

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.

Pedestal Driven Centrifugal Pumps



Refer to Specific Information and Repair Parts Manual for product specific information.

SAFETY GUIDELINES

This manual contains information that is very important to know and understand. This information is provided for SAFETY and to PREVENT EQUIPMENT PROBLEMS. To help recognize this information, observe the following symbols:



Danger indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.



Warning indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.



Caution Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.

NOTE: These symbols indicates important information that, if not followed, may cause damage to equipment.

UNPACKING

After unpacking the unit, inspect carefully for any damage that may have occurred during transit. Make sure to tighten fittings, bolts, etc., before putting unit into service. **Do not attempt to assemble or operate pump if any parts are missing or damaged. Determine that all parts are properly installed.**

GENERAL SAFETY INFORMATION

1. Know the pump application, limitations, and potential hazards. Read all manuals included with this product carefully. Be thoroughly familiar with the pump and the proper use of the equipment.



Do not use to pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. Do not use in flammable and/or explosive atmospheres. When pumping hazardous or dangerous materials, use only in room or area designated for that purpose. For your protection, always wear proper clothing, eye protection, etc. in case of any malfunction. For proper handling techniques and cautions, contact your chemical supplier, insurance company and local agencies (fire dept., etc.). Failure to comply

with this warning could result in personal injury and/or property damage.

2. Make certain that the power source conforms to the requirements of your equipment.
3. Provide adequate protection and guarding around moving parts.
4. Disconnect power before servicing. If the power disconnect is out-of-sight, lock in the open position and tag it to prevent unexpected application of power. Failure to do so could result in fatal electrical shock!
5. Release all pressure within the system before servicing any component.
6. Drain all liquids from the system before servicing.
7. Secure the discharge line before starting the pump. An unsecured discharge line will whip, possibly causing personal injury and/or property damage.
8. Check hoses for weak or worn condition before each use making certain that all connections are secure.
9. Periodically inspect pump and system components. Perform routine maintenance as required (See Maintenance section).
10. Provide a means of pressure relief for pumps whose discharge line can be shut-off or obstructed.
11. Personal Safety:
 - a.. Wear safety glasses at all times when working with pumps.
 - b. Wear a face shield and proper apparel when pumping hazardous chemicals.
 - c. Keep work area clean, uncluttered and properly lighted; replace all unused tools and equipment.
 - d. Keep visitors at a safe distance from the work area.
 - e. Make workshop childproof – with padlocks, master switches, and by removing starter keys.
12. When wiring an electrically driven pump, follow all electrical and safety codes, as well as the most recent United States National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).



Risk of electric shock!

13. To reduce the risk of electric shock, electric motor must be adequately grounded to a grounded metal raceway system, or by using a separate grounding wire connected to bare metal on the motor frame, or to the ground screw located inside motor terminal box, or by other suitable means. Refer to the most recent National Electrical Code (NEC) Article 250 (Grounding) for additional information. ALL WIRING SHOULD BE DONE BY A QUALIFIED ELECTRICIAN.
14. Do not operate a gasoline engine in an enclosed area. Be sure the area is well ventilated.

Pedestal Driven Centrifugal Pumps

⚠ WARNING

Gasoline is a highly combustible fuel. The improper use, handling, or storage of gasoline can be dangerous. Prevent accidents by following these safety rules:

- a. Use gasoline only as fuel, never as a cleaning fluid.
- b. Use only an approved container to hold or store gasoline. Never store gasoline in familiar containers such as milk containers or soda pop bottles.
- c. Store gasoline in a cool location, out of reach of children. Never store gasoline near heat or an open flame.
- d. Add gasoline to a cool engine only. Spilled gasoline on a hot engine may cause fire or an explosion. Fill gasoline tank outdoors and wipe up any spills.
- e. Provide a fire extinguisher nearby when working with gasoline. Be sure extinguisher is in operating condition – check the pressure gauge or indicator. Be familiar with its proper use. Consult local fire department for the correct type of extinguisher for your application. Extinguishers rated ABC by the National Fire Protection Association are appropriate for most applications.

Do not handle a pump or pump motor with wet hands or when standing on wet or damp surfaces or in water as fatal shock could occur.

Disconnect main power before handling unit for any reason

INSTALLATION

⚠ WARNING

In order to safely use this product familiarize yourself with this pump and also with the liquid (chemical, etc.) that is going to be pumped through the unit. This pump is not suitable for many liquids.

In any installations where property damage and/or personal injury might result from an inoperative or leaking pump due to power outages, discharge line blockage, or any other reason, a backup system(s) should be used.

1. Locate pump as close to the fluid source as possible, making the suction line as short and direct as possible.

⚠ CAUTION

The unit should be placed where the pump is protected from the weather and extremes of heat, cold and humidity.

2. Mount the unit on a solid foundation. On fixed installation, install both a union and a gate valve (not furnished) on the discharge side of the pump for service convenience.

NOTE: Do not use a globe or other restricting type of valve at the discharge, as this would seriously restrict the capacity of the pump.

⚠ WARNING

Support pump and piping when assembling and when installed. Failure to do so may cause piping to break, pump to fail, motor bearing failures, etc. All of which can result in property damage and/or personal injury.

3. Attach suction piping to the suction inlet and discharge pipe to the discharge outlet. Avoid using loops or sections of pipe or fittings, which might permit air to become trapped.

IMPORTANT: If plastic or fabric hose is used for the suction piping, it should be of a reinforced type so as not to collapse under suction. The discharge piping

should be at least the same size as the discharge connection. Suction piping should be the same size as the discharge piping or one size larger.

4. **SELF-PRIMING PUMPS:** It is recommended that a foot valve be used on the suction line to assure quick priming and that a suitable suction strainer be attached to the suction line so that large pieces of foreign material are not drawn into the pump.
 - a. Locate pump as close to the fluid source as possible making the suction line as short and direct as possible.
 - b. The suction line should be positioned such that there is a continual upward slope from the fluid source to the pump. Avoid using loops or sections of pipe or fittings which might permit air to become trapped.
 - c. Suction piping should be the same size as the discharge piping.

DRIVES

1. **Direct Coupling Drives:** Never use a rigid coupling between the pump and the motor. Some degree of flexibility must be allowed at the coupling to avoid excessive side loading of the motor and pump bearings. Any flexible

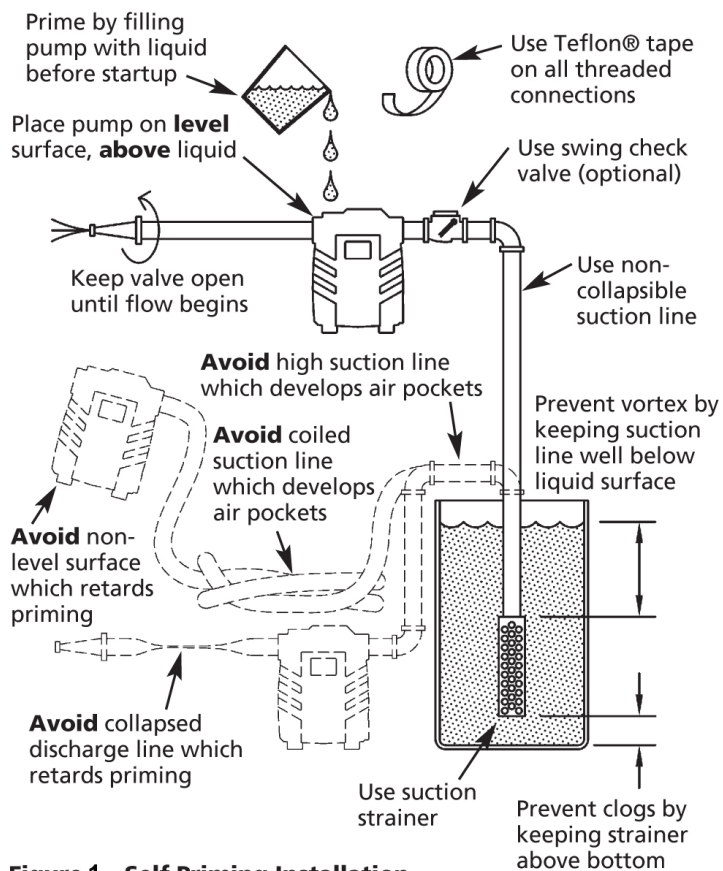


Figure 1 - Self Priming Installation

Pedestal Driven Centrifugal Pumps

coupling rated for the horsepower load and speed is satisfactory. Pump and motor must be in alignment. Misalignment will cause unnecessary loads on the pump and motor bearings.

NOTE: Unit is not recommended for direct drive by an engine (gas or gasoline). If engine drive is desired a V-belt arrangement is recommended, to reduce torque pulsations on pump.

2. **Pulley Drive:**(Refer to Pedestal Pump Performance Chart, found in the Product Specific OIPM accompanying this manual). A single 1/2" (A or 4L section) V-belt and single groove pulleys are satisfactory for drive sizes and speeds up to 3450 RPM, 1 HP. For higher HP loads, doubled groove pulleys are recommended.

Matched V-Belts and double groove pulleys are satisfactory for drive sizes and speeds up to 7-1/2 HP, 3600 RPM. When replacing belts for double groove pulleys, replace both belts with a matched pair, even if only 1 belt breaks or shows wear.

3. **ROTATION:** Check motor rotation before coupling to pump to be certain it is the same as arrow on bearing housing. Looking at pump from shaft end this rotation is clockwise.

4. When using a self-priming pump, a foot valve may be used on the suction line (for drive speeds below 3450 RPM) to assist in faster priming and is recommended for suction lifts over 10 feet or when long suction runs are involved.

5. A suitable suction strainer should be attached to the suction line so that large pieces of foreign material are not drawn into the pump.

6. Install any auxiliary components (e.g. pressure switch, timer, etc.).

OPERATION

SELF-PRIMING PUMPS

It is necessary to prime the pump before initial startup. Prime the pump by filling the casing with liquid through the top fill plug, the discharge port or by installing a pipe tee at the discharge of the pump. (When installing a tee, use the horizontal leg of the tee as the pump discharge and place a pipe plug in the vertical leg. This procedure will help facilitate priming later.)

NON-PRIMING PUMPS

1. The casing and suction piping must be filled with liquid before the unit can begin pumping. In order to completely fill casing with liquid, entrapped air in casing must be vented. This is accomplished by momentarily loosening or removing the top drain plug located on the casing.

CAUTION

Do not run pump dry as permanent damage to the mechanical seal will result.

2. Activate the unit.

IMPORTANT: Proper Rotation- Power supply should be applied momentarily to the pump at first and the direction of rotation checked. When viewing the front of the pump, the motor shaft (impeller) should be rotating counterclockwise. If it is not, disconnect power and re-check wiring to motor. (See "Installation" section.) To change rotation on three phase models, interchange any two incoming line (power) leads. Other models, consult driver information that came with driver.

NOTE: Never shut off discharge or restrict suction flow while the pump is operating. It may take up to 5 minutes for a **SELF-PRIMING** pump to prime if long horizontal/ vertical lines are used. If pump has not picked up prime in 2 minutes, re-prime piping and casing after letting unit cool down for 5 minutes.

Re-check all suction connections making sure pipe compound has sealed all connections. Initial priming may take 2 to 3 tries to prime successfully.

CAUTION

The proper Impeller (motor) rotation is CCW (counter clockwise) facing the front of the pump. Wrong rotation will give low performance, low head and could damage unit and/or injure personnel.

MAINTENANCE

WARNING

Make certain that the unit is disconnected from the power source before attempting to service or remove any components!

NOTE: Always flush pump thoroughly after use or if unit is not going to be used for any prolonged length of time to prevent crystallization and/or damage to seal and pump.

ROUTINE

1. Pump should be drained when subjected to freezing temperatures. A drain plug is provided on the pump casing.
2. Clean the suction line strainer at regular intervals.
3. Properly selected and installed electric motors are capable of operating for years with minimal maintenance. Periodically clean dirt accumulations from open-type motors, especially in and around vent openings, preferably by vacuuming (avoids imbedding dirt in windings).
4. Periodically check to see if electrical connections are tight.
5. Pump should be checked daily, weekly, monthly, etc. for proper operation. If anything has changed since unit was new, unit should be removed and repaired or replaced. Only qualified electricians or service personnel should attempt to repair this unit. Improper repair and/or assembly can cause an electrical shock hazard.

TROUBLESHOOTING CHART

Problem	Possible Cause(s)	Corrective Action
Little or no discharge and unit will not prime	1 Casing not filled with water.	1 Fill pump casing. Using a foot valve will extend pump life and facilitate immediate priming.
	2 Total head too high.	2 Shorten suction lift and/or discharge head.
	3 Suction head exceeds that for which pump is designed.	3 Shorten suction line and/or vertical distance from liquid to pump, install foot valve and prime.
	4 Impeller partially or completely plugged.	4 Disassemble pump and clean out impeller.
	5 Impeller Rotation incorrect.	5 Correct. (See Installation Instructions for proper rotation)
	6 Hole or air leak in suction line.	6 Repair or replace suction line.
	7 Foot valve too small.	7 Match foot valve to piping or install one size larger foot valve.
	8 Impeller damaged.	8 Disassemble pump and replace impeller.
	9 Foot valve or suction line not submerged deep enough in water, pulling air.	9 Submerge lower in water.
	10 Insufficient inlet pressure or suction head.	10 Increase outlet pressure by adding more water to tank or increasing back pressure by turning gate valve on discharge line to partially closed position.
	11 Suction piping too small.	11 Increase pipe size to pump to pump inlet size or larger.
	12 Casing gasket leaking.	12 Replace.
	13 Suction or discharge line valves closed	13 Open.
	14 Speed too low.	14 Check and correct alignment, belt slippage and possibly incorrect pulley sizes.
	15 Wear plate worn.	15 Replace .
Loss of suction after satisfactory operation	1 Air leak in suction line.	1 Repair or replace suction line.
	2 When unit was last turned off, water syphoned out of pump casing.	2 Refill (reprime) pump casing before restarting.
	3 Suction head exceeds that for which pump was designed.	3 Shorten suction line and/or vertical distance from liquid to pump, install foot valve and prime.
	4 Insufficient inlet pressure or suction head.	4 Increase inlet pressure by adding more water to tank or increasing back pressure by turning gate valve on discharge line to practically closed position.
	5 Clogged foot-valve, strainer or pump.	5 Unclog, clean or replace as necessary.
Pump overloads driver (gas engine shuts off before complete hose fill)	1 Total head lower than pump rating. Unit delivering too much water.	1 Increase back pressure on pumping by turning gate valve on discharge line to practically closed position that will not overload motor.
	2 Specific gravity and viscosity of liquid being pumped different than the pump rating.	2 Pump is designed for water, use only for liquid which have similar characteristics.
	3 Speed to high.	3 Check and correct, lower speed.
Pump vibrates and/or makes excessive noise	1 Pump and motor misaligned.	1 Realign.
	2 Mounting plate or foundation not rigid enough.	2 Reinforce.
	3 Foreign matter in pump causing unbalance.	3 Disassemble pump and remove.
	4 Impeller bent.	4 Replace impeller.
	5 Cavitation present.	5 Check suction line for proper size and check valve in suction line if completely open, remove any sharp bends before and shorten suction line.
	6 Worn bearings.	6 Replace.

TROUBLESHOOTING CHART (continued)

Problem	Possible Cause(s)	Corrective Action
Pump runs, but no fluid	1 Faulty suction piping (air leak).	1 Replace.
	2 Pump located too far from fluid source.	2 Relocate.
	3 Valve closed.	3 Open.
	4 Clogged strainer.	4 Clean or replace.
	5 Fouled foot valve.	5 Clean or replace.
	6 Discharge height too great.	5 Lower the height.
Pump leaks at shaft	1 Worn mechanical seal.	1 Replace.



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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.

12 Month Limited Warranty

EXTENT AND DURATION OF LIMITED WARRANTY

Coverage: AMT Pump 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:

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.

- 1. 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.
- 2. To obtain the above remedy:**
 - A.** 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.
 - B.** 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.
 - C. 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.
- 3. 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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