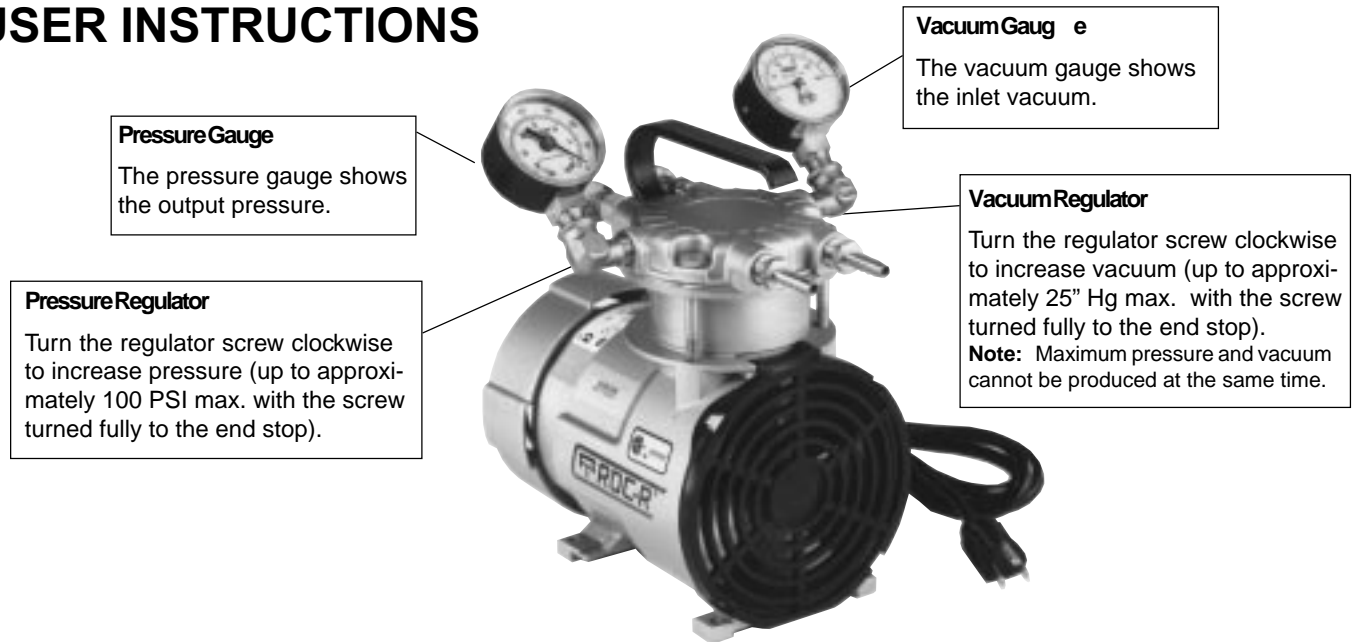


Laboratory Rocking Piston Vacuum Pump and Compressor

ROA Series

OPERATION & MAINTENANCE USER INSTRUCTIONS



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 INFORMATION

This pump is designed to be used for the purpose of pumping air. The pump should not be used for the pumping of fluids, particles, solids or any combustible substances likely to cause explosions.

- ⚠ DANGER** Do not pump flammable or explosive gases or operate the unit in an atmosphere containing them.
- ⚠ CAUTION** The pump is designed for pumping air. Do not allow corrosive gases or particulate material to enter the pump. Water, oil-based contaminants, or other liquids must be filtered out.
- ⚠ CAUTION** Normal ambient temperature should not exceed 40° C (104° F). For operation at higher temperatures, consult the factory.
- ⚠ WARNING** Exhaust air temperature can become very hot. Keep away from air stream.

Performance is reduced by low atmospheric pressure found at high altitudes. Consult a Gast distributor for details.

Never lubricate this oil-less pump. Most components are made of aluminum and the valves are stainless steel.

KEEP THIS DOCUMENT FOR FUTURE REFERENCE

INSTALLATION

⚠ WARNING To avoid risk of electrocution do not use this product in an area where it could come in contact with water or other liquids. If exposed to the elements, it must be weather protected.

⚠ CAUTION Do not block the flow of cooling air over the pump in any way.

Mounting the Pump

⚠ CAUTION Remove the plastic plugs in the intake and exhaust ports before operating unit.

The pump may be installed in any orientation as long as the flow of cool, ambient air over the pump is not blocked. To reduce noise and vibration, use shock mounts and affix to a stable, rigid operating surface.

Plumbing

To prevent air flow restriction, use pipe and fittings that are the same size or larger than the threaded ports of the pump. NOTE: Be sure to connect the intake and exhaust plumbing to the correct inlet and outlet ports.

Accessories

Filters and mufflers are supplied on some models. Check periodically and replace when necessary. Consult a Gast Representative for filter recommendations. For best results, install relief valves and gauges at the inlet or outlet, or both, to monitor performance.

Relief Valve

⚠ WARNING Do not touch relief valve as it becomes very hot during operation and will burn skin on contact. Wait until unit has been turned off and allowed to cool before touching it.

A safety relief valve is provided on standard compressors and is preset at factory. Do not exceed or adjust safety relief to pressures other than those preset at factory.

⚠ WARNING Do not unscrew relief valve head entirely off while unit is operating. Ejecting valve parts could cause severe injury.

Wiring

⚠ WARNING Incorrect wiring can result in electric shock. Wiring must conform to all required safety codes and be installed by a qualified person.

⚠ WARNING All power to the motor must be de-energized and disconnected when servicing.

Grounding Instructions

Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the product is properly grounded. Do not modify the plug provided; if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

For All Grounded, Cord-connected Products:

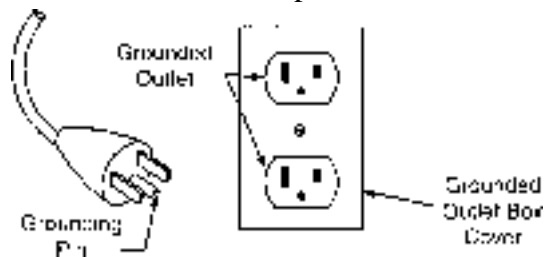
This product should be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. Some units are equipped with a cord having a grounding wire with an appropriate grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

⚠ DANGER Improper installation of the grounding plug can result in a risk of electric shock.

If repair or replacement of the cord or plug is necessary, do not connect the grounding wire to either flat blade terminal. The wire with insulation having an outer surface that is green, with or without yellow stripes, is the grounding wire.

For A Grounded, Cord-connected Product Rated Less Than 15 Amperes And Intended For Use On A Nominal 120v, Or 220-240 Volt Supply Circuit:

This product is for use on a nominal 120v, or 220-240 volt circuit, and has a grounding plug. Make sure that the product is connected to an outlet having the same configuration as the plug. No adapter should be used with the product.



OPERATION

⚠ WARNING Solid or liquid material exiting the unit can cause eye or skin damage. Keep away from air stream.

⚠ WARNING Always disconnect the power before servicing. The motor may be thermally protected and will restart automatically when it cools if the thermal protection switch is tripped.

- ⚠WARNING** The head surface(s) can be very hot depending on pump duty and speed. Do not touch these parts during operation.
- ⚠ CAUTION** Do not operate these units above 25 in. Hg vacuum or 100 PSIG pressure (45 PSIG intermittent). To do so will damage the unit.
- ⚠WARNING** Do not operate without the grille(s), if provided, in place. Failure to do so could result in severe personal injury.

Starting

- ⚠ CAUTION** Do not start against a vacuum or pressure load.

If the pump is extremely cold, let it warm up to room temperature before starting. If the pump does not operate properly, see the troubleshooting guide.

NOTE: Some of these models may exceed 70 dB(A). When in close proximity to these models hearing protection is required. Refer to the Technical Data Sheet for your specific model.

MAINTENANCE AND INSPECTION

Intake filter and mufflers require periodic inspection and replacement. Initial inspection is suggested at 500 hours, then the user should determine the frequency thereafter. Most problems can be prevented by keeping filters and mufflers clean. Dirty filters and mufflers decrease pump performance and can decrease pump life.

Filter Inspection and Replacement

The head surface(s) on some models can be very hot during operation. Do not touch these parts until the pump has been turned off and allowed to cool. Some filter element(s) are held together by a snap fit. Remove the cover to replace the felt, and reassemble.

SHUTDOWN PROCEDURES

Proper shutdown procedures must be followed to prevent pump damage. Failure to do so may result in premature pump failure. The Gast Manufacturing non-lubricated vacuum pumps and compressors are constructed of ferrous metals or aluminum which are subject to rust and corrosion when pumping condensable vapors such as water. Follow the steps below to assure correct storage and shutdown between use:

Shutdown Procedure Conti.

1. NEVER oil this non-lubricated pump.
2. After using the pump, disconnect plumbing and allow the pump to run "open" for at least 5 minutes before shutdown.
3. Plug the open ports to prevent dirt or other contaminants from entering the pump. It is now ready for shutdown or storage.

TROUBLESHOOTING GUIDE

Possible Reason	Low Pressure	Low Vacuum	Excessive Noise	Over-heating	Won't Start
Dirty Filter	X	X			
Dirty Muffler	X	X			
Dirty Valves	X	X			
Bent Valves	X	X			
Damaged Cup	X	X			
Low Voltage	X	X		X	X
Wrong voltage			X	X	X
Pressure on Head					X
Improper Cylinder Shimming			X	X	
Relief Valve Set Too High				X	
Relief Valve Set Too Low	X	X			
Leaky Hose	X	X			
Leaky Check Valve					X

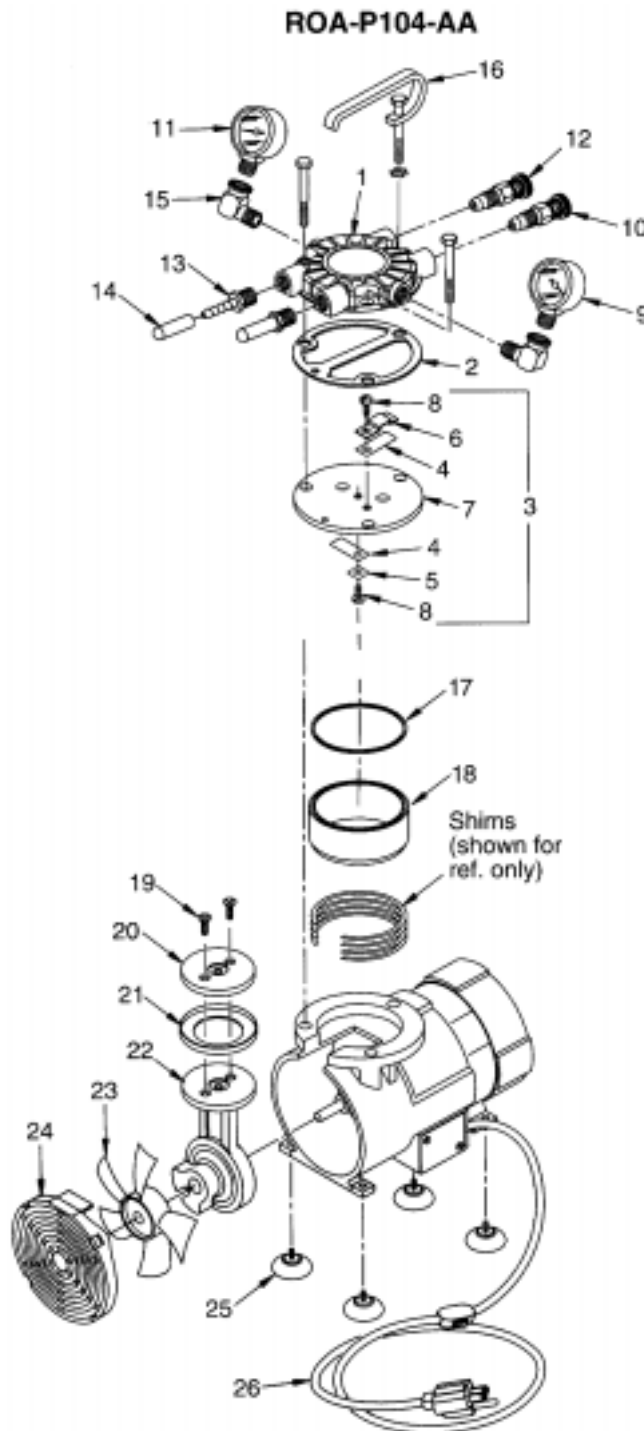
Service Kit(s) and repair instructions are available upon request. Contact your local Representative, Distributor, or the factory for details.

NOTE: Gast will not guarantee the performance of a field rebuilt pump. You can return the pump to an Authorized Service Facility listed on the back page.

Ref. No.	Description	Part Qty.	ROA-P231	ROA-P204
1	Head	1	AJ347	AJ347
*2	Head Gasket	1	AJ404A	AJ404A
*3	Valve Plate Assembly	1	AJ343A	AJ343A
4	Leaf Valve	2	AF817	AF817
5	Valve Retainer	1	AF819A	AF819A
6	Valve Limiter	1	AF856	AF856
7	Valve Plate	1	AJ344	AJ344
8	Screw	1	BB317 (2)	BB317 (2)
9	Pressure Gauge	1	AF583	AE362
10	Pressure Regulator	1	AF887	AF887
11	Vacuum Gauge	1	AA640	AA640
12	Vacuum Regulator	1	AA550C-V	AA550G-V
13	Hose Nipple	2	AA254D	AF431
14	Cap	2	AG491	AG491A
15	Elbow	2	BA204A	BA204A
16	Handle	1	AC174	AC174
*17	O-Ring, Cylinder	1	AH179	AH179
18	Cylinder	1	AJ342	AJ342
19	Screw	2	BB557	BB557
20	Retainer Plate	1	AH177	AH177
*21	Cup	1	AH175	AH175
22	Connecting Rod Assembly	1	AH173	AH173
23	Fan	1	AF533	AF533
24	Grille	1	AH185	AH185
25	Rubber Foot Support	4	AF584A	AF584A
26	Cord/Switch/Plug	1	AF968	AF968
	Service Kit	1	K757	K757

*Denotes parts included in the service kit.

When corresponding or ordering parts please give complete model and serial numbers.



AUTHORIZED SERVICE FACILITIES

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or: 81-3-3571-7896

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