


2D SERIES MINIATURE PUMP OPERATION and MAINTENANCE INSTRUCTION MANUAL






KEEP THIS DOCUMENT FOR FUTURE REFERENCE

This is the hazard alert symbol:  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:

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

GENERAL SAFETY GUIDELINES FOR THIS PRODUCT

WARNING

- Poor wiring can result in electric shock. Wiring must conform to all required safety codes and be installed by a qualified person. Refer to wiring diagram on page 8.
- Always disconnect power source before servicing.
-  **CAUTION**
- Required ambient temperature is -10°F to 150°F. Operation at temperatures outside this range, will reduce the life of the pump.

- Do not block the flow of cooling air over the pump in any way.
- This unit is designed to pump gases only. Ingestion of dirt, metal, water, or petroleum-based contaminants will reduce the life of the pump.

Lower atmospheric pressure at high altitudes lowers performance. Consult a Gast distributor for details.

Never lubricate this oil-less pump. The sealed bearings are grease-packed. Introducing petroleum based or hydrocarbon products will reduce the service life of the diaphragm and valve.

Ensure that nothing will interfere with the movement of the eccentric. While not dangerous, the eccentric must move freely to allow the pump to operated properly.

MOUNTING

To reduce noise and vibration, use Velcro or a vibration-isolated mounting surface.

PLUMBING

To prevent air flow restriction, use an elastic hose of the same size as the hose port. These ports are not designed to support plumbing.

FILTERS

Avoid unfiltered operation in an environment where there is visible airborne particulate material. Use a suitable filter to avoid ingesting dirt/metal or other foreign material into the pump.

WIRING

Ensure that the supply voltage agrees with the pump operating voltage. Remove power to the pump if the motor fails to start or stops under load. Warming the pump to a minimum of -10 F in extremely cold weather will ease starting and extend the life of the pump.

OPERATION

General recommendations for operation:

Avoid operating the pump at temperatures less than -10°F or greater than 150°F.

Draw through the pump only those substances which do not react with PPS or EPDM (diaphragm and valve material).

Avoid unfiltered operation in an environment where there is visible airborne particulate matter.

Avoid ingesting dirt into the pump.

Following these basic recommendations will avoid damage to the pump and may extend its operating life.

MAINTENANCE

Do not attempt to replace the connecting rod or motor bearings. If after cleaning the unit and/or installing a new valve, the unit still does not operate properly, contact your representative, or the factory, or return the pump to an Authorized Service Facilities.

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

Follow these steps to replace the valve:

- 1) Disconnect pump from electrical power.

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 the pump to remove pressure.
- 3) Note the direction of the arrows so you can orient the pump head correctly during reinstallation.
- 4) Remove the four corner head screws and remove the head, valve, and valve plate.
- 5) Clean the pump head and valve plate using water-based solvents.
- 6) Ensure the diaphragm is centered in the recessed area of the bracket with no bends or folds.
- 7) Place the new valve on the valve plate so that the holes in the valve fit over the correct pins in the valve plate.
- 8) Assemble the head by fitting the correct holes in the head onto the pins in the valve plate.
- 9) Place the entire head, valve, and valve plate assembly on top of the bracket, by aligning the four holes and orienting the ports in your desired position.
- 10) Torque the head screws to 17 to 21 in-oz. into the body.

CAUTION

Do not over-tighten head screw(s). To do so can risk stripping the plastic threads.

TROUBLESHOOTING GUIDE

SYMPTOM: WON'T START

Possible Cause:	Point to Check:	Remedy:
-Electrical Connection	-Ensure electrical power is supplied and inspect	-Check plug or wire connection
-Wrong/Low Voltage		-Apply proper voltage
-Pressure/Vacuum on Head	-Inspect relief valve	-Reset or replace relief valve

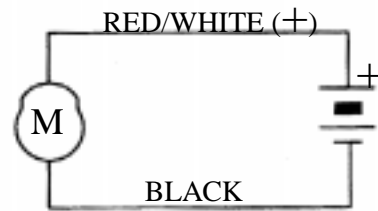
SYMPTOM: EXCESSIVE NOISE

Possible Cause:	Point to Check:	Remedy:
-Wrong Voltage	-Inspect power supply	-Apply proper voltage
-Hose or plumbing leak	-Inspect hoses for cracks	-Replace hose

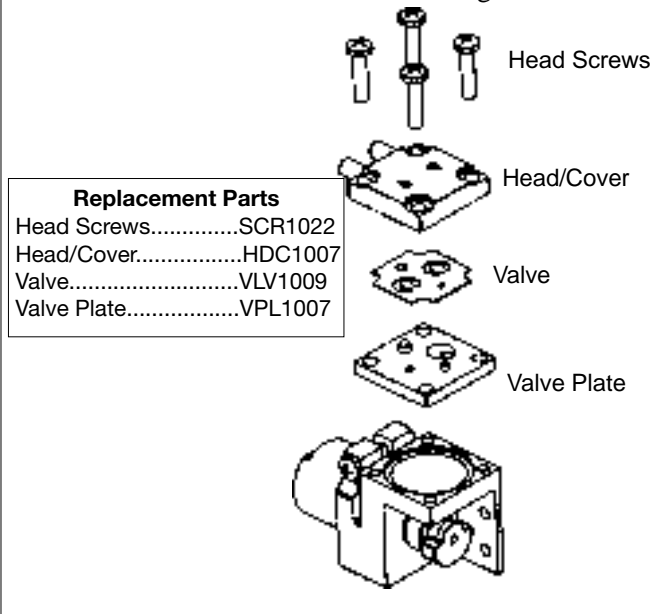
SYMPTOM: OVERHEATING

Possible Cause:	Point to Check:	Remedy:
-Dirty Filter	-Inspect Filter	-Replace Filter
-Low or High Voltage	-Inspect Power Supply	-Apply proper voltage
-Dirty Valves	-Remove Head and inspect valve	-Clean/Replace Valve

DC WIRING



Exploded View and Parts Ordering Information



SYMPTOM: LOW PRESSURE/LOW VACUUM

Possible Cause:	Point to Check:	Remedy:
-Dirty Filter	-Inspect filter	-Replace Filter
-Low voltage	-Inspect power supply	-Supply proper electrical power
-Damaged/Contaminated Diaphragm	-Remove Head & Valve Plate and inspect Diaphragm	-Send unit to an Authorized Service Facility
-Dirty Valve	-Remove Head and inspect Valve	-Clean/Replace Valve

AUTHORIZED SERVICE FACILITIES

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