



There when you need us most

SP Series

Stainless Steel Self-Priming Centrifugal Pump

Installation & Operating Manual



Congratulations on Your Choice in Purchasing this Webtrol Pump!

Its Quality is unsurpassed in material and workmanship and has been factory tested.
If properly installed, it will give many years of trouble free service.

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Introduction

This manual was prepared to assist the installer and/or operator in understanding the proper method of installing, operating and maintaining the SP Series Self-Priming Pump. We recommend that you thoroughly understand the proper installation and start-up procedures, prior to starting the pump. If these procedures are followed, you will have years of trouble-free service.

WARNING

Rules For Safe Installation And Operation

1. Read these rules and instructions carefully. Failure to follow them could cause serious bodily injury and/or property damage.
2. Check your local codes before installing.
3. For maximum safety, this product should be connected to a grounded circuit equipped with a ground fault interrupter device.
4. Before installing this product, have the electrical circuit checked by an electrician to make sure it is properly grounded.
5. Before installing or servicing your pump, BE CERTAIN pump power source is disconnected.
6. Make sure the line voltage and frequency of the electrical current supply agrees with the motor wiring. If motor is dual voltage type, BE SURE it is wired correctly for your power supply.
7. Complete pump and piping system MUST be protected against below freezing temperature. Failure to do so could cause severe damage and voids the Warranty.
8. Do not operate the pump in flammable and / or explosive atmosphere.

Specifications

Max. temperature of pumped fluid	113°F	Suction diameter	1 1/4"
Max. suction depth	25ft.	Discharge diameter	1"
Max. working pressure	87 PSI	Impeller material	Stainless Steel
Type of impeller	Closed	Liner material	Stainless Steel
Type of seal on the shaft	Mechanical	Shaft material	Stainless Steel
Type bearing	Shielded ball	Max. number starts per hour	40

Pump Inspection And Handling

When receiving your pump, check to see if the shipment has been damaged in any way or if any parts seem to be missing. If so, note the damage or shortage on the bill of lading and the freight bill. Make any claims to the transportation company immediately. Keep all packaging materials until the claim is resolved.

The Webtrol SS Centrifugal pump should remain in the shipping carton until it is ready to be installed.

Installation

General Installation - Use plastic pipes with a certain degree of rigidity or metal pipes, to prevent them from collapsing under the vacuum that is created during suction.

If using flexible pipes or hoses for suction or discharge, avoid bending them to prevent chocking or blockages.

Seal any connections in the pipes, air infiltration in the suction pipe have a negative influence on pump operation.

The suction pipe must have a foot valve and filter to prevent the entry of foreign bodies.

The end of the suction pipe must be immersed at a depth of at least twice the diameter of the pipe; it must also be at a distance of at least one and a half times the pipe diameter from the bottom of the tank.

On the discharge pipe, it is advisable to fit a check valve and a gate valve, in this order.

Anchor the pipes to the tank, or to fixed parts, so that their weight is not carried by the pump housing.

Avoid using too many curves and valves in the system.

For suction depths greater than 12 feet, use a pipe with a larger diameter to obtain better performance.

Fixed Installation: The pump must be placed on a level surface, as near as possible to a source of water. When positioning the pump, observe the 6 inch minimum required distance from walls, so as to allow functioning, use and maintenance operations in safe conditions.

Temporary Installation: (For Temporary Use) The pump must be placed on a level surface, as near as possible to a source of water. When positioning the pump, observe the 6 inch minimum required distance from walls, so as to allow functioning, use and maintenance operations in safe conditions.

Electrical Connections

Before wiring the pump to the power source, verify that the voltage of the motor matches the voltage of the power supply. See motor nameplate. The supply voltage must be within + 10% of nameplate voltage. Incorrect voltage can cause fire or seriously damage the motor and voids the warranty.

Wire the motor according to the diagram shown on the motor nameplate. If the nameplate diagram differs from the wiring diagrams shown in this manual, follow the nameplate diagram. Both 1 and 3 phase motors are factory wired for 230 volts.

Install ground wire and maintain this pump in compliance with the National Electrical Code (NEC) or the Canadian Electrical Code (CEC) and with all local codes and ordinances that apply. Consult your local building inspector for local code information.

The motors used on the EZ Series Booster pumps are commonly manufactured by U.S. Motors, Century Electric or Baldor. Both 1 and 3 phase motors are factory wired for 230 volts.

U.S. Motors 1 Phase ODP Motor		
Catalog Number	See Figure	HP
EU0502	1	1/2
EU0752	1	3/4
EU1002	1	1
EU1502	1	1 1/2
EU2002	1	2
EU3002	2	3*

U.S. Motors 3 Phase ODP Motor		
Catalog Number	See Figure	HP
EE155	3	1/2
EE446	3	3/4
EE506	3	1
EE607	3	1 1/2
EE733	3	2
EE734	3	3

*The 3 HP - 1 Phase motor is dual voltage (208/230v) and cannot be connected to 115v.

U.S. Motors - Connection Diagrams

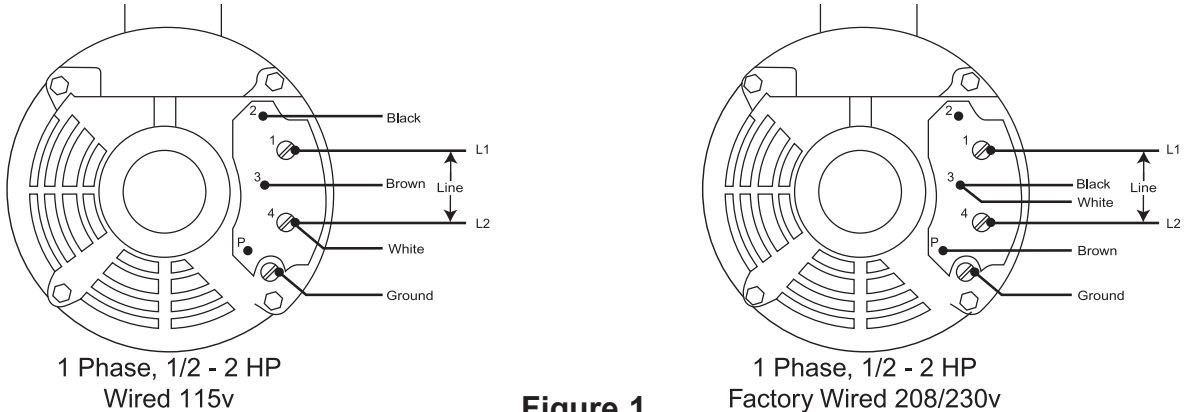


Figure 1

U.S. Motors - Connection Diagram

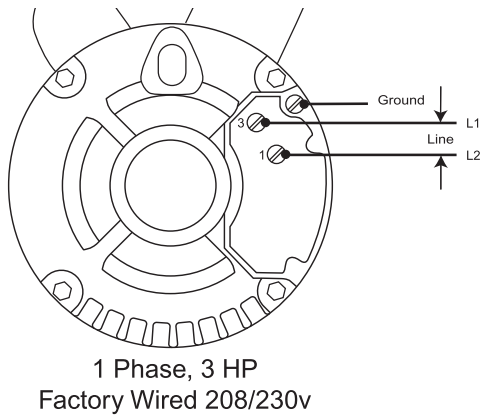


Figure 2

U.S. Motors - Connection Diagrams

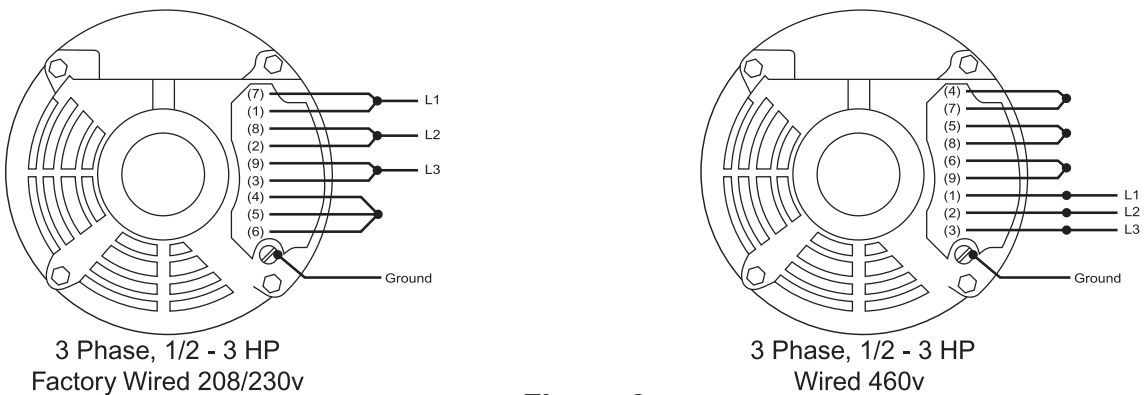


Figure 3

If the supply voltage for a 1 phase motor is 115 volts, refer to the motor wiring connections shown below to properly rewire the motor.

Century Electric 1 Phase ODP Motor		
Stock Number	See Figure	HP
T1052	4	1/2
T1072	4	3/4
T1102	4	1
T1152	4	1 1/2
T1202	4	2
ST1302VI	5	3

Century Electric 3 Phase ODP Motor		
Stock Number	See Figure	HP
T3052	6	1/2
T3072	6	3/4
T3102	6	1
T3152	6	1 1/2
T3202	6	2
H741	6	3

Century Electric Motors - Connection Diagrams

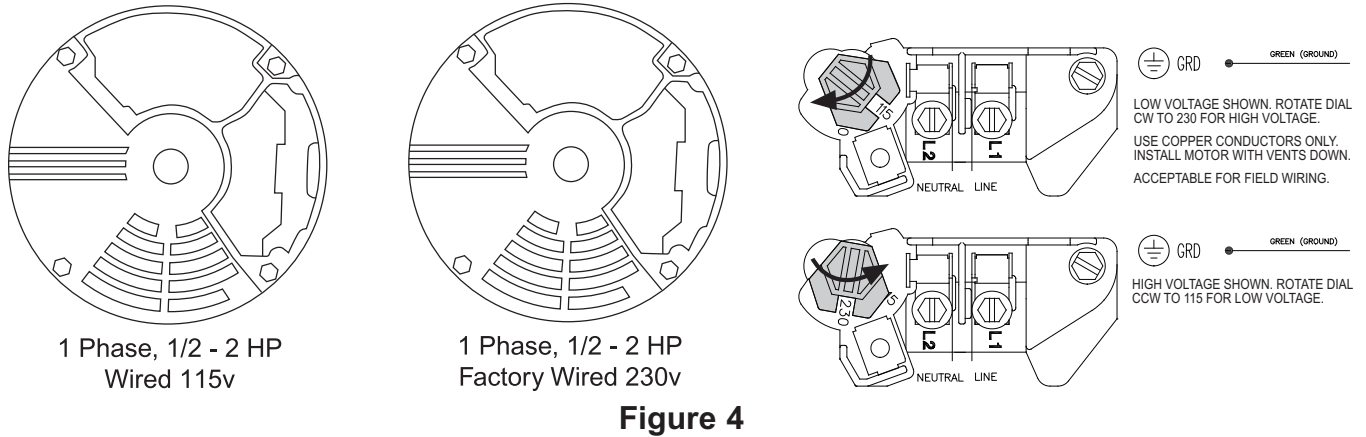


Figure 4

Century Electric Motors - Connection Diagrams

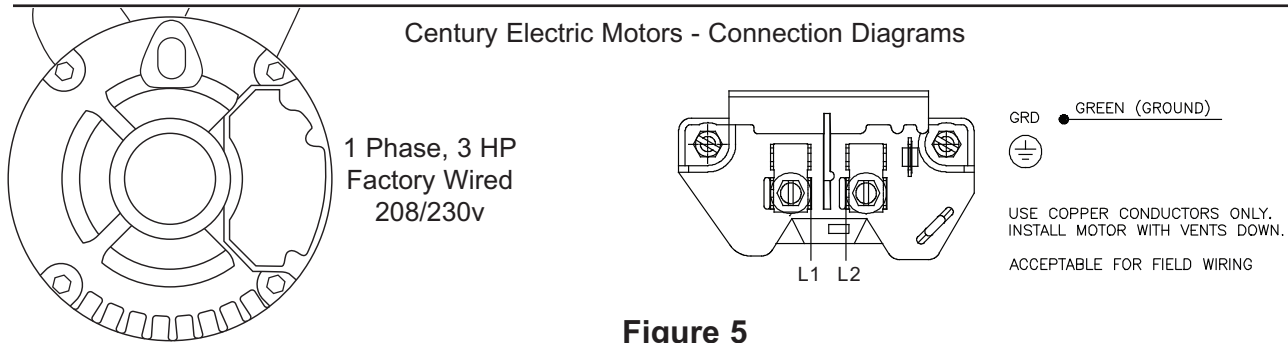


Figure 5

Century Electric Motors - Connection Diagrams

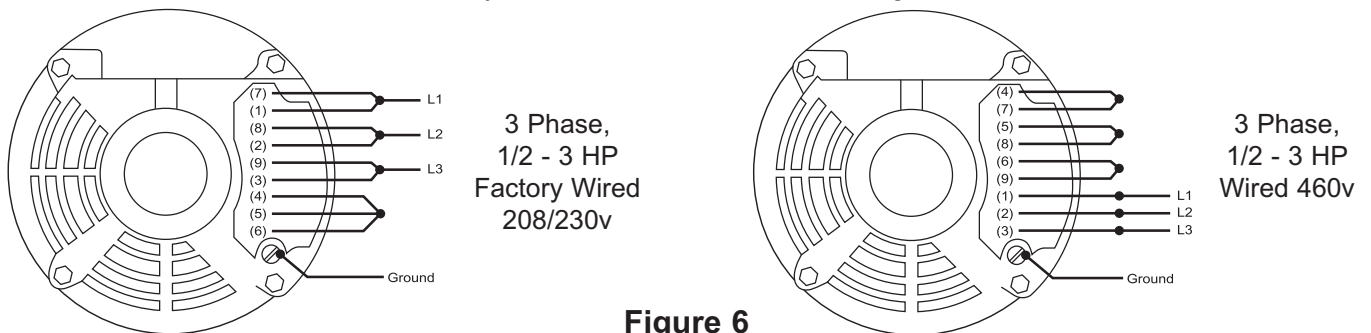


Figure 6

If the supply voltage is 460 volts, refer to the motor wiring diagram show in (Figure 6) to properly rewire the motor.

Motor shaft rotation - 3 phase motors

1. Turn the power off.
2. Remove the circular end cap located on the back of the motor. This will expose the motor shaft.
3. Momentarily start pump. If the connection is correct, the shaft will rotate clockwise. If not reverse any two incoming lines (Power Leads).

Baldor 1 Phase ODP Motor		
Catalog Number	See Figure	HP
JL1303A	7	1/2
JL1306A	7	3/4
JL1309A	7	1
JL1313A	7	1 1/2
JL1317A	7	2
JL1323A	8	3*

Baldor 3 Phase ODP Motor		
Catalog Number	See Figure	HP
JM3107	9	1/2
JM3111	9	3/4
JM3115	9	1
JM3120	9	1 1/2
JM3155	9	2
JM3158	9	3

*The 3 & 5 HP 1 Phase motor is single voltage (230v) and cannot be connected to 115v.

Baldor Motors - Connection Diagrams

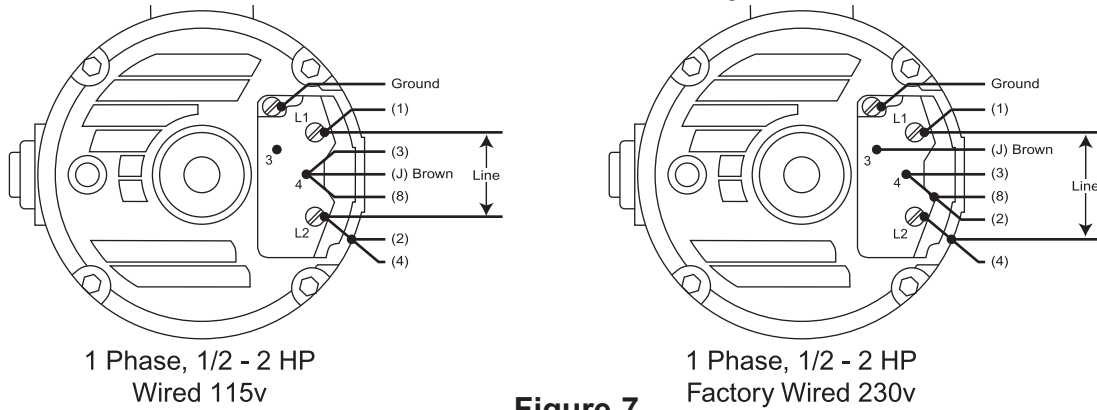


Figure 7

Baldor Motors - Connection Diagrams

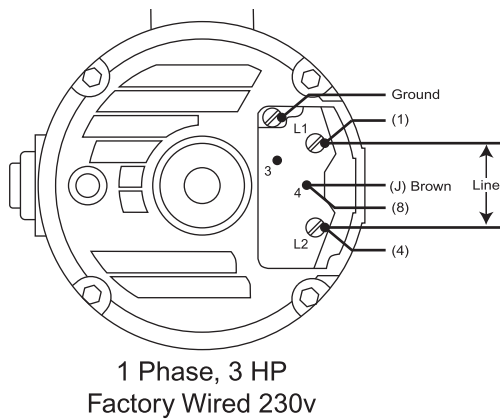


Figure 8

Baldor Motors - Connection Diagrams

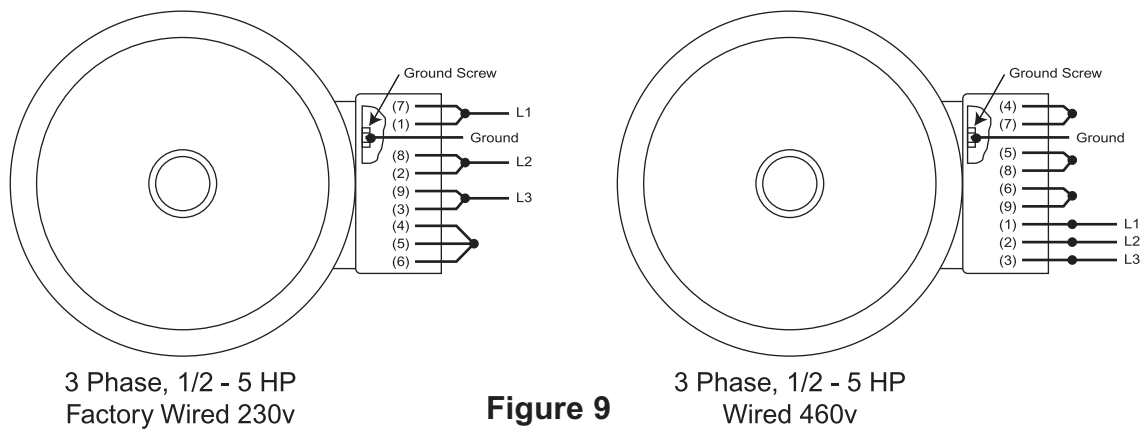


Figure 9

Start-Up Procedures

On three-phase pumps, check the direction of rotation of the motor. The impeller must turn in a clockwise direction when viewing the pump from above. (see the arrow on the pump). As it is not possible to check the direction of rotation of the impeller visually, proceed as follows: before anchoring the pump in the system and without the pipes, connect the power cables to the electric panel and switch on the main switch for a moment; the direction of rotation of the fan that cools the motor of the pump is the same as the direction of rotation of the impeller. If it is turning in the wrong direction (that is counterclockwise), invert two of the three leads on the motor base.

Filling The Pump:

Warning: Always disconnect the electrical supply prior to servicing the pump.

Unscrew the hexagonal cap located on the top of the pump body, in front of the discharge.

Using a funnel, fill the pump body with water until it overflows.

Replace the cap, making sure it is firmly tightened to prevent air infiltration.

Check that there are no leaks in the system.

Ensure that the pump does not vibrate abnormally, is not too noisy, or have large variations in pressure and electric absorption during operation.

Warning: Never run the pump without water: lack of water may cause severe damage to the internal components.

General Warnings

1. Prolonged operation of the pump with the gate valve on the discharge pipe closed may cause damage.
2. Avoid frequent starting and stopping of the pump.
3. If there is an interruption in the power supply, it is advisable to switch off the pump.

Starting

1. Ensure that the foot valve is not blocked.
2. Switch on and off two or three times to check operating conditions.
3. Begin continuous operation and gradually open the gate valve on the discharge.
4. Check that noise, vibrations, pressure and electric voltage are at normal levels.

Stopping

1. Close the gate valve on discharge (this should always be done if the system is without a check valve, especially in the presence of high heads), to prevent overpressures in the pipes and pump due to water hammer.
2. Switch pump off.

Maintenance And Repairs

Warning: Always disconnect the electrical supply prior to any maintenance operations.

When the pump is to remain inactive for a long period, it is advisable to empty it completely, removing the drainage and filling caps, wash it out thoroughly with clean water, then drain it again, ensuring that no water is left inside it.

This operation must always be performed when there is a risk of frost, to prevent breakage of the pump components.

System Trouble Shooting

Motor Fails To Start

Possible Cause Of Trouble	Corrective Action
No electric power	Check switch or contactor on the electric line
Plug not inserted	Check power connection to the line
Automatic switch has tripped	Reset switch and check the cause
Thermal protection has tripped (single phase)	This resets automatically (single-phase only)
Protection fuses are burnt out (three-phase)	Replace the fuses with others of the same type
Incorrect electric connection	Check terminal board and electric panel
Faulty motor or capacitor	Contact Webtrol
Damaged bearing (noisy)	Contact Webtrol

Motor Turns, The Pump Does Not Work

Possible Cause Of Trouble	Corrective Action
Voltage drop on power line	Contact a trained Electrician
Clogged filter at end of suction	Dismantle and clean filter
Foot valve blocked	Clean the valve and check its operation
No water in the pump	Fill the pump (see start-up)
Pressure too low	Choke the discharge gate valve

The Pump Works At A Low Flow Rate

Possible Cause Of Trouble	Corrective Action
Foot valve partly clogged	Clean valve and check its operation
Water level to low	Switch off the pump or immerse the foot valve
Wrong direction of rotation (three phase only)	Reverse any two leads
Wrong supply voltage	Feed the pump with the voltage indicated on the motor plate
Leaking pipes	Check the connections
Pressure to high	Check the system

The Pump Stops After Brief Periods Of Operation

Possible Cause Of Trouble	Corrective Action
Liquid temperature too high	The temperature exceeds the technical limits of the pump
Very small difference between maximum and minimum pressure switch setting	Increase the difference in pressure
Internal defect	Contact Webtrol

The Pump Vibrates Or Makes Excessive Noise While Operating

Possible Cause Of Trouble	Corrective Action
Flow rate too high	Reduce flow rate
Cavitation	Contact Webtrol
Irregular piping	Adjust the pipe configuration
Noisy bearing	Contact Webtrol
Foreign bodies rubbing against the motor fan	Remove the foreign bodies

Thank You for Purchasing an SP Series Self-Priming Centrifugal Pump

We at Webtrol are constantly working on new products to make your job easier, while making your systems more efficient, reliable and affordable. Your opinion means a lot to us, so please let us know what you think about our Stainless Steel SP Series Self-Priming Centrifugal Pump.



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