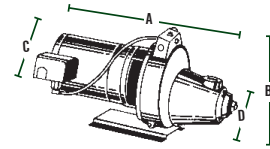
Features:

- Nema J (Threaded Shaft) Motor 7/16" - 20 Threads
- Pressure switch factory settings:
 1/2 HP High Capacity = 20-40 PSI
 1/2 HP High Pressure = 30-50 PSI
 All 3/4 and 1 HP = 30-50 PSI
- * Maximum Amp. Draw at factory voltage setting.



Models Available High Capacity

Model No.	HP	Volt	*Max. Amps	Switch	Impeller	A	B	C	D	WT
8150	1/2	115/230	11.2	20/40	plastic	20"	10"	10.5"	8"	45
8151	1/2	115/230	11.2	20/40	brass	20"	10"	10.5"	8"	46
8170	3/4	230/115	7.4	30/50	plastic	19.5"	10"	10.5"	8"	48
8171	3/4	230/115	7.4	30/50	brass	19.5"	10"	10.5"	8"	50
8110	1	230/115	8.8	30/50	plastic	20"	10"	10.5"	8"	51
8111	1	230/115	8.8	30/50	brass	20"	10"	10.5"	8"	53



Overall Length "A" | Overall Height "B"
 Overall Width with Pressure Switch "C"
 Overall Width without Pressure Switch "D"
 *See table to left for dimensions.

High Pressure

Model No.	HP	Volt	*Max. Amps	Switch	Impeller	A	B	C	D	WT
8150HP	1/2	115/230	11.2	30/50	plastic	20"	10"	10.5"	8"	46
8151HP	1/2	115/230	11.2	30/50	brass	20"	10"	10.5"	8"	47
8170HP	3/4	230/115	7.4	30/50	plastic	19.5"	10"	10.5"	8"	49
8171HP	3/4	230/115	7.4	30/50	brass	19.5"	10"	10.5"	8"	49
8110HP	1	230/115	8.8	30/50	plastic	20"	10"	10.5"	8"	52
8111HP	1	230/115	8.8	30/50	brass	20"	10"	10.5"	8"	53

Factory Voltage Setting listed first in bold type.

8100 Series - Shallow Well

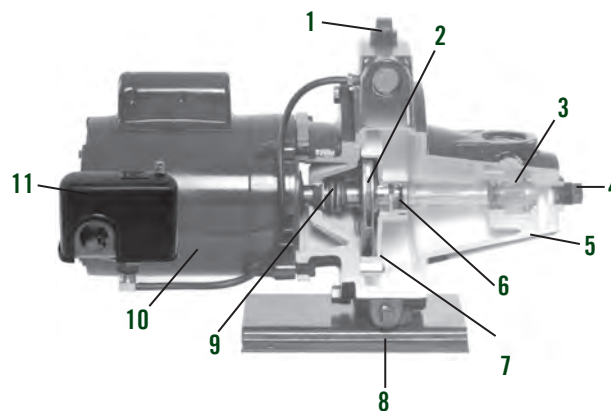
High Capacity | Shallow Well

Model No.	HP	Suction Lift - Ft.	Capacities in GPM at Discharge Pressure (PSI)				MAX Shut Off Pressure
			20	30	40	50	
8150	1/2	5	15.6	15.6	8.6	2.3	58
8151		15	11.7	11.7	6.5	1.2	
		25	6.6	6.6	4.7	--	
8170	3/4	5	18.8	18.8	16.2	8.8	64
8171		15	14.4	14.4	12.3	3.9	
		25	8.6	8.6	7.3	2.7	
8110	1	5	24.2	24.0	23.0	15.0	64
8111		15	20.1	18.6	18.4	10.9	
		25	11.6	11.4	11.3	4.7	

High Pressure | Shallow Well

Model No.	HP	Suction Lift - Ft.	Capacities in GPM at Discharge Pressure (PSI)					MAX Shut Off Pressure
			30	40	50	60	70	
8150HP	1/2	5	7.6	7.1	5.7	2.7		70
8151HP		15	5.5	5.4	4.3	2.0		
		25	3.7	3.6	2.9			
8170HP	3/4	5	9.4	9.4	7.8	4.2		74
8171HP		15	7.0	7.0	5.9	2.9		
		25	4.6	4.6	3.8	2.1		
8110HP	1	5	13.4	13.4	12.7	9.2	3.0	80
8111HP		15	10.0	10.0	9.4	6.5	2.4	
		25	6.2	6.2	6.0	4.3	1.8	

- 1 - Zinc Plated Plug
(With Pressure Gauge Tap & 1/4" plug)
- 2 - Impeller
Available in either dynamically balanced bronze or engineered thermoplastic
- 3 - Nozzle-Venturi (Jet Ejector) Assembly
Unitized construction made of non-distorting Polycarbonate with excellent heat resistance
- 4 - Zinc Plated Nozzle Clean-out Plug
- 5 - Cast Iron Pump Body & Motor Adapter
- 6 - Buna-N O-ring (On Venturi)
- 7 - Diffuser
Multi-volute engineered thermoplastic diffuser for maximum capacity and pressure



- 8 - Drain Plug
- 9 - Shaft Seal
Standard 5/8" ceramic carbon rotating mechanical seal
- 10 - Standard, Capacitor Start, Nema J Motor
Built to NEMA specifications by nationally known manufacturers to assure local service availability. Choice of 1/2, 3/4 and 1 H.P. 50 Hz. or 60 Hz.
- 11 - Pressure Switch
Easily adjusted for higher or lower operating pressures

8200 Series - Convertible

A.Y. McDonald offers a full line of shallow well and convertible jet pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. The 8200 series convertible capacity is up to 65 gallons per minute (GPM) and pressures to 80 PSI.

All 8200 Series Convertible Pumps come with a 1 1/4" suction pipe and 1" top or side discharge. The sizes range from 1/2 to 1 horsepower (HP).

Features:

- Nema J (Threaded Shaft) Motor 7/16" - 20 Threads
- Pressure switch factory settings:
 - 1/2 HP = 20-40 PSI
 - 3/4 and 1 HP = 30-50 PSI
- Two pipe tapings 1" x 1 1/4"
- * Maximum Amp. Draw at factory voltage setting.



Models Available

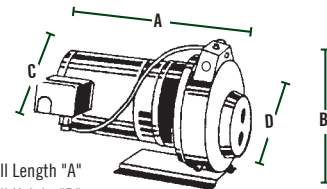
Model No.	HP	Volt	*Max. Amps	Impeller	A	B	C	D	WT
8250	1/2	115/230	11.2	plastic	15.5"	10"	10.5"	8"	42
8251	1/2	115/230	11.2	brass	15.5"	10"	10.5"	8"	44
8270	3/4	230/115	7.4	plastic	15"	10"	10.5"	8"	45

Model No.	HP	Volt	*Max. Amps	Impeller	A	B	C	D	WT
8271	3/4	230/115	7.4	brass	15"	10"	10.5"	8"	47
8210	1	230/115	8.8	plastic	15.5"	10"	10.5"	8"	48
8211	1	230/115	8.8	brass	15.5"	10"	10.5"	8"	50

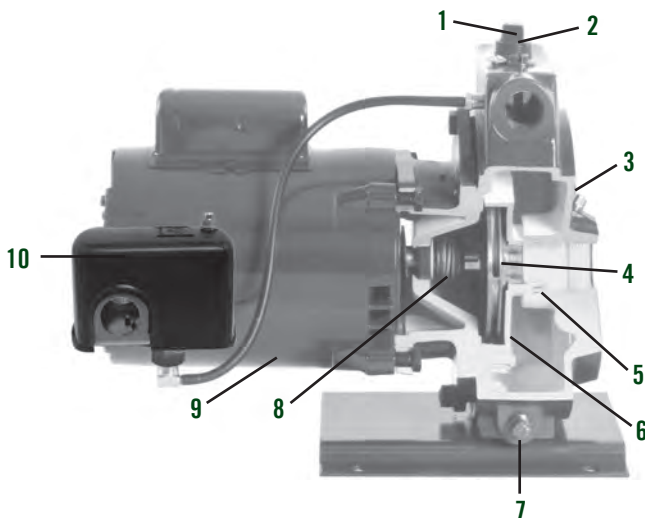
Factory Voltage Setting listed first in bold type.

*Maximum Amp. draw at factory voltage setting.

- See page 186 for required Jet Ejectors



Overall Length "A"
 Overall Height "B"
 Overall Width with Pressure Switch "C"
 Overall Width without Pressure Switch "D"
 *See table to left for dimensions.



- 1- **Zinc Plated Plug**
(With Pressure Gauge Tap & 1/4" plug)
- 2- **Internal Regulating Valve**
(Manual adjustment for deep well only)
- 3- **Cast Iron Pump Body & Motor Adapter**
- 4- **Impeller**
Available in either dynamically balanced bronze or engineered thermoplastic
- 5- **Buna-N O-ring (In Body)**
- 6- **Diffuser**
Multi-volute engineered thermoplastic diffuser for maximum capacity and pressure
- 7- **Drain Plug**
- 8- **Shaft Seal**
Standard 5/8" ceramic carbon rotating mechanical seal
- 9- **Standard, Capacitor Start, Nema J Motor**
Built to NEMA specifications by nationally known manufacturers to assure local service availability. Choice of 1/2, 3/4 and 1 H.P. 50 Hz. or 60 Hz.
- 10- **Pressure Switch**
Easily adjusted for higher or lower operating pressures

8200 Series - Convertible

8200 Series - Convertible | Shallow Well Performance

Model No.	HP	Jet Ejector*	Suction Lift - Ft.	Capacities in GPM at Discharge Pressure (PSI)						MAX Shut Off Pressure
				20	30	40	50	60	70	
8250 8251	1/2	651-JP Hi-Capacity	5	15.6	15.6	8.6	2.3			58
			15	11.7	11.7	6.5	1.2			
			25	6.6	6.6	4.7				
		655-JP Hi-Pressure	5	7.6	7.6	7.1	5.7	2.7		74
			15	5.5	5.5	5.4	4.3	2.0		
			25	3.7	3.7	3.6	2.9			
8270 8271	3/4	652-JP Hi-Capacity	5	18.8	18.8	16.2	8.8			61
			15	14.4	14.4	12.3	3.9			
			25	8.6	8.6	7.3	2.7			
		656-JP Hi-Pressure	5	9.7	9.4	9.4	7.8	4.2		75
			15	7.1	7.0	7.0	5.9	2.9		
			25	4.7	4.6	4.6	3.8	2.1		
8210 8211	1	653-JP Hi-Capacity	5	24.2	24.0	23.0	15.0			64
			15	20.1	18.6	18.4	10.9			
			25	11.6	11.4	11.3	4.7			
		657-JP Hi-Pressure	5	13.3	13.3	13.3	12.7	9.2	3.0	80
			15	10.0	10.0	10.0	9.4	6.5	2.4	
			25	6.2	6.2	6.2	6.0	4.3	1.8	

*Jet Ejectors must be ordered separately

Shallow Well Performance without Jet Ejector

Model No.	HP	Jet Ejector*	Suction Lift - Ft.	Capacities in GPM at Discharge Pressure (PSI)						MAX Shut Off Pressure
				10	15	20	25	30	35	
8250 8251	1/2	Without	10	49.5	47	39.5	25	11		34
Jet		20	45	40.5	28	11.5				
8270 8271	3/4	Without	10	60	58	56	51.5	40		38
Jet		20	52	52	50	41	19			
8210 8211	1	Without	10	65	63	61	57	50	41.5	42
Jet		20	54	53.5	52	48	41	26		

8200 Series - Convertible | Deep Well Performance at 20 PSI | For 20-40 PSI Pressure Switch Setting

Model No.	HP	Well Casing Size	Jet Ejector*	Deep Well Capacities in GPM - At Depth to Water in Feet										
				30	40	50	60	70	80	90	100	110	120	
8250 8251	1/2	4"	7508-JP	12.7	10.5	8.8								
		4"	7509-JP		9.3	8.1	6.3	5.0	4.0					
		2"	7735-JP	11.3	9.4	7.9								
		2"	7736-JP		8.3	7.3	5.7	4.6						
8270 8271	3/4	4"	7901-JP	16.1	13.0	9.6								
		4"	7906-JP			9.9	8.4	6.5	5.1					
		4"	7907-JP						4.7	3.9	3.3	2.5		
		2"	7808-JP	14.3	11.6	8.5								
8210 8211	1	2"	7812-JP			8.9	7.5	5.8	4.6					
		2"	7813-JP						4.2	3.6	2.9	2.2		
		4"	7901-JP	16.8	14.3	11.9								
		4"	7902-JP			11.8	9.9	8.1	6.3					
8210 8211	1	4"	7903-JP						5.5	4.8	4.3	3.5	2.8	
		2"	7808-JP	15.0	12.9	10.7								
		2"	7809-JP			10.4	8.8	7.2	5.6					
		2"	7810-JP						4.8	4.2	3.8	3.1	2.6	

*Jet Ejectors must be ordered separately



E-Series

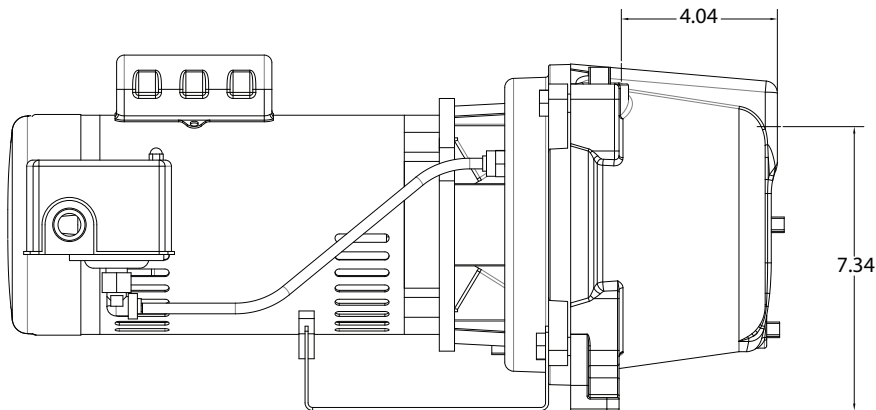
8300 Series Jet Pumps

Get water from point A to point B easier than ever with A.Y. McDonald's E-Series Jet Pump. Available in 1/2, 3/4, 1, and 1 1/2 HP, this pump also contains a flow of up to 32 gallons per minute (GPM). The E-Series Jet Pump is designed with a 1 1/4" inlet and 1" outlet while allowing for an easy switch between 115V and 230V.

The High Pressure E-Series Jet Pump is available in 1/2 HP with pressures to 80 PSI and flows up to 11 gallons per minute (GPM).

Features:

- Up to 32 GPM
- 1" Outlet
- 1 1/4" Inlet
- Reliable, robust, and tested motor
- Easy to switch between 115V & 230V
- 304 Stainless steel motor shaft with wrench flat
- All iron pump housing and seal plate
- 304 Stainless steel insert on plastic impeller
- Stainless steel wear ring between the impeller & diffuser
- Stainless steel bolt hardware connecting pump to motor



Models Available

Model No.	HP	Volts	Suction	Discharge	Max Amp	Switch	Ship WT. (lbs.)
8350	1/2	115 / 230	1 1/4"	1"	10.8	20/40	52
8350HP	1/2	115 / 230	1 1/4"	1"	10.8	40/60	52
8370	3/4	230 / 115	1 1/4"	1"	7.1	30/50	53
8310	1	230 / 115	1 1/4"	1"	8.3	30/50	63
8315	1 1/2	230 / 115	1 1/4"	1"	10.5	40/60	65

Factory Voltage Setting listed first in bold type.

8300 Series Jet Pumps

Performance

Model No.	HP	Suction Lift - FT.	Capacities in GPM at Discharge Pressure					Max. Shut off PSI
			20	30	40	50	60	
8350	1/2	5	17.4	12.6	8.0	2.7	-	58
		10	15.8	11.9	6.6	1.6	-	56
		15	12.9	10.9	5.6	0.8	-	52
		20	10.7	9.4	4.4	0.2	-	51
		25	8.5	8.3	3.6	0.1	-	51
8350HP	1/2	5	10.6	10.6	9.3	6.5	3.4	80
		10	9.4	9.	9.2	6.1	3.1	77
		15	8.2	8.1	8.0	5.3	2.3	74
		20	6.6	6.7	6.7	4.6	1.9	73
		25	4.9	5.0	5.0	4.1	0.0	70
8370	3/4	5	-	22.2	17.1	11.1	6.7	73
		10	-	20.0	15.8	10.8	6.0	70
		15	-	16.5	13.8	9.4	3.7	66
		20	-	13.7	10.9	7.5	1.6	62
		25	-	11.2	10.6	6.6	0.4	61
8310	1	5	-	25.9	21.3	13.8	7.0	70
		10	-	23.3	19.0	12.4	6.0	69
		15	-	19.5	17.1	10.1	3.1	66
		20	-	16.3	15.2	9.6	2.2	63
		25	-	13.4	12.9	7.8	0.2	60
8315	1 1/2	5	-	27.2	26.9	21.8	16.0	87
		10	-	24.1	24.0	20.2	15.2	82
		15	-	20.1	20.1	18.7	13.3	80
		20	-	16.7	16.7	15.9	11.4	75
		25	-	14.3	13.9	13.5	11.3	74

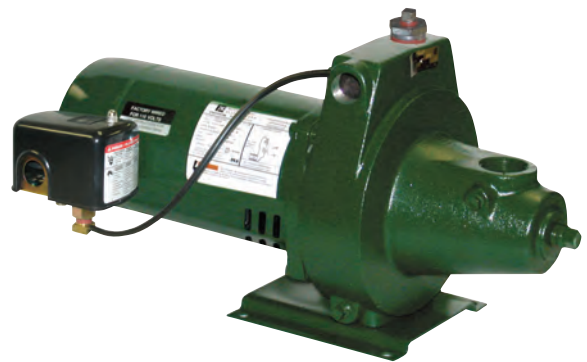
8500 Series - Shallow Well

A.Y. McDonald offers a full line of shallow well and convertible jet pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. The 8500 series shallow well capacity is up to 25 gallons per minute (GPM) and pressures to 80 PSI.

All 8500 Series Shallow Well Pumps come with a 1 1/4" suction pipe and 1" top or side discharge. The sizes range from 1/3 to 1 horsepower (HP).

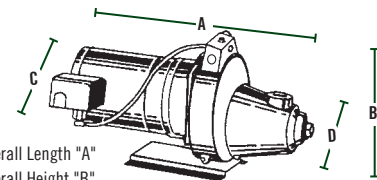
Features:

- Square Flange Motor 7/16" - 20 Threads
- Pressure switch factory settings:
 1/3 and 1/2 HP High Capacity = 20-40 PSI
 1/3 and 1/2 HP High Pressure = 30-50 PSI
 All 3/4 and 1 HP = 30-50 PSI
- * Maximum Amp. Draw at factory voltage setting.



Models Available High Capacity

Model No.	HP	Volt	*Max. Amps	Impeller	A	B	C	D	WT
8530	1/3	115/230	10.6	plastic	19.5"	10"	10.5"	8"	38
8531	1/3	115/230	10.6	brass	19.5"	10"	10.5"	8"	40
8550	1/2	115/230	12.0	plastic	20"	10"	10.5"	8"	43
8551	1/2	115/230	12.0	brass	20"	10"	10.5"	8"	44
8570	3/4	230/115	7.6	plastic	20.2"	10"	10.5"	8"	43
8571	3/4	230/115	7.6	brass	20.2"	10"	10.5"	8"	45
8510	1	230/115	9.2	plastic	20.6"	10"	10.5"	8"	45
8511	1	230/115	9.2	brass	20.6"	10"	10.5"	8"	47



Overall Length "A"
 Overall Height "B"
 Overall Width with Pressure Switch "C"
 Overall Width without Pressure Switch "D"
 *See table to left for dimensions.

High Pressure

Model No.	HP	Volt	*Max. Amps	Impeller	A	B	C	D	WT
8530HP	1/3	115/230	10.6	plastic	19.5"	10"	10.5"	8"	41
8531HP	1/3	115/230	10.6	brass	19.5"	10"	10.5"	8"	42
8550HP	1/2	115/230	12.0	plastic	20"	10"	10.5"	8"	44
8551HP	1/2	115/230	12.0	brass	20"	10"	10.5"	8"	42
8570HP	3/4	230/115	7.6	plastic	20.2"	10"	10.5"	8"	44
8571HP	3/4	230/115	7.6	brass	20.2"	10"	10.5"	8"	44
8510HP	1	230/115	9.2	plastic	20.6"	10"	10.5"	8"	45
8511HP	1	230/115	9.2	brass	20.6"	10"	10.5"	8"	47

Factory Voltage Setting listed first in bold type.

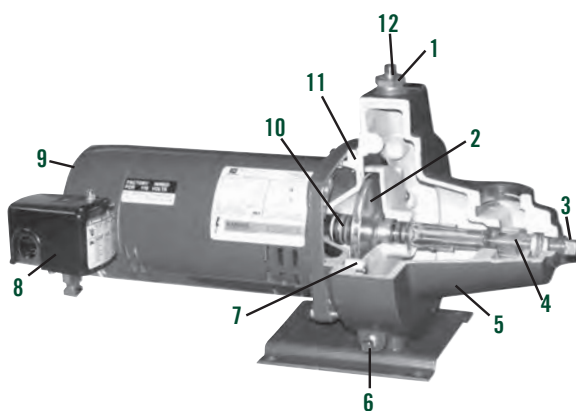
8500 Series - Shallow Well

8500 Series - High Capacity | Shallow Well

Model No.	HP	Suction Lift - Ft.	Capacities in GPM at Discharge Pressure (PSI)				MAX Shut Off Pressure
			20	30	40	50	
8530	1/3	5	12.6	12.6	7.4	2.5	57
8531		15	10.0	10.0	6.0	1.3	
		25	5.8	5.8	2.7	--	
8550	1/2	5	15.6	15.6	8.6	2.3	58
8551		15	11.7	11.7	6.5	1.2	
		25	6.6	6.6	4.7	--	
8570	3/4	5	18.8	18.8	16.2	8.8	61
8571		15	14.4	14.4	12.3	3.9	
		25	8.6	8.6	7.3	2.7	
8510	1	5	24.2	24.0	23.0	15	64
8511		15	20.1	18.6	18.4	10.9	
		25	11.6	11.4	11.3	4.7	

8500 Series - High Pressure | Shallow Well

Model No.	HP	Suction Lift - Ft.	Capacities in GPM at Discharge Pressure (PSI)					MAX Shut Off Pressure
			30	40	50	60	70	
8530HP	1/3	5	6.7	6.1	4.3	2.3		70
8531HP		15	4.8	4.6	3.3	1.1		
		25	3.0	2.9	2.1			
8550HP	1/2	5	7.6	7.1	5.7	2.7		74
8551HP		15	5.5	5.4	4.3	2.0		
		25	3.7	3.6	2.9			
8570HP	3/4	5	9.4	9.4	7.8	4.2		75
8571HP		15	7.0	7.0	5.9	2.9		
		25	4.6	4.6	3.8	2.1		
8510HP	1	5	13.4	13.4	12.7	9.2	3.0	80
8511HP		15	10.0	10.0	9.4	6.5	2.4	
		25	6.2	6.2	6.0	4.3	1.8	



- 1 - Zinc Plated Plug**
(With Pressure Gauge Tap and 1/4" plug in side discharge, see picture above)
- 2 - Impeller**
Available in engineered polycarbonate thermoplastic
- 3 - Zinc Plated Nozzle Cleanout Plug**
- 4 - Nozzle-Venturi (jet Ejector) Assembly**
Unitized construction made of non-distorting Polycarbonate with excellent heat resistance
- 5 - Cast Iron Pump Body**
- 6 - Drain Plug**
- 7 - Diffuser**
Multi-volute engineered thermoplastic diffuser for maximum capacity and pressure
- 8 - Pressure Switch**
Easily adjusted for higher or lower operating pressures
- 9 - High Service Factor, Capacitor Start, Threaded Shaft, Square Flange Motor**
Built to specifications by nationally known manufacturers to assure local service availability. Choice of 1/3, 1/2, 3/4 and 1 H.P. 50 Hz. or 60 Hz.
- 10 - Shaft Seal**
Standard 5/8" ceramic carbon rotating mechanical seal
- 11 - Thermoplastic Seal / Condensation Plate**
Provides air gap between motor and water chamber
- 12 - Discharge**
1" Top or 3/4" Side discharge

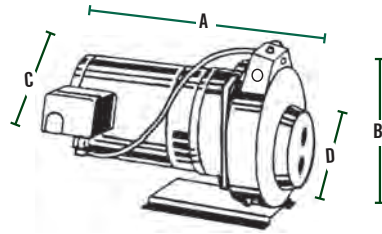
8600 Series - Convertible

A.Y. McDonald offers a full line of shallow well and convertible jet pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. With appropriate jet ejector the 8600 series convertible capacity is up to 65 gallons per minute (GPM) and pressures to 80 PSI.

All 8600 Series Convertible Pumps come with a 1 1/4" suction pipe and 1" top or side discharge. The sizes range from 1/3 to 1 horsepower (HP).

Features:

- Square Flange Motor 7/16" - 20 Threads
- Deep Well performance to 120 feet to water
- Pressure switch factory settings:
1/3 and 1/2 HP = 20-40 PSI
3/4 and 1 HP = 30-50 PSI
- Two pipe tapping 1" x 1 1/4"
- * Maximum Amp. Draw at factory voltage setting.



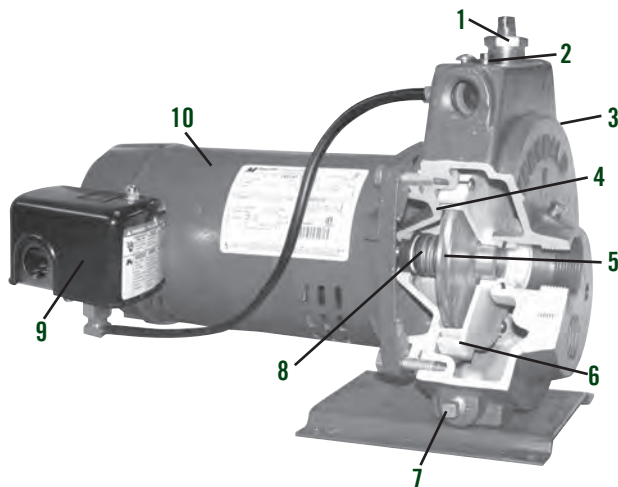
Overall Length "A"
Overall Height "B"
Overall Width with Pressure Switch "C"
Overall Width without Pressure Switch "D"
*See table to left for dimensions.

Models Available

Model No.	HP	Volt	*Max. Amps	Impeller	A	B	C	D	WT
8630	1/3	115/230	10.6	plastic	15.2"	10"	10.5"	8"	35
8631	1/3	115/230	10.6	brass	15.2"	10"	10.5"	8"	36
8650	1/2	115/230	12.0	plastic	15.5"	10"	10.5"	8"	37
8651	1/2	115/230	12.0	brass	15.5"	10"	10.5"	8"	38
8670	3/4	230/115	7.6	plastic	15.9"	10"	10.5"	8"	39
8671	3/4	230/115	7.6	brass	15.9"	10"	10.5"	8"	40
8610	1	230/115	9.2	plastic	16.2"	10"	10.5"	8"	42
8611	1	230/115	9.2	brass	16.2"	10"	10.5"	8"	44

*Factory Voltage Setting listed first in bold type.

- Optional jet ejectors: High Capacity and High Pressure



1 - Zinc Plated Plug
(With Pressure Gauge Tap and 1/4" plug)

2 - Internal Regulating Valve
(Manual adjustment for deep well only)

3 - Cast Iron Pump Body

4 - Seal / Condensation Plate
Provides air gap between motor and water chamber

5 - Impeller
Available in engineered polycarbonate thermoplastic

6 - Diffuser
Multi-volute engineered thermoplastic diffuser for maximum capacity and pressure

7 - Drain Plug

8 - Shaft Seal
Standard 5/8" ceramic carbon rotating mechanical seal

9 - Pressure Switch
Easily adjusted for higher or lower operating pressures

10 - High Service Factor, Capacitor Start, Threaded Shaft, Square Flange Motor
Built to NEMA specifications by nationally known manufacturers to assure local service availability. Choice of 1/3, 1/2, 3/4 and 1 H.P. 50 Hz. or 60 Hz.

8600 Series - Convertible

Jet Pumps

8600 Series - Convertible | Shallow Well Performance

Model No.	HP	Jet Ejector*	Suction Lift - Ft.	Capacities in GPM at Discharge Pressure (PSI)						MAX Shut Off Pressure
				20	30	40	50	60	70	
8630 8631	1/3	650-JP Hi-Capacity	5	12.6	12.6	7.4	2.5			57
			15	10.0	10.0	6.0	1.3			
			25	5.8	5.8	2.0				
		654-JP Hi-Pressure	5	6.8	6.8	6.1	4.3	2.3		70
			15	4.8	4.8	4.6	3.3	1.1		
			25	3.0	3.0	2.9	2.1			
8650 8651	1/2	651-JP Hi-Capacity	5	15.6	15.6	8.6	2.3			58
			15	11.7	11.7	6.5	1.2			
			25	6.6	6.6	4.7				
		655-JP Hi-Pressure	5	7.6	7.6	7.1	5.7	2.7		74
			15	5.5	5.5	5.4	4.3	2.0		
			25	3.7	3.7	3.6	2.9			
8670 8671	3/4	652-JP Hi-Capacity	5	18.8	18.8	16.2	8.8			61
			15	14.4	14.4	12.3	3.9			
			25	8.6	8.6	7.3	2.7			
		656-JP Hi-Pressure	5	9.7	9.4	9.4	7.8	4.2		75
			15	7.1	7.0	7.0	5.9	2.9		
			25	4.7	4.6	4.6	3.8	2.1		
8610 8611	1	653-JP Hi-Capacity	5	24.2	24.0	23.0	15.0			64
			15	20.1	18.6	18.4	10.9			
			25	11.6	11.4	11.3	4.7			
		657-JP Hi-Pressure	5	13.3	13.3	13.3	12.7	9.2	3.0	80
			15	10.0	10.0	10.0	9.4	6.5	2.4	
			25	6.2	6.2	6.2	6.0	4.3	1.8	

Shallow Well Performance without Jet Ejector

Model No.	HP	Jet Ejector*	Suction Lift - Ft.	Capacities in GPM at Discharge Pressure (PSI)						MAX Shut Off Pressure
				10	15	20	25	30	35	
8630	1/3	Without	10	45	41.5	30	15			26
8631		Jet	20	40	31	20				
8650	1/2	Without	10	49.5	47	39.5	25	11		34
8651		Jet	20	45	40.5	28	11.5			
8670	3/4	Without	10	60	58	56	51.5	40		38
8671		Jet	20	52	52	50	41	19		
8610	1	Without	10	65	63	61	57	50	41.5	42
8611		Jet	20	64	53.5	52	48	41	26	

8600 Series - Convertible | Deep Well Performance at 20 PSI | For 20-40 PSI Pressure Switch Setting

Model No.	HP	Well Casing Size	Jet Ejector*	Deep Well Capacities in GPM - At Depth to Water in Feet									
				30	40	50	60	70	80	90	100	110	120
8630 8631	1/3	4"	7502-JP	9.8	8.0	6.2							
			7503-JP		6.9	5.7	4.3	3.3					
			7733-JP	8.8	7.2	5.6							
			7734-JP		6.2	5.1	3.8	3.0					
8650 8651	1/2	4"	7508-JP	12.7	10.5	8.8							
			7509-JP		9.3	8.1	6.3	5.0	4.0				
			7735-JP	11.3	9.4	7.9							
			7736-JP		8.3	7.3	5.7	4.6					
8670 8671	3/4	4"	7901-JP	16.1	13.0	9.6							
			7906-JP			9.9	8.4	6.5	5.1				
			7907-JP						4.7	3.9	3.3	2.5	
			7808-JP	14.3	11.6	8.5							
			7812-JP			8.9	7.5	5.8	4.6				
			7813-JP						4.2	3.6	2.9	2.2	
8610 8611	1	4"	7901-JP	16.8	14.3	11.9							
			7902-JP			11.8	9.9	8.1	6.3				
			7903-JP						5.5	4.8	4.3	3.5	2.8
			7808-JP	15.0	12.9	10.7							
			7809-JP			10.4	8.8	7.2	5.6				
		2"	7810-JP						4.8	4.2	3.8	3.1	2.6

*Jet Ejectors must be ordered separately

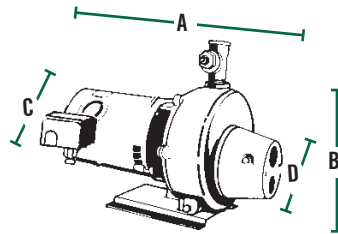
1500 Series - Multi-Stage

A.Y. McDonald offers a full line of shallow well, convertible, and multi-stage jet pumps built for years of trouble free operation, with high-efficiency impellers and diffusers. The 1500 series shallow well capacity is up to 40 gallons per minute (GPM) and pressures to 100 PSI.

All 1500 Series Multi-Stage Pumps come with a 1 1/4" suction pipe and a 1" discharge. The sizes range from 3/4 to 1 1/2 horsepower (HP).

Features:

- Nema C (Keyed Shaft) Motor
- Pressure switch factory setting 30-50 PSI
- Two pipe drop pipe 1" x 1 1/4" (with 108 adaptor)
- SW models are less regulating valve
- 460V available, contact factory
- * Maximum Amp. Draw at factory voltage setting.



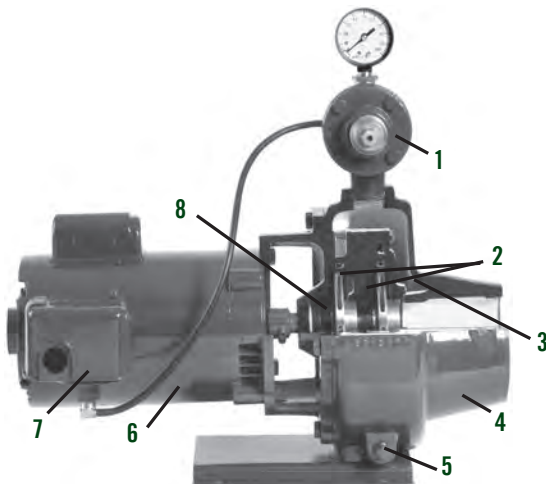
Overall Length "A"
 Overall Height "B" (without Regulating Valve)
 Overall Width "C" (with Pressure Switch)
 Overall Width "D" (without Pressure Switch)
 *See table to left for dimensions.



Models Available

Model No.	HP	Volt	*Max. Amps	Impeller	A	B	C	D	Wt.
1575	3/4	230/115	7.4	brass	19.5"	10.5"	11"	8.8"	68
1575P	3/4	230/115	7.4	plastic					
1575SW	3/4	230/115	7.4	brass	19.5"	10.5"	11"	8.8"	62
1575SWP	3/4	230/115	7.4	plastic					
1510	1	230/115	9.0	brass	19.5"	10.5"	11"	8.8"	68
1510P	1	230/115	9.0	plastic					
1510SW	1	230/115	9.0	brass	19.5"	10.5"	11"	8.8"	69
1510SWP	1	230/115	9.0	plastic					
1515SW	1 1/2	230/115	10.6	brass	20.5"	10.5"	11"	8.8"	69
1515SWP	1 1/2	230/115	10.6	plastic					

Factory Voltage Setting listed first in bold type.



- 1 - Automatic Diaphragm Type Regulating Valve**
Positive acting - non-chattering for easier pump priming. Assures maximum performance at varying water levels (For deep well only)
- 2 - Impeller**
Available in either dynamically balanced bronze or engineered thermoplastic
- 3 - Cast Iron Diffusers**
Precision machined for greatest efficiency
- 4 - Cast Iron Pump Body & Motor Adapter**

- 5 - Drain Plug**
- 6 - Nema Standard Motor**
Heavy duty, capacitor start, dual voltage (230/115) with built-in overload protection. Choice of 3/4, 1, 1 1/2 HP & 50 Hz. or 60 Hz.
- 7 - Pressure Switch**
Easily adjusted for higher or lower operating pressures
- 8 - Shaft Seal**
Standard 3/4" ceramic carbon rotating mechanical seal

1500 Series - Multi-Stage

1000 Series | Shallow Well Performance

Model No.	HP	Jet Ejector*	Suction Lift - Ft.	Capacities in GPM at Discharge Pressure (PSI)							MAX Shut Off Pressure	
				20	30	40	50	60	70	80		
1575SW Without Jet	3/4	N/A	10	34.3	28.7	22.2						53
			15	33.1	27.5	20.4						51
			25	29.9	24.5							46
1510SW Without Jet	1	N/A	10	41.6	37.6	31.6	24.1					65
			15	40.0	36.5	30.1	22.1					63
			25	29.5	28.5	26.5	16.5					58
1515SW Without Jet	1 1/2	N/A	10	42.3	40.5	36.5	32.0	24.5				76
			15	41.6	39.8	35.2	29.3	23.0				74
			25	33.3	32.5	31.0	26.5	18.8				69
1575 *Requires Jet	3/4	659JP	10		12.3	12.3	12.1	11.7	10.0	6.1		96
			15		11.0	11.0	11.0	10.5	7.6	4.1		94
			25		7.1	7.0	7.0	7.0	7.0	3.0		89
1510 *Requires Jet	1	658JP	10		15.0	14.8	14.7	14.1	13.4	9.1		102
			15		13.0	12.9	12.9	12.8	12.4	8.2		100
			25		7.6	7.5	7.5	7.5	7.4	6.3		96
1515SW *Requires Jet	1 1/2	652JP	10	17.4	17.2	17.1	16.9	15.0	10.0	5.8		100
			15	15.0	15.0	14.7	14.5	13.6	9.7	5.0		98
			25	9.6	9.2	9.0	8.8	8.8	6.7	3.1		94

*Jet Ejectors must be ordered separately

1500 Series | Deep Well Performance at 30 PSI | For 30-50 PSI Pressure Switch Setting

Model No.	HP	Jet Ejector Package		Deep Well Capacities in GPM - At Depth to Water in Feet															
		4" Two Pipe	2" Single Pipe	30	40	50	60	70	80	90	100	110	120	130	140	150	160		
1575	3/4		7125 MP	14.5	13.1	11.2	9.3	7.2											
			7126 MP					9.3	8.0	6.6	5.4	4.2	3.2						
			7127MP								5.7	5.0	4.2	3.5	2.7	2.0	1.3		
			7109 MP			16.1	14.6	12.5	10.3	8.0									
			7110 MP							10.3	8.9	7.4	6.0	4.7	3.5				
1510	1		7111 MP								6.4	5.5	4.7	3.9	3.0	2.3	1.5		
			7128 MP	14.5	13.5	12.1	10.8	8.9	6.7										
			7129 MP					9.7	8.3	7.4	6.5	5.6	4.9	4.0					
			7130 MP									5.8	4.9	4.2	3.5	2.9	2.2	1.5	
			7112 MP			16.1	15.0	13.5	12.0	9.9	7.5								
			7113 MP						10.8	9.2	8.2	7.2	6.3	5.5	4.5				
	7114MP										6.5	5.5	4.6	3.9	3.2	2.5	1.8		

Nema J Motor

The 8100 and 8200 series jet pumps use the Nema J motor, which has a single phase, Open Drip Proof (ODP) capacitor start.



Features:

- 303 Stainless steel shaft
- Shaft threads 7/16-20 UNF-2A, 0.625" Diameter, 2.57" long from face
- Ball bearings (locked drive end bearing)
- Continuous duty at 40°C/104°F Ambient, 60Hz
- Automatic reset thermal overload protector
- Round frame (without base), Nema 56C mounting
- Power leads and ground wire supplied for proper connection to the pressure switch
- Voltage change device

Single Compartments Products

Part No.	HP	RPM	Frame	Catalog Volt	Type	Service Factor	SF* AMPS	MTR LGTH(1)	Ship Wt.	Factory Wired
6155-240	1/2	3500	48/56	115/230	FHP	1.60	11.2/5.6	9.0"	15	115V
6155-241	3/4	3500	48/56	230/115	FHP	1.50	7.4/14.8	9.5"	19	230V
6155-242	1	3500	48/56	230/115	FHP	1.40	8.8/17.6	10"	21	230V

(1) Length not including shaft

Square Flange Motor

The 8500 and 8600 series jet pumps use the Square Flange motor, which has a single phase, Open Drip Proof (ODP) capacitor start.



Features:

- 303 Stainless steel shaft
- Shaft threads 7/16-20 UNF-2A, 0.625" Diameter, .91" long from face
- Ball bearings (locked drive end bearing)
- Continuous duty at 40°C/104°F Ambient, 60Hz
- Automatic reset thermal overload protector
- Round frame (without base)
- Power leads and ground wire supplied for proper connection to the pressure switch
- Voltage change device

Two Compartments Products | E-Z Access

Part No.	HP	RPM	Frame	Catalog Volt	Type	Service Factor	SF* AMPS	MTR LGTH(1)	Ship Wt.	Factory Wired
6164-203	1/3	3500	48Y	115/230	FNP	1.95	10.6/5.3	11.23"	17	115V
6164-200	1/2	3500	48Y	115/230	FHP	1.90	11.2/5.6	12.0"	19	115V
6164-201	3/4	3500	48Y	230/115	FHP	1.65	7.6/14.3	12.27"	22	230V
6164-202	1	3500	48Y	230/115	FHP	1.65	9.2/18.4	12.35"	24	230V

*Service Factor Amps. may vary with motor manufacturer - refer to label on motor

(1) Length not including shaft

Nema C Motor

The 1000 and 1500 series jet pumps use the Nema C (Keyed Shaft Motor), which has a single phase, Open Drip Proof (ODP)⁽²⁾ capacitor start.

Features:

- Carbon steel shaft (not in contact with the water)
- Shaft 0.625" Diameter, x 2.07" long from face
- Ball bearings (locked drive end bearing)
- Continuous duty at 40°C/104°F Ambient, 60Hz
- Automatic reset thermal overload protector
- Round frame (without base), Nema 56C mounting
- Power leads and ground wire supplied for proper connection to the pressure switch
- Voltage change device (except 2 HP)



Two Compartments Products | E-Z Access

Part No.	HP	RPM	Frame	Catalog Volt	Type	Service Factor	SF* AMPS	MTR LGTH(1)	Ship Wt.	Factory Wired
6127-154	3/4	3500	48/56	230/115	FHP	1.50	7.4/14.8	9.5"	21	230V
6127-160	1	3500	48/56	230/115	FHP	1.65	9.0/18.0	10"	24	230V
6127-156	1 1/2	3500	48/56	230/115	FHP	1.30	10.7/21.4	10.5"	28	230V

*Service Factor Amps. may vary with motor manufacturer - refer to label on motor

*Includes run capacitor for higher efficiency

(1) Length not including shaft

(2) Contact factory for three phase and/or TEFC motors

Jet Ejectors

Single Stage

8200 or 8600 Series - Shallow Well



High Capacity

*1/3 HP 8600 Series ONLY

Model No.	HP	Wt.
*650JP	1/3	5
651JP	1/2	5
652JP	3/4	5
653JP	1	5

High Pressure

*1/3 HP 8600 Series ONLY

Model No.	HP	Wt.
*654JP	1/3	5
655JP	1/2	5
656JP	3/4	5
657JP	1	5

Deep Well

4" Two Pipe, 1" Drive Pipe, & 1 1/4" Return Pipe

Model No.	HP	Depth to Water (Ft.)	Wt.
7502JP	1/3	30/50'	6
7503JP	1/3	40/70'	4
7508JP	1/2	30/50'	4
7509JP	1/2	40/80'	4
7901JP	3/4 & 1	30/50'	4
7902JP	1	50/80'	4
7903JP	1	80/110'	4
7906JP	3/4	50/80"	4
7907JP	3/4	80/100'	4



Two Pipe

2" Single Pipe

Model No.	HP	Depth to Water (Ft.)	Wt.
7733JP	1/3	30/50'	3
7734JP	1/3	40/70'	3
7735JP	1/2	30/50'	3
7736JP	1/2	40/70'	3
7808JP	3/4 & 1	30/50'	3
7809JP	1	50/80'	3
7810JP	1	80/110'	4
7812JP	3/4	50/80"	3
7813JP	3/4	80/100'	4



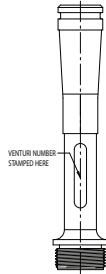
Single Pipe

Add "L" to the model number for less foot valve

*For better efficiency, use increasing fittings to allow 1 1/4" drive pipe

Deep Well Jet Kits

HP	Model No.	Part No.	Well Casing Size	Depth to Water (Ft.)	Wt.
1/2	7508/9JP	5999-115	4	30-80 ft.	4
1/2	7735/6JP	5999-116	2	30-70 ft.	3
3/4	7906/7JP	5999-117	4	50-110 ft.	4
3/4	7812/3JP	5999-118	2	50-110 ft.	4
1	7902/JJP	5999-119	4	50-120 ft.	4
1	7809/10JP	5999-120	2	50-120 ft.	3



VENTURI NUMBER STAMPED HERE

Single Pipe
2" Well Casing



Two Pipe
4" Well Casing

Multi-Stage

1000 or 1500 Series - Shallow Well

Model No.	For Model	HP	Wt.
659JP	1575	1/3	5
658JP	1510	1/2	5
652JP	1515	3/4	5



Deep Well

4" Two Pipe, 1" Drive Pipe, & 1 1/4" Return Pipe

Model No.	For Model	Depth to Water (Ft.)	Wt.
7109MP	1075 & 1575	30/70'	4
7110MP	1075 & 1575	60/110'	4
7111MP	1075 & 1575	90/150'	4
7112MP	1010 & 1510	30/80'	3
7113MP	1010 & 1510	60/120'	3
7114MP	1010 & 1510	100/160'	3



Two Pipe

2" Single Pipe

Model No.	For Model	Depth to Water (Ft.)	Wt.
7125MP	1075 & 1575	30/70'	3
7126MP	1075 & 1575	60/110'	3
7127MP	1075 & 1575	90/150'	3
7128MP	1010 & 1510	30/80'	3
7129MP	1010 & 1510	60/120'	3
7130MP	1010 & 1510	100/160'	3



Single Pipe

Add "L" to the model number for less foot valve

*For better efficiency, use increasing fittings to allow 1 1/4" drive pipe (2" well casing serves as the drive pipe)

Adapters - Flanges

101 Casing Adapter

For all 8200, 8600 and 1500 Series. With tapped openings for offset installations using two pipes to the jet pump and single pipe jet ejector in the well. Slips onto the well casing and is secured by tightening the two bolts and nuts (one pictured). Also allows the pump to bolt directly to the well head using the specially designed fiber gasket between the two flat faces.



Part No.	Wt.
6450-103	9

106 Casing Adapter*

For all single pipe 1000 Series. Slips onto the well casing and is secured by tightening the two bolts and nuts (one pictured). Thick rubber compression gasket eliminates threading or welding of casing. 1 1/4" x 1" face bushing or reducing nipple required to permit use of 1" drop pipe. Adapters and flanges bolt directly to the base of all 1000 and 1000SW Series pumps and 8200, 8600, and 1500 series. Sizes Available: 2"



Part No.	Wt.
6450-110	9

108 Threaded Flange*

For all 1000 Series. Tapped openings permit use directly over standard 4" well seal as well as offset installation of all 1000 and 1000SW Series pumps. Furnished with all 1000SW pumps. Sizes Available: 4" | Includes 1" and 1 1/4" NPT



Part No.	Wt.
6421-124	3

100-4 Casing Adapter Plate*

For use with 1000 series, not threaded with 1 1/2" & 1 1/2" opening.



Part No.	Wt.
6316-114	

*Flange Gasket

Part No.	Wt.
6316-257	

Pressure Switches see page 122.

Jet Pump Accessories

105 - Automatic Regulating Valve

Spring loaded to maintain prime even with rising and lowering water levels. Required for deep well use only. Sizes Available: 1"



Part No.	Wt.
6453-105	3.25

Face Bushing

For use with 2" and 3" single pipe jet ejectors and casing adapters. Sizes Available: 1 1/4" x 1"



Part No.	Wt.
3126-676	.01

Turned Coupling

Attaches to single pipe ejector and mating drop pipe or reducing nipple. Plated finish for corrosion resistance. Allows greater flow when used inside 2" well casings. Sizes Available: 1 1/4"



Part No.	Wt.
6411-225	.38

6127-300 - Reducing/Increasing Nipple

Attaches to single pipe ejector and other uses. Sizes Available: 1 1/4" x 1" x 8"



Part No.	Wt.
6127-300	1

Tubing and Fittings

Part No.	Description
6610-169	Plastic Tubing 1/4" x 5' Ft
6610-168	Plastic Tubing 1/4" x 100' Ft

Used on all Jet pumps (excluding 1000 series)

6155-356	Straight Conn - Fast&Tite - 1/4 Tube x 1/8 NPT
6155-355	Elbow Conn - Fast&Tite - 1/4 Tube x 1/4 NPT

Used on 1000 series

5999-900	Barb Straight Conn - 1/4 Plastic x 1/4 NPT - NL
5999-898	Barb Elbow - 1/4 Plastic x 1/8 MPT - NL



DuraMAC™ Booster Pumps



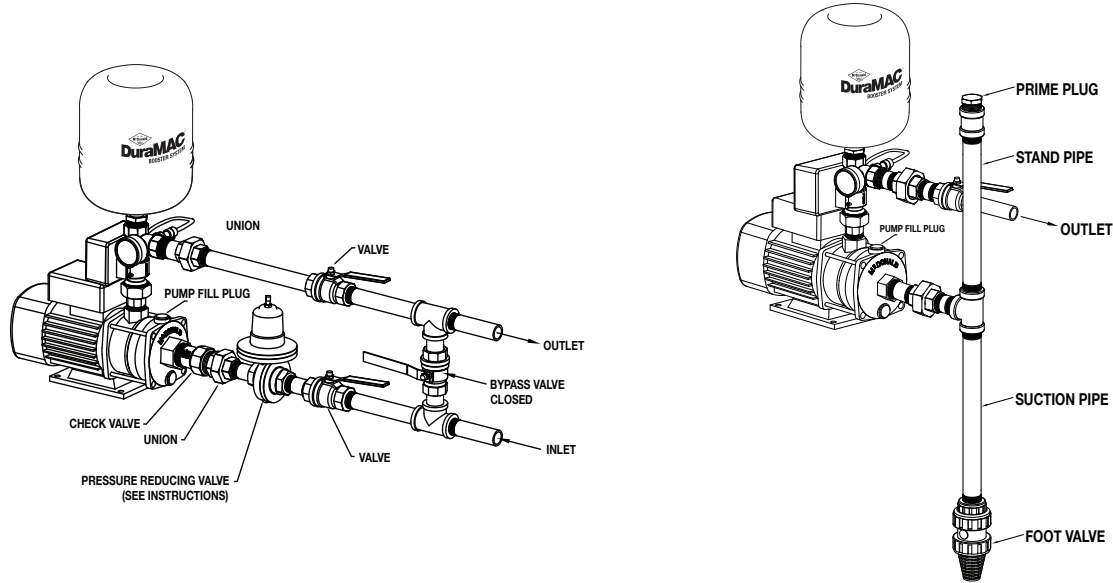
DuraMAC™ Booster Pumps

Pump Catalog - January 2020

MORE THAN A BRAND. WE'RE A FAMILY.

Typical Installations

Not all boosting applications require complicated boosting systems. The DuraMAC™ Booster System is simple, versatile, sophisticated, and reliable. Quite simply, it is the World's Most Versatile Boosting System.



Versatile

It is the first booster pump of its kind to be designed for virtually all boosting applications. In Pressure Mode, the pump starts with pressure drop and stops on low flow. In Flow Mode, the pump starts and stops by sensing flow. In Conservation Mode, the pump only operates during a peak demand, such as when multiple showers, bathtubs, or irrigation systems are running.

Simple

A single-speed, totally enclosed fan-cooled motor drives the DuraMAC™ booster pump with single phase power. It is controlled with one dial and tells you it is working properly by illuminating a single status light. The settings and readouts are simple and straight forward.

Sophisticated

A pressure transducer constantly monitors system pressure and alerts the pump control to start the pump as water in the system is used. The pump then stays on, boosting the system pressure until the need for water is no longer present, indicated by low flow.

Reliable

Electronic components are completely separated from piping and water ways for added safety and ease of field repair. The DuraMAC™ is built from scratch with one purpose in mind - boosting water pressure. Each component of the system is specifically designed to work together, as one harmonious unit.

The World's Most Versatile Booster System



Pressure Tank

Eliminates short cycling and helps accommodate thermal expansion.

Pressure Gauge

Displays total system pressure

Circuit Board

Sophisticated programming assures proper operation in all conditions.

Digital Control

Single knob for simple pressure adjustment. Status light indicates standby, run and fault modes

Transducer

Constantly monitors system pressure.

Inlet w/Check Valve: Residential

No-Lead Brass NPT thread with large wrench flats for easy & secure pipe connections

Inlet w/Check Valve: Light Commercial

No-Lead Brass NPT thread with large wrench flats for easy & secure pipe connections

Union Swivel

Allows for 360° adjustment of discharge.

Motor

Totally enclosed fan-cooled motor for quiet operation and low power consumption

Pump

All stainless construction for tough water conditions.

DuraMAC™ Booster Pumps

A.Y. McDonald's Full Line of DuraMAC™ Booster Pumps

Vertical Multistage Variable Speed Simplex & Duplex Boosters



Dual-Mode Modular, Simplex, & Duplex



E-Series, Residential, Light Commercial, & Irrigation Boosters



How to Order

Order by Model Number - Example: 17044C070PC2-M

17

Series

17
18

044

Water Pressure at 0 GPM

035
040
044
052
060
062
070
078

C

Type

R - Residential
C - Commercial

070

GPM

020
035
070
120

P

C

2

Voltage

1 - 120V
2 - 230V

M

Options

D - Duplex
M - Modular
S - Simplex

SS - Stainless Steel
*Only available in E-Series

DuraMAC™ Booster Pumps

Models Available

- E-Series

- 18035R020PC1
- 18052R020PC1
- 18035R020PC1-SS
- 18052R020PC1-SS



Models Available

- Residential, Light Commercial, & Irrigation Boosters

- 17035R020PC1
- 17040C035PC2
- 17052R020PC1
- 17062C035PC2
- 17070R020PC2
- 17078C035PC2



Models Available

- Dual-Mode - Modular, Simplex, & Duplex Models

- 17044C070PC2-S
- 17060C070PC2-M
- 17060C070PC2-S
- 17044C120PC2-D
- 17044C070PC2-M
- 17060C120PC2-D



How It Works

The DuraMAC™ Water Pressure Boosting System can be set to three separate modes, which can accommodate virtually any application.



PRESSURE MODE

START METHOD: Pressure drop

STOP METHOD: Low flow

TYPICAL INSTALLATION: Appropriate for the majority of light commercial or residential applications

RESULT: Pump operates continuously while there is a need for water



FLOW MODE

START METHOD: Water flow

STOP METHOD: Low flow

TYPICAL INSTALLATION: Application where pressure fluctuates, or occasional system leaks are present

RESULT: Pump operates when usage of water exceeds approximately one gallon per minute



CONSERVATION MODE

START METHOD: Pressure drop

STOP METHOD: Low Flow

TYPICAL INSTALLATION: Application where pressure is adequate for most uses, and boosting is only necessary for high demand

RESULT: Pump will operate only when system pressure is below city supplied pressure and operate continuously while there is demand for water

DuraMAC™ Booster Pumps

DuraMAC™ Residential, Light Commercial, & Irrigation Pump Control (excludes E-Series)



New Pump Control 115V

115V DC: B17 - Current

230V DC: F17 - Current

DuraMAC™ Booster Pumps



E Series

DuraMAC™ Booster Pump

Not all boosting applications require complicated boosting systems. The DuraMAC™ Boosting system is simple, versatile, sophisticated, and reliable. With an easy set-up installation and a versatile control with three modes of operation, this pump is flexible enough to meet your commercial or irrigation needs.

The 304 stainless steel version of the DuraMAC™ Booster pump will meet the needs of boosting water pressure from Reverse Osmosis (RO) systems, low PH and other aggressive water applications which would be corrosive to no-lead brass and metal pipes.

Features:

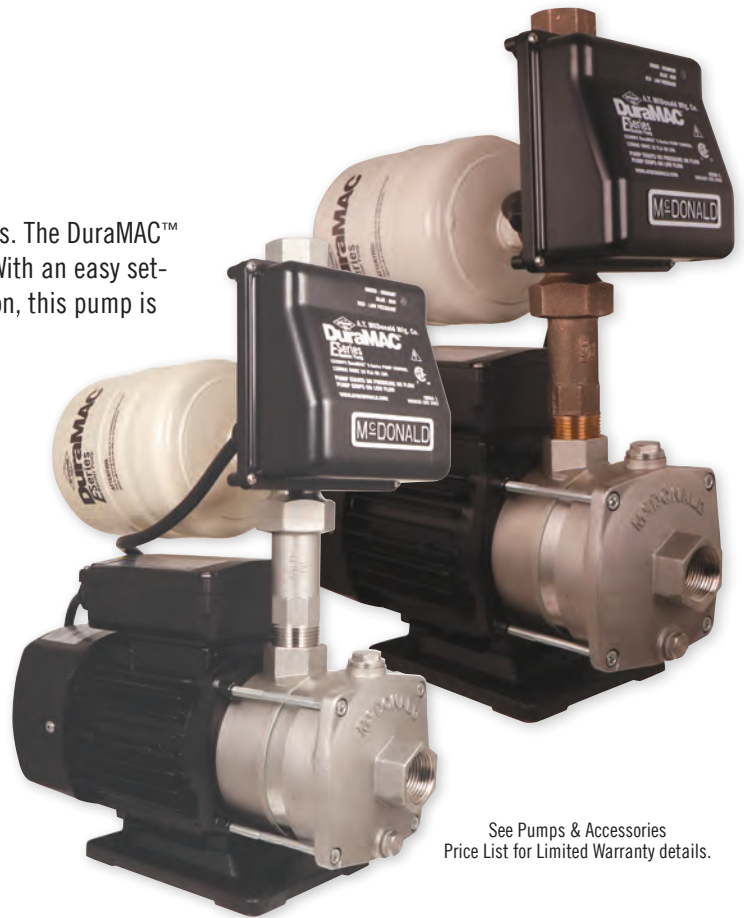
- Water pressure boosting system for residential, irrigation, or light commercial use
- Easy set-up installation
- All metal connections - no plastic threads
- Half-gallon pressure tank included
- TEFC single phase motor for quiet operation
- Electronics separated and sealed from waterway
- No-Lead Brass / 304 stainless steel check valve included
- Dry-Run protection
- 1" inlet and outlet
- 1 year warranty

Materials of Construction

- Impellers	304 Stainless Steel
- Pump Casing Inlet	301 Stainless Steel
- Pump Casing Outlet	301 Stainless Steel
- Pump Seal (stationary)	Silicon Carbide
- Pump Seal (rotating)	Carbon / NBR
- Diffuser	304 Stainless Steel
- Check Valve	No-Lead Brass / Stainless Steel
- Pump Controller Cross	No-Lead Brass / Stainless Steel

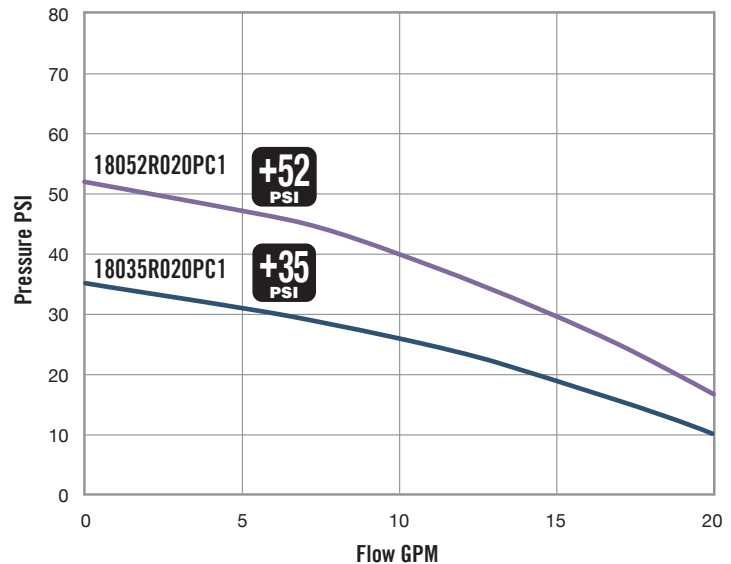
Models Available

DuraMAC™ Model	Pump Boost	Amps	Voltage	Power	Weight
18035R020PC1	35 PSI	5.5	120 - 60 Hz	1/2 HP	27.1
18052R020PC1	52 PSI	7.0	120 - 60 Hz	3/4 HP	27.7
18035R020PC1SS	35 PSI	5.5	120 - 60 Hz	1/2 HP	27.1
18052R020PC1SS	52 PSI	7.0	120 - 60 Hz	3/4 HP	27.7



See Pumps & Accessories Price List for Limited Warranty details.

DuraMAC™ Performance (Additional Boost)



DuraMAC™ Booster Pumps

E-Series DuraMAC™ Booster Pump

Sizing Information

E-Series DuraMAC™ Booster Systems are designed to shut off when no flow is detected. Pump total pressure boost should be added to current household system pressure to determine total system pressure when boosted. Note: It is not recommended to exceed 80 PSI total boosted household pressure.

Example:
Household system pressure before boost = 30 PSI

$$\begin{array}{rcccl} 30 & + & & = & \\ \text{Household} & & \text{Total Pump} & & \text{Total Pressure} \\ \text{Pressure} & & \text{Pressure} & & \text{After Boost} \end{array}$$

*Not Recommended to Exceed 80 PSI

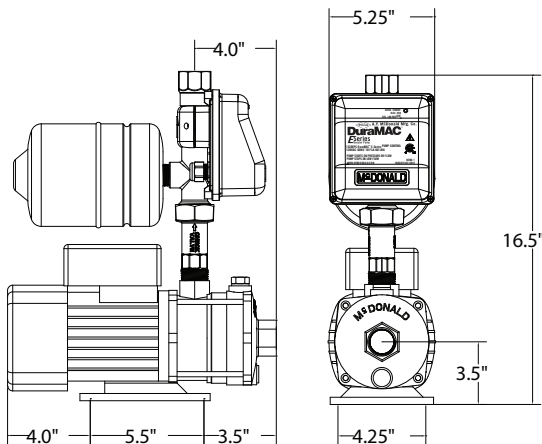
Models Available:
18035R020PC1 +35
18052R020PC1 +52

$$\begin{array}{rcccl} 30 & + & 35 & = & 65 \\ \text{Household} & & \text{Total Pump} & & \text{Total Pressure} \\ \text{Pressure} & & \text{Pressure} & & \text{After Boost} \end{array}$$

Based on this example, the recommended model for this application is the 18035R020PC1.

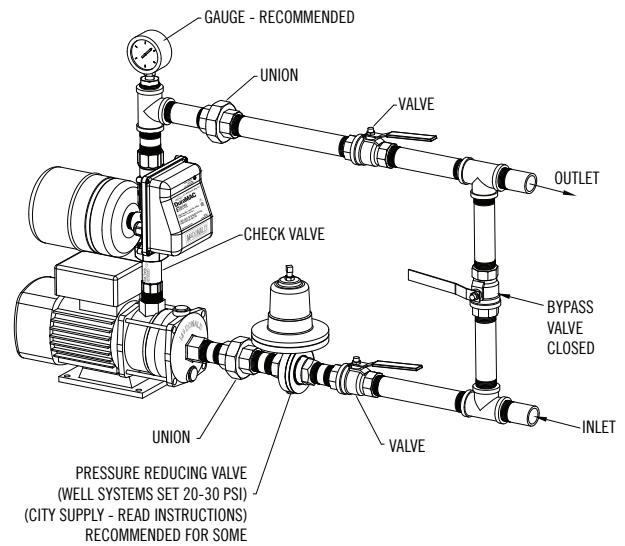
For systems with fluctuating pressure, a pressure reducing valve is recommended to assure system pressure stays below 80 PSI.

Dimensional Information



Typical Installation

CITY OR WELL SUPPLY



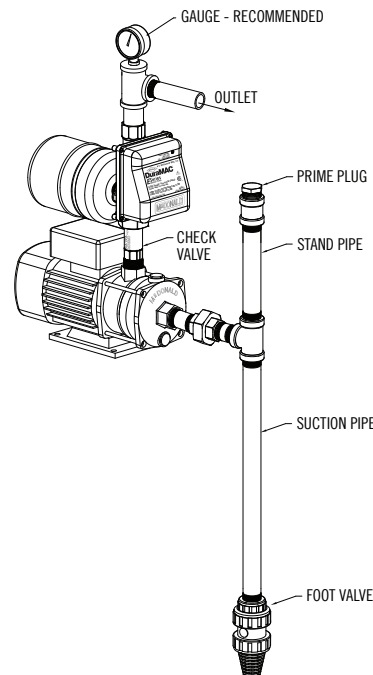
Sizing Chart

Total static pressure DuraMAC™ pump

Incoming Pressure (PSI)	18035R020PC1 +35 PSI	18052R020PC1 +52 PSI
60		
55	90	
50	85	
45	80	
40	75	
35	70	87
30	65	82
25	60	77
20	55	72
15	50	67
10	45	62

CONTACT FACTORY

**SUCTION LIFT
10 Ft. Max**



DuraMAC™ - Residential Booster

Not all boosting applications require complicated boosting systems. The DuraMAC™ Boosting system is simple, versatile, sophisticated, and reliable. Quite simply, it is the world's most versatile boosting system for residential use.

Features:

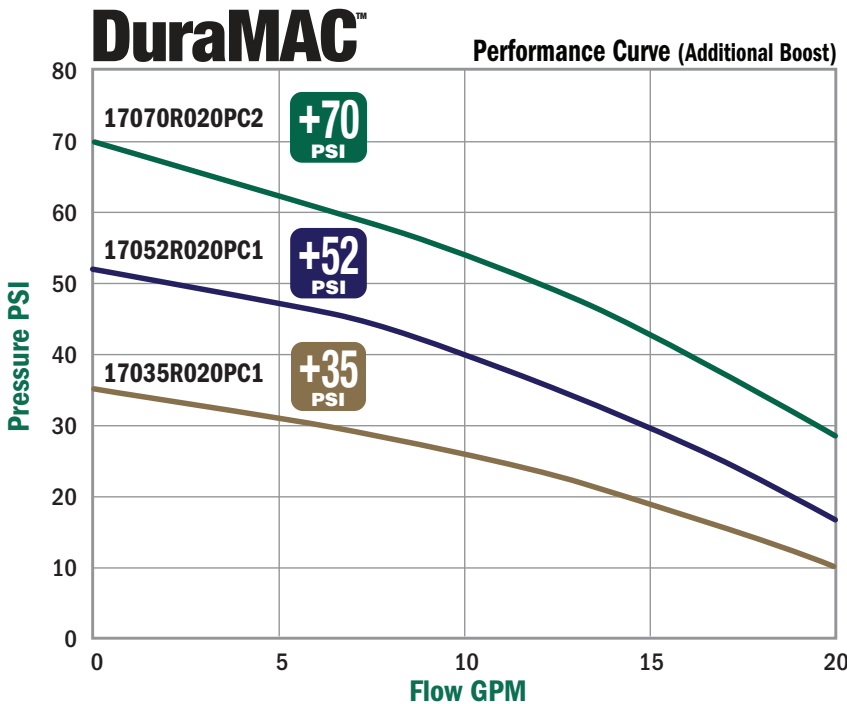
- Easy set-up installation
- Digital control for three modes of operation
- Durable stainless steel and no-lead brass connections
- Two gallon pressure tank included
- TEFC single phase motor for quiet operation
- Electronics separated and sealed from waterway
- Pressure gauge included
- No-Lead brass check valve included
- Dry-Run protection



See Pumps & Accessories Price List for Limited Warranty details.



DuraMAC™ Booster Pumps



20 Gallon / Minute (GPM) Max

DuraMAC™ Model	Pump Boost	Amps	Length "L"	Voltage	Power	*Pressure Reducing Valve Recommended for installation with incoming pressure greater than:	Wt.
17035R020PC1	35 PSI	5.5	15.26"	120 - 60 Hz	1/2 HP	45 PSI	33
17052R020PC1	52 PSI	7.0	15.97"	120 - 60 Hz	3/4 HP	28 PSI	37
17070R020PC2	70 PSI	4.0	16.68"	230 - 60 Hz	1 HP	10 PSI (for use with holding tank)	40

*Many plumbing codes do not recommend system pressure exceeding 80 PSI. Refer to local plumbing codes for maximum boosted pressure.

DuraMAC™ - Residential Booster

Sizing Information

DuraMAC™ Booster Systems are designed to shut off when no flow is detected. Pump pressure boost should be added to current system pressure to determine total system pressure when boosted.

Example:
Household system pressure before boost = 30 PSI

30	+	_____	=	_____	*Not Recommended to Exceed 80 PSI
Household Pressure		Total Pump Pressure		Total Pressure After Boost	

Models Available:

17035R020PC1	+35
17052R020PC1	+52
17070R020PC2	+70

30	+	35	=	65
Household Pressure		Total Pump Pressure		Total Pressure After Boost

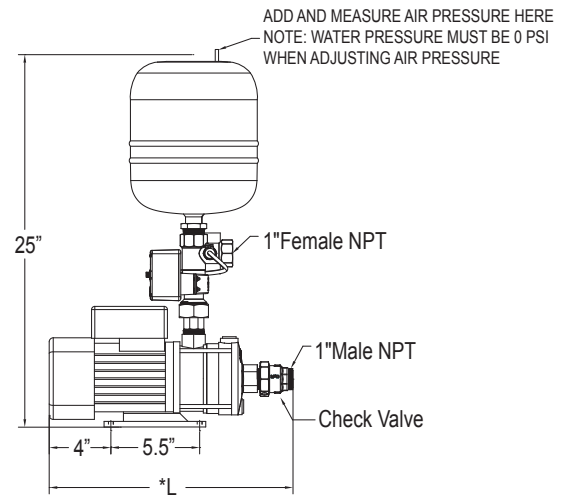
Based on this example, the recommended model for this application is the 17035R020PC1.

For systems with fluctuating pressure, a pressure reducing valve is recommended to assure system pressure stays below 80 PSI.

Materials of Construction

- Impellers	304 Stainless Steel
- Pump Casing Inlet	301 Stainless Steel
- Pump Casing Outlet	301 Stainless Steel
- Pump Seal (stationary)	Silicon Carbide
- Pump Seal (rotating)	Carbon / NBR
- Diffuser	304 Stainless Steel
- Check Valve	No-Lead Brass
- Pump Controller Cross	No-Lead Brass

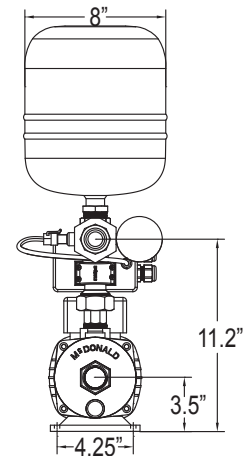
Typical Installation



Sizing Chart

Total static pressure **DuraMAC™** pump

Incoming Pressure (PSI)	17035R020PC1 +35	17052R020PC1 +52	17070R020PC2 +70
60			
55	90		
50	85	CONTACT FACTORY	
45	80		
40	75		
35	70		
30	65	87	
25	60	82	
20	55	77	
15	50	72	90
10	45	67	85
		62	80



DuraMAC™ - Light Commercial & Irrigation

Not all boosting applications require complicated boosting systems. The DuraMAC™ Boosting system is simple, versatile, sophisticated, and reliable. With an easy set-up installation and a versatile control with three modes of operation, this pump is flexible enough to meet your commercial or irrigation needs.

Features:

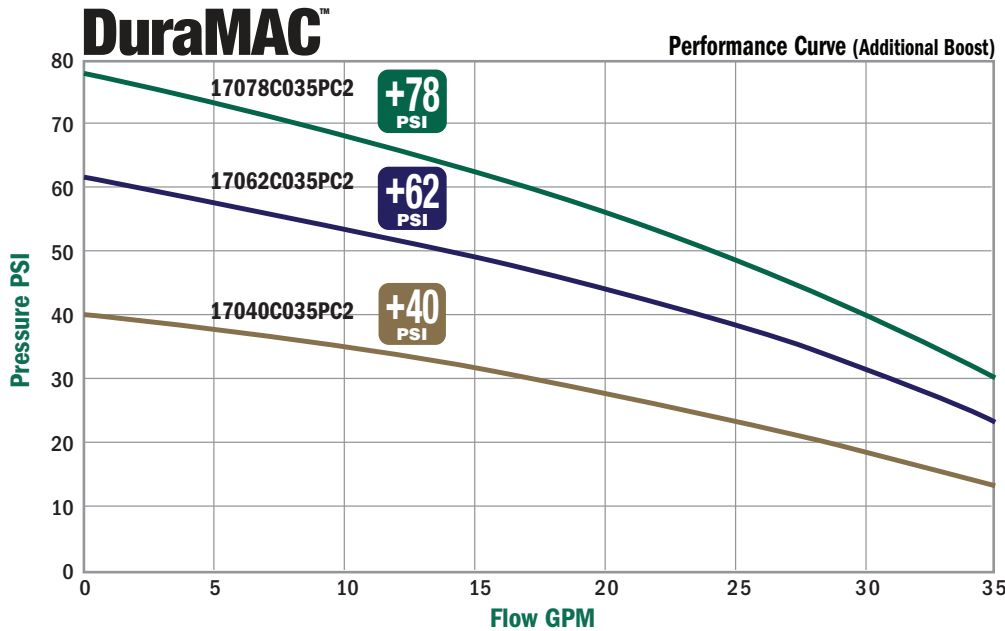
- Easy set-up installation
- Digital control for three modes of operation
- Durable stainless steel and no-lead brass connections
- Two gallon pressure tank included
- TEFC single phase motor for quiet operation
- Electronics separated and sealed from waterway
- Pressure gauge included
- No-Lead brass check valve included
- Dry-Run protection



See Pumps & Accessories Price List for Limited Warranty details.



DuraMAC™ Booster Pumps



35 Gallon / Minute (GPM) Max

DuraMAC™ Model	Pump Boost	Amps	Length "L"	Voltage	Power	*Pressure Reducing Valve Recommended for installation with incoming pressure greater than:	Wt.
17040C035PC2	40 PSI	5.0	15.43"	230 - 60 Hz	1 HP	40 PSI	38
17062C035PC2	62 PSI	6.3	16.49"	230 - 60 Hz	1 HP	18 PSI	41
17078C035PC2	78 PSI	6.8	17.55"	230 - 60 Hz	1 1/2 HP	2 PSI (for use with holding tank)	35

*Many plumbing codes do not recommend system pressure exceeding 80 PSI. Refer to local plumbing codes for maximum boosted pressure.

DuraMAC™ - Light Commercial & Irrigation

Sizing Information

DuraMAC™ Booster Systems are designed to shut off when no flow is detected. Pump pressure boost should be added to current system pressure to determine total system pressure when boosted.

Example:

Household system pressure before boost = 30 PSI

$$\begin{array}{rcccl} \mathbf{30} & + & & = & \\ \text{Household} & & \text{Total Pump} & & \text{Total Pressure} \\ \text{Pressure} & & \text{Pressure} & & \text{After Boost} \end{array} \quad \begin{array}{l} \text{*Not Recommended} \\ \text{to Exceed 80 PSI} \end{array}$$

Models Available:

17040C035PC2	+40
17062C035PC2	+62
17078C035PC2	+78

$$\begin{array}{rcccl} \mathbf{30} & + & \mathbf{40} & = & \mathbf{70} \\ \text{Household} & & \text{Total Pump} & & \text{Total Pressure} \\ \text{Pressure} & & \text{Pressure} & & \text{After Boost} \end{array}$$

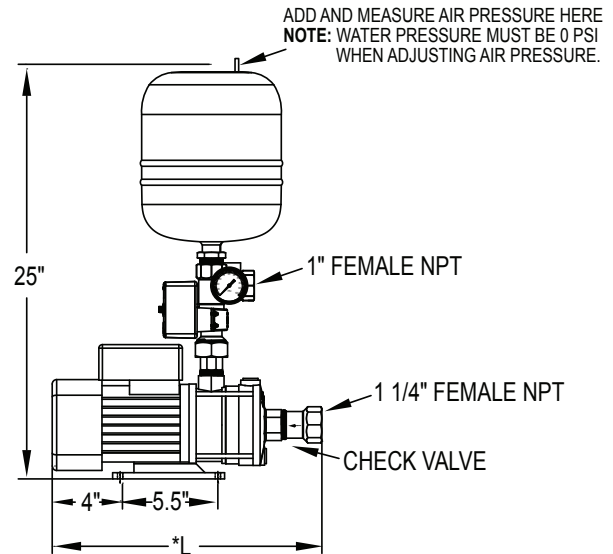
Based on this example, the recommended model for this application is the 17040C035PC2.

For systems with fluctuating pressure, a pressure reducing valve is recommended to assure system pressure stays below 80 PSI.

Materials of Construction

- Impellers	304 Stainless Steel
- Pump Casing Inlet	301 Stainless Steel
- Pump Casing Outlet	301 Stainless Steel
- Pump Seal (stationary)	Silicon Carbide
- Pump Seal (rotating)	Carbon / NBR
- Diffuser	304 Stainless Steel
- Check Valve	No-Lead Brass
- Pump Controller Cross	No-Lead Brass

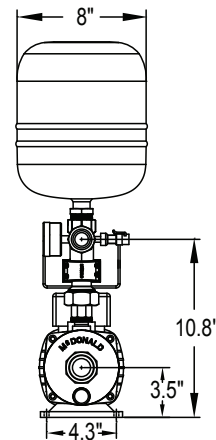
Typical Installation



Sizing Chart

Total static pressure **DuraMAC™** pump

Incoming Pressure (PSI)	17040C035PC2 +40 PSI	17062C035PC2 +62 PSI	17078C035PC2 +78 PSI
60			
55			
50	90	CONTACT FACTORY	
45	85		
40	80		
35	75		
30	70		
25	65	87	
20	60	82	
15	55	77	93
10	50	72	88



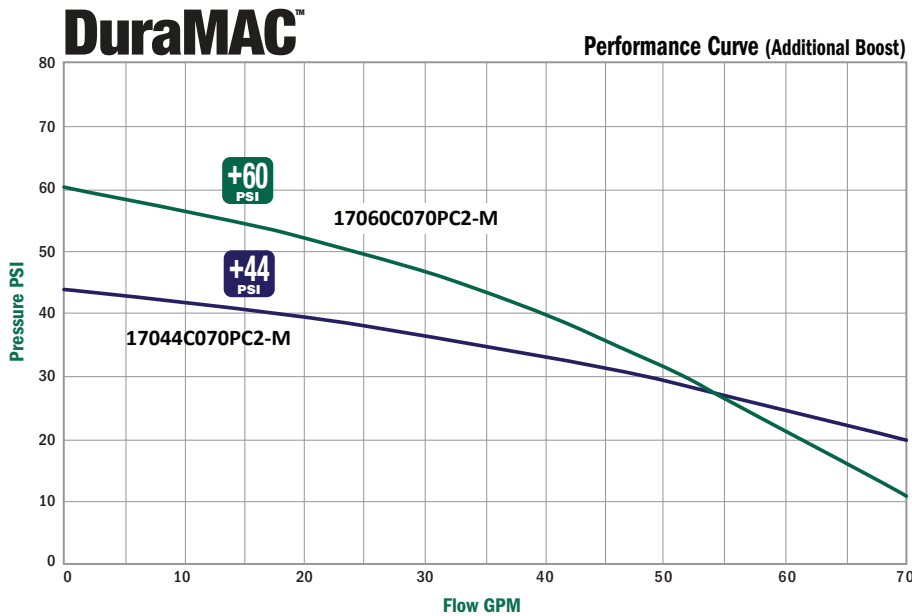
DuraMAC™ - Dual Mode Modular

Not all boosting applications require complicated boosting systems. The DuraMAC™ Boosting system is simple, versatile, sophisticated, and reliable. With a quick and easy installation, and unique digital control featuring dual modes of operation, this pump can meet your unique commercial or irrigation needs.

Features:

- Easy set-up installation
- Digital control with dual modes of operation
- Durable stainless steel and no-lead brass connections
- TEFC single phase motor for quiet operation
- Electronics separated and sealed from waterway
- Pressure gauge included
- No-Lead brass check valve included (meets no-lead compliance)
- Standard, 1 year from install warranty applies

See Pumps & Accessories Price List for Limited Warranty details.



70 Gallon / Minute (GPM) Max

DuraMAC™ Model	Description	Pump Boost	Amps	Voltage	Power	*Pressure Reducing Valve Recommended for installation with incoming pressure greater than:	Wt.
17044C070PC2-M	230V Booster System	44 PSI	7.0	230 - 60 Hz	2 HP	36 PSI	56
17060C070PC2-M	230V Booster System	60 PSI	8.0	230 - 60 Hz	2 HP	20 PSI	56

Pressure tank required. See instruction manual for sizing information.

*Many plumbing codes do not recommend system pressure exceeding 80 PSI. Refer to local plumbing codes for maximum boosted pressure.

DuraMAC™ - Dual Mode Modular

Control Features

The DuraMAC™ Dual-Mode control has the flexibility to be run in two different modes.



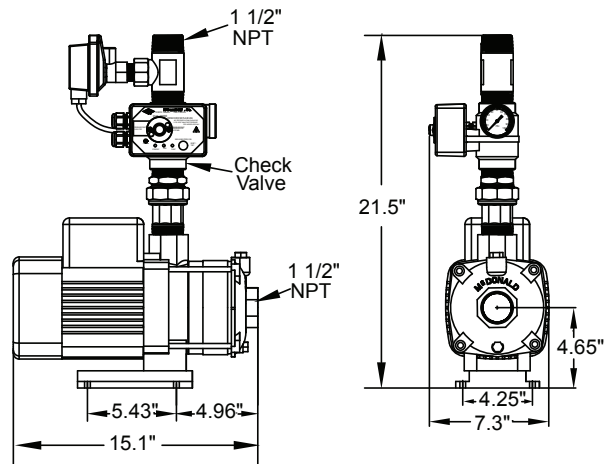
PRESSURE MODE

START METHOD: Pressure Drop

STOP METHOD: Low Flow

In Pressure Mode, the control accurately measures pressure with a pressure transducer and starts the pump at an adjustable start pressure point. The pump will stop when the flow is less than three Gallons per Minute.

This smart system will only run the pump when water is in use. There is a preset seven second delay after water is not flowing past the flow sensor to fully pressurize your system and eliminate water hammer.



Dual-Mode Modular Shown.
Skid mounted Simplex and Duplex available.



FLOW MODE

START METHOD: Water Flow

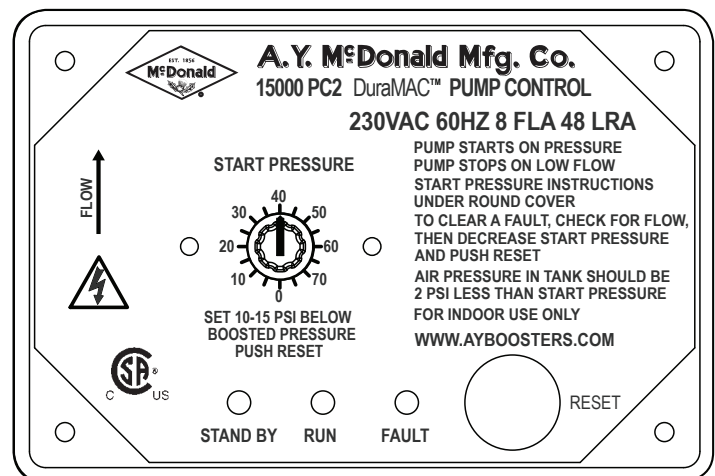
STOP METHOD: Low Flow

In Flow Mode, the control will start and stop on flow, regardless of pressure. This method can be used for systems with minor leaking or when incoming pressure varies. The starting flow rate is approximately five Gallons per Minute. The pump will stop when the flow is less than three Gallons per Minute.

DuraMAC™ Booster Pumps

Materials of Construction

- Impellers	304 Stainless Steel
- Pump Casing Inlet	301 Stainless Steel
- Pump Casing Outlet	301 Stainless Steel
- Pump Seal (stationary)	Silicon Carbide
- Pump Seal (rotating)	Carbon / NBR
- Diffuser	304 Stainless Steel
- Union Connection	No-Lead Brass
- Check Valve	No-Lead Brass
- Pump Control	No-Lead Brass
- Motor - Single Phase	2 HP TEFC



DuraMAC™ - Dual Mode Simplex

Not all boosting applications require complicated boosting systems. The DuraMAC™ Boosting system is simple, versatile, sophisticated, and reliable. With the ability to pump up to 70 GPM this unique pump is ideal for commercial or irrigation use.

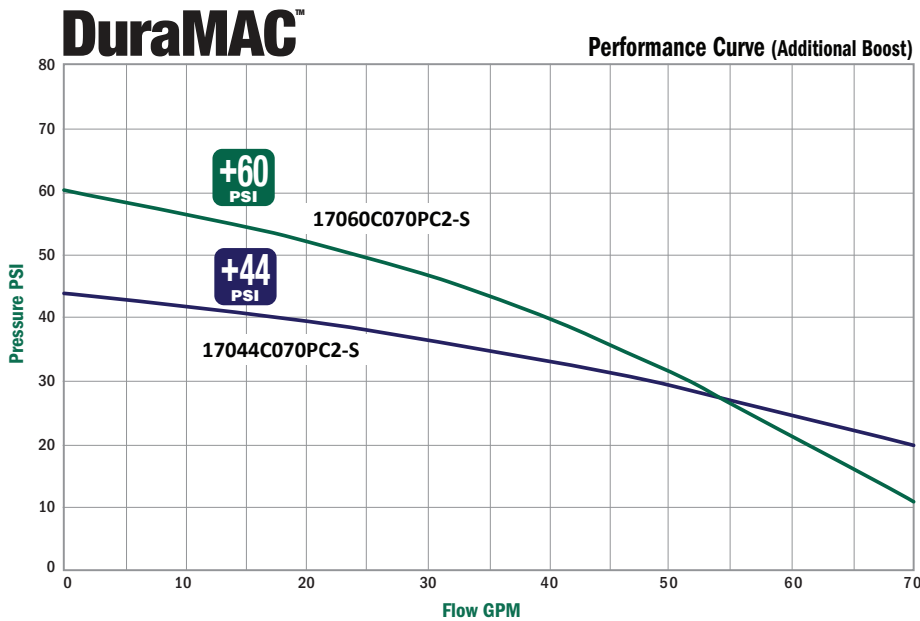
Features:

- Easy set-up installation
- Digital control with dual modes of operation
- Durable stainless steel and no-lead brass connections
- TEFC single phase motor for quiet operation
- Electronics separated and sealed from waterway
- Pressure gauge included
- No-Lead brass check valve included
- Up to 70 GPM
- 20 gallon pressure tank included
- Stainless steel base
- Dry run protection
- Standard, 1 year from install warranty applies



See Pumps & Accessories Price List for Limited Warranty details.

DuraMAC™ Booster Pumps



70 Gallon / Minute (GPM) Max

DuraMAC™ Model	Description	Pump Boost	Amps	Voltage	Power	*Pressure Reducing Valve Recommended for installation with incoming pressure greater than:	Wt.
17044C070PC2-S	230V Booster System	44 PSI	7.0	230 - 60 Hz	2 HP	36 PSI	168
17060C070PC2-S	230V Booster System	60 PSI	8.0	230 - 60 Hz	2 HP	20 PSI	168

Pressure tank required. See instruction manual for sizing information.

*Many plumbing codes do not recommend system pressure exceeding 80 PSI. Refer to local plumbing codes for maximum boosted pressure.

DuraMAC™ - Dual Mode Simplex

Control Features

The DuraMAC™ Dual-Mode control has the flexibility to be run in two different modes.



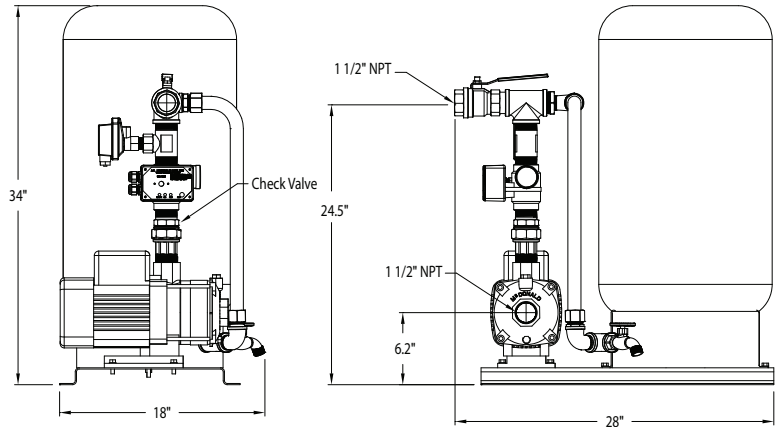
PRESSURE MODE

START METHOD: Pressure Drop

STOP METHOD: Low Flow

In Pressure Mode, the control accurately measures pressure with a pressure transducer and starts the pump at an adjustable start pressure point. The pump will stop when the flow is less than three Gallons per Minute.

This smart system will only run the pump when water is in use. There is a preset seven second delay after water is not flowing past the flow sensor to fully pressurize your system and eliminate water hammer.



Simplex base mounted with 20 gallon tank.



FLOW MODE

START METHOD: Water Flow

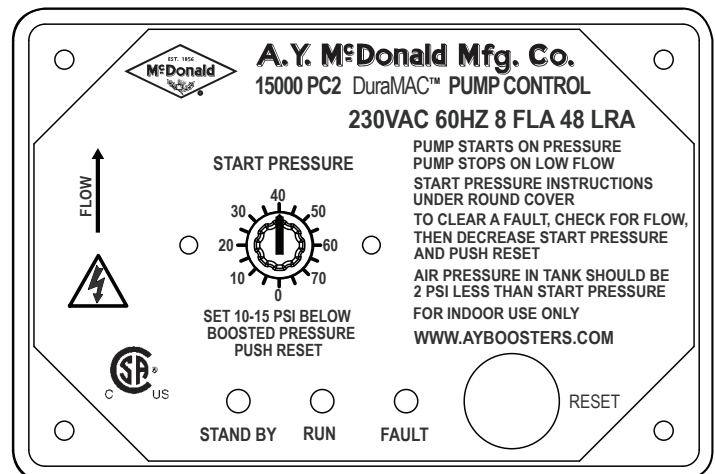
STOP METHOD: Low Flow

In Flow Mode, the control will start and stop on flow, regardless of pressure. This method can be used for systems with minor leaking or when incoming pressure varies. The starting flow rate is approximately five Gallons per Minute. The pump will stop when the flow is less than three Gallons per Minute.

DuraMAC™ Booster Pumps

Materials of Construction

- Impellers	304 Stainless Steel
- Pump Casing Inlet	301 Stainless Steel
- Pump Casing Outlet	301 Stainless Steel
- Pump Seal (stationary)	Silicon Carbide
- Pump Seal (rotating)	Carbon / NBR
- Diffuser	304 Stainless Steel
- Union Connection	No-Lead Brass
- Check Valve	No-Lead Brass
- Pump Control	No-Lead Brass
- Motor - Single Phase	2 HP TEFC
- Base	304 Stainless Steel



DuraMAC™ - Dual Mode Duplex

Not all boosting applications require complicated boosting systems. The DuraMAC™ Boosting system is simple, versatile, sophisticated, and reliable. Quite simply, it is the world's most versatile boosting system for commercial or irrigation use.

Features:

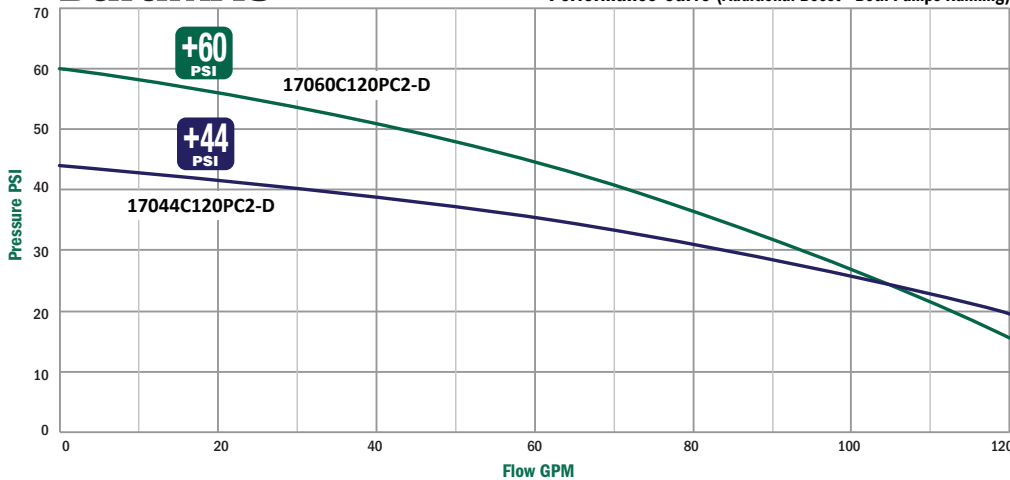
- Easy set-up installation
- Digital control with dual modes of operation
- Durable stainless steel and no-lead brass connections
- TEFC single phase motor for quiet operation
- Electronics separated and sealed from waterway
- Pressure gauge included
- No-Lead brass check valve included
- Designed for Lead-Lag
- Up to 120 GPM
- 20 gallon pressure tank included
- Stainless steel base
- Dry run protection
- Standard, 1 year from install warranty applies



See Pumps & Accessories Price List for Limited Warranty details.

DuraMAC™

Performance Curve (Additional Boost - Both Pumps Running)



120 Gallon / Minute (GPM) Max

DuraMAC™ Model	Description	Pump Boost	Amps	Voltage	Power	*Pressure Reducing Valve Recommended for installation with incoming pressure greater than:	Wt.
17044C120PC2-D	230V Booster System	44 PSI	7.0	230 - 60 Hz	2 HP	36 PSI	252
17060C120PC2-D	230V Booster System	60 PSI	8.0	230 - 60 Hz	2 HP	20 PSI	252

Pressure tank required. See instruction manual for sizing information.

*Many plumbing codes do not recommend system pressure exceeding 80 PSI. Refer to local plumbing codes for maximum boosted pressure.

DuraMAC™ - Dual Mode Simplex

Control Features

The DuraMAC™ Dual-Mode control has the flexibility to be run in two different modes.



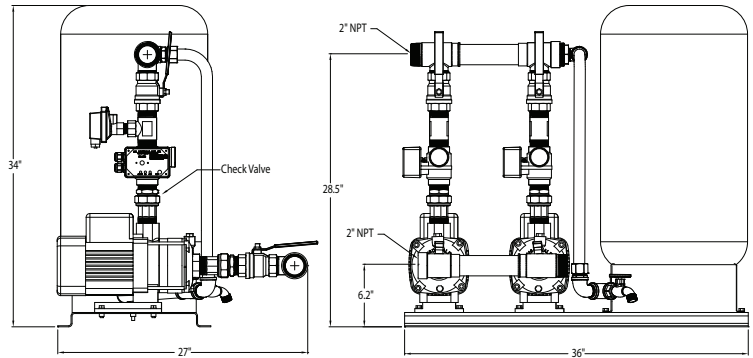
PRESSURE MODE

START METHOD: Pressure Drop

STOP METHOD: Low Flow

In Pressure Mode, the control accurately measures pressure with a pressure transducer and starts the pump at an adjustable start pressure point. The pump will stop when the flow is less than three Gallons per Minute.

This smart system will only run the pump when water is in use. There is a preset seven7 second delay after water is not flowing past the flow sensor to fully pressurize your system and eliminate water hammer.



Duplex base mounted with 20-gallon tank 2" NPT manifolds with ball valves.



FLOW MODE

START METHOD: Water Flow

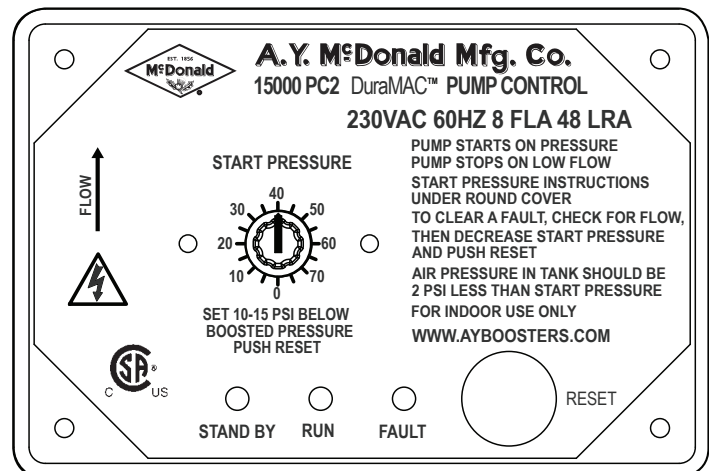
STOP METHOD: Low Flow

In Flow Mode, the control will start and stop on flow, regardless of pressure. This method can be used for systems with minor leaking or when incoming pressure varies. The starting flow rate is approximately five Gallons per Minute. The pump will stop when the flow is less than three Gallons per Minute.

DuraMAC™ Booster Pumps

Materials of Construction

- Impellers	304 Stainless Steel
- Pump Casing Inlet	301 Stainless Steel
- Pump Casing Outlet	301 Stainless Steel
- Pump Seal (stationary)	Silicon Carbide
- Pump Seal (rotating)	Carbon / NBR
- Diffuser	304 Stainless Steel
- Union Connection	No-Lead Brass
- Check Valve	No-Lead Brass
- Pump Control	No-Lead Brass
- Motor - Single Phase	2 HP TEFC
- Base	304 Stainless Steel



How to Order a Vertical Multistage Simplex / Duplex / Triplex System

Order by Model Number - Example: 17060V140Y-34

17

Series

060

**Water Pressure
at 0 GPM**

056
060
062
084
088
104
140
142
150

V

**Variable
Speed**

140

GPM

080
120
140
160
240
280
360
420

Y

**Yaskawa
Drive**

-

3

Phase

1 - Single Phase
3 - Three Phase

4

Volts

4 - 460V
Leave blank for
208 / 230 volts
(standard)

Models Available

- Simplex Models

17062V080Y-1	17150V080Y-3
17062V080Y-3	17142V120Y-3
17084V080Y-1	17056V120Y-1
17084V080Y-3	17060V140Y-3
17104V080Y-1	17088V140Y-3
17104V080Y-3	

Models Available

- Duplex Models

17062V160Y-1	17150V160Y-3
17062V160Y-3	17142V240Y-3
17084V160Y-1	17056V240Y-1
17084V160Y-3	17060V280Y-3
17104V160Y-1	17088V280Y-3
17104V160Y-3	

Models Available

- Triplex Models


17062V240Y-3	17150V240Y-34
17062V240Y-34	17142V360Y-3
17084V240Y-3	17142V360Y-34
17084V240Y-34	17060V420Y-3
17104V240Y-3	17060V420Y-34
17104V240Y-34	17088V420Y-3
17150V240Y-3	17088V420Y-34



How It Works

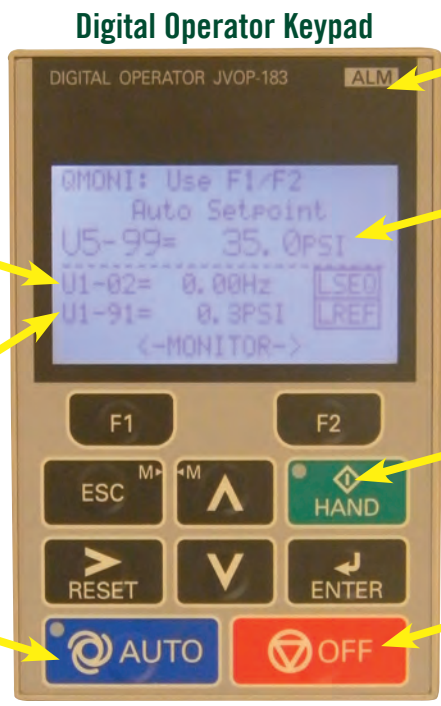
The Yaskawa iQpump 1000 drive features powerful software combined with an internal PLC to deliver multiple features that are designed help protect the drive, pump, motor, and entire pumping system. While many of these features are factory programmed and set, many features depend on the specific pumping application and may be required to be set during install.



Changing certain parameters while the drive and pump are running may cause unwanted behavior. It is recommended to turn the drive off  before changing parameter values.

To return to home screen, hold  for 3 seconds, or press . The display should look similar to the one below. Once at the home screen, additional drive status can be viewed by pressing .

Pump Output Frequency
 Transducer Feedback
 (Actual System Pressure)



Alarm light blinks if alarm or fault occurs.

System Outlet Pressure Auto Setpoint

Press to turn HAND mode on. Use only for Priming and troubleshooting. Pump will run at a fixed speed.

Do not run against a closed discharge.

Press to turn AUTO mode on.
 If LED is blinking, Auto mode is active but pump is sleeping.

Press to turn system off.

DuraMAC™ Booster Pumps

DuraMAC™ Vertical Multistage Variable Speed Simplex / Duplex / Triplex Booster Pump Control Features

- Set it and forget it technology
- Factory set point at 50 PSI, but can be easily be changed in the field
- Extremely reliable
- Proven product
- Yaskawa Drive



DuraMAC™ - Vertical Multistage Variable Speed Simplex Booster System

The DuraMAC™ Boosting system is simple, versatile, sophisticated, and reliable. The Vertical Multistage Variable Speed Booster System changes motor speed based on demands of the system, which allows users to save energy costs over traditional constant speed booster systems.

Features:

- Easy set-up installation
- Variable speed control
- Stainless steel pump
- Energy efficient NEMA TEFC motors
- Liquid filled gauges
- Wafer check valves with soft seat
- Stainless steel base
- 2" Brass No-Lead isolation valves
- NEMA 1 enclosure
- Suction and discharge transducers
- Fused disconnect
- 2" Suction and discharge
- **Certified to:**
NSF / ANSI 61 Section 8-2016
NSF / ANSI 372-2016



See Pumps & Accessories Price List for Limited Warranty details.

DuraMAC™ Booster Pumps



Models Available

Model	Description	Pump Boost	Voltage	HP
17062V080Y-1	62 PSI 230V VFD Booster	62 PSI	208 - 230 - Single Phase	3
17062V080Y-3	62 PSI 230V VFD Booster	62 PSI	208 - 230 - Three Phase	3
17084V080Y-1	84 PSI 230V VFD Booster	84 PSI	208 - 230 - Single Phase	5
17084V080Y-3	84 PSI 230V VFD Booster	84 PSI	208 - 230 - Three Phase	5
17104V080Y-1	104 PSI 230V VFD Booster	104 PSI	208 - 230 - Single Phase	5
17104V080Y-3	104 PSI 230V VFD Booster	104 PSI	208 - 230 - Three Phase	5
17150V080Y-3	150 PSI 230V VFD Booster	150 PSI	208 - 230 - Three Phase	7 1/2
17142V120Y-3	142 PSI 230V VFD Booster	142 PSI	208 - 230 - Three Phase	10
17056V120Y-1	56 PSI 230V VFD Booster	56 PSI	208 - 230 - Single Phase	5
17060V140Y-3	60 PSI 230V VFD Booster	60 PSI	208 - 230 - Three Phase	5
17088V140Y-3	88 PSI 230V VFD Booster	88 PSI	208 - 230 - Three Phase	7 1/2

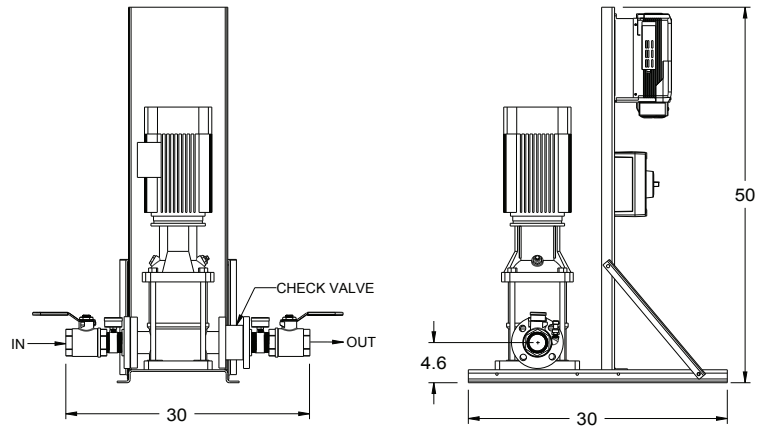
460 volt version also available

A.Y. McDonald considers the information on this sheet correct when published. Specifications are subject to change with notice.

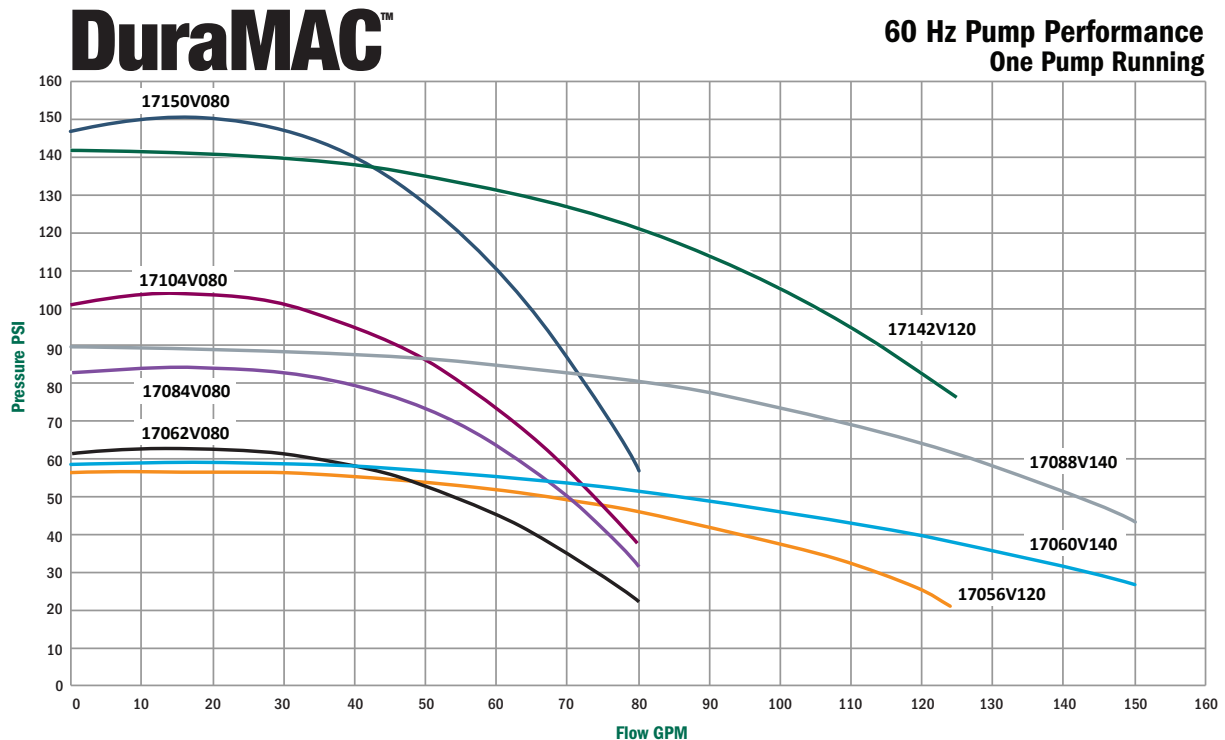
DuraMAC™ - Vertical Multistage Variable Speed Simplex Booster System

Control Features

- Variable speed control, speeds up and slows down based on the demand of system, maintaining a constant pressure.
- Date and time stamp for all faults.
- Better system efficiency by applying only the power needed based on the load.
- Password protected parameter settings.
- Real time clock.
- No Flow Mode - puts pump to sleep during no flow conditions.
- Low Suction Alarm to prevent the pump from running if the incoming supply of water is interrupted.
- Internal monitors prevent the pump from running if a pipe is broken or demand exceeds capability.
- Live Zero protects the pump if the transducer cable is broken or damaged.



DuraMAC™ Booster Pumps



Materials of Construction

- Impellers	304 Stainless Steel	- Pump Seal (rotating)	Carbon / NBR
- Pump Casing Inlet	301 Stainless Steel	- Diffuser	304 Stainless Steel
- Pump Casing Outlet	301 Stainless Steel	- Base	304 Stainless Steel
- Pump Seal (stationary)	Silicon Carbide		

DuraMAC™ - Vertical Multistage Variable Speed Duplex Booster System

The DuraMAC™ Boosting system is simple, versatile, sophisticated, and reliable. The Vertical Multistage Variable Speed Booster System changes motor speed based on demands of the system, which allows users to save energy costs over traditional constant speed booster systems.

Features:

- Easy set-up installation
- Variable speed control
- Stainless steel pump
- Energy efficient NEMA TEFC motors
- Liquid filled gauges
- Wafer check valves with soft seat
- Stainless steel base
- 2" Brass No-Lead isolation valves
- NEMA 1 enclosure
- Suction and discharge transducers
- Fused disconnect
- 3" Flanged stainless steel manifolds
- **Certified to:**
NSF / ANSI 61 Section 8-2016
NSF / ANSI 372-2016



See Pumps & Accessories Price List for Limited Warranty details.



C US
ANSI/NSF 372 ONLY



C US
Drinking Water
ANSI/NSF 61

Models Available

Model	Description	Pump Boost	Voltage	HP
17062V160Y-1	62 PSI 230V VFD Booster	62 PSI	208 - 230 - Single Phase	3
17062V160Y-3	62 PSI 230V VFD Booster	62 PSI	208 - 230 - Three Phase	3
17084V160Y-1	84 PSI 230V VFD Booster	84 PSI	208 - 230 - Single Phase	5
17084V160Y-3	84 PSI 230V VFD Booster	84 PSI	208 - 230 - Three Phase	5
17104V160Y-1	104 PSI 230V VFD Booster	104 PSI	208 - 230 - Single Phase	5
17104V160Y-3	104 PSI 230V VFD Booster	104 PSI	208 - 230 - Three Phase	5
17150V160Y-3	150 PSI 230V VFD Booster	150 PSI	208 - 230 - Three Phase	7 1/2
17142V240Y-3	142 PSI 230V VFD Booster	142 PSI	208 - 230 - Three Phase	10
17056V240Y-1	56 PSI 230V VFD Booster	56 PSI	208 - 230 - Single Phase	5
17060V280Y-3	60 PSI 230V VFD Booster	60 PSI	208 - 230 - Three Phase	5
17088V280Y-3	88 PSI 230V VFD Booster	88 PSI	208 - 230 - Three Phase	7 1/2

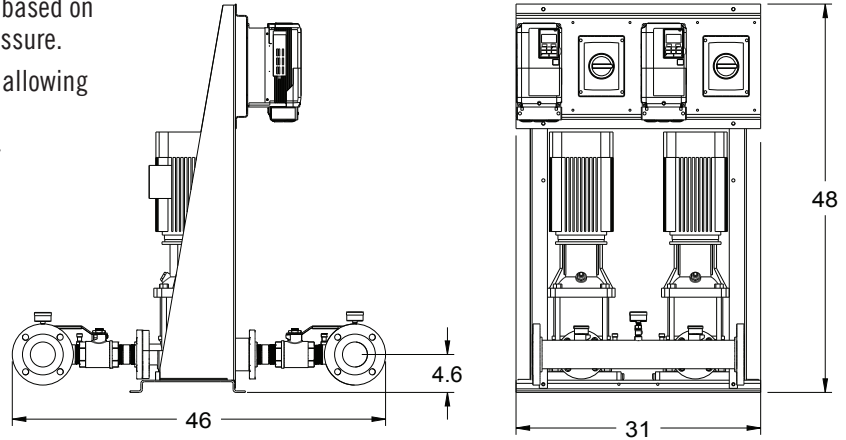
460 volt version also available

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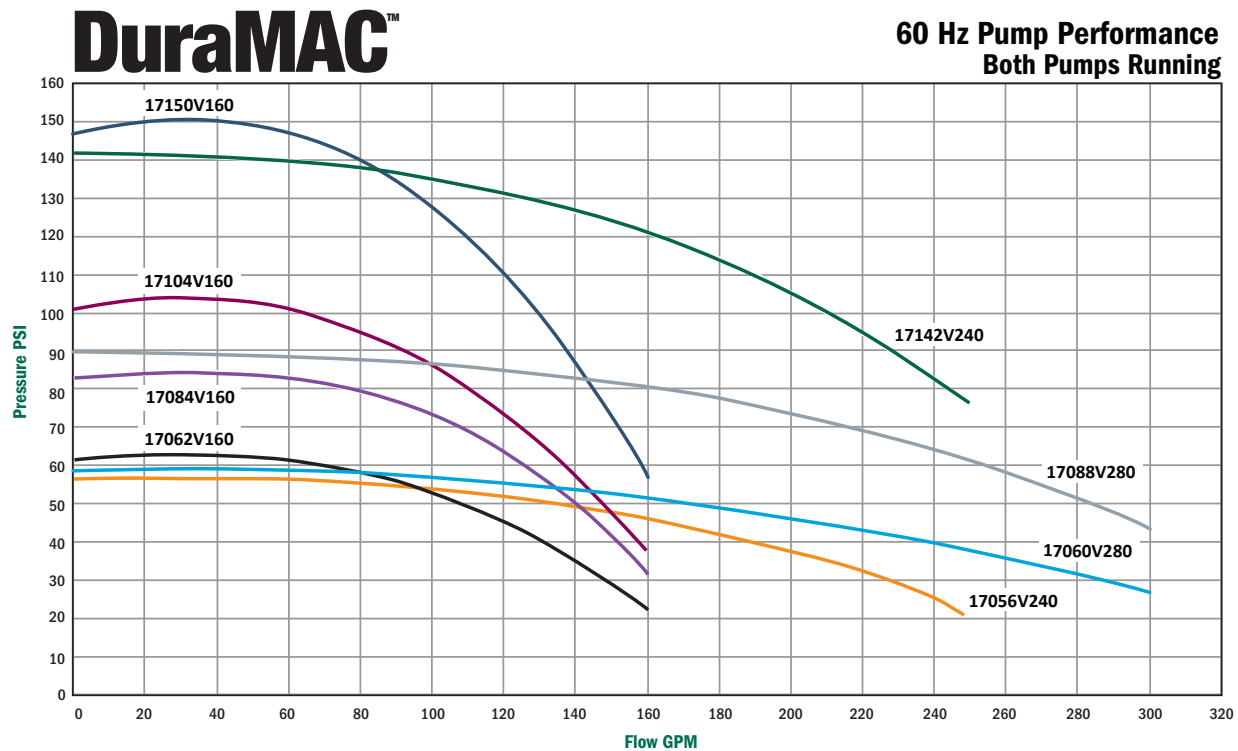
DuraMAC™ - Vertical Multistage Variable Speed Duplex Booster System

Control Features

- Variable speed control, speeds up and slows down based on the demand of system, maintaining a constant pressure.
- Lead - Lag pump control to alternate pump starts, allowing equal run times on all pumps for longer life cycles.
- Better system efficiency by applying only the power needed based on the load.
- Password protected parameter settings.
- Real time clock.
- No Flow Mode - puts pump to sleep during no flow conditions.
- Low Suction Alarm to prevent the pump from running if the incoming supply of water is interrupted.
- Internal monitors prevent the pump from running if a pipe is broken or demand exceeds capability.
- Live Zero protects the pump if the transducer cable is broken or damaged.
- Backup system transducer for pump and drive redundancy.



DuraMAC™ Booster Pumps



Materials of Construction

- Impellers	304 Stainless Steel	- Pump Seal (rotating)	Carbon / NBR
- Pump Casing Inlet	301 Stainless Steel	- Diffuser	304 Stainless Steel
- Pump Casing Outlet	301 Stainless Steel	- Base	304 Stainless Steel
- Pump Seal (stationary)	Silicon Carbide		

DuraMAC™ - Vertical Multistage Variable Speed Triplex Booster System

The DuraMAC™ Boosting system is simple, versatile, sophisticated, and reliable. The Vertical Multistage Variable Speed Booster System changes motor speed based on demands of the system, which allows users to save energy costs over traditional constant speed booster systems.

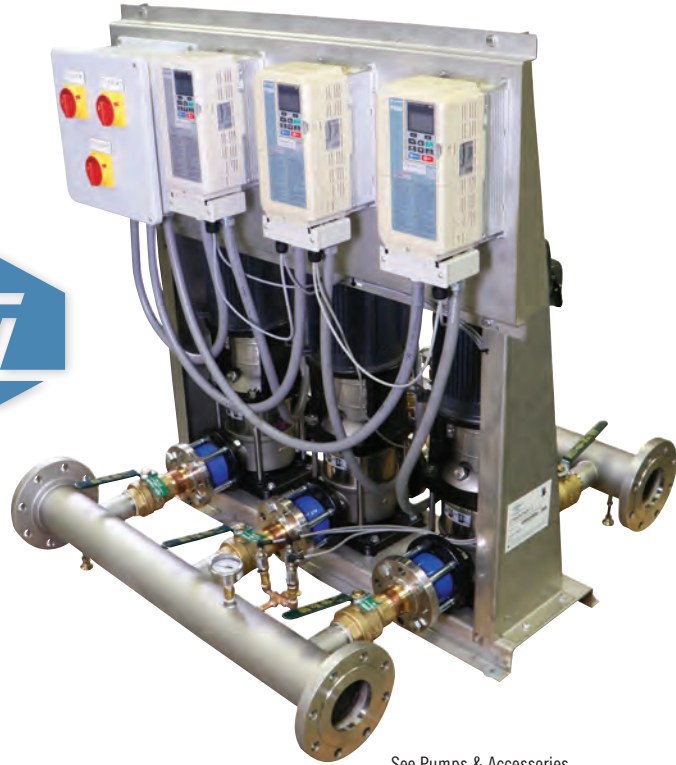
Features:

- Easy set-up installation
- Variable speed control
- Stainless steel pump
- Energy efficient NEMA TEFC motors
- Liquid filled gauges
- Wafer check valves with soft seat
- Stainless steel base
- 2" Brass No-Lead isolation valves
- NEMA 1 enclosure
- Suction and discharge transducers
- Fused disconnect
- 4" Flanged stainless steel manifolds

Certified to:

NSF / ANSI 61 Section 8-2016

NSF / ANSI 372-2016



See Pumps & Accessories Price List for Limited Warranty details.



C US
ANSI/NSF 372 ONLY



C US
Drinking Water
ANSI/NSF 61

Models Available

Model	Description	Pump Boost	Voltage	HP
17062V240Y-3	62 PSI 230V VFD Booster	62 PSI	208 - 230 - Three Phase	3
17084V240Y-3	84 PSI 230V VFD Booster	84 PSI	208 - 230 - Three Phase	5
17104V240Y-3	104 PSI 230V VFD Booster	104 PSI	208 - 230 - Three Phase	5
17150V240Y-3	150 PSI 230V VFD Booster	150 PSI	208 - 230 - Three Phase	7 1/2
17142V360Y-3	142 PSI 230V VFD Booster	142 PSI	208 - 230 - Three Phase	10
17060V420Y-3	60 PSI 230V VFD Booster	60 PSI	208 - 230 - Three Phase	5
17088V420Y-3	88 PSI 230V VFD Booster	88 PSI	208 - 230 - Three Phase	7 1/2

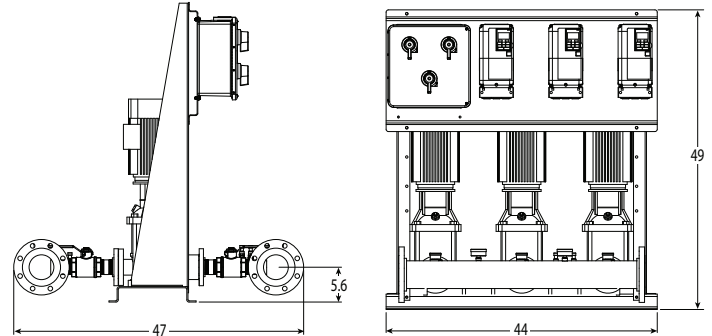
460 volt version also available

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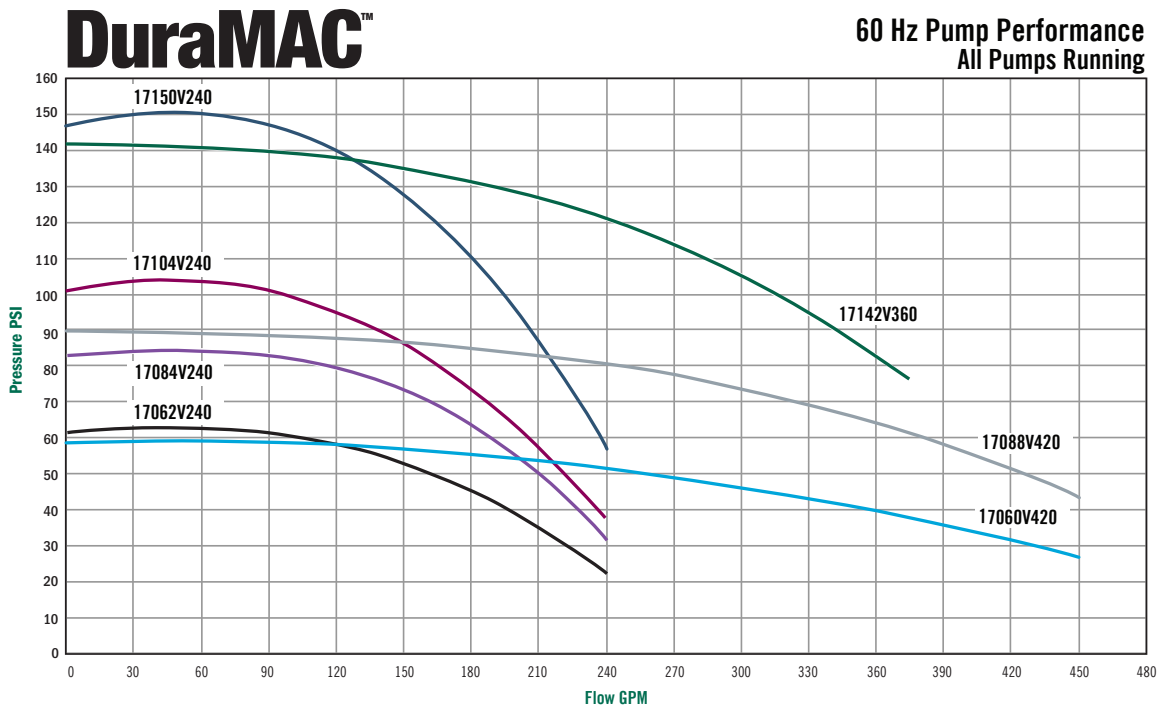
DuraMAC™ - Vertical Multistage Variable Speed Triplex Booster System

Control Features

- Variable speed control, speeds up and slows down based on the demand of system, maintaining a constant pressure.
- Lead - Lag pump control to alternate pump starts, allowing equal run times on all pumps for longer life cycles.
- Better system efficiency by applying only the power needed based on the load.
- Password protected parameter settings.
- Real time clock.
- No Flow Mode - puts pump to sleep during no flow conditions.
- Low Suction Alarm to prevent the pump from running if the incoming supply of water is interrupted.
- Internal monitors prevent the pump from running if a pipe is broken or demand exceeds capability.
- Live Zero protects the pump if the transducer cable is broken or damaged.
- Backup system transducer for pump and drive redundancy.



DuraMAC™ Booster Pumps



Materials of Construction

- Impellers	304 Stainless Steel	- Pump Seal (rotating)	Carbon / NBR
- Pump Casing Inlet	301 Stainless Steel	- Diffuser	304 Stainless Steel
- Pump Casing Outlet	301 Stainless Steel	- Base	304 Stainless Steel
- Pump Seal (stationary)	Silicon Carbide		

How to Order a Vertical Multistage Simplex / Duplex

Order by Model Number - Example: 17066V040Y-3

17	066	V	040	Y	-	3	
Series	Water Pressure at 0 GPM	Variable Speed	GPM	Yaskawa Drive		Phase	Volts
	066 103 110 122 140		020 040 080			1 - Single Phase 3 - Three Phase	Leave blank for 208 / 230 volts (standard)

DuraMAC™ Booster Pumps

Models Available

- Simplex Models

17103V020Y-1	17110V040Y-3
17103V020Y-3	17110V040Y-3
17140V020Y-1	17122V040Y-1
17140V020Y-3	17122V040Y-3
17066V040Y-1	
17066V040Y-3	

Models Available

- Duplex Models


17103V040Y-1	17110V080Y-3
17103V040Y-3	17110V080Y-3
17140V040Y-1	17122V080Y-1
17140V040Y-3	17122V080Y-3
17066V080Y-1	
17066V080Y-3	





How It Works


The Yaskawa iQpump micro drive features powerful software combined with an internal PLC to deliver multiple features that are designed help protect the drive, pump, motor, and entire pumping system. While many of these features are factory programmed and set, many features depend on the specific pumping application and may be required to be set during install.



Changing certain parameters while the drive and pump are running may cause unwanted behavior. It is recommended to turn the drive off  before changing parameter values.

To return to home screen, hold  for 3 seconds. The display should look similar to the one below. Once at the home screen, additional drive status can be viewed by pressing . Additional drive information includes output frequency, current, voltage, DC bus voltage, and kilowatts.

Digital Operator Keypad



System Outlet Pressure Auto Setpoint

Press to turn AUTO mode on. If LED is blinking, Auto mode is active but pump is sleeping.

Press to turn HAND mode on. Use only for Priming and troubleshooting. Pump will run at a fixed speed. Do not run against a closed discharge.

Alarm light blinks if alarm or fault occurs.

Press to turn system off.

DuraMAC™ Booster Pumps

DuraMAC™ Vertical Multistage Variable Speed Simplex / Duplex Booster Pump Control Features

- Set it and forget it technology
- Factory set point at 50 PSI, but can be easily be changed in the field
- Extremely reliable
- Proven product
- Yaskawa Drive



DuraMAC™ - Vertical Multistage Variable Speed Simplex Booster System

The DuraMAC™ 1 1/2 to 3 HP Vertical Multistage Variable Speed Simplex Booster capable of up to 140 PSI and 40 gallons per minute (GPM). It's simple, versatile, sophisticated, and reliable. The Vertical Multistage Variable Speed Booster System changes motor speed based on demands of the system, which allows users to save energy costs over traditional constant speed booster systems.

Features:

- Easy set-up installation
- Variable speed control
- Stainless steel pump
- Energy efficient NEMA TEFC motors
- Liquid filled gauge
- Stainless steel base
- NEMA 1 enclosure
- 1 1/4" Suction & 1 1/4" Discharge
- Discharge transducer



See Pumps & Accessories Price List for Limited Warranty details.

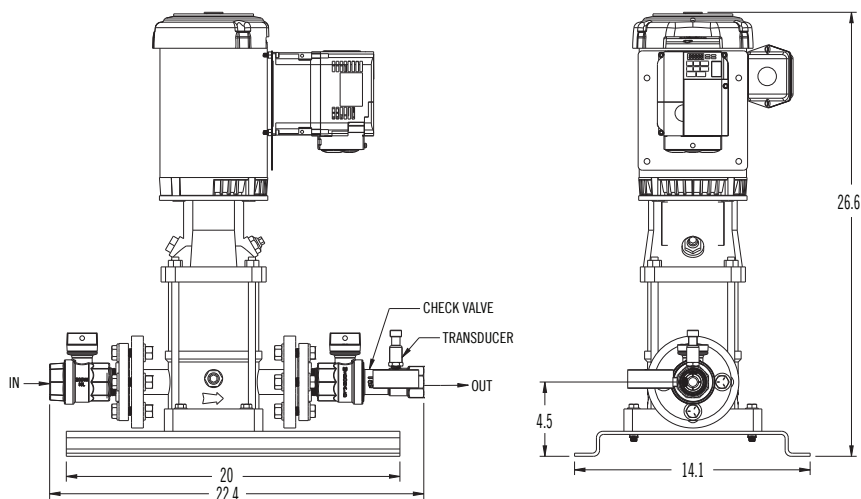
Models Available

Model	Description	Pump Boost	Voltage	GPM	HP
17103V020Y-1	103 PSI 230V VFD Booster	103 PSI	230V Single Phase	20	1 1/2
17103V020Y-3	103 PSI 230V VFD Booster	103 PSI	230V Three Phase	20	1 1/2
17140V020Y-1	140 PSI 230V VFD Booster	140 PSI	230V Single Phase	20	2
17140V020Y-3	140 PSI 230V VFD Booster	140 PSI	230V Three Phase	20	2
17066V040Y-1	66 PSI 230V VFD Booster	66 PSI	230V Single Phase	40	2
17066V040Y-3	66 PSI 230V VFD Booster	66 PSI	230V Three Phase	40	2
17110V040Y-1	110 PSI 230V VFD Booster	110 PSI	230V Single Phase	40	3
17110V040Y-3	110 PSI 230V VFD Booster	110 PSI	230V Three Phase	40	3
17122V040Y-1	122 PSI 230V VFD Booster	122 PSI	230V Single Phase	40	3
17122V040Y-3	122 PSI 230V VFD Booster	122 PSI	230V Three Phase	40	3

DuraMAC™ - Vertical Multistage Variable Speed Simplex Booster System

Control Features

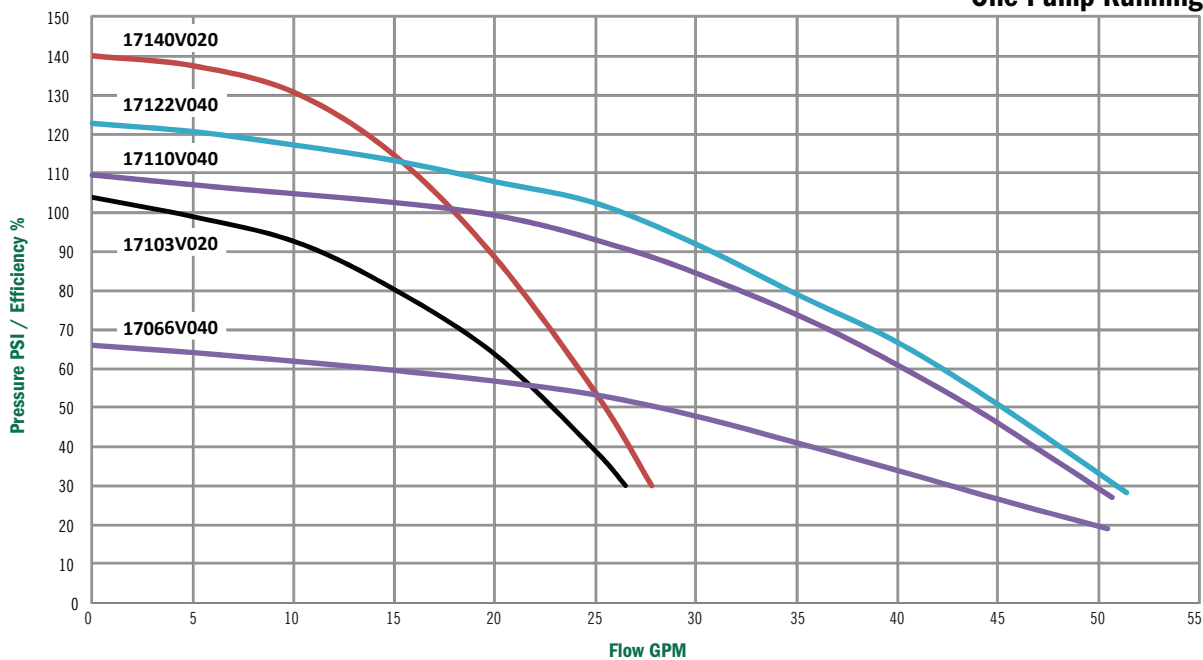
- Sleep Mode / Low Flow Protection
- Automatic system restart
- Sleep boost
- Dry run protection



DuraMAC™ Booster Pumps

DuraMAC

60 Hz Pump Performance One Pump Running



Materials of Construction

- Impellers	304 Stainless Steel	- Pump Seal (rotating)	Carbon / NBR
- Pump Casing Inlet	301 Stainless Steel	- Diffuser	304 Stainless Steel
- Pump Casing Outlet	301 Stainless Steel	- Base	304 Stainless Steel
- Pump Seal (stationary)	Silicon Carbide		

DuraMAC™ - Vertical Multistage Variable Speed Duplex Booster System

The DuraMAC™ 1 1/2 to 3 HP Vertical Multistage Variable Speed Duplex Booster capable of up to 140 PSI and 80 gallons per minute (GPM). It's simple, versatile, sophisticated, and reliable. The Vertical Multistage Variable Speed Booster System changes motor speed based on demands of the system, which allows users to save energy costs over traditional constant speed booster systems.

Features:

- Easy set-up installation
- Variable speed control
- Stainless steel pump
- Energy efficient NEMA TEFC motors
- Liquid filled gauge
- Stainless steel base
- NEMA 1 enclosure
- Discharge transducers
- 2" NPT stainless steel manifolds



See Pumps & Accessories Price List for Limited Warranty details.

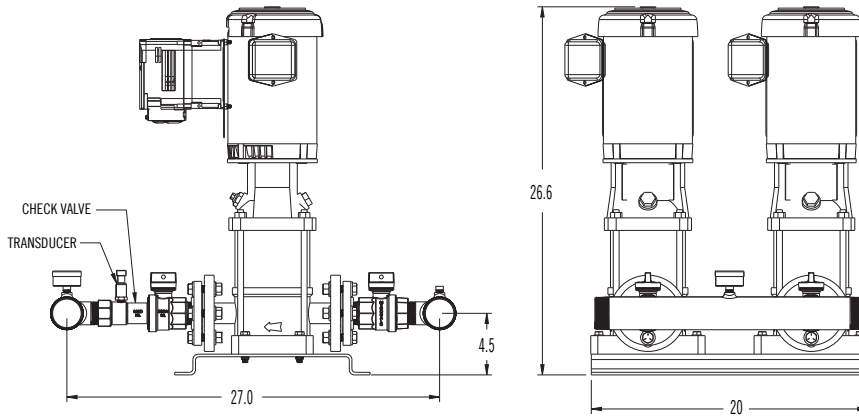
Models Available

Model	Description	Pump Boost	Voltage	GPM	HP
17103V040Y-1	103 PSI 230V VFD Booster	103 PSI	230V Single Phase	40	1 1/2
17103V040Y-3	103 PSI 230V VFD Booster	103 PSI	230V Three Phase	40	1 1/2
17140V040Y-1	140 PSI 230V VFD Booster	140 PSI	230V Single Phase	40	2
17140V040Y-3	140 PSI 230V VFD Booster	140 PSI	230V Three Phase	40	2
17066V080Y-1	66 PSI 230V VFD Booster	66 PSI	230V Single Phase	80	2
17066V080Y-3	66 PSI 230V VFD Booster	66 PSI	230V Three Phase	80	2
17110V080Y-1	110 PSI 230V VFD Booster	110 PSI	230V Single Phase	80	3
17110V080Y-3	110 PSI 230V VFD Booster	110 PSI	230V Three Phase	80	3
17122V080Y-1	122 PSI 230V VFD Booster	122 PSI	230V Single Phase	80	3
17122V080Y-3	122 PSI 230V VFD Booster	122 PSI	230V Three Phase	80	3

DuraMAC™ - Vertical Multistage Variable Speed Duplex Booster System

Control Features

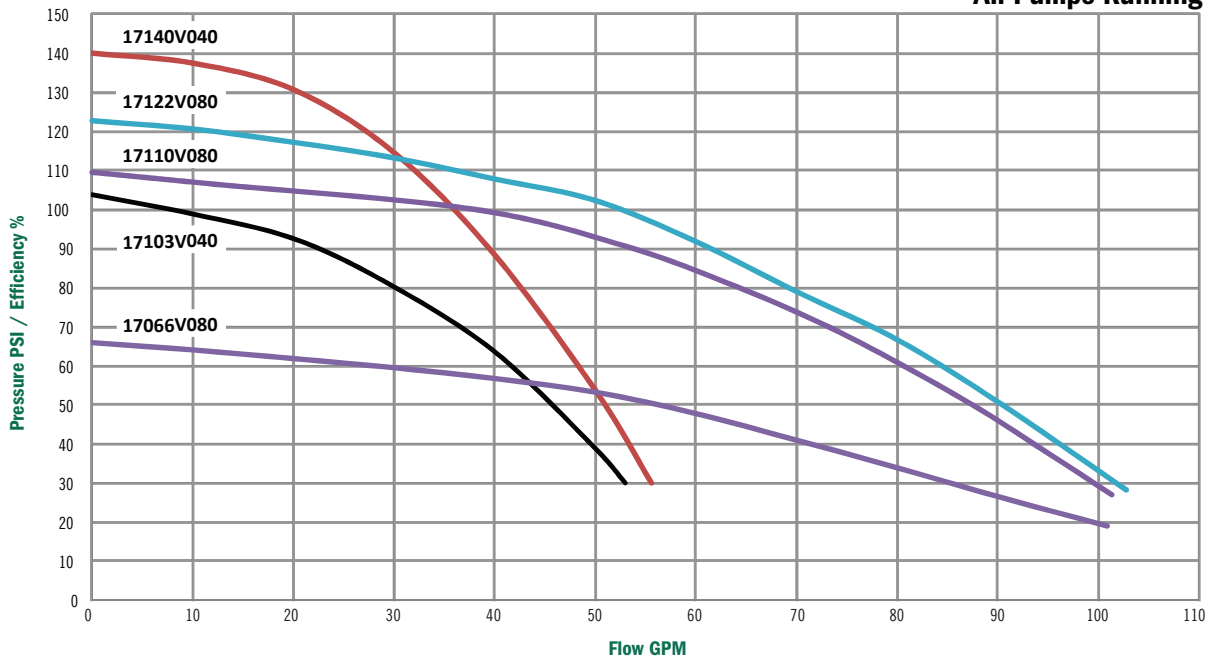
- Sleep Mode / Low Flow Protection
- Automatic system restart
- Sleep boost
- Dry run protection



DuraMAC™ Booster Pumps

DuraMAC

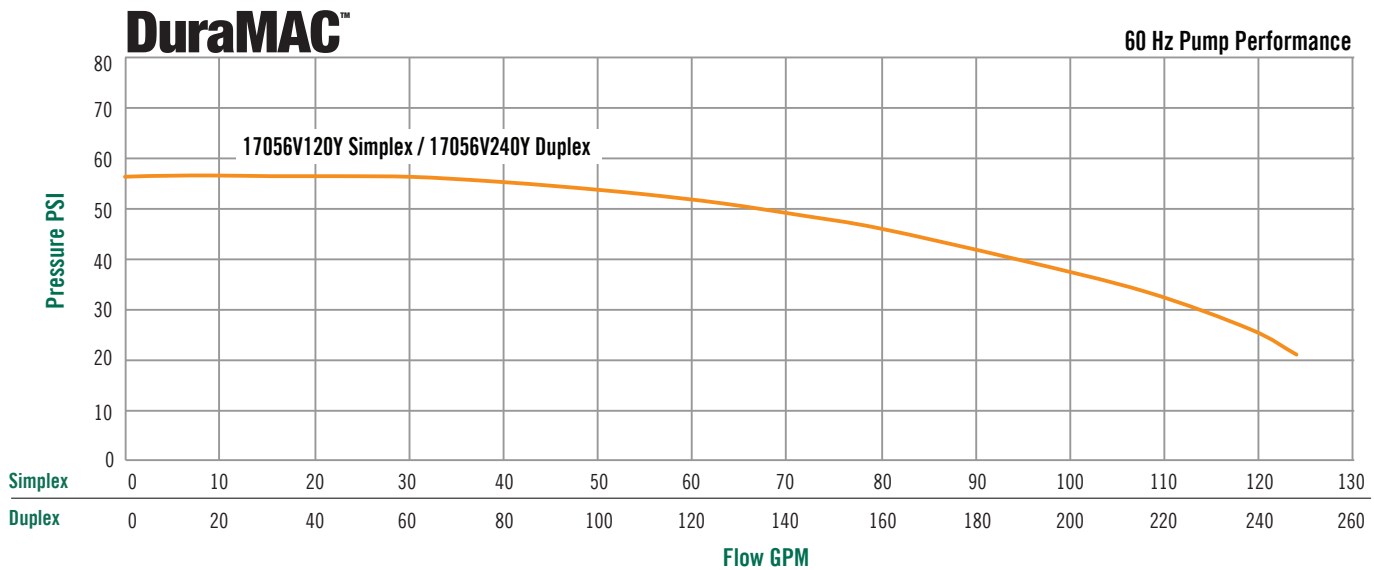
60 Hz Pump Performance All Pumps Running



Materials of Construction

- Impellers	304 Stainless Steel	- Pump Seal (rotating)	Carbon / NBR
- Pump Casing Inlet	301 Stainless Steel	- Diffuser	304 Stainless Steel
- Pump Casing Outlet	301 Stainless Steel	- Base	304 Stainless Steel
- Pump Seal (stationary)	Silicon Carbide		

DuraMAC™ - 17056V120Y Simplex / 17056V240Y Duplex Technical Information & Performance Curves



Technical Information

Max Boost	56 PSI
Suction Transducer	0-150 PSI 4-20mA
Discharge Transducer	0-150 PSI 4-20mA
Drive - Yaskawa iQ Pump	NEMA 1
Suction Ball Valve	2" No-Lead Brass
Discharge Ball Valve	2" No-Lead Brass
Impeller	304 Stainless Steel
Pump End	304 Stainless Steel
Motor - Energy Eff.	TEFC 184TC
Horsepower	5
Seal Material	Carbon/Sic
Electrical	208-230V 1 Phase
Base	304 Stainless Steel

Technical Information - Simplex

Model Number	17056V120Y-1
Max Flow	120 GPM
Tank Required	32 Gallon Minimum

Technical Information - Duplex

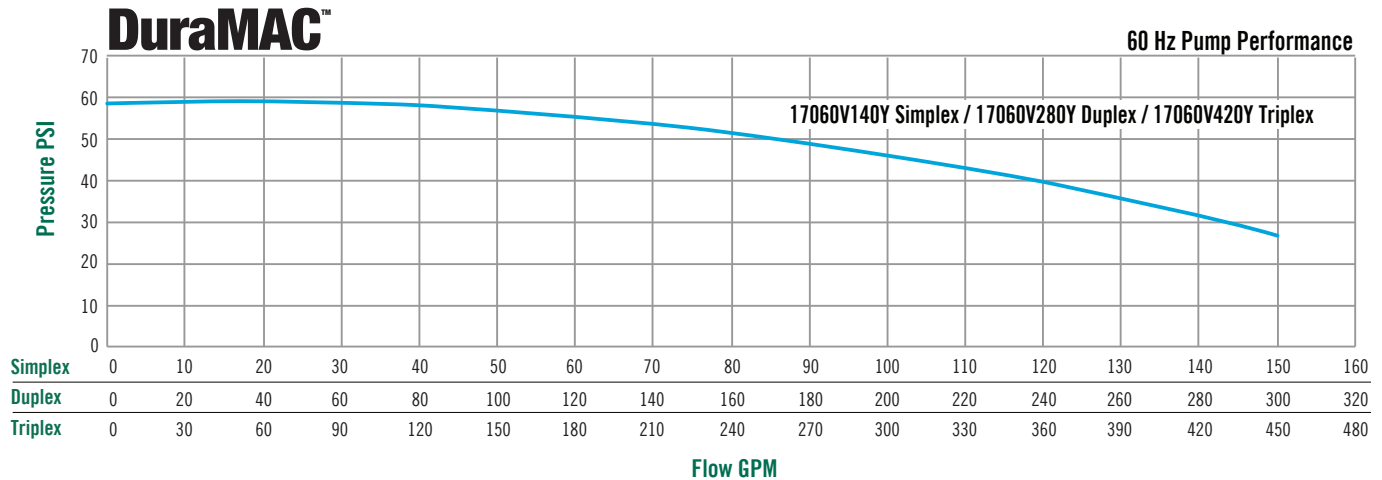
Model Number	17056V240Y-1
Max Flow	240 GPM
Tank Required	52 Gallon Minimum

Model	V120
PEI	0.94
Imp. Dia. (in)	4.11

A.Y. McDonald considers the information on this sheet correct when published. Specifications are subject to change with notice.

DuraMAC™ - 17060V140Y Simplex / 17060V280Y Duplex / 17060V420Y Triplex

Technical Information & Performance Curves



DuraMAC™ Booster Pumps

Technical Information

Max Boost	60 PSI
Suction Transducer	0-150 PSI 4-20mA
Discharge Transducer	0-150 PSI 4-20mA
Drive - Yaskawa iQ Pump	NEMA 1
Suction Ball Valve	2" No-Lead Brass
Discharge Ball Valve	2" No-Lead Brass
Impeller	304 Stainless Steel
Pump End	304 Stainless Steel
Motor - Energy Eff.	TEFC 184TC
Horsepower	5
Seal Material	Carbon/Sic
Base	304 Stainless Steel

Technical Information - Simplex

Model Number	17060V140Y-3
Max Flow	140 GPM
Electrical	208-230V 3 Phase
Tank Required	36 Gallon Minimum

Technical Information - Duplex

Model Number	17060V280Y-3
Max Flow	280 GPM
Electrical	208-230V 3 Phase
Tank Required	52 Gallon Minimum

Technical Information - Triplex

Model Number	17060V420Y-3
Max Flow	420 GPM
Electrical	208-230V 3 Phase
Tank Required	86 Gallon Minimum

Model	V140
PEI	0.96
Imp. Dia. (in)	4.12

A.Y. McDonald considers the information on this sheet correct when published. Specifications are subject to change with notice.

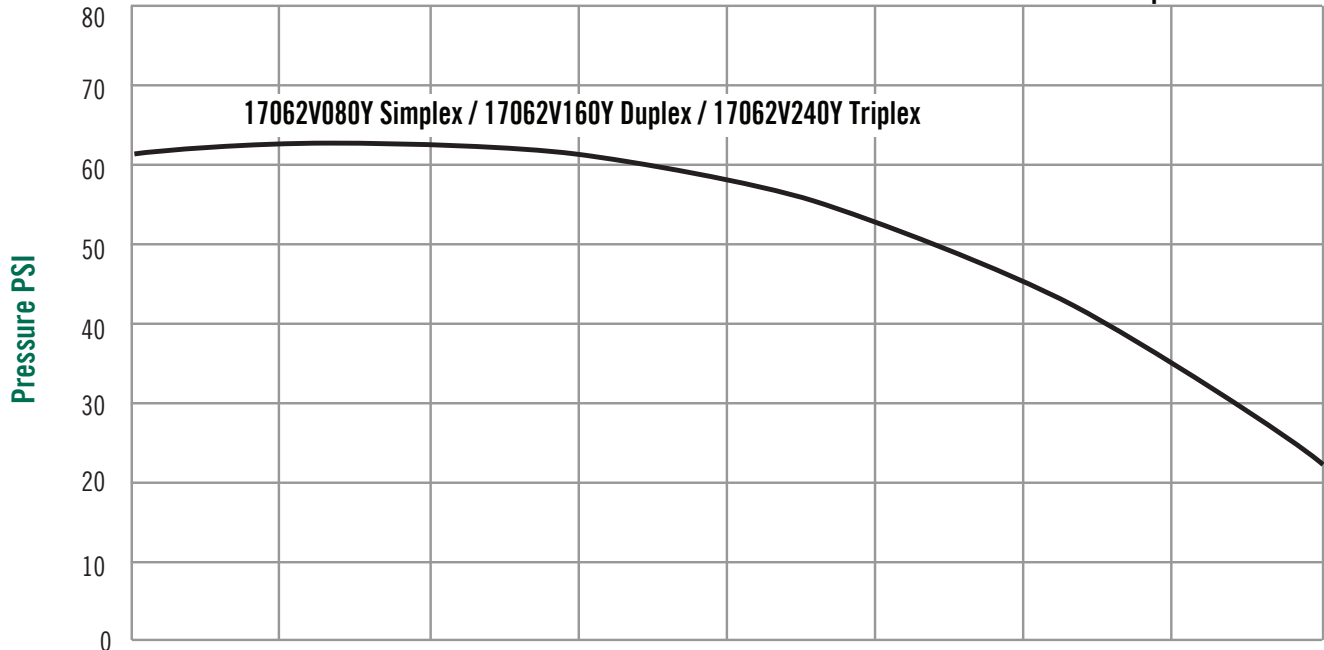
DuraMAC™ - 17062V080Y Simplex / 17062V160Y Duplex 17062V240Y Triplex

Technical Information & Performance Curves

DuraMAC™ Booster Pumps

DuraMAC™

60 Hz Pump Performance



	0	10	20	30	40	50	60	70	80
Simplex	0	10	20	30	40	50	60	70	80
Duplex	0	20	40	60	80	100	120	140	160
Triplex	0	30	60	90	120	150	180	210	240

Flow GPM

Technical Information

Max Boost	62 PSI
Suction Transducer	0-150 PSI 4-20mA
Discharge Transducer	0-150 PSI 4-20mA
Drive - Yaskawa iQ Pump	NEMA 1
Suction Ball Valve	2" No-Lead Brass
Discharge Ball Valve	2" No-Lead Brass
Impeller	304 Stainless Steel
Pump End	304 Stainless Steel
Motor - Energy Eff.	TEFC 182TC
Horsepower	3
Seal Material	Carbon/Sic
Base	304 Stainless Steel

Technical Information - Simplex

Model Number	17062V080Y-1
Max Flow	80 GPM
Electrical	208-230V 1 Phase
Tank Required	20 Gallon Minimum

Model Number	17062V080Y-3
Max Flow	80 GPM
Electrical	208-230V 3 Phase
Tank Required	20 Gallon Minimum

Technical Information - Triplex

Model Number	17062V240Y-3
Max Flow	240 GPM
Electrical	208-230V 3 Phase
Tank Required	52 Gallon Minimum

Technical Information - Duplex

Model Number	17062V160Y-1
Max Flow	160 GPM
Electrical	208-230V 1 Phase
Tank Required	52 Gallon Minimum

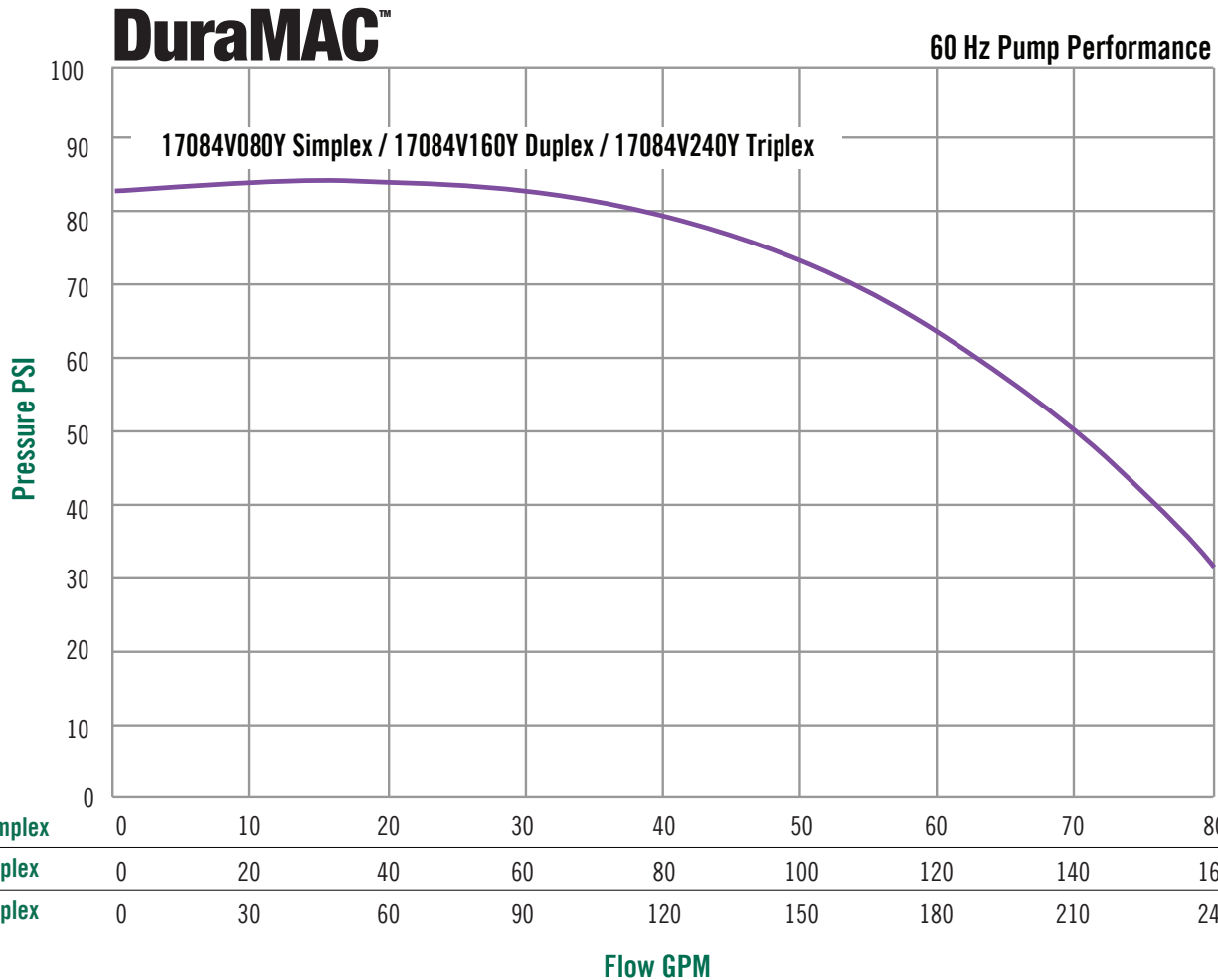
Model Number	17062V160Y-3
Max Flow	160 GPM
Electrical	208-230V 3 Phase
Tank Required	52 Gallon Minimum

Model	V080
PEI	0.89
Imp. Dia. (in)	3.64

A.Y. McDonald considers the information on this sheet correct when published. Specifications are subject to change with notice.

DuraMAC™ - 17084V080Y Simplex / 17084V160Y Duplex / 17084V240Y Triplex

Technical Information & Performance Curves



DuraMAC™ Booster Pumps

Technical Information

Max Boost	84 PSI
Suction Transducer	0-150 PSI 4-20mA
Discharge Transducer	0-150 PSI 4-20mA
Drive - Yaskawa iQ Pump	NEMA 1
Suction Ball Valve	2" No-Lead Brass
Discharge Ball Valve	2" No-Lead Brass
Impeller	304 Stainless Steel
Pump End	304 Stainless Steel
Motor - Energy Eff.	TEFC 184TC
Horsepower	5
Seal Material	Carbon/Sic
Base	304 Stainless Steel

Technical Information - Simplex

Model Number	17084V080Y-1
Max Flow	80 GPM
Electrical	208-230V 1 Phase
Tank Required	20 Gallon Minimum
Model Number	17084V080Y-3
Max Flow	80 GPM
Electrical	208-230V 3 Phase
Tank Required	20 Gallon Minimum

Technical Information - Triplex

Model Number	17084V240Y-3
Max Flow	240 GPM
Electrical	208-230V 3 Phase
Tank Required	52 Gallon Minimum

Technical Information - Duplex

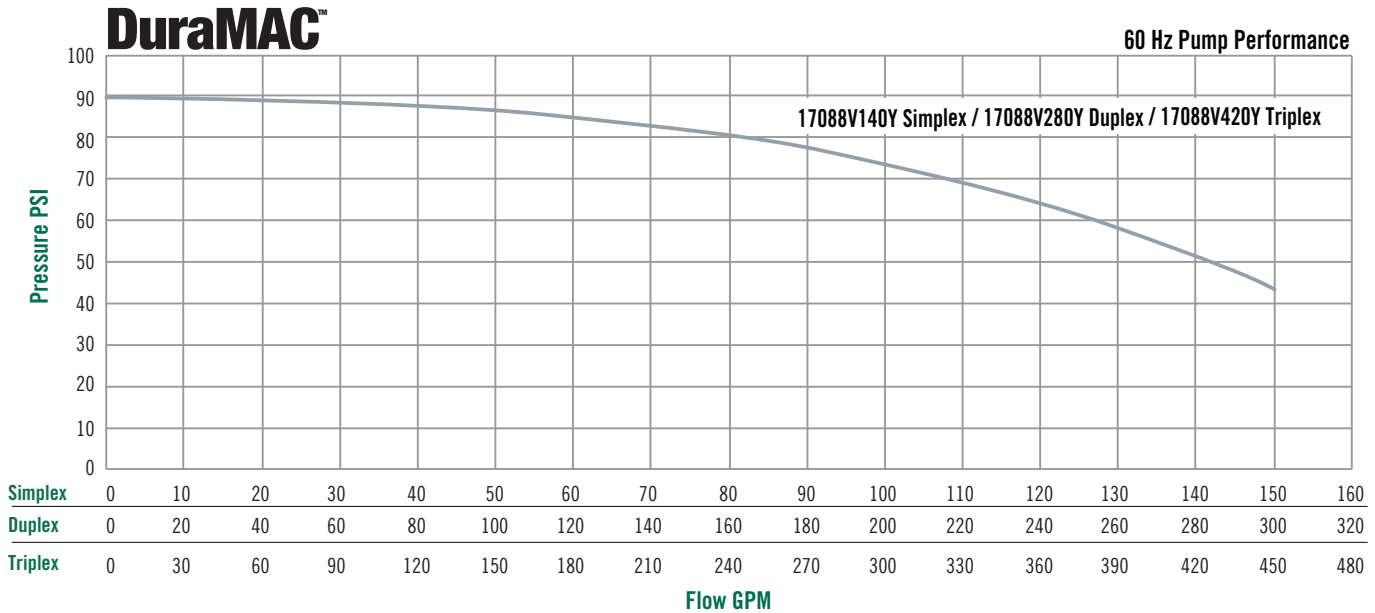
Model Number	17084V160Y-1
Max Flow	160 GPM
Electrical	208-230V 1 Phase
Tank Required	52 Gallon Minimum
Model Number	17084V160Y-3
Max Flow	160 GPM
Electrical	208-230V 3 Phase
Tank Required	52 Gallon Minimum

Model	V080
PEI	0.89
Imp. Dia. (in)	3.64

A.Y. McDonald considers the information on this sheet correct when published. Specifications are subject to change with notice.

DuraMAC™ - 17088V140Y Simplex / 17088V280Y Duplex 17088V420Y Triplex

Technical Information & Performance Curves



Technical Information

Max Boost	88 PSI
Suction Transducer	0-150 PSI 4-20mA
Discharge Transducer	0-150 PSI 4-20mA
Drive - Yaskawa iQ Pump	NEMA 1
Suction Ball Valve	2" No-Lead Brass
Discharge Ball Valve	2" No-Lead Brass
Impeller	304 Stainless Steel
Pump End	304 Stainless Steel
Motor - Energy Eff.	TEFC 213TC
Horsepower	7 1/2
Seal Material	Carbon/Sic
Electrical	208-230V 3 Phase
Base	304 Stainless Steel

Technical Information - Simplex

Model Number	17088V140Y-3
Max Flow	140 GPM
Tank Required	36 Gallon Minimum

Technical Information - Duplex

Model Number	17088V280Y-3
Max Flow	280 GPM
Tank Required	52 Gallon Minimum

Technical Information - Triplex

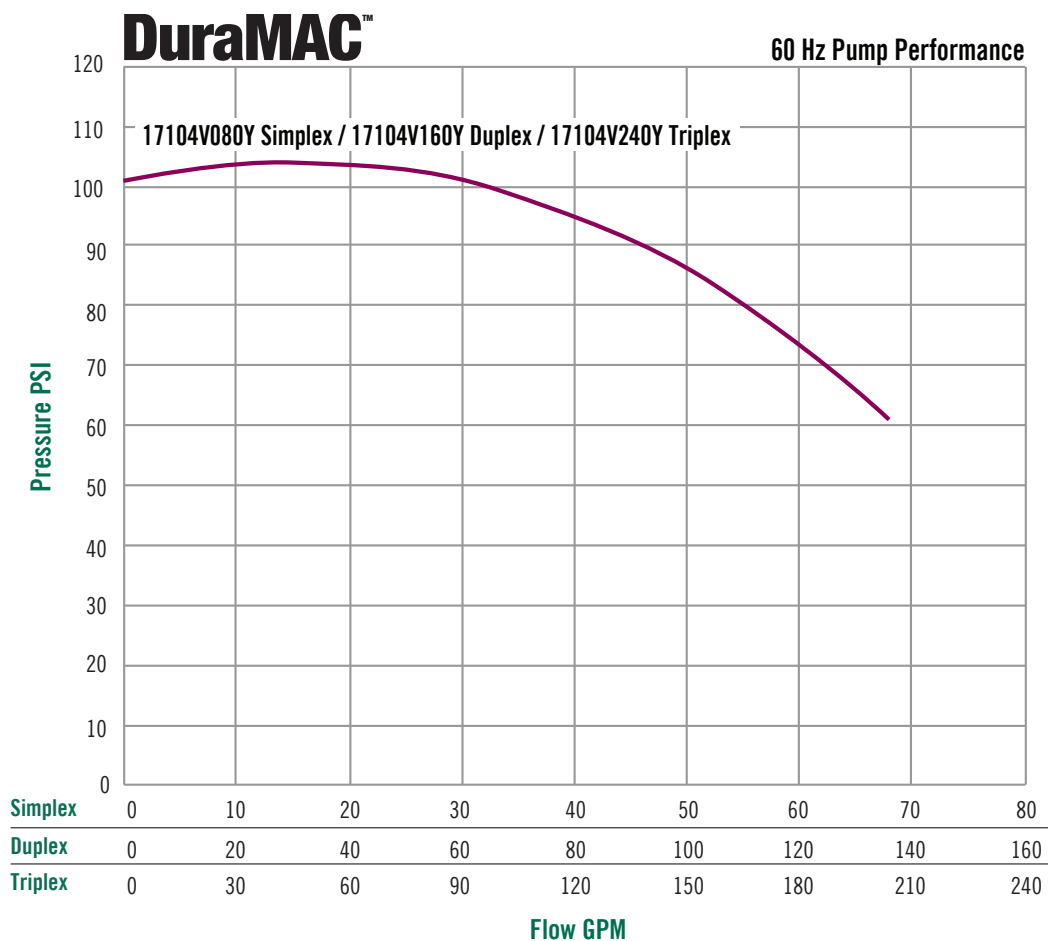
Model Number	17088V420Y-3
Max Flow	420 GPM
Tank Required	86 Gallon Minimum

Model	V140
PEI	0.96
Imp. Dia. (in)	4.12

A.Y. McDonald considers the information on this sheet correct when published. Specifications are subject to change with notice.

DuraMAC™ - 17104V080Y Simplex / 17104V160Y Duplex / 17104V240Y Triplex

Technical Information & Performance Curves



DuraMAC™ Booster Pumps

Technical Information

Max Boost	104 PSI
Suction Transducer	0-150 PSI 4-20mA
Discharge Transducer	0-150 PSI 4-20mA
Drive - Yaskawa iQ Pump	NEMA 1
Suction Ball Valve	2" No-Lead Brass
Discharge Ball Valve	2" No-Lead Brass
Impeller	304 Stainless Steel
Pump End	304 Stainless Steel
Motor - Energy Eff.	TEFC 184TC
Horsepower	5
Seal Material	Carbon/Sic
Base	304 Stainless Steel

Technical Information - Simplex

Model Number	17104V080Y-1
Max Flow	80 GPM
Electrical	208-230V 1 Phase
Tank Required	20 Gallon Minimum
Model Number	17104V080Y-3
Max Flow	80 GPM
Electrical	208-230V 3 Phase
Tank Required	20 Gallon Minimum

Technical Information - Duplex

Model Number	17104V160Y-1
Max Flow	160 GPM
Electrical	208-230V 1 Phase
Tank Required	52 Gallon Minimum
Model Number	17104V160Y-3
Max Flow	160 GPM
Electrical	208-230V 3 Phase
Tank Required	52 Gallon Minimum

Technical Information - Triplex

Model Number	17104V240Y-3
Max Flow	240 GPM
Electrical	208-230V 3 Phase
Tank Required	52 Gallon Minimum

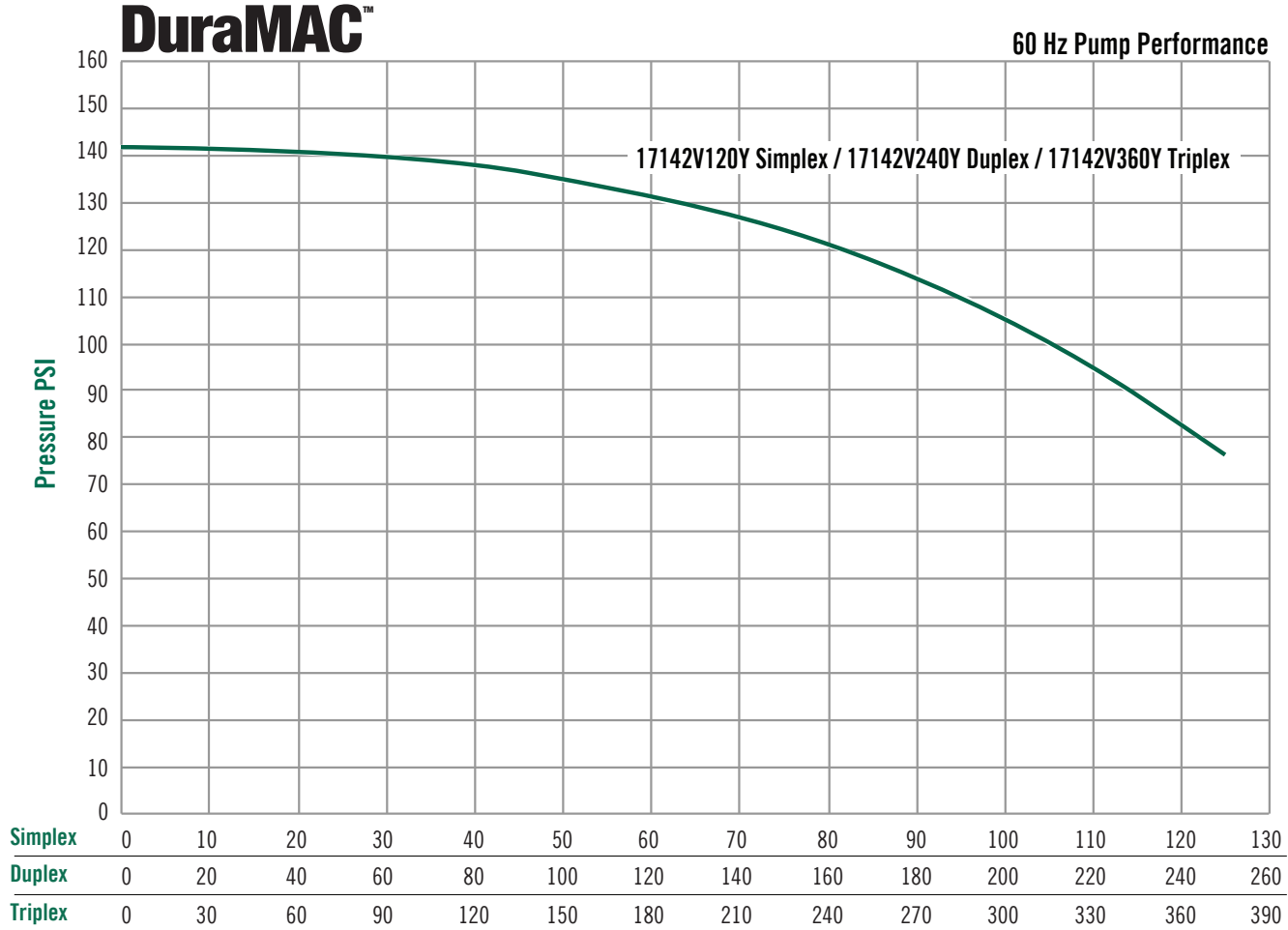
Model	V080
PEI	0.89
Imp. Dia. (in)	3.64

A.Y. McDonald considers the information on this sheet correct when published. Specifications are subject to change with notice.

DuraMAC™ - 17142V120Y Simplex / 17142V240Y Duplex 17142V360Y Triplex

Technical Information & Performance Curves

DuraMAC™ Booster Pumps



Technical Information

Max Boost	142 PSI
Suction Transducer	0-150 PSI 4-20mA
Discharge Transducer	0-150 PSI 4-20mA
Drive - Yaskawa iQ Pump	NEMA 1
Suction Ball Valve	2" No-Lead Brass
Discharge Ball Valve	2" No-Lead Brass
Impeller	304 Stainless Steel
Pump End	304 Stainless Steel
Motor - Energy Eff.	TEFC 215TC
Horsepower	10
Seal Material	Carbon/Sic
Electrical	208-230V 3 Phase
Base	304 Stainless Steel

Technical Information - Simplex

Model Number	17142V120Y-3
Max Flow	120 GPM
Tank Required	32 Gallon Minimum

Technical Information - Duplex

Model Number	17142V240Y-3
Max Flow	240 GPM
Tank Required	52 Gallon Minimum

Technical Information - Triplex

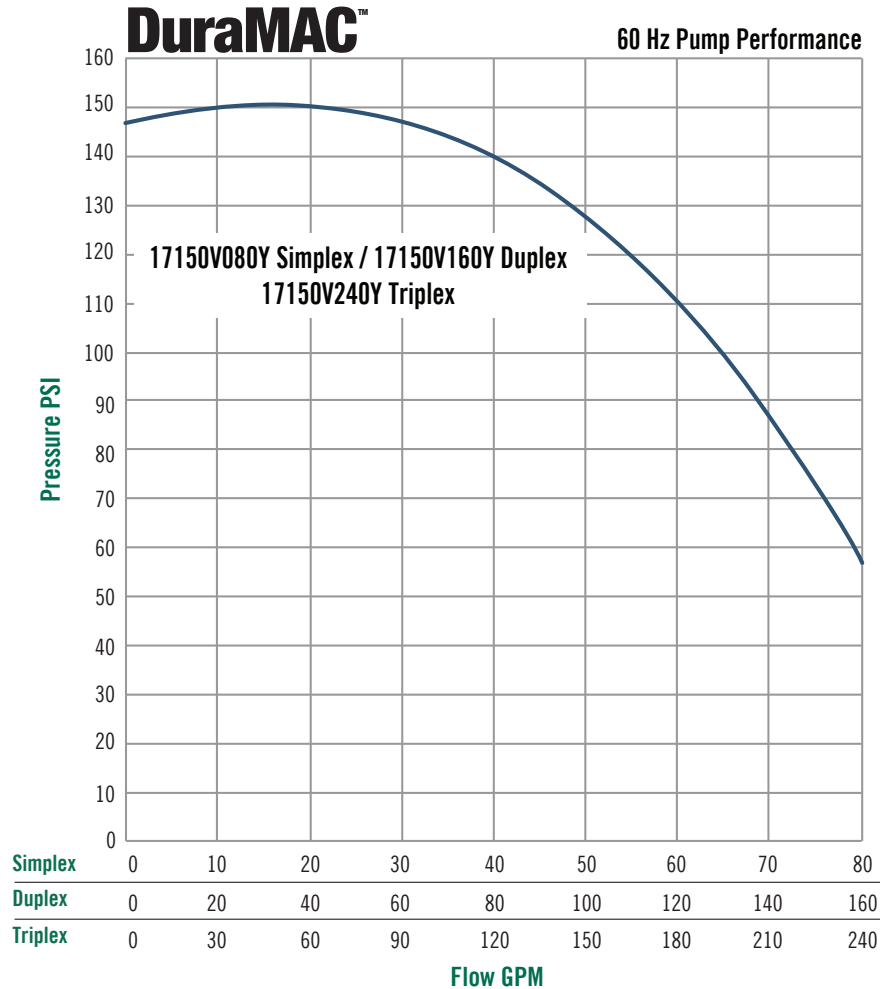
Model Number	17142V360Y-3
Max Flow	360 GPM
Tank Required	86 Gallon Minimum

Model	V120
PEI	0.94
Imp. Dia. (in)	4.11

A.Y. McDonald considers the information on this sheet correct when published. Specifications are subject to change with notice.

DuraMAC™ - 17150V080Y Simplex / 17150V160Y Duplex 17150V240Y Triplex

Technical Information & Performance Curves



DuraMAC™ Booster Pumps

Technical Information

Max Boost	150 PSI
Suction Transducer	0-200 PSI 4-20mA
Discharge Transducer	0-200 PSI 4-20mA
Drive - Yaskawa iQ Pump	NEMA 1
Suction Ball Valve	2" No-Lead Brass
Discharge Ball Valve	2" No-Lead Brass
Impeller	304 Stainless Steel
Pump End	304 Stainless Steel
Motor - Energy Eff.	TEFC 213TC
Horsepower	7 1/2
Seal Material	Carbon/Sic
Electrical	208-230V 3 Phase
Base	304 Stainless Steel

Technical Information - Simplex

Model Number	17150V080Y-3
Max Flow	80 GPM
Tank Required	20 Gallon Minimum

Technical Information - Triplex

Model Number	17150V240Y-3
Max Flow	240 GPM
Tank Required	52 Gallon Minimum

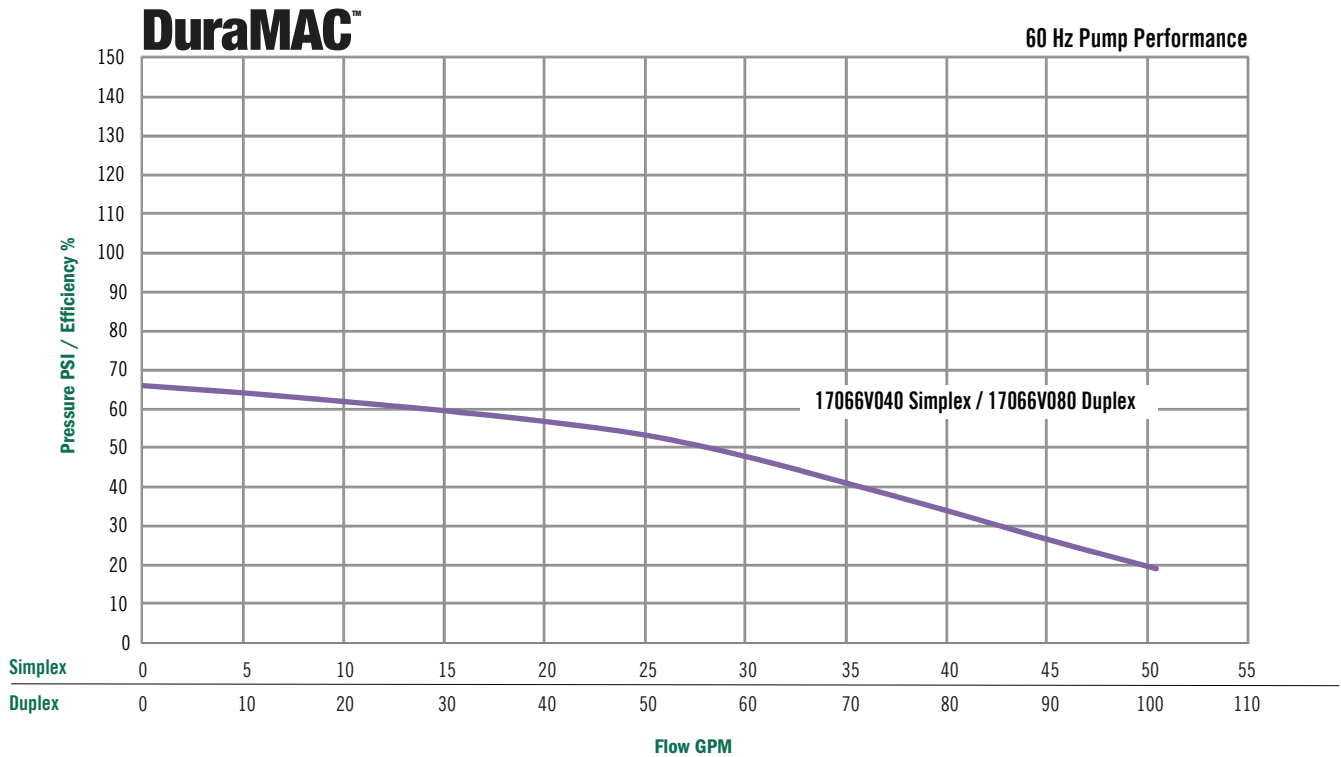
Technical Information - Duplex

Model Number	17150V160Y-3
Max Flow	160 GPM
Tank Required	52 Gallon Minimum

Model	V080
PEI	0.89
Imp. Dia. (in)	3.64

A.Y. McDonald considers the information on this sheet correct when published. Specifications are subject to change with notice.

DuraMAC™ - 17066V040 Simplex / 17066V080 Duplex Technical Information & Performance Curves



Technical Information

Max Boost	66 PSI
Discharge Transducer	0-200 PSI 4-20mA
Drive - Yaskawa iQ Pump	NEMA 1
Suction Ball Valve	1 1/4" No-Lead Brass
Discharge Ball Valve	1 1/4" No-Lead Brass
Impeller	304 Stainless Steel
Pump End	304 Stainless Steel
Motor - Energy Eff.	TEFC 56C
Horsepower	2
Seal Material	Carbon/Sic
Base	304 Stainless Steel

Technical Information - Simplex

Model Number	17066V040Y-1
Max Flow	40 GPM
Electrical	208-230V 1 Phase
Tank Required	7.3 Gallon Minimum
Model Number	17066V040Y-3
Max Flow	40 GPM
Electrical	208-230V 3 Phase
Tank Required	7.3 Gallon Minimum

Technical Information - Duplex

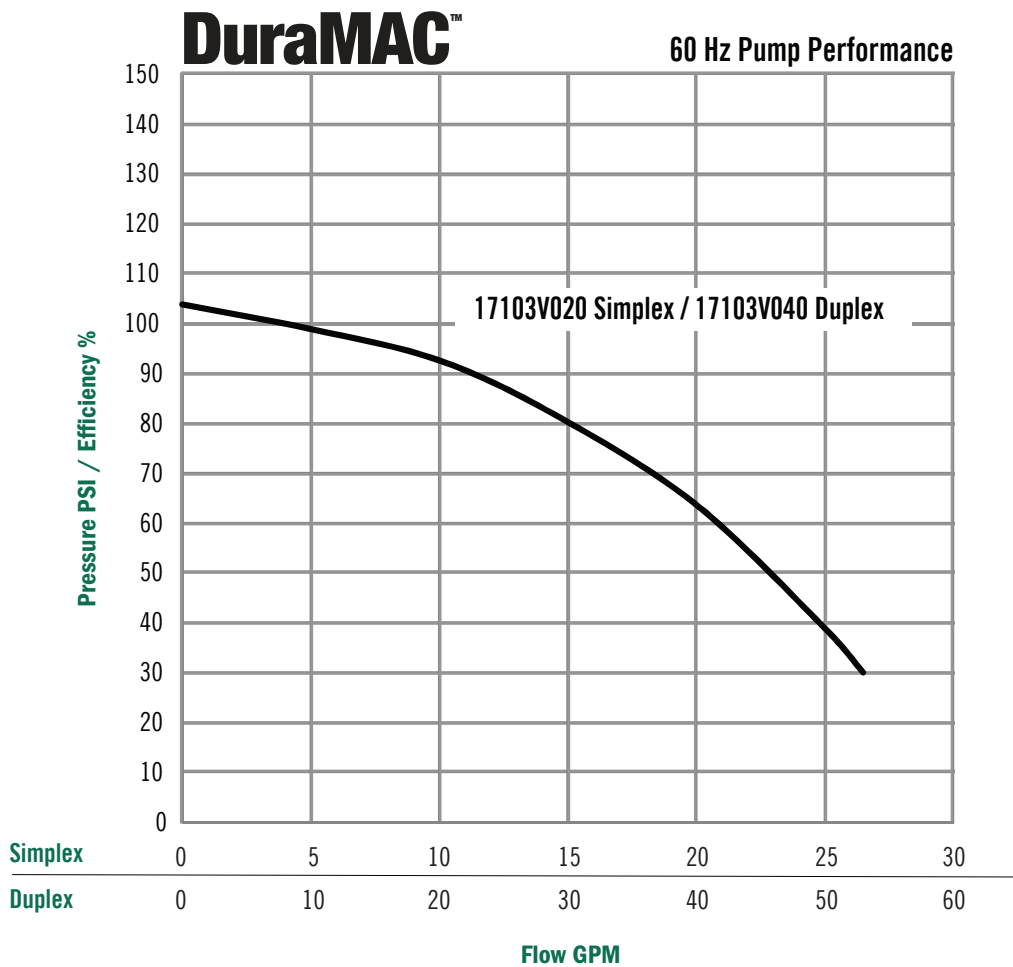
Model Number	17066V080Y-1
Max Flow	80 GPM
Electrical	208-230V 1 Phase
Tank Required	20 Gallon Minimum
Model Number	17066V080Y-3
Max Flow	80 GPM
Electrical	208-230V 3 Phase
Tank Required	20 Gallon Minimum

Model	V040
PEI	0.82
Imp. Dia. (in)	2.874

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DuraMAC™ - 17103V020 Simplex / 17103V040 Duplex

Technical Information & Performance Curves



DuraMAC™ Booster Pumps

Technical Information

Max Boost	103 PSI
Discharge Transducer	0-150 PSI 4-20mA
Drive - Yaskawa iQ Pump	NEMA 1
Suction Ball Valve	1 1/4" No-Lead Brass
Discharge Ball Valve	1 1/4" No-Lead Brass
Impeller	304 Stainless Steel
Pump End	304 Stainless Steel
Motor - Energy Eff.	TEFC 56C
Horsepower	1 1/2
Seal Material	Carbon/Sic
Base	304 Stainless Steel

Technical Information - Simplex

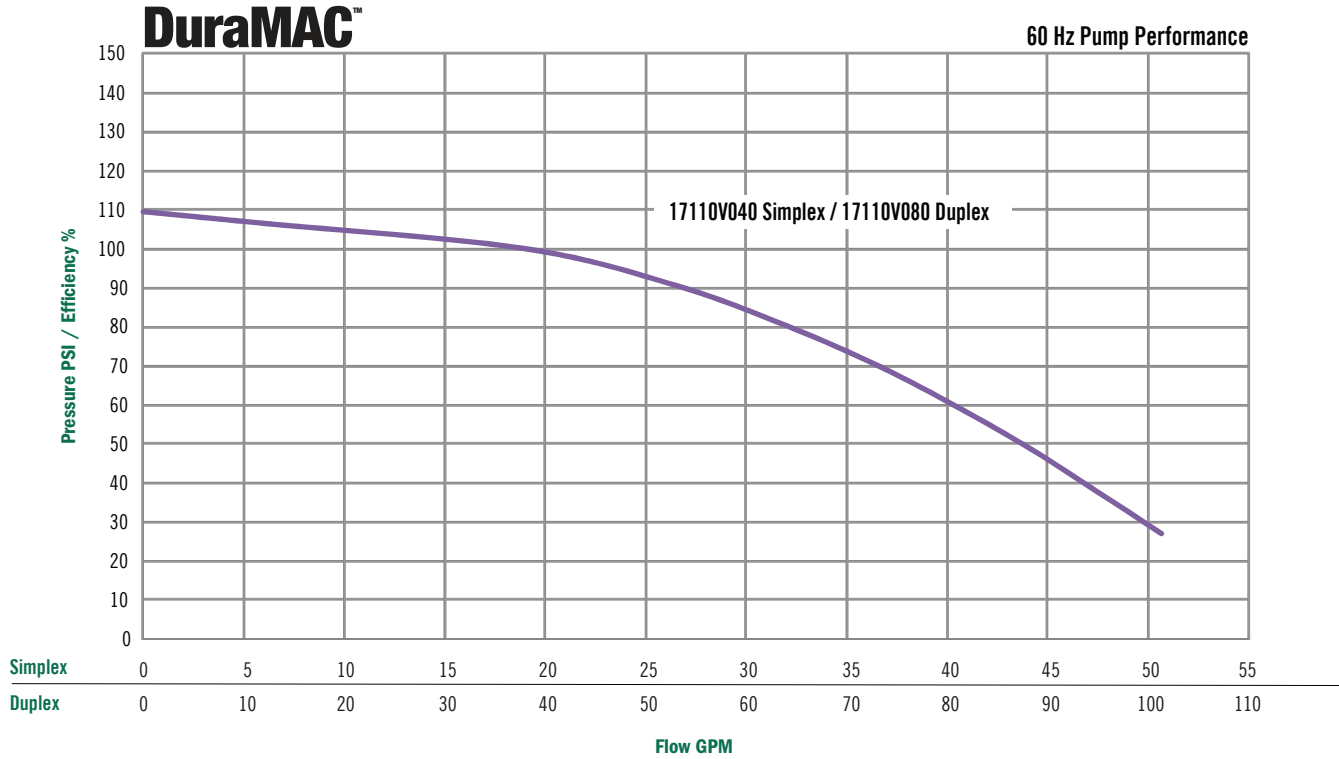
Model Number	17103V020Y-1
Max Flow	20 GPM
Electrical	208-230V 1 Phase
Tank Required	7.3 Gallon Minimum
Model Number	17103V020Y-3
Max Flow	20 GPM
Electrical	208-230V 3 Phase
Tank Required	7.3 Gallon Minimum

Technical Information - Duplex

Model Number	17103V040Y-1
Max Flow	40 GPM
Electrical	208-230V 1 Phase
Tank Required	14 Gallon Minimum
Model Number	17103V040Y-3
Max Flow	40 GPM
Electrical	208-230V 3 Phase
Tank Required	14 Gallon Minimum

A.Y. McDonald considers the information on this sheet correct when published. Specifications are subject to change with notice.

DuraMAC™ - 17110V040 Simplex / 17110V080 Duplex Technical Information & Performance Curves



Technical Information

Max Boost	110 PSI
Discharge Transducer	0-200 PSI 4-20mA
Drive - Yaskawa iQ Pump	NEMA 1
Suction Ball Valve	1 1/4" No-Lead Brass
Discharge Ball Valve	1 1/4" No-Lead Brass
Impeller	304 Stainless Steel
Pump End	304 Stainless Steel
Motor - Energy Eff.	TEFC 56C
Horsepower	3
Seal Material	Carbon/Sic
Base	304 Stainless Steel

Technical Information - Simplex

Model Number	17110V040Y-1
Max Flow	40 GPM
Electrical	208-230V 1 Phase
Tank Required	7.3 Gallon Minimum
Model Number	17110V040Y-3
Max Flow	40 GPM
Electrical	208-230V 3 Phase
Tank Required	7.3 Gallon Minimum

Technical Information - Duplex

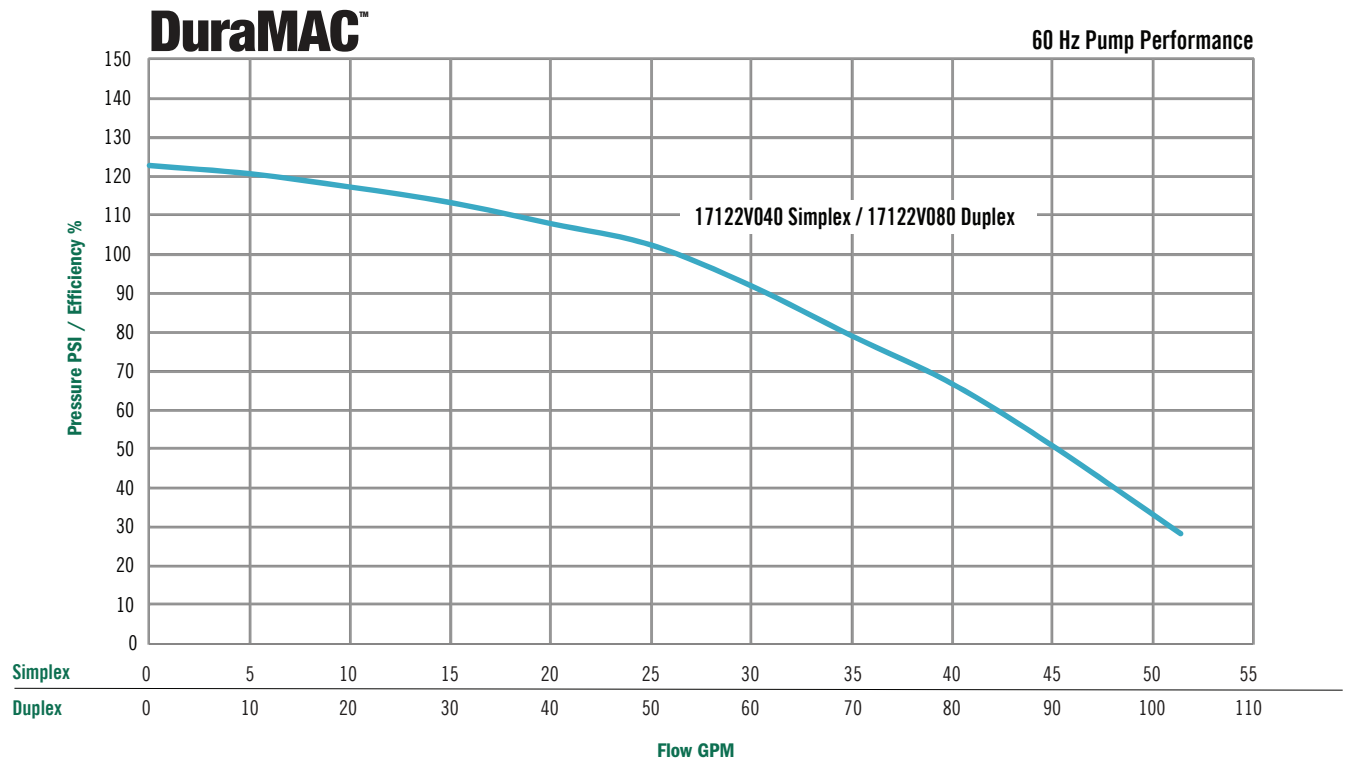
Model Number	17110V080Y-1
Max Flow	80 GPM
Electrical	208-230V 1 Phase
Tank Required	20 Gallon Minimum
Model Number	17110V080Y-3
Max Flow	80 GPM
Electrical	208-230V 3 Phase
Tank Required	20 Gallon Minimum

Model	V040
PEI	0.82
Imp. Dia. (in)	2.874

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DuraMAC™ - 17122V040 Simplex / 17122V080 Duplex

Technical Information & Performance Curves



DuraMAC™ Booster Pumps

Technical Information

Max Boost	122 PSI
Discharge Transducer	0-200 PSI 4-20mA
Drive - Yaskawa iQ Pump	NEMA 1
Suction Ball Valve	1 1/4" No-Lead Brass
Discharge Ball Valve	1 1/4" No-Lead Brass
Impeller	304 Stainless Steel
Pump End	304 Stainless Steel
Motor - Energy Eff.	TEFC 56C
Horsepower	3
Seal Material	Carbon/Sic
Base	304 Stainless Steel

Technical Information - Simplex

Model Number	17122V040Y-1
Max Flow	40 GPM
Electrical	208-230V 1 Phase
Tank Required	7.3 Gallon Minimum
Model Number	17122V040Y-3
Max Flow	40 GPM
Electrical	208-230V 3 Phase
Tank Required	7.3 Gallon Minimum

Technical Information - Duplex

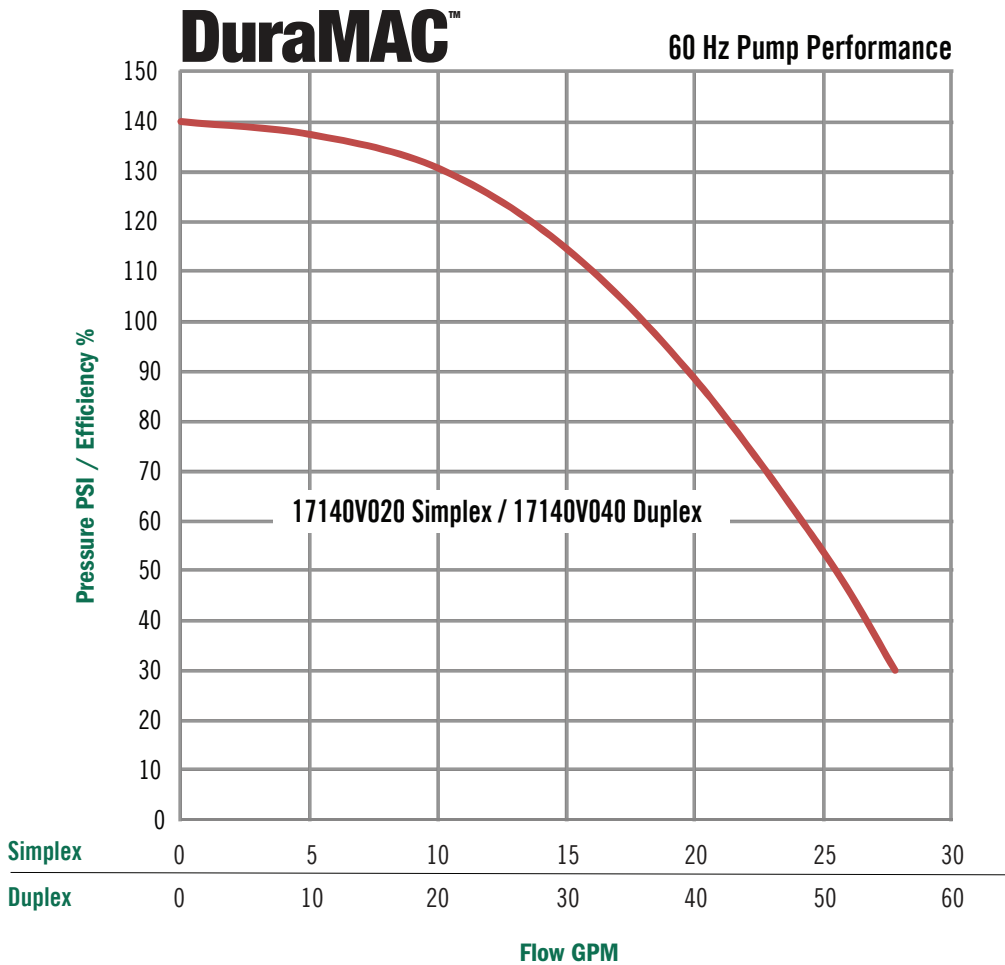
Model Number	17122V080Y-1
Max Flow	80 GPM
Electrical	208-230V 1 Phase
Tank Required	20 Gallon Minimum
Model Number	17122V080Y-3
Max Flow	80 GPM
Electrical	208-230V 3 Phase
Tank Required	20 Gallon Minimum

Model	V040
PEI	0.82
Imp. Dia. (in)	2.874

A.Y. McDonald considers the information on this sheet correct when published. Specifications are subject to change with notice.

DuraMAC™ - 17140V020 Simplex / 17140V040 Duplex Technical Information & Performance Curves

DuraMAC™ Booster Pumps



Technical Information

Max Boost	140 PSI
Discharge Transducer	0-200 PSI 4-20mA
Drive - Yaskawa iQ Pump	NEMA 1
Suction Ball Valve	1 1/4" No-Lead Brass
Discharge Ball Valve	1 1/4" No-Lead Brass
Impeller	304 Stainless Steel
Pump End	304 Stainless Steel
Motor - Energy Eff.	TEFC 56C
Horsepower	2
Seal Material	Carbon/Sic
Base	304 Stainless Steel

Technical Information - Simplex

Model Number	17140V020Y-1
Max Flow	20 GPM
Electrical	208-230V 1 Phase
Tank Required	7.3 Gallon Minimum
Model Number	17140V020Y-3
Max Flow	20 GPM
Electrical	208-230V 3 Phase
Tank Required	7.3 Gallon Minimum

Technical Information - Duplex

Model Number	17140V040Y-1
Max Flow	40 GPM
Electrical	208-230V 1 Phase
Tank Required	14 Gallon Minimum
Model Number	17140V040Y-3
Max Flow	40 GPM
Electrical	208-230V 3 Phase
Tank Required	14 Gallon Minimum

A.Y. McDonald considers the information on this sheet correct when published. Specifications are subject to change with notice.



Irrigation & Booster Pumps



Irrigation & Booster Pumps

Pump Catalog - January 2020

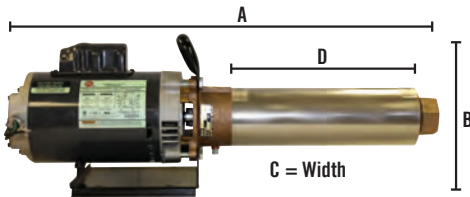
MORE THAN A BRAND. WE'RE A FAMILY.

Superbooster

Booster systems | Filtration | Spray systems | Water circulation | Reverse osmosis

A.Y. McDonald offers a full line of superboosters ranging from 1/2 through 2 horsepower, with a flow rate ranging from 5 through 25 gallons per minute (GPM). Our superbooster offers peak capacity performance in 5, 7, 10, 15, 20, and 25 GPM models. The superbooster can be used for general purpose pumping along with residential, commercial applications, and pressure washing for agriculture.

- Keyed shaft motor with shaft extension/coupling for easy motor replacement
- Heavy duty corrosion resistant construction
- No-Lead Brass intake and discharge
- Thermoplastic impellers and diffusers for long life
- Stainless steel shell, shaft extension and hex shaft
- 3/4" Ceramic/carbon rotary mechanical seal
- 1 1/4" Intake, 1 1/4" Discharge
- Drain plug



Nema C Motor

Nema C (Keyed Shaft) Motor which has a single phase, Open Drip Proof (ODP) capacitor start.



Features:

- Carbon steel shaft (not in contact with the water)
- Shaft 0.625" Diameter, x 2.07" long from face
- Ball bearings (locked drive end bearing)
- Continuous duty at 40°C / 104°F Ambient, 60Hz
- Automatic reset thermal overload protector
- Round frame (without base), Nema 56C mounting
- Power leads and ground wire supplied for proper connection to the pressure switch
- Voltage change device (except 2 HP)

Two Compartments Products | E-Z Access

Part No.	HP	RPM	Frame	Catalog Volt	Type	Service Factor	SF* AMPS	MTR LGTH(1)	Ship Wt.	Factory Wired
6903-280	1/2	3500	48/56	115/230	FNP	1.60	10.8/5.4	9"	19	115V
6903-281	3/4	3500	48/56	230/115	FHP	1.50	6.4/12.8	9.5"	23	230V
6903-282	1	3500	48/56	230/115	FHP	1.40	7.7/15.4	10"	25	230V
6903-283	1 1/2	3500	48/56	230/115	FHP	1.30	10.9/21.8	10.5"	31	230V
6903-284	2	3500	48/56	230	FHP	1.20	11.1	10.5"	32	230V

*Service Factor Amps. may vary with motor manufacturer - refer to label on motor

(1) Length not including shaft

(2) Contact factory for three phase and/or TEFC motors

Repair parts multiplier applies

Factory set voltage in bold.

Part No.	Model No.
6903-041	27000KIT

Repair gauge kit (use for alignment when assembling motor and pump end back together).

Note - To change the voltage:

- remove the plate off the back of the motor
- move the spades to the appropriate location

Superbooster

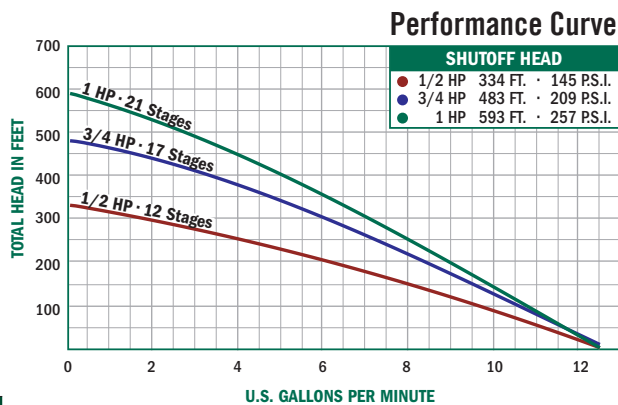
J - 5 GPM - 27000JHB

Pump Ends

Model No.	HP	Wt.
27050JHBPE	1/2	18
27075JHBPE	3/4	21
27100JHBPE	1	19

Specifications

Model	HP	Volts	Max. Amps	Intake	Discharge Size	A	B	C	D	Wt.
27050JHB	1/2	115/230	10.8/5.4	1 1/4"	1 1/4"	24.72	9.4	6.5	13.67	34
27075JHB	3/4	230/115	7.4/14.8	1 1/4"	1 1/4"	29.12	9.4	6.5	17.57	42
27100JHB	1	230/115	9.0/18.0	1 1/4"	1 1/4"	34.13	9.4	6.5	22.08	44



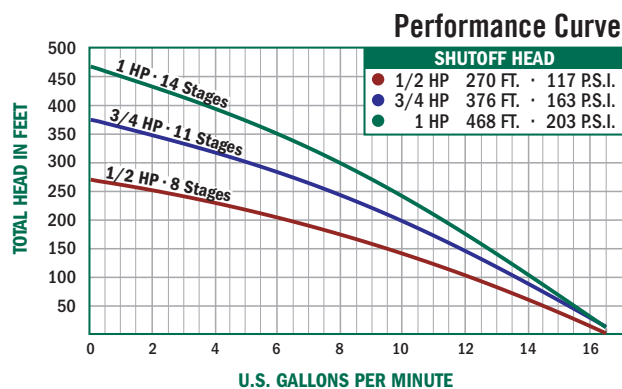
V - 7 GPM - 27000VHB

Pump Ends

Model No.	HP	Wt.
27050VHBPE	1/2	13
27075VHBPE	3/4	17
27100VHBPE	1	19

Specifications

Model	HP	Volts	Max. Amps	Intake	Discharge Size	A	B	C	D	Wt.
27050VHB	1/2	115/230	10.8/5.4	1 1/4"	1 1/4"	21.60	9.4	6.5	10.55	34
27075VHB	3/4	230/115	7.4/14.8	1 1/4"	1 1/4"	24.43	9.4	6.5	12.87	39
27100VHB	1	230/115	9.0/18.0	1 1/4"	1 1/4"	27.33	9.4	6.5	15.28	42



K - 10 GPM - 27000KHB

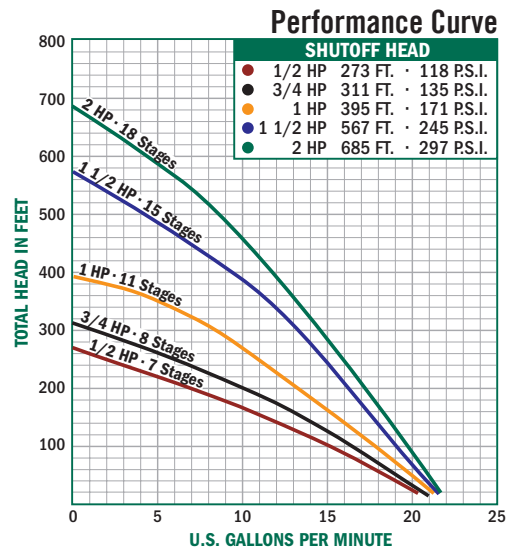
Pump Ends

Model No.	HP	Wt.
27050KHBPE	1/2	14
27075KHBPE	3/4	15
27100KHBPE	1	16
27150KHBPE	1 1/2	18
27200KHBPE	2	17

Specifications

Model	HP	Volts	Max. Amps	Intake	Discharge Size	A	B	C	D	Wt.
27050KHB	1/2	115/230	10.8/5.4	1 1/4"	1 1/4"	21.13	9.4	6.5	10.08	35
27075KHB	3/4	230/115	7.4/14.8	1 1/4"	1 1/4"	22.47	9.4	6.5	10.92	40
27100KHB	1	230/115	9.0/18.0	1 1/4"	1 1/4"	25.56	9.4	6.5	13.51	42
27150KHB	1 1/2	230/115	10.7/21.4	1 1/4"	1 1/4"	30.68	9.4	6.5	18.13	53
27200KHB	2	230	10.2*	1 1/4"	1 1/4"	33.16	9.4	6.5	20.61	54

Factory set voltage in bold.



Irrigation & Booster Pumps

Superbooster L - 15 GPM - 27000LHB

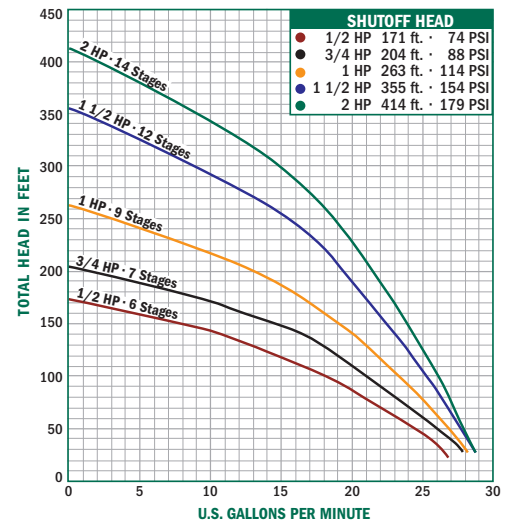
Pump Ends

Model No.	HP	Wt.
27050LHBPE	1/2	12
27075LHBPE	3/4	15
27100LHBPE	1	17
27150LHBPE	1 1/2	18
27200LHBPE	2	16

Specifications

Model	HP	Volts	Max. Amps	Intake	Discharge Size	A	B	C	D	Wt.
27050LHB	1/2	115/230	10.8/5/4	1 1/4"	1 1/4"	22.00	9.4	6.5	10.00	30
27075LHB	3/4	230/115	6.4/12.8	1 1/4"	1 1/4"	24.00	9.4	6.5	11.00	35
27100LHB	1	230/115	7.7/15.4	1 1/4"	1 1/4"	26.00	9.4	6.5	13.00	37
27150LHB	1 1/2	230/115	10.9/21.8	1 1/4"	1 1/4"	30.00	9.4	6.5	16.00	46
27200LHB	2	230	11.1*	1 1/4"	1 1/4"	31.50	9.4	6.5	18.00	47

Performance Curve



P - 20 GPM - 27000PHB

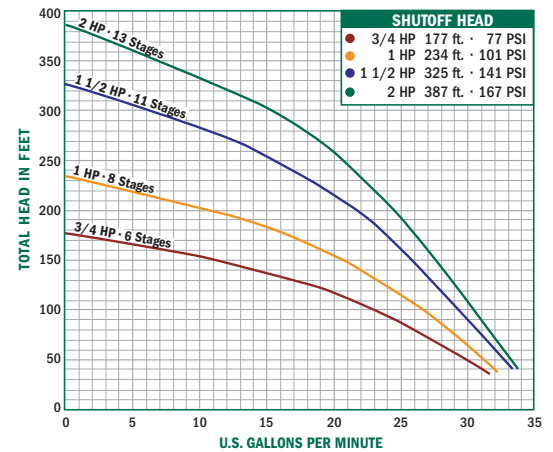
Pump Ends

Model No.	HP	Wt.
27075PHBPE	3/4	12
27100PHBPE	1	15
27150PHBPE	1 1/2	16
27200PHBPE	2	20

Specifications

Model	HP	Volts	Max. Amps	Intake	Discharge Size	A	B	C	D	Wt.
27075PHB	3/4	230/115	6.4/12.8	1 1/4"	1 1/4"	23.00	9.4	6.5	10.00	34
27100PHB	1	230/115	7.7/15.4	1 1/4"	1 1/4"	25.00	9.4	6.5	12.00	37
27150PHB	1 1/2	230/115	10.9/21.8	1 1/4"	1 1/4"	29.00	9.4	6.5	15.00	45
27200PHB	2	230	11.1	1 1/4"	1 1/4"	30.50	9.4	6.5	17.00	47

Performance Curve



M - 25 GPM - 27000MHB

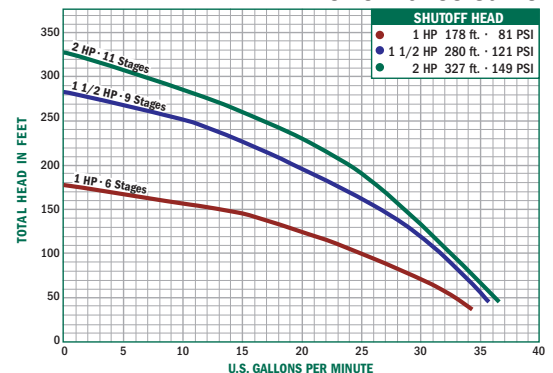
Pump Ends

Model No.	HP	Wt.
27100MHBPE	1	12
27150MHBPE	1 1/2	12
27200MHBPE	2	15

Specifications

Model	HP	Volts	Max. Amps	Intake	Discharge Size	A	B	C	D	Wt.
27100MHB	1	230/115	7.7/15.4	1 1/4"	1 1/4"	23.00	9.4	6.5	10.00	36
27150MHB	1 1/2	230/115	10.9/21.8	1 1/4"	1 1/4"	27.00	9.4	6.5	13.00	44
27200MHB	2	230	11.1	1 1/4"	1 1/4"	28.50	9.4	6.5	15.00	46

Performance Curve



Factory set voltage in bold.

92000 & 93000 Series - Workhorse End Suction Centrifugal Pumps

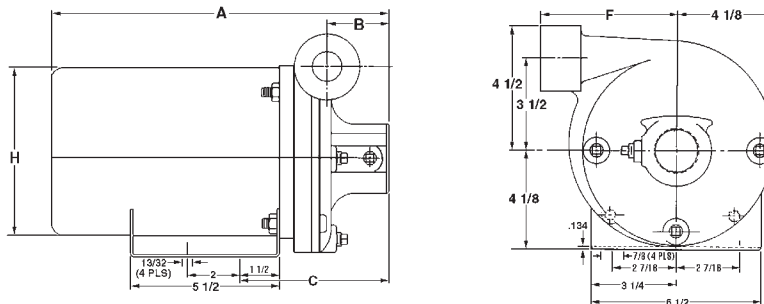
A.Y. McDonald Mfg. Co. 92000 & 93000 Series Centrifugal Pumps cover a wide range of applications. Ideal for booster systems, farms, industry, lawn sprinkling, irrigation, air conditioning, tower cooling, and other water transfer applications.

Features:

- Heavy duty cast iron construction
- Quality Nema standard square flange motor
- Precision molded Noryl impeller (no-lead bronze available)
- Four position discharge with three drain ports
- Easy serviceability with rear pull out design, no need to disturb plumbing
- 175° maximum



Dimensions



NOTE: Four position discharge - vertical or horizontal.
Air volume control tapping - optional on suction side of pump.

Specifications - Single Phase

Model No.	HP	Voltage & Phase	Ports			A	B	C	F	H	Packing Dimen. Inches	Weight Lbs
			Suct.	Disch.	A								B	C
92030	1/3	115 / 230 / 1	1 1/4"	1"	15.40	2.35	6.10	4.35	5.60	15.5 x 8.5 x 10	36	
92050	1/2	115 / 230 / 1	1 1/4"	1"	15.40	2.35	6.10	4.35	5.60	15.5 x 8.5 x 10	36	
92070	3/4	230 / 115 / 1	1 1/4"	1"	15.90	2.35	6.10	4.35	5.60	16.5 x 9.5 x 10	36	
92100	1	230 / 115 / 1	1 1/4"	1"	16.40	2.35	6.10	4.35	5.60	16.5 x 9.5 x 10	38	
92150	1 1/2	230 / 115 / 1	1 1/4"	1"	16.60	2.35	6.10	4.35	5.60	16.5 x 9.5 x 10	42	
92200	2	230 / 1	1 1/2"	1 1/4"	18.15	2.90	6.75	4.70	6.30	18.25 x 9.5 x 10	43	
92250	2 1/2	230 / 1	2"	1 1/2"	18.15	2.90	6.75	4.70	6.30	18.25 x 9.5 x 10	43	
92300	3	230 / 1	2"	1 1/2"	18.15	2.90	6.75	4.70	6.30	18.25 x 9.5 x 10	54	

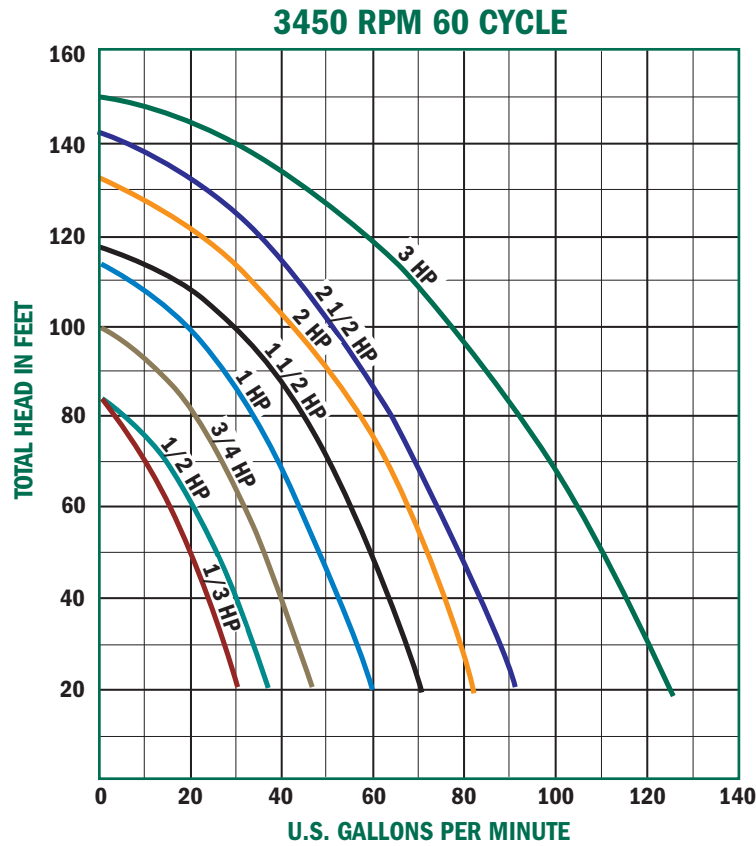
Specifications - Three Phase

Model No.	HP	Voltage & Phase	Ports			A	B	C	F	H	Packing Dimen. Inches	Weight Lbs
			Suct.	Disch.	A								B	C
93050	1/2	230 / 3	1 1/4"	1"	15.40	2.35	6.10	4.35	5.60	15.5 x 8.5 x 10	32	
93070	3/4	230 / 3	1 1/4"	1"	15.90	2.35	6.10	4.35	5.60	16.5 x 9.5 x 10	34	
93100	1	230 / 3	1 1/4"	1"	16.40	2.35	6.10	4.35	5.60	16.5 x 9.5 x 10	37	
93150	1 1/2	230 / 3	1 1/4"	1"	16.60	2.35	6.10	4.35	5.60	16.5 x 9.5 x 10	41	
93200	2	230 / 3	1 1/2"	1 1/4"	18.15	2.90	6.75	4.70	6.30	18.25 x 9.5 x 10	48	
93300	3	230 / 3	2"	1 1/2"	18.15	2.90	6.75	4.70	6.30	18.25 x 9.5 x 10	58	

Three Phase -- 208/230/460V, just need to change the wires for the desired voltage.
Factory set voltage in bold.

92000 & 93000 Series - Workhorse End Suction Centrifugal Pumps

Performance Curves



- Tested at 2 ft. lift

Model	92100	92150	92200	92250	92300
PEI	0.73	0.75	0.83	0.99	0.75
Imp. Dia. (in)	5.33	5.32	5.88	6.06	6.11

Performance (GPM)

Model No.	HP	Total Head in FT.												Max Head FT/PSIG	
		30	40	50	60	70	80	90	100	110	120	130	140		
92030	1/3	28	23	20	16	10									84' / 36#
93030															
92050	1/2	33	30	26	21	14								83' / 36#	
93050															
92070	3/4	42	40	36	31	28	21	11						100' / 43#	
93070															
92100	1	57	52	49	42	39	32	28	19					113' / 48#	
93100															
92150	1 1/2	68	62	60	55	50	43	38	30	18				118' / 51#	
93150															
92200	2	79	76	73	69	63	58	50	41	32	22			132' / 57#	
93200															
92250	2 1/2		84	79	75	70	65	59	52	45	35	24		142' / 61#	
93200															
92300	3		115	110	103	98	91	85	78	69	59	46	30	150' / 65#	
93300															
Model No.	HP	13	17	21	26	30	34	39	43	47	52	56	60		
		PSI													

84000 Series Self-Priming Centrifugal Pumps

The A.Y. McDonald 84000 Series Centrifugal Pumps is designed for both high pressure and high capacity to cover a wide range of applications. These portable units are ideal for lawn and turf sprinkling, garden irrigation, pool filling, and can be used as standby pumps for fire protection, as well as other commercial uses. Individually balanced heavy-duty cast iron impellers handle silt and muddied water with a minimal effort.

84000 Series pumps are suitable for installation where the vertical distance from the pump to the water level does not exceed 25 feet. In all installations, friction losses in the suction pipe must be taken into consideration.

This series is available in three and five horsepower (HP).

The single phase motors are 230 volt only.

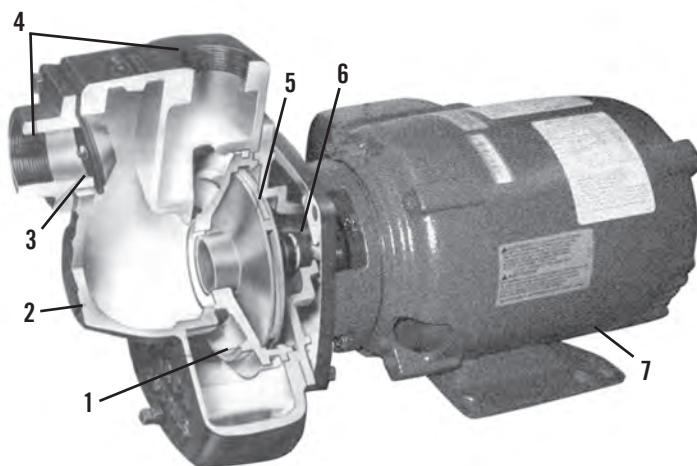
Three phase motors are also available for three and five horsepower (HP) and require thermal overloads to be installed separately.

Complete unit includes pump, motor, and suction check valve for positive priming.



Features:

- Residential and industrial uses
- Capacities to 170 GPM
- Heads to 171 ft. or pressure to 74 PSI
- Self-adjusting mechanical seal
- Needs no lubrication
- No foot valves or priming devices needed
- All units have built-in check valve
- Minimal operation costs
- Three phase available, contact factory

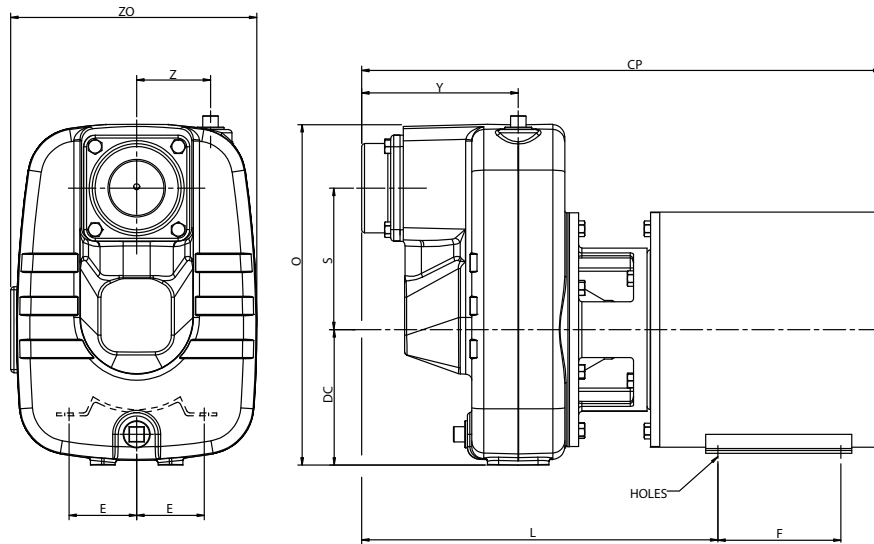


- 1 - Diffuser
Cast Iron
- 2 - Casing
Cast Iron
- 3 - Built-in Check Valve
- 4 - Discharge & Suction
- 5 - Impeller - Cast Iron
- 6 - Seal
- 7 - Motors
J M Frame design on 3 & 5 HP

Specifications

Model No.	HP	Volts	Phase	Impeller Material	Suction NPT	Full Load Amps	Discharge NPT	Ship WT. (lbs.)
84300	3	208 / 230	1	Cast Iron	2"	13.5	2"	136
84500	5	208 / 230	1	Cast Iron	2 1/2"	21.5	2"	146

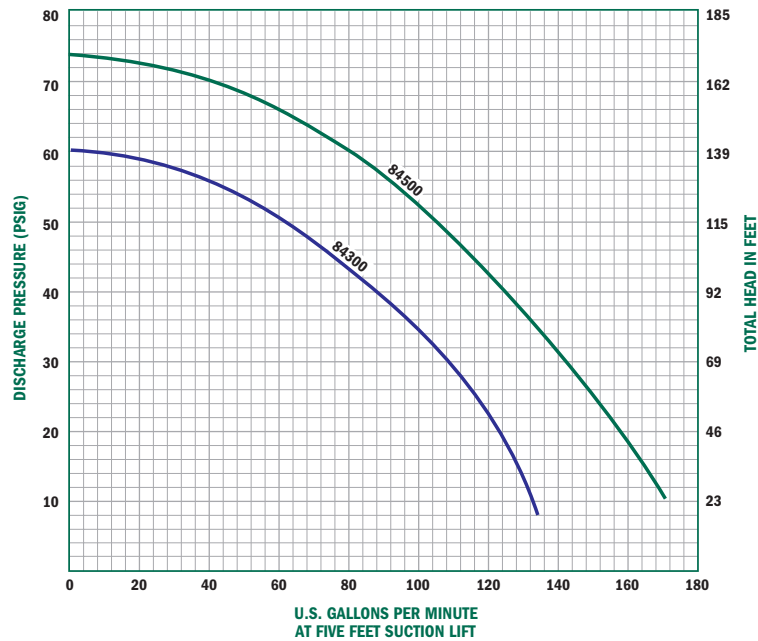
84000 Series Self-Priming Centrifugal Pumps



Dimensions

Model	Suction	Discharge	CP	D	DC	E	F	Inches						
								H	L	O	S	Y	Z	ZO
84300	2 NPT	2 NPT	23.25	4.50	5.00	3.74	5.00	.44	14.75	13.25	6.00	6.38	3.00	9.75
84500	2 1/2 NPT	2 NPT	23.38	4.50	5.56	3.75	2.75	.40	15.12	13.88	5.75	6.38	3.00	9.75

*84300 & 84500 Model have a "JM" face motor connection (not shown).



Performance

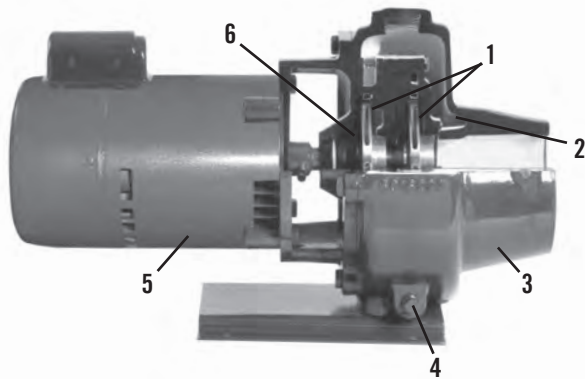
Model No.	HP	Suction Lift - FT.	Capacities in GPM at Discharge Pressure						Max. Shut off pressure
			10	20	30	40	50	60	
84300	3	10	120	117	102	80	48	59 PSIG	
		20	88	86	82	68	26		
84500	5	10	145	138	126	115	97	65	74 PSIG
		20	105	104	100	95	77	47	

1500XSW Series Multi-Stage Centrifugal Pumps

This two stage construction multi-stage centrifugal pump provides pressure to 60 PSI for high pressure applications. Motors are Nema standard construction, coupled shaft design and available in both single and three-phase. Housing and adapter are cast iron. Impeller of your choice - no-lead bronze or plastic.

Features:

- Trouble-free (carbon-ceramic) seal.



- 1 - Impeller**
Available in either dynamically balanced no-lead bronze or engineered thermoplastic
- 2 - Cast Iron Diffusers**
Precision machined for greatest efficiency
- 3 - Cast Iron Pump Body & Motor Adapter**
- 4 - Drain Plug**
- 5 - Nema Standard Motor**
Heavy duty, capacitor start, dual voltage (230/115) with built-in overload protection. Choice of 3/4, 1, 1 1/2, & 2 HP. 50 Hz. or 60 Hz.
- 6 - Shaft Seal**
Standard 3/4" ceramic carbon rotating mechanical seal

Performance

Model No.	HP	Suction Lift - FT.	Capacities in GPM at Discharge Pressure				
			20	30	40	50	60
1575XSW 1575XSW3	3/4	10	34.3	28.8	22.2		
		15	33.2	27.6	20.4		
		20	32	26	18.4		
		25	29.9	24.9	--		
1510XSW 1510XSW3	1	10	41.7	37.7	31.7	24.2	
		15	40	36.5	30.2	22.2	
		20	36.6	34.3	28.5	19.8	
		25	29.5	28.5	26.5	16.5	
1515XSW 1515XSW3	1 1/2	10	42.3	40.5	36.5	32	24.5
		15	41.7	39.8	35.3	29.3	23
		20	40.3	39	34	28	21
		25	33.3	32.5	31	26.5	18.8

- To order with plastic impeller, add "P" to model number above. Example: 1575XSWP

Specifications

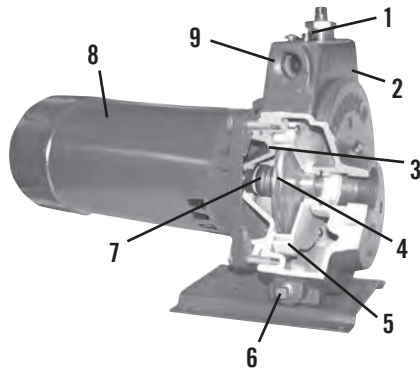
Model No.	HP	Voltage	Phase	Suction	Discharge	Stages	Ship WT. (lbs.)
1575XSW	3/4	115 / 230	1	1 1/4"	1"	2	64
1575XSW3	3/4	230 / 460	3	1 1/4"	1"	2	59
1510XSW	1	115 / 230	1	1 1/4"	1"	2	64
1510XSW3	1	230 / 460	3	1 1/4"	1"	2	61
1515XSW	1 1/2	115 / 230	1	1 1/4"	1"	2	66
1515XSW3	1 1/2	230 / 460	3	1 1/4"	1"	2	64

8600SW Series Convertible Centrifugal Pumps

The convertible centrifugal pump is ideal for lawn sprinkling, garden irrigation, pool filling, draining, cooling towers, and other water transfer applications. The square flange construction has a high service factor rating for continuous operation. The 8600SW pump has a capacity to 65 gallons per minute (GPM), and requires no maintenance.

Features:

- Self-priming under normal conditions
- Time proven 5/8" mechanical seal
- Pressure to 40 PSI / 92 feet head
- For shallow wells, lakes, streams, or booster systems



- 1 - **Internal Regulating Valve**
(Manual adjustment for deep well only)
- 2 - **Cast Iron Pump Body**
- 3 - **Seal / Condensation Plate**
Provides air gap between motor & water chamber
- 4 - **Impeller**
Available in engineered polycarbonate thermoplastic
- 5 - **Diffusers**
Multi-volute engineered thermoplastic diffuser for maximum capacity and pressure
- 6 - **Drain Plug**
- 7 - **Shaft Seal**
Standard 5/8" ceramic carbon rotating mechanical seal
- 8 - **High Service Factor, Capacitor Start, Threaded Shaft, Square Flange Motor**
Built to Nema specifications by nationally known manufacturers to assure local service availability. Choice of 1/3, 1/2, 3/4, & 1 HP. 50 Hz. or 60 Hz.
- 9 - **Zinc Plated Plug**
(With Pressure Gauge Tap and 1/4" plug)

Performance

Model No.	HP	Suction Lift - FT.	Capacities in GPM at Discharge Pressure							Max. Shut off pressure PSI / FT.
			5# / 12'	10# / 23'	15# / 35'	20# / 46'	25# / 58'	30# / 69'	35# / 81'	
8650SW	1/2	10	52	49.5	47	39.5	25	10.8	--	34# / 78'
		20	46.5	45.5	40.5	28	11.5	--	--	30# / 69'
8670SW	3/4	10	60	60	57.8	56	51.5	40	--	38# / 88'
		20	52	52	52	50	41	19.3	--	34# / 78'
8610SW	1	10	65	65	62.8	60.8	57	50	41.5	42# / 97'
		20	54	54	53.5	52.5	48	41	26	38# / 88'

Specifications

Model No.	HP	Volts	Pipe Sizes		Ship WT. (lbs.)
			Suction	Discharge	
8650SW	1/2	115 / 230	1 1/4"	1"	40#
8670SW	3/4	230 / 115	1 1/4"	1"	42#
8610SW	1	230 / 115	1 1/4"	1"	46#

- **Suction Pipe** = 1 1/4" NPT. For best results increase to 2" NPT within 6" of pump intake.
 - **Discharge Pipe** = 1" NPT. For best results increase to 1 1/2" NPT within 6" of pump outlet using priming plug opening.
 - Maximum allowable operating pressure = 100 PSIG (as a booster pump, for example).
- NOTE:** Standard 8600 series pumps, with pressure switch, may also be used with these applications and if the 3/4" top discharge tapping is increased to 1 1/2" NPT similar, but slightly less, capacity will be obtained.



89000 Series Self Priming Sprinkler Pumps

A.Y. McDonald's E-Series Sprinkler Pump is designed with a 1 1/2" inlet and outlet with a flow of up to 85 GPM. With an easy switch between 115V and 230V and a 304 stainless steel insert on the impeller, this high quality pump also contains a stainless steel wear ring between the impeller and diffuser. The E-Series Sprinkler Pump is available in 1, 1 1/2, and 2 HP and comes with a reliable, robust, and tested motor.

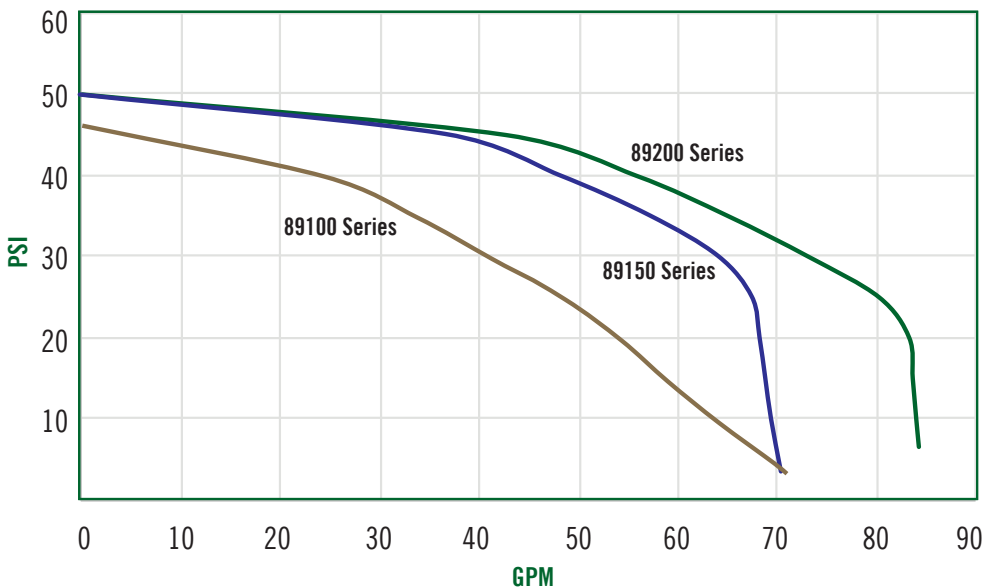


Features:

- Up to 85 GPM
- 1 1/2" Inlet & outlet
- Reliable, robust, and tested motor
- Easy to switch between 115V & 230V (Factory preset to 230V)
- 2 HP Sprinkler pump - 230V Only
- 304 Stainless steel motor shaft with wrench flat
- All iron pump housing and seal plate
- 304 Stainless steel insert on impeller
- Stainless steel wear ring between the impeller & diffuser
- Stainless steel bolt hardware connecting pump to motor

Irrigation & Booster Pumps

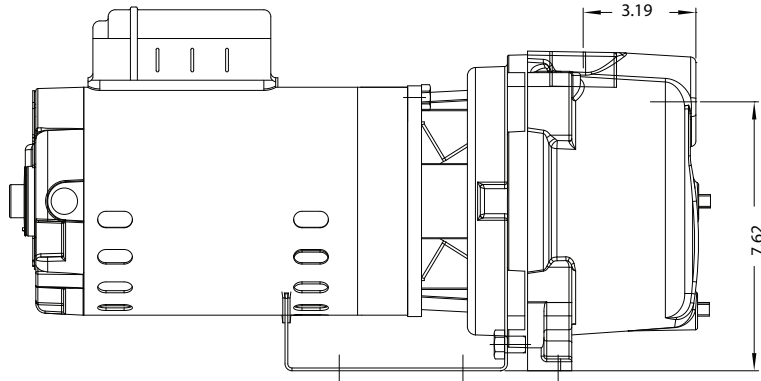
Flow GPM vs. Pressure PSI Curve



Models Available

Model No.	HP	Volts	Pipe Sizes		Ship WT. (lbs.)
			Suction	Discharge	
89100	1	115 / 230	1 1/2"	1 1/2"	59
89150	1 1/2	115 / 230	1 1/2"	1 1/2"	63
89200	2	230	1 1/2"	1 1/2"	64

89000 Series Sprinkler Pumps



Performance

Model No.	HP	Suction Lift - FT.	Capacities in GPM at Discharge Pressure				Max. Shut off PSI
			10	20	30	40	
89100	1	0	63	54	41	24	46.2
		5	61	51	38	19	44
		10	56	46	32		41.9
		15	51	44	28		39.7
		20	43	40	23		38.3
		25	35	34	18		34.8
89150	1 1/2	0	69	68	64	48	49.9
		5	62	61	58	42	46.7
		10	55	53	51	35	45
		15	48	48	46	26	44.2
		20	42	40	39	15	43.8
		25	34	34	30		41.4
89200	2	0	83	83	73	54	50
		5	73	73	69	49	48
		10	57	57	56	39	48
		15	50	50	50	34	43.8
		20	42	42	42	22	45.1
		25	34	34	34		39.4



Sump, Sewage, & Effluent Pumps

Sump, Sewage, & Effluent Pumps

Pump Catalog - January 2020

MORE THAN A BRAND. WE'RE A FAMILY.

How to Order Sump Pumps

Order by Model Number - Example: 5033CTEF25

5

Pump Model
5 - Series

033

Horsepower
020 - 1/5 HP
025 - 1/4 HP
030 - 3/10 HP
033 - 1/3 HP
040 - 4/10 HP
050 - 1/2 HP

C

Construction
C - Cast Iron
P - Plastic

T

Switch Type
T - Tethered
V - Vertical
U - None / Utility

EF

Pump Type
UP - Utility pump
SP - Sump pump
EF - Effluent pump
SJ - Sewage ejector
PD - Pedestal pump

25

Specials
15 - 15' Cord
25 - 25' Cord
EZ - EZ install
K - Sink system
H - High Head / High Volume
BU - Battery backup
CWB - Clearwater basin
CSK - Crawl space kit
PAC - Simplex system
PAC24 - Simplex system 24 x 24
PACSDA - Nema 3R alarm
PACDA1 - Nema 1 Tank alarm
PACSL - Simplex system w/ split lid

Locating the Serial Number on the Tag / Pump



5020PUUP Utility Pumps

This 5020PUUP can handle up to 26 gallons per minute (GPM). Built with a tough thermoplastic construction, it has a sleek design that allows the pump to fit in a 6" or larger opening.

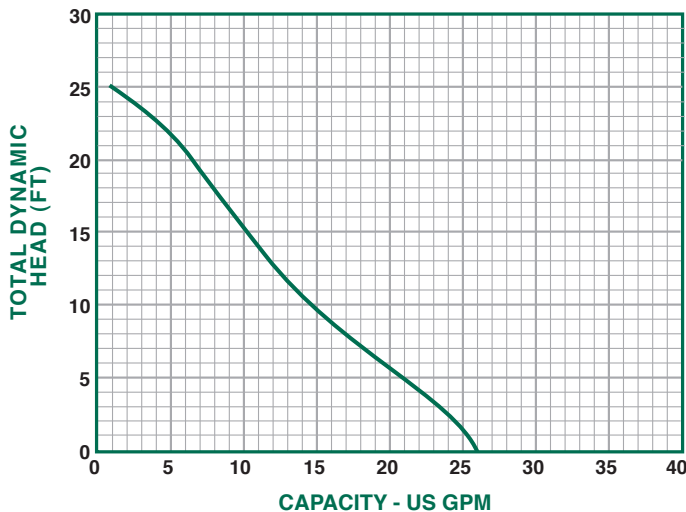
Features:

- Split Capacitor Motor - 1/5 HP continuous duty, thermal protected
- Lifts water up to 25' of vertical height
- 10' Power Cord
- 3/4" Garden hose adapter included
- Large 1 1/4" discharge for high capacity pumping
- Clog resistant impeller

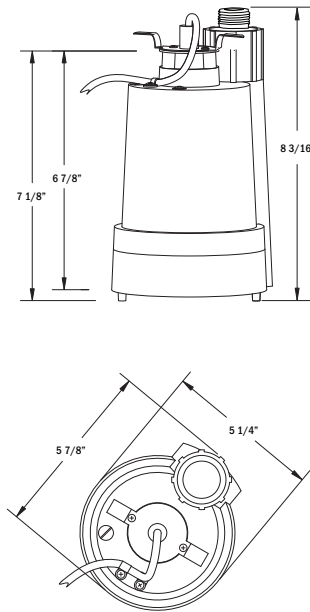


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5020PUUP	26	21	14	10	7	1

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5020PUUP	1/5	120	60	3.6	Thermoplastic	1 1/4"	10'	1/8"	3450	1	8

Sump, Sewage, & Effluent Pumps

5025PTSP Sump Pumps

With a tough thermoplastic construction, the 5025PTSP can handle up to 30 gallons per minute (GPM).

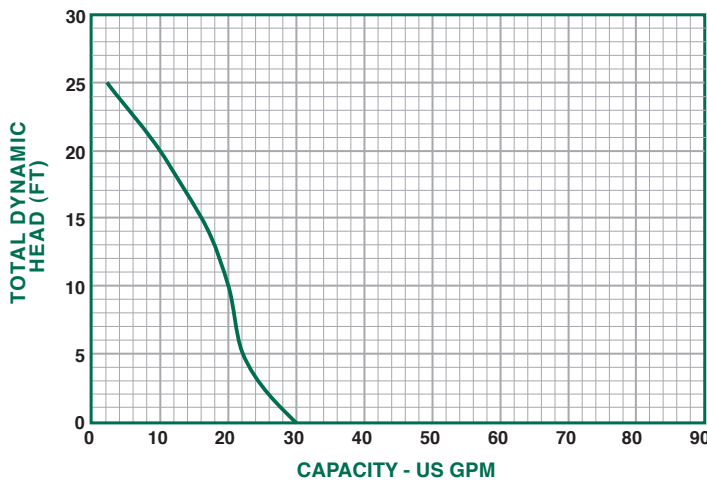
Features:

- Split Capacitor Motor - 1/4 HP continuous duty, thermal protected
- Lifts water up to 25' of vertical height
- 10' power cord, 25' cords are available for an additional charge
- Large 1 1/4" or 1 1/2" discharge for high capacity pumping
- Clog resistant impeller
- Tethered float switch

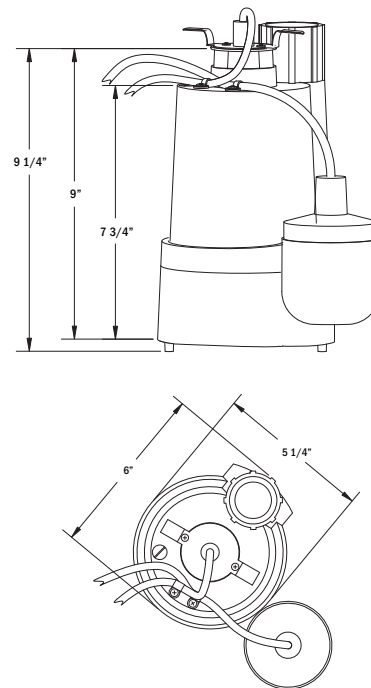


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5025PTSP	30	22	20	16	9	2

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5025PTSP	1/4	120	60	3.8	Thermoplastic	1 1/4" or 1 1/2"	10'	1/8"	3450	1	9

5025PVSP Sump Pumps

With a tough thermoplastic construction, the 5025PVSP can handle up to 30 gallons per minute (GPM).

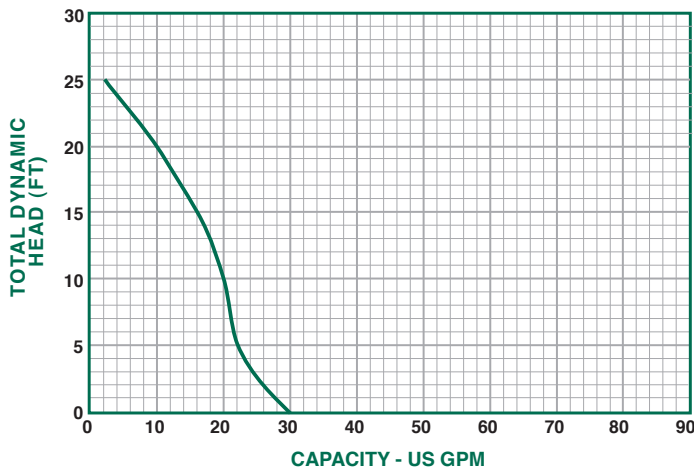
Features:

- Split Capacitor Motor - 1/4 HP continuous duty, thermal protected
- Lifts water up to 25' of vertical height
- 10' power cord, 25' cords are available for an additional charge
- Large 1 1/4" or 1 1/2" discharge for high capacity pumping
- Clog resistant impeller
- Vertical float switch

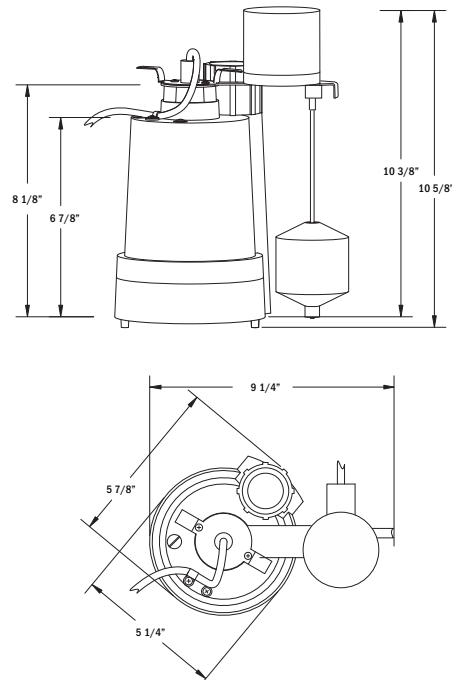


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5025PVSP	30	22	20	16	9	2

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5025PVSP	1/4	120	60	3.8	Thermoplastic	1 1/4" or 1 1/2"	10'	1/8"	3450	1	9

Sump, Sewage, & Effluent Pumps

5030CVSP 5030CUSP, & 5030CUSP25 Sump Pumps

With a rugged cast iron construction, the 5030CVSP, 5030CUSP, and 5030CUSP25 can handle up to 46 gallons per minute (GPM).

Features:

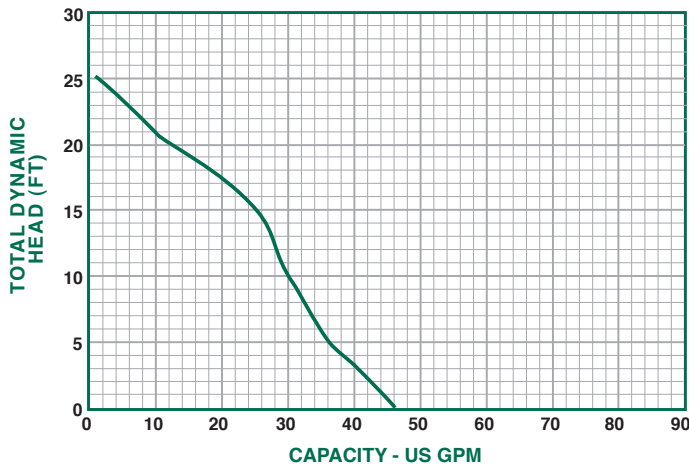
- Split Capacitor Motor - 3/10 HP continuous duty, thermal protected
- Lifts water up to 25' of vertical height
- 10' power cord, 25' cords are available for an additional charge
- Large 1 1/2" discharge for high capacity pumping
- Also available without a switch
- Non-clogging stainless steel impeller
- Vertical float switch



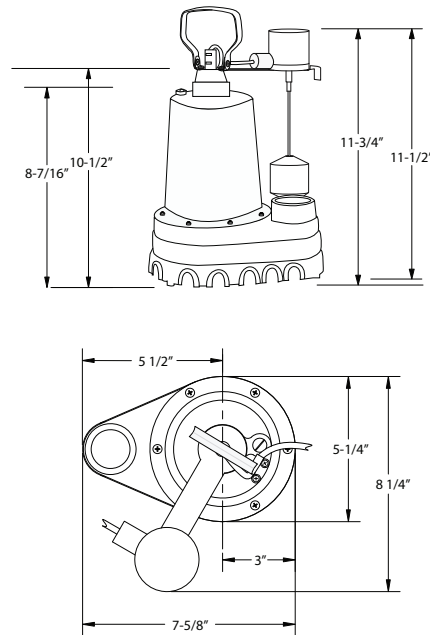
See Pumps & Accessories Price List for Limited Warranty details.



Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
5030CUSP	0	5	10	15	20	25
5030CUSP25	46	36	30	25	12	1
5030CVSP						

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5030CVSP	3/10	120	60	4.1	Cast Iron	1 1/2"	10'	3/8"	3450	1	20
5030CUSP (NO SWITCH)	3/10	120	60	4.1	Cast Iron	1 1/2"	10'	3/8"	3450	1	18
5030CUSP25 (NO SWITCH)	3/10	120	60	4.1	Cast Iron	1 1/2"	25'	3/8"	3450	1	19

Sump, Sewage, & Effluent Pumps

5030CTSP Sump Pumps

With a rugged cast iron construction, the 5030CTSP can handle up to 46 gallons per minute (GPM).

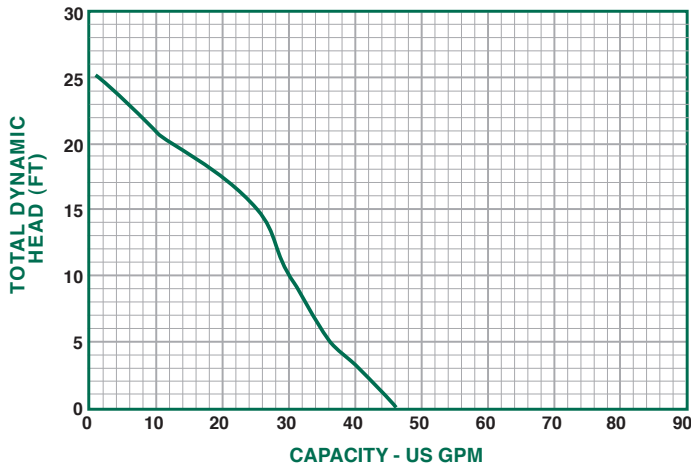
Features:

- Split Capacitor Motor - 3/10 HP continuous duty, thermal protected
- Lifts water up to 25' of vertical height
- 10' power cord, 25' cords are available for an additional charge
- Large 1 1/2" discharge for high capacity pumping
- Non-clogging stainless steel impeller
- Tethered float switch

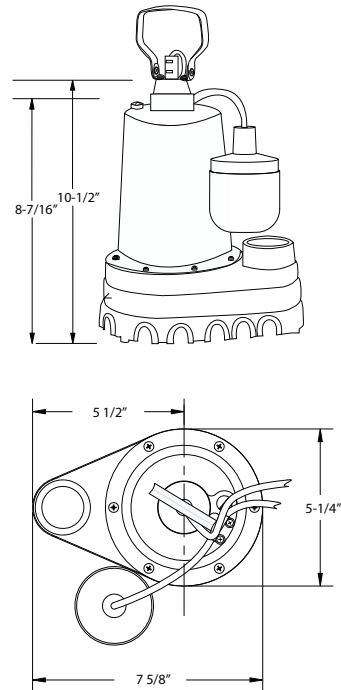


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5030CTSP	46	36	30	25	12	1

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5030CTSP	3/10	120	60	4.1	Cast Iron	1 1/2"	10'	3/8"	3450	1	19

Sump, Sewage, & Effluent Pumps

5033PVSP Sump Pumps

With a tough thermoplastic construction, the 5033PVSP can handle up to 40 gallons per minute (GPM).

Features:

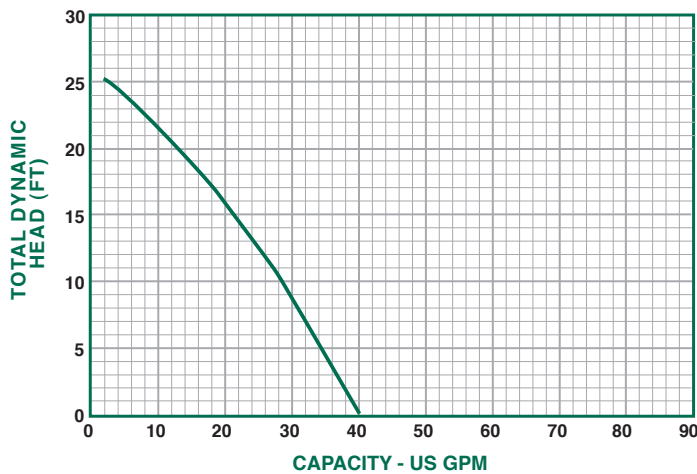
- Split Capacitor Motor - 1/3 HP continuous duty, thermal protected
- Lifts water up to 25' of vertical height
- 10' power cord, 25' cords are available for an additional charge
- Large 1 1/4" or 1 1/2" discharge for high capacity pumping
- Also available without a switch
- Clog resistant impeller
- Vertical float switch



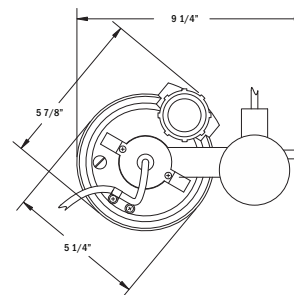
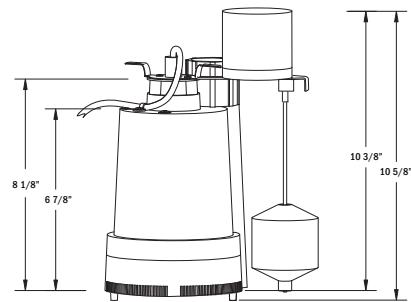
See Pumps & Accessories Price List for Limited Warranty details.



Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5033PVSP	40	34	28	22	12	2

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5033PVSP	1/3	120	60	4.1	Thermoplastic	1 1/4" or 1 1/2"	10'	1/8"	3450	1	10

5033CVSP 5033CUSP, & 5033CUSP25 Sump Pumps

With a rugged cast iron construction, the 5033CVSP, 5033CUSP, and 5033CUSP25 can handle up to 60 gallons per minute (GPM).

Features:

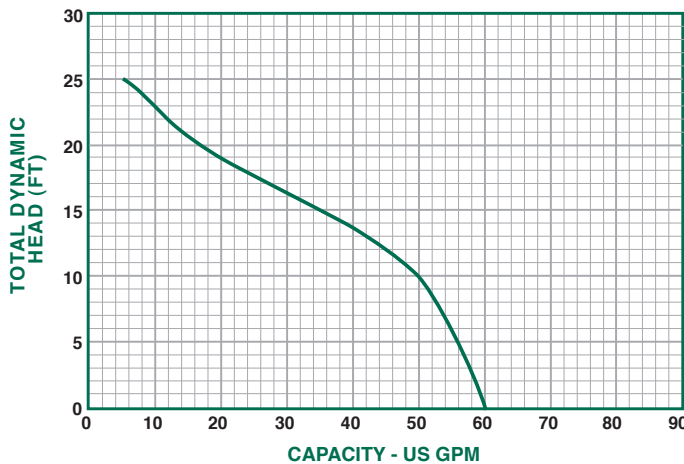
- Split Capacitor Motor - 1/3 HP continuous duty, thermal protected
- Lifts water up to 25' of vertical height
- 10' power cord, 25' cords are available for an additional charge
- Large 1 1/2" discharge for high capacity pumping
- Also available without a switch
- Clog resistant impeller
- Vertical float switch



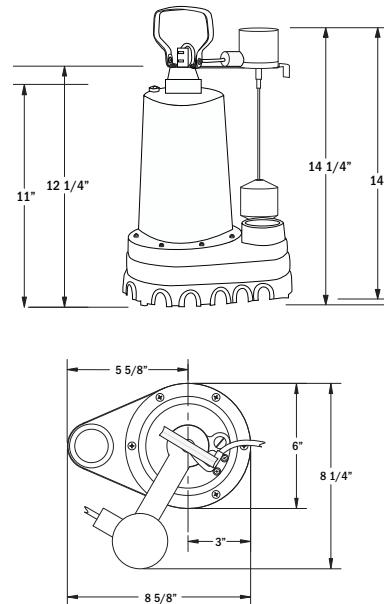
See Pumps & Accessories Price List for Limited Warranty details.



Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
5033CUSP	0	5	10	15	20	25
5033CUSP25	60	56	50	35	15	6
5033CVSP						

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5033CVSP	1/3	120	60	5.9	Cast Iron	1 1/2"	10'	1/2"	3450	1	25
5033CUSP (NO SWITCH)	1/3	120	60	5.9	Cast Iron	1 1/2"	10'	1/2"	3450	1	24
5033CUSP25 (NO SWITCH)	1/3	120	60	5.9	Cast Iron	1 1/2"	25'	1/2"	3450	1	25

5050CVSP & 5050CUSP25 Sump Pumps

With a rugged cast iron construction, the 5050CVSP and 5050CUSP25 can handle up to 70 gallons per minute (GPM).

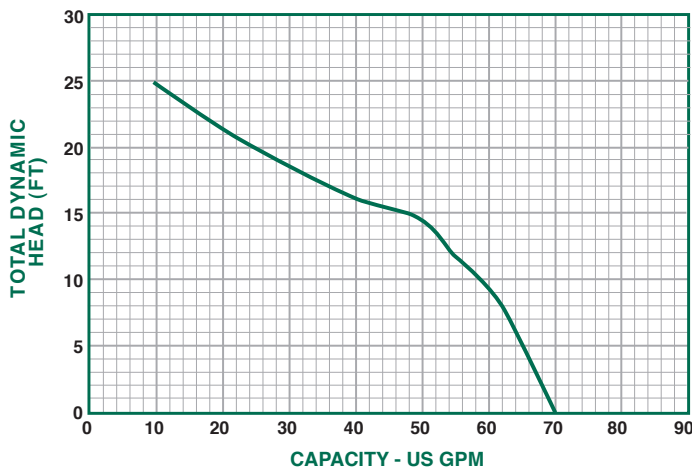
Features:

- Split Capacitor Motor -
1/2 HP continuous duty, thermal protected
- Lifts water up to 25' of vertical height
- 10' power cord, 25' cords are available for an additional charge
- Large 1 1/2" discharge for high capacity pumping
- Also available without a switch
- Clog resistant impeller
- Vertical float switch

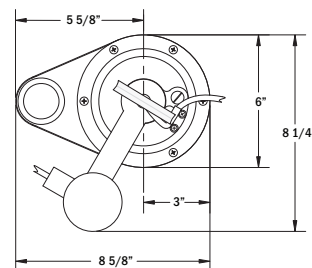
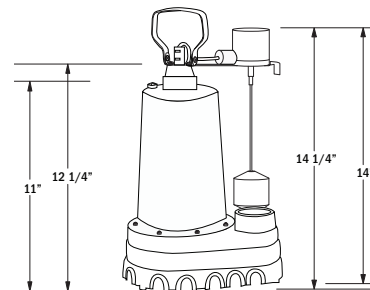


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	0	5	10	15	20	25
5050CUSP25	0	5	10	15	20	25
5050CVSP	70	66	58	48	25	10

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5050CVSP	1/2	120	60	7.6	Cast Iron	1 1/2"	10'	1/2"	3450	1	25
5050CUSP25 (NO SWITCH)	1/2	120	60	7.6	Cast Iron	1 1/2"	25'	1/2"	3450	1	27

Sump, Sewage, & Effluent Pumps

5033PVPD Sump Pumps

The 5033PVPD is designed for use in sump basins 12" or larger. It has a tough thermoplastic base and will handle liquids up to 120°F.

Features:

- Fully adjustable automatic switch
- Metal switch arm for strength and durability
- 1 1/4" discharge for high capacity pumping
- Non-corrosive plated steel drive shaft

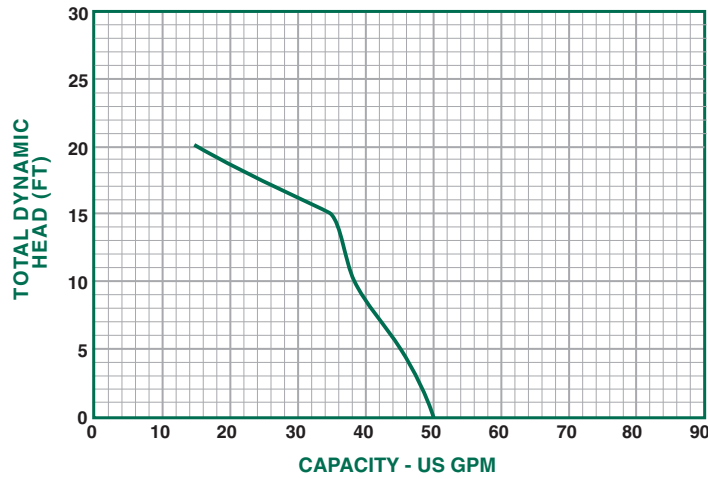
***Non-submersible pump! Motor cannot get wet.**



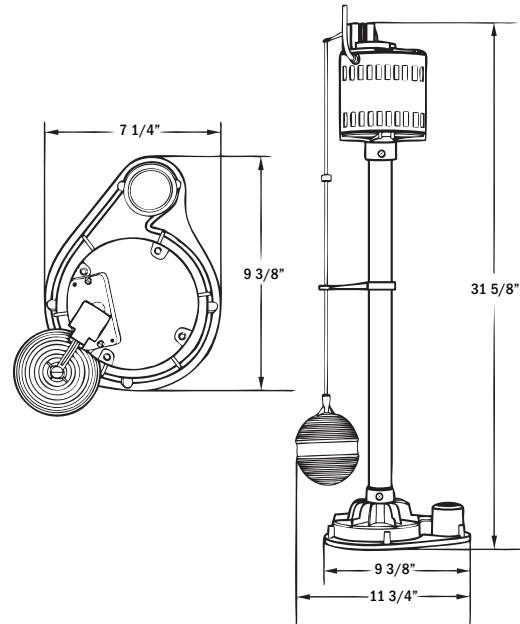
See Pumps & Accessories Price List for Limited Warranty details.



Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5033PVPD	50	45	38	35	15	-

Specifications

Model No.	HP	Amps	Base Material	Discharge Size	Column Material	Impeller Material	Cord Length	Wt.
5033PVPD	1/3	2.76	Thermoplastic	1 1/4"	Thermoplastic	Stainless Steel	10'	16

Sump, Sewage, & Effluent Pumps

5050CVPD Sump Pumps

The 5050CVPD is designed for use in sump basins 12" or larger. It has a strong cast iron base construction and will handle liquids up to 180°F.

Features:

- Fully adjustable automatic switch
- Metal switch arm for strength and durability
- 1 1/2" discharge for high capacity pumping
- Non-corrosive stainless steel drive shaft, impeller & float ball

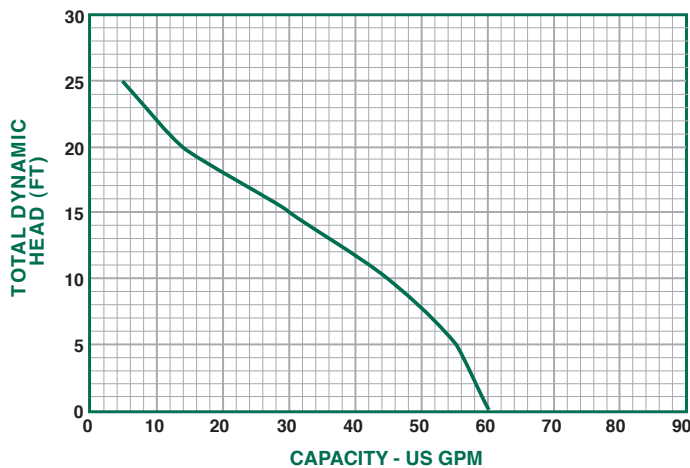
***Non-submersible pump! Motor cannot get wet.**



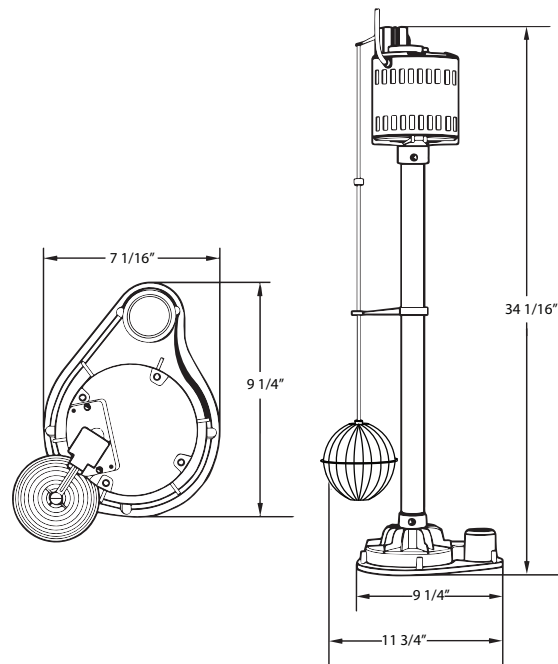
See Pumps & Accessories Price List for Limited Warranty details.



Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5050CVPD	60	55	45	30	12	5

Specifications

Model No.	HP	Amps	Base Material	Discharge Size	Column Material	Impeller Material	Cord Length	Wt.
5050CVPD	1/2	3.06	Cast Iron	1 1/2"	Stainless Steel	Stainless Steel	10'	28

5033CVSPEZ Sump Pumps

With its rugged cast iron construction and strong plastic base, the 5033CVSPEZ can handle up to 60 gallons per minute (GPM). It is pre-plumbed with a check valve and discharge pipe. Easy to install - everything you need comes in one box.

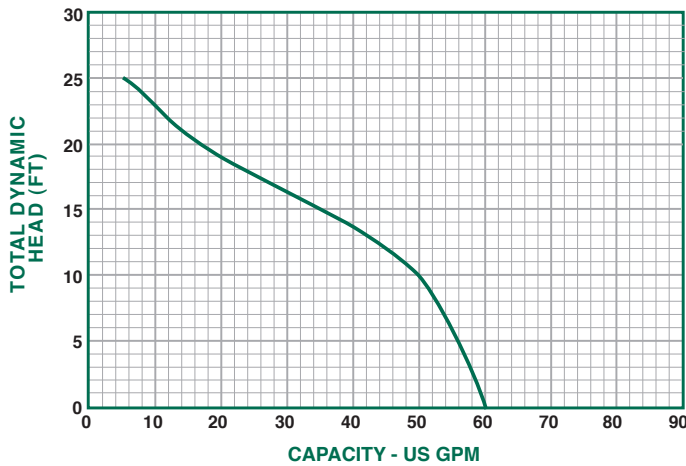
Features:

- Pump is mounted to the base to prevent clogging and switch malfunction
- Split Capacitor Motor - 1/3 HP continuous duty, thermal protected
- Lifts water up to 25' of vertical height
- 10' power cord, 25' cords are available for an additional charge
- Large 1 1/2" discharge for high capacity pumping
- Clog resistant impeller
- Vertical float switch
- Pre-plumbed

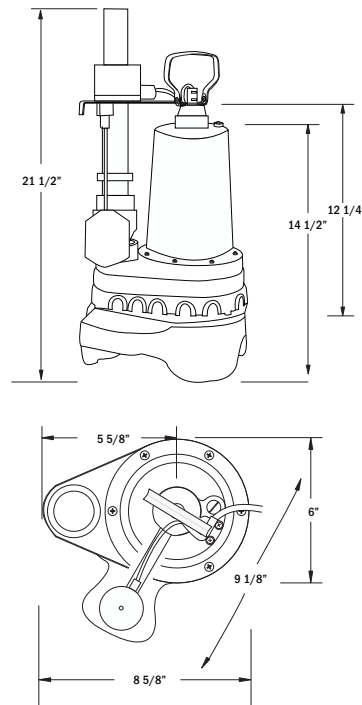


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5033CVSP	60	56	50	35	15	6

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5033CVSPEZ	1/3	120	60	5.9	Cast Iron	1 1/2"	10'	1/2"	3450	1	28

Sump, Sewage, & Effluent Pumps

5030CVSPK Sump Pumps

This pre-assembled sink drain system has a six gallon capacity basin. It is great for laundry tubs, washing machines, wet bars, and dehumidifiers. For easy installation, it comes pre-assembled.

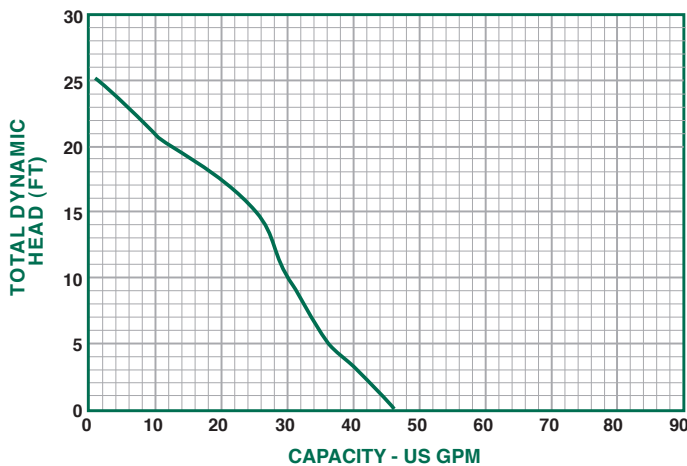
Features:

- 5030CVSP 3/10 HP cast iron sump pump with vertical switch
- 15" x 13 1/2" durable structural foam basin with 1 1/2" FNPT inlet
- 1 1/2" Full Flow Check Valve with Rubber Boots
- Structural foam cover with 1 1/2" FNPT discharge and vent
- Non-clogging stainless steel impeller

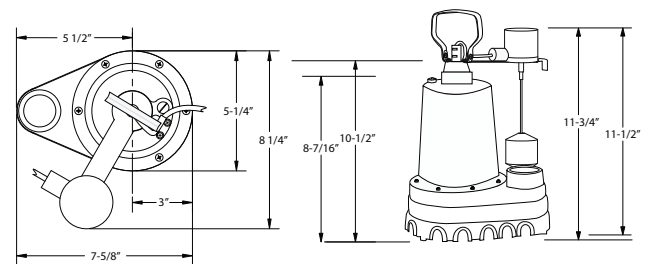
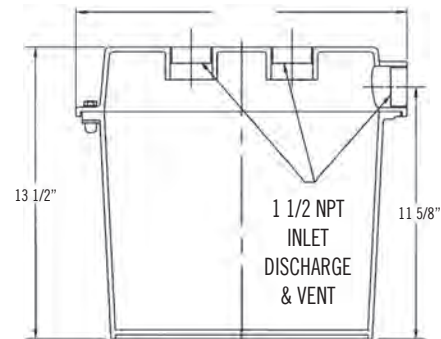


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5030CVSP	46	36	30	25	12	1

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5030CVSPK	3/10	120	60	4.1	Cast Iron	1 1/2"	10'	3/8"	3450	1	30

5030CVSPCSK Sump Pumps

With pre-drilled holes in the basin, this sump pump kit can be used for pumping water out of crawl spaces. The kit includes everything pictured on the right.

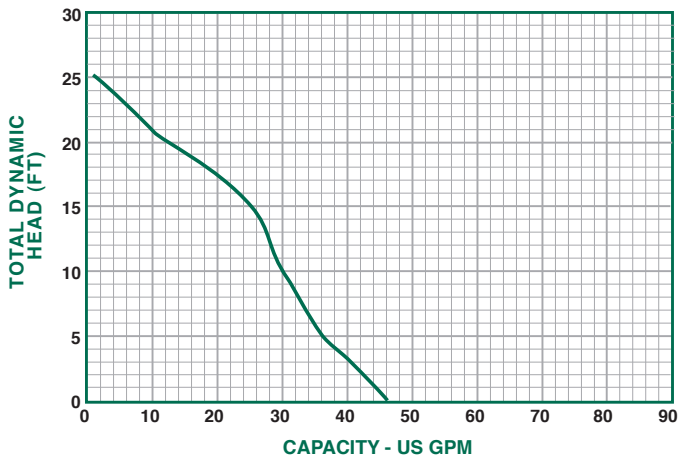
Features:

- 5030CVSP 3/10 HP cast iron sump pump with vertical float switch
- 18 1/4" x 17 1/4" Poly basin with slotted cover
- 24' hose - 1 1/4"
- 1 1/2" x 1 1/4" Hose adaptor with stainless steel clamp
- Non-clogging stainless steel impeller

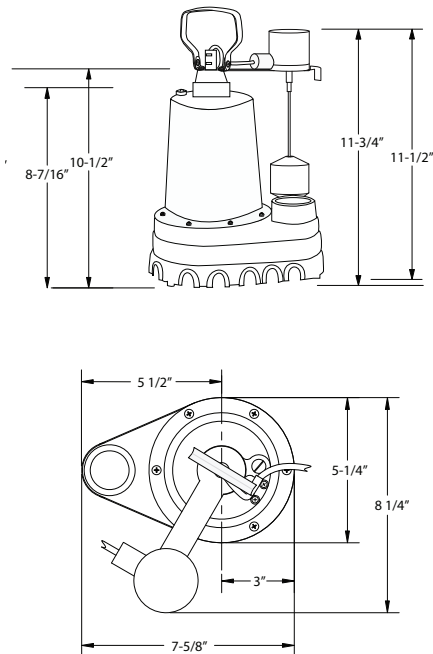


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5030CVSP	46	36	30	25	12	1

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5030CVSPCSK	3/10	120	60	4.1	Cast Iron	1 1/2"	10'	3/8"	3450	1	34

5025PTSPCWB Sump Pumps

This pre-assembled clear water basin package would be great for new home construction that requires both a sump pump and basin to be installed.

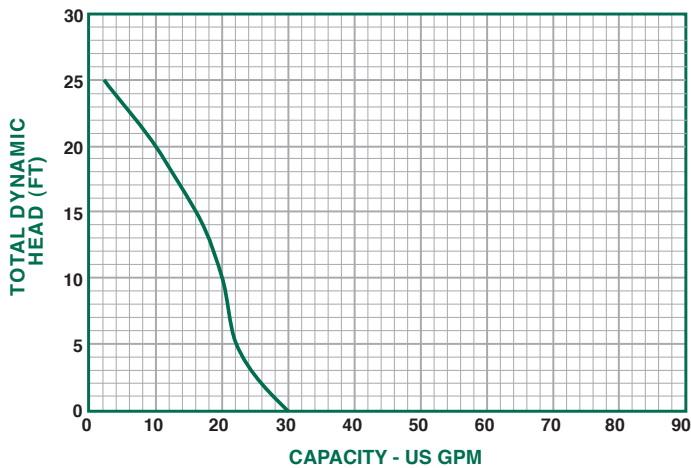
Features:

- 5025PTSP 1/4 HP Thermoplastic sump pump with tethered float switch
- 18" x 24" Structural foam basin with slotted cover
- 1 1/2" Full flow check valve with rubber boots
- 2' 1 1/2" PVC pipe
- Clog resistant impeller

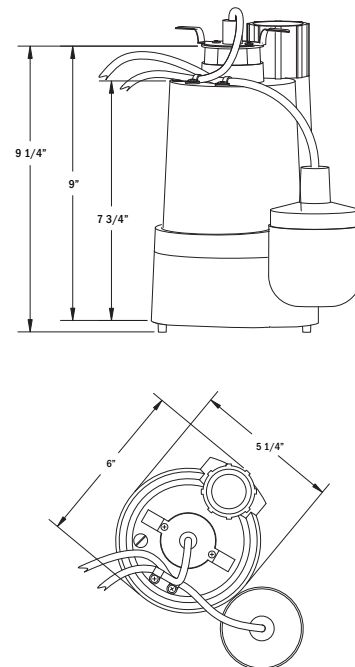


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5025PTSP	30	22	20	16	9	2

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5025PTSPCWB	1/4	120	60	3.8	Thermoplastic	1 1/4" or 1 1/2"	10'	1/8"	3450	1	29

5033CUEF Effluent Pumps

With a rugged cast iron construction, the 5033CUEF and 5033CTEF25 can handle up to 60 gallons per minute (GPM).

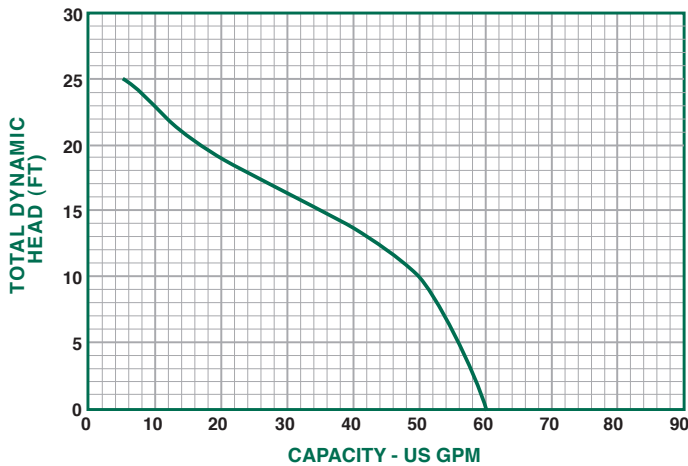
Features:

- Split Capacitor Motor - 1/3 HP continuous duty, thermal protected
- Lifts water up to 25' of vertical height
- 10' power cord, 25' cords are available for an additional charge
- Large 1 1/2" discharge for high capacity pumping
- Also available without a switch
- Non-clogging stainless steel vortex impeller
- Tethered float switch
- Handles 5/8" solids

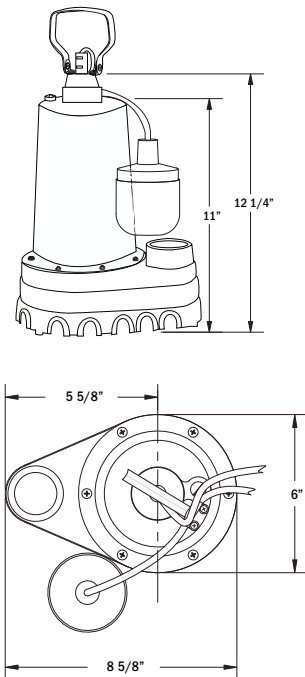


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	0	5	10	15	20	25
5033CUEF	60	56	50	35	15	6

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5033CUEF (NO SWITCH)	1/3	120	60	5.9	Cast Iron	1 1/2"	10'	5/8"	3450	1	24

5050CUEF, 5050CTEF, & 5050CTEF25 Effluent Pumps

With a rugged cast iron construction, the 5050C Series can handle up to 70 gallons per minute (GPM).

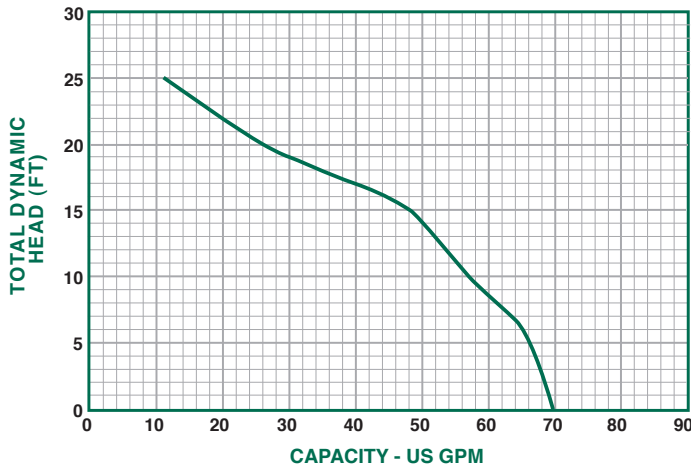
Features:

- Split Capacitor Motor - 1/2 HP continuous duty, thermal protected
- Lifts water up to 25' of vertical height
- 10' power cord, 25' cords are available for an additional charge
- Large 1 1/2" discharge for high capacity pumping
- Also available with or without tethered switch
- Non-clogging stainless steel vortex impeller
- Handles 5/8" solids

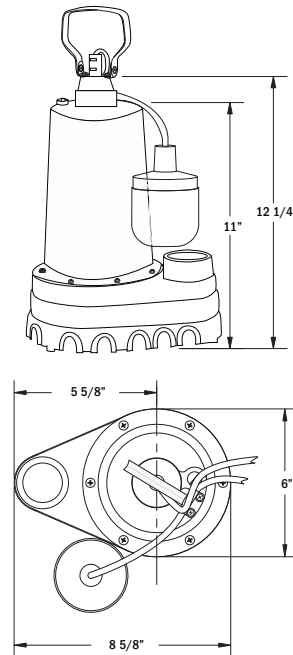


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5050CUEF						
5050CTEF						
5050CTEF25	70	66	58	48	25	10

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5050CUEF (NO SWITCH)	1/2	120	60	7.6	Cast Iron	1 1/2"	10'	5/8"	3450	1	24
5050CTEF	1/2	120	60	7.6	Cast Iron	1 1/2"	10'	5/8"	3450	1	25
5050CTEF25	1/2	120	60	7.6	Cast Iron	1 1/2"	25'	5/8"	3450	1	28

5050CVEF Effluent Pumps

With a rugged cast iron construction, the 5050CVEF can handle up to 70 gallons per minute (GPM).

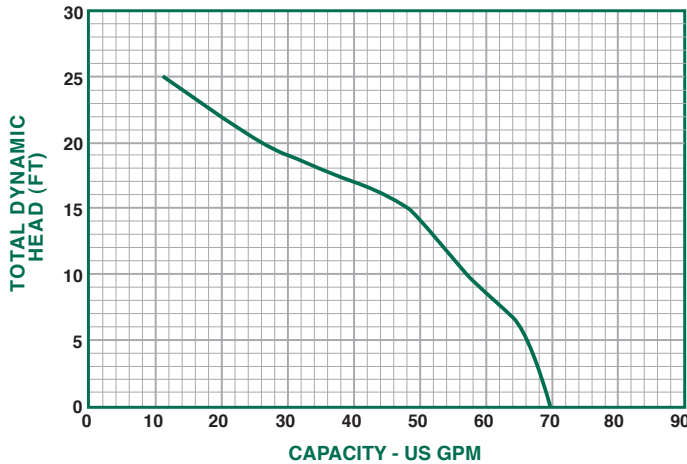
Features:

- Split Capacitor Motor - 1/2 HP continuous duty, thermal protected
- Lifts water up to 25' of vertical height
- 10' power cord
- Large 1 1/2" discharge for high capacity pumping
- Non-clogging stainless steel vortex impeller
- Vertical float switch
- Handles 5/8" solids

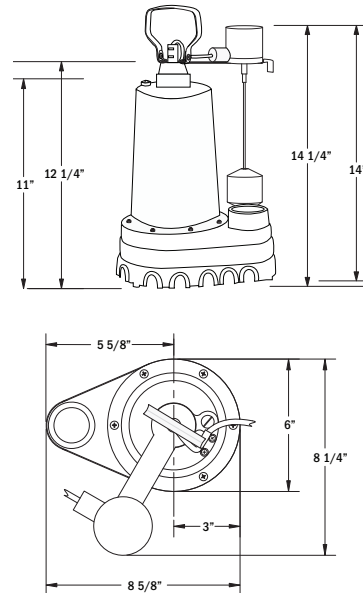


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5050CVEF	70	66	58	48	25	10

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5050CVEF	1/2	120	60	7.6	Cast Iron	1 1/2"	10'	5/8"	3450	1	25

Sump, Sewage, & Effluent Pumps

5040CTEFH25 5050CUEFH25, & 5050CTEFH25 High Head Effluent Pumps

This high quality and dependable pump features a stainless steel housing and a cast iron base. With a built-in thermal overload protection for safety and a permanent split capacitor continuous duty motor. Convenient carrying handle is attached.

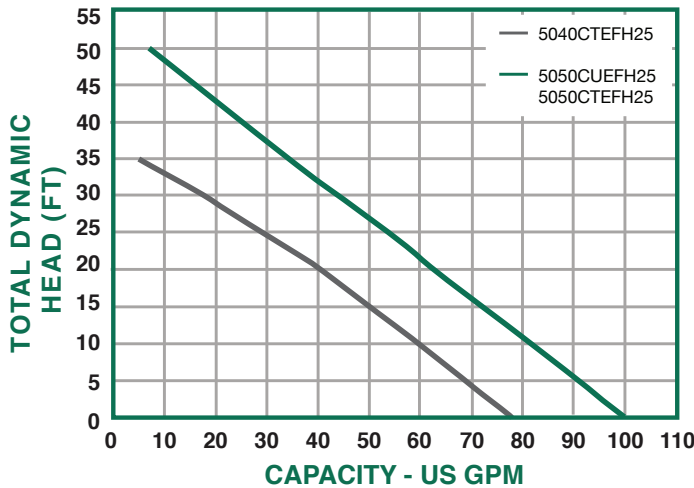
Features:

- Non-clogging stainless steel vortex impeller
- Also available without a switch
- 2" or 1 1/2" FNPT with adapter - discharge size
- Tethered float switch
- Handles 3/4" solids

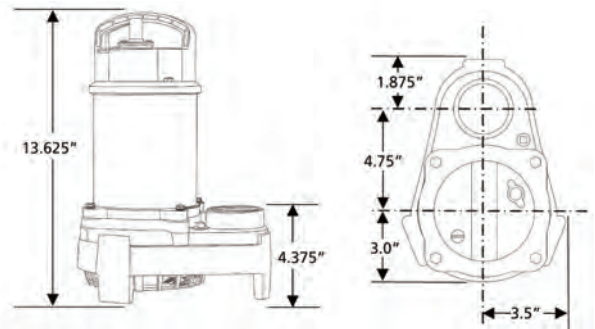


See Pumps & Accessories
Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet										
	0	5	10	15	20	25	30	35	40	45	50
5040CTEFH25	78	69	60	50	41	29	18	5	-	-	-
5050CUEFH25 5050CTEFH25	100	91	82	72	63	54	44	34	25	16	7

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	Switch	Phase	Wt.
5040CTEFH25	4/10	120	60	7.5	Cast Iron / Stainless Steel	2" or 1 1/2"	25'	3/4"	Tethered	1	27
5050CUEFH25 (NO SWITCH)	1/2	120	60	12	Cast Iron / Stainless Steel	2" or 1 1/2"	25'	3/4"	N/A	1	26
5050CTEFH25	1/2	120	60	12	Cast Iron / Stainless Steel	2" or 1 1/2"	25'	3/4"	Tethered	1	28

5050CUSJ & 5050CVSJ Sewage Pumps

With a rugged cast iron construction, the 5050CUSJ and 5050CVSJ can handle up to 80 gallons per minute (GPM).

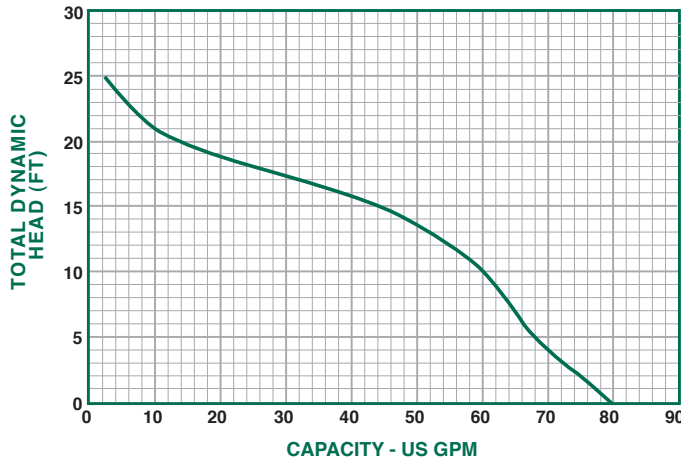
Features:

- Split Capacitor Motor - 1/2 HP continuous duty, thermal protected
- Lifts water up to 25' of vertical height
- 10' Power Cord
- Large 2" discharge for high capacity pumping
- Easily handles 2" solids
- Non-clogging cast stainless steel vortex impeller
- Also available without a switch
- Vertical float switch

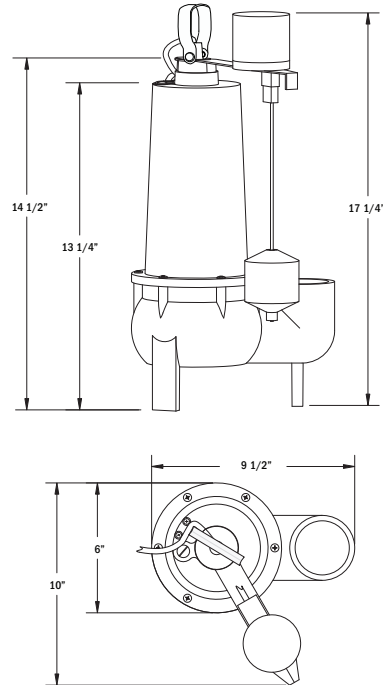


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
5050CUSJ	0	5	10	15	20	25
5050CVSJ	80	68	60	44	13	2

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5050CUSJ (NO SWITCH)	1/2	120	60	7.6	Cast Iron	2"	10'	2"	3450	1	25
5050CVSJ	1/2	120	60	7.6	Cast Iron	2"	10'	2"	3450	1	26

5050CTSJ & 5050CTSJ25 Sewage Pumps

With a rugged cast iron construction, the 5050CTSJ and 5050CTSJ25 can handle up to 80 gallons per minute (GPM).

Features:

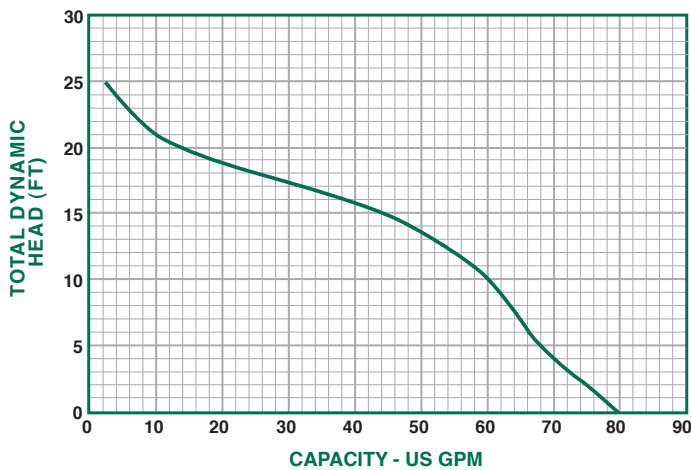
- Split Capacitor Motor - 1/2 HP continuous duty, thermal protected
- Lifts water up to 25' of vertical height
- 10' power cord, 25' cords are available for an additional charge
- Large 2" discharge for high capacity pumping
- Easily handles 2" solids
- Non-clogging cast stainless steel vortex impeller
- Tethered float switch



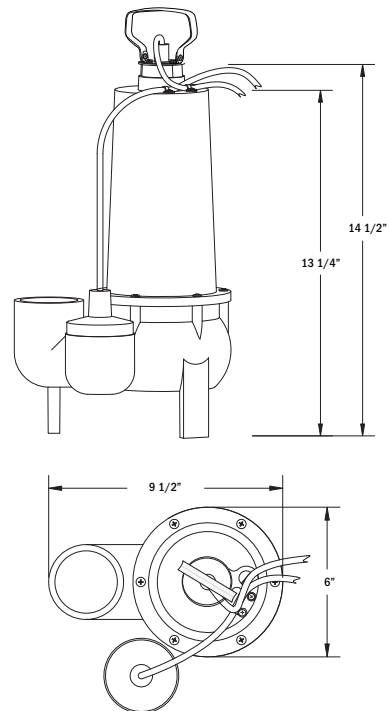
See Pumps & Accessories Price List for Limited Warranty details.



Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
5050CTSJ	0	5	10	15	20	25
5050CTSJ25	80	68	60	44	13	2

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5050CTSJ	1/2	120	60	7.6	Cast Iron	2"	10'	2"	3450	1	27
5050CTSJ25	1/2	120	60	7.6	Cast Iron	2"	25'	2"	3450	1	28

Sump, Sewage, & Effluent Pumps

5050CTSJ15, 5050CVSJ15, & 5050CTSJH25

1/2 HP High Volume Sewage Pump

This high quality and dependable pump features a stainless steel housing and a cast iron base. With a built-in thermal overload protection for safety and a permanent split capacitor continuous duty motor. Convenient carrying handle is attached.

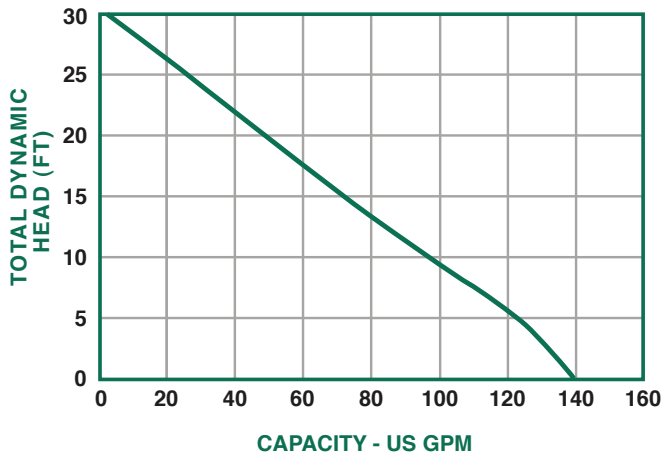
Features:

- Split Capacitor Motor - 1/2 HP continuous duty, thermal protected
- Lifts water up to 30' of vertical height
- 15' power cord & 25' option
- Large 2" discharge for high capacity pumping
- Easily handles 2" solids
- Non-clogging cast stainless steel vortex impeller
- Vertical, tethered, or no float switch

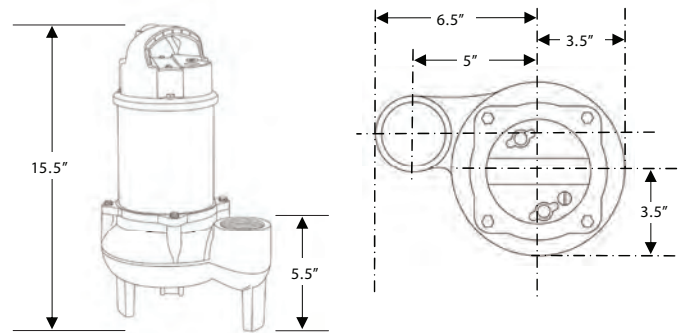


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet						
	0	5	10	15	20	25	30
5050CTSJ15	0	5	10	15	20	25	30
5050CVSJ15	140	123	97	72	49	25	3
5050CTSJH25							

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	Switch	Phase	Wt.
5050CTSJ15	1/2	120	60	12	Cast Iron / Stainless Steel	2"	15'	2"	Tethered	1	25
5050CVSJ15	1/2	120	60	12	Cast Iron / Stainless Steel	2"	15'	2"	Vertical	1	25
5050CTSJH25	1/2	120	60	12	Cast Iron / Stainless Steel	2"	25'	2"	Vertical	1	25

Sump, Sewage, & Effluent Pumps

5050CTSJPAC Sewage Package

This pre-assembled simplex sewage package is designed to be used in any residential sewage application. With a 30 gallon capacity, 2" solids handling, and a 2" discharge pipe connected to the sewage pump, the package is ready to be installed.

Features:

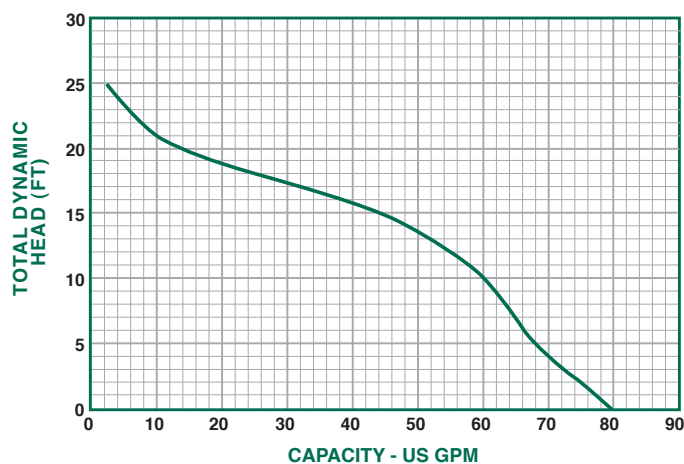
- 5050CTSJ 1/2 HP sewage pump with tethered switch
- 18" structural foam cover with gasket kit
- 18" x 30" durable structural foam sewage basin with 4" inlet
- 2" Full flow check valve with rubber boots
- 4" Snap-In-Hub with stainless steel clamp
- Stainless steel fasteners for cover
- 30" Long 2" PVC stub pipe
- Non-clogging stainless steel vortex impeller



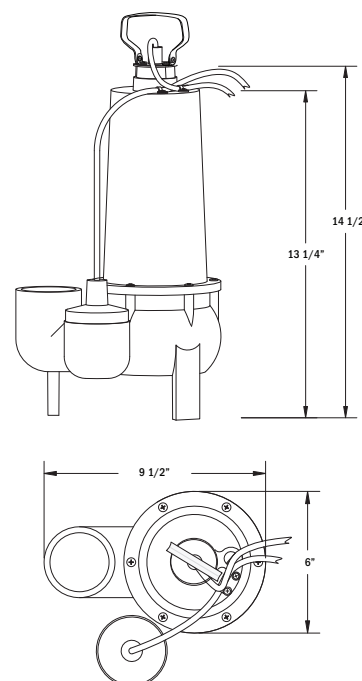
See Pumps & Accessories Price List for Limited Warranty details.



Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5050CTSJ	80	68	60	44	13	2

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5050CTSJPAC	1/2	120	60	7.6	Cast Iron	2"	10'	2"	3450	1	54

5050CTSJPACSDA Sewage Package

This pre-assembled simplex sewage package with side discharge and alarm is designed to be used in any residential sewage application. With a 30 gallon capacity, 2" solids handling, and a 2" discharge pipe connected to the sewage pump, the package is ready to be installed.

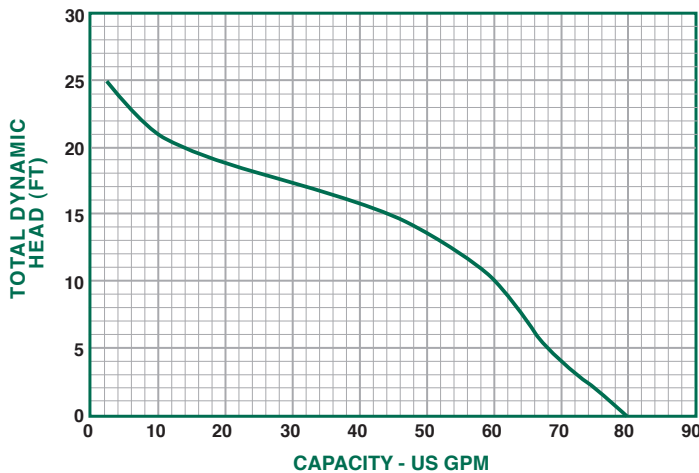
Features:

- 5050CTSJ25 1/2 HP sewage pump with tethered switch
- 18" structural foam cover with gasket kit
- 18" x 30" durable structural foam sewage basin with 4" inlet with "Snap-In-Hub"
- 2" Full flow check valve with rubber boots
- 4" Snap-In-Hub with stainless steel clamp
- Stainless steel fasteners for cover
- 30" Long 2" PVC stub pipe
- Automatic alarm reset, silence switch, and alarm test switch, alarm enclosure rated for outdoor use
- NEMA 3R Tank alarm
- Non-clogging stainless steel vortex impeller

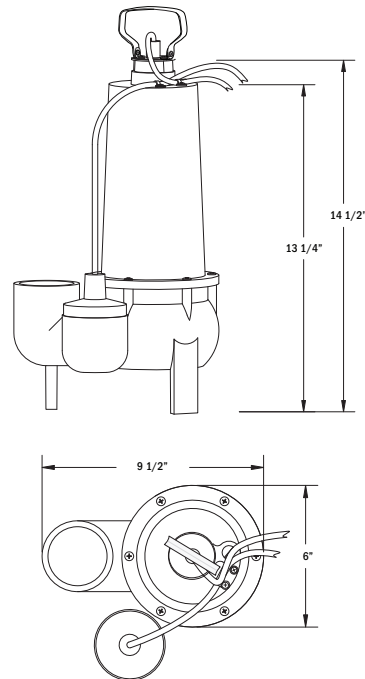


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5050CTSJ25	80	68	60	44	13	2

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5050CTSJPACSDA	1/2	120	60	7.6	Cast Iron	2"	25'	2"	3450	1	62

5050CTSJPACDA1 Sewage Package

This pre-assembled simplex sewage package with top discharge and alarm is designed to be used in any residential sewage application. With a 30 gallon capacity, 2" solids handling, and a 2" discharge pipe connected to the sewage pump, the package is ready to be installed.

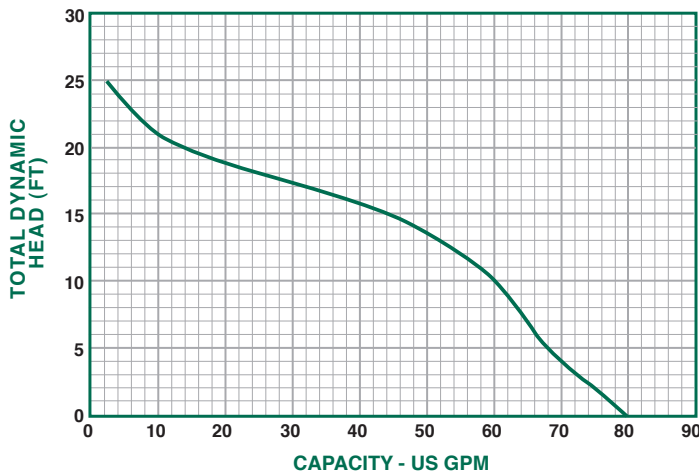
Features:

- 5050CTSJ 1/2 HP sewage pump with tethered switch
- 18" structural foam cover with gasket kit
- 18" x 30" durable structural foam sewage basin with 4" inlet with "Combo Hub"
- 2" Full flow check valve with rubber boots
- 4" Snap-In-Hub with stainless steel clamp
- Stainless steel fasteners for cover
- 30" Long 2" PVC stub pipe
- Automatic alarm reset, silence switch, and alarm test switch, alarm enclosure rated for outdoor use
- NEMA 1 Tank alarm
- Non-clogging stainless steel vortex impeller

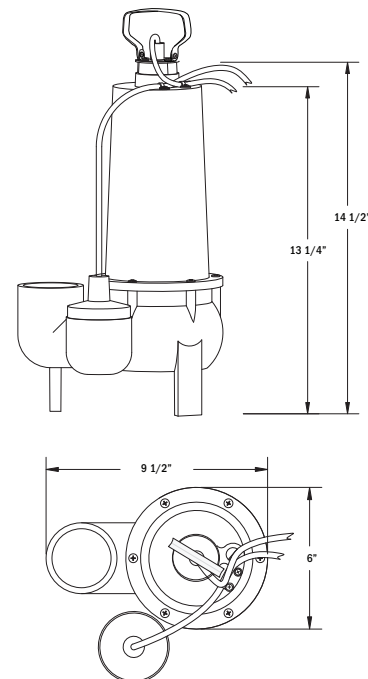


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5050CTSJ	80	68	60	44	13	2

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5050CTSJPACDA1	1/2	120	60	7.6	Cast Iron	2"	10'	2"	3450	1	

5050CTSJPAC24 Sewage Package

This pre-assembled 24" x 24" simplex sewage package is designed for use in any residential sewage application with its 45 gallon capacity.

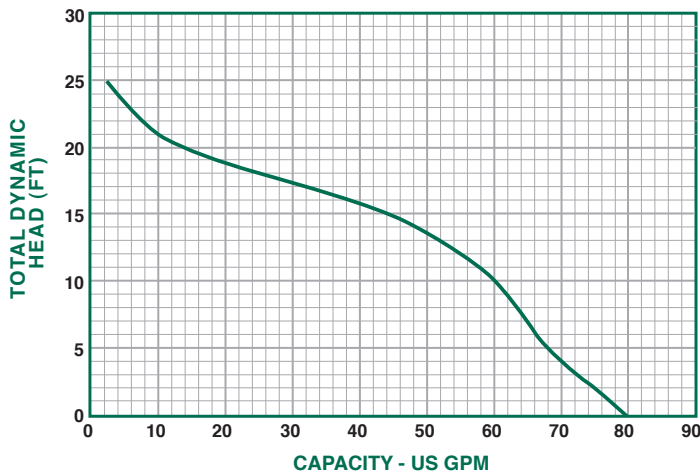
Features:

- 5050CTSJ 1/2 HP sewage pump with tethered switch
- 24" structural foam cover with gasket kit
- 24" x 24" durable structural foam sewage basin with 4" inlet
- 2" Full flow check valve with rubber boots
- 4" Snap-In-Hub with stainless steel clamp
- Non-clogging stainless steel vortex impeller

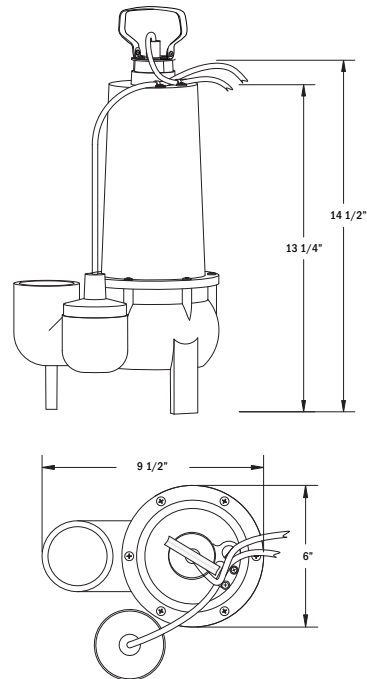


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5050CTSJ	80	68	60	44	13	2

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5050CTSJPAC24	1/2	120	60	7.6	Cast Iron	2"	10'	2"	3450	1	62

Sump, Sewage, & Effluent Pumps

5050CTSJPACSL Sewage Package

This pre-assembled simplex sewage package is designed to be used in any residential sewage application. With a 30 gallon capacity, 2" solids handling, and a 2" discharge pipe connected to the sewage pump, the package is ready to be installed. Special feature is the split lid for easy access to pump without disturbing discharge pipe.

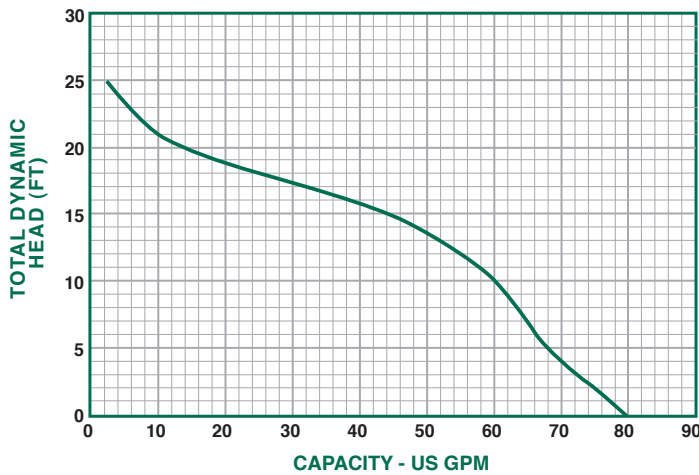
Features:

- 5050CTSJ 1/2 HP Cast iron sewage ejector with tethered switch
- 18" x 30" durable structural foam sewage basin with 4" inlet
- 2" Full flow check valve with rubber boots
- 4" Snap-In-Hub with stainless steel clamp
- 18" structural foam split lid cover with inspection port & gasket kit
- Stainless steel fasteners for cover
- 30" Long 2" PVC stub pipe
- Non-clogging stainless steel vortex impeller

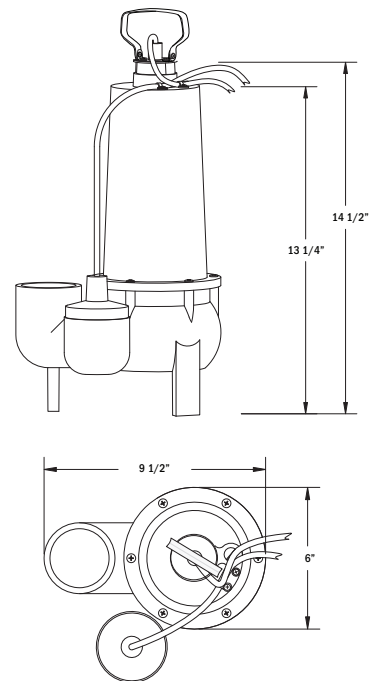


See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



Dimensions



Performance

Model	Gallons per Minute in Feet					
	0	5	10	15	20	25
5050CTSJ	80	68	60	44	13	2

Specifications

Model No.	HP	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	RPM	Phase	Wt.
5050CTSJPACSL	1/2	120	60	7.6	Cast Iron	2"	10'	2"	3450	1	58

Sump, Sewage, & Effluent Pumps

5000PVSPBU Sump Pump Backup

This battery backup system is designed to provide temporary back-up during power failures or malfunctions with your primary electric sump pump. It works with 12 volt, deep cycle marine battery, which is not included.

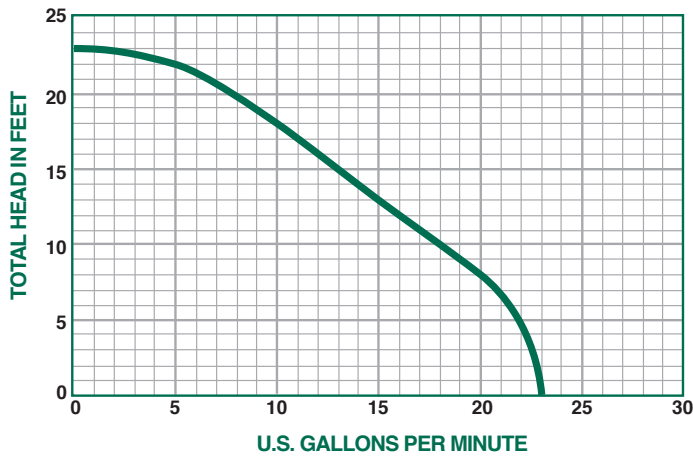
Features:

- 5000PVSPBU 12V DC Thermoplastic sump pump
- Vertical switch and 10' cord
- 1 1/4" or 1 1/2" Discharge (pump discharge 1 1/4", w/ check valve 1 1/2")
- Alarm / Control unit with fuse and mute feature
- Thermoplastic battery box



See Pumps & Accessories Price List for Limited Warranty details.

Performance Curve



*Not sold separately

Performance

Model	Gallons per Minute in Feet				
	0	5	10	15	20
5000PVSPBU	23	22	18	13	8

Specifications

Model No.	Volts	Hz	Amps	Construction	Discharge Size	Cord Length	Solids Handling	Phase	Wt.
5000PVSPBU	12V DC	60	12	Thermoplastic	1 1/4" or 1 1/2"	10'	1/8"	1	14

Sump, Sewage, & Effluent Pumps



747H20

Emergency Water Powered Back Up Sump Pump

When the power goes out, the Guardian takes over!

Designed for ground water, sump crocks in homes, motels, hotels, schools, hospitals, industrial buildings, computer and record storage rooms.

Features:

- Made in the USA
- Patented activation valve for Positive ON, Positive OFF
- Designed for intermittent or continuous use
- Supplied with single check valve for your convenience
- Made with high quality brass and PVC materials for corrosion resistance
- Designed for de-watering
- Discharge size 1 1/4" PVC Sch. 80 (IPS)
- 3/4" FNPT inlet
- Minimum pressure 29 PSI, maximum 90 PSI
- Minimum water temperature 32°F

Tank Alert Liquid Level Alarm - 747H20A / 747H20RRA

Tank Alert AB (6190-137 | 120V, NEMA1 enclosure - with mechanical switch, normally open, SignalMaster® float 15' cord, high water alarm with pipe mounting clamp)

Water Removed	
Feet of Lift - GPH Removed	
10'	
Inlet Pressure (PSI)	
30	390
40	630
60	906
80	1110



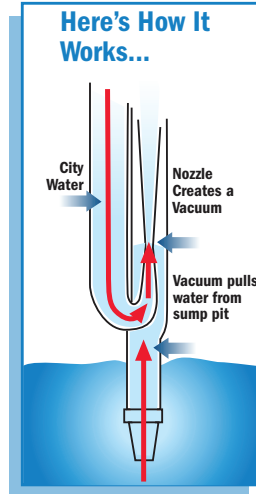
747H20-0001**

BACKFLOW OPTIONS ORDER MODEL

BACKFLOW PROVIDED	3/4" Reduced pressure assembly
ASSE STANDARD	1013
OTHER APPROVALS	Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California

**Where required by code

Model No.	Description	Wt.
747H20	Guardian	11
747H20-0001	Guardian w/ RPZ	16



Radon Ready Model 747H20RR

Operating valve below sump lid.

Allows operating valve to be installed under cover for application where sump lid must be sealed.



Model No.	Description	Wt.
747H20RR	Radon Ready	10
747H20A	w/ Tank Alert Alarm	16
747H20RRA	Radon Ready w/ Alarm	15

Sump, Sewage, & Effluent Pump Accessories

(Use accessories discount)

5000BLK

- Use instead of bricks to raise pump off bottom of basin
- Mounts to pump base to prevent clogging
- Made from durable ABS
- Helps prevent switch malfunction
- Fits all DuraMAC™ Submersible pumps (excludes sewage pumps)



Part No.	Wt.
5000BLK	1

Filters

- Made from durable PVC
- Handles up to 160 GPM without the bag
- 2" MNPT or FNPT threaded outlet
- Optional filter bag prevent clogging
- Easy to clean

Model No.	Description	Wt.
5000LSKIT	Lake Screen Kit	1
5000LSBAG	Lake Screen Bag	1
5000LS	Lake Screen Filter	2

(use accessories discount)

5000LS - Filter Only



5000LSKIT - Filter & Bag



5000LSBAG
Bag Only



Openings measure
3/8" wide x 1/8" high

Floats

Vertical

Model No.	Switch	Cord Length	Wt.
5000-V--10	Vertical Float	10' piggy back	1
5000-V--25	Vertical Float	25' piggy back	2



Tethered

Model No.	Switch	Cord Length	Wt.
5000-T--10	Tethered Float	10' piggy back	1
5000-T--25	Tethered Float	25' piggy back	2





Wastewater Pumps



Wastewater Pumps

Pump Catalog - January 2020

MORE THAN A BRAND. WE'RE A FAMILY.

Sewage & Effluent Features



Effluent Pumps 4/10 & 1/2 HP

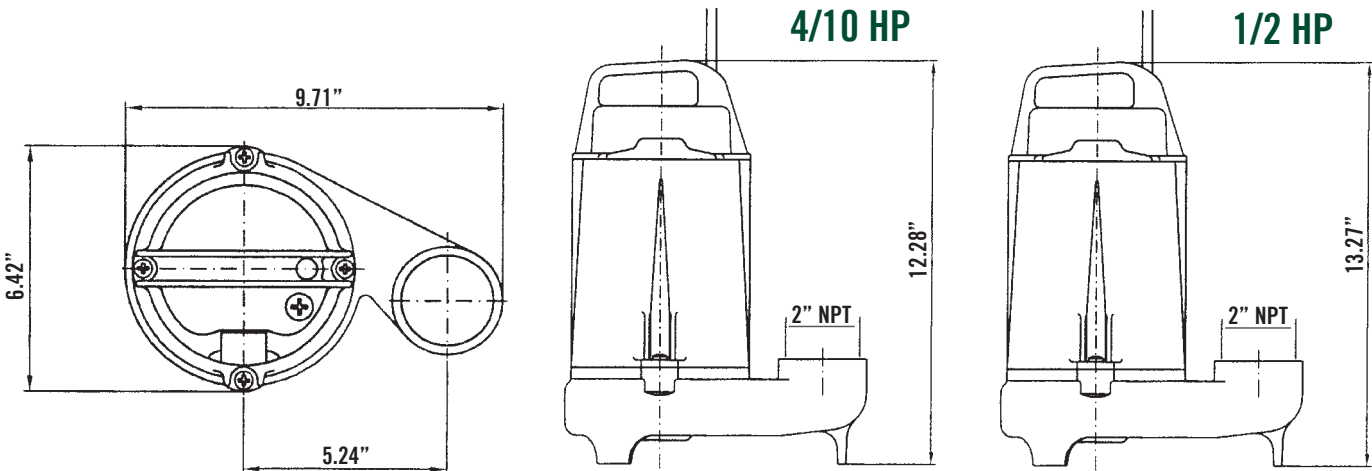
Rugged, cast iron submersible ideal for residential and light commercial wastewater applications. Contains upper & lower ball bearings which reduces heat and increases life of the pump. Available with or without piggyback float switch.

Features:

- High torque capacitor start motors
- 2" NPT vertical discharge, vortex impellers
- Cast iron housings
- Stainless steel fasteners and motor shaft
- Oil-filled motors (non-toxic oil)
- Integrated clip for float switch cable



Dimensions



Specifications

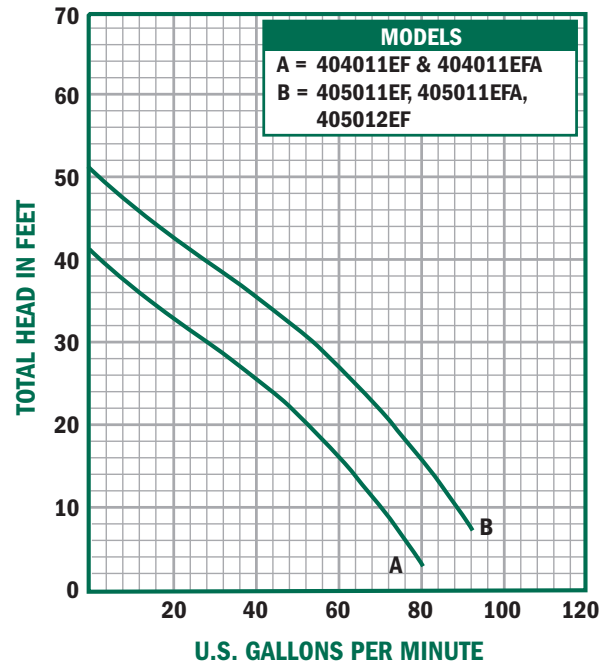
Model No.	Voltage	HP	Phase	Solids Size	Hertz	Speed (RPM)	Discharge	Weight	Cable Length(ft.)	Float Included
404011EF	115	4/10	1	3/4"	60	3450	2" Vert NPT	32	15	N
404011EFA	115	4/10	1	3/4"	60	3450	2" Vert NPT	34	15	Y
405011EF	115	1/2	1	3/4"	60	3450	2" Vert NPT	36	15	N
405011EFA	115	1/2	1	3/4"	60	3450	2" Vert NPT	38	15	Y
405012EF	230	1/2	1	3/4"	60	3450	2" Vert NPT	36	15	N

Effluent Pumps

4/10 & 1/2 HP

Materials of Construction & Motor Specifications

Motor Housing	Cast Iron ASTM A48 Class 30
Volute	Cast Iron ASTM A48 Class 30
External Hardware	304 Stainless Steel
O-ring	Buna-N
Motor Shaft	420 Stainless
Oil	Non-toxic white mineral oil (Marcol 52)
Upper Bearing	Single row ball bearing
Lower Bearing	Single row ball bearing
Lower Shaft Seal	Spring loaded rotating carbon face w/ stationary ceramic face
Impeller	Polybutylene Terephthalate (PBT) 30% glass fiber, Vortex
Motor Design	NEMA design B, squirrel cage induction, oil-filled (non toxic)
Motor Type	Enclosed submersible
Insulation Class	Class B, rated at 248° F(120° C)
Motor Protection	Integral Bi-Metallic current sensing switch providing over temperature shut down
Service Factor	1.10
Voltage Tolerance	± 10% from nominal
Slinger	Neoprene
Shipping weight	6 lbs.



Motor Data, 60 Hz

Model No.	Phase	Rated Output Power	Volts	Full Load Amps	Locked Rotor Amps	NEMA Code Letter	Power Factor 100% Load	Motor Efficiency 100% Load	Pole/Speed (RPM)	Float Included
404011EF	1	0.4 HP	115	9.1	40	N	0.6	49	2/3450	N
404011EFA	1	0.4 HP	115	9.1	40	N	0.6	49	2/3450	Y
405011EF	1	0.5 HP	115	13.2	58.5	P	0.85	50	2/3450	N
405011EFA	1	0.5 HP	115	13.2	58.5	P	0.85	50	2/3450	Y
405012EF	1	0.5 HP	230	6.6	35.2	S	0.85	50	2/3450	N

Cable Specifications

Model No.	Volts	Power Cable	Length (Feet)	Outer Jacket
404011EF	115 Volt	16/3 SJTOW-A or equiv. w/ 3 prong plug	15	Thermoplastic Elastomer
404011EFA	115 Volt	16/3 SJTOW-A or equiv. w/ 3 prong plug	15	Thermoplastic Elastomer
405011EF	115 Volt	16/3 SJE00W or equiv. w/ 3 prong plug	15	Thermoplastic Elastomer
405011EFA	115 Volt	16/3 SJE00W or equiv. w/ 3 prong plug	15	Thermoplastic Elastomer
405012EF	230 Volt	16/3 SJE00W or equiv. w/ 3 prong plug	15	Thermoplastic Elastomer

Effluent Pumps

1 HP

Featuring a rugged, cast iron construction with stainless steel fasteners and motor shaft submersible pumps for residential, commercial, municipal, and industrial applications.

With the exclusive triple seal system, this pump offers three levels of sealing for outstanding reliability! A double mechanical seal located inside the oil chamber provides two full levels of sealing. An additional V-Ring type lip seal between the oil chamber and pump volute provides a third, extra level of sealing, and enhanced mechanical seal protection.

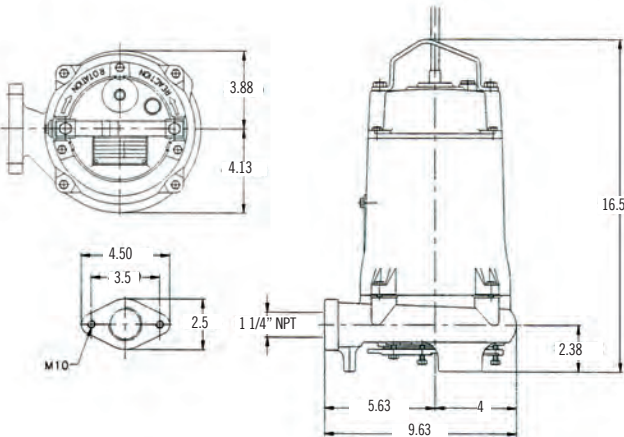
Features:

- Unique triple seal design
- Patented Contra Block® impeller with adjustable wear plate system for clog-free operation
- Discharges: 1 1/4" on 1 HP High Head, 2" on 1 HP Standard Head
- High torque capacitor start single phase motors
- Oil-filled motors (non-toxic oil)
- Stainless steel open loop lifting bale for ease of removal
- Continuous duty

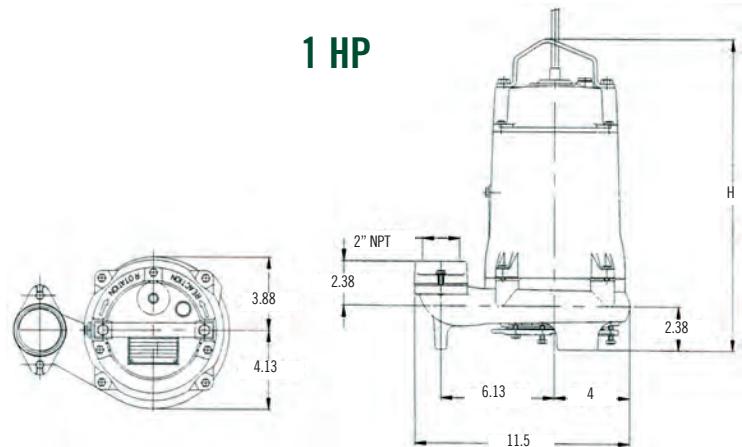


Dimensions

1 HP HH



1 HP



Specifications

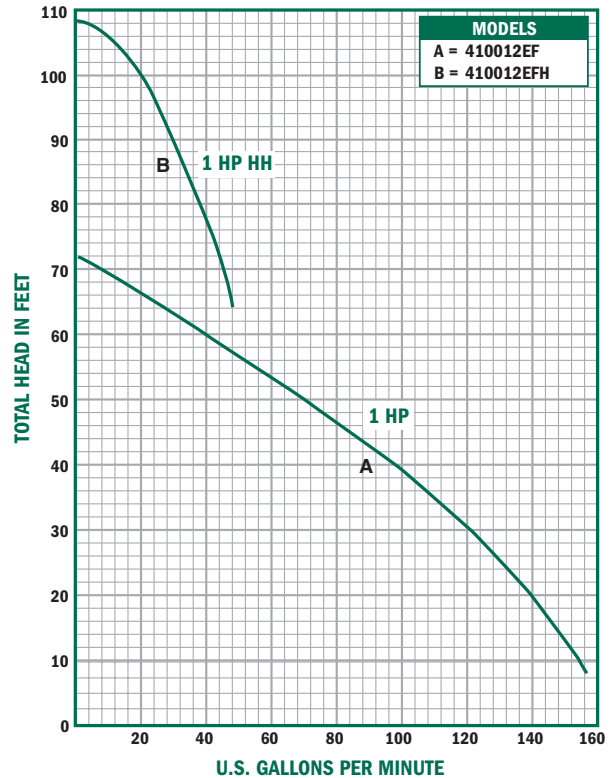
Model No.	Voltage	HP	Phase	Solids Size	Hertz	Speed (RPM)	Discharge	Weight	Cable Length(ft.)	Float Included
410012EF	208-230	1	1	3/4"	60	3450	Vertical NPT 2"	71	15	N
410012EFH	230	1	1	5/8"	60	3450	Horizontal NPT 1 1/4"	70	20	N

Effluent Pumps

1 HP

Materials of Construction & Motor Specifications

Upper Motor Lid	Cast Iron ASTM A48 Class 30
Motor Housing	Cast Iron ASTM A48 Class 30
Oil Chamber	Cast Iron ASTM A48 Class 30
Volute	Cast Iron ASTM A48 Class 30
Bottom Plate	Cast Iron ASTM A48 Class 30
Impeller	Cast Iron ASTM A48 Class 30
Lifting Bail	AISI 304 Stainless Steel
Oil (motor & oil chamber)	Non-toxic white mineral oil (Marcol 52)
External Hardware	AISI 304 Stainless Steel
O-rings	Buna-N
Motor Shaft	AISI 420 Stainless Steel
Upper & Lower Bearing(s)	Single row ball bearing
Upper Shaft Seal (secondary)	Rotating carbon face w/ stationary ceramic face
Lower Shaft Seal (primary)	Rotating carbon face w/ stationary ceramic face Includes V-ring lip seal for lower seal protection.
Motor Design	NEMA design B, squirrel cage induction, oil filled, non toxic oil
Motor Type	Enclosed submersible
Insulation Class	Class B, rated at 248° F
Motor Protection	Single Phase: Internal thermal protection with automatic reset. Installer must provide circuit breaker for short circuit protection per N.E.C. standards. Three Phase: Installer must provide external motor overload protection device such as a contactor w/ thermal relay, and circuit breaker for short circuit protection per N.E.C. standards.
Service Factor	1.15
Voltage Tolerance	± 10% from name plate rating



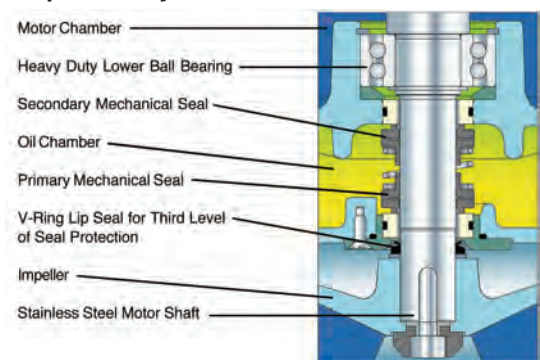
Motor Data, 60 Hz

Model No.	Phase	Rated Output BHP	Volts	Full Load Amps	Locked Rotor Amps	NEMA Code Letter	Pole/Speed (RPM)
410012EF	1*	1.0	230	13.0	45.5	M	2/3450
410012EFH	1	1.0	230	13.0	45.5	M	2/3450

* Start switch and capacitor integrated into top of pump.

** These three phase motors are tri-voltage, 208/230/460.

Triple Seal System



Cable Specifications

Model No.	Volts	Power Cable	Diameter	Length (Feet)	Outer Jacket
410012EF	230	14/3 SJE00W	0.36IN (9.2MM)	20ft (6m)	Thermoplastic Elastomer

- Maximum submergence, ft. - 30

- Maximum temp. of pumped fluid - (40°C) 104°F continuous, (50°C) 122°F intermittent

Thermoplastic - Effluent

Reinforced Thermoplastic motor bracket and discharge with built-in guide bearing. Sizes range from 1/2 HP - 1 1/2 HP. The 300 series stainless steel top bearing and motor coupling. These are assembled with our A.Y. McDonald stainless steel motors. Two wire single phase models include pump, motor, and 10' lead, 25', 50' & 100' available.

All four inch submersibles are supplied with grounded leads meeting the National Electrical Code (N.E.C.) specifications.

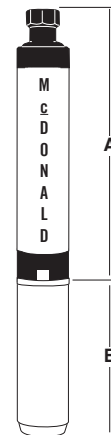
The performance curves on the following page will assist you in choosing the pump that meets your needs.

Features:

- Stainless steel pump shell and pump shaft
- Reinforced Thermoplastic diffusers and impellers
- Internal, anti-spin check valve standard
- Thermoplastic intake screen and cable guard
- Powered by A.Y. McDonald submersible motors 1/2 - 1 1/2 HP.
- 1 1/4" FNPT Discharge

Models

- 5 GPM - J Series
- 7 GPM - V Series
- 10 GPM - K Series
- 15 GPM - L Series
- 20 GPM - P Series
- 30 GPM - E Series



High Head Effluent Pumps

Model	Flow	HP	Voltage	10' Lead	10' Lead	25' Lead	50' Lead	100' Lead
					X996*	X993*	X995*	X994*
22050K2AJ	10	1/2	115	Standard				
22050K2J	10	1/2	230	Standard				
22075K2J	10	3/4	230	Standard				
22100K2J	10	1	230	Standard				
22150K2J	10	1 1/2	230	Standard				
22050P2AJ	20	1/2	115	Standard				
22050P2J	20	1/2	230	Standard				
22075P2J	20	3/4	230	Standard				
22100P2J	20	1	230	Standard				
22150P2J	20	1 1/2	230	Standard				
22050E2AJ	30	1/2	115	Standard				
22050E2J	30	1/2	230	Standard				
22075E2J	30	3/4	230	Standard				
22100E2J	30	1	230	Standard				
22150E2J	30	1 1/2	230	Standard				

*Less check valve, cable guard, cable guard screws, with hole drilled into center of discharge

Pump Ends

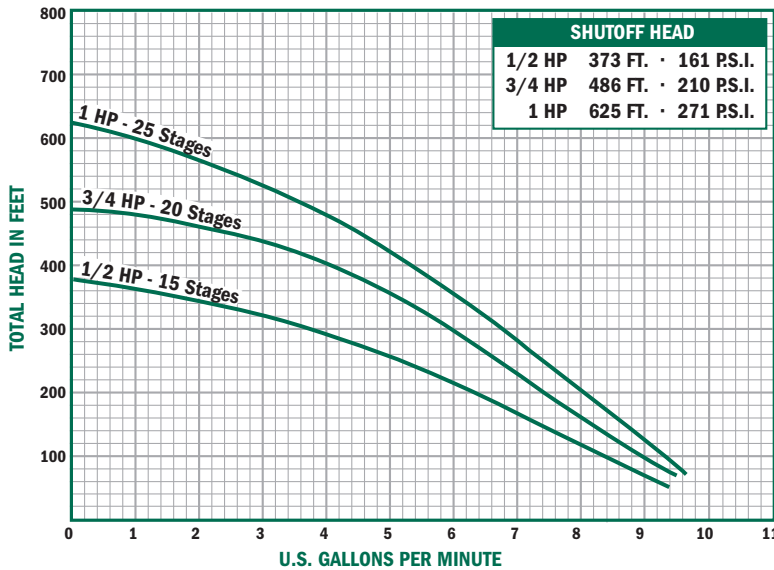
Model	Flowrate, gal / min	HP
22050KAJ	10	1/2
22075KJ	10	3/4
22100KJ	10	1
22150KJ	10	1 1/2
22050PAJ	20	1/2
22075PJ	20	3/4
22100PJ	20	1
22150PJ	20	1 1/2
22050EAJ	30	1/2
22075EJ	30	3/4
22100EJ	30	1
22150EJ	30	1 1/2

Leads (use accessories discount)

AY Part #	# Wire	Length
3132-538	2	10
3132-539	2	25
3132-540	2	50
3132-541	2	100

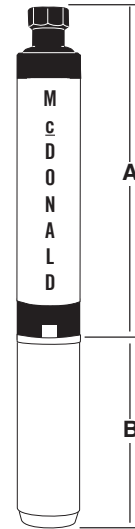
Thermoplastic - Effluent

J - 5 GPM

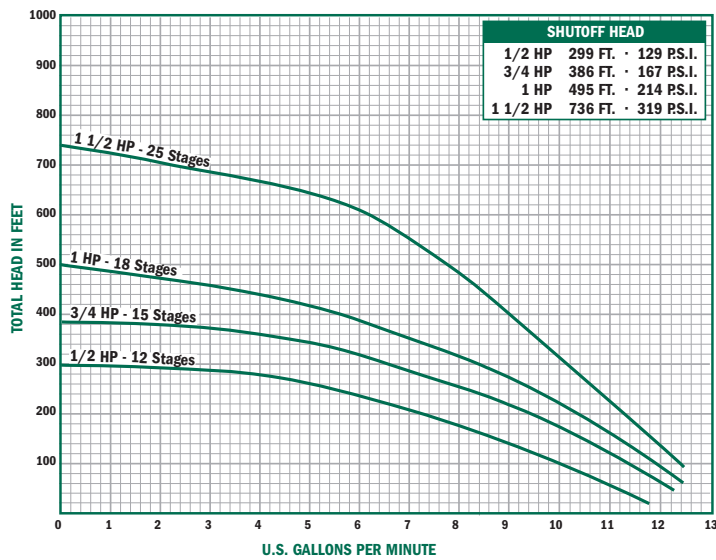


Specifications

Model	HP	Material	Volts	Phase	A	B	Wt.
22050J2AJ	1/2	Plastic	115	1	16.6	9.5	26
22050J2J	1/2	Plastic	230	1	16.6	9.5	26
22075J2J	3/4	Plastic	230	1	20.3	10.7	30
22100J2J	1	Plastic	230	1	22.5	11.8	35

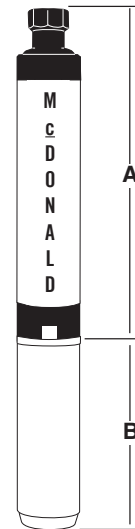


V - 7 GPM

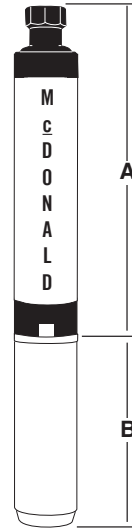
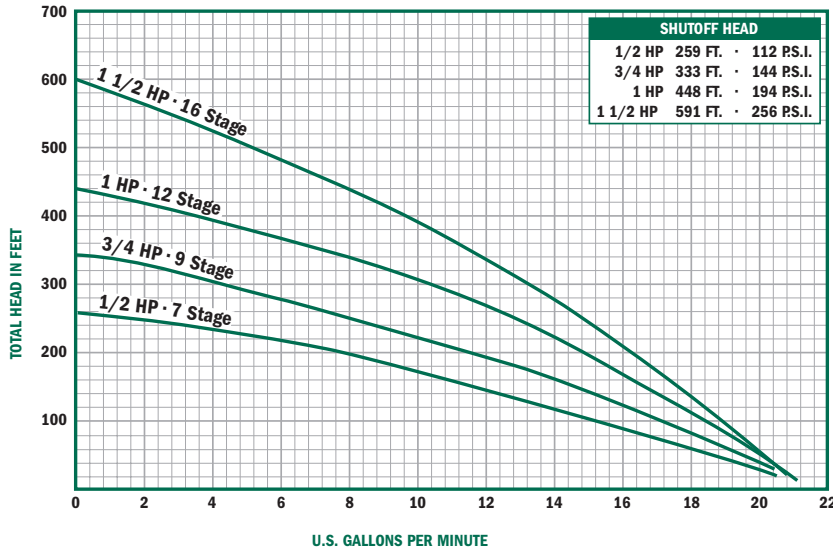


Specifications

Model	HP	Material	Volts	Phase	A	B	Wt.
22050V2AJ	1/2	Plastic	115	1	14.3	9.5	25
22050V2J	1/2	Plastic	230	1	14.3	9.5	25
22075V2J	3/4	Plastic	230	1	16.6	10.7	28
22100V2J	1	Plastic	230	1	18.8	11.7	32
22150V2J	1 1/2	Plastic	230	1	24.0	13.6	40



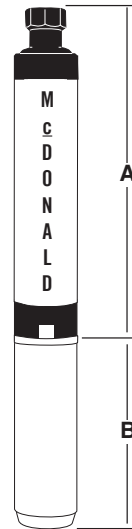
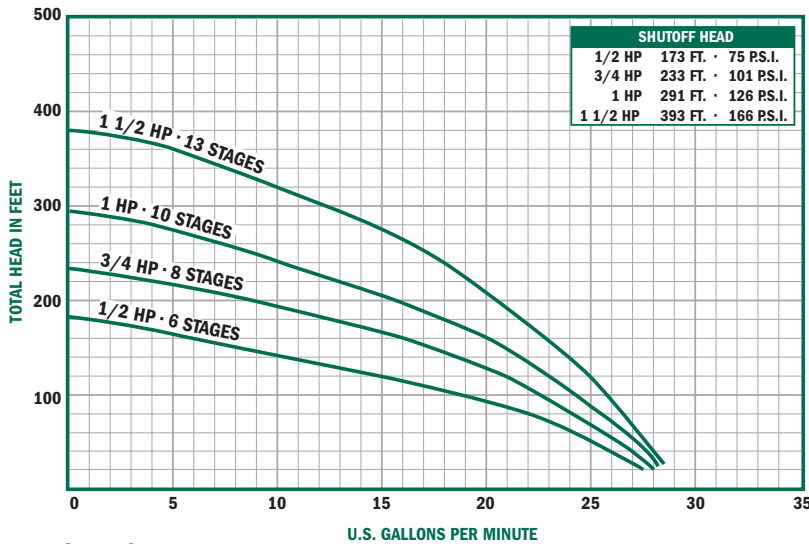
Thermoplastic - Effluent K - 10 GPM



Specifications

Model	HP	Material	Volts	Phase	A	B	Wt.
22050K2AJ	1/2	Plastic	115	1	12.3	9.53	23
22050K2J	1/2	Plastic	230	1	12.3	9.53	22
22075K2J	3/4	Plastic	230	1	13.7	10.66	27
22100K2J	1	Plastic	230	1	16.0	11.75	31
22150K2J	1 1/2	Plastic	230	1	19.7	15.12	40

L - 15 GPM

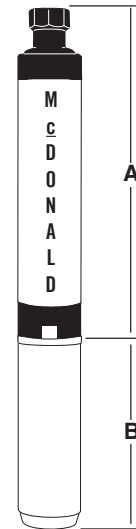
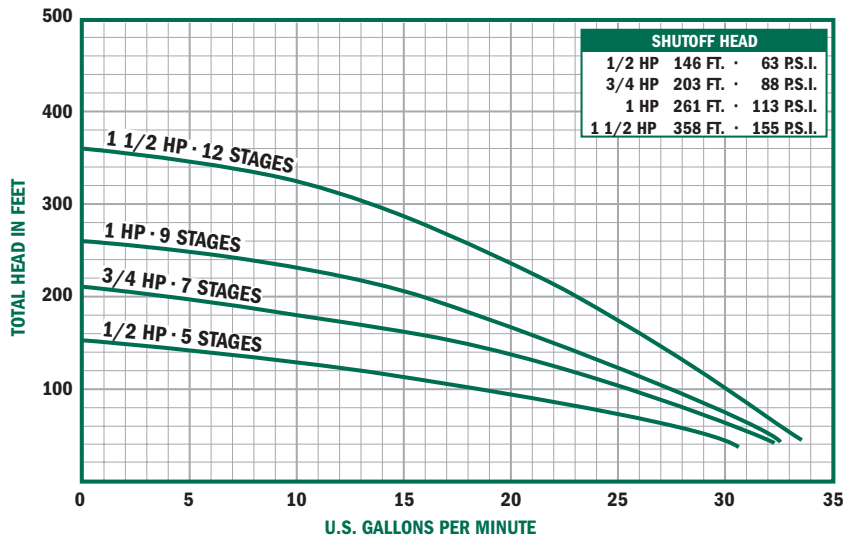


Specifications

Model	HP	Material	Volts	Phase	A	B	Wt.
22050L2AJ	1/2	Plastic	115	1	13.55	9.53	23
22050L2J	1/2	Plastic	230	1	13.55	9.53	23
22075L2J	3/4	Plastic	230	1	15.71	10.66	27
22100L2J	1	Plastic	230	1	17.85	11.75	31
22150L2J	1 1/2	Plastic	230	1	21.07	15.12	39

Thermoplastic - Effluent

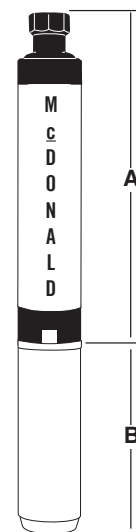
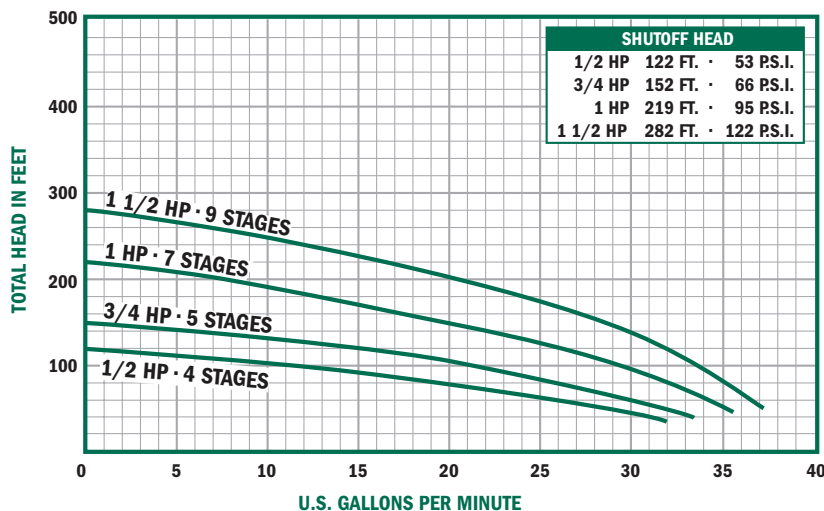
P - 20 GPM



Specifications

Model	HP	Material	Volts	Phase	A	B	Wt.
22050P2AJ	1/2	Plastic	115	1	12.48	9.53	23
22050P2J	1/2	Plastic	230	1	12.48	9.53	23
22075P2J	3/4	Plastic	230	1	14.63	10.66	27
22100P2J	1	Plastic	230	1	16.78	11.75	31
22150P2J	1 1/2	Plastic	230	1	20.00	15.12	41

E Series - 30 GPM



Specifications

Model	HP	Material	Volts	Phase	A	B	Wt.
22050E2AJ	1/2	Plastic	115	1	10.94	9.53	23
22050E2J	1/2	Plastic	230	1	10.94	9.53	23
22075E2J	3/4	Plastic	230	1	12.48	10.66	25
22100E2J	1	Plastic	230	1	14.63	11.75	30
22150E2J	1 1/2	Plastic	230	1	16.78	15.12	39

Sewage Ejector 4/10 HP

Rugged, cast iron housing for residential and light commercial wastewater applications. Stainless steel fasteners and motor shaft, also available with or without piggyback float switch.

Features:

- High torque capacitor start motors
- Upper & lower ball bearings
- 2" NPT vertical discharge, vortex impellers
- Oil-filled motors (non-toxic oil)
- Integrated clip for float switch cable

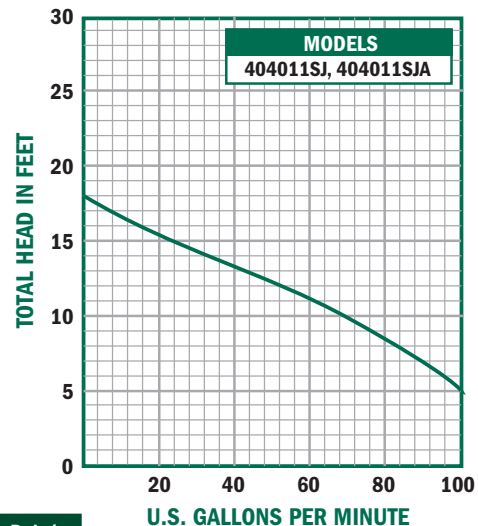
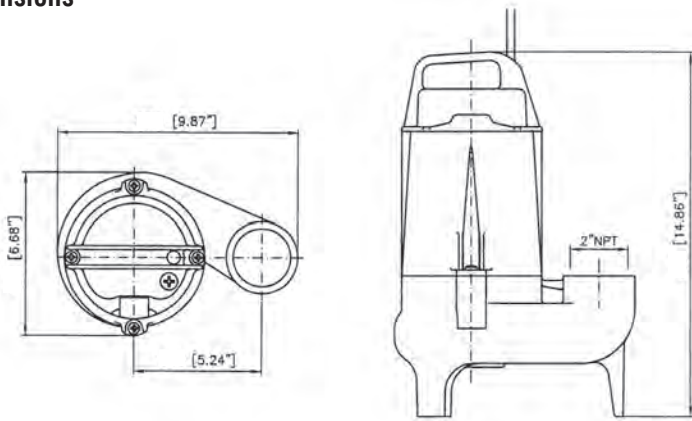


Materials of Construction & Motor Specifications

Motor Housing	Cast Iron ASTM A48 Class 30
Volute	Cast Iron ASTM A48 Class 30
External Hardware	304 Stainless Steel
O-ring	Buna-N
Motor Shaft	420 Stainless
Oil	Non-toxic white mineral oil (Marcol 52)
Upper Bearing	Single row ball bearing
Lower Bearing	Single row ball bearing
Lower Shaft Seal	Spring loaded rotating carbon face w/ stationary ceramic face

Impeller	Polybutylene Terephthalate (PBT) 30% glass fiber, Vortex
Motor Design	NEMA design B, squirrel cage induction, oil filled (non toxic)
Motor Type	Enclosed submersible
Insulation Class	Class B, rated at 248°F(120° C)
Motor Protection	Integral Bi-Metallic current sensing switch providing over temperature shut down
Service Factor	1.10
Voltage Tolerance	± 10% from nominal

Dimensions



Motor Data, 60 Hz

Model No.	Phase	Rated Output BHP	Volts	Full Load Amps	Locked Rotor Amps	NEMA Code Letter	Power Factor 100% Load	Motor Efficiency 100% Load	Pole/Speed (RPM)
404011SJ	1	0.4 HP	115	6.6	17.7	F	0.92	57	4/1750
404011SJA	1	0.4 HP	115	6.6	17.7	F	0.92	57	4/1750

Sewage Ejector & Cable Specifications

Model No.	Voltage	HP	Phase	Solids Size	Hertz	Speed (RPM)	Discharge	Weight	Cable Length(ft.)	Float Included	Outer Jacket
404011SJ	115	4/10	1	2"	60	1750	2" Vert NPT	35	15	N	Thermoplastic elastomer
404011SJA	115	4/10	1	2"	60	1750	2" Vert NPT	37	15	Y	Thermoplastic elastomer

- Power Cable - 16/3 SJTOW-A or equiv. w/ 3 prong plug
- Maximum submergence (feet) = 30
- Maximum temp. of pumped fluid = 104° F(40°C) continuous, =122°F (50°C) intermittent

Sewage Ejector 1/2 HP

Rugged, cast iron housing for residential and light commercial wastewater applications. Stainless steel fasteners and motor shaft, also available with or without piggyback float switch.

Features:

- High torque capacitor start motors
- Upper & lower ball bearings
- 2" NPT vertical discharge, vortex impellers
- Oil-filled motors (non-toxic oil)
- Integrated clip for float switch cable

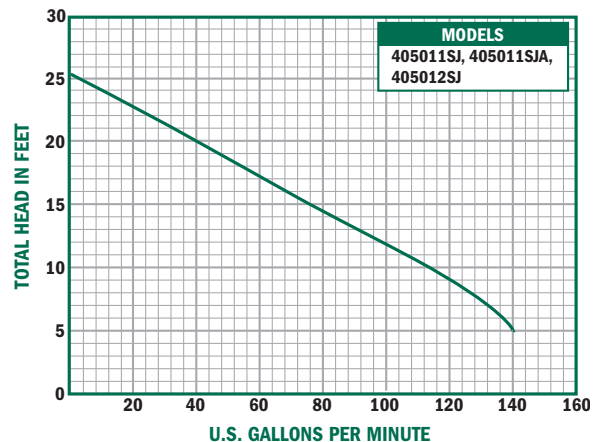
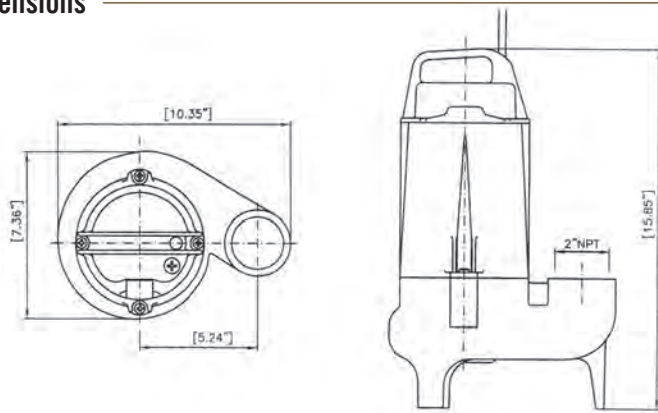


Materials of Construction & Motor Specifications

Motor Housing	Cast Iron ASTM A48 Class 30
Volute	Cast Iron ASTM A48 Class 30
External Hardware	304 Stainless Steel
O-ring	Buna-N
Motor Shaft	420 Stainless
Oil	Non-toxic white mineral oil (Marcol 52)
Upper Bearing	Single row ball bearing
Lower Bearing	Single row ball bearing
Lower Shaft Seal	Spring loaded rotating carbon face w/ stationary ceramic face

Impeller	Polybutylene Terephthalate (PBT) 30% glass fiber, Vortex
Motor Design	NEMA design B, squirrel cage induction, oil filled (non toxic)
Motor Type	Enclosed submersible
Insulation Class	Class B, rated at 248°F(120° C)
Motor Protection	Integral Bi-Metallic current sensing switch providing over temperature shut down
Service Factor	1.10
Voltage Tolerance	± 10% from nominal

Dimensions



Motor Data, 60 Hz

Model No.	Phase	Rated Output BHP	Volts	Full Load Amps	Locked Rotor Amps	NEMA Code Letter	Power Factor 100% Load	Motor Efficiency 100% Load	Pole/Speed (RPM)
405011SJ	1	0.5	115	10.6	21.4	E	0.87	59	4/1750
405011SJA	1	0.5	115	10.6	21.4	E	0.87	59	4/1750
405012SJA	1	0.5	230	5.3	10.5	E	0.87	59	4/1750

- Power Cable - 16/3 SJTOW-A or equiv. w/ 3 prong plug
- Maximum submergence (feet) = 30
- Maximum temp. of pumped fluid = 104° F(40°C) continuous, = 122°F (50°C) intermittent

Sewage Ejector & Cable Specifications

Model No.	Voltage	HP	Phase	Solids Size	Hertz	Speed (RPM)	Discharge	Weight	Cable Length(ft.)	Float Included	Outer Jacket
405011SJ	115	1/2	1	2"	60	1750	2" Vert NPT	37	15	N	Thermoplastic elastomer
405011SJA	115	1/2	1	2"	60	1750	2" Vert NPT	39	15	Y	Thermoplastic elastomer
405012SJA	230	1/2	1	2"	60	1750	2" Vert NPT	39	15	Y	Thermoplastic elastomer

Sewage Ejector 1 HP

Rugged cast iron construction submersible pumps with stainless steel fasteners and motor shaft for residential, commercial, municipal, and industrial applications.

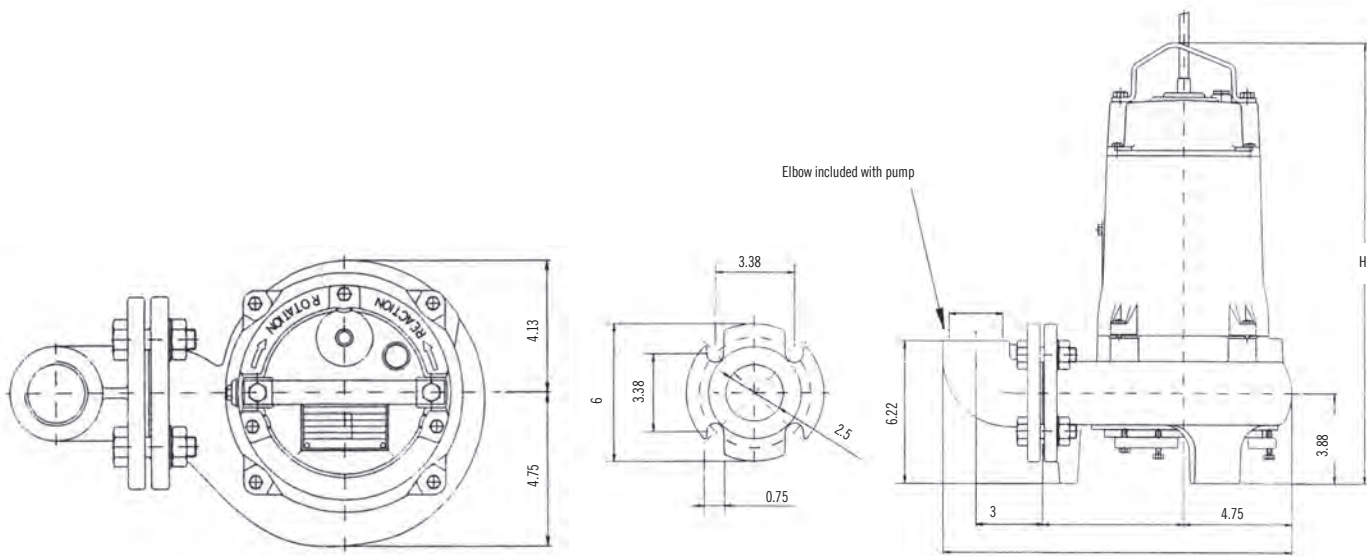
With the exclusive triple seal system, this pump offers three levels of sealing for outstanding reliability! A double mechanical seal located inside the oil chamber provides two full levels of sealing. An additional V-Ring type lip seal between the oil chamber and pump volute provides a third, extra level of sealing, and enhanced mechanical seal protection.

Features:

- Unique triple seal design
- Patented Contra Block® impeller with adjustable wear plate system, for clog-free operation
- 2" Discharge
- High torque capacitor start single phase motors
- Rugged cast iron construction with stainless steel fasteners and motor shaft
- Oil-filled motors (non-toxic oil)
- Stainless steel open loop lifting bale for ease of removal



Dimensions



Specifications

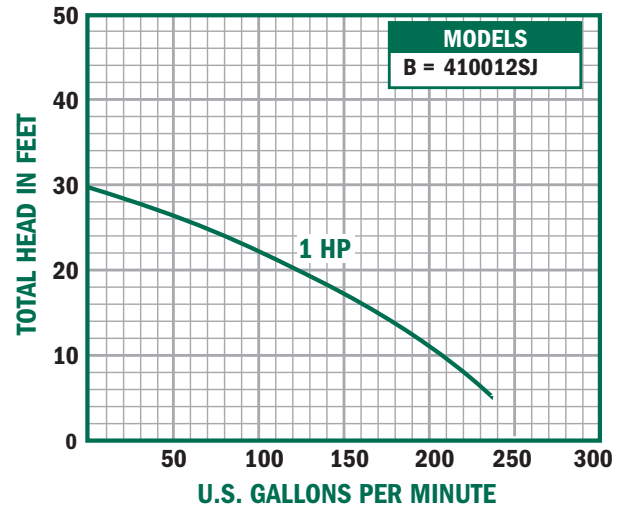
Model No.	Voltage	HP	Phase	Solids Size	Speed (RPM)	Amps	Discharge	Weight	Max Head (ft.)	Max Flow (GPM)
410012SJ	208/230	1	1	2"	1750	11.1-10.0	Horiz. Flange **	84	30	240

Sewage Ejector

1 HP

Materials of Construction & Motor Specifications

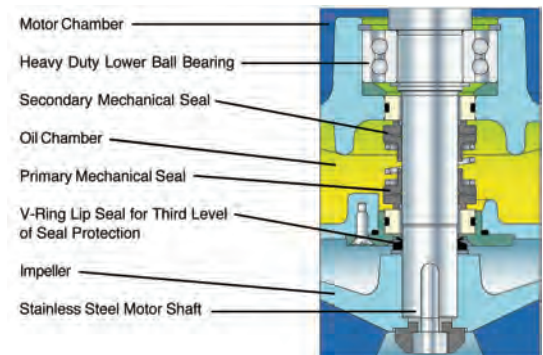
Upper Motor Lid	Cast Iron ASTM A48 Class 30
Motor Housing	Cast Iron ASTM A48 Class 30
Oil Chamber	Cast Iron ASTM A48 Class 30
Volute	Cast Iron ASTM A48 Class 30
Bottom Plate	Cast Iron ASTM A48 Class 30
Impeller	Cast Iron ASTM A48 Class 30
Lifting Bail	AISI 304 Stainless Steel
Oil (motor & oil chamber)	Non-toxic white mineral oil (Marcol 52)
External Hardware	AISI 304 Stainless Steel
O-rings	Buna-N
Motor Shaft	AISI 420 Stainless Steel
Upper Bearing	Single row ball bearing
Lower Bearing(s)	Single row ball bearing
Upper Shaft Seal (secondary)	Rotating carbon face w/ stationary ceramic face
Lower Shaft Seal (primary)	Rotating carbon face w/ stationary ceramic face Includes V-ring lip seal for lower seal protection.
Motor Design	NEMA design B, squirrel cage induction, oil filled, non toxic oil
Motor Type	Enclosed submersible
Insulation Class	Class B, rated at 120° F
Motor Protection	Single Phase: Internal thermal protection with automatic reset. Installer must provide circuit breaker for short circuit protection per N.E.C. standards. Three Phase: Installer must provide external motor overload protection device such as a contactor w/ thermal relay, and circuit breaker for short circuit protection per N.E.C. standards.
Service Factor	1.15
Voltage Tolerance	± 10% from name plate rating



Motor Data, 60 Hz

Model No.	Phase	Rated Output BHP	Volts	Full Load Amps	Locked Rotor Amps	NEMA Code Letter	Pole/Speed (RPM)
410012SJ	1*	1.0	230	10.0	38	K	4/1750

Triple Seal System



Cable Specifications

Model No.	Volts	Diameter	Power Cable	Length (Feet)	Outer Jacket
410012SJ	230	14/3 SJE00W	0.36in (9.2mm)	20ft (6m)	Thermoplastic Elastomer

- Maximum submergence, ft. (m) - 65 (20)
- Maximum temp. of pumped fluid - 104°F (40°C) continuous, 122°F (50°C) intermittent

Grinder Pumps

120912GRP

These submersible pumps have been designed for effective and economical dewatering tasks using discharge lines of small diameter in private, municipal and industrial areas. Grinder pumps are specially designed for private and domestic applications.

Applications

- For sewage removal from living units and houses in scattered settlements where the laying of a conventional sewer would be too expensive, or where large ground undulations are present or where it is only possible to lay pipe lines of small diameter.
- For sewage removal from motorway resting sites, communal buildings and for renovation of buildings or parts of a city.
- For use in slaughter houses, food processing plants, paper factories, agriculture, and similar areas.

Medium Pumped

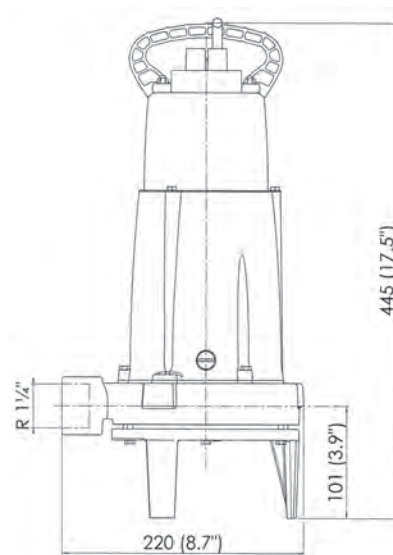
Fecal matter and heavily polluted sewage, max, medium temperature: continuous operation = 104°F (40°C) or if unit is submerged, short term to 140°F (60°C) (max. 5 min).

Features:

- Unique shredding system capable of shredding cloths and plastic bags
- For the pumping of wastewater containing sewage, offal, organic and industrial effluent
- Low installation costs
- Advantage of small discharge lines from 1 1/4"
- Installations are possible where large ground undulations are present
- Do not need a control box as capacitor and relay are in upper lid
- DN32 flange with internal thread



Dimensions



Specifications

Model No.	Voltage	HP	Phase	Hertz	Full Load Amps	Speed (RPM)	Discharge	Height	Cable Length (ft.)
120912GRP	230	2	1	60	13.51	3450	1 1/4" Thread / Flange	51	32'

Grinder Pumps

120912GRP

Materials of Construction & Motor Specifications

Motor Housing	Cast Iron GG-25
Rotor Shaft	Stainless Steel 1.4021 (AISI 420)
Volute, impeller	Cast Iron GG-25
Fasteners	Stainless Steel 1.4401 (AISI 316)

Construction

The water pressure tight encapsulated fully flood proof motor and the pump section form a compact robust unit construction.

Bearings

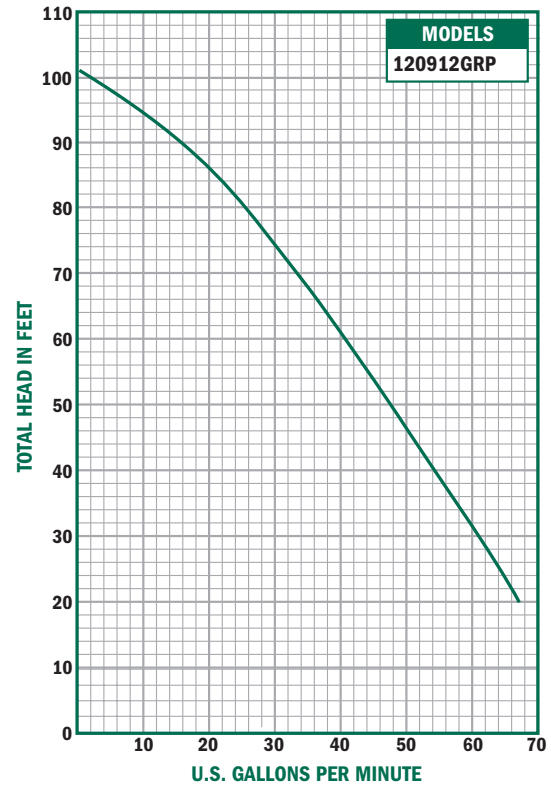
The motor shaft is supported in lubricated-for-life ball bearings.

Shaft sealing

Between motor and hydraulic section by means of high quality sealing unit using a silicon carbide mechanical seal, independent of direction of rotation and resistant to temperature shock, motor side: Lip seal oil lubricated.

Shredding System

Consists of spiral bottom plate with stationary cutter ring with cutting edges and a shredding rotor located before the impeller for optimum blockage-free running.



Pumpmaster®

Mechanically activated, wide angle switch for direct control of single phase pumps up to 1/2 HP at 120V and 1 HP at 230V,

Part No.	Description	Wt.
6190-011	20' cord with piggyback plug 120V pump down, with pipe clamp.	3
6190-012	10' cord with piggyback plug 120V pump down, with pipe clamp.	2
6190-013	15' cord with piggyback plug 120V pump down, with pipe clamp.	2
6190-014	15' cord with piggyback plug 230V pump down, with pipe clamp.	2
6190-015	20' cord with piggyback plug 230V pump down, with pipe clamp.	3
6190-027	15' cord with piggyback plug 120V pump up, with pipe clamp.	2



Pumpmaster® Plus

Mechanically activated, wide angle switch designed for direct control of single phase pumps up to 3/4 HP at 120V and 2 HP at 230V.

Part No.	Description	Wt.
6190-016	15' cord with piggyback plug 120V pump down, with pipe clamp.	3
6190-017	15' cord with piggyback plug 230V pump down, with pipe clamp.	3
6190-018	20' cord with piggyback plug 120V pump down, with pipe clamp.	3
6190-019	20' cord with piggyback plug 230V pump down, with pipe clamp.	3
6190-008	10' cord without plug, pump up.	3
6190-130	10' cord without plug, pump down.	3
6190-177	20' cord with piggyback plug, 120V, pump up, with pipe clamp.	



Verticalmaster®

Mechanically activated, switch designed for direct control of single phase pumps up to 1/2 HP at 120V and 1 HP at 230V.

Part No.	Description	Wt.
6190-020	15' cord with piggyback plug 120V pump down, with mounting bracket and hose clamp.	2
6190-021	30' cord without piggyback plug 230/120V pump down, with mounting bracket and hose clamp.	3
6190-022	20' cord with piggyback plug 120V pump down, with mounting bracket and hose clamp.	3
6190-023	20' cord with piggyback plug 230V pump down, with mounting bracket and hose clamp.	3



Liquid Level Alarm Systems

Alarm systems can be special ordered with other floats options (cord length, pump down, pump up, etc.). Contact factory for pricing information.



Tank Alert AB

Indoor - 120V, Nema 1 enclosure, with auto reset and battery backup features.

Part No.	Description	Wt.
6190-137	With mechanical switch, 15' pipe clamp mount, normally open, SignalMaster® float, high water alarm.	3
6190-176	With mechanical switch, 15' pipe clamp mount, normally open, SignalMaster® float, high water alarm with auxiliary contacts.	3



Tank Alarm XT

Indoor/outdoor - 120V, Nema 3R water tight enclosure.

Part No.	Description	Wt.
6190-025	With mechanical switch, 15' pipe SignalMaster® float, high water alarm.	4

Signalmaster®

Control Switches can be special ordered with other floats options (cord length, pump down, pump up, etc.). Contact factory for pricing information.

Mechanically activated, narrow angle float switch designed to activate pump control panels and alarms.

Part No.	Description	Wt.
6190-044	20' cord, normally closed, weighted externally with mounting clamp.	4
6190-045	15' cord, normally open, pipe clamp.	2
6190-046	20' cable, NC	2
6190-144	Sensor float, 15' cable, NC	2
6190-035	PS Patrol System w/o switch	13



Normally Open (high level) Operation

The control switch closes (turns on) when the float tips slightly **above** horizontal signaling a high level, and opens (turns off) when the float drops slightly **below** horizontal in potable water, water or sewage applications.

Normally Closed (low level) Operation

The control switch closes (turns on) when the float tips slightly **below** horizontal signaling a low level, and opens (turns off) when the float tips slightly **above** horizontal in potable water, water or sewage applications.

Poly Basin & Covers

Simplex

Part No.	Description	Wt.
6192-010	18"x30" Poly Basin w/ 4" adapt-a-flex	13
6192-011	18" Structural foam cover, 2"x2" with gaskets (ind. boxed)	6
6192-012	18" steel cover	8
6192-013	18" x 30" Simplex Basin kit with structural foam cover	21
6192-014	18" x 30" Simplex Basin kit with steel cover	27

Simplex basins include 18" x 30" basin, cover, 4" schedule 40 adapt-a-flex inlet, lid gasket, discharge and vent gasket, and cord grommet.

Duplex

Part No.	Description	Wt.
6192-015	36" x 36" Poly Basin-no inlet	45
6192-016	36" Duplex cover, 10 ga. steel	20
6192-017	36" Duplex cover, 1/4" steel	30

Basin Accessories

Part No.	Description	Wt.
6192-018	4" sch. 40 adapt-a-flex inlet	1
6192-019	4" caulking hub inlet	2



Check Valves

Model No.	Description
*2063	1 1/4" x 1 1/2" Combo Sump Pump Check Valve
*2063	1 1/2", 2" Full Flow Sump Pump Check Valve
*2065	2" Union Swing Check Valve
*2066	2" Union Swing Check - Socket Ball Valve Combo
*2067	2" Compression Swing Check Valve
*2068	2" Compression Swing Check Valve - Socket Ball Valve Combo

*Refer to the plumbing catalog for pricing.





Dewatering Pumps



Dewatering Pumps

Pump Catalog - January 2020

MORE THAN A BRAND. WE'RE A FAMILY.

How to Order Trash Pumps

Order by Model Number - Example: 02G3AC

See pages 332 - 351

02

Intake & Discharge Size

- 01.5 - 1 1/2"
- 02 - 2"
- 03 - 3"
- 04 - 4"
- 06 - 6"

G

Type

- G - General Dewatering
- P - High Pressure
- S - Trash
- D - Diaphragm
- J - Dredging
- F - Fire Pump

3

Horsepower

- 1/3 HP 6 1/2 HP
- 1/2 HP 7 1/2 HP
- 1 HP 8 HP
- 1 1/2 HP 9 HP
- 2 1/2 HP 10 HP
- 3 HP 13 HP
- 3 1/2 HP 24 HP
- 5 HP 27 HP
- 5 1/2 HP

A

Motor Type

- A - Briggs & Stratton Intec Plus*
- H - Honda Engine
- I - Briggs & Stratton Industrial Engine
- K - Kohler
- Z - Hatz Diesel

C

Construction Materials or Accessories

- C - Cast Iron
- T - Thermoplastic
- R - Roll Cage
- V - Electric or Electric Start
- P - Premium
- X - Die-cast aluminum

6" Engine Trash Pumps

- T - Trailer Mounted for 6"
- S - Skid Mounted for 6:

Note: For engine driven models, HP class represents market category and is not intended to define actual horsepower.

Dewatering Pumps



Mini Mac Transfer Pump Kits

The mini mac transfer pump kit can handle most domestic and commercial pump requirements. With a durable cast brass and stainless steel construction this pump is designed for long life and can withstand temperatures ranging from 40° to 130°F.

Application:

Emptying water heaters, bilge pumping, bait tanks, liquid transfer, clogged sinks, dewatering, and any common small household job.

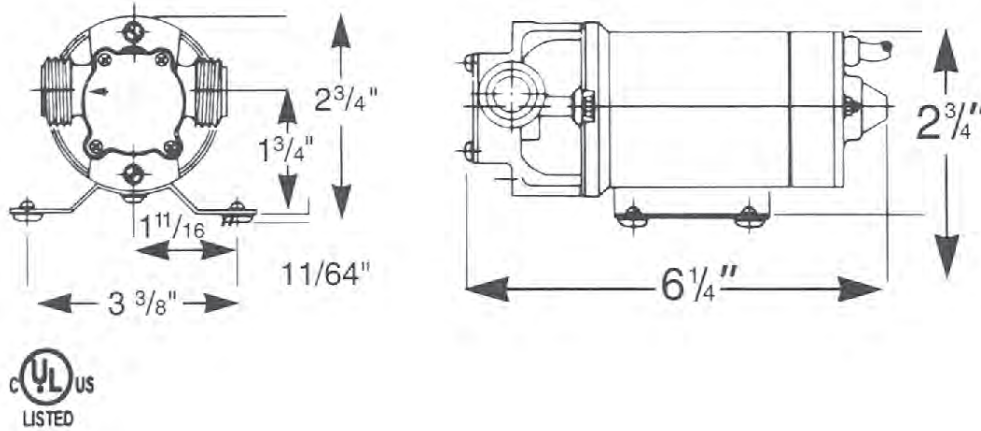
* Medium being pumped must be compatible with pump materials.
Not for use with flammable liquids.

Features:

- Buna N impeller and lip seal
- Inlet and outlet are 3/4" male garden hose
- Self priming to 7 feet
- Available 115V AC



300611TPK Dimensions | 115V AC 3/4" Garden Hose Threads External



Model Includes:

Replacement impeller



Puddle scoop and 6' suction hose for
draining flat surfaces



Mini Mac

Transfer Pump Kits

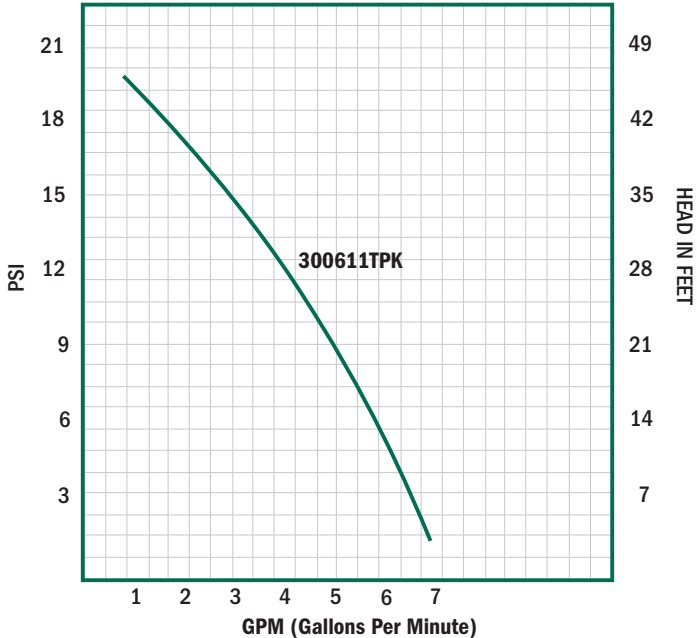
Specifications for Flexible Impeller Transfer Pump

Specifications

Power supply required	115V 60 Hz	Impeller & lip seal	Nitrile
Motor, full load amps (fuse size)	2.0 Amps	Lip seal metal retain	BL 22
Motor type (design)	Universal	Motor shaft material	416 S.S.
Motor leads and length	6' Cord	Ports	3/4" external hose, Thread suction & discharge
HP	1/6	Pump gasket	Paper
Dimensions (overall) not include base	6 1/4" L x 3 1/2" H x 3 1/4" W	Cover	316 S.S.
Maximum liquid temperature	130°F	Screws	18-8 S.S.
Minimum	40°F	Slinger	Neoprene
Pump body material	Environmental Safe, No-Lead Alloy	Shipping weight	6 lbs.

Dewatering Pumps

Performance Curve



Performance (GPH)

Model	1 FT.	5FT.	10 FT.	15 FT.	20 FT.	30 FT.	40 FT.	Shut-Off	Wt.
300611TPK	400	390	358	330	295	225	120	48	6

Model	Description	Wt.
300622RK	Impeller Repair Kit (Use repair parts discount)	1

303022SP Handymac

The powerful and portable Handymac can operate on any 12-volt truck or automobile battery. A convenient 30' cable is standard and an optional carrying case is also available.

Application:

Dewatering applications for utility companies, contractors, municipalities, and industrial users.

Features:

- 1/3 HP motor delivers up to 43 GPM
- Remote waterproof controller integrated into the pump cable for simple and safe operation
- Unit weights just 33 lbs
- Low, 30 amp draw for approximately an hour of operation without restarting the engine (times may vary)
- Watertight o-ring seals keep pump internals dry
- Color coded battery power leads
- Self-lubricating shaft seals, and bearing lubricated for long life
- 1 1/2" NPT discharge pipe size
- Improved switch design for increased reliability



Performance

Capacity	Discharge Height
41.6 GPM	5'
34.0 GPM	10'
25.0 GPM	15'
15.0 GPM	20'
0.0 GPM	25'

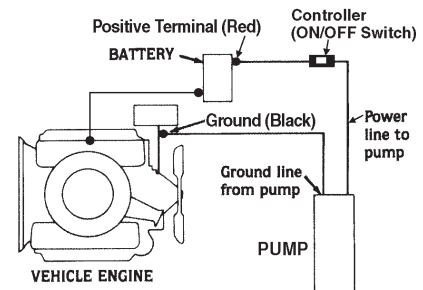
Model	Description	Wt.
303022SP	Dewatering Pump DC - 1/3 HP	36

Important

1. Make sure the vehicle and the pump are not in contact during connection.
2. Do not run completely dry for extended periods. Damage to shaft seal may result.
3. Do not use power cable for handling unit.

Danger

Turn off before connecting battery clamps to battery. Arcing could result. Not for use with fluids that have a flash point below 100°F / 38°C (examples: gasoline, alcohol). Sparking could result in death.



Optional storage / carrying case

This is available to protect the pump during between-jobs storage and on truck or in field during transit. Welded steel construction, carrying handle, lock-type center hasp and identification sign. Hammered paint finish.

10" wide, 24" long, 11" high

Model	Description	Wt.
303022B	Carry case for pump	16

(Use accessories discount)



Submersible Pumps 115V

With their slim-design, these light-weight submersibles feature top discharge as well as cast-iron impellers, 304 stainless steel casing, motor housing, shaft, and hardware. The pump motor is protected from overload with a thermal breaker. These are rugged and durable submersible pumps at value prices and can be used with piggyback float switches.

Application:

Dewatering applications for utility companies, contractors, municipalities, and industrial users.

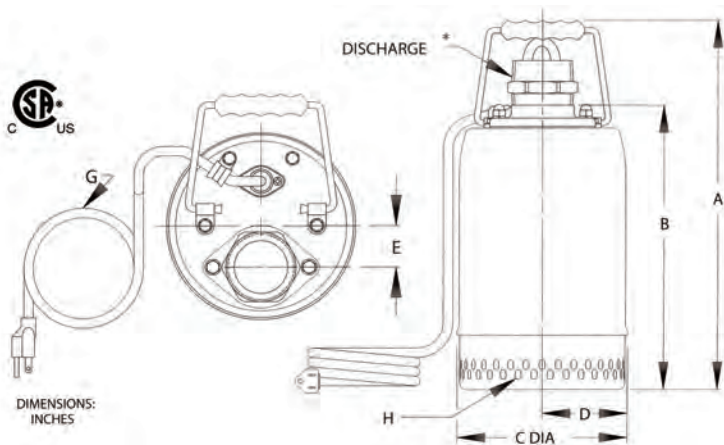
Features:

- 2" pumps, 1/2 HP to 1 HP
- Stainless steel / Cast iron construction
- Light weight slim design
- Motors thermal overload protected
- Lower seal: silicon - carbide, viton
- Upper seal: carbon - ceramic, viton
- Oil lubricated seals
- Cast iron impeller, top, pump end
- 304 stainless steel casing, motor housing, shaft, and hardware
- Long power cables - 30' on 1/2 HP and 50' on 1 HP
- Pumps cannot run dry

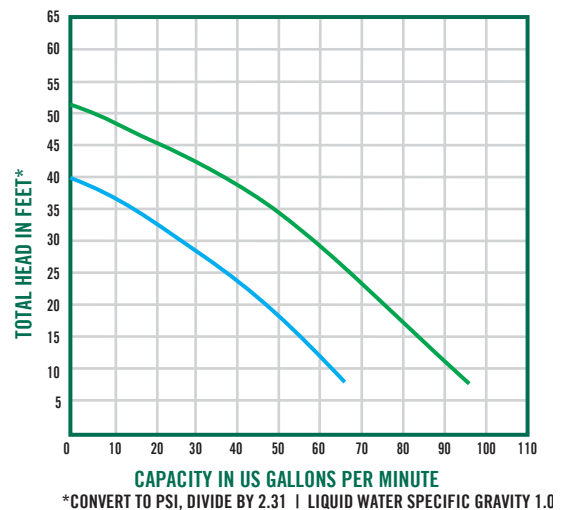


Dewatering Pumps

Dimensions



Performance Curve



Specifications

Model #	A	B	C	D	E	Disch*	G Cable Length	H Suction Stainer	HP	Discharge	FL Amps	VAC or Tank Size (Qts.)	Ship Wt. (lbs)
02G.5V	14.50	11.13	6.66	3.33	1.44	2.00	30.00 FT	.39 X .24 Slots on Staggered Center	1/2	2"	5.4	115V	31
02G1V	17.12	13.75	7.55	3.80	1.64	2.00	50.00 FT	.25 X .38 Slots on Staggered Center	1	2"	9.3	115V	50

325070SL SludgeMaster

The benefits of air-powered SludgeMaster are varied and unique. Immediate use: simply hook up compressed air supply, lower through manhole, or into sump or fluid to be pumped. The SludgeMaster has no fuel tanks to run empty, no gas cans to carry, no electrical connections, no electric motors to overload. High capacity, low head operation to meet nearly every emergency or daily-use application.

The SludgeMaster keeps pumping without clogging on most problem jobs, and won't choke up on small trash. Can run dry with no damage. Self-draining to prevent damage in below-freezing weather. Sturdily built for rough handling and long-life endurance on land, at sea or offshore: cast iron & steel for wear, aluminum for weight-saving.

Application:

- Handles mud, leaves, twigs, sand, sludge, mill-scale, bilge-gunk, sewage and trash-laden water typically confronted by utility companies, contractors, municipalities, and most industries.
- Also handles most substances common to the chemical process, marine, mining, paper pulp and petrochemical industries . . . even handles small solids.

Features:

- Powered by a compressed air powered motor with easily adjusted variable flow and pressure control.
- Up to 65' shut-off head.
- Self-priming. Submersible when exhaust air is piped above surface. No suction hose needed.
- Weighs just 59 lbs. Only 23" high. Air inlet 1/2" NPT.
- Fits through openings as small as 14" diameter.
- Fool-proof design: open two-vane low-speed trash-type cast iron impeller handles abrasive substances with less wear.
- Continuous automatic lubrication: internal oiler, oil-bath lubricated shaft seal; needs only one pint every 50 hours of use.
- Built-in speed-limiting governor prevents damage to pump if run dry for extended periods of time.



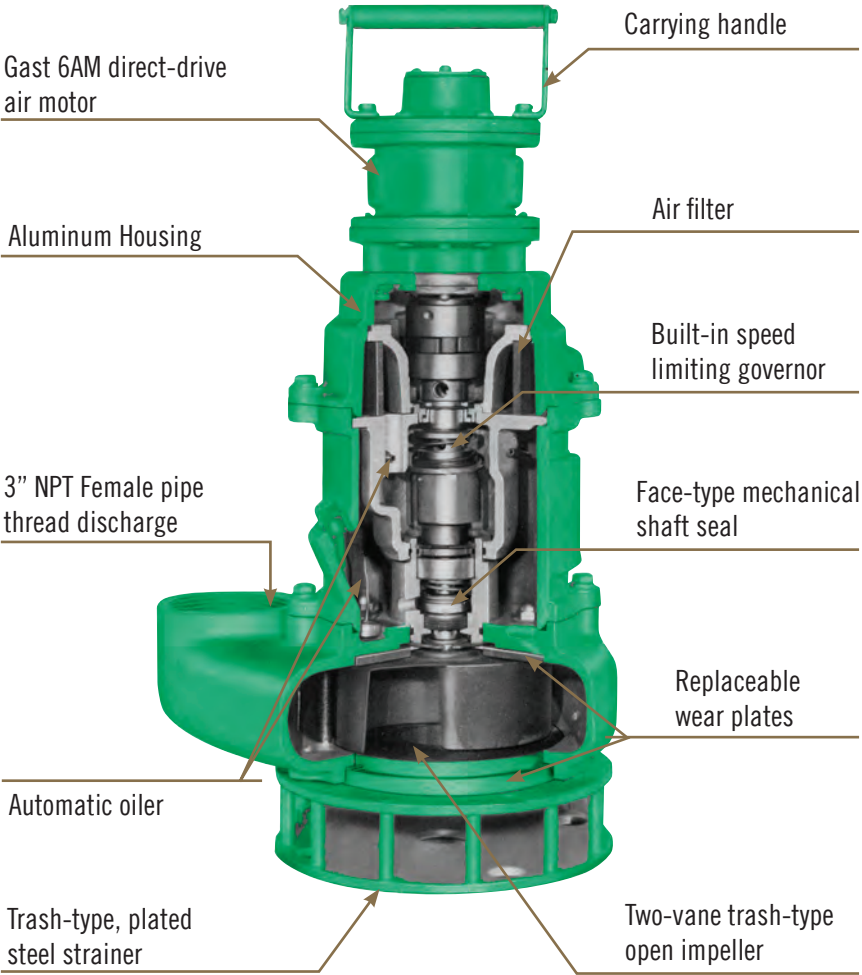
Discharge Pipe Size
3"

Capacity
Up to 300 GPM

Air Powered Pump - SludgeMaster

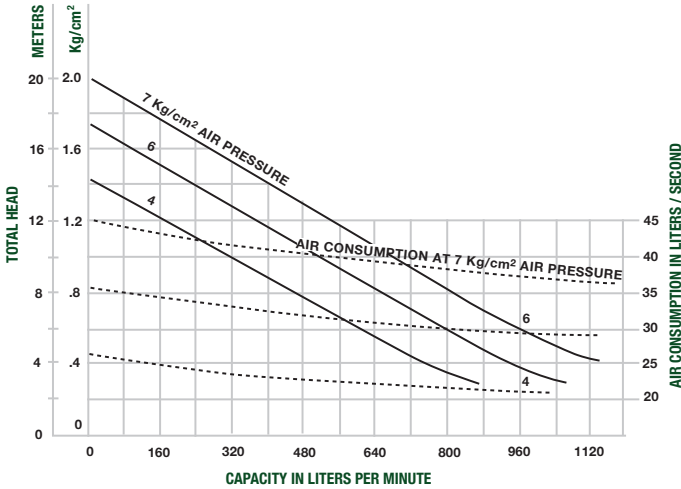
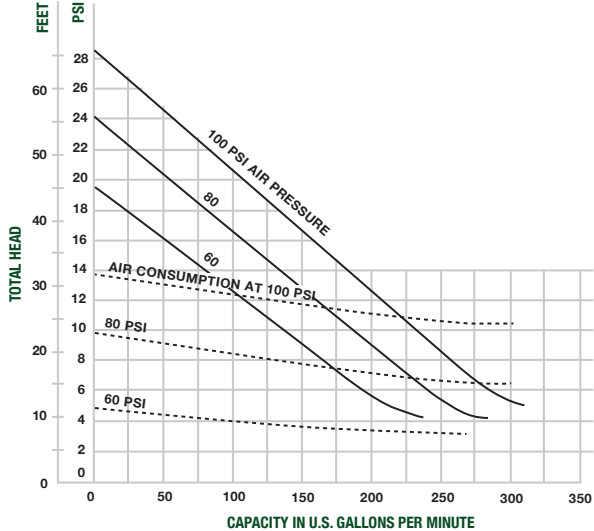
Model	Description	Wt.
325070SL	SludgeMaster	70

325070SL SludgeMaster



Dewatering Pumps

Performance



Cast Iron Sewage Trash Pumps

A.Y. McDonald cast iron sewage/trash pumps are designed for trouble free and economical handling of solid laden liquids and slurries. Pumps are available in three NPT port sizes; 2", 3", and 4". Cast iron construction with two vane stainless steel self-cleaning impellers, silicon carbide mechanical seals for abrasion resistance and Buna-N o-rings and check valves. Built-in check valve allows pump to reprime automatically in an open system, without a foot valve.

A.Y. McDonald Sewage/Trash pumps will easily handle liquids containing sewage, stone, sticks, mud, and other solids. Minimum liquid requirement must be above 85%. Failure to do so may damage pump and void warranty. These pumps are reliable, cost effective, and low maintenance. For use with non-flammable liquids which are compatible with pump component materials.



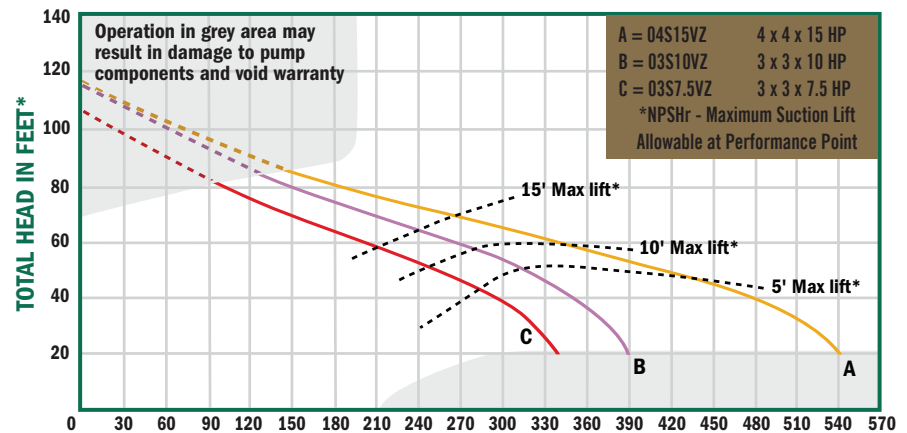
Application:

The solids handling capabilities of the pumps make them ideally suited for a variety of industrial applications including: sewage treatment, canneries, chemical processing, wineries, tanneries, meat packing, breweries, pulp, wood chips, process water, sludge and slime, waste water, white water, and other applications.

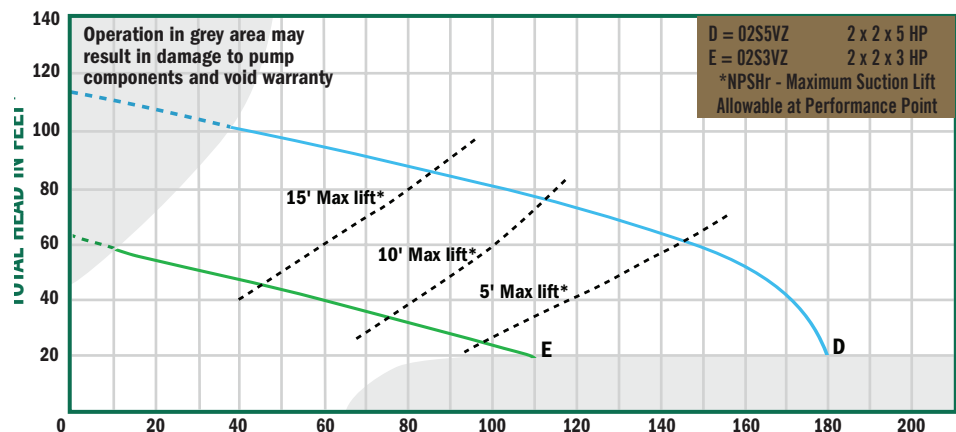
Features:

- Cast iron construction
- Silicon carbide/viton mechanical seal
- 2", 3", & 4" NPT port sizes
- Self-priming up to 20'
- Maximum temperature 180°F
- Maximum working pressure 150 PSI
- Stainless steel semi-open, clog resistant impeller
- Built in Buna-N check valve
- Removable cast iron volute/wearplate
- Easy cleanout design
- Pull-from-rear design
- 3" & 4" models feature front cleanout
- Available with 3 to 15 HP totally enclosed fan cooled (TEFC) electric motors
- Single and three phase, 3450 RPM Motors
- Seal flush port provided on 5 HP and larger

Performance

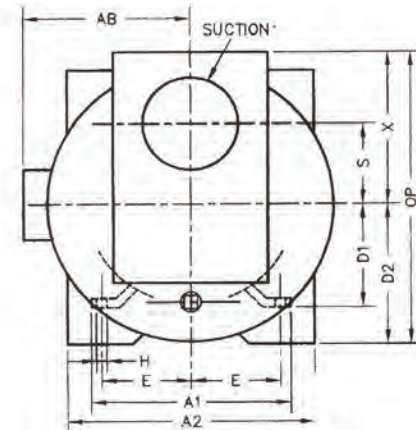
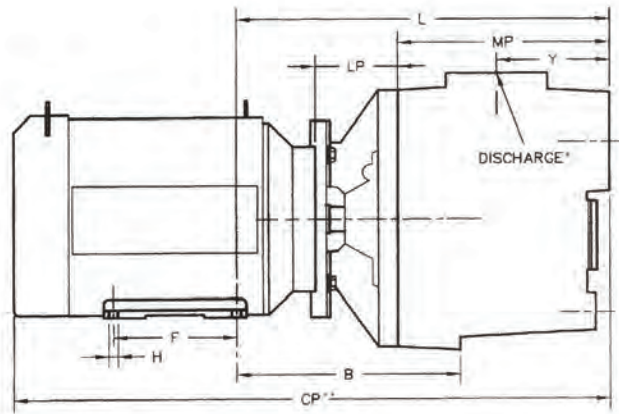


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Cast Iron Sewage Trash Pumps



Dimensions

Model No.	HP	SUC*	DIS*	CP**	A1	Width	AB	B	D1	D2	E	F	H	L	LP	MP	OP	S	X	Y
02S3VZ	3	2"	2"	21.0	6.5	9.0	5.0	N/A	3.5	N/A	2.4	3.0	0.88 X 0.34	11.0	2.3	6.1	8.2	2.1	4.7	3.1
02S3V	3	2"	2"	21.0	6.5	9.0	5.0	N/A	3.5	N/A	2.4	3.0	0.88 X 0.34	11.0	2.3	6.1	8.2	2.1	4.7	3.1
02S5VZ	5	2"	2"	25.0	6.4	13.5	8.6	9.7	4.5	5.2	3.7	5.5	0.4	14.8	4.4	6.9	10.	2.1	4.7	3.1
02S5V	5	2"	2"	25.0	6.4	13.5	8.6	9.7	4.5	5.2	3.7	5.5	0.4	14.8	4.4	6.9	10.	2.1	4.7	3.1
03S7.5VZ	7.5	3"	3"	26.5	6.4	15.5	9.4	10.0	4.5	5.7	3.7	5.5	0.4	16.5	3.7	9.3	12.4	3.5	6.6	5.0
03S7.5V	7.5	3"	3"	31.0	9.5	15.5	9.4	10.8	5.2	5.7	4.2	7.0	0.4	17.4	3.7	9.3	12.4	3.5	6.6	5.0
03S10VZ	10	3"	3"	31.0	9.5	15.5	9.5	10.8	5.2	5.7	4.2	7.0	0.4	17.4	3.7	9.3	12.4	3.5	6.6	5.0
03S10V	10	3"	3"	31.0	9.5	15.5	9.5	10.8	5.2	5.7	4.2	7.0	0.4	17.4	3.7	9.3	12.4	3.5	6.6	5.0
04S15VZ	15	4"	4"	32.0	9.5	15.5	9.5	11.2	5.2	6.1	4.2	7.0	0.4	18.5	3.7	10.3	14.3	3.5	8.1	6.6

(*) Standard NPT (female) pipe thread.

(**) This dimension may vary due to motor manufacturer's specifications.

(+) 3-Phase motors can operate on 50 Hz. (Those will change Full Load Amps, Service Factor, RPM and Priming Capabilities)

NOTE: Dimensions have a tolerance of $\pm 1/8"$.

NOTE: Electric supply for ALL motors must be within $\pm 10\%$ of nameplate voltage rating (Ex. 230V $\pm 10\%$ = 207 to 253)

Specifications

Model No.	HP	Phase	ENC	Frame	Voltage @60 Hz+	Full Load Amps	Max Solids	Ship Wt.
02S3VZ	3	3	TEFC	56J	230/460	8/4	1"	87 lbs
02S3V	3	1	TEFC	56J	230	16	1"	94 lbs
02S5VZ	5	3	TEFC	184JM	230/460	17/9	1"	146 lbs
02S5V	5	1	TEFC	184JM	230	20	1"	170 lbs
03S7.5VZ	7-1/2	3	TEFC	184JM	230/460	22/11	1-1/2"	200 lbs
03S7.5V	7-1/2	1	TEFC	215JM	230	31	1-1/2"	255 lbs
03S10VZ	10	3	TEFC	215JM	230/460	26/13	1-1/2"	215 lbs
03S10V	10	1	TEFC	215JM	230	40	1-1/2"	285 lbs
04S15VZ	15	3	TEFC	215JM	230/460	47/24	2"	287 lbs

2" General Purpose AG Dewatering Pumps Cast Iron / Thermoplastic

The A.Y. McDonald line of engine driven dewatering pumps offer economy, durability, portability and performance all in one neat package. Pump construction materials range from cast iron featuring dual volute design that reduces radial load on engine to corrosion resistant thermoplastic components featuring removable/replaceable volutes, impellers and wearplates. A.Y. McDonald Engine Driven Dewatering pumps are reliable, cost effective, and low maintenance.

Application:

Ideal for general purpose dewatering, irrigation, spraying, washdown, and agricultural applications. For use with non-flammable liquids which are compatible with pump component materials.

Features:

- Cast iron or thermoplastic construction
- Briggs & Stratton or Honda engines
- Buna-N mechanical seal
- 2" FNPT port sizes - suction & discharge
- Self-priming up to 20'
- Pumps include carrying handle
- Built-in check valve

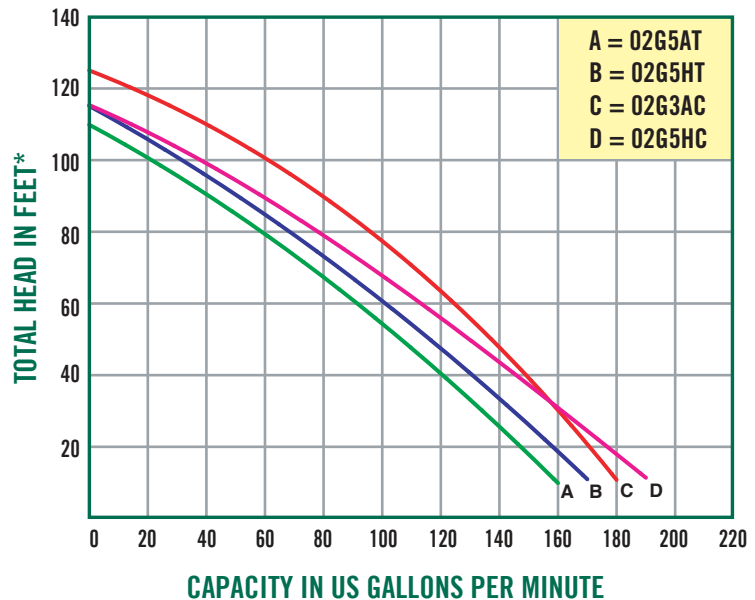


2" Dewatering pump
Cast iron housing



2" Thermoplastic housing

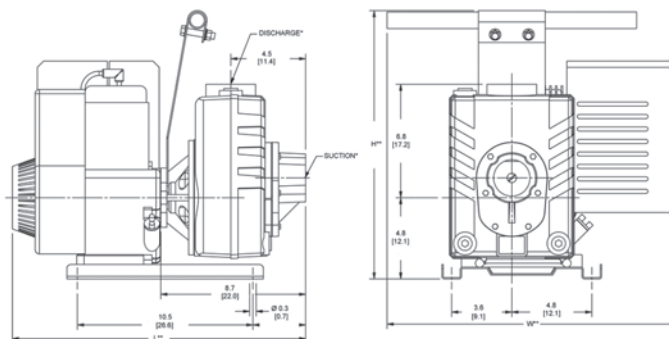
Performance



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2" General Purpose AG Dewatering Pumps

Cast Iron / Thermoplastic

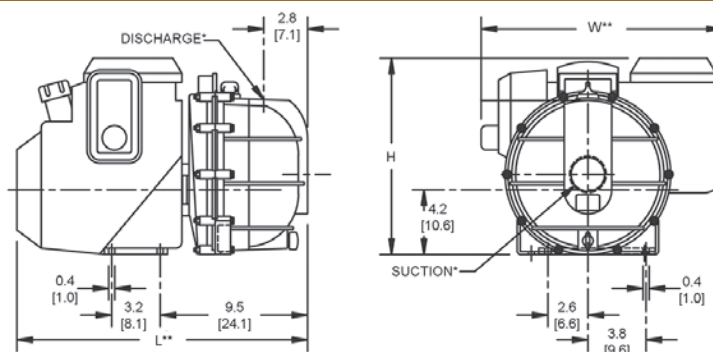


2" Dewater Pumps | Cast Iron

Model	Curve	HP Class*	Motor	Run-Time (Hours)	Tank Size (Gal/Lrt)	Ship Wt. (Lbs.)	L**	W**	H**
02G3AC	B	4	Briggs & Stratton	1.2	0.52/2.0	65	17.8	17.5	16.1
02G5HC	C	5	Honda	1.5	0.47/1.7	70	16.1	19.4	16.1

Features:

- Cast iron construction
- Solids Handling - 3/8" diameter
- Stainless steel shaft sleeve
- Maximum temperature 180°F
- Dual volute design
- Fiber Gasket Casing Seal
- Delivers a maximum of 180 GPM
- Optional Viton® or silicon carbide mechanical seals
- Maximum working pressure 75 PSI



2" Dewater Pumps | Thermoplastic

Model	Curve	HP Class*	Motor	Run-Time (Hours)	Tank Size (Gal/Lrt)	Ship Wt. (Lbs.)	L**	W**	H**
02G5AT	A	4	Briggs & Stratton	1.2	0.52/2.0	40	18.1	13.6	12.6
02G5HT	D	5	Honda	1.5	0.47/1.7	45	18.8	15.6	12.7

Features:

- Thermoplastic construction
- Polypropylene impeller
- Solids Handling - 7/16" diameter
- O-ring casing seal
- Replaceable volute
- Maximum temperature 130°F
- Delivers up to 48 PSI and maximum 190 GPM
- Optional EPDM mechanical seals available
- Maximum working pressure 60 PSI

(*) Standard NPT (female) pipe thread.

(**) This dimension may vary due to motor manufacturer's specifications.

Dimensions are in inches.

† HP class represents market category and is not intended to define actual horsepower.

NOTE: Dimensions have a tolerance of $\pm 1/8"$.

WARNING: Do not use in explosive atmosphere or for pumping volatile flammable liquids.

2" Engine Driven Portable High Pressure

A.Y. McDonald cast aluminum self-priming portable engine driven pumps can provide for home fire protection with optional hose kit. These pumps are capable of developing 75 lbs. of pressure at 30 GPM. Available with a choice of standard and heavy-duty engines for gasoline and diesel fuel engines.

Unit is standard with die-cast aluminum housing, cast iron impeller, and built-in check valve. All models standard with EPDM elastomers & seals. A.Y. McDonald engine driven dewatering pumps are reliable, cost effective and low maintenance.

Application:

Use for fire protection or irrigation. For use with non-flammable liquids which are compatible with pump component materials.

Features:

- Available with Briggs & Stratton, Honda gasoline, or Hatz diesel Engines.
- 2" suction and discharge port sizes
- Discharge port rotates in 90° Increments
- Maximum flow/head: 130 GPM/108 PSI
- Maximum lift up to 26'
- One tool serviceability
- Suction strainer included
- EPDM / CAR / CER - shaft seal
- Maximum temperature 180°
- Optional high pressure hose kit
- Optional wheel kit



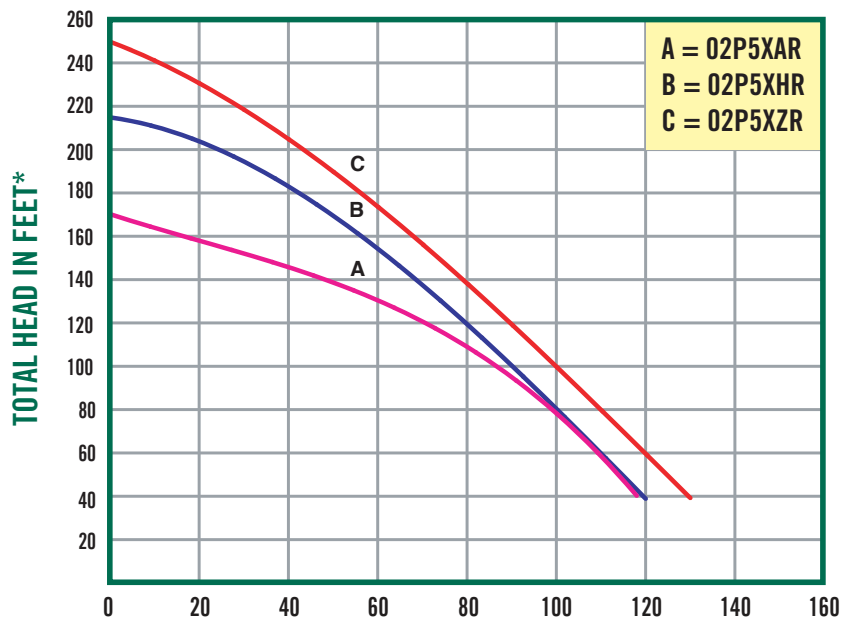
Model 02P5XHR



02S5HK
2" High Pressure Hose Kit

2" High Pressure Hose Kit with 20 ft. 2" suction and 100 ft. 1 1/2" high pressure (100 PSI) discharge hose, (1) 1 1/2" fire nozzle, 1 1/2" x 2" adapter and hose wrench.

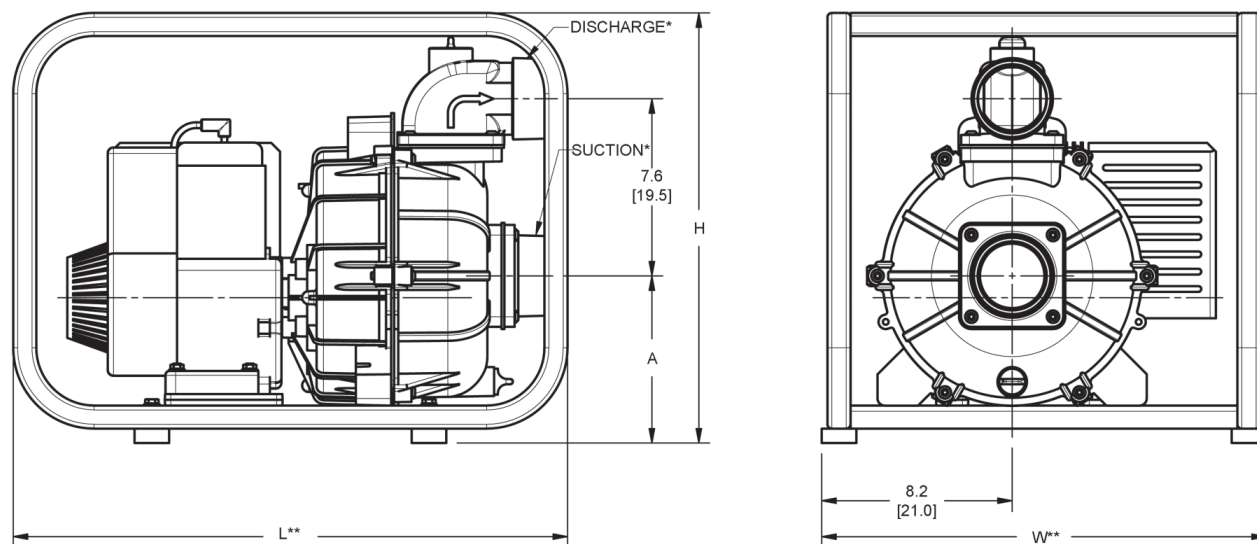
Performance



CAPACITY IN US GALLONS PER MINUTE

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2" Engine Driven Portable High Pressure



Dewatering Pumps

2" High Pressure Pumps

Model No.	Curve	Driver Type & HP	Shaft Seal	Tank Size (Gal/Lrt)	Run Time (Hours)	Mounting	Ship Wt. (Lbs)	L**	W**	H**	Suct*	Disch*
02P5XAR	C	B&S CP650 6.5 HP Pro	EPDM / CAR / CER	0.87 / 3.3	1.3	Roll Cage	90	24	19.2	18.6	*2.00	*2.00
02P5XHR	B	Honda GX160, 5.5 HP	EPDM / CAR / CER	0.82 / 3.1	2.8	Roll Cage	90	24	19.2	18.6	*2.00	*2.00
02P5XZR	A	Hatz Diesel 5 HP	EPDM / CAR / CER	0.79 / 3.0	2.7	Roll Cage	110	24	19.2	18.6	*2.00	*2.00

Model	Description	Wt.
-------	-------------	-----

02S5HK	High Pressure Hose Kit	40
--------	------------------------	----

(Use accessories multiplier)

(*) Standard NPT (male) pipe thread.

(**) This dimension may vary due to motor manufacturer's specifications.

Dimensions are in inches.

NOTE: Dimensions are in inches and have a tolerance of $\pm 1/8"$.

WARNING: Do not use in explosive atmosphere or for pumping volatile flammable liquids.

Optional Viton® seals and elastomers include o-rings and check valve. Hose Kit with 100' of high pressure discharge hose, 15' of suction hose, fire nozzle, hose wrench, adapter, & weight is 38 lbs. Two wheel truck assemblies with semi-pneumatic tires for pumps with roll cages are available.

*Viton® and Teflon® are registered trademarks of DuPont.

2" & 3" Self-Priming Engine Driven Trash Pump

A.Y. McDonald high-volume self-priming centrifugal trash pumps come standard with a ductile iron impeller to resist abrasion and one tool serviceability for cleanout. All pumps feature aluminum housing, cast iron wear parts, built-in check valve, suction strainer and heavy duty steel frame. Standard flanges with male NPT threads. A.Y. McDonald engine driven trash pumps are reliable, cost effective, and low maintenance.

Application:

Dewatering and trash applications with solids handling capability. For use with non-flammable liquids which are compatible with pump component materials.

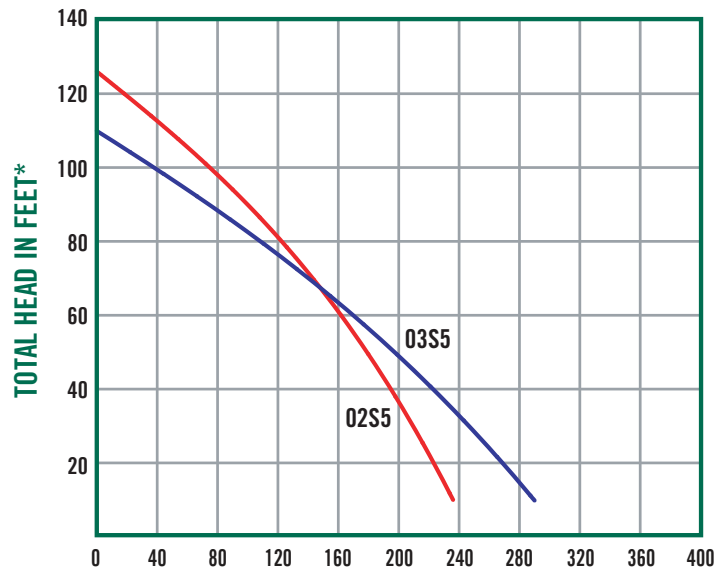
Features:

- Cast aluminum with cast iron wear parts
- Available with Briggs & Straton, Honda gasoline or Hatz diesel engines
- Removable suction and discharge port sizes 2" and 3"
- Discharge male NPT port rotates 90° increments
- Maximum flow: 290 GPM
- Maximum head: 125'
- Maximum lift up to 26'
- Maximum temperature 180°F
- Silicon-carbide seal with dry run survivability / Viton® mechanical seal
- Easy clean out with one tool serviceability
- Optional Viton® elastomers
- Optional wheel kit



Model 03S5XHR

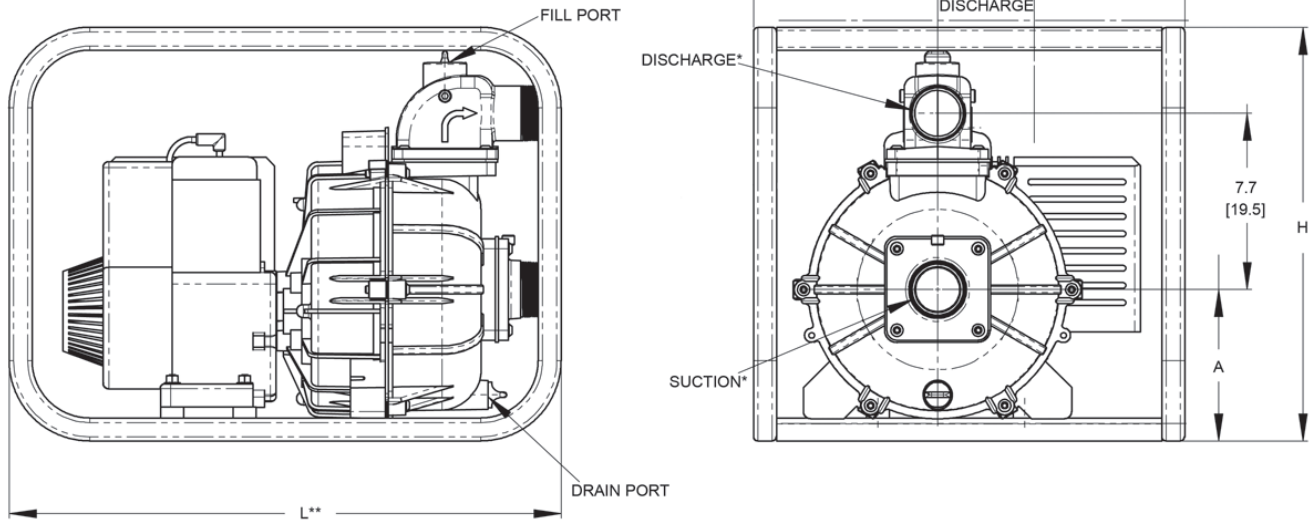
Performance



CAPACITY IN US GALLONS PER MINUTE

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2" & 3" Self-Priming Engine Driven Trash Pump



Dewatering Pumps

2" Trash Pumps

Model No.	Driver Type & HP	Shaft Seal	Tank Size (Gal/Lrt)	Run Time (Hours)	Mounting	Ship Wt. (Lbs)	L**	W	H	Suct*	Disch*
02S5XAR	B&S CP650 5 HP	Viton® / Sic / Sic**	0.87 / 3.3	1.3	Roll Cage	90	24	19.5	19.9	2.00	2.00
02S5XHR	Honda GX160, 5 HP	Viton® / Sic / Sic**	0.82 / 3.1	2.0	Roll Cage	90	24	19.5	19.9	2.00	2.00
02S5XZR	Hatz Diesel 5 HP	Viton® / Sic / Sic**	0.79 / 3.0	2.7	Roll Cage	115	24	19.5	19.9	2.00	2.00

Solids Handling - 1" diameter

3" Trash Pumps

Model No.	Driver Type & HP	Shaft Seal	Tank Size (Gal/Lrt)	Run Time (Hours)	Mounting	Ship Wt. (Lbs)	L**	W	H	Suct*	Disch*
03S5XAR	B&S CP650 6.5 HP	Viton® / Sic / Sic**	0.87 / 3.3	1.3	Roll Cage	100	24	19.5	19.9	3.00	3.00
03S5XHR	Honda GX160, 5.5 HP	Viton® / Sic / Sic**	0.82 / 3.1	2.5	Roll Cage	100	24	19.5	19.9	3.00	3.00
03S5XZR	Hatz Diesel 4.8 HP	Viton® / Sic / Sic**	0.79 / 3.0	2.7	Roll Cage	120	24	19.5	19.9	3.00	3.00

Solids Handling - 1 1/4" diameter

WARNING: Do not use in explosive atmosphere or for pumping volatile flammable liquids.

*Viton® is a registered trademark of DuPont.

**SIC = Silicon Carbide

3" & 4" Engine Driven Trash Pump

The A.Y. McDonald line of engine driven trash pumps are constructed of heavy duty sand cast components featuring removable/replaceable cast iron volutes, impellers, and wearplates. Simple cleanout design permits easy removal of trash and debris without disconnecting hoses.

Pumps are available with side valve or overhead valve engines from various engine manufacturers. An electric start option is available on 4" model. A.Y. McDonald engine driven trash pumps are reliable, cost effective, and low maintenance.

Application:

Designed for applications which require high flow efficiency and solids handling capability. For use with non-flammable liquids which are compatible with pump component materials.

Features:

- Cast aluminum with cast iron wearparts construction
- Viton®/silicon carbide mechanical seal & Buna-N o-ring
- 3" & 4" NPT port sizes
- Self-priming up to 20'
- Engine options: Briggs & Stratton, or Honda
- Available in 8, 9 and 13 HP engines
- Pumps include heavy duty base or roll frame
- Suction strainer included
- Solids handling up to 2" diameter



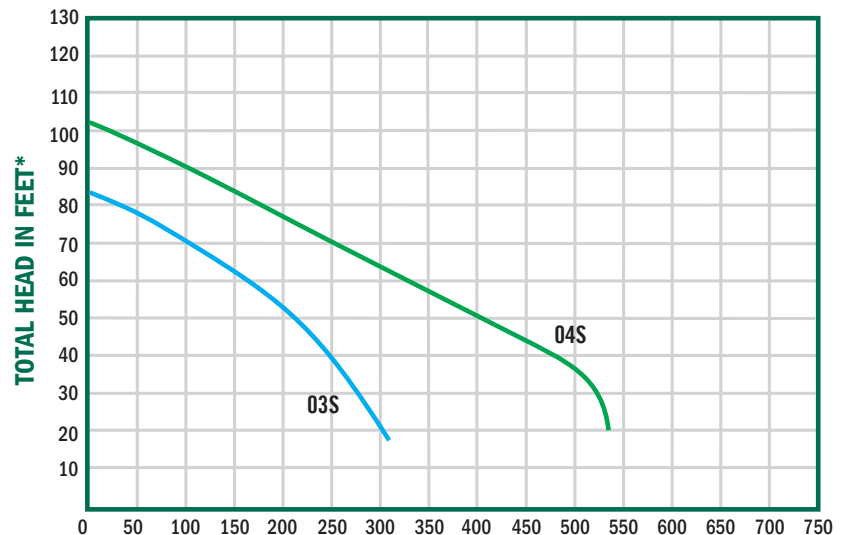
3" Trash Pump

Dewatering Pumps



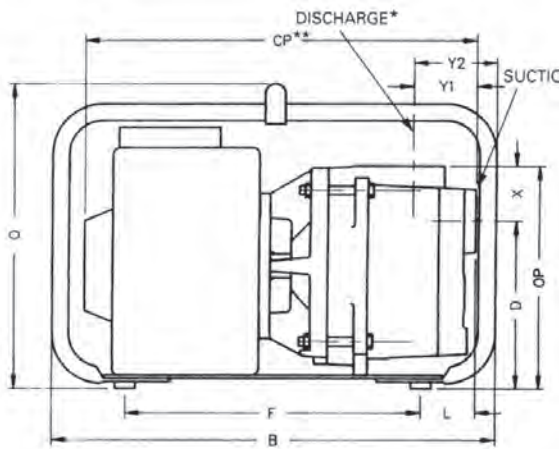
04S13HPV
4" Trash Pump

Performance

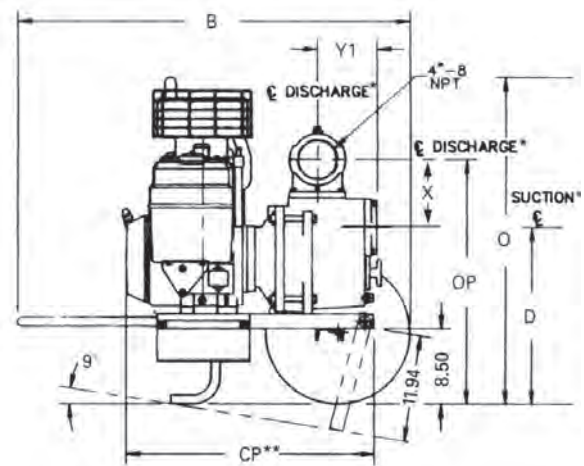


CAPACITY IN US GALLONS PER MINUTE @ 3600 RPM
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3" & 4" Engine Driven Trash Pump



3" Models



4" Models

Dimensions

Model#	Width	B	CP**	D	F	L	O	OP	X	Y1	Y2	Suct.	Disch.
03S8IR	21.3	27.3	25.5	11.0	13.3	6.0	23.8	14.5	3.5	5.0	6.0	3"	3"
03S9HR	21.3	27.3	25.5	11.0	13.3	6.0	23.8	14.5	3.5	5.0	6.0	3"	3"
04S13HPV	37.5	44.5	27.4	19.6	N/A	N/A	36.6	27.5	7.8	6.5	N/A	4"	4"

(* Standard NPT (female) pipe thread.

(**) This dimension may vary due to motor manufacturer's specifications.

NOTE: Dimensions have a tolerance of $\pm 1/8"$.

3" Engine Driven Trash Pumps

Model No.	Driver	Shaft Seal	Run Time	Tank Size	Ship Wt. (Lbs)
03S8IR	8 HP Briggs & Stratton 1350*	Viton® / Sic / Sic**	90 min.	4.0 qt.	143
03S9HR	9 HP Honda GX270*	Viton® / Sic / Sic**	100 min.	6.4 qt.	158

Solids Handling - 1 1/2" diameter

4" Premium Engine Driven Trash Pumps

Model No.	Driver	Shaft Seal	Run Time	Tank Size	Ship Wt. (Lbs)
04S13HPV	13 HP Honda GX390*†	Viton® / Sic / Sic**	80 min.	6.9 qt.	299

Solids Handling - 2" diameter

(13 HP includes transport dolly / wheel kit)

(* Oil alert included

(**) SIC = Silicon Carbide

†12V DC electric start (battery not included)

WARNING: Do not use in explosive atmosphere or for pumping volatile flammable liquids.

3" & 4" Engine Trash Pump

The A.Y. McDonald engine driven trash pumps are constructed of heavy duty sand cast aluminum components featuring replaceable ductile iron impellers and steel wearplates. Simple front cleanout design permits easy removal of trash and debris without disconnecting hoses.

Pumps are available with Honda gasoline engine. All are furnished with heavy-duty steel roll cages, suction strainers, and 90° degree discharge elbows.

Application:

Designed for applications which require high flow efficiency and solid handling capability. For use with non-flammable liquids which are compatible with pump component materials.

Features:

- Cast aluminum construction
- Pump includes heavy duty steel roll cage
- 3" & 4" NPT port sizes
- Self-priming to 25'
- Engine options: Honda gasoline
- Available in 8 HP and 13 HP (includes heavy duty steel roll cages) engines
- Solids handling to 1 1/2" & 2 5/8" diameter
- Viton®/silicon carbide mechanical seals

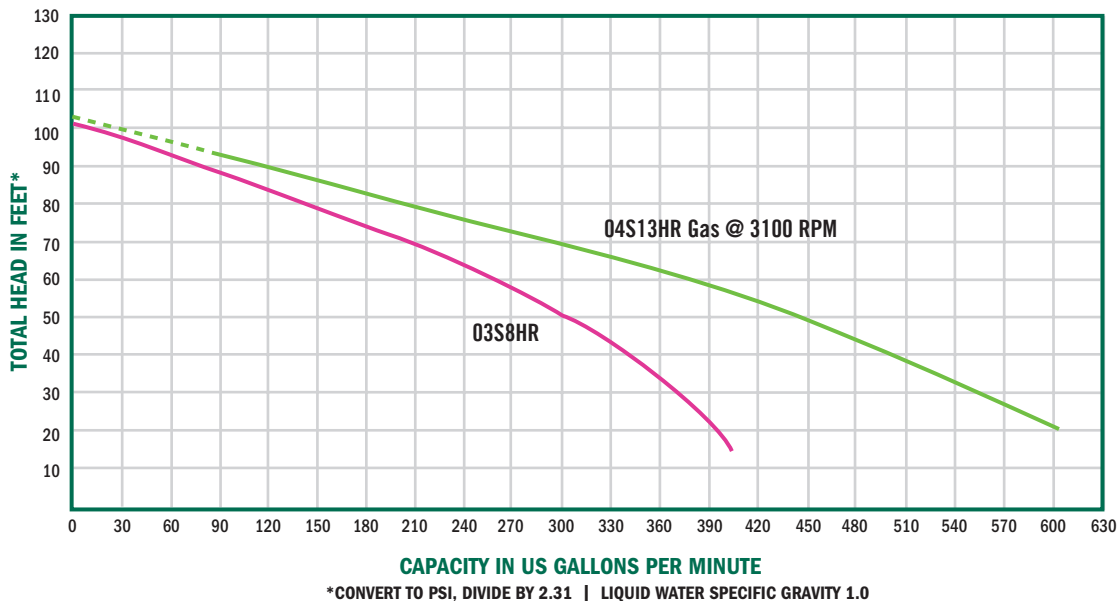


Model 03S8HR
3" trash pump

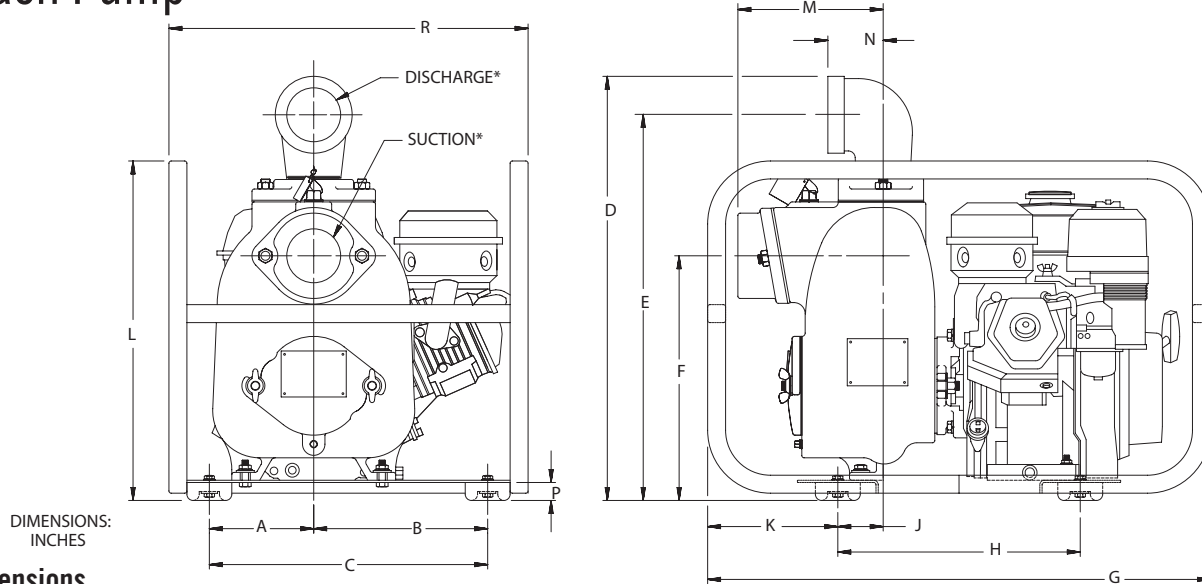


Model 04S13HR
4" trash pump

Performance



3" & 4" Engine Trash Pump

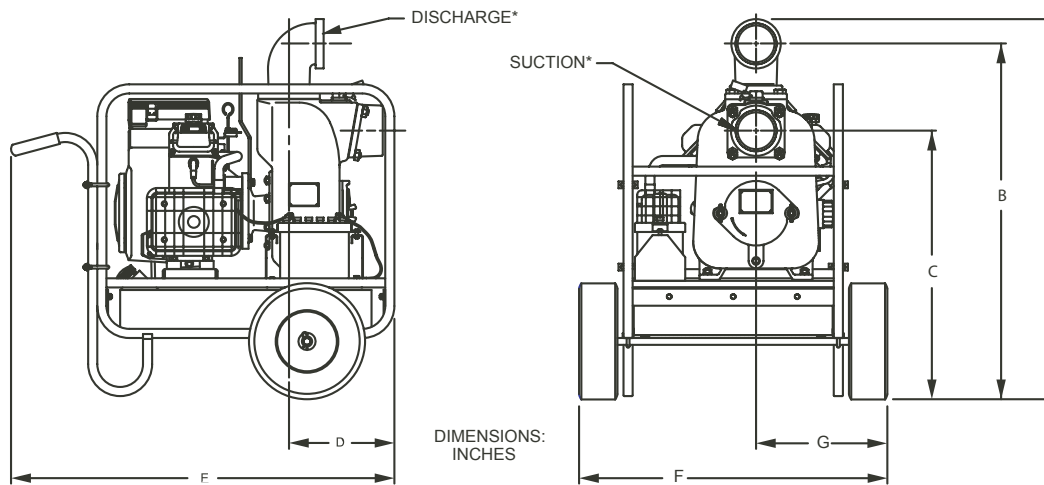


DIMENSIONS: INCHES

Dimensions

Model#	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	Suct.*	Disch.*
03S8HR	5.81	9.69	15.50	23.62	21.50	13.62	28.00	13.50	3.06	7.25	18.90	8.06	3.08	1.00	20.00	3.00	3.00

(*) Standard NPT (female) pipe thread.



DIMENSIONS: INCHES

Dimensions

Model#	A	B	C	D	E	F	G	Suct.*	Disch.*
04S13HR	29.66	26.96	17.44	12.50	36.50	22.50	13.76	4.00	4.00

Note: 04S13HR shown with optional wheel kit

(*) Standard NPT (female) pipe thread.

3" & 4" Trash Pumps

Model No.	Driver Type & HP	Port Size Suc x dis (NPT)	Basic Construction	Shaft Seal	Run Time	Tank Size (qts.)	Mounting	Ship Wt. (Lbs)
03S8HR	Honda 8	3" x 3"	Aluminum	Viton®*/ Sic / Sic**	2.7 hrs.	1.6 gal.	Roll Cage	136
04S13HR	Honda 13	4" x 4"	Aluminum	Viton®/ Sic**	1.2 hrs	6.9 gal.	Roll Cage	262

*Viton® is a registered trademark of DuPont.

**SIC = Silicon Carbide

WARNING: Do not use in explosive atmosphere or for pumping volatile flammable liquids.

6" Engine Trash Pump

The A.Y. McDonald engine driven trash pumps are constructed of heavy duty sand cast aluminum with cast iron and stainless steel internal parts for wear resistance, and durability. Built-in slide mechanism features nylon and powder coated steel components that permit servicing, repairing, and cleaning entire pump without removing hoses or pump components from trailer.

Pumps are available with gasoline or diesel engine options; as well as trailer or skid mounted options.

Application:

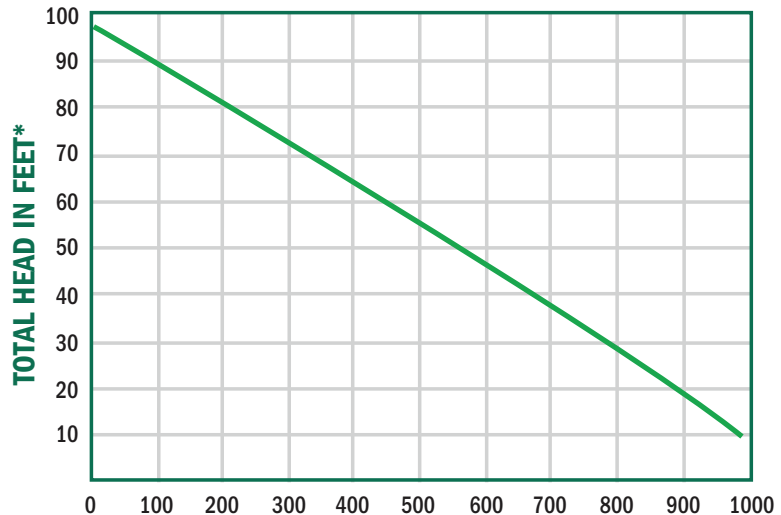
Designed to handle applications which require high flow efficiency and solid handling capability. For use with non-flammable liquids which are compatible with pump component materials.

Features:

- Cast aluminum casing and adapter
- Cast iron seal plate, volute, & manifold
- Stainless steel impeller
- Silicon carbide mechanical seal and Buna-N o-rings & check valve
- 6" NPT port size
- Self priming to 20'
- Solids handling to 3" diameter
- Includes seal wash feature for extended seal life
- 12 volt electric star
- Digital tachometer/hourmeter included
- Maximum temperature 180°F
- D.O.T. Approved Trailer - refer to your state and local codes for registration



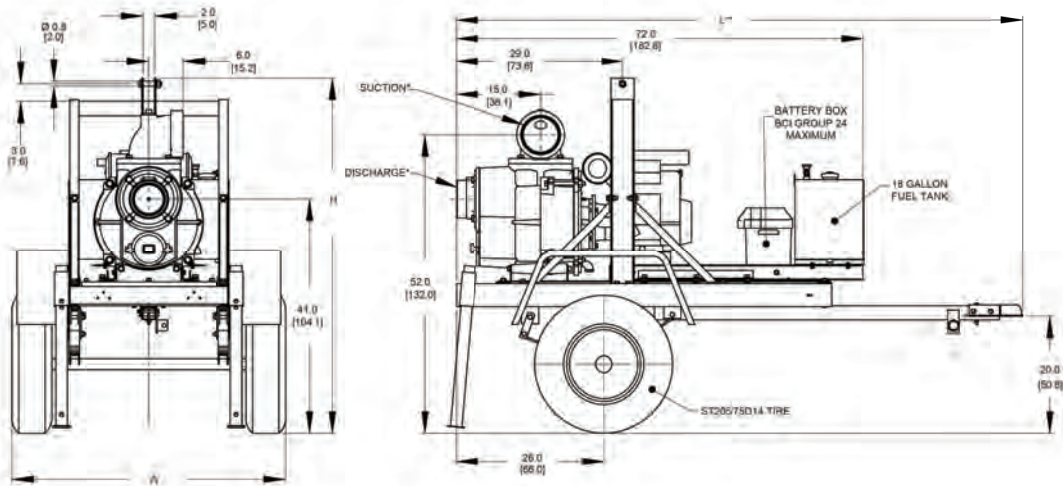
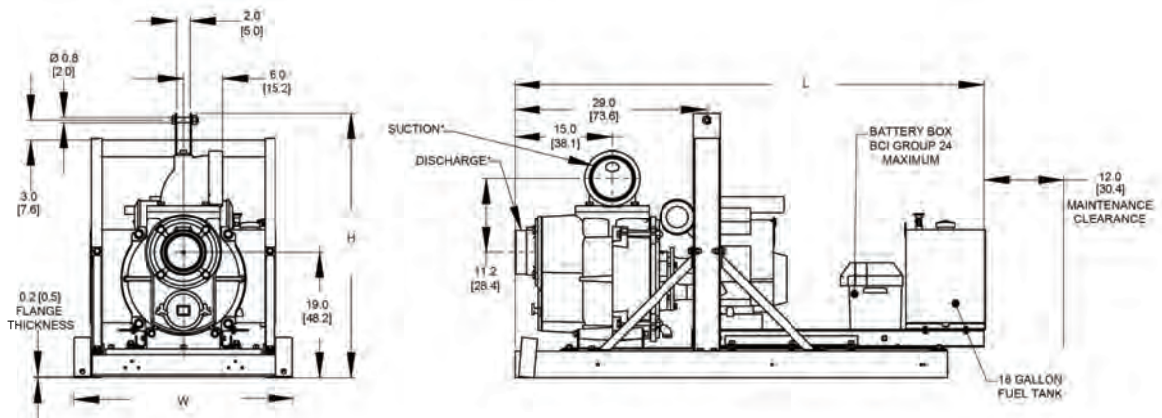
Performance



CAPACITY IN US GALLONS PER MINUTE @ 3600 RPM

*CONVERT TO PSI, DIVIDE BY 2.31 | LIQUID WATER SPECIFIC GRAVITY 1.0

6" Engine Trash Pump



Dimensions

Model#	L	W	H	Suct.*	Disch.*
06S24HTV	99.0	48.0	62.0	6	6
06S24HSV	71.0	33.0	40.3	6	6
06S27ITV	99.0	48.0	62.0	6	6
06S24YSV	71.0	33.0	40.0	6	6
06S24YTV	99.0	48.0	62.0	6	6

(* Standard NPT (female) pipe thread.

NOTE: Dimensions have a tolerance of $\pm 1/8$ ".

6" Trash Pumps

Model No.	Description / Type of Pump	Engine Type	Maximum Solids Dia.	Tank Size	Run Time	Base	Ship Wt. (Lbs)
06S24HTV	Honda OHV +++▲	2 cycle air cooled	3"	20 gal.	9 hrs.	Trailer	1000
06S24HSV	Honda OHV +++▲	2 cycle air cooled	3"	20 gal.	9 hrs.	Skid	725
06S24KTV	Kohler Diesel	3 cycle liquid cooled	3"	20 gal.	12 hrs.	Trailer	1250

Solids Handling - 3" diameter

+++Electric start, battery not included - requires 12 volt DC, BCI Group 24, Min 500 CCA battery

▲ Oil alert included

WARNING: Do not use in explosive atmosphere or for pumping volatile flammable liquids.

2" Engine Driven Dredging Pump

A.Y. McDonald engine driven dredging pump is designed for pumping sea water and fresh water containing up to 25% sand, debris, and other abrasive particles.

This pump is constructed of wear resistant high chromium stainless steel internal components that are designed to last for over 500 hours of service with regular maintenance of rinsing pump after each use. The high chromium stainless steel components are investment cast and CNC machined for maximum efficiency, performance and quality. Dual volute design reduces radial load on engine. The pump is coupled to a 5 1/2 HP Honda engine that is also known for reliability and easy starting. The four bolt casing design and removable type volute offer simple maintenance and fast cleanout of the pump. A.Y. McDonald Dredging pumps are reliable, cost effective, and low maintenance.



Model 02J5HCR

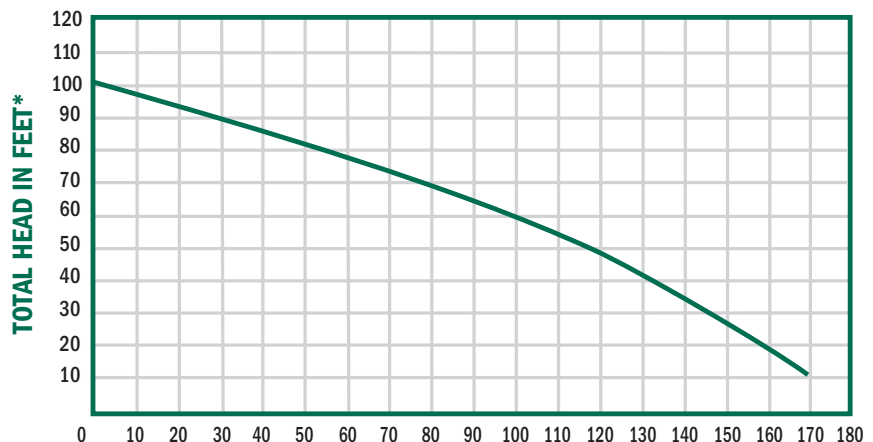
Application:

Besides pumping seawater, this unit can be used for other marine applications including dredging, pile driving, pier maintenance, emergency bilging, and wash down. For use with non-flammable liquids compatible with pump component materials.

Features:

- High chromium stainless steel internal components resist wear from sea water mixed with abrasive sand
- Silicon carbide mechanical seal resists abrasives and extends seal life
- Heavy duty cast iron casing and adapter ensures durability for severe service conditions
- Dual volute design
- O-ring casing seal for ease of service & cleaning
- Maximum working pressure 75 PSI
- Maximum temperature 160°F
- Maximum flow 173 GPM
- Discharge pressure up to 44 PSI
- Solids handling up to 1/2" diameter
- Self-priming to 10' in 1 minute
- Maximum suction lift 20'
- 5 1/2 HP Honda OHV engine with oil alert

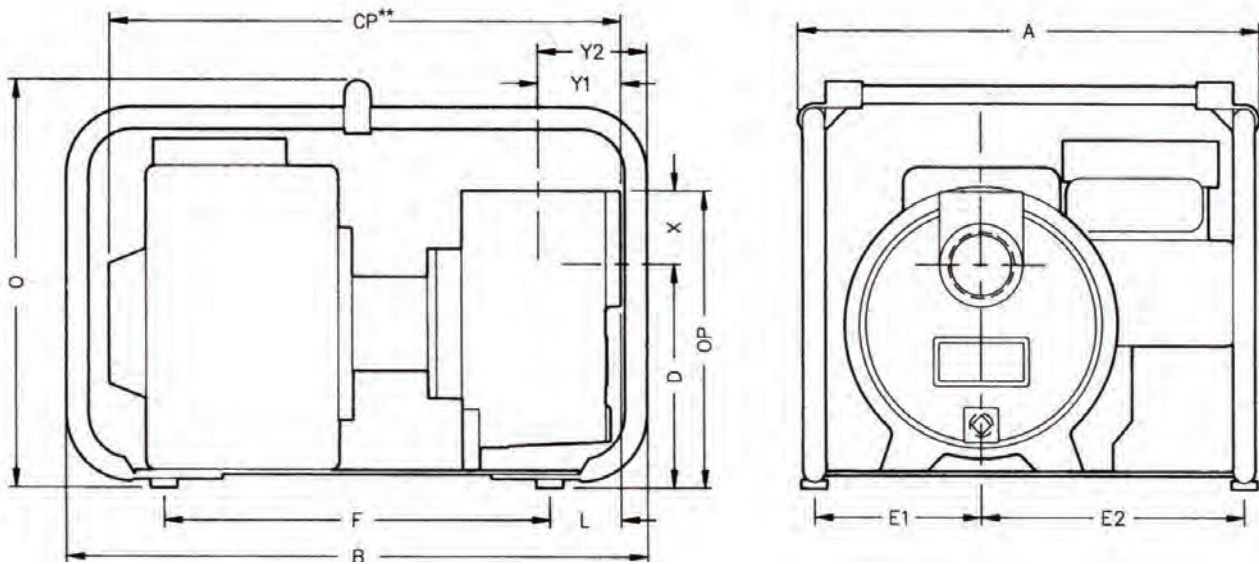
Performance



CAPACITY IN US GALLONS PER MINUTE @ 3600 RPM

*CONVERT TO PSI, DIVIDE BY 2.31 | LIQUID WATER SPECIFIC GRAVITY 1.0

2" Engine Driven Dredging Pump



Dimensions

Model#	HP	A	B	CP**	D	E1	E2	F	L	O	OP	X	Y1	Y2	Suct.	Disch.
02J5HCR	5 1/2	19.5	24.3	19.0	6.8	7.0	11.0	9.3	6.0	20	9.5	2.6	3.1	4.6	2"	2"

(*) This dimension may vary due to motor manufacturer's specifications.

NOTE: Dimensions have a tolerance of $\pm 1/8"$.

2" Dredging Pumps

Model No.	Description / Type of Pump	Construction	Port Size	Shaft Seal	Run Time	Tank Size	Max Solids	Ship Wt. (Lbs)
02J5HCR	5.5 HP Honda GX160 OHV with oil alert	Cast iron w/ high Chromium stainless steel wear parts	2" NPT	Silicon carbide w/ Buna-N	100 min.	3.8 qt.	1/2"	85

Solids Handling - 1/2" diameter

*Viton® is a registered trademark of DuPont.

**SIC = Silicon Carbide

Self-Priming Diaphragm Pump

The A.Y. McDonald line of 3" Diaphragm pumps features two stage, forty-four/one gear reduction with a large diameter output gear and heavy duty ball bearing construction. Often referred to as mud pumps or sludge pumps.

A.Y. McDonald Diaphragm pumps are available with a choice of drivers to meet your application requirements: Briggs & Stratton or Honda gasoline engines, Hatz diesel or 115 VAC electric motor with weatherproof cord and switch. Built-in molded polyurethane flapper/check valve assures self-priming to 20 feet after initial prime. Heavy duty gear box is designed to operate pumps at 40 strokes per minute for electric motor and 60 strokes per minute for engine models. Each unit includes a 3" NPT steel suction strainer, two 3" NPT nipples, and a wheel kit with 10" semi-pneumatic transport wheels for portability. **Suction and discharge port size cannot be reduced.**

Application:

Designed to pump mud, slurry, sewage, and thick liquids that have the ability to flow. Pumps are designed for use with non-flammable liquids which are compatible with pump component materials.

Features:

- Sand cast aluminum construction for portability and durability
- Thermoplastic rubber diaphragm
- 3" NPT suction and discharge
- 1 5/8" diameter solids handling capability
- Modular component design permits easy maintenance and cleanout
- Driver options: gasoline engine or electric motor
- Delivers up to 90 GPM
- Maximum temperature 180°F
- Suction strainer included
- Model 03D1.5V - 1.5 HP single phase, 115/230 Volt motor with manual reset overload includes 20 foot 115 VAC power cord and weatherproof on/off switch

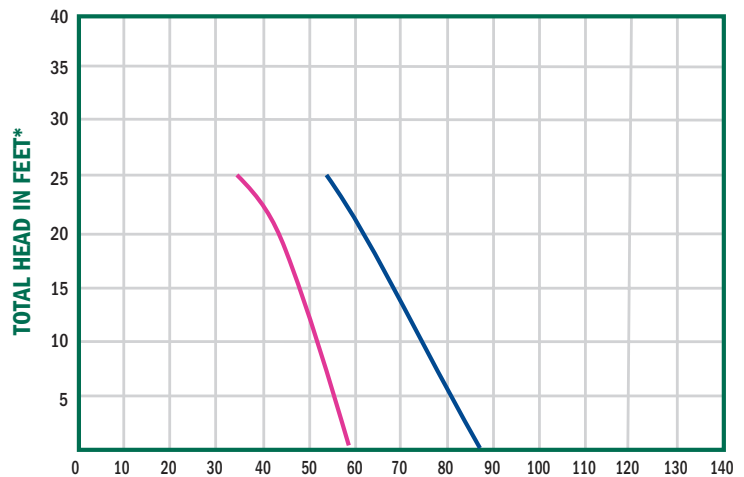


Model 03D5A

Handle not shown

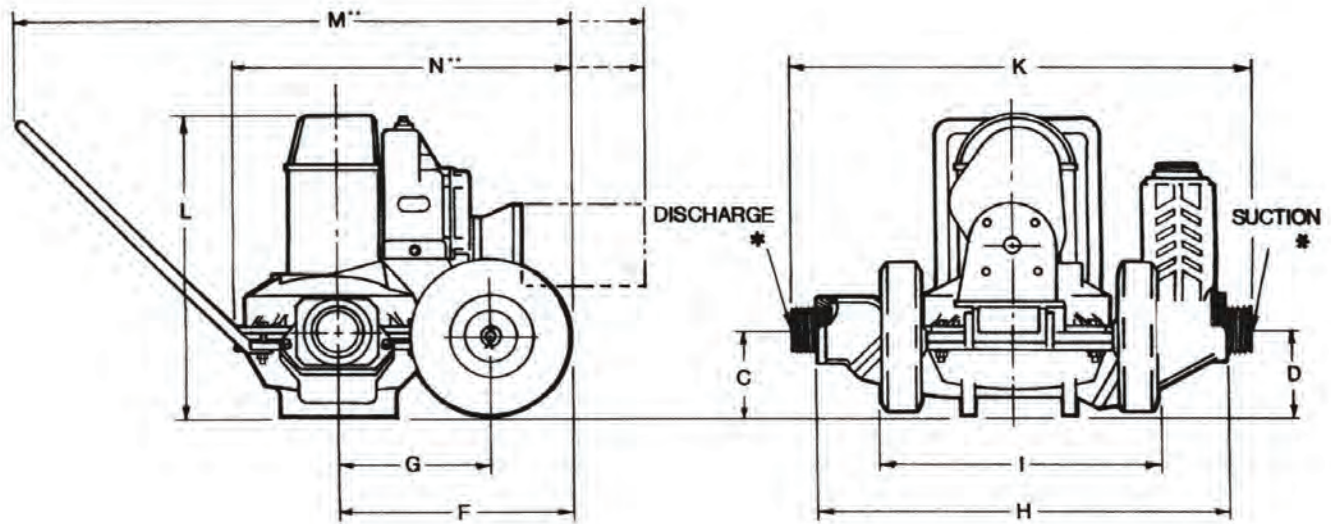


Performance



CAPACITY IN US GALLONS PER MINUTE @ 3450 RPM
*CONVERT TO PSI, DIVIDE BY 2.31 | LIQUID WATER SPECIFIC GRAVITY 1.0

Self-Priming Diaphragm Pump



Dimensions

Model#	Driver	C	D	F	G	H	I	K	L	M**	N**	Suct.	Disch.	Shipping Wt. (lbs.)
03D1.5V	1.5 HP Electric Motor	6.2	6.3	14.5	9.5	26.5	17.9	30.0	22.0	43.5	27.5	3"	3"	186
03D5A	5.5 HP Briggs & Stratton CP550	6.2	6.3	14.5	9.5	26.5	17.9	30.0	22.0	41.5	25.5	3"	3"	181
03D5H	5.5 HP Honda GX160	6.2	6.3	14.5	9.5	26.5	17.9	30.0	22.0	41.5	25.5	3"	3"	182
03D5Z	4.8 HP Hatz diesel L20	6.2	6.3	14.5	9.5	26.5	17.9	30.0	22.0	43.0	27.0	3"	3"	203

(*) Standard NPT (female) pipe thread.

(**) This dimension may vary due to motor manufacturer's specifications.

NOTE: Dimensions have a tolerance of $\pm 1/8"$.

90° Rotatable Base on All Models



Fire Pump

The A.Y. McDonald Engine Driven line of High Pressure/Fire pumps deliver excellent pressure and flow for use in many applications including: fire protection, emergency fire fighting, washdown, and AG/Sprinkler. Portable units feature metal fuel tanks installed on engine or frame depending on model. 12 Volt DC electric start engine with recoil starter from Briggs & Stratton Vanguard, Honda Gasoline, or Yanmar Diesel engines are standard on these pumps.

Application:

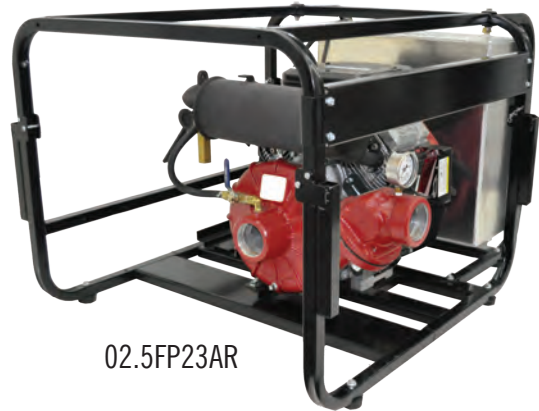
For use with non-flammable liquids which are compatible with pump component materials.

Features:

- Aluminum construction with replaceable hard coat anodized wear ring
- Viton® mechanical seals with silicon carbide & carbon faces
- 2 1/2" NPT Suction & Discharge ports
- Primes assist to 19'
- Maximum temperature 200°F
- Exhaust prime or hand prime depending on model
- Built-in discharge check valve
- Discharge pressure gauge included
- Suction strainer, nipples and heavy duty steel roll frame with battery tray included
- Maximum head up to 165 PSI/380' TDH
- Delivers to 270 GPM
- Optional NPT to Fire Hose thread available
- Optional wheel kit available

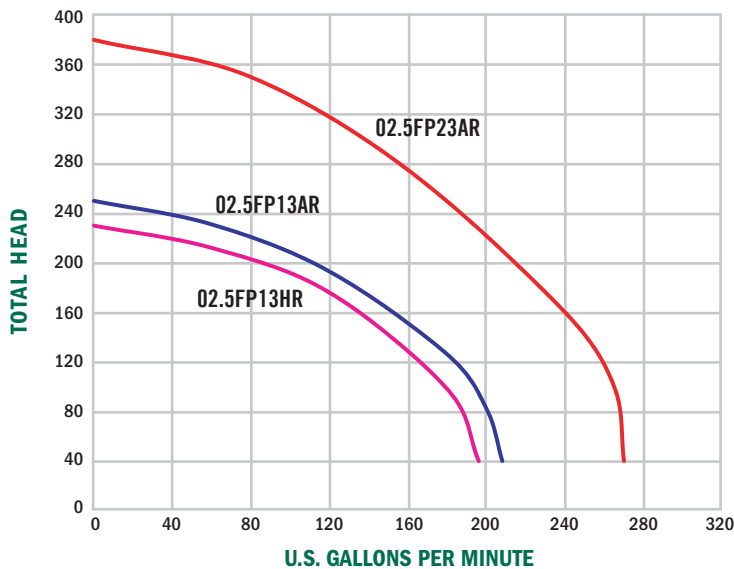


02.5FP13HR



02.5FP23AR

Performance



*CONVERT TO PSI, DIVIDE BY 2.31 | LIQUID WATER SPECIFIC GRAVITY 1.0

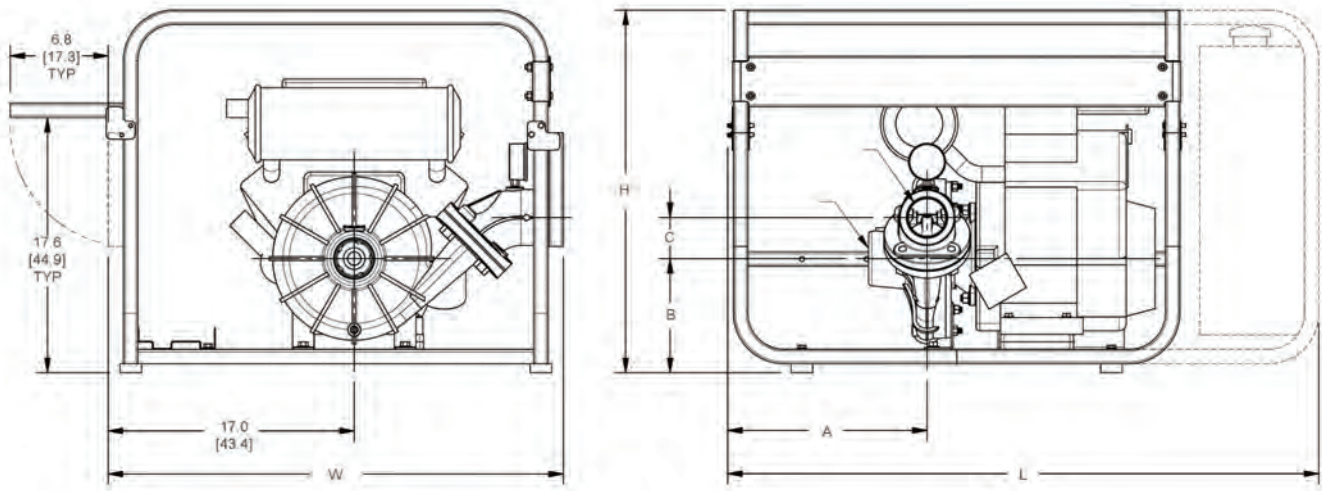


02S5HK
2" High Pressure Hose Kit

2" High Pressure Hose Kit with 20 ft. 2" suction and 100 ft. 1 1/2" high pressure (100 PSI) discharge hose, (1) 1 1/2" fire nozzle, 1 1/2" x 2" adapter and hose wrench.

Dewatering Pumps

Fire Pump



Dimensions

Model#	HP Class*	A	B	C	L**	W	H	Suct.*	Disch.*
02.5FP13HR	13	13.3	6.8	4.6	31.8	31.6	25.1	2 1/2	2 1/2
02.5FP13AR	13	13.3	6.8	4.6	31.8	31.6	25.1	2 1/2	2 1/2
02.5FP23AR	23	13.8	7.9	2.8	41.0	31.6	25.1	2 1/2	2 1/2

(♦) HP Class represents market category and is not intended to define actual horsepower.

(*) Standard NPT (female) pipe thread.

(**) This dimension may vary due to motor manufacturer's specifications.

NOTE: Dimensions have a tolerance of $\pm 1/8"$.

(†) Minimal Assembly Required: Auxiliary Fuel Tank Shipped Uninstalled.

Specifications

Model No.	Curve	Driver	Seal Type & Elastomer / Faces	Prime Feature	Tank Size (Gal/Ltr)	Run Time (Hr.)	Ship Wt. (Lbs)
02.5FP13HR	A	Honda GX390▲++	Viton® Silicon Carbide / Carbon	Hand	1.6 / 6.1	2.5	200
02.5FP13AR	B	B&S Vanguard 13 HP▲++	Viton® Silicon Carbide / Carbon	Exhaust	2.25 / 8.5	1.8	225
02.5FP23AR	C	B&S Vanguard 23 HP▲++	Viton® Silicon Carbide / Carbon	Exhaust	10 / 37.8	7.0	255

*Viton® is a registered trademark of DuPont.

Construction: Aluminum

▲ Oil alert included

++Electric start

Hose Kits

- All suction and discharge hose supplied with Male x Femal NPSH couplings.
- Female NPSH is compatible with Male NPT connection.
- Temperature range: 10°F to 150°F
- 6195-314 / 03G8WK10 - 10" Semi-pneumatic Optional Wheel Kit (universal 2", 3", 4")

* Note: Strainer is included with the pump

Part No.	Hose Kits, Hose & Fittings	Ship Wt. (Lbs)
Contact Factory	2" General Purpose Hose Kit with 20 ft. 2" suction and 25 ft. 2" discharge hose and hose wrench (55-362)	20
Contact Factory	3" General Purpose Hose Kit with 20 ft. 3" suction and 25 ft. 3" lay flat discharge hose and hose wrench (55-363)	20
6195-141	2" High Pressure Hose Kit with 20 ft. 2" suction and 100 ft. 1 1/2" high pressure (100 PSI) discharge hose. (1) 1 1/2" fire nozzle. 1 1/2" x 2" adapter and hose wrench (55-338)	38



Pump Repair Parts



Pump Repair Parts

Pump Catalog - January 2020

MORE THAN A BRAND. WE'RE A FAMILY.

Motor Control Components Control Box Components

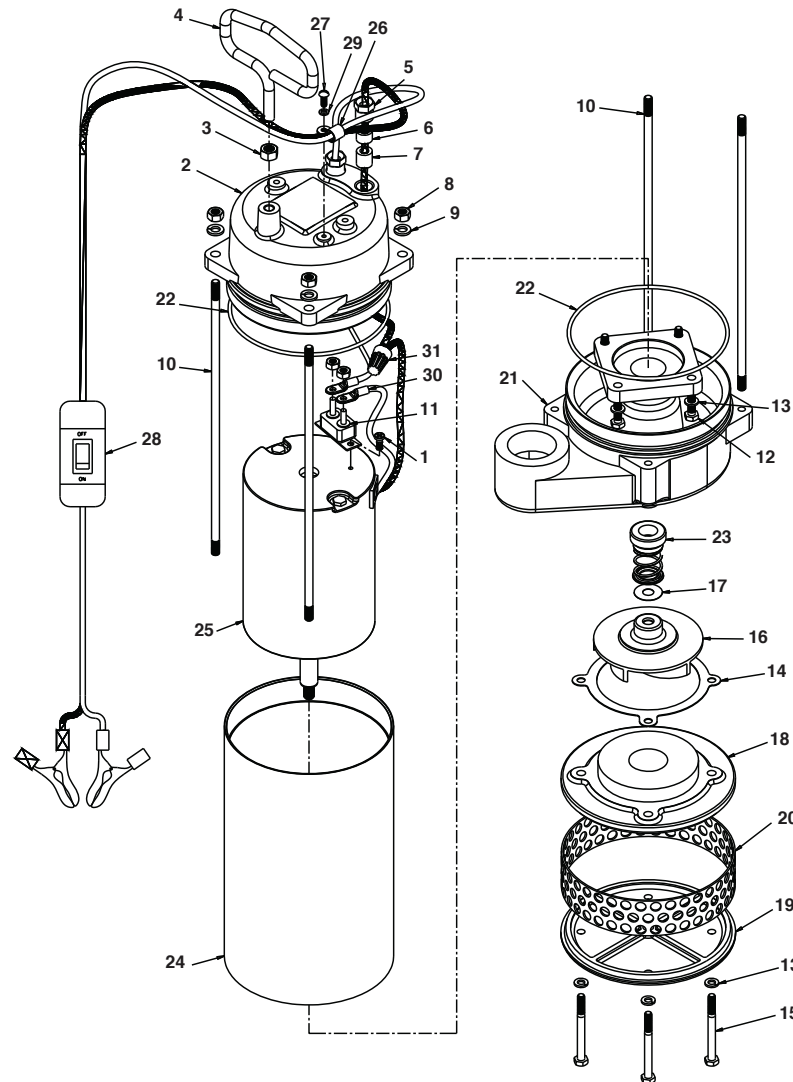
- Components are not interchangeable with other vendors

		Starting Cap.	Cap & OL Kit	Relay Kit	Overload Kit
HP	Volts	Part #	Part #	Part #	Part #
1/2	115	3132-648	3132-660	3132-652	3132-656
1/2	230	3132-649	3132-661	3132-653	3132-657
3/4	230	3132-650	3132-662	3132-654	3132-658
1	230	3132-651	3132-663	3132-655	3132-659

		Starting Cap.	Run Cap.	Start O.L.	Run O.L.	Control Relay	Contactor
HP	Volts	Part #	Part #	Part #	Part #	Part #	Part #
1 1/2	230	3132-664	3132-672	3132-680	3132-688	3132-696	3132-704
2	230	3132-666	3132-674	3132-682	3132-690	3132-698	3132-706
3	230	3132-668	3132-676	3132-684	3132-692	3132-700	3132-708
5	230	3132-670	3132-678	3132-686	3132-694	3132-702	3132-710
1 1/2 DLX	230	3132-665	3132-673	3132-681	3132-689	3132-697	3132-705
2 DLX	230	3132-667	3132-675	3132-683	3132-691	3132-699	3132-707
3 DLX	230	3132-669	3132-677	3132-685	3132-693	3132-701	3132-709
5 DLX	230	3132-671	3132-679	3132-687	3132-695	3132-703	3132-711
7 1/2 DLX	230	3132-630	3132-633	3132-636	3132-639	3132-642	3132-645
10 DLX	230	3132-631	3132-634	3132-637	3132-640	3132-643	3132-646
15 DLX	230	3132-632	3132-635	3132-638	3132-641	3132-644	3132-647

303022SP

HandyMac Repair Parts



Pump Repair Parts

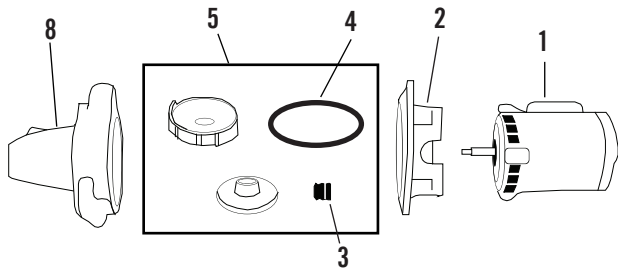
Part #	Plate #	Vender Part#	Ref. #	Description	# Required
6195-258	303022STSC	710-004-330	1	Self-tapping screw	2
6195-259	303022MTCV	258-017-157	2	Motor cover	1
6195-260	303022HNUT	545-005-330	3	Hex nut	1
6195-261	303022HNDL	405-009-000	4	Handle	1
6195-262	303022GLNT	543-001-162	5	Gland nut	2
6195-263	303022GLSP	770-007-162	6	Gland spacer	2
6195-264	303022SLRG	675-016-360	7	Sealing ring	2
6195-265	303022HXNT	545-004-330	8	Hex nut	4
6195-266	303022LKWS	900-004-330	9	Lock washer	4
6195-267	303022STUD	807-011-330	10	Stud ***	4
6195-268	303022CRBK	270-001-000	11	Circuit breaker	1
6195-269	303022HCS	170-028-330	12	Hex head capscrew	4
6195-270	303022LWSR	900-001-330	13	Lock washer	8
6195-271	303022CSGS	360-001-440	14	Casing gasket	1
6195-272	303022HCSR	170-003-115	15	Hex head capscrew	4
6195-176	303022MPLR	444-001-010	16	Impeller	1
6195-179	303022SHIM	740-001-115	17	Shim	* as required

Part #	Plate #	Vender Part#	Ref. #	Description	# Required
6195-273	303022SCTC	258-001-157	18	Suction cover	1
6195-274	303022STRN	612-001-156	19	Strainer Plate	1
6195-177	303022SCRN	700-001-330	20	Strainer screen	1
6195-275	303022CSVL	181-001-155	21	Casing volute 1 1/2 npt	1
6195-276	303022RING	560-022-360	22	O-ring	2
6195-178	303022SEAL	720-005-000	23	Seal	1
6195-283	303022SSKT	475-132-000	24	Shell & stud kit ***	1
6195-277	303022MTR	525-005-000	25	Motor	1
6195-278	303022CBCL	200-003-000	26	Cable clamp	1
6195-279	303022MCSC	706-007-330	27	Machine screw	1
6195-280	303022PWRC	150-036-000	28	Power cable assembly	1
6195-281	303022LCKW	900-002-330	29	Lock washer	1

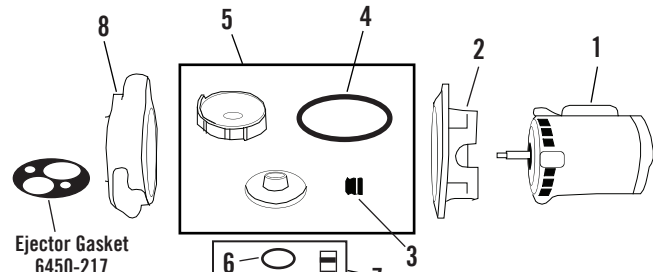
* Typically only needs 1

*** items shell (#24) is only sold in kit, includes #10

8100 / 8200 Series Shallow Well & Convertible



8100 SHALLOW WELL SERIES



8200 CONVERTIBLE SERIES

HP	(1) Motor	(5) Impeller / Diffuser Kit*	Impeller	Diffuser
	Part #	Part #	Part #	Part #
8130, 8130HP, 8230	6155-240	6127-324	6155-359	6130-201
8131, 8131HP, 8231	6155-240	6127-325	6155-331	6130-201
8150, 8150HP, 8250	6155-240	6127-326	6155-358	6130-201
8151, 8151HP, 8251	6155-240	6127-327	6155-330	6130-201
8170, 8170HP, 8270	6155-241	6127-328	6155-370	6155-223
8171, 8171HP, 8271	6155-241	6127-329	6155-334	6155-223
8110, 8110HP, 8210	6155-242	6127-330	6155-369	6155-223
8111, 8111HP, 8211	6155-242	6127-331	6155-333	6155-223

*Kit includes impeller, diffuser, rotary seal & housing gasket with instructions

Part #	Description
6156-140	2 Adapter
6422-100	3 Rotary Seal
6155-224	4 Housing Gasket D09 or Older
3138-995	4 O-ring E09 or Newer
3134-133	6 Regulating Valve assembly O-ring
6155-238	7 Regulating Valve assembly
6155-236	8 8100 Pump Body assembly
6155-237	8 8200 Pump Body assembly

Miscellaneous Parts (Not shown above)

Part #	Description
6127-248	Pump Foot
3100-530	Foot Capscrews
3100-528	Adapter Capscrews
5999-903	Diffuser Screws
3110-951	Regulating Valve Set Screw
6450-217	Ejector Gasket
5999-958	Bolt-on Jet Body

Shallow Well Venturi - Nozzle - O-ring Assemblies

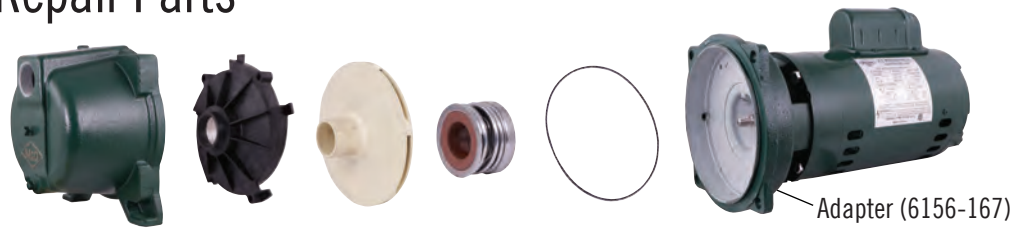
HP	Models	Part #
1/3	8130-8131, 650JP, 8530, 8531	6155-203
1/2	8150-8151, 651JP, 8550, 8551	6155-204
3/4	8170-8171, 652JP, 8570, 8571	6155-212
1	8110-8111, 653JP, 8510, 8511	6155-213
1/3	8130HP, 8131HP, 654JP, 8530HP, 8531HP	6155-202
1/2	8150HP, 8151HP, 655JP, 8550HP, 8551HP	6155-205
3/4	8170HP, 8171HP, 656JP, 8570HP, 8571HP	6155-211
1	8110HP, 8111HP, 657JP, 8510HP, 8511HP	6155-214
1/2	8350HP	6156-151
1/2	8350	6156-147
	Nozzle/venturi o-ring for assemblies	3134-120

Deep Well Kits - Jet Package

Models	Venturi / Nozzle	
	Part #	Part #
7502JP, 7733JP	6413-203	6128-201
7503JP, 7734JP	6413-204	6128-201
7508JP, 7735JP	6414-207	6128-201
7509JP, 7736JP	6414-208	6128-201
7901JP, 7808JP	6413-250	6413-246
7902JP, 7809JP	6413-249	6413-246
7903JP, 7810JP	6413-248	6413-246
7906JP, 7812JP	6413-253	6413-246
7907JP, 7813JP	6413-254	6413-246



E Series 8300 Series Jet Pumps Repair Parts

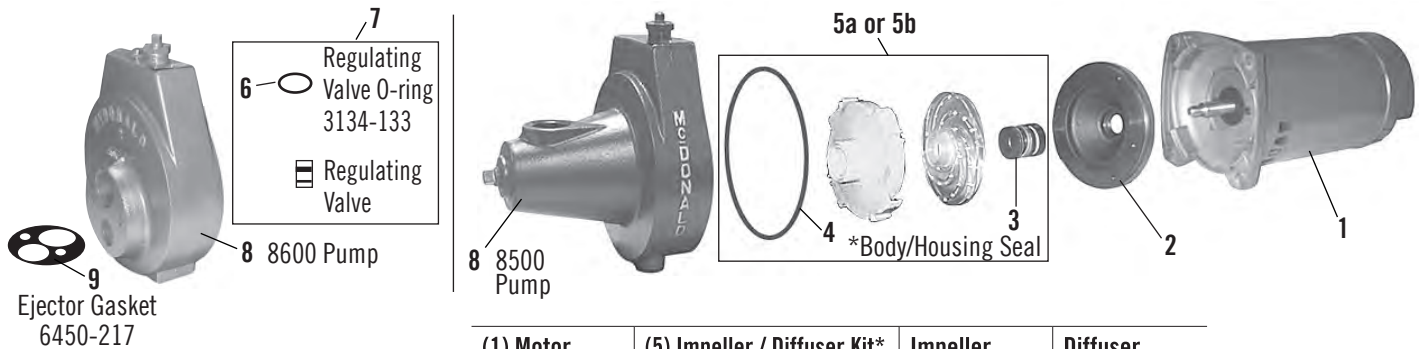


Model No.	Imp/Dif Kit	Seal Kit	Venturi Kit	Casing	Model No.	Imp/Dif Kit	Seal Kit	Venturi Kit	Casing
8350	6156-129	6156-133	6156-147	6156-145	8310	6156-131	6156-141	6156-149	6156-145
8350HP	6156-129	6156-133	6156-151	6156-145	8315	6156-132	6156-141	6156-150	6156-145
8370	6156-130	6156-133	6156-148	6156-145					

*Imp/Dif Kit includes - impeller, diffuser, rotary seal, housing o-ring, seal ring, and diffuser screws

*Seal Kit includes - rotary seal, housing o-ring and seal ring

8500 / 8600 Repair Parts



HP	(1) Motor	(5) Impeller / Diffuser Kit*	Impeller	Diffuser
	Part #	Part #	Part #	Part #
8530, 8530HP, 8630	6164-203	6127-324	6155-359	6130-201
8531, 8531HP, 8631	6164-203	6127-325	6155-331	6130-201
8550, 8550HP, 8650	6164-200	6127-326	6155-358	6130-201
8551, 8551HP, 8651	6164-200	6127-327	6155-330	6130-201
8570, 8570HP, 8670	6164-201	6127-328	6155-370	6155-223
8571, 8571HP, 8671	6164-201	6127-329	6155-334	6155-223
8510, 8510HP, 8610	6164-202	6127-330	6155-369	6155-223
8511, 8511HP, 8611	6164-202	6127-331	6155-333	6155-223

*Kit includes impeller, diffuser, rotary seal & housing gasket with instructions

Part #	Ref #	Description	Part #	Ref #	Description
6155-284	2	Seal Plate	6164-213	8	8600 Pump Body assembly
6422-100	3	Rotary Seal	6450-217	9	Ejector Gasket
3138-995	4	O-Ring E03 & Newer	6127-248		Pump Foot
6155-224	4	Housing gasket D03 & Older	3100-530		Foot Capscrews
3134-133	6	Regulating Valve O-ring	3100-565		Body Capscrews
6155-238	7	Regulating Valve assembly	5999-903		Brass diffuser screws
6164-212	8	8500 Pump Body assembly	3110-951		Regulating valve set screw

Miscellaneous Parts (Not shown above)

Part #	Description
3119-112	101-2 Casing Adapter Washers
3100-527	1/2-13x1" Capscrew
3100-303	3/8-16 x 1 3/4 Sq Hd. Bolt
6450-214	2" Rubber Packing
6450-215	2" Gland
6450-261	Casing Adapter Gasket

1000 / 1500 Series Repair Parts

		3/4 HP 1075 & 1575	1 HP 1010 & 1510	3/4 HP 1075SW & 1575SW	1 HP 1010SW & 1510SW	1 1/2 HP 1015SW & 1515SW
Description	Part #	Part #	Part #	Part #	Part #	Part #
1 Motor	6127-154	6127-160	6127-154	6127-160	6127-156	
9 Brass Impeller	6316-209	6316-208	6316-210	6316-209	6316-208	
9 Plastic Impeller	6316-251	6316-250	6316-252	6316-251	6316-250	

Part #	Ref #	Description
3129-394	2	1000 Series motor cover (Magnetek)
6127-334	3	Shaft assembly
6316-241	4	Adapter
6152-207	5	Body Gasket
3100-529	6 7	Capscrews
6422-103	8	Shaft Seal
6316-216	10	1st Diffuser
3121-509	11	Drive pin (supplied w/1 diffuser)
6316-217	12	2nd diffuser
6127-335	15	Diffuser cover assembly *
6421-124	16	Flange assembly+
3100-545	17	Diffuser capscrews

*Includes body gasket (5) and cover gasket (21).
+For 1000 series, sold separately.

Part #	Ref #	Description
6127-336	18	Impeller spacer kit*
3104-131	19	Impeller locknut
6316-228	20	Impeller Key
6316-213	21	Cover gasket
6316-234	22	1000 Series body assembly
6316-235	23	1500 Series body assembly
6127-248	24	1500 Series pump foot
3100-530	25	Pump foot capscrew
5999-902	26	Series vent cock (1000 Series)
3126-103	27	1/8" plug

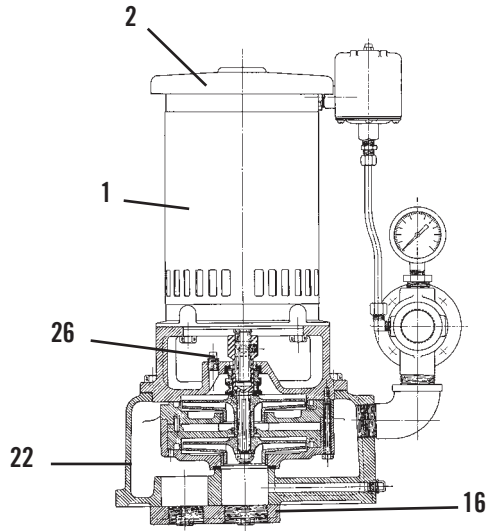
Shallow Well Jet Package

Venturi Assembly		
Models	HP	Part #
659JP	3/4	6155-314
658JP	1	6155-316
652JP	1 1/2	6155-212

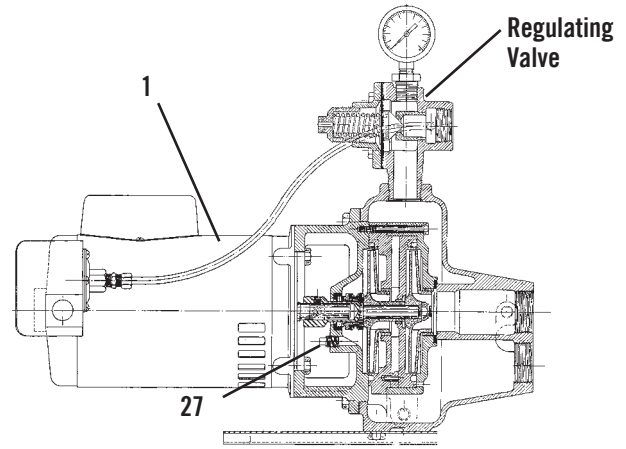
Deep Well Jet Package (2003 & Newer)

Models	Venturi	Nozzle
	Part #	Part #
7109MP & 7125MP	6414-207	5999-911
7110MP & 7126MP	6413-203	6128-201
7111MP & 7127MP	6421-217	5999-911
7112MP & 7128MP	6421-219	5999-913
7113MP & 7129MP	6414-208	5999-912
7114MP & 7130MP	6414-208	5999-911

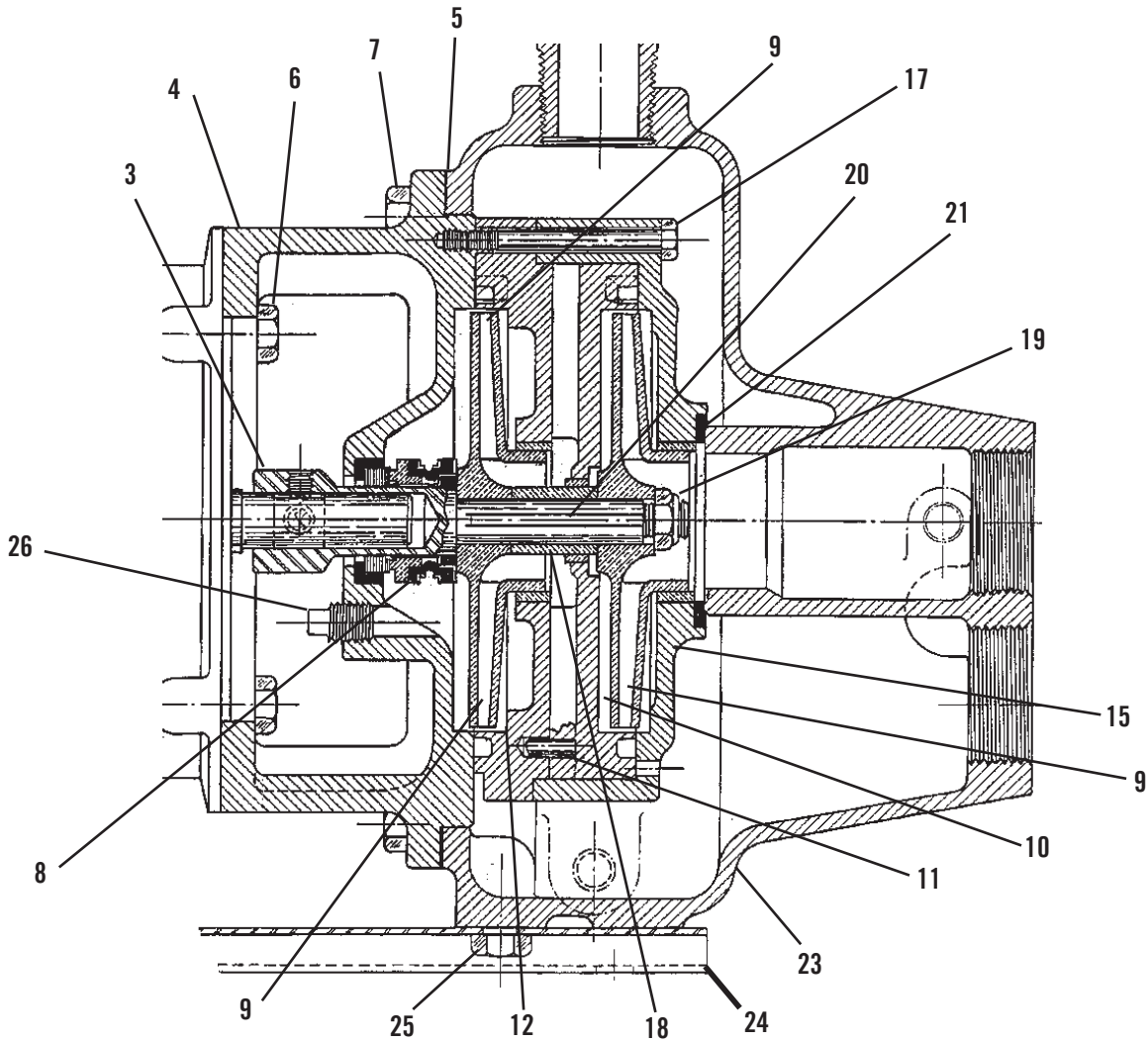
1000 / 1500 Series Repair Parts



SERIES 1000 - VERTICAL

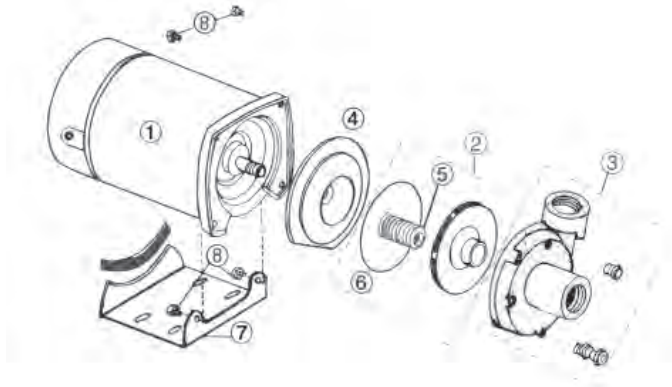


SERIES 1500 - HORIZONTAL



Pump Repair Parts

92000 / 93000 Series Repair Parts

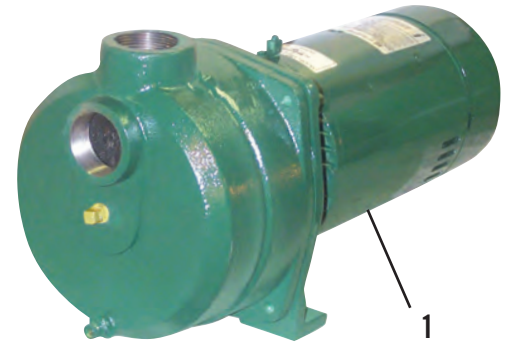
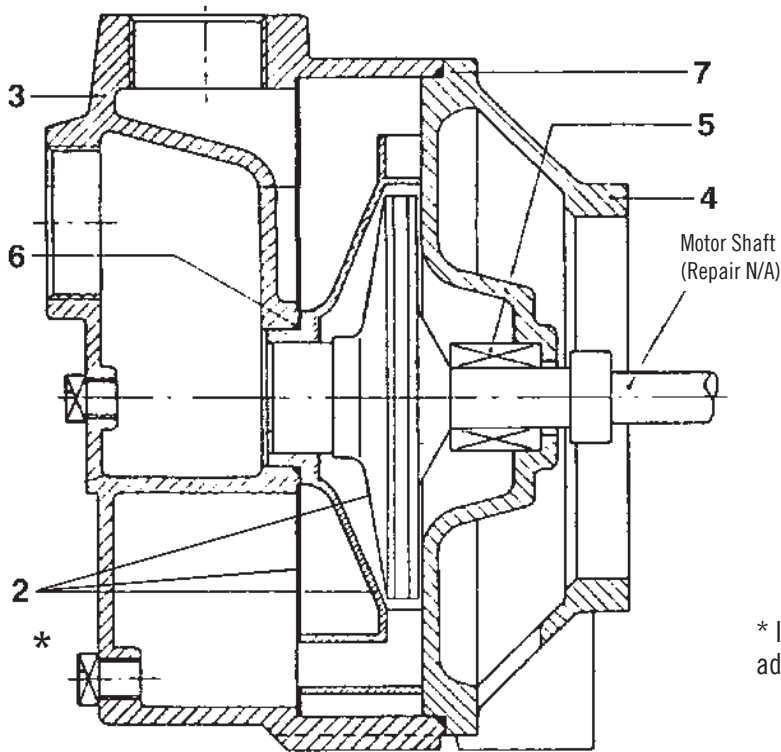


Pipe plugs & pet cock (drain) are included with volute assemblies.

Pump Model	1 Repair Motor		2 Impeller / Seal Kit		3 Volute Assembly	
	Model #	Part #	Model #	Part #	Model #	Part #
92030	92050RM	6712-258	92050RK	6712-046	92100RV	6712-262
92050	92050RM	6712-258	92050RK	6712-046	92100RV	6712-262
92070	92070RM	6712-257	92070RK	6712-045	92100RV	6712-262
92100	92100RM	6712-256	92100RK	6712-044	92100RV	6712-262
92150	92150RM	6712-255	92150RK	6712-043	92100RV	6712-262
92200	92200RM	6712-254	92200RK	6712-042	92200RV	6712-261
92250	92250RM	6712-253	92250RK	6712-041	92300RV	6712-260
92300	92300RM	6712-252	92300RK	6712-040	92300RV	6712-260

Model #	Part #	Ref #	Description
92000SP	6712-250	4	Seal Plate
92000RS	6712-268	5	Rotary seal
92000RO	6712-267	6	O-ring for seal plate
92000MB	6712-251	7	Mounting base
---	3100-565	8	Hex cap screws

87000 Series Repair Parts

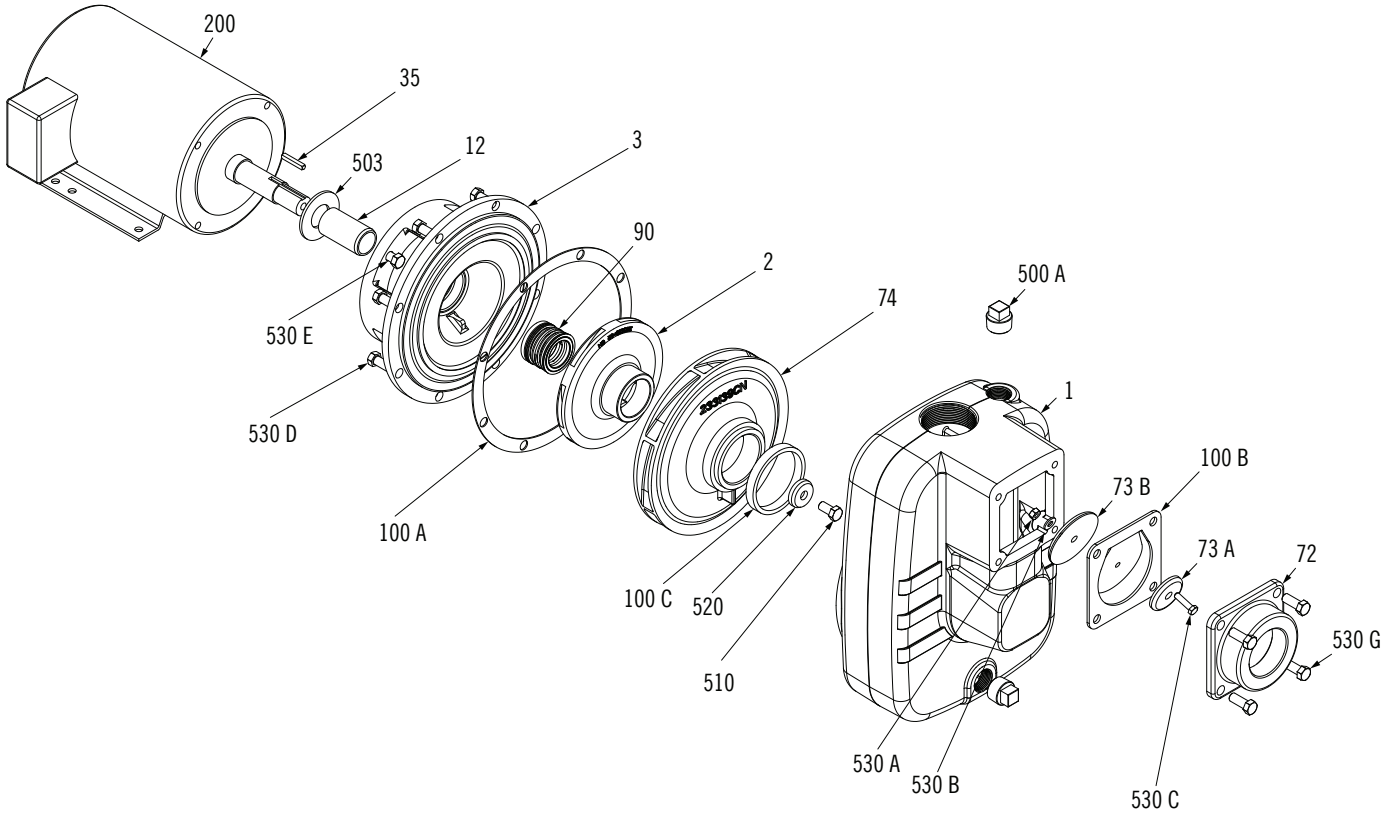


* Includes impeller, diffuser, diffuser o-ring, diffuser plate, adapter/body o-ring, and rotary shaft seal

Description	87070		87100		87150		87200	
	Model #	Part #	Model #	Part #	Model #	Part #	Model #	Part #
1 Repair Motor	--	--	--	--	--	6180-231	--	6180-278
*2 Impeller / diffuser kit	87070RK	6180-008	87100RK	6180-009	87150RK	6180-010	87200RK	6180-011

Model #	Part #	Ref #	Description
87000RB	6180-270	3	Pump body w/plugs
87000RA	6180-271	4	Motor Adapter
87000RS		5	Rotary Shaft Seal
87000DO	6180-272	6	Diffuser O-ring
87000AO	6180-273	7	Adapter/Body O-ring
87000PS	6180-275		Diffuser/Body O-ring
87000CS	6180-276		Hex Cap screws
87000DV	6180-277		Drain Valve

84000 Series 1984 & After

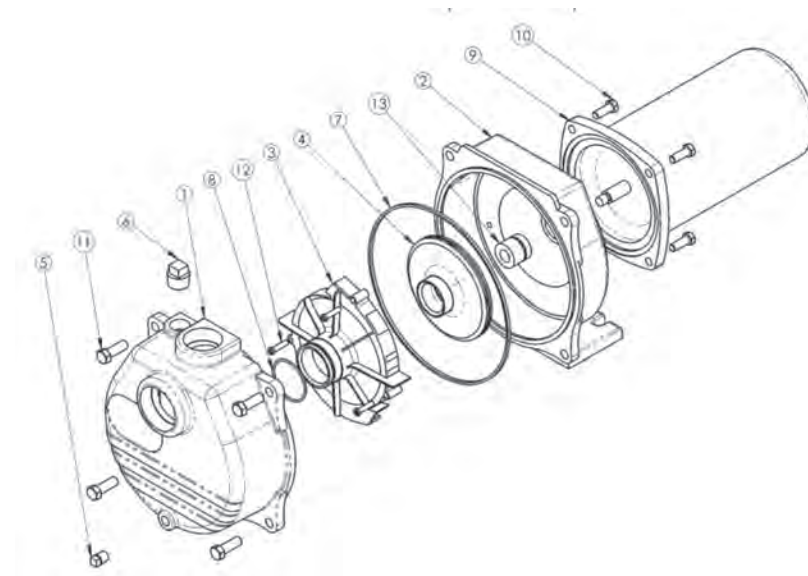


REF#	A.Y. Part	Model #	Part Description
#2	6180-311	84300IMP	Impeller 3 HP
#2	6180-312	84500IMP	Impeller 5 HP
#12	6180-320	84000SS	Shaft Sleeve 3 & 5 HP
#72	6180-315	84000CV	Check Valve Kit 3 & 5 HP
#74	6180-322	84000D	Diffuser Kit 3 & 5 HP
#90	6180-319	84000SL	Shaft Seal 3 & 5 HP
#503	6180-313	84000SLG	Slinger Kit 3 & 5 HP
#520	6180-318	84500WSH	Impeller Washer 5 HP
#520	6180-309	84300WSH	Impeller Washer 3 HP
#100A	6180-323	84000GSKT	Gasket Kit 3 & 5 HP
#100B	6180-314	84000VG	Flapper Valve Gasket 3 & 5 HP
#100C	6180-324	84000DR	Diffuser Ring 3 & 5 HP
#73A	6180-316	84000TW	Top Weight 3 & 5 HP
#73B	6180-317	84000BW	Bottom Weight Check Valve 3 & 5 HP

**For items not listed,
contact factory.**

88000 Series

Lawn & Turf Sprinkler Pumps (3/4 HP - 2 HP Models, Square Flange)



		88075 | 3/4 HP	88100 | 1 HP	88150 | 1 1/2 HP	88200 | 2 HP
Model #	Description	Part #	Part #	Part #	Part #
	Motor	6180-292	6180-293	6180-294	6180-295
88075RK	Overhaul Kit*	6180-298	-	-	-
88100RK	Overhaul Kit*	-	6180-299	-	-
88150RK	Overhaul Kit*	-	-	6180-300	-
88200RK	Overhaul Kit*	-	-	-	6180-301
88000CSG	Casing Kit*	6180-302	6180-302	6180-302	6180-302
88000FS	Fastener Kit*	6180-303	6180-303	6180-303	6180-303
88000AD	Adapter Kit*	6180-304	6180-304	6180-304	6180-304
88000GS	Gasket Kit*	6180-305	6180-305	6180-305	6180-305

REF #	Description
1	Casing
2	Adapter
3	Diffuser
4	Impeller 3/4 HP
4	Impeller 1 HP
4	Impeller 1 1/2 HP
4	Impeller 2 HP
5	Plug, 1/4" NPT
6	Plug, 3/4" NPT
7	Gasket
8	O-Ring
9	Motor, 3/4 HP, 1 phase, 115/230,
9	Motor, 1 HP, 1 phase 115/230, square
9	Motor 1 1/2 HP, 1 phase, 115/230, square
9	1 Motor 2 HP, 1 phase, 230V, square
10	Bolt, 3/8" UNC x 1"
11	Bolt, 7/16" UNC x 1 1/4"
12	Screw, #10-24 UNC x 1"
13	Seal, 5/8" diameter 3/4, 1, 1 1/2 HP
13	Seal, 3/4" diameter 2 HP
x	Slinger 1.25x .59x.09

Kit	REF#
88000RK Overhaul Kit includes	3, 4, 7, 8, 10, 11, 12, 13, x
88000CSG Casing Kit includes	1, 5, 6, 7, 11
88000FS Fastener Kit includes	10, 11, 12, x
88000AD Adapter Kit includes	2, 7, 10, 11, 12
88000GS Gasket Kit includes	7, 8

**Repair parts sold
in kits only.**



E Series

89000 Series

89000 Series

Self Priming Sprinkler Pumps Repair Parts



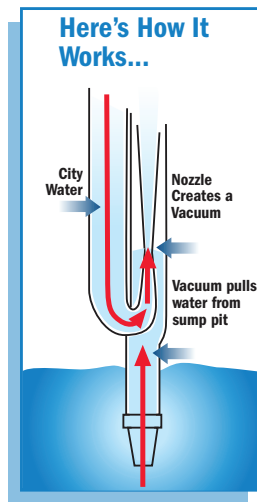
Model No.	Imp/Dif Kit	Seal Kit	Casting	Adapter
89100	6156-137	6156-142	6156-146	6156-168
89150	6156-138	6156-142	6156-146	6156-168
89200	6156-139	6156-142	6156-146	6156-168

*Imp/Dif Kit includes - impeller, diffuser, rotary seal, housing o-ring, seal ring, and diffuser screws

*Seal Kit includes - rotary seal, housing o-ring and seal ring

Guardian Repair Parts

GUARDIAN® Emergency Back Up Sump Pump The Guardian consists of all components outlined

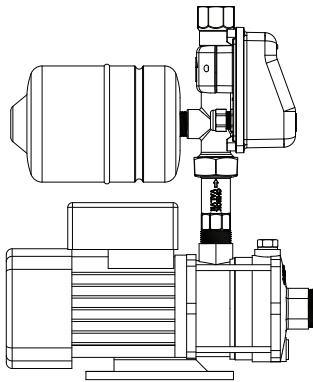


Model #	Part #	Description
747H20FL2	6225-017	Float Package (New Style) - Float, Float Rod, four rubber grommet stoppers, standoff, and hose clamp
747H20MT	6225-004	Mounting Package - Galvanized Nipple 1/4" x 5 - Mounting Bracket 1/4" FNPT Zinc Flange - Elbow 1/4" 90° Galvanized Iron - Split Ring Hanger 1 1/4" OD-Zinc
747H20SC	6225-003	Suction Kit - Suction Tube - 1" PVC - Inlet Strainer - Adaptor PVC x FNPT 1" SCH 40 - Hose Clamp
747H20SV2	6225-016	Switch Valve Replacement (New Style) - To replace the mechanically activated diaphragm valve with attached float mechanism *Repair parts/pieces are not sold separately for this valve.
	5040-007	Basic Guardian Single Check
	6225-525	Jet Package Kit - Jet Body and Venturi Nozzle Assembly
	6155-316	Venturi/Nozzle Assembly

DuraMAC™ Booster Pumps Repair Parts



20 GPM | Residential



* Gauge 1/4" Tap

18035R020PC1 / 18035R020PC1SS*

6010-003	17035R020P-1 Pump 120V Pump +35 | 20 GPM | 1/2 HP | 120V
6010-103	Control Box with cross 120V
6127-382	1/2 Gallon Diaphragm Tank
6010-112	Control Box w/ Stainless Steel Cross* 120V
6010-104	Control Box 120V

18052R020PC1 / 18052R020PC1SS*

6010-004	17052R020P-1 Pump 120V Pump +52 | 20 GPM | 3/4 HP | 120V
6010-103	Control Box with cross 120V
6127-382	1/2 Gallon Diaphragm Tank
6010-112	Control Box w/ Stainless Steel Cross* 120V
6010-104	Control Box 120V

*SS = Stainless Steel

20 GPM | Residential

17035R020PC1

6010-003	17035R020P-1 Pump 120V, Pump & Motor Assembly Pump +35 | 20 GPM | 1/2 HP | 120V
6010-001	Control Box | 120V with Tee
6010-009	Control Box | 120V (Black box)
6010-026	Transducer | TDL32K | 150 PSI | 5V
6127-337	Two Gallon Diaphragm Tank
6010-027	Check Valve | 1" MNPT x 1" MNPT
6010-554	Seal Kit - (Stage gasket & rotary seal)
6010-028	Pressure Gauge | 0 - 100 | 2" Dry

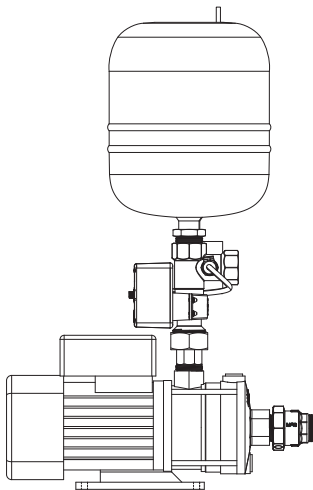
17052R020PC1

6010-004	17052R020P-1 Pump 120V, Pump & Motor Assembly Pump +52 | 20 GPM | 3/4 HP | 120V
6010-001	Control Box | 120V with Tee
6010-009	Control Box | 120V (Black box)
6010-026	Transducer | TDL32K | 150 PSI | 5V
6127-337	Two Gallon Diaphragm Tank
6010-027	Check Valve | 1" MNPT x 1" MNPT
6010-554	Seal Kit - (Stage gasket & rotary seal)
6010-028	Pressure Gauge | 0 - 100 | 2" Dry

17070R020PC2

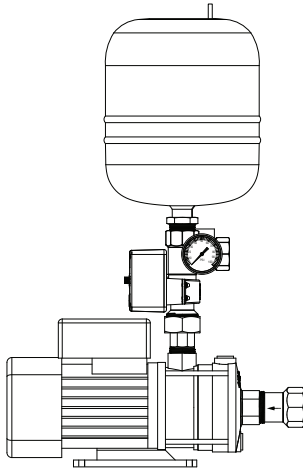
6010-005	17070R020P-2 Pump 230V, Pump & Motor Assembly Pump +70 | 20 GPM | 1 HP | 230V
6010-002	Control Box | 230V with Tee
6010-010	Control Box | 230V (Black box)
6010-026	Transducer | TDL32K | 150 PSI | 5V
6127-337	Two Gallon Diaphragm Tank
6010-027	Check Valve | 1" MNPT x 1" MNPT
6010-554	Seal Kit - (Stage gasket & rotary seal)
6010-028	Pressure Gauge | 0 - 100 | 2" Dry

* T-assembly #6010-032
for residential and light commercial



DuraMAC™ Booster Pumps Repair Parts

35 GPM | Light Commercial



* T-assembly #6010-032
for residential and light commercial

17040C035PC2

6010-011	17040C035P-2 Pump 230V, Pump & Motor Assembly Pump +40 | 35 GPM | 1 HP | 230V
6010-002	Control Box | 230V with Tee
6010-010	Control Box | 230V (Black box)
6010-026	Transducer | TDL32K | 150 PSI | 5V
6127-337	Two Gallon Diaphragm Tank
6010-029	Check | 1 1/4" MNPT x 1 1/4" FNPT
6010-554	Seal Kit - (Stage gasket & rotary seal)
6010-028	Pressure Gauge | 0 - 100 | 2" Dry

17062C035PC2

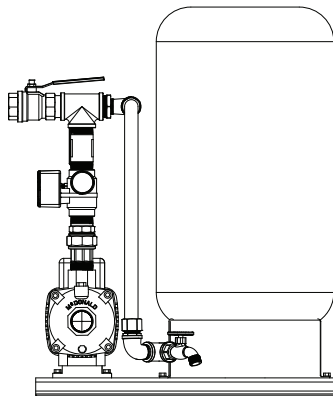
6010-012	17062C035P-2 Pump 230V, Pump & Motor Assembly Pump +62 | 35 GPM | 1 HP | 230V
6010-002	Control Box | 230V with Tee
6010-010	Control Box | 230V (Black box)
6010-026	Transducer | TDL32K | 150 PSI | 5V
6127-337	Two Gallon Diaphragm Tank
6010-029	Check | 1 1/4" MNPT x 1 1/4" FNPT
6010-554	Seal Kit - (Stage gasket & rotary seal)
6010-028	Pressure Gauge | 0 - 100 | 2" Dry

17078C035PC2

6010-013	17078C035P-2 Pump 230V, Pump & Motor Assembly Pump +78 | 35 GPM | 1 1/2 HP | 230V
6010-002	Control Box | 230V with Tee
6010-010	Control Box | 230V (Black box)
6010-026	Transducer | TDL32K | 150 PSI | 5V
6127-337	Two Gallon Diaphragm Tank
6010-029	Check | 1 1/4" MNPT x 1 1/4" FNPT
6010-554	Seal Kit - (Stage gasket & rotary seal)
6010-028	Pressure Gauge | 0 - 100 | 2" Dry

70 GPM | Dual-Mode - Modular, Simplex, & Duplex

17044C070PC2-M | 17044C070PC2-S | 17044C120PC2-D



Dual-Mode - Simplex

6010-017	17044C070P-2 Pump 230V, Pump & Motor Assembly Pump +44 | 70 GPM | 230V | 2 HP
6010-026	Transducer | TDL32K | 150 PSI | 5V
6011-009	Dual-Mode Control | Repair (Black Box)
6011-012	Paddle Switch
6127-341	16020MV4F - Pressure Tank
6011-011	Pressure Gauge | 0 - 100 | 2 1/2" Liquid filled
6010-555	Seal Kit - (Stage gasket & rotary seal)
5424-401	Ball Valve | 1/4" MNPT x 1/4" FNPT (Test Cock)

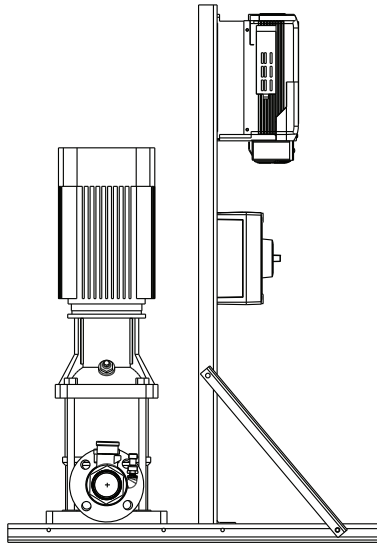
17060C070PC2-M | 17060C070PC2-S | 17060C120PC2-D

6010-018	17060C070P-2 Pump 230V, Pump & Motor Assembly Pump +60 | 70 GPM | 2 HP | 230V
6010-026	Transducer | TDL32K | 150 PSI | 5V
6011-009	Dual-Mode Control | Repair (Black Box)
6011-012	Paddle Switch
6127-341	16020MV4F - Pressure Tank
6011-011	Pressure Gauge | 0 - 100 | 2 1/2" Liquid filled
6010-555	Seal Kit - (Stage gasket & rotary seal)
5424-401	Ball Valve | 1/4" MNPT x 1/4" FNPT (Test Cock)

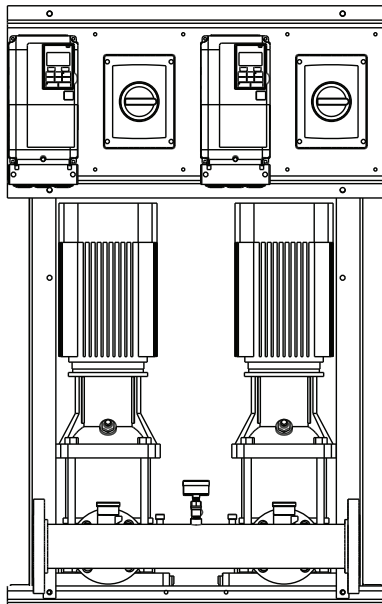
DuraMAC™ Booster Pumps

Repair Parts - Vertical Multistage Variable Speed Booster Systems

Simplex / Duplex / Triplex



Simplex



Duplex

6012-106	Transducer | 4-20mA | 150 PSI
6012-107	Transducer | 4-20mA | 200 PSI
6012-108	Transducer | 4-20mA | 15 PSI
6012-531	Transducer Cable M12 - 9 ft. long
6012-533	Wafer Check Valve - 2" soft seat
6012-453	Flange Kit Thread 304SS
6012-109	Seal Repair Part SiC / Carbon / EPDM
6012-110	Seal Repair Part (SiC / SiC / EPDM) - Sandy Water
6012-654	Pressure Gauge | 200 PSI | Liquid filled
6011-537	Pressure Gauge | 100 PSI | Liquid filled

6012-575	Yaskawa Drive 3 HP | 3 Phase | 230V
6012-576	Yaskawa Drive 3 HP | 1 Phase | 230V Yaskawa Drive 5 HP | 3 Phase | 230V
6012-577	Yaskawa Drive 7 1/2 HP | 3 Phase | 230V
6012-578	Yaskawa Drive 5 HP | 1 Phase | 230V Yaskawa Drive 10 HP | 3 Phase | 230V
6012-579	Yaskawa Drive 5 HP | 3 Phase | 460V
6012-580	Yaskawa Drive 7 1/2 HP | 3 Phase | 460V
6012-581	Yaskawa Drive 10 HP | 3 Phase | 460V

6012-590	Disconnect - Altech 30 Amp
6012-591	Disconnect - AB 60 Amp
6012-520	Pump end 17062V080
6012-521	Pump end 17084V080
6012-522	Pump end 17104V080
6012-523	Pump end 17150V080
6012-524	Pump end 17142V120
6012-525	Pump end 17060V140
6012-526	Pump end 17088V140
6012-528	Pump end 17056V120

6012-547	Motor TEFC - 3 HP Energy Eff 182TC
6012-548	Motor TEFC - 5 HP Energy Eff 184TC
6012-549	Motor TEFC - 7 1/2 HP Energy Eff 213TC
6012-550	Motor TEFC - 10 HP Energy Eff 215TC
6012-551	Motor TEFC - 15 HP Energy Eff 215TC

Simplex / Duplex Accessories

6012-100	17200EJ 3" Flanged Expansion Joint
6012-101	17200EJ 2" Threaded Braided Hose | 304 SS
6012-102	Flange Blind 3" | 150# | 304 SS
6012-103	Flange Threaded 3" | 150# | 304 SS
6012-104	Flange Kit Blind 3" | 150# | 304 SS
6012-105	Flange Kit Threaded 3" | 150# | 304 SS

*Contact factory for Triplex Accessories

Pump Repair Parts



Troubleshooting Submersible & Jet Pumps

Troubleshooting

Pump Catalog - January 2020

MORE THAN A BRAND. WE'RE A FAMILY.

Troubleshooting Submersible Pumps

Fuse overload or circuit breaker trips when motor is started

Cause of Trouble	How to Check	How to Correct
1. Incorrect line voltage.	Check the line voltage terminals in the control box (or connection box in the case of the two wire models) with a voltmeter. Make sure that the voltage is within the minimum-maximum range prescribed by the manufacturer.	If the voltage is incorrect, contact the power company to have it corrected.
2. Defective Control Box		
(a) Defective wiring.	Check out all motor and power-line wiring in the control box, following the wiring diagram found inside the box. See that all connections are tight and that no short circuits exist because of worn insulation, crossed wires, etc.	Rewire any incorrect circuits. Tighten loose connections. Replace worn wires.
(b) Incorrect components.	Check all control box components to see that they are the type and size specified for the pump in the manufacturers' literature. In previous service work, the wrong components may have been installed.	Replace any incorrect component with the size and type recommended by the manufacturer.
(c) Defective starting capacitor (skip for two wire models).	Using an ohmmeter, X1000 scale, determine the resistance across the disconnected starting capacitor. When contact is made, the ohmmeter needle should jump toward 0, and then drift back slowly toward infinity. No movement indicates an open capacitor, low resistance means that the capacitor is shorted.	Replace defective starting capacitor.
(d) Defective relay (skip for two wire models).	Using an ohmmeter, check the relay coil and contacts. Their resistance should be as shown in the manufacturer's literature.	If coil resistance is incorrect or contacts defective, replace relay.
3. Incorrectly wired pressure switch.	Check the wiring at the pressure switch.	Make sure all line, load and ground connections in the switch match the diagram.
4. Defective motor winding or cable:		
(a) Shorted or open motor winding.	Check the resistance of the motor winding by using an ohmmeter on the proper terminals in the control box (see manufacturer's wiring diagram). The resistance should match the ohms specified in the manufacturer's data sheet. If it's too low, the motor winding may be shorted; if the ohmmeter needle doesn't move, indicating high or infinite resistance, there is an open circuit in the motor winding or cable.	If the motor winding is defective—shorted or open—the pump must be pulled and the motor repaired.
(b) Grounded cable or winding.	Ground one lead of the ohmmeter onto the drop pipe or well casing, then touch the other lead to each motor wire terminal. If the ohmmeter needle moves appreciably when this is done, there is a ground in either the cable or the motor winding.	Pull the pump and inspect the cable for damage. Replace damaged cable. If cable checks OK, the motor winding is grounded.
5. Pump locked.	Check the line amps before the trip. If amps are twice normal, or higher, pump is probably locked.	Pull pump, disassemble from motor and check which one is locked. Replace one, or both, if defective.

Troubleshooting Submersible Pumps

Pump operates but delivers little or no water

Cause of Trouble	How to Check	How to Correct
1. Pump may be air locked.	Stop and start the pump several times, waiting about one minute between cycles. If the pump then resumes its normal delivery, air lock was the trouble.	If this test fails to correct the trouble, proceed as below.
2. Water level in well too low.	Well production may be too low for pump capacity. Restrict the flow of pump output, then wait for well to recover, and start pump.	If partial restriction corrects trouble, leave valve at restricted setting. Otherwise, lower pump in well if depth is sufficient. Do not lower if sand clogging might occur.
3. Discharge line check valve installed backward.	Examine check valve on discharge line to make sure that the arrow indicating direction of flow points in the right direction.	Reverse the valve if necessary.
4. Leak in drop pipe	Raise the pipe and examine for leaks.	Replace the damaged section of drop pipe.
5. Pump check valve jammed by drop pipe	When pump is pulled after completing Step 4 above, examine connection of drop pipe to pump outlet. If threaded section of drop pipe has been screwed in too far, it may be jamming the pump's check valve in the closed position.	Unscrew the drop pipe and cut off the portion of threads.
6. Pump intake screen blocked	The intake screen on the pump may be blocked by sand or mud. Examine the screen.	Clean the screen and when reinstalling the pump, make sure that it is located several feet above the well bottom— preferably 10 feet or more.
7. Pump parts worn.	The presence of abrasives in the water may result in excessive wear on the impeller, casing and other close-clearance parts. Before pulling the pump, reduce setting on pressure switch to see if the pump shuts off. If it does, worn parts are probably at fault. Examine the screen.	Pull the pump and replace worn components.
8. Motor shaft uncoupled.	Coupling between motor and pump shaft may have worn out or worked loose. Inspect for this after pulling the pump and looking for worn components, as in Step 7 above.	Tighten all connections, setscrews, etc. Replace parts if worn out.

Pump starts too frequently

Cause of Trouble	How to Check	How to Correct
1. Pressure switch defective or out of adjustment.	Check the setting on the pressure switch and examine for defects.	Adjust the pressure setting or replace switch.
2. Leak in pressure tank above water level.	For discharge or bladder captive air tanks, drain the tank and check the precharge pressure. It should be equal to or two psig below pump cut-in pressure. If lower, check welds, braze joints, mechanical joints and valve core with a soap solution. If defective, replace. DO NOT ATTEMPT TO REPAIR BY WELDING.	Replace tank.
3. Leak in plumbing system.	Examine the service line to the house and distribution branches for leaks.	Repair leaks.
4. Discharge line check valve leaking.	Remove and examine.	Replace if defective.
5. Air volume control plugged.	Remove and inspect the air volume control.	Clean or replace.
6. Snifter valve plugged.	Remove and inspect the snifter valve.	Clean or replace.
7. Captive air tank has lost charge.	Check tank.	Recharge or replace tank.

Troubleshooting Submersible Pumps

Fuse overload or circuit breaker trips when motor is running

Cause of Trouble	How to Check	How to Correct
1. Incorrect voltage.	Check the line voltage terminals in the control box (or connection box in the case of two wire models) with a voltmeter. Make sure that the voltage is within the minimum-maximum range prescribed by the manufacturer.	If voltage is incorrect, contact the power company for service.
2. Overheated control or starter	If sunlight or other sources of heat makes the box too hot, overload may trip or fuses may blow. If box is hot to the touch, this may be the problem.	Ventilate or shade the box, or remove it from the source of heat.
3. Defective control box components (skip this for two wire models).	<p>Using an ohmmeter, X1000 scale, determine the resistance across the disconnected running capacitor. When contact is made, the ohmmeter needle should jump toward 0, and then drift back slowly toward infinity. No movement indicates an open capacitor; low resistance means the capacitor is shorted.</p> <p>Using an ohmmeter, check the relay coil. Its resistance should be shown in the manufacturer's literature. Check amps in red motor lead with motor running. If amps are much higher than the manufacturer specifies, start relay contacts are failing to open. If amps are much lower, run capacitor is defective or motor is overloaded.</p>	Replace defective components.
4. Defective motor winding or cable:	Check the resistance of the motor winding by using an ohmmeter on the proper terminals in the control box (see manufacturer's wiring diagram). The resistance should match the ohms specified in the manufacturer's data sheet. If it's too low the motor winding may be shorted; if the ohmmeter needle doesn't move, indicating high or infinite resistance, there is an open circuit in the motor winding. Ground one lead of the ohmmeter onto the drop line or well casing, then touch the other lead to each motor wire terminal. If the ohmmeter needle moves appreciably when this is done, there is a ground in either the cable or the motor winding.	If neither cable or winding is defective—shorted, grounded, or open—the pump must be pulled and serviced.
5. Pump is overloading	If the fuses blow or overloads trip while the pump is operating, check the line amps. If it's more than five percent above the manufacturer's nameplate value, the pump is overloading, which indicates a defective pump and/or motor.	Pull pump, disassemble from motor and replace one or both, if defective.

Troubleshooting Submersible Pumps

Pump won't shut off

Cause of Trouble	How to Check	How to Correct
1. Defective pressure switch.	Check the pressure switch to insure contacts are open at the correct pressure.	Adjust or replace switch.
2. Water level in well too low.	Well production may be too low for the pump capacity. Restrict the flow of pump output, wait for the well to recover, and then start pump.	If partial restriction corrects trouble, leave the valve at restricted setting. Otherwise, lower pump into the well if depth is sufficient. Do not lower if sand clogging might occur.
3. Leak in drop line.	Raise the pipe and examine it for leaks.	Replace the damaged section of the drop pipe.
4. Pump parts worn.	The presence of abrasives in the water may result in excessive wear on the impeller, casing and other close-clearance parts. Before pulling pump, reduce setting on pressure switch to see if the pump shuts off. If it does, worn parts are probably at fault.	Pull pump and replace worn components.

Motor does not start, but fuses don't blow

Cause of Trouble	How to Check	How to Correct
1. Overload protection tripped.	Check overloads and circuit breaker to see if they are operable.	Reset overloads or circuit breaker.
2. No power.	Check power supply to control box (or overload protection box) by placing a voltmeter across the incoming power lines. Voltage should approximate nominal line voltage.	If no power is reaching the box, contact power company for service.
3. Defective pressure switch.	Check whether contacts are closed and the same voltage is present between load terminals as line terminals.	If the line voltage is not on the line terminals, replace the switch.
4. Defective control box.	Examine the winding in the control box to make sure all of the contacts are tight. With a voltmeter, check voltage at line and motor terminals. If no voltage is shown at terminals, wiring is defective from pressure switch or in control box. With a voltmeter, check the voltage across the pressure switch while the switch is closed. If the voltage drop is equal to the line voltage, the switch is not making contact.	Correct faulty wiring or tighten loose contacts. Clean the contacts or replace the switch.

Troubleshooting Jet Pumps

Pump won't start or run

Cause of Trouble	How to Check	How to Correct
1. Blown fuse.	Check to see if the fuse is OK.	If blown, replace with a fuse of proper size.
2. Low line voltage.	Use voltmeter to check pressure switch or the terminals nearest pump.	If voltage is under the recommended minimum, check the size of wiring from the main switch on the property. If OK, contact the power company.
3. Loose, broken or incorrect wiring.	Check the wiring circuit against diagram. See that all of the connections are tight and that no short circuits exist because of worn insulation, crossed wires, etc.	Rewire any incorrect circuits and tighten connections, replace defective wires.
4. Defective motor.	Check to see that the pressure switch is closed.	Replace motor.
5. Defective pressure switch.	Check the switch setting. Examine the switch contacts for dirt or excessive wear.	Adjust the switch settings. Clean contacts with an emery cloth if it's dirty.
6. Tubing to pressure switch plugged.	Remove the tubing and blow through it.	Clean or replace if it's plugged.
7. Impeller or seal jammed.	Turn off the power, then use a screwdriver to try to turn the impeller or motor.	If the impeller won't turn, remove housing and locate the source of binding.
8. Defective start capacitor.	Use an multi meter to check the capacitance across a capacitor.	Replace the capacitor or take the motor to the service station.
9. Motor shorted out.	If the fuse blows when the pump is started (and external wiring is OK), the motor is shorted.	Replace the motor.

Motor overheats and overload trips out

Cause of Trouble	How to Check	How to Correct
1. Incorrect line voltage.	Use a voltmeter to check at pressure switch or terminals nearest pump.	If voltage is under the recommended minimum, check size of wiring from main switch on property. If OK, contact power the company.
2. Motor wired incorrectly.	Check the motor wiring diagram.	Reconnect for proper voltage as per wiring diagram.
3. Inadequate ventilation.	Check the air temperature where the pump is located. If over 100° F, overload may be tripping on external heat.	Provide adequate ventilation or move the pump.
4. Prolonged low pressure delivery.	Continuous operation at very low pressure places heavy overload on pump. This can cause overload protection to trip.	Install the globe valve on the discharge line and throttle it to reduce flow and to increase the pressure.

Troubleshooting Jet Pumps

Pump starts and stops too often

Cause of Trouble	How to Check	How to Correct
1. Leak in pressure tank.	For discharge or bladder captive air tanks, drain the tank and check the precharge pressure. It should be or two psig below pump cut-in pressure. If it's lower, check welds, braze joints, mechanical joints, and valve core with a soap solution. If it's defective, replace. DO NOT ATTEMPT TO REPAIR BY WELDING.	Replace the tank.
2. Defective air volume control.	This will lead to a water-logged tank. Make sure the control is operating properly. If it's not, remove and examine for plugging.	Adjust the switch settings. Clean the contacts with an emery cloth if dirty.
3. Faulty pressure switch.	Check the switch setting. Examine the switch contacts for dirt or excessive wear.	Adjust the switch settings. Clean the contacts with an emery cloth if dirty.
4. Leak on discharge side of system.	Make sure all of the fixtures in the plumbing system are shut off. Then check all of the units (especially ballcocks) for leaks. Listen for the noise of water running.	Repair leaks as necessary.
5. Leak on suction side of system.	On shallow well units install the pressure gauge on suction side. On the deep well systems, attach a pressure gauge to the pump. Close the discharge line valve. Then, using a bicycle pump or air compressor, apply about 30 psi pressure to the system. If the system will not hold this pressure when the compressor is shut off, there is a leak on the suction side.	Make sure above ground connections are tight. Then repeat the test. If necessary, pull the piping and repair the leak.
6. Leak in foot valve.	Pull the piping and then examine foot valve.	Repair or replace the defective valve.

Pump won't shut off

Cause of Trouble	How to Check	How to Correct
1. Wrong pressure switch setting or setting "drift".	Lower the switch setting. If the pump shuts off, this was the trouble.	Adjust the switch to the proper setting.
2. Defective pressure switch.	Arcing may have caused the switch contacts to "weld" together in a closed position. Examine the points and other parts of the switch for defects.	Replace the switch if it's defective.
3. Tubing of pressure switch plugged.	Remove the tubing and blow through it.	Clean or replace the tubing if it's plugged.
4. Loss of prime.	When no water is being delivered, check the prime of the pump and well piping.	Reprime if necessary.
5. Low well level.	Check the well depth against the pump performance table to make sure the pump and the ejector are properly sized.	If undersized, replace pump or ejector.
6. Plugged ejector.	Remove the ejector and inspect it.	Clean and reinstall if dirty.

Troubleshooting Jet Pumps

Pump operates but delivers little or no water

Cause of Trouble	How to Check	How to Correct
1. Low line voltage.	Use a voltmeter to check at the pressure switch or the terminals nearest pump.	If the voltage is under the recommended minimum, check the size of wiring from the main switch on the property. If OK, contact the power company.
2. System incompletely primed.	When no water is being delivered, check prime of pump and the well piping.	Reprime if necessary.
3. Air lock in suction line.	Check the horizontal piping between the well and pump. If it does not pitch upward from the well to the pump, an air lock may form.	Rearrange the piping to eliminate an air lock.
4. Undersized piping.	If the system delivery is low, the discharge piping and/or plumbing lines may be undersized. Refigure the friction loss.	Replace the undersized piping or install a pump with higher capacity.
5. Leak in air volume control or tubing.	Disconnect the air volume control tubing at the pump and plug hole. If the capacity increases, a leak exists in the tubing of control.	Tighten all the fittings and replace control if necessary.
6. Pressure regulating valve stuck or incorrectly set; (deep well only).	Check the valve setting. Inspect the valve for defects.	Reset, clean, or replace the valve as needed.
7. Leak on suction side of system.	On shallow well units, install a pressure gauge on suction side. On deep well systems, attach a pressure gauge to the pump. Close the discharge line valve. Then, using a bicycle pump or air compressor, apply about 30 psi pressure to the system. If the system will not hold this pressure when the compressor is shut off, there is a leak on the suction side.	Make sure above ground connections are tight. Then repeat the test. If necessary, pull the piping and repair the leak.
8. Low well level.	Check well depth against pump performance table to make sure the pump and ejector are properly sized.	If undersized, replace the pump or ejector.
9. Wrong pump-ejector combination.	Check the pump and ejector models against the manufacturer's performance tables.	Replace ejector if wrong model is being used.
10. Low water level in well.	Shut off the pump and allow the well to recover. Restart the pump and note whether delivery drops after continuous operation.	If well is "weak," lower the ejector (deep well pumps), use a tail pipe (deep well pumps), or switch from shallow well to deep well equipment.
11. Plugged ejector.	Remove the ejector and inspect.	Clean and reinstall if it's dirty.
12. Defective or plugged foot valve and / or strainer.	Pull the foot valve and inspect. Partial clogging will reduce delivery. Complete clogging will result in no water flow. A defective foot valve may cause pump to lose prime, resulting in no delivery.	Clean, repair or replace as needed.
13. Worn or defective pump parts or plugged impeller.	Low delivery may result from wear on the impeller or other pump parts. Disassemble and inspect.	Replace worn parts or the entire pump. Clean parts if required.



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