

22 SERIES OIL-LESS VACUUM PUMPS & COMPRESSORS

OPERATION & MAINTENANCE MANUAL



WARNING



PLEASE READ THIS MANUAL COMPLETELY BEFORE INSTALLING AND USING THIS PRODUCT. SAVE THIS MANUAL FOR FUTURE REFERENCE AND KEEP IN THE VICINITY OF THE PRODUCT.

General information

- **Model numbers ending in "X"** have automatic thermal protectors which protect the motor by shutting the motor off if it overheats. The motor will automatically restart once the motor has cooled.

Product Use Criteria:

- Pump only clean, dry air.
- Operate at 32°F - 104°F (0°C - 40°C).
- Protect unit from dirt & moisture.
- Do not pump flammable or explosive gases or use in an atmosphere that contains such gases.
- Protect all surrounding items from exhaust air. This exhaust air can become very hot.
- Corrosive gases and particulate material will damage unit. Water vapor, oil-based contaminants or other liquids must be filtered out.
- Consult your Gast Distributor before using at high altitudes.
- Oil-Less rotary-vanes require NO lubrication.
- Use of petroleum or hydrocarbon products will reduce carbon-vane service life.



ISO 9001 & 14001 CERTIFIED

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Your safety and the safety of others is extremely important.

We have provided many important safety messages in this manual and on your product. Always read and obey all safety messages.



This is the safety alert symbol. This symbol alerts you to hazards that can kill or hurt you and others. The safety alert symbol and the words "DANGER" and "WARNING" will precede all safety messages. These words mean:



DANGER

You will be killed or seriously injured if you don't follow instructions.



WARNING

You can be killed or seriously injured if you don't follow instructions.

All safety messages will identify the hazard, tell you how to reduce the chance of injury, and tell you what can happen if the safety instructions are not followed.

INSTALLATION



WARNING



Electrical Shock Hazard

Disconnect electrical power at the circuit breaker or fuse box before installing this product.

Install this product where it will not come into contact with water or other liquids.

Install this product where it will be weather protected.

Electrically ground this product.

Failure to follow these instructions can result in death, fire or electrical shock.

Correct installation is your responsibility. Make sure you have the proper installation conditions and that installation clearances do not block air flow.

Blocking air flow over the product in any way can cause the product to overheat.

Mounting

This product can be installed in any orientation. Mounting the product to a stable, rigid operating surface and using shock mounts will reduce noise and vibration.

Plumbing

Remove plugs from the IN and OUT ports. Connect with pipe and fittings that are the same size or larger than the product's threaded ports.

Accessories

The product's intake and exhaust filters will provide adequate filtration in most applications. Consult your Gast representative for additional filter recommendations. Install relief valves and gauges at inlet or outlet, or both, to monitor performance. Check valves are required to prevent back streaming through the pump.

Motor Control

It is your responsibility to contact a qualified electrician and assure that the electrical installation is adequate and in conformance with all national and local codes and ordinances.

Determine the correct overload setting required to protect the motor (see motor starter manufacturer's recommendations). Select fuses, motor protective switches or thermal protective switches to provide protection. Fuses act as short circuit protection for the motor, not as protection against overload. Incoming line fuses help to withstand the motor's starting current. Motor starters with thermal magnetic overload or circuit breakers protect motor from overload or reduced voltage conditions.

The wiring diagram attached to the product provides required electrical information. Check that power source is correct to properly operate the dual-voltage motor.

OPERATION



WARNING

Injury Hazard

Product surfaces become very hot during operation, allow product surfaces to cool before handling.

Air stream from product may contain solid or liquid material that can result in eye or skin damage, wear proper eye protection.

Failure to follow these instructions can result in burns, eye injury or other serious injury.

It is your responsibility to operate this product at recommended pressures or vacuum duties and room ambient temperatures.

Model numbers ending in "X" have automatic thermal protectors which protect the motor by shutting the motor off if it overheats. The motor will automatically restart once the motor has cooled.

Start Up

If motor fails to start or slows down significantly under load, shut off and disconnect from power supply. Check that the voltage is correct for motor and that motor is turning in the proper direction. Vane life will be drastically reduced if motor is not operating properly. Vanes can break or be damaged if motor/pump runs in the wrong direction.

MAINTENANCE

WARNING



Electrical Shock Hazard

Disconnect electrical power supply cord before performing maintenance on this product.

If product is hard wired into system, disconnect electrical power at the circuit breaker or fuse box before performing maintenance on this product.

Failure to follow these instructions can result in death, fire or electrical shock.

WARNING

Injury Hazard

Product surfaces become very hot during operation, allow product surfaces to cool before handling.

Air stream from product may contain solid or liquid material that can result in eye or skin damage, wear proper eye protection.

Flush this product in a well ventilated area.

Failure to follow these instructions can result in burns, eye injury or other serious injury.

It is your responsibility to:

- **Regularly inspect and make necessary repairs to product in order to maintain proper operation.**
- **Make sure that pressure and vacuum is released from product before starting maintenance.**

Check intake and exhaust filters after first 500 hours of operation. Clean filters and determine how frequently filters should be checked during future operation. This one procedure will help to assure the product's performance and service life.

Flushing

Flushing this product to remove excessive dirt, foreign particles, moisture or oil that occurs in the operating environment will help to maintain proper vane performance.

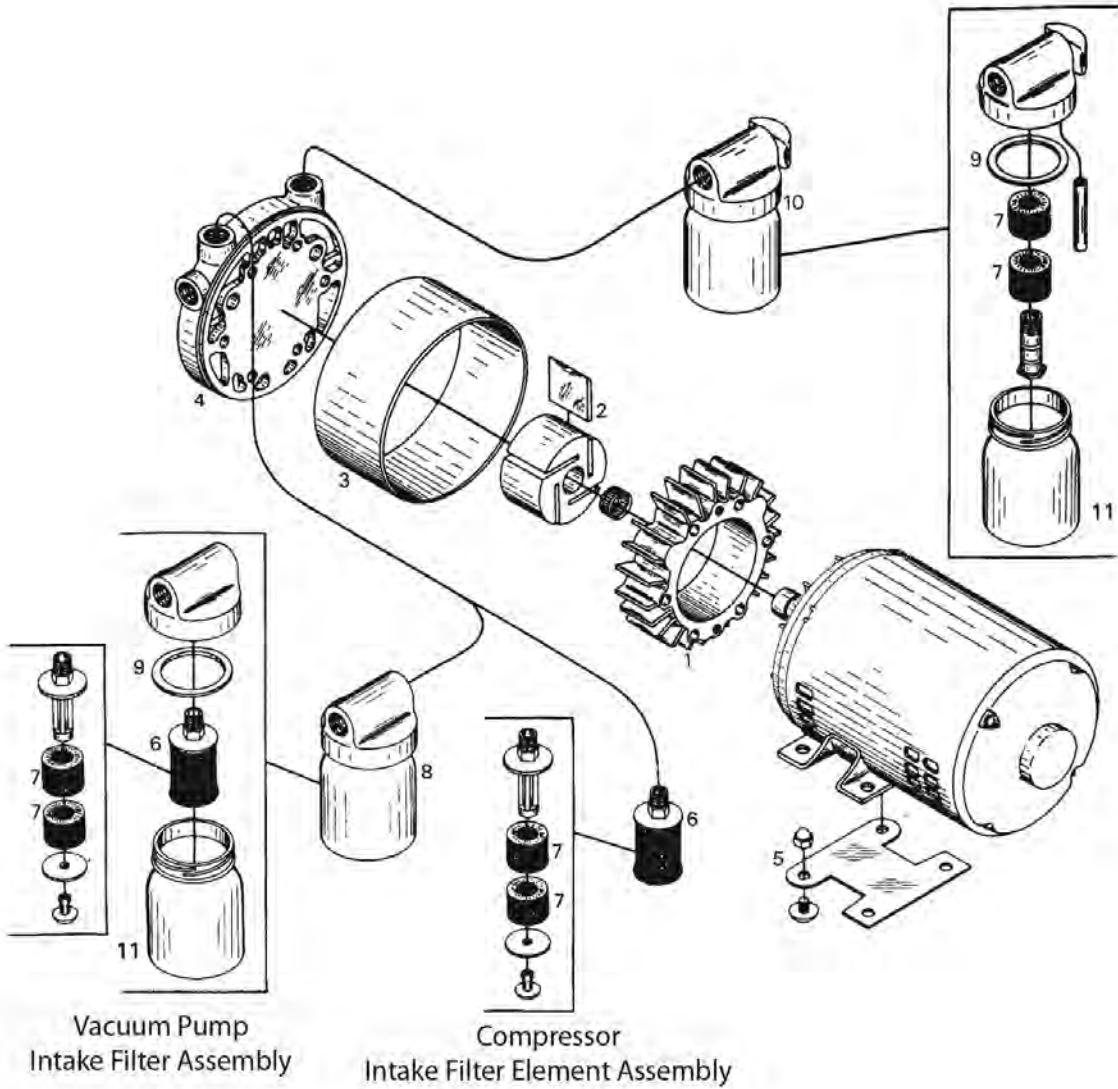
Use only Gast recommended Flushing Solvent or other non-petroleum based flushing solvent. Do Not use kerosene or ANY other combustible solvents to flush product.

-Disassembly

If flushing does not eliminate the problem, remove the six bolts holding the end plate to the body. Now remove the end plate and four vanes (DO NOT REMOVE THE ROTOR OR LOOSEN ANY ELECTRIC MOTOR "THRU-BOLTS"). If the pump fails to produce the proper vacuum or pressure, the vanes could be worn. A metallic clanging could mean the rotor and body are touching. The top clearance may be adjusted by "LIGHTLY" tapping on the pump body (either top or bottom depending upon whether clearance is too large or small). The rotor should be turned while setting clearance to assure that all points on the rotor clear the body. Check with factory for clearances.

Check that all external accessories such as relief valves and gauges are attached to cover and are not damaged before re-operating product.

EXPLODED VIEW AND PARTS ORDERING INFORMATION

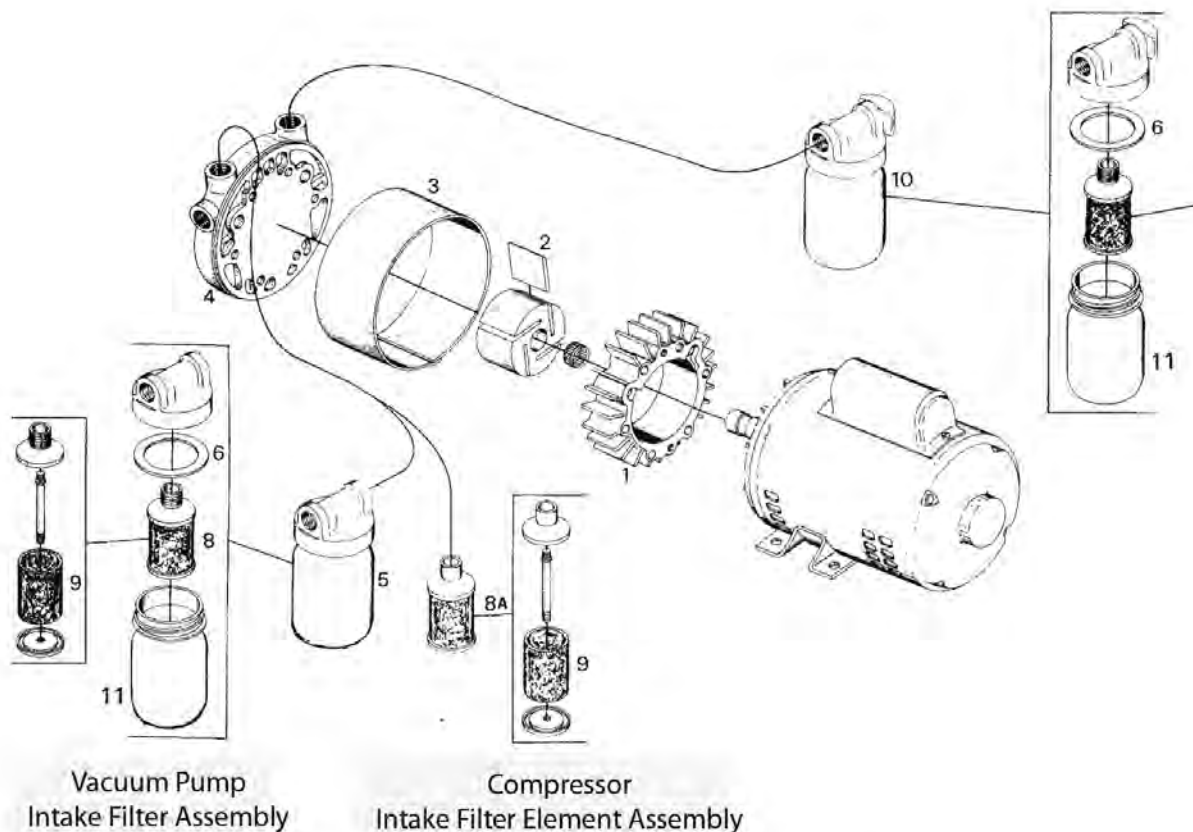


REF NO.	DESCRIPTION	QTY	0322-V103 VACUUM	0522-V103 VACUUM	0322-P102 COMPRESSOR	0522-P102 COMPRESSOR
1	BODY	1	AF107	AF108	AF107	AF108
2 Δ	VANE	4	AF109C	AF109C	AF109C	AF109C
3	SHROUD	1	AF111	AF111	AF111	AF111
4	END PLATE	1	AF112E	AF112E	AF112E	AF112E
5	FOOT SUPPORT ASSM	1	AC136	AC136	AC136	AC136
6	INTAKE FILTER ELEMENT ASSM	1	B343B	B343B	B343B	B343B
7 Δ	FILTER FELT	4	B344A	B344A	B344A	A344A
8	INTAKE FILTER ASSEMBLY	1	V400G	V400G	-	-
9 Δ	COVER GASKET	2	B62A	B62A	-	-
10	MUFFLER ASSEMBLY	1	V425L	V425L	-	-
11	JAR	2	AA125A	AA125A	-	-
***	SERVICE KIT	1	K247	K247	K247	K247

Δ Denotes parts in the service kit.

Parts listed are for stock models. For specific OEM models, contact the factory. When corresponding or ordering parts, please give complete model number and serial number.

EXPLODED VIEW AND PARTS ORDERING INFORMATION



REF NO.	DESCRIPTION	QTY	0822-V103 VACUUM	0822-P102 COMPRESSOR	1022-V103 VACUUM	1022-P102 COMPRESSOR
1	BODY	1	AB978	AB978	AB887	AB887
2 Δ	VANE	4	AB992B	AB992B	AB992B	AB992B
3	SHROUD	1	AB981	AB981	AB981	AB981
4	END PLATE	1	AB982C	AB982C	AB982C	AB982C
5	INTAKE FILTER ASSEMBLY	1	AB599	-	AB599	-
6 Δ	COVER GASKET	2	AA405	-	AA405	-
7	MUFFLER ELEMENT ASSM	1	AC434	-	AC434	-
8	FILTER ELEMENT ASSM	1	AC433	-	AC433	-
8A	FILTER ELEMENT ASSM	1	-	AC432	-	AC432
9 Δ	CARTRIDGE	2	AC393	AC393	AC393	AC393
10	EXHAUST MUFFLER ASSM	1	AB599B	-	AB599B	-
11	JAR	2	AA805	-	AA805	-
***	SERVICE KIT	1	K223	K223	K223	K223

Δ Denotes parts in the service kit.

Parts listed are for stock models. For specific OEM models, contact the factory. When corresponding or ordering parts, please give complete model number and serial number.

TROUBLESHOOTING CHART

Low		High		Pump Overheat	Motor Overload	Reason and remedy for problem.
Vacuum	Pressure	Vacuum	Pressure			
●	●	At pump		●	●	Filter dirty. Clean or replace.
	●		At pump	●	●	Muffler dirty. Clean or replace.
●		At pump		●	●	Vacuum line collapsed. Repair or replace.
			●	●	●	Relief valve set too high. Inspect and adjust.
●	●					Relief valve set too low. Inspect and adjust.
●	●	At pump	At pump	●	●	Plugged vacuum/pressure line. Inspect and repair.
●	●					Vanes sticking. Clean or replace.
●	●					Vanes worn. Replace.
●	●					Shaft seal worn. Replace.
●	●			●	●	Dust or offset powder in pump. Inspect and clean.
●	●			●	●	Motor not wired correctly. Check wiring diagram and line voltage.

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