

15D SERIES MINIATURE PUMP OPERATION & MAINTENANCE MANUAL



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This is the hazard alert symbol: Δ . When you see this symbol, be aware that personal injury or property damage is possible. The hazard is explained in the text following the symbol. Read the information carefully before proceeding.

The following is an explanation of the three different types of hazards:

- Δ **DANGER** Severe personal injury or death will occur if hazard is ignored.
- Δ **WARNING** Severe personal injury or death can occur if hazard is ignored.
- Δ **CAUTION** Minor injury or property damage can occur if hazard is ignored.

GENERAL INFORMATION

- Δ **DANGER** To prevent explosive hazard, do not pump combustible liquids or gases, or operate unit in an atmosphere containing them. Use only in a well-ventilated area.
- Δ **CAUTION** Required ambient temperature is 0° - 40°C (32° -105°F). For operation at temperatures outside this range, consult the factory.

Performance is reduced by lower atmospheric pressure at high altitudes. Consult a Gast distributor for details. Never lubricate this oil-less unit. Sealed bearings are grease-packed.

INSTALLATION

- Δ **WARNING** Beware of any exposed movable parts. Proper guards should be in place to prevent severe personal injury or death.
- Δ **WARNING** Twin Series AC units must be installed with an external cooling system or fan. Overheating can occur due to insufficient cooling air.
- Δ **CAUTION** Do not block flow of cooling air over unit in any way.

Mounting

To reduce noise and vibration use shock mounts or a vibration-isolated mounting surface.

Plumbing

To prevent air flow restriction, use pipes and fittings of same size or larger than barbed ports. Note that ports are not designed to support plumbing.

Relief Valves and Gauges

Install gauges in the lines to monitor performance. A relief valve can be installed at inlet or outlet ports, or both. Consult a Gast Representative for performance limitations.

Filters

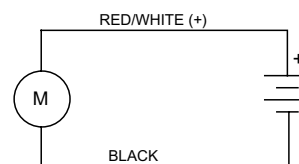
If operated in a dirt-contaminated atmosphere, a suitable filter should be used to ensure long service. For recommendations contact a Gast Representative.

Wiring

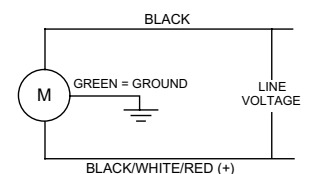
- Δ **WARNING** Poor wiring can result in electric shock. Wiring must conform to all required safety codes and be installed by a qualified person. Grounding is required.

Check that supply voltage agrees with motor nameplate. If motor fails to start or slows down under load, shut unit off and unplug it. If unit is extremely cold let it warm up to room temperature before starting.

DC WIRING



AC WIRING



KEEP THIS DOCUMENT FOR FUTURE REFERENCE

TROUBLESHOOTING GUIDE

OPERATION

- ⚠ WARNING** Always disconnect power source before servicing. Personal injury and/or property damage could result.
- ⚠ CAUTION** Unit is designed to pump air only. Do not allow foreign material such as dirt or metal particles to enter unit. Water vapor, oil-based contaminants, or other liquids should be filtered out.

NOTE: Standard AC models have a single trip thermal overload. If motor is tripped it cannot be restarted. The following could possibly cause an overload: a power spike, or unit overheating.

- ⚠WARNING** All electric motors generate heat. To avoid serious burns, never touch unit during or immediately after operation.

MAINTENANCE

Do not attempt to replace connecting rod or motor bearings. If after cleaning unit and/or installing a new diaphragm or head assembly, unit still does not operate properly, contact a Gast Representative, the factory, or return unit to an Authorized Service Facilities.

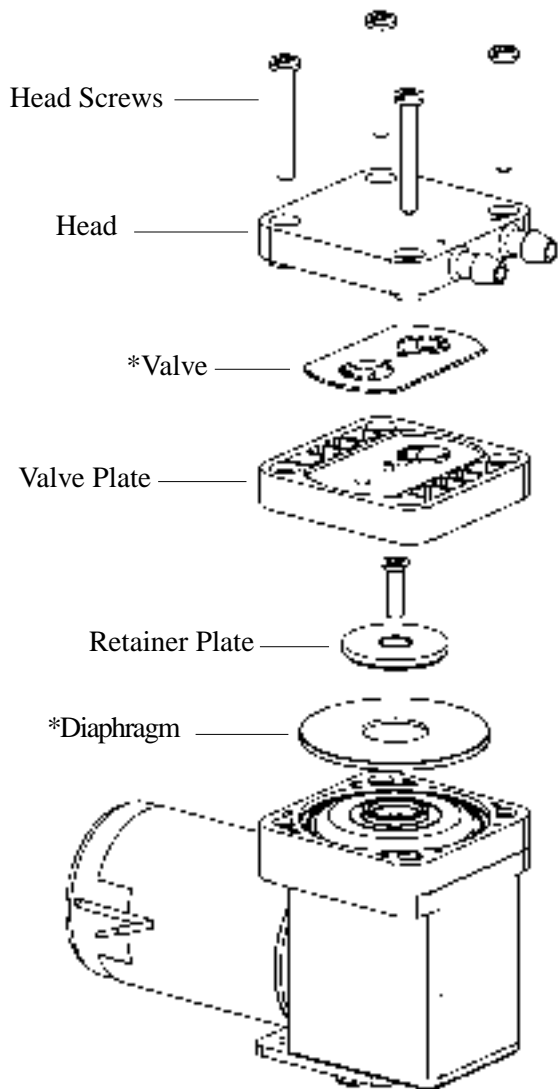
Before attempting repair, determine if unit has been exposed to/or contains biological, toxic, or radioactive materials, so that repair personnel are not exposed to these potentially hazardous items.

Follow these steps to replace diaphragm and/or valve:

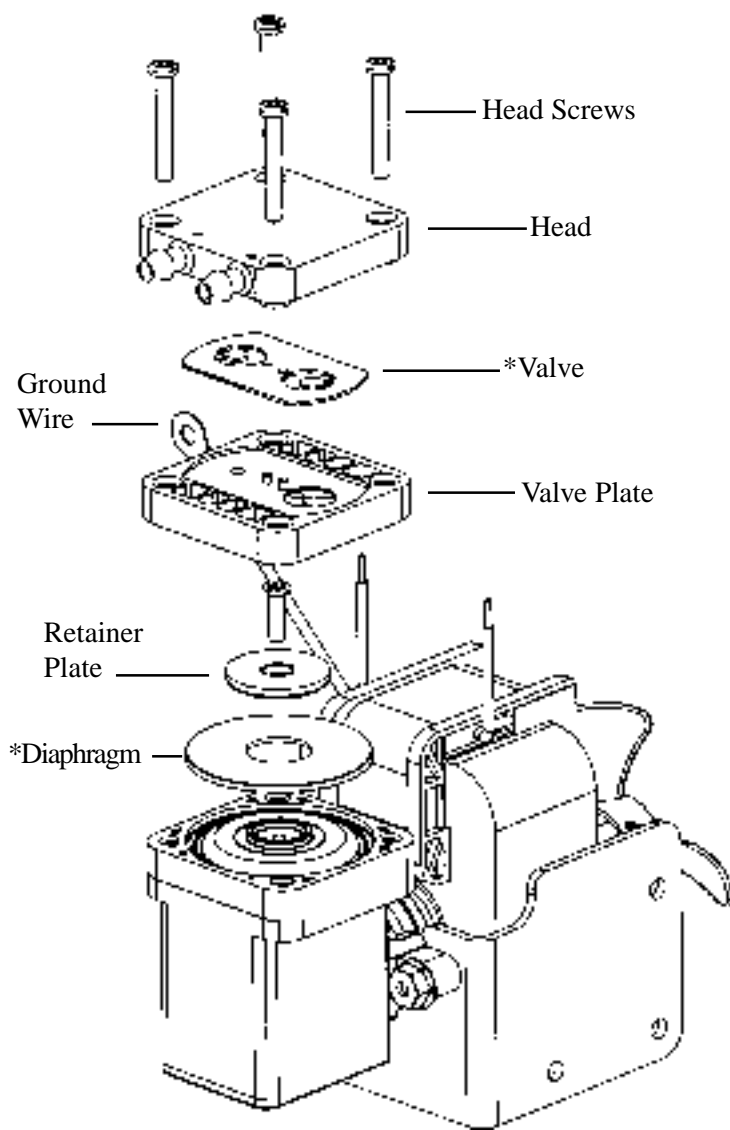
1. Disconnect unit from power source.
- ⚠ WARNING** Always disconnect power source before servicing. Failure to do so can result in personal injury and/or property damage.
2. Vent all air lines to unit to remove pressure.
- ⚠ WARNING** Vent all air lines to unit to remove pressure before servicing it. Failure to do so can result in personal and/or property damage.
3. Label ports, noting arrows' direction so pump head can be oriented correctly during reinstallation.
4. Remove the four corner head screws.
5. Remove head, valve, and valve plate.
6. Remove screw on retainer plate.
7. Remove retainer plate and diaphragm.
8. Clean pump head and retainer using water-based solvents.
- ⚠ CAUTION** Do not use petroleum-base compounds, acids, caustics, or chlorinated solvents to clean or lubricate any parts. It will reduce service life of unit.
9. Reattach retainer plate and diaphragm to rod with retainer screw.
10. Torque screw to 12 in-lbs.
- ⚠ CAUTION** Do not over-tighten screw(s). To do so can damage unit and will reduce performance.
11. Re-install valve plate, valve, and head.
12. Re-install head screws and torque to 12 in-lbs.

TROUBLESHOOTING GUIDE			
SYMPTOM	POSSIBLE CAUSE	POINT TO CHECK	REMEDY
Won't Start	<ul style="list-style-type: none"> • Electrical connection • Dirty muffler • Wrong/Low voltage • Pressure/Vacuum on head • Thermal overload tripped 	<ul style="list-style-type: none"> • Ensure electrical power is supplied • Is muffler clogged • Inspect power supply • Inspect relief valve • Inspect above points 	<ul style="list-style-type: none"> • Check plug or wire connection • Replace muffler • Apply proper voltage • Reset or replace relief valve • Replace unit
Excessive Noise	<ul style="list-style-type: none"> • Wrong voltage • Hose or plumbing leak • Checkvalve leaks 	<ul style="list-style-type: none"> • Inspect power supply • Inspect hoses for cracks • Inspect check valve 	<ul style="list-style-type: none"> • Apply proper voltage • Replace hose • Repair or replace check valve
Overheating	<ul style="list-style-type: none"> • Dirty filter • Dirty muffler • Low voltage • Dirty valves 	<ul style="list-style-type: none"> • Inspect filter • Is muffler clogged • Inspect power supply • Remove head and inspect valve 	<ul style="list-style-type: none"> • Replace filter • Replace muffler • Apply proper voltage • Clean/replace valve
Low Pressure/ Vacuum	<ul style="list-style-type: none"> • Dirty filter • Dirty muffler • Low voltage • Wrong AC voltage frequency • Damaged/contaminated diaphragm • Dirty valves 	<ul style="list-style-type: none"> • Inspect filter • Inspect muffler • Inspect power supply • Inspect power supply • Remove head & valve plate; inspect diaphragm • Remove head & inspect valve 	<ul style="list-style-type: none"> • Replace filter • Replace muffler • Supply proper electrical power • Supply proper electrical power • Replace diaphragm • Clean/replace valve

(DC Model Shown)



(AC Model Shown)



Parts Ordering Information	
Service Kit (EPDM Mat'l).....	K813
Service Kit (NEOPRENE Mat'l).....	K813A

*Each Service Kit contains (1) Valves, and (1) Diaphragms.

Exploded Views shown for reference only. Twin series model views are available upon request.

YOUR WARRANTY

Gast finished products, when properly installed and operated under normal conditions of use, are warranted by Gast to be free from defects in material and workmanship for a period of twelve (12) months from the date of purchase from Gast or an authorized Gast Representative or Distributor. In order to obtain performance under this warranty, the buyer must promptly (in no event later than thirty (30) days after discovery of the defect) give written notice of the defect to Gast Manufacturing Incorporated, PO Box 97, Benton Harbor Michigan USA 49023-0097 or an authorized Service Center (unless specifically agreed upon in writing signed by both parties or specified in writing as part of a Gast OEM Quotation). Buyer is responsible for freight charges both to and from Gast in all cases.

This warranty does not apply to electric motors, electrical controls, and gasoline engines not supplied by Gast. Gast's warranties also do not extend to any goods or parts which have been subjected to misuse, lack of maintenance, neglect, damage by accident or transit damage.

THIS EXPRESS WARRANTY EXCLUDES ALL OTHER WARRANTIES OR REPRESENTATIONS EXPRESSED OR IMPLIED BY ANY LITERATURE, DATA, OR PERSON. GAST'S MAXIMUM LIABILITY UNDER THIS EXCLUSIVE REMEDY SHALL NEVER EXCEED THE COST OF THE SUBJECT PRODUCT AND GAST RESERVES THE RIGHT, AT ITS SOLE DISCRETION, TO REFUND THE PURCHASE PRICE IN LIEU OF REPAIR OR REPLACEMENT.

GAST WILL NOT BE RESPONSIBLE OR LIABLE FOR INDIRECT OR CONSEQUENTIAL DAMAGES OF ANY KIND, however arising, including but not limited to those for use of any products, loss of time, inconvenience, lost profit, labor charges, or other incidental or consequential damages with respect to persons, business, or property, whether as a result of breach of warranty, negligence or otherwise. Notwithstanding any other provision of this warranty, BUYER'S REMEDY AGAINST GAST FOR GOODS SUPPLIED OR FOR NON-DELIVERED GOODS OR FAILURE TO FURNISH GOODS, WHETHER OR NOT BASED ON NEGLIGENCE, STRICT LIABILITY OR BREACH OF EXPRESS OR IMPLIED WARRANTY IS LIMITED SOLELY, AT GAST'S OPTION, TO REPLACEMENT OF OR CURE OF SUCH NONCONFORMING OR NON-DELIVERED GOODS OR RETURN OF THE PURCHASE PRICE FOR SUCH GOODS AND IN NO EVENT SHALL EXCEED THE PRICE OR CHARGE FOR SUCH GOODS. GAST EXPRESSLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE WITH RESPECT TO THE GOODS SOLD. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTIONS SET FORTH IN THIS WARRANTY, notwithstanding any knowledge of Gast regarding the use or uses intended to be made of goods, proposed changes or additions to goods, or any assistance or suggestions that may have been made by Gast personnel.

Unauthorized extensions of warranties by the customer shall remain the customer's responsibility.

CUSTOMER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF GAST PRODUCTS FOR CUSTOMER'S USE OR RESALE, OR FOR INCORPORATING THEM INTO OBJECTS OR APPLICATIONS WHICH CUSTOMER DESIGNS, ASSEMBLES, CONSTRUCTS OR MANUFACTURES.

This warranty can be modified only by authorized Gast personnel by signing a specific, written description of any modifications.

AUTHORIZED SERVICE FACILITIES

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