HOBART

SERVICE

LG FRYER SERIES

Customer Maintenance Manual

SPECIFICATION SHEETS

INSTALLATION / OPERATION MANUAL

ADDITIONAL RESOURCES

SERVICE MANUAL

HOBART SERVICE PARTS STORE

CATALOG OF REPLACEMENT PARTS

F48034

F R Y E R S

LG SERIES
FREE STANDING ENTRY LEVEL GAS FRYERS

Model LG300
Shown with caster accessories

SPECIFICATIONS

LG Series gas freestanding model fryers, Vulcan Model No. LG300, LG400, and LG500 available in 35-40, 45-50, and 65-70 lb. oil capacities with 90,000, 120,000, or 150,000 BTU's respectively. Stainless steel front top and reinforced door. Stainless steel fry tank with three, four or five heat exchanger tubes for maximum heat transfer. Large "V" shaped cold zone and 1¼" port ball valve. Includes twin fry baskets with plastic coated handles and drain extension. Behind the door snap action millivolt thermostat control adjust from 200° to 400°F

Overall Dimensions:
15½"w x 29¾"d x 34⅝"h working height – LG300, LG400
21"w x 29¾"d x 34⅝"h working height – LG500

CSA design certified. NSF listed.

SPECIFY TYPE OF GAS WHEN ORDERING

- ☐ Natural Gas
- ☐ Propane Gas

SPECIFY ALTITUDE

- ☐ Natural Gas for above 2,000 ft.
- ☐ Propane Gas for above 3,500 ft.

- ☐ **LG300** 35-40 lb. Capacity
- ☐ **LG400** 45-50 lb. Capacity
- ☐ **LG500** 65-70 lb. Capacity

STANDARD FEATURES

- ■ Stainless steel fry tank, 35-40, 45-50 and 65-70 lb. capacities.
- ■ Large cold zone area.
- ■ 1¼" full port ball type drain valve.
- ■ Stainless steel reinforced door.
- ■ G90 high grade galvanized non corrosive finish sides and back.
- ■ Door liner for added stability.
- ■ Set of four nickel plated adjustable legs.
- ■ Twin fry baskets with plastic coated handles.
- ■ 90,000, 120,000 and 150,000 BTU's/hr. input.
- ■ Behind the door snap action millivolt thermostat control adjusts from 200° to 400°F with standing pilot.
- ■ Millivolt System - Requires no electric hook-up.
- ■ Hi-limit shut-off protector shuts off gas combination valve and standing pilot.
- ■ Built in flue deflector.
- ■ Nickel plated tube rack.
- ■ Earth magnet to secure closed door.
- ■ Easily removable stainless steel basket hanger for cleaning.
- ■ Vulcan-Hart (Vulcan) warrants the LG Series gas fryer to be free of defects in materials and workmanship for a period of 1 year from the date of original installation.
- ■ Stainless steel fry tank has a five (5) year limited tank warranty. If during the first year only, the tank is found to have a leak and is verified by an authorized service agency, the entire LG Series fryer will be replaced.

ACCESSORIES (Packaged & Sold Separately)

- ☐ Casters 6" adjustable – 2 locking, 2 non-locking.
- ☐ Stainless steel tank cover – doubles as a work surface top.
- ☐ Connecting kit(s) – connect two fryers together (banking strip, brackets, and hardware).
- ☐ Single large basket:
  13"w x 13¼"d x 5½"h – LG300, LG400
  18½"w x 13¼"d x 6"h – LG500
- ☐ Extra set of twin baskets:
  6½"w x 13¼"d x 6"h – LG300, LG400
  9½"w x 13¼"d x 6"h – LG500
- ☐ FRYMATE-VX15 add-on Frymate™ Dump Station.
- ☐ 10" high stainless steel removable splash guard.
- ☐ Flexible gas hose with quick disconnect.

VULCAN
a division of ITW Food Equipment Group LLC
P.O. Box 696 ■ Louisville, KY 40201 ■ Toll-free: 1-800-814-2028 ■ Local: 502-778-2791 ■ Quote & Order Fax: 1-800-444-0602

LG SERIES
FREE STANDING ENTRY LEVEL GAS FRYERS

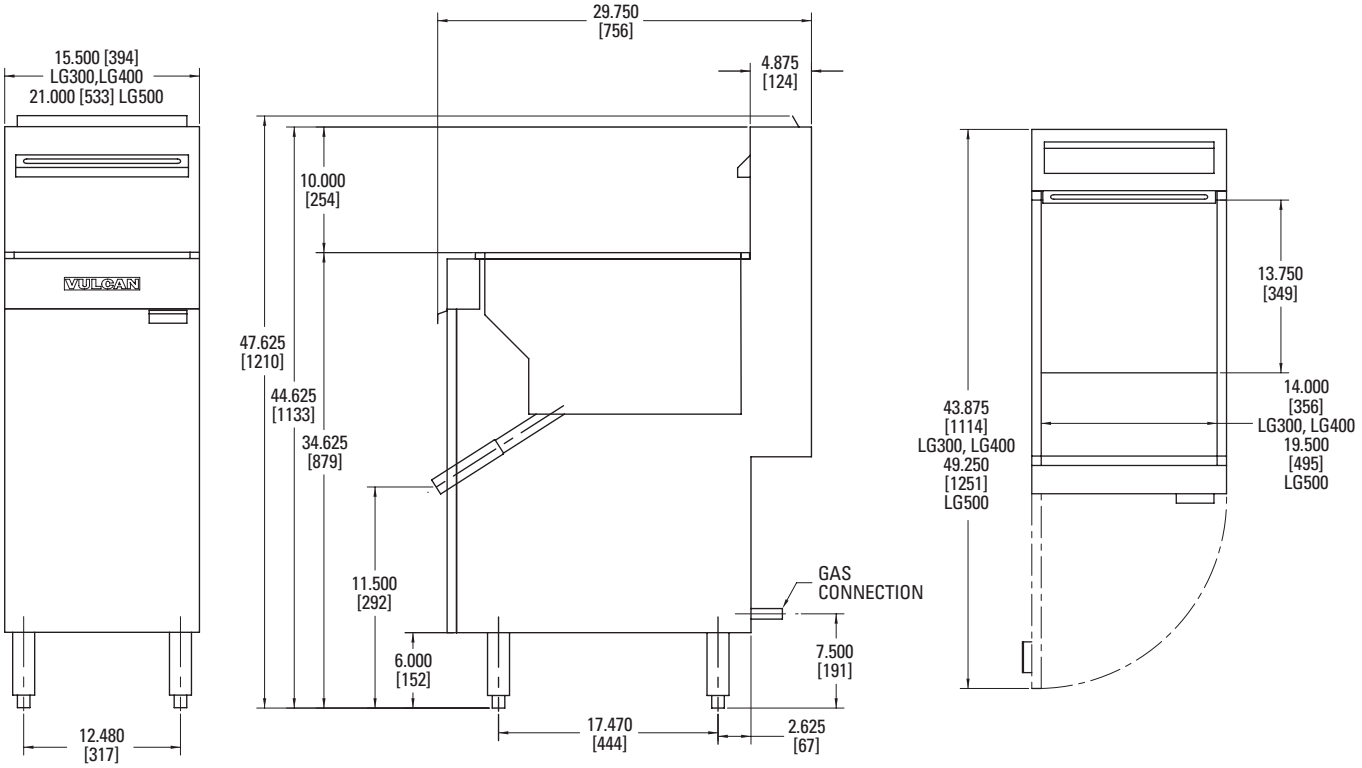
INSTALLATION INSTRUCTIONS

1. A combination valve with pressure regulator is provided with this unit.
   - Natural Gas
     Operating pressure – 4.0" W.C.
     Recommended supply pressure 7-9" W.C.
     Not to exceed 14" W.C. (1/2 PSI)
   - Propane Gas
     Operating pressure – 10.0" W.C.
     Recommended supply pressure 11-12" W.C.
     Not to exceed 14" W.C. (1/2 PSI)
2. An adequate ventilation system is required for Commercial Cooking Equipment. Information may be obtained by writing to the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269. When writing refer to NFPA No. 96.
3. All models require a 6" (152 mm) clearance at both sides and rear adjacent to combustible construction.
4. All models require a 16" (407 mm) minimum clearance to adjacent open top burner units.
5. This appliance is manufactured for commercial installation only and is not intended for home use.

SERVICE CONNECTIONS:

(P1) Both ½" NPT and ¾" NPT rear gas connections. You can remove the ¾" NPT fitting to access the ½" NPT connection.

NOTE: In line with its policy to continually improve its product, Vulcan reserves the right to change materials and specifications without notice.



Model	Width	Depth	Overall Height	Working Height	Tank Size	BTU/HR	Fry Comp. Capacity	Approx. Shipping Weight
LG300	15½"	29¾"	46⅝"	34⅝"	14" x 14"	90,000	35 - 40 lbs.	210 lbs. (95 kg)
LG400	15½"	29¾"	46⅝"	34⅝"	14" x 14"	120,000	45 - 50 lbs.	210 lbs. (95 kg)
LG500	21"	29¾"	46⅝"	34⅝"	19½" x 14"	150,000	65 - 70 lbs.	270 lbs. (122 kg)

This appliance is manufactured for commercial use only and is not intended for home use.

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DONE TO PERFECTION.

INSTALLATION & OPERATIONAL MANUAL

LG SERIES GAS FRYERS

MODELS:

LG300	ML-136528
LG400	ML-136622
LG500	ML-136643

For additional information on Vulcan-Hart or to locate an authorized parts and service provider in your area, visit our website at www.vulcanequipment.com

DIVISION OF ITW FOOD EQUIPMENT GROUP, LLC
WWW.VULCANEQUIPMENT.COM
3600 NORTH POINT BLVD.
BALTIMORE, MD 21222
F-32910 REV. O (9-15)

IMPORTANT FOR YOUR SAFETY

THIS MANUAL HAS BEEN PREPARED FOR PERSONNEL QUALIFIED TO INSTALL GAS EQUIPMENT, WHO SHOULD PERFORM THE INITIAL FIELD START-UP AND ADJUSTMENTS OF THE EQUIPMENT COVERED BY THIS MANUAL.

POST IN A PROMINENT LOCATION THE INSTRUCTIONS TO BE FOLLOWED IN THE EVENT THE SMELL OF GAS IS DETECTED. THIS INFORMATION CAN BE OBTAINED FROM THE LOCAL GAS SUPPLIER.

IMPORTANT

IN THE EVENT A GAS ORDOR IS DETECTED, SHUT DOWN UNITS AT THE MAIN SHUTOFF VALVE AND CONTACT THE LOCAL GAS COMPANY OR GAS SUPPLIER FOR SERVICE.

FOR YOUR SAFETY

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS OR LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

⚠ 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.

TABLE OF CONTENTS

INTRODUCTION

GENERAL

Vulcan Fryers are produced with quality workmanship and material. Proper installation, usage and maintenance will result in years of satisfactory performance.

Before installing the fryer, thoroughly read this manual and carefully follow all instruction.

This manual is applicable to model listed on the cover page. Procedures in this manual will apply to all models unless specified. Pictures and illustrations can be of any model unless the picture or illustration needs to be model specific.

ORDERING PARTS

To speed up your order, provide the model number, serial number, gas type, part needed, item part number (if known) and quantity needed.

FRYER CAPACITY				
MODEL	# of Heat Tubes	BTU/hr.	Width Inch (cm)	Shortening lbs. (kg)
LG300	3	90,000	15.5 (39)	35-40 (16-18)
LG400	4	120,000	15.5 (39)	45-50 (21-23)
LG500	5	150,000	21.0 (53)	65-70 (29-32)

UNPACKING

This fryer was inspected before leaving the factory. The carrier assumes full responsibility for the safe delivery upon acceptance of the shipment. Check for possible shipping damage immediately after receipt.

If the fryer is found to be damaged, complete the following steps:

1. Carrier must be notified within 5 business days of receipt.
2. Carrier's local terminal must be notified immediately upon discovery (note time, date, and who was spoken to), and follow up and confirm with written or electronic communication.
3. All original packing materials must be kept for inspection purposes.
4. The fryer cannot have been moved, installed, or modified.
5. Notify Vulcan Customer Service immediately at 800-814-2028.

Check that the following have been included:

- Crumb Rack
- Basket Hanger
- Adjustable Legs (4)
- Drain Pipe Extension
- Twin Fry Baskets (2)
- Manual and Warranty – Retain for future reference.

Do not use the door or its handle to lift the fryer.

INSTALLATION

Before installing the fryer, verify that the type of gas (natural or propane) agrees with the specifications on the fryer data plate, which is located on the inside of the door panel. Make sure the fryer is configured for the proper elevation.

Record your fryer model, device, and serial numbers for future reference in the space provided below. This information can be found on the fryer data plate.

Fryer Model No: _____

Device:_____

Serial No: _____

Clearances

- Minimum clearance from combustible construction:

  6” (15 cm) from the sides of the fryer
  6” (15 cm) from the back of the fryer
  The fryer may be installed on combustible floors

- Minimum clearance from noncombustible construction:

  0” from the sides of the fryer
  0” from the back of the fryer

- Between the fryer and any open-top flame units:

  16” (41 cm)

- Allow space for servicing and operation.

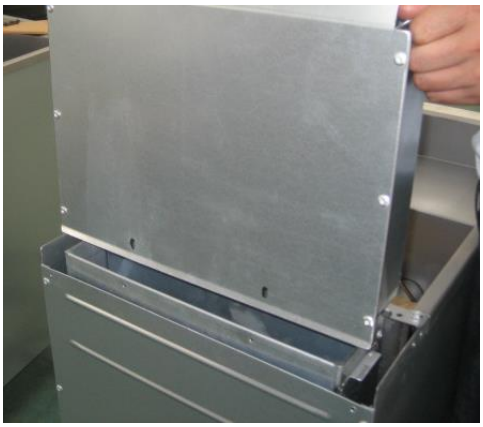
Location

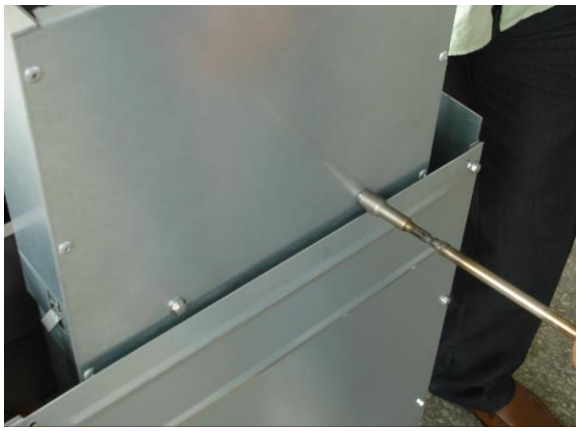
- Install fryer in an area with sufficient air supply for gas combustion at fryer burners.
- Do not obstruct the flow of combustion and ventilation air.
- Provide adequate clearance for air openings into the combustion chamber.
- Do not permit fans to blow directly onto fryer.
- Avoid wall-type fans, which create cross-currents within a room. Avoid open windows next to sides or back.
- Electrical diagram located on inside of door.

⚠ WARNING **FLUE INSTALLATION: BEFORE USING FRYER INSTALL AND ASSEMBLE THE 10-5/8" FLUE TO THE FRYER..**

1. Unpack the flue box and flue wrap

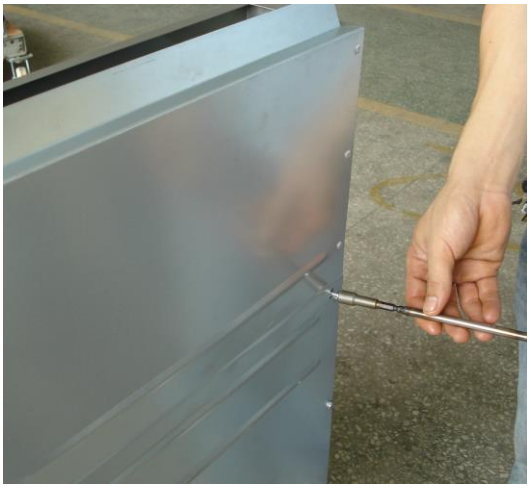
2. Slide the flue box over the flue and secure it with the two self-tapping screws using a 5/16" socket





3. Slide the flue wrap over the flue

4. Secure it with four self-tapping screws two on the back and one on each side using a 5/16” socket



CODES AND STANDARDS

The fryer must be installed in accordance with:

In the United States:

- State and local codes, or in the absence of local codes, with:
- National Fuel Gas Code, ANSI-Z223.1/NFPA #54 (latest edition). Copies may be obtained from The American Gas Association Accredited Standards Committee Z223, @ 400 N. Capital St. NW, Washington, DC 20001 or the Secretary Standards Council, NFPA, 1 Batterymarch Park Quincy, MA 02169-7471.
- NFPA Standard #96 Vapor Removal from Cooking Equipment, latest edition, available from the National Fire Protection Association, Batterymarch Park, Quincy, MA.
- In the commonwealth of Massachusetts all gas appliances vented through a ventilation hood or exhaust system with a damper or with a power means of exhaust shall comply with 248 CMR.

In Canada:

- Local codes
- CAN/CSA-B149.1 Natural Gas and Propane Code Installation (latest edition), available from the Canadian Gas Association 350 Sparks Street, Ottawa, Ontario Canada K1R 7S8.
- CSA C22.1 Canadian Electric Code L4W 5N6.

ASSEMBLY

The fryer must be restrained to prevent tipping and the splashing of hot liquid. The means of restraint may be the manner of installation, such as connection to a battery of appliances, installing the fryer in an alcove, or by separate means such as adequate ties.

FLUE EXHAUST

- Comply with *Vapor Removal from Cooking Equipment*, ANSI-NFPA Standard #96 (latest edition), available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.
- Locate the fryer under a hood with adequate connection to an exhaust duct. The hood must extend 6" (15 cm) beyond fryer on both sides.
- Clearance above the fryer should be adequate for combustion byproducts to be removed efficiently.
- An 18" (46 cm) minimum clearance should be maintained between the flue vent and the filters of the hood venting system.
- Never make flue connections directly to the fryer.
- Do not obstruct the flow of the gases from the appliance. Proper air balance should be maintained in the room.
- Ensure that your ventilation system does not cause a down draft at the fryer's flue opening. Down draft will not allow the fryer to exhaust properly and will cause overheating which may cause permanent damage. Damage caused by down draft will not be covered under equipment warranty. Never allow anything to obstruct the flue or ventilation exiting from the fryer flue. Do not put anything on top of flue area.

GAS CONNECTION

NOTICE All gas supply connections and any pipe joint compound must be resistant to the action of propane gases.

The gas inlet is located on the lower rear of the fryer. Codes require that a gas shutoff valve be installed in the gas line ahead of the fryer.

The gas supply line must be at least the equivalent of ½" (12.7 mm) iron pipe for single units and 1-1/4" (31.75 mm) for batteries. If using the optional quick-disconnect flex hose, ¾" (19 mm) iron pipe for single units.

Make sure the pipes are clean and free of obstructions, dirt, and piping compound. A battery requires one or two connections of appropriate size for the gas requirement.

⚠ WARNING Prior to lighting, check all joints in the gas supply line for leaks. Use soap and water solution. Do not use an open flame.

After piping has been checked for leaks, fully purge gas pipes to remove air.

GAS PRESSURES (ALL MODELS):

The gas pressure should be set at 4" W.C. (Water Column) (0.8 kPa) for natural gas and 10" W.C. (2.75 kPa) for propane gas. If incoming pressure exceeds ½ PSI (3.45 kPa), an additional pressure regulator must be installed.

TESTING THE GAS SUPPLY PIPING SYSTEM:

When test pressures exceed ½ PSI (3.45 kPa), the fryer and its individual shutoff valve must be disconnected from the gas supply piping system.

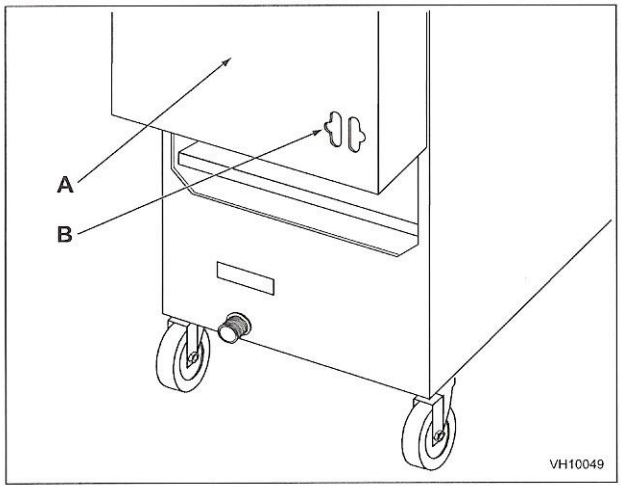
When test pressures are ½ PSI (3.45 kPa) or less, the fryer must be isolated from the gas supply piping system by closing its individual shutoff valve.

Fryers with Casters: (Restraining device does not come supplied with fryer or casters).

Separate instructions for installing casters are included with the casters:

- The installation shall be made with a connector that complies with the Standard for Connectors for Movable Gas Appliances, ANSI Z21.69 or Connectors for Moveable Gas Appliances, CAN/CGA-6.16, and a quick-disconnect device that complies with the Standard for Quick-Disconnect Devices for Use with Gas Fuel, ANSI z21.41 or Quick-Disconnect Devices for Use with Gas Fuel, CANI-6.9.

- When installing a quick disconnect you must also install a means for limiting the movement of the fryer. This restraining device will prevent the gas line or quick disconnect from being strained. The restraining device should be attached to the cutout on the back panel. See illustration for location. If disconnection of the restraining device is necessary for service or cleaning, reconnect the restraining device after the fryer is placed back into its original position.



A Rear of Fryer
B Strain Relief Chain Connection
(Chain supplied by others)

- The fryer must be installed with a connector (not supplied by Vulcan) complying with the above codes.
- The fryer must be installed with restraining means to guard against transmission of strain to the connector. See illustration.
- The fryer must be installed with the casters provided.
- If the restraint is ever to be disconnected, first turn the gas supply off.

LEVELING THE FRYER

Check the level of the fryer by placing a level on top of the fryer after gas connections have been made.

Ensure that the fryer is level front-to-back and side-to-side in the final installed position.

If using casters, lock the wheels after unit is level.

OPERATION

⚠ WARNING Hot oil and parts can cause burns. Use care when operating, cleaning and servicing the fryer.

⚠ WARNING Spilling hot frying compound can cause severe burns. Do not move fryer without draining all frying compound from the tank.

OVER-TEMPERATURE SHUTDOWN

If the shortening becomes overheated, a high-temperature shutoff device will turn the gas valve off and extinguish the pilot.

If the fryer shuts down due to overheating, DO NOT relight the pilot until the shortening temperature is below 300° F (149 C).

If an overheating situation persists, contact your local Vulcan-Hart authorized service office.

BEFORE FIRST USE

Cleaning
New units are wiped down at the factory to remove any visible signs of dirt, oil, grease, etc. remaining from the manufacturing process.

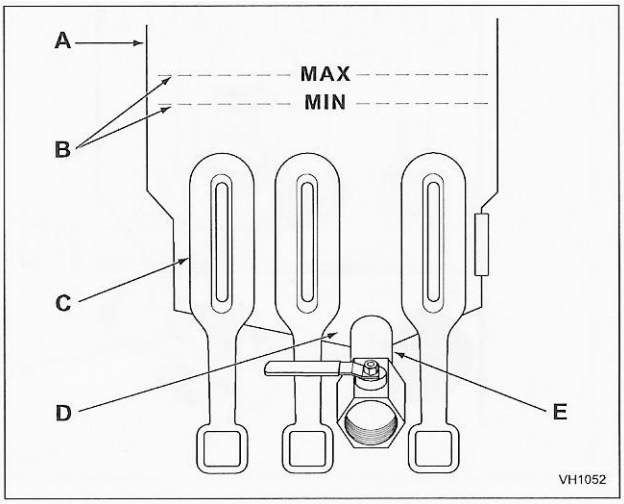
Before any food preparation, thoroughly wash the protective oil from all surface parts and the tank interior with hot soapy water to remove any film residue and dust or debris.

NOTICE Do not use chlorine or sulfate/sulfide cleaners.

- Wash any accessories shipped with unit.
- Rinse fryer and accessories thoroughly and drain the fryer.
- Wipe tank completely dry with a soft, clean cloth.

FILLING TANK WITH SHORTENING

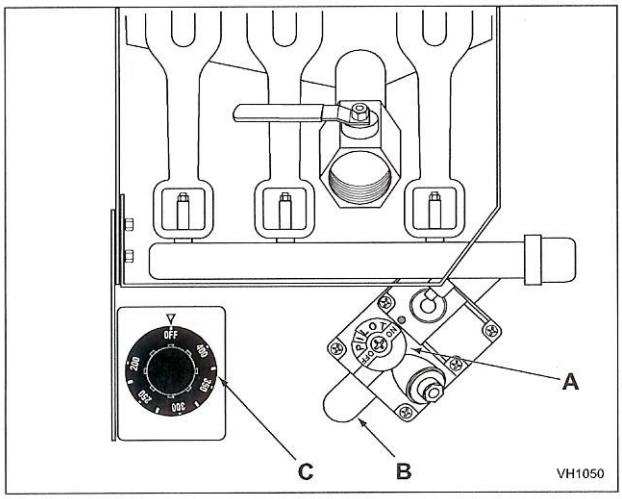
NOTICE Solid shortening should NOT be used with LG300 or LG400 fryers. Melting solid shortening will damage the tank and void your warranty.



A Fryer Tank
B MIN and MAX Fill Level Lines
C Heat Pipes
D Cold Zone
E Drain Pipe

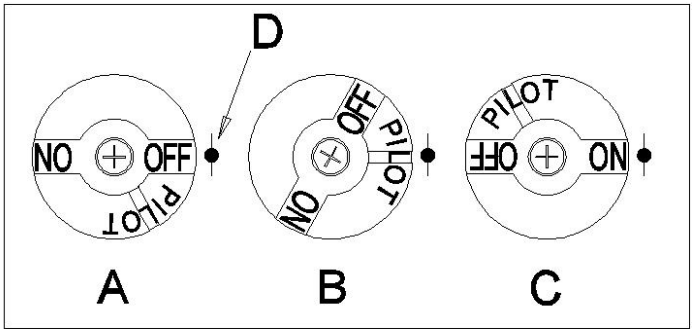
- Close the drain valve.
- Fill the fryer tank with liquid shortening.
- Shortening level should be between the min and max lines in the fryer tank.
- Shortening will expand when heated. Do not ill the fryer tank past the MAX line.
- Add fresh shortening as needed to maintain oil level.

LIGHTING THE PILOT



A Gas Valve Knob
B Gas Supply
C Thermostat Knob

1. Open the door.
2. Turn the thermostat OFF. The thermostat is located behind the door.
3. Push the gas control valve knob and turn to OFF (see figure below, view A). Wait 5 minutes for unburned gas to vent.
4. Push and turn gas control valve knob to the “L” in PILOT (see figure below, view B).
5. While still holding the knob in, light the pilot with a lit flame. Continue to depress the knob until pilot remains lit when knob is released. If the pilot does not remain lit, repeat step 3 through 5.
6. Depress and turn gas control knob to ON (See figure below, view C).
7. If gas supply is interrupted, repeat steps 2 through 6.



A Gas Valve Knob, View A
B Gas Valve Knob, View B
C Gas Valve Knob, View C
D Indicator Point, All Views

TURNING ON THE FRYER

- Set the temperature knob to desired temperature.
- After the set temperature has been reached, the thermostat shuts off the gas flow to burners.
- The pilot remains lit. The burners will cycle on and off, maintaining the set temperature.

TURNING OFF THE FRYER

1. Turn the thermostat OFF.
2. To keep the pilot lit, turn the gas valve to “L” in Pilot.
3. To shut off all gas to the system, including the pilot, turn the gas valve knob to OFF.

EXTENDED SHUTDOWN

1. Turn the thermostat knob to OFF.
2. Push in the pilot knob and turn to OFF.
3. Thoroughly drain the fryer. Refer to DRAINING THE FRYER.
4. Clean the fryer according to CLEANING.
5. Turn off the main gas shutoff valve.

BASIC FRYING INSTRUCTION

- Set the desired temperature and allow shortening to heat up to that temperature.
- Fry items that are the same size to ensure equal doneness.
- Drain or wipe dry raw or wet foods to minimize splatter when lowering into hot shortening.
- Add fresh shortening as needed.

Fry Basket Guidelines

- Do not overfill baskets. (See table for recommended basket capacities below) Carefully lower basket into oil.
- When frying doughnuts and fritters, turn product only once during frying.
- When cooking French fries or onion rings, shake the basket several times.
- Batter-covered foods should be dropped carefully, one by one, into shortening or basket. If you use the basket, first dip the basket into the shortening to reduce batter-build up on basket surfaces.
- When frying is completed, remove basket or product. Hang basket on rear hanger.

Fry Basket Capacity:

LG300, LG400: Recommended pounds per basket are 1.5 lbs. (0.7 kg).
LG500 Recommended pounds per basket are 3.0 lbs. (1.4 kg).

EXTENDING SHORTENING LIFE

Shortening life can be extended by the following guidelines:

- Do not salt foods over the fryer.
- Use good-quality shortening.

- Filter shortening daily (at a minimum).
- Replace shortening if it becomes poorly flavored.
- Keep equipment and surrounding area clean.
- Set thermostat correctly.
- Remove excess moisture and particles from food products before placing on fryer.

DRAINING THE TANK

1. Turn the thermostat to OFF.
2. To keep the pilot lit, turn the gas valve to PILOT.
3. Direct the drain spout into the container that you want to drain the shortening into.
4. Open the drain valve. The oil will drain into the container. When the container is full or the fryer tank is empty, close the drain valve. Repeat this step until the fryer is empty.
5. If desired, perform the weekly clean-out as described under CLEANING.
6. Once tank is completely empty, add new shortening and set thermostat to desired temperature.

DAILY FILTERING

⚠ WARNING Hot oil and hot parts can cause burns. Use care when operating, cleaning, and servicing the fryer.

- Filter shortening at least once a day. Refer to the instructions provided with your filtering equipment.
- A cold fryer will not drain properly. Always filter shortening between 250°F and 350°F. The shortening in the cold zone area will remain hard if the heat is only on for a few minutes. If necessary, use the clean-out rod to carefully stir the hard shortening to an area above the cold zone where it will melt. Use the tank brush to help clear sides and tubes of debris.

CLEANING

⚠ WARNING Hot oil and hot parts can cause burns. Use care when operating, cleaning, and servicing the fryer.

Daily

Clean your fryer regularly with the tank brush along with a damp cloth, and polish with a soft dry cloth. If regular cleaning is neglected, grease will be burned on and discolorations may form.

Fingerprints are sometimes a problem on highly polished surfaces of stainless steel. They can be minimized by applying a cleaner that will leave a thin oily or waxy film.

- Clean all exterior surfaces of your fryer at least once daily.
- Use a damp cloth with warm water and a mild soap or detergent.

NOTICE Do not use chlorine or sulfate/sulfide cleaners.

- Rinse thoroughly, and then polish with a soft dry cloth.
- Keep he fryer exterior clean and free of accumulated grease to prevent stubborn stains from forming. If regular cleaning is neglected, grease will be burned on and discolorations may form.
- Remove discolorations by washing with any detergent or soap and water.
- Use a self-soaping, non-metallic scouring pad for particularly stubborn discolorations.
- Always rub with the grain of the stainless steel.
- Do not use a metallic scoring pad or harsh cleaners.

BOIL OUT PROCEDURE

Weekly or as required:

1. Drain the tank as described under DRAINING THE TANK.
2. Once the shortening has been drained, flush out scraps and sediment with a small amount of warm shortening, using tank brush. Allow the tank to drain thoroughly.
3. Close the drain valve and fill tank water. Use a low foaming cleaner/degreaser to clean the fry tank. Follow the instructions on the side of the package.

NOTICE Do not use chlorine or sulfate/sulfide cleaners.

4. Add commercial boil-out solution. Solution level must be between the MIN and MAX levels on the fryer tank.
5. Set thermostat to the temperature recommended for the solution being used. Do not exceed 200°F. Allow solution to simmer for about 15 to 20 minutes.
6. Drain the cleaning solution from the tank.
7. Close the drain valve and refill the tank with water. Add 1 cup (1/4 L) of vinegar to neutralize alkaline left by the cleaner. Solution level must be between the MIN and MAX level on the fryer tank.
8. Bring the solution to a simmer only, turn the thermostat off. Allow to stand for a few minutes.
9. Drain the tank according to DRAINING THE TANK. Rinse thoroughly with clear, hot water. All traces of cleaner must be removed. Dry the tank thoroughly.
10. Close the drain valve and add shortening. Follow the FILLING TANK WITH SHORTENING procedure in this manual. The fryer is now ready for use.

MAINTENANCE

⚠ WARNING Hot oil and hot parts can cause burns. Use care when operating, cleaning, and servicing the fryer.

⚠ WARNING Spilling hot fryer compound can cause severe burns. Do not move fryer without draining all frying compound from the tank.

FLUE VENT INSPECTION

When the fryer is cool, inspect annually. Check the flue and clear any obstructions.

Service in the US and Canada

Check www.vulcanequipment.com for the closest service office.

In Australia

Contact Hobart Food Equipment PTY. LTD., 16 Hilly Street Morlake, N.S.W. 2137 Australia; P.O. Box 100, Concord N.S.W. 2137; Tel: (02) 9736 1200; Fax: (02) 9736 1555. www.hobartfood.com.au

Troubleshooting Chart:	
Problem:	Probable Cause:
No Heat:	Thermostat dial not turned on. Pilot not lit. Gas supply not turned on. Wire connections loose (call service) Wires connections need cleaning (call service) Thermopile (call service)
Insufficient or too much heat:	Thermostat dial not set to desired temperature. High limit tripped (call service) Temperature probe (call service)
Tank will not drain:	Shortening too cold. Drain pipe clogged with debris.

LIMITED ORIGINAL COMMERCIAL EQUIPMENT WARRANTY FOR THE LG SERIES GAS FRYERS

Vulcan warrants the LG Gas Fryer to be free of defects in materials and workmanship for a period of 1 year from the date of original installation.

This Warranty is subject to the following conditions and limitations:

1. This warranty is limited to product(s) sold by Vulcan to the original user in the continental United States and Canada.

2. Original installation must occur within 18 months of date of manufacture, and proof of the installation must be provided to Vulcan.

3. The liability of Vulcan is limited to the repair or replacement of any part found to be defective.

4. Vulcan will bear normal labor charges incurred in the repair or replacement of a warranted piece of equipment within 50 miles (80 kilometers) of an authorized service agency. Time and travel charges in excess of 50 miles (80 kilometers) will be the responsibility of the person or firm requesting the service.

5. This warranty does not apply to any product(s) which have not been installed in accordance with the directions published in the appropriate installation and operation manuals. Vulcan will bear no responsibility or liability for any product(s) which have been mishandled , abused, misapplied, misused, subject to harsh chemical action, (chlorinated or sulfate products), or poor water quality, field modified by unauthorized personnel, damaged by flood, fire, or other acts of nature, or which have altered or missing serial numbers.

6. Vulcan does not recommend or authorize the use of any product(s) in a non-commercial application, including but not limited to residential use. The use or installation of product(s) in non-commercial applications renders all warranties, expressed or implied, including the warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE, null and void, including any responsibility for damage, cost and legal actions resulting from the use or installation of product(s) in any non-commercial setting.

7. Adjustments such as calibrations, leveling, tightening of fasteners or utility connections normally associated with original installation are the responsibility of the installer and not that of Vulcan.

8. Exception to the 1 year warranty period is as listed:

   Fry Tanks:

   If tank is found to be leaking within the first year of operation from date of installation and verified by an authorized service agency, the entire LG fryer will be replaced. Replacement fryer will be warranted for the balance of the original warranty. Fry tanks found to be leaking that are over 1 year and under 3 years, 50% of the current selling fry tank price, plus labor, freight and mileage will be the responsibility of the person or firm requesting the service. Fry tanks found to be leaking that are over 3 year and under 5 years, 75% of the current selling fry tank price, plus labor, freight and mileage will be the responsibility of the person or firm requesting the service. After 5 years – no fry tank part warranty.

9. Original purchased replacement parts manufactured by Vulcan will be warranted for 90 days from the parts invoice date. This warranty is for parts cost only, and does not include freight or labor charges. Exceptions are stainless steel fry tanks which will be warranted as stated in item 8.

10. This states the exclusive remedy against Vulcan relating to the product(s), whether in contract or in tort or under any other legal theory, and whether arising out of warranties, representations, instructions, installations or defects from any cause. Vulcan shall not be liable, under any legal theory, for loss of use, revenue or profit, or for substituted use or performance, or for incidental, indirect, or special or consequential damages or for any other loss of cost of similar type.

11. THIS WARRANTY AND THE LIABILTIES SET FORTH HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OF THEIR LIABILITES AND WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE AND CONSTITUTES THE ONLY WARRANTY OF VULCAN WITH RESPOECT TO THE PRODUCT(S).

EXTENDED SHUTDOWN & RESTART OF YOUR VULCAN COOKING EQUIPMENT

Following you will find instructions on how to shut down your Vulcan cooking equipment for an extended period, and how to safely restart equipment after idle.

Always refer to the procedures as instructed in the Installation & Operation manual for your specific model. Manuals may be found by visiting the Vulcan website and clicking on RESOURCES at the top right of the home page.

Always remember that cooking equipment and its parts are hot. Use care when operating, cleaning or performing maintenance.

For additional product resources, please visit https://www.vulcanequipment.com/.

GAS & ELECTRIC FRYERS

EXTENDED SHUTDOWN – LG, VEG, GR GAS FRYERS

1. Turn the thermostat knob to off.
2. Thoroughly drain the fryer according to instructions outlined in “draining the fryer” section.
3. Clean the fryer according to instructions outlined in “cleaning” section.
4. Push in the pilot knob and turn to off.
5. Turn off the main gas shutoff valve.

Model 1VEG35M
Shown with accessory casters

EXTENDED SHUTDOWN – POWERFRY GAS FRYERS

1. Thoroughly drain the fryer. Refer to instructions outlined in “draining the fryer” section.
2. Clean the fryer according to instructions outlined in “cleaning” section.
3. Push power switch to the off position
4. Turn off the main gas shutoff valve.

EXTENDED SHUTDOWN – ER ELECTRIC FRYERS

1. Open the door to the fryer.
2. Press the power switch to the off position.
3. Thoroughly drain the fryer according to instructions outlined in “draining the fryer” section.
4. Clean the fryer according to instructions outlined in “cleaning” section.
5. Turn off the main electric circuit breaker to fryer.

GAS & ELECTRIC FRYERS *(CONTINUED)*

DRAINING THE TANK – FREESTANDING FRYERS WITHOUT FILTRATION

1. Turn off fryer.
2. Insert the drain extension into the drain valve. Tighten only hand tight.
3. Direct the drain spout into the container that you want to drain the shortening into.
4. Open the drain valve. The oil will drain into the container. When the container is full or the fryer tank is empty, close the drain valve. Repeat this step until the fryer is empty. Remove the drain extension and place it back into the provided holder.

DRAINING THE TANK – FRYERS WITH BUILT-IN FILTRATION

Fryers with Millivolt (M) controls:

1. Turn thermostat knob to off position.
2. Open drain valve and allow oil to drain into filter pan.
3. Close drain valve.
4. Attach high temperature hose to male quick disconnect.
5. Place nozzle end into a discard container.
6. Pull lever to turn on motor/pump.
7. Once oil is drained from filter pan push lever in to turn off motor/pump.

Fryers with Analog (A) Controls:

1. Do not turn off power.
2. Open drain valve and allow oil to drain into filter pan.
3. Close drain valve.
4. Discard oil using flush/discard hose. Make sure that the vertical filter switch is on discard.
5. Place nozzle end into a discard container.
6. Press filter switch on control panel to turn on motor/pump.
7. Once oil is drained from filter pan press filter switch to turn off motor/pump.
8. Press filter switch to flush/ filter and not discard.

Fryers with Digital (D) or Computer (C) Controls:

1. Do not turn off power.
2. Open drain valve and allow oil to drain into filter pan.
3. Close drain valve.
4. Discard oil using flush/discard hose. Make sure that the vertical filter switch is on discard.
5. Place nozzle end into a discard container.
6. Pull lever to turn on motor/pump.
7. Press filter switch on control panel to turn on motor/pump. Hold for at least 3 seconds.
8. Once oil is drained from filter pan press filter switch to turn off motor/pump.

GAS & ELECTRIC FRYERS *(CONTINUED)*

CLEANING

1. Clean your fryer regularly with the tank brush along with a damp cloth, and polish with a soft dry cloth. If regular cleaning is neglected, grease will be burned on and discolorations may form.
    a. Fingerprints are sometimes a problem on highly polished surfaces of stainless steel. They can be minimized by applying a cleaner that will leave a thin oily or waxy film.
2. Clean all exterior surfaces of your fryer at least once daily.
3. Use a damp cloth with warm water and a mild soap or detergent.
    a. Do not use chlorine or sulfate/sulfide cleaners.
4. Rinse thoroughly, and then dry with a soft dry cloth.
5. Keep the fryer exterior clean and free of accumulated grease to prevent stubborn stains from forming. If regular cleaning is neglected, grease will be burned on and discolorations may form.
6. Remove discolorations by washing with any detergent or soap and water.
7. Use a self-soaping, non-metallic scouring pad for particularly stubborn discolorations.
8. Always rub with the grain of the stainless steel.
    a. Do not use a metallic scoring pad or harsh cleaners.
9. Air Filter Cleaning (VK fryers only): The air filter needs to be cleaned at least once every three months. Pull the air filter off and clean in a dishwasher or by hand. Dry thoroughly before replacing it into position. There is no need to tighten the band clamp with tools.

RESTART FROM EXTENDED SHUTDOWN – ALL MODELS

1. Schedule a qualified gas service technician to be onsite upon restart if kitchen has been down for more than 30 days.
    a. Check all gas equipment in kitchen for gas leaks.
2. Perform a boil-out as instructed in the Installation & Operation manual for your specific model.
3. Perform the BEFORE FIRST USE cleaning instructions as instructed in the Installation & Operation manual for your specific model.
4. Fill the fry tank with oil and start fryer per the instructions of your model Installation & Operation manual guidelines.

SERVICE MANUAL

LG Series Fryer

LG300	**ML-136528**
LG400	**ML-136622**
LG500	**ML-136643**

- NOTICE -

This Manual is prepared for the use of trained Hobart Service Technicians and should not be used by those not properly qualified.

This manual is not intended to be all encompassing. If you have not attended a Hobart Service School for this product, you should read, in its entirety, the repair procedure you wish to perform to determine if you have the necessary tools, instruments and skills required to perform the procedure. Procedures for which you do not have the necessary tools, instruments and skills should be performed by a trained Hobart Service Technician.

The reproduction, transfer, sale or other use of this manual, without the express written consent of Hobart, is prohibited.

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TABLE OF CONTENTS

SERVICE UPDATES

SERVICE UPDATES

- Added TIS Document List.

NOVEMBER, 2018

TIS DOCUMENT LIST - LG SERIES FRYER

SERVICE TAB	
Document Title	**Document Type**
LG Series Service Manual	Service Manual

SERVICE TAB (Multimedia)	
Document Title	**Document Type**
KleenScreen Filtration System User's Guide	Instructions
Repair Flood-Damaged Equipment	Misc
LG Series Electric Fryers	Operator
Fryers, Mobile Filters, Gas & Electric Service Information	Service Instructions
Fundamentals of Gas	Service Instructions
Hobart Fryers with TDI Computer Control Quick Reference Programming Guide	Service Instructions
Hobart Gas Fryers with Drawer Filter System Solid State Controller Kits - Part No. 913012-6 & 913012-7 Installation Instructions	Service Instructions
Vulcan Fryers Part No. 415144-17 & 415144-18 Control Board Instructions	Service Instructions
Rating Plate Locations ON Current Vulcan-Hart/Wolf Range Equipment	Technical Service Bulletin (TSB)
TSB 1037A Hobart to Vulcan "Common" Model Cross Reference List	Technical Service Bulletin (TSB)
TSB 1159 Floor & Battery Fryers (Gas & Electric) - "Continuous Hinge" Door Assembly	Technical Service Bulletin (TSB)
TSB 1254 Gas & Electric fryers - New Door Magnet (Hobart & Vulcan)	Technical Service Bulletin (TSB)
TSB 1301 Onwatch Quicklook 72 for Gas Cooking Equipment	Technical Service Bulletin (TSB)
TSB 1304 Gas Millivolt Controls	Technical Service Bulletin (TSB)
TSB 1324 Solid State Control - Software Revision 3.0 & Higher / Hobart & Vulcan Gas & Electric Fryers	Technical Service Bulletin (TSB)
TSB 1325 Computer Control - Software Revision 3.0 & Higher / Hobart & Vulcan Gas & Electric Fryers	Technical Service Bulletin (TSB)
TSB 1345 Fryer Tank Assembly - Drain Size Change	Technical Service Bulletin (TSB)
TSB 1352 Hobart & Vulcan Gas & Electric Fryers - AFC to NCC Computer Control Conversion Kits	Technical Service Bulletin (TSB)

PARTS TAB (Multimedia)	
Document Title	**Document Type**
LG Series Parts Catalog	Parts Catalog

GENERAL

INTRODUCTION

This manual is applicable only to models listed on the cover page. Procedures in this manual will apply to all models unless specified. Pictures and illustrations can be of any model unless they need to be model specific.

INSTALLATION, OPERATION AND CLEANING

For detailed installation, operation and cleaning instructions, refer to the Installation & Operation Manual sent with each unit. The manual is also available online at www.vulcanequipment.com.

TOOLS

Standard

- Standard set of hand tools.
- VOM with minimum of NFPA-70E CATIII 600V, UL/CSA/TUV listed. Sensitivity of at least 20,000 ohms per volt. Meter leads must also be rated at CAT III 600V.
- Temperature tester (thermocouple type).
- ESD (Electrostatic discharge) Protection Kit.

Special

- Manometer.

SPECIFICATIONS

Gas Data		
Model	**No. Tubes**	**BTU/HR**
LG300	3	90,000
LG400	4	120,000
LG500	5	150,000

REMOVAL AND REPLACEMENT OF PARTS

COVER PANELS

Door

NOTICE

Be prepared to catch door when bottom hinge is removed.

1. Remove door hinge screws while supporting door.

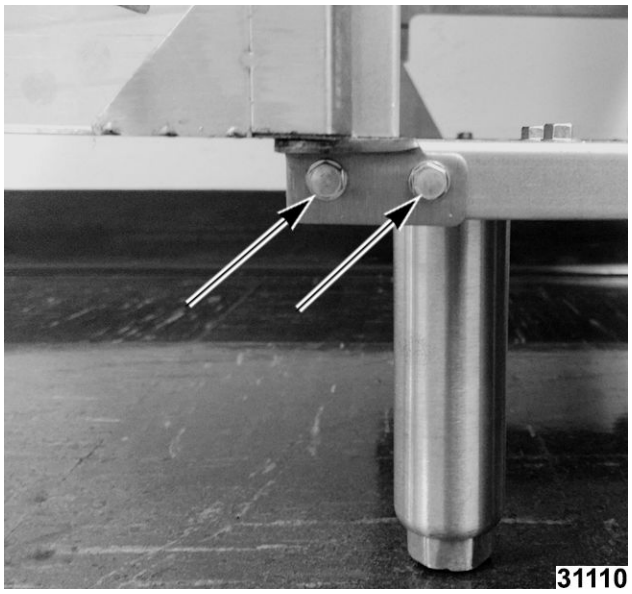


Fig. 1

2. Reverse procedure to install.

Heat Shield

1. Remove DOOR.
2. Remove heat shield mounting screws.

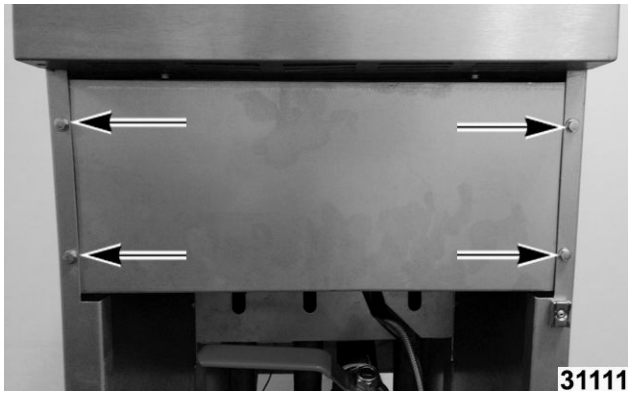


Fig. 2

3. Angle heat shield to remove.

Fig. 3

4. Reverse procedure to install.

Back Panel

1. Remove rear panel mounting screws.

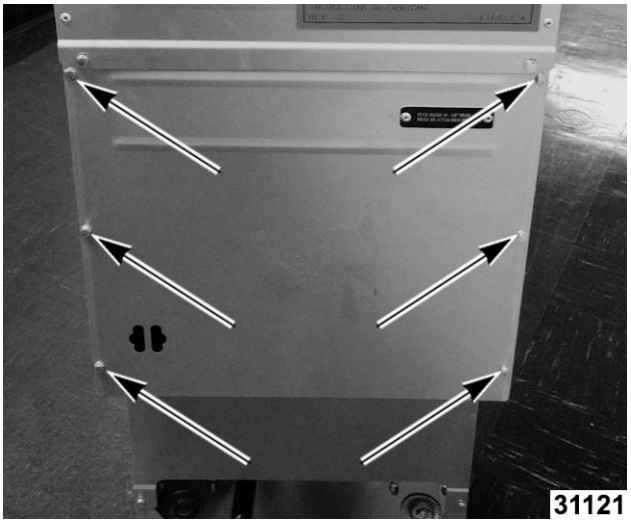


Fig. 4

2. Reverse procedure to install.

Flue Wrap

1. Remove screws securing flue wrap.

Fig. 5

2. Reverse procedure to install.

Flue Box

1. Remove FLUE WRAP.
2. Remove screws securing flue box.

Fig. 6

3. Reverse procedure to install.

BURNERS

⚠ WARNING

Shut off the gas before servicing the unit and follow lockout / tagout procedures.

1. Remove HEAT SHEILD.
2. Loosen mounting bolts at top of burner being removed.

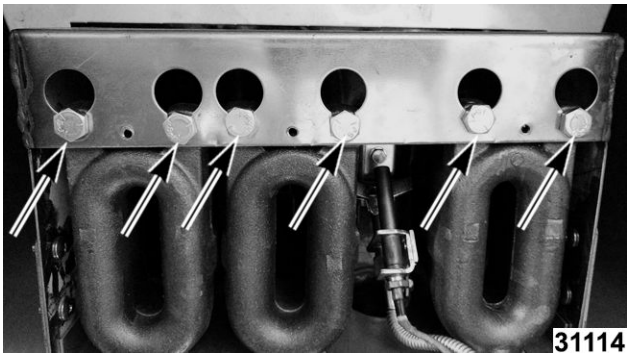


Fig. 7

3. Push up on burner while pulling bottom of burner forward to clear burner nozzle.
4. Reverse procedure to install.

THERMOSTAT

⚠ WARNING

Oil may be hot when draining fryer tank.

⚠ WARNING

Shut off the gas before servicing the unit and follow lockout / tagout procedures.

1. DRAIN FRYER TANK .

NOTE: Steps to remove Heat Shield can be skipped if back of fryer is accessible. Remove BACK PANEL to access thermostat probe packing nut.

2. Remove HEAT SHIELD.
3. Remove LEFT BURNER.
4. Pull thermostat knob (1, Fig. 8) off thermostat shaft.

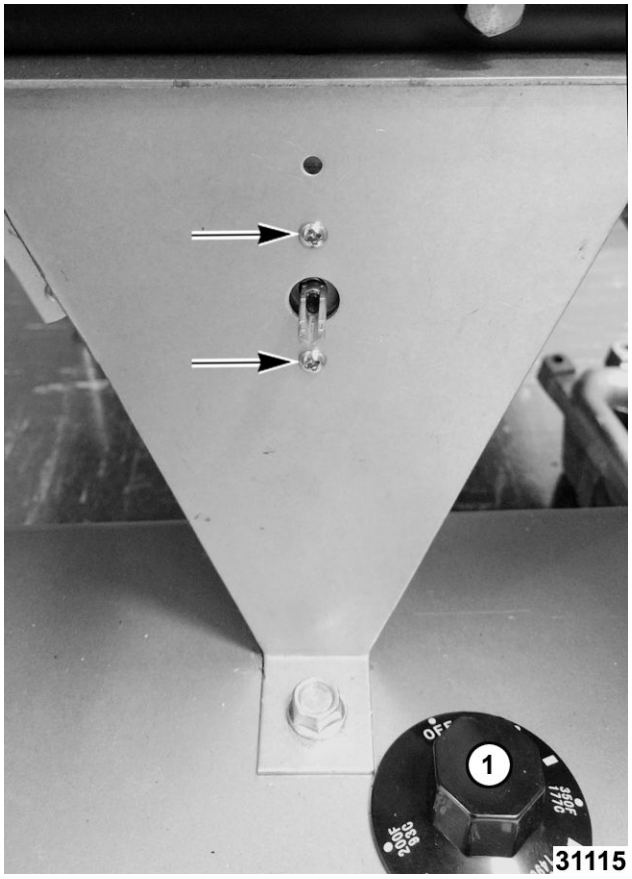


Fig. 8

5. Remove thermostat mounting screws (Fig. 8) and bracket.
6. Note and disconnect thermostat wiring.

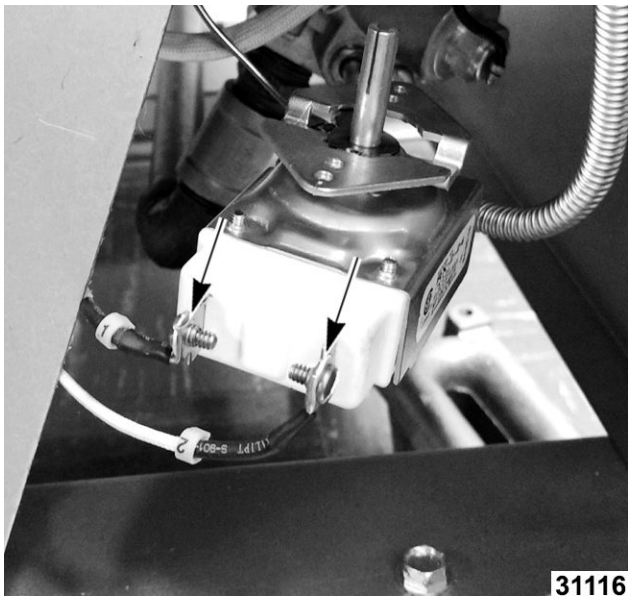


Fig. 9

7. Loosen packing nut (1, Fig. 10) and remove holding nut (2, Fig. 10).

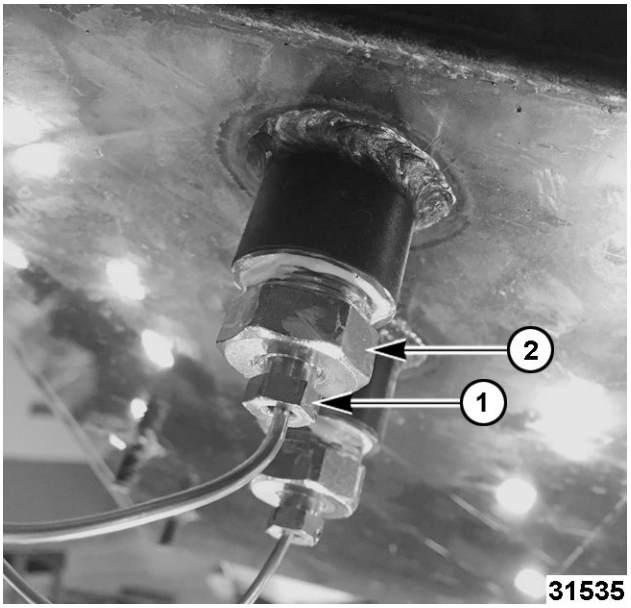


Fig. 10

8. Remove thermostat bulb from clamp.

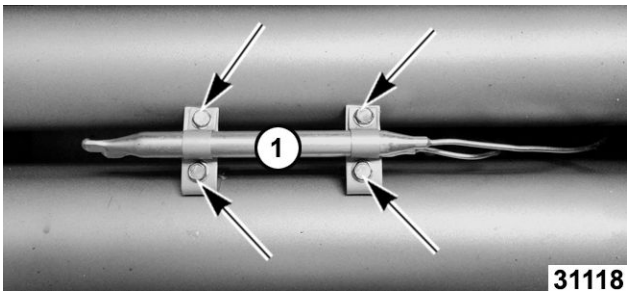


Fig. 11

9. Remove thermostat assembly.
10. Reverse procedure to install.

NOTICE

Take care not to kink thermostat capillary when installing. Wrap threads of packing nut with teflon tape to prevent leakage.

HIGH LIMIT THERMOSTAT

⚠ WARNING

Shut off the gas before servicing the unit and follow lockout / tagout procedures.

1. DRAIN FRYER TANK .
2. Remove HEAT SHIELD.
3. Remove LEFT BURNER.
4. Remove high limit mounting bracket.

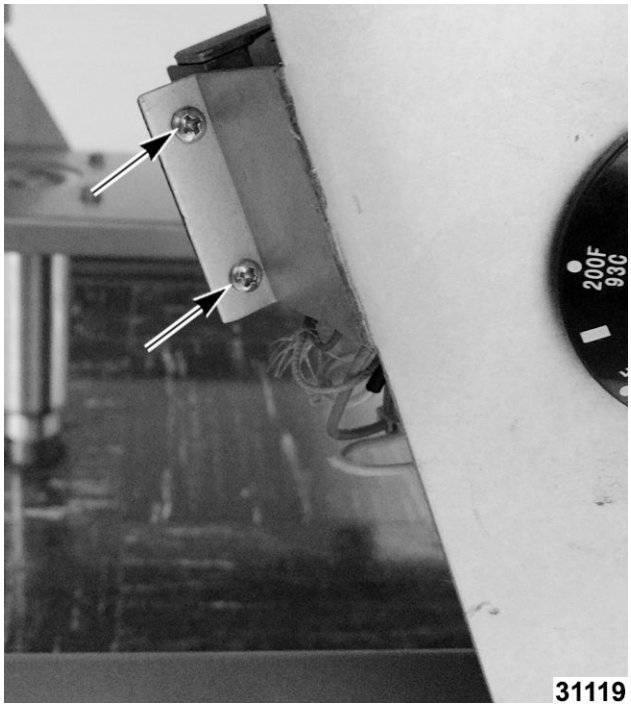


Fig. 12

5. Note wires and disconnect.

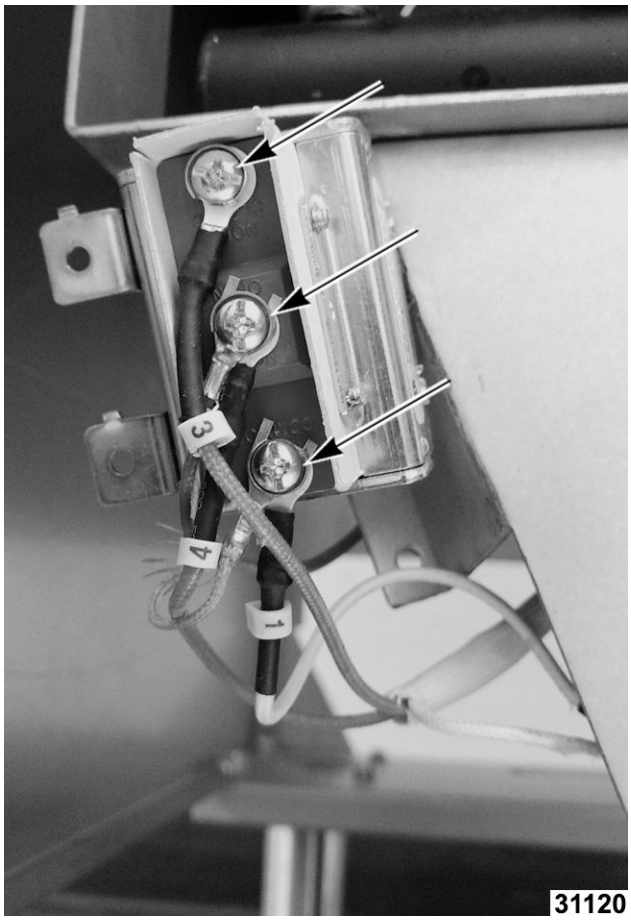


Fig. 13

6. Loosen packing nut (1,Fig. 14) and remove holding nut (2,).

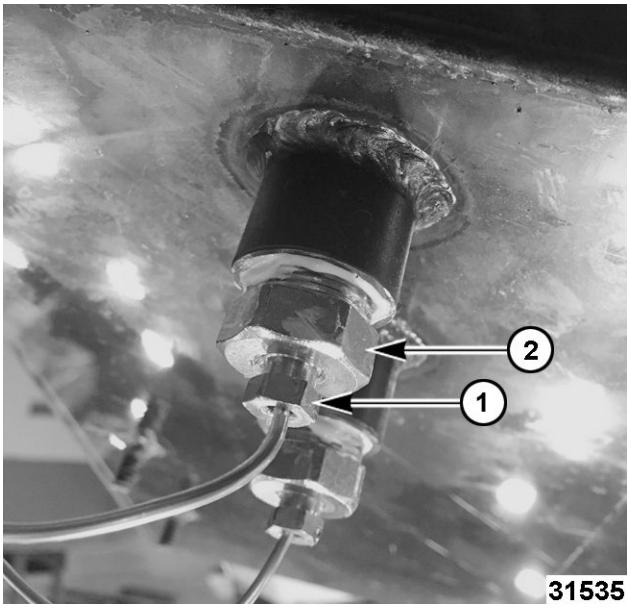


Fig. 14

7. Reverse procedure to install.
8. Check for leaks.

THERMOPILE

⚠ WARNING

Shut off the gas before servicing the unit and follow lockout / tagout procedures.

⚠ WARNING

All gas joints disturbed during servicing must be checked for leaks. Check with a soap and water solution (bubbles). Do not use an open flame.

1. Remove pilot assembly bracket.

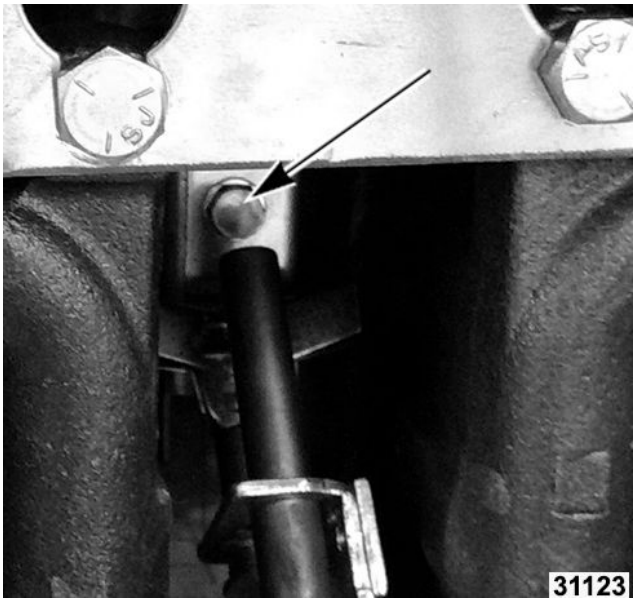


Fig. 15

2. Note and disconnect thermopile to high limit switch wiring.

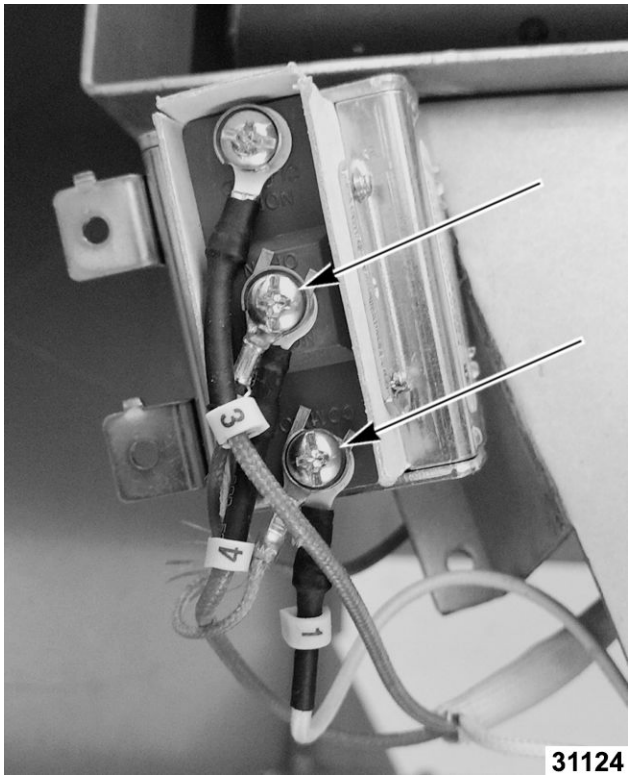


Fig. 16

3. Loosen thermopile holding nut (1, Fig. 17).

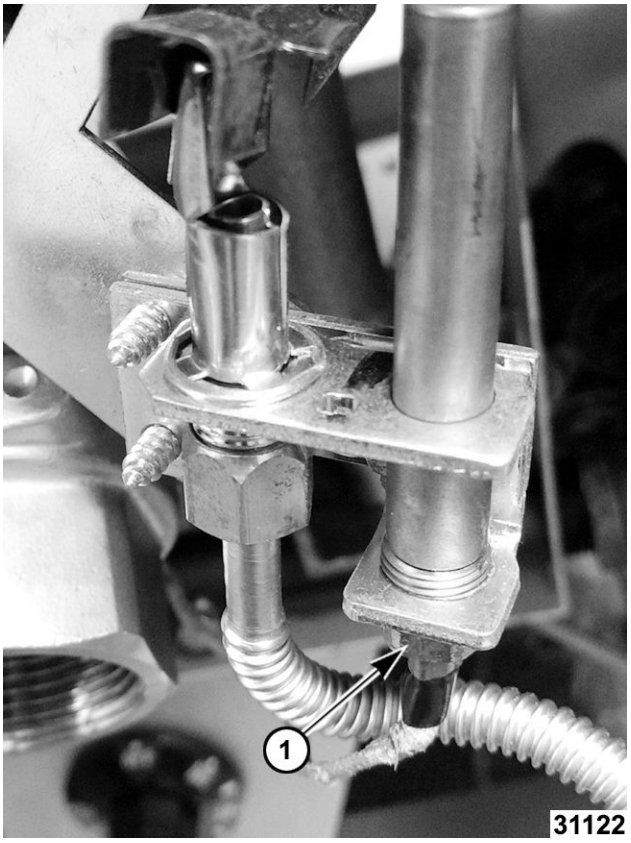


Fig. 17

4. Remove thermopile from bracket.
5. Reverse to install.

PILOT

⚠ WARNING

Shut off the gas before servicing the unit and follow lockout / tagout procedures.

⚠ WARNING

All gas joints disturbed during servicing must be checked for leaks. Check with a soap and water solution (bubbles). Do not use an open flame.

1. Remove HEAT SHIELD.
2. Remove pilot assembly bracket.

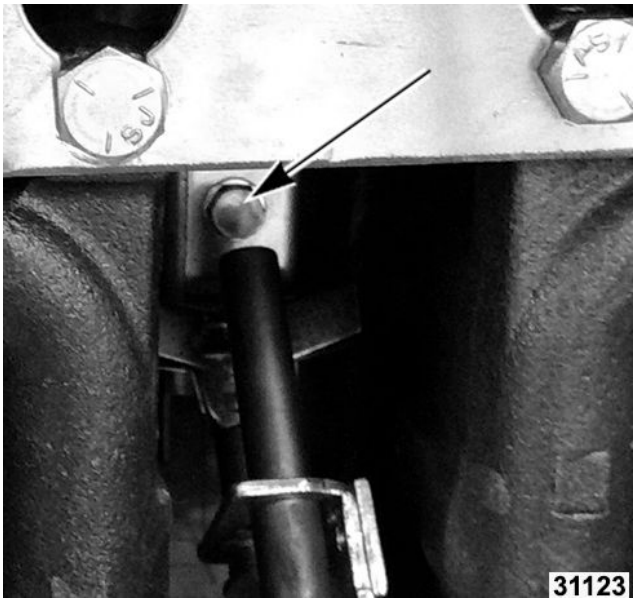


Fig. 18

3. Remove pilot nut at bottom of pilot assembly.

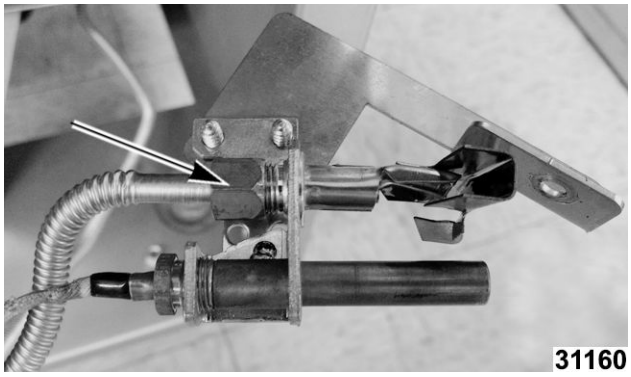


Fig. 19

4. Disconnect pilot tubing.
5. Remove THERMOPILE.
6. Remove pilot bracket screws.

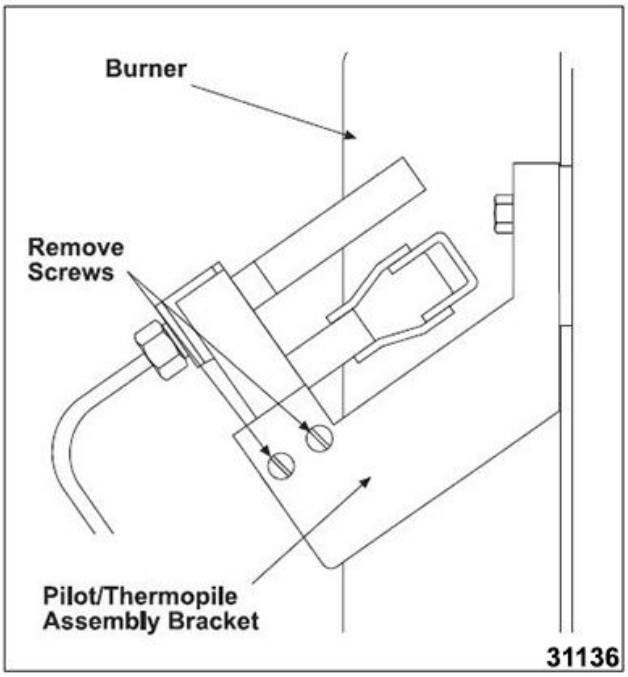


Fig. 20

7. Reverse procedure to install.

PILOT ORIFICE

⚠ WARNING

Shut off the gas before servicing the unit and follow lockout / tagout procedures.

⚠ WARNING

All gas joints disturbed during servicing must be checked for leaks. Check with a soap and water solution (bubbles). Do not use an open flame.

1. Remove HEAT SHIELD.
2. Remove pilot assembly bracket.

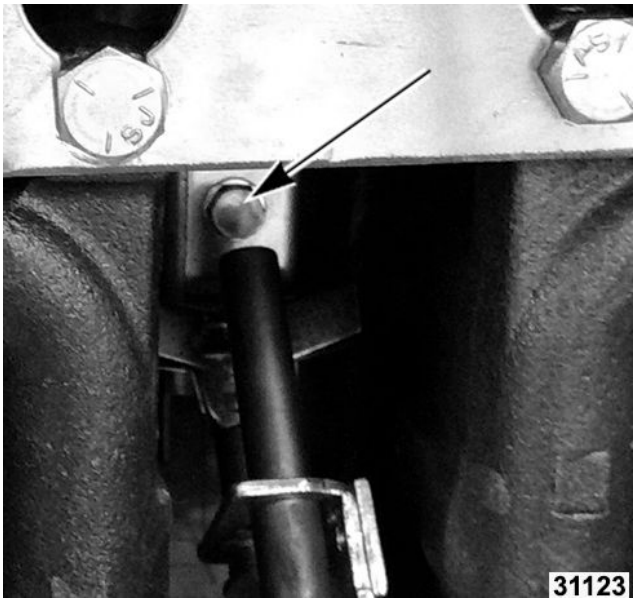


Fig. 21

3. Remove the nut at bottom of pilot to expose the orifice.

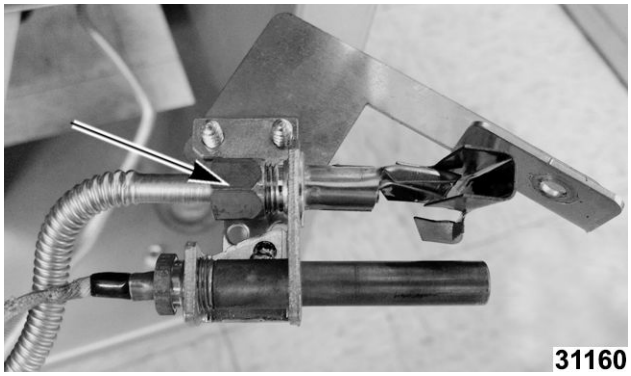


Fig. 22

4. Pull orifice (1, Fig. 23) out and replace.

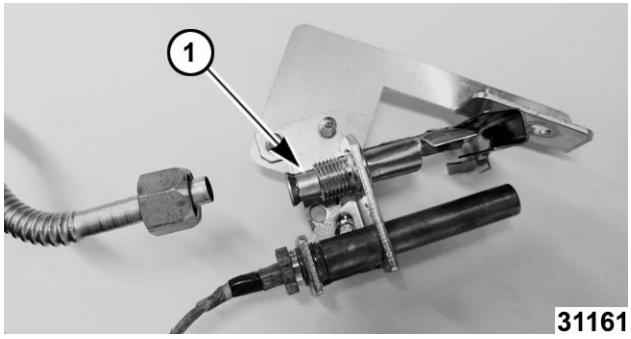


Fig. 23

5. Reverse procedure to install.

COMBINATION VALVE

⚠ WARNING

Shut off the gas before servicing the unit and follow lockout / tagout procedures.

⚠ WARNING

All gas joints disturbed during servicing must be checked for leaks. Check with a soap and water solution (bubbles). Do not use an open flame.

1. Disconnect fryer from main gas supply.
2. Remove RIGHT BURNER.
3. Note and disconnect wires (1, Fig. 24) from combination valve (2, Fig. 24).

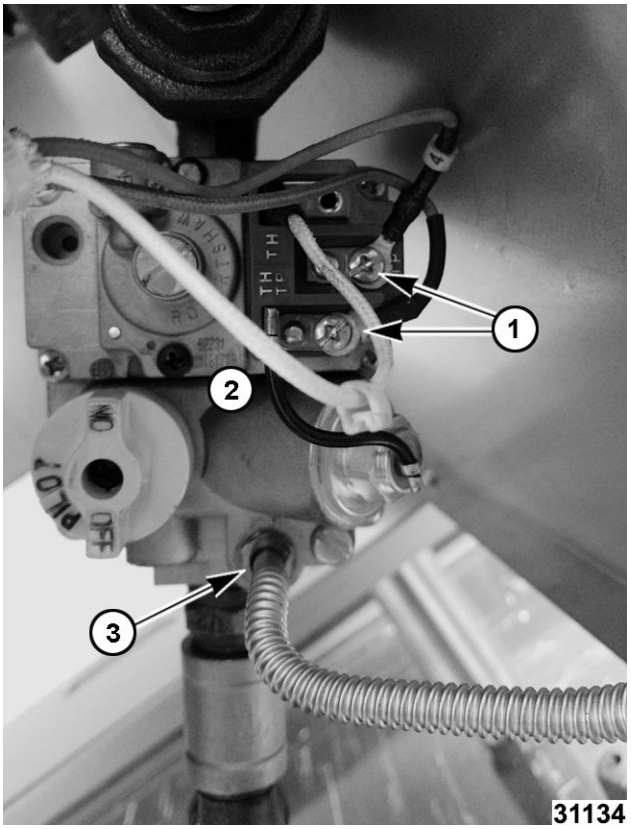


Fig. 24

4. Disconnect pilot tubing (3, Fig. 24) from combination valve.
5. Disconnect combination valve union and pressure fitting.

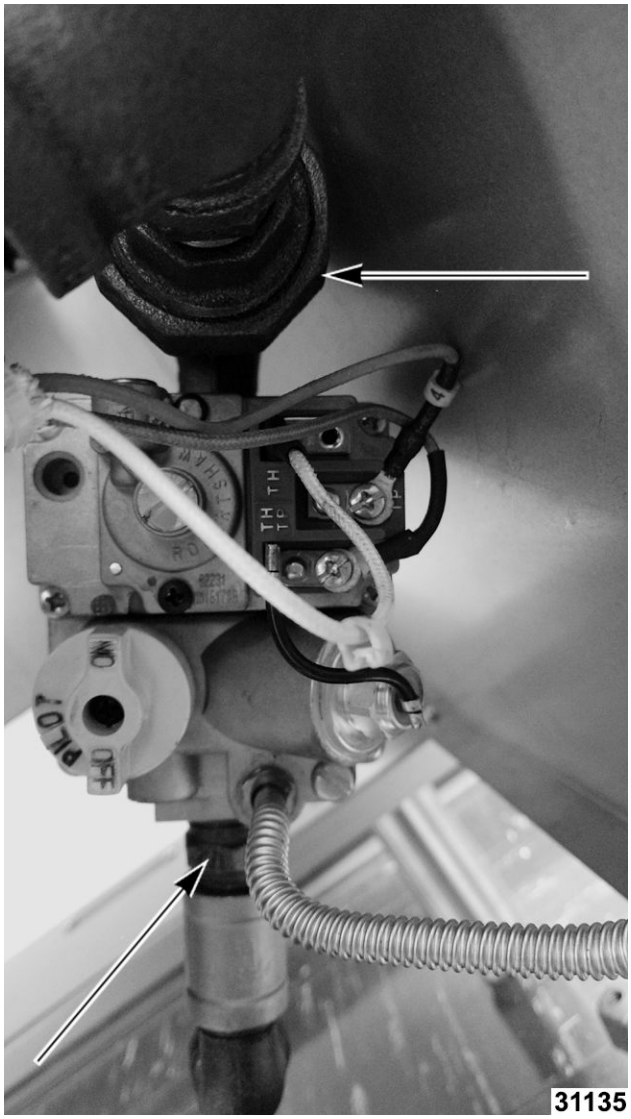


Fig. 25

6. Remove all pipe fittings from old valve if new valve is not supplied with fittings.
7. Reverse procedure to install.

FRY TANK

⚠ WARNING

Oil may be hot when draining fryer tank.

⚠ WARNING

Shut off the gas before servicing the unit and follow lockout / tagout procedures.

1. Disconnect fryer from main gas line.
2. Remove all baskets, fryer basket hanger and crumb screen.
3. DRAIN FRYER TANK .
4. Remove HEAT SHIELD.
5. Remove FLUE WRAP.
6. Remove FLUE BOX.
7. Remove BACK PANEL.
8. Remove BURNERS and manifold bracket (Fig. 26).

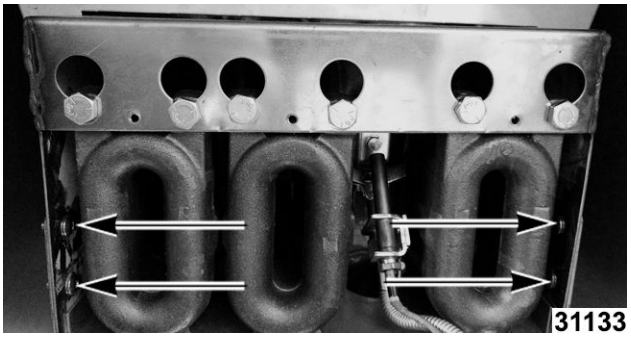


Fig. 26

9. Remove THERMOSTAT.
10. Remove HIGH LIMIT THERMOSTAT.
11. Remove pilot assembly bracket.

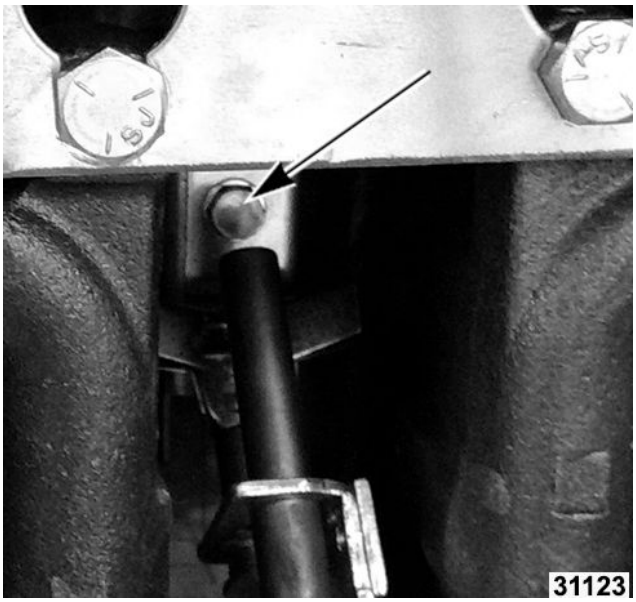


Fig. 27

12. Lift tank up and out of cabinet.
13. Remove drain valve from tank.
14. Reverse procedure to install.

SERVICE PROCEDURES AND ADJUSTMENTS

TURNING FRYER OFF

1. Turn thermostat off.

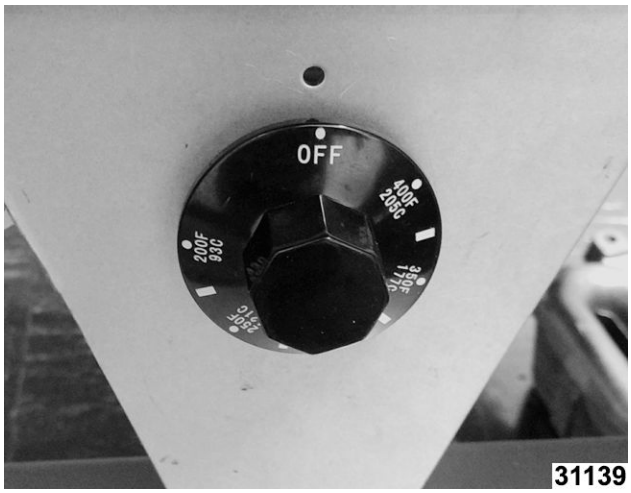


Fig. 28

2. Keep pilot lit by turning gas valve to the "L" in pilot.

Fig. 29

3. Turn gas valve to OFF position to shut gas off to the system, including pilot.

LIGHTING PILOT

NOTICE

Before lighting pilot make sure tank is filled with liquid shortening. Make sure gas supply to the fryer is on.

1. Turn thermostat off.

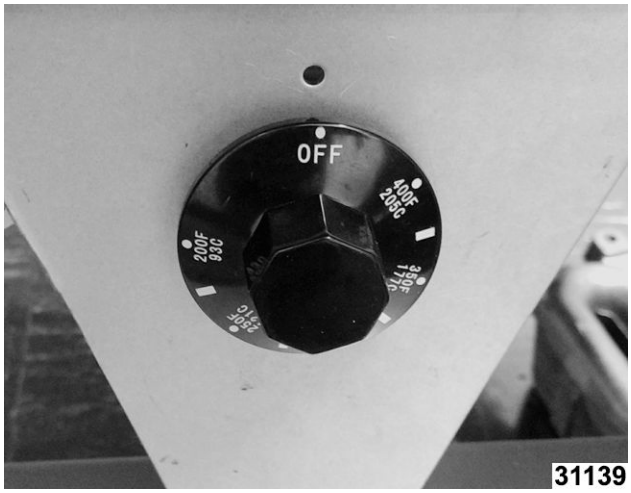


Fig. 30

2. Turn gas control valve knob to PILOT.
3. Wait five minutes for unburned gas to vent.
4. Push and turn the gas control valve to "L" in pilot.

Fig. 31

5. While still holding knob in, light the pilot with a flame. Continue to depress knob until pilot remains lit (approximately 30 seconds), then release knob.
6. Depress and turn gas control valve knob to ON.

NOTE: If gas supply is interrupted, repeat all steps.

DRAIN FRYER TANK

⚠ WARNING

Oil may be hot when draining fryer tank.

1. Turn thermostat off.
2. Turn gas valve to "L" in PILOT to keep pilot lit.

Fig. 32

3. Place container under drain valve (1, Fig. 33) to drain shortening into.

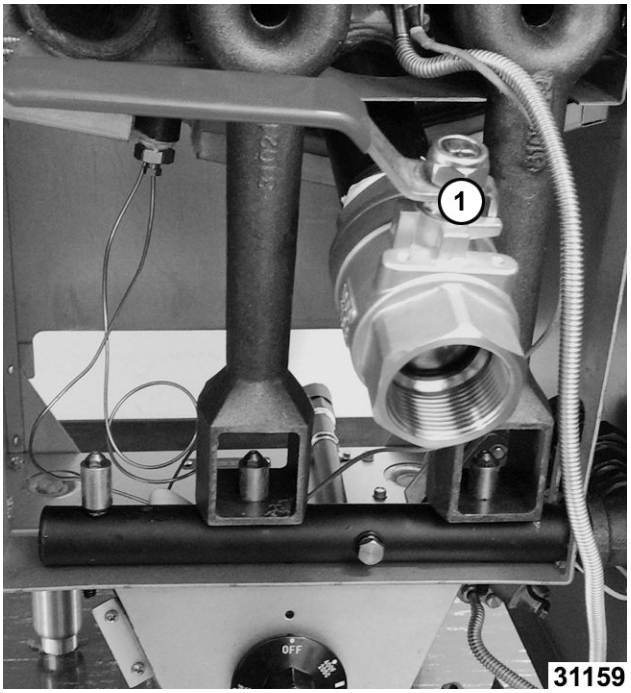


Fig. 33

4. Open the drain valve.
5. Close drain valve when fryer tank is emptied.

MILLIVOLT CONTROLS TEST

1. Verify proper gas (natural or propane) is present.
2. Check for correct wiring and secure connections.
3. Verify pilot flame is adjusted properly as outlined in PILOT ADJUSTMENT.

NOTE: If the pilot is not lit, light pilot. Refer to: LIGHTING PILOT.

4. Allow pilot to burn for 3 to 4 minutes to stabilize.
   A. If pilot remains lit, proceed to step 6.
   B. If pilot will not remain lit, proceed to step 5.
5. Connect DC voltmeter to terminals TH-TP and TH of combination valve. Relight pilot, hold gas control valve knob in, and allow pilot to burn for 3 to 4 minutes to stabilize.
   A. If voltage measures 450 millivolts or greater and pilot will not stay lit, replace combination valve.
   B. If voltage is less than 450 millivolts, measure voltage at terminals NO and C of high limit.
   C. If the voltage is less than 500 millivolts, disconnect lead wire from terminal TH-TP on combination valve and remeasure voltage at the high limit.

- If voltage is less than 500 millivolts, replace thermopile.
- If voltage is 500 millivolts or more, replace combination valve.

6. Connect DC voltmeter to terminals TP and TH of combination valve.
7. Turn gas control valve knob to ON. Turn thermostat to a setting higher than the shortening temperature.
   A. If voltage measures 150 millivolts or more but the burners do not ignite, replace combination valve.
   B. If voltage is less than 150 millivolts, measure voltage between terminals NO on high limit and TP on combination valve.
      - If voltage is 200 millivolts or greater and burners do not light, replace thermostat.
      - If voltage is less than 200 millivolts and burners do not light, replace combination valve.

THERMOSTAT CALIBRATION

⚠ WARNING

Oil may be hot.

NOTICE

If oil is present, verify it is at proper fill mark.

Check

1. Place temperature tester in center of fry tank, one inch below the surface of the oil.
2. Set thermostat to 300°F and allow temperature to stabilize.
3. Check temperature tester reading against the thermostat dial reading. If there is a variance of more than +/- 20°F (208°F to 320°F), calibration is required.

Calibration

1. Remove thermostat knob from shaft.
2. Using a small screwdriver, rotate setscrew inside the hollow shaft counterclockwise to increase temperature or clockwise to decrease temperature (1/4 turn equals approximately 18°F).
3. Allow temperature to stabilize and recheck temperature. Repeat until the temperature falls within the limits as stated in step 3 under Thermostat Calibration - Check.
4. Install thermostat knob and set dial to 350°F
5. Allow temperature to stabilize at new setting and compare temperature tester to dial setting. Recalibrate if the temperature does not fall within the range of 330°F to 370°F.
6. If temperature does not fall within the limits at both settings, replace thermostat.
7. Seal the adjustment screw after calibration is complete.

NOTE: Glyptal or ordinary Nail polish is acceptable to use as sealant.

PILOT ADJUSTMENT

NOTE: Verify the proper gas type (natural or propane) is being supplied to fryer before proceeding.

1. Turn control thermostat to off.
2. LIGHT PILOT burner and leave gas combination valve knob/extension arm in pilot position.

NOTICE

Allow pilot to burn for 3-4 minutes to stabilize flame. If pilot burner is not lighting or does not remain lit when gas combination valve knob/extension arm is released, see TROUBLESHOOTING. Wait 5 minutes between pilot burner lighting attempts for unburned gas to vent.

NOTE: Connect meter to thermopile leads at high limit and monitor millivolt output, with pilot properly adjusted millivolt reading should be 500mV. increase or decrease pilot flame height to achieve 500mV.

3. Verify flame does not extend beyond the outer edges of pilot shield ½", or extends more than ½", (Fig. 34). If adjustment is necessary continue with procedure.

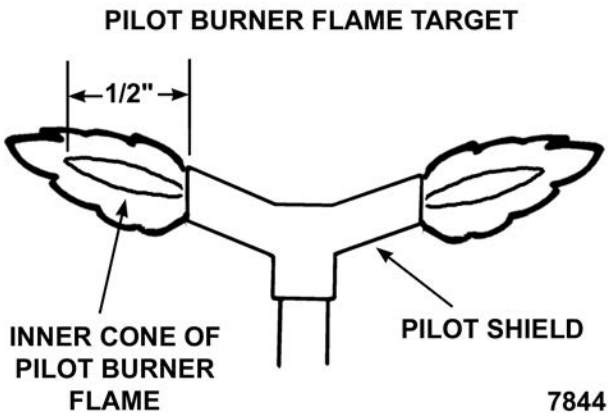


Fig. 34

4. Remove the cap covering pilot adjustment screw from combination valve.

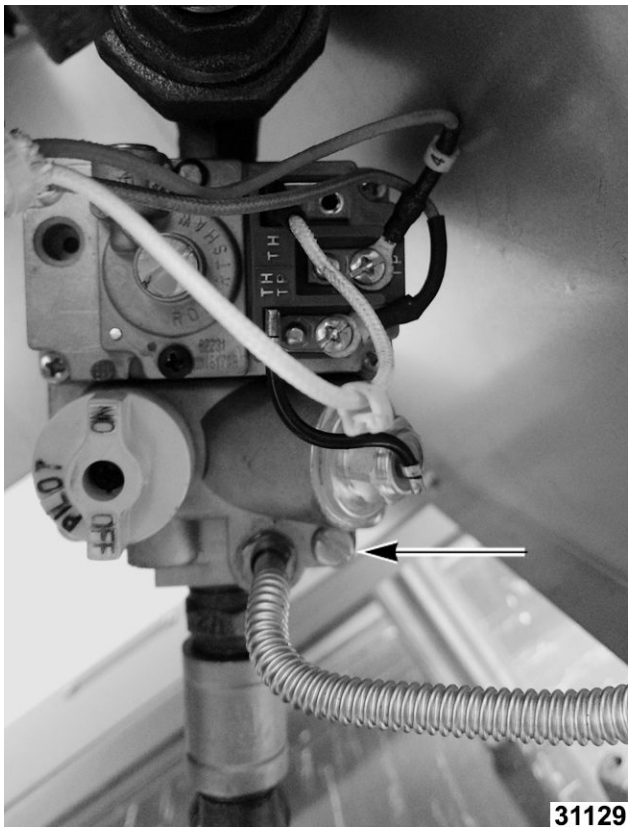


Fig. 35

- Turn counterclockwise to increase the size of flame.
- Turn clockwise to decrease size of flame.

5. Verify pilot burner is lit.
6. Turn gas combination valve knob/extension arm to on and set control thermostat to call for heat.

NOTICE

If main burners do not light or pilot burner goes out, proceed to MILLIVOLT CONTROLS TEST.

BURNERS, NOZZLES AND ORIFICES

⚠ WARNING

Shut off the gas before servicing the unit and follow lockout / tagout procedures.

Burners

1. Remove BURNERS.
2. Check burners for cracks or clogged ports.

NOTICE

If burner ports become clogged fryer will not operate properly. If burner is cracked, it must be replaced.

3. Wash burners in warm, soapy water.
4. Hand-turn a drill bit into hole with obstruction as needed to remove blockage.

Nozzles and Orifices

1. Remove BURNERS.
2. Hold burner nozzle with channel locks and remove orifice.

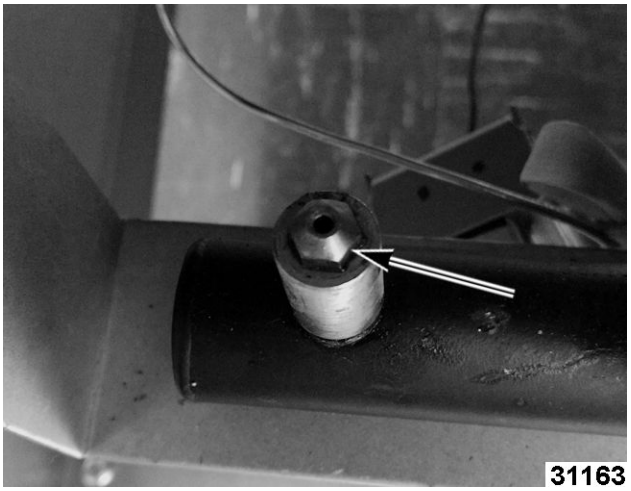


Fig. 36

3. Check orifice for obstructions or damage.
4. Wash orifice in warm, soapy water.
5. Clean orifice with an orifice cleaning tool. Remove obstruction as needed to remove blockage.

6. Reverse procedure to install new burner, nozzle and orifice.

COMBINATION VALVE REGULATOR ADJUSTMENT

⚠ WARNING

Shut off the gas before servicing the unit and follow lockout / tagout procedures.

NOTE: Accurate gas pressure adjustments can only be made with gas on and burner lit. If incoming line pressure to valve is less than the minimum stated, then pressure cannot be set correctly.

Combination valve is preadjusted for natural or propane gas as specified on the rating plate. Natural gas rating is 4" W.C., and propane rating is 10" W.C.

1. Turn gas control valve knob to OFF.

Fig. 37

2. Remove plug from submanifold and install Manometer at this point.

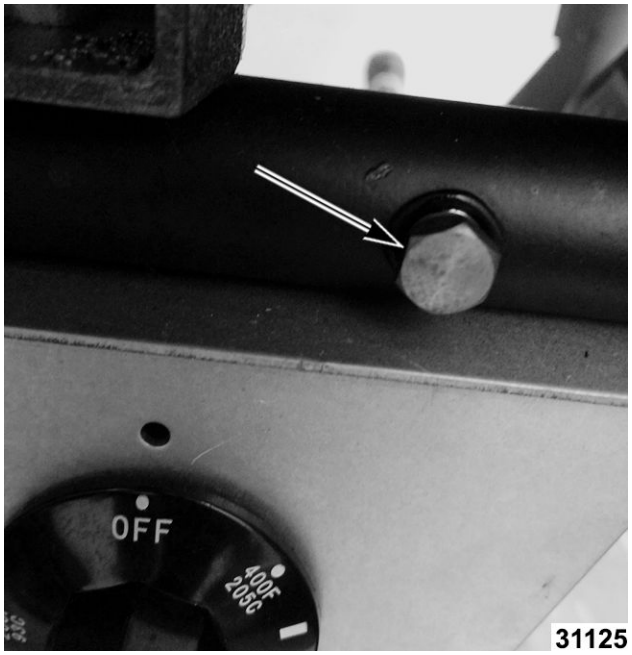


Fig. 38

3. Turn on gas and LIGHT PILOT.
4. Turn gas control valve knob to ON.
5. Set thermostat so burners will come on.
6. Check pressure reading. Manifold Manometer should match pressure rating on data plate. Perform adjustment as necessary.

   Adjustment

   A. Remove adjustment screw cap.

   B. Turn adjustment screw (1, Fig. 39):

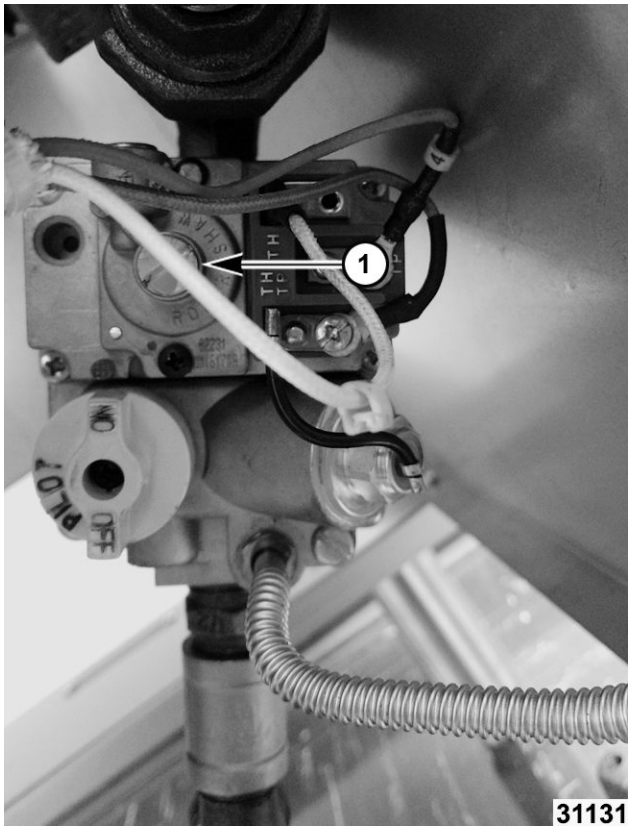


Fig. 39

- Counterclockwise to decrease pressure.
- Clockwise to increase pressure.

7. Install cap and check for proper operation.

EXTENDED SHUT-DOWN

⚠ WARNING

Oil may be hot.

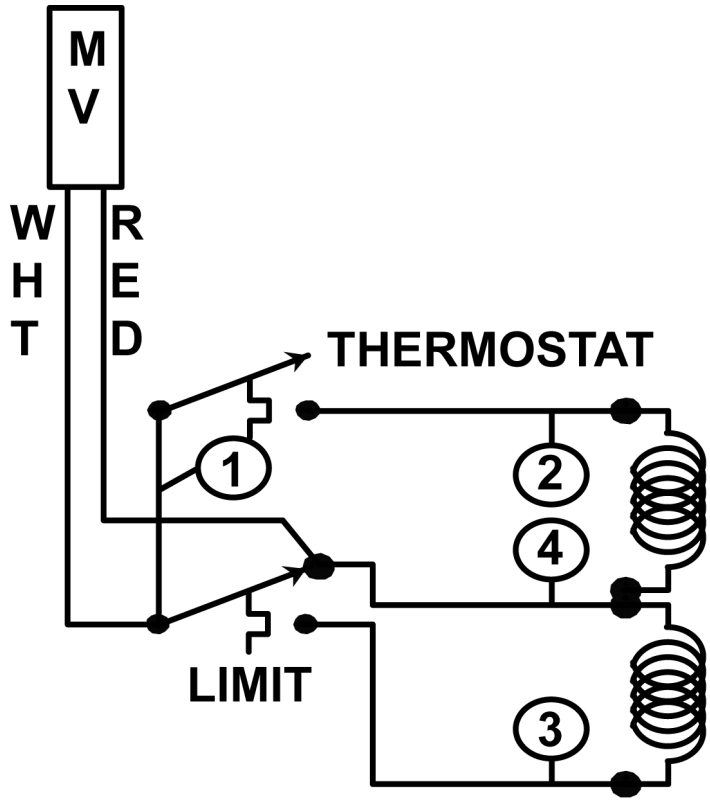
1. Turn thermostat off.
2. Push pilot knob in and turn to OFF.
3. DRAIN FRYER TANK .
4. Clean fryer.
5. Turn off main gas shutoff valve.

⚠ WARNING

Shut off the gas before servicing the unit and follow lockout / tagout procedures.

DIAGRAMS

SCHEMATIC



DERIVED FROM #958873 AI4735

Fig. 40

NOTE: High limit shown tripped.

WIRING DIAGRAM

LG Series Gas Fryers

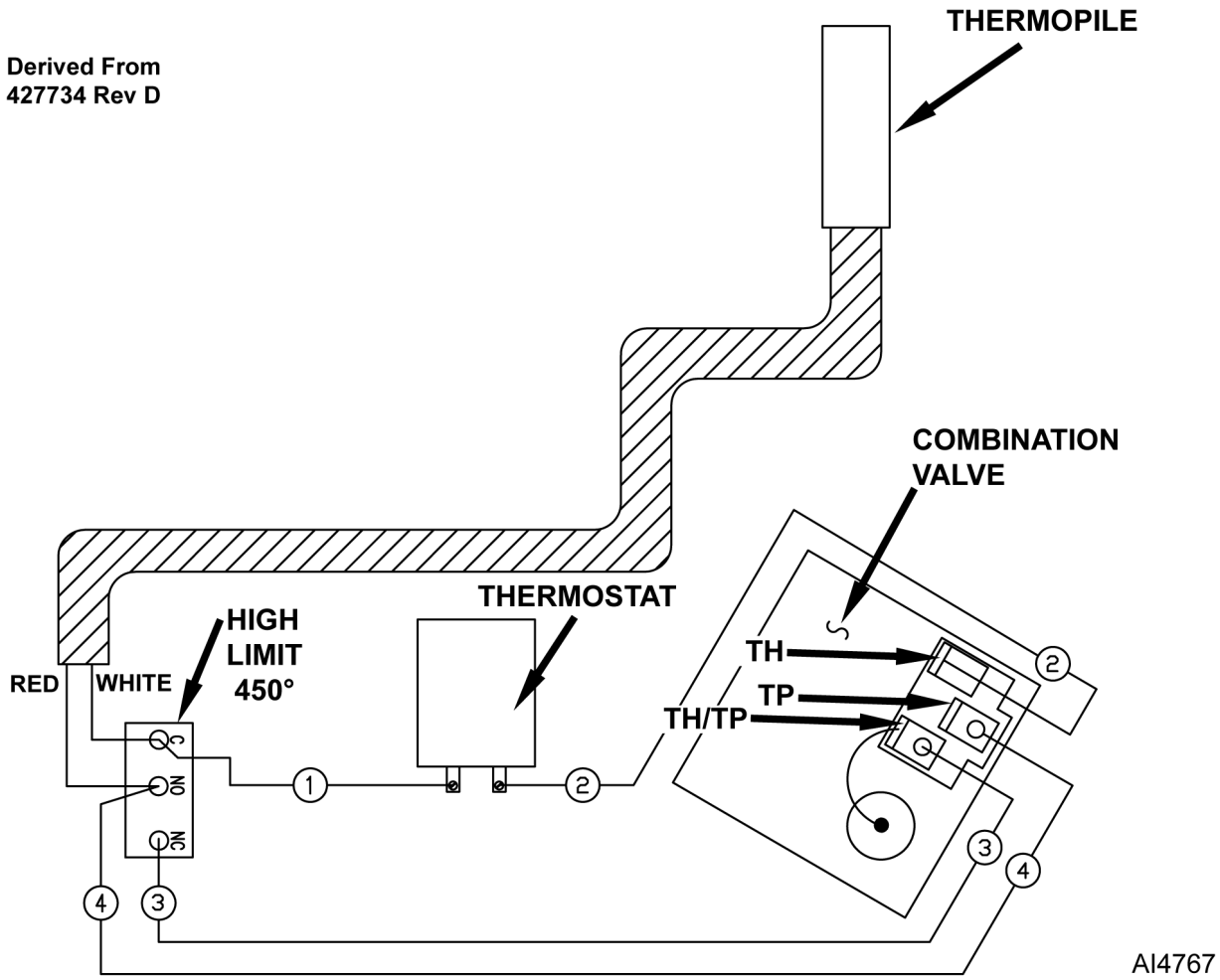


Fig. 41

ELECTRICAL OPERATION

CONTROL SYSTEM DESCRIPTION

1. The thermopile (TH) provides total control voltage for this system.
   A. One side of thermopile is connected to common (C) of high limit (HL).
   B. The other side of the thermopile is connected to normally open (NO) contacts (wire 4) of high limit.
   C. The common of high limit (below high limit trip temp) is connected through normally closed (NC) contacts of high limit, through wire 3 (wire 3 goes to TH/TP terminal on gas valve) to combination valve pilot connection common.
   D. The other side of pilot valve is connected through wire 4 (wire 4 goes to NO terminal on high limit with red wire from thermopile) to wire 1 (wire 1 goes from thermostat to high limit common terminal with white wire from the thermopile) to high limit normally open contacts which hold pilot valve open.

NOTE: If high limit trips, connection is made from common to normally open contacts, turning off pilot valve voltage. The gas valve closes.

2. **Thermostat Control**
   A. One side of millivolt supply is connected through high limit system, as described above, to thermostat common (wire 2) of combination valve.
   B. The other side of thermopile is connected from normally open (common terminal on high limit) contacts of high limit to thermostat through wire 1 (common terminal on high limit).
   C. When the thermostat calls for heat (closed circuit) power from thermopile, it is then connected to other combination valve thermostat connection through wire 2 (to TH terminal on gas valve).
   D. If high limit trips, thermopile is connected across zero ohms, the output voltage of thermopile drops to 0.0 millivolts, and the thermostat coil of combination valve drops out, shutting the thermostat valve.
3. **Total Shutdown**
   A. When high limit trips, 0.0 millivolts will read across both coils of the combination valve, causing both valves to close.
   B. Pilot relight cannot be accomplished until oil cools sufficiently to allow high limit to close.
   C. If any wire in the system is shorting, cut or broken, the system will shut down.

SYSTEM CONDITION QUICK CHECK PROCEDURE

1. Use the Pilot Lighting procedure and check millivolts (mV) at wires 3 and 4.
   A. If the pilot lights, then pilot combination valve and high limit are good.
   B. If the pilot will not stay lit, check high limit and open the thermopile circuit. It should read 500 mV; if there are Ø volts, check high limit. If the high limit is good, replace combination valve.
   C. Check for voltage at disconnected thermopile. It should read 500 mV; if there are Ø volts, replace thermopile. Check high limit. If the high limit is good, replace combination valve.
2. Turn on thermostat; burners should light.
   A. If burner does not light, check voltage at combination valve at wires 2 (TH) and 4 (TP).
   B. If correct voltage is present, then check combination valve.
   C. If there are Ø volts, check voltage between wire 3 of combination valve and wire 1 of thermostat. If correct voltage is present, then check resistance of the thermostat contacts and continuity of wires 3 & 2.

COMPONENT FUNCTION

Thermostat . . . . . . Millivolt type with capillary bulb, single-throw break on temperature rise. Temperature range of 200°F to 400°F.

Thermopile . . . . . . Millivolt control with 24" capillary. Rated to generate 500 millivolts.

Combination Valve . . . Regulates gas flow to burner and pilot. Provides pilot safety.

High Limit . . . . . . Prevents overheating of fryer in the event of thermostat failure. Opens at 465°F and automatically resets at 415°F.

TROUBLESHOOTING

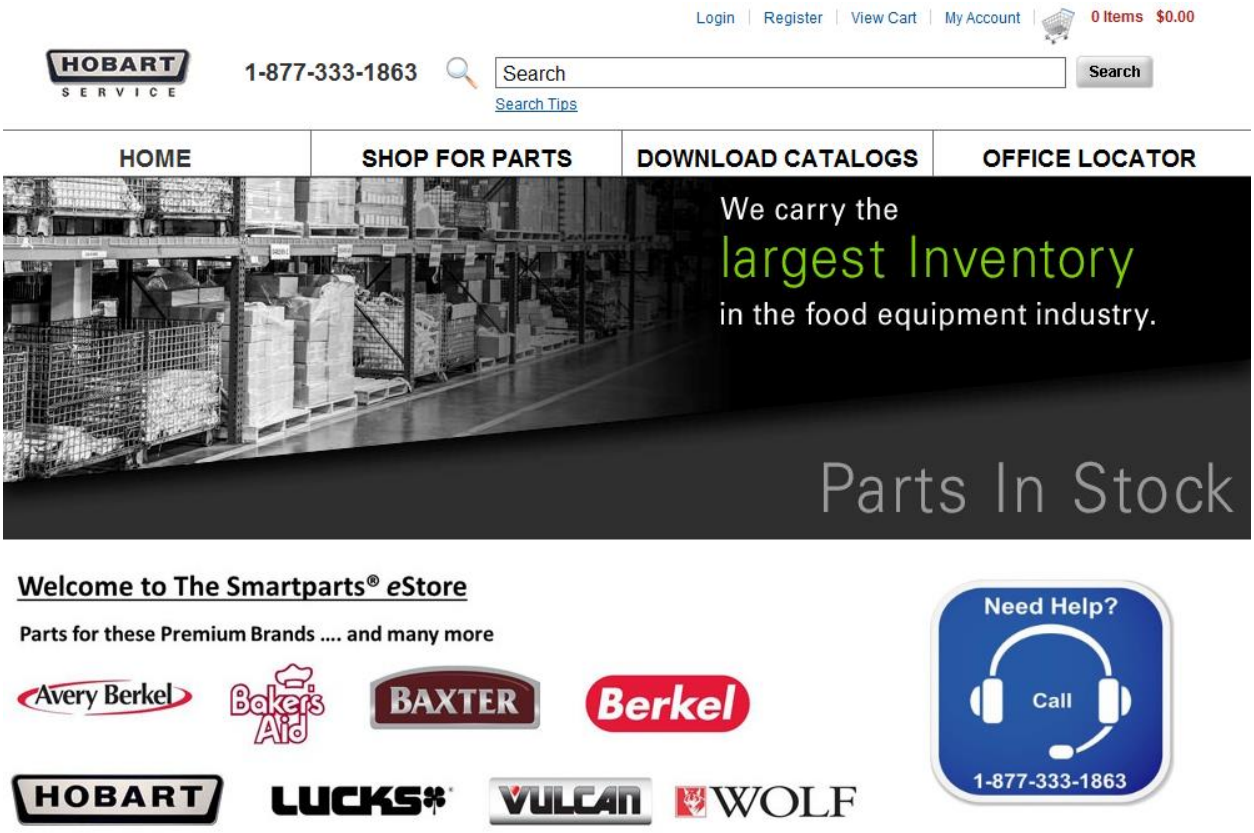
TROUBLESHOOTING

SYMPTOM	CAUSE	REMEDY
The temperature of shortening drops, or excessive recovery time is required.	1. Insufficient gas supply to unit. 2. Ventilation system pulling heat out of heat exchanger and flue box. 3. Overloading fryer capacity. 4. Check thermostat calibration and reaction times.	1. Adjust gas supply at gas combination valve. 2. Relocate fryer. 3. Adjust loads accordingly. 4. Calibrate or replace thermostat.
Pilot won't stay lit. Fryer shuts off.	1. Malfunctioning thermopile or loose/dirty connection in thermopile. 2. Gas supply turned off or disconnected. 3. Pilot burner orifice and air openings need cleaning. 4. Possible shorted combination valve. 5. High limit is open.	1. Check thermopile function and connections. Adjust or replace as required. 2. Clean burner orifice and air openings as required. 3. Check each post on combination valve to ground. If zero resistance, replace combination valve. 4. Check high limit, are NC contacts open?
Rapid shortening breakdown, crumbs and specks in frying compound.	1. Excessive temperature settings (over 375°F). 2. Shortening not being filtered regularly. 3. Incorrect preparation of breaded food.	1. Adjust temperature setting. 2. Adjust filtering schedule. 3. Do not use salt. 4. Allow breading time to adhere to food. 5. Do not allow loose flour to fall into shortening from hands. 6. Do not add straining or drippings from meat fats to shortening. 7. Use correct shortening and follow temperature recommendations. 8. Take out 10% to 15% of the shortening. 9. Check thermostat settings with thermometer periodically.

SYMPTOM	CAUSE	REMEDY
Leaking tank.	1. Foam-over by depleted shortening permits oil to drip from the tank surface, giving appearance of leaking. 2. Careless draining procedures. 3. Carbon buildup causes rapid attack on tank by promoting acid formulation.	1. Replace shortening. 2. Gas control valve knob should be in PILOT or OFF position before draining oil. Burners heating an empty tank will damage tank joints. 3. Clean tank surfaces.
Pilot burner flames adjusted properly, but fluctuates to very low and blows out easily.	1. Gas pressure too low. 2. Gas pressure too low at submanifold.	1. Check gas pressure on submanifold fitting when fryer is in operation. 2. Check other equipment attached to same gas line. 3. Adjust gas pressure at submanifold to not less than 4.0" W.C. (natural and mixed gas) or 10.0" W.C. for propane gas.

ONLINE PARTS CATALOG

Order parts online at our Hobart Service Parts store: http://thesmartpartsestore.hobartservice.com/



CATALOG OF REPLACEMENT PARTS

LG SERIES GAS FRYERS

MODELS

LG300	*ML-136528*
LG400	*ML-136622*
LG500	*ML-136643*

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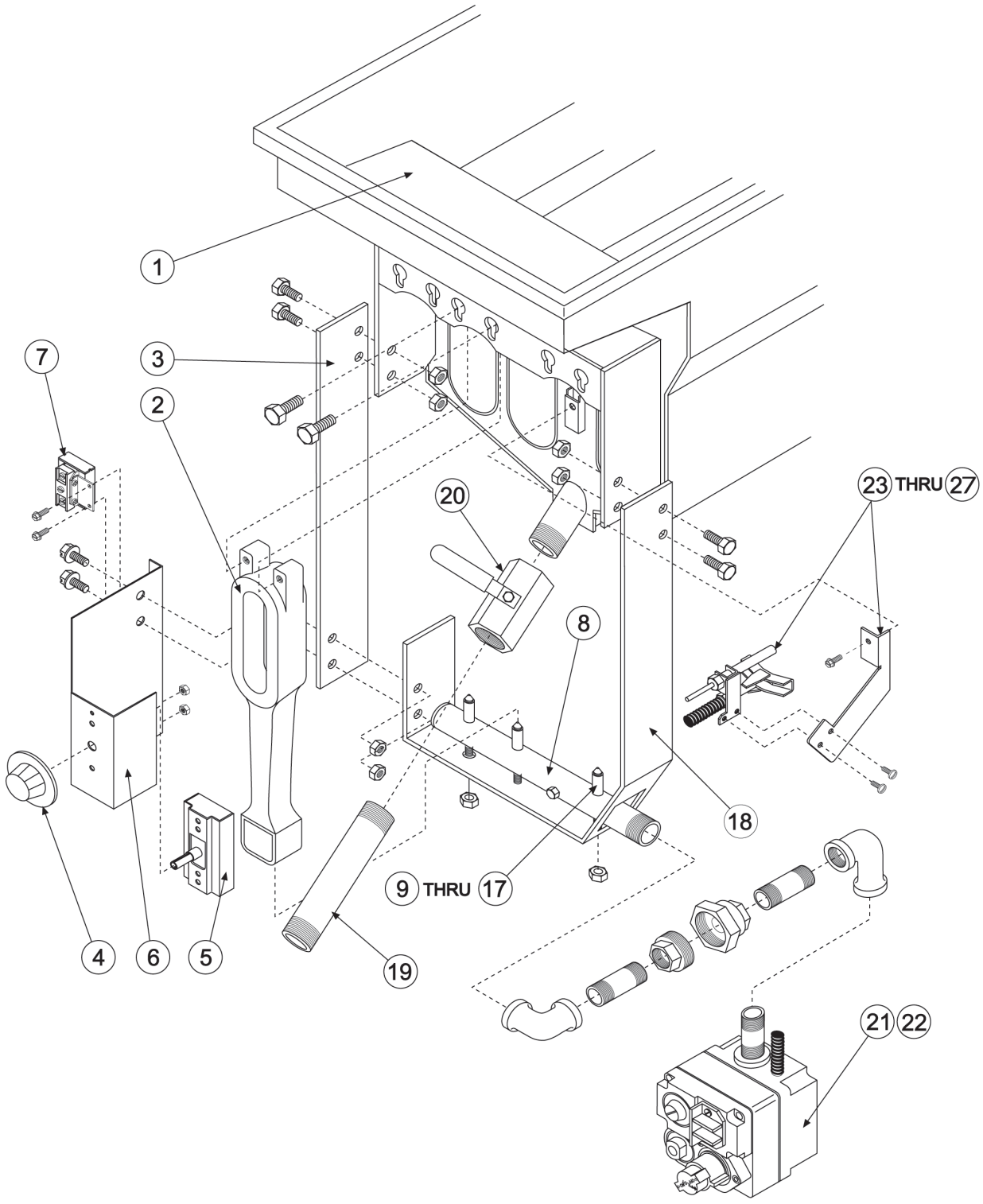

Fig. 1B

LG SERIES
BURNER COMPONENTS

BURNER COMPONENTS

ILLUS. Fig. 1B	PART NO.	NAME OF PART	AMT. LG300	LG400	LG500
1	00-499700-000G1	Tank Assembly	1		
	00-499701-000G1	Tank Assembly		1	
	00-499702-000G1	Tank Assembly			1
2	00-410681-00001	Burner	3	4	5
3	00-417714-00001	Hanger - Manifold Extension	1	1	1
4	00-408659-00005	Knob - Thermostat	1	1	1
5	00-411506-00013	Thermostat - Millivolt	1	1	1
6	00-419613	Bracket - Control	1	1	1
7	00-410840-00002	Thermostat - Hi-Limit (W/Stuff Box)	1	1	1
8	00-418209-00001	Manifold	1		
	00-418212-00001	Manifold		1	
	00-418318-00001	Manifold			1
9	00-010901-00039	Orifice - Spud (Nat. Gas) (Sea Level - 2000 Ft.)	AR	AR	AR
10	00-010901-00041	Orifice - Spud (Nat. Gas) (2000 - 3000 Ft.)	AR	AR	AR
11	00-010901-00042	Orifice - Spud (Nat. Gas) (3000 - 5000 Ft.)	AR	AR	AR
12	00-010901-00043	Orifice - Spud (Nat. Gas) (5000 - 7000 Ft.)	AR	AR	AR
13	00-010901-00044	Orifice - Spud (Nat. Gas) (7000 - 8000 Ft.)	AR	AR	AR
14	00-010901-00052	Orifice - Spud (LP. Gas) (Sea Level - 2000 Ft.)	AR	AR	AR
15	00-010901-00053	Orifice - Spud (LP. Gas) (3000 - 5000 Ft.)	AR	AR	AR
16	00-010901-00054	Orifice - Spud (LP. Gas) (5000 - 8000 Ft.)	AR	AR	AR
17	00-410695-00001	Extension - Orifice	3	4	5
18	00-418208-00001	Hanger - Manifold	1		
	00-418211-00001	Hanger - Manifold		1	
	00-418317-00001	Hanger - Manifold			1
19	FP-085-74	Drain - Extension ($1^1/_4$ NPT Pipe)	1	1	1
20	00-414212-00006	Valve ($1^1/_4$" Ball Drain)	1	1	1
21	00-410841-00022	Valve - Combination (Natural Gas)	1	1	1
22	00-410841-00023	Valve - Combination (L.P. Gas)	1	1	1
23	00-426505-00023	Flex Tube - Pilot	1	1	1
24	00-412212-00007	Pilot - (Nat. Gas)	1	1	1
25	00-412212-00002	Pilot - (L.P. Gas)	1	1	1
26	00-410839-00004	Thermopile, Millivolt	1	1	1
27	00-427952-00001	Bracket - Pilot Mounting	1	1	1
	00-417008-000G1	Heat Baffle for Burner	1	1	1
	00-497344-000G1	Wiring Harness	1	1	1

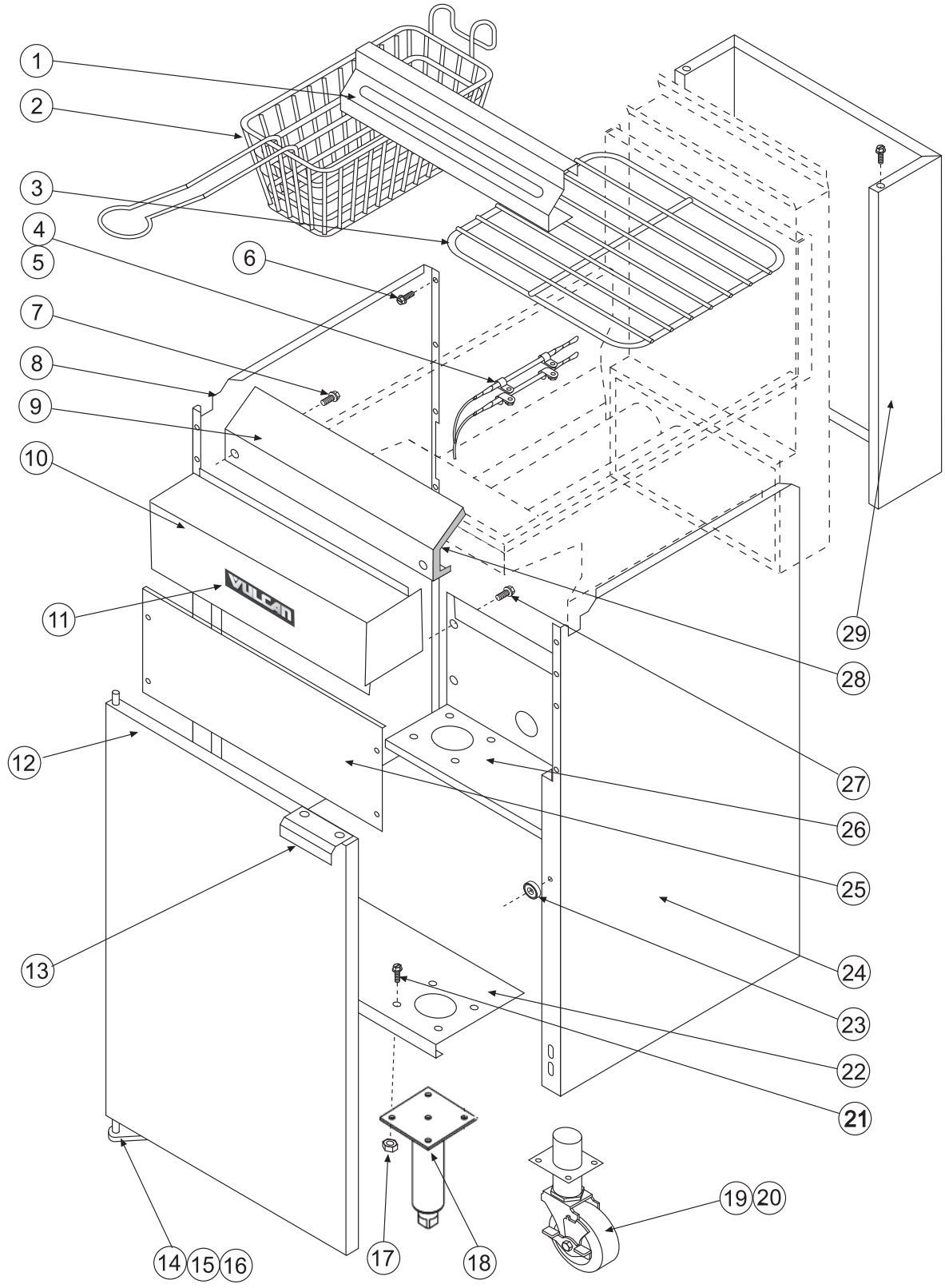

Fig. 2B

LG SERIES
BODY UNIT

BODY UNIT

ILLUS. Fig. 2B	PART NO.	NAME OF PART	AMT. LG300	LG400	LG500
1	00-419664-00002	Hanger - Basket	1	1	
	00-419664-00004	Hanger - Basket			1
2	00-499223-00001	Basket (Twin - Red Handle)	2	2	
	00-499223-00002	Basket (Twin - Red Handle)			2
3	00-427883-00001	Rack - Crumb	1		
	00-427883-00002	Rack - Crumb		1	
	00-427883-00003	Rack - Crumb			1
4	00-402558-00006	Clamp - Thermostat Bulb	2	2	2
5	00-417522-00001	Clip - Capillary	2	2	2
6	SD-036-03	Self-Tapping Screw 8-18 x 3/8” Hex Washer Hd., Type AB	4	4	4
7	SD-036-03	Self-Tapping Screw 8-18 x 3/8” Hex Washer Hd., Type AB	2	2	2
8	00-419778-00006	Body - L.H. Side	1	1	1
9	00-419656	Heat Shield	1	1	
	00-419656-00002	Heat Shield			1
10	00-419662-000G1	Front Panel Assembly	1	1	
	00-419662-000G2	Front Panel Assembly			1
11	00-417700-00002	Nameplate	1	1	1
12	00-421582-000G2	Door Panel Assembly (Stainless Steel) (Incls. Item 27)	1	1	
	00-421582-000G4	Door Panel Assembly (Stainless Steel) (Incls. Item 27)			1
13	00-419653	Handle	1	1	1
14	00-428023-000G1	Hinge - Assembly	1	1	1
15	SD-032-07	Self-Tapping Screw 10-24 x 1/2” Hex Washer Hd., Type TT	2	2	2
16	NS-044-09	Nut Assembly 10-24 Hex “KEPS”	2	2	2
17	SD-015-14	Self-Tapping Screw 1-4-20 x 1/2” Hex Washer Hd., Type TT	AR	AR	AR
18	00-413112-00012	Legs (6”) (Stainless Steel)	4	4	4
19	00-421893-00001	Caster, 4” W/Brake	2	2	2
20	00-421893-00002	Caster. 4”	2	2	2
21	NS-044-14	Nut - 1/4-20 x 1/2 Hex Washer Hd., Type TT	AR	AR	AR
22	00-427886-00001	Body - Front Bottom	1	1	
23	00-497296-000G2	Magnet - Door	1	1	1
24	00-419778-00005	Body - R.H. Side	1	1	1
25	00-419788-00001	Shield - Front	1	1	
	00-419788-00002	Shield - Front			1
26	00-427884-00001	Body - Rear Bottom	1	1	
27	SD-032-07	Self-Tapping Screw 10-24 x 1/2” Hex Washer Hd., Type TT	4	4	4
28	00-419795-000G1	Insulation - Heat Shield	1	1	
	00-419795-000G2	Insulation - Heat Shield			1
29	00-416959-00006	Wrap - Flue	1	1	
	00-418336-00006	Wrap - Flue			1
	00-497428-00003	Body Bottom (21”)			1

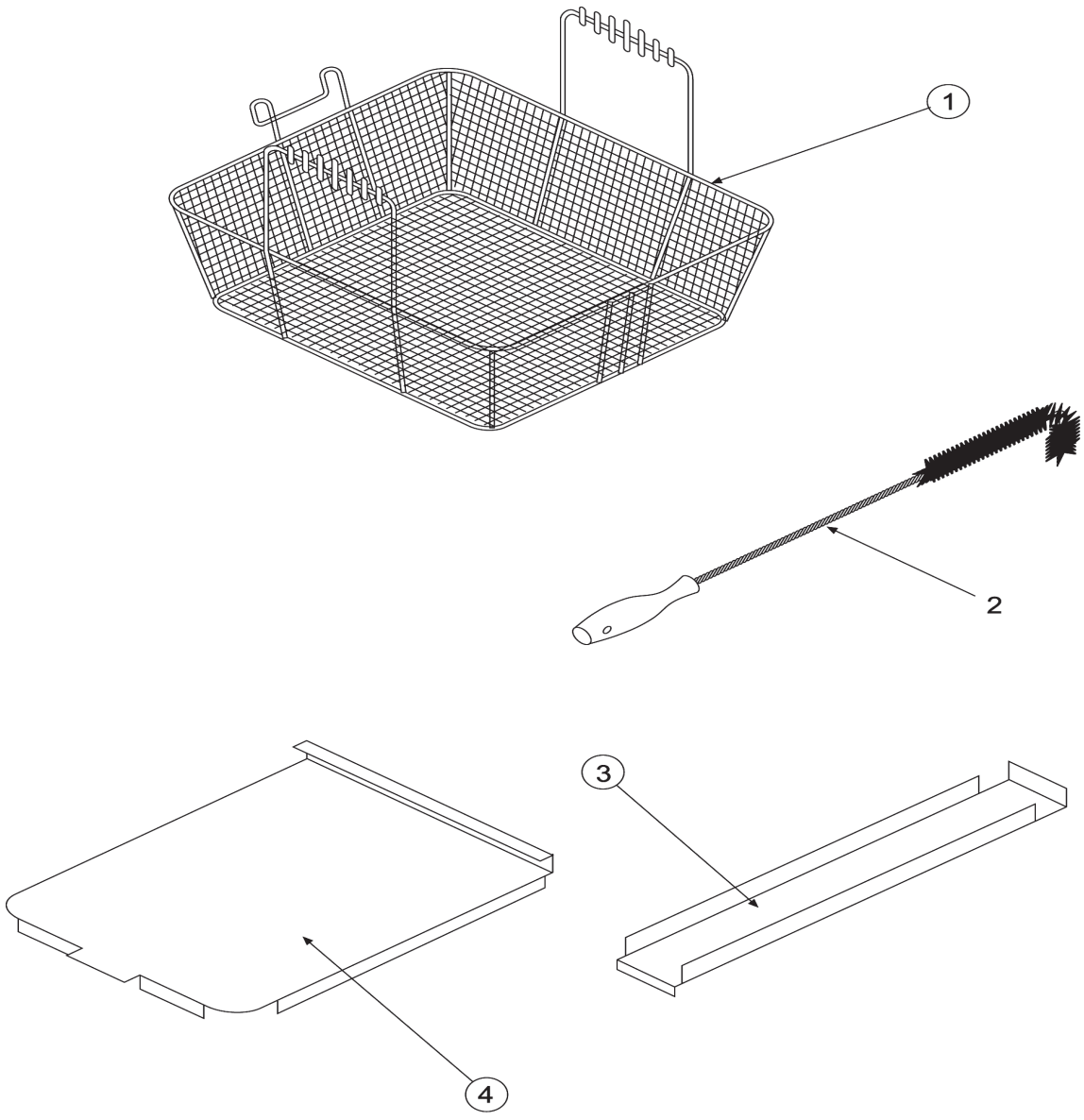

Fig. 3B

LG SERIES
ACCESSORIES

ILLUS. Fig. 3B	PART NO.	NAME OF PART	AMT. LG300	LG400	LG500
1	00-499223-00009	Basket - Single, Dual Handle	1	1	
	00-499223-00010	Basket - Single, Dual Handle			1
2	00-421756-00001	Brush - Fryer Cleaning	1	1	1
3	00-410863-00002	Grease Strip	1	1	1
4	00-497211-00001	Vat Cover (SST)	1	1	
	00-497211-00002	Vat Cover (SST)			1

RECOMMENDED SPARE PARTS LIST

PART NO.	NAME OF PART	AMT.
00-410840-00002	High Limit	2
00-411506-00013	Thermostat-Millivolt	2
00-408659-00005	Thermostat Knob	2
00-410841-00022	Combination Valve (Nat. Gas)	1
00-410841-00023	Combination Valve (LP. Gas)	1
00-412212-00007	Pilot Assy. (Nat. Gas)	2
00-412212-00002	Pilot Assy. (LP. Gas)	2
00-410839-00004	Thermopile	2

NOTES