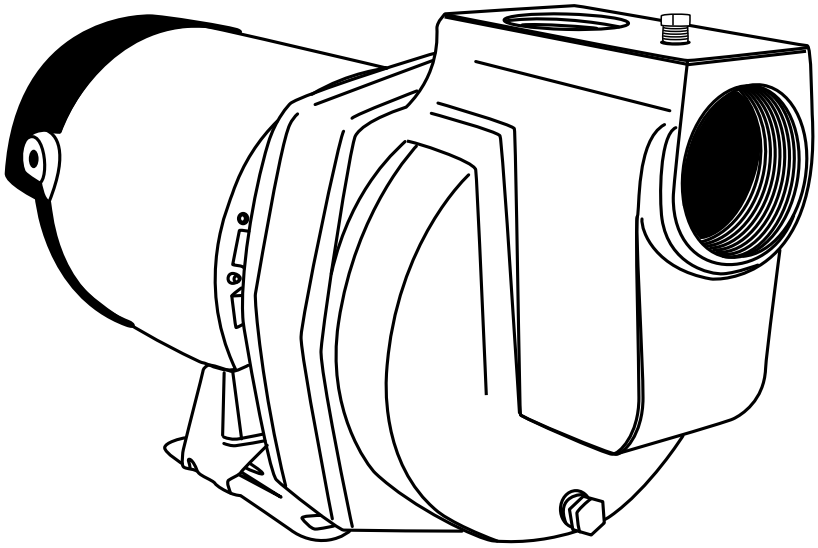
IRRIGATION PUMPS

MODELS #1332-0006, 1333-0006

Español p. 24



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.

024998 B

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.

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.

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.

CHEMICAL ALERT.

Prop65 Warning for California residents:

WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

CAUTION

ELECTRICAL SHOCK MAY OCCUR

Protect the power cable from coming in contact with sharp objects.

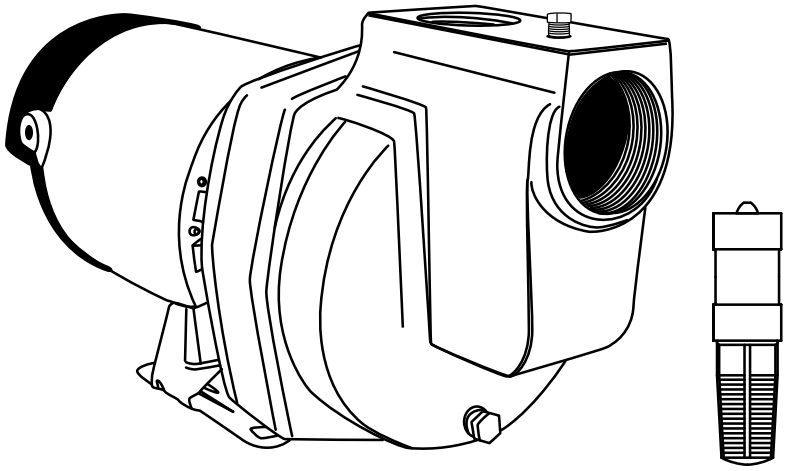
HOT SURFACE MAY CAUSE BURNS

Be careful when touching the exterior of an operating motor - It may be hot enough to be painful or cause injury.

PRODUCT DAMAGE MAY RESULT

Make certain that the power source conforms to the requirements of your equipment.

PACKAGE CONTENTS



Description	Quantity
Pump	1
Foot Valve	1

PREPARATION

Before beginning installation of product, make sure all parts are present. Compare parts with package contents drawing. If any part is missing or damaged, do not attempt to assemble the product. Contact customer service for replacement parts.

Estimated Installation Time: 2 hours.

Tools Required for Assembly (not included): Hacksaw, Pipe Wrenches (2), Wire Strippers, Needle-Nose Pliers, Phillips Screwdriver, Wire Cutters, Adjustable Wrench

Parts Required For Assembly (not included): 2 in. Sched 40 PVC pipe, 1-1/2 in. Sched 40 PVC pipe, 2 in. MPT x 2 in. slip adapter, 1-1/2 in. MPT x 1-1/2 in. slip adapter, 1-1/2 in. pipe tee, 1-1/2 in. slip x 1-1/4 in. FPT reducer bushing, 1-1/4 in. MPT plug, 2 in. 90º pipe elbow, 1-1/2 in. 90º pipe elbow, thread tape, 1/4 in. electric wire strain relief, 2-step PVC glue system (primer and sealer), and thread paste.

Optional Parts For Assembly (not included):

1. **Priming Plug with Pressure Gauge:** Used instead of a priming plug alone. Helps determine if the pump is primed, indicates if the pump is operating properly and what kind of pressure is in the system when operating.
   (1) 1-1/4 in. MPT x 1/2 in. FPT reducer bushing
   (1) 1/2 in. MPT x 1/4 in. FPT reducer bushing
   (1) 100 PSI pressure gauge
2. **Unions:** Used for easy removal of the pump from the sprinkler system.
   (2) 2 in. union
   (1) 1-1/2 in. union
3. **(1) 1-1/2 in. Ball Valve:** Prevents back flow of water from the sprinkler system when the pump is removed from the system.
4. **1-1/2 in. Couplers:** Quantity determined by the total length of pipe used.
5. **2 in. Couplers:** Quantity determined by the total length of pipe used.

GENERAL PUMP INFORMATION

Typical Pump Setup
Typical setups for lawn sprinkler pump systems include ground water wells (**Fig. 1**) or surface water, such as lakes, ponds, or streams. (**Fig. 3**)

Location
For best performance, the pump must be located as close to the water source as possible and protected from the elements.

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

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

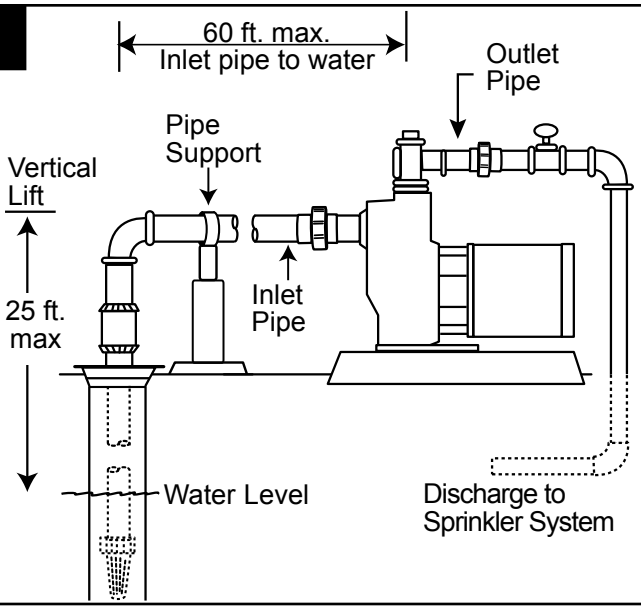
Water Supply
The water source must be able to supply enough water to satisfy the capacity of the pump and water needs. See performance chart in section: SPECIFICATIONS.

⚠ **WARNING:** NEVER run pump against a closed discharge. Doing so can boil water inside pump causing hazardous pressure in unit, risk of explosion and possibly scald persons handling pump. (**Fig. 2**)

Vertical Lift
Vertical lift is the vertical distance from the lowest level of the water to the pump intake. The pump will move water as long as the pump is within 25 vertical feet of the water source.

Horizontal Distance
The horizontal distance is the horizontal measurement between the pump inlet and the water source. This distance may affect the ability of the pump to operate. If it is over 60 feet, call customer service at 1-800-584-8089.

1



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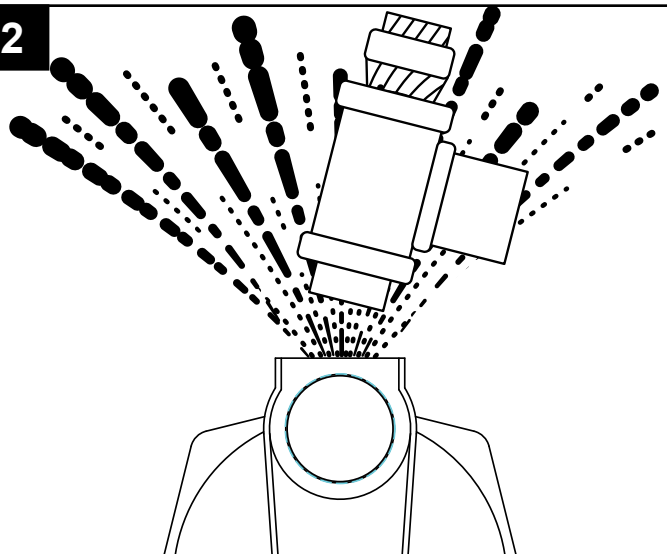

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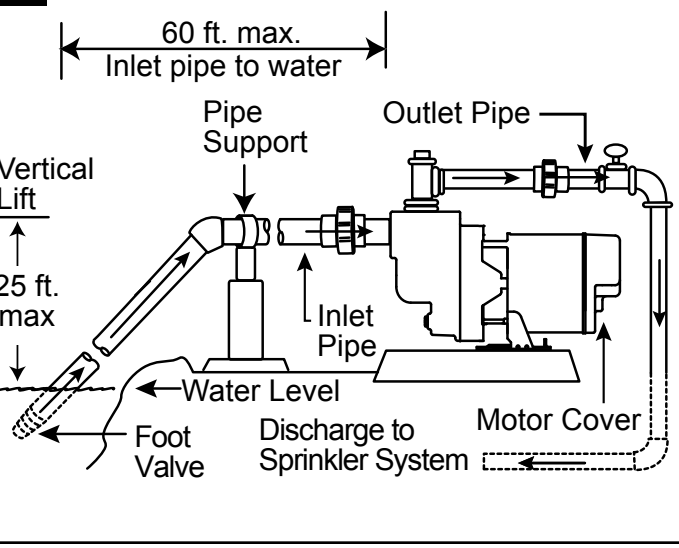


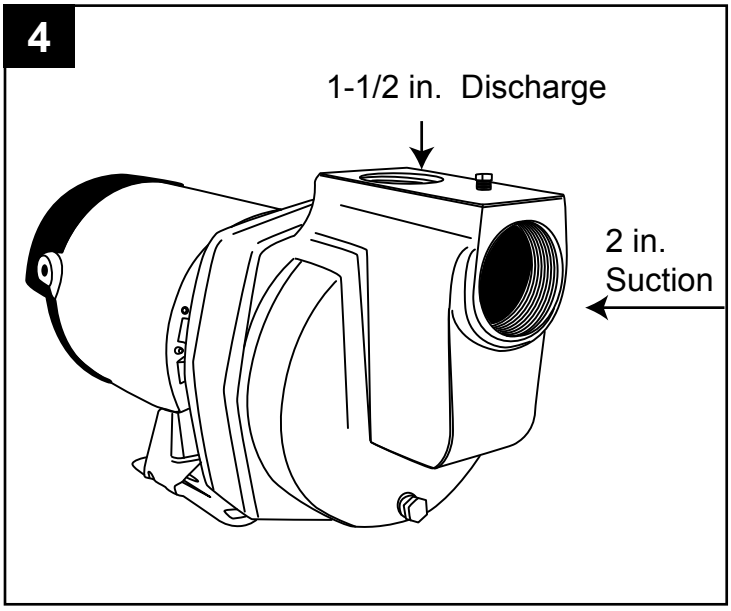
Pipe And Fittings

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 breaker box to the pump motor, and the horsepower rating of the motor. See the wire chart in **PUMP ELECTRICAL INSTRUCTIONS** for proper wire size.



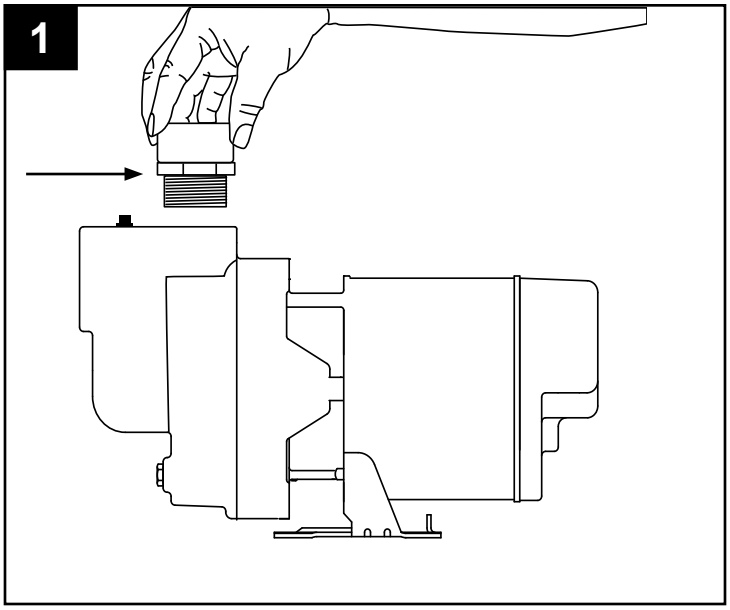
PUMP PREPARATION FOR WELL AND SURFACE WATER

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

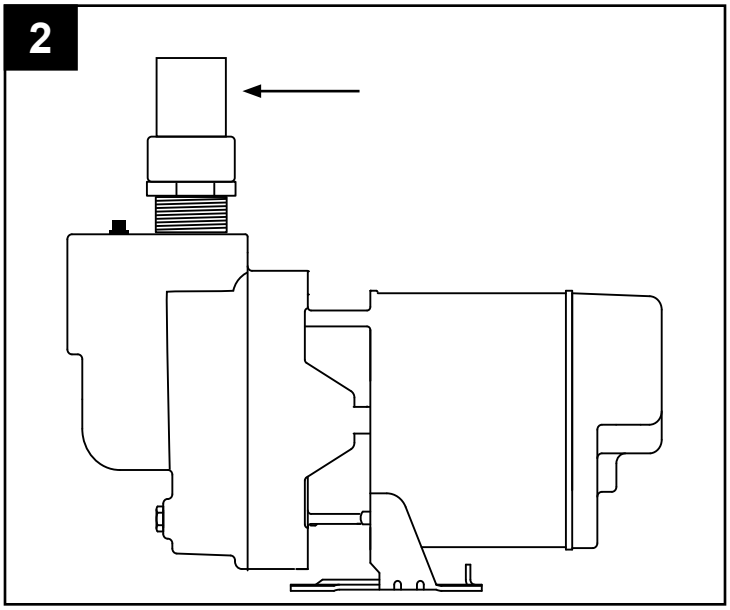
⚠ **CAUTION:** Follow all proper gluing procedures as specified by the glue manufacturer. Always glue in a vertical direction whenever possible to prevent glue from dripping inside pipe or fittings.

⚠ **CAUTION:** Use thread tape and a thread paste compound on all male threads except for the unions. Tighten securely with a wrench and add another 1/4 turn to ensure proper seal.

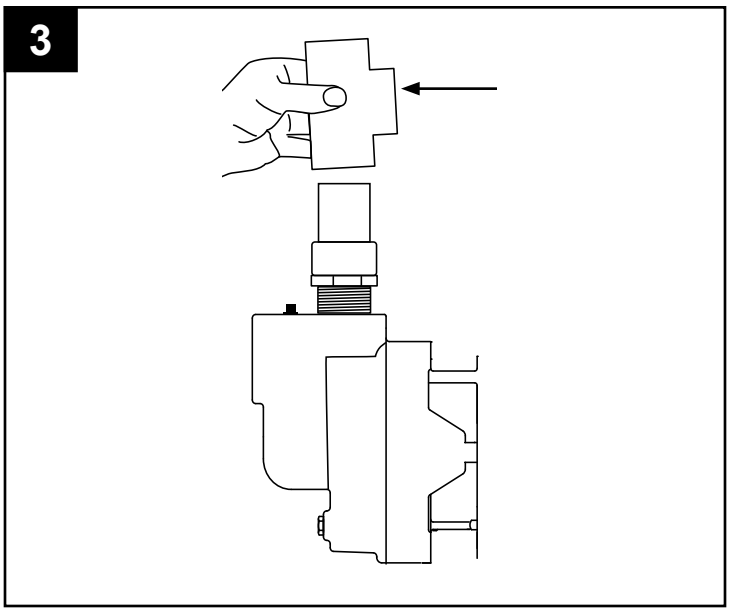
1. Thread 1-1/2 in. MPT x 1-1/2 in. slip adapter (not included) into the outlet port located at the top of the pump.



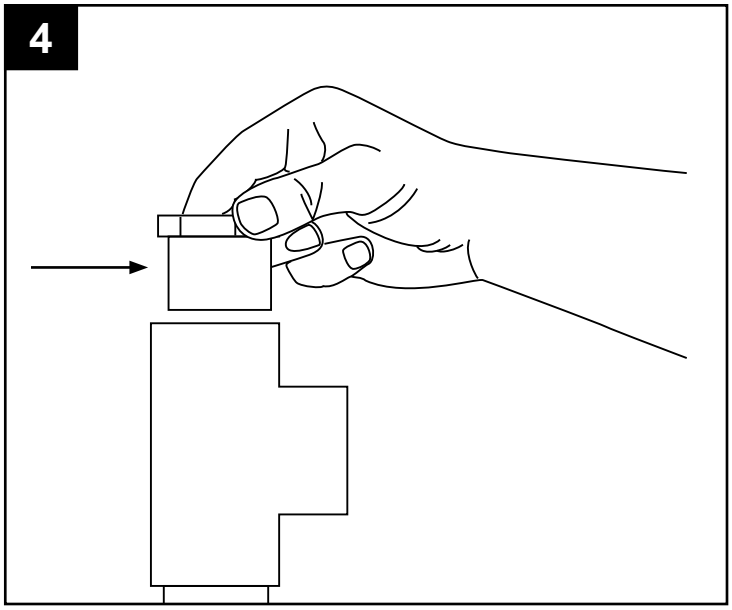
2. Glue a 6 in. piece of 1-1/2 in. pipe (not included) into the adapter.



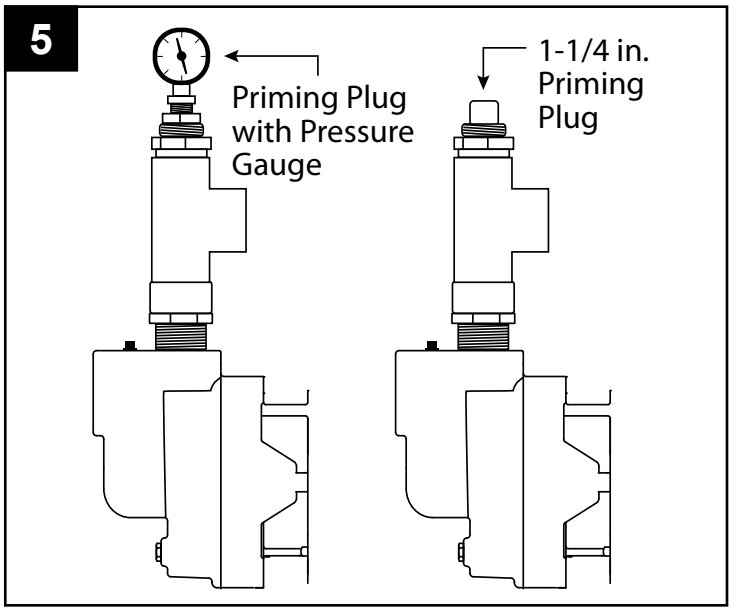
3. Glue a 1-1/2 in. tee (not included) to the pipe.



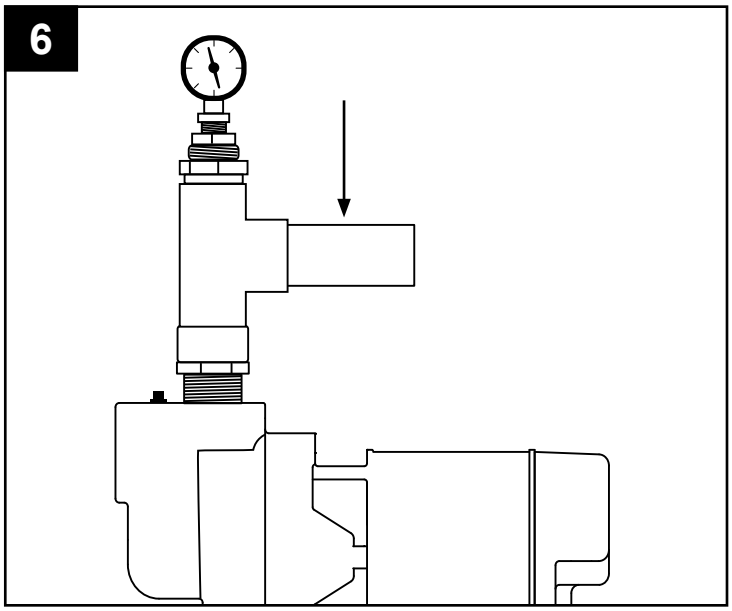
4. Glue a 1-1/2 in. slip x 1-1/4 in. adapter (not included) to the top opening of the 1-1/2 in. tee.



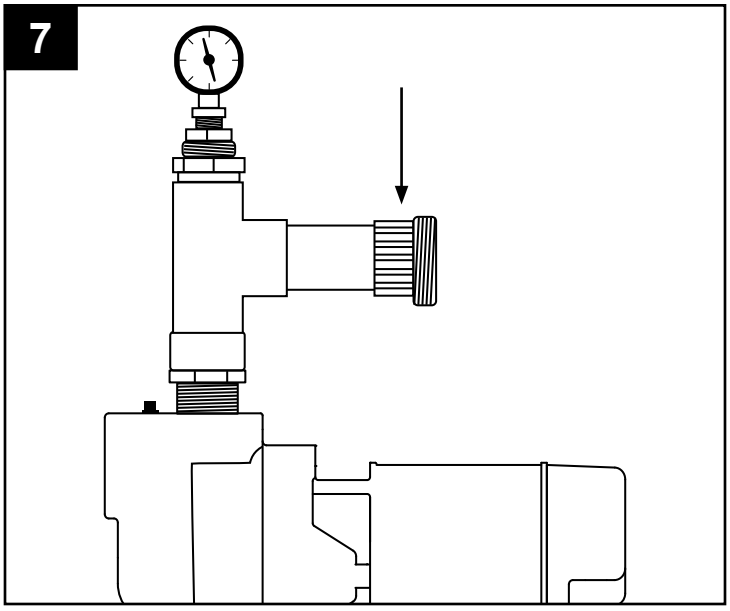
5. Thread in a 1-1/4 in. priming plug or optional priming plug with pressure gauge (neither included).
   NOTE: Hand tighten only, as this will be removed for priming.



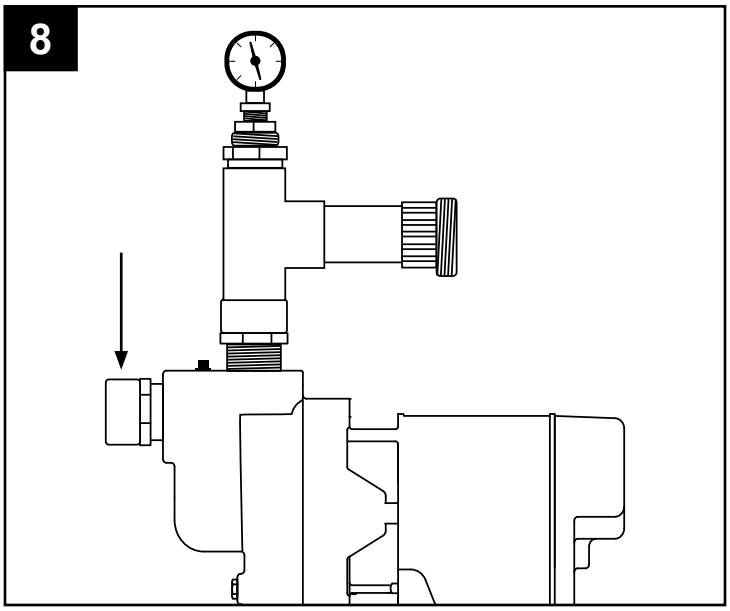
6. Glue another 6 in. section of 1-1/2 in. pipe (not included) into the opening in the 1-1/2 in. tee.



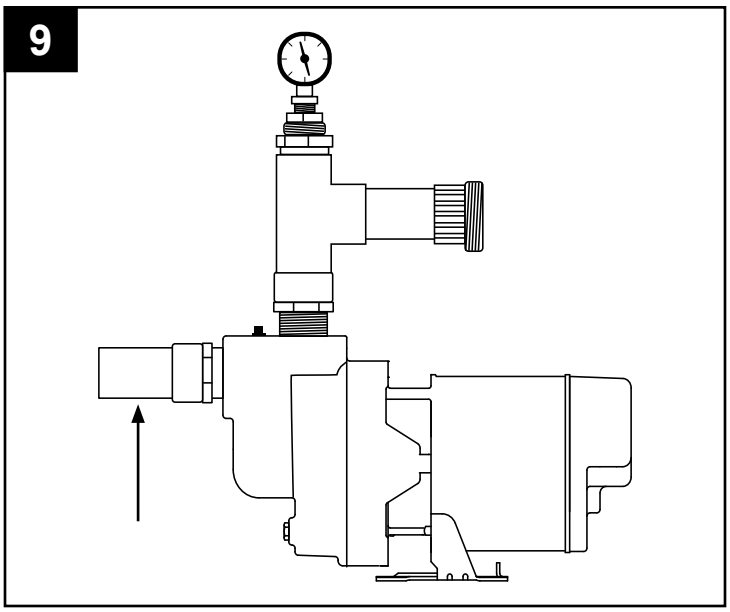
7. Glue the male thread side of a 1-1/2 in. union (not included) to the pipe.



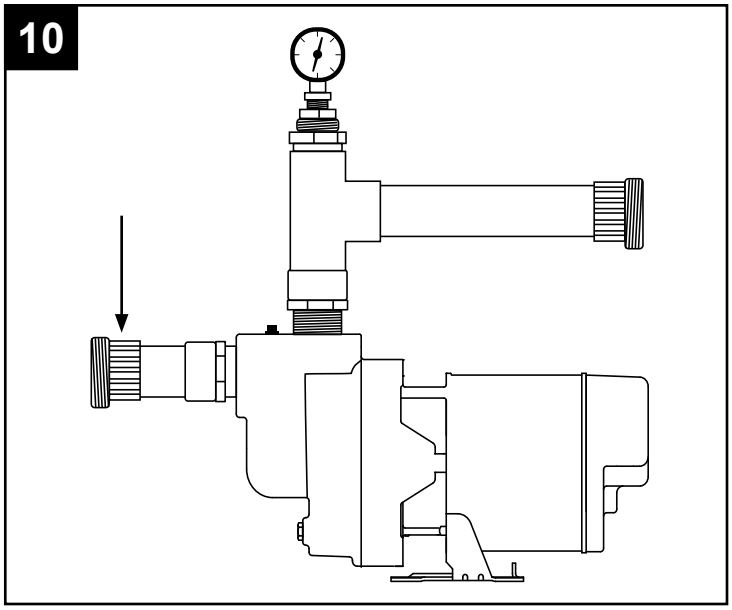
8. Thread 2 in. MPT x 2 in. slip adapter (not included) into the inlet port located on the front of the pump body.



9. Glue an 8 in. section of 2 in. pipe (not included) into the 2 in. adapter.

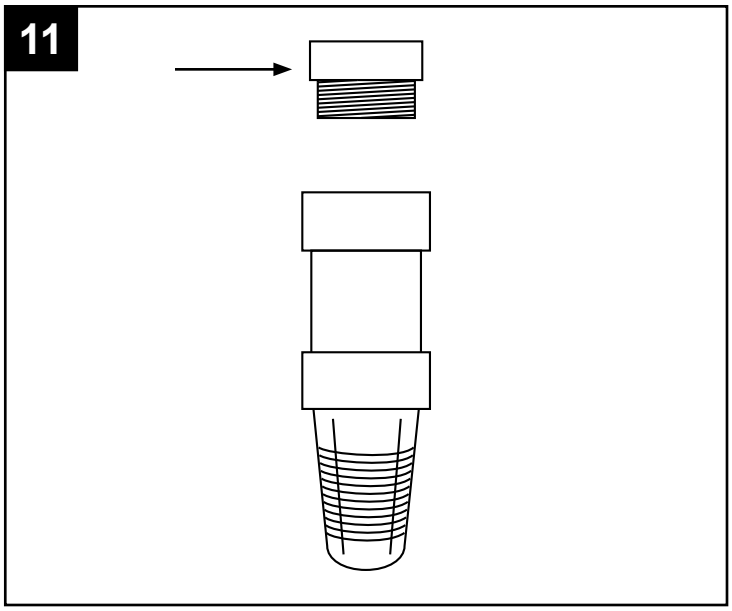


10. Glue one side of a 2 in. union (not included) to the pipe.

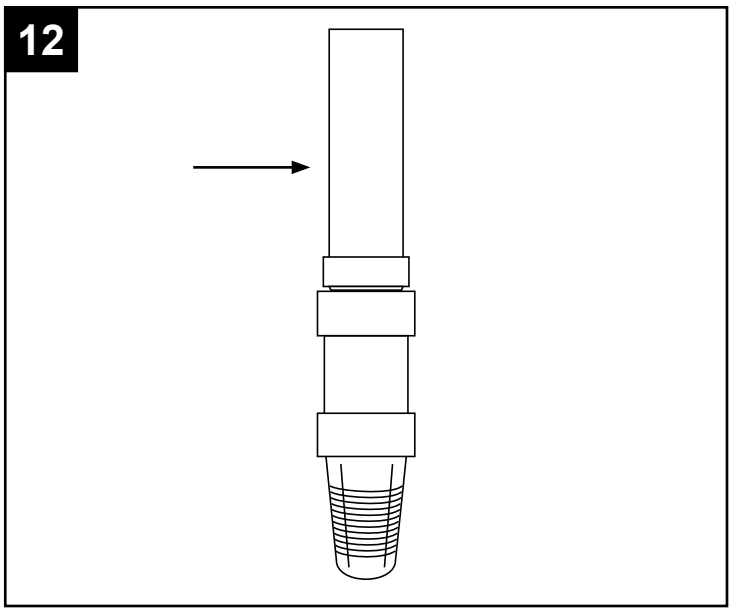


For Well Installations

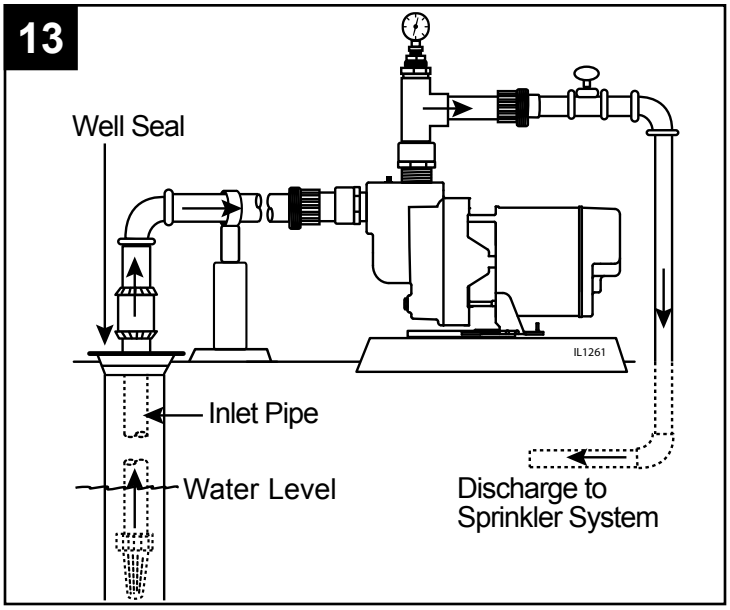
11. Thread a 2 in. MPT x 2 in. slip adapter (not included) into the foot valve.



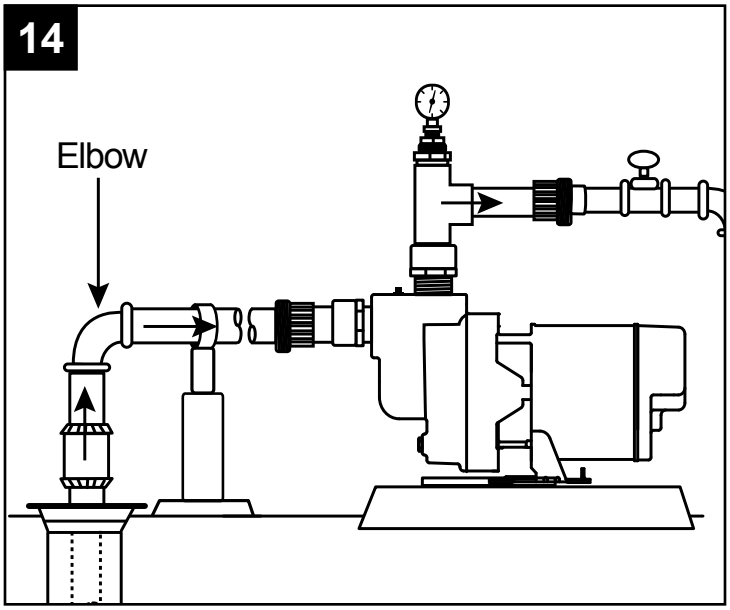
12. Glue 2 in. pipe (not included) into the adapter. Glue enough sections of pipe together using 2 in. couplers (not included) in order for the foot valve to be completely submerged in water. Be sure inlet pipe will remain fully submerged at the lowest expected level of the water source.



13. Install well seal (not included) in order to hold the inlet pipe in position in the well.



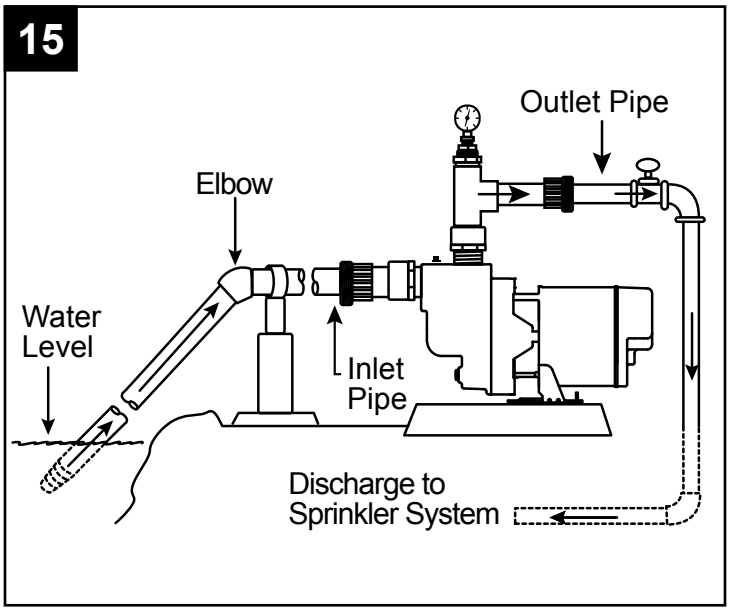
14. Glue a 90º elbow (not included) when the inlet pipe is in line with the inlet port of the pump.



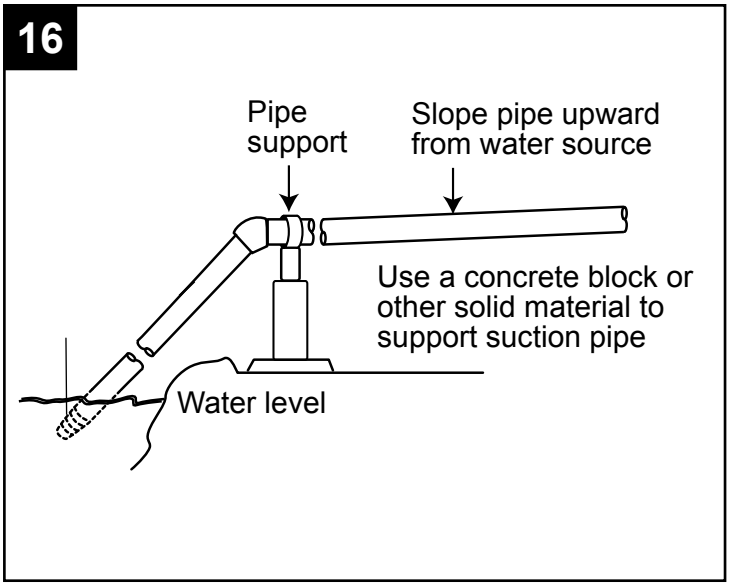
<u>For Surface Water Installations</u>

For surface water installations, follow steps 11 and 12 above and then:

15. Glue a 45º elbow (not included) when the inlet pipe is in line with the inlet port of the pump.



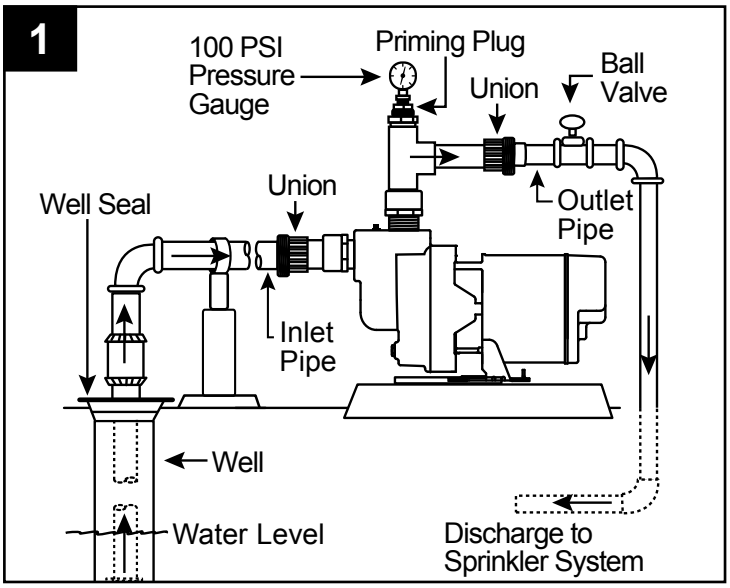
16. Support inlet pipe with pipe support (not included).



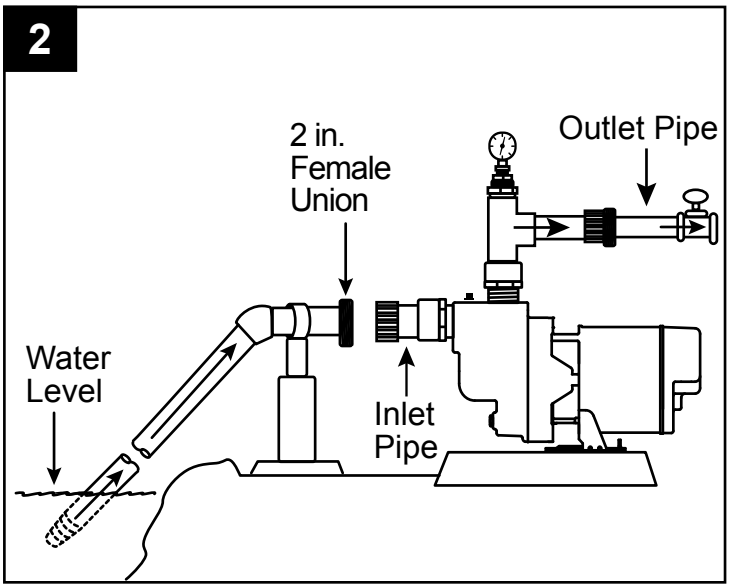
PUMP INSTALLATION FOR WELL AND SURFACE WATER

1. Mount pump on a solid foundation as close to the water source as possible.

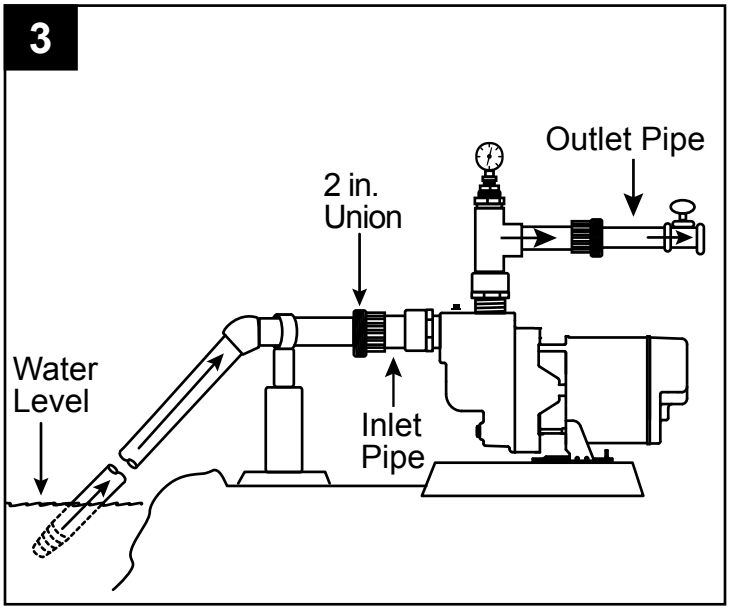
   CAUTION: Support the 2 in. inlet pipe from the well or lake to the inlet port to prevent sagging. Sagging will create air pockets within the pipe that will prevent the pump from priming and operating correctly.



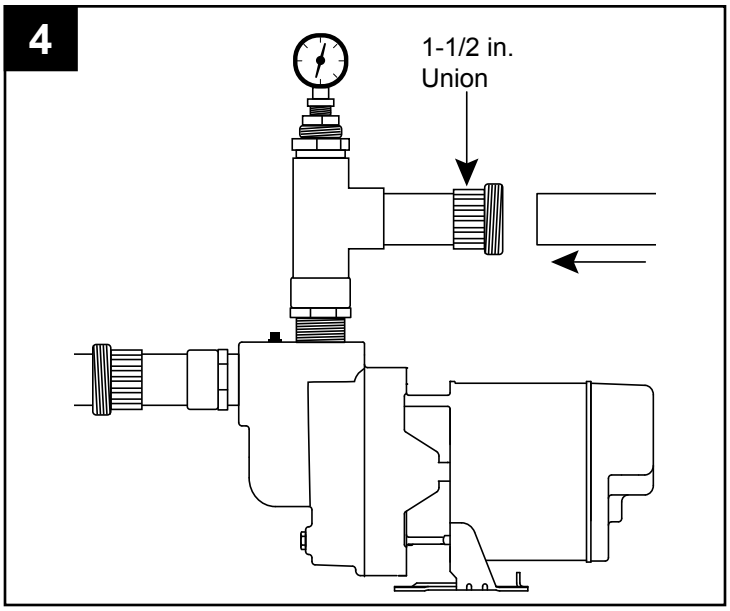
2. Glue female 2 in. union (not included) to the end of inlet pipe leading from the water source.



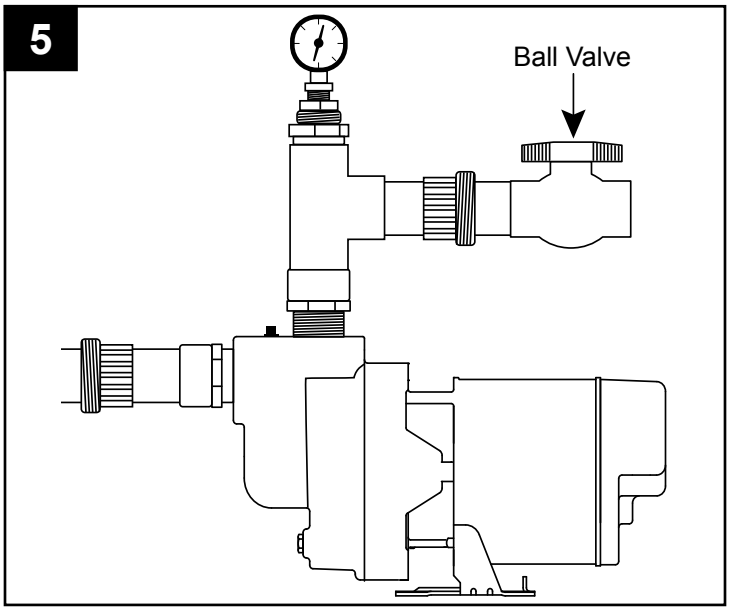
3. Connect the 2 in. union together to complete the inlet line to the pump.



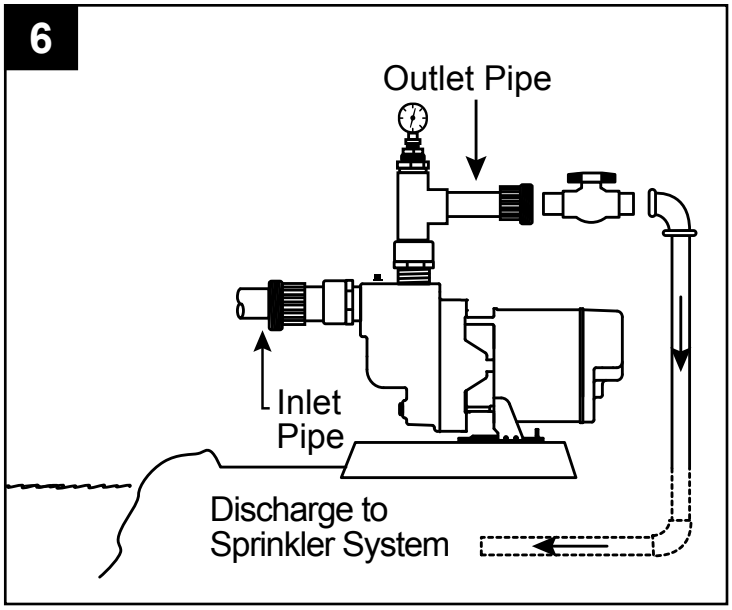
4. Glue a 6 in. piece of 1-1/2 in. pipe (not included) to the female portion of the 1-1/2 in. union.



5. Glue 1-1/2 in. ball valve (not included) to the other end of the 6 in. piece of pipe.

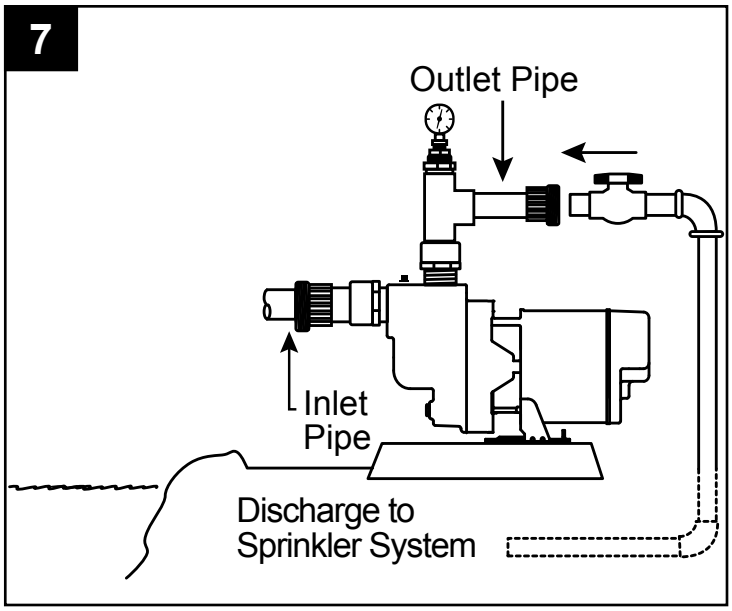


6. Connect the 1-1/2 in. outlet pipe to the sprinkler system (not included) by gluing in additional sections of pipe (not included) as needed.



7. Connect union to ensure proper fit. Do not tighten until after priming.

⚠ **CAUTION:** Do not glue union together.



PUMP ELECTRICAL INSTRUCTIONS

⚠ WARNING

ELECTRICAL SHOCK ALERT.
Under-size wiring can cause motor failure and even fire. Use proper wire size specified in the wire size chart below.
ELECTRICAL SHOCK ALERT.
Replace damaged or worn wiring cord immediately.
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.
The pump must be properly grounded using the proper wire cable with ground.
ELECTRICAL SHOCK ALERT.
Always disconnect pump from electricity before performing any work on the motor.

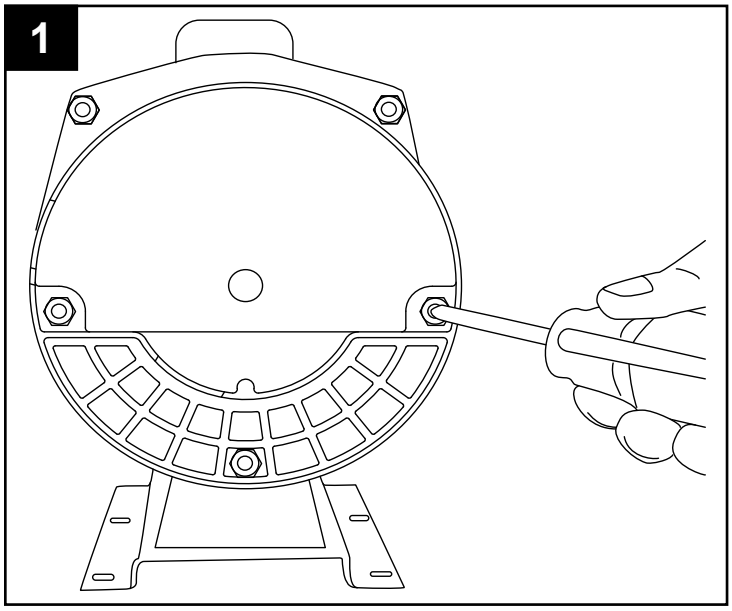
CAUTION

ELECTRICAL SHOCK MAY OCCUR
All wiring should be performed by a qualified electrician in accordance with the National Electric Code and local electric codes.
ELECTRICAL SHOCK MAY OCCUR
Connect the pump to a separate electrical circuit with a dedicated circuit breaker. Reference the wire size chart below for proper fuse size.
ELECTRICAL SHOCK MAY OCCUR
Protect the power cable from coming in contact with sharp objects.
PRODUCT DAMAGE MAY RESULT
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 wired from the factory to run on 230 volts; refer to page 16 if you want to change the pump to run on 115 volts.

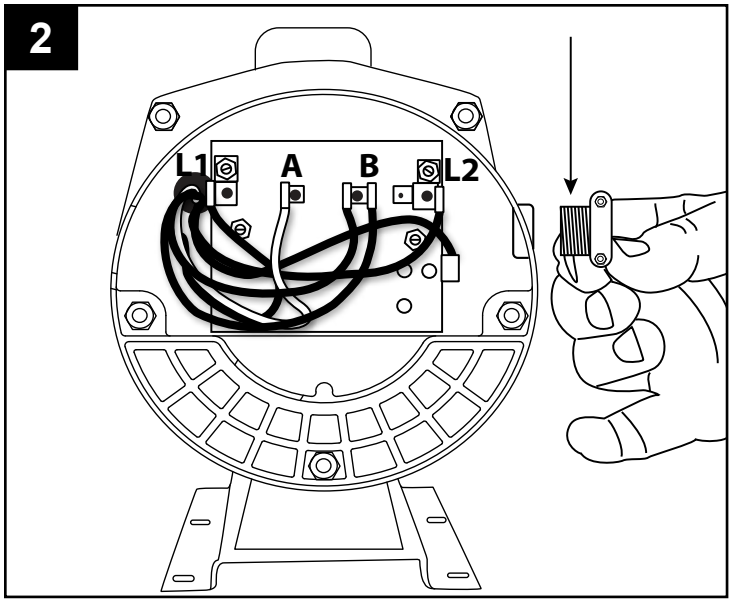
Wire Size Chart				
Distance From Motor To Fuse Box, Meter or Electrical Outlet	Minimum Copper Wire Size Chart (Gauge)			
	Single Phase Motors			
	1-1/2 HP		2 HP	
	115 Volt	230 Volt	115 Volt	230 Volt
0-50 Ft.	12	14	12	14
50-100 Ft.	10	14	10	14
100-150 Ft.	8	12	8	12
150-200 Ft.	*	12	*	10
200-300 Ft.	*	10	*	10
Fuse Size (Amps)	20	15	20	15
(*) Not economical to run in 115 V; use 230 V				

NOTE: This pump can be used with a variety of controls, including a pump start relay, pressure switch with tank, and indexing valve. See control manufacturer's instructions for details.

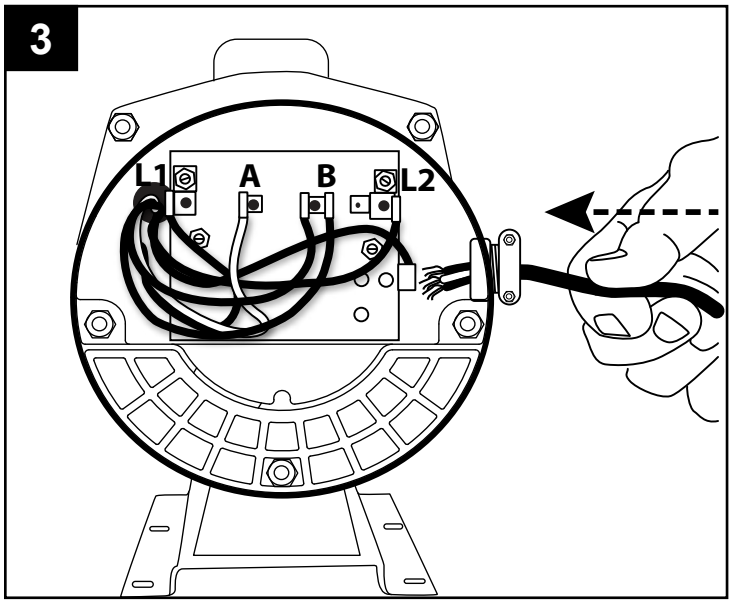
1. Remove rear motor cover on pump by unscrewing the two screws.



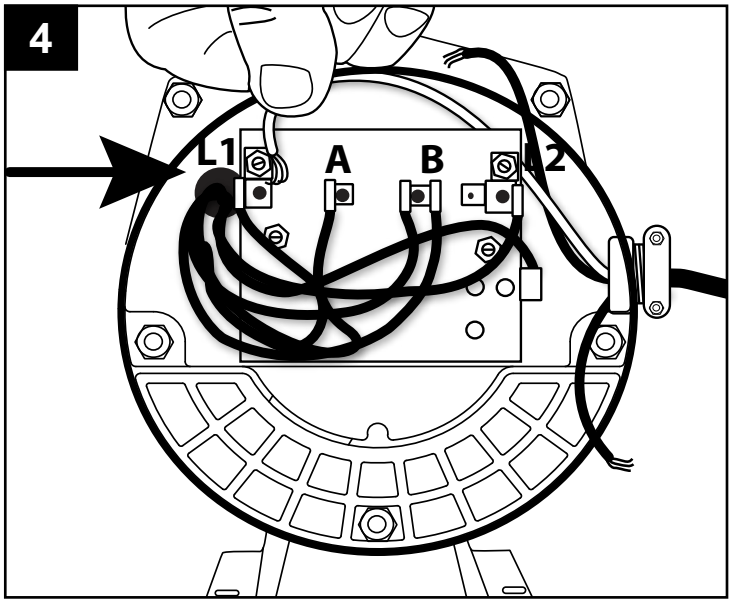
2. Thread electric wire strain relief (not included) into wire opening on the side of the motor of pump.



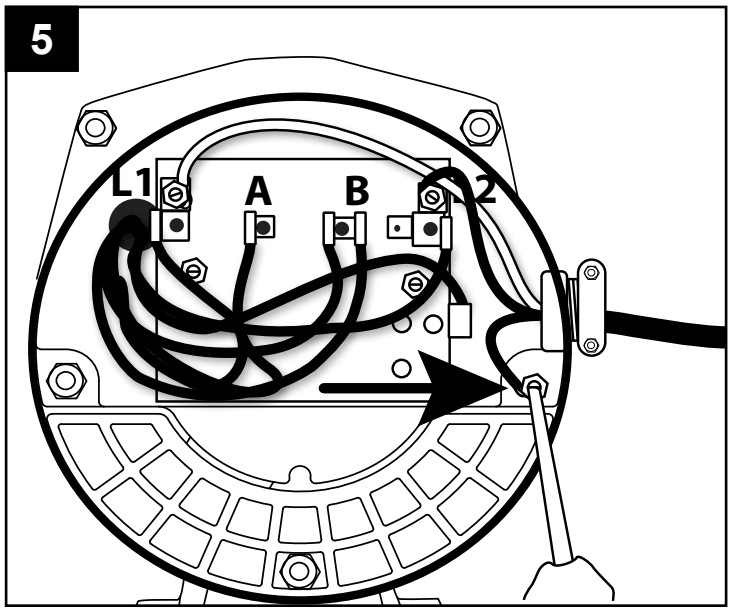
3. Insert wire through electric wire strain relief and tighten screws.



4. Connect white power lead to L1 and black power lead to L2.

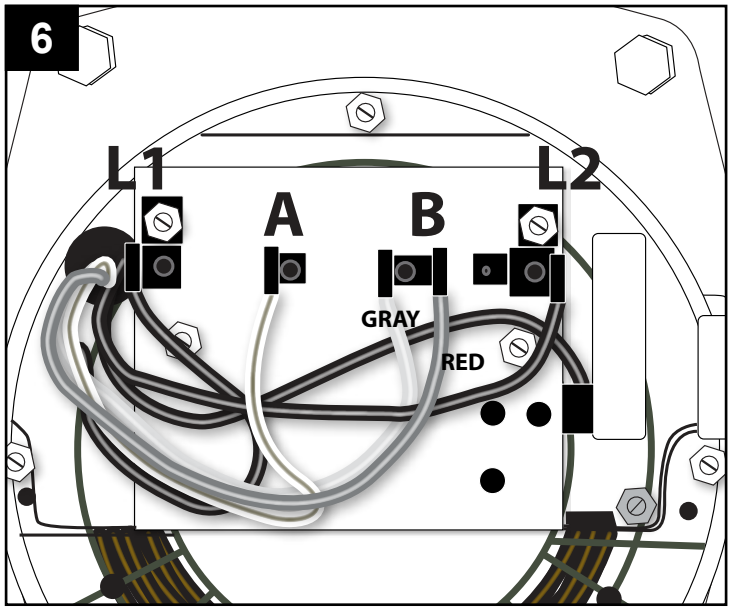


5. Connect green ground wire to green grounding screw. Re-install rear motor cover to pump.

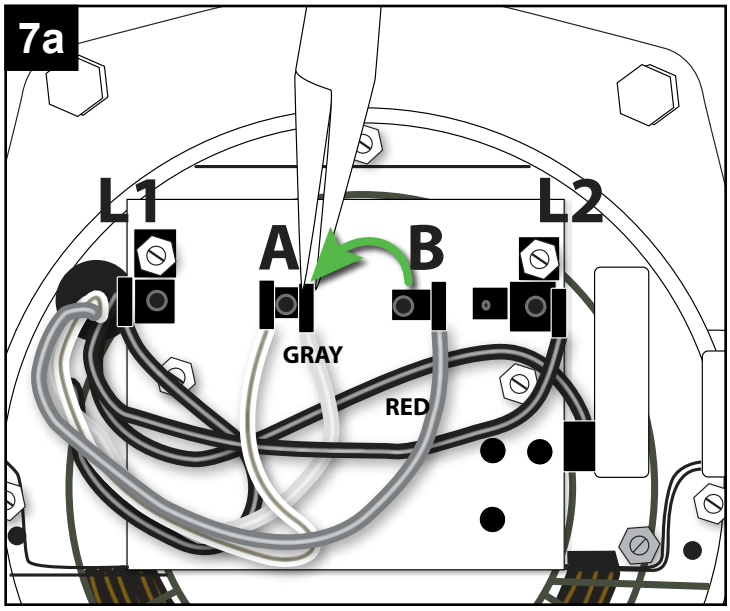


<u>To change from 230 V to 115 V</u>

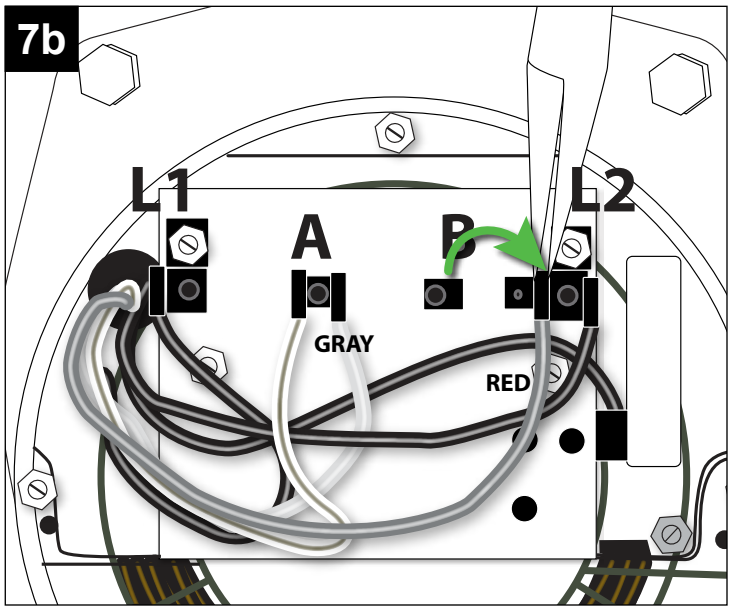
6. The motor of pump is dual voltage and can run on either 115 volts or 230 volts. In general, 230 volts is more economical to run, and requires a smaller wire size. The pump is pre-set in the factory to run at 230 volts.



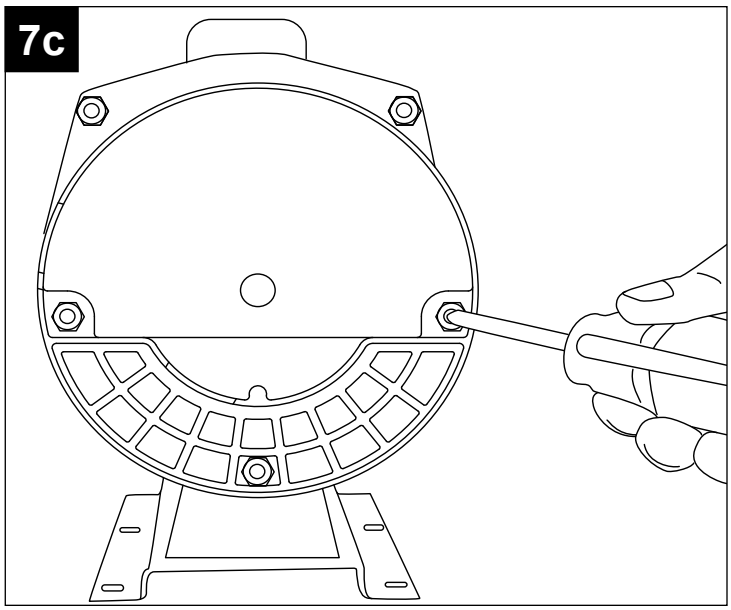
7. For 115 volts service, change the following wires on the terminal board:
   a. Using a pair of needle nose pliers, pull the gray wire with the female flag connector from the “B” terminal spade post. Place it to the left on the “A” terminal spade post.



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



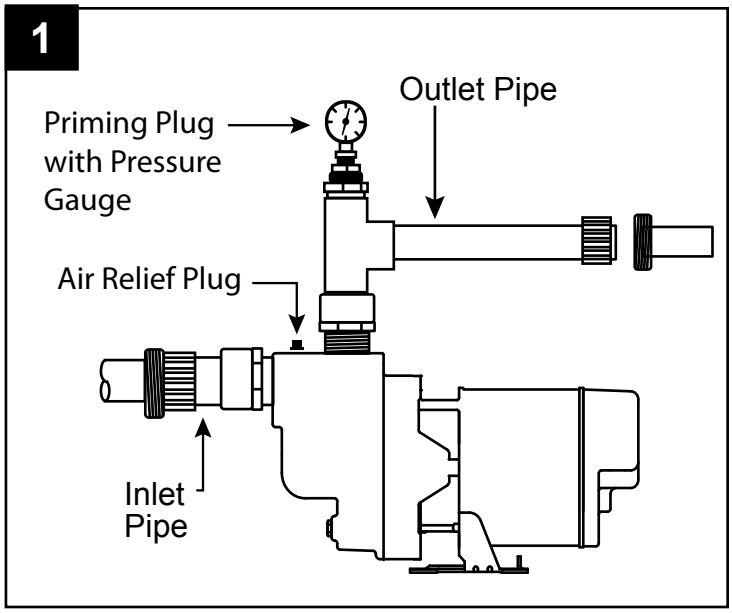
   c. Reinstall the rear motor cover.



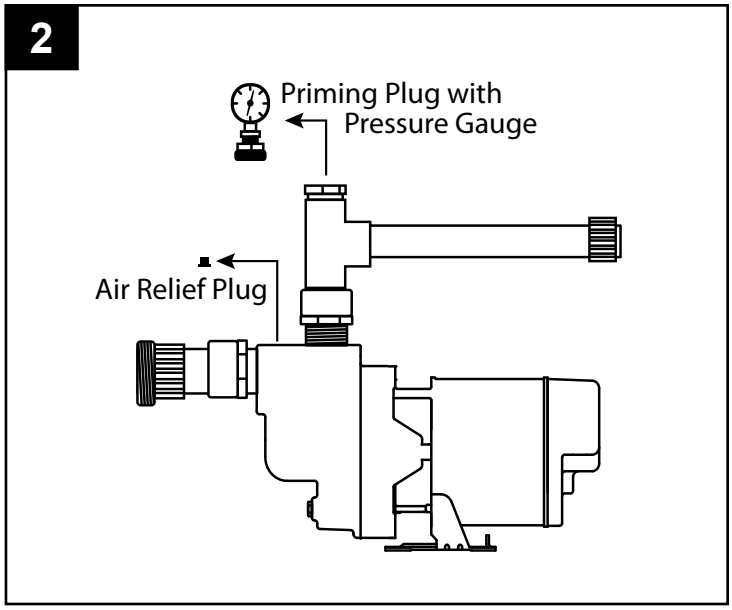
PUMP PRIMING AND STARTUP

CAUTION: All pumps must be primed by filling the pump cavity with water before they are first operated. This may take several gallons of water, as the entire inlet line will be filled in addition to the pump cavity. The longer the inlet line, the more water is required for priming.

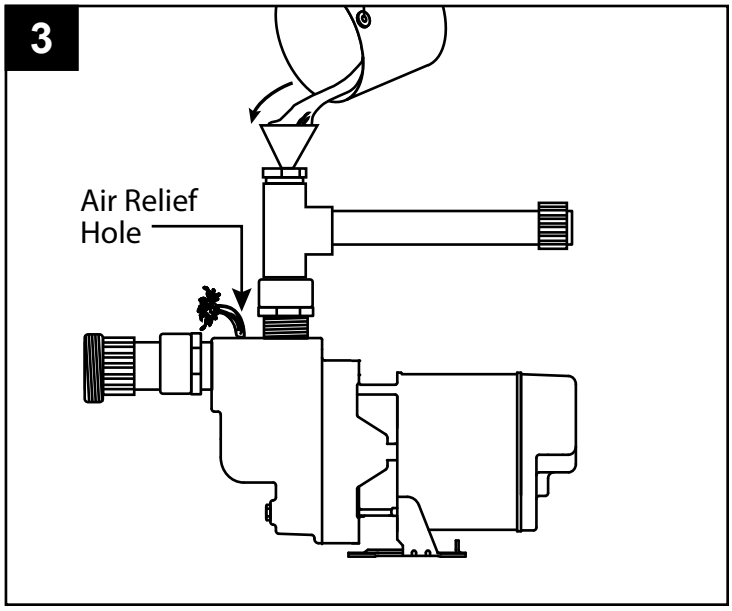
1. Disconnect the 1-1/2 in. outlet union and separate the pipe.



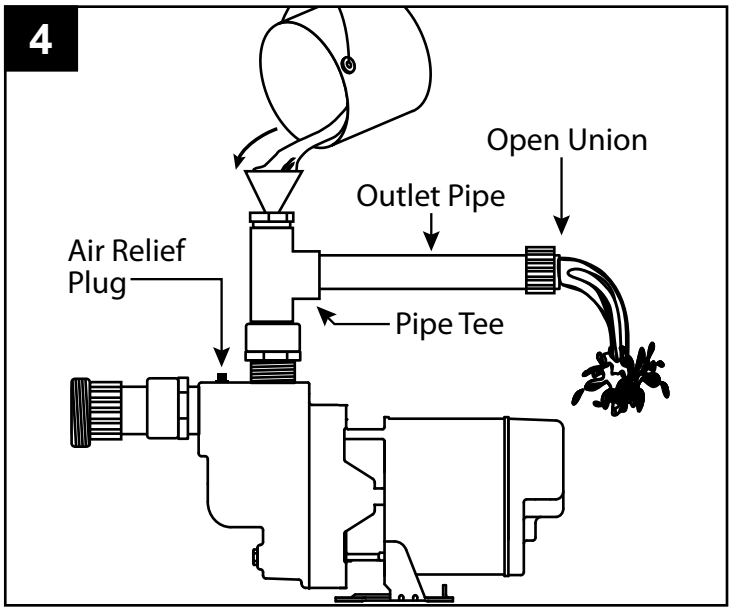
2. Remove the air relief plug on top of pump and the 1-1/4 in. priming plug with pressure gauge or plug. Refer to Pump Preparation Step 5.



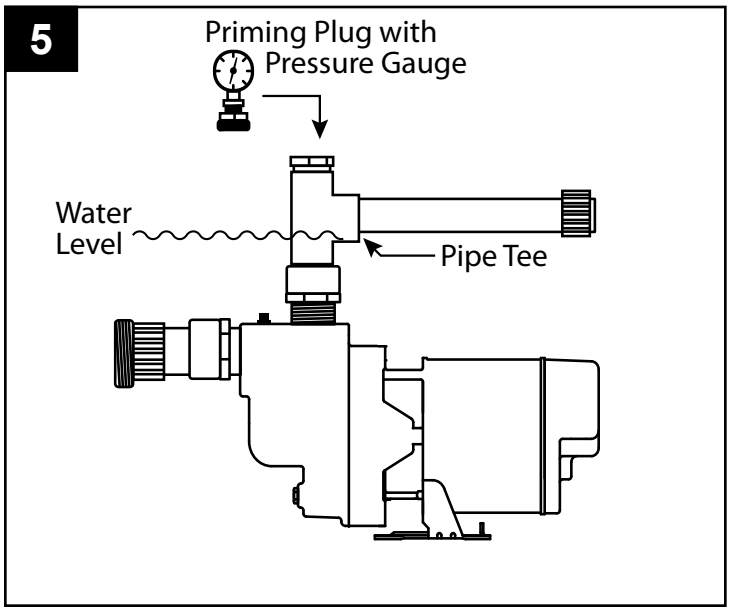
3. Slowly fill pump cavity until water comes out of air relief hole on top of the pump.



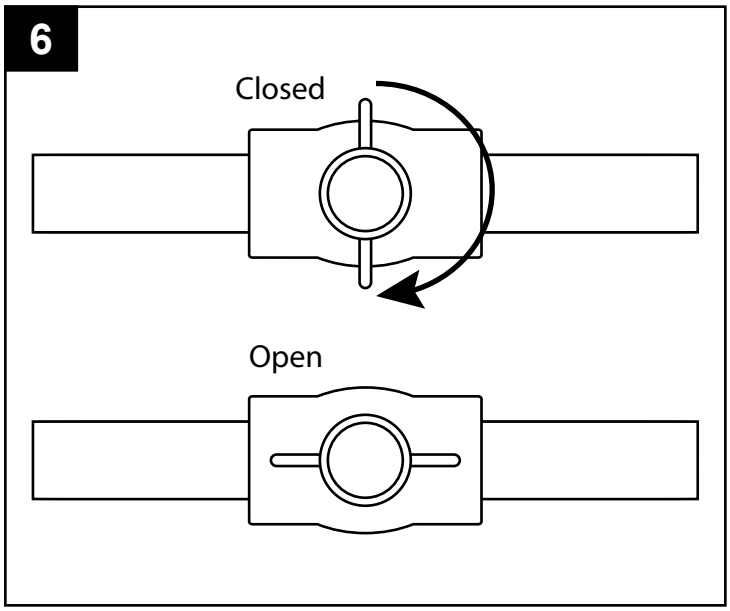
4. Replace air relief plug and continue adding water to pump cavity until water comes out of the open outlet pipe at the open union.



5. Wait 10 minutes to see if water level drops below the pipe tee. If level drops, check foot valve. If level stays constant, replace the priming plug.



6. Reconnect 1-1/2 in. union on outlet pipe. Open the ball valve (turn handle to line up with pipe), and then turn on breaker to start pump.



IMPORTANT: If the pump fails to prime within five minutes:

7. Turn the power off at the breaker box. Check all pipe connections for leaks, making sure all connections are water and air tight. Check the inlet pipe for any sagging, making sure the inlet pipe is in a straight line to the pump. Watch 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.

IMPORTANT: If the pump hums instead of pumping or turns off repeatedly, shut pump off immediately. Check voltage. Pump is wired to run on 230 volts. If the pump cuts out or stops, you may be attempting to connect to 115 volts. See PUMP ELECTRICAL INSTRUCTIONS to see how to correctly change the motor voltage to 115 volts.

SPECIFICATIONS

MOTOR DATA CHART					
HP	Phase	Volts	Code Letter	Max Amps	Locked Rotor Amps
1-1/2	1	115	G	18.0	72.0
	1	230		9.0	36.0
2	1	115	G	21.0	108.0
	1	230		10.5	54.0

PERFORMANCE										
Item Number	HP	Vertical Lift (FT)	Capacity - U.S. Gallons per Minute Discharge Pressure (PSI)						Inlet Pipe	Outlet Pipe
			15	20	25	30	35	40		
1332-0006	1-1/2	10	66	58	53	42	32	10	2 in.	1-1/2 in.
		15	62	57	47	38	25	7		
		20	54	52	42	31	13	3		
		25	40	38	36	23	12	0		
1333-0006	2	10	67	62	56	49	39	27	2 in.	1-1/2 in.
		15	63	59	52	44	34	25		
		20	59	56	49	40	29	9		
		25	37	36	35	31	18	5		

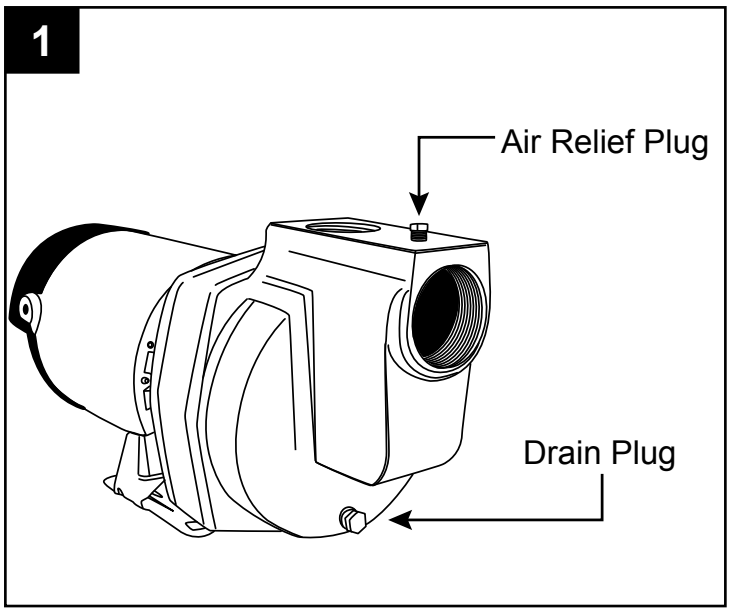
TROUBLESHOOTING

Problem	Possible Cause	Corrective Action
A. Little or no discharge	1. Casing not initially filled with water	1. Fill pump casing
	2. Vertical lift too high or too long	2. Move pump closer to water source
	3. Hole or air leak in inlet line	3. Repair or replace inlet line. Use thread 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 inlet line not submerged deep enough in water	5. Submerge foot valve lower in water
	6. Motor wired incorrectly	6. Check wiring diagram
	7. Inlet or outlet line valves closed	7. Open valves
B. Pump will not deliver water or develop pressure	1. No priming water in casing	1. Fill pump casing
	2. Leak in inlet line	2. Repair or replace
	3. Outlet line is closed and priming air has nowhere to go	3. Open ball valve
	4. Inlet line (or valve) is closed	4. Open line or valve
	5. Foot valve is leaking	5. Replace foot valve
	6. Inlet screen clogged	6. Clean or replace inlet screen
C. Loss of suction	1. Hole or air leak in inlet line	1. Repair or replace inlet line. Use thread tape and pipe sealing compound
	2. Vertical lift too high	2. Reduce vertical 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. Inspect foot valve and/or strainer for debris and remove
D. Pump vibrates and/ or makes excessive noise	1. Mounting plate or foundation not rigid enough	1. Reinforce plate or foundation
	2. Foreign material in pump	2. Disassemble pump and clean
	3. Impeller damaged	3. Replace impeller
E. Pump will not start or run	1. Motor wired incorrectly	1. Check wiring diagram
	2. Blown fuse or open circuit breaker	2. Replace fuse or close circuit breaker
	3. Loose or broken wiring	3. Tighten connections and replace broken wiring
	4. Stone or foreign object lodged in impeller	4. Disassemble pump and remove foreign object
	5. Motor overheated	5. Allow unit to cool, restart after cooling
F. Pump loses prime	1. Clogged foot valve or strainer	1. Inspect foot valve and/or strainer for debris, and remove.
	2. Worn or broken foot valve	2. Inspect and replace
	3. Hole or air leak in inlet line	3. Repair or replace inlet line. Use thread tape and pipe sealing compound

CARE AND MAINTENANCE

Winterizing

⚠ **CAUTION:** Drain the entire system if there is danger of freezing. A drain plug is provided at the bottom of pump for this purpose. Remove drain plug then loosen air relief plug.



WARRANTY

This product is warranted for two years from the date of manufacture. 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.

REPLACEMENT PARTS LIST

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

PART	DESCRIPTION	PART NO.
C	Ring, Square Cut	132429
D	Seal, Rotary and Ceramic (includes Spring)	131100
E	Impeller (Model 1332-0006)	021280
E	Impeller (Model 1333-0006)	134138
F	Diffuser Insert	134240
G	Diffuser	132425
H	Rubber Diffuser	132428
I	Pump Body	023115
J	Rebuild Kit 1332-0006	023704
	Rebuild Kit 1333-0006	023705