

# Kenyon Marine

## HOMESTRAND STOVE, MODEL 640 Instructions and Parts List

### INTRODUCTION

The Kenyon Homestrand Model 640 Series Marine Propane Stoves are three-burner stoves with thermostatically controlled ovens, available gimballed for underway operation, (Model 640) or flush mounted for fixed use (Model 642). Safety features include a pilotless top burner arrangement and an oven pilot shut-off control. The oven burner also includes a pilot safety which removes the main oven gas supply if the pilot goes out. All burner controls lock in the off position preventing accidental gas leakage. Gimballed models are also supplied with a local shut-off valve and flexible interconnect hose. The stainless steel cook top is surrounded by a strong sea rail measuring 18 by 21 inches, capable of holding a griddle or an 11 inch fry pan. Standard equipment includes two adjustable pot holders and a built-in solid state piezoelectric spark lighter for the top burners. The oven finish is designed for continuous cleaning in normal use. The oven burner is in a raised location for use as a broiler.

### SPECIFICATIONS

FUEL: Propane or liquified petroleum gas.

FUEL SUPPLY PRESSURE: 10 ± 2 inches water column.

MAXIMUM FUEL DEMAND: 7.5 cubic feet per hour.

BURNER CAPACITIES: Top burners: 4,500 BTU/hr.  
Oven burner: 5,000 BTU/hr.

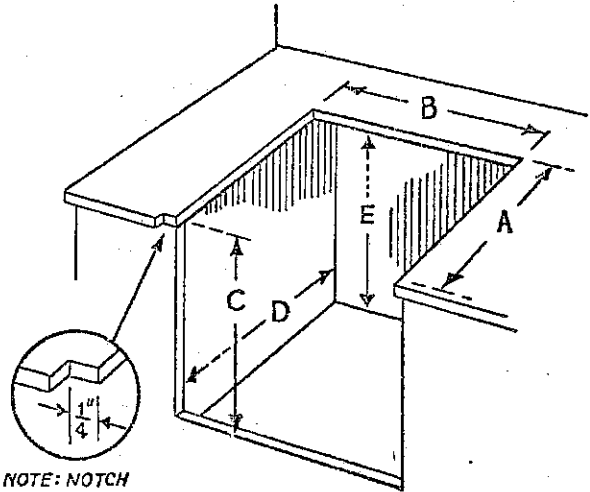
DIMENSIONS:	Inches (cm)	Wide	Deep	High
Top Burner Area	21	(53.5)	18	(45.5)
Oven	16	(40.5)	13	(33.0) 7.3 (18.5)
Broiler	16	(40.5)	13	(33.0) 3.5 (9.0)
Counter Cutout (640)	22	(56.0)	23	(70.0) 23.5 (71.5)
Counter Cutout (642)	20.8	(53.0)	19.1	(48.5) 19.8 (50.5)

SHIPPING WEIGHT: 70 lb. (32 Kg.); 7 cu. ft. (0.2 cu. meter)

## INSTALLATION

Before mounting your stove, review the safety precautions listed in Section 3 of this manual. Installation should be made in accordance with applicable sections of NFPA Code No. 302 which are reproduced elsewhere. Copies of the code may be obtained from - National Fire Protection Association, 470 Atlantic Avenue, Boston, Massachusetts, 02210 at \$2.00 each. Select a location for the stove which permits adequate ventilation yet is sheltered from drafts or other conditions which may cause a burner to become extinguished. Keep in mind that the greatest danger in liquified gas stoves is the collection of unburned gas. The gimbaled Model 640 stoves are designed to be mounted facing athwartships with enough room for the stove bottom to swing back 12 1/2 inches and forward 13 inches from its vertical location.

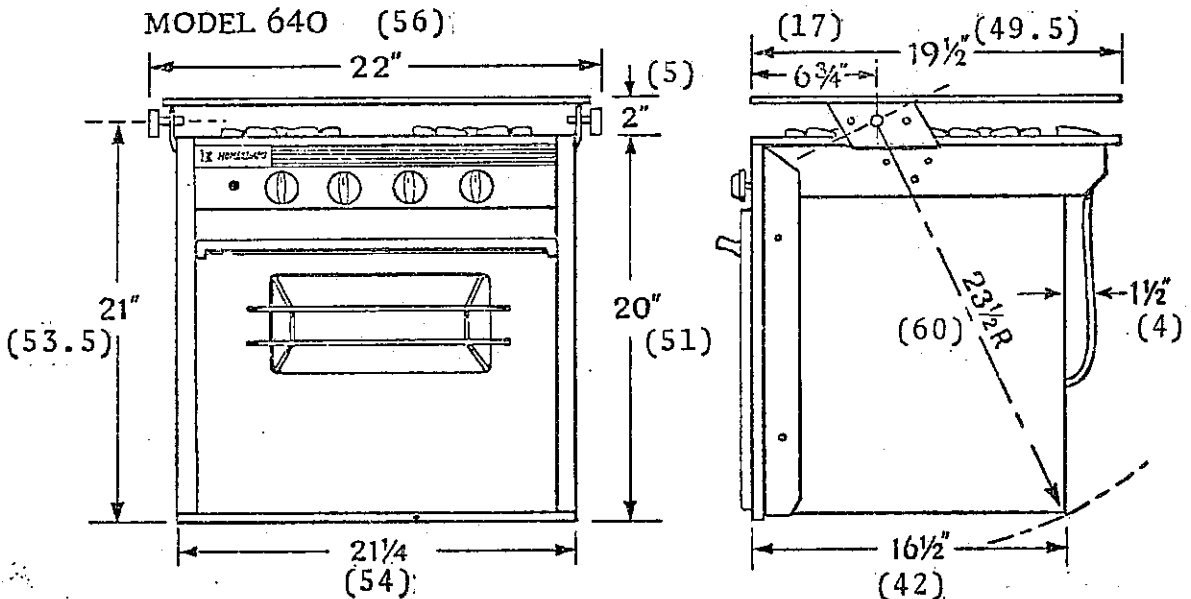
**CUTOUT** Prepare the counter to receive the stove as shown in the figure. The cutout must be lined with fireproof material for safety and to prevent pressure differentials from communicating through cabinetry into the stove. The dimensions shown for the Model 640 provide clearance for the stove to swing 45° either side of vertical.



NOTE: NOTCH OMITTED WHEN NO OVERHANG IS USED.

CUTOUT DIMENSIONS Inches (cm)

	A	B	C	D	E
Model 640	23 (70)	22 (67)	23.5 (72)	30 (91)	25 (76)
Model 642	19.1 (58)	20.8 (63)	19.8 (60)	19.1 (58)	19.8 (60)



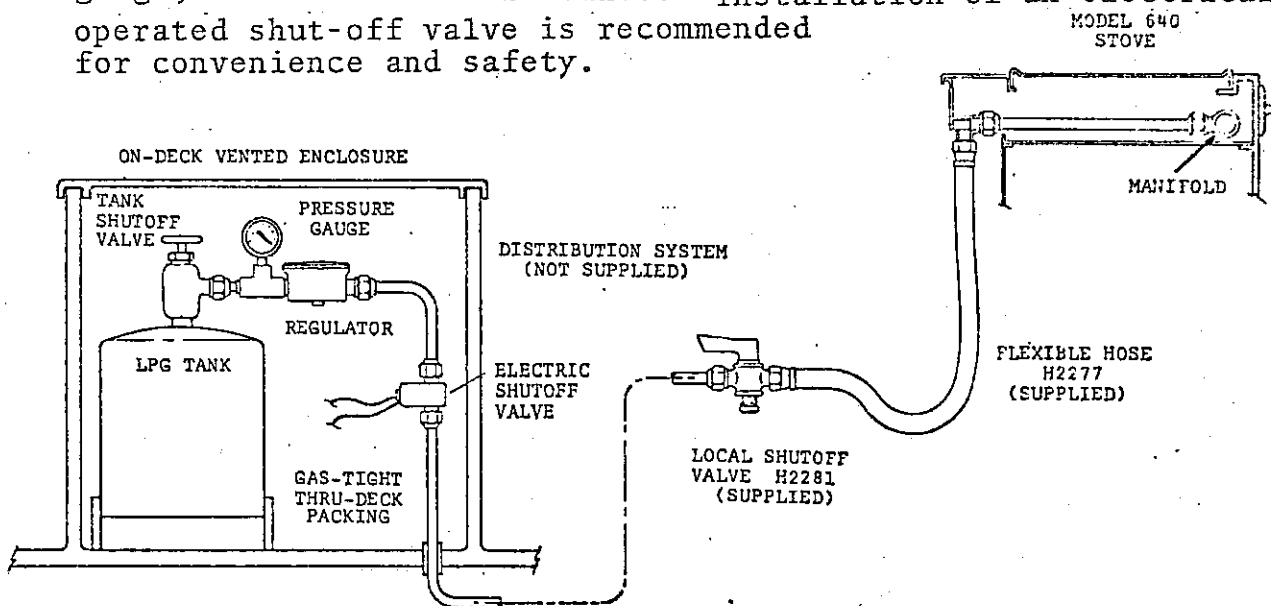
MOUNTING MODEL 640 Mount the two gimbal pins supplied to the side of the cutout at the highest possible location and 7 inches behind the edge of the counter with the two screws in a horizontal plane. Remove one pin and temporarily tape it into the rear hole of its gimbal bracket. Before mounting the stove it is usually easier to attach the flexible hose as described below. Mount the stove on the mounted pin and block up the unsupported side. Remount the second pivot using the forward hole of the bracket for access to the forward screw of the pivot.

Determine the location of the local shut-off valve by holding the flexible hose in different positions and swinging the stove from one extreme to the other. Select a location which allows free motion, and which is accessible from the front of the stove. Mount the local gas shut-off valve at this point and attach the flexible hose to the valve.

MOUNTING MODEL 642 Prepare the counter as described on Page 2-1. If the countertop has an overhang, the notch shown in the detail will be necessary. A slight recess in the countertop may be required to allow the trim strip to lie flush in the area of the sea rail brackets.

Locate the gas service line at the back of the cutout 1 1/2 inches from the left and 2 1/4 inches from the top. The line will extend into the stove to connect to the manifold at the left front. Slide the stove into the cutout and secure with 4 screws through the mounting recesses located to the left and right of the stove top in the trim strip.

FUELING Connect the stove to the gas supply using good plumbing practices. The supply line should be 3/8 inch outside diameter copper tubing with SAE 45 degree flare fittings. Be sure to include a regulator (10 inches water column), pressure gauge, and tank shut-off valve. Installation of an electrically operated shut-off valve is recommended for convenience and safety.



# EXCERPTS 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.

(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 line.

(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 semienclosures and equipment so placed shall be protected 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 the bottom by a pipe of at least  $\frac{1}{2}$  inch I.D., led outboard without pucks 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 non-abrasive 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.

## OPERATION

### PREPARATION

Before operating the stove, review the safety precautions listed elsewhere in this manual.

The Homestrand Model 640 stove is normally installed with a valve located at the propane tank and another valve located in the vicinity of the stove. To operate the stove the supply must be turned ON both at the tank and at the stove. The local shut-off valve is turned ON by placing the handle in line with the tubing.

### TOP BURNERS

Push the appropriate top burner control in and turn one quarter turn counter-clockwise to full flame position. Wait three seconds, and push the spark lighter button located to the left of the burner controls. This device produces a spark where a normal stove would have a pilot light. It may take several attempts for the lighter to ignite the gas, however, once lit the burner will operate in the normal manner. Adjust the flame to the desired height by rotating the knob clockwise for less heat and counter-clockwise for more heat. To shut off the burner return the control to the vertical OFF position. Be sure that the knob clicks into the detent to prevent vibration from opening it.

### OVEN

The Model 640 oven control operates the same as a normal oven except that the pilot is normally kept OFF for safety purposes by placing the oven control in the vertical PILOT OFF position. Before using the oven, light the pilot by pushing the oven control in and turning it counter-clockwise approximately 10 degrees. Release the knob into the second detent position marked OFF. Open the oven and light the pilot located to the right of the main burner assembly. The pilot will remain lit until the knob is returned to the vertical PILOT OFF position. The oven may now be operated in the normal way by pushing the knob in and rotating it counter-clockwise to the desired temperature. The oven control has a heat sensor which will not allow main burner operation unless the pilot is operating.

If the oven doesn't light, return the knob to the OFF position, open the oven and relight the pilot. The oven may be

turned off with the pilot remaining lit by rotating the control clockwise to the first detent position (OFF). When the oven is no longer required the controls should be returned to the vertical PILOT OFF position.

#### SHUT DOWN

When the stove is not to be used for a period, the remote fuel shut-off valve located at the tank must be closed to prevent gas leakage in the event of a break in the fuel supply line. The local shut-off valve at the stove may normally be left in the ON position.

#### CLEANING

The Model 640 series stove tops are made from corrosion resistant stainless steel and only require an occasional cleaning with a damp cloth and mild cleaning aids. If more extensive cleaning is required the stove top may be removed by lifting the small tab located at the front center of the stove top and lifting the entire top off the stove. The burner grates may be removed by lifting the grate clip tabs located in the burner cutouts. To remount the grate, hook the round part of the grate clips over the grate, place it in the burner recess and push on the center of the clip until it snaps over the lip of the burner cutout.

To remount the stove top, hook the two small tabs at the rear into the cutouts, lower the stove top into place and push the locking tab down.

The oven interior is treated with a constant-clean finish which is designed to slowly oxidize normal spillovers over a period of time. In case of a major spill or excessive buildup, the oven should be cleaned using a nylon brush or damp cloth or sponge. Do not use steel wool or caustic cleaners as they will reduce the cleaning ability of the finish.

#### IN CASE OF ACCIDENT

If for any reason you must shut down the stove and cannot reach the burner controls, or if a leak has developed in the gas supply lines, immediately close the local valve and the remote tank shut-off valve. On installations using electrically operated remote valves at the supply tank it is also possible to shut down the gas system by removing power from the boat.

Grease fires should be extinguished by smothering them (putting a lid over the fry pan for example), or by using baking soda or a Class B fire extinguisher. Do not try to put out a grease fire with water.

## SAFETY PRECAUTIONS

Liquified petroleum gas LPG is a highly flammable gas which is heavier than air. This means that any escaping gas tends to flow downward, and collect in the bilges where it cannot escape. It is this reason which makes it very important to observe the following safety precautions in installation, operation, and maintenance of the Model 640 series.

1. The remote gas supply must be located above decks in an isolated enclosure, vented at the bottom so that any leaks will flow overboard, and not below decks.
2. A manual or automatic shut-off valve must be installed at the tank so that the gas supply can be shut off when the stove is not in use, or in case a leak should develop. An electrically operated solenoid tank shut-off valve with the control at the stove is recommended because the convenience will make proper use more likely.
3. All plumbing and fixtures used in the distribution system must be of high quality material, and installed so as to prevent accidental damage, corrosion, and fatigue, and yet allow periodic inspection.
4. A second gas shut-off valve must be installed in the vicinity of the stove so that the gas may be shut off immediately if an accident should occur in the vicinity of the stove. This valve is provided with each Model 640 series stove.
5. The flexible connection between the gas distribution line and gimballed stoves (Model 640) must be installed in such a way that it does not abrade or catch throughout the permissible swing of the stove.
6. The stove must never be operated unattended because of the danger of a burner becoming extinguished by a cooking spillover or a gust of wind. The resulting escaping gas will quickly fill up the boat, and may eventually be ignited by other stove burners or a spark.
7. The oven pilot light must never be lit except just prior to use. The oven must be turned completely OFF when not in use by rotating the control past the first detent position to PILOT OFF.
8. Periodic visual inspection and leak tests must be made of all gas carrying components of the system. (See the Maintenance Section) In particular, the flexible gas hose should be removed and checked for cracks and abrasion, and all valves must be tested.



## MAINTENANCE

Due to the nature of liquified petroleum gas fuel (LPG), it is important to keep all components of your Model 640 series stove in good condition. You should inspect the fuel supply system at least every two weeks by the following test.

### GAS DISTRIBUTION SYSTEM INTEGRITY TEST

1. Close all stove valves.
2. Open the local shut-off valve and the electric shut-off valve if installed.
3. Open the tank valve, and note the reading on the pressure gauge.
4. Close the tank valve.
5. The gauge should remain constant for at least 10 minutes.

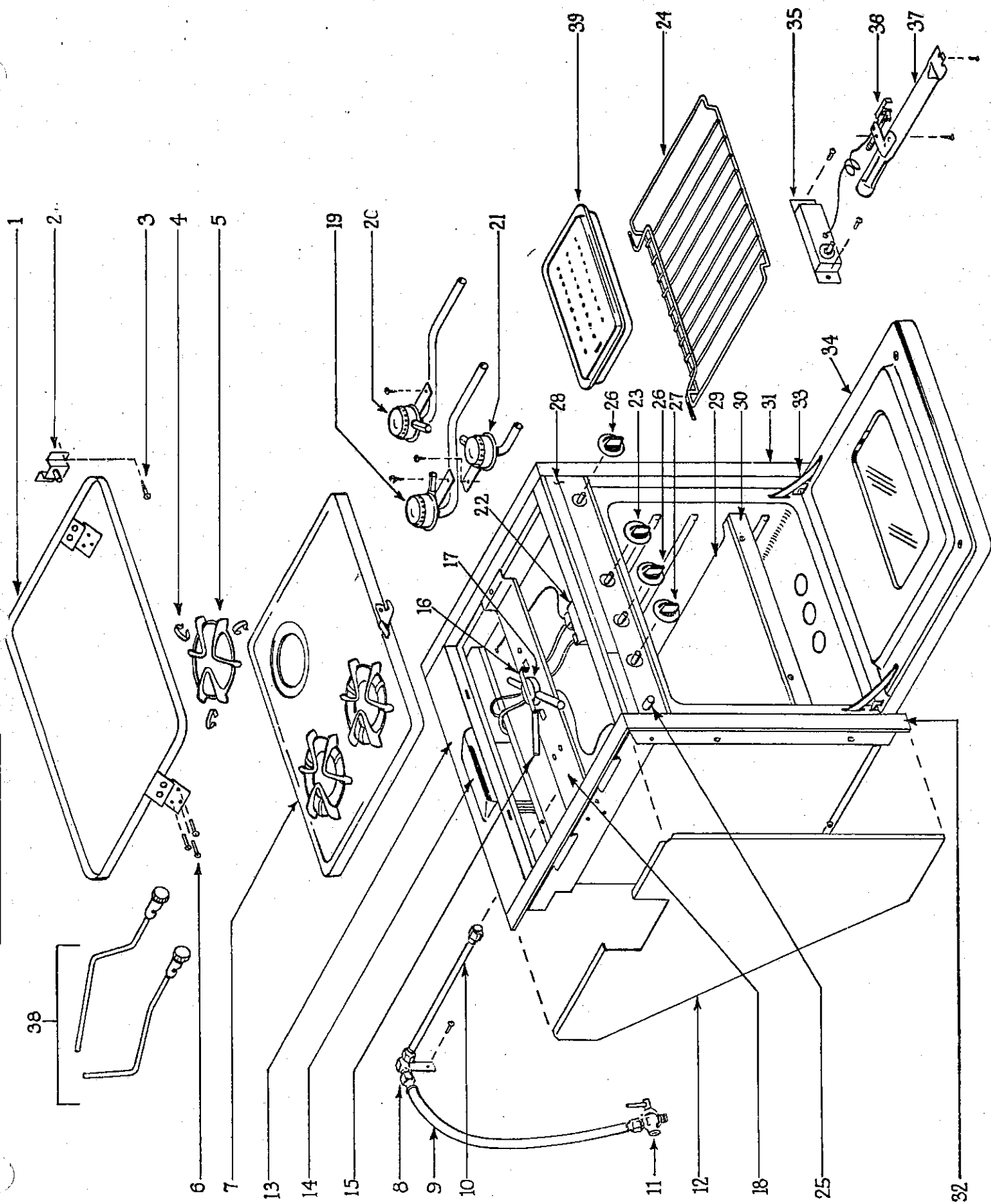
All components of the gas system should be inspected periodically for unsafe conditions.

The following should be specifically checked for.

1. Dents, bulging, excessive corrosion, cracked fittings, or other signs of weakening in the gas container.
2. Corrosion, pitting, nicks, pinches, abrasions or kinking of the distribution line.
3. Fraying, abrasion or soft spots in the flexible hose connections.
4. Loose fittings, unsecured fuel tank or loose distribution line.

ITEM NO	DESCRIPTION	PART NO	QUANTITY/MODEL			
			640	641	642	643
1	SEA RAIL	H-2246	1	1	1	1
2	GIMBAL BRACKET	H-1994	2	2	-	-
3	SCREW	F-4216	4	4	-	-
4	GRATE CLIP	H-1018-4	9	9	9	9
5	GRATE	H-2432	3	3	3	3
6	SCREW	F-4212	6	6	6	6
7	TOP PAN	H-2433	1	1	1	1
8	ELBOW UNION	H-2276	1	1	-	-
9	FLEX HOSE	H-2277	1	1	-	-
10	COPPER TUBING	H-2272	1	1	-	-
11	MANUAL SHUT OFF VALVE	H-2281	1	1	1	1
12	SIDE PANEL L.H.	H-2255-1	1	1	-	-
12	SIDE PANEL R.H.	H-2255-2	1	1	-	-
13	REAR FRAME TRIM	H-2437	1	1	1	1
14	VENT COVER	H-2436	1	1	1	1
15	SPARK TUBE	H-2444	3	3	3	3
16	SPARK BRACKET	H-2438	1	1	1	1
17	SPARK ELECTRODE	H-2435	1	1	1	1
18	TOP BURNER SUPPORT BRKT.	H-2434	1	1	1	1
19	REAR BURNER L.H.	H-2396	1	1	1	1
20	REAR BURNER R.H.	H-2398	1	1	1	1
21	FRONT BURNER	H-2397	1	1	1	1
22	MANIFOLD	H-2443	1	1	1	1
23	CONTROL KNOB OVEN	H-2394	1	1	1	1
24	OVEN RACK	H-2439	1	1	1	1
25	PIEZOELECTRIC LIGHTER	H-2375	1	1	1	1
26	CONTROL KNOB	H-2392	2	2	2	2
27	CONTROL KNOB FRONT	H-2393	1	1	1	1
28	CONTROL PANEL	H-2447	1	1	1	1
29	OVEN BOTTOM	H-2445	1	1	1	1
30	OVEN BURNER SUPPORT	H-2425	1	1	1	1
31	TRIM FRAME RIGHT	H-2424	1	1	1	1
32	TRIM FRAME LEFT	H-2423	1	1	1	1
33	SHOULDER HINGE	H-2442	2	2	2	2
34	OVEN DOOR	H-2370	1	-	1	-
34	OVEN DOOR	H-2371	-	1	-	1
35	OVEN SAFETY VALVE	H-2431	1	1	1	1
36	OVEN PILOT W/SCREW	H-2395	1	1	1	1
37	OVEN BURNER	H-2440	1	1	1	1
38	POT HOLDER SET	H-2305	1	1	1	1
39	BROILER PAN	H-2376	1	1	1	1

HOMESTRAND  
MODEL  
6-40



KENYON MARINE  
#8 HERITAGE PARK  
CLINTON, CT. 06413  
TEL: 860-664-4906 FAX: 860-664-4907