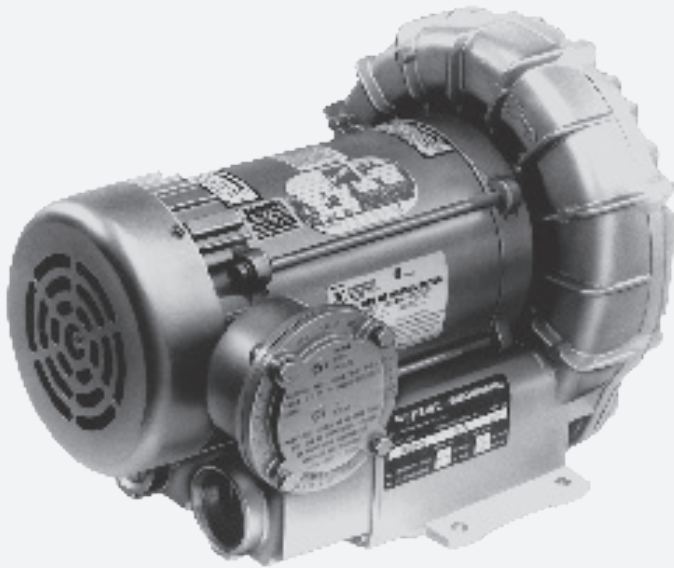




Operation and Maintenance Manual

Gast® Hazardous Duty Regenair® Blowers

R3105N-50, R4310P-50, R4P115N-50, R5125Q-50,
R5325R-50, R6130Q-50, R6P155Q-50, R6340R-50,
R6P355R-50, R7100R-50



Additional Languages.



Declaration of Conformity.

gastmfg.com

Dear Customer,

Thank you for purchasing this Gast® blower. It is manufactured to the highest standards using quality materials. Please follow all recommended maintenance, operational, and safety instructions, and you will receive years of trouble-free service.



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.

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SAFETY

Please note that pictures and figures referenced in the text can be found throughout the manual.

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. Definitions for these words are provided below.

**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.

**CAUTION**

MINOR INJURY OR PROPERTY DAMAGE CAN
OCCUR IF HAZARD IS IGNORED.

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.

General Information

This instruction applies to the following models ONLY:
R3105N-50, R4310P-50, R4P115N-50, R5125Q-50, R5325R-50, R6130Q-50, R6P155Q-50, R6340R-50, R6P355R-50, and R7100R-50.

These blowers are intended for use in Soil Vapor Extraction Systems. The blowers are sealed at the factory for very low leakage. They are powered with a U.L. listed electric motor Class 1 Div. 1 Group D for Hazardous Duty locations. Ambient temperature for normal full load operation should not exceed 40°C (105°F).

Gast® Manufacturing may offer general application guidance; however, suitability of the particular blower and/or accessories is ultimately the responsibility of the user, not the manufacturer of the blower.

Product Use Criteria:

- Operate at 32°F - 104°F (0°C - 40°C).
- This product must only be used for the purpose of pumping/evacuating air.
- This product must be protected from inclement weather. It is not suitable for exterior use.
- Protect all surrounding items from hot exhaust air. This exhaust air can become very hot.
- Consult your Gast® distributor before using at high altitudes. Performance will be adversely affected at high altitudes.
- Wear eye protection.
- A qualified person must install all wiring, conforming to all required safety codes.
- Do not try to obtain higher pressures or vacuums than those recommended. Refer to technical data sheet supplied.
- Damage will occur if the product is driven at higher speeds than those recommended. Refer to technical data sheet supplied.

INSTALLATION


DANGER


INJURY HAZARD.

Models R5325R-50, R6130Q-50, R6340R-50, R5125Q-50, R6P155Q-50, R6P355R-50, and R7100R-50 use Pilot Duty Thermal Overload Protection. Connecting this protection to the proper control circuitry is mandated by UL674 and NEC501. Failure to do so could/may result in an EXPLOSION. See pages 8 and 9 for recommended wiring schematic for these models.

Unpacking

1. Cut the banding strap from the carton and remove any packaging inserts.
2. Visually inspect the entire blower for shipping damage and verify any applicable accessories have been included.
 - a. If the contents were damaged during shipping, contact the freight carrier to file a claim.
 - b. If parts are missing, contact the supplier.
3. Use caution when removing the system from the remaining packaging. Retain the packaging material for future use if necessary.
4. Install the rubber shock mounts if applicable.

Lift the unit by the motor shell, housing, handle, or motor foot (depending on design).

Plumbing

Remove the plastic port plugs. Retain if you are likely to decommission and store the product in the future. Use the threaded pipe ports for connection only. They will not support the plumbing. Be sure to use the same or larger size pipe to prevent air flow restriction and overheating of the blower. When installing fittings, be sure to use pipe thread sealant. This protects the threads in the blower housing and prevents leakage. Dirt and chips are often found in new plumbing. Do not allow them to enter the blower.

Supply and install a check valve, minimum of 30 cm from port to prevent back pressure. Do not lubricate any part of this product. Do not use thread tape to seal pipe threads. Use only the correct pipe sealant on the threads. Fit a recommended filter/muffler to the inlet/exhaust port.

For pressure applications, always fit a relief valve set to the maximum working pressure but never higher than the maximum permitted pressure specified on the technical data sheet.

For vacuum applications, it is recommended that a relief valve is fitted set to the duty vacuum required. When an intermittent vacuum is advised, the product is only permitted to operate at this level for short cyclic periods.

Mounting

Supply and use the correct size fasteners and fixing holes provided to secure the product. Mount the unit on a solid surface as this will reduce noise and vibration. We suggest the use of shock mounts or vibration isolation material for mounting. Mounting is essential to maintaining stability during use, assembly, transport, and servicing. Guard all rotating parts.


WARNING


ELECTRICAL SHOCK HAZARD.

Electric shock can result from improper wiring. A qualified person must install all wiring, conforming to all required safety codes. Grounding is necessary.


WARNING

This blower is intended for use on soil vapor extraction equipment. Any other use must be approved in writing by Gast® Manufacturing, Inc.

Install this blower in any mounting position. Do not block the flow of cooling air over the blower and motor.

Ensure that the ventilation grilles are kept free from obstruction. Do not place any objects, fingers, metal tools, etc, through the grille holes.

Transportation and Storage Conditions:

- Temperature: -25°C (-13°F) to 55°C (131°F)
- Relative humidity: Maximum of 95%
- Keep the system dry at all times.
- Do not stack units during shipment, installation, or while being used.

INSTALLATION

Rotation

The Gast® Regenair® Blower should only rotate clockwise as viewed from the electric motor end. The casting has an arrow showing the correct direction of rotation. Confirm the proper rotation by checking air flow at the IN and OUT ports. If needed, reverse rotation of 3-phase motors by changing the position of any two of the power line wires.

Motor Installation

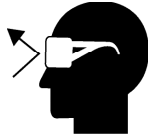
It is your responsibility to contact a qualified electrician and assure that the electrical installation is adequate and in conformance with all national and local codes and ordinances.

Check that the mains supply voltage is correct for the product—see nameplate. Contact the factory immediately if the voltage conditions are different.

OPERATION



WARNING



INJURY HAZARD.

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

Wear proper eye protection.

Keep fingers and objects away from openings and rotating parts.

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



WARNING

Gast® Manufacturing will not knowingly specify, design, or build any blower for installation in a hazardous, combustible, or explosive location without a motor conforming, to the proper NEMA or U.L. standards.

Blowers with standard TEFC motors should never be utilized for soil vapor extraction applications or where local, state, and/or federal codes specify the use of explosion-proof motors (as defined by the National Electric Code, Articles 100,500 c1990).



WARNING

Attach blower to solid surface before starting to prevent injury or damage from unit movement.

Air containing solid particles or liquid must pass through a filter before entering the blower. Blowers must have filters, other accessories, and all piping attached before starting. Any foreign material passing through the blower may cause internal damage to the blower.



WARNING

Outlet piping can burn skin. Guard or limit access. Mark "CAUTION Hot Surface. Can Cause Burns."



WARNING

Wear hearing protection.

Model	Sound Pressure Level
R3 Family	68/63 dB(A) Maximum
R4 Family	68/64 dB(A) Maximum
R5 Family	75 dB(A) Maximum

Air temperature increases when passing through the blower. When run at duties above 50 in. H₂O, metal pipe may be required for hot exhaust air. The blower must not be operated above the limits for continuous duty. Only models R3105N-50 and R4310P-50 can be operated continuously with no air flowing through the blower. Other units can only be run at the rating shown on the model number label. Do not close off inlet (for vacuum) to reduce extra air flow. This will cause added heat and motor load. Blower exhaust air in excess of 230°F indicates operation in excess of rating, which can cause the blower to fail.

Accessories

Gast® pressure gauge AJ496 and vacuum gauges AJ497 or AE134 show blower duty. The Gast® pressure/vacuum relief valve, AG258, will limit the operating duty by admitting or relieving air. It also allows full flow through the blower when the relief valve closes.

Shutdown Procedures

- Turn the electricity supply "OFF."
- Vent all pressure/vacuum from the product and/or systems.
- Disconnect the product from the pipe work.
- Do not stay in line with the air stream.
- Turn the electricity supply "ON" and run the product open to the atmosphere for approximately 15 minutes.
- Leave the product to cool down.
- Turn the electricity supply "OFF" and disconnect the motor from the electrical supply.
- Fit plastic port plugs.
- The unit is now ready for storage.

MAINTENANCE



WARNING

To retain their sealed construction, they should be serviced by Gast® Manufacturing ONLY. These models are sealed at the factory for very low leakage.

Inlet and exhaust filters attached to the blower may need cleaning or replacement of the elements. Check after the first 200 hours of operation and determine how frequently they should be checked during future operation. Failure to do so will result in more pressure drop, reduced air flow and hotter operation of the blower. The outside of the unit requires cleaning of dust and dirt. The inside of the blower also may need cleaning to remove foreign material coating the impeller and housing. This should be done at a Gast® Manufacturing facility only. This buildup can cause vibration, failure of the motor to operate, or reduced flow.



WARNING



ELECTRIC SHOCK HAZARD.

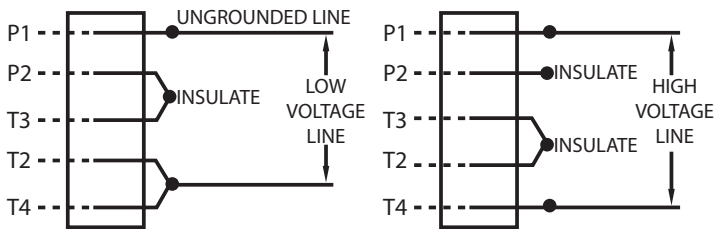
Turn off electric power before removing blower from service. Be sure rotating parts have stopped.

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

In the event of a breakdown, disconnect the electricity supply. Do not attempt to dismantle any part of the product before electricity is disconnected. Wait until the product has cooled down. Contact Gast® Manufacturing for service.

WIRING SCHEMATICS

Motor Wiring Diagram for R3105N-50

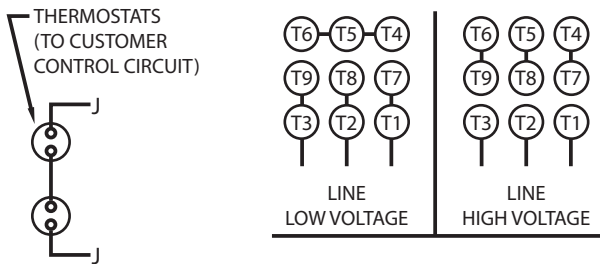


WARNING

This motor is thermally protected and will automatically restart when protector resets. Always disconnect power supply before servicing.

Motor Wiring Diagram for R4310P-50, R5325R-50, R6340R-50, R6P355R-50, and R7100R-50

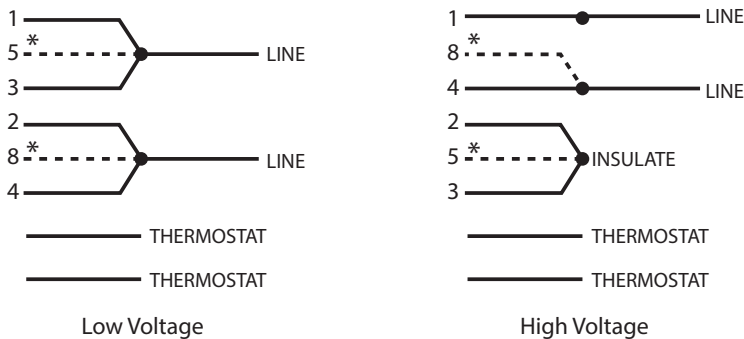
To reverse rotation, interchange the external connections to any two leads.



WARNING

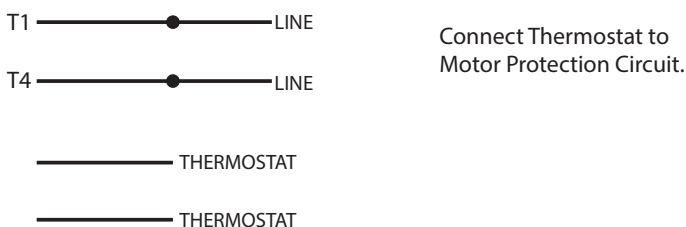
This motor is thermally protected and will automatically restart when protector resets. Always disconnect power supply before servicing.

Single-Phase Motor Wiring Diagram for R5125Q-50 and R4P115N-50



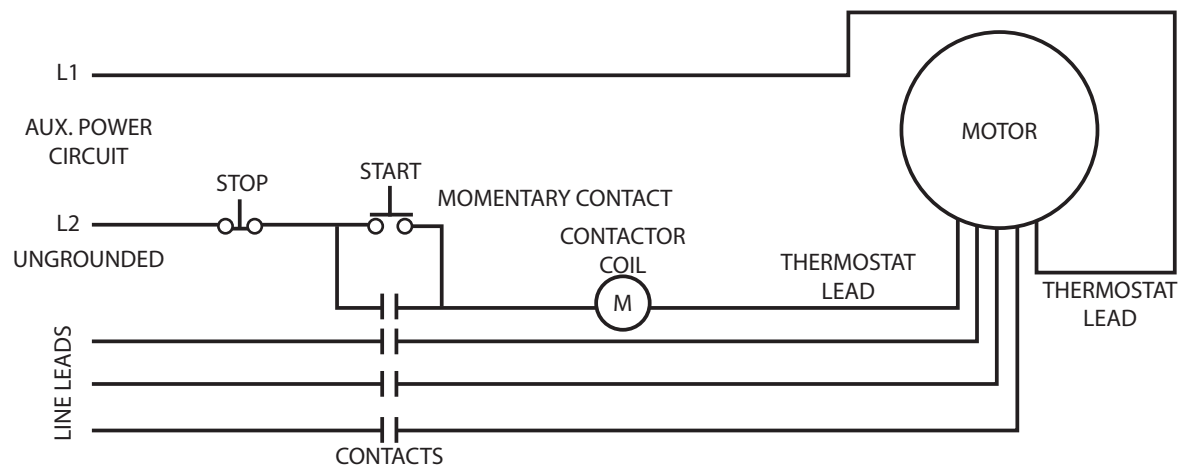
*R5125Q-50 Blowers produced after September 1992 (Serial No. 0992) do not have motor leads 5 and 8.

Single-Phase Motor Wiring Diagram for R6130Q-50 and R6P155Q-50



WIRING SCHEMATICS

Thermostat Connection for 3-Phase Motor Protection



Thermostats to be connected in series with control as shown. Motor furnished with automatic thermostats rated A.C. 115-600V. 720VA circuit shown is for 3-phase motor. Single-phase motor has two line leads in the above circuit.

SYMBOLS

The symbols found on the product and packing are explained below.

Symbol	Description
	DANGER: Hazardous situation or extreme condition. Will result in serious or fatal injury if not avoided. WARNING: Hazardous situation. May result in serious injury if not avoided. CAUTION: Potentially hazardous situation/avoid unsafe practices. Could result in minor or moderate injury if not avoided.
	EQUIPMENT ALERT: Hazardous situation that could result in equipment damage if not avoided.
	WARNING: Hot surfaces. Risk of burns. Do not touch surface during operation. Do not touch the compressor head.
	CAUTION: Risk of explosion. Risk of bursting. Do not adjust regulator to result in output pressure greater than marked maximum pressure of attachment.
	WARNING: Risk of injury. Do not direct air stream at body.
	Keep dry. Do not expose to rain.
	Transport and storage temperature: -25°C (-13°F) to 55°C (131°F)
	Transport and storage relative humidity: Maximum 95%
	This side up.
	Fragile. Handle with care.
	Disposal in accordance with existing regulations for electric and electronic equipment.
	Read operation and maintenance manual before operating.
	A/C power
	Ground
	ELECTRICAL SHOCK HAZARD: Risk of electric shock present. Make sure power is disconnected before attempting this procedure.
	ELECTRICAL SHOCK HAZARD: Risk of electric shock present. Make sure power is disconnected before attempting this procedure.
	WARNING: Air stream from motor may contain solid or liquid material that can result in eye or skin damage. Wear eye protection.
	MOVING PARTS PRESENT: Can result in serious injury to hands or fingers. Keep hands away from moving parts. Disconnect and lockout power before servicing.

POTENTIAL WARNING LABELS ON PRODUCT

WARNING

THIS MOTOR IS THERMALLY PROTECTED AND WILL AUTOMATICALLY RESTART WHEN PROTECTOR RESETS. ALWAYS DISCONNECT POWER SUPPLY BEFORE SERVICING.

WARNING



ELECTRIC SHOCK RISK.
DISCONNECT BEFORE
SERVICING.

CAUTION



TO REDUCE THE RISK OF ELECTRIC
SHOCK, DO NOT EXPOSE TO RAIN.
STORE INDOORS.

CAUTION



RISK OF INJURY - DO NOT DIRECT
AIR STREAM AT BODY.

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.

WARNING



HOT SURFACE. RISK OF BURNS.
DO NOT TOUCH.

WARNING

GAST® MANUFACTURING WILL NOT KNOWINGLY SPECIFY, DESIGN, OR BUILD ANY BLOWER FOR INSTALLATION IN A HAZARDOUS, COMBUSTIBLE OR EXPLOSIVE LOCATION WITHOUT THE PROPER NEMA OR UL ENCLOSURE. BLOWERS WITH STANDARD TEFC MOTORS SHOULD NEVER BE UTILIZED WHERE LOCAL, STATE, AND/OR FEDERAL CODE SPECIFY THE USE OF EXPLOSION-PROOF MOTORS (AS DEFINED BY THE NATIONAL ELECTRIC CODE, ARTICLES 100, 500 C1990).

GAST® "SOIL VAPOR EXTRACTION" BLOWERS DRIVEN WITH EXPLOSION-PROOF MOTORS ARE INTENDED FOR USE IN SOIL VAPOR EXTRACTION APPLICATIONS. ANY OTHER USE MUST BE APPROVED IN WRITING BY GAST®.

DANGER

CONNECT MOTOR TO PROPER THERMAL PROTECTION CIRCUITRY. FAILURE TO DO SO COULD RESULT IN AN EXPLOSION.

ATTENTION

OPERATION OF THIS UNIT WITHOUT REQUIRED FILTRATION OR IN EXCESS OF RATED MAXIMUM PRESSURE OR VACUUM LIMITS WILL DAMAGE THIS UNIT, CAUSE CATASTROPHIC FAILURE, AND MAY VOID WARRANTY. PROTECT THIS INVESTMENT, REFER TO THE INSTALLATION INSTRUCTIONS BEFORE OPERATING UNIT.

ATTENTION

REDUCE MAXIMUM DUTY RATINGS BY 10 IN. WATER WHEN USING 208V 60HZ NOMINAL VOLTAGE.

POTENTIAL WARNING LABELS ON PRODUCT



WARNING

DO NOT TAKE APART. SEALS MAY BE DAMAGED.
SERVICE ONLY BY GAST® MANUFACTURING.



CAUTION ATTENTION

3-PHASE MOTOR MUST BE WIRED TO ROTATE
IN PROPER DIRECTION FOR PUMP OPERATION.
PROTECT MOTOR WITH PROPER OVERLOAD
HEATERS ACCORDING TO YOUR LOCAL
ELECTRICAL CODE AND MOTOR
MANUFACTURER'S RECOMMENDATION.



SERVICE KIT	PART NUMBER	SERVICE INTERVAL



Scan this code or visit gastmfg.com for more
information on where to purchase genuine
Gast® maintenance kits.

WARRANTY

Warranty Policy

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, 2300 M139 Highway, Benton Harbor, Michigan, USA 49022-6114 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®. The Gast® warranty also does 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. THE GAST® 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 THE OPTION OF GAST®, 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.

For more warranty information, visit gastmfg.com/warranty.

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Additional Languages.



Declaration of Conformity.

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