

WWW.gastmfg.com ®Registered Trademark/™Trademark of Gast Manufacturing Inc., Copyright ©2002 Gast Manufacturing Inc. All Rights Reserved.

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 <u>will</u> be killed or seriously injured if you don't follow instructions.

WARNING

You <u>can</u> 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.

Mounting

This product must be installed on a flat, horizontal surface. Mounting the product to a stable, rigid operating surface and using shock mounts will reduce noise and vibration.

Plumbing

Remove plug from the OUT port. Connect with pipe and fittings that are the same size or larger than the product's port.

Accessories

Install relief valve and gauge at outlet to monitor performance. A check valve may be required to prevent back streaming through the compressor.

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.

ELECTRICAL CONNECTION

A WARNING



Electrical Shock Hazard

This product must be properly grounded.

Do not modify the plug provided. If it will not fit the outlet, have the proper outlet installed by a qualified electrician.

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 that is green with or without yellow stripes is the grounding wire.

Check the condition of the power supply wiring. Do not permanently connect this product to wiring that is not in good condition or is inadequate for the requirements of this product.

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

In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This product may be equipped with a power supply 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.

Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if you are not sure 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.

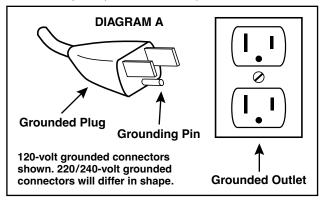
Model that is permanently wired:

This product must be connected to a grounded, metallic, permanent wiring system, or an equipment grounding terminal or lead on the product.

Power supply wiring must conform to all required safety codes and be installed by a qualified person. Check that supply voltage agrees with that listed on product nameplate.

Model with a power supply cord:

This product must be grounded. For either 120-volt or 220/240-volt circuits connect power supply cord grounding plug to a matching grounded outlet. Do not use an adapter. (See DIAGRAM A)



Extension cords:

Use only a 3-wire extension cord that has a 3-blade grounding plug. Connect extension cord plug to a matching 3-slot receptacle. Do not use an adapter. Make sure your extension cord is in good condition. Check that the wire gage of the extension cord is the correct size wire to carry the current this product will draw. An undersized cord is a potential fire hazard, and will cause a drop in line voltage resulting in loss of power causing the product to overheat. DIAGRAM B indicates the correct gage cord for length required and the ampere rating listed on the product nameplate.

If in doubt, use the next heavier gage cord. The smaller the gage number, the heavier the wire gage.

DIAGRAM B
Minimum Gage For Extension Cords

Amps	Volts	Length of cord in feet								
	120v	25	50	100	150	200	250	300	400	500
	240v	50	100	200	300	400	500	600	800	1000
0-2		18	18	18	16	16	14	14	12	12
2-3		18	18	16	14	14	12	12	10	10
3-4		18	18	16	14	12	12	10	10	8
4-5		18	18	14	12	12	10	10	8	8
5-6		18	16	14	12	10	10	8	8	8
6-8		18	16	12	10	10	8	6	6	6
8-10		18	14	12	10	8	8	6	6	4

OPERATION

WARNING

Injury Hazard

Use only recommended air handling parts acceptable for pressure not less than 10 psi.

When provided, motor terminal covers must be in place for safe operation.

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

Do Not direct air stream at body. Air stream from product may contain solid or liquid material that can result in eye or skin damage, wear proper eye protection.

Do Not spray flammable or combustible liquid.

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

Start Up

If pump fails to start or slows down significantly under load, shut off and disconnect from power supply. Check that the voltage is correct for the pump.

Safety switch system(only in DBMX and DBMS series)

When diaphragm is broken, the protrusion on top of the magnet frame will activate microswitch and shut down the power to prevent further damage.

Alarm control system(optional)

The control is equipped with a three position toggle switch (DIAGRAM C). Operation in each switch position is as follows. **RUN:**

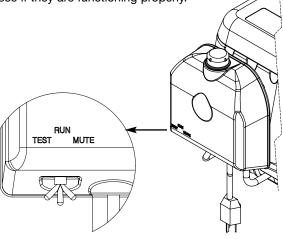
During normal operation the switch is in the RUN or center position. The unit will function fully automated in the RUN mode. In the event of two pressure situation (low or high pressure) the controller will sound an alarm and light a visual indicator light to attract the operator of those conditions (lower & higher pressure).

MUTE:

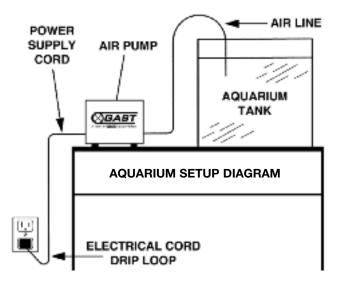
The MUTE position will allow the unit to continue to run but will silence the audible alarm while leaving the visual alarm active.

TEST:

The TEST position will activate both the audible and visual alarms to check to see if they are functioning properly.



IMPORTANT SAFETY INSTRUCTIONS FOR AQUARIUM USE



WARNING – Read and follow all safety instructions. To guard against injury, basic safety precautions should be observed.

DANGER – To avoid possible electrical shock, special care should be taken since water is employed in the use of aquarium equipment. If the air pump, cord or plug are damaged in any way whatsoever, DO NOT attempt repairs by yourself, return the air pump to a Gast Authorized Service Facility for inspection and repair.

Precautions for aquarium use:

- 1. If the air pump falls into the water, DO NOT reach into the water to retrieve it.
- Carefully examine the appliance after installation. It should not be plugged into electrical power if there is water found on any part of the pump.
- 3. DO NOT operate any air pump if it has a damaged cord or plug, or if it is malfunctioning or has been dropped or damaged in any manner.
- 4. To avoid the possibility of the air pump plug or receptacle getting wet, position the aquarium stand and tank to one side of a wall-mounted receptacle to prevent water from dripping onto the receptacle or plug. A "drip loop," shown above in the AQUARIUM SETUP DIAGRAM, should be arranged by the user for each cord connecting an aquarium air pump to a receptacle. The "drip loop" is that part of the cord below the level of the receptacle, or the connector if an extension cord is used, which prevents water travelling along the cord from coming into contact with the receptacle.
- 5. If the plug or receptacle do get wet, DO NOT grasp the plug to disconnect the air pump. Instead disconnect the fuse or circuit breaker supplying power to the receptacle. Then unplug the air pump and examine for the presence of water on the plug or receptacle.

Guidelines for aquarium use:

- 1. Close supervision is necessary when any air pump is used by or near children.
- 2. To avoid injury, DO NOT disassemble the air pump.
- Always unplug an air pump from an outlet when not in use, before putting on or taking off parts and before cleaning. NEVER yank a cord to remove the plug from the receptacle. Grasp the plug and pull to disconnect.
- 4. DO NOT use an aquarium air pump for other than its intended use. The use of attachments which are not recommended or sold by Gast Manufacturing may cause an unsafe condition.
- 5. DO NOT install or store the air pump where it will be exposed to the weather or to temperatures below freezing.
- 6. Make sure an air pump mounted on a tank is securely installed before operating it.
- 7. Read and observe all the important notices on the air pump.

SAVE THESE INSTRUCTIONS.

MAINTENANCE



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

Do Not direct air stream at body. Air stream from product may contain solid or liquid material that can result in eye or skin damage, wear proper eye protection.

Clean 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 is released from product before starting maintenance.
- · Never add oil to this oil-less compressor.

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

Cleaning

Do Not use kerosene or ANY other combustible solvent to clean product.

To clean the air filter (Recommended once every six months)

1. Loosen the screw on top (Refer to Diagram D and E).

- 2. Remove filter cover.
- 3. Take the filter out and clean it with clean water and dry it.
- 4. Put it back and secure the fixing plate with the screw in.

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

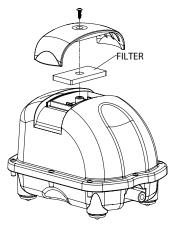


DIAGRAM D

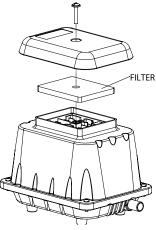


DIAGRAM E

MAINTENANCE RECORD					
DATE	PROCEDURE PERFORMED				

SERVICE KIT INSTALLATION



Electrical Shock Hazard

Disconnect electrical power supply cord before installing Service Kit.

If product is hard wired into system, disconnect electrical power at the circuit breaker or fuse box before installing Service Kit.

Disconnect air supply and vent all air lines to release pressure or vacuum.

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

SERVICE KITS*

MODEL	DIAPH & HEA	FILTER	
	60 Hz	50 Hz	
DDL5	K898		N/A
DDL8	K890		N/A
DDL8B	K890		N/A
DDL15	K890		N/A
DDL15B	K890		N/A
DDL30	K887	K932	K891
DDL30B	K887	K932	N/A
DDL40	K887	K932	K891
DDL40B	K887	K932	N/A
DDL60	K888	K931	K891
DDL80	K888	K931	K891
DDL120	K889	K930	K892
DDL150	K889	K930	K892
DBP25	K941	K941A	N/A
DBP40	K943	K943	K891A
DBM30B	K947	K947A	N/A
DBM20	K951	K951	N/A
DBM40	K942	K942	K891B
DBM60	K944	K944A	K891B
DBM80	K950	K950A	K891B
DBMS60		K952A	K891B
DBMS80		K953A	K891B
DBMS600	K944		K891B
DBMS800	K950		K891B
DBMX80	K945	K945A	K891
DBMX100	K949	K949A	K891
DBMX120	K956	K956	K891
DBMX150	K946	K946	K891C
DBMX200	K946	K946	K891C

* The service kit may contain parts for more than one model or style of linear pump. Parts not needed may be discarded. Kits listed are for stock models. For specific OEM models, please consult the factory. When corresponding or ordering kits, please give complete model and serial numbers. Gast will NOT guarantee field-rebuilt product performance.

For performance guarantee, the product must be returned to a Gast Authorized Service Facility.

Service Kit contents vary with compressor models. If compressor still does not produce proper pressure,

send unit to a Gast Authorized Service Facility for repair.

Replacing Head and Diaphragm Assemblies (DDL5)

Disassembly

- 1. Remove hex nuts from cover(Diagram F).
- 2. Remove cover and cover gasket.
- 3. Gently lift out electromagnet and casing block.
- 4. Remove head asembly from diaphragm casing block, discard if replacing.
- 5. Remove phillips screw from center of diaphragm and remove the diaphragm.

Re-assembly

- 1. Reinstall new diaphragm, make sure it fits securely into diaphagm casing (note the two locating notches for re-assembly).
- 2. Reinstall and tighten the phillips screw
- 3. Reinstall or replace the head assembly.
- 3. Fit electromagnet unit over casing mechanism and fit components back into housing of pump
- 4. Reinstall cover gasket and cover.
- 5. Tighten hex nuts in place

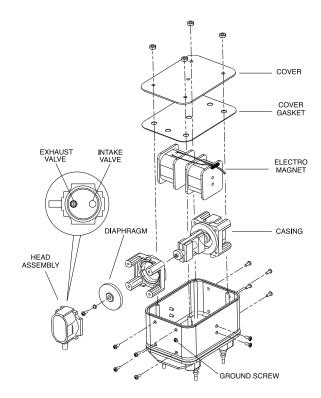


DIAGRAM F

Replacing Head and Diaphragm Assemblies (DDL40-80, DBP, DBM40-80)

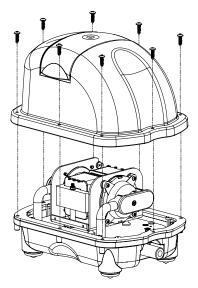


DIAGRAM G

IMPORTANT To open the upper housing, please make sure you have unplugged the power cord before opening.

- 1. Loosen the screws around the upper housing,
- and take the housing off. (Diagram G)
- 2. Loosen the four screws and disassemble the parts. (Diagram H)
- 3. Loosen the u-nut in the center of diaphragm.
- 4. Take the diaphragm off its place.
- 5. Replace a new one by mounting the rubber studs into their position.
- 6. Press the rim of the diaphragm into the ring.
- 7. Secure the magnet with a new u-nut and screw and put the diaphragm housing back with the four screws on.

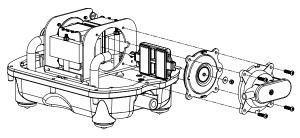
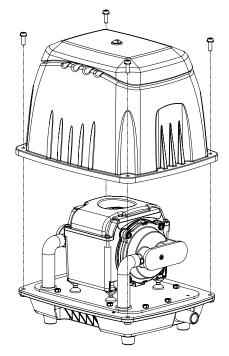


DIAGRAM H

Replacing Head and Diaphragm Assemblies (DBMX MODELS)



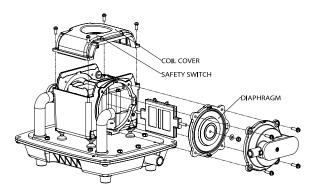
IMPORTANT To open the upper housing, please make sure you have unplugged the power cord before opening.

- 1. Loosen the four screws around the upper housing, and take the housing off. (Diagram I)
- 2. Loosen the four screws around the coil cover, and take the cover off. (Diagram J)
- 3. Loosen the four screws and disassemble the diaphragm housing.
- 4. Loosen the u-nut in the center of diaphragm.
- 5. Take the diaphragm off its place.
- 6. Replace a new one by mounting the rubber studs into their position.
- 7. Press the rim of the diaphragm into the ring.

8. Secure the magnet with a new u-nut and screw and put the diaphragm housing back with the four screws on.

9. Put the coil cover back with the four screws on.

10. Put on the aluminum cover and secure the four screws firmly.



EXPLODED PRODUCT VIEW & PARTS

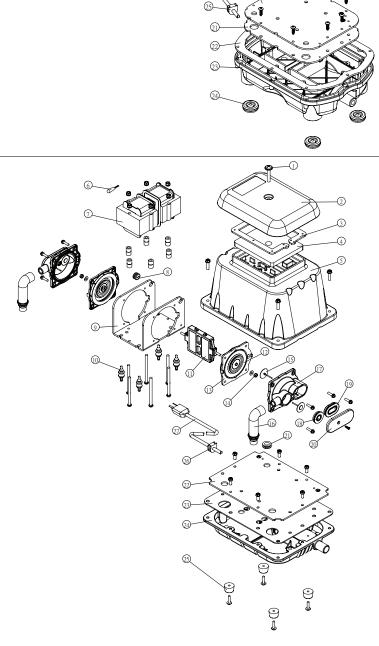
* Your model may vary in appearance and configuration. However, internal components will be similar to those shown. Parts shown are for stock models. For specific OEM models, please consult the factory. When corresponding or ordering kits, please give complete model and serial numbers.

DBP40

NO.	DESCRIPTION	QTY
1	TOP SCREW	1
2	FILTER COVER	1
3	FILTER	1
4	UPPER HOUSING	1
5	THERMOSTAT	1
6	ELECTROMAGNET	2
7	WIRE STOPPER	1
8	U-SHAPED COIL FRAME	1
9	VIBRATION CONTROL RUBBER	4
10	ACTIVATING ARM	1
11	DIAPHRAGM	2
12	DIAPHRAGM FRAME	2
13	U NUT	2
14	CHECK VALVE	4
15	L - TUBE	2
16	DIAPHRAGM HOUSING	2
17	CHAMBER SEAL (ROUND)	2
18	CHAMBER SEAL (OVAL)	2
19	SIDE COVER (STEEL)	2
20	STEEL PLATE	1
21	GASKET	1
22	GASKET	1
23	LOWER HOUSING	1
24	RUBBER FEET	4
25	CORD RELIEF	1
26	POWER CORD	1

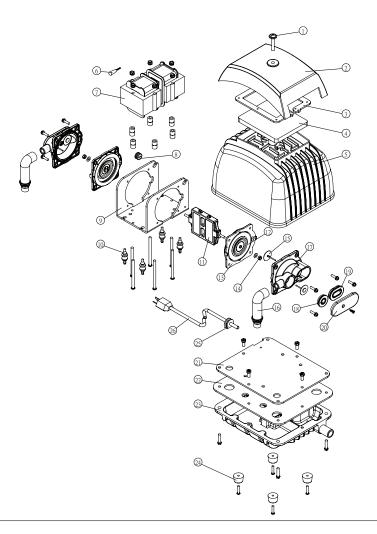
DBM40, 60, 80

NO.	DESCRIPTION	QTY
1	TOP SCREW	1
2	FILTER COVER	1
3	FOAM SEAL	1
4	FILTER	1
5	UPPER HOUSING	1
6	THERMOSTAT	1
7	ELECTROMAGNET	2
8	WIRE STOPPER	1
9	U-SHAPED COIL FRAME	1
10	VIBRATION CONTROL RUBBER	4
11	ACTIVATING ARM	1
12	DIAPHRAGM	2
13	DIAPHRAGM FRAME	2
14	U NUT	2
15	CHECK VALVE	4
16	L – TUBE	2
17	DIAPHRAGM HOUSING	2
18	CHAMBER SEAL (ROUND)	2
19	CHAMBER SEAL (OVAL)	2
20	SIDE COVER (STEEL)	2
21	CORD PROTECTOR	1
22	STEEL PLATE	1
23	GASKET	1
24	LOWER HOUSING	1
25	RUBBER FEET	4
26	CORD RELIEF	1
27	POWER CORD	1



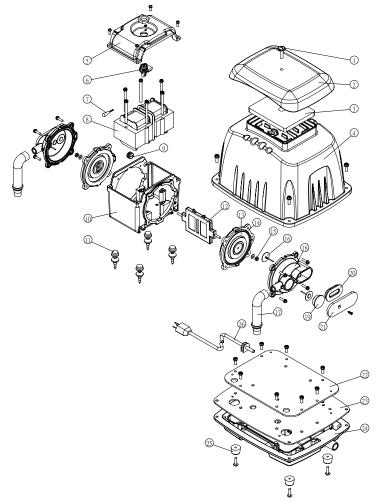
DDL40, 60, 80

NO.	DESCRIPTION	QTY
1	TOP SCREW	1
2	FILTER COVER	1
3	FOAM SEAL	1
4	FILTER	1
5	UPPER HOUSING	1
6	THERMOSTAT	1
7	ELECTROMAGNET	2
8	WIRE STOPPER	1
9	U-SHAPED COIL FRAME	1
10	VIBRATION CONTROL RUBBER	4
11	ACTIVATING ARM	1
12	DIAPHRAGM	2
13	DIAPHRAGM FRAME	2
14	U NUT	2
15	CHECK VALVE	4
16	L - TUBE	2
17	DIAPHRAGM HOUSING	2
18	CHAMBER SEAL (ROUND)	2
19	CHAMBER SEAL (OVAL)	2
20	SIDE COVER (STEEL)	2
21	STEEL PLATE	1
22	GASKET	1
23	LOWER HOUSING	1
24	RUBBER FEET	4
25	CORD RELIEF	1
26	POWER CORD	1



DBMX80, 100, 120

NO.	DESCRIPTION	QTY
1	TOP SCREW	1
2	FILTER COVER	1
3	FILTER	1
4	UPPER HOUSING	1
5	COIL COVER	1
6	SAFETY SYSTEM KIT	1
7	THERMOSTAT	1
8	ELECTORMAGNET	2
9	WIRE STOPPER	1
10	COIL FRAME	1
11	VIBRATION CONTROL RUBBER	4
12	ACTIVATING ARM	1
13	DIAPHRAGM	2
14	DIAPHRAGM FRAME	2
15	U NUT	2
16	CHECK VALVE	4
17	L – TUBE	2
18	DIAPHRAGM HOUSING	2
19	CHAMBER SEAL (ROUND)	2
20	CHAMBER SEAL (OVAL)	2
21	SIDE COVER (STEEL)	2
22	STEEL PLATE	1
23	GASKET	1
24	LOWER HOUSING	1
25	RUBBER FEET	4
26	POWER CORD	1



DBMX150,	200
----------	-----

NO.	DESCRIPTION	QTY
1	TOP SCREW	1
2	FILTER COVER	1
3	FOAM SEAL	1
4	FILTER	1
5	UPPER HOUSING	1
6	SAFETY SYSTEM NUT	1
7	COIL COVER	1
8	SAFETY SYSTEM KIT	1
0 9	THERMOSTAT	1
9 10		2
	ELECTORMAGNET	_
11	WIRE STOPPER	1
12	COIL FRAME	1
13	VIBRATION CONTROL RUBBER	4
14	ACTIVATING ARM	1
15	DIAPHRAGM	2
16	DIAPHRAGM FRAME	2
17	U – NUT	2
18	DIAPHRAGM HOUSING	2
19	CHECK VALVE	8
20	GASKET - 1	2
21	L – TUBE	2
22	DIAPHRAGM HOUSING COVER	2
23	POWER CORD	1
24	CORD PROTECTOR	1
25	STEEL PLATE	1
26	GASKET - 2	1
27	LOWER HOUSING	1
28	RUBBER FEET	4

Ð

9

Ş

(14)

(15)

(16)

K.

23

24) 25)

26 27

28

17

Ş

Ş

0

8

6

21

(22)

Ļ

9

8

R

8

(19)

0

Ī

20)

0

18

K

Å

 \bigcirc

2

3

-(4)

-(5)

0

@ 0.

9

Û

6-

 \bigcirc

8

9

10

(12)

13

Ş

P

(a)

TROUBLESHOOTING CHART

Low	High	Pump	Motor	Excess	Reason and remedy
Pressure	Pressure	Overheat	Overload	Noise	for problem.
•					Filter dirty. Clean or replace.
•					Valves dirty or valves bent. Clean or replace.
•		•	•		Worn or torn diaphragm. Repair or replace.
	•				Relief valve set too high. Inspect and adjust.
•					Relief valve set too low. Inspect and adjust.
	•				Plugged pressure line. Inspect and repair.
•					Low voltage, won't start. Check power source.
	•	•	•	•	Voltage wrong. Check power source.
		•		•	Rod magnet misalignment. Realign.
•					Leaky hose or check valve. Replace.
•		•	•	•	Dirt or liquid in compressor. Inspect and clean.
•				•	Blown or leaking head gasket or tubes. Replace.

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.

For the name of the nearest authorized service facility, contact one of our offices below or visit our website at www.gastmfg.com.

World Headquarters

GAST Manufacturing Inc. A Unit of IDEX Corporation 2300 M-139 Highway Benton Harbor, Michigan 49022

Phone 269-926-6171 Fax 269-925-8288

GAST Hong Kong

Room 6/9F, New Commerce Centre 19 On Sum St., Shatin N.T., Hong Kong

Phone 852-2690-1008 Fax 852-2690-1012

GAST GROUP LTD

A unit of IDEX Corporation Unit 11, The I O Centre Nash Road Redditch, B98 7AS United Kingdom

Phone +44 (0)1527 504040 Fax +44 (0)1527 525262



B Corporation