OPERATOR MANUAL

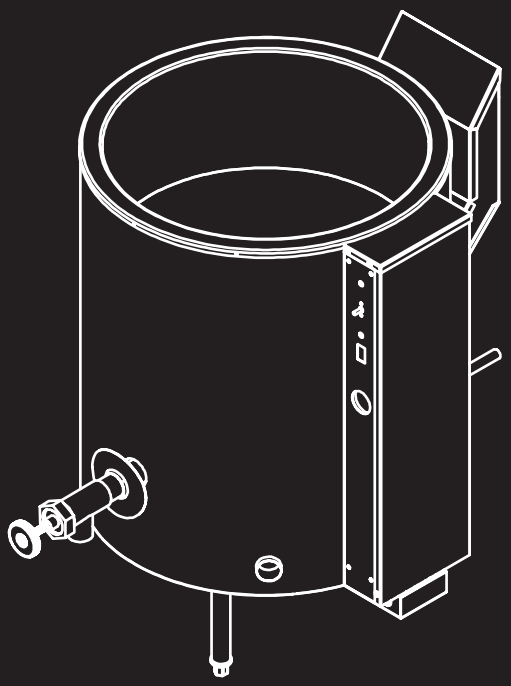
IMPORTANT INFORMATION, KEEP FOR OPERATOR

This manual provides information for:

Steam Jacketed Kettle

MODEL: LKS-45G

COMMERCIAL FOODSERVICE EQUIPMENT



THIS MANUAL MUST BE RETAINED FOR FUTURE REFERENCE. READ, UNDERSTAND AND FOLLOW THE INSTRUCTIONS AND WARNINGS CONTAINED IN THIS MANUAL.

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

POST IN A PROMINENT LOCATION
Instructions to be followed in the event user smells gas. This information shall be obtained by consulting your local gas supplier. As a minimum, turn off the gas and call your gas company and your authorized service agent. Evacuate all personnel from the area.

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.

NOTIFY CARRIER OF DAMAGE AT ONCE
It is the responsibility of the consignee to inspect the container upon receipt and to determine the possibility of any damage, including concealed damage. LoLo Commercial Foodservice Equipment suggests that if you are suspicious of damage to make a notation on the delivery receipt. It will be the responsibility of the consignee to file a claim with the carrier. We recommend that you do so at once.

Manufacturer's Service/Questions 877-246-5656

Information contained in this document is known to be current and accurate at the time of printing/creation. LoLo Commercial Foodservice Equipment recommends referencing our product line website, www.getLoLo.com, for current product information and specifications.

PART NUMBER 156698 Rev. B (08/13)

IMPORTANT - READ FIRST - IMPORTANT

IMPORTANT: **BE SURE OPERATORS READ, UNDERSTAND AND FOLLOW THE OPERATING INSTRUCTIONS, CAUTIONS, AND SAFETY INSTRUCTIONS IN THIS MANUAL.**

WARNING: **THIS UNIT IS INTENDED FOR USE IN THE COMMERCIAL HEATING, COOKING AND HOLDING OF WATER AND FOOD PRODUCTS, PER THE INSTRUCTIONS CONTAINED IN THIS MANUAL. ANY OTHER USE COULD RESULT IN SERIOUS PERSONAL INJURY OR DAMAGE TO EQUIPMENT AND WILL VOID WARRANTY.**

WARNING: **KETTLE MUST BE INSTALLED BY PERSONNEL QUALIFIED TO WORK WITH ELECTRICITY. IMPROPER INSTALLATION CAN RESULT IN INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT.**

WARNING: **ELECTRICALLY GROUND THE UNIT AT THE TERMINAL PROVIDED. FAILURE TO GROUND UNIT COULD RESULT IN ELECTROCUTION AND DEATH.**

CAUTION: **DO NOT CONNECT ANY PIPING TO THE POP SAFETY VALVE. THE VALVE MUST BE FREE TO VENT STEAM AS NEEDED. THE ELBOW ATTACHED TO THE SAFETY VALVE SHOULD POINT TO THE FLOOR. IMPROPER INSTALLATION WILL VOID WARRANTY.**

CAUTION: **AVOID ALL DIRECT CONTACT WITH HOT EQUIPMENT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.**

CAUTION: **AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE KETTLE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.**

CAUTION: **DO NOT OVER FILL THE KETTLE WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS A MINIMUM OF 2-3" (5-8 CM) BELOW THE KETTLE BODY RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING AND SAFE PRODUCT TRANSFER.**

CAUTION: **TAKE SPECIAL CARE TO AVOID CONTACT WITH HOT KETTLE BODY OR HOT PRODUCT WHEN ADDING INGREDIENTS, STIRRING OR TRANSFERRING PRODUCT TO ANOTHER CONTAINER.**

CAUTION: **WHEN TILTING KETTLE FOR PRODUCT TRANSFER:**
1) USE CONTAINER DEEP ENOUGH TO CONTAIN AND MINIMIZE SPLASHING.
2) PLACE CONTAINER ON STABLE, FLAT SURFACE, AS CLOSE TO KETTLE AS POSSIBLE.
3) DO NOT OVER FILL CONTAINER. AVOID DIRECT SKIN CONTACT WITH HOT CONTAINER AND ITS CONTENTS.

CAUTION: **KEEP FLOORS IN FRONT OF KETTLE WORK AREA CLEAN AND DRY. IF SPILLS OCCUR, CLEAN IMMEDIATELY, TO AVOID SLIPS OR FALLS.**

WARNING: **FAILURE TO CHECK PRESSURE RELIEF VALVE OPERATION PERIODICALLY COULD RESULT IN PERSONAL INJURY AND/OR DAMAGE TO EQUIPMENT.**

CAUTION: **WHEN TESTING, AVOID ANY EXPOSURE TO THE STEAM BLOWING OUT OF THE PRESSURE RELIEF VALVE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.**

WARNING: **BEFORE REPLACING ANY PARTS, DISCONNECT THE UNIT FROM THE ELECTRIC POWER SUPPLY AND CLOSE THE MAIN GAS VALVE. ALLOW FIVE MINUTES FOR UNBURNED GAS TO VENT.**

WARNING: **KEEP WATER AND SOLUTIONS OUT OF CONTROLS AND ELECTRICAL EQUIPMENT. NEVER USE A HIGH PRESSURE HOSE TO CLEAN KETTLE SURFACES.**

CAUTION: **MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES AND CLOTHING. PRECAUTIONS SHOULD BE TAKEN. WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD AND PROTECTIVE CLOTHING. CAREFULLY READ THE WARNINGS AND FOLLOW THE DIRECTIONS ON THE LABEL OF THE CLEANER TO BE USED.**

IMPORTANT - READ FIRST - IMPORTANT

CAUTION: USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY LOLO COMMERCIAL FOODSERVICE EQUIPMENT OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE OPERATOR INJURY AND DAMAGE TO THE EQUIPMENT, AND WILL VOID ALL WARRANTIES.

IMPORTANT: SERVICE PERFORMED BY OTHER THAN FACTORY AUTHORIZED PERSONNEL WILL VOID WARRANTIES.

SAFETY PRECAUTIONS

Before installing and operating this equipment be sure everyone involved in its operation are fully trained and are aware of all precautions. Accidents and problems can result from a failure to follow fundamental procedures and precautions.

The following words and symbols, found in this manual, alert you to potential hazards to the operator, service personnel or the equipment. The words are defined as follows:

⚠ DANGER

DANGER: This symbol warns of an imminent hazard which will result in serious injury or death.

⚠ WARNING

WARNING: This symbol refers to a potential hazard or unsafe practice, which could result in serious injury or death.

⚠ CAUTION

CAUTION: This symbol refers to a potential hazard or unsafe practice, which could result in minor or moderate injury, or product or property damage.

NOTICE

NOTICE: This symbol refers to information that needs special attention or must be fully understood even though not dangerous.

⚠ WARNING **TO AVOID PROPERTY DAMAGE, PERSONAL INJURY OR DEATH, SHUT OFF GAS BEFORE SERVICING THE UNIT.**

⚠ WARNING **TO AVOID PROPERTY DAMAGE, PERSONAL INJURY OR DEATH, CHECK ALL JOINTS IN THE GAS SUPPLY LINE FOR LEAKS PRIOR TO LIGHTING. USE SOAP AND WATER SOLUTION (BUBBLES). DO NOT USE AN OPEN FLAME.**
A. CHECK ALL JOINTS IN FRONT OF (BEFORE) THE GAS VALVE BEFORE LIGHTING UNIT.
B. CHECK ALL JOINTS BEYOND THE GAS VALVE AFTER THE UNIT IS LIT.

⚠ WARNING **TO AVOID PROPERTY DAMAGE, PERSONAL INJURY OR DEATH, 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.**

NOTICE This product is intended for commercial use only. Not for household use.

NOTICE Local codes regarding installation vary greatly from one area to another. The National Fire Protection Association, Inc., states in its NFPA96 latest edition that local codes are “Authority Having Jurisdiction” when it comes to requirements for installation of equipment. Therefore, installation should comply with all local codes.

IMPORTANT FOR FUTURE REFERENCE

Please record this information and retain this manual for the life of the equipment. For Warranty Service and/or parts, this information is required.

Model Number	Serial Number	Date Purchased

Table of Contents

References

NATIONAL FIRE PROTECTION ASSOCIATION
60 Batterymarch Park
Quincy, Massachusetts 02269

NFPA/70
The National Electrical Code

NFPA/54
The National Fuel Gas Code

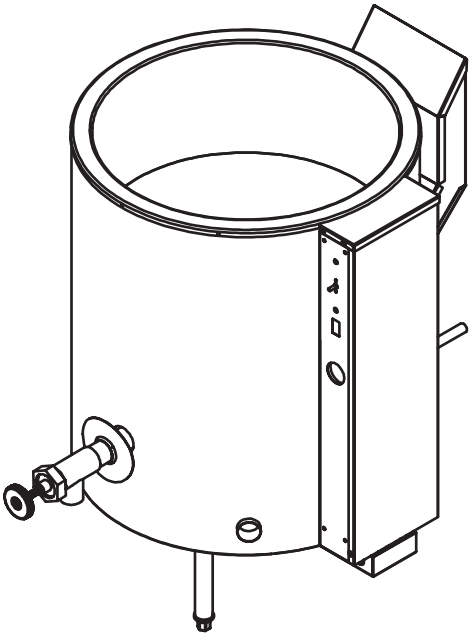
NSF INTERNATIONAL
789 N. Dixboro Rd.
Ann Arbor, Michigan 48113-0140

INTERTEK (ETL)
1950 Evergreen Blvd, Suite 100
Duluth, GA 30096

AMERICAN NATIONAL STANDARDS INST., INC.
1430 Broadway
New York, New York 10018

Z223.1-1984 - National Fuel Gas Code
Z21.30 - Installation Gas Appliances & Piping

Equipment Description



Congratulations on your purchase of LoLo commercial cooking equipment. LoLo takes pride in the design and quality of our products. When used as intended and with proper care and maintenance, you will experience years of reliable operation from this equipment. To ensure best results, it is important that you read and follow the instructions in this manual carefully.

The LoLo LKS-45G steam kettles are stainless steel, floor mounted kettles with a self-contained steam source heated by gas. A closed steam jacket covers the lower 2/3 of the kettle. Heat from the gas burner boils water in the jacket to produce steam under pressure. To ignite the burner, the kettle uses electronic spark ignition.

The kettle body is welded into one piece. The interior of the kettle is polished to a 180 emery grit finish. The unit is ASME shop inspected and registered with the National Board for working pressures up to 25 PSI.

The jacket is filled at the factory with water containing rust inhibitor. The kettle can operate at steam pressures up to 25 PSI, which provides operating temperatures of 150ºF (65ºC) to approximately 267ºF (131ºC). This range allows warming, simmering, boiling or braising.

These kettles are stationary (non-tilting). Liquids can be removed through the tangent draw-off valve. The standard 2 inch tangent draw-off is a 316 stainless steel, compression disc valve. All exposed surfaces are stainless steel. Insulated sheathing covers the kettle body, and a housing encloses the controls. Tubular legs support the unit, with adjustable bullet feet to level the kettle.

Controls provided include a power ON/OFF switch, to control electric power for the unit, and a thermostat to set the cooking temperature. Automatic safety systems include:

- Gas pressure regulator that protects the unit from high pressure in the gas supply line
- Automatic gas valve that allows gas into the burners, as needed
- Pressure limit switch that turns off the burner when jacket pressure reaches 23 PSI and lights the burner when pressure drops to 20 PSI
- Safety valve that lets steam out of the jacket if the steam pressure exceeds 25 PSI
- Low-water cutoff that turns off the burner if the water level in the jacket gets too low for safe operation

Kettle operating status systems include:

- Pressure/vacuum gauge that shows steam pressure and whether too much air has entered the jacket
- Heating indicator light (amber) that indicates that the kettle is being heated
- Power ON indicator light (green) mounted in the power switch indicates when electric power is turned on
- Low water indicator light (red) that shows when jacket water needs to be replenished

Equipment Description

Optional equipment includes:

- Lift-off cover
- 1/8” or 1/4” perforated or solid disc strainer
- Tangent brush kit
- Flanged feet
- Propane gas/elevation conversion kit

KEY UNIT DIMENSIONS

Dimension	US/Metric	Performance Characteristics	
Unit Width	33” *838 mm*	***Max. PSI***	25
Rim Height	42.2” *1072 mm*	***Temp. Range***	150 to 265° F
Unit Depth	48.3” *1227 mm*	***Rim Capacity***	45 gal. *170 l*
Ship. Weight	625 lbs *283 kg*	***Working Cap.***	36 gal. *136 l*

POWER REQUIREMENTS

Electric Service		Gas Service (via ½” NPT Fitting)		
Voltage	120	**TYPE**	**NATURAL**	**PROPANE**
Phase	1	Firing Rate	96,000 BTU/hr	96,000 BTU/hr
Hz	60	Min. Pressure	4.5” W.C.	4.5” W.C.
Amp Load	5	Max. Pressure	11” W.C.	11” W.C.

Inspect for Shipping Damage

All containers should be examined for damage before and during unloading. The freight carrier has assumed responsibility for its safe transit and delivery. If the equipment is received damaged, either apparent or concealed, a claim must be made with the delivering carrier.

1. Apparent damage or loss must be noted on the freight bill at the time of delivery. It must then be signed by the carrier representative (driver). If this is not done, the carrier may reject the claim. The carrier can supply the necessary claim forms.

2. Concealed damage or loss if not apparent until after the equipment is uncrated, can also be claimed. However, a request for inspection must be made to the carrier within 15 days. The carrier should arrange an inspection. Be certain to retain all contents and packaging material.

Uncrating

⚠ CAUTION

USE CAUTION WHEN UNCRATING LOLO EQUIPMENT. METAL AND PLASTIC BANDING IS UNDER TENSION AND CAN SNAP BACK WHEN CUT. WOOD PALLETS OR SKIDS CAN CONTAIN SPLINTERS AND NAILS. SHIPPING CARTONS CAN CONTAIN LARGE STAPLES. WEAR GLOVES AND PROTECTIVE EYEWEAR WHEN OPENING, MOVING AND DISPOSING OF SHIPPING CONTAINERS.

⚠ CAUTION

THIS UNIT IS VERY HEAVY. INSTALLER SHOULD OBTAIN HELP OR USE MATERIALS HANDLING EQUIPMENT AS NEEDED TO LIFT THIS WEIGHT SAFELY.

1. Cut strapping or banding that closes the top of the cardboard shipping carton and secures it to the wood pallet.

2. Lift carton straight up and off the kettle. Obtain help, if needed.

3. Remove any Styrofoam blocking or wood bracing that protects unit from shipping damage.

4. Cut strapping or banding that secures kettle to the wood pallet or skid.

5. This kettle weighs over 600 pounds (280 kg). Use material handling equipment (forklift, pallet jacket, etc.) to lift the kettle off and clear of wood pallet.

   IMPORTANT: Use caution to avoid damage to kettle jacket sheathing, the tangent drawoff tube, jacket fill assembly or burner assembly parts underneath the kettle, during the lift and movement. Lift the kettle at the reinforced ring around the parameter, beneath the kettle outer sheathing.

6. Pull off any grey/white plastic from stainless steel surfaces. This adhesive-backed plastic protects surfaces for scratches during fabrication and shipping.

7. Dispose of cardboard carton, Styrofoam and wood pallet/skid by recycling.

Installation Instructions

⚠ CAUTION

INSTALLER MUST VERIFY THAT THE INSTALLATION COMPLIES WITH THE APPLICABLE LOCAL CODES AND REGULATIONS. THE UNIT MUST BE INSTALLED BY A LICENSED PLUMBER OR GAS FITTER WHEN INSTALLED WITHIN THE COMMONWEALTH OF MASSACHUSETTS.

⚠ WARNING

INSTALLATION OF THE KETTLE MUST BE DONE BY A LICENSED PLUMBER OR AUTHORIZED REPRESENTATIVE QUALIFIED TO WORK WITH GAS. IMPROPER INSTALLATION CAN RESULT IN INJURY TO PERSONNEL AN/OR DAMAGE TO EQUIPMENT.

⚠ WARNING

THE AREA DIRECTLY AROUND THE APPLIANCE MUST BE CLEARED OF ALL COMBUSTIBLE MATERIAL. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN CAUSE BODILY INJURY AND/OR PROPERTY DAMAGE.

⚠ WARNING

INSTALLATION OF THE KETTLE MUST BE DONE BY A CERTIFIED ELECTRICIAN OR AUTHORIZED REPRESENTATIVE QUALIFIED TO WORK WITH ELECTRICITY. IMPROPER INSTALLATION CAN RESULT IN INJURY TO PERSONNEL AN/OR DAMAGE TO EQUIPMENT.

GENERAL INSTALLATION – CODE REQUIREMENTS

Install the gas appliance in a well ventilated area. Adequate air must be supplied to replenish the air used for combustion. Ventilation must employ a vent hood and exhaust fan with no direct connection between the vent duct and the kettle flue.

Installation must conform with local codes and/or with the National Fuel Gas Code, ANSI Z223.1/NFPA-54 (latest edition) or the Natural Gas and Propane Installation Code CSA B149.1 as applicable. **NOTE**: Local codes may require that the kettle be electrically interlocked to shut off the gas supply and prevent the operation of the unit if the exhaust fan is not operating or if the fire suppression system is activated. Failure to follow these instructions can cause bodily injury and/or property damage.

SITE SELECTION & REQUIREMENTS

The LoLo gas-heated floor-model stationary steam jacketed kettle must be:

1. Installed in a commercial kitchen with ready access to natural or propane gas, plus 120 volt, single phase 60 cycle electric power;

2. Positioned under a Type I commercial ventilation hood capable of full capture of gas combustion byproducts, heat, grease and water vapor produced during the operation and use (cooking) of the kettle;

3. Provided with a level, sturdy, stable floor capable of supporting the weight of the kettle (625 lbs/283 kg), plus up to 36 gallons/136 liters of product, which can weigh over 300 pounds/140 kg.

4. Provided with enough space to ensure easy cleaning and minimum clearances from non-combustible surfaces of:
   - 2” (51 mm) on both sides
   - 6” (152 mm) in rear from gas flue

KETTLE POSITIONING & COMPONENT ASSEMBLY

1. **Position & Level the Kettle:**
   - Obtain sufficient help or use material handling equipment to lift the kettle and position it on a floor area that meets the support criteria described above. **TIP**: If possible, locate the kettle where a floor sink or drain is available and positioned directly under the 2-inch tangent drawoff valve.
   - Position the kettle with the tangent drawoff facing straight forward.
   - Use a spirit level to check the level of the kettle from left-to-right and front-to-back. Lay the level on the top rim to check level.
   - If the kettle is not level, rotate one or two of the three height-adjustable feet on the kettle as needed and recheck level.

2. **Install the Tangent Drawoff Valve:**
   The LoLo LKS-45G Kettle comes with a front mounted 2” tangent drawoff valve that can be used to transfer product (without large food solids) into pans or containers; and to drain cleaning water into a floor drain or bucket. The tangent valve stem and handle assembly ships loose.
   - Remove the valve stem and handle assembly from protective packaging.
   - Position the valve stem into the front-mounted tangent tube.
   - Slide the large stainless steel nut over the threaded tube end and hand-tighten that big nut. (See Photo 11-1 on page 11)

⚠ WARNING
ELECTRICALLY GROUND THE UNIT AT THE TERMINAL PROVIDED. FAILURE TO GROUND THE UNIT COULD RESULT IN ELECTROCUTION AND DEATH.

⚠ WARNING
DO NOT CONNECT ANY PIPING TO THE POP SAFETY VALVE. THE VALVE MUST BE FREE TO VENT STEAM AS NEEDED. IMPROPER INSTALLATION WILL VOID THE WARRANTY!

- Turn the black plastic handle clockwise to seal off the tangent valve. Turn it counter-clockwise to open the valve. The valve should open and close easily, without binding or major effort; and seal completely when closed.

3. **Install OPTIONAL Tangent Drain Strainer (If Ordered):**
The LoLo LKS-45G Kettle can be ordered with tangent drain strainers that are designed to keep food solids (cut carrots, potatoes, peas, etc.) from collecting in and blocking the tangent drawoff valve. A drain strainer will allow liquids (stock, etc.) to drain, while holding back food solids.

Three different optional Drain Strainers are available: a Solid Disk Strainer, a ¼" (6 mm) Perforated Disk Strainer and a 1/8" (3 mm) Perforated Disk Strainer. To install any of the three:
- Remove Disk Strainer from protective packaging.
- Position the heavy wire clip under the shield-shaped strainer, reach into the kettle vessel interior and insert the centering clip into the tangent drawoff tube opening.
- Center the shield-shaped strainer over the tangent opening, tight against the kettle bottom.

4. **For OPTIONAL Flanged Feet:**
- Obtain sufficient help or use material handling equipment to lift one side of the kettle.
- Use a heavy screwdriver and hammer (or mallet) to tap the adjustable bullet feet out of the frame support legs. They are a tight press fit.
- Position the optional flanged foot into the frame support leg and use the hammer or mallet to seat the flanged foot. Don't bend the floor flange when seating the foot.

NOTE: Flanged feet are height adjustable and can be leveled by following the Kettle Leveling Instructions on page 8. After the Kettle is positioned as desired and leveled, the flanged feet can be secured with floor anchors, per local codes and best practice.

MAKE ELECTRIC POWER CONNECTION

1. Provide 120 VAC, 60 Hz, 1 Ph, 15 Amp electrical service for standard unit. Use 1/2 inch waterproof conduit and waterproof connections. A cutout is provided in the back of the control panel enclosure, just above the gas pipe nipple.

IMPORTANT: Observe local codes and/or The National Electrical Code in accordance with ANSI/NFPA-70 latest edition. In Canada, provide electrical service in accordance with the Canadian Electrical Code CSA C22.1 Part 1 and/or local codes.

2. AN ELECTRICAL GROUND IS REQUIRED. The electrical schematic is located on the inside of the service panel, and on page 25 of this manual.

PRESSURE TEST WARNING

1. During pressure testing of the gas supply piping system at pressure exceeding 0.5 PSIG, the kettle and its individual shutoff valve must be disconnected from the gas supply piping system.

2. During pressure testing of the gas supply piping system at pressures equal to or less than 0.5 PSIG (3.45 kPa), the kettle must be isolated from the gas supply piping system by closing its individual manual shutoff valve.

MAKE GAS CONNECTION

1. The internal gas lines of the unit were cleaned and closed off with a gas cock before the unit was shipped from the factory. **IMPORTANT**: Free external gas lines of lint, dirt, metal chips, sealant, grease, oil, and other contaminants before you connect the lines to the kettle.

2. Connect the gas cock of the kettle to the gas service main with 1/2 inch IPS line or approved equivalent.

   IMPORTANT: Installation must conform with local codes or with the American National Standard Z223, latest edition, National Fuel Gas Code. In Canada, installation must conform to CAN/CGA B149 Installation Codes for Gas Appliance and Equipment and/or local codes. Do NOT obstruct the flue or vent duct after installation.

3. After the kettle has been connected to the gas supply, all gas line joints must be checked for leaks. DO NOT USE A FLAME TO CHECK FOR LEAKS. A thick soap solution or other suitable leak detector should be employed.

Initial Start-Up

IMPORTANT

BE SURE ALL OPERATORS READ, UNDERSTAND AND FOLLOW THE OPERATING INSTRUCTIONS, CAUTIONS, AND SAFETY INSTRUCTIONS CONTAINED IN THIS MANUAL.

⚠ CAUTION

AVOID ALL DIRECT CONTACT WITH HOT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.

AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE KETTLE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

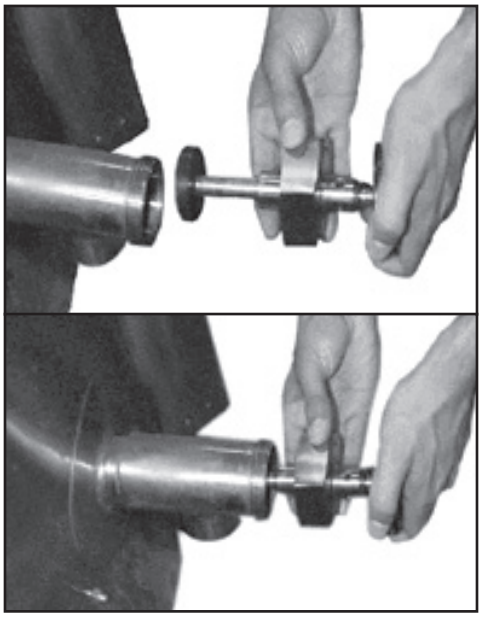


Photo 11-1
Insert and hand-tighten the tangent draw-off valve stem nut.

Now that the kettle has been installed, you should test it to ensure that the unit is operating correctly.

1. Remove all literature and packing materials from inside the kettle.

2. Inspect tangent outlet tube for any material which might clog or damage the draw-off (product outlet).

3. If not already done, install the draw-off valve (packed separately) by sliding the assembly into the tangent and hand-tighten the large stainless steel nut. (See Photo 11-1, lower left)

3. Turn on electrical service to the kettle.

4. Place a bucket under the drawoff and pour water into the kettle until it is about six inches deep (150 mm).

5. Test draw-off valve operation by opening it all the way, then closing it before all the water runs out. The valve should NOT drip after the valve is closed.

6. Following “To Start Kettle” instructions in the “Operation” section of this manual, begin heating the water at the highest thermostat setting. The amber heating indicator light should come on immediately, and heating should continue until the water boils.

7. To shut down the unit, turn the thermostat dial and power switch to “OFF”.

If the unit functions as described above, it is ready for use. If the unit does not function as intended, first recheck power supply connections and, if necessary, contact your LoLo Authorized Service Agency.

Operation - General Kettle Use

Photo 12-1

Photo 12-2

⚠ CAUTION

AVOID ALL DIRECT CONTACT WITH HOT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.

AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE KETTLE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

TAKE SPECIAL CARE TO AVOID CONTACT WITH THE HOT KETTLE BODY OR HOT PRODUCT, WHEN ADDING INGREDIENTS, STIRRING OR TRANSFERRING PRODUCT TO ANOTHER CONTAINER.

OPERATOR CONTROLS

1. Manual gas valve. Controls the supply of gas from the main line to the kettle.

2. Power on/off switch. This switch turns the control circuit power on or off.

3. Thermostat dial. This turns the thermostat on or off and sets the kettle operating temperature.

4. Indicator lights, to alert operator of unit conditions:
   a. Power indicator (green), shows that electric power is turned on.
   b. Heating indicator (amber), indicates that main gas burner is firing to produce steam in the kettle jacket.
   c. Low water indicator (red), warns that jacket water level is low.

TO START KETTLE

1. CHECK THE WATER LEVEL IN THE JACKET EVERY DAY. The level should be at the middle of the sight glass. (See Photo 12-2 at left). If the level is low, see "Jacket Filling" in the "Maintenance" section of this manual.

2. While the kettle is cold, check the pressure gauge. If the gauge does not show -20 to -30 inches of vacuum (that is, a reading of 20 to 30 below 0), see "Jacket Vacuum" in the "Maintenance" section of this manual.

3. If closed, open main supply gas valve (handle in line with the pipe).

4. Turn the power switch to ON. For 90 seconds or until it succeeds, the electronic ignition control will attempt to light the pilot. **NOTE**: DO NOT attempt to light any burner with a flame.

5. Once the pilot is lit, turn the thermostat dial to the desired setting.

6. If the pilot does not light, turn power OFF and wait five minutes. At that time, follow the instructions for starting once again.

7. If the unit repeatedly fails to light, contact an LoLo Authorized Service Agency for assistance.

TO SHUT OFF KETTLE

1. Turn the thermostat dial to OFF.

2. Turn the power switch OFF.

3. For a prolonged shut-down:
   a. Follow steps 1 and 2 above AND:
   b. Turn the manual gas valve OFF (handle at right angle to gas line).
   c. Shut off unit's electrical power at wall outlet or breaker.

Operation - General Kettle Use

⚠ WARNING

DO NOT ATTEMPT TO LIGHT ANY BURNER WITH A FLAME.

⚠ CAUTION

HEATING AN EMPTY KETTLE MAY CAUSE THE RELEASE OF STEAM FROM THE SAFETY VALVE.

⚠ CAUTION

KEEP FLOORS IN FRONT OF THE KETTLE WORK AREA CLEAN AND DRY. IF SPILLS OCCUR, CLEAN AT ONCE TO AVOID SLIPS OR FALLS.

⚠ CAUTION

DO NOT OVERFILL THE KETTLE WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS AT LEAST 2-3" (5-8 cm) BELOW THE KETTLE RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING PRODUCT AND SAFE TRANSFER.

⚠ CAUTION

ALWAYS USE CAUTION WHEN TRANSFERRING HOT FOODS OR WATER FROM THE KETTLE. WEAR PROTECTIVE MITS AND CLOTHING TO AVOID CONTACT WITH HOT SURFACES AND HOT LIQUIDS. HOT LIQUIDS AND HOT KETTLE SURFACES CAN CAUSE SERIOUS BURNS ON CONTACT WITH EXPOSED SKIN.

TO RELIGHT KETTLE

1. Close main gas supply valve.
2. Set power switch to OFF.
3. Set thermostat to OFF.
4. Wait five minutes then proceed as directed under "To Start Kettle," on page 12.

TIPS FOR EASIER PRODUCT TRANSFER

1. Always transfer food into clean containers designed to hold hot liquids.
2. When transferring foods such as soups or sauces with food solids, someone may need to stir the batch while transferring, to insure uniform suspension of floating and sinking food solids. An alternative is to do a two-stage fill by transferring all liquids into containers then ladling solids into each of the containers in equal proportions.
3. Use caution when opening the tangent drawoff valve to avoid splashing.
4. The tangent valve nozzle is positioned 11-inches above floor level to accommodate buckets and taller containers. If filling small/short or shallow containers, place another (upside-down) container under the pan to raise it closer to the valve nozzle. **IMPORTANT**: Use caution and wear hand and arm protection to avoid burns from splashing hot liquids.
5. If you want to restrict the flow of food solids through the tangent valve, you will need an OPTIONAL tangent drain strainer. These stainless steel disks are available in solid, 1/8" and ¼" perforated strainers. **NOTE**: If an optional tangent strainer was not included with your kettle order, you can order them from your authorized LoLo Foodservice Equipment Distributor.

Operation - General Kettle Use

⚠ CAUTION

AVOID ALL DIRECT CONTACT WITH HOT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.

AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE KETTLE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

TAKE SPECIAL CARE TO AVOID CONTACT WITH HOT KETTLE BODY OR HOT PRODUCT, WHEN ADDING INGREDIENTS, STIRRING OR TRANSFERRING PRODUCT TO ANOTHER CONTAINER.

⚠ CAUTION

DO NOT OVERFILL THE KETTLE WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS AT LEAST 2-3" (5-8 cm) BELOW THE KETTLE BODY RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING PRODUCT AND SAFE TRANSFER.

⚠ CAUTION

USE CAUTION WHEN LIFTING, POSITIONING OR REMOVING THE LIFT-OFF COVER. AVOID CONTACT WITH ALL HOT SURFACES AND STEAM THAT MAY BE RELEASED WHEN THE COVER IS OPENED-REMOVED, HOT LIQUIDS OR HOT CONDENSATE THAT MAY ROLL OFF THE COVER WHEN IT IS REMOVED. BARE SKIN CONTACT WITH HOT SURFACES, STEAM, FOOD OR CONDENSATE CAN CAUSE SERIOUS BURNS.

USE OF OPTIONAL LIFT-OFF COVER

A stainless steel lift-off cover is available as an extra-cost option. This kettle cover can:

- Reduce cook times or the time to bring water or other liquids to a boil;
- Reduce heat and humidity loss into the kitchen;
- Reduce impact on air conditioning;
- Control product moisture loss during cooking.

To position/place cover:

1. Firmly grasp BOTH handles and place cover on top of the kettle rim. Slide cover forward to engage cover locking clips. When the kettle is hot, wear protective mitts and avoid contact with all hot kettle surfaces.

To remove cover:

1. Wearing protective mitts, grasp BOTH cover handles, slide cover back (away from you) to clear locking clips and **lift the rear edge** of the cover to vent any steam or water vapor that may be trapped under the cover.

2. Tilt the cover edge higher to allow any condensate or liquids to drain back into the kettle.

3. Place the cover topside/outside-down on a clean, uncluttered surface, away from the kettle and other employees. It may still be hot.

4. If the bottom/product side of the cover is compromised or contaminated in any way, clean and sanitize it before returning it to service on the kettle.

5. Clean both sides of cover between each use.

Cleaning

⚠ CAUTION

KEEP WATER AND SOLUTIONS OUT OF CONTROLS AND ELECTRICAL EQUIPMENT. DO NOT USE A HIGH PRESSURE HOSE TO CLEAN THE CONTROL CONSOLE, ELECTRICAL CONNECTIONS, ETC.

⚠ CAUTION

NEVER LEAVE A CHLORINE SANITIZER IN CONTACT WITH STAINLESS STEEL SURFACES FOR LONGER THAN 30 MINUTES. LONGER CONTACT CAN CAUSE CORROSION.

⚠ CAUTION

MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES AND CLOTHING. PRECAUTIONS SHOULD BE TAKEN TO WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD AND PROTECTIVE CLOTHING. CAREFULLY READ THE WARNINGS AND FOLLOW LABEL DIRECTIONS.

Photo 15-1

Use a brush, sponge, cloth, plastic or rubber scraper, or plastic wool to clean.

Photo 15-2

Don't use metal implements or steel wool when cleaning.

SUGGESTED CLEANING SUPPLIES

1. A high quality detergent and sanitizer, or a combination cleaning-sanitizing agent.
2. Kettle brushes in good condition.
3. Spray Degreaser (PN 156704) or equivalent.
4. De-limer/De-scaler (PN 156707) or equivalent.
5. A high quality stainless steel cleaner.

PRECAUTIONS

Before any cleaning operation, shut off the kettle by turning the power switch and thermostat dial to "OFF"; and shut off electric power to the unit at a remote switch, such as the circuit breaker.

CLEANING PROCEDURES

1. Clean food contact surfaces as soon as possible after use, preferably while the kettle is still warm. If the unit is in continuous use, clean and sanitize inside and outside at least once every 12 hours.

2. Scrape and flush out large amounts of food residue. Be careful not to scratch the kettle with metal implements. Close the draw-off.

3. Prepare a solution of the detergent/cleaning compound as instructed by the supplier. Clean the unit thoroughly. A cloth moistened with cleaning solution can be used to clean controls, their enclosures, electrical conduit, etc.

4. Rinse the kettle thoroughly with hot water, then drain completely.

5. Disassemble the tangent draw-off valve. Clean the draw-off port (outlet) and each valve part with a brush.

6. Rinse the kettle and draw-off valve parts thoroughly with hot water, then drain completely.

7. When you reassemble the draw-off valve, hand-tighten the nut which holds it in place. **NOTE:** Do not mix parts of different draw-off assemblies during washing. The parts are not always interchangeable.

8. As part of the daily cleaning program, clean soiled external surfaces. Remember to check the sides of the unit and control housing.

9. To remove burned-on foods, use a brush, sponge, cloth, plastic or rubber scraper, or plastic wool, along with the cleaning solution. To reduce effort required, let the detergent solution sit in the kettle for a few minutes and soak into the residue.

   IMPORTANT: Do NOT use abrasive materials or metal tools that might scratch the surface. Scratches make the surface harder to clean and provide places for bacteria to grow. Do not use steel wool, which will leave particles in the surface and cause eventual corrosion and pitting.

10. The outside of the unit can be cleaned with a warm water (100°F or less) spray. **Do not use a high pressure spray.** The outside of the unit may be polished with a stainless steel cleaner such as "Zepper" from Zep Manufacturing Co.

Cleaning

11. When the equipment needs to be sanitized, use a sanitizing solution equivalent to one that supplies 200 parts per million chlorine. Obtain advice on the best sanitizing agent from your supplier of sanitizing products. Following the suppliers instructions, apply the sanitizing agent after the unit has been cleaned and drained. Rinse off the sanitizer thoroughly.

    NOTE: It is recommended that the unit be sanitized just before use.

12. If there is difficulty removing mineral deposits or a film left by hard water or food residues, use a de-liming agent such as LoLo De-limer De-Scaler (Part Number 156707), Lime- Away from ECOLAB or an equivalent, following manufacturer directions. Rinse and drain the unit thoroughly before use.

13. If cleaning problems persist, contact your cleaning product supplier for assistance. The supplier has a trained technical staff with laboratory facilities to serve you.

Maintenance

⚠ CAUTION

AVOID ANY EXPOSURE TO THE STEAM BLOWING OUT OF THE PRESSURE RELIEF VALVE. SEVERE BURNS CAN RESULT ON EXPOSED SKIN.

⚠ WARNING

FAILURE TO CHECK PRESSURE RELIEF VALVE OPERATION PERIODICALLY COULD RESULT IN PERSONAL INJURY AND/OR DAMAGE TO EQUIPMENT.

NOTE: Contact a LoLo Authorized Service Representative when repairs are required.

Periodic inspection will minimize equipment down time and increase the efficiency of operation. The following should be checked:

1. **Jacket Vacuum - Removing Air From Jacket (By Operator)**
   Every day, while the kettle is cold, check the pressure/vacuum gauge. A positive reading or a negative reading between zero and -20" of vacuum on the pressure/vacuum gauge indicates excess air in the jacket (See Photo 17-1 on page 17). Air in the jacket slows kettle heating and can prevent the kettle from reaching operating temperature. To remove air:

   a. Start the kettle. (See the Operation section).

   b. **IMPORTANT**: Make sure the elbow on the outlet of the pressure relief valve is turned so that escaping steam is directed down toward the floor (See Photo 17-2 on page 17). Be sure and follow the instructions on the attached pressure relief valve tag.

   c. When the pressure/vacuum gauge reaches a positive pressure reading of 5 PSI (above zero), release trapped air by lifting the pressure relief valve ring for about one second. Repeat this step, then let the valve ring snap closed, so the valve will seat properly and not leak.

2. **Test Pressure Relief Valve (By Operator)**
   At least twice a month, test the pressure relief valve. Test the valve with the kettle operating at 5 PSI (34.5 kPa), by pulling the test ring for at least five seconds. Then release the ring and permit the valve to snap shut. If the ring does not activate, if there is no discharge or if the valve leaks, stop using the kettle immediately and contact an Authorized Service Representative.

⚠ WARNING

USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY LOLO COMMERCIAL FOODSERVICE EQUIPMENT OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.

SERVICE PERFORMED BY OTHER THAN FACTORY-AUTHORIZED PERSONNEL WILL VOID ALL WARRANTIES.

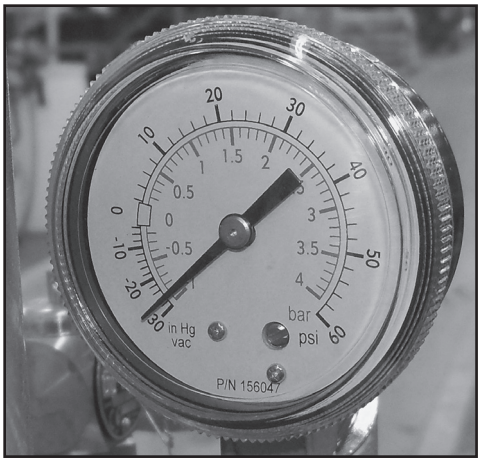


Photo 17-1

The pressure gauge should show a vacuum of -20 to -30 inches when the kettle is cold.

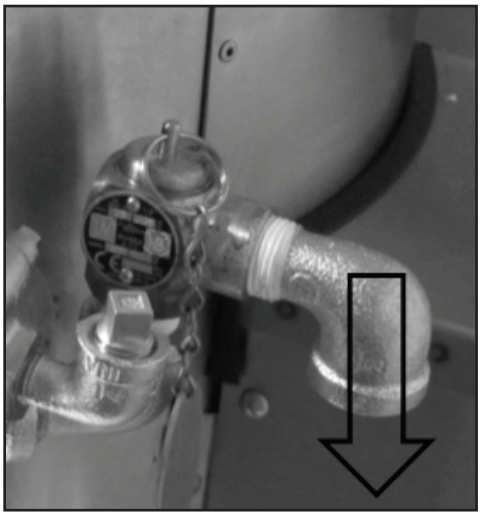


Photo 17-2

Make sure that the open end of the elbow on the pressure relief valve is directed downward.

3. Jacket Filling

The jacket was charged at the factory with the proper amount of treated water. You may need to restore this water because it was lost as steam during venting. Every day, before you turn on the unit, make sure the water level is approximately in the center of the water level sight glass.

a. If you are replacing water lost as steam, use distilled water. **Do not use tap water.** If you are replacing treated water that was drained from the jacket, contact LoLo Service Support at 877-246-5656.

b. Allow the kettle to cool completely. Remove the pipe plug from the jacket fill assembly.

c. Open the gate valve and pour in the distilled water. **TIP**: Using a funnel will help you in this process. Hold the pressure relief valve open while you pour, to let air escape from the jacket.

NOTE: The low water limit alarm (red indicator lamp) comes on when the level drops below the minimum line on the sight glass. Refill with distilled water until the level returns to between the minimum and maximum marks on the water sight glass.

d. Close the gate valve and replace the pipe plug.

e. Air that gets into the jacket during the filling operation must be removed, because it will make heating less efficient. Follow the procedure in Jacket Vacuum - Removing Air From Jacket to restore a negative pressure (vacuum) reading.

IMPORTANT: If most or all of the jacket water is lost due to a leak, contact LoLo at 877-246-5656 or your LoLo authorized service provider. The source of the leak will need to be determined and repaired; and the kettle jacket refilled with chemically treated water.

Troubleshooting Guide

Your LoLo kettle is designed to operate smoothly and efficiently if properly maintained. However, the following is a list of checks to make in the event of a problem. Wiring diagrams are furnished inside the service panel. **CAUTION: USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY LOLO COMMERCIAL FOODSERVICE EQUIPMENT OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.**

SYMPTOM	WHO	WHAT TO CHECK OR DO
Kettle continues heating after it reaches desired temperature.	User	a. Thermostat dial setting.
	Authorized Service Rep Only	b. Thermostat calibration. c. Thermostat operation. The thermostat should click when the dial is rotated to settings above and below the temperature of the kettle.
Kettle stops heating before it reaches the desired temperature.	User	a. Thermostat dial setting.
	Authorized Service Rep Only	b. Thermostat calibration. c. Thermostat operation. The thermostat should click when the dial is rotated to settings above and below the temperature of the kettle.
Safety Valve pops open.	User	a. For air in the jacket. See “Jacket Vacuum” in the Maintenance section. b. Thermostat dial setting. c. Is there water or product in the kettle?
	Authorized Service Rep Only	d. For defective thermostat. The thermostat should click when the dial is rotated to settings above and below the temperature of the kettle. If defective replace. e. For defective safety valve. If the valve pops at pressures below 24 PSI, replace.
Burners will not light.	User	a. That the main gas supply valve is open. (Handle should be in line with gas pipe). b. Gas supply to the building. c. Is power ON and thermostat ON?
	Authorized Service Rep Only	d. Thermostat operation. The thermostat should click when the dial is rotated to settings above and below the temperature of the kettle.
Ignition system does not produce a spark.	Authorized Service Rep Only	a. Thermostat; Close the contacts if they are open. b. AC voltage between terminals on secondary side of transformer. If it is not 24 Volts, replace the transformer. c. That the high voltage cable is firmly attached and in good condition. If cracked or brittle, replace. d. Pilot electric ceramic for crack or break. e. Pilot spark gap. Regap as needed.

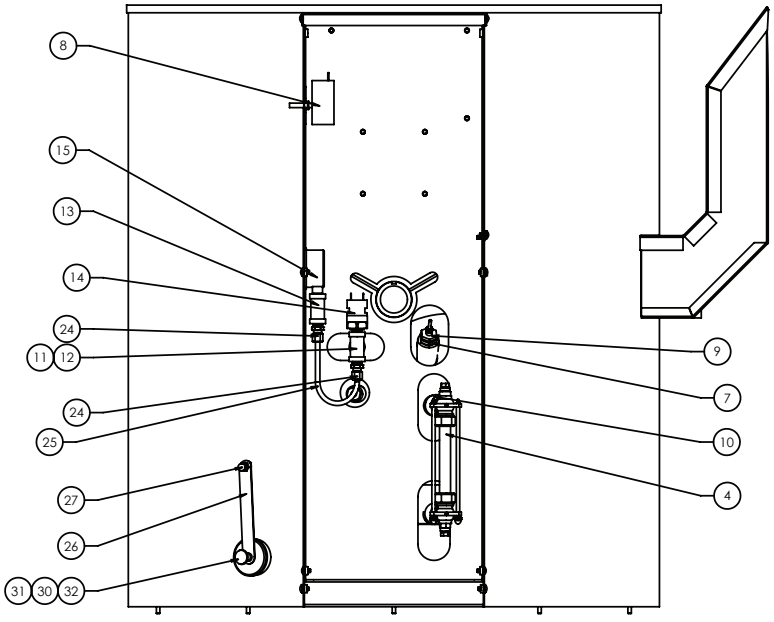
Troubleshooting Guide

SYMPTOM	WHO	WHAT TO CHECK OR DO
Spark is present but the pilot will not light.	Authorized Service Rep Only	a. That the pilot valve is securely connected to terminals. b. For 24 VAC at terminals PV and PV/MV. If 24VAC is not present, replace the ignition control module. c. That gas pressure is at least 3.5" W.C. (8.7818). d. For gas at the pilot. If it is not flowing: (1) Check the pilot gas line for kinks and obstructions. (2) Clean orifice, if necessary. (3) Check magnetic operator for pilot valve on gas valve. Repair or replace as necessary. e. That the pilot spark gap is located in the pilot gas stream. If not, adjust or replace the pilot burner. f. For drafts in kitchen. Shield the pilot burner, if necessary.
Pilot lights, but main burner will not come on and spark does not stay on.	Authorized Service Rep Only	a. For 24 VAC between terminals PV and PV/MV. If 24 VAC is not present, replace the ignition control module. b. That gas pressure is at least 3.5" W.C. (8.7818). c. Electrical connections for main valve to terminals, to assure that they are securely attached. Check magnetic operator for pilot valve on the gas valve. Repair or replace as necessary.
Pilot lights, but main burner will not come on and the spark stays on.	Authorized Service Rep Only	a. Check for bad burner ground. If necessary, repair with high temperature wire. b. Pilot burner ceramic insulator for cracks. c. That cable is not grounded out. If it is, correct the ground-out condition or replace cable. d. For proper gas pressure. e. Clean pilot assembly, or replace if necessary. f. Tighten all mechanical and electrical connections. g. If the pilot flame is weak, increase pilot orifice size. h. Replace ignition control module.
Main burner comes on but will not stay on.	Authorized Service Rep Only	a. Check burner ground for bad wire or connection. Replace if necessary with high temperature wire. b. Check for low gas supply pressure. If necessary, replace ignition control module.

Parts List & Diagram

Kettle Body Assembly

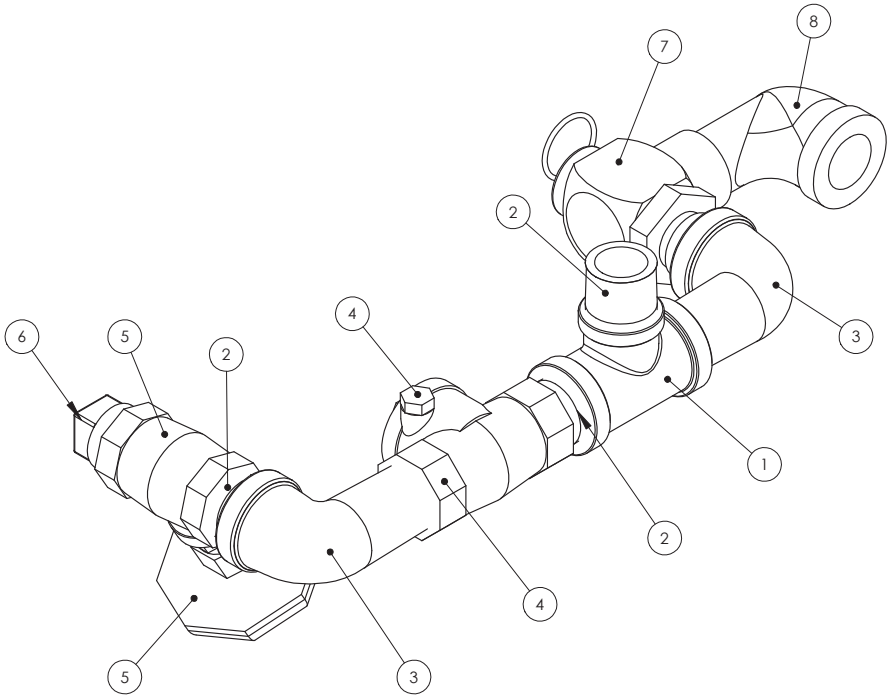
Item no.	Description	Part number
1	KETTLE SHELL ASSY	156527
2	KETTLE BODY ASSY, 25 PSIG, 304 INTERIOR	156099
3	PIPING WATER FILL ASSEMBLY	097007
4	SIGHT GLASS ASSEMBLY	139832B
5	COLLAR 1/2” PIPE	009143
6	NIPPLE 1/2” NPT X CLOSE (QTY 2)	008877
7	BUSHING REDUCING, HEXAGON 1/2” X 3/8”	007442
8	THERMOSTAT	009730
9	ELECTRODE, WATER LEVEL	074665
10	COUPLING FULL 1/2” NPT (QTY 2)	005684
11	NIPPLE 1/4” NPT X SHOULDER	127330
12	TEE 1/4” NPT #XHVY	008539
13	COUPLING 1/4 NPT	070625
14	PRESSURE SWITCH	108559
15	PRESSURE GAUGE	156047
16	ELBOW 90 DEG STREET 1/2” NPT	010108
17	VALVE SAFETY, 25 PSI	141362
18	PLATE/CHAIN ASM	156552
19	BOX INSULATION BACK	156609
20	SIDE SEAL PLATE (QTY 2)	156608
22	SCREW, TRS HEAD 10-32 X 3/8 (QTY 6)	004173
23	COLLAR TDO 2” ID X 22 GA	084264
24	FITTING COMPRESSION (QTY 2)	064565
25	PRESSURE GAUGE COPPER TUBING	156667
26	ARM COVER VENT	002377
27	NUT, DOME 1/4 - 20	090567
28	STUD WELD 1/4-20 X 1”	003617
29	SPACER	012733
30	COVER - VALVE HOUSING	080793
31	SIGHT GLASS INSULATION	156668
32	KNOB BLACK W/#10-32	004112



Parts List & Diagram

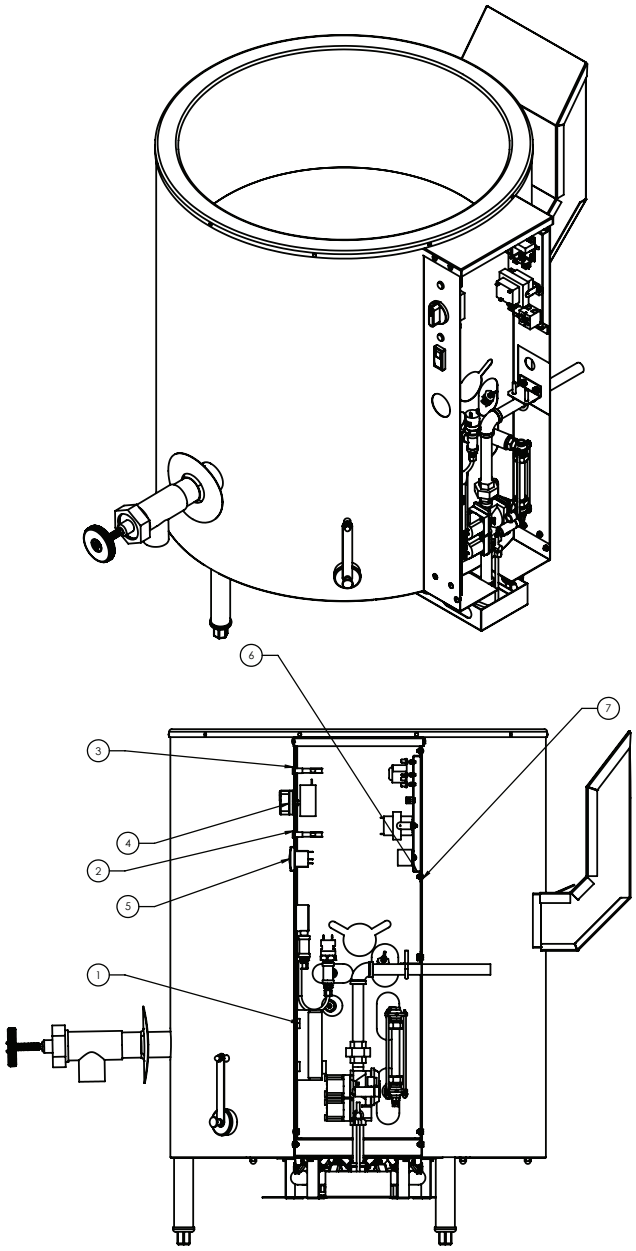
Water-Fill/Safety Relief

Item no.	Description	Part number
1	TEE 1/2” NPT	008772
2	NIPPLE 1/2” NPT X CLOSE (QTY 3)	008877
3	ELBOW 90 DEG STREET 1/2” NPT (QTY 2)	004185
4	VALVE SWING CHECK	004187
5	VALVE GATE 1/2” NPT HAMMOND	004180
6	PLUG PIPE 1/2 NPT	011146
7	VALVE SAFETY, 25 PSI	156046
8	ELBOW 1/2 NPT, 90 DEG STREET	096905



Parts List & Diagram
Operating Controls

Item no.	Description	Part number
1	HONEYWELL IGNITION	085153
2	LIGHT, INDICATOR RED, 24V	116383
3	LIGHT, INDICATOR AMBER	116384
4	KNOB, THERMOSTAT	156179
5	POWER SWITCH, WITH GREEN INDICATOR LIGHT	155548
6	PANEL, ELECTRICAL	156193
7	SCREW, TRS HEAD 10 - 32 X 3/8 (QTY 4)	004173

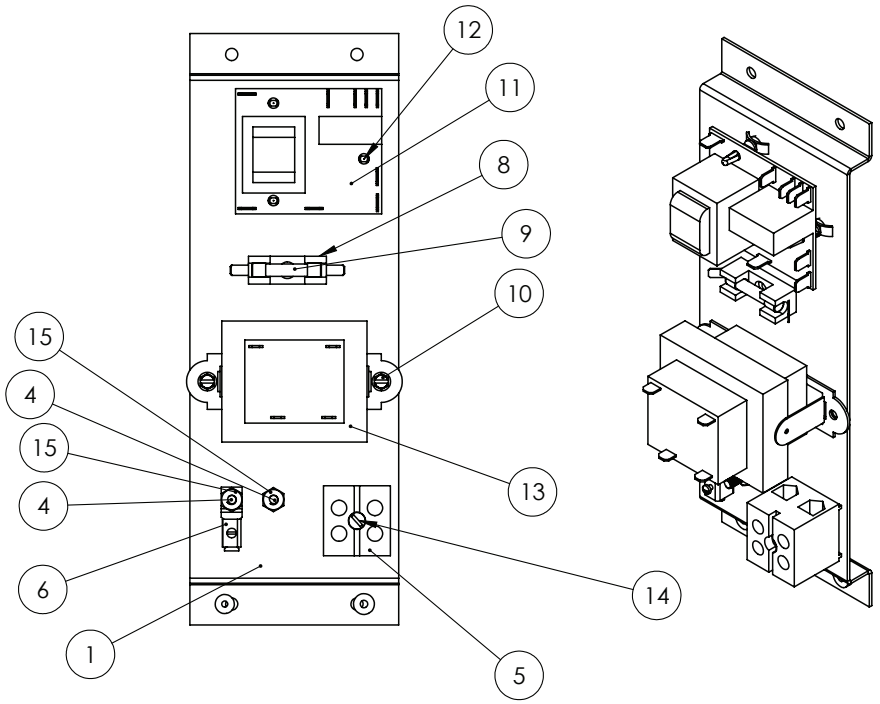


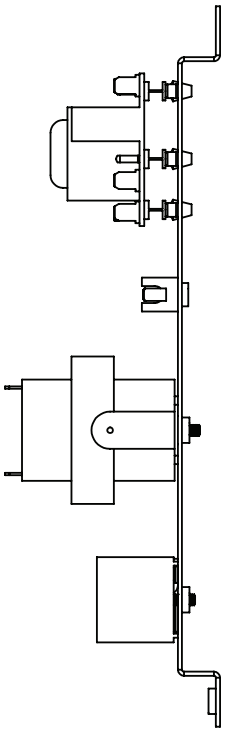
RIGHT SIDE VIEW

Parts List & Diagram

Electrical Panel

Item no.	Description	Part number
1	ASSEMBLY, PANEL	156194
4	STUD WELD, #10 X 32 X 3/4" (QTY 2)	002966
5	TERMINAL BLOCK 2P	003887
6	LUG, GROUND, 14-6 AWG	119829
7	SCREW ROUND HEAD MACHINE	018384
8	FUSE HOLDER TYPE 3 AG	077854
9	FUSE 3.0 AMP TYPE 3 AG	077853
10	SCREW HEX SLOTTED HD W/WASHER #8-32 X 3/8" (QTY 2)	069789
11	CONTROL BOARD ASSEMBLY, WATER LEVEL	122192
12	STANDOFF (QTY 3)	099292
13	40VA TRANSFORMER, 120VAC PRI, 24VAC SEC	156504
14	SCREW ROUND HEAD 8-32 X 1-1/4"	005056
15	NUT HEXHEAD KEPS 10-32 (QTY 2)	071256

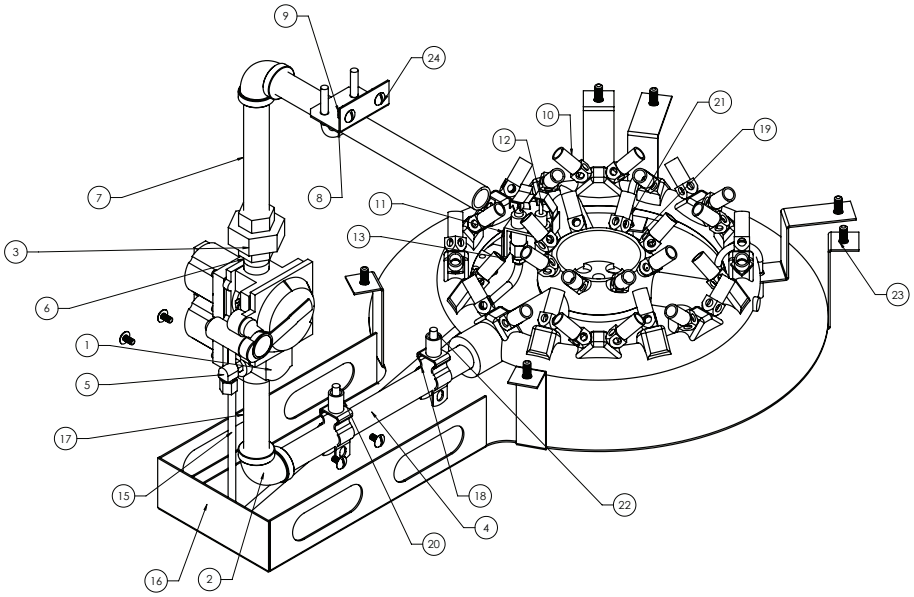




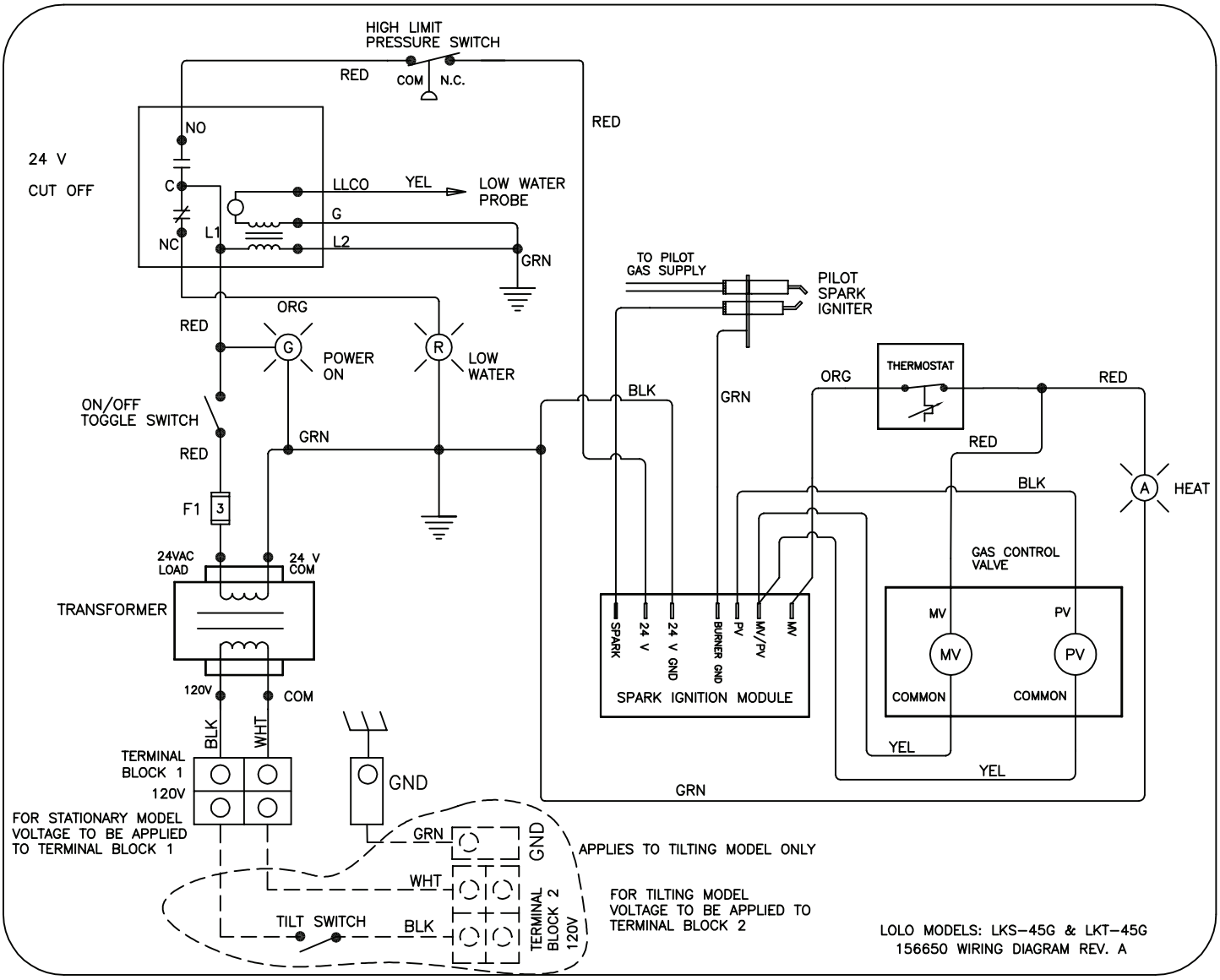
Parts List & Diagram

Gas Heating System

Item no.	Description	Part number
1	VALVE, GAS	123815
2	ELBOW 90 DEG 1/2" NPT (QTY 2)	008747
3	UNION 1/2" NPT	004186
4	NIPPLE 1/2" BPT X 9-1/2" (QTY 2)	144360
5	FITTING COMPRESSION 90	004584
6	NIPPLE 1/2" NPT X CLOSE	008877
7	NIPPLE 1/2" NPT X 5" LONG	005555
8	BRACKET, 1/2" NPT, GAS PIPE LINE	156211
9	NUT, 1/4-20 KEPS ZP (QTY 2)	080749
10	BURNER MANIFOLD ASSEMBLY, .038 ORIFICE	156697
11	SCREW PAN HEAD MACHINE (QTY 2)	003254
12a	PILOT BURNER ASSEMBLY NATURAL	102258
12b	PILOT BURNER ASSEMBLY PROPANE	104392
13	PILOT BRACKET	139181
14	SCREW HEX HEAD 1/4-20 X 3/8 (QTY 2)	085199
15	PILOT TUBE	156536
16	SHIELD ASSY RADIATION	156538
17	NIPPLE 1/2" NPT X 3-1/2" BLK	009816
18	HANGER CONDUIT 1/2" (QTY 2)	012852
19	BURNER ATTACHMENT BRACKET (QTY 2)	156673
20	SPACER (QTY 2)	156701
21	U BOLT, 3/4" PIPE (QTY 3)	N87786
22	SCREW ROUND HEAD MACHINE 1/4"-20 X 1" (QTY 2)	012847
23	SCREW, HEX HEAD CAP, 1/4-20 X 5/8" (QTY 6)	078546
24	SCREW, TRS HEAD 10-32 X 3/8 (QTY 6)	004173



Electrical Schematic



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