

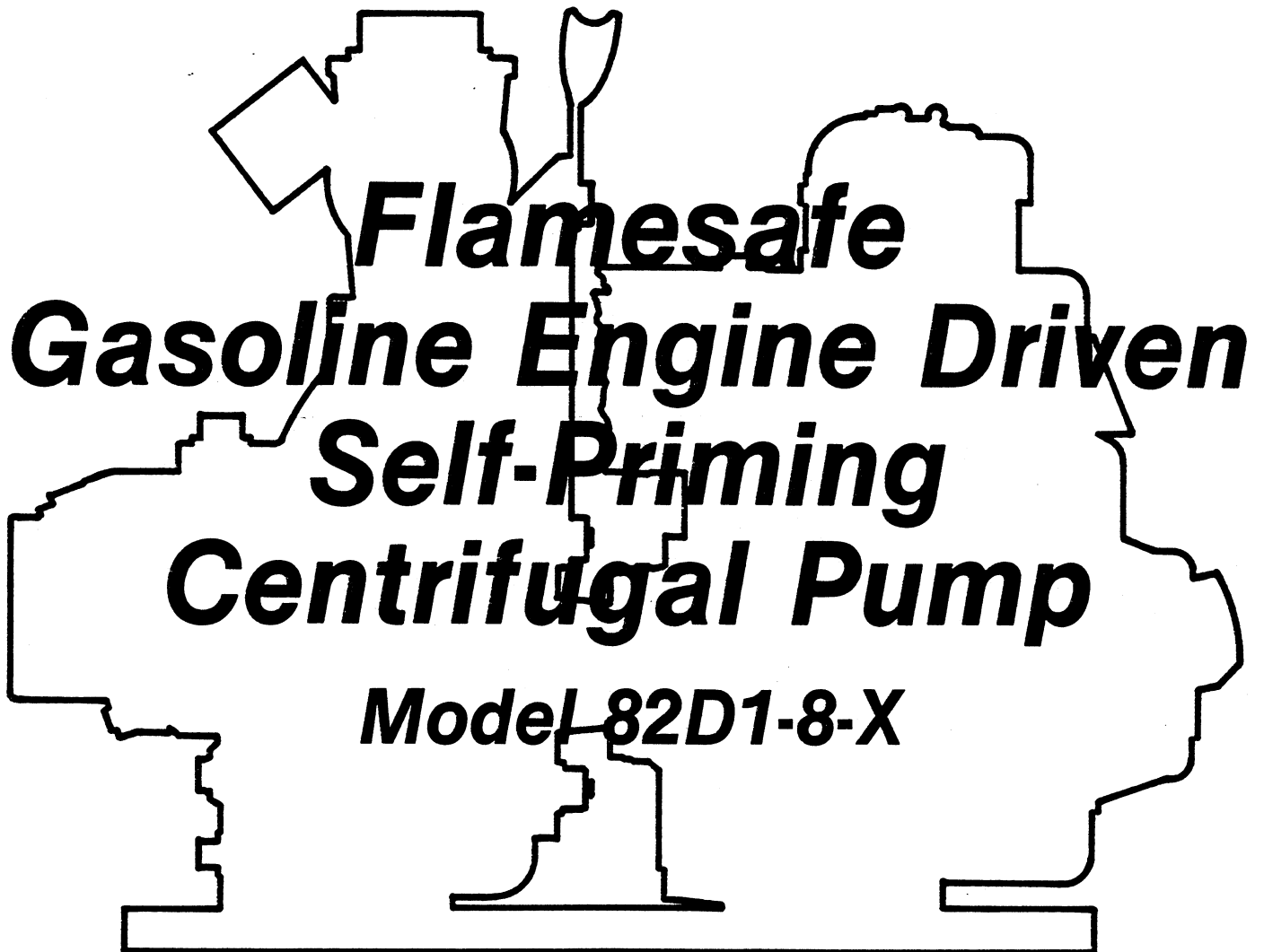
**INSTALLATION, OPERATION, PARTS LIST,  
AND MAINTENANCE MANUAL**

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A B C E



August 4, 1981

A large, stylized outline drawing of the pump assembly, showing the engine, pump housing, and base. The text is overlaid on this drawing.

***Flamesafe  
Gasoline Engine Driven  
Self-Priming  
Centrifugal Pump  
Model 82D1-8-X***

**THE GORMAN-RUPP COMPANY • MANSFIELD, OHIO**  
GORMAN-RUPP OF CANADA LIMITED • ST. THOMAS, ONTARIO, CANADA    Printed in U.S.A.

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This Installation, Operation, and Maintenance Manual is designed specifically to help you get the best performance and longest life from your Gorman-Rupp pump. The engine of this pump has been modified at the Gorman-Rupp factory to include special Flamesafe features.

If you have any questions regarding the pump or the modification which are not covered in this manual or in other literature furnished with the unit, please contact your Gorman-Rupp distributor, or write:

The Gorman-Rupp Company	or	Gorman-Rupp of Canada Limited
P.O. Box 1217		70 Burwell Road
Mansfield, Ohio 44902		St. Thomas, Ontario N5P 3R7

For information or technical assistance on the power source, contact the power source manufacturer's local dealer or representative.

The following are used to alert maintenance personnel to procedures which require special attention, to those which could damage equipment, and to those which could be dangerous to personnel:

**NOTE**

Instructions to aid in installation, operation, or maintenance or which clarify a procedure.

**CAUTION**

Instructions which must be followed to avoid causing damage to the product or other equipment incidental to the installation. These describe the procedure required and the damage which could result from failure to follow the procedure.

**WARNING**

Instructions which must be followed to avoid causing injury or death to personnel. These describe the procedure required and the injury which could result from failure to follow the procedure.

**TABLE OF CONTENTS**

WARNINGS	Section A
INSTALLATION	Section B
OPERATION	Section C
TROUBLESHOOTING	Section D
MAINTENANCE AND REPAIR	Section E
WARRANTY	

## WARNINGS

**THESE WARNINGS APPLY TO FLAMESAFE ENGINE DRIVEN SELF-PRIMING CENTRIFUGAL PUMPS. REFER TO THE MANUAL ACCOMPANYING THE ENGINE BEFORE ATTEMPTING TO START THE ENGINE.**

The engine used in this pump is not standard. It has been modified at the Gorman-Rupp factory for Flamesafe operation, and cannot be further modified without affecting performance and safety factors. The Flamesafe modifications must be inspected and maintained regularly while the unit is in use.

Before attempting to open or service the pump:

1. Familiarize yourself with this manual.
2. Disconnect the power source to ensure that the pump will remain inoperative.
3. Allow the pump to cool if overheated.
4. Vent the pump slowly and cautiously.
5. Close the suction and discharge valves.
6. Check the temperature before opening any covers, plates, or plugs.
7. Drain the pump.

Do not attempt to pump volatile or flammable materials for which this pump has not been designed.

After the pump has been located in its operating position, make certain that the pump has been secured before attempting to operate it.

Do not operate the pump without shields and/or guards in place over drive shafts, belts and/or couplings, or other rotating parts. Exposed rotating parts can catch clothing, fingers, or tools, causing severe injury to personnel.



Do not operate the pump against a closed discharge valve for long periods of time. This could bring the liquid to a boil, build pressure, and cause the pump to rupture or explode.

Overheated pumps can cause severe burns and injury. If overheating of the pump casing occurs:

1. Stop the pump immediately.
2. Allow the pump to cool.
3. Refer to instructions in this manual before restarting the pump.

Do not remove plates, covers, gauges, pipe plugs, or fittings from an overheated pump. Vapor pressure within the pump can cause parts being disengaged to be ejected with great force. Allow the pump to cool before servicing.

Never tamper with the governor to gain more power. The governor establishes safe operating limits that should not be exceeded.

## INSTALLATION

Seldom are two pump installations identical. The information presented in this section is a summary of the recommended installation practices related to inspection, pump positioning, hardware, suction and discharge piping, and sumps. For further assistance, contact your Gorman-Rupp distributor or the Gorman-Rupp Company.

### PREINSTALLATION INSPECTION

The pump assembly was inspected and tested before it was shipped from the factory. Before installation, inspect the pump for damage which may have occurred during shipment. Check as follows:

- a. Inspect the pump assembly for cracks, dents, damaged threads, and other obvious damage.
- b. Check for and tighten loose bolts, nuts, capscrews, and other attaching hardware. Since gaskets tend to shrink after drying, check for and tighten loose nuts and capscrews securing mating surfaces.
- c. Carefully read all tags, decals, and markings on the pump assembly, and perform all duties indicated. Note the direction of rotation indicated on the pump.
- d. Check all lubricant levels and lubricate as necessary. Refer to the MAINTENANCE AND REPAIR section of this manual.

### POSITIONING THE PUMP

#### Mounting

Locate the pump in an accessible place as close as practical to the liquid to be pumped. Level mounting is essential for proper operation. The pump may have to be supported to provide for level operation or to eliminate vibration.

#### Lifting

#### WARNING

Use lifting and moving equipment in good repair and with adequate capacity to prevent injuries to personnel or damage to equipment. The bail is intended for use in lifting the pump assembly **only**; disconnect suction and discharge hoses and piping from the pump when lifting the pump by the bail.



Make sure that hoists and other lifting equipment are of sufficient capacity to safely handle the pump assembly. If chains or cables are used, make certain that they are positioned so that they will not damage the pump, and so that the load will be balanced.

### **CAUTION**

The pump assembly can be seriously damaged if the cables or chains used to lift and move the unit are improperly wrapped around it.

## **SUCTION AND DISCHARGE PIPING**

### **Materials**

Either pipe or hose may be used for suction and discharge lines, but hose used in suction lines must be the rigid-wall, reinforced type to prevent collapse under suction. Using pipe couplings in suction lines is not recommended.

### **Line Configuration**

Keep suction and discharge lines as straight as possible to minimize friction losses. Make minimum use of elbows and fittings, which substantially increase friction loss. If elbows are necessary, use the long-radius type to minimize friction loss.

### **Connections to Pump**

Never pull a pipe line into place by tightening the flange bolts. The connecting flange must be aligned exactly with the pump port. Lines near the pump must be independently supported to avoid strain on the pump which could cause serious vibration, decreased bearing life, and increased shaft and seal wear. Hose-type lines should have supports strong enough to secure the line when it is filled with liquid and under pressure.

### **Gauges**

Most pumps are drilled and tapped for installing discharge pressure and vacuum suction gauges. If these gauges are desired for pumps that are not tapped, drill and tap the suction and discharge lines close to the pump before installing the lines.

## **SUCTION LINES**

To avoid air pockets which could affect pump priming, the suction line must be as short and direct as possible. When operation involves a suction lift, the line must always slope upward to the pump from the source of the liquid being pumped; if the line slopes down to the pump at any point along the suction run, air pockets will be created.

### **Fittings**

Suction lines should be the same size as the pump inlet. If reducers are used in suction lines, they should be the eccentric type, and should be installed with the flat part of the reducers uppermost to avoid creating air pockets. Valves are not normally used in suction lines, but if a valve is used, install it with the stem horizontal to avoid air pockets.

**Strainers**

Install a strainer at the end of the suction line to avoid possible clogging or damage to the pump. The total area of the openings in the strainer should be at least three or four times the cross section of the suction line, but no opening should be larger than the solids handling capability of the pump. Clean the strainer regularly during operation.

**Sealing**

All connections in the suction line should be sealed with pipe dope to ensure an airtight seal. Even a slight leak will affect priming, head, and capacity, especially when operating with a high suction lift. After installation, inspect the suction line carefully for potential leaks.

**DISCHARGE LINES****Throttling Valves**

If a throttling valve is desired, install it in the discharge line. Use a valve as large as the largest pipe in the line to minimize friction losses. Never install a throttling valve in the suction line.

**Check Valves**

A check valve in the discharge line is normally recommended, but is not necessary in low discharge head applications.

With high discharge heads, install a throttling valve and a check valve in the discharge line to protect the pump from excessive shock pressure and reverse rotation when it is stopped.

**Bypass Lines**

If it is necessary to permit the escape of air to atmosphere during initial priming or in the repriming cycle, install a bypass line between the pump and the discharge check valve. The bypass line should be sized so that it does not affect pump discharge capacity.

Either a Gorman-Rupp automatic air release valve—which will automatically open to allow the pump to prime, and automatically close when priming is accomplished—or a hand-operated shutoff valve should be installed in the bypass line.

**NOTE**

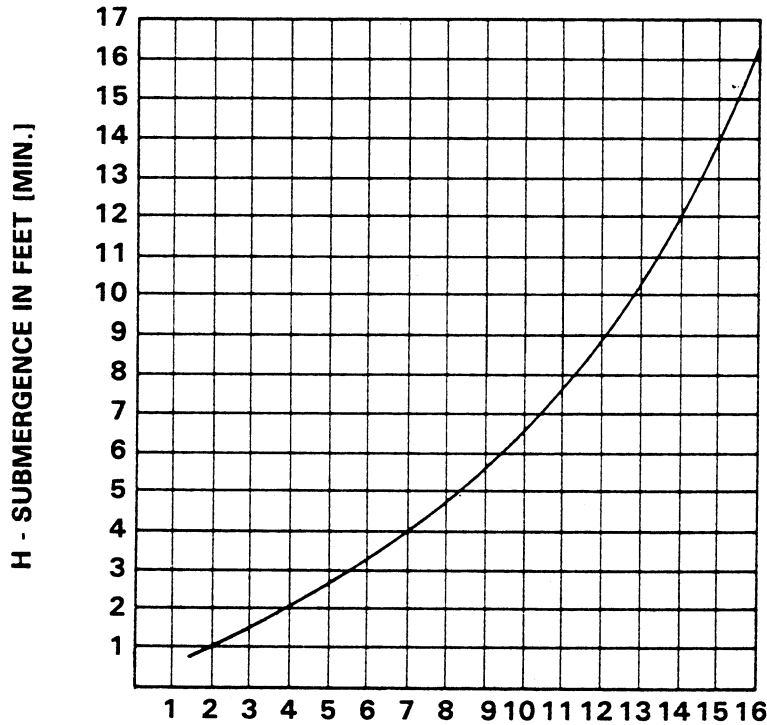
The bypass line may clog frequently, particularly if the valve remains closed. If this condition occurs, either use a larger bypass line or leave the shutoff valve open during the pumping operation.

Do not terminate the discharge line at a level lower than that of the liquid being pumped unless a siphon breaker is used in the line. Otherwise, a siphoning action could result, causing damage to the pump.



**SUCTION LINE POSITIONING**

The depth of submergence of the suction line is critical to efficient pump operation. Figure 1 shows recommended minimum submergence vs. velocity.



$$\text{VELOCITY IN FEET PER SEC.} = \frac{\text{QUAN. [G.P.M.] x .321}}{\text{AREA}} \text{ OR } \frac{\text{G.P.M. x .4085}}{D^2}$$

Figure 1. Recommended Minimum Suction Line Submergence Vs. Velocity



## OPERATION

### WARNING

Do not attempt to pump volatile or corrosive materials for which this pump has not been designed.

### PRIMING

Install the pump and piping as described in INSTALLATION. Make sure that the piping connections are tight, and that the pump is securely mounted. Check that the pump is properly lubricated (see LUBRICATION in MAINTENANCE AND REPAIR).

This pump is self priming, but the pump volute casing must first be filled with liquid if:

1. The pump is being put into service for the first time.
2. The pump has not been used for a considerable length of time.
3. The liquid in the volute casing has evaporated.

Once the volute casing has been filled, the pump will prime and reprime as necessary.

### CAUTION

Never operate a self-priming pump unless the volute is filled with liquid. The pump will not prime when dry. Extended operation of a dry pump will destroy the seal assembly.

To fill the pump, remove the volute fill cover or fill plug at the top of the casing and add clean liquid until the pump is filled. Replace the fill cover or fill plug before operating the pump.

### STARTING

Consult the operating manual furnished with the power source.

### OPERATION

#### Lines With a Bypass

Either a Gorman-Rupp automatic air release valve or a hand operated shutoff valve may be installed in a bypass line.

If a Gorman-Rupp automatic air release valve has been installed, close the throttling valve in the discharge line. The Gorman-Rupp valve will automatically open to allow the pump to prime, and automatically close when priming has been accomplished. After the pump has been primed, and liquid is flowing steadily from the bypass line, open the discharge throttling valve.

If a hand operated shutoff valve has been installed, close the throttling valve in the discharge line, and open the bypass shutoff valve so that the pump will not have to prime against the weight of the liquid in the discharge line. When the pump has been primed, and liquid is flowing steadily from the bypass line, close the bypass shutoff valve and open the discharge throttling valve.

#### **Lines Without a Bypass**

Open all valves in the discharge line and start the power source. Priming is indicated by a positive reading on the discharge pressure gauge or by quieter operation. The pump may not prime immediately because the suction line must first fill with liquid. If the pump fails to prime within five minutes, stop it and check the suction line for leaks.

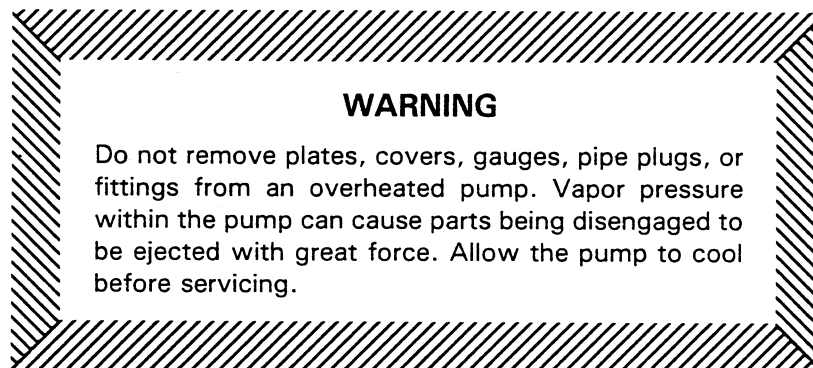
After the pump has been primed, partially close the discharge line throttling valve in order to fill the line slowly and guard against excessive shock pressure which could damage pipe ends, gaskets, sprinkler heads, and any other fixtures connected to the line. When the discharge line is completely filled, adjust the throttling valve to the required discharge flow rate.

#### **Leakage**

No leakage should be visible at pump mating surfaces, or at pump connections or fittings. Keep all line connections and fittings tight to maintain maximum pump efficiency.

#### **Overheating**

Overheating can occur if the valves in the suction or discharge lines are closed. Operating against closed valves could bring the liquid to a boil, build pressure, and cause the pump to rupture or explode. If overheating occurs, stop the pump and allow it to cool before servicing it. Refill the volute casing with cool liquid.



#### **Strainer Check**

Check the suction strainer regularly during pump operation, or if the pump flow rate begins to drop, and clean it as necessary. Be especially alert for unusual noises when pumping liquids containing solids.

#### **Pump Vacuum Check**

Install a vacuum gauge in the system, using pipe dope on the threads.

The pump should pull a vacuum of 20 inches or more of mercury at operating speed with the suction line blocked. If it does not, check for air leaks in the seals or gaskets.



With the pump primed and at operating speed, and the suction line open, read the vacuum gauge. Shut off the pump, keep the vacuum line open, and read the gauge again to see if the vacuum remains at the maximum developed by the pump. If the vacuum falls off rapidly, an air leak exists. If the liquid level at the source of supply remains at a constant level, check to make certain that the air leak is not from the vacuum gauge connection.

## **STOPPING**

After stopping the pump, disconnect the power source to ensure that the pump will remain inoperative.

In below freezing conditions, drain the pump to prevent damage from freezing. Also, clean out any solids by flushing with a hose. Operate the pump for approximately one minute; this will remove any remaining liquid that could freeze the pump rotating parts.

If the pump will be idle for more than a few hours, or if it has been pumping liquids containing a large amount of solids, drain the pump, and flush it thoroughly with clean water. To prevent large solids from clogging the drain port and preventing the pump from completely draining, operate the pump during the draining process. Clean out any remaining solids by flushing with a hose.



## TROUBLESHOOTING

### WARNING

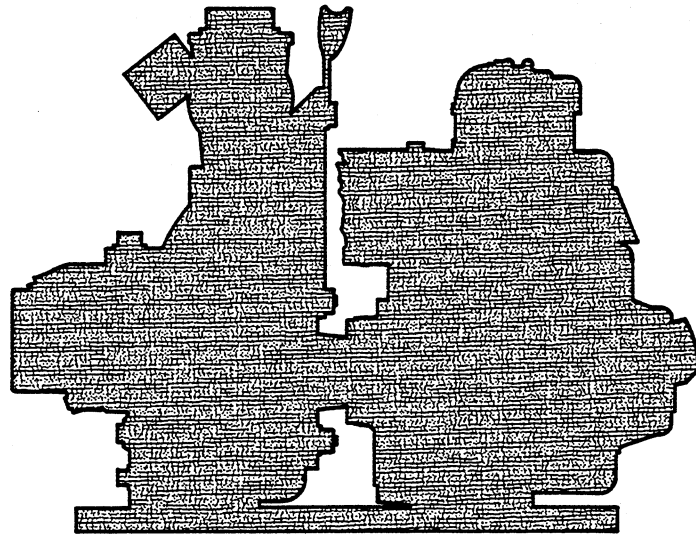
Before attempting to open or service the pump:

1. Consult pump service manual.
2. Disconnect the power source to ensure that the pump will remain inoperative.
3. Allow the pump to cool if overheated.
4. Close suction and discharge valves.
5. Drain pump.

Trouble	Possible Cause	Probable Remedy
PUMP FAILS TO PRIME	<p>Air leak in suction line.</p> <p>Lining of suction hose collapsed.</p> <p>Suction check valve clogged or binding.</p> <p>Leaking or worn seal or pump gasket.</p> <p>Suction lift or discharge head too high.</p> <p>Suction strainer clogged.</p>	<p>Correct leak.</p> <p>Replace suction hose.</p> <p>Clean valve.</p> <p>Check pump vacuum. Replace leaking or worn seal or gasket.</p> <p>Check piping installation and install bypass line if needed. See INSTALLATION.</p> <p>Clean suction strainer.</p>
PUMP STOPS OR FAILS TO DELIVER RATED FLOW OR PRESSURE	<p>Air leak in suction line.</p> <p>Suction intake not submerged at proper level or sump too small.</p> <p>Lining of suction hose collapsed.</p> <p>Impeller or other wearing parts worn or damaged.</p> <p>Impeller clogged.</p> <p>Pump speed too slow.</p> <p>Discharge head too high.</p> <p>Suction lift too high.</p>	<p>Correct leak.</p> <p>Check installation and correct as needed. Check submergence chart (Section B, page 4).</p> <p>Replace suction hose.</p> <p>Check impeller clearance. Replace worn parts as needed.</p> <p>Free impeller of debris.</p> <p>Check driver output.</p> <p>Install bypass line.</p> <p>Reduce suction lift.</p>

Trouble	Possible Cause	Probable Remedy
<p>PUMP STOPS OR FAILS TO DELIVER RATED FLOW OR PRESSURE (cont)</p>	<p>Leaking or worn seal or pump gaskets.</p> <p>Suction strainer clogged.</p>	<p>Check pump vacuum. Replace leaking or worn seal or pump gaskets.</p> <p>Clean suction strainer.</p>
<p>PUMP REQUIRES TOO MUCH POWER</p>	<p>Pump speed too high.</p> <p>Discharge head too low.</p> <p>Liquid solution too thick.</p>	<p>Reduce speed of power source.</p> <p>Adjust discharge valve.</p> <p>Dilute if possible.</p>
<p>PUMP CLOGS FREQUENTLY</p>	<p>Discharge flow too slow.</p> <p>Suction check valve clogged or binding.</p>	<p>Open discharge valve fully to increase flow rate, and run engine at maximum governed speed.</p> <p>Free valve, and clean or replace it.</p>
<p>EXCESSIVE NOISE</p>	<p>Cavitation in pump.</p> <p>Pumping entrained air.</p> <p>Pump or drive not securely mounted.</p> <p>Impeller clogged or damaged.</p>	<p>Reduce suction lift and/or friction losses in suction line.</p> <p>Locate and eliminate source of air bubble.</p> <p>Secure mounting hardware.</p> <p>Clean out debris; replace damaged parts.</p>

# ***Flamesafe Gasoline Engine Driven Self-Priming Centrifugal Pump Model 82D1-8-X***



MAINTENANCE AND REPAIR OF THE WEARING PARTS OF THE PUMP WILL MAINTAIN PEAK OPERATING EFFICIENCY.

# SECTIONAL DRAWING

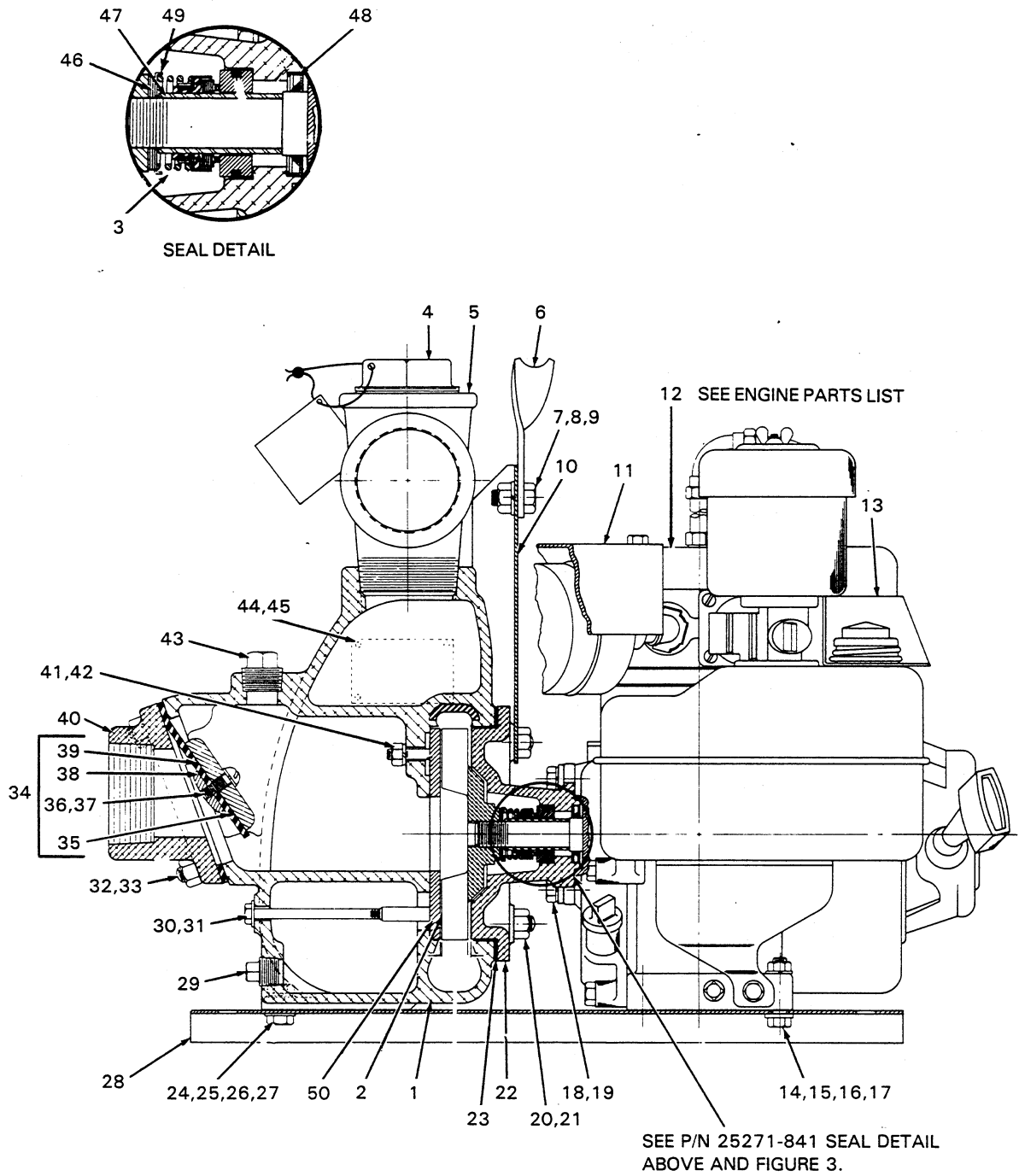


Figure 1. Pump Model 82D1-8-X



# PARTS LIST

## PUMP MODEL 82D1-8-X

(From S/N 505621 up)

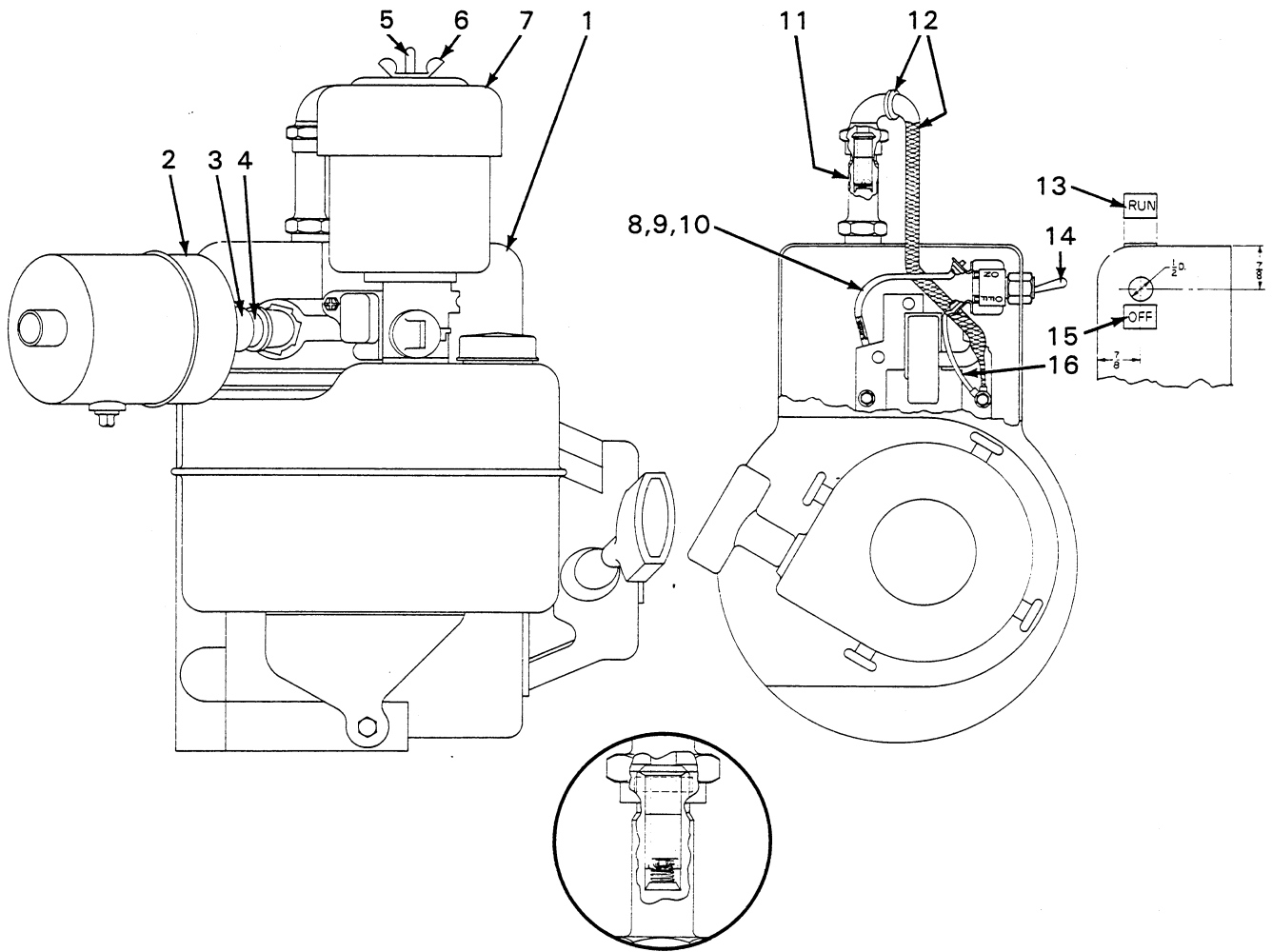
ITEM NO.	PART NAME	PART NUMBER	MATL CODE	QTY	ITEM NO.	PART NAME	PART NUMBER	MATL CODE	QTY
1	VOLUTE CASING	6846-C	13040	1	29	VOLUTE DRAIN PLUG	P-08	11990	1
2	★ IMPELLER	2912-F	13040	1	30	HEX HEAD CAPSCREW	B-0414	15991	1
3	★ SEAL ASSEMBLY	25271-841	—	1	31	FLAT WASHER	KF-04	18040	1
4	FILL PLUG ASSEMBLY	48271-068	—	1	32	STUD	C-0606	15991	4
5	SERVICE TEE	US-32	11990	1	33	HEX NUT	D-06	15991	4
6	HANDLE	44723-016	—	1	34	FLAP VALVE ASSEMBLY	1361-A	—	1
7	HEX HEAD CAPSCREW	B-0603	15991	2	35	★ LG FLAP VALVE WEIGHT	19-B	10010	1
8	LOCKWASHER	J-06	15991	2	36	RD HD MACH SCREW	X-0403	17090	1
9	HEX NUT	D-06	15991	2	37	LOCKWASHER	J-04	17090	1
10	ENGINE SHIELD	34165-002	—	1	38	★ SM FLAP VALVE WEIGHT	1354	10010	1
11	MUFFLER SHIELD ASSY	42331-008	—	1	39	★ FLAP VALVE	1361-G	19070	1
12	ENGINE MODIFICATION ASSEMBLY (Figure 2)	GRP41-09A	—	1	40	SUCTION FLANGE	1361	13110	1
13	FILL CAP GUARD ASSY	42381-010	—	1	41	LOCKWASHER	J-04	15991	1
14	HEX HEAD CAPSCREW	B-0506	15991	2	42	HEX NUT	D-04	15991	1
15	FLAT WASHER	K-05	15991	2	43	PIPE PLUG	P-12	11990	1
16	LOCKWASHER	J-05	15991	2	44	NAME PLATE	2613-EC	13990	1
17	HEX NUT	D-05	15991	2	45	DRIVE SCREW	BM#04-03	15990	4
18	HEX HEAD CAPSCREW	B-0503½-S	15991	4	46	IMPELLER SHIM SET	513-A	17090	1
19	LOCKWASHER	J-05	15991	4	47	★ SHAFT SLEEVE	2353	17020	1
20	STUD	C-0606	15991	4	48	★ OIL SEAL	S-1401	—	1
21	HEX NUT	D-06	15991	4	49	★ SEAL SPRING CENT WSHR	12658	17100	1
22	INTERMEDIATE	6732-A	13010	1	50	★ WEAR PLATE ASSEMBLY	2643-A	15990	1
23	★ VOLUTE GASKET SET	504-GA	20000	1	NOT SHOWN:				
24	HEX HEAD CAPSCREW	B-0505	15991	2		GROUND WIRE ASSY	13830	—	1
25	FLAT WASHER	K-05	15991	4		HEX HEAD CAPSCREW	B-0402½	15991	1
26	LOCKWASHER	J-05	15991	2		FLAT WASHER	K-04	15991	2
27	HEX NUT	D-05	15991	2		LOCKWASHER	J-04	15991	1
28	BASE CHANNEL	7425	15990	2		HEX NUT	D-04	15991	1
						FLAMESAFE DECAL	6588-AP	00000	1

★ INDICATES PARTS RECOMMENDED FOR STOCK

CANADIAN SERIAL NO. . . . . AND UP



# SECTIONAL DRAWING



SPARK PLUG SHIELDING DETAIL

Figure 2. Flamesafe Modification of Engine



## PARTS LIST

### FLAMESAFE MODIFICATION OF ENGINE

ITEM NO.	PART NAME	PART NUMBER	MATL CODE	QTY
1	ENGINE	201-B-10	—	1
2	MUFFLER	29334-202	—	1
3	PIPE COUPLING	AE-08	11990	1
4	PIPE NIPPLE	T-08	15070	1
5	MOUNTING STUD	S-2229	—	1
6	WING NUT	S-2230	—	1
7	AIR CLEANER	S-1811	—	1
8	WIRE	38748-004	—	1
9	TERMINAL	S-2067	—	1
10	INSULATING SLEEVE	31411-017	—	1
11	SPARK PLUG	S-1809	—	1
12	SPARK PLUG SHIELDING	S-1810	—	1
13	INSTRUCTION STICKER	38816-034	—	1
14	TOGGLE SWITCH	S-1961	—	1
15	INSTRUCTION STICKER	38815-009	—	1
16	GROUND WIRE ASSEMBLY	47311-052	—	1

## PUMP AND SEAL DISASSEMBLY AND REASSEMBLY

### WARNING

The engine used in this pump is not standard. It has been modified at the Gorman-Rupp factory for Flamesafe operation, and cannot be further modified without affecting performance and safety factors. The Flamesafe modifications must be inspected and maintained regularly while the unit is in use.

Due to the design and construction of this pump, it requires little service. If it becomes necessary to replace any of the rotating element parts, however, follow these instructions, which are keyed to figure 1 and the accompanying parts list.

#### Pump Disassembly

Disconnect the spark plug, or take other precautions to ensure that the engine is inoperative, and close all connecting valves. Remove the volute drain plug (29) below the suction flange (39), and drain the pump. Clean and reinstall the drain plug.

Remove the hex nuts (21) securing the volute assembly (1) to the intermediate (22). Remove the handle (6) and engine shield (10). Remove the pump mounting hardware (24, 25, 26, and 27), and separate the volute and intermediate. Inspect the wear plate (50), and replace it if scored or worn. The wear plate is secured by hex nuts (42), lockwashers (41), hex head capscrews (30), and flat washers (31).

Unscrew the impeller (2) by turning it counterclockwise. It may be necessary to tap the vanes with a soft hammer or block of wood to loosen the impeller. Use caution when unscrewing the impeller from the shaft; tension on the seal spring will be released as the impeller is removed.

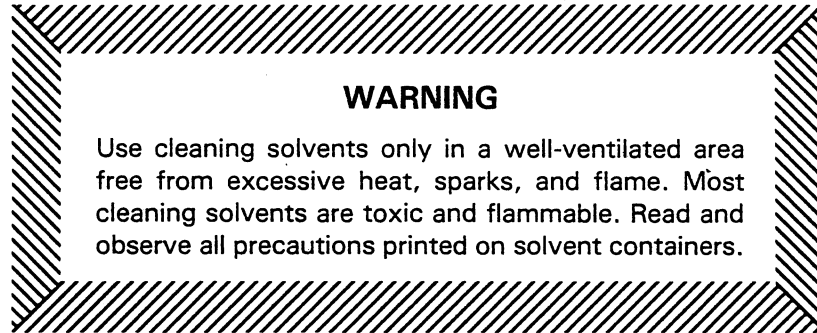
Remove the impeller adjusting shims (45). For ease of reassembly, tag and tie the shims.

#### Seal Disassembly

Remove the spring centering washer (49), and carefully remove the remaining seal parts, using a stiff wire with a hooked end to pry them out if necessary. Remove the shaft sleeve (46).

Inspect the oil seal (48), and replace it as necessary.

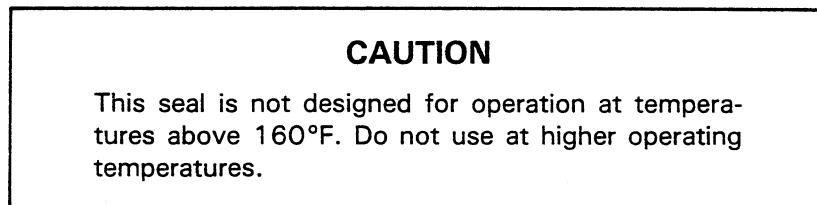
Clean the seal cavity and shaft with a soft cloth soaked in cleaning solvent.



### Seal Reassembly

The seal is not normally reused because of high polish on the lapped faces. If it is necessary to reuse the old seal, wash all metallic parts in cleaning solvent and dry thoroughly.

Inspect seal components for wear, scoring, grooves, and other damage that might cause leakage. If any components are worn, replace the complete seal; never mix old and new seal parts. Clean and polish the shaft sleeve, or replace it if there are nicks or cuts on the end.



Install the shaft sleeve, and install the seal as a complete unit (see figure 3).

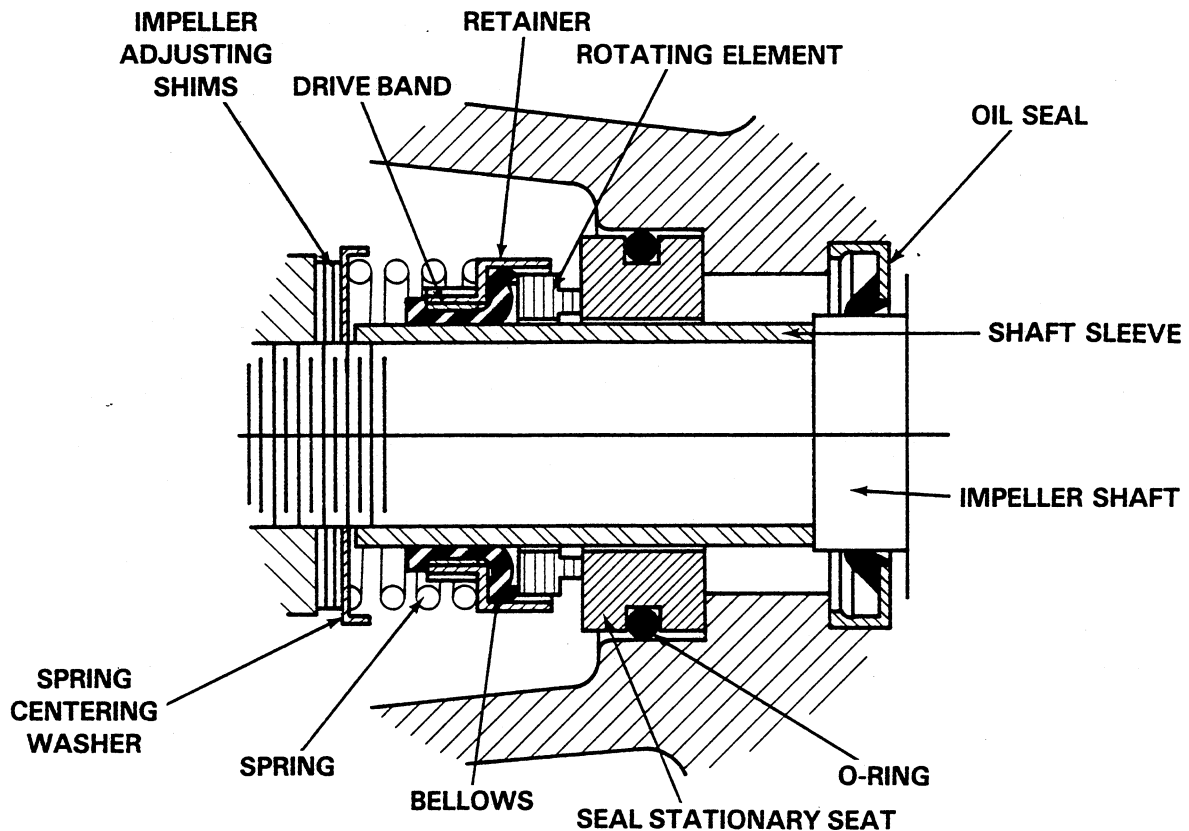


Figure 3. 25271-841 Seal Assembly

Place a drop of light lubricating oil on the lapped faces of the seal. Coat the stationary seat O-ring with soft grease or oil, and install the stationary seat and O-ring. Lubricate the bellows with soft grease or oil, and install the seal elements as shown in figure 3.

#### Pump Reassembly

Inspect the impeller, and replace it if cracked or badly worn.

Reinstall the impeller adjusting shims (45) and the impeller. A clearance of .020 to .040 inch between the impeller and the intermediate is necessary for maximum pump efficiency. Measure this clearance, and add or remove impeller shims until it is reached.

Replace the volute gasket set (23), and secure the intermediate and volute casing. A clearance of .008 to .015 inch between the impeller and the wear plate (50) is also recommended for maximum pump efficiency. This clearance can be reached by removing gaskets in the volute gasket set until the impeller binds against the wear plate when the shaft is turned. After the impeller binds, add .010 inch of gaskets.

In final pump assembly, reinstall the handle (6) and the engine shield (10), and reassemble the hardware (24, 25, 26, and 27) securing the pump to the base channel.

Before starting the pump, check that all piping is secure, fill the volute with clean liquid, and open all connecting valves.



## LUBRICATION

### Seal Assembly

This seal is lubricated by the medium being pumped.

### Engine

See the engine manufacturer's lubrication recommendations.

**THE GORMAN-RUPP COMPANY AND  
GORMAN-RUPP OF CANADA LIMITED  
12 MONTH LIMITED WARRANTY**

**EXTENT AND DURATION OF WARRANTY**

**Coverage:** The Gorman-Rupp Company or Gorman-Rupp of Canada Limited (herein individually referred to as "GR") each individually warrant that its products and parts shall be free from defects in material and workmanship for twelve (12) months from the date of purchase by the original end user.

**Exceptions:** This Limited Warranty shall not apply to the following products and parts: engines, motors, trade accessories and other products, components or materials not manufactured by GR. With respect to submersible pumps, the pump and motor are an integral unit and are therefore warranted as a unit. However, with respect to the electrical components in submersible pumps, this warranty is valid **only** when electrical controls for the pump have been specified and/or provided by GR. Wear and tear on any product resulting from normal use is not covered by this Limited Warranty.

**LIMITATIONS**

**GR'S SOLE AND EXCLUSIVE WARRANTY WITH RESPECT TO ITS PRODUCTS AND PARTS IS THIS LIMITED WARRANTY. THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER EXPRESS AND/OR IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE.**

**EXCLUSIVE REMEDY AND DAMAGES**

The sole and exclusive remedy for breach of this Limited Warranty by GR, and the entire extent of its liability for such breach or for damages arising and/or resulting from the use of the products and parts covered by this Limited Warranty shall be as follows:

1. **Repair or replacement:** If inspection shows that any GR product or part covered under this Limited Warranty is defective in materials or workmanship, GR shall repair or replace the defective product or part at its option, without charge. You must have properly installed, maintained and used the product or part claimed to be defective in accordance with the maintenance schedule and/or manual which comes with the product. *No allowance will be made for labor, transportation or other charges incurred by you in connection with such repair or replacement.*
2. **To obtain the above remedy:**
  - a) Immediately notify GR at the address below of the claimed defect in materials or workmanship and provide the serial number or date code of the product and/or part and provide a copy of the invoice or bill of sale referencing the product and/or part by no later than the expiration date of the Limited Warranty period.
  - b) GR will advise whether inspection of the product and/or part will be necessary and whether and how repair or replacement will be effected. If inspection by GR is necessary, the product or part must be sent freight prepaid to GR at the address stated below. Return shipment of the repaired product or part will be F.O.B. the address stated below.
3. **Damages:** GR's liability for damages for breach of this Limited Warranty shall not exceed the amount of the purchase price of the product or part in respect to which damages are claimed. **IN NO EVENT SHALL GR BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES FOR BREACH OF THIS LIMITED WARRANTY OTHER THAN AS STATED HEREIN.**

Some states do not allow the exclusion or limitation of incidental or consequential damages. Accordingly, the above may not apply to you. This Limited Warranty gives you specific legal rights, and you may also have other rights which vary from state to state and province to province.

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