

## REGENAIR TYPE M & H SERIES BLOWERS OPERATION & MAINTENANCE MANUAL




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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 text following the symbol.

**Read this 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



-  **CAUTION** Operation of M & H Series blowers without required filtration, or in excess of rated maximum pressure or vacuum limits can damage blower.

This blower is only to be used for purpose of pumping air and under no circumstances be used with any other gases. The blower must not be used for pumping fluids, particles, solids, or any substance likely to cause fire or explosion.


-  **WARNING** Do not pump flammable or toxic gases or operate pump in an atmosphere containing them. Severe personal injury can occur if hazard is ignored.
-  **WARNING** Keep hands or other body parts away from blower suction. Failure to do so could result in personal injury.
-  **WARNING** Required ambient temperature for normal operation should not exceed 40°C (105°F). For higher ambient operation, consult the factory. Failure to do so could result in fire or property damage.
-  **WARNING** Blower surfaces can become very hot during operation. Do not touch these surfaces until unit has been shut off and allowed to cool.

Blower performance is reduced by lower atmospheric pressure found at high altitudes, consult the factory or a Gast distributor for details.

## INSTALLATION




-  **CAUTION** Remove any plastic caps before starting blower. Failure to do so could result in cap being blown out of port and minor injury could result.
-  **CAUTION** Clean out new plumbing before attaching to blower inlet. Any foreign material (burrs, chips, welding drops, slag, pipe cuttings, excess sealants, sand, lime, etc.) must be removed, or filtered out. Any such material, no matter how small, that enters blower can damage it.

### Wiring

-  **WARNING** Wiring must conform to all required safety codes and be installed by a qualified person. Grounding is required. Electrical shock or fire hazard can result from incorrect wiring.

Fuses protect wiring against short circuits. Thermal or magnetic over-current cut-outs are absolutely necessary to prevent motor overloading, due to lack of one phase in a three phase electric system, high starting frequency, or jammed blower. Required power will rise as differential pressure increases. For motor wiring diagram, see motor label. Be sure that all dual-voltage motors are wired for your power source.

### Mounting

-  **WARNING** Air temperature increases when passing through the blower. This may cause outlet piping to reach high temperatures and can cause burns. Access to these areas should be guarded, limited, or marked "WARNING HOT".
-  **CAUTION** The exhaust air of this blower can become very hot. Do not direct exhaust air towards property that is temperature sensitive.
-  **CAUTION** Attach blower to solid surface before starting, to prevent injury or damage from unit movement.

The blower may be installed in any orientation as long as the flow of cool, ambient air over the blower and motor must not be blocked. It is very important to install blower in a well-ventilated area where temperature does not exceed 40°C. Check this temperature after blower has been running for an hour.

Strong forced ventilation is often needed for larger blowers. In vacuum service, hot discharge air of larger blowers must be plumbed away to avoid overheating the room or enclosure where blower is located. Discharge excess hot air into atmosphere through a relief valve.

### Plumbing

Connect motor and check direction of rotation before connecting plumbing. The threaded pipe ports are designed as connection ports only and will not support heavy plumbing. Be sure to use the same or larger size pipe and fittings to prevent air flow restriction and overheating of the blower.

When installing plumbing, be sure to use a small amount of pipe thread lubricant. This protects the threads in the blower flange. Dirt and chips, often found in new plumbing, should not be allowed to enter the blower. To minimize friction loss due to pipe fittings, use one pipe size larger than that of the blower ports. When installing two blowers in parallel, use plumbing two whole pipe sizes larger in diameter than that of the blower.

### Accessories

⚠ CAUTION Blower must be installed with a proper sized inlet filter, gauge, and relief valve. Failure to do so may damage blower. Consult the factory or see a Gast distributor for recommendations.

Keep in mind filters progressively increase losses, due to clogging. Install a vacuum gauge to monitor filter restriction. Install a relief valve to avoid overloading of large blowers, caused by changes in pressure or vacuum.

Do not install check valves that close with a strong spring due to their large pressure loss. We recommend the check valves listed in the accessory section.

These have minimal pressure drop, are positive sealing, and resistant to the high discharge temperatures of large blowers.

### OPERATION

⚠ WARNING Do not run blowers with no air flow through them. Protect with Gast recommended pressure or vacuum relief valves. Failure to do so will damage blower.

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

⚠ WARNING Some of these models may exceed 85 dB(A). When in close proximity to these models hearing protection is required.

Do not exceed maximum pressure or vacuum capabilities marked on data label of unit. High altitudes will reduce maximum pressure or vacuum duties, consult the factory or a Gast distributor for details.

Fit correct sized pipes and choose accessories that reduce to a minimum air friction load loss. Do not throttle discharge or suction pipe to reduce capacity. Throttling increases differential pressure, which consequently increases power absorption and working temperature. When the blower is ran at duties above 200mbar (80" H<sub>2</sub>O) metal pipe may be required for the hot exhaust air.

Once blower is in operation, check the following:

- Working pressure or vacuum values.
- Relief valve pressure or vacuum setting, adjust if needed.
- Measure motor current and compare with motor nameplate data.
- Rated electrical overload cut-out.
- Check ambient and discharge air temperatures to be sure they do not exceed allowed values one hour after starting.

### MAINTENANCE

⚠ WARNING Power must be de-energized and disconnected before servicing. Be sure all rotating parts have stopped. Electric shock or severe cuts can result if hazard is ignored.

The electric motor and blower need periodic cleaning to remove accumulated dust and dirt. If they are not cleaned, this can result in an increase in temperature, or can reduce blower service life. It is not recommended to attempt to repair a "M" or "H" series blower since clearances and tolerances are very close.

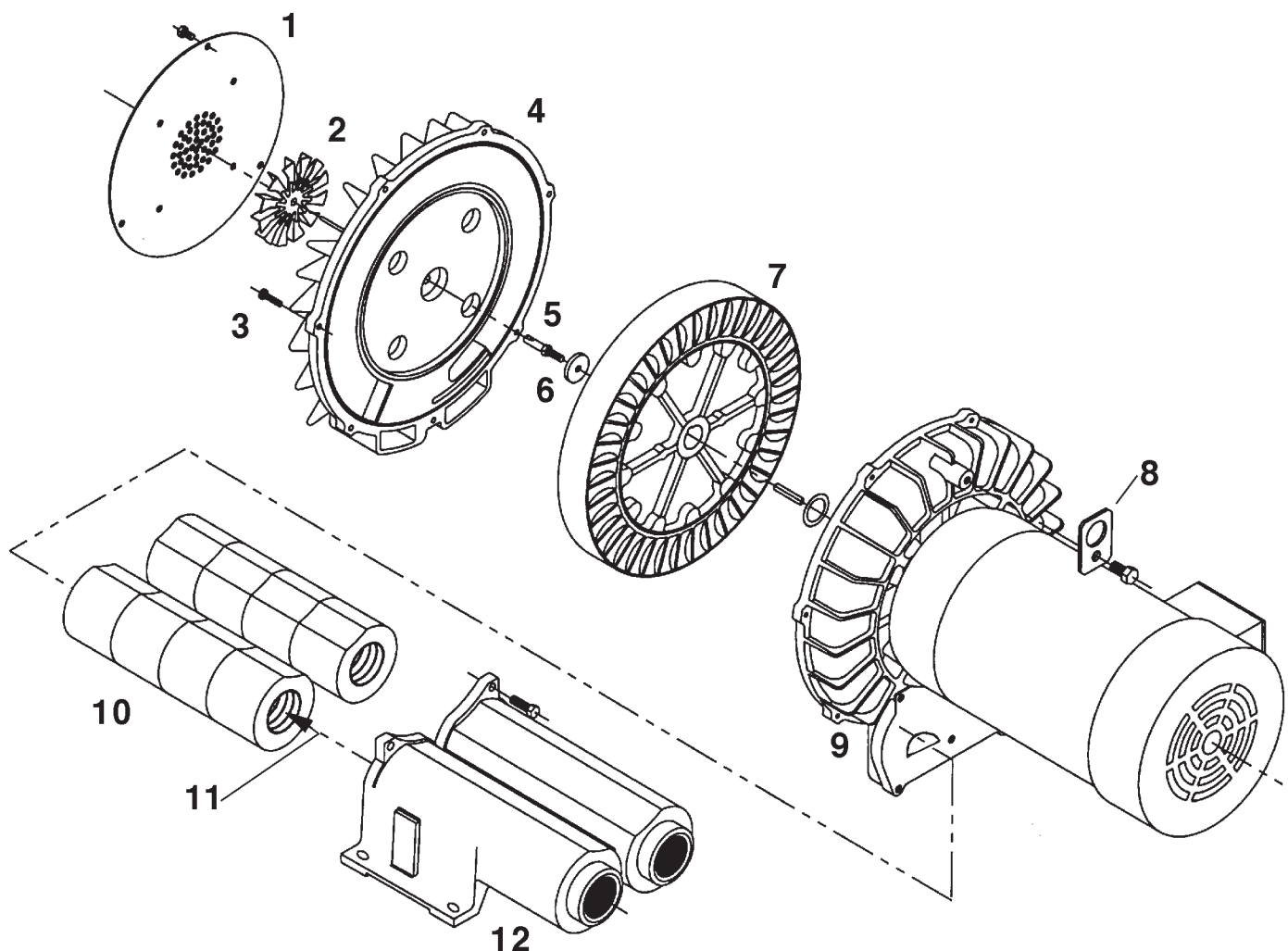
An increase in differential pressure across an inlet filter indicates its getting clogged. Clean inlet air filter as often as needed, blowing down against the current to clean it. Change cartridge when cleaning no longer gets cartridge clean. A dirty filter cartridge causes a high intake resistance resulting in an increase of differential pressure, absorbed power, and working temperature.

Gast will not guarantee a field rebuilt pump. If repairs are needed contact factory or send blower to a Gast Authorized Service Facility.

TROUBLESHOOTING GUIDE		
Symptom	Possible Diagnosis	Possible Remedy
Overheating or Unusually Hot	Running at too high a pressure or vacuum duty, or a combination of both	Install a Relief Valve, Pressure or Vacuum Gauge, or reduce duty
Abnormal Sound	Impeller rubbing against Cover or Housing	Reduce duty, or return to Service Facility
Increase in Sound Level	Foreign material can coat or destroy Muffler Foam	Clean or replace Foam, Muffler Elements, Trap, or filter foreign material out
Blown Fuse	Electrical wiring problem	Have Qualified person check fuse capacity and wiring

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RECOMMENDED ACCESSORIES		
Models R4H3060A, R4H3060A-1, R4H3060B		R4M3090A
Inline vacuum filters	AJ151E	AJ151G
Inlet pressure filters	AJ126F	AJ126F
Pressure Gauge	AE133F	AE133
Vacuum Gauge	AE134F	AE134 or AE134F
Check Valve	AH326F	AH326F
Pressure Relief Valve	50 Hz/PV084 60 Hz/PV091	AG258
Vacuum Relief Valve	AG258	AG258



PARTS ORDERING INFORMATION						
Ref No	Description	Qty	R4H3060A	R4H3060A-1	R4H3060B	R4H3090A
1	Fan Guard	1	N/A	BJ11D	N/A	N/A
2	Fan	1	N/A	BJ118	N/A	N/A
3	Cover Screws	7	BB926	BB926	BB926	BB926
4	Cover	1	BJ101D	BJ101DV	BJ101D	BJ101DM
5	Stud Shaft or Bolt	1	BB718	BJ105	BB718	BB718
6	Impeller Washer	1	AJ217	AJ217	AJ217	AJ217
7	Impeller	1	BJ102D	BJ102D	BJ102D	BJ102D
8	Lifting Plate	1	AJ218	AJ218	AJ218	AJ218
9	Housing	1	BJ103D	BJ103DV	BJ103D	BJ103DM
10	Foams	8	AJ112K	AJ112K	AJ112K	AJ112K
11	Muffler Spring	2	AJ113FQ	AJ113FQ	AJ113FQ	AJ113FQ
12	Muffler Box	1	AJ104K	AJ104K	AJ104K	AJ104K
*	Shims	*	AJ110 Series	AJ110 Series	AJ110 Series	AJ110 Series
	Motor/Housing Kit	1	JH1110A-1	JH1110A-2	JH1112A	JH1210-1

Parts listed are for stock model units. For specific OEM models consult the factory.

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

\* Indicates items included in the Motor/Housing Kit.



## 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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