

Please read and save this Repair Parts Manual. Read this manual and the General Operating Instructions carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. The Safety Instructions are contained in the General Operating Instructions. Failure to comply with the safety instructions accompanying this product could result in personal injury and/or property damage! Retain instructions for future reference. AMT reserves the right to discontinue any model or change specifications at any time without incurring any obligation.

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Periodic maintenance and inspection is required on all pumps to ensure proper operation. Unit must be clear of debris and sediment. Inspect for leaks and loose bolts. Failure to do so voids warranty.

Self-Priming Centrifugal Pumps



Refer to pump manual 1808-634-00 for General Operating and Safety Instructions.

DESCRIPTION

These self-priming (to 15 ft. lift) (to 10 ft. lift on aluminum models) are designed for general purpose liquid transfer. Pumps include a semi-open clog resistant impeller. Handle liquids from 40° to 180° F (4° to 82° C) with Buna N seals and 40° to 200° F (4° to 93° C) with Viton® seals. Some units will handle liquid with up to 1.65 specific gravity. For use with non-flammable, non-abrasive liquids compatible with pump component materials.

PUMPS

Motorized units are direct coupled to a 3450 RPM motor. Single phase pump motors have automatic reset thermal protection. All models are manual mode and require field wiring; no controls are supplied. Check motor wiring before putting unit into operation (see motor nameplate for specific wiring diagram).

UNITS SHIPPED WITHOUT MOTOR

Some models are not equipped with motors. They are suitable for mounting to 3450 RPM, NEMA 56J face threaded shaft motors with counterclockwise rotation (looking at motor shaft). To find available horsepower of motor, multiply rated horsepower by service factor. This number must be equal to or greater than that required by pump.

ASSEMBLY

MOTOR (for units shipped without motor only)

1. If any parts are missing or damaged, do not attempt to assemble or operate pump until replacement parts are obtained and properly installed.
2. Verify that motor conforms to ALL standards specified in "Description".
3. Place motor in vertical position with shaft end up. Set adapter (Ref. No. 4) on top of motor.
4. See "Shaft Seal Replacement" and follow steps to complete assembly.

MAINTENANCE

▲ WARNING

Make certain that unit is disconnected from power source before attempting to service or remove any components! If the power disconnect is out of sight, lock it in the open position and tag to prevent application of power.

MECHANICAL SEAL REPLACEMENT

Refer to Figures 1, 2 and 3

IMPORTANT: Always replace both the seal seat (Ref. No. 5) and the seal head (Ref. No. 6) to ensure proper mating of mechanical seal components!

NOTE: It is not necessary to remove piping from pump casing. The motor and impeller assembly are removed from back of casing.

1. Unthread cap screws (Ref. No. 3) and remove pump casing (Ref. No. 10) from adapter (Ref. No. 4).
2. The motor used with this pump is a 56J frame. It has a threaded shaft; impeller is screwed directly onto shaft. To unscrew the impeller (Ref. No. 9), turn counterclockwise (CCW) facing impeller.

NOTE: A screwdriver slot or two flats for use with an open end 7/16" wrench are provided at the rear of the motor shaft (remove bearing cap for access). To hold the motor shaft from turning, either insert a large screwdriver blade into the slot or use a 7/16" wrench across the flats. Before removing impeller, remove impeller nut (Ref. No. 13) and impeller seal washer (Ref. No. 14) (where applicable).

3. Remove the adapter from the motor mounting face. The seal head (Ref. No. 6) and impeller shims (Ref. No. 8) will come loose at this time.

IMPORTANT: Retain impeller shims for use when reassembling unit.

4. Push seal seat (Ref. No. 5) from the adapter recess with a screwdriver.
5. Clean the adapter recess before inserting a new seal seat.
6. Carefully wipe the ceramic surface of the new seal seat with a clean cloth.
7. Wet the rubber portion of the seal seat with a light coating of soapy water.
8. Press the new seal seat squarely into the cavity in the adapter. If the seal seat does not press squarely into the cavity, it can be adjusted into place by pushing on it with a piece of cardboard between the pipe and seal seat to avoid scratching the seal seat. (This is a lapped surface and must be handled very carefully).
9. After the seal seat is in place, be sure that it is clean and has not been marred.
10. Using a clean cloth, wipe the shaft and make certain that it is perfectly clean.
11. Secure the adapter (Ref. No. 4) on the motor mounting face. Carefully guide motor shaft through the seal seat.
12. Apply a light coating of soapy water to the inside rubber portion of seal head (Ref. No. 6) and slide onto the shaft (with the sealing face first) so that the rubber portion is just up over the shaft shoulder.
13. Replace any impeller shims which may have been removed in disassembly (See "Shim Adjustment").
14. Screw the impeller (Ref. No. 9) back in place, tightening until it is against the shaft shoulder.

NOTE: After impeller clearance has been set (See "Shim Adjustment"), place a new impeller seal washer onto exposed shaft. Screw impeller nut onto shaft and tighten (where applicable).

15. Remount the pump casing (Ref. No. 10) on the adapter (Ref. No. 4). (See "Shim Adjustment" if motor or impeller was replaced).

IMPORTANT: Always inspect the O-ring gasket (Ref. No. 7) for cracks or cuts when unit is disassembled; replace if damaged.

Self-Priming Centrifugal Pumps

SHIM ADJUSTMENT

When installing a replacement impeller (Ref. No. 9) or motor (Ref. No. 1), it may be necessary to adjust the number of shims (Ref. No. 8) to ensure proper running clearance between the impeller and the casing. Proceed as follow

NOTE: A proper running clearance is less than 0.010.

1. For impeller replacement, add one (1) shim in addition to the one (1) removed originally.
2. For motor replacement, add two (2) shims in addition to the shims removed during disassembly.
3. Reassemble the pump using MECHANICAL SEAL REPLACEMENT for reference.

IMPORTANT: Be sure that the casing is snugly in place and check the shaft to make sure it is turning freely (use the screwdriver slot in the motor to turn the shaft). If it turns freely, check to ensure that the casing cover and casing are fitted "metal to metal" where they meet on the outside. If they are not "metal to metal", tighten the fasteners (Ref. No. 3) and recheck the shaft for free turning.

Tighten carefully turning the shaft while tightening so that the motor bearings are not damaged in the event that too many shims were installed. If the shaft seizes before fasteners are completely tight, disassemble the pump and remove one (1) shim and repeat reassembly.

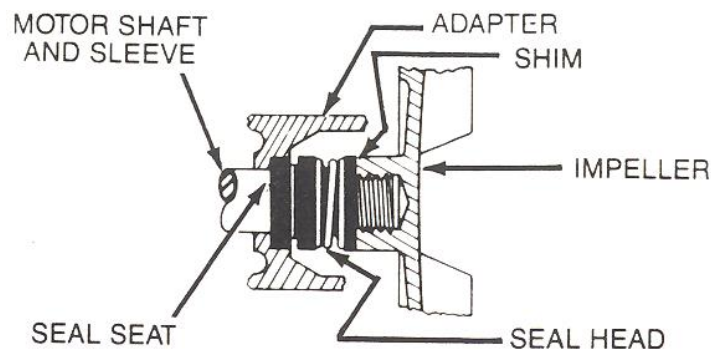


Figure 1- Mechanical Seal Replacement

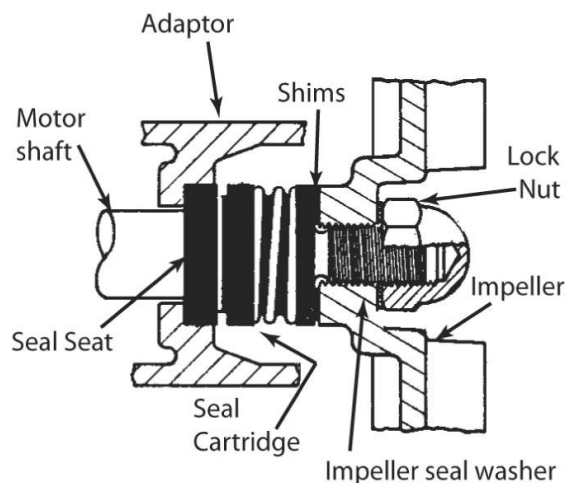


Figure 2- Models 2856, 2857, 285A, 285M, 285B, 285C, 285D, 285J, 285K, 285P

For Repair Parts contact dealer where pump was purchased.

Please provide following information:

-Model Number

-Serial Number (if any)

Part description and number as shown in parts list

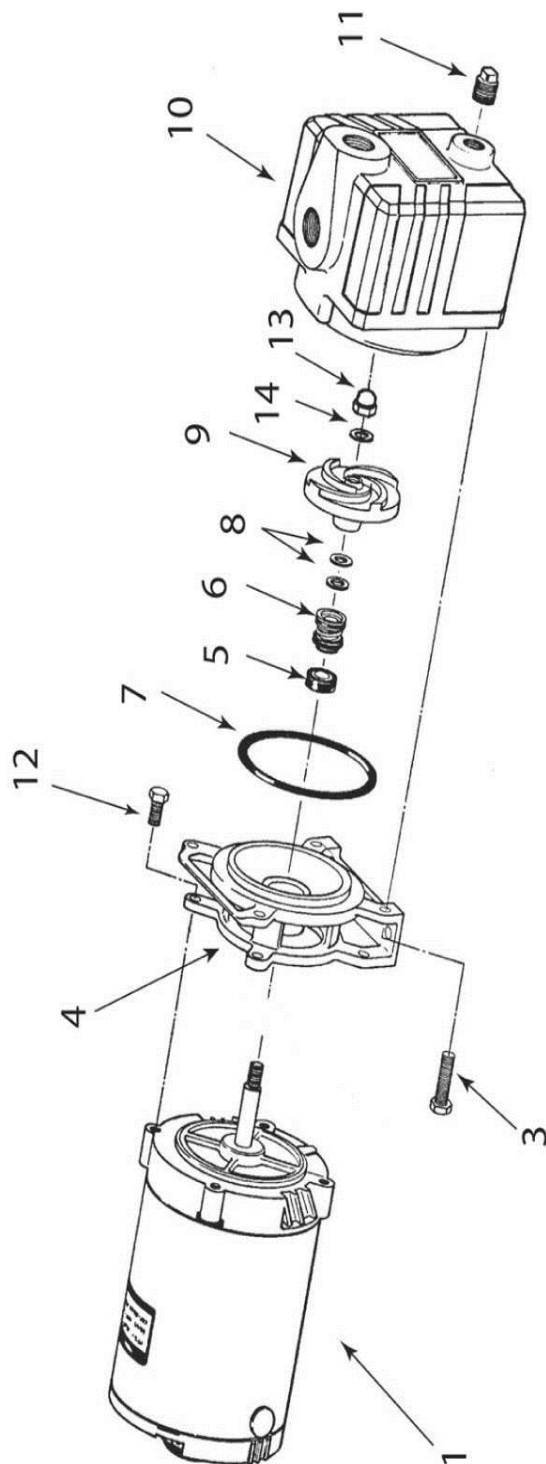


Figure 3 – Repair Parts Illustration

Repair Parts List

Ref. No.	Description	Part Number for Models:							Qty.
		2851-95 285E-95	2852-95 285F-95	2853-95 285G-95	2855-95 285H-95	2856-95 285J-95	2857-95 285K-95	285M-95 285P-95	
1	Motor ODP	1626-008-00	1626-009-00	1626-010-00	1626-011-00	1626-014-00	1626-015-00	1626-013-00	1
	Motor TEFC	1626-301-00	1626-302-00	1626-303-00	1626-304-00	1626-309-00	1626-310-00	1626-308-00	1
3	Fastener	*	*	*	*	*	*	*	4
4	Adapter	1560-000-01	1560-000-01	1560-000-01	1560-000-01	1560-000-01	1560-000-01	1560-000-01	1
5 & 6	↔Shaft Seal Assembly	-Buna-N (standard)	1640-161-90	1640-161-90	1640-161-90	1640-161-90	1640-161-90	1640-161-90	1
		-Viton (optional)	1640-161-91	1640-161-91	1640-161-91	1640-161-91	1640-161-91	1640-161-91	1
		-Viton & Sil. Carb. (opt)	1641-165-91	1641-165-91	1641-165-91	1641-165-91	1641-165-91	1641-165-91	1
7	O-Ring	-Buna-N (standard)	1531-000-00	1531-000-00	1531-000-00	1531-000-00	1531-000-00	1531-000-00	1
		-Viton® (optional)	1532-000-00	1532-000-00	1532-000-00	1532-000-00	1532-000-00	1532-000-00	1
8	Impeller Shim Package	1657-000-90	1657-000-90	1657-000-90	1657-000-90	1657-000-90	1657-000-90	1657-000-90	1
9	Impeller	2850-010-01	2850-010-03	2850-010-05	2850-010-07	2850-010-06	2850-010-08	2850-010-04	1
10	Casing	1558-000-01	1558-000-02	1558-000-02	1558-000-03	1558-000-02	1558-000-03	1558-000-02	1
11	1/2" NPT Drain Plug	*	*	*	*	*	*	*	1
12	Fastener	*	*	*	*	*	*	*	4
13	Impeller Nut	N/A	N/A	N/A	N/A	1784-001-00	1784-001-00	1784-001-00	1
14	Impeller Seal Washer	N/A	N/A	N/A	N/A	1471-020-00	1471-020-00	1471-020-00	1

(*) Standard Hardware Item, Available Locally

(↔) Seal assembly available as set only (includes seal head and seat).

For Repair Parts contact dealer where pump was purchased.

Please provide following information:

-Model Number

-Serial Number (if any)

Part description and number as shown in parts list

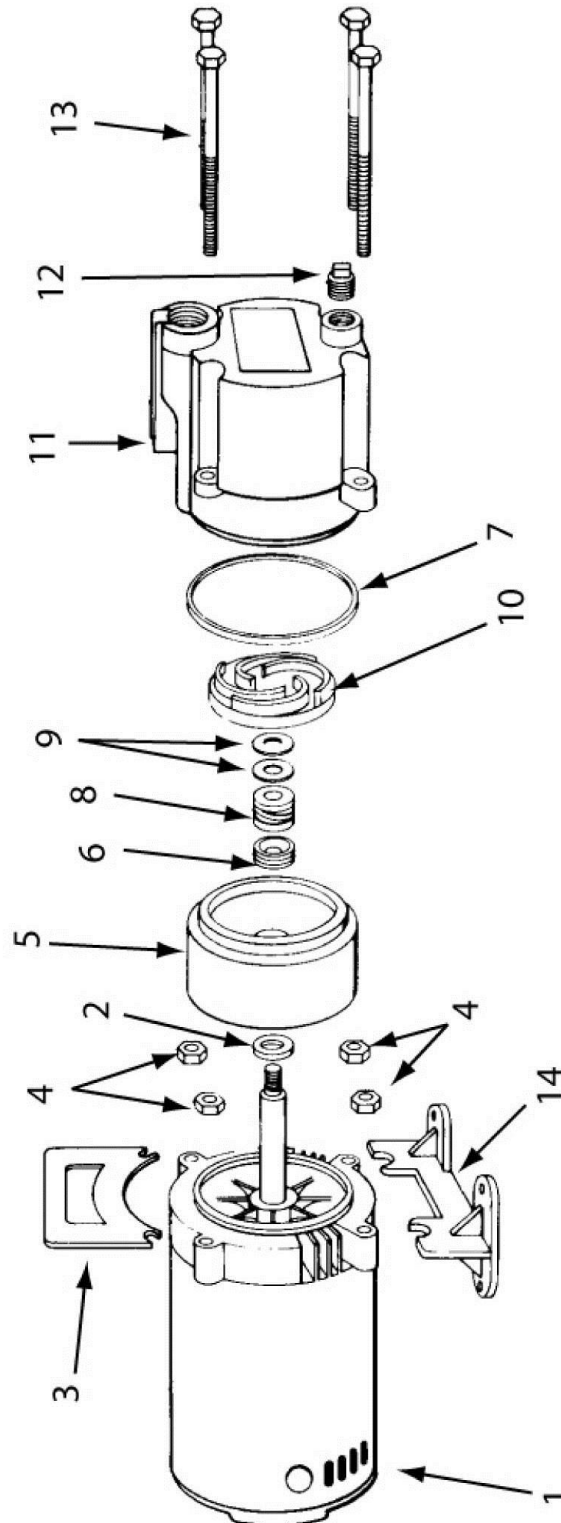


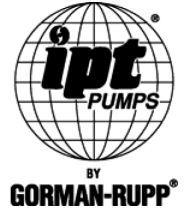
Figure 4 – Repair Parts Illustration

Repair Parts List

Ref. No.	Description	Part Number for Models:	
		2851-96 285E-96	Qty.
1	Motor - ODP	1626-008-00	1
	Motor - TEFC	1626-301-00	1
2	Slinger Washer (optional, not required)	1534-000-00	1
3	Handle	1515-000-00	1
4	Fastener	*	4
5	Adapter	1560-000-01	1
6 & 8	◇ Shaft Seal Assembly	-Buna-N (standard)	1640-161-90
		-Viton® (optional)	1640-161-91
7	O-Ring	-Buna-N (standard)	1531-000-00
		-Viton® (optional)	1532-000-00
8	Impeller Shim Package	1657-000-90	1
10	Impeller	1540-000-01	1
11	Casing	1519-000-01	1
12	1/2" NPT Drain Plug	*	1
13	Fastener	*	4
14	Foot	1506-000-00	1
(*)	Standard Hardware Item, Available Locally		
(◇)	Seal assembly available as set only (includes seal head and seat).		



American Machine & Tool Co., Inc. of PA
(herein "AMT")
400 Spring Street
Royersford, PA 19468
Phone: (610) 948-3800
Fax: (610) 948-5300
www.amtpump.com



General Information

SALES POLICY: AMT products are sold through our established Distributors. We do not sell direct to the consumer or organization not entitled to trade recognition. Therefore, possession of our catalogs and/or price list(s) does not infer an offer to sell.

MINIMUM ORDER: We appreciate your order, however, all orders are subject to a minimum \$35.00 net invoice charge (excluding freight). This applies to all pump and parts purchase orders.

PRICES: Prices are subject to change without notice. All orders accepted are subject to prices in effect at time of shipment.

PAYMENT TERMS: Terms, upon establishment of credit, are Net 30 days. Past due accounts may be subject to a service charge of 1.5% per month. Domestic or assignable letter of credit is required for all export trade.

PAST DUE ACCOUNTS: AMT reserves the right to withhold open account shipments on any past due account. Invoices are considered past due after thirty (30) days. In the interest of sound business, all orders are subject to approval of the Credit Department.

SHIPPING INSTRUCTIONS: All shipments will be made F.O.B. the factory. Where instructions for shipment do not appear on the order, the shipment will be made according to our best judgment. Full risk of loss (including transportation delays and losses) shall pass to the customer upon delivery of the products to the carrier at the F.O.B. point. When loss or delay occurs, primary responsibility for tracing rests with the customer. When there is LOSS or APPARENT VISIBLE DAMAGE to a shipment, when tendered for delivery, *DO NOT* give the carrier a clear receipt. Note such damage on the carrier's delivery receipt and *HAVE THE DRIVER SIGN THE RECEIPT.*

PRODUCT REVISIONS: AMT reserves the right to discontinue, 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 a change or improvement.

LEAD TIME: Products designated "Quick Ship Product", also referred to as "QSP" will normally be shipped within 24 hours of receipt of a non-cancellable purchase order. Only limited quantities of "QSP" pumps are available.

STANDARD LEAD TIME: Lead time is two weeks for all non "QSP" product. AMT reserves the right to revise lead times as required due to availability of materials and all other causes beyond our control.

VIP SHIPMENT: Select AMT and IPT branded pumps are available for next day shipment for non-QSP (Quick Ship Products) items and subjected to a specific model surcharge per unit noted in the respective price book. Requires calling for availability, confirmation and a non-cancellable purchase order or credit card payment prior to shipment. The expedited shipping charges are an additional cost added separately from the VIP charges per item. AMT reserves the right to revise lead times as required due to availability of materials and all other causes beyond our control. QSP quantities are limited as determined by AMT.

ALL purchase orders must be submitted via hard copy sent to AMT customer service department by fax, EDI or e-mail.

RETURN GOODS POLICY: Goods shall not be returned without a return goods authorization number (RGA) issued by AMT customer service. The RGA number must be listed on the packing list. Only current model and part numbers with a valid date code may be returned (within one year from date of purchase). **A 20% restocking and packaging charge will apply to all returns. All shipping charges must be pre-paid. No exceptions.**

ORDER CHANGES BY CUSTOMER: Orders in process may not be changed except with written consent and may be subject to special charges.

12 Month Limited Warranty

EXTENT AND DURATION OF LIMITED WARRANTY

Coverage: American Machine & Tool Company (herein "AMT") or IPT Pumps by Gorman-Rupp (herein "IPT") or Gorman-Rupp Industries Division of The Gorman-Rupp Company, Patterson, or the Gorman-Rupp Company (herein referred to as "G-R Unit") each individually warrants 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 when installation is made and maintenance is performed in accordance with G-R Unit's recommendations. Wear and tear resulting from use and items normally consumed in use are not covered.

EXCEPTIONS

(A) This Limited Warranty shall not apply to mechanical seals in AMT or IPT pumps and the following products and parts: engines, motors, trade accessories and all other products, components, parts and materials not manufactured by the G-R Units. These items may, however, be covered by the warranties of their respective manufacturers. (B) This warranty does not extend to or apply to any unit which has been repaired or altered at any place other than by a G-R Unit, or by persons not expressly approved by a G-R Unit to make repairs or alterations, nor to any unit the serial number, model number or identification of which has been removed, defaced or altered. (C) This warranty does not extend to any product manufactured by a G-R Unit, which has been subjected to mis-use, neglect, accident, improper installation, or use in violation of instructions furnished by a G-R Unit. (D) Pump Kits: This warranty does not extend to any product sold by a G-R Unit unassembled as a Pump Kit. Pump Kits are warranted against defects in material and workmanship for 60 days from the date of shipment from a G-R Unit. Any Pump Kit parts deemed defective by a G-R Unit will be replaced free of charge within 60 days of shipment. Pump Kits are not returnable for credit.

LIMITATIONS

THE G-R UNITS' SOLE AND EXCLUSIVE WARRANTY WITH RESPECT TO THEIR 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

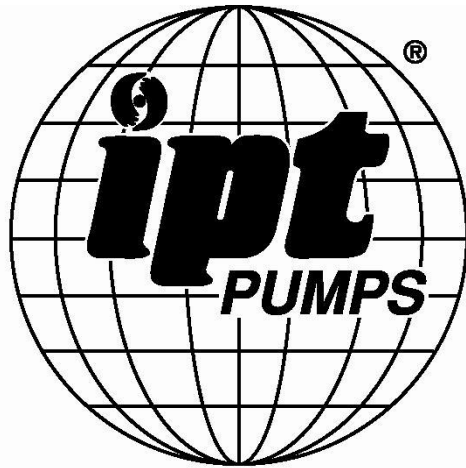
The sole and exclusive remedy for breach of this Warranty by a G-R Unit and the entire extent of its liability for such breach or for damages arising from the use of the products and parts covered under this Limited Warranty, shall be as follows:

- Repair or Replacement:** If inspection shows that any G-R Unit product or part covered under this Limited Warranty is defective in materials or workmanship, the G-R Unit shall repair or replace the defective or non-conforming product or part without charge, whichever the G-R Unit chooses. You must have properly maintained and used the product or part claimed to be defective in accordance with the maintenance schedule or manual, which comes with the product. No allowance will be made for labor, installation, removal, transportation or other charges incurred by you in connection with such repair or replacement.
- To obtain the above remedy:
 - Immediately notify the G-R Unit upon discovery of the claimed defect in materials or workmanship and provide the serial number or date code of the product and/or part(s) or provide the G-R Unit with the invoice or bill of sale referencing the product by no later than the expiration date of the warranty period.
 - The G-R Unit will advise whether inspection will be necessary and how whether repair or replacement will be made. If inspection by the G-R Unit is necessary, the pump or defective part must be sent freight pre-paid to the G-R Unit. Return shipment will be F.O.B. the G-R Unit's plant.
 - Return Goods Authorization Requirement:** No product will be accepted for return or replacement without the prior written authorization of the G-R Unit. Upon such authorization, and in accordance with instructions from the G-R Unit, the product will be returned to the G-R Unit, shipping charges prepaid by the Buyer.
- Damages:** The G-R Unit's liability for damages for breach of this Limited Warranty shall not exceed the amount of the purchase price of the product or part(s) in respect to which Such damages are claimed. **IN NO EVENT SHALL THE G-R UNITS BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES FOR BREACH OF THIS LIMITED WARRANTY.**

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion 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.



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