

# Owner's Manual & Safety Instructions

**Save This Manual** Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

REV 15I

**ITEM 68454 68455 68476**

# PACIFICHYDROSTAR®

## SUBMERSIBLE SUMP PUMP WITH VERTICAL FLOAT SWITCH



Item 68455 shown.

Visit our website at: <http://www.harborfreight.com>

Email our technical support at: [productsupport@harborfreight.com](mailto:productsupport@harborfreight.com)

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.

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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools. Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein.

Tools required for assembly and service may not be included.

## **⚠ WARNING**

**Read this material before using this product.  
Failure to do so can result in serious injury.  
SAVE THIS MANUAL.**

## Before start-up, note the following:

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The pump can be connected to any shock-proof plug which has been installed according to regulations. The plug must have a supply voltage of 120 VAC at 60 Hz.

## CAUTION

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This pump has been evaluated for use with water only.

## ⚠WARNING

**IMPORTANT! For your own safety – before starting to run the pump, please have the following items checked by an expert:**

1. Risk of electric shock – This pump is supplied with a grounding conductor and grounding-type attachment plug. To reduce the risk of electric shock, be certain that it is connected only to a properly grounded, grounding-type receptacle.
2. Risk of electric shock – This pump has not been investigated for use in swimming pool areas.
3. The electrical connections must be protected from moisture.
4. If there is danger of flooding, the electrical connections must be taken to higher ground.
5. Circulation of caustic fluids, as well as the circulation of abrasive materials, must be avoided at all costs.
6. The pump must be protected from frost.
7. The pump must be protected from running dry.
8. Access by children should also be prevented with appropriate measures.
9. Position the Pump on a flat, level, solid surface. Also secure the discharge pipe (not included) to a solid surface to ensure the stability of the Pump.
10. Do not use with an extension cord. If a GFCI-protected outlet is not close enough to the Pump, contact a licensed electrician to install a new one. All wiring must be performed by a licensed electrician and comply with the National Electric Code. Do not remove the round grounding pin from the plug.
11. Turn off power to all circuits before walking on a wet floor. If you cannot turn power off first, contact an electrician to turn off the power.
12. Install a backup pump and/or high water alarm as an additional safeguard against flooding.
13. **WARNING:** The cord of this product contains lead and/or di (2-ethylhexyl) phthalate (DEHP), chemicals known to the State of California to cause cancer, and birth defects or other reproductive harm. Wash hands after handling. (California Health & Safety Code § 25249.5, *et seq.*)
14. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.
15. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

## Fluid Type

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The Pump is designed for use with water with a maximum temperature of 77° F (25°C). Do not use the pump for other fluids, especially not fuels, cleaning fluids, or other chemical products.



## Specifications

ITEM	68455	68476	68454
Float Switch Operation Height	8.4" ON / 4.0" OFF		
Electrical Requirements	120VAC / 60Hz / 6.4A	120VAC / 60Hz / 7.6A	120VAC / 60Hz / 9.8A
Power Cord Length	10 Feet		
Maximum Capacity	2800 GPH	3000 GPH	3200 GPH
Maximum Delivery Height	22 Feet	25 Feet	28 Feet
Discharge Size	1.5" NPT (includes 1.25" Adaptor)		
Maximum Water Temperature	77° F (25°C)		



## Installation

The submersible motor pump must be installed in a stationary position with either:

- a. A fixed pipeline or
- b. A flexible hose pipe.

## Please note!

1. Do not install the pump by suspending it unsupported from its delivery pipe or power cords. The pump must be suspended from the handle or be placed on the bottom of the shaft. To ensure that the pump works properly, keep the bottom of the shaft free from sludge and dirt of all kinds.
2. If the water level sinks too low, any sludge in the shaft will dry out and stop the pump from starting. To help ensure the pump will start as required, check the pump regularly with start-up tests.

## Power Supply

1. The pump is equipped with a shock-proof plug according to regulations. The pump is designed to be connected to 120 VAC, 60 Hz, Ground Fault Circuit Interrupter (GFCI) protected safety socket.
  2. Make sure that the socket is sufficiently secured and is in excellent condition.
  3. When the plug is inserted into the socket the pump will be on standby.
  4. Connect the Pump Power Cord only through the Float Switch Cord plug to prevent dry running.
- WARNING!** If either power cord or plug is damaged, do not use the pump. The power cord or plug may only be repaired by a certified electrician.

## Areas of use

1. This pump is designed to pump clear water only.
2. This pump is designed for use as a basement pump. When installed in a shaft, this pump provides some protection from basement flooding.
3. This pump can also be used to transfer water (e.g. household, farming, plumbing).

# Installation Instructions

1. Construct a basin that is at least 22" deep and at least 14" in diameter.

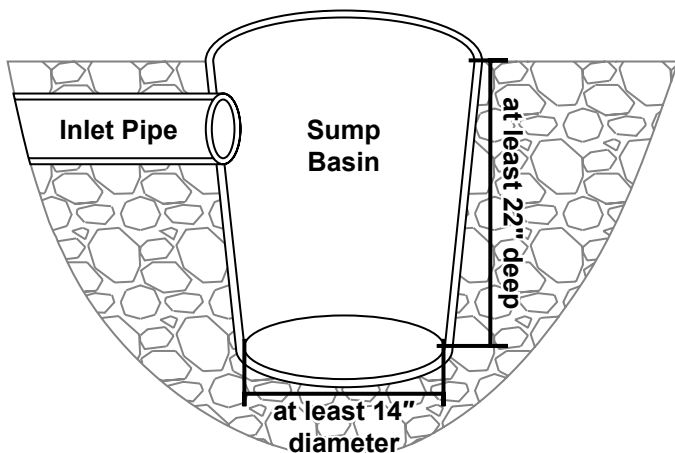


Figure A: Sump Basin

2. Position pump on solid surface so that the Float Switch is away from the inlet pipe and at least 1" away from all obstructions throughout its movement.
3. Fit a sump cover with a hole for the output pipe and a hole for the power cords. Thread the Power Cords through their holes, but do not plug them in yet. Set the sump cover aside for now.

**Note:** The sump cover can also be fitted with a vent pipe, if desired.

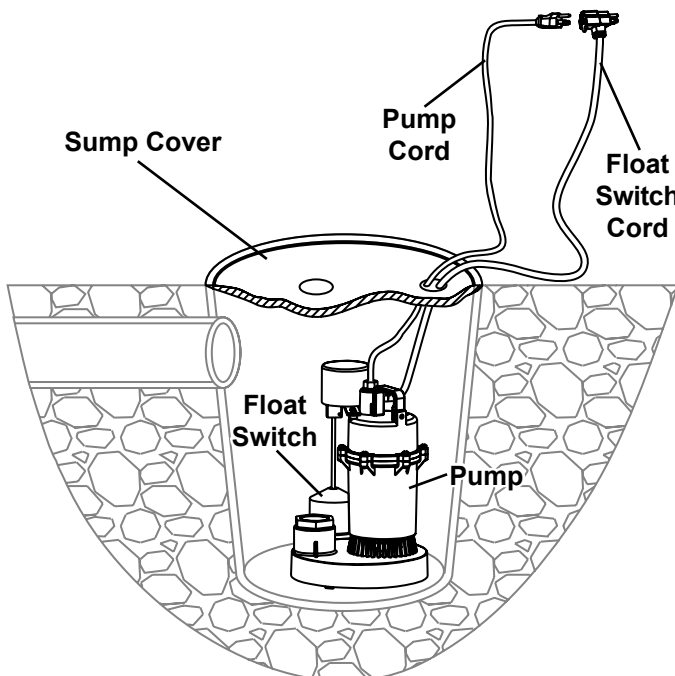


Figure B: Pump Position

4. Attach a discharge pipe to the Pump Outlet.

**Note:** Wrap all threaded connections with PTFE thread seal tape.

5. To prevent needless cycling, install a check valve onto the discharge pipe. This prevents water from flowing back after the pump shuts off.

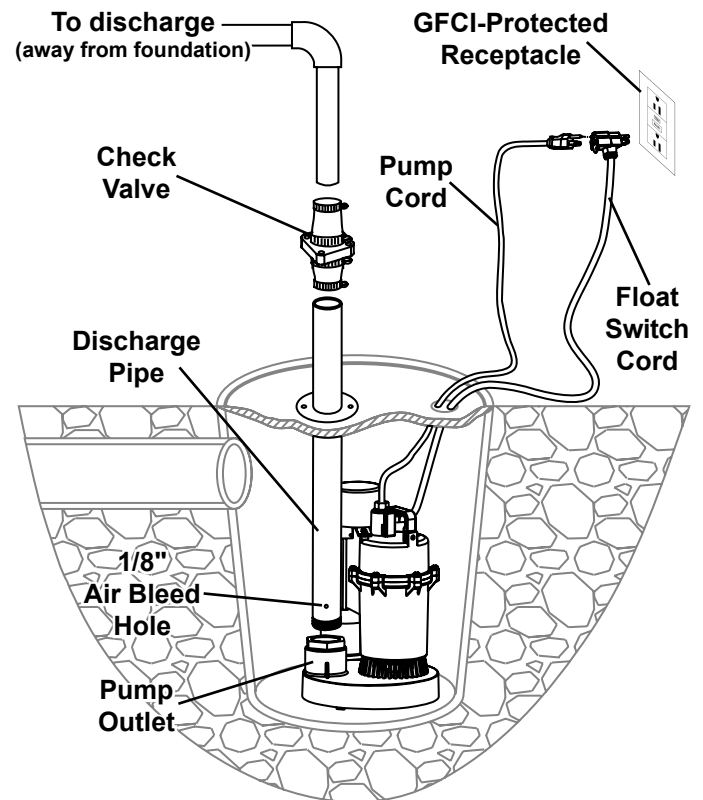


Figure C: Outlet Pipe and Plug

6. **IMPORTANT:** Drill a 1/8" diameter air bleed hole through the Discharge Pipe just above the lower Base to prevent Pump "airlock". A small spray of water out of this hole is normal while the Pump is running.
7. Install a gate valve or ball valve if required by building codes.
8. The ON/OFF height can be changed by adjusting the Float Switch.
9. Connect additional Discharge Pipe as needed to direct the water discharge at least 3 feet away from the foundation. Slope the discharge pipe downward, away from the foundation. The discharge should be kept as short as possible with a minimum number of turns.

**IMPORTANT:** Do not exceed the Maximum Delivery Height of the Pump.

## Operation

After reading these instructions, consider the following points before starting the pump:

1. Verify that the pump rests on the floor of the shaft, if it is not suspended by the handle.
2. Verify that the delivery pipe is properly connected.
3. Verify that the electrical connection is 120 VAC, 60 Hz, and GFCI-protected.
4. Verify that the electrical socket is in good condition.
5. Verify that water and moisture cannot get near the power supply socket.
6. Verify that the pump is installed so as to prevent running dry.
7. Verify that the power cords do not have excess slack in the Sump Basin to prevent it from interfering with the Float Switch. Secure them to the Discharge Pipe if needed.
8. Dry the floor and your hands, then plug the Float Switch Cord into a grounded, GFCI-protected receptacle.
9. Plug the Pump Cord into the back of the Float Switch Cord's plug. The pump will then be on standby.

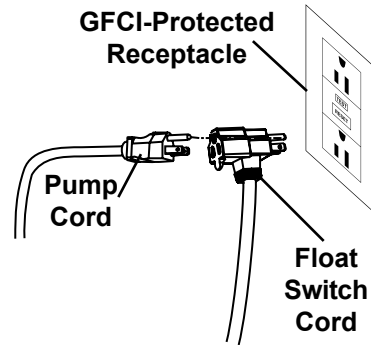


Figure D: Outlet Pipe and Plug

10. After connecting power to the pump and periodically afterwards, test the pump:
  - a. Fill the basin to above the Float Switch Operation ON Height. The pump should start pumping.
  - b. The pump should pump the water down to below its Float Switch Operation OFF Height and then stop pumping.
  - c. If the water drains back into the basin and restarts the pump, make sure the check valve is properly installed and working. Also make sure that all pipe connections are tight.

**Note:** It is the owner's responsibility to ensure the float switch is properly connected to the pump and can operate properly and freely without obstructions.

## Maintenance

### **⚠ WARNING**

**TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:  
Unplug the Pump from its electrical outlet and ALLOW TO COOL FOR AT LEAST 2 HOURS  
before performing any inspection, maintenance, or cleaning procedures.**

If the pump is moved during operation, flush it out with clean water after every use.

1. **Before each use**, inspect the general condition of the Pump. Check for cracked or broken parts, damaged electrical wiring, clogged Impeller Cover, Impeller, Discharge Pipes, leaks and loose connections, and any other condition that may affect safe operation. If abnormal noise or vibration occurs, have the problem corrected before further use. Do not use damaged equipment.
2. Keep the Sump Basin clean. Clean out the sump basin regularly and keep the cover in place to keep it clean. Sand and other debris can interfere with pump operation, can block the air bleed hole, or can cause premature wear.
3. Clean out the air bleed hole periodically.

## Quarterly Maintenance

The below maintenance must be performed at least once every 3 months under optimal conditions. For frequent use, or dirty areas, more frequent maintenance is required.

1. Remove the Sump Basin Cover.
2. Clean sludge and debris from the bottom of the shaft.
3. Rinse the housing off with clean water.
4. Clean fibers from inside the pump housing with a pressure washer (not included).

5. If the pump housing cannot be cleaned from the outside, it must be thoroughly cleaned.  
**Unplug the power cord before maintenance.**  
Dismantle the bottom part of the pump as follows:
  - a. Remove the Screws at the bottom of the Base.
  - b. Remove the Volute to expose the Impeller.
  - c. Clean the impeller with clean water.
- d. To prevent damage, do not rest the pump on the impeller or pry against the impeller.
- e. Reassemble in reverse order.
6. Make sure the float switch can operate freely, without obstructions.
7. Replace the Sump Basin Cover.

## Cold Weather Storage

In cold weather, when the Pump is not in use, protect the interior of the Pump from freezing by draining the water and pumping a permanent-type automobile anti-freeze containing a rust inhibitor through the system. A 50% mixture with water is recommended. Be sure to flush the system with a neutralizing liquid prior to re-use of the Pump.

**▲WARNING!** The oil inside some pump types can be harmful to the environment. Check state environmental laws before disposing of any pump oil.

## Troubleshooting

Problem	Possible Causes	Possible Solutions
Pump runs, but will not deliver any water.	<p><b>Disconnect power cords immediately to prevent damage from running dry.</b></p> <ol style="list-style-type: none"> <li>1. Pump "airlock". Impeller trapped in an air bubble.</li> <li>2. Shut-off valve closed (if installed).</li> <li>3. Filter (if installed) and/or impeller clogged.</li> <li>4. Check valve (optional) stuck or installed backwards.</li> </ol>	<p><b>Disconnect power cords immediately to prevent damage from running dry.</b></p> <ol style="list-style-type: none"> <li>1. Drill a 1/8" diameter air bleed hole through the Discharge Pipe just above the Lower Base. Make sure air bleed hole is clear.</li> <li>2. Open valve.</li> <li>3. Remove filter and/or volute. Clean out dirt and debris from filter and/or impeller. Replace filter and/or volute.</li> <li>4. Examine and correct check valve.</li> </ol>
Pump won't start or run.	<ol style="list-style-type: none"> <li>1. Check power connections and circuits/fuses.</li> <li>2. Float Switch failed.</li> <li>3. Filter (if installed) and/or impeller clogged.</li> <li>4. Defective motor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Consult with an electrician.</li> <li>2. Replace Float Switch.</li> <li>3. Remove filter and/or volute. Clean out dirt and debris from filter and/or impeller. Replace filter and/or volute.</li> <li>4. Have a qualified service technician repair or replace.</li> </ol>
Excessive noise or vibration.	<ol style="list-style-type: none"> <li>1. Debris in impeller.</li> <li>2. Discharge pipe restricted.</li> <li>3. Worn bearings.</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove volute. Clean impeller. Reinstall volute.</li> <li>2. Clean Pump and discharge pipe. Straighten flexible hose.</li> <li>3. Have a qualified service technician repair or replace.</li> </ol>
Pump starts and stops too frequently.	<ol style="list-style-type: none"> <li>1. Water temperature too high.</li> <li>2. Back flow of water from discharge pipe.</li> <li>3. Extension cord used.</li> </ol>	<ol style="list-style-type: none"> <li>1. Do not exceed 77° F (25°C) water temperature.</li> <li>2. Install or inspect check valve (optional).</li> <li>3. Eliminate use of extension cord. Have licensed electrician install GFCI-protected outlet if needed.</li> </ol>
Pump does not shut off automatically.	<p><b>DISCONNECT POWER CORDS FIRST TO PREVENT SERIOUS INJURY.</b></p> <ol style="list-style-type: none"> <li>1. Pump Cord not connected through Float Switch Cord plug.</li> <li>2. Float Switch stuck.</li> <li>3. Check valve not installed or functioning properly.</li> <li>4. Defective Float Switch.</li> </ol>	<p><b>DISCONNECT POWER CORDS FIRST TO PREVENT SERIOUS INJURY.</b></p> <ol style="list-style-type: none"> <li>1. Plug Pump Cord into back of Float Switch Cord plug.</li> <li>2. Check for free movement of Float Switch. Clear debris away from beneath Float Switch.</li> <li>3. Ensure check valve is properly installed and in working order.</li> <li>4. Unplug Pump. Have qualified technician check Pump for proper operation.</li> </ol>

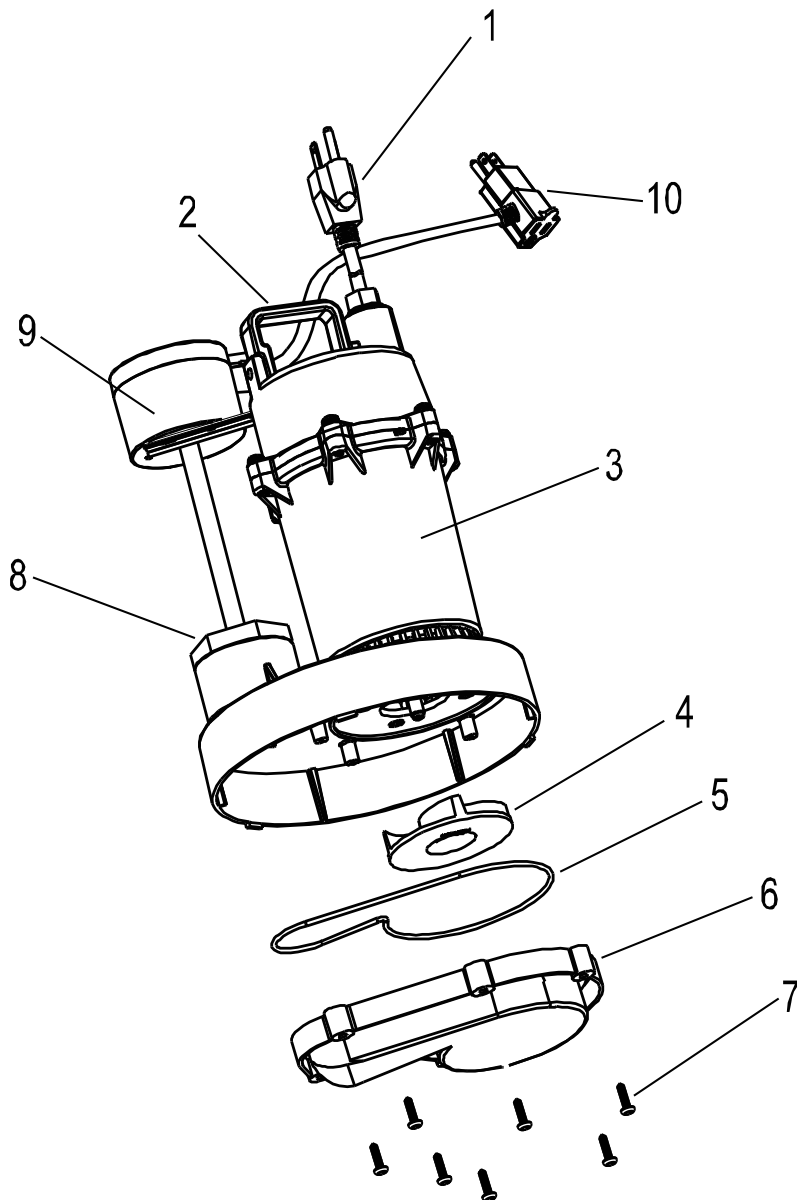


**Follow all safety precautions whenever diagnosing or servicing the tool.  
Disconnect power supply before service.**

# PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

## Parts List and Assembly Diagram



Part	Description	Qty.
1	Pump Cord	1
2	Handle	1
3	Motor	1
4	Impeller	1
5	Gasket	1
6	Volute	1
7	Screw	7
8	Adaptor	1
9	Float Switch	1
10	Float Switch Cord	1

Record Product's Serial Number Here: \_\_\_\_\_

**Note:** If product has no serial number, record month and year of purchase instead.

**Note:** Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

## Limited 90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. **THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.**

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

