



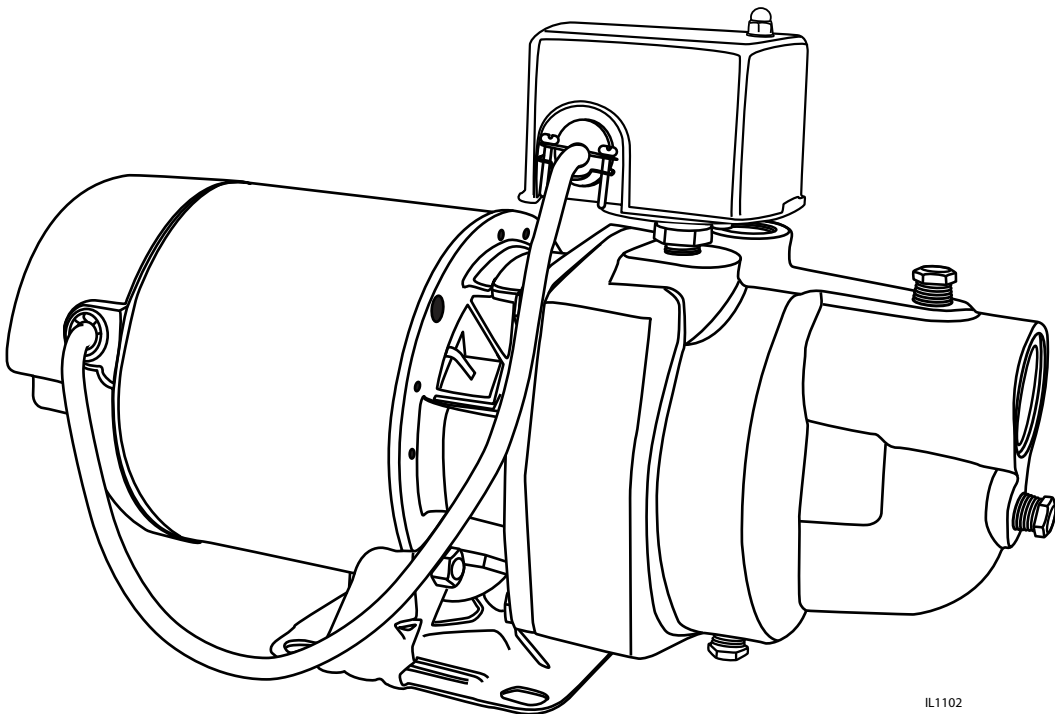
ZoellerAtHome.com

CAST IRON SHALLOW WELL JET PUMP

MODEL #1461-0006

Español p. 21

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IL1102

ATTACH YOUR RECEIPT HERE

Serial Number _____ Purchase Date _____



Questions, problems, missing parts? Before returning to your retailer, call our customer service department at 1-800-584-8089, 7:30 a.m. - 5:00 p.m., EST, Monday - Friday.

PRODUCT SPECIFICATIONS

Power supply required.....115 volts or 230 volts, 60 Hz
(Pump is set by the factory to run on 115 volts)
Maximum water temperature.....77°F (25°C)
Individual branch circuit required..... 15 Amp minimum
Discharge connection 1 in. NPT
Suction connection 1-1/4 in. NPT
Motor duty..... Continuous duty with enforced air cooling and thermal overload protection
Pressure switch Preset at 20 PSI “on” / 40 PSI “off”
Water depth rating Maximum of 25 ft.

ITEM #	HP	VOLTAGE	HZ	MAX AMPS	LOCKED ROTOR AMPS	CAPACITY - U.S. GALLONS PER MINUTE AT 20 PSI DISCHARGE PRESSURE			
						0 FT.	5 FT.	15 FT.	25 FT.
1461-0006	3/4	115/230	60	13/6.5	36.0/18.0	15	10	9	5

SAFETY INFORMATION

Please read and understand this entire manual before attempting to assemble, operate, or install the product.

- NOTE: Pumps with the “UL” Mark and pumps with the “US” mark are tested to UL Standard UL778. CSA certified pumps are certified to CSA Standard C22.2 No. 108. (CUS.)

DANGER

- ELECTRICAL SHOCK HAZARD.
Always disconnect power source before performing any work on or near the motor or its connected load. If the power disconnect point is out-of-sight, lock it in the open position and tag it to prevent unexpected application of power. Failure to do so could result in fatal electrical shock.
- ELECTRICAL SHOCK HAZARD.
Do not handle the pump with wet hands or when standing in water as fatal electrical shock could occur. Disconnect main power before handling unit for ANY REASON!
- RISK OF ELECTRIC SHOCK.
These pumps have not been investigated for use in swimming pool areas.

WARNING

- ELECTRICAL SHOCK ALERT.
Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).
- ELECTRICAL SHOCK ALERT.
Replace damaged or worn wiring cord immediately. Never use an extension cord.
- ELECTRICAL SHOCK ALERT.
Do not kink power cable and never allow the cable to come in contact with oil, grease, hot surfaces, or chemicals.

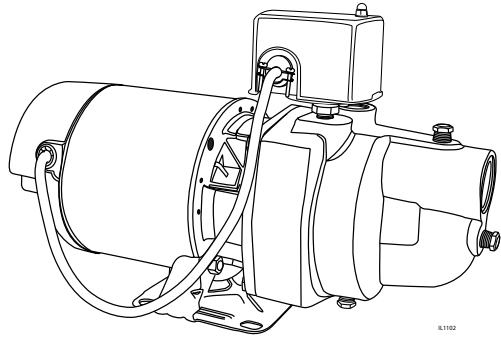
- ELECTRICAL SHOCK ALERT.
Wire motor to correct supply voltage. See motor nameplate and wiring diagrams and check voltage of power supply.
- ELECTRICAL SHOCK ALERT.
Unit must be securely and adequately electrically grounded. This can be accomplished by wiring the unit to a ground metal-clad raceway system or by using a separate ground wire connected to the bare metal of the motor frame or other suitable means.
- ELECTRICAL SHOCK ALERT.
Make certain the electrical power source is adequate for the requirements of the pump.
- ELECTRICAL SHOCK ALERT.
Never use an extension cord with this pump.
- CHEMICAL ALERT.
Prop65 Warning for California residents:
⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov
- HAZARDOUS PRESSURE ALERT.
Install pressure relief valve in discharge pipe. Release all pressure on system before working on any component.
- EXPLOSION ALERT
Do not use to pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. Do not use in flammable and/or explosive atmospheres.

CAUTION

- PRODUCT DAMAGE MAY RESULT
This pump is not to be used for irrigation or water systems.
- PRODUCT DAMAGE MAY RESULT
Protect the power cable from coming in contact with sharp objects.
- PRODUCT DAMAGE MAY RESULT
Do not run pump dry.
- PRODUCT DAMAGE MAY RESULT
Pump and plumbing must be full of water before startup.
- PRODUCT DAMAGE MAY RESULT
Do not pump water which contains sand, mud, silt, or debris.
- INJURY MAY RESULT
Be careful when touching the exterior of an operating motor. It may be hot enough to be painful or cause injury.

PACKAGE CONTENTS

Description	Quantity
Pump	1



PREPARATION

Before beginning installation of product, make sure all parts are present. If any part is missing or damaged, do not attempt to assemble the product. Compare parts to package contents list.

Estimated Installation Time: 2 hours.

Tools Required for New Installation (not included): pipe wrench, pliers, Phillips screwdriver, pipe clamp, 2-step PVC glue system (primer and sealer), thread tape, tire gauge and tire pump

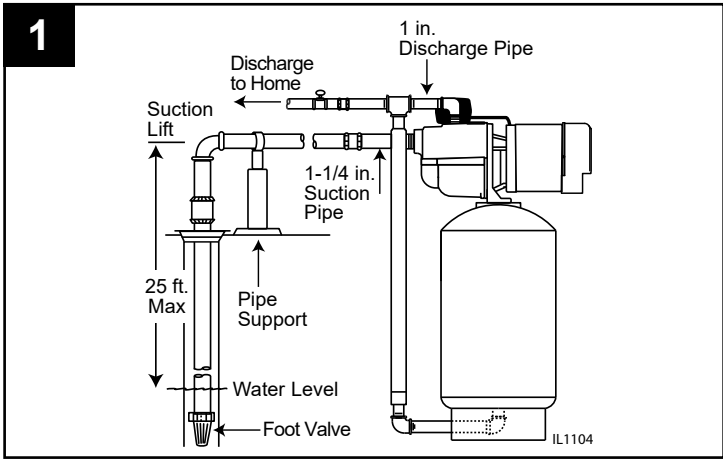
Parts Required for New Installation (not included): well seal, 1-1/4 in. to 1 in. male PVC adapter (2), 1-1/4 in. male PVC adapter, 1 in. male PVC adapter, 1-1/4 in. foot valve, 1-1/4 in. PVC pipe and couplings, 1 in. PVC pipe and couplings, 1-1/4 in. PVC elbow, 1 in. PVC elbow, 1 in. discharge tee, galvanized bushing, pressure gauge (optional) or pipe plug, 1-1/4 in. union (optional), 1 in. union (optional), electrical wire, electrical wire strain relief, 1 in. x 1 in. x 1 in. tee, 3/4 in. x 3/4 in. slip coupling, 1 in. x 1 in. slip adapter, 1 in. x 3/4 in. slip adapter.

GENERAL PUMP INFORMATION

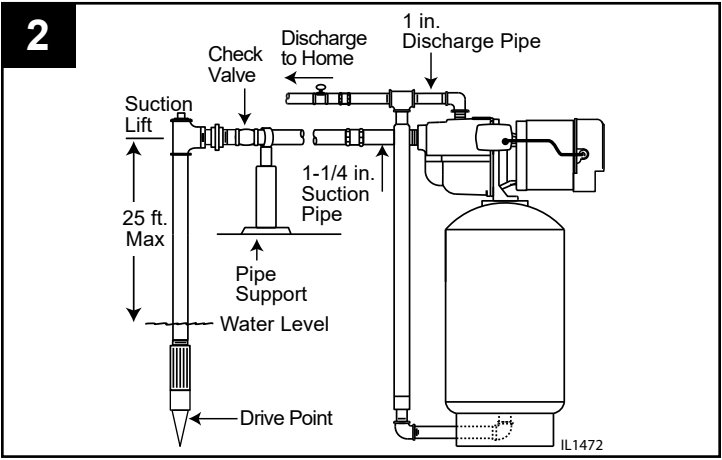
FOR USE WITH A PRESSURE TANK. DO NOT USE FOR IRRIGATION APPLICATIONS.

Typical Pump Setup

- 1. Shallow well jet pumps are designed for use where the suction lift is 25 ft. or less. They can be used with drilled or cased wells.



- 2. Jet pumps can also be used with dug wells, driven wells, or with cisterns or lakes.



Ventilation - Ventilation and drainage must be provided to prevent damage to the motor from heat and moisture.

Freezing - Pump and all piping must be protected from freezing. If freezing weather is forecast, drain pump or remove completely from the system.

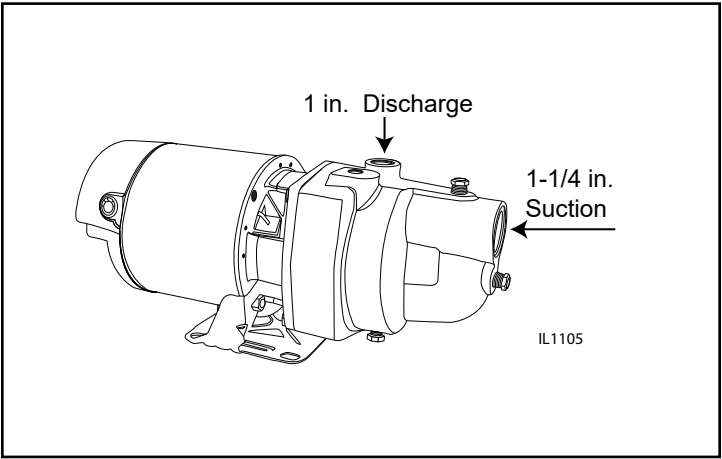
Water Supply - The water source must be able to supply enough water to satisfy the capacity of pump and water needs. See performance chart on page 2.

Suction Lift - Suction lift is the vertical distance from the lowest level of the water to the pump intake. Pump will move water as long as it is within 25 vertical ft. of the water source.

Horizontal Distance - The horizontal distance is the horizontal measurement between pump suction and the water source. This distance may affect the ability of pump to operate. If it is more than 100 ft., call the manufacturer for assistance: 1-800-584-8089.

Pipe And Fittings - Use galvanized steel or NSF PW Schedule 40 PVC pipe and fittings. This material is designed for water pressure and will seal against air and water under pressure. Do not use DWV fittings, as these are designed for drains without pressure and will not seal properly.

CAUTION: The entire system must be air and water tight for efficient operation, and to maintain prime.



Wire Size - The wire size is determined by the distance from the power source to the pump motor and the horsepower rating of the motor. See the wire chart in ELECTRICAL CONNECTIONS for proper wire size.

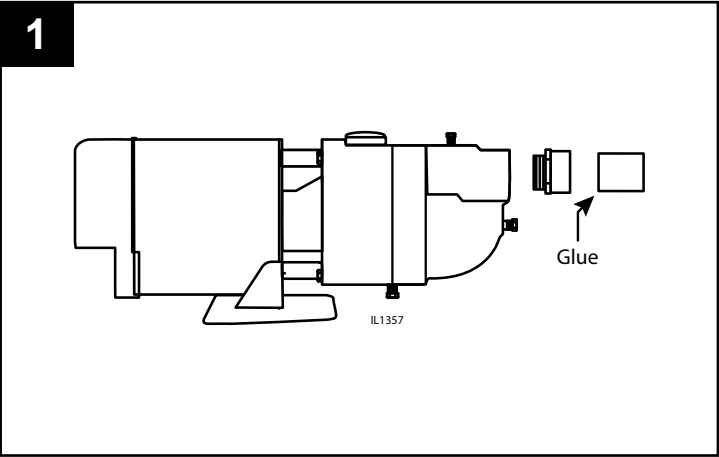
WELL TO PUMP CONNECTION (SUCTION PIPE)

CAUTION: Dry-fit entire assembly to ensure proper fit before gluing or taping parts.

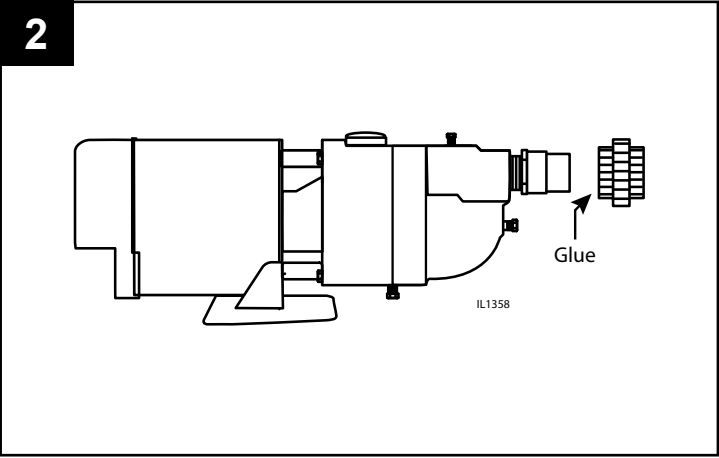
CAUTION: Follow all proper gluing procedures as specified by the glue manufacturer. Always glue in a vertical direction whenever possible to prevent glue from dripping inside pipe or fittings

CAUTION: Use pipe tape and pipe paste compound on all male threads. Tighten with wrench to a snug fit and add another 1/4 turn to ensure proper seal.

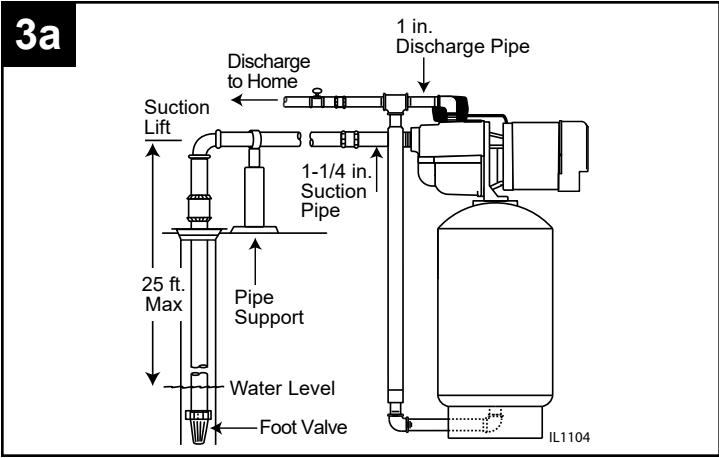
1. Make the connection to your well first. Wrap all threaded fittings with pipe tape 5 times and then apply a pipe paste (pipe dope) to ensure an air tight connection.



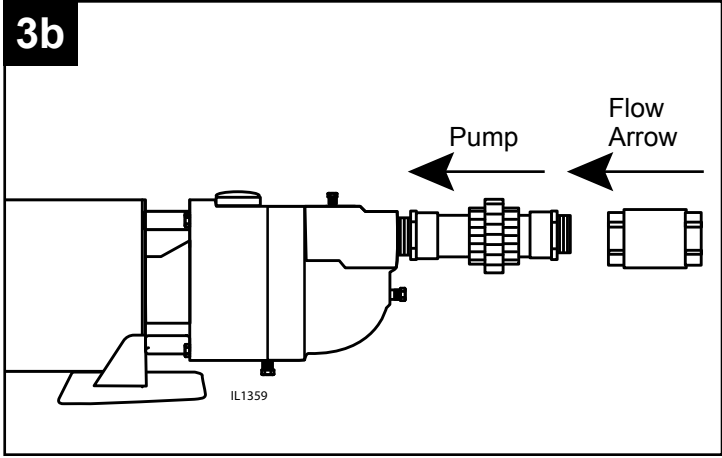
2. The use of a union (optional) will assist with easy connection and disconnect.



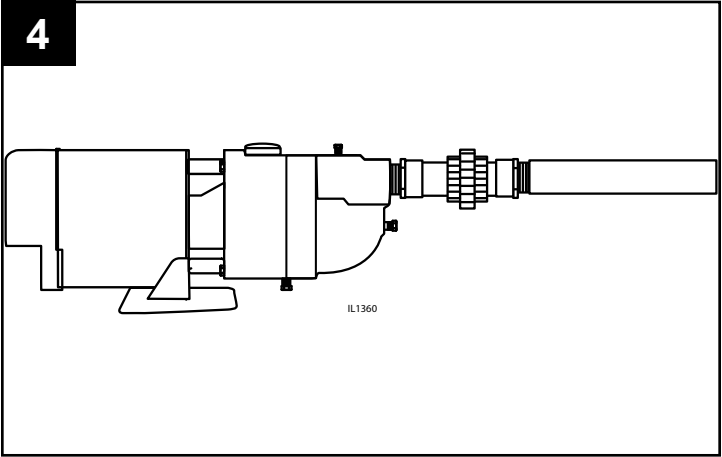
3a. NOTE: For drilled (cased) wells, a foot valve is required in the well at the end of the pipe to maintain prime.



3b. For driven wells, a check valve is required at the top of the well to maintain prime. Flow arrow must point toward pump.

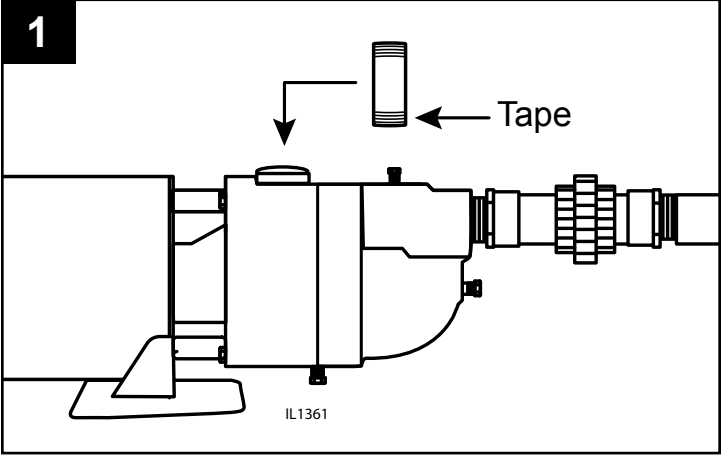


4. Finish the connection to your well with additional pipe and fittings as needed.

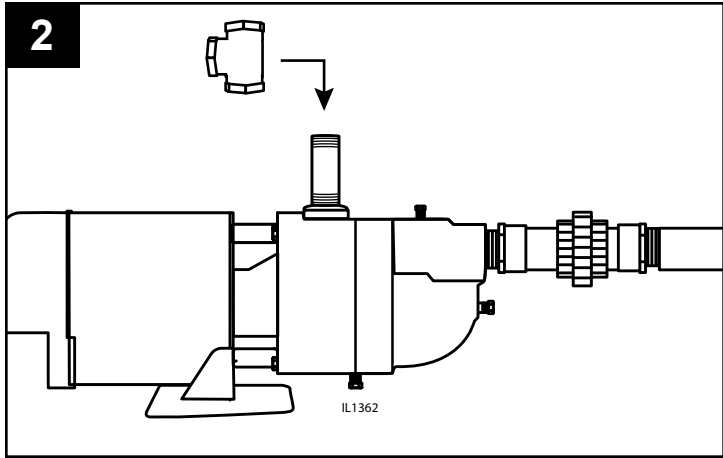


PUMP TO PRESSURE TANK CONNECTION (DISCHARGE PIPE)

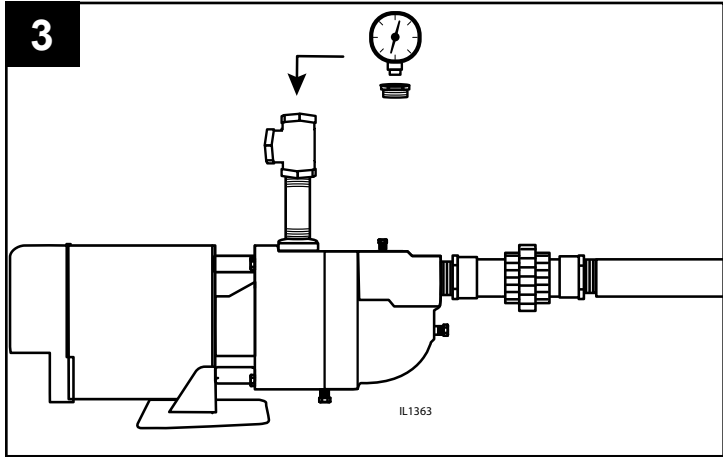
1. Begin the connection to the pressure tank. Using a 1 in. x 3 in. galvanized nipple, wrap the threads 5 times with pipe tape or apply pipe paste (pipe dope) and install in top of pump.



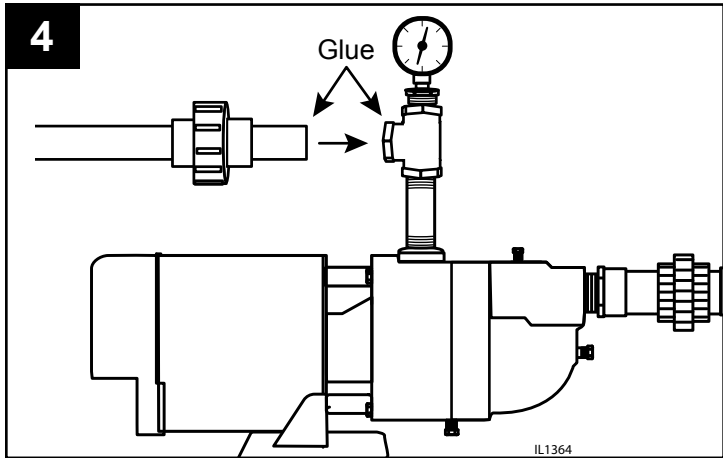
2. Install a 1 x 1 x 1 in. galvanized tee fitting.



3. Install a 1 in. MPT x 1/4 in. FPT galvanized bushing and pressure gauge (optional), or a pipe plug. Do not tighten, as you will prime your pump later at this location

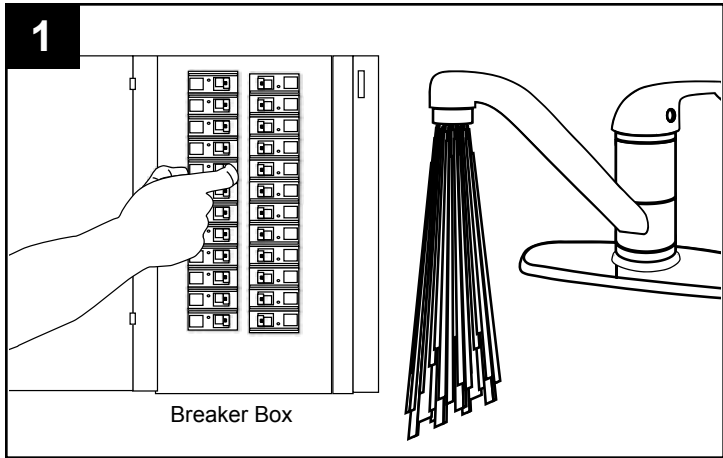


4. Continue with fittings and pipe to the pressure tank. A 1 in. union (optional) is recommended for easy connection and disconnection.

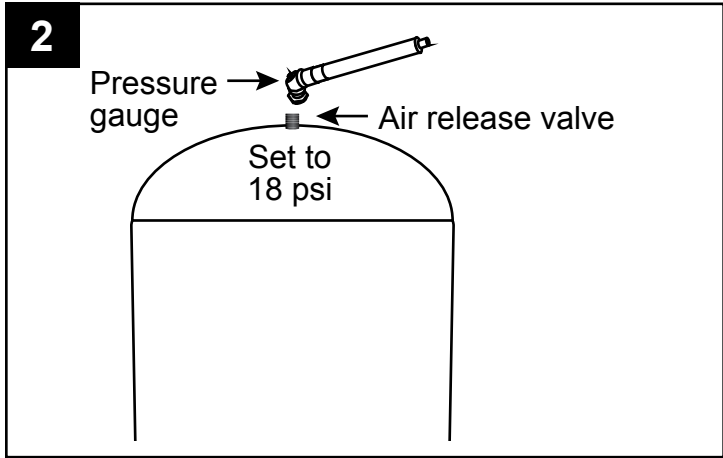


CHECK TANK PRESSURE

1. Completely drain all water from tank by turning off pump and opening a faucet until water stops.

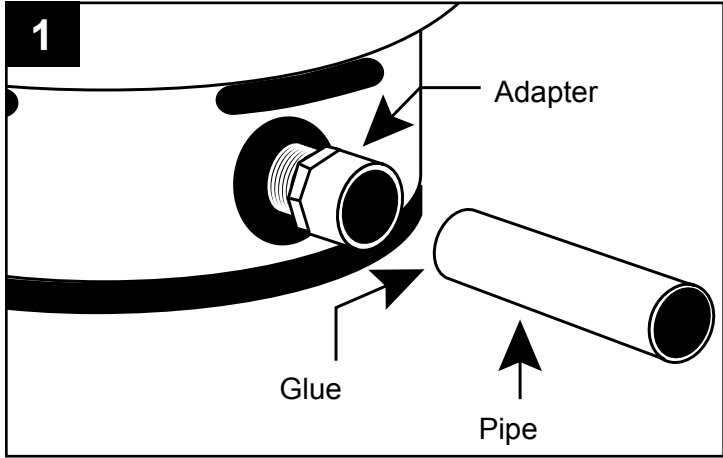


2. Use a pressure gauge to ensure it's set to 18 PSI.
- a. Use a tire pump to adjust the PSI to 18 PSI
 - b. If water leaks from the air release valve, replace the pressure tank.

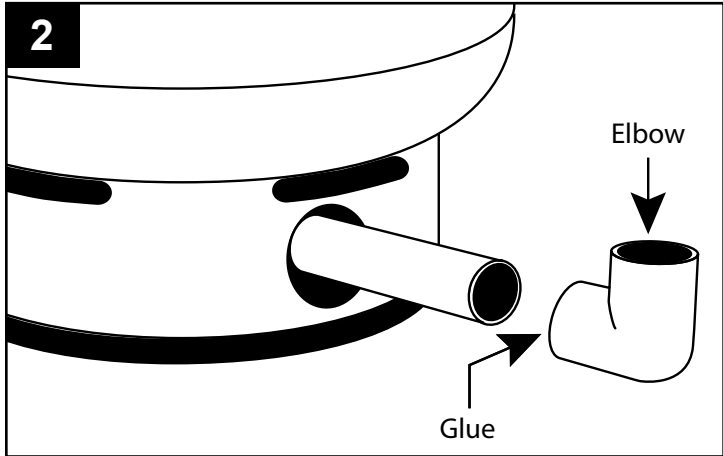


TANK TO HOUSE CONNECTION

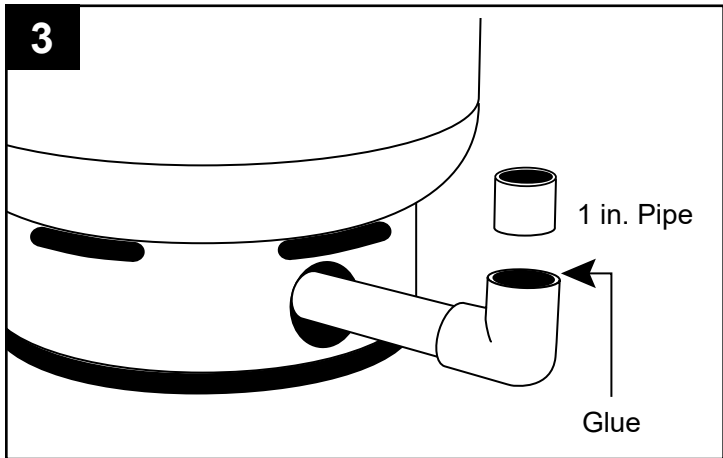
1. Most pressure tanks will have a 1 in. inlet elbow on the bottom. Connect to this elbow with a 1 in. MPT x 1 in. slip (glue) adapter and short piece of pipe.



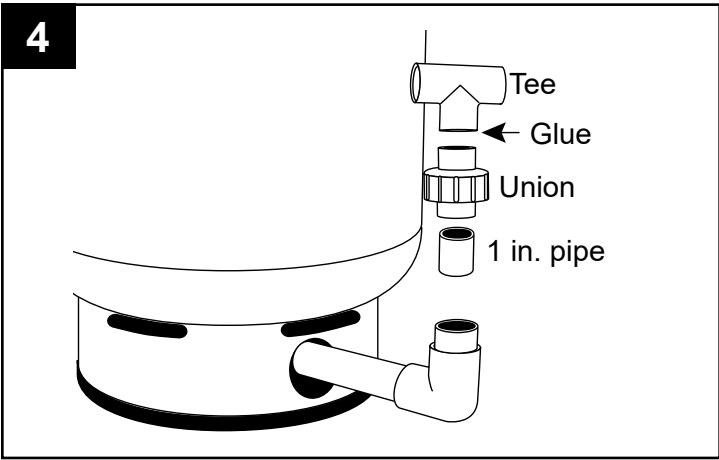
2. Attach a 1 in. elbow (not included) to the pipe.



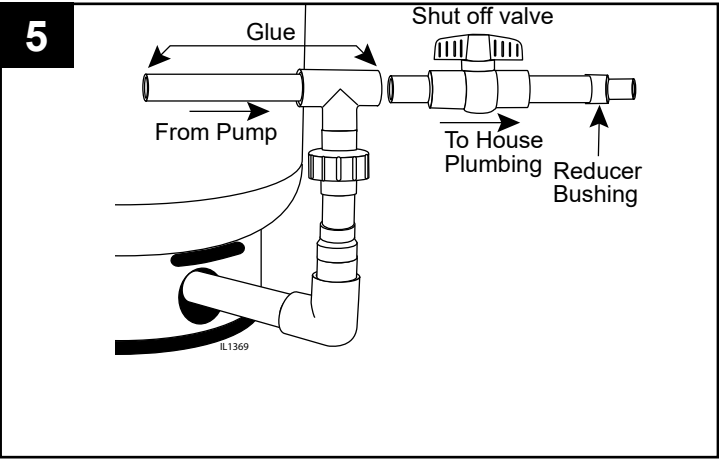
3. Attach a 1 in. pipe (not included) to the elbow.



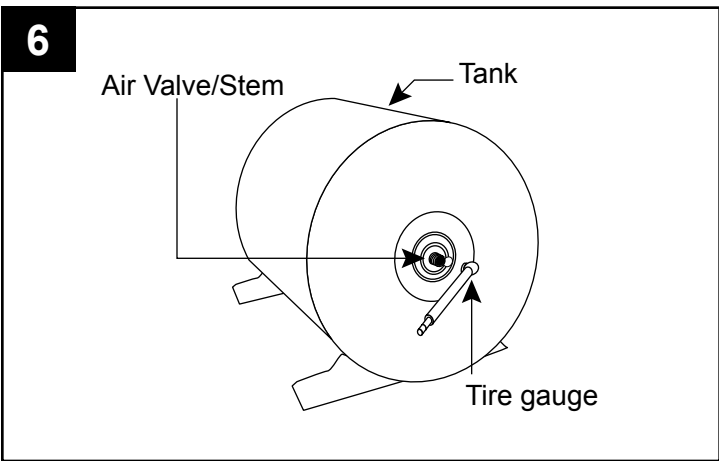
4. Attach a 1 in. pipe (not included) to the reducer bushing. Install an optional 1 in. union (not included) and continue with pipe and 1 in. x 1 in. x 1 in. tee (not included).



5. Attach the pipe from the pump to the tee installed in Step 4. Then, from the tee, install 1 in. pipe and optional shut off valve (not included) to connect tee to house plumbing. 1 x 3/4 in reducer bushing may be required to connect to house plumbing.



6. **IMPORTANT:** Air pressure in the tank must be 2 PSI lower than the “cut-in” of the pressure switch. Pump has a 20/40 PSI pressure switch, so tank pressure must be set at 18 PSI. Locate the air valve/stem on the tank and check pressure with a tire gauge (not included). If air needs to be removed, press down on valve to bleed off air. Use a tire pump or air compressor to add air if needed.



PUMP ELECTRICAL CONNECTIONS

⚠ WARNING:

- Always disconnect pump from electricity before performing any work on the motor.
- Under-sized wiring can cause motor failure and even fire. Use proper wire size specified in the Wire Size Chart.
- Replace damaged or worn wiring cord immediately.
- Do not kink power cable and never allow the cable to come in contact with oil, grease, hot surfaces, or chemicals.
- The pump must be properly grounded using the proper wire cable with ground.

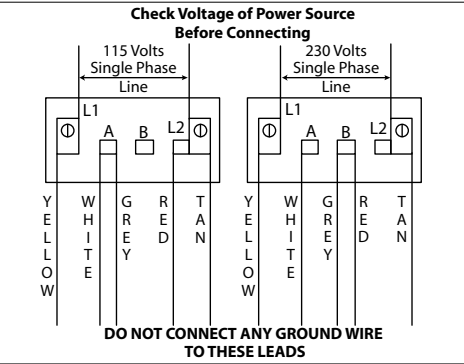
⚠ CAUTION:

- Protect the power cable from coming in contact with sharp objects.
- All wiring should be performed by a qualified electrician in accordance with the National Electric Code and local electric codes.
- Connect the pump to a separate electrical circuit with a dedicated circuit breaker. Refer to the Wire Size Chart for proper fuse size.

WIRE SIZE CHART

Distance from Motor to Meter	Recommended Copper Wire and Fuse Sizes	
	Single Phase Motors	
	3/4 HP	
	115 Volt	230 Volt
0-50 Ft.	14	14
50-100 Ft.	10	14
100-150 Ft.	8	14
150-200 Ft.	8	14
200-300 Ft.	6	12
Fuse Size (Amps)	15	15

WIRING DIAGRAM

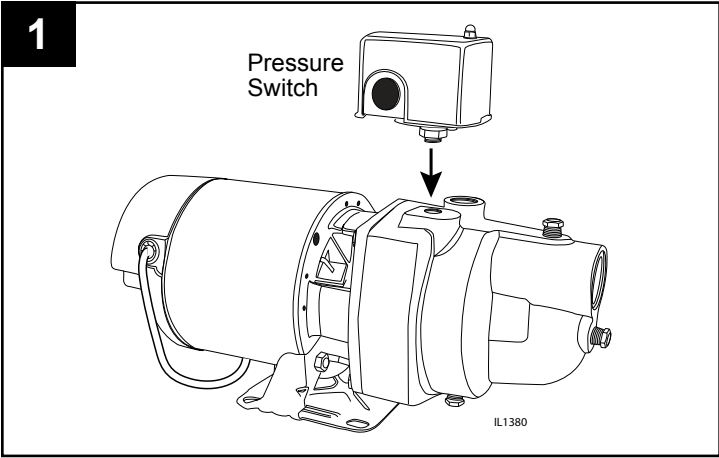


Wiring the Pressure Switch:

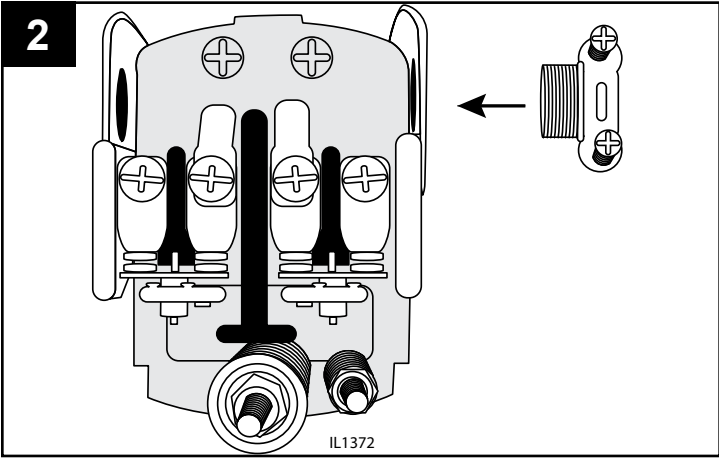
CAUTION: Make certain that the power source matches the pump requirements. This pump has a dual voltage motor and can run on 115 V or 230 V. This pump is pre-wired at the factory to run on 115 V.

NOTE: To change pump voltage, see wiring diagram on this page or instructions on page 14.

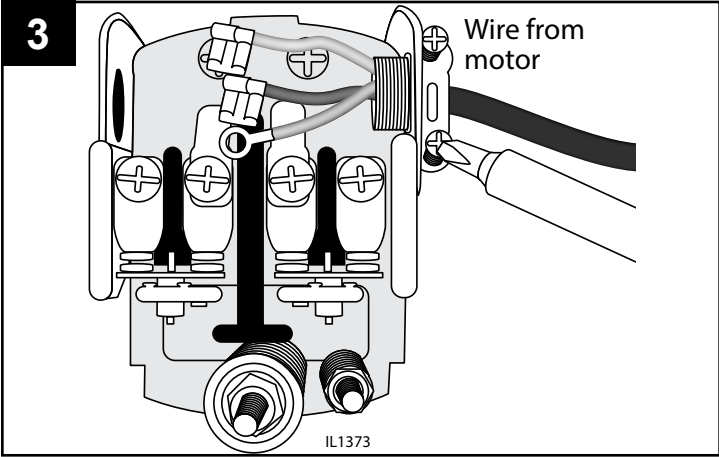
1. Screw the pressure switch into the 1/4 in. opening on the top of the pump and remove the switch cover.



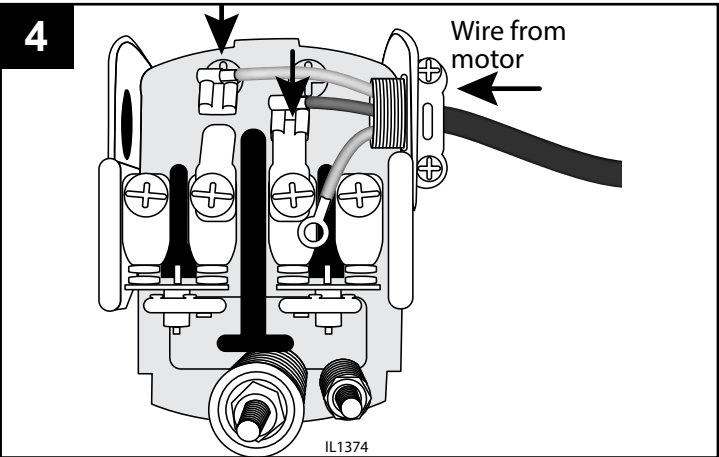
2. Insert an electrical wire strain relief into the opening in the side of the pressure switch closest to the motor.



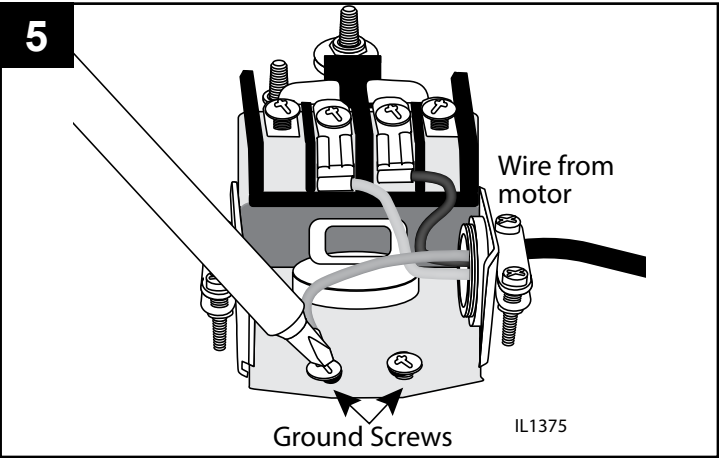
3. Thread the cable from the pump motor through the strain relief into the pressure switch cavity and tighten both screws on the strain relief. Do not crush wire.



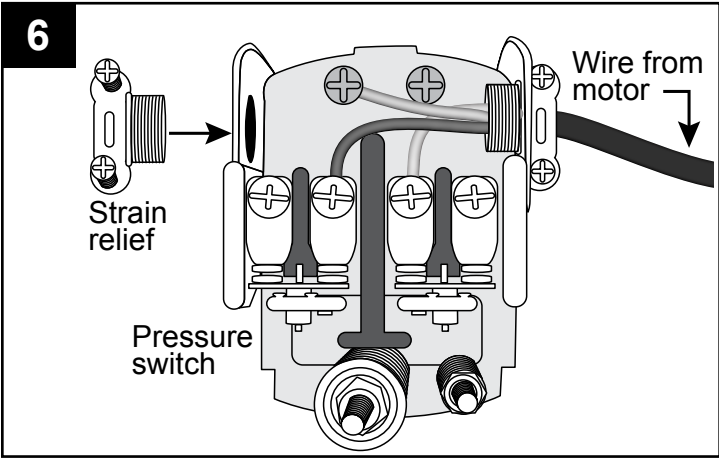
4. Connect the two motor wires of the motor cable to the two inside terminals on the pressure switch.



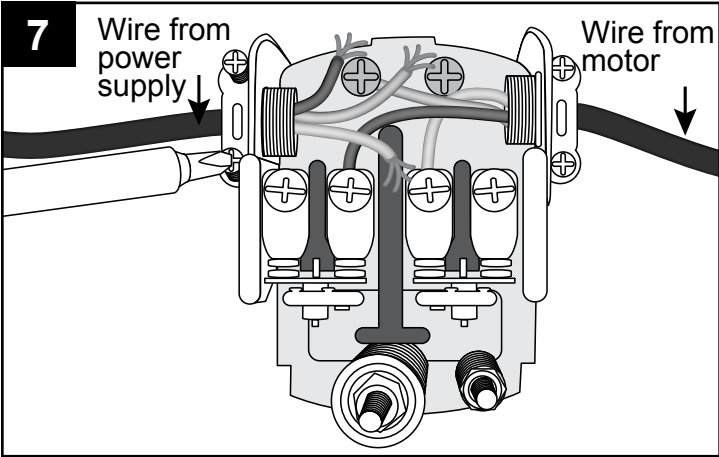
5. Connect the green ground wire from the motor cable to one of the green ground screws at the bottom of the pressure switch.



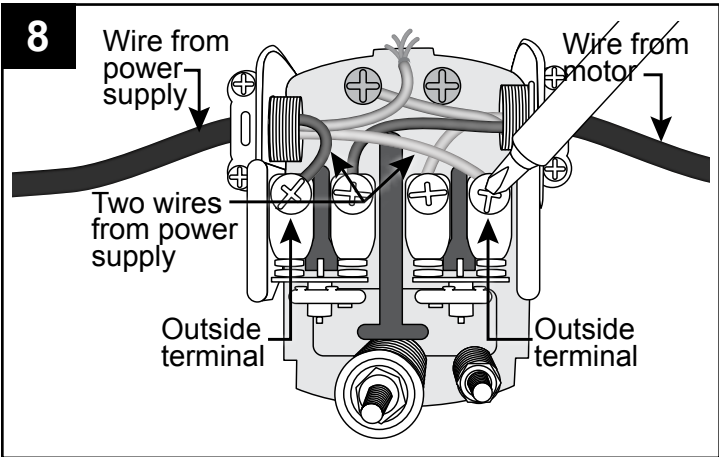
6. Insert an electrical wire strain relief into the opening in the opposite side of the pressure switch.



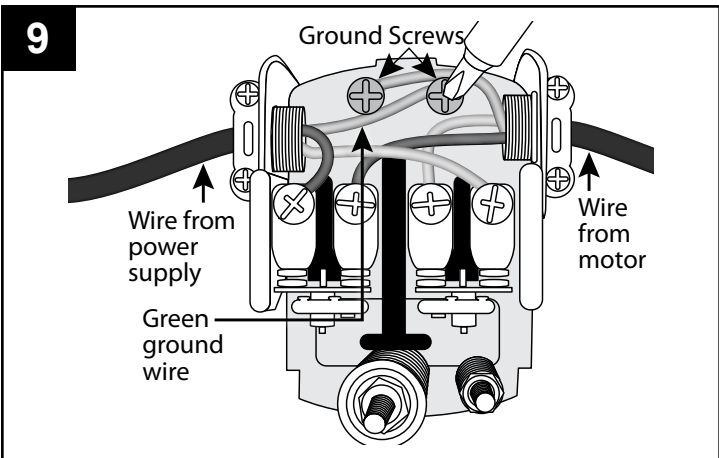
7. Thread the cable from the power supply through the strain relief and tighten both screws on the strain relief. Do not crush wire.



8. Connect the two wires from the power supply to the two outside terminals on the pressure switch.



9. Connect the green ground wire from the power supply to the remaining green ground screw in the pressure switch and re-attach the pressure switch cover.



To change from 115V to 230V

1. The motor of this pump is dual voltage and can run on either 115V or 230V. In general, 230V is more economical to run, and requires a smaller wire size.

NOTE: This pump is pre-wired at the factory to run on 115 V.

2a. For 230V service, change the following wires on the terminal board:

a. Using a pair of needle nose pliers, pull the gray wire with the female flag connector from the “A” terminal spade post. Place it to the right on the “B” terminal spade post.

b. Pull the red wire with the female flag connector from the “L2” terminal. Place it to the left on the “B” terminal spade post.

c. Reinstall the rear motor cover.

NOTE: To change voltage from 230V to 115V, simply reverse instructions above.

1

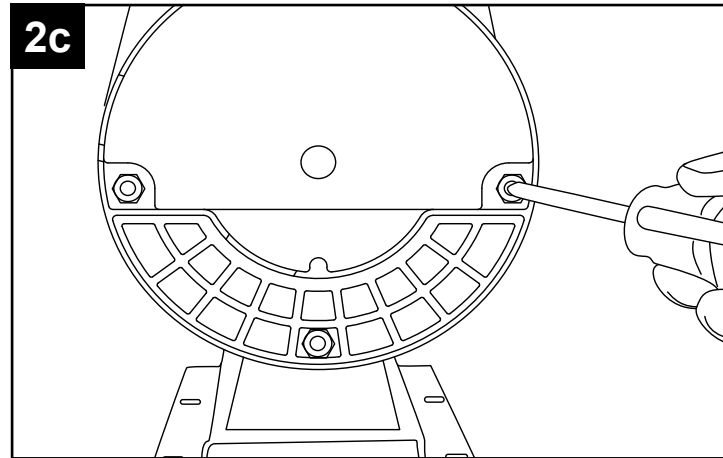
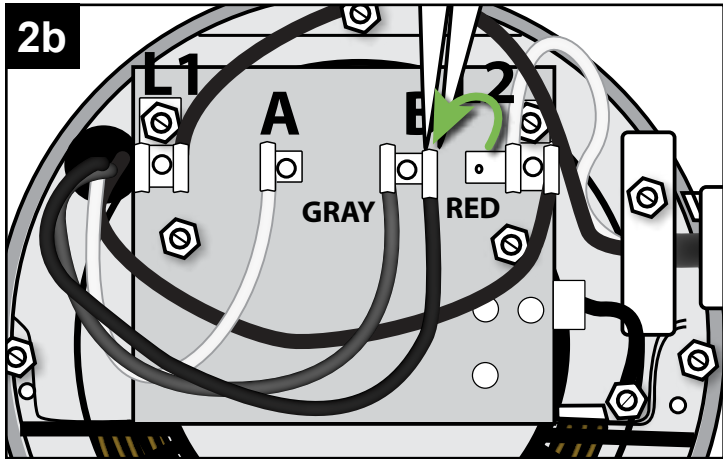
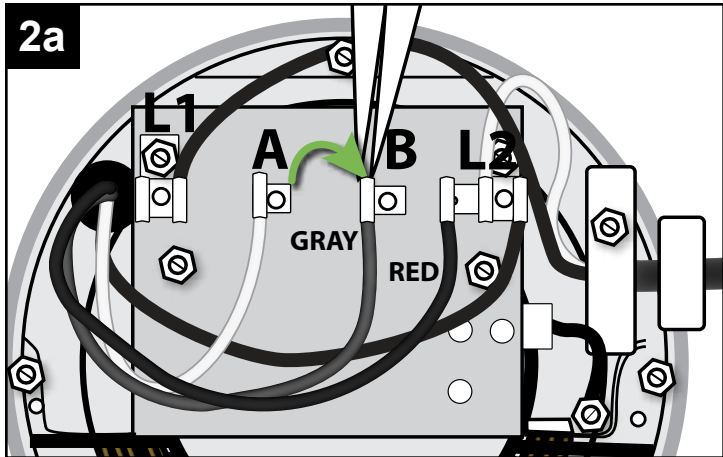
Motor: **98L105**

HP:	1/2	PH	1	Hz	60
Volts	115/230	S.F.	1.2	Amps	6.4/3.2
S.F. Amps:	8.6/4.3	RPM	3450	Type	C
Duty:	Cont.	Temp	65C	KVA Code	G
Frame	56L	Ins Class	B		

Factory prewired for 115V
Check voltage of power source

Thermally protected automatic
Use copper conductors only

ELECTRICAL HAZARD
Improper installation may result in fire, explosion, electrical short or injury. Replace all covers before operating. Ground motor in accordance with local and national electrical codes. Disconnect power source before touching internal parts. Motors equipped with automatic protection may restart without warning. See instruction manual for proper installation procedure.
Se reporter au manuel d'instructions pour suivre la procédure adéquate d'installation.
Consulte el instructivo para conocer el procedimiento de instalación correcto.



PUMP PRIMING & STARTUP

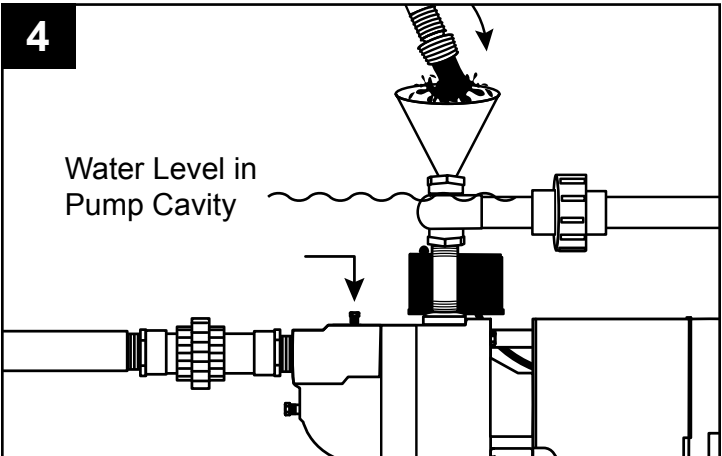
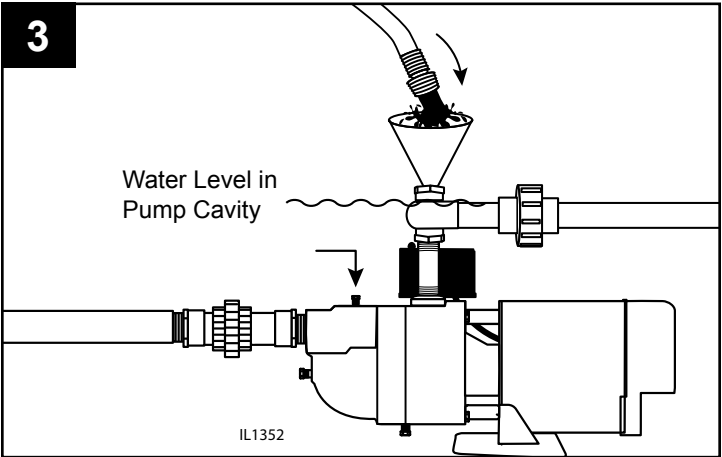
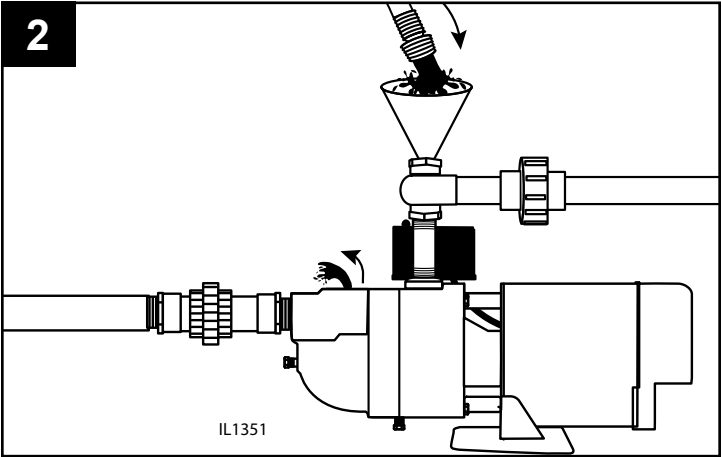
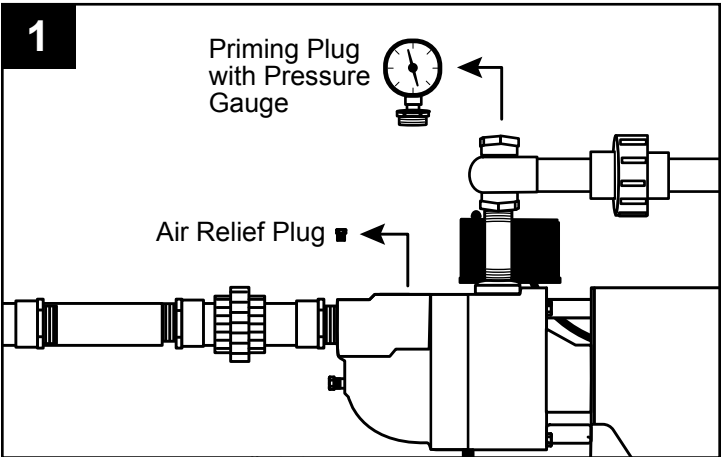
CAUTION: All pumps must be primed (filling the cavity with water) before they are first operated. This may take several gallons of water, as the suction line will be filled in addition to the pump cavity.

1. Remove the priming plug with pressure gauge and air relief plug.

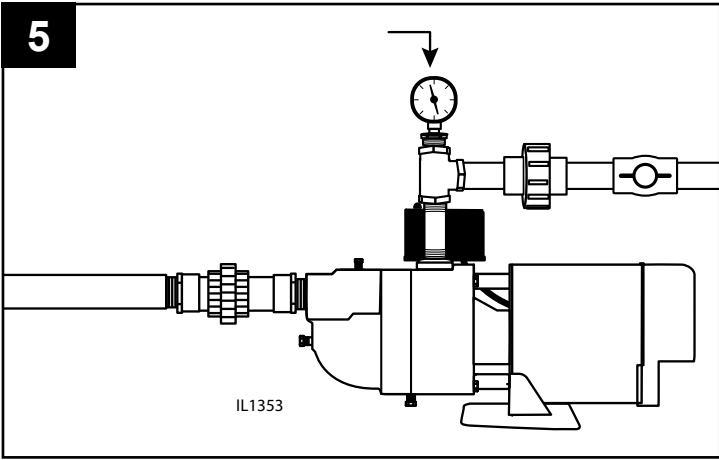
2. Slowly fill pump cavity until water comes out of air relief hole on top of the pump.

3. Replace air relief plug and continue adding water to pump cavity until water reaches the top of the priming plug.

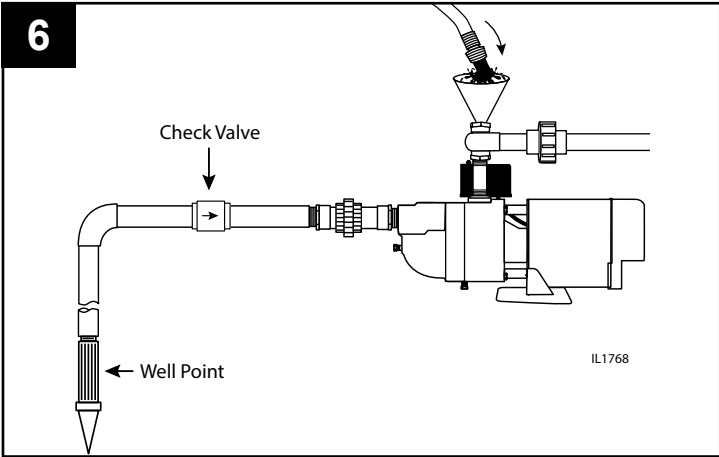
4. Check to be sure water in pump cavity stays constant. If water level goes down, it could indicate a leak in the foot valve, check valve or suction pipe.



5. Thread in priming plug and then open optional ball valve if installed by turning handle to line up with the pipe.

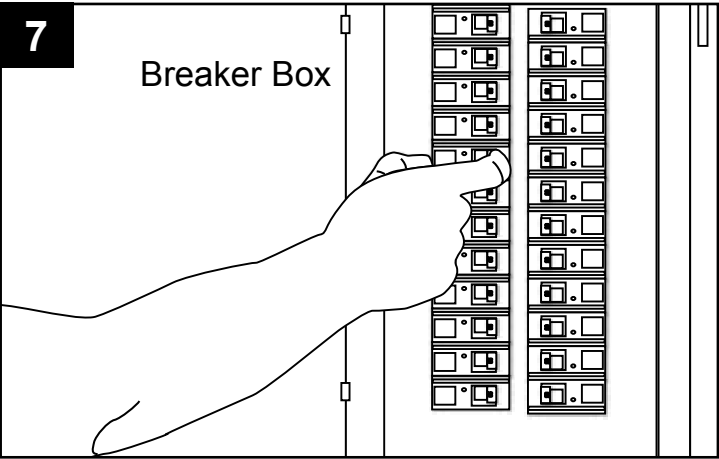


6. PRIMING NOTE: Several priming attempts may be necessary, depending on the length of suction pipe and location of check valve if a well point is being used.



7. Turn on breaker to start pump.

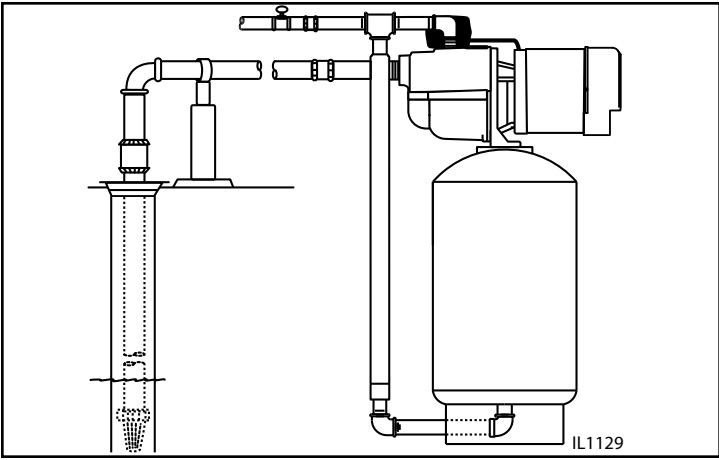
⚠ IMPORTANT: If the pump hums instead of pumping or turns off repeatedly, shut pump off immediately. Check voltage. Make sure your incoming voltage matches the pump wiring voltage. See wiring guide in the instructions.



⚠ IMPORTANT: If the pump fails to prime within five minutes:
Turn power off at the breaker box and check all pipe connections for leaks. All connections must be water and air tight in order for pump to operate.

All piping from the well to the pump should slope slightly upward with no sagging. Support suction pipe between water source and pump. Unions in the suction line near the pump and well will aid in servicing. Be sure to leave enough room so that wrenches can be used easily.

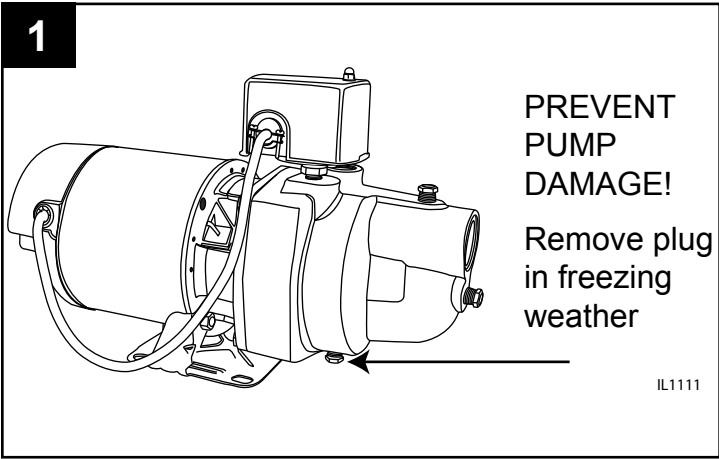
NOTE: Look for leaks or a milky color in the discharged water, which indicates an air leak. Re-prime if necessary, following steps 1 through 6 above. Reset breaker at the breaker box. All connections must be water and air tight in order for pump to operate.



CARE AND MAINTENANCE

Winterizing

⚠ CAUTION: Drain the entire system if there is danger of freezing. A drain plug is provided at the bottom of the pump case for this purpose.

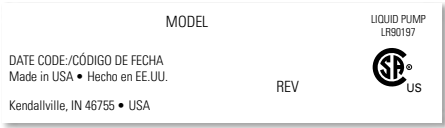


PREVENT PUMP DAMAGE!
Remove plug in freezing weather

QUICK TROUBLE-SHOOTING CHECKLIST

Please review the following troubleshooting questions before returning a pump as defective. If you have any questions, please call Customer Service at (800) 584-8089.

1. Check date code to make sure pump is within warranty period. Date code is the month and the year.
(Example: 0318 is March of 2018. Date Code is found on the top of the pump.)

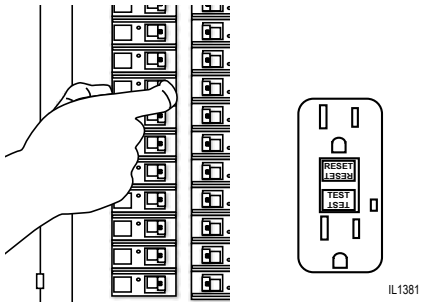


2. Make certain that the power source matches the pump requirements. This pump has a dual voltage motor and can run on 115 V or 230 V. This pump is pre-wired at the factory to run on 115 V.

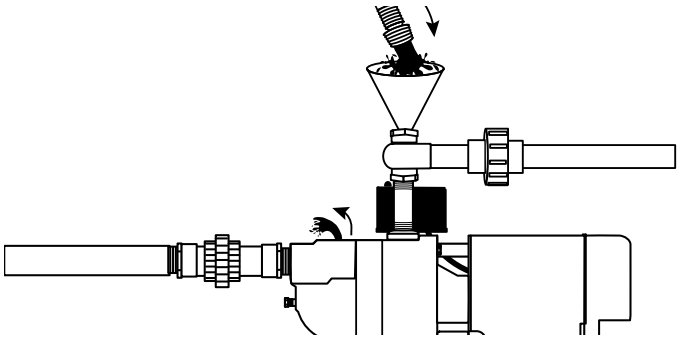
Volts	115/230	S.F.	1.2	Amps	6.4/3.2
S.F. Amps:	8.6/4.3	RPM	3450	Type	C
Duty:	Cont.	Temp	65C	KVA Code	G
Frame	56L	Ins Class	B		
Factory prewired for 115V			Thermally protected automatic		
Check voltage of power source			Use copper conductors only		

ELECTRICAL HAZARD
Improper installation may result in fire, explosion, electrical short or injury. Replace all cov before operating. Ground motor in accordance with local and national electrical codes. Disconnect power source before touching internal parts. Motors equipped with automatic protection may restart without warning.

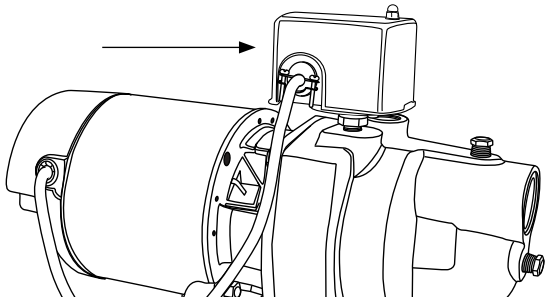
3. If pump does not run, check the GFI or breaker panel switch to make it is in full operation.



4. If the pump runs all the time, make sure the pump has been primed correctly. If pump is not holding the prime, inspect check valve, foot valve, and piping, then re-prime.



5. If the pump runs but won't shut off, check pressure switch.



TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Little or no discharge	1. Casing not initially filled with water	1. Fill pump casing
	2. Suction lift too high, or too long	2. Move pump closer to water source
	3. Hole or air leak in suction line	3. Repair or replace. Use pipe tape and pipe sealing compound
	4. Foot valve too small	4. Match foot valve to piping or install one size larger foot valve.
	5. Foot valve or suction line not submerged deep enough in water	5. Submerge lower in water
	6. Motor wired incorrectly	6. Check wiring diagram
	7. Casing gasket leaking	7. Replace
	8. Suction or discharge line valves closed	8. Open
Pump will not deliver water or develop pressure	1. No priming water in casing	1. Fill pump casing
	2. Leak in suction line	2. Repair or replace
	3. Discharge line is closed and priming air has nowhere to go	3. Open ball valve
	4. Suction line (or valve) is closed	4. Open
	5. Foot valve is leaking	5. Replace foot valve
	6. Suction screen clogged	6. Clean or replace
Loss of suction	1. Air leak in suction line	1. Repair or replace
	2. Suction lift too high	2. Lower suction lift, install foot valve and prime
	3. Insufficient inlet pressure or suction head	3. Increase inlet pressure by adding more water to tank or increasing back pressure
	4. Clogged foot valve or strainer	4. Unclog
Pump vibrates and/or makes excessive noise	1. Mounting plate or foundation not rigid enough	1. Reinforce
	2. Foreign material in pump	2. Disassemble pump and clean
	3. Impeller damaged	3. Replace
	4. Worn motor bearings	4. Replace
Pump will not start or run	1. Improperly wired	1. Check wiring diagram on motor
	2. Blown fuse or open circuit breaker	2. Replace fuse or close circuit breaker
	3. Loose or broken wiring	3. Tighten connections, replace broken wiring
	4. Stone or foreign object lodged in impeller	4. Disassemble pump and remove foreign object
	5. Motor shorted out	5. Replace
	6. Thermal overload has opened circuit	6. Allow unit to cool, restart after reason for overload has been determined

WARRANTY

This product is warranted for two years from the date of purchase. Subject to the conditions hereinafter set forth, the manufacturer will repair or replace to the original consumer any portion of the product which proves defective due to defective materials or workmanship. To obtain warranty service, contact the dealer from whom the product was purchased. The manufacturer retains the sole right and option to determine whether to repair or replace defective equipment, parts, or components. Damage due to conditions beyond the control of the manufacturer is not covered by this warranty.

THIS WARRANTY WILL NOT APPLY: (a) To defects or malfunctions resulting from failure to properly install, operate, or maintain the unit in accordance with printed instructions provided; (b) to failures resulting from abuse, accident, or negligence, or use of inappropriate chemicals or additives in the water; (c) to normal maintenance services and the parts used in connection with such service; (d) to units which are not installed in accordance with normal applicable local codes, ordinances, and good trade practices; and (e) if the unit is used for purposes other than for what it was designed and manufactured.

RETURN OF WARRANTED COMPONENTS: Any item to be repaired or replaced under this warranty must be returned to the manufacturer at Kendallville, Indiana or such other place as the manufacturer may designate, freight prepaid.

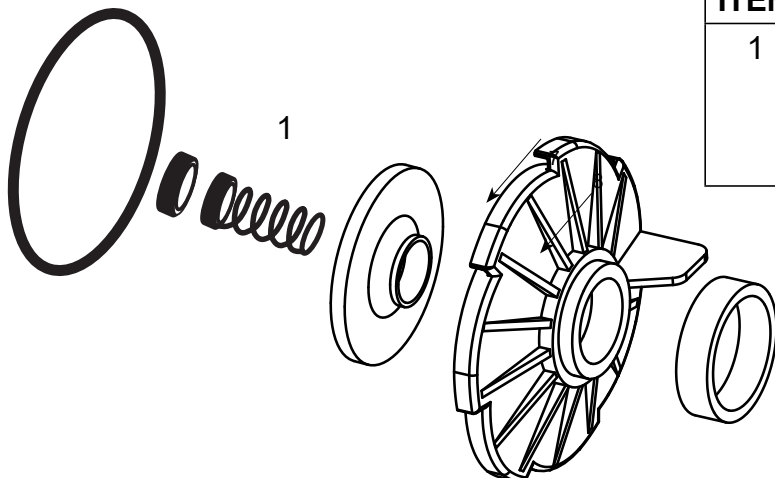
THE WARRANTY PROVIDED HEREIN IS IN LIEU OF ALL OTHER EXPRESS WARRANTIES, AND MAY NOT BE EXTENDED OR MODIFIED BY ANYONE. ANY IMPLIED WARRANTIES SHALL BE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY AND THEREAFTER ALL SUCH IMPLIED WARRANTIES ARE DISCLAIMED AND EXCLUDED. THE MANUFACTURER SHALL NOT, UNDER ANY CIRCUMSTANCES, BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES, SUCH AS, BUT NOT LIMITED TO DAMAGE TO, OR LOSS OF, OTHER PROPERTY OR EQUIPMENT, LOSS OF PROFITS, INCONVENIENCE, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY TYPE OR NATURE. THE LIABILITY OF THE MANUFACTURER SHALL NOT EXCEED THE PRICE OF THE PRODUCT UPON WHICH SUCH LIABILITY IS BASED.

This warranty gives you specific legal rights, and you may have other rights which vary from state to state. Some states do not allow limitations on duration of implied warranties or exclusion of incidental or consequential damages, so the above limitations may not apply to you.

In those instances where damages are incurred as a result of an alleged pump failure, the Homeowner must retain possession of the pump for investigation purposes.

REPAIR PARTS

For replacement parts, call our customer service department at 1-800-584-8089, 7:30 a.m. - 5:00 p.m., EST, Monday - Friday.



ITEM	DESCRIPTION	PART NO.
1	Repair Kit includes impeller, diffuser, rotary seal, quadraseal and diffuser rubber	148141