

Installation and Service Instructions



Open Hearth Broilers Models 25, 31 & 41

Warranty

See page 8 for warranty.

This warranty does not apply to damages resulting from accident, misuse, abuse or alteration.

No equipment may be returned without written authorization from EmberGlo (or Midco). Returned goods must be shipped prepaid to the factory.

Warranty card must be filled in and returned to EmberGlo (or Midco) to validate warranty.

CAUTION: EmberGlo Open Hearth Broilers are for installation on non-combustible locations only.

This manual contains sufficient information for installation of the EmberGlo Broiler in normal locations.

In the United States, installation must conform with local codes, or in absence of local codes, with **National Fuel Gas Code, ANSI Z223.1 /NFPA 54**. In Canada, installation must be in accordance with **Natural Gas and Propane Gas Installation code CSA B149.1 or .2** as applicable.

PURCHASER: Retain these instructions for future use.

Post, in a prominent location near the broiler, instructions for turning off gas valves in case gas odor is detected and any other instructions as advised by your local gas supplier.

CAUTION: To avoid grease filter fire hazard, commercial kitchen exhaust hoods should be positioned at a minimum of 3½ feet above the broiler cooking surface, as specified by Commercial Grease Removal, Building Officials & Code Administrators International Inc. and the National Mechanical Code, 1990 Seventh Edition (or latest edition), Article 5, Section M504.0, Table M504.3.2.

CAUTION: Cooking equipment should be used in an environment protected by an automatic fire suppression system. Consult the National Fire Protection Association NFPA Code 96 or the latest edition of Standards for Installation of Equipment for Removal of Smoke and Grease-Laden Vapors From Commercial Cooking Equipment.

WARNING: Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

FOR YOUR SAFETY

Do not store or use gasoline or other flammable liquids and vapors in the vicinity of this or any other appliance.

IF YOU SMELL GAS:

1. DO NOT TOUCH ELECTRIC SWITCHES
2. EXTINGUISH ANY OPEN FLAME
3. IMMEDIATELY CALL YOUR GAS COMPANY

AVOID ERROR IN PARTS SELECTION. When ordering use complete EMBERGLO Part Number and Description. Furnish Model Number, Bill of Material Number and Serial Number (if available) from the specification plate found on the product. **IMPORTANT:** Availability of parts as well as specifications are subject to change without notice. Please consult factory for item availability.



EmberGlo

EmberGlo
A Div of Midco® International Inc.
4140 West Victoria Street
Chicago, Illinois 60646
toll free 866.705.0514
tel 773.604.8700
fax 773.604.4070
web www.emberglo.com
e-mail sales@emberglo.com

SAFETY INFORMATION TERMS: The following terms are used to identify hazards, safety precaution of special notations and have standard meanings throughout this manual. They are printed in all capital letters using a bold type face as shown below, and preceded by the exclamation mark symbol. When you see the safety alert symbol and one of the safety information terms as shown below, be aware of the hazard potential.



- DANGER:** Identifies the most serious hazards which will result in severe personal injury or death.
- WARNING:** Signifies a hazard that could result in personal injury or death.
- CAUTION:** Identifies unsafe practices which would result in minor personal injury or product and property damage.

Quality Designed for Proven Performance



511
8448 24
Printed in USA

Models 25, 31 and 41 - Installation

Gas Pressure Requirements

GAS PRESSURE REQUIRED	
Natural Gas	Propane Gas
800 to 1,100 BTU/cu. ft	2,500 BTU/cu. ft.
5.0" to 14" W.C	11.0" to 14.0" W.C.

Table 1 - Gas Pressure Requirements

Installation

Clearance Instructions:

1. For use in non-combustible locations only - For use only on non-combustible counter tops, where minimum clearance from sides and back is 6" (153mm).
2. The appliance area must be free and clear of all combustible items.
3. The unit must be leveled before placing it in operation. Level the unit on an uneven surface to prevent rocking, adjustable feet have been provided.
4. When using gas broiler, keep the appliance area free from obstructions that could block the flow of fresh air for the ventilation and Flaretrol systems.

Floor model broilers are equipped with adjustable legs. Use an open-ended wrench on the bottom hex of each leg to adjust the height and to level the broiler.

When an appliance is supplied on casters and is connected to the supply piping by means of a connector for movable appliances, the operator must be aware of the restraints on the appliance and if disconnection of the restraints is necessary to reconnect this restraint after the appliance has been returned to its originally installed position.

For an appliance equipped with casters the following criteria must be met:

1. The installation shall be made with a connector that complies with the Standard or Connectors for **Movable Gas Appliances, ANSI Z21.69 - CSA 6.16**, and a quick-disconnect device that complies with the **Standard for Quick-Disconnect Devices for Use With Gas Fuel, ANSI Z21.41 - CSA 6.9**.
2. Adequate means must be provided to limit the movement of the appliance without depending on the connector and the quick-disconnect device or its associated piping to limit the appliance movement
3. The location(s) where the restraining means may be attached to the appliance shall be specified.

The broiler is shipped with knobs unattached. To assemble knobs, align shaft flats with knob flats and press on (no set screws are used). When pressing, reach under broiler and support valve shafts. Do not hammer knobs as valve damage could occur.

Electrical Connections: The wiring diagram and electrical and gas connections are located behind the front plate of the broiler. To remove the front plate:

1. Slip the valve knobs from their stems (no set screws are used).
2. Remove the side screws holding the front plate.
3. Pulling from both sides at the bottom, snap out lower section and lift off.

Power supply for the Flaretrol system should be rated at 120 Volts, 60 Hz. with a current draw of 1.5 Amps maximum. Use rigid or flexible conduit (flexible type recommended for counter models); splice each leg of the electrical supply line to one of the leads at the rear of the Flaretrol switch. Make sure the broiler is electrically grounded using the grounding lug located adjacent to the conduit box.

Installation wiring and grounding of the broiler must conform to local codes or, in the absence of local codes in the **United States to National Electric Code, ANSI/NFPA 70** or latest edition; in Canada, to **Canadian Electrical Code, CSA Standard C22.2**.

Gas Line Connection: Supplied loose with every broiler are a union, a Main Manual Shut-Off Valve and a gas pressure regulator. The union is to be used for connecting the gas line to the unit and must be located downstream of the Main Manual Shut-Off Valve and regulator. The Main Manual Shut-Off Valve and the gas pressure regulator should both be mounted in an accessible location near the broiler, with the Main Manual Shut-Off Valve located upstream of the regulator and the arrow on the body of the regulator pointing in the direction of the flow. The Main Manual Shut-Off Valve must be located so that the operator's hand will not be exposed to flame or flue products when reaching for the valve handle. Although the regulator may be mounted in any position, it is recommended that it be located in a horizontal run of pipe with its diaphragm case level.

Supply line size should be sufficient to provide full input at the broiler. For Model 25, use 1/2" pipe for runs up to 100 ft. For Models 31 and 41, use 1/2" pipe for runs up to 50 ft. and 3/4" pipe for runs of 50 ft. or more. For all broilers using PROPANE gas, 1/2" pipe will be sufficient for runs up to 100 ft.

Models 25, 31 and 41 - Broiler Hearth Setup

IMPORTANT:

Placement of the Grate Support Bricks is identical for either Briquette or Barbriq set-up.

Broiler Hearth Setup

Grate Support Bricks Setup

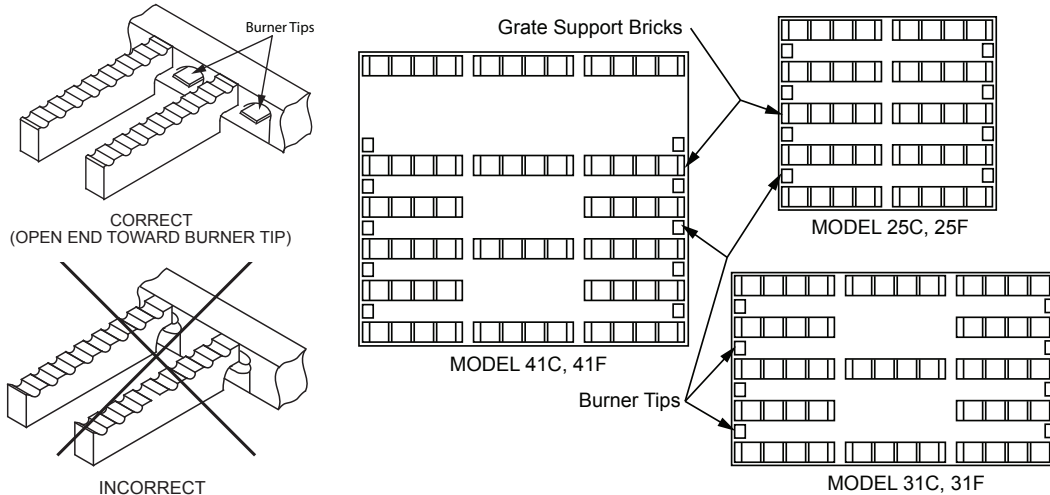


Figure 1

Grate Support Brick Placement

Figure 2

Grate Support Brick Arrangements

Set grate support bricks in firebox. Be sure cut-out end of brick is placed midway between each burner tip - NEVER directly in front of the tips.



CAUTION: When the Char Broiler is HOT!! never attempt to change location or remove grates during cooking. Flare-Up can occur at anytime. Turn off the char broiler and wait until it cools.

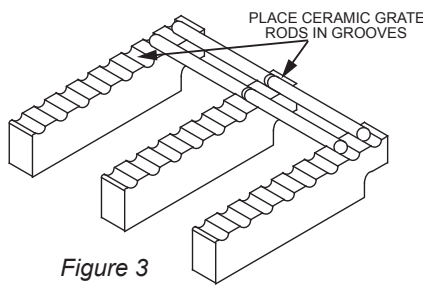


Figure 3

Ceramic Grate Rod Placement

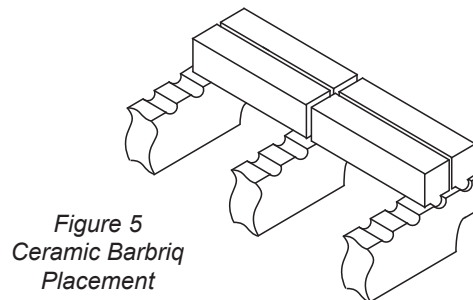


Figure 5
Ceramic Barbriq Placement

Barbriq and Briquette Setup

Place ceramic Barbriqs in grooves. The featured design aligns automatically between each Barbriq. Barbriqs should only cover grate support brick area of hearth. Barbriqs are arranged in columns (as shown) end to end.

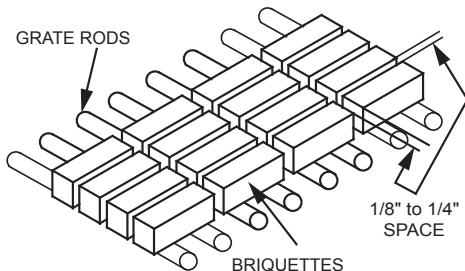


Figure 4

Briquette Placement

Set ceramic briquette on grate rods. Be sure to allow 1/8" to 1/4" space between each briquette. Briquette should only cover grate rod area of hearth. Briquette arranged in columns (as shown) or staggered briquette arrangements are acceptable.

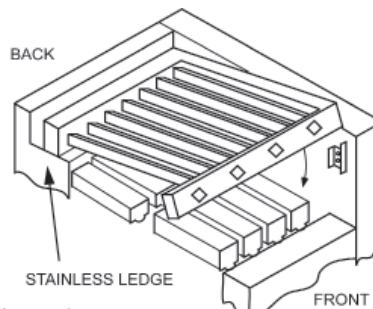


Figure 6

Cooking Grill (All Models)

Grill Setup

Install cooking grill by resting it on stainless ledge at rear and then lowering it onto metal bracket at front.

Models 25, 31 and 41 - Installation

Installation Continued

Use pipe joint compound resistant to Liquefied Petroleum Gases. Check the broiler piping and valves for gas leaks by applying a weak liquid soap solution to unions and joints with the gas supply on. Leakage will be indicated by the appearance of soap bubbles. Locate and correct all gas leaks before proceeding.

⚠ WARNING: DO NOT USE OPEN FLAME.

During any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psi (3.45 ka), the Broiler must be isolated from the gas supply piping system by closing its individual Main Manual Shut-Off Valve.

During any pressure testing of the gas supply piping system at test pressures in excess of 1/2 psi (3.45 ka), the Broiler and its individual Main Manual Shut-Off Valve must be disconnected from that system.

⚠ WARNING: EXPLOSION HAZARD. DO NOT USE OXYGEN FOR PRESSURE TESTING. AN EXPLOSION COULD OCCUR DURING INITIAL START-UP

Manifold pressure taps are supplied for testing operating pressures and setting gas input. On Model 25, the tap is located in the main manifold piping directly behind the Manual Burner Valve. On Models 31 and 41, it is located in the pilot line behind the Manual Pilot Valve.

Each burner tip has been individually orificed for the correct gas input for NATURAL or PROPANE gas.

BROILER MODEL	25C/25F	31C/31F	41C/41F
Number of burner tips	6	8	10
Capacity/Tip (BTU/Hr)	6,600	8,500	8,500
Max. BTU/Hr Input	39,600	68,000	85,000
NAT Gas Orifice Size	#56	#54	#54
Manifold Pressure	4" W.C.	4" W.C.	4" W.C.
PROP Gas Orifice Size		#68	#65 #65
Manifold Pressure	10" W.C.	10" W.C.	10" W.C.

Table 2 - BTU Capacity, Orifice Size and Manifold Pressure

USE OF PROPANE FOR GAS BROILERS				
Model	BTU/Hr	LB of Propane Used/Hour	Cylinder Size	Hours of Use Full On (approx.)
25*	39,000	0.48 lb	20#	9 Hr
			40#	19 Hr
			100#	48 Hr
31**	68,000	0.28 lb	40#	11 Hr
			100#	28 Hr
41***	85,000	0.22 lb	100#	22 Hr

Minimum size Cylinder: * Model 25 - 20# / ** Model 31 - 40# / *** Model 41 - 100#

Table 3 - Propane per Hour Usage

Ventilation: A suitable power or gravity ventilating system **must be used in conjunction with the EmberGlo Open Hearth Broiler.**

Power Types: Either of the two types of power ventilators - the overhead hood type or under shelf exhaust type - may be used. The latter offers simplicity of installation and minimum cleaning expense. Both require flame-proof filters for grease removal. Connect the ventilator to a duct of suitable size. The exhaust blower must be capable of removing a minimum of 325 CFM of air per square ft. of broiler surface; specifically: a fan capacity of 2,000 CFM is required for the Model 41, 1400 CFM for the Model 31, and 775 CFM for the Model 25.

Gravity Types: Since no power exhaust is used, the gravity ventilating system is adequate only in certain conditions. It is only practical in single story buildings not surrounded by higher structures. A large straight duct, equal to a minimum of half the grill area, must be carried upward from a hood over the broiler to a height of four feet above the highest point of the roof. It should be equipped with a rotary outlet. The hood must extend at least 12 inches beyond each side of the grill. Since no filters are used, periodic inspection and cleaning of the hood and duct work is especially important.

Models 25, 31 and 41 - Operations, Installation & Maintenance

FOR PROPER OPERATION, ALL VENTILATING SYSTEMS REQUIRE AN ADEQUATE SUPPLY OF FRESH AIR INTO THE ROOM.

*Installation
Continued*

SEE IMPORTANT NOTE REGARDING EXHAUST HOODS ON FRONT PAGE OF THIS MANUAL.

*Operation
Continued*

Instructions for turning on the Broiler:

The two pilots are located under the front panel on the right and left hand sides.

1. Make sure that the Main Manual Shut-Off Valve is in the ON position and the Manual Burner Valve(s) are in the OFF position.
2. Turn Manual Pilot Valve ON and use a match or long lighter to ignite the pilots.
3. Once the pilot(s) is lit turn on the manual burner valves.
4. If the flame fails to light or goes out, turn off the manual burner valves and the pilot valves. Wait for 5 minutes. Repeat from step 2.

If necessary, a few briquettes may be removed from the hearth for easy access to the pilot; they should be replaced before operating the broiler.

If the pilot flame is too short or too long, remove the Manual Pilot Valve handle and adjust the slotted screw in the valve stem for a suitable flame.

Preheating: The Model 25 broiler has a single Manual Burner Valve which controls all six main burners. Models 31 and 41 have two Manual Burner Valves, one for each side of the broiler. Preheat the broiler with the Manual Burner Valves wide open for a short period, until a dull red glow is visible on the lower surface of the Barbriq. After preheating, reduce valve settings to the lowest flame required to maintain the glow on each side of the broiler hearth - not necessarily in the center. DO NOT broil with the Manual Burner Valves wide open, or with excessively bright Barbriqs on the hearth. Maximum valve setting is used only for preheating.

Flaretrol: Turn the Flaretrol switch ON when an excessive grease flare develops. When there is no flare, turn it OFF. Continuous operation of the Flaretrol will not damage the motor, but it will needlessly lower the temperature at the grill.

If excessive flare develops which cannot be adequately controlled by the Flaretrol, move meat to another area of the grill. Do not overload the grill; leave sufficient space between the pieces of meat to allow the meat to be shifted and smoke to exit. If cooking during a power failure, the Flaretrol function is lost; therefore take special care to avoid excessive grease flare-up.

During heavy periods of broiling, reduce the valve settings to compensate for increased heat from grease flare.

To Shut Off: Turn the Manual Burner Valve(s) to the OFF position. Turn the Manual Pilot Valve to the OFF position.

Maintenance

IMPORTANT: Disconnect power supply prior to cleaning or servicing.

Depending on the amount of use, periodic cleaning is necessary. Turn the Main Knobs on high for 30 minutes. Turn the broiler off and wait for a **complete** cool down. Brush or vacuum the hearth. Be sure that the pilot areas are clean and clear of ash and burned matches. Because of the incinerator action of the hearth, grease does not normally accumulate under the grate; however, periodically the Barbriqs or ceramic rods should be removed and the hearth cleaned, either by brushing or vacuuming. Wipe grease splatter from the top and adjacent surfaces.

The Flaretrol motor features permanently lubricated ball bearings and requires no routine oiling.

Keep the area around the broiler free of combustible materials. Since the combustion and Flaretrol air is taken from the front of the unit, do not obstruct the free flow of air to the front.

CAUTION: On the counter models, do not store cooking utensils, mitts, towels or anything combustible between broiler and counter top. Restricting air flow, particularly on counter models, can cause over-heating and premature motor failure.

CAUTION: On floor models, do not store combustible materials such as paper, fabric, cooking oils, or any other flammable liquids in floor models' stainless steel storage shelf.

Do not obstruct the fresh air supply into the room or the ventilating system. For maintenance and service, refer to your local gas service or utility company.

Models 25, 31 and 41 - Broiling Techniques

Broiling Techniques

Open hearth broiling on the EmberGlo has great advantages over other methods of cooking meats, fish, and poultry. It is fast and gives a seared surface to the food, improving both appearance and taste. It uses no grease except that which is in the food itself.

The temperature at the grill surface, as in all cooking processes, is most important. It is possible to create various zones of temperature ranging from 350°F to 750°F by adjusting the Main Knobs on the EmberGlo Broiler. The higher temperatures impart the seared dark brown surface that some customers prefer, and speed cooking time. The lower temperatures are for thick cuts of meat which must be well done without excessive surface charring. Excessive grill temperatures should be avoided. The temperature at the grill surface is the determining factor in cooking-the hotter the grill, the shorter the cooking time, and vice versa.

Start broiling by placing food products on the center of the cooking grill (hottest area) and finish in the cooler zone (sides). Following are some helpful hints for getting the most from your EmberGlo Broiler.

1. Thick pieces of meat, whole fish and half chickens should be broiled over lower heat to prevent undue charring of the surface while the center is being cooked. This should be done over a cooler zone on the grill.
 2. In broiling large quantities of strip steaks simultaneously, excess fat should be trimmed off. If thick steaks are being broiled, sear at high fire and finish in a cooler zone, particularly if medium or well done steak is desired.
 3. Fillets Mignon and other lightly fattened meats may be brushed with butter or garlic butter before broiling or when first placed over the fire. This gives a more even browning to the meat, and prevents excessive surface charring.
 4. Meat or fish should not be salted before broiling in order to prevent the rapid loss of natural juices. However, poultry should be salted before placing on the grill to prevent too charred a surface.
 5. Raw pork must, of course, be cooked throughout. This means slow broiling at lower temperatures. Ribs, chops, and other cuts are delicious when so broiled. Due to the time involved, it is often advisable to partly cook the ribs and double chops on the EmberGlo Broiler and then finish-broiling on a standard top broiler.
 6. Fish requires basting two or three times during the broiling period. Butter, margarine or salad (cooking) oil may be used. Some chefs prefer a basting sauce or lemon juice and spices mixed with oil. Others recommend supplying the customer with special sauces at the table. The purpose of basting with oils is to speed browning of the quickly broiled, moist flesh.
 7. Lobster is often prepared by the open hearth method. Basting is required but the use of lobster racks makes this simple. Many establishments feel this is the best possible method of broiling lobster.
 8. Veal is seldom broiled because the lack of fat tends to make the meat dry and "chewy." Connective tissue in veal usually requires a longer cooking time than is desired with broiling.
-

This table gives the approximate times for broiling various cuts and thicknesses of different meats on the EmberGlo Broiler.

Cooking time is given for raw meats.

Cooking Time in Minutes

	Thickness	Rare	Medium	Well
BEEF				
Filet Mignon, Porterhouse	1"	6	8	10
T-Bone, Club, Rib, Pin-Bone	1½"	9	10	13
Sirloin	2"	16	18	21
Strip Sirloin	¾"	4	6	8
Hamburger, Ground Chuck, or Round	½"	2	4	8
LAMB*				
Center cut loin, rib	1"	--	10	15
Sirloin chops, double rib	1½"	--	15	21
English chops	2"	--	20	25
Shoulder chops and leg steaks	1"	--	10	15
Lamb riblets or Mutton chops	1"	--	12	18
PORK*				
Spare ribs	--	--	--	30-40
Single chops	½"	--	--	15
Double chops	1½"	--	--	25

	Thickness	Well
FISH		
Filletts (times are for one side of fillet only do not turn)	¼"	5
	½"	6
	1"	8
Fish steaks	½"	3
	1"	5
	1½"	8
Whole fish, dressed	3"	5
	4"	7
	5"	9
Split (times are for one side of split only - do not turn)	1½"	6
	2"	9
POULTRY		
Broiling chickens	¾ lb.	9
(Ready-to-broil weight	1 lb.	11
for half chickens)	1½ lbs.	14

* These times can be shortened by partial pre-or post- cooking.

Warranty

Midco® International Inc Limited Warranty Policy Exclusions Terms, Customer Requirements and Instructions

**All claims should be filed through Warranty Central.
Call factory for information (773 604 8700)**

Only Authorized Service Providers are authorized to provide Limited Warranty service on all EmberGlo®, a Division of Midco® International Inc., food equipment as described under and Midco® International Limited Warranty Policy. A list of providers can be found on our web site: www.emberglo.com

Provisions:

In lieu of an implied warranty, all repairs and replacement parts furnished under our Limited Warranty shall be f.o.b. point of distribution, but the owner must pay the necessary freight, delivery and labor costs involved when required. Any Federal, State or Local taxes are also extra. This Limited Warranty is effective for a period of one year from date of installation. EmberGlo® Char Broilers and EmberGlo® Electric Food Preparation Equipment manufactured by Midco International, sold under the EmberGlo® trademark, are guaranteed to be free from defect in material and workmanship under normal use and service for a period of 1 (one) year after the date of original installation. Midco's obligation under this Limited Warranty Policy shall be limited to repairing or replacing, at our option, any part of said equipment which Midco examination shall disclose to its satisfaction to be thus defective.

Exclusions:

This Limited Warranty Policy does not apply to damages resulting from accident, misuse, abuse or alteration, nor does it apply to limed steam generators, nor does it apply to any consequential damages. Most geographical areas require the use of distilled or demineralized water. Tap water is permissible only with ES Series Steamers. Nor does it apply to Barbriq's®, briquettes, or rods used in gas broilers. Midco's obligation will be the replacement of the product or parts removed.

Terms:

Under the terms of this Limited Warranty Policy, models considered portable (devices with cords and plug caps such as EmberGlo Steamers) must be taken or returned to the nearest service provider, transportation prepaid, returned transportation collect. Non-portable units with permanent wiring will be serviced on the customer's premises. Under these terms, Midco agrees, within the terms of this Limited Warranty period, to make all repairs at no charge by the authorized service provider. Labor and mileage charges submitted by any other provider not authorized will be the responsibility of the customer.

Customer Requirements:

All charges related to repairs made one (1) year after the date of original installation, during the Limited Warranty period will be the responsibility of the customer. The product registration information is located on the product I.D. plate.

If a part is defective due to workmanship or materials and is removed from the product within the applicable warranty period and returned to Midco in accordance with the following procedure described, Midco will, at its option, either repair or replace the part.

Call the factory for Instructions on returned goods.

No equipment may be returned without written authorization from MIDCO. Returned goods must be shipped prepaid to the factory.

⚠ WARNING: Improper installation and use of this product could result in personal or property injury.