

DYNA-GLO RA250NGDGD-1 Owner's Manual

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----- Manual continues below ------

Operating Instructions & Parts Manual

RA100NGDGD and RA250NGDGD

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

Dyna-Glo[®] Delux Natural Gas Radiant Heaters

Description

Dyna-Glo Delux Models RA100NGDGD and RA250NGDGD heaters are 50,000 to 100,000 and 250,000 BTU/Hr construction heaters. These heaters use natural gas for combustion. They are primarily intended for temporary heating of well-ventilated buildings under construction, alteration or repair. These heaters should be utilized in sheltered, well-ventilated areas, but never in occupied dwellings.



GHP Group, Inc. 6440 W Howard St Niles, IL 60714



Specifications

Unpacking

Model	BTU/Hr	Fuel Consumption Maximum	Min. Gas Supply Pressure	Max. Gas Supply Pressure	Manifold Pressure	lgnitor Gap	Size L x W x H (in.)
RA100NGDGD	50,000 to 100,000	104 ft³/hr (2.95 m³/h)	8″ W.C.	14″ W.C.	7.5″ W.C.	0.19" (4.8mm)	16.3 x 16.3 x 29.8 (41.4 x 41.4 x 75.7 cm)
RA250NGDGD	250,000	260 ft³/h (7.36 m³/h)	10 PSI	250 PSI	6 PSI	0.19" (4.8 mm)	14.7 x 14.7 x 44.3 (37.3 x 37.3 x 112.5 cm)

Fuel Type - Natural Gas Only

1. Unpack all materials used to protect

the heater inside of carton. Retain

plastic caps attached to exposed

2. Remove heater, accessories and all

have occurred during shipment.

3. Inspect all items for damage that may

fittings for use during storage.

hardware from carton.

Ignition Type – Piezo (RA100NGDGD) Pilot (RA250NGDGD)

General Safety Information

Make sure you read and thoroughly understand these safety and operating instructions. Keep these instructions for future reference. They are your guides to safe and proper operation of this heater.

Safety information appears throughout this manual. Pay close attention to them. Below are definitions for the safety information listed throughout this manual.

Minimum Operating Temp. - -20°F (-29°C)

Indicates an 🛦 DANGER imminently

hazardous situation which, if not avoided, WILL result in death or serious injury.

Indicates a poten-tially hazardous situation which, if not avoided, COULD result in death or serious injury.

Indicates a poten-**A** CAUTION tially hazardous situation which, if not avoided, MAY result in minor or moderate injury.

Consumer: Retain this manual for

future reference.



Printed in China

IMNGRDGD - HBX

Dyna-Glo[®] Delux Natural Gas Radiant Heaters

General Safety Information (Continued)

A WARNING GENERAL HAZARD WARNING: Failure

to comply with the precautions and instructions provided with this heater can result in death, serious bodily injury, and property loss, or damage from hazards of fire, explosion, burn, asphyxiation, carbon monoxide poisoning, and/ or electrical shock. Only persons who can understand and follow these instructions should use or service this heater. If you need assistance or heater information such as an instruction manual, labels, etc. contact the manufacturer.

A WARNING FIRE, BURN, INHALATION AND

EXPLOSION HAZARD: Keep solid combustibles such as building materials, paper, or cardboard, at a safe distance away from heater

as recommended by the instructions. Never use the heater in spaces which do or may contain volatile or airborne combustibles or products such as gasoline, solvents, paint thinner, dust particles, or unknown chemicals.

A WARNING Not for home or recreational vehicle

use. This l

This heater has been designed as a construction heater in accordance with ANS Z83.7 CSA 2.14. Other standards govern the use of fuel gases and heating products for specific uses. Your local authority can inform you of these. The primary purpose of these construction heaters are to provide temporary heating of building under construction, alteration, or repair. When properly used, the heater provides safe economical heating. Products of combustion are vented into the heated area.

 For either indoor or outdoor use. Adequate ventilation must be provided.

IMPORTANT: Every possible circumstance that might involve a hazard cannot be anticipated. The warnings in this manual on tags or decals affixed to the unit are not all inclusive. If a procedure, work method, or operating technique not specifically recommended by Dayton is used, you must make sure it is safe for you and others. You should also ensure that equipment will not be damaged or be made unsafe by the operating or maintenance method you use.

Carbon Monoxide poisoning may lead to death! Some people are more affected by Carbon Monoxide than others. Early signs of carbon monoxide poisoning resemble the flu, with headaches, dizziness, and/or nausea. If you have these signs, the heater may not be operating properly or the area may not be sufficiently ventilated. Get fresh air at once! Have heater serviced.

A WARNING Carefully install and always use great care when operating this heater. Be sure to research and follow all local ordinances and codes. In the absence of local codes, with the Standard for the Storage and Handling of Liquefied Petroleum Gases, ANSI/NFPA 58 and the Natural Gas and Propane Installation Code CSA B149.1.

Natural Gas: Natural gas has a very distinctive odor that will help you detect a leak. However, this odor may fade in time. Natural gas may be present in the area even though no odor is detected.

- Use only natural gas. Do not attempt to use propane gas. Use only factory preset regulator provided on heater.
- Provide adequate ventilation. Before using heater, provide at least a 3 square foot (.28 m²) opening of fresh, outside air for every 100,000 BTU/Hr rating.

Proposition 65 Warning: Fuels used in gas or oil fired appliances and the products of combustion of such fuels, contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. This product contains chemicals, including lead and lead compounds, known to the state of

NEVER LEAVE THE HEATER UNATTENDED WHILE BURNING!

California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.

- This heater should be utilized in sheltered, well-ventilated areas, but never in occupied dwellings.
- Do not use heater in occupied dwellings, in living or sleeping areas.
- Keep appliance clear and free from combustible materials, gasoline, paint thinner, and other flammable vapors and liquids. Dust is combustible. Do not use heaters in areas with high dust content.
- Check heater for damage before each use. Do not use damaged heater.

www.ghpgroupinc.com

For Technical Support or Troubleshooting, Call: 1-877-447-4768, 8:00 am - 5:00 pm CST

Models RA100NGDGD and RA250NGDGD

General Safety Information (Continued)

Minimum heater clearance from combustibles:

Sides: 6 feet (1.8 m) Top: 5 feet (1.5 m)

Floor: Combustible - Not for use on finished floors

- The heater, other than a heater with integral propane gas container, must be located at least 6 feet (1.8 m) (in Canada, distance must be 10 feet [3 m]) from any propane gas container.
- Blower or radiant type heaters shall not be directed toward any propane gas container within 20 feet (6 m).
- Check hose before each use of heater.
 Do not use if hose is cut or damaged.
 Replace with hose specified by manufacturer.
- Always be sure to place the heater on a stable and level surface while the heater is in operation.
- The heater is not intended for use on finished floors. Warping or other damage may occur.
- Place heater away from any breezes or drafts. Keep away from dripping water or rain.
- Keep small children and animals away from the heater.
- Never handle, move or service a hot or operating heater. Wait 20 minutes after turning heater off before touching the heater. Severe burns can result.
- Always wear gloves when handling the heater to prevent injury.
- Never attach ductwork to heater.
- Do not alter heater. Keep heater in its original state.
- Do not use heater if altered.
- Turn off gas supply to heater when

not in use.

 Use only original replacement parts.
 This heater must use design specific parts. Do not substitute or use generic parts. Improper replacement parts could cause serious or fatal injury.

Assembly

MODEL RA100NGDGD

- 1. Provide natural gas supply system.
- 2. Install plumbing to a low pressure natural gas source to heater. The source must be regulated to 1/2 PSI, maximum 3/4" (19 mm) I.D. pipe or flexible connector, not longer than 10 feet (3 m).
- 3. Be sure to use thread sealing compound when connecting the hose to the heater at the 1/2" (13 mm) NPT fitting at the regulator inlet. Tighten all fittings with a wrench.
- 4. Open natural gas supply valve SLOWLY.
- 5. Check all connections for leaks.

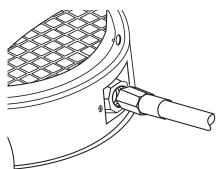


Figure 2 – Pipe and Valve Inlet

WARNING Never use an open flame to check for a leak. Apply 50/50 mixture of liquid soap and water to all joints. Bubbles forming show a leak. Correct all leaks at once.

6. Close natural gas supply valve.

NEVER LEAVE THE HEATER UNATTENDED WHILE BURNING!

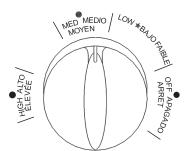


Figure 3 – Heater Control Knob – RA100NGDGD

MODEL RA250NGDGD

- Insert AA battery (included) into ignition by turning COUNTERCLOCKWISE and unscrewing ignition cap.
- 2. Provide natural gas supply system.
- 3. Install plumbing to a natural gas source to heater.
- Connect gas supply to heater using minimum 3/8" (10 mm) ID pipe. Maximum pipe length is 10 feet (3 m).
- 5. Connect hose or plumbing to 1/2" (13 mm) NPT flare fitting at the valve inlet. Tighten all fittings with a wrench.
- 6. Open natural gas supply valve SLOWLY. Check all connections for leaks. Never use an open flame to check for leaks.
- 7. Close natural gas supply valve.

NOTE: Keep hands and face away from outlet (around top of shelf) of heater while attempting to start heater.

For Technical Support or Troubleshooting, Call: 1-877-447-4768, 8:00 am - 5:00 pm CST



Dyna-Glo[®] Delux Natural Gas Radiant Heaters

Operation

A WARNING Hot while in operation. Do not

touch. Keep children, clothing, furniture, gasoline, and other liquids having flammable vapors away.

The gas supply attaches to the heater by a minimum 3/8" (10 mm) I.D. pipe or flexible connector. User must supply pipe or flexible connector. The length should be no more than 10 feet (3 m). The natural gas moves through the regulator and out the nozzle.

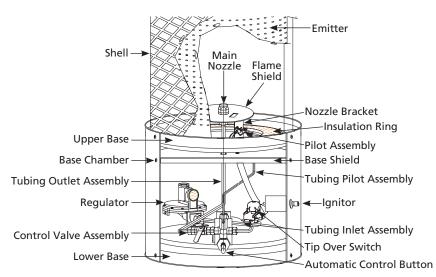
Ignition System: The ignitor initiates a spark which ignites the gas from the main burner.

Automatic Control System: This system causes the heater to turn off if the flame is extinguished.

TO START HEATER (RA100NGDGD)

1. Follow all of the safety, ventilation and installation instructions previously noted in this manual.

- 2. Always be sure to place the heater on a stable and level surface while the heater is in operation. Be sure that no strong winds blow into the ends of the heater.
- Turn control knob CLOCKWISE to OFF position.
- 4. Turn natural gas supply valve on.
- Depress heater control knob and turn counterclockwise to (IGN) LOW position to light burner (see Figure 3).
- If burner does not light, turn heater control knob to OFF position and repeat step 5. Keep control knob depressed for approximately 10 to 15 seconds, then release control knob.
- If burner flame goes out, wait 5 minutes then repeat steps 5 and 6.
- 8. With burner operating, the control knob may be turned counterclockwise to desired heating level between LOW, MED, and HIGH.



NEVER LEAVE THE HEATER UNATTENDED WHILE BURNING!

TO SHUT DOWN HEATER

- Shut off the main burner valve, being sure to wear a glove for protection. Turn the control knob to the OFF position.
- 2. Firmly close the natural gas supply valve.

TO RESTART HEATER

- 1. Wait five minutes for heater to cool.
- 2. Follow steps in TO START HEATER section.

TO START HEATER (RA250NGDGD)

- 1. Follow all of the safety, ventilation and installation instructions previously noted in this manual.
- 2. Always be sure to place the heater on a stable and level surface while the heater is in operation. Be sure that no strong winds blow into the ends of the heater.
- 3. SLOWLY open the gas valve.
- 4. Push in and hold safety valve button while pushing ignitor button until pilot lights (see Figure 4).

NOTE: Hose may be filled with air, if so, allow around 15 seconds for gas to reach pilot.

- 5. If pilot does not light, repeat Step 4.
- 6. When pilot stays lit, fully open the main burner valve by turning the handle of the burner valve counterclockwise until it stops all the way to the ON position.

Figure 4 – RA250NGDGD Part Identification

For Technical Support or Troubleshooting, Call: 1-877-447-4768, 8:00 am - 5:00 pm CST www.

Models RA100NGDGD and RA250NGDGD

Operation (Continued)

NOTE: Arrows on main burner valve handle show directions for ON and OFF.

TO SHUT DOWN HEATER

- 1. Firmly close the natural gas supply valve.
- Shut off the main burner valve, being sure to wear a glove for protection. Turn the main burner handle CLOCKWISE until it stops all the way to the OFF position.

TO RESTART HEATER

- 1. Wait five minutes for heater to cool.
- 2. Follow steps in TO START HEATER section.

A WARNING

below specified gas pressure may cause flashback. During flashback, the burner flame is mostly yellow. The flame will burn inside the burner tube causing a roaring noise. If flashback occurs, turn heater off. After burner tube cools off, restart heater.

Running heater

NATURAL GAS SUPPLY

You must provide the natural gas supply along with all pipe and fittings.

Check with your local gas supplier to properly size all of your supply lines. Be sure to follow all local codes, or refer to the Natural Fuel Gas Code Handbook – NFPA54/ANSI Z223.1, or the Natural Gas Installation Code – CAN/CSA B149.1.



VENTILATION

A WARNING A thr open

A three square foot opening of fresh th 100,000 BTU/Hr of

outside air for each 100,000 BTU/Hr of heater output must be provided to operate each heater safely. If the proper ventilation air is not provided, carbon monoxide poisoning can occur.

Always be sure that the proper ventilation is being provided before starting this heater.

FRESH OUTSIDE AIR OPENING REQUIREMENTS

<u>Heater size</u>	Opening
100,000 BTU	3.0 ft ² (.28 m ²)
250,000 BTU	7.5 ft² (.70 m²)
A WARNING	Read and understand all of the warnings in

the General Safety Information pages of this manual. They are essential to the safe operation of this heater. Be sure to follow all local codes when operating this heater.

A WARNING Be sure to leak test all fittings and pipe

connections after installation or repairs. Use a 50/50 mixture of liquid dish soap and water. Bubbles forming reveal a leak. You must repair all leaks at once!

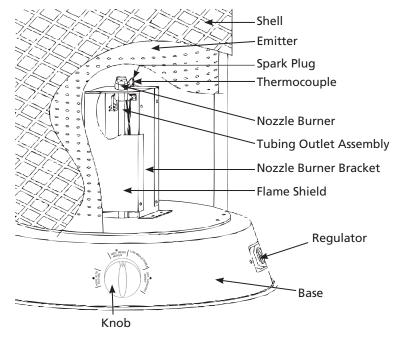


Figure 5 – RA100NGDGD Part Identification



Dyna-Glo[®] Delux Natural Gas Radiant Heaters

Maintenance

A WARNING *It is connected to natural gas supply, operating, or hot. Severe burns can occur.*

- 1. Always keep heater clean.
- 2. Inspect heater before each use. Check connections for leaks. Apply a 50/50 solution of dish soap and water. Bubbles forming show a leak that must be corrected. Correct leaks at once.
- 3. Inspect regulator hose assembly before each use. If hose is highly worn or cut, replace with hose specified by manufacturer.
- Keep appliance area clear and free from combustible materials, gasoline, and other flammable vapors and liquids.
- 5. Have heater inspected yearly by a qualified service person.
- 6. The flow of combustion and ventilation air cannot be obstructed.

NEVER LEAVE THE HEATER UNATTENDED WHILE BURNING!

STORAGE

A CAUTION Disconnect heater from natural gas supply.

- 1. Place plastic cover over brass fitting on inlet connector.
- 2. Store in a dry, clean, safe place.
- 3. When taking the heater out of storage, always check inside the heater. Small animals or insects may place foreign objects in the heater. Keep heater free from foreign objects and combustible materials.

Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action	
Burner fails to light	1. More warm-up time needed	 Relight, holding control valve button in fo 45 seconds 	
	2. Gas pressure is low	2. Inspect natural gas supply	
	 Thermocouple loose or in need of replacement 	 Tighten, reconnect or replace thermocouple 	
	 Automatic control valve in need of replacement 	4. Replace automatic control valve	
Burner lights but goes out when automatic control	1. Main burner valve not completely open	1. Completely open main burner valve by turning control knob to HIGH position	
valve button is released	2. Clogged gas orifice	2. Replace gas orifice	
	3. Low gas pressure	3. Check gas supply, regulator function	
	4. Low gas supply	4. Contact gas supplier	
Burn rate is low, emitter does not glow	1. Main burner valve not fully open	 Fully open main burner valve by turning control knob towards HIGH position until it stops 	
	2. Plugged gas orifices	2. Replace gas orifice	
	3. Low gas pressure	3. Check gas supply, regulator output	
	4. Low fuel supply	4. Consult gas supplier	
Flames are extremely high and coming from emitter	Unit has been connected to a propane gas supply instead of natural gas	Check gas source and replace with natural gas supply	

For Repair Parts, call 1-877-447-4768

Please provide following information: -Model number -Serial number (if any) -Part description and number as shown in parts list

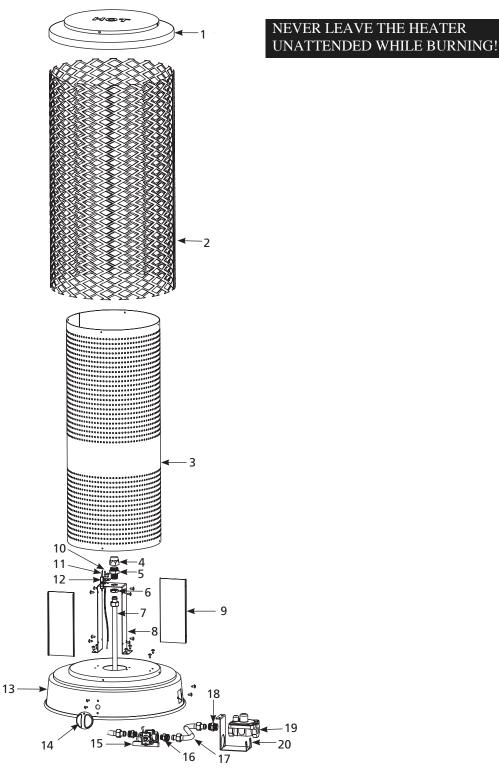


Figure 6 – Repair Parts Illustration for Natural Gas Radiant Heater RA100NGDGD

Model RA100NGDGD

AWARNING

replacement parts. This Heater must use design-specific parts. Do not substitute or use generic parts. Improper replacement parts could cause serious or fatal injuries.

NEVER LEAVE THE HEATER UNATTENDED WHILE BURNING!

Repair Parts List for Natural Gas Radiant Heater RA100NGDGD

Reference Number	Description	Part Number for Model: RA100NGDGD	Quantity
1	Top Cover	5002854	1
2	Guard	2315528	1
3	Emitter	2315519	1
4	Nozzle	2315521	1
5	Nozzle Connector	2315545	1
6	Nozzle Nut	2315546	1
7	Main Gas Tubing Assy (NG)	2315523	1
8	Nozzle Bracket	2315517	1
9	Flame Shield	2315516	2
10	Thermocouple	2201584	1
11	Spark Plug	2201583	1
12	Thermocouple Holder	2315520	1
13	Base	5002851	1
14	Control Knob	2101451	1
15	Control Valve	GS22 (8B)	1
16	Fitting	2304948	2
17	Tubing Inlet Assy	2315524	1
18	Fitting-Regulator to Tubing Inlet	2315547	1
19	Regulator	2315555	1
20	Regulator Bracket	2315518	1



For Repair Parts, call 1-877-447-4768

Please provide following information: -Model number -Serial number (if any) -Part description and number as shown in parts list

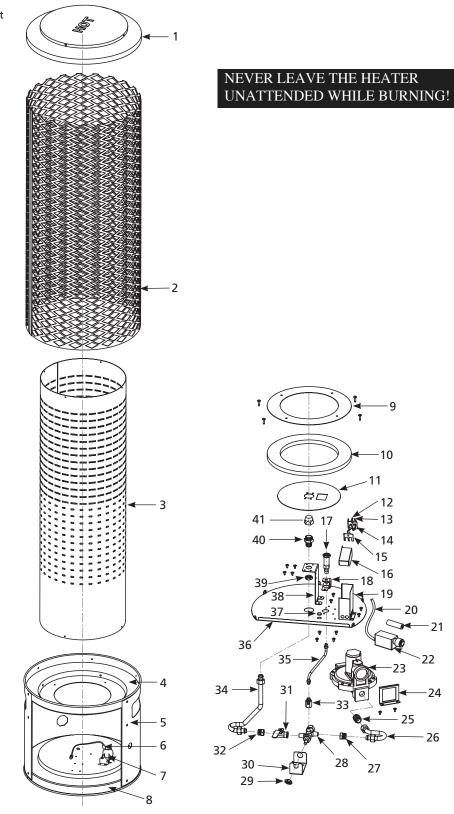


Figure 7 – Repair Parts Illustration for Natural Gas Radiant Heater RA250NGDGD

Model RA250NGDGD

WARNING Use only original replacement parts. This

Heater must use design-specific parts. Do not substitute or use generic parts. Improper replacement parts could cause serious or fatal injuries.

NEVER LEAVE THE HEATER UNATTENDED WHILE BURNING!

Repair Parts List for Natural Gas Radiant Heater RA250NGDGD

Reference Number	Description	Part Number for Model: RA250NGDGD	Quantity
1	Top Cover Guard	5002854	1
2 3	Emitter	2315554	1
3 4		2315537 5002853	1
4 5	Upper Base Base Cover	2315532	1
6	Lead Wire	2315643	1
6 7	Tilt Switch		1
	Lower Base	TT15C-08	1
8		5002852	1
9	Blanket	2315539	1
<u>10</u> 11	Insulation	2315544	1
	Flame Shield	2315540	1
12	Thermocouple	2201591	1
13	Spark Plug	2201583	1
14	Spark Plug Bracket	2315609	1
15	Bracket	2315520	1
16	Box for Lead Wire	2315535	1
17	Pilot Assy	GL250.39	1
18	Pilot Bracket	2315608	1
19	Wind Box	2315610	1
20	Ignition Wire	2201585	1
21	Battery	2300481	1
22	Ignition	2201220	1
23	Regulator	2315513	1
24	Regulator Holder	2315536	1
25	Regulator Connector	2315547	1
26	Inlet Tubing Assy	2315542	1
27	Connector	2315549	1
28	Control Valve	GS16	1
29	Contol Valve Fixing Nut	2305687	1
30	Contol Valve Bracket	2315538	1
31	Ball Valve	GQ01	1
32	Ball Valve Connector	2305391	1
33	Pilot Connector	2315548	1
34	Main Tubing Assy	2315550	1
35	Pilot Tubing	2001402	1
36	Base Shield	2315541	1
37	Rubber Ring for Wire	2315543	1
38	Nozzle Bracket	2315533	1
39	Nut	2101008	1
40	Nozzle Connector	2315534	1
41	Nozzle	2315546	1



LIMITED WARRANTY:

This limited warranty is extended to the original retail purchaser of this Forced Air/Convection/Radiant Heater and warrants against any defect in materials and workmanship for a period of one (1) year from the date of retail sale. GHP Group, Inc., at it's option, will either provide replacement parts or replace or repair the unit, when properly returned to the retailer where purchased or one of our service centers as directed by GHP Group, Inc., within one (1) year of retail purchase. (Shipping costs, labour costs, etc. are the responsibility of the purchaser.)

DUTIES OF THE OWNER:

This heating appliance must be operated in accordance with the written instructions furnished with this heater. This warranty shall not excuse the owner from properly maintaining this heater in accordance with the written instructions furnished with this heater. A bill of sale, canceled check or payment record must be kept to verify purchase date and establish warranty period. Original carton should be kept in case of warranty return of unit.

WHAT IS NOT COVERED:

- 1. Damage resulting from use of improper fuel.
- 2. Damage caused by misuse or use contrary to the owners manual and safety guidelines.
- 3. Damage caused by a lack of normal maintenance.
- 4. Fuses
- 5. Use of non-standard parts or accessories.
- 6. Damage caused in transit. Freight charges on warranty parts or heaters to and from the factory shall be the responsibility of the owner.

This warranty does not imply or assume any responsibility for consequential damages that may result from the use, misuse, or the lack of routine maintenance of this heating appliance. A cleaning fee and the cost of parts may be charged for appliance failures resulting from lack of maintenance. This warranty does not cover claims which do not involve defective workmanship or materials. FAILURE TO PERFORM GENERAL MAINTENANCE (INCLUDING CLEANING) WILL VOID THIS WARRANTY.

THIS LIMITED WARRANTY IS GIVEN TO THE PURCHASER IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE. THE REMEDY PROVIDED IN THIS WARRANTY IS EXCLUSIVE AND IS GRANTED IN LIEU OF ALL OTHER REMEDIES. IN NO EVENT WILL GHP GROUP, INC. BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you.

CLAIMS HANDLED AS FOLLOWS:

- 1. Contact your retailer and explain the problem.
- 2. If the retailer is unable to resolve the problem, contact our Customer Service Dept. detailing the heater model, the problem, and proof of date of purchase.
- 3. A representative will contact you. DO NOT RETURN THE HEATER TO GHP GROUP, INC. unless instructed by our Representative. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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WARRANTY REGISTRATION

IMPORTANT: We urge you to fill out your warranty registration card within fourteen (14) days of date of purchase. You can also register your warranty on the internet at www.ghpgroupinc.com. Complete the entire serial number. Retain this portion of the card for your records.



GHP Group, Inc. 6440 W Howard St Niles, IL 60714-3302

Tel: (877) 447-4768 www.ghpgroupinc.com

SAVE THIS CARD!

