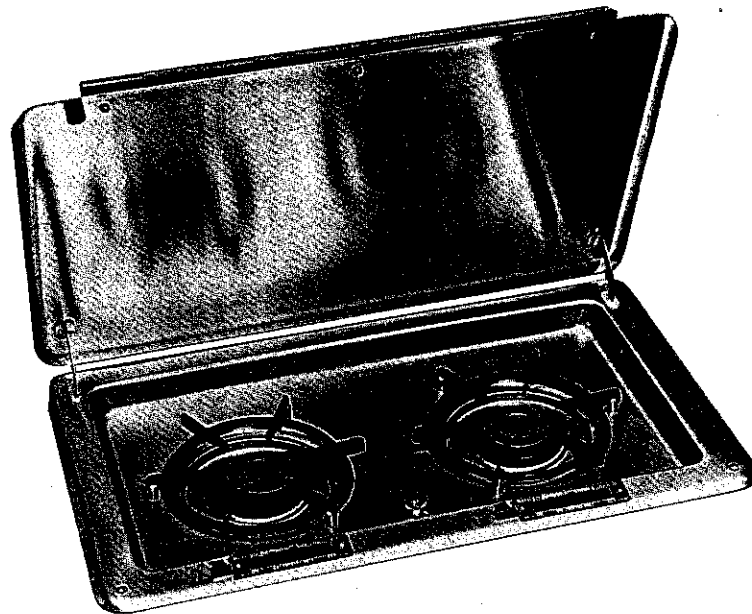




AN INTERNATIONAL MARINE INDUSTRIES COMPANY

## LPG STOVE, MODEL 219

### OPERATING AND INSTALLATION INSTRUCTIONS



**TWO BURNER RECESSED  
LIQUIFIED PETROLEUM GAS STOVE  
MODEL 219**

PLEASE KEEP THIS MANUAL ABOARD YOUR BOAT

MEMO PAGE



## INTRODUCTION

The Model 219 is a two burner recessed stove designed to burn liquified petroleum gas. Kenyon Marine stoves have been engineered exclusively for marine use. The design considerations and the

materials used were dictated by the requirement for a reliable, long life and low maintenance stove, operating in a salt atmosphere.

## SPECIFICATIONS

FUEL: Propane or liquified petroleum gas.

FUEL SUPPLY PRESSURE: 7 to 10 inches water column. (0.25 to 0.36 psi)

MAXIMUM FUEL DEMAND: 3.5 cubic feet per hour.

BURNER CAPACITY: 4,500 BTU/hr.

DIMENSIONS: Inches (cm)

Front To Back = 13.5 (34.29)

Left To Right = 22.37 (56.82)

SHIPPING WEIGHT: 18 lbs. (8.16kg)

COUNTER CUT OUT = 12.5 x 21.5 (31.75 x 54.61)

It is important that the properties of LPG, Liquified Petroleum Gas be understood and that safe practices for its use be followed.

LPG is a gas at normal room temperature and atmospheric pressure. Under moderate pressure, 183 psi at 100°F, they liquify, but will return to the gaseous state when released at atmospheric pressure.

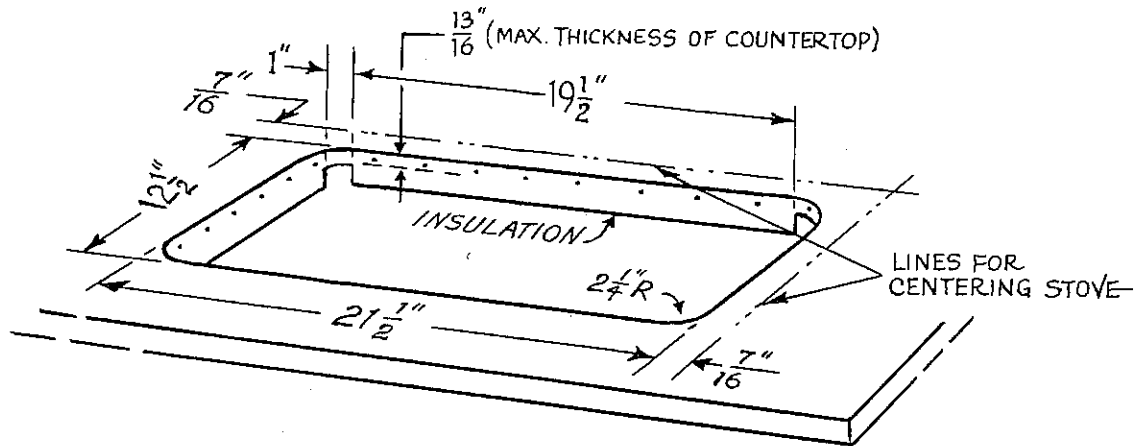
It is this property which permits the convenience of transporting and storing these hydrocarbons in concentrated form while normally using them in a vapor form.

The gas is heavier than air, and if unignited, will tend to sink to the bottom of an enclosed compartment (or the bilge of a boat).

## INSTALLATION INSTRUCTIONS

NOTE: The installation should comply with ABYC Standard A-1, "Recommended Practices and Standards Covering Marine LPG-Liquified Petroleum Gas Systems", and the "Fire Protection Standards for Motor Craft, NFPA #302". Be sure to provide adequate ventilation, permanent and secure fastening of the stove and protection for all surrounding woodwork.

Cut Out: A cut out with dimensions shown below is required. Make sure there are no obstructions beneath the countertop within two inches behind the edge of the cut out where the rear of the stove is to be located. Draw two lines as indicated on the sketch to help center the stove in the cut out.



**CAUTION**  
The stove **MUST NOT** be installed in an airtight

compartment. At least 40 sq. inches of opening is required to permit adequate air supply to the stove.

## STOVE INSTALLATION

Open the stove lid to the locked position and bring the stove to either end of the cut out. Raise the stove end furthest from the cut out so that the stove is slanting, and slide the lower end into the cut out. Care should be exercised so as not to damage the control wheels.

Center the stove with the help of lines already drawn on the countertop. Mark centers of the four fastening holes. Remove the stove in the same manner as inserted. Drill four holes with 3/32 (.093) drill diameter. Reinstall stove and secure in each corner with #6 x 3/4" oval head wood screws.

Note: Before the stove is secured a slight bowing may be noticeable on the flanges. This is an intentional design feature to provide a tight seal around the flange once the stove has been tightly secured in each corner.

Clearance: The stove extends 6" below the upper surface of the counter. It is essential that the part of the stove that is below the counter be free of any objects that may come in contact with the piping or the bottom of the stove since these parts are hot when the stove is in operation.

Unless the construction of the cabinet is such that no objects such as rags, papers or other combustible materials can come in contact with the bottom of the stove, a protective wire mesh basket or perforated metal enclosure must be installed. Wire mesh having adequate rigidity should be used to allow circulation of air. Solid metal should not be used.

## LPG PLUMBING SYSTEM INSTALLATION

The design and installation of a safe LPG storage and supply system for the appliance is of extreme importance. Excerpts from NFPA (National Fire Protection Association) No. 302 are included in this manual and should be studied prior to installation or operation of a system.

The liquified petroleum gas system consists basically of an LPG storage cylinder(s), a pressure regulator to reduce the pressure to the nominal ten inches of water column max., required by the appliance, and the piping from the regulator to the appliance.

A manual shut-off valve must be installed at the cylinder outlet.

A means for testing the system for leaks must also be installed. The leakage test system may be a pressure gage installed on the high pressure side of the regulator, which will allow a pressure decay test to be conducted. Alternatively, a commercial leakage testing device may be installed at the regulator.

The installation of a remotely operated electrical shut-off valve is also highly recommended. This device allows the gas to be shut off at the tank with a switch near the appliance. The gas is also shut-off when ships power is turned off.

The LPG cylinder must be stored in a manner and location such that escaping vapor will flow overboard and cannot reach the interior of the boat. A sealed container is recommended with vents overboard at both top and bottom. The regulator, gages, leakage tester, remote solenoid valve and tubing connections should all be located within this enclosure.

The piping system should be 1/4 inch copper tubing and should be continuous (without fittings) from the storage container to the appliance connection, and should be secured at regular intervals to prevent vibration. The tubing should be protected from abrasion, flexure and pinching, and all feeds thru bulkheads must be sealed.

### CAUTION

**INSTALLATION MUST BE CARRIED OUT ONLY BY QUALIFIED PERSONNEL!**

## STOVE OPERATION

### PREPARATION

Before operating the stove, review the safety precautions on Page 3 (Installation Instructions) and Page 4 (LPG Plumbing System Installation.)

The Homestrand Model 219 stove is normally installed with a valve located at the propane tank and another valve located in the stove. To operate the stove the supply must be turned ON both at the tank and at the stove.

### OPERATION

The stove is equipped with a main shut-off valve in the center and two control valves in the front.

Remove and discard the plastic burner covers before attempting to operate the stove.

The shut-off valve is closed when turned clockwise (right) to stop.

The control valves are also closed when the control wheels are turned all the way to the right as indi-

cated by "OFF" and arrow on the label. In this position they are locked.

To start the stove, first turn the main valve counter-clockwise (left) to stop. Then, with one finger of the left hand, press the button to the left of the control wheel and with the thumb of the same hand move the wheel in the left direction, at the same time holding a lighted match to the burner. Repeat with the other burner.

### SHUTTING OFF

Turn the control wheel clockwise to stop. Safety lock will snap in. Turn the main valve knob to the extreme clockwise position. Stove is now fully off.

### CAUTION

NEVER LEAVE THE STOVE OPERATING UNATTENDED. TEST SYSTEM FOR LEAKAGE PERIODICALLY, EVERY (2) WEEKS MIN.

EXCERPS FROM NFPA NO. 302-1972

CHAPTER 4. COOKING, HEATING AND  
AUXILIARY APPLIANCES

40. Open flame devices are more liable to promiscuous, unskilled or ignorant operation than any other boat equipment involving fire risk. It is therefore imperative that such items be selected and installed with the aim of minimizing personal and physical hazards.

41. **Cooking Equipment.**

411. Galley stoves shall be manufactured, approved and labeled for marine use. Printed instructions for proper installation, operation and maintenance shall be furnished by the manufacturer. A durable and permanently legible instruction sign covering safe operation and maintenance shall be provided by the manufacturer and installed on or adjacent to the consuming appliance, where it may be readily read.

(a) Stoves shall be installed in adequately ventilated areas to comply with Paragraph 113.

(b) Stoves shall be securely fastened when in use and when stored.

(c) Any burner system that may affect safety by reason of motion of the boat shall not be used.

(d) All woodwork or other combustible materials above stove tops and all woodwork or combustibles immediately surrounding stoves shall be effectively insulated with noncombustible materials or sheathing.

42. **Liquefied Petroleum Gas Systems.**

In the interest of safety it is important that the properties of liquefied petroleum gases be understood and that safe practices for their use be followed. Under moderate pressure the gases liquefy; upon relief of the pressure they are readily converted into the gaseous state. Advantage of this characteristic is taken in their usage, and for convenience they are shipped and stored under pressure as liquids. In their gaseous state they present a hazard comparable to any flammable natural or manufactured gas, except that they are heavier than air. Although the vapors tend to sink to the bottom of an enclosed compartment into which they are released, they will diffuse throughout, and are not readily dispelled by overhead ventilation. Safety requires the prevention of escape of any liquefied petroleum gases, for when mixed with air in certain proportions they will explode if ignited.

NOTE: Attention is invited to U. S. Coast Guard regulations which prohibit the use of liquefied petroleum gas on certain vessels.

422. **General.**

(a) Liquefied petroleum gas systems shall be designed and installed in accordance with provisions outlined herein and shall be subject to inspection and approval of the authority having jurisdiction.

(b) Only systems of the vapor withdrawal type are permitted. Containers designed or installed so as to admit liquid gas into any other part of the system are prohibited.

(c) Comprehensive printed instructions and a labeled diagram covering details of proper installation and operation shall be furnished with each system installed on a boat and shall be kept on board for ready reference.

(d) All liquefied petroleum gases shall be effectively odorized by an approved agent of such character as to indicate positively, by a distinctive odor, the presence of gas down to concentration in air of not over one-fifth the lower limit of combustibility.

(e) All component parts of systems other than containers and low pressure distribution tubing between regulators and appliances shall be approved for marine use and should be so listed or labeled.

(f) All component parts of systems, subject to container pressures shall have a rated working pressure of at least 250 pounds per square inch gage.

(g) With each liquefied petroleum gas system installed on a boat, at least two of the signs required by Paragraph 411 shall be provided. These signs shall include:

**CAUTION**

1. Keep container valves closed when boat is unattended. Close them immediately in any emergency.
2. Be sure all appliance valves are closed before opening container valve.
3. Always apply lit match or other flame to burner before opening burner valve.
4. Close master valve on appliance whenever appliance is not in use.
5. Test system for leakage at least twice a month and after any emergency in accordance with the following procedure.

With appliance valves closed, the master shutoff valve on the appliance open, and with one container valve open, note pressure on the gage. Close container valve. The pressure should remain constant for at least 10 minutes. If pressure drops, locate leakage by application of liquid detergent or soapy water solution at all connections. Repeat test for each container in multi-container system. NEVER USE FLAME TO CHECK FOR LEAKS.

## EXCERPS FROM NFPA NO. 302-1972

(h) The required caution signs shall be installed in plainly visible locations, (1) on the outside of each container enclosure and (2) adjacent to each consuming appliance.

### 423. Containers.

(a) Containers shall be constructed, tested, marked, maintained, requalified for continued service, and refilled:

(1) In accordance with the regulations of the U. S. Department of Transportation (DOT) for containers for LP-Gas service, or

(2) In accordance with equivalent specifications or regulations determined by the authority having jurisdiction.

(b) Containers shall be condemned and withdrawn from service when they leak; when corrosion, denting, bulging or other evidence of rough usage exists to the extent they may be weakened appreciably, or when they have been involved in a fire.

### 424. Valves and Safety Relief Devices.

(a) Each container shall have a manually operated shutoff valve installed directly at the container outlet, which should be equipped with a securely attached hand wheel for convenient operation without the use of a separate wrench.

(b) All containers shall be provided with safety relief devices as required by DOT regulations or equivalent thereto.

(c) Container valves and safety relief devices shall have direct connection with the vapor space of the cylinder.

(d) In addition to the valve required at the container, a dual container system shall be provided with a two-way positive shutoff valve of manually operated type, or equivalent, at the manifold.

(e) Discharge of the safety relief valves shall be vented away from the container(s) into the open atmosphere, if practicable, but in all cases so as to prevent impingement of escaping gas onto the container.

### 425. Reducing Regulator.

(a) Each system shall be provided with a regulating device, so adjusted as to deliver gas to the distributing tubing at a pressure not in excess of 18 inches water column, approximately 0.653 pounds per square inch gage.

(b) A low pressure relief valve shall be integral with each regulator; it shall be set to start to discharge at not less than two times and not more than three times the delivery pressure.

(c) The relief valve and the space above regulator and relief valve diaphragms shall be vented to the atmosphere. This may be accomplished through a common outlet, vented to a point at least two feet distant (and farther if possible) from any part of an opening to the cabin or hull interior or from an engine exhaust which is below the level of such discharge.

(d) The outlet termination shall be turned downward to prevent water entering the discharge

(e) Each reducing-regulator shall be fitted with a pressure gage. This gage shall be on the high pressure side of the regulator. The purpose of the pressure gage is to provide a convenient and quick means of testing the system, from the container valve to and including the appliance valves, for leakage. It is recommended that this test be made at least once every two weeks and after any emergency. No leakage, even of a seeping character, shall be tolerated.

### 426. Piping and Fittings.

(a) All low pressure distribution tubing between regulator and appliances shall be copper tubing of standard type K or L or equivalent. All high pressure tubing between containers and regulators shall be type K or equivalent.

(b) Flexible sections used to allow free swing of gimballed stoves shall be approved for marine use.

(c) Tube connecting fittings shall be in accordance with Paragraph 322(c); or connections may be soldered or brazed with a material having a melting point in excess of 1000°F.

### 427. Appliances.

(a) All gas consuming appliances shall be approved for marine use.

(b) Cooking stoves, service water heaters, cabin heaters, etc., shall comply with applicable provisions of Sections 41-43, and the following:

(1) All appliances designed for operation with pilot lights, glow plugs, switches, etc., shall have them so protected as to prevent ignition of external vapors or addition of further combustible material to those vapors.

(2) Cabin space heaters shall be of the sealed combustion chamber type, designed to provide complete separation of the combustion system from the atmosphere of the boat. Combustion air inlet and flue gas outlet shall be provided as integral parts of the appliance.

(c) A master packless shutoff valve, controlling all burners simultaneously is required at the manifold of each appliance.





**428. Location and Installation.**

(a) Containers regulating equipment and safety equipment shall be substantially secured, readily accessible, and so located that escaping vapor cannot reach the bilges, machinery space, accommodations or other enclosed spaces.

(1) Such locations are confined to open deck, or cabin top, outside of cockpits or semi-enclosures and equipment so placed shall be produced from climatic extremes by a housing or housings vented to open air near the top and bottom.

(2) If construction or design prevents compliance with locations specified above, the container, regulating equipment and safety equipment may be mounted in a locker or housing, vapor-tight to the hull interior, located above the waterline in an open cockpit provided the locker or housing is constructed of or lined with corrosion resistant material; opens only from the top, with cover seated on gasket and tightly latched but so as to be conveniently and quickly opened for operation of container valves and testing of system for leakage; and is vented at bottom by a pipe of at least 1/2 inch I.D., led outboard without pockets through the hull sides to a point lower than the locker or housing bottom but above the waterline.

(3) Installation of gas equipment in lockers or housings shall be such that when the means of access to the lockers or housings is open, the container valves can be conveniently and quickly operated and the system pressure gage dials are fully visible.

(4) Lockers or housings shall not be used for storage of any other equipment nor shall quick access to the gas system be obstructed in any way.

(b) Storage provisions for unconnected reserve containers, filled or empty, shall be the same as the provisions above for containers in use. Valves to containers, even those considered empty, shall be kept tightly closed.

(c) Distribution lines shall be protected from physical damage and be readily accessible for inspection.

(1) Lines shall be substantially secured against vibration by neat-fitting soft nonferrous metal clips with no sharp edges in contact with the tubing.

(2) Lines shall be protected by close-fitting ferrules of nonabrasive material wherever they pass through decks or bulkheads, and where passing through decks the connections shall be vaportight.

(3) Lines shall be continuous lengths of tubing from regulator to master shutoff valve at appliance manifolds except for connections to other appliances.

(d) After installation, distribution tubing shall be tested prior to its connection to regulator and appliance by an air pressure of not less than 5 pounds per square inch gage. The container valve should be checked for leakage at its outlet and at its connection to the container by application of liquid detergent or soapy water solution prior to connection to the system. After these tests and when appliances and high pressure equipment have been connected, the whole system shall be subjected to the following: With appliance valves closed, the master shutoff valve on the appliance open, and with one container valve open, note the pressure on the gage. Close container valve. Pressure should remain constant for at least 10 minutes. If pressure drops, locate leakage by application of liquid detergent or soapy water solution at all connections.

NEVER USE FLAME TO CHECK FOR LEAKS.

**429. Precautions.**

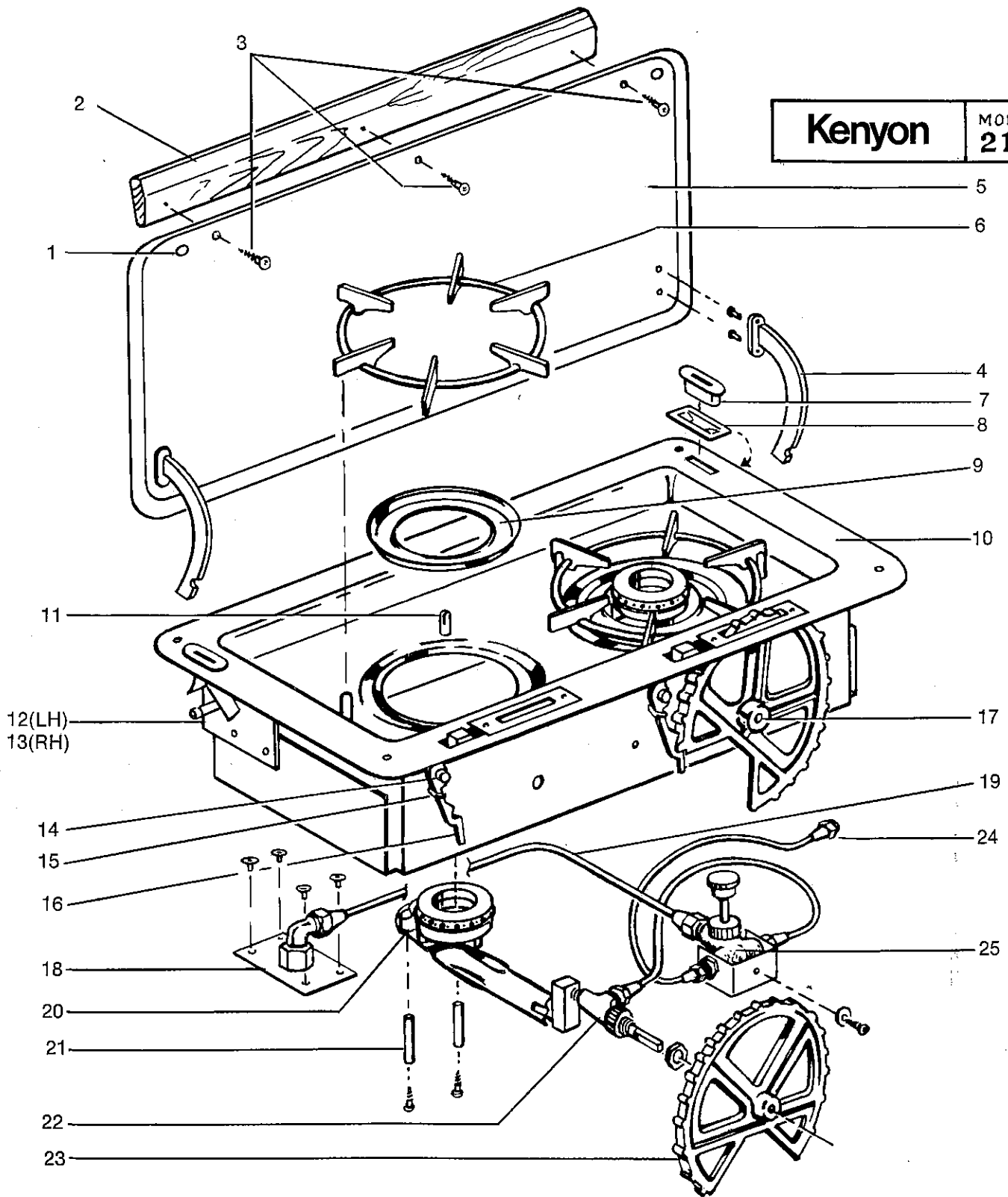
(a) A container shall not be charged with fuel unless it bears the proper markings of the code under which it was fabricated and also its water weight capacity and tare weight in pounds.

(b) No container which is due for requalification shall be charged with fuel until it has been retested or otherwise qualified for service in accordance with the requirements of the U. S. Department of Transportation.

(c) Container valves and safety devices must be tested for leaks before the charged container is shipped from the filling plant and it shall not be shipped with leaking fittings.

# Kenyon

<b>Kenyon</b>	<b>MODEL 219</b>
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## PARTS LIST FOR KENYON MODEL 219 LPG STOVE

DET. #	P/N	DESCRIPTION	QTY.
1	H-1153	LID CUSHION	2
2	141210	HANDLE	1
3	062132-12	SCREWS	3
4	H-1057	LID STAY	2
5	H-1718	LID	1
6	H-2162	GRATE	2
7	H-1064	GROMMET	2
8	H-1193	RETAINING BUSHING	2
9	H-1261	BURNER CUP	2
10	H-1703	PAN	1
11	H-2220	STUD GRATE	6
12	H-1707	STAY BRKT. ASSY. L.H.	1
13	H-1708	STAY BRKT. ASSY. R.H.	1
14	H-1263	BUSHING LOCK LEVER	2
15	H-1266	SPRING LOCK LEVER	2
16	H-1262	LOCK LEVER	2
17	H-1151	PIN CONTROL WHEEL	2
18	240209	GIMBAL BRACKET	1
19	240210	INTAKE TUBE ASSY.	1
20	H-1804	LPG BURNER ASSY.	2
21	H-1803	SUPPORT BURNER	4
22	H-1808-1	CONTROL VALVE ASSY.-LEFT	1
	H-1808-2	CONTROL VALVE ASSY.-RIGHT	1
23	H-1150-1	CONTROL WHEEL	2
24	H-1797	FEED PIPE ASSY.	2
25	H-1805	SHUT OFF VALVE ASSY.	1

# Kenyon

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