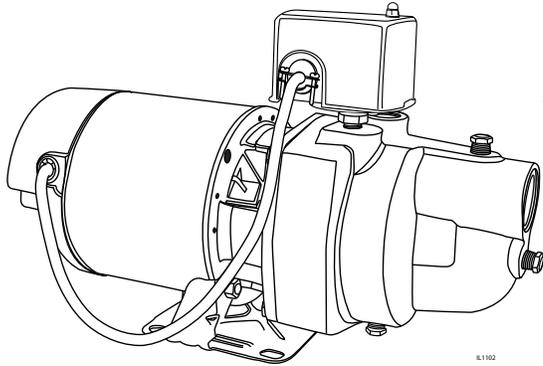


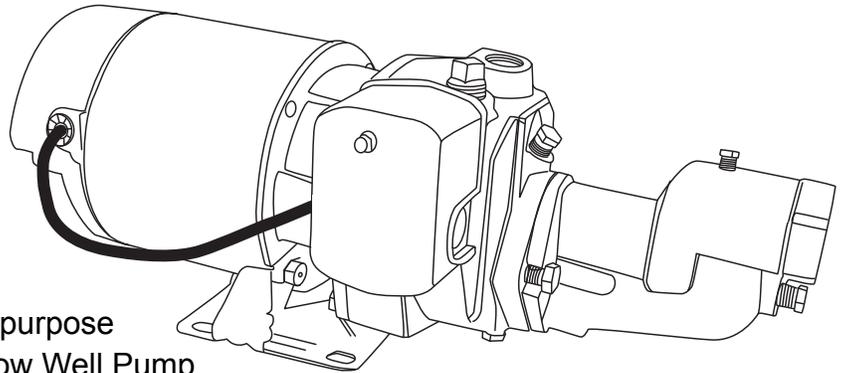
# SHALLOW WELL JET PUMP

110 West Division St. | Boonville, IN 47601

MODEL # ES05S, EK05S, CPH05S, ES07S, EK07S, ES10S,  
EK10S, JHU15S



Integral Jet  
Shallow Well Pump



Multi-purpose  
Shallow Well Pump



**For loose, missing or damaged parts, or if the unit does not seem to be operating properly, please call before returning unit to the place of purchase**

**Phone No.: 1-800-742-5044**

**Service Hours:**

**Monday thru Friday - 7:30 am to 5:00 pm EST**

**TABLE OF CONTENTS**

Product Specifications .....2  
 Safety Information .....3  
 General Pump Information .....4  
 Preparation .....5  
 Well to Pump Connection .....6  
 Pump to Tank Connection .....8  
 Tank to House Connection .....9  
 Pump Electrical Connections.....11  
 Pump Priming and Startup .....15  
 Repair Parts.....18  
 Troubleshooting .....19  
 Care and Maintenance .....20

**PRODUCT SPECIFICATIONS**

MOTOR DATA CHART

Model	HP	Phase	Volts	Max Amps	Locked Rotor Amps
CPH05S	1/2	1	115 or 230	13.0/6.5	36.0/18.0
All others	1/2	1	115 or 230	8.6/4.3	26.0/13.0
All	3/4	1	115 or 230	13.0/6.5	36.0/18.0
All	1	1	115 or 230	14.0/7.0	52.0/26.0
All	1-1/2	1	115 or 230	21.0/10.5	98.0/49.0

**IMPORTANT:**

This jet pump is wired for either 115V or 230V. The label on the pump will state whether pump is pre-wired for 115V or 230V. To change pump voltage, see pump label diagram or page 14 in these instructions.

**SAFETY INFORMATION**

Please read and understand this entire manual before attempting to assemble, operate or install the product. If you have any questions regarding the product, please call customer service at 1-800-742-5044, 7:30 a.m.-5:00 p.m., EST, Monday-Friday.

**DANGER:**

1. 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.
2. 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!
3. RISK OF ELECTRIC SHOCK. These pumps have not been investigated for use in swimming pool areas.

**WARNING:**

1. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).
2. Replace damaged or worn wiring cord immediately.
3. Do not kink power cable and never allow the cable to come in contact with oil, grease, hot surfaces, or chemicals.
4. Wire motor to correct supply voltage - see motor nameplate and wiring diagrams and check voltage of power supply.
5. 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.

6. This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
7. Hazardous Pressure! Install pressure relief valve in discharge pipe. Release all pressure on system before working on any component.
8. 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:**

1. Protect the power cable from coming in contact with sharp objects.
2. Be careful when touching the exterior of an operating motor - It may be hot enough to be painful or cause injury.
3. Make certain that the power source conforms to the requirements of your equipment.
4. Do not run pump dry.
5. Pump and plumbing must be full of water before startup.
6. Do not pump water which contains sand, mud, silt, or debris

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)

## GENERAL PUMP INFORMATION

### TYPICAL PUMP SETUP

Shallow well jet pumps are designed for use where the suction lift is 25 feet or less. They can be used with drilled (cased wells) (**Fig. 1**), dug wells, driven wells (**Fig. 2**) or with cisterns or lakes.

### 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 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 on page 2.

### SUCTION LIFT

Suction 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 suction and the water source. This distance may affect the ability of the pump to operate. If it is over 100 feet, call the manufacturer for assistance at 1-800-742-5044.

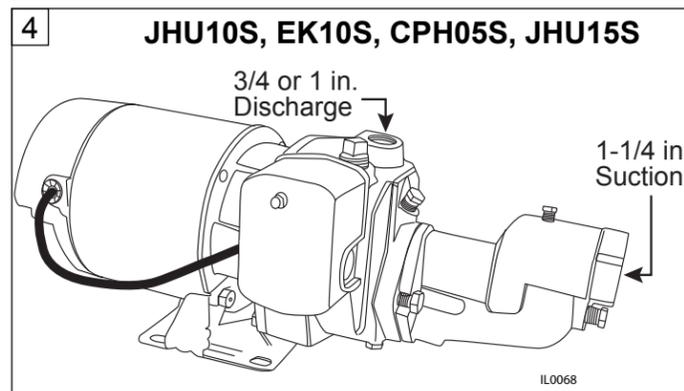
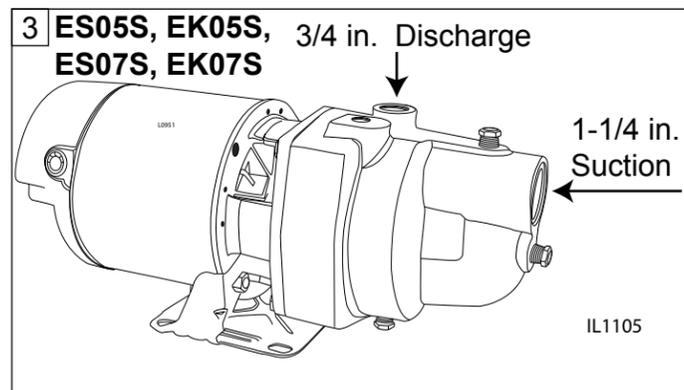
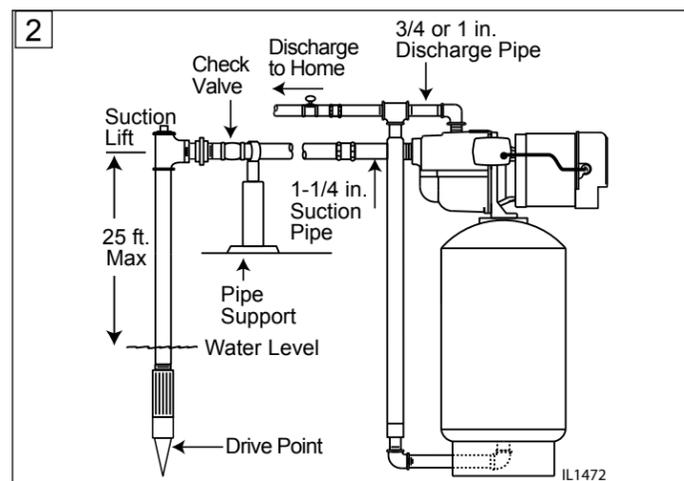
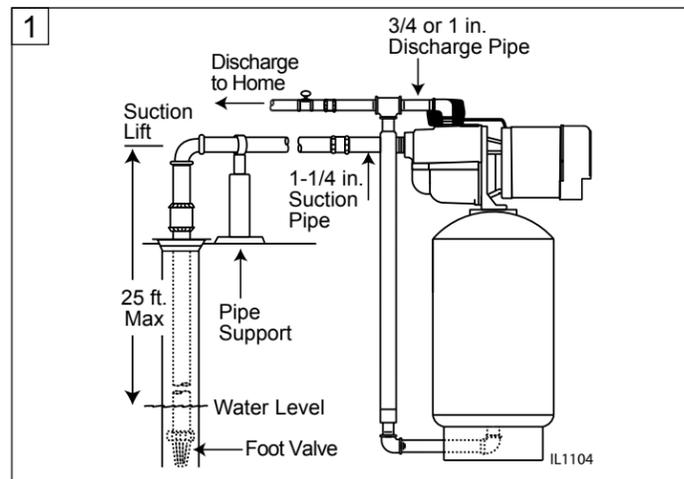
### PIPE AND FITTINGS

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. (**Fig. 2 & 3**)

**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 on page 11 for proper wire size.



## 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. Contact customer service for replacement parts.

Estimated Installation Time: 2 hours.

### TOOLS REQUIRED

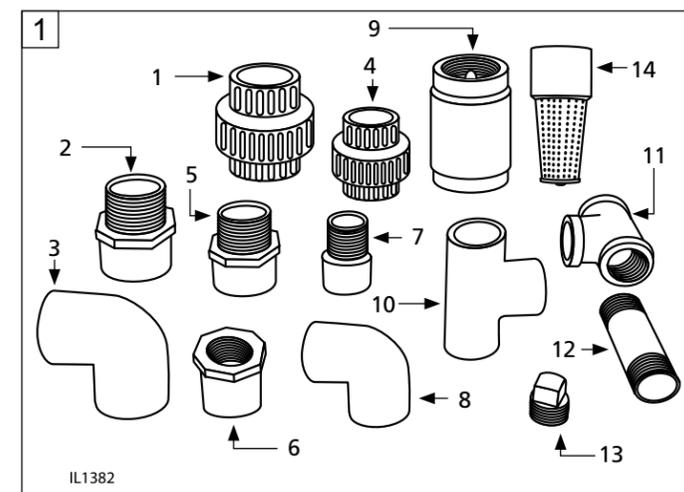
Pipe wrenches (2)  
Wire strippers  
Needle-nose pliers  
Phillips screwdriver

Wire cutters  
Adjustable wrench  
Pipe tape  
Pipe dope

**NOTE:** For a successful installation, take time to study your application for the correct pipe size and appropriate fittings. The illustrations in these instructions will assist you with required and optional fittings. Sch. 40 PVC plastic pipe and fittings were used in these instructions.

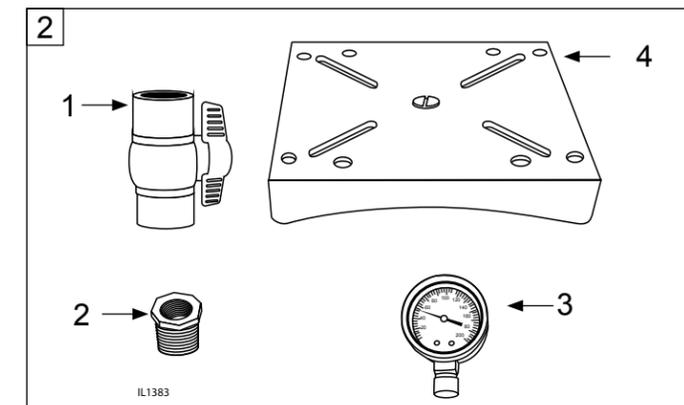
### PARTS YOU MAY NEED FOR ASSEMBLY (not included) (Fig. 1)

Item	Description
1	1-1/4 In. union
2	1-1/4 in. adapter
3	1-1/4 in. elbow
4	3/4 in. union
5	1 in. adapter
6	1 in. x 3/4 in. reducer bushing
7	3/4 in. adapter
8	1 in. elbow
9	1-1/4 in. check valve
10	3/4 in. tee (plastic)
11	3/4 in. tee (steel)
12	3/4 in. x 3 in. nipple (steel)
13	3/4 in. plug (steel)
14	Foot valve
	Electric cord strain relief



### OPTIONAL PARTS FOR ASSEMBLY (not included) (Fig 2)

Item	Description
1	Ball Valve (plastic)
2	3/4 in. x 1/4 in. bushing (steel)
3	Pressure Gauge
4	Pump stand for tank



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

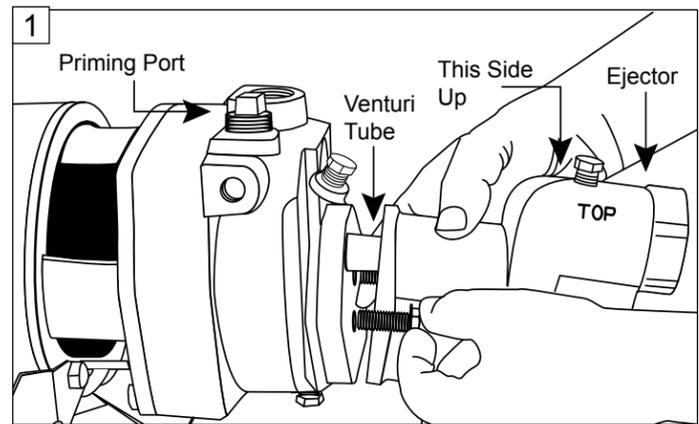
**⚠ CAUTION:** Follow all proper gluing procedures as specified by the glue manufacturer. Always glue in a vertical direction whenever possible to prevent glue from dripping inside pipe or fittings

**⚠ 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.

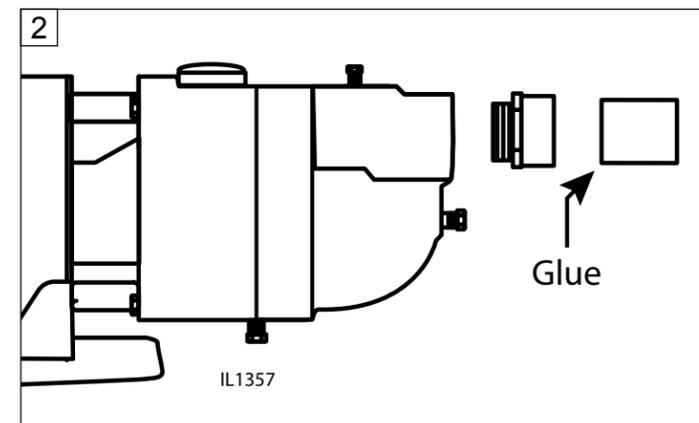
**1. JHU10S, EK10S, JHU15S, CPH05S Models Only**

Attach ejector to face of pump with two (2) bolts and gasket provided. Venturi tube on the ejector inserts into the top tapping of the face of the pump (Fig. 1).

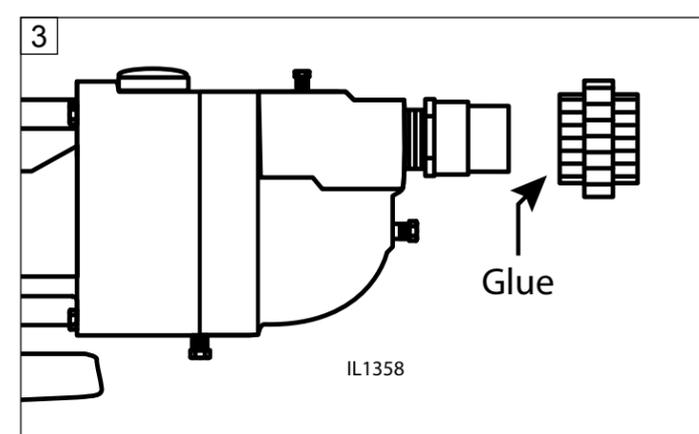
NOTE: Models ES05S, EK05S, ES07S, and EK07S have built-in ejector.



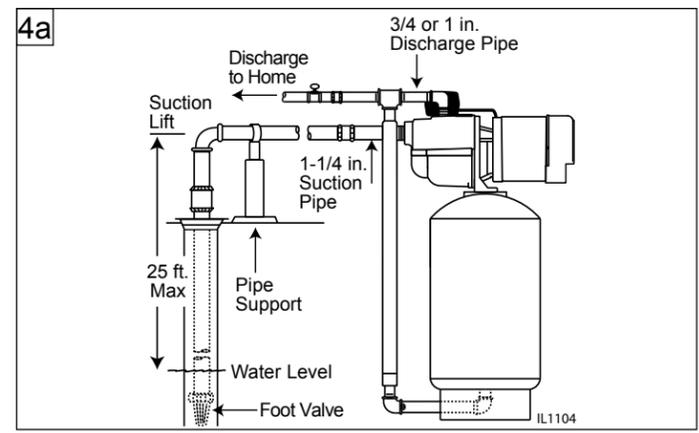
2. Make the connection to your well first. Wrap all threaded fittings with pipe tape 5 times and then apply a pipe paste (pipe dope) to ensure an air tight connection. (Fig. 1)



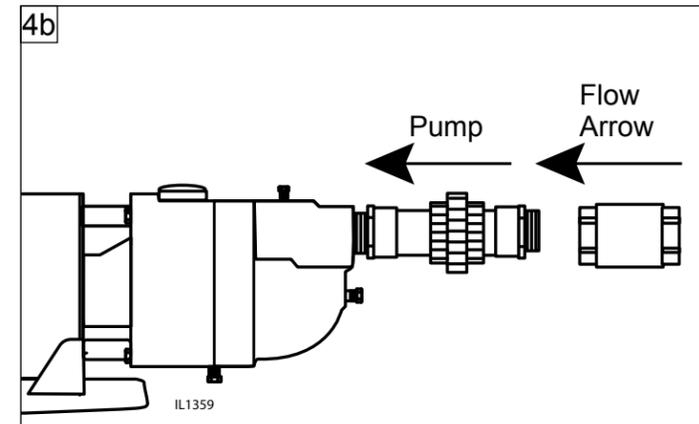
3. The use of a union (optional) will assist with easy connection and disconnect. (Fig. 2)



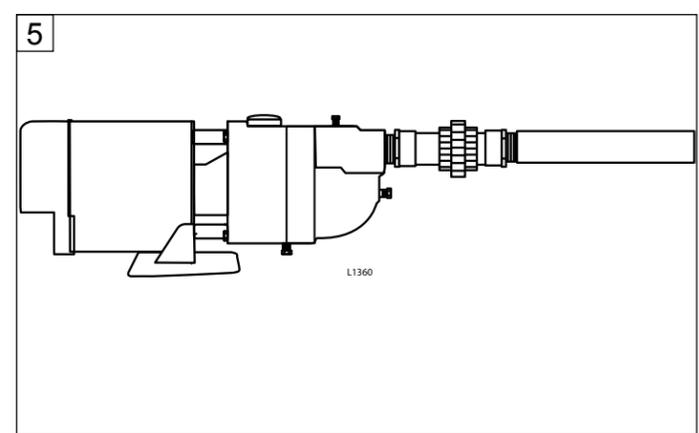
4a. NOTE: For drilled (cased) wells, a foot valve is required in the well at the end of the pipe to maintain prime. (Fig 4a)



4b. For driven wells, a check valve is required at the top of the well to maintain prime. Flow arrow must point toward pump. (Fig.4b)



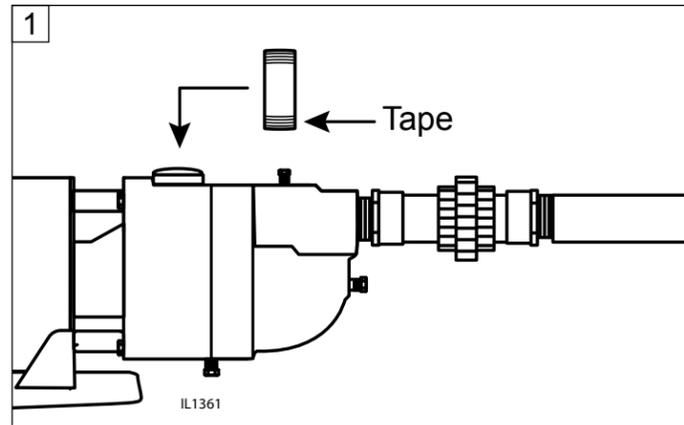
5. Finish the connection to your well with additional pipe and fittings as needed. (Fig. 5)



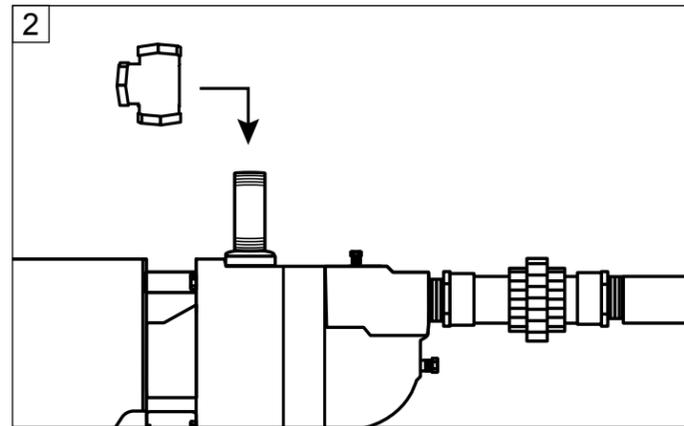
## PUMP TO PRESSURE TANK CONNECTION (DISCHARGE PIPE)

1. Begin the connection to the pressure tank. Using a 3/4 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. (**Fig. 1**)

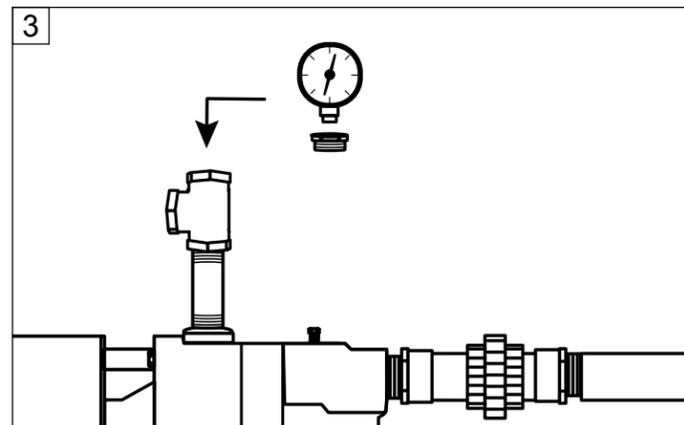
NOTE: 1 and 1-1/2 HP models will require 1 in. discharge fittings in place of 3/4 in. discharge fittings throughout these steps.



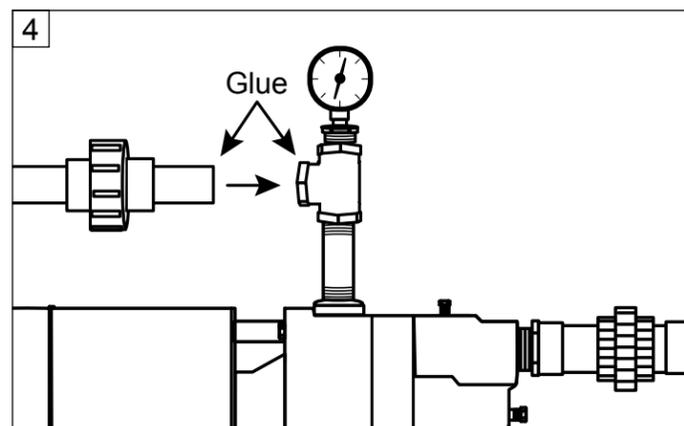
2. Install a 3/4 x 3/4 x 3/4 in. galvanized tee fitting. (**Fig. 2**)



3. Install a 3/4 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. (**Fig. 3**)

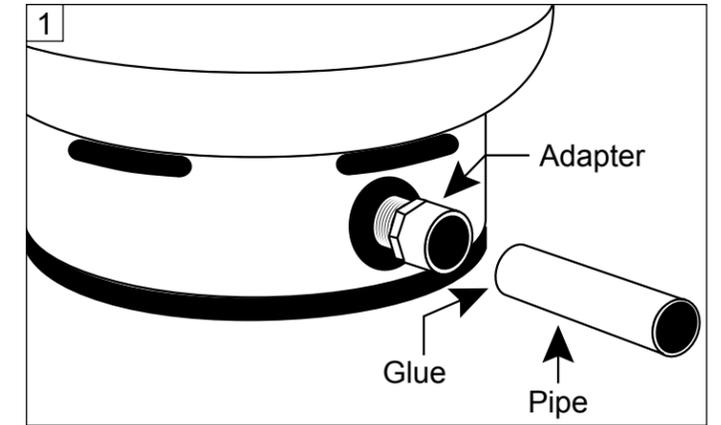


4. Continue with fittings and pipe to the pressure tank. A 3/4 in. union (optional) is recommended for easy connection and disconnection. (**Fig. 4**)

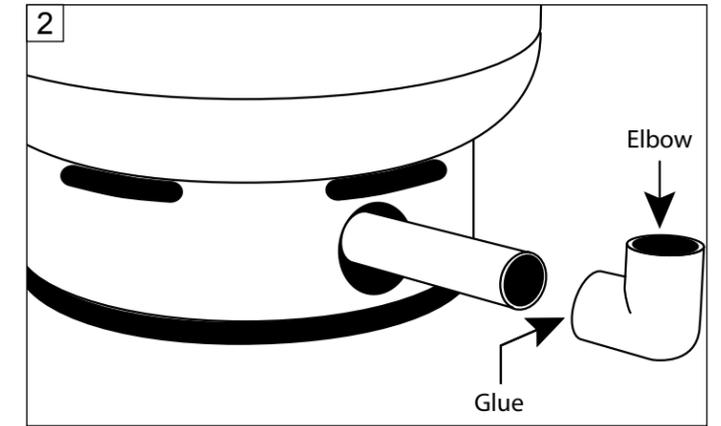


## TANK TO HOUSE CONNECTION

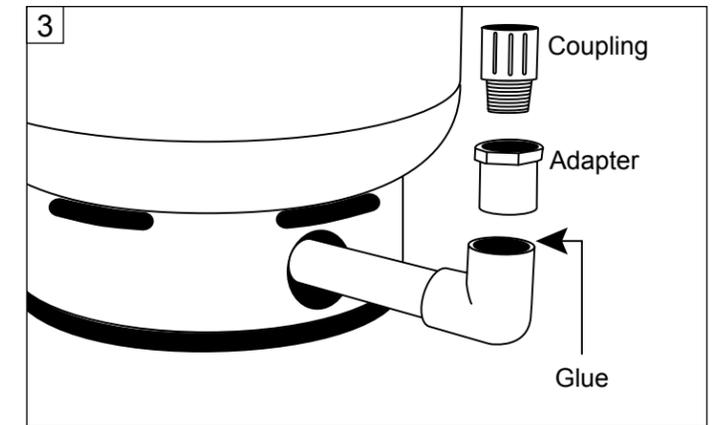
1. Most pressure tanks will have a 1 inch inlet elbow on the bottom. Connect to this elbow with a 1 in. MPT x 1 in. slip (glue) adapter and short piece of pipe. (**Fig 1**)



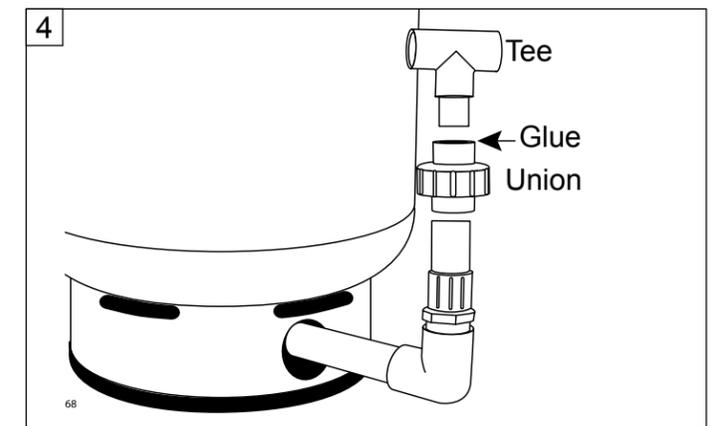
2. Install a 1 in. elbow. (**Fig. 2**)



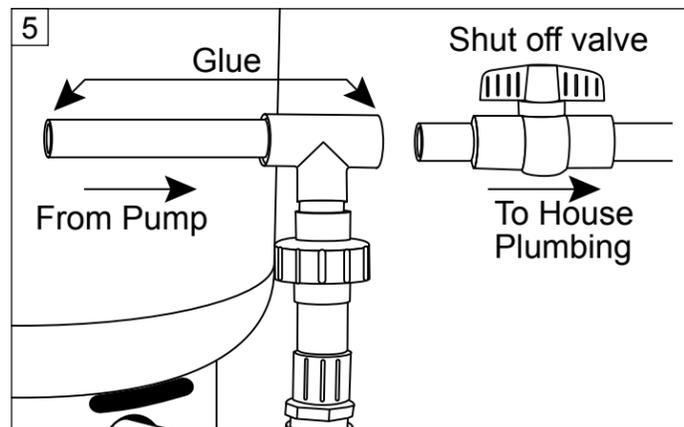
3. Attach a 1 in. pipe to the elbow and a 1 in. x 3/4 in. reducer bushing to the pipe. (**Fig. 3**)



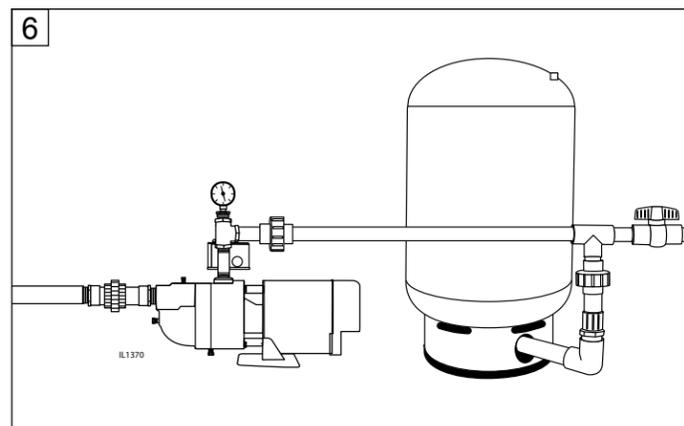
4. Attach a 3/4 in. pipe to the reducer bushing. Install an optional 3/4 in. union and continue with pipe and 3/4 in. x 3/4 in. x 3/4 in. tee. (**Fig. 4**)



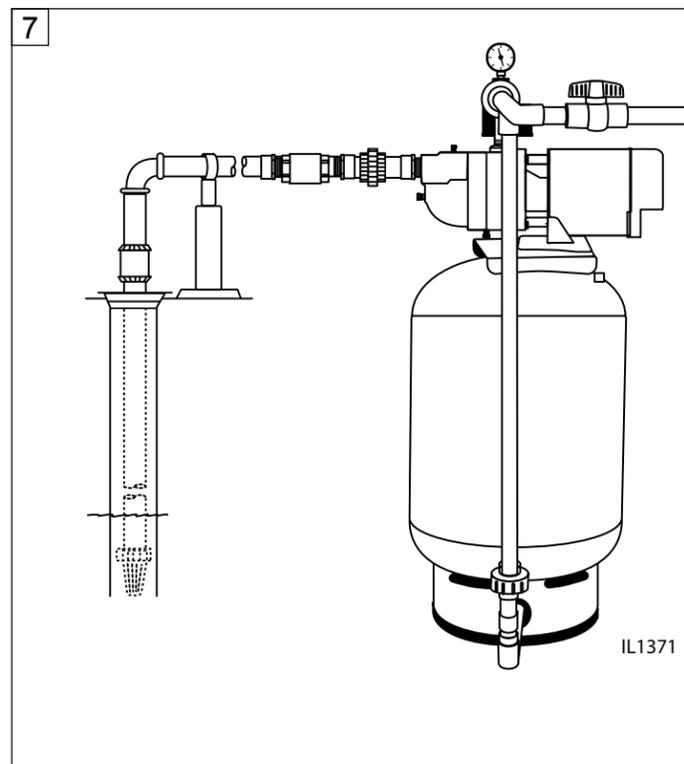
5. Make the connection to the house plumbing. From the tee, install pipe and shut off valve (optional). (Fig 5)



6. Completed installation with piping and tank is shown (Fig. 6)



7. Optional tank mounted system is shown. Connections are basically the same as explained in previous steps. (Fig. 7)



**CAUTION:** All wiring should be performed by a qualified electrician in accordance with the National Electric Code and local electric codes.

**CAUTION:** Connect the pump to a separate electrical circuit with a dedicated circuit breaker. Refer to the Wire Size Chart for proper fuse size.

**WARNING:** Under-size wiring can cause motor failure and even fire. Use proper wire size specified in the Wire size chart.

**WARNING:** Replace damaged or worn wiring cord immediately.

**WARNING:** Do not kink power cable and never allow the cable to come in contact with oil, grease, hot surfaces, or chemicals.

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

**WARNING:** The pump must be properly grounded using the proper wire cable with ground.

**WARNING:** Always disconnect pump from electricity before performing any work on the motor.

Wiring the pressure switch

1. **CAUTION:** Make certain that the power source matches the pump requirements. This pump has a dual voltage motor and can run on 115V or 230V. See pump label for voltage prewired at the factory. (Fig. 1)

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

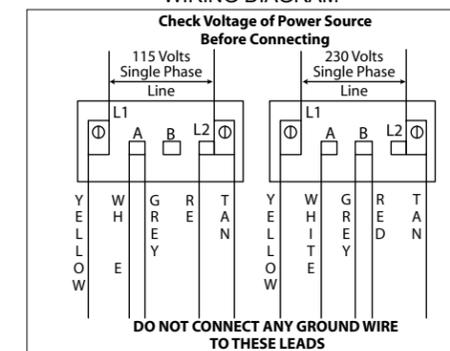
2. Screw the pressure switch into the 1/4 in. opening on the top of the pump and remove the switch cover. (Fig. 2)

WIRE SIZE CHART

Distance from Motor to Meter	Recommended Copper Wire and Fuse Sizes							
	Single Phase Motors							
	1/2 HP		3/4 HP		1 HP		1-1/2 HP	
	115 Volt	230 Volt	115 Volt	230 Volt	115 Volt	230 Volt	115 Volt	230 Volt
0-50 Ft.	14	14	14	14	12	14	12	14
50-100 Ft.	12	14	10	14	10	14	8	14
100-150 Ft.	10	14	8	14	8	14	6	14
150-200 Ft.	8	14	8	14	6	12	6	12
200-300 Ft.	6	12	6	12	4	10	4	10
Fuse Size (Amps)	15	15	20	15	30	15	30	20

(\* Not economical to run in 115V, use 230V)

WIRING DIAGRAM



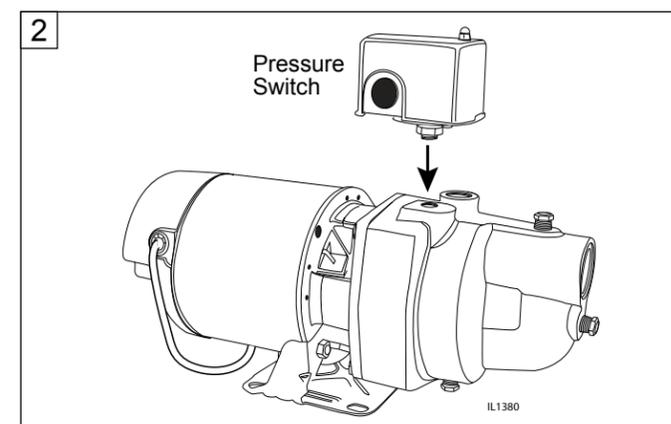
1 Motor: **98L105**

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	

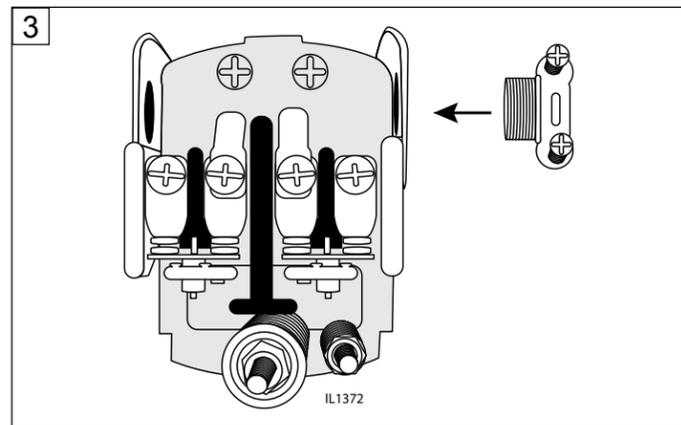
Factory prewired for 115V Thermally protected automatic  
Check voltage of power source Use copper conductors only

**ELECTRICAL HAZARD**

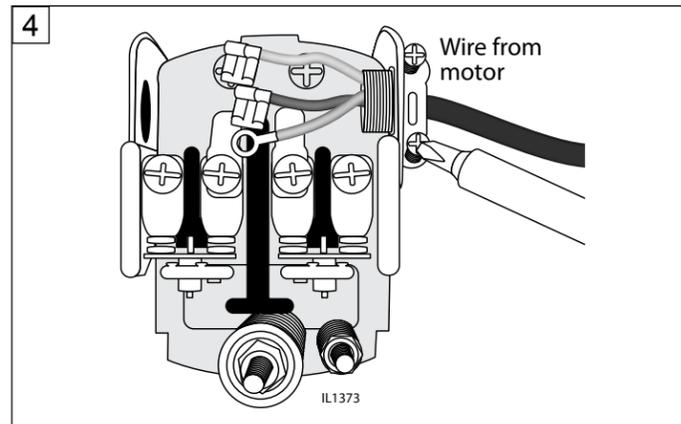
Improper installation may result in fire, explosion, electrical short or injury. Replace all covers before operating. Ground motor in accordance with local and national electrical codes. Disconnect power source before touching internal parts. Motors equipped with automatic protection may restart without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



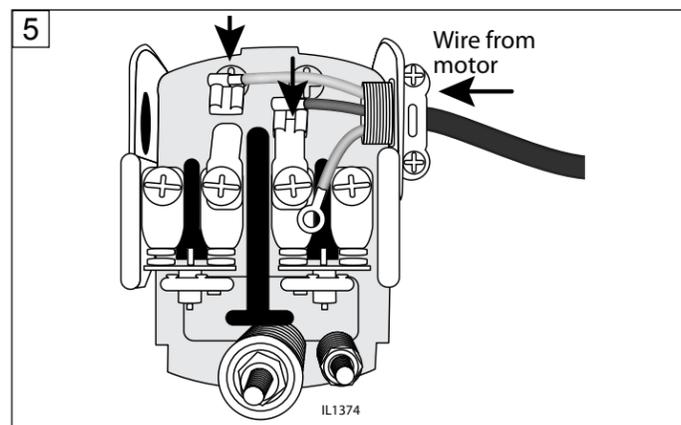
3. Insert an electrical wire strain relief into the opening in the side of the pressure switch closest to the motor. (Fig. 3)



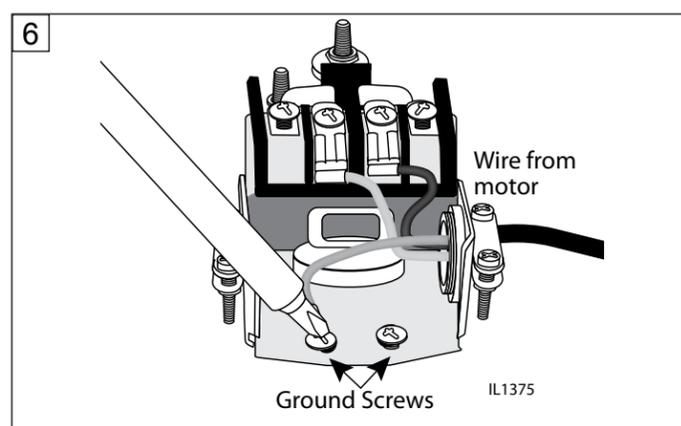
4. Thread the cable from the pump motor through the strain relief into the pressure switch cavity and tighten both screws on the strain relief. Do not crush wire. (Fig. 4)



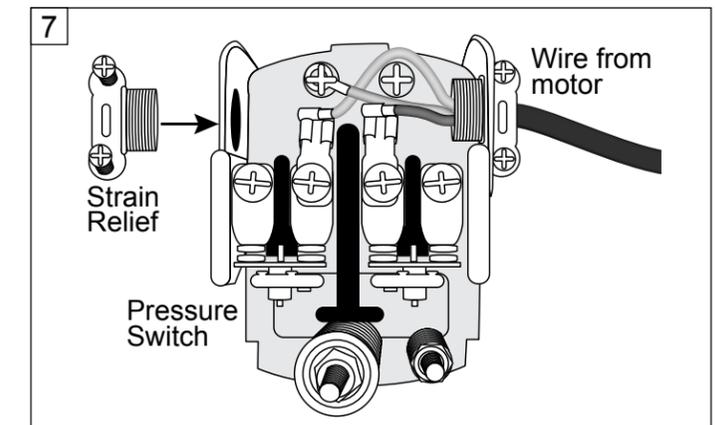
5. Connect the two motor wires of the motor cable to the two inside terminals on the pressure switch. (Fig. 5)



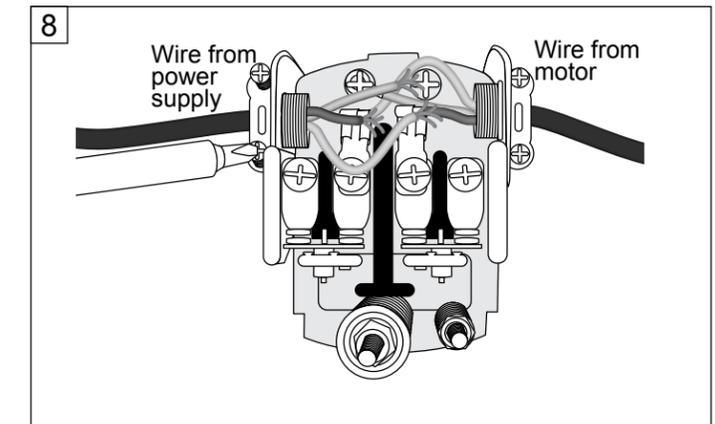
6. Connect the green ground wire from the motor cable to one of the green ground screws at the bottom of the pressure switch. (Fig. 6)



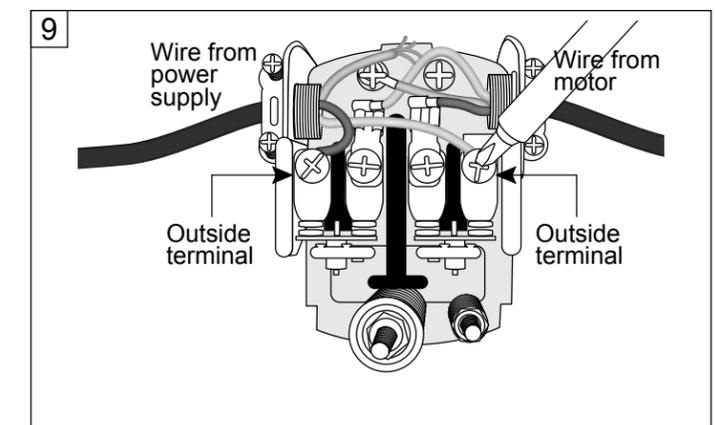
7. Insert an electrical wire strain relief into the opening in the opposite side of the pressure switch. (Fig. 7)



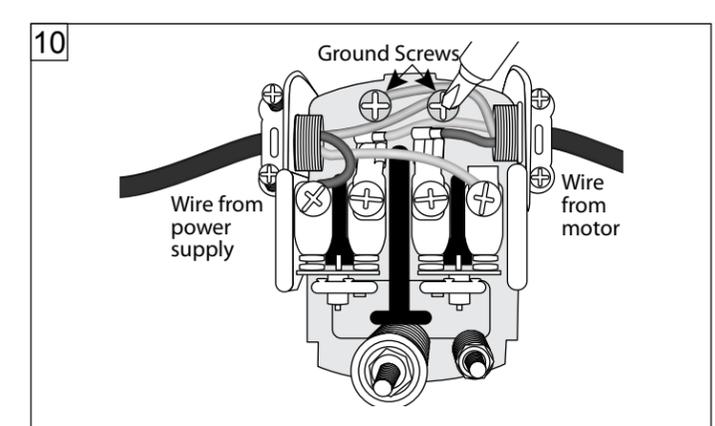
8. Thread the cable from the power supply through the strain relief and tighten both screws on the strain relief. Do not crush wire. (Fig. 8)



9. Connect the two wires from the power supply to the two outside terminals on the pressure switch. (Fig. 9)



10. 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. (Fig. 10)



**To change from 115V to 230V**

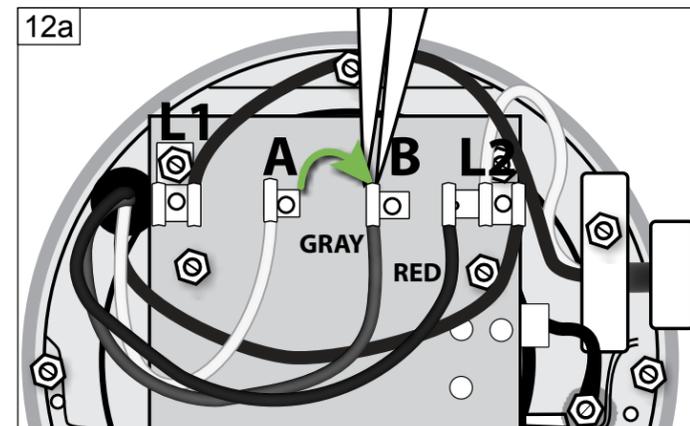
11. The motor of this pump is dual voltage and can run on either 115V or 230V. In general, 230V is more economical to run, and requires a smaller wire size. Most models are pre-set in the factory to run at 115V. NOTE: See pump label to verify voltage prewired at the factory. (Fig. 11)

11	Motor:	<b>98L105</b>				
	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		Thermally protected automatic			
	Check voltage of power source		Use copper conductors only			

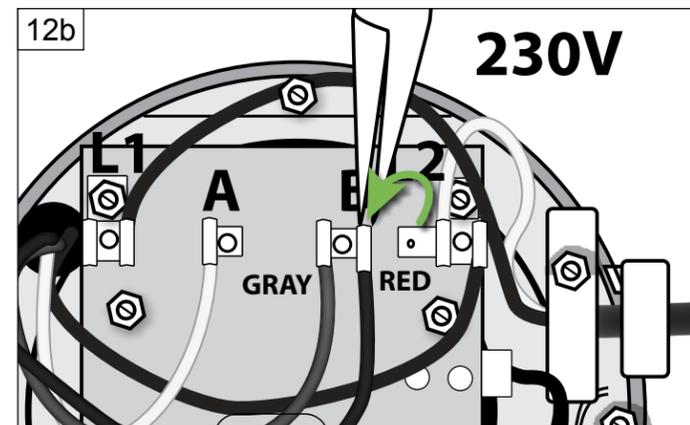
**ELECTRICAL HAZARD**  
 Improper installation may result in fire, explosion, electrical short or injury. Replace all covers before operating. Ground motor in accordance with local and national electrical codes. Disconnect power source before touching internal parts. Motors equipped with automatic protection 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.

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

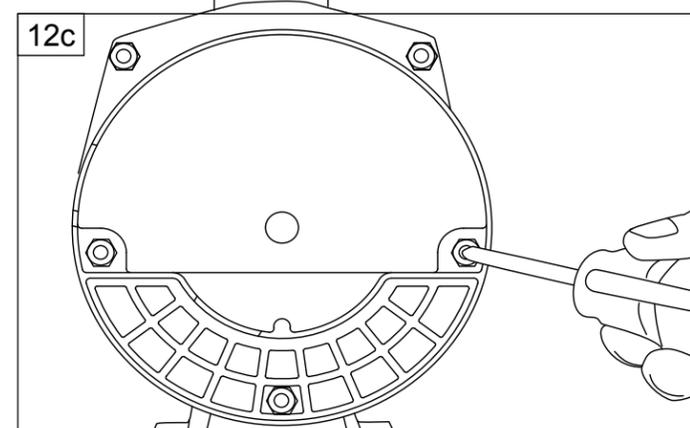
a. Using a pair of needle nose pliers, pull the gray wire with the female flag connector from the "A" terminal spade post. Place it to the right on the "B" terminal space post. (Fig. 12a)



b. Pull the red wire with the female flag connector from the "L2" terminal. Place it to the left on the "B" terminal space post. (Fig. 12b)



c. Reinstall the rear motor cover. (Fig.12c)

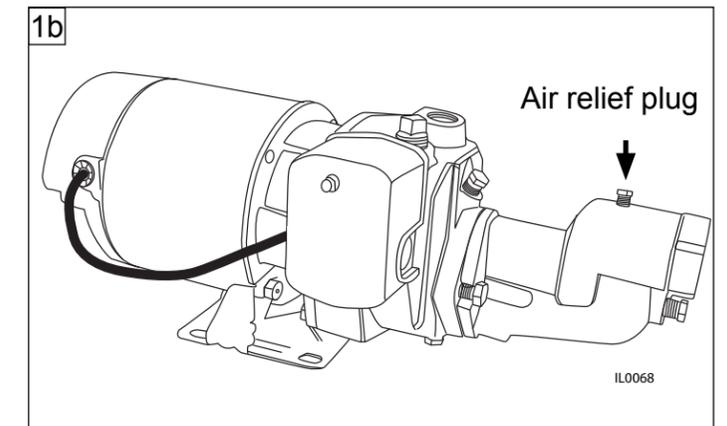
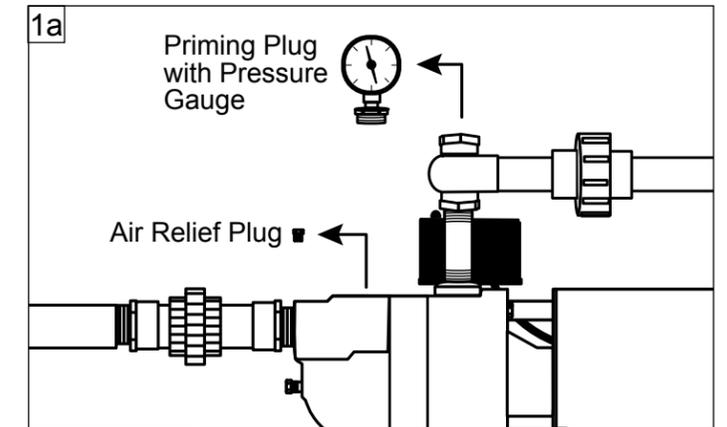


NOTE: To change voltage from 230V to 115V, simply reverse instructions above.

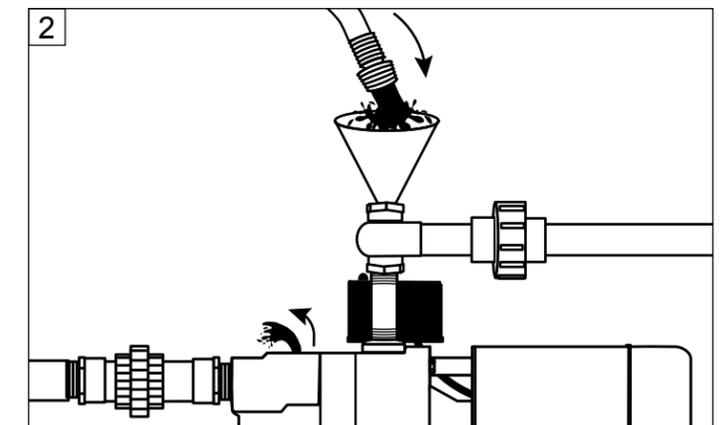
**PRIMING**

**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.

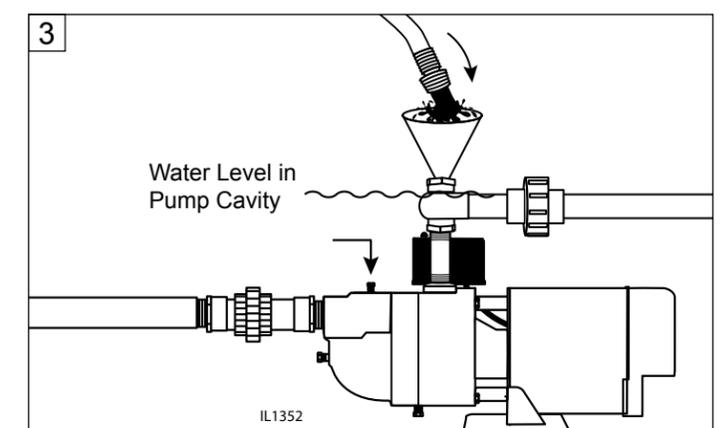
1. Remove the priming plug with pressure gauge and air relief plug. (Fig. 1a with built-in ejector) (Fig. 1b with bolt-on ejector)



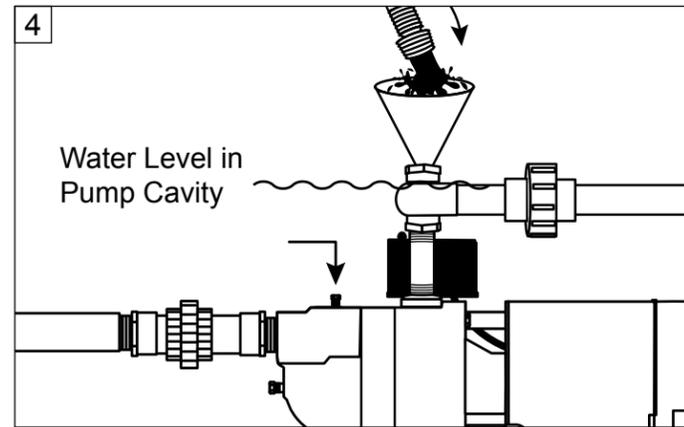
2. Slowly fill pump cavity until water comes out of air relief hole on top of the pump. (Fig. 2)



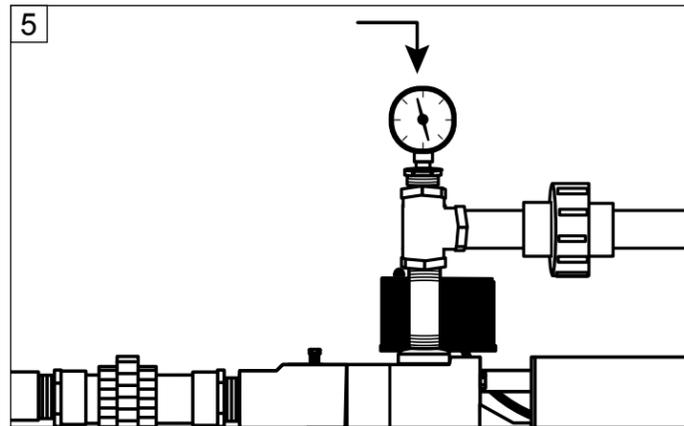
3. Replace air relief plug and continue adding water to pump cavity until water reaches the top of the priming plug. (Fig. 3)



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. **(Fig. 4)**

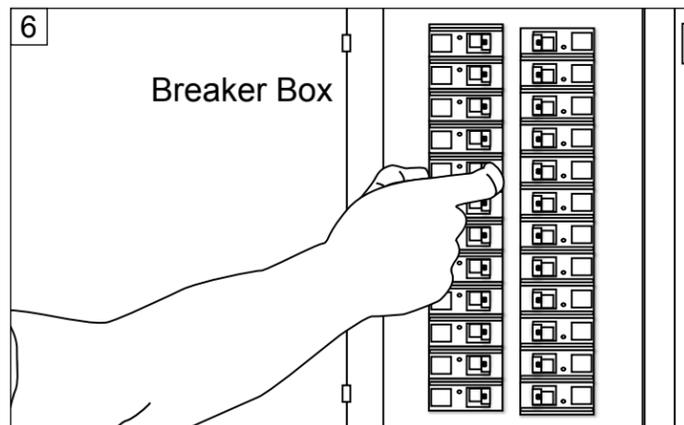


5. Thread in priming plug and then open optional ball valve if installed by turning handle to line up with the pipe. **(Fig. 5)**



6. Turn on breaker to start pump. **(Fig. 6)**

**⚠ 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.

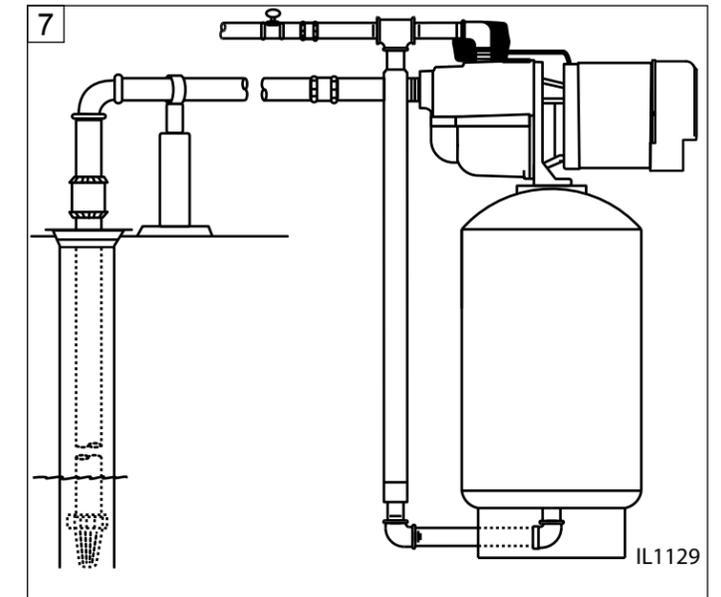


**⚠ IMPORTANT:** If the pump fails to prime within five minutes: Turn power off at the breaker box and check all pipe connections for leaks. All connections must be water and air tight in order for pump to operate.

7. Check suction pipe for any sagging. Support suction pipe in a straight line to the pump. **(Fig. 7)**

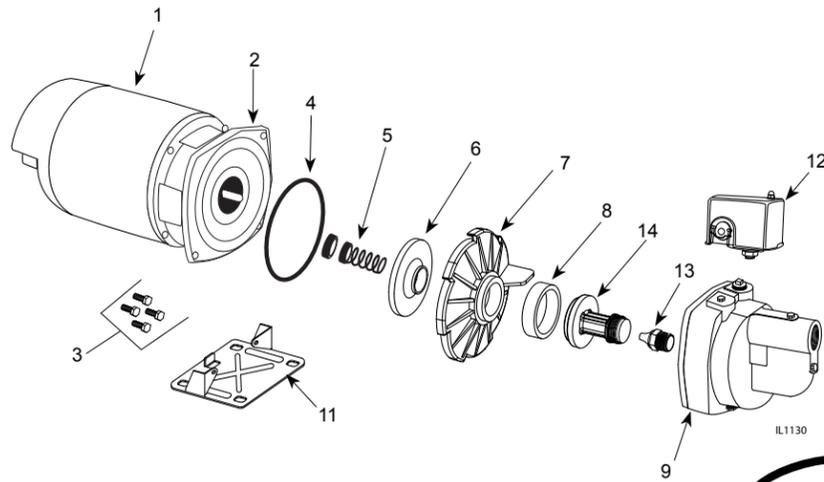
**NOTE:** Look for leaks or a milky color in the discharged water, which indicates an air leak. Re-prime if necessary, following steps 1 through 6 above. Reset breaker at the breaker box. All connections must be water and air tight in order for pump to operate.

**Questions? Call 1-800-742-5044 Monday - Friday 7:30 am - 5:00 pm EST.**



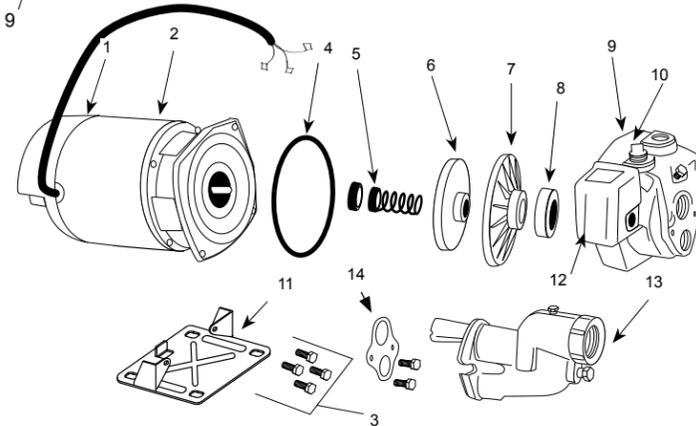
## REPAIR PARTS

### 1/2 & 3/4 HP MODELS - REV C



### 1/2 THRU 1 HP MODELS - REV B

### 1-1/2 HP MODELS - REV C



ITEM	HORSEPOWER		1/2			3/4		1	1-1/2	
	MODEL NO.:	PART NO.	ES05S EK05S 416959 Rev B	ES05S EK05S 416959 Rev C	- CPH05S Rev B	ES07S EK07S 433225 Rev B	ES07S EK07S 433225 Rev C	JHU10S EK10S Rev B	JHU15S	
DESCRIPTION			QTY.							
1	Motor, Nema J Motor Cover w/Screws Screws, Cover Motor Lead Wire	021301R 021302	98J105 1 136135A	98J105 1 136135A	98J105 1 136135A	98J107 1 136135A	98J107 1 136135A	98J110 1 136135A	98J115 1 136136A	
2	Mounting Ring	*	134162	134162	135314	134162	134162	134163	134163	
3	Hex Hd. Cap Screws 3/8 x 3/4"	*	4	4	4	4	4	4	4	
4	Ring, Square Cut		132583	132583	132583	132583	132583	132429	132429	
5	Seal, Rotary w/Spring	131100	1	1	1	1	1	1	1	
6	Impeller		139348	023502††	139349††	139349††	139349††	134137	134138	
7	Diffuser		132424□	132424□	132424□	132424□	132424□	132425□	132425□	
8	Rubber, Diffuser	132428	1	1	1	1	1	1	1	
9	Pump Body		134121	023381	134311	134121	023381	134123	134123	
10	Plug, Priming	*	1/2" NPT	1/2" NPT	1/2" NPT	1/2" NPT	1/2" NPT	1/2" NPT	1/2" NPT	
11	Base	128034A	1	1	1	1	1	1	1	
12	Pressure Switch - ES Pressure Switch - EK/JH/CP		020345 020345	020345 020345	- 020346	020345 020346	020345 020346	020345 020346	- 020346	
13	Ejector Body	135021	1	N/A	1	1	N/A	1	1	
14	Ejector Gasket Pkg w/Bolts	132404	1	N/A	1	1	N/A	1	1	
†	Nozzle		4C3916	4C3915	4C3916	4C3916	4C3916	4C3914	4C3918	
†	Venturi		4C5526	4C6026	4C5530	4C5530	4C6032	4C5532	4C5536	

- (\*) Standard hardware item  
(†) Not shown  
(††) Impeller w/ 138138 Seal Ring  
(□) Diffuser w/ 134240 Insert

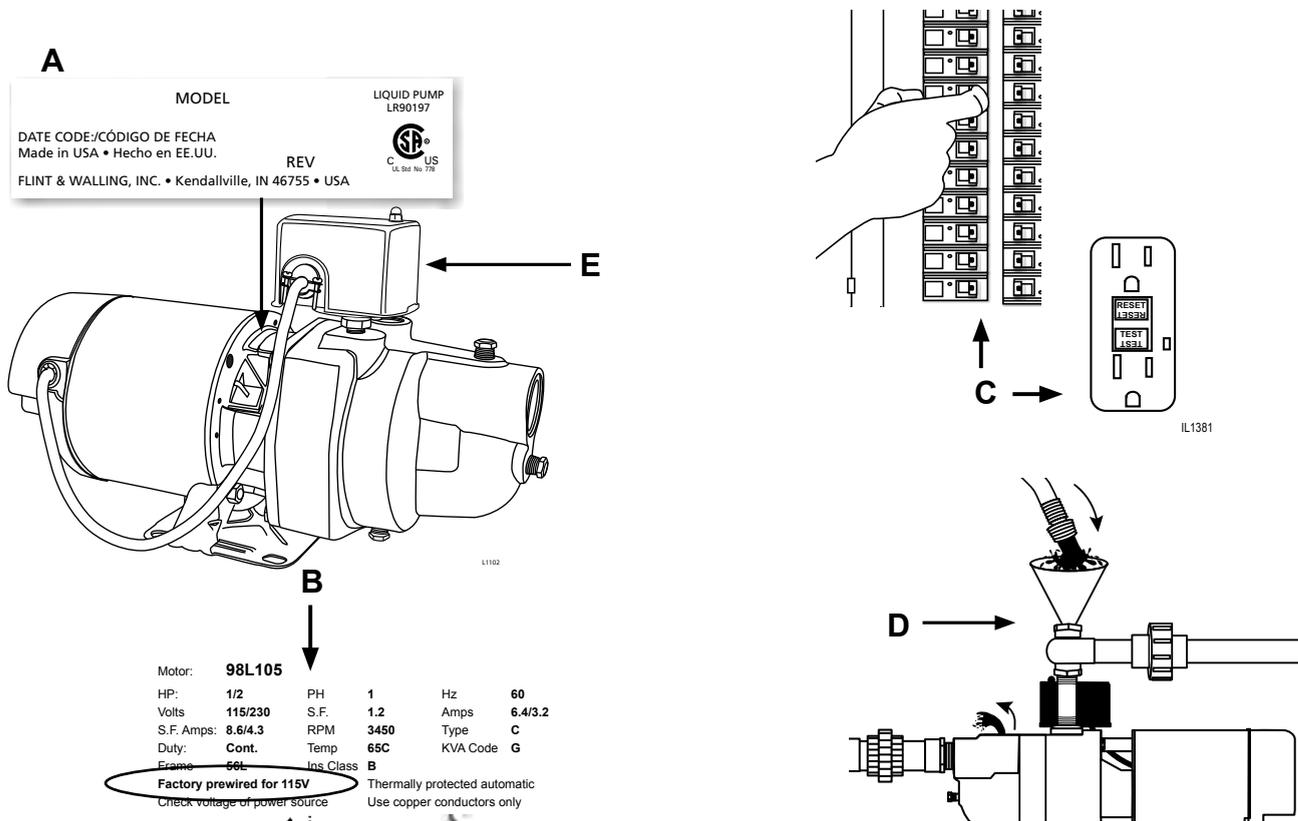
## TROUBLESHOOTING

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

## 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) 742-5044.

√	CHECK LIST
A	Check date code to make sure pump is within warranty period. Date code is the month and the year. (Example: 0311 is March of 2011. Date Code is found on the top of the pump.)
B	Make certain that the power source matches the pump requirements. This pump has a dual voltage motor and can run on 115V or 230V. See pump label for voltage prewired at the factory.
C	If pump does not run, check the GFI or breaker panel switch to make it is in full operation.
D	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 reprime.
E	If the pump runs but won't shut off, check pressure switch.



## 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. (Fig 1).

