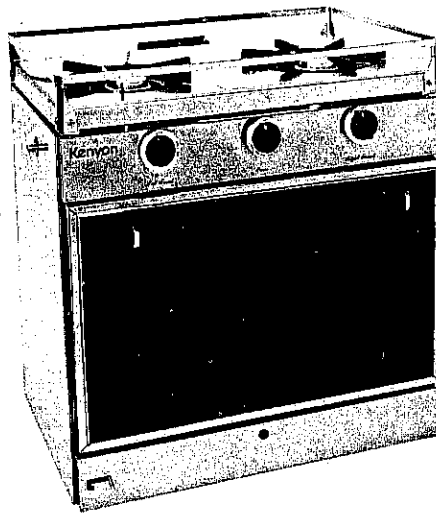


## PROPANE STOVE MODEL 540LP, MODEL 545LP OPERATING INSTRUCTIONS and PARTS LIST



### INTRODUCTION

The Kenyon Model 540LP/545LP series ranges are compact, gimbal mounted propane fueled stoves with integral ovens. The 540LP has two top burners, while the Model 545LP has three. The stoves are designed to operate from an external source of propane (liquefied petroleum gas). Standard equipment includes all mounting hardware and flexible fuel connecting hose. These ranges are also equipped with

a built-in gimbal lock. The cook top is entirely surrounded by a strong sea rail to help keep cooking utensils secure. Kenyon stoves have been engineered exclusively for marine use. The design considerations and the materials used are dictated by the requirement for a reliable, long life, low maintenance stove, operating in a salt atmosphere.

### SPECIFICATIONS

Fuel: Propane or Liquefied Petroleum Gas.  
 Fuel Supply Pressure: Maximum 12 inches of water column (.43 psi).  
 Maximum Fuel Demand = 7 cubic feet per hour (1.75 ft<sup>3</sup> or .2 lb per burner per hr.).  
 Burner Capacity = 4,500 BTU / Hr.  
 Oven = 7,000 BTU / Hr.

	540LP	545LP
TOP AREA:	12¼ 20½	15½ Deep 20½ Wide
OVEN CAPACITY:	11¼ 15 9½	14¾ Deep 15 Wide 9½ High
RANGE OUTLINE:	16½ 22 20⅞	19½ Deep 22 Wide 20⅞ High
SHIPPING WEIGHT:	60 7.5	65 Lb. 7.5 Cu. Ft.

PLEASE KEEP THIS MANUAL ABOARD YOUR BOAT

## THEORY OF OPERATION

The range is fueled by liquefied petroleum gas (L.P.G.) from a remote tank which has a manual shutoff valve. There may be an electrically operated solenoid in the supply line between the tank and the low pressure (max. 12 inches of water column or .43 PSI) regulator. This solenoid is turned on by a switch at the remote panel, which enables fuel to flow from the supply tank to the burner.

The oven burner is operated basically the same as the top burners, except there is a two stage pilot along side the oven burner. The primary pilot is

ignited by a Match. When the oven thermostat calls for heat the secondary (larger pilot) is activated which heats up a thermocouple and allows gas to flow to the oven burner. The pilot will then light the oven burner. As the temperature of the oven reaches desired heat the oven burner will shut down. When the temperature drops below the desired heat the burner will ignite automatically. This ON OFF cycle of the oven burner is maintained by a temperature probe, which is connected to the oven thermostat (control knob). When all knobs (on the control panel) are switched to "OFF" the fuel supply is shut down to the pilot and burners.



## INSTALLATION

### GENERAL

It is important that the properties of LPG (liquefied 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) it liquefies, 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 (such as the bilge of a boat). This property makes propane extremely dangerous if released inside a boat. Installation should be done **ONLY** by

qualified personnel and leak tests **MUST** be performed often. Stoves **MUST** be operated in a safe manner at all times.

Select a location for your Model 500 Series stove which permits adequate ventilation and yet which is sheltered from excessive exposure to wind or rough handling. The ranges are normally mounted facing athwartships in a counter recess. Installation should be in accordance with applicable sections of NFPA Code, No. 302 available from National Fire Protection Association, 470 Atlantic Avenue, Boston, Massachusetts, 02210 and/or ABYC Standards A1-1978, marine LPG systems and A-3-70. Galley stoves available from ABYC, P.O. Box 806, Amityville, N.Y. 11701. The stove must be permanently and securely fastened, and surrounding materials must be protected from fire.

### CUTOUT

Prepare the counter as shown in the Figure. The dimensions shown in the accompanying table are determined from the dimensions of the range with an allowance for a 45° swing either side of vertical. Note that at 45°, the rear edge of the stove extends back 12 inches from the vertical position and the forward edge extends 13 inches forward of the vertical position. The cutout must be sheathed with fire-proof material for safety, ease of cleaning, and to prevent pressure differentials from communicating through cabinetry into the stove.

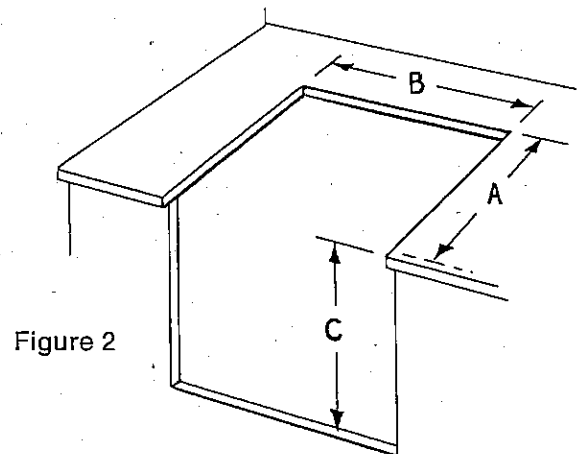
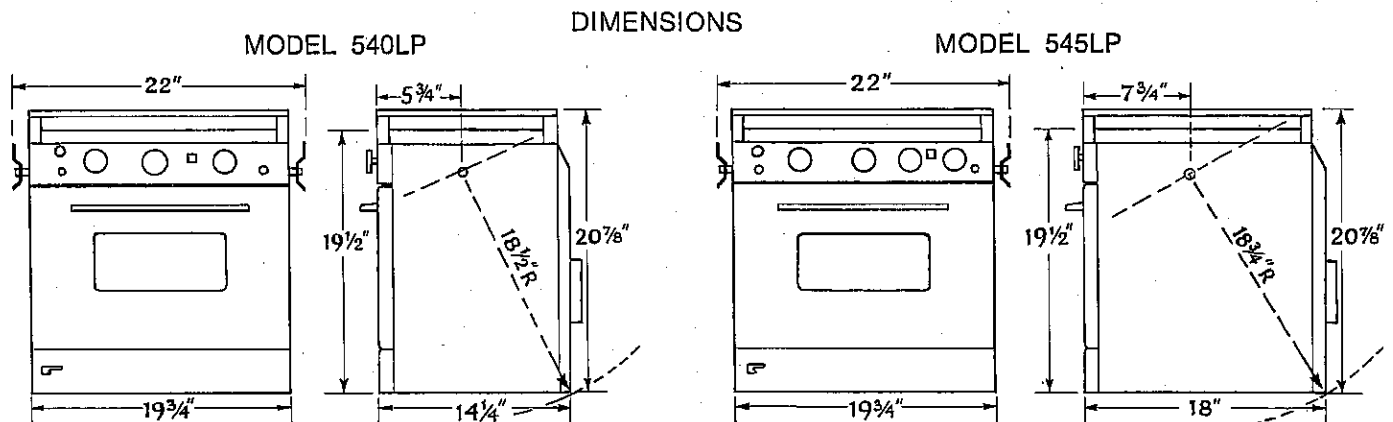


Figure 2

	A	B	C
Model 540LP	20"	22"	22"
Model 545LP	24"	22"	23"



## LPG PLUMBING SYSTEM INSTALLATION

The recommendations and requirements of ABYC Standard A-1 should be read and understood before making a system installation.

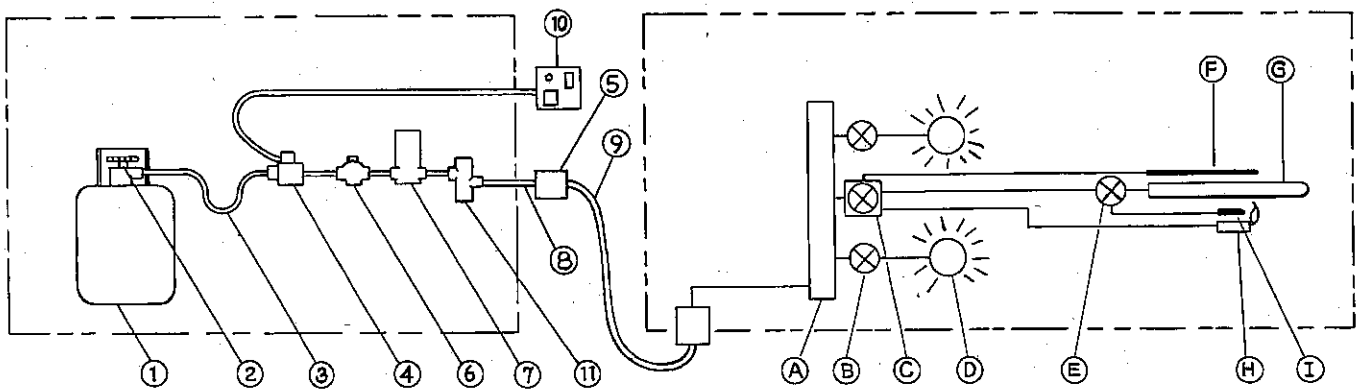
The recommended liquefied petroleum gas system for the 540LP/545LP range consists of an LPG storage cylinder (1), with a manual shutoff valve (2), and 18 inch high pressure pigtail with flow protector (3), an electric shutoff valve (4), bulkhead fitting (5), a pressure regulator (6) to reduce the pressure to the maximum 12 inches of water column, an over pressure protector (7), and a leakage tester (11). All of this equipment must be securely mounted in a manner and location such that

any escaping vapor will flow overboard and cannot reach the interior of the boat.

Select the proper cylinder for your installation. Tanks are available with *vertical* outlets and *horizontal* outlets. Use of the wrong type is DANGEROUS. The piping system extends from the enclosure to the range and must be 1/4 inch minimum (3/8 recommended) continuous copper tubing (without fittings) from enclosure to bulkhead fitting. This should be secured at regular intervals to prevent vibration. The tubing must be protected from abrasion, flexure and pinching, and all bulkhead feed-thrus must be sealed.

### CAUTION

INSTALLATION MUST BE CARRIED OUT ONLY BY QUALIFIED PERSONNEL!



SUPPLY SCHEMATIC

ITEM	NAME
1	Cylinder
2	Manual Shutoff Valve
3	Pigtail w/Flow Protector
4	Elec. Shutoff Valve
5	Bulkhead Fitting
6	Pressure Regulator
7	Over Pressure Protector
8	Plumbing System
9	Flexible Hose
10	Remote Panel
11	Manual Leak Detector

RANGE SCHEMATIC

ITEM	NAME
A	Manifold
B	Burner Valve
C	Oven Thermostat
D	Top Burner
E	Flow Control
F	Temperature Control Sensor
G	Oven Burner
H	Oven Pilot
I	Oven Pilot Sensor

Install this Caution Plaque (supplied with range) in the vicinity of cylinder(s).

### CAUTION

- 1. THIS SYSTEM IS DESIGNED FOR USE WITH LPG, LIQUEFIED PETROLEUM GAS ONLY. DO NOT CONNECT CNG, COMPRESSED NATURAL GAS TO THIS SYSTEM.**
2. Keep cylinder valves closed when boat is unattended. Close them immediately in any emergency. It is recommended that cylinder valves be closed when appliances are not in use.
3. Be sure all appliance valves are closed before opening cylinder valve.
4. Test for system leakage each time the cylinder supply valve is opened for appliance use. Close all appliance valves. Open cylinder supply valves, manual, electrical and manual valve at appliance. Depress red button on top of leak detector fully down and hold for one minute minimum. Test all connections between the leak detector and the tank(s) with leak detecting fluid. If any leakage is evidenced by a bubble in leak detector, check system with a soapy water or leak detecting fluid and repair before operating system.
5. Test system for leakage at least every two weeks and after any emergency in accordance with paragraph (4) above. Repeat the test for a multi-cylinder system.

**NEVER USE FLAME TO CHECK FOR LEAKS**

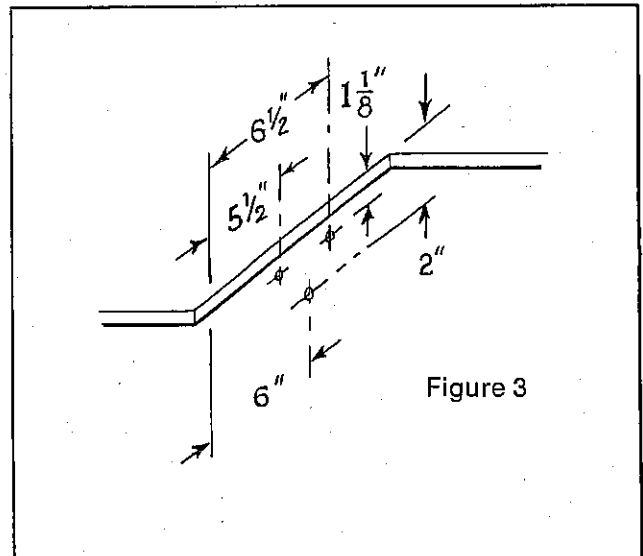
NOTE: This sign shall be installed in the vicinity of cylinder and shall be plainly visible.

## MOUNTING

Attach the gimbal brackets to the range using "E" rings P/N 063-009. Mounting holes are normally above the gimbal pivot pin so the range hangs from mounting screws.

Block the range into counter cutout (See Fig. 2 on page 3) at the desired position. Locate the mounting holes in the gimbal bracket and drill a  $\frac{1}{8}$ " pilot approx. 1" deep. (See Fig. 3). Secure the brackets to the counter using (6) #14 x  $1\frac{1}{4}$ " long wood screws P/N 069-301.

The range may also be mounted with the range top even with or above the counter top by mounting the gimbal bracket so that the mounting screw holes are below the gimbal pins. In this case mount the brackets to the counter with the gimbal pin hole  $2\frac{1}{2}$ " below the desired location of the range top. Then mount the range onto the brackets and insert "E" rings.



## FINAL HOOKUP AND LEAK TEST

Once the range is mounted, connect the gimbal hose to the Bulkhead fitting.

Be sure all sources of ignition are turned off on the boat. Turn the gas on at the tank (manual valve). Turn on the electric shutoff valve (if used). Check

the system with Fluid Leak Detector and the Manual Leak Detector, Item #11, page 4. (Leak test may also be conducted using a pressure decay test with a pressure gauge installed at the tank). If a leak is detected, do not operate system until the source is found and corrected.



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.**

## EXCERPTS 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 gimbaled 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.





EXCERPTS FROM NFPA NO. 302-1972

**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 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 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.

H2286 Rev. A

## STOVE OPERATION

### PREPARATION

Before operating the range, review the safety precautions. (See Installation Instructions and LPG Plumbing System Installation).

The Kenyon Model 540LP/545LP is normally installed with both a manual and electric valve located at the propane tank. To operate the range the supply must be turned ON at the tank and at the range and with the electric gas control activated.

## LIGHTING 540/545LP RANGE

### TOP BURNERS

Turn on the manual valve at the tank.

Turn on electric shutoff valve (if used).

Push in and turn the burner control knob all the way to the left.

Light Burner with a match.

Adjust flame to desired height.

### OVEN BURNER

Turn on electric shutoff valve (if used).

Push in and turn the oven control knob (to the left) to the desired temperature.

Immediately light Oven Pilot with a match.

After 10-15 seconds, oven burner will light. When set temperature is reached, burner will drop back to low flame, and then will go out. As the oven cools down, the burner will relight to maintain the desired temperature.

## CAUTION

NEVER LEAVE AN OPERATING STOVE UN-ATTENDED. TEST SYSTEM FOR LEAKS EACH TIME THE CYLINDER SUPPLY VALVES ARE OPENED OR EVERY (2) WEEKS WHICHEVER OCCURS FIRST.

## TROUBLESHOOTING

If range will not light check the following:

- A. No fuel: (Replace or refill fuel cylinder)
- B. Manual shutoff valve at the tank must be open.
- C. Kinks or sharp bends in fuel line and gimbal hose.

D. Switch for electric shutoff valve must be on.

E. High pressure detector, item 7, page 4, has shutoff gas supply.

NOTE: If red button is extended there is a high pressure leak in the regulator and regulator MUST be replaced.

## FLAME ADJUSTMENT

To adjust the top burner flame, rotate the metal clip on the air intake portion of the burner (where the burner and burner valve connect).

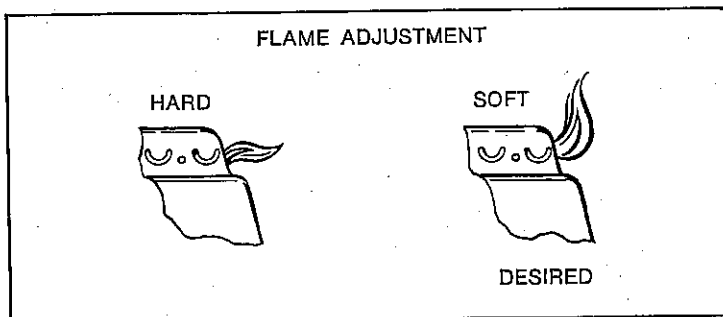
To adjust the oven burner flame, loosen the screw on the air adjusting clip (rear portion of burner) and

slide the clip forward or back then re-tightening the screw.

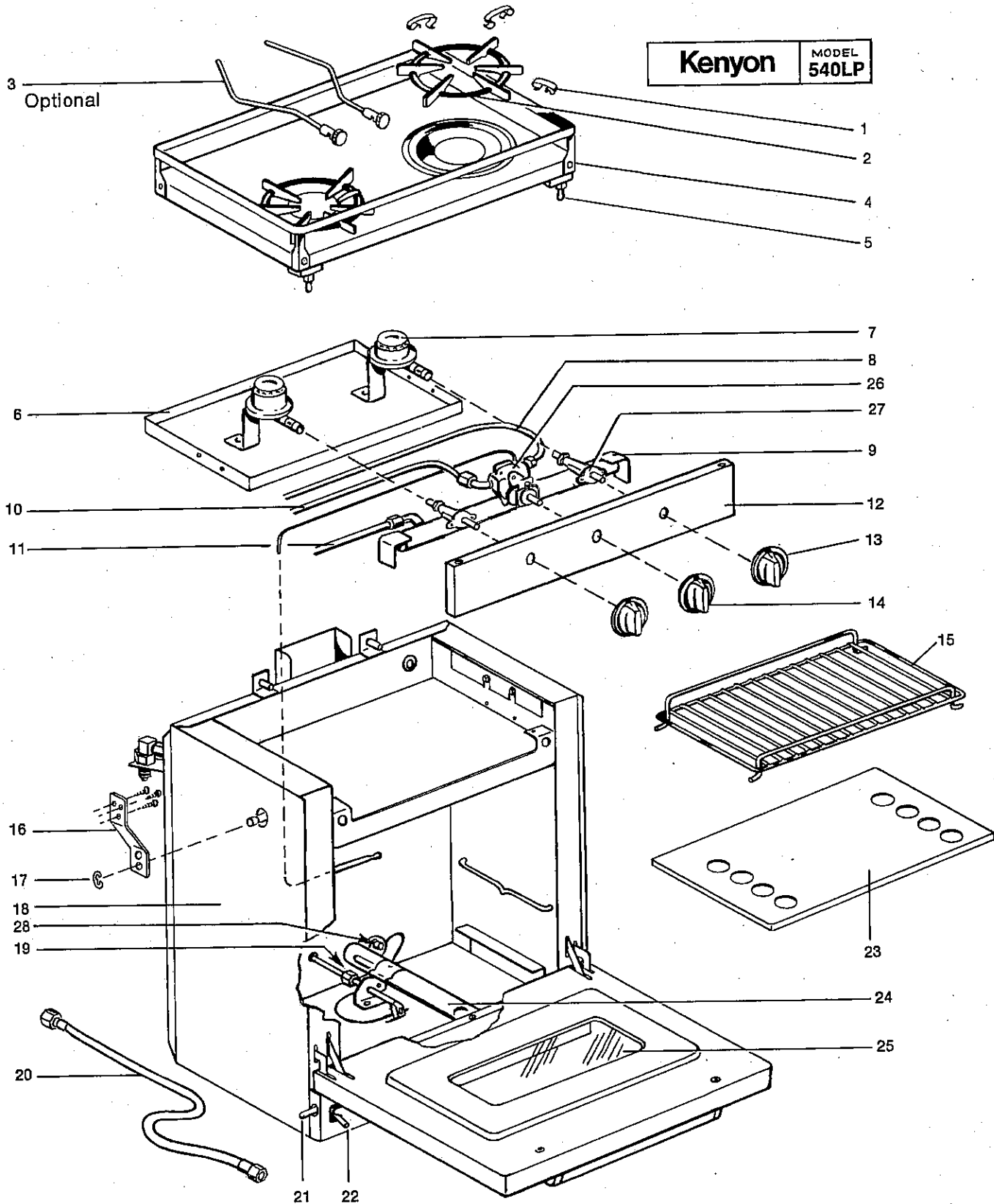
A flame with too much air will be a hard flame.

A flame with not enough air will have yellow tips.

A soft flame without yellow tips is desired.



# Kenyon



**Kenyon** MODEL 540LP

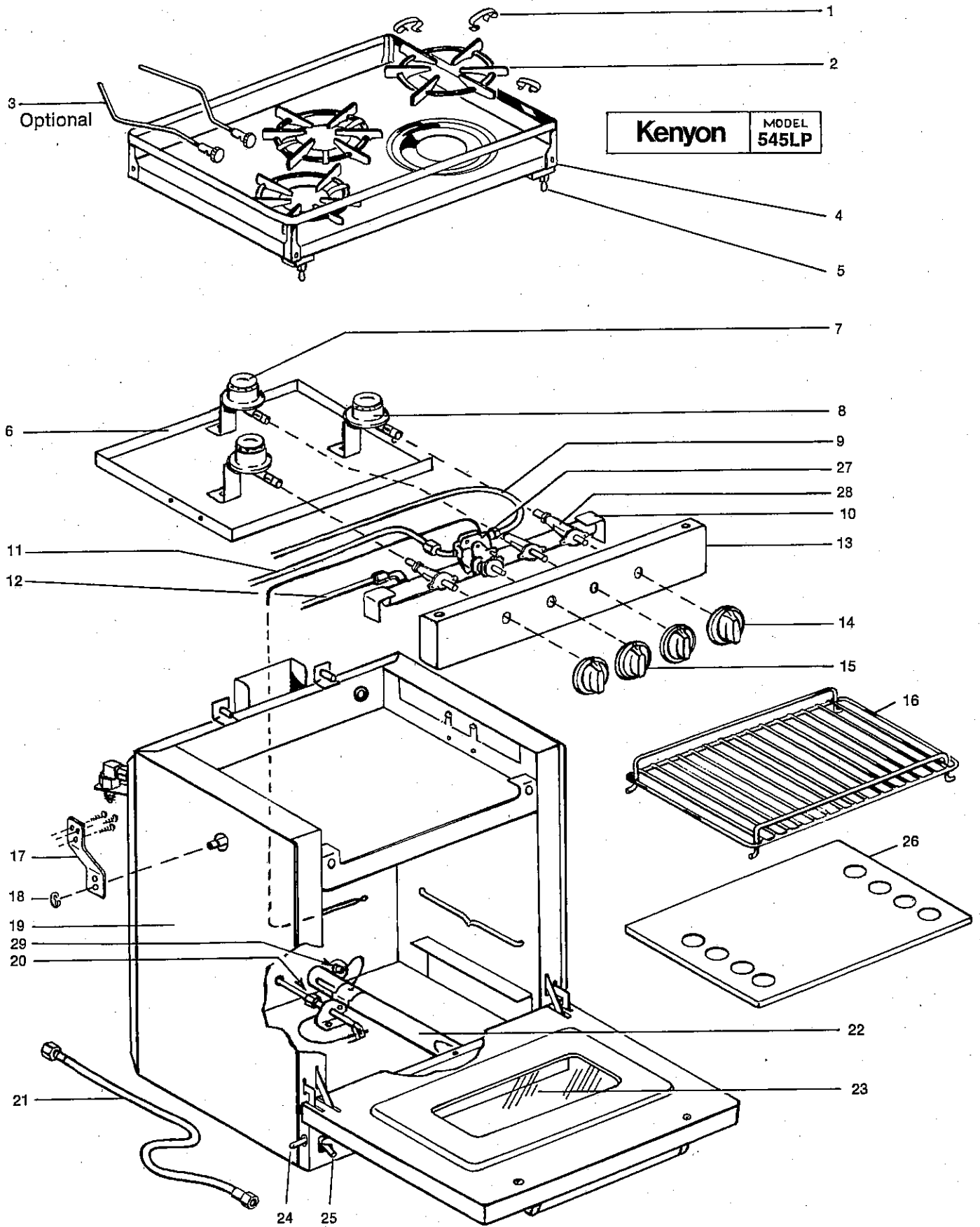


## STOVE PARTS LIST

### MODEL 540LP

ITEM	DESCRIPTION	QTY.	PART NO.
1	Grate Clip .....	6	H-1018-4
2	Grate .....	2	H-2164
Optional — 3	Right Utensil Holder .....	1	H-2378
	Left Utensil Holder .....	1	H-2377
4	Range Top Assembly, Coppertone ....	1	240259
	Range Top Assembly, Stainless Steel	1	240240
5	Range Top Hold Down Stud .....	2	144007
6	Drip Pan Assembly .....	1	240243
7	Front Burner .....	2	141230
8	Oven Pilot Feed Line .....	1	141241
9	Manifold Assembly .....	1	240244
10	Oven Burner Feed Line .....	1	141243
11	Main Inlet Feed Line .....	1	141242
12	Control Panel Assembly .....	1	240236
13	Top Burner Knob .....	2	14212910
14	Oven Burner Knob .....	1	14212920
15	Oven Grate .....	1	142003
16	Gimbal Bracket .....	2	141081
17	"E" Ring .....	2	063009
18	Left Side Panel .....	1	142240
	Right Side Panel .....	1	142241
19	Oven Pilot .....	1	141226
20	Hose Assembly .....	1	240-207
21	Gimbal Lock Shaft .....	1	141113
22	Gimbal Lock Handle .....	1	141114
23	Heat Deflector .....	1	240204
24	Oven Burner .....	1	141228
25	Oven Window .....	1	H-2160
26	Oven Thermostat .....	1	141225
27	Burner Valve .....	2	141103
28	Oven Flow Control Valve .....	1	141226

# Kenyon





## STOVE PARTS LIST

### MODEL 545LP

ITEM	DESCRIPTION	QTY.	PART NO.
1	Grate Clip .....	9	H-1018-4
2	Grate .....	3	H-2164
Optional — 3	Right Utensil Holder .....	1	H-2378
	Left Utensil Holder .....	1	H-2377
4	Range Top Assembly, Coppertone ....	1	240-152
	Range Top Assembly, Stainless Steel	1	240-258
5	Range Hold Down Stud .....	2	144007
6	Drip Pan Assembly .....	1	240254
7	Rear Burner .....	1	141231
8	Front Burner .....	2	141230
9	Oven Pilot Feed Line .....	1	141246
10	Manifold Assembly .....	1	240252
11	Oven Burner Feed Line .....	1	141245
12	Main Inlet Feed Line .....	1	141242
13	Control Panel Assembly .....	1	240193
14	Top Burner Knob .....	3	14212910
15	Oven Burner Knob .....	1	14212920
16	Oven Grate .....	1	H-2120
17	Gimbal Bracket .....	2	141081
18	"E" Ring .....	2	063009
19	Left Side .....	1	142108
	Right Side .....	1	142107
20	Oven Pilot .....	1	141226
21	Hose Assembly .....	1	240-207
22	Oven Burner .....	1	141228
23	Oven Window .....	1	H-2160
24	Gimbal Lock Shaft .....	1	141113
25	Gimbal Lock Handle .....	1	141114
26	Heat Deflector .....	1	240-205
27	Oven Thermostat .....	1	141225
28	Burner Valve .....	3	141103
29	Oven Flow Control Valve .....	1	141226

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