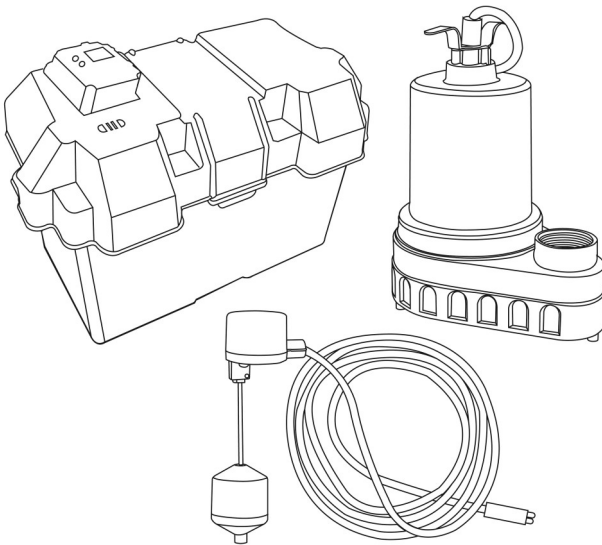




INSTALLATION & OPERATION MANUAL


12 VOLT BATTERY BACK-UP SYSTEM


Models:
PF92950





Safety Guidelines

Carefully read, understand and follow all safety instructions in this manual.

 **This is the safety alert symbol.** When you see this symbol, look for one of the following signal words.


 **DANGER** Indicates a hazardous situation which, if not avoided, will result in death or serious injury.


 **CAUTION** Indicates a hazardous situation which, if not avoided, could result in death or serious injury.


 **WARNING** Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.


Safety Information


Read these warnings carefully. Know the application and limitations of this pump. Failure to follow these warnings could result in serious bodily injury and/or property damage.


 **DANGER** **RISK OF ELECTRICAL SHOCK.** Disconnect and lockout power supply before removing old pump or installing or servicing this pump.


 **DANGER** This pump is designed to pump clear water. Do not use this pump to pump chemicals, flammable liquids, sewage or corrosive liquids. You could injure yourself and the pump will fail. Pumping these types of liquids voids the warranty.


 **DANGER** Keep all electrical connections away from wet and moist environments. Wet connections can cause electrical shock resulting in personal injury. Do not plug in or unplug battery charger while standing on a wet floor or in water. If the floor is wet, disconnect power to the pump before walking on floor.


 **WARNING** Battery acid is corrosive. Do not spill on skin, clothing, or parts of this system. Wear gloves and eye protection when handling the battery.


 **WARNING** **DO NOT** use the power cord to install or carry the pump. Always use the handle. The cord may pull apart exposing bare wires which could cause a fire or electrical shock. Use the handle supplied with the pump for installing and transporting the pump.

 **WARNING** Do not run pump dry. This pump relies on water for cooling. Running the pump dry can cause the pump to overheat and the possibility of burns to anyone that handles the pump. Running the pump dry will void the warranty.

 **WARNING** Use this system in a residential backup sump pump application only. It is not designed to be used as a primary sump pump.

 **WARNING** Make sure the sump basin is clear of rocks, sand & debris. Debris can damage or clog the pump which could result in flooding.

 **WARNING** This product can expose you to chemicals including vinyl chloride which is known to the state of California to cause cancer. For more information go to www.P65Warnings.ca.gov

 **CAUTION** Do not use this pump for potable/drinking water. Use only in applications for which the pump is designed for.

Battery Selection

This system is designed to work with 12 volt, lead-acid deep cycle marine / RV batteries. Either a flooded cell (serviceable or maintenance free) or sealed AGM battery are acceptable. Choose a battery with a minimum 40 amp-hour rating. The higher the amp-hour rating is on the battery, the longer the pump will run on battery power. Avoid using automobile batteries as these types of batteries are not intended to be charged/discharged for extended periods of time.

The battery case will accommodate group 24 or 27 batteries.

During prolonged periods of power failure or in an emergency, your automobile battery may be used. Make sure to replace the deep cycle battery as soon as possible as the automobile battery will be quickly ruined by the continuous charge/discharge cycles.

General Information

This battery back-up system is not intended to replace your primary sump pump. It is intended to provide temporary back up during power failures or malfunctions with the primary pump.

Carbon Monoxide (CO) Detectors

All backup pump systems that use lead acid batteries, regardless of brand, give off gaseous by-products when the battery is charging. Some of these by-products can cause a carbon monoxide (CO) detector to give a false alarm. When installing this system, position the battery as far away from the CO detector as possible. **DO NOT** move or remove CO detectors from their original location. Always follow the instructions that accompany your CO detector.

If your CO detector alarm sounds, take the following actions.

1. Take immediate action for personal safety as outlined in the CO detector manual.
2. Contact the appropriate utility agency to determine if the CO is coming from your furnace, water heater or other appliance that uses natural gas.

If it's determined that a charging battery is causing the CO detector to activate, contact the battery manufacturer for recommendations on how to alleviate the problem.

Installation

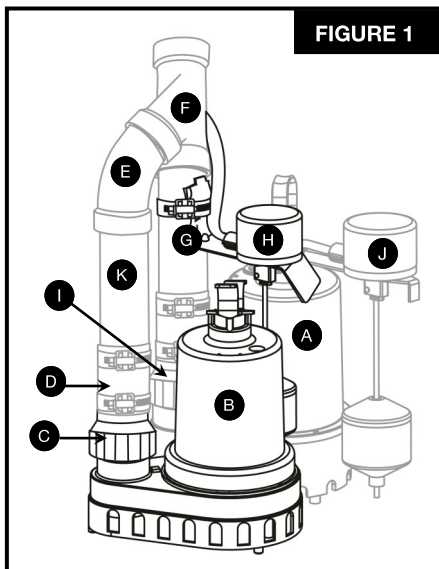
⚠ WARNING Always disconnect the power source before attempting to install, service or perform maintenance on the pump. Failure to do so may result in fatal electric shock. If required, a qualified electrician must install all wiring.

TOOLS & MATERIALS REQUIRED

- Pencil or marker
- Socket wrench with 10mm socket, 10mm nut driver or adjustable wrench
- Hacksaw
- PVC Pipe
- PVC Fittings
- PVC Pipe cleaner/primer & cement
- Pliers
- Slip joint pliers
- Tape measure
- Deep cycle marine battery (see battery selection section)

NOTE: Install this system when the primary pump will not be required.

1. Start by finding the water level at which your primary pump starts. Mark this point on the discharge pipe with a pencil or marker.
2. NOTE: If your existing discharge pipe is metal or flexible tubing you will need to replace it with PVC pipe or use a transition coupling such as a flexible rubber coupling
3. Drain as much excess water from the sump basin as possible. When the basin has been drained, turn off the power to the outlet / pump to avoid the risk of electrical shock.
4. Before removing the primary pump, make sure the discharge pipe is properly supported to prevent it from collapsing.
5. If your installation uses a flexible pipe coupling with clamps, simply disconnect the coupling and remove the pump. If a flexible coupling is not used, cut the pipe using a hacksaw as close to the floor level as possible and remove the pump from the basin.
NOTE: BE PREPARED FOR WATER TO LEAK FROM THE PIPE WHEN CUTTING. Keep tools and components of this system away from the work area when cutting pipe. If any components get wet, make sure they are dry before installing.
6. If your primary pump does not have a check valve in or near the pump discharge, install one at this time (sold separately). It is necessary to have a check valve installed on both the back up pump and on the primary pump. **NOTE: The primary pump check valve must be located below the junction of where the back up and primary piping meet.** This is to prevent backflow from the back-up pump when it is running.

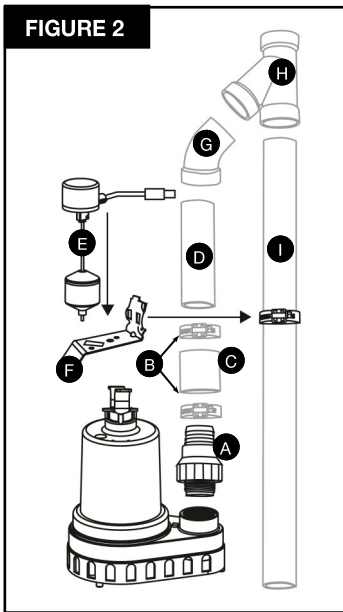


TYPICAL INSTALLATION

- A. Primary Pump (sold separately)
- B. Back up Pump
- C. Check Valve (included)
- D. Flexible rubber coupling with clamps (sold separately)
- E. 45° Street Elbow (sold separately)
- F. Wye fitting (sold separately)
- G. Float Switch Bracket
- H. Float Switch (backup pump)
- I. Primary pump check valve (sold separately)
- J. Primary pump float switch (sold separately)
- K. PVC pipe (sold separately)

7. Now would be a good time to remove any build up of sand/silt or stones that may have accumulated in the basin. These types of materials can clog or cause damage to the pump.
8. Following Figure 2 on page 5, thread the check valve (A) (included) into the discharge on the back up pump. Connect the flexible pipe coupling (C) to the check valve and secure the clamp.

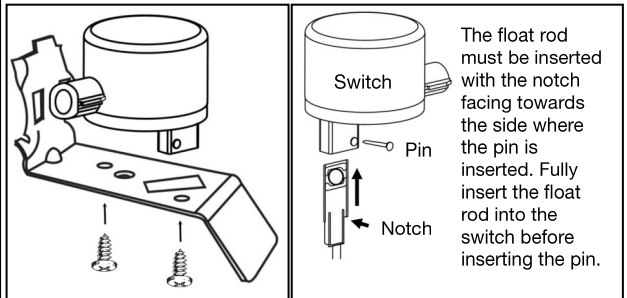
9. Plumb the back-up pump to the primary pump piping using a 1-1/2" flexible rubber coupling (C) Stainless Steel Clamps (B), 45° Street Elbow (G) length of pipe (D) and a Wye fitting (H). See Figure 2. It is highly recommended to do a "dry fit" before permanently gluing the pipe and fittings together. Place the assembly in the basin to make sure that it fits properly and that the primary float switch operates freely before permanently gluing the pipe and fittings together.
10. Remove the assembly from the basin and glue all fittings.
11. Next, secure the float switch to the discharge pipe using the provided bracket & clamp. See illustrations below for proper installation. DO NOT fully tighten the clamp at this time. Leave it a bit loose so you can adjust the position of the float in the next steps.
12. After the float switch has been attached to the discharge pipe, place the entire assembly in the basin. Make sure the primary pump float switch will operate freely and not contact the sides of the basin. Connect the pump assembly to the discharge pipe.



PIPE AND FITTINGS INSTALLATION

- A. 1-1/2" Check Valve
- B. Stainless Steel Clamps (sold separately)
- C. Flexible Rubber Coupling (sold separately)
- D. Discharge Pipe (Cut to fit your installation)
- E. Vertical Float Switch
- F. Vertical Float Switch Bracket (Includes clamp)
- G. PVC 45° Street Elbow (sold separately)
- H. PVC Wye (sold separately)
- I. Primary pump discharge pipe (sold separately)

VERTICAL FLOAT SWITCH INSTALLATION



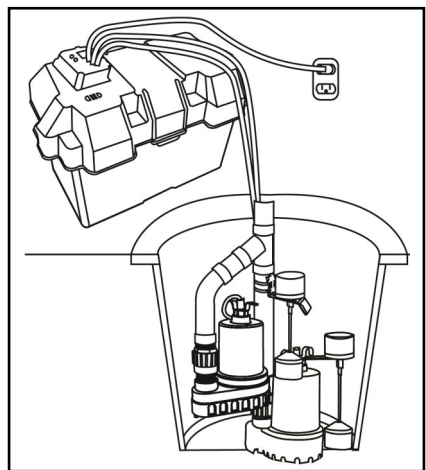
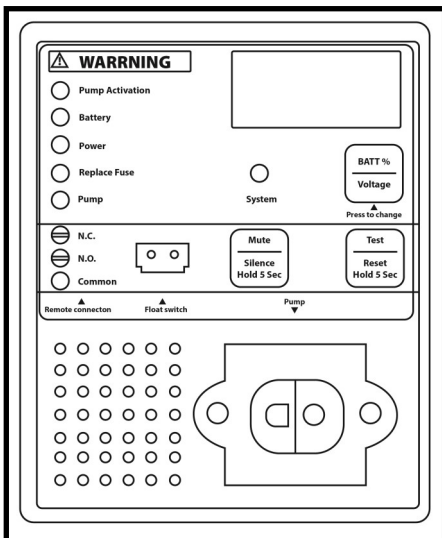
Vertical Switch Installation

Adjust the position of the vertical float switch so the back up pump will turn on when the water level rises above the start level of the primary pump. The float switch should be located above the activation mark made in Step 1. Make sure the "on" level does not exceed the top of the basin. It is recommended to keep at least a 2" clearance from the top of the basin. Position the float so that it will operate freely and not contact the sides of the basin or the primary pump. Once positioned properly, completely tighten the float switch clamp.

NOTE: These instructions represent one of the most common installations. Your installation may vary. Make sure the back up pump is positioned so that it won't interfere with the primary pump operation. If you have any questions about your particular installation, please feel free to contact us at 1-800-495-9278.

Wiring & Electrical Connections

1. If necessary, attach the provided battery terminals to the battery posts. (Many deep cycle marine batteries come with a threaded post terminal built in.) **NOTE:** The provided battery terminals are labeled (+) positive and (-) negative. Make sure the terminals are connected to the proper terminal on the battery. Place the battery in the battery box.
2. Connect the battery lead wires from the control panel to the corresponding terminals on the battery. Connect the red (+) positive lead to the positive battery terminal and tighten the wing nut. Connect the black (-) negative lead to the negative battery terminal and tighten the wing nut. Secure the cover to the lower box.
3. Connect the pump power cord to the corresponding terminal on the control panel. Make sure it is fully seated into the receptacle.
4. Connect the float switch to the corresponding receptacle on the control panel. Make sure it is fully seated into the receptacle.
5. Connect the AC power cord into the receptacle on the side of the control panel making sure it is fully seated in the receptacle.
6. Test the float switch and pump by lifting and holding the float ball to activate the float switch. The alarm will sound and the “PUMP ACTIVATION” lights on the control panel will illuminate. The pump should start immediately after lifting the float ball. If it does not run, check your connections and retry. Once complete, press and hold the TEST/RESET button to reset the system.
7. Test the “MUTE” button when the alarm is sounding. Press once to mute the alarm.
8. Secure the float switch and pump wires to the discharge pipe using the provided cable ties.



Installation - Testing installation

1. Once your installation and wiring connections are complete, unplug or disconnect the power to the primary pump.
2. Fill the basin using buckets or a hose. Observe the float switches to make sure they are positioned properly when the basin is filling. Fill the basin until the backup float activates the alarm. The pump should start and drain the basin.
3. Make any necessary adjustments to the float(s) and/or pumps at this time.

Operation

1. When the power fails or when there is a problem with the primary pump, the back-up pump will automatically start in a high water situation. The back up pump will operate for many hours intermittently. During prolonged periods of power outage the pump may stop pumping when the battery voltage drops to 10.8 volts. When this happens the an alarm will sound signaling that the voltage is too low to operate the pump.
2. This unit is equipped with a 5 amp charger. It will charge a discharged battery at a rate of 5 Ah (Amp hours). Once the battery reaches a full charge, the charger will gradually reduce the charge rate. It will also maintain a charged battery by periodically checking the voltage of the battery.
3. The charger is equipped with over charge protection. It will not let the battery become over charged.

WARNING LIGHTS & CONTROLS

System - When the system is operating normally without any warnings or notifications, this light will illuminate solid green.

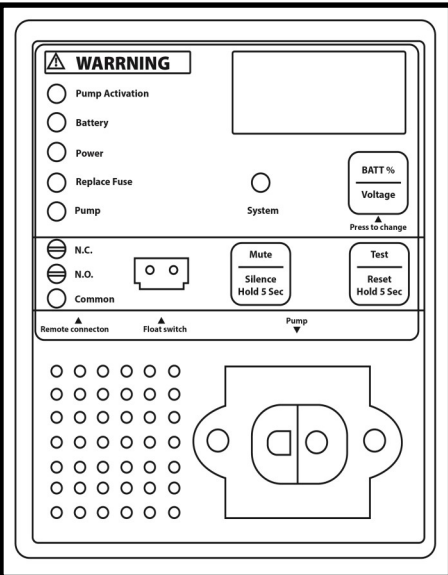
Pump Activation - This light will illuminate and the alarm will sound when the back up pump has activated. Press and hold reset for 5 seconds to reset.

Battery - This light will illuminate and the alarm will sound when the battery voltage drops below 10.8 volts. Press and hold the Test/Reset button for 5 seconds to reset.

Power - This light will illuminate and the alarm will sound when the AC power to the control panel is interrupted or disconnected. This would indicate a loose or disconnected power cord, power outage, blown fuse/circuit breaker or tripped GFCI outlet. Press and hold Test/Reset button for 5 seconds to reset.

Replace Fuse - This light will illuminate and the alarm will sound when the fuse is blown and needs to be replaced. Press and hold Test/Reset button for 5 seconds to reset.

Pump - This light will illuminate when there is a problem with the backup pump such as a short circuit or faulty motor. The light will also illuminate if the pump is not operating in water.



Mute / Silence - Press this button once to mute the alarm. The alarm will remain muted until another warning is detected. Press and hold this button for 5 seconds to permanently silence the alarm. To reactivate the alarm, press and hold the Test/Reset button for 5 seconds.

Test/Reset - Press this button once to test the status of the control panel and operation of the back up pump. The green light will flash and the pump will operate for 5 seconds and turn off. If any warnings are detected, the alarm will sound and the corresponding light will illuminate. Press and hold this button for 5 seconds to reset all alarm & warning notifications.

Batt% / Voltage - Press this button to switch the LCD display between the battery charge percentage and the battery voltage.

AUTO TEST FEATURE: This system will automatically test the pump every 15 days to ensure it is operating properly. If any problems are found, the corresponding warning lights will illuminate.

Troubleshooting

TROUBLESHOOTING WARNING LIGHTS		
WARNING	POSSIBLE CAUSES	HOW TO CORRECT
PUMP ACTIVATION	Primary pump is unplugged, clogged, locked up or has failed	Check and replace if necessary
	Incoming water is more than primary pump can handle.	Replace primary pump with higher output pump
	The float switch on the primary pump is stuck or defective	Ensure the float switch is operating freely or replace if necessary
	The primary pump check valve is stuck, or installed improperly.	Inspect, correct the installation or replace.
BATTERY	Battery voltage has dropped below 10.8 volts.	Check battery, ensure it is charging, replace if necessary
	Cables are loose	Tighten wing nuts on terminals
	Battery terminals are corroded	Clean terminals and cable connections.
POWER	Power cord to control panel is loose or unplugged	Inspect, make sure cord is fully seated in receptacle
	Outlet has failed or a fuse or circuit breaker has blown/tripped, tripped GFCI Outlet	Check outlet, replace if necessary, Check for blown fuses, or tripped breakers
REPLACE FUSE	Backup pump is clogged	Inspect and clear any debris from the pump
	Motor is seized	Replace pump
	Exposed wires	Replace power cord

TROUBLESHOOTING		
PROBLEM	POSSIBLE CAUSES	HOW TO CORRECT
Pump won't run.	Loose, corroded or reversed wire connections	Tighten, clean or reconnect if necessary
	Discharged battery	Charge battery
	Defective battery	Replace battery
Pump hums but won't run	Blown fuse	Replace with 20 amp fuse
	Float switch is stuck	Position float so it moves freely
	Battery is discharged below 10.8 volts	Fully charge the battery
Pump cycles too often	Float switch positioned improperly	Reposition float switch
	Defective or missing check valve	Install or replace check valve
Pump runs but moves little or no water	Low or discharged battery	Fully charge battery
	Obstruction in pipe	Clear obstruction
	Discharge pipe height/length exceeds the capacity of the pump	Check performance section for capacity of this pump
	Defective check valve	Replace Check Valve if necessary

Performances

Height and/or piping restriction will reduce the pump output performance. See the performance chart below to ensure the pump will work in your application. Whenever possible use the same size or larger pipe as the pump discharge for optimum performance. Reducing the pipe size will not harm your pump; it will just reduce the output.

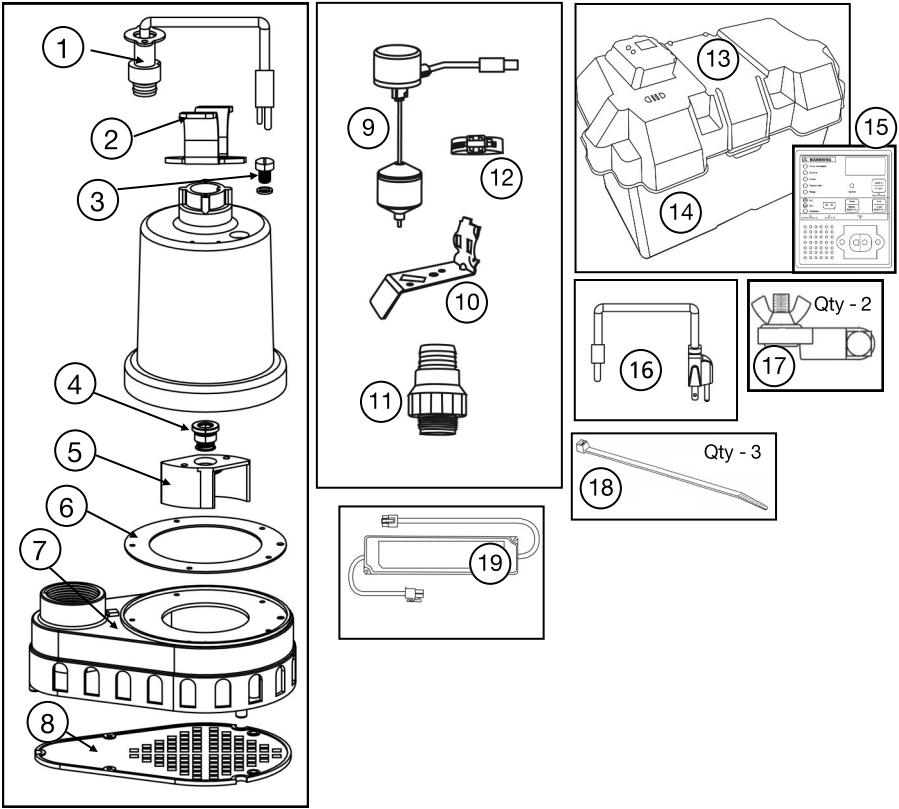
*Performance ratings are based on using a 27M, 12 volt deep cycle marine battery with a 100 Ah rating.

Output in gallons per minute at listed discharge height above pumping level					
Model	0'	5'	10'	15'	20'
PF92950	45	42	36	25	12

Specifications

Model	PF92950
Volts	12 volt DC
Amps	12 Amps
Discharge Size	1-1/2" NPT
Max. Solids Handling	3/8"
Liquid Temperature Range	32°F - 120°F
Cord Length	10'
Switch Type	Vertical
Pump Housing Construction	Thermoplastic
Pump Base Construction	Thermoplastic
Impeller	Thermoplastic
Motor Shaft	Stainless Steel
Shaft Seal	Carbon/Ceramic/Stainless Steel
Fasteners	Stainless Steel
Shut off head	21'
Max. PSI	9.0
Battery Requirement	12 volt Deep Cycle
Battery Charger	5 Amp
Low Voltage Cutoff	10.8 volts

Replacement Parts



Ref #	Description	PART #
1	Power Cord	99158
2	Pump Handle	99050
3	Oil Fill Plug with O-ring	99056
4	Shaft Seal	99057
5	Impeller	99065
6	Gasket	99187
7	Volute/Base	99185
8	Intake Screen	99186
9	Float Switch	92091
10	Float Switch Bracket	99195
11	1-1/2" Check Valve	99509
12	Stainless Steel Clamp	99182
13	Battery Box Cover (Includes Control	99450
14	Battery Box	99459
15	Control Panel	99451
16	Power Cord (Control Panel)	99452
17	Battery Terminals (+ & -)	99460
18	Cable Ties	Purchase Locally
19	AC Transformer	99453

To order replacement parts call 888-6-PROFLO

LIMITED WARRANTY - BATTERY BACKUP PUMPS:

Manufacturer warrants the products specified in this warranty to be free from defects in material or workmanship for three (3) years from date of purchase. During the time period and subject to the terms and conditions, the manufacturer will repair or replace to the original user or consumer any portion of this product which proves to be defective due to materials or workmanship. At all times the manufacturer shall have and possess the sole right and option to determine whether to repair or replace defective equipment, parts, or components. The manufacturer has the option to inspect any product returned under warranty to confirm that the warranty applies before repair or replacement under warranty is approved. This warranty sets forth the manufacturer's sole obligation and purchaser's exclusive remedy for defective product. Return defective product to the place of purchase for warranty consideration.

WARRANTY PERIOD - PRODUCTS:

If, within the duration of product use by the original user, this product proves to be defective due to materials or workmanship, the product shall be repaired or replaced at the manufacturer's option, subject to the terms and conditions set forth in this warranty statement. Proof of purchase is required for warranty consideration. In the absence of suitable proof of the purchase date, the effective period of this warranty is 12 months from the product's date of manufacture.

LABOR, ETC. COSTS:

The manufacturer shall IN NO EVENT be responsible or liable for the cost of field labor or other charges incurred by any customer in removing and/or affixing any product, part, or component thereof.

PRODUCT IMPROVEMENTS:

The manufacturer reserves the right to change or improve its products or any portions thereof without being obligated to provide such a change or improvement for units sold and/or shipped prior to such change or improvement.

GENERAL TERMS AND CONDITIONS:

This warranty shall not apply to damage due to acts of God, normal wear and tear, normal maintenance services and the parts used in connection with such service, lightning or conditions beyond the control of the manufacturer, nor shall it apply to products which, in the sole judgment of the manufacturer, have been subject to negligence, abuse, accident, misapplication, tampering, alteration; nor due to improper installation, operation, maintenance or storage; nor to excess of recommended maximums as set forth in the instructions. Warranty will be VOID if any of the following conditions are found:

1. Product is used for purposes other than those for which it was designed and manufactured
2. Product not installed in accordance with applicable codes, ordinances, and good trade practices
3. Product connected to voltage other than indicated on nameplate or labels
4. Pump exposed to but not limited to the following: sand, gravel, cement, grease, plaster, mud, tar, oil, gasoline, solvents or other abrasive or corrosive substances
5. Pump has been used for pumping liquids above 120°F
6. Pump allowed to operate dry (liquid supply cut off)

DISCLAIMER:

Any oral statements about the product made by the seller, the manufacturer, the representatives, or any other parties do not constitute warranties, shall not be relied upon by the user, and are not part of the contract for sale. Seller's and the manufacturers only obligation, and buyer's only remedy, shall be the replacement and/or repair by the manufacturer of the product as described above. NEITHER SELLER NOR THE MANUFACTURER SHALL BE LIABLE FOR ANY INJURY, LOSS OR DAMAGE, DIRECT, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR LOST PROFITS, LOST SALES, INJURY TO PERSON OR PROPERTY, OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS), ARISING OUT OF THE USE OR THE INABILITY TO USE THE PRODUCT, AND THE USER AGREES THAT NO OTHER REMEDY SHALL BE AVAILABLE TO IT. Before using, the user shall determine the suitability of the product for his/her intended use, and user assumes all risk and liability whatsoever in connection therewith.

THE WARRANTY AND REMEDY DESCRIBED IN THIS LIMITED WARRANTY IS AN EXCLUSIVE WARRANTY AND REMEDY AND IS IN LIEU OF ANY OTHER WARRANTY OR REMEDY, EXPRESSED OR IMPLIED, WHICH OTHER WARRANTIES AND REMEDIES ARE HEREBY EXPRESSLY EXCLUDED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, TO THE EXTENT EITHER APPLIES TO A PRODUCT SHALL BE LIMITED IN DURATION TO THE PERIODS OF THE EXPRESSED WARRANTIES GIVEN ABOVE.

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

