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Timeless Quality, Trusted for Life

Gas Floor Model Kettles

Installation, Operation, Maintenance, Parts & Service

This manual is updated as new information and models are released. Visit our website for the latest manual.

MODELS:

KGL-40, KGL-60, KGL-80, KGL-100
KGL-40-T, KGL-60-T, KGL-80-T
KGL-40-SH, KGL-60-SH,
KGL-40-TSH

For your future reference.

Model # _____

Serial # _____



KGL-40-T

KGL-40SH



Read the manual thoroughly.
Improper installation, operation or
maintenance can cause property
damage, injury or death.

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STATEMENT OF RESPONSIBILITIES / DÉCLARATION DES RESPONSABILITÉS / DECLARACIÓN DE RESPONSABILIDADES

This document is for use by experienced and trained Qualified Cleveland Range, LLC Authorized Service Representatives who are familiar with both the safety procedures, and equipment they service. Cleveland Range, LLC assumes no liability for any death, injury, equipment damage, or property damage resulting from use of, improper use of, or failure to use the information contained in this document. Cleveland Range, LLC has made every effort to provide accurate information in this document, but cannot guarantee that this document does not contain unintentional errors and omissions.

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Qualified Cleveland Range, LLC Authorized Service Representatives are obligated to follow industry standard safety procedures, including, but not limited to, OSHA regulations, and disconnect / lock out / tag out procedures for all utilities including steam, and disconnect / lock out / tag out procedures for gas, electric, and steam powered equipment and / or appliances.

All utilities (gas, electric, water and steam) should be turned OFF to the equipment and locked out of operation according to OSHA approved practices during any servicing of Cleveland Range equipment

Qualified Cleveland Range, LLC Authorized Service Representatives are obligated to maintain up-to-date knowledge, skills, materials and equipment.

Ce document est destiné à l'usage des Représentants de Service qualifiés et autorisés de Cleveland Range, LLC qui possèdent l'expérience et la formation ainsi que la bonne connaissance des mesures de sécurité et du matériel qu'ils entretiennent.

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Les Représentants de Service qualifiés et autorisés de Cleveland Range, LLC sont tenus de se conformer aux mesures de sécurité normalisées de l'industrie, y compris, mais sans s'y limiter, les réglementations de l'OSHA, les procédures de débranchement / verrouillage / étiquetage relatives à tous les services publics, dont l'approvisionnement en vapeur, et les procédures de débranchement / verrouillage / étiquetage relatives aux équipements et/ou appareils fonctionnant au gaz, à l'électricité et à la vapeur.

Au cours de tout entretien d'un appareil Cleveland Range, tous les services publics (gaz, électricité, eau et vapeur) doivent être FERMÉS au niveau de l'appareil et le dispositif de fonctionnement doit être verrouillé suivant les pratiques approuvées de l'OSHA.

Les Représentants de Service qualifiés et autorisés de Cleveland Range, LLC sont tenus d'actualiser en permanence leurs connaissances, compétences, matériel et équipement.

Este documento está destinado para el uso de los Representantes de Servicio calificados y autorizados de Cleveland Range, LLC quienes cuentan con la experiencia y la capacitación así como el buen conocimiento de las medidas de seguridad y de los equipos que mantienen.

Cleveland Range, LLC, declina toda responsabilidad en caso de cualquier fallecimiento, lesiones, daños al equipo o daños a la propiedad resultantes de la utilización, del uso indebido o de la falta de utilización de la información provista en este documento.

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Los Representantes de Servicio calificados y autorizados de Cleveland Range, LLC tienen la obligación de seguir los procedimientos estándar de seguridad de la industria; los cuales incluyen pero no se limitan a los reglamentos de la OSHA (La Administración de la Seguridad y Salud Ocupacionales), los procedimientos de desconexión, cierre y etiquetado relativos a todos los servicios públicos incluyendo el suministro de vapor y los procedimientos de desconexión, cierre y etiquetado para los equipos y/o aparatos que funcionan a base de gas, electricidad o vapor.

Cuando se esté dando servicio o mantenimiento a un aparato de Cleveland Range, todos los servicios públicos (gas, electricidad, agua y vapor) deben estar APAGADOS para el equipo en cuestión y se debe seguir el procedimiento de cierre de operaciones de acuerdo con las prácticas aprobadas por la OSHA.

Los Representantes de Servicio calificados y autorizados de Cleveland Range, LLC tienen la obligación de actualizar constantemente sus conocimientos, destrezas, materiales y equipamiento.

FOR YOUR SAFETY / POUR VOTRE SÉCURITÉ / PARA SU SEGURIDAD

FOR YOUR SAFETY

Do not store or use gasoline or any other flammable liquids and vapours in the vicinity of this or any other appliance.

POUR VOTRE SÉCURITÉ

Ne pas entreposer ou utiliser d'essence ou d'autres liquides ou vapeurs inflammables à proximité de cet appareil ou de tout autre appareil.

PARA SU SEGURIDAD

No guarde ni use gasolina o cualesquiera otros líquidos o vapores inflamables en las cercanías de éste o cualquier otro aparato.

WARNING: Improper installation, operation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation and operating instructions thoroughly before installing, operating or servicing this equipment.

AVERTISSEMENT : Toute mauvaise pratique en matière d'installation, de fonctionnement, de réglage, de modification, d'entretien ou de maintenance peut causer des dommages matériels, des blessures ou la mort. Lisez la totalité des instructions d'installation et d'utilisation avant d'installer, d'utiliser ou d'entretenir cet équipement.

ADVERTENCIA: La indebida instalación, operación, ajuste, modificación, servicio o mantenimiento puede ocasionar daños a la propiedad, lesiones o muerte. Lea detenidamente las instrucciones de instalación y de operación antes de instalar, poner a funcionar o dar servicio a este equipo.

Do not spray aerosols in the vicinity of this appliance while it is in operation.

This appliance is not to be used by persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

This appliance is not for use by children and they must be supervised not to play with it.

Post in a prominent location, instructions to be followed in the event the user smells gas. This information shall be obtained by consulting your local gas supplier.

Do not obstruct the flow of combustion and ventilation air.

Retain this manual for your reference.

Ne pas pulvériser des aérosols dans le voisinage de cet appareil alors qu'il est en fonctionnement.

Cet appareil ne doit pas être utilisé par des personnes dont les capacités physiques, sensorielles ou mentales sont réduites, ou des personnes dénuées d'expérience ou de connaissance, sauf si elles ont pu bénéficier, par l'intermédiaire d'une personne responsable de leur sécurité, d'une surveillance ou d'instructions préalables concernant l'utilisation de l'appareil.

Cet appareil n'est pas destiné à être utilisé par des enfants et ils doivent être surveillés pour s'assurer qu'ils ne jouent pas avec l'appareil.

Affichez à un endroit bien visible les instructions à suivre dans le cas où l'utilisateur sent une odeur de gaz. Ces informations seront obtenues auprès de votre fournisseur de gaz local.

Ne pas obstruer le flux d'air de combustion et de ventilation.

Conservez ce manuel pour votre référence.

No pulverice aerosoles en las proximidades de este aparato mientras está en funcionamiento.

Este aparato no debe ser utilizado por personas con capacidades físicas, sensoriales o mentales reducidas, o que no tengan la experiencia y los conocimientos adecuados, a menos que estas personas hayan recibido supervisión e instrucciones en cuanto al uso del aparato por la persona responsable de la seguridad de ellas.

Este aparato no debe ser usado por los niños y ellos deben ser supervisados para que no jueguen con el aparato.

No obstruya el flujo del aire combustión y de ventilación.

Guarde este manual para su referencia.



WARNING / AVERTISSEMENT / ADVERTENCIA



Improper installation, operation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation and operating instructions thoroughly before installing, operating or servicing this equipment. / Toute mauvaise pratique en matière d'installation, de fonctionnement, de réglage, de

modification, d'entretien ou de maintenance peut causer des dommages matériels, des blessures ou la mort. Lisez la totalité des instructions d'installation et d'utilisation avant d'installer, d'utiliser ou d'entretenir cet équipement. / La indebida instalación, operación, ajuste, modificación, servicio o mantenimiento puede ocasionar daños a la propiedad, lesiones o muerte. Lea detenidamente las instrucciones de instalación y de operación antes de instalar, poner a funcionar o dar servicio a este equipo.



Do not lean on or place objects on lip. / Ne vous penchez pas sur ou ne placez pas des objets sur la lèvre. / No se apoye ni coloque objetos en el labio.



Hot product and surfaces. / Produit et surfaces chaudes. / Producto y superficies calientes.

Do not touch. / Ne pas toucher. / No la toque



Stand clear of product discharge path when discharging hot product. / Écartez-vous du chemin de décharge d'un produit chaud. / Permanezca alejado de la ruta de descarga del producto al vaciar producto caliente.



Keep hands away from moving parts and pinch points. / Gardez les mains loin des pièces mobiles et des points de pincement. / Mantenga las manos lejos de piezas móviles y puntos de presión muy localizada.



Do not fill kettle above recommended level marked on outside of kettle. / Ne remplissez pas la chaudière en excès du niveau recommandé marqué sur la chaudière. / No llene la marmita arriba del nivel recomendado marcado fuera de la marmita.



Unit must be anchored as per manual. / Unité doit être ancrée selon les directives du manuel. / Unidad debe estar fijado según el manual.



Keep appliance and area free and clear of combustibles. / Gardez l'appareil et son entourage libre de tous combustibles. / Mantenga el aparato y el área libres de combustibles.



Do not attempt to operate this appliance during a power failure. / N'essayez pas de faire fonctionner cet appareil lors d'une panne de courant. / No intente poner en marcha este aparato durante un fallo de suministro eléctrico.



Inspect unit daily for proper operation. / Inspectez l'unité tous les jours pour son bon fonctionnement. / Inspeccione diariamente el funcionamiento correcto de la unidad.



Heavy / Lourd / Pesado

Team or mechanical lift. / Équipe ou remontée mécanique. / Equipo o elevador mecánico.



Surfaces and product may be hot! Wear protective equipment. / Les surfaces et le produit peuvent être chauds! Portez un équipement de protection. / ¡Las superficies y el producto pueden estar calientes! Utilice equipo protector.



Floor may become slippery from product spillage. / Déversement de produit peut causer de plancher à être glissant. / Derrame de producto puede causar piso a ser resbaladizo.



Unit exhaust contains carbon monoxide. Operate only under a properly functioning hood with adequate makeup air. / L'échappement de l'unité émet du monoxyde de carbone. Exploitez uniquement sous une hotte fonctionnant correctement avec une source adéquate d'air d'appoint. / El escape de la unidad contiene monóxido de carbono. Operar solamente bajo una campana en buen funcionamiento con aire de relleno adecuado.



Pressurized device. / Appareil sous pression. / Dispositivo de presión.

Keep clear of pressure relief discharge. / Restez à l'écart de la soupape de sûreté. / Permanezca alejado de la descarga de presión.



Do not climb, sit or stand on equipment. / Il ne faut pas monter, s'asseoir ni se tenir debout sur l'équipement. / No subirse, ni sentarse ni pararse sobre el equipo.

SERVICING / ENTRETIEN / SERVICIO



Shut gas supply off prior to servicing. / Fourniture de gaz fermée au loin avant d'entretenir. / Suministro de gas cerrado apagado antes del mantenimiento.



Remove electrical power prior to servicing. / Coupez l'alimentation électrique avant l'entretien. / Desconecte la energía eléctrica antes de darle servicio.

Risk of electric shock. / Risque de choc électrique. / Riesgo de choque eléctrico.



Ensure kettle is at room temperature and pressure gauge is showing zero or less prior to removing any fittings. / Assurez-vous que la chaudière est à température ambiante et que le manomètre est à zéro ou moins avant de retirer des accessoires. / Asegúrese de que la marmita esté a temperatura ambiente y el manómetro esté mostrando cero o menos antes de retirar cualquier accesorio.



Have a qualified service technician maintain your equipment. / Demandez à un technicien en entretien et en réparation qualifié d'effectuer l'entretien de votre équipement. / Haga que un técnico de servicio calificado mantenga su equipo

INSTALLATION

GENERAL

<i>Environment:</i>	Operating Criteria	Acceptable Range
	Ambient Air Temperature	15-40 degrees Celsius
	Relative Humidity	0-80%
	Altitude	0-3000 meters
	Voltage	110-120 or 220-240 1ph
	Location	Inside building, under ventilation hood

Insure gas and electrical supplies match rating plate.

Installation of the kettle must be accomplished by qualified installation personnel working to all applicable local and national codes.

This equipment is built to comply with applicable standards for manufacturers. Included among those approval agencies are: UL, NSF, ASME/N.Bd., CSA, ETL, and others. Many local codes exist, and it is the responsibility of the owner/installer to comply with these codes.

Observe all clearance requirements. Do not obstruct the flow of combustion and ventilation air.

RECEIVING INSPECTION

Before unpacking visually inspect the unit for evidence of damage during shipping.

If damage is noticed, do not unpack the unit, follow shipping damage instructions.

SHIPPING DAMAGE INSTRUCTIONS

If shipping damage to the unit is discovered or suspected, observe the following guidelines in preparing a shipping damage claim.

1. Write down a description of the damage or the reason for suspecting damage as soon as it is discovered. This will help in filling out the claim forms later.
2. As soon as damage is discovered or suspected, notify the carrier that delivered the shipment.
3. Arrange for the carrier's representative to examine the damage.
4. Fill out all carrier claims forms and have the examining carrier sign and date each form.

APPROXIMATE WEIGHTS

Model #	Unit	Unit with shipping box
KGL-40	520 lbs.	555 lbs.
KGL-60	560 lbs.	595 lbs.
KGL-80	600 lbs.	635 lbs.
KGL-100	620 lbs.	655 lbs.

KGL-40-T	520 lbs.	555 lbs.
KGL-60-T	560 lbs.	595 lbs.
KGL-80-T	600 lbs.	635 lbs.
KGL-40-SH	520 lbs.	555 lbs.
KGL-60-SH	560 lbs.	595 lbs.
KGL-40-TSH	520 lbs.	555 lbs.

UNCRATING

Caution:

Straps under tension and will snap when cut.

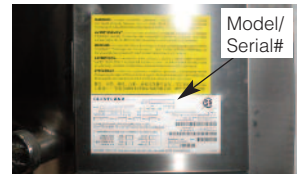
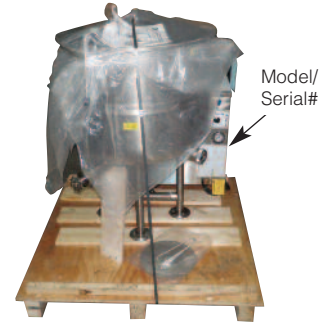
Carton may contain staples and Skid contains Nails.

Use proper safety equipment and precautions.

Unit is heavy use adequate help or lifting equipment as needed.



1. Carefully cut any straps from container.
2. Lift off carton.
3. Inspect for hidden damage. If found refer to "SHIPPING DAMAGE INSTRUCTIONS".
4. Cut strap holding unit.
5. Remove lag bolts from feet.
6. Remove manual from kettle pot. Write down the model# and serial# of the unit onto the front of this manual.
7. Lift kettle off skid and move kettle to its installation location.
8. Discard packaging material according to local and or state requirements.



VENTILATION

Gas fired kettles are only to be installed under a ventilation hood in a room which has provisions for adequate make up air. Further information can be obtained by referring to the U.S.A. National Fire Protection Associations NFPA96 regulations. These standards have also been adopted by the National Building Code in Canada.



POSITIONING

This unit must be installed in accordance with the clearances shown on the rating label which is adhered to the unit.

	RIGHT	LEFT	REAR
Tilting	0	0	3"
Stationary	3"	3"	3"

Allow 12" minimum on right for service.

1. Position the unit in it's permanent location, and level the unit by turning the adjustable feet.
2. Once positioned and leveled, permanently secure the unit's flanged feet to the floor using 5/16" lag bolts and floor anchors (supplied by the installer). Three bolts are required to secure each of the flanged feet.
3. Seal joints of flanged feet with a silicone sealant.
4. Remove any protective material covering the stainless steel panels.

GAS

ENSURE THE GAS SUPPLY MATCHES THE KETTLE'S REQUIREMENTS AS STATED ON THE RATING PLATE.

Installation must conform, with local codes or in the absence of local codes, with the National Fuel Gas Code ANSI Z223.1/NFPA 54, or the Natural Gas and Propane Installation Code, CSA B149.1.

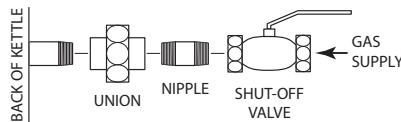
The appliance and its individual shut-off valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psi (3.45 kPa).

The appliance must be isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psi (3.45 kPa).

It is recommended that a sediment trap (drip leg) be installed in the gas supply line. If the gas pressure exceeds 1/2 psi (3.45 kPa) water column, a pressure regulator must be installed, to provide a maximum of 1/2 psi (3.45 kPa) water column gas pressure to the gas control valve.

Use a gas pipe joint compound which is resistant to L.P. gas. Test all pipe joints for leaks.

1. Removed supplied manual shut-off valve and establish mounting location.
2. Add union and piping as required.
3. Connect the gas line to the manual shut-off valve.



ELECTRICAL

ENSURE THE ELECTRICAL SUPPLY MATCHES THE KETTLE'S REQUIREMENTS AS STATED ON THE RATING LABEL.

WARNING: Electrical Grounding Instructions.

This unit is equipped with a three-prong (grounding) plug for your protection against shock hazard and should be plugged directly into a properly grounded three-prong receptacle. Do not cut or remove the grounding prong from this plug.

For 110-120 volt units a cord and plug are supplied with the unit. Simply plug the unit into any grounded outlet rated for a minimum of 10 amps.

The kettle must be electrically installed and grounded in accordance with local codes, or in the absence of local codes, with National Electrical Code, ANSI/NFPA 70 (USA) or the Canadian Electrical Code, CSA C22.2, (Canada).

Standard supply voltage is 115 volts A.C., however, optional A.C. voltages can be supplied on special order. A separate fused disconnect switch must be supplied and installed in the high voltage electrical supply line.

The wiring diagram is located under the cover of electrical box inside the back console.

For 200-240 volt units a terminal block is provided.

1. Remove the consol cover. A wiring diagram is affixed to the underside of the cover.
2. Feed permanent copper wiring through the cut-out in the

rear or bottom of the console, and fasten to the terminal block. Be sure to connect the ground wire to the separate ground terminal connector (ground lug).

NOTE: Units are tested on a in-house ground fault system. However, there is no guarantee the unit will work on all ground fault systems. If you are having problems you can hard wire the unit.

WATER

The sealed jacket of the gas-fired kettle is precharged with the correct amount of a water-based formula, and therefore, no water connection is required to the kettle jacket. The kettle can be equipped with optional hot and cold water taps, requiring 1/2" copper tubing as supply lines.

INSTALLATION CHECKS

Although the kettle has been thoroughly tested before leaving the factory, the installer is responsible for ensuring the proper operation of kettle once installed.

1. Before turning the kettle on, read the vacuum/pressure gauge. The gauge's needle should be in the green zone. If the needle is in the "VENT AIR" zone, follow air venting procedure.
2. Unit has been thoroughly checked for gas leaks at the factory however the installer should check all connections for any leaks which may have resulted from shipping or installation.
3. Supply power to the kettle by placing the fused disconnect switch to the "ON" position.
4. Open gas shut-off valve to turn on main gas supply.
5. Turn the temperature control knob to "1" (Min.). The green LED light should remain lit, indicating the burner is lit, until the set temperature is reached. Then the green light will cycle on and off, indicating the burner is cycling on and off to maintain temperature.
6. Tilt the kettle forward. After a few seconds the red "LOW WATER" light should be lit when the kettle is in a tilted position. This light indicates that the burner has automatically been shut off by the kettle's safety circuit. This is a normal condition when the kettle is in a tilted position.
7. Raise the kettle to the upright position. The red "LOW WATER" light should go out when the kettle is upright.
8. Turn the temperature control knob to "10" (Max.) and allow the kettle to preheat. The green light should remain on until the set temperature is reached. Then the green light will cycle ON and OFF, indicating the burner is cycling ON and OFF to maintain temperature.
9. Check carbon monoxide is less than 0.08 percent in an air-free sample of the flue gases. See FREE AIR CALCULATION procedure in "Maintenance Procedures & Parts Lists" manual.

CLEANING

After installation the kettle must be thoroughly cleaned and sanitized prior to cooking.

WARNING

If for any reason this unit is not functioning correctly DO NOT OPERATE. Contact your authorized service agent.

OPERATING INSTRUCTIONS



OPERATING CONTROLS AND INDICATORS



1 LOW WATER INDICATOR LIGHT (RED)

When lit, indicates that the kettle is low on water and will not operate in this condition. This will also light when the kettle is in the tilted position.

2 ON-OFF TEMPERATURE CONTROL

Turns kettle ON/OFF and allows the operator to adjust the kettle temperature.



3 HEAT INDICATOR LIGHT (GREEN)

When lit, indicates that the kettle's burner is on. Cycles ON-OFF with burner.

4 VACUUM/PRESSURE GAUGE

Indicate steam pressure in PSI inside steam jacket and vacuum in inches of mercury.

5 PRESSURE RELIEF VALVE (NOT SHOWN)

This valve is used to vent the kettle and in the unlikely event there is an excess steam build-up in the jacket.

6 WATER LEVEL SIGHT GLASS

Displays water level in steam jacket.

7 TILT WHEEL

Used for tilting the kettle on hand tilt models.

8 FLUE

Exit for combustion gasses.

9 TANGENT DRAW-OFF VALVE

Used for draining product or wash water from kettle.

OPERATING THE KETTLE

1. Perform daily startup inspection.

Temperature Control Setting	Approximate Product Temperature	
	°F	°C
1.	120	49
2.	135	57
3.	150	66
4.	165	74
5.	180	82
6.	195	91
7.	210	99
8.	225	107
9.	245	118
10.	265	130

NOTE: Certain combinations of ingredients will result in temperature variations

2. Preheat the kettle by turning the ON/OFF Temperature Control to the desired temperature setting. The Heat Indicator Light (Green) will remain lit, indicating the burner is on, until the temperature setting is reached. When the green light goes off, the burners are off, and preheating is complete.

NOTE: When cooking egg and milk products, the kettle should not be preheated, as products of this nature adhere to hot cooking surfaces.

3. Place food product into the kettle. The green Heat Indicator Light will cycle on and off indicating the burners are cycling on and off to maintain the set temperature.



4. When cooking is completed turn Temperature Control to the "OFF" position.
5. Pour the contents of the kettle into an appropriate container by tilting the kettle forward or using discharge valve.



NOTE: Cleaning should be completed immediately after cooked foods are removed.

NOTE: A five minute complete shut-of period is required before relighting.

CLEANING INSTRUCTIONS



CARE AND CLEANING

Cooking equipment must be cleaned regularly to maintain its fast, efficient cooking performance and to ensure its continued safe, reliable operation. The best time to clean is shortly after each use (allow unit to cool to a safe temperature).

WARNINGS



Chloride Cleaners

Do not use detergents or cleansers that are chloride based or contain quaternary salt.



Wire Brush & Scrapers

Do not use a metal bristle brush or scraper.



Steel Pads

Steel wool should never be used for cleaning the stainless steel.



High Pressure Spray Hose

Unit should never be cleaned with a high pressure spray hose.



Stagnant Water

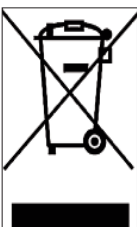
Do not leave water sitting in unit when not in use.

CLEANING INSTRUCTIONS

1. Turn unit off.
2. Remove drain screen (if applicable). Thoroughly wash and rinse the screen either in a sink or a dishwasher.
3. Prepare a warm water and mild detergent solution in the unit.
4. Remove food soil using a nylon brush.
5. Loosen food which is stuck by allowing it to soak at a low temperature setting.
6. Drain unit.
7. Rinse interior thoroughly.
8. If the unit is equipped with a **Tangent Draw-Off Valve**, clean as follows:
 - a) Disassemble the draw-off valve first by turning the valve knob counter-clockwise, then turning the large hex nut counter-clockwise until the valve stem is free of the valve body.
 - b) In a sink, wash and rinse the inside of the valve body using a nylon brush.
 - c) Use a nylon brush to clean tangent draw-off tube.
 - d) Rinse with fresh water.
 - e) Reassemble the draw-off valve by reversing the procedure for disassembly. The valve's hex nut should be hand tight only.
9. If the unit is equipped with a **Butterfly Valve**, clean as follows:
 - a) Place valve in open position.
 - b) Wash using a warm water and mild detergent solution.
 - c) Remove food deposits using a nylon brush.
 - d) Rinse with fresh water.
 - e) Leave valve open when unit is not in use.
10. If the unit is equipped with an **Air Valve**, clean as follows:
 - a) Open product valve.
 - b) Disconnect air hoses.
 - c) Remove air cylinder.
 - d) Remove valve tee.
 - e) Remove all O-rings.
 - f) Clean air cylinder, do not submerge in water. Wipe clean and sanitize.
 - g) Clean and sanitize tee and O-rings.
 - h) Grease and reinstall O-rings.
 - i) Reinstall valve tee to kettle outlet.
 - j) Reinstall air cylinder to bottom of tee.
 - k) Reconnect air hoses.
 - l) Close valve and check for alignment.
11. Using mild soapy water and a damp sponge, wash the exterior, rinse, and dry.

NOTES

- ⇒ For more difficult cleaning applications one of the following can be used: alcohol, baking soda, vinegar, or a solution of ammonia in water.
- ⇒ Leave the cover off when the kettle is not in use.
- ⇒ For more detailed instructions refer to Stainless Steel Equipment Care and Cleaning (www.nafem.org/resources/stainlesssteelfinal.doc) on Nafem's website (www.nafem.org).



DISPOSAL INSTRUCTIONS

This unit is recyclable. Do not dispose in landfill.

The unit may contain rust inhibitor and or antifreeze within the jacket. Drain unit and dispose following Federal, State and local regulations.

The majority of the unit is composed of stainless steel. Other alloys and electrical components make up a small percentage of the total. Follow Federal, state and local regulations for disposal.



PREVENTATIVE MAINTENANCE

**FOR MAINTENANCE AND REPAIRS CONTACT YOUR AUTHORIZED MANITOWOC SERVICE AGENCY
AND HAVE A QUALIFIED SERVICE TECHNICIAN MAINTAIN YOUR EQUIPMENT.**



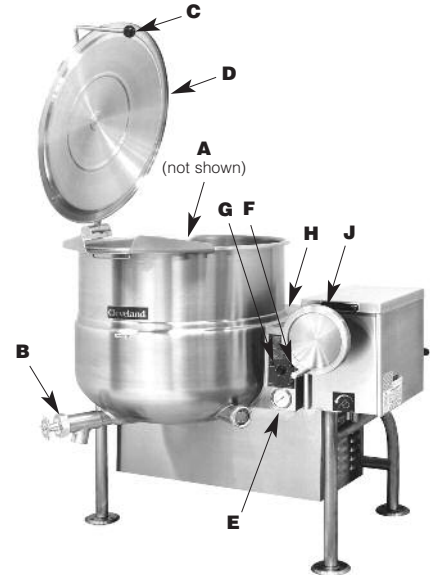
WARNING:

If for any reason this unit is not functioning correctly **DO NOT OPERATE**. Contact your authorized service agent.



DAILY PRE-STARTUP INSPECTION

1. Flue (A) is not obstructed.
2. Draw-Off Valve (B) is installed and handle is in place.
3. Knob (C) not missing from spring assist handle.
4. Cover (D) lifts up and down freely and is held in place when fully open.
5. Pressure Gauge (E) is in the green when unit is cold.
6. Green Light (F) comes on when unit is energized.
7. Red Light (G) comes on when unit is tilted (tilting models only).



SIX MONTH SERVICE INSPECTION

1. Perform daily startup inspection.
2. Gasket (H) around top cover is in good condition.
3. Tilt hand (J) wheel is tight.
4. Grease bearings on both trunnions.
5. Check for play in gears (adjust if required).
6. Fasteners securing panels are in place and tight.
7. Perform pressure relief valve periodic test (see Pressure Relief Valve Testing).
8. Adequate exhaust and makeup air is supplied to working area.

YEARLY SERVICE INSPECTION

1. Perform six month service inspection.
2. Check kettle maximum temperature setting (see Calibrating Procedure).
3. Inspect safety thermostat for proper connections (see Safety Thermostat).
4. Inspect Low water probe for proper connections (see Low Water Level Probe).
5. Inspect safety valve installation (see SAFETY VALVE INSTALLATION).
6. Clean blower.
7. Perform free air calculation (see FREE AIR CALCULATION).

TROUBLESHOOTING AND MAINTENANCE PROCEDURES

The following trouble shooting guide and maintenance procedures are meant to be used by Qualified Service Technician



ANY REPAIRS TO THE PRESSURE VESSEL MUST BE DONE BY A CERTIFIED PRESSURE VESSEL REPAIR SHOP AND ALL REPAIR METHODS AND MATERIALS MUST BE APPROVED BY THE MANUFACTURER.

**For periodic maintenance recommendations see “Operators Manual”.
Extreme caution must be taken if unit is electrically energized for testing. Remove power from the unit while servicing.**

SPARE PARTS LIST

PART NO.	DESCRIPTION	QTY.
KE51834	Scraper Blades	5
KE00860	Speed Control Cable Assembly	1
KE52936-6	Fuse, 3 Amp	2
KE50753-10	Relay	2-5
KE52936-16	Fuse	2
KE603208-9	Contact Block, Normally Open	2
KE603208-8	Contact Block, Normally Closed	2

MECHANICAL CHECKS

1. Inspect controls, replace damaged seals, switches, LED's etc..
2. Remove the console cover and check that the seal is not cracked or split. Replace seal, screws, missing or worn nylon anchor nuts. **Leave cover off.**
3. Remove the kettle bottom cover and check that the seal is not cracked or split. **Leave cover off.**

4. For units with tilt crank-

- A. Check that the kettle tilts smoothly. If there is excess play adjust the worm to gear clearance with Locking Nuts or Adjusting Screw as required.
- B. Check that there is no excessive wear in the trunnion bearings.
- C. Apply grease to gear teeth and bearings.

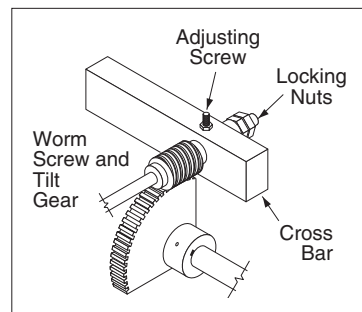
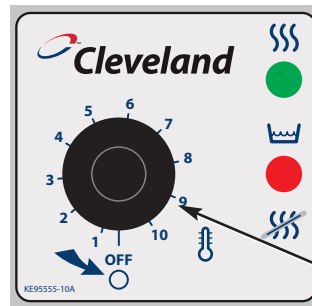


Illustration inverted for clarity.



Grease Nipples.

TROUBLESHOOTING GUIDES (Legend)

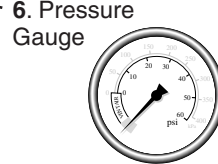


1. Green Light

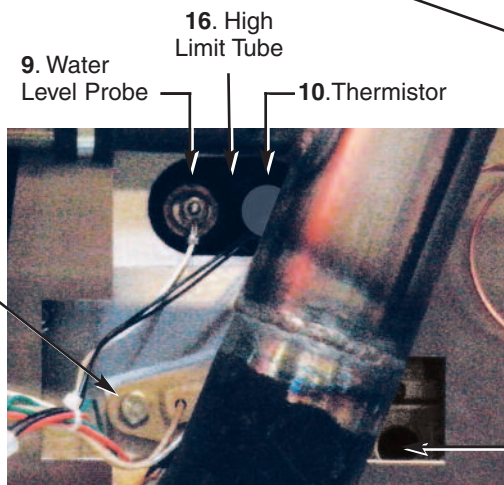
2. Red Light

3. ON/OFF Switch

4. Potentiometer



5. Kettle Jacket Water Sight Glass



9. Water Level Probe

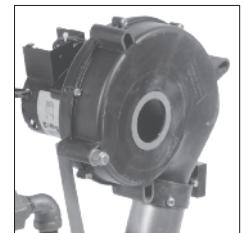
16. High Limit Tube

10. Thermistor

11. Ignitor



7. Gas Valve (showing hose for pressure tap)



8. Blower

1. Green Light
2. Red Light
3. ON/OFF Switch
4. Potentiometer
5. Kettle Jacket Water Sight Glass

6. Pressure Gauge
7. Gas Valve
8. Blower
9. Water Level Probe
10. Thermistor

11. Ignitor
12. Sight Glass
13. 14V Transformer
14. 24V Igniton Transformer

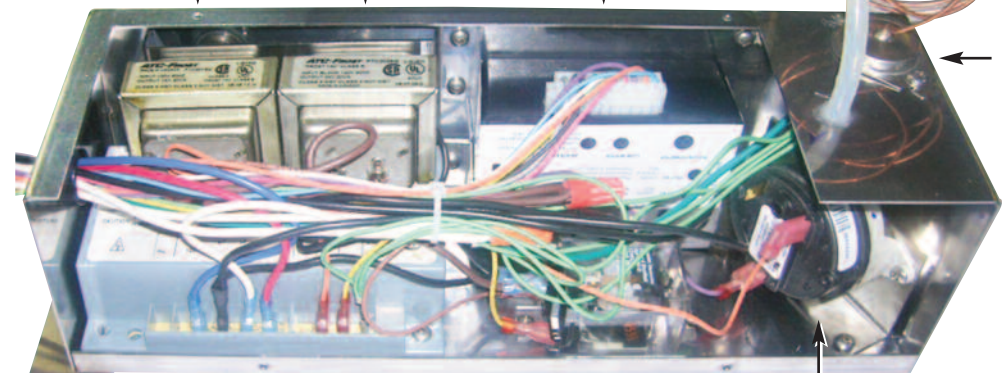
15. SSK Controller
16. High Limit
17. Ignition Module
18. Relay
19. Air Switch

15. SSK Controller



13. 14V Transformer

14. 24V Igniton Transformer



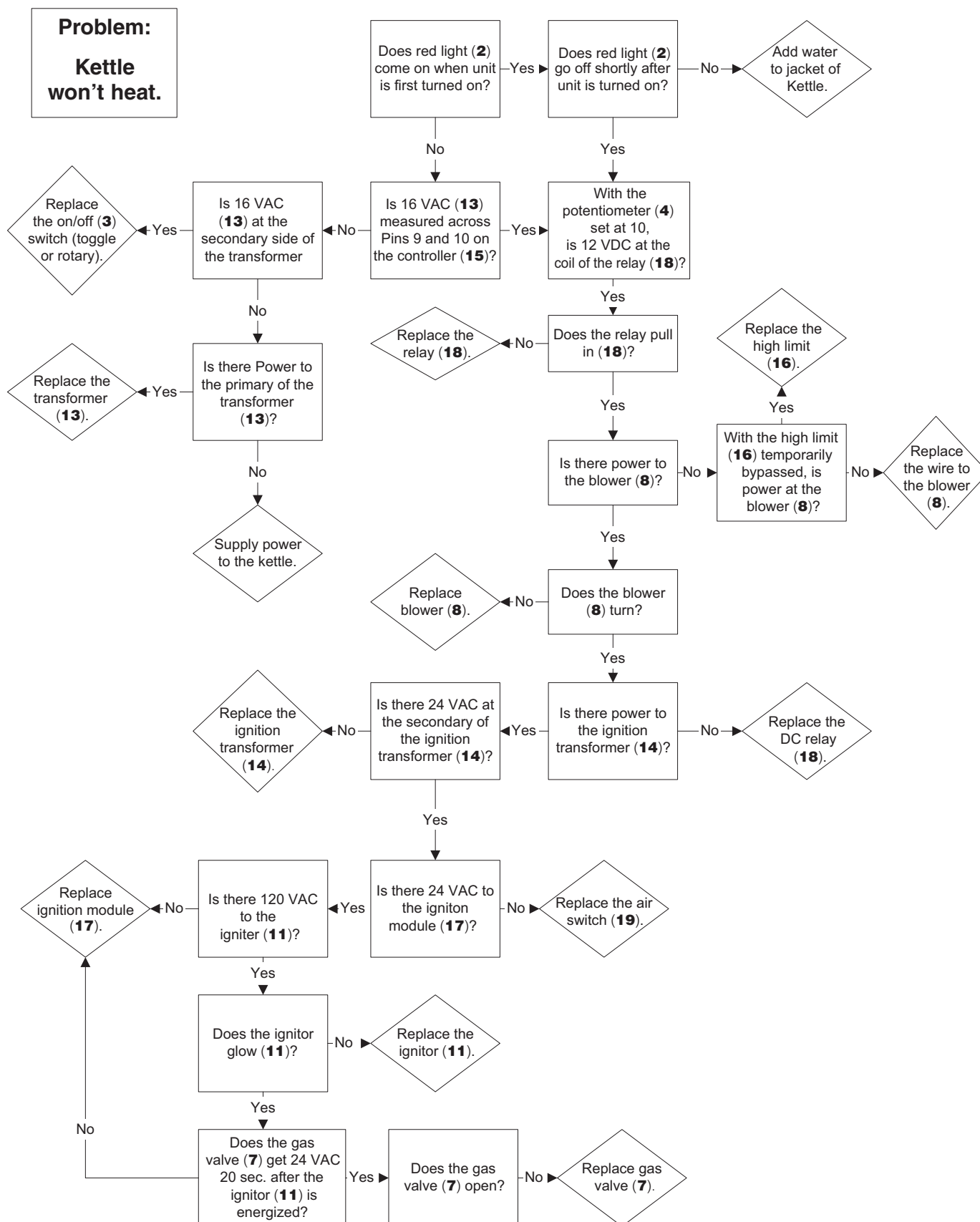
17. Ignition Module

18. Relay

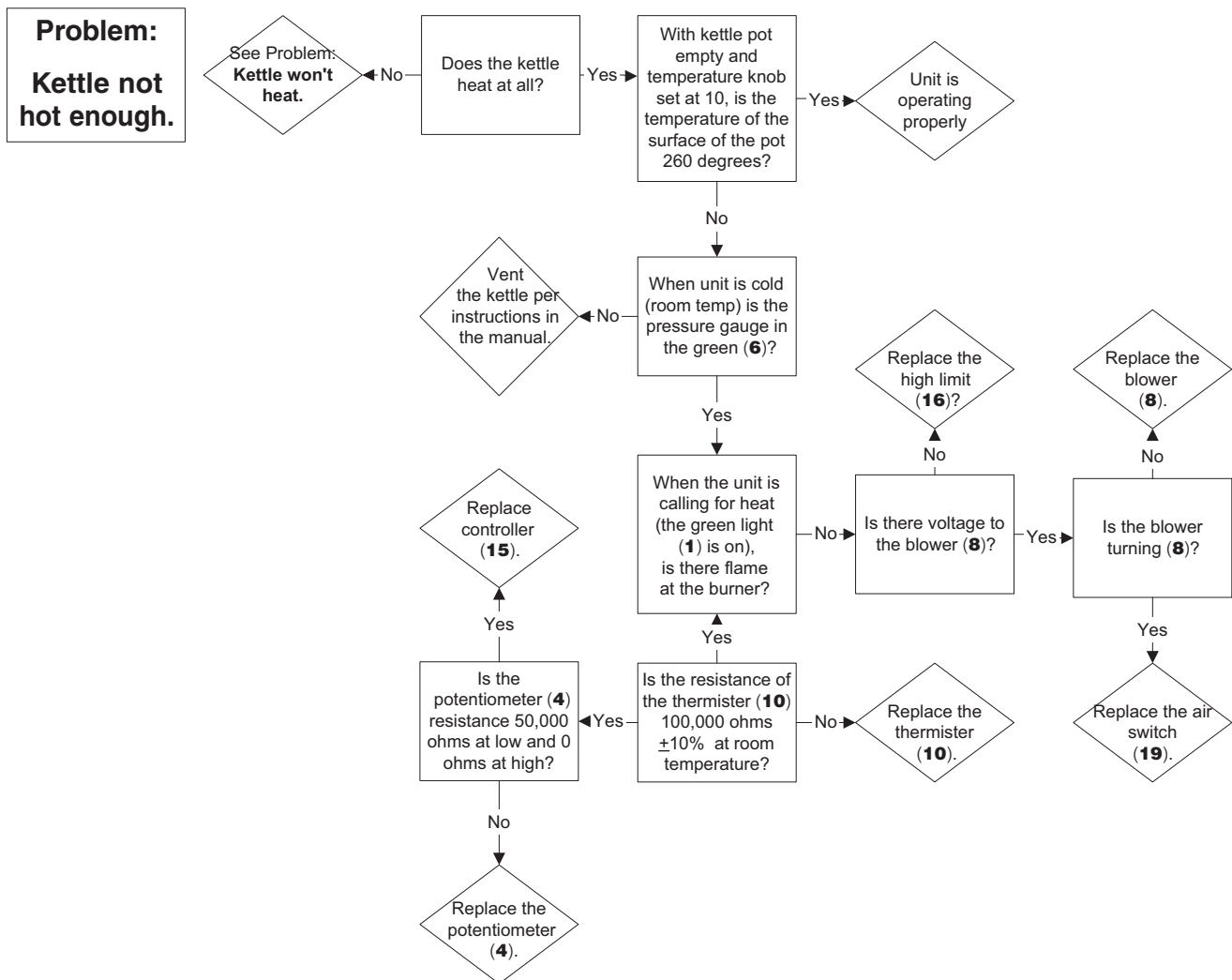
19. Air Switch

16. High Limit

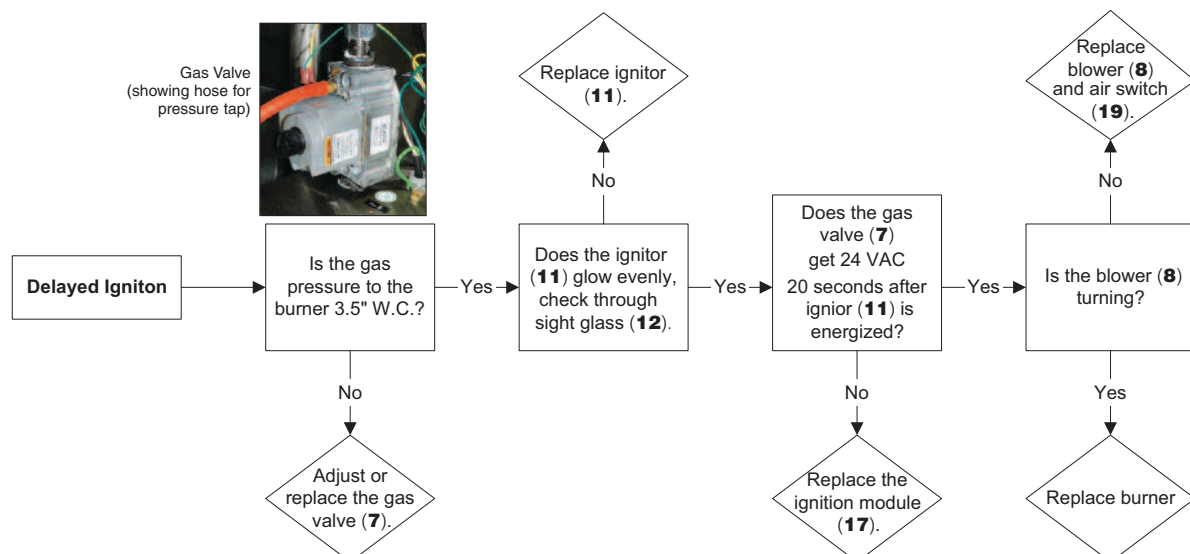
TROUBLESHOOTING GUIDES (continued)



TROUBLESHOOTING GUIDES (continued)

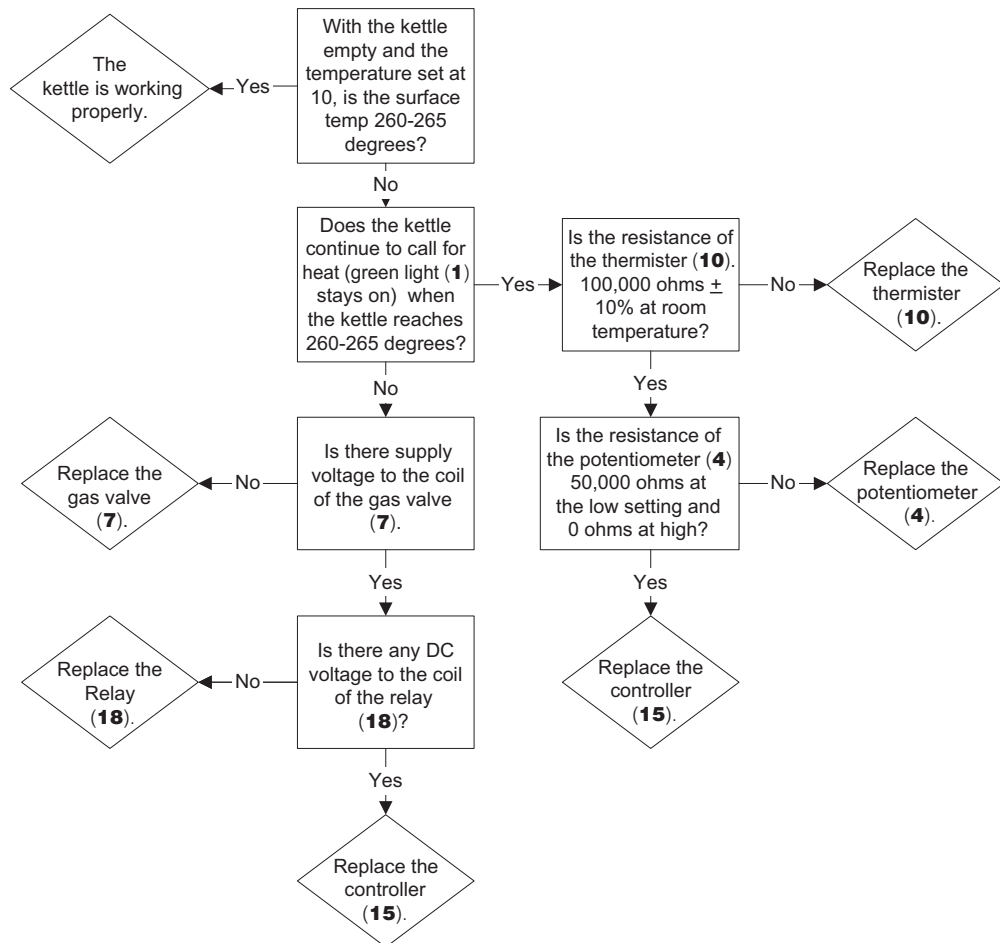


Problem: Kettle has delayed ignition.

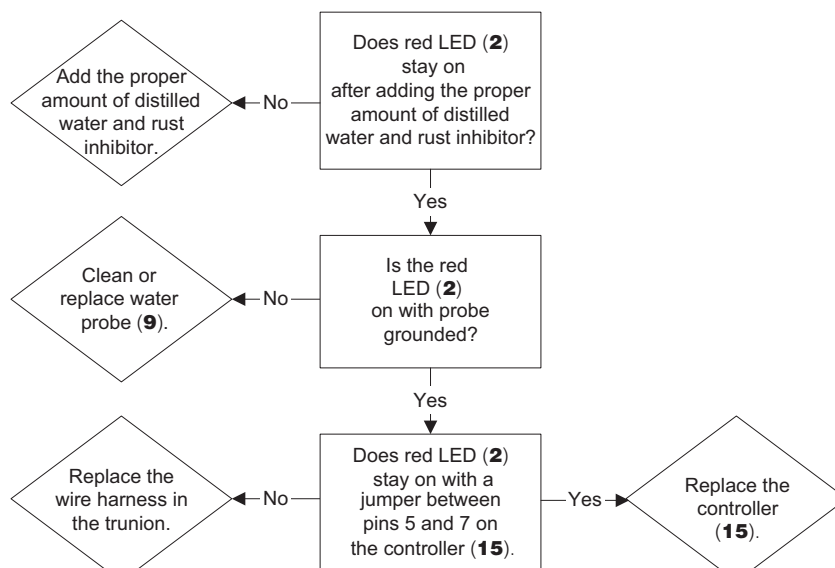


TROUBLESHOOTING GUIDES (continued)

Problem:
Kettle gets too hot.

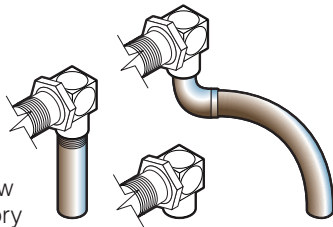


Problem: Red LED stays on.



KETTLE SAFETY INSPECTION AND TESTING

SAFETY VALVE INSTALLATION:

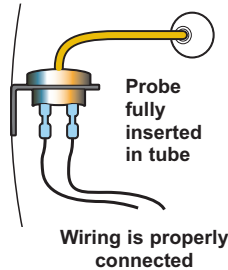


The above illustrations show the three variations of factory installed Safety Valves.

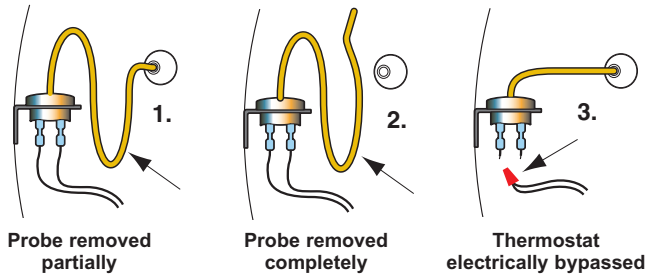
Modifications are unacceptable.

SAFETY THERMOSTAT:

Correct Installation



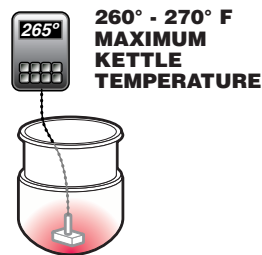
Incorrect Installations



1. Safety thermostat probe is not completely inserted into tubing.
2. Safety thermostat probe is removed from tubing.
3. Safety thermostat electrical connection is bypassed.

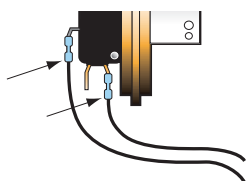
OPERATING THERMOSTAT:

If maximum temperature is not in this range (on empty kettle), refer to the "Calibrating Procedure".



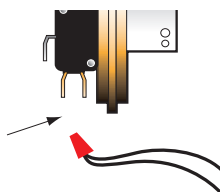
GAS KETTLE AIR SWITCH:

Correct



Wiring is properly connected

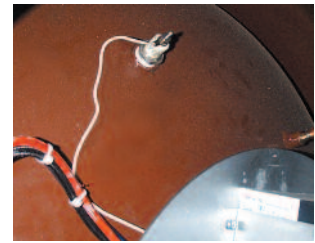
Incorrect



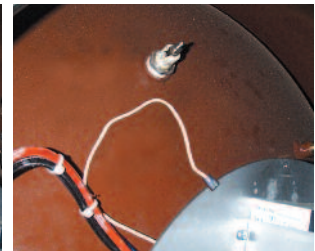
Switch electrically bypassed

LOW WATER LEVEL PROBE:

Probe properly attached

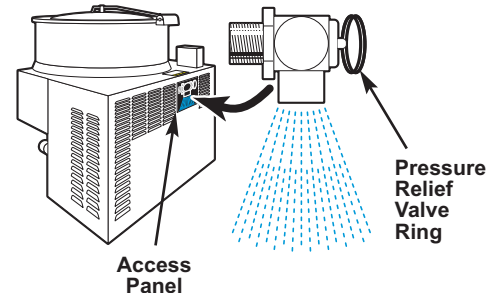


Probe bypassed by running (A) an additional wire

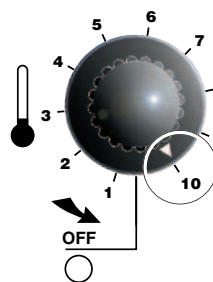


Probe bypassed by (B) grounding the connecting wire

PRESSURE RELIEF VALVE TESTING



WARNING: Use of gloves and eye protection to prevent personal injury.



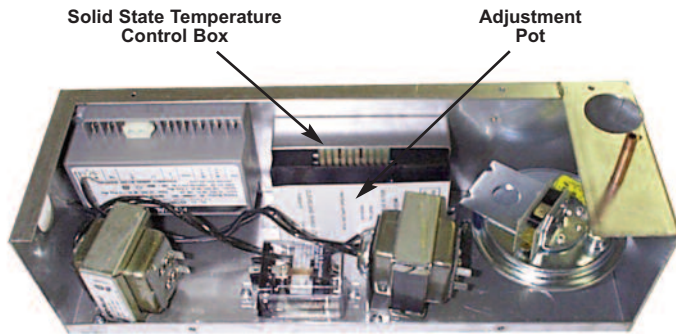
1. With the kettle empty, set On-Off Switch/Temperature Control to "10" (Max.). Allow the kettle to heat until the unit cycles off.
2. Switch On-Off Switch/Temperature Control to "0" (Off) and disconnect main power at fused disconnect switch.
3. Remove Access Panel at back of main kettle console.
4. Pull Pressure Relief Valve Ring open for a maximum of one second. Repeat test three to four times. Each time the mechanism should move freely and be accompanied by a rapid escape of steam.
5. Replace access panel.

IMPORTANT:

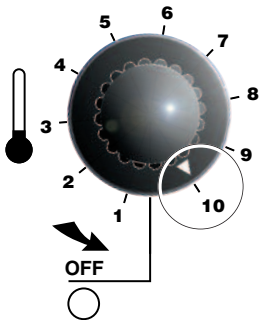
If valve appears to be sticking replace pressure relief valve.

If foreign material is discharged then drain kettle and replace pressure relief valve.

CALIBRATING PROCEDURE



1. Insure the unit has a vacuum before you begin calibrating procedures. If unit requires venting refer to KETTLE VENTING INSTRUCTIONS.
2. Set On-Off Switch/Temperature Control to "10" (Max.).
3. Allow the unit to cycle twice.
4. Check temperature of the inner kettle surface with a digital surface thermometer.
5. Temperature should be between 260°F and 265°F.
6. Using a screw driver adjust temperature by turning the potentiometer on the Solid State Temperature Control Box. Turn very little. Turn clockwise to INCREASES and counter-clockwise to DECREASE temperature.
7. Allow the unit to cycle twice.
8. Check temperature of the inner kettle surface with a digital surface thermometer.
9. Repeat steps 4. through 8. until unit is calibrated.



FREE AIR CALCULATION

Insert drager pump tube 4" down the center of the flue and take one sample each of Carbon Dioxide (CO₂) and Carbon Monoxide (CO) and record results.

% CO (PPM)	% CO ₂
------------	-------------------

With results obtained for CO₂ use chart to determine dilution factor for gas type used.

Dilution Factor

Enter these numbers in the following formula to determine the concentration of carbon monoxide in an air free sample of flue gas.

$$\text{Dilution Factor} \times \frac{\text{CO (PPM)}}{10,000} = \frac{\text{}}{\% \text{ Carbon Monoxide}}$$

Result must not exceed 0.08% carbon monoxide.

CARBON DIOXIDE IN SAMPLE (PERCENT)	FACTOR PROPANE GAS	FACTOR NATURAL GAS
4.0	3.50	3.05
4.2	3.33	2.90
4.4	3.18	2.77
4.6	3.04	2.65
4.8	2.92	2.54
5.0	2.80	2.44
5.2	2.69	2.34
5.4	2.59	2.26
5.6	2.50	2.18
5.8	2.41	2.10
6.0	2.33	2.03
6.2	2.26	1.97
6.4	2.19	1.91
6.6	2.12	1.85
6.8	2.06	1.80
7.0	2.00	1.74
7.2	1.94	1.70
7.4	1.89	1.65
7.6	1.84	1.61
7.8	1.79	1.56
8.0	1.75	1.53
8.2	1.71	1.49
8.4	1.67	1.45
8.6	1.63	1.42
8.8	1.59	1.39
9.0	1.56	1.36
9.2	1.52	1.33
9.4	1.49	1.30
9.6	1.46	1.27
9.8	1.43	1.24
10.0	1.40	1.22

REPAIRING LEAKS IN STEAM JACKETED KETTLE FITTINGS

If unit will not hold a vacuum the most likely cause is a leak at one of the fittings.

Often, the easiest way to eliminate a leak is reseal the suspect areas.

1. Water Level Probe
Remove, clean threads, apply teflon thread sealant and reinstall.
2. Pressure Relief Valve
A/ Inspect for signs of leaks. Replace if required.

B/ Remove, clean threads, apply teflon thread sealant and reinstall.

3. Pressure Gauge

A/ Inspect face of gauge. If it contains moisture on the inside of face replace.

B/ Check tightness of plumbing connection to pressure Gauge.

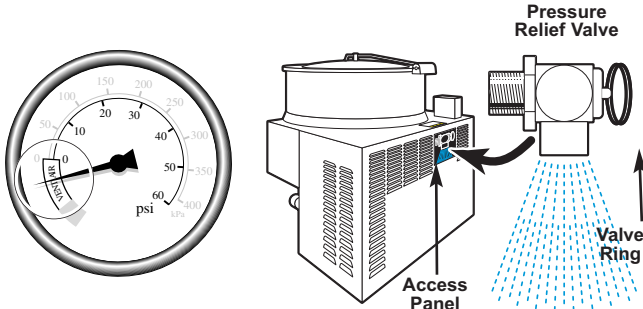
4. Sight Glass

A/ Check tightness of sight glass.

B/ Replace "O" ring if required.

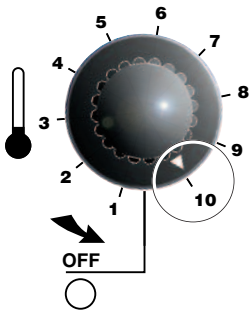
5. If unsuccessful, repeat this process, replacing all fittings and components.

KETTLE VENTING INSTRUCTIONS



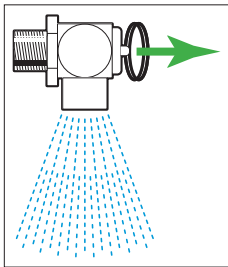
The following venting procedure should be followed when the Vacuum/Pressure Gauge needle is in the "VENT AIR" zone:

NOTE: Check for and eliminate leaks prior to venting (see REPAIRING LEAKS IN STEAM JACKETED KETTLE FITTINGS).

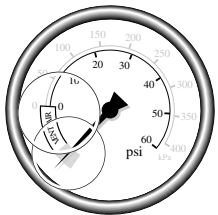


1. Remove Access Panel from back of main kettle console.
2. Turn kettle ON and set temperature control to **10**, heat the empty kettle until unit cycles off.
3. Vent kettle by pulling Valve Ring eight to fifteen times, holding valve open for two seconds each time.

NOTE: If unit cycles ON, stop venting and wait for kettle to cycle OFF before continuing.



4. Turn kettle OFF. Add cold water to kettle until its surface temperature is below 100°F. The pressure gauge needle should be in the green zone, indicating a vacuum in the kettle's jacket.



5. If needle is in the green zone then venting was successful. If not repeat procedure.

RESERVOIR FILL PROCEDURES

WARNING:

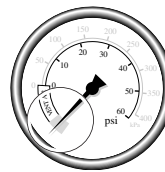


Improper refilling of kettle jacket will result in irreversible damage to unit.

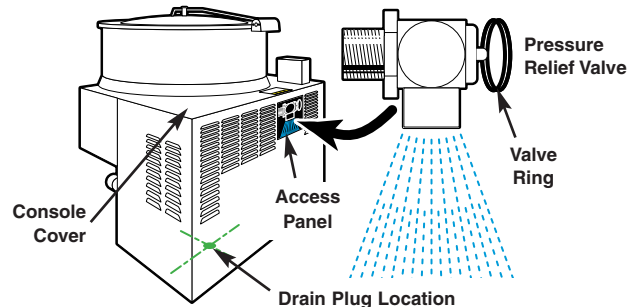
The kettle's water level must be maintained at the proper level. Under normal operating conditions, the sealed water reservoir should never require the addition of water.

If the red "low water" light comes on during use (while the kettle is in an upright position), the water level has reached a critically low level. The low water protection control has automatically shut off the gas burner. The following procedure must be completed before further use:

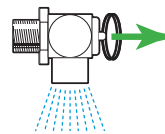
NOTE: Have a qualified service technician repair the leakage problem and add water to the unit. Ensure that the red "low water" light is on when the kettle is upright. On tilting kettles, it is normal for the red light to come on when the kettle is in a tilted position.



1. Ensure kettle is at room temperature and pressure gauge showing zero or less pressure.
2. Shut off power to the kettle at the fused disconnect switch.



3. Remove Console Cover and Access Panel.



Important- Pull ring on Pressure Relief Valve prior to removal to insure vessel is not pressurized.



Sight Glass

4. Pull Pressure Relief Valve Ring open to insure vessel is not pressurized.
5. Remove 1/4" copper tubing and reducer bushing.
6. Add distilled water using a funnel if necessary. Fill the unit to the high level mark on the Sight Glass.
7. Apply a thread sealant (i.e. Teflon tape) to the reducer bushing threads and replace.
8. Replace Console Cover and Access Panel.
9. Restore power to unit at the fused disconnect switch.
10. The kettle must now be vented. (Refer to the KETTLE VENTING INSTRUCTIONS).

KETTLE JACKET CLEANOUT AND PASSIVATION PROCEDURES

The following procedure should be performed at least once every three years to prevent possible corrosion and ensure the optimum life of the kettle.

RUST INHIBITOR

Use a “radiator rust inhibitor” that can be purchased at your local automotive centre. It should not contain any anti-freeze and preferably no lubricant.

To ensure satisfactory mixing follow the manufacturer's instructions.

DISPOSAL - Follow all Federal, State and local codes when disposing of product.

ANGER:

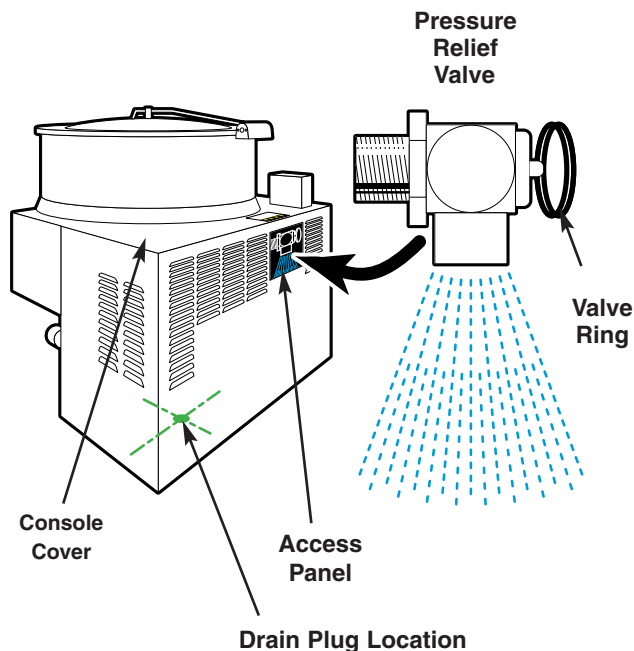


Rust inhibitor can be dangerous.
Read label and follow safety instructions.

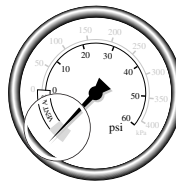
ARNING:



Improper refilling of kettle jacket will result in irreversible damage to unit.



PRESSURE RELIEF VALVE PERIODIC TESTING PROCEDURE



1. Ensure kettle is at room temperature and pressure gauge showing zero or less pressure.
2. Shut off and disconnect gas supply.
3. Remove electrical plug from power source.
4. Remove bolts holding kettle to tabletop.
5. Pull ring on pressure relief valve to insure there is no pressure within the kettle jacket.
6. Remove pressure relief valve.
7. Replace pressure relief valve with street elbow (see above illustration).
8. Remove sight glass from left side of kettle.
9. Tilt kettle on its side (sight glass opening facing downwards) and allow to drain. Flush out with water.
10. Tilt kettle upright, apply a thread sealant (i.e. Teflon tape) to the sight glass threads and replace.
11. Refer to chart below to determine the required volume of water.

Kettle Size	Volume of Mixture	
	U.S. Gal.	Liters
6 U.S. Gal.	1.6	5.8
12 U.S. Gal.	2.2	8.3

12. In a separate container mix water with the required rust inhibitor.
13. Fill jacket via the street elbow with the mixture.
14. Remove street elbow.
15. Apply a thread sealant (i.e. Teflon tape) to the pressure relief valve and replace.
16. Reconnect gas and electrical supplies.
17. Turn kettle on, vent and heat to high for 1/2 hour.
18. Cool kettle.
19. Repeat steps 5-15.
20. Replace bolts holding kettle to tabletop.
21. Reconnect gas and electrical supplies.
22. Turn kettle on and vent kettle.



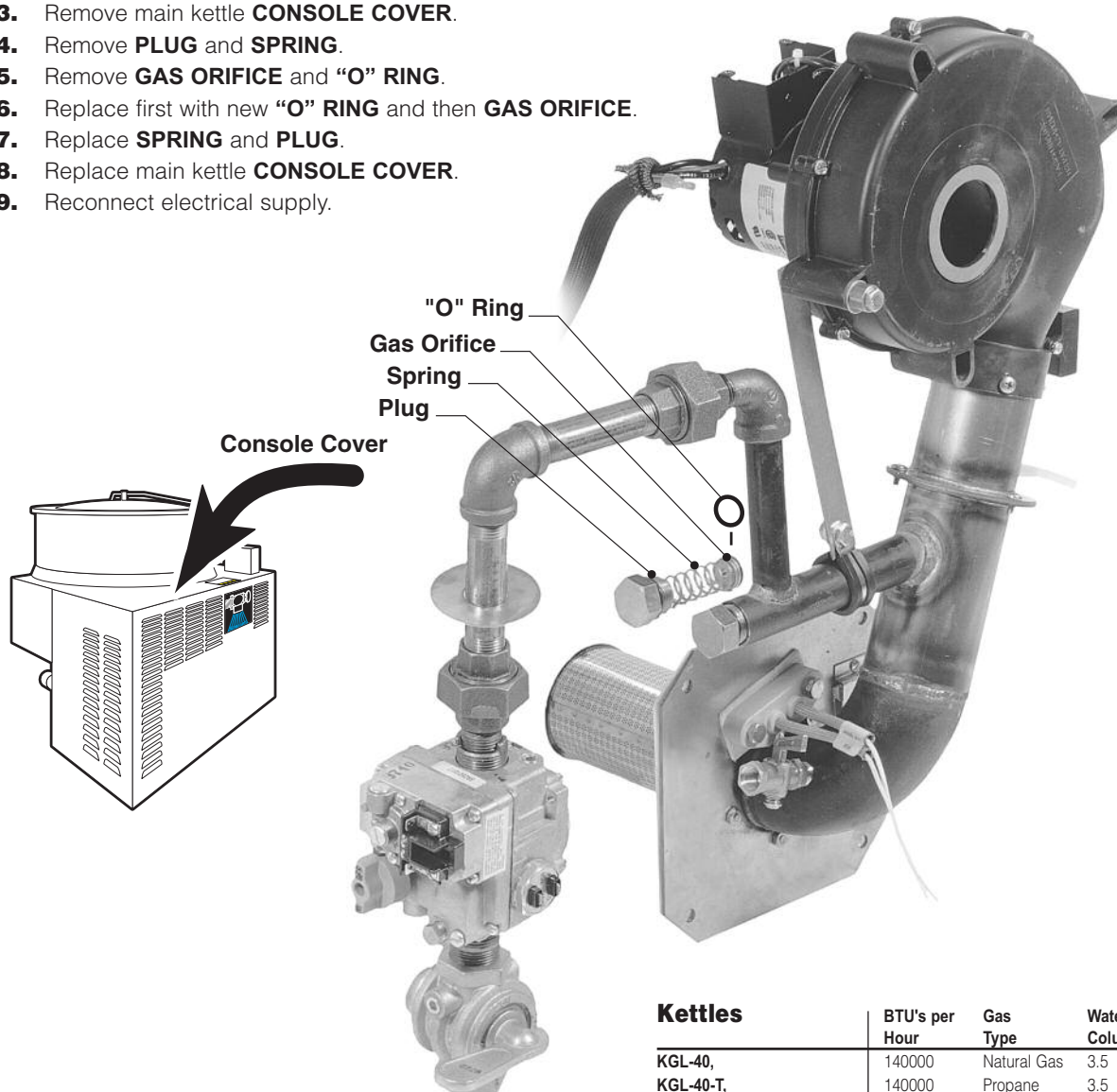
GAS CONVERSION KITS

See Product Bulletin # KE603901.

GAS KETTLE ORIFICE REPLACEMENT

NOTE: Use thread sealant compatible with propane gas on all threaded piping connections.

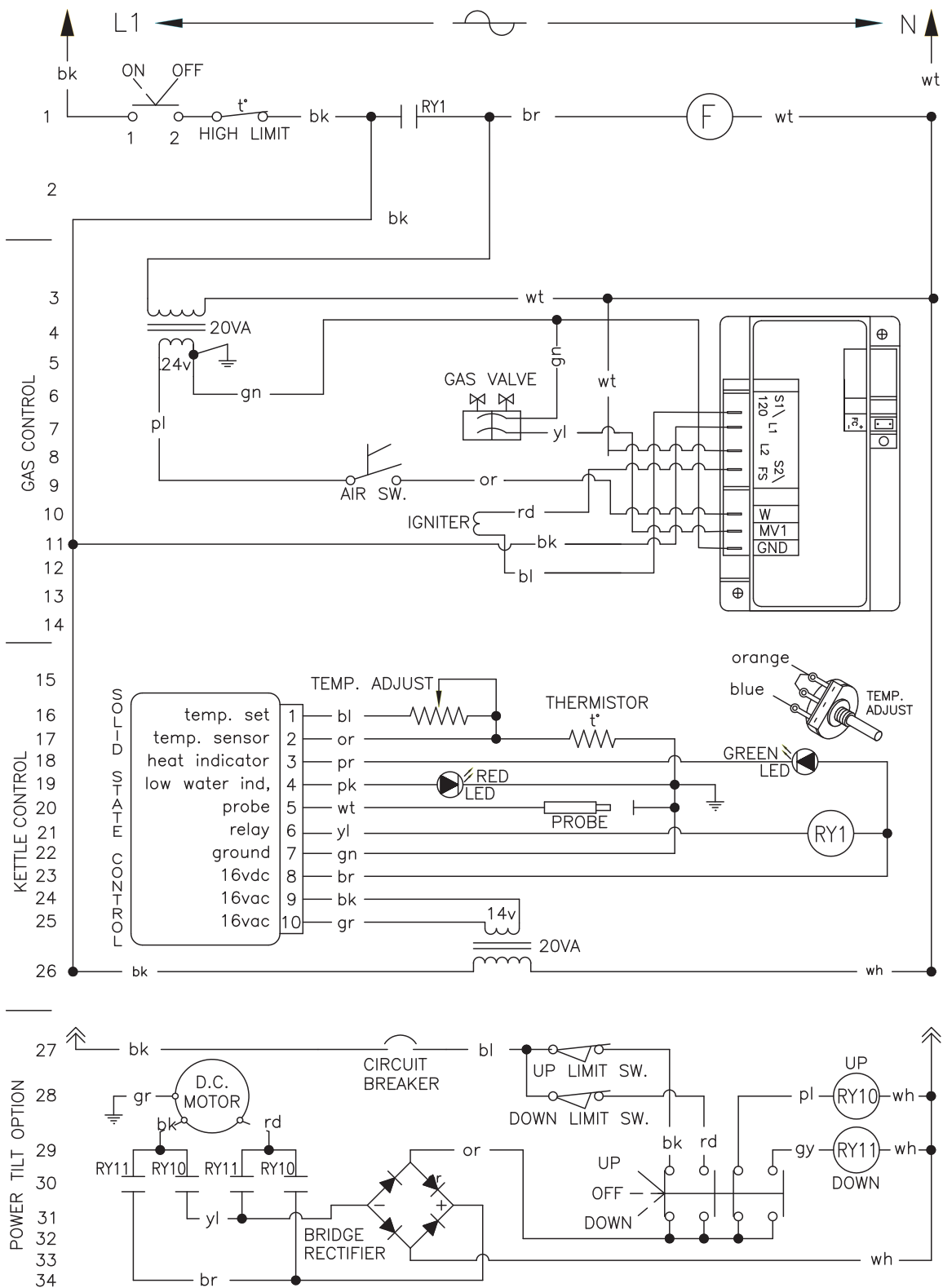
1. Disconnect electrical connection.
2. Shut off main gas supply and disconnect kettle from supply line.
3. Remove main kettle **CONSOLE COVER**.
4. Remove **PLUG** and **SPRING**.
5. Remove **GAS ORIFICE** and **"O" RING**.
6. Replace first with new **"O" RING** and then **GAS ORIFICE**.
7. Replace **SPRING** and **PLUG**.
8. Replace main kettle **CONSOLE COVER**.
9. Reconnect electrical supply.



Kettles

	BTU's per Hour	Gas Type	Water Column	# of Orifices
KGL-40,	140000	Natural Gas	3.5	1
KGL-40-T,	140000	Propane	3.5	1
KGL-60 to 100,				
KGL-60-T to 80-T,	190000	Natural Gas	3.5	1
KGL-40-TSH,	190000	Propane	3.5	1
KGL-40-F to 60-F,				
KGL-40-SH to 60-SH,				

WIRING DIAGRAM - 110-120V, 60 HZ.



Consult factory for alternate voltages.
For Australian wiring diagram see separate addendum.

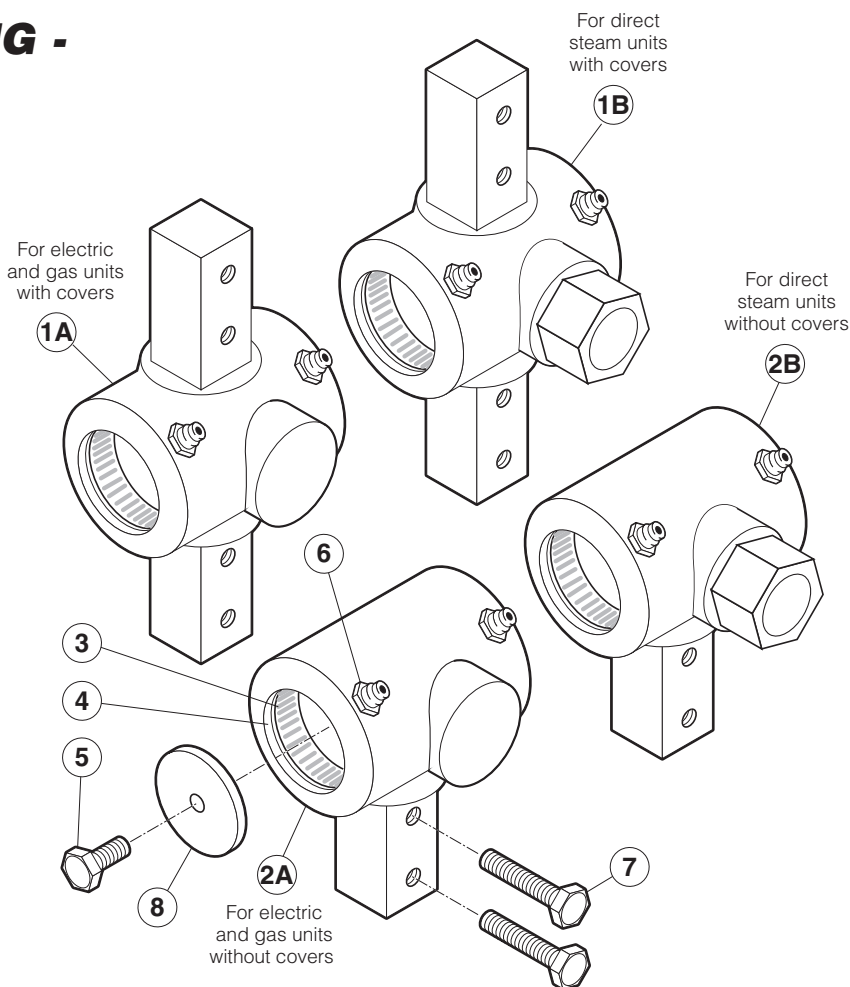
KE90407 REV. (I)

SERVICE PARTS

WARRANTY

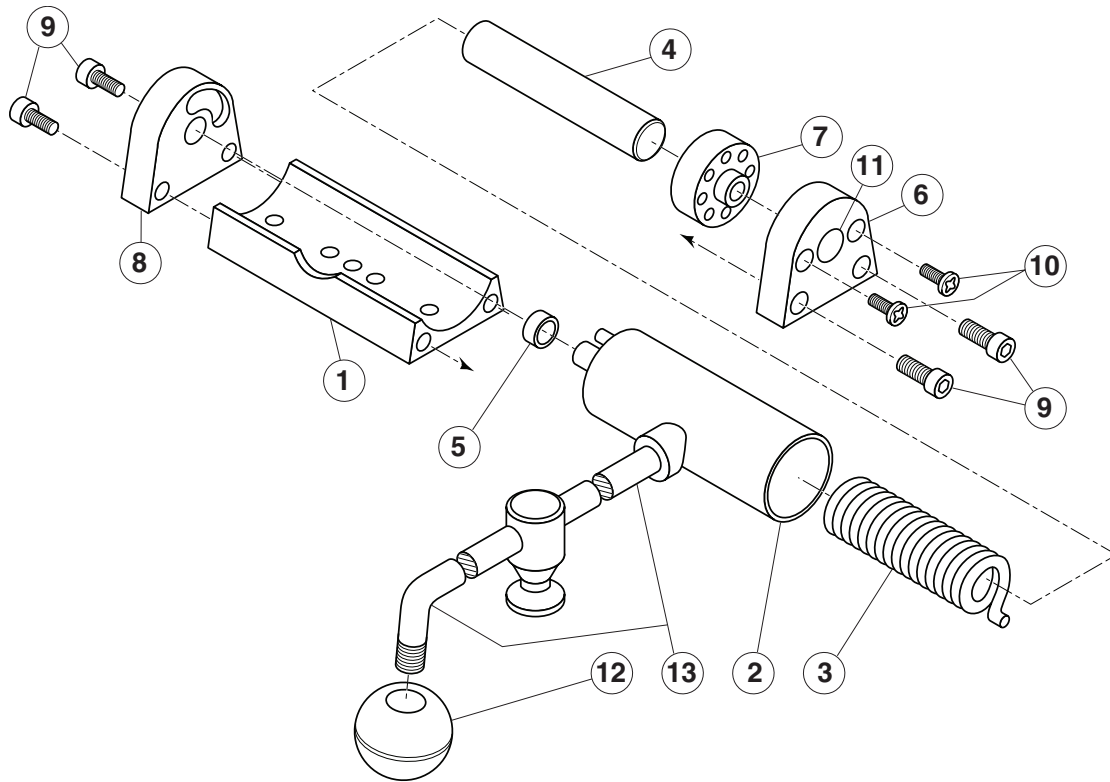
Our Company supports a worldwide network of Maintenance and Repair Centers. Contact your nearest Maintenance and Repair Centre for replacement parts, service, or information regarding the proper maintenance and repair of your cooking equipment. In order to preserve the various agency safety certification (UL, NSF, ASME/Ntl. Bd., etc.), only factory-supplied replacement parts should be used. The use of other than factory supplied replacement parts will void warranty.

TRUNNION HOUSING - TILTING KETTLES



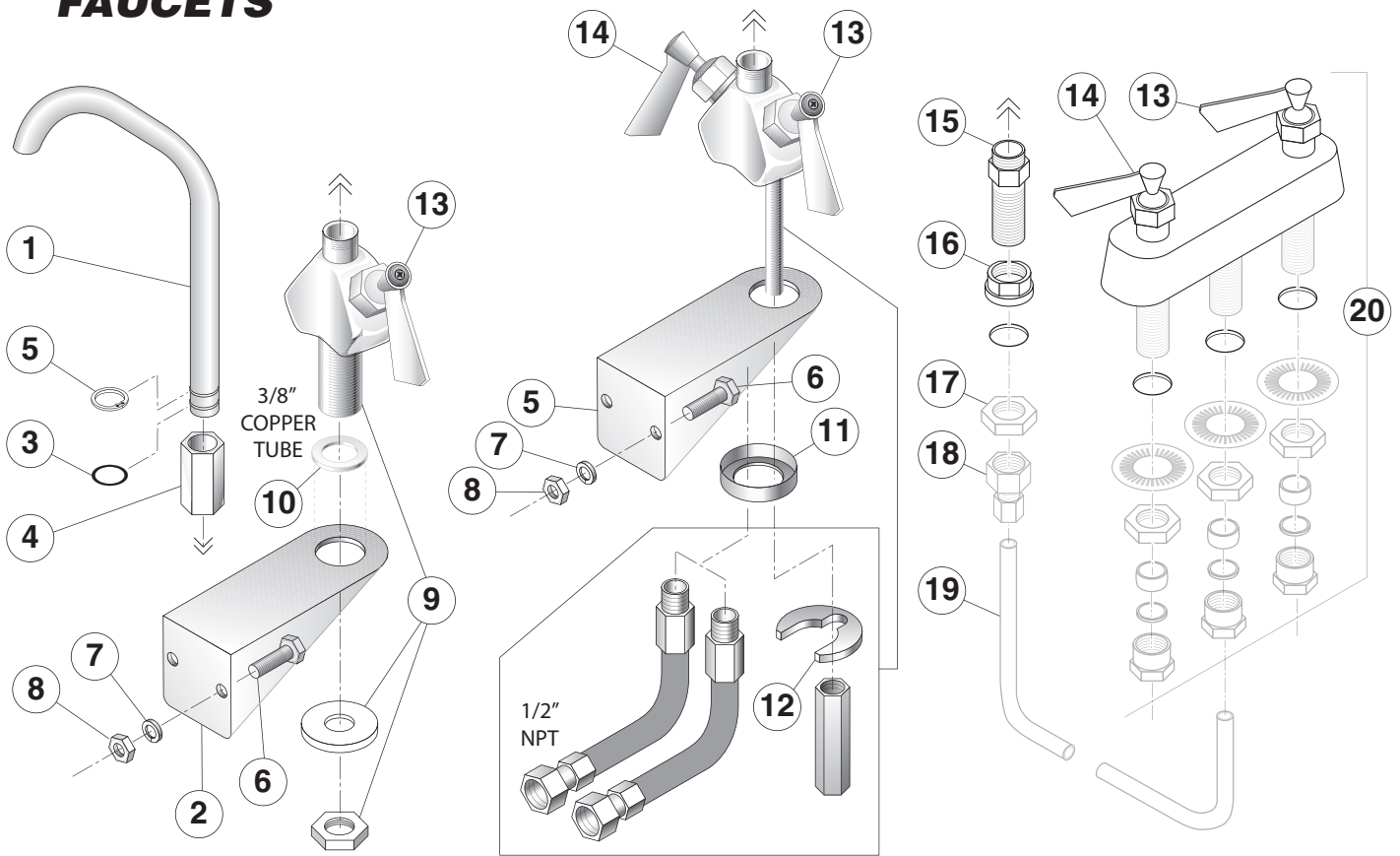
ITEM NO.	PART NO.	DESCRIPTION	QTY.
TRUNNION BEARING ASSEMBLIES (INCLUDES PART # 3, 4 & 6)			
1A.	KE00354	FOR ELECTRIC AND GAS UNITS WITH COVERS	.1
1B.	KE00353	FOR DIRECT STEAM UNITS WITH COVERS	.1
	KE003531	SERVICE HOUSING; SOLID BEARING (KDLT C/W COVER)	.1
2A.	KE00351	FOR ELECTRIC AND GAS UNITS WITHOUT COVERS	.1
2B.	KE00352	FOR DIRECT STEAM UNITS WITHOUT COVERS	.1
	KE003521	SERVICE HOUSING; SOLID BEARING (KDLT W/O COVER)	.1
3.	KE51711	ROLLER BEARING	.2
4.	KE51571-1	BEARING WASHER	.1
5.	FA95081-3	BOLT, 5/16-18 X 1/2"	.1
6.	KE51886	GREASE NIPPLE	.2
7.	FA11326	BOLT, 5/16-18 X 1 1/2"	.4/2
8.	KE50666	SPHERICAL WASHER	.1

HINGE ASSEMBLY



ITEM	PART #	DESCRIPTION	QTY	QTY	QTY	QTY
-	KE00597-6	HINGE ASSY; 25 GALLONS (100 DEG. OPENING, LIGHT SPRING)				▼
-	KE00597-4	HINGE ASSY; KGL-40TSH, HA-MKGL, KDM60T/CT (100 DEG. OPENING, HEAVY SPRING)			▼	
-	KE00597-2	HINGE ASS'Y; 60-100 GALLONS, 30-60F (HEAVY SPRING)		▼		
-	KE00597-1	HINGE ASS'Y; 30-40 GALLONS, 20F, KDM25-40T/CT (LIGHT SPRING)	▼			
1	KE50822	HINGE BASE; CHS	1	1	1	1
2	KE51217	HINGE CYLINDER	1	1	1	1
3	KE50121-1	HINGE SPRING; HEAVY (0.187DIA/12 COILS)	-	1	1	-
	KE50121-2	HINGE SPRING; LIGHT (0.162DIA/16 COILS)	1	-	-	1
4	KE50823-1	HINGE PIN; LIGHT SPRING	1	-	-	1
	KE50823-2	HINGE PIN MODIFD; HEAVY SPRING	-	1	1	-
5	KE50824	HINGE BEARING; MODIFIED	1	1	1	1
6	KE50819-1	HINGE END PIECE; LHS	1	1	-	-
	KE50819-2	HINGE END PIECE; LHS MODIFIED (TO 100 DEGREE)	-	-	1	1
7	KE50820	HINGE INSERT; CHS	1	1	1	1
8	KE50819	HINGE END PIECE; RHS	1	1	1	1
9	FA11284	SCREW; 1/4-20 X 1/2" HEX SOCKET	4	4	4	4
10.	FA11507	Cutting Screw,	2	2	2	2
11.	KE54907-10	Plug Button	1	1	1	1
12.	KE50151-2	Knob	1	1	1	1
13.		Cover Handle (specify model)	1	1	1	1

FAUCETS



Common Parts

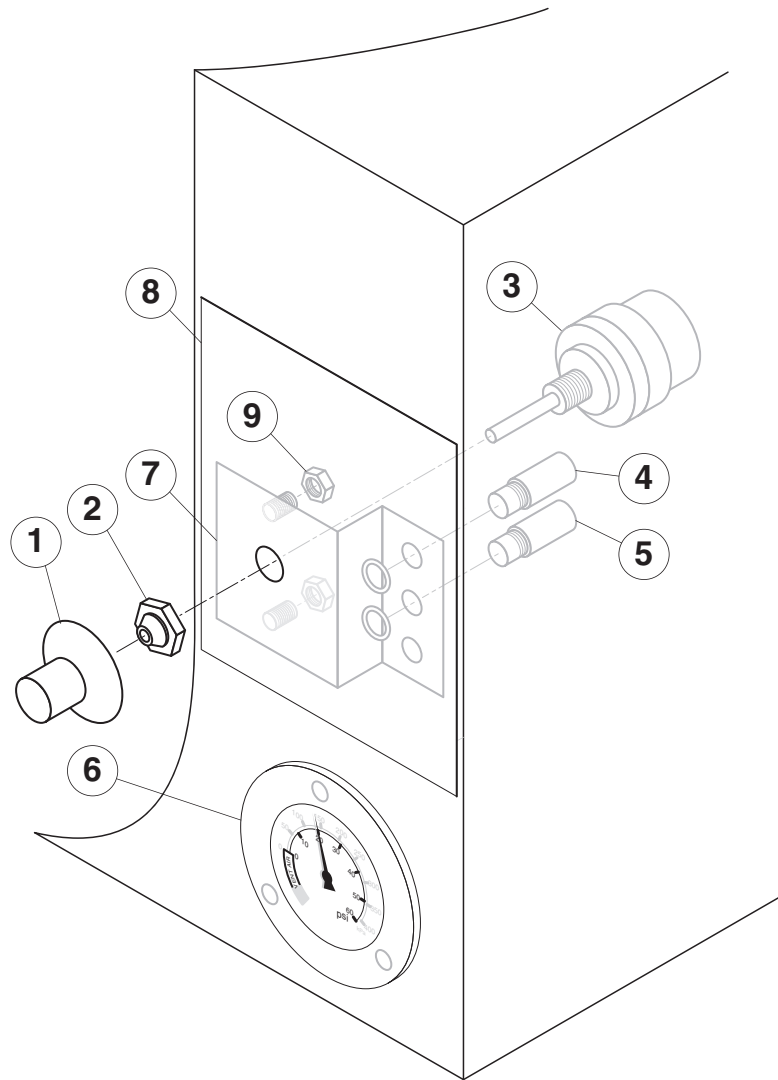
ITEM #	PART #	DESCRIPTION	QTY.
	SPK ____	SINGLE PANTRY FAUCET KIT , (includes items 1-10) see page 2 for ordering information	
	DPK ____	DOUBLE PANTRY FAUCET , (includes items 1-8 & 11) see page 2 for ordering information	
1.	KE50825- ____	SPOUT , see page 2 for ordering information	
2.	_____	FAUCET MOUNTING BRACKET , see page 2 for ordering information	1
3.	FA05002-19	"O" RING	1
4.	KE51736	LONG FAUCET NUT	1
5.	FA95007-10	RETAINING RING	1
6.	FA11258	HEX CAP SCREW	2
7.	FA31029	LOCK WASHER	2
8.	FA21008	HEX NUT	2
9.	KE51401	SINGLE PANTRY BODY (c/w item 13)	1
10.	KE50335	ADAPTER WASHER	1
11.	KE51403	DOUBLE PANTRY BODY (c/w item 13 & 14)	1
12.	SE50447	REPLACEMENT HORSESHOE WASHER	1
13.	SE50021	REPLACEMENT STEM ASSEMBLY, COLD WATER	1
14.	SE50020	REPLACEMENT STEM ASSEMBLY, HOT WATER	1
15.	SD50097	FLANGED NUT, 3/4" NPT, CHROME PLATED	1
16.	KE51585	FAUCET SPOUT FITTING	1
17.	SD50098	LOCKNUT, 3/4" NPT	1
18.	FI00266	COUPLING, 1/2" NPT	1
19.	SD50100	COPPER TUBE	1
20.	KE51899	REMOTE VALVE (c/w item 13 & 14)	1

FAUCETS

Models

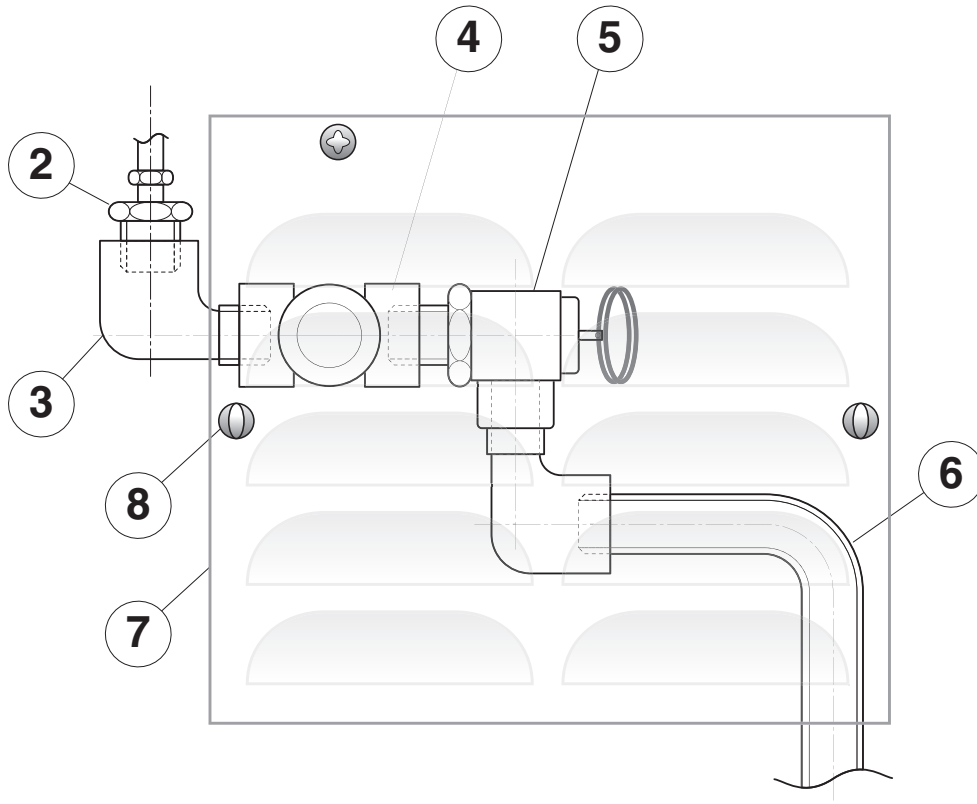
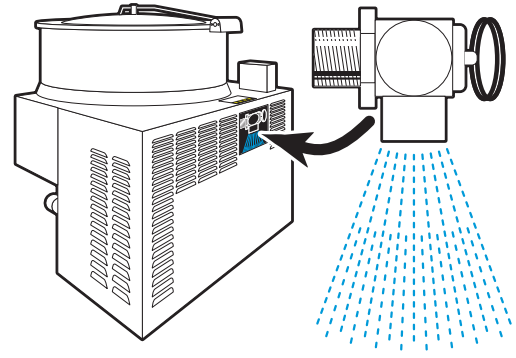
	FAUCET KIT	BRACKET	SPOUT
KDT12/20 ON SD TABLE	SPK1 DPK1		KE50825-1
KDL60/80/100T KEL40/60/80/100T KET20 KGT,MKET, KDP60-100/T	SPK2 DPK2	KE54159 KE02071-1 (CP)	KE50825-2
KDL25/40T KEL25T,KDP25/40T	SPK3 DPK3	KE54159	KE50825-3
KDM60/T	SPK-KDM60 DPK-KDM60		KE50825-2
KDM25/40/T	SPK6 DPK6		KE50825-6
KDL40/60/80TSH KEL40/60TSH	SPK7 DPK7	KE54159	KE50825-7
KDT6 ON SD OR ST	SPK8 DPK8		KE50825-8
TKET, KET3/6/12	SPK9 DPK9	KE54159	KE50825-9
KDL125/150T KGL40/60/80T KGL40TSH	SPK10 DPK10	KE54159	KE50825-10
HAMKGL60/80/100T	SPK11 DPK11	KE54159	KE50825-11
KGL25T, T1	SPK13 DPK13	SK00395-1 KE02071-2 (CP)	KE50825-7
TR	SPK14 DPK14	SK2382300 SK2382400 (SPACER)	KE50825-6
SET10	DPK15 SPK15	SK2308800	KE50825-6
SET15	SPK16 DPK16	SK2302200	KE50825-6
HAMKGL60/80/100	DPK17 SKP17		KE50825-12
ALL STATIONARY KETTLES	DPK5 SPK5		KE50825-5

CONSOLE CONTROLS



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	KE50569-1	KNOB, POTENTIOMETER	1
2.	KE51005	RUBBER BOOT	1
3.	SE00114	POTENTIOMETER WITH ON/OFF SWITCH, C/W ITEM #4	1
4.	KE55486-3	L.E.D., GREEN	1
5.	KE55486-2	L.E.D., RED	1
6.	KE50429-6	PRESSURE GAUGE	1
7.	KE603836	BRACKET FOR LED'S	1
8.	KE95555-10	LABEL	1
9.	FA20504-3	NUT, 10-24	2
OR IS IT	FA21006		

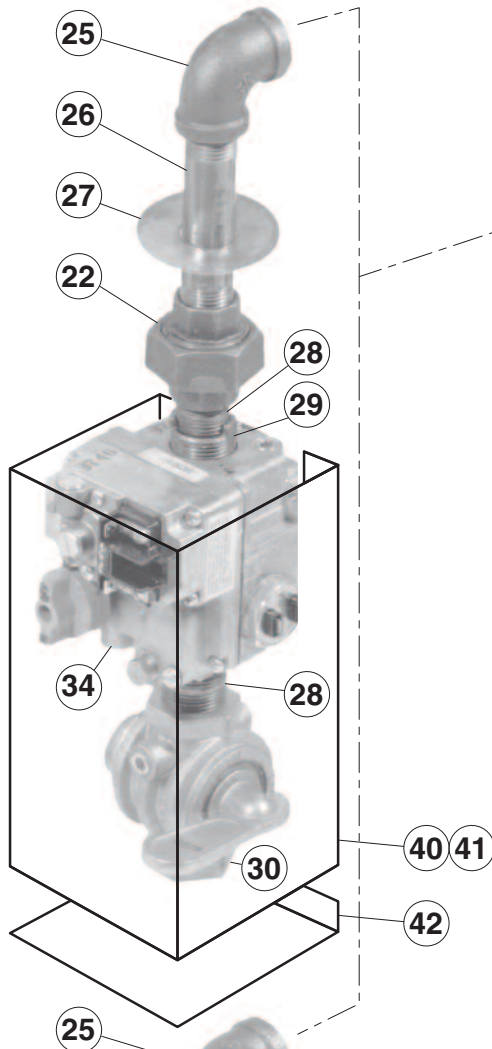
PRESSURE RELIEF ASSEMBLY



ITEM NO.	PART NO.	DESCRIPTION	QTY.
<i>PRESSURE RELIEF VALVE ASSEMBLIES</i>			
1.	KE01450	FOR ASME KETTLES (INCLUDES #2-6)	1
	KE01450-1	FOR CE KETTLES (INCLUDES #2-6)	1
2.	FI05049	MALE CONNECTOR, 1/2" PIPE - 1/4" TUBE	1
3.	KE600812-1	STREET ELBOW, 90°, 1/2", BRASS	2
4.	KE600814-1	TEE, 1/2" FPT, BRASS	1
<i>SAFETY VALVES</i>			
5.	KE54941-5	SAFETY VALVE, 50 PSI, 1/2" (NORTH AMERICA)	1
	KE54941-31	SAFETY VALVE, 50 PSI, 1/2", (EUROPE)	1
6.	KE54223	BLOW DOWN TUBE	1
7.	KE54864	ACCESS PANEL	1
8.	FA11518-4	THUMB SCREW, 10-32 X 1/2" L	1

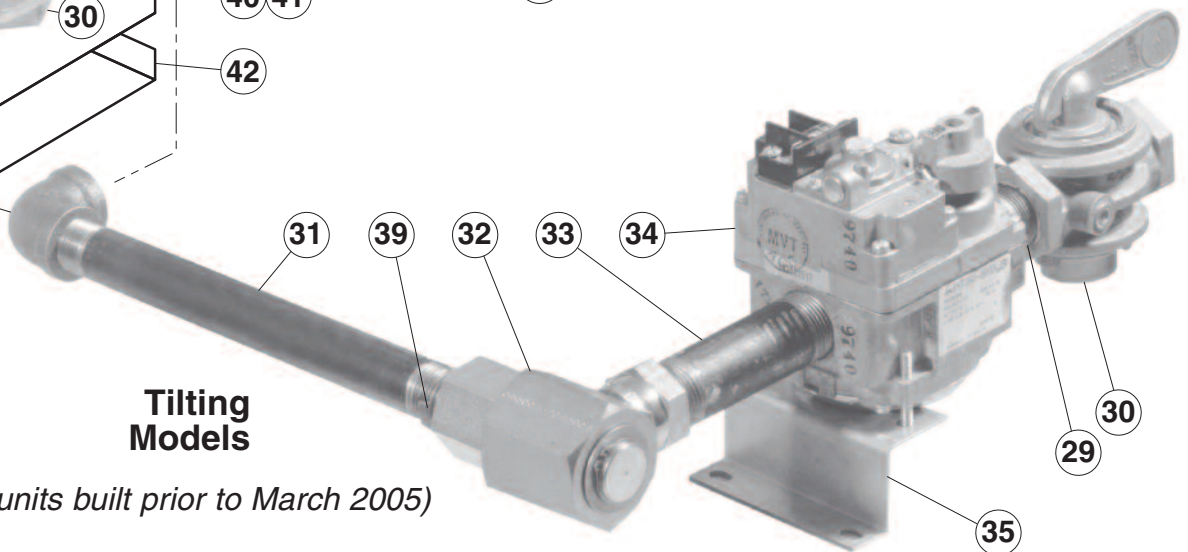
GAS CONTROL ASSEMBLY

Stationary Models



Tilting Models

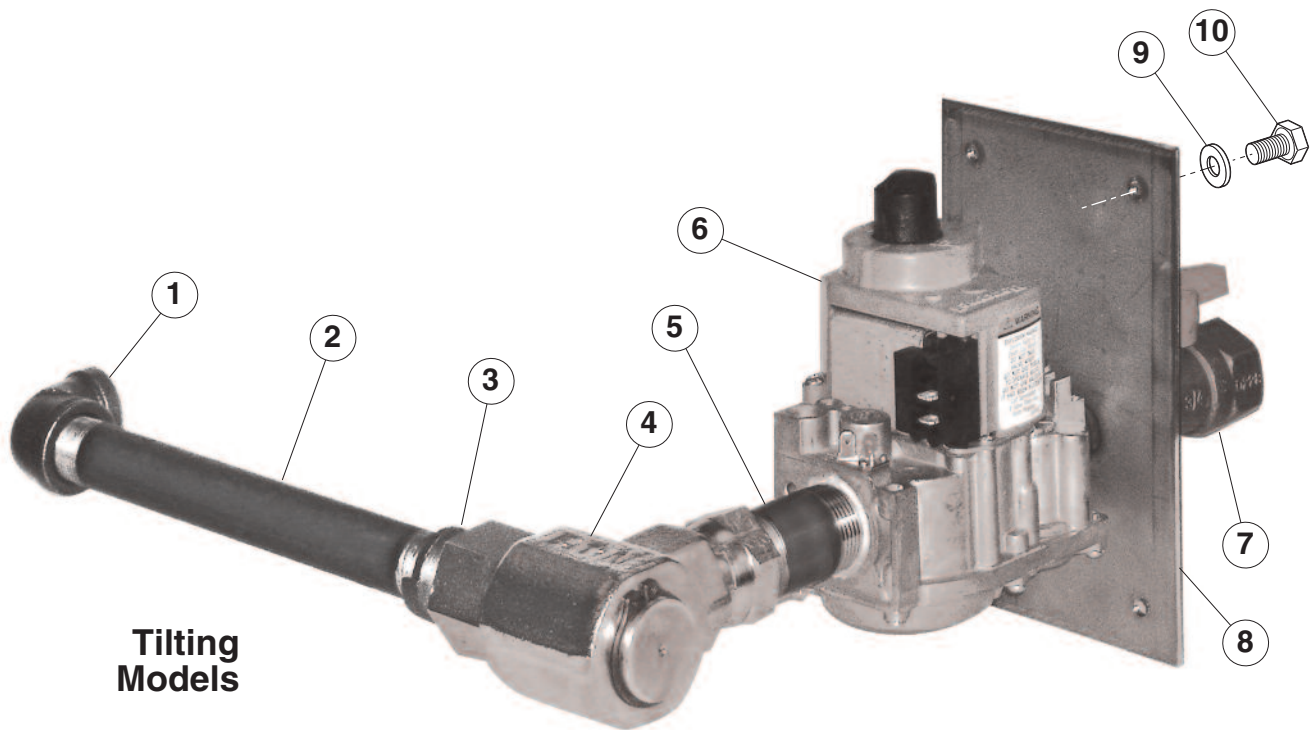
(for units built prior to March 2005)



GAS CONTROL ASSEMBLY

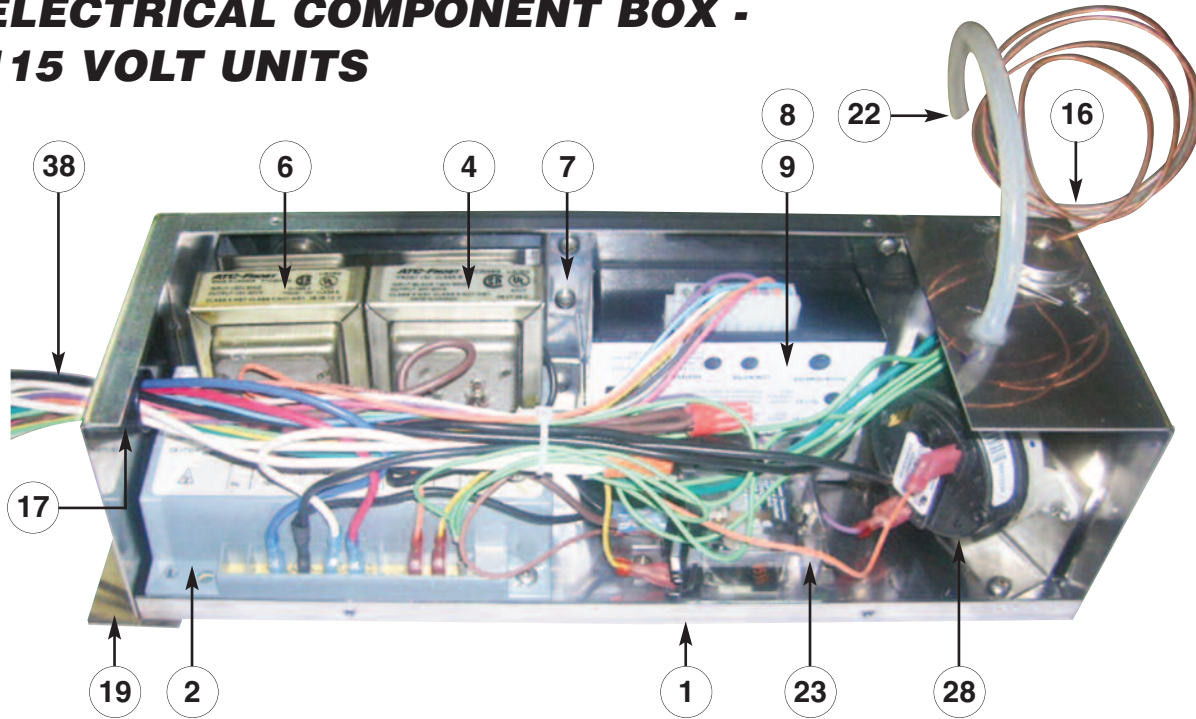
ITEM ON.	PART NO.	DESCRIPTION	QTY.
1.	KE53441	BLOWER, 115V, 60 HZ	1
	KE53441-1	BLOWER, 220V, 50 HZ	1
2.	KE54420	AIR INTAKE WASHER (NATURAL GAS, CE UNITS)	1
	KE54420-1	AIR INTAKE WASHER (PROPANE, CE UNITS)	1
3.	KE54239	CAPACITOR (C-W #2)	1
4.	KE01426-4	MIXING CHAMBER, 40 GALLON KETTLES	1
	KE01426-1	MIXING CHAMBER, 60 GALLON KETTLES	1
	KE01426-2	MIXING CHAMBER, 80 GALLON KETTLES	1
	KE01426-3	MIXING CHAMBER, 100 GALLON KETTLES	1
5.	RT00501	TUBING (SPECIFY LENGTH)	1
	FI05156	HOSE FITTING	1
6.	KE53402	AIR ORIFICE, 40 GALLON KETTLES	1
	KE53402-1	AIR ORIFICE, 60 - 100 GALLON KETTLES	1
	KE53402-2	AIR ORIFICE, 40 GALLON KETTLES (50 HZ BLOWER)	1
	KE53402-3	AIR ORIFICE, 60 - 100 GALLON KETTLES (50 HZ BLOWER)	1
7.	KE01449	BLOWER MOUNTING PIPE ASSEMBLY	1
8.	KE53618	SIGHT GLASS GASKET	1
9.	KE53617	SIGHT GLASS	1
10.	KE53619	SIGHT GLASS RETAINER	1
11.	KE00515	THERMISTOR	1
12.	KE50556-2	WATER LEVEL PROBE	1
13.	KE53437-3	IGNITOR	1
14.	KE53570	GASKET FOR IGNITOR	1
15.	FI05257	SHUT-OFF COCK	1
16.	FI05213	PLUG, C/W O/RING	1
17.	KE53422	SPRING	1
19.	GAS ORIFICES:		
	KE53403-8	NATURAL GAS - SEA LEVEL UP TO 2000', 40 GALLON KETTLES	1
	KE53403-5	PROPANE GAS - SEA LEVEL UP TO 2000', 40 GALLON KETTLES	1
	KE53403-6	NATURAL GAS - SEA LEVEL UP TO 2000', 60 - 100 GALLON KETTLES	1
	KE53403-7	PROPANE GAS - SEA LEVEL UP TO 2000', 60 - 100 GALLON KETTLES	1
	KE53403-8	NATURAL GAS - 2000' UP TO 4000', 40 GALLON KETTLES	1
	KE53403-9	PROPANE GAS - 2000' UP TO 4000', 40 GALLON KETTLES	1
	KE53403-10	NATURAL GAS - 2000' UP TO 4000', 60 - 100 GALLON KETTLES	1
	KE53403-11	PROPANE GAS - 2000' TO 4000', 60 - 100 GALLON KETTLES	1
	KE53403-12	NATURAL GAS - 4000' UP TO 6000', 40 GALLON KETTLES	1
	KE53403-13	PROPANE GAS - 4000' UP TO 6000', 40 GALLON KETTLES	1
	KE53403-10	NATURAL GAS - 4000' UP TO 6000', 60 - 100 GALLON KETTLES	1
	KE53403-14	PROPANE GAS - 4000' UP TO 6000', 60 - 100 GALLON KETTLES	1
20.	FA05002-29	"O" RING	1
21.	N0440C5-312	NIPPLE, 1/2" NPT, 5 5/16" LONG	1
22.	FI00073	UNION, 1/2"	1
23.	FI00133	ELBOW, 1/2", STREET	1
24.	KE53909	STRIP, TO HOLD BLOWER DOWN	1
25.	FI00040-1	ELBOW, 1/2"	1
26.	N0440C4	NIPPLE, 1/2" NPT, 4" LONG, KGL-60-T	1
	N0440C3-875	NIPPLE, 1/2" NPT, 4" LONG, KGL-80-T	1
27.	KE55004-3	RETAINING PLATE	1
28.	N0640C2	NIPPLE, 1/2" NPT, 1 1/8" LONG	1
29.	FI05231	BUSHING, 3/4 - 1/2" NPT FLUSH, BLACK IRON	1
30.	F01518-1	GAS SHUT-OFF VALVE, 3/4" (NOT FOR FRENCH CE KETTLES)	1
	F01518-2	GAS SHUT-OFF VALVE, 3/4" (FOR AUSTRALIAN KETTLES)	1
31.	N0440C8	NIPPLE, 1/2" NPT, 8" LONG	1
32.	FI05222	SWIVEL ELBOW	1
33.	FI05223-1	SPECIAL NIPPLE, 40 GALLON KETTLES	1
	FI05223-2	SPECIAL NIPPLE, 60 GALLON KETTLES	1
	FI05223-3	SPECIAL NIPPLE, 80 GALLON KETTLES	1
34.	KE02053	GAS VALVE ASSEMBLY	1
35.	KE53390	BRACKET FOR GAS VALVE	1
36.	N0640C1-5	NIPPLE, 3/4" NPT, 1 1/2" LONG	1
37.	KE01500-5	BURNER, 40 GALLON KETTLES, 140,000 BTU	1
	KE01500-1	BURNER, 60-100 GALLON KETTLES, 190,000 BTU	1
38.	KE53397	GASKET, BURNER	1
39.	FI05231	ADAPTOR	1
40.	KE601085	COVER FOR GAS VALVE	1
41.	RB018151	GASKET FOR COVER	1
42.	KE601085	BRACKET	1

GAS CONTROL ASSEMBLY



1.	FI00040-1	ELBOW, 1/2"	1
2.	N0440C2-375	NIPPLE, 1/2" NPT, 8" LONG	1
3.	FI05231	ADAPTOR	1
4.	FI05222	SWIVEL ELBOW	1
5.	KE53515-2	SPECIAL NIPPLE, 40 GALLON KETTLES	1
	KE53515-3	SPECIAL NIPPLE, 60 GALLON KETTLES	1
	KE53515-4	SPECIAL NIPPLE, 80 GALLON KETTLES	1
6.	KE55240R	GAS VALVE	1
7.	F01518-1	GAS SHUT-OFF VALVE, 3/4", CE	1
7.	F01518-2	GAS SHUT-OFF VALVE, 3/4", AUSTRALIA	1
8.	KE000960-1	NIPPLE PLATE WELDMENT, CE	1
8.	KE000960-2	NIPPLE PLATE WELDMENT, AUSTRALIA	1
	FA30505-1	WASHER, 1/4"	4
10.	FA11256	HEX BOLT, 1/4-20 X 1/2, 18-8 SS	4

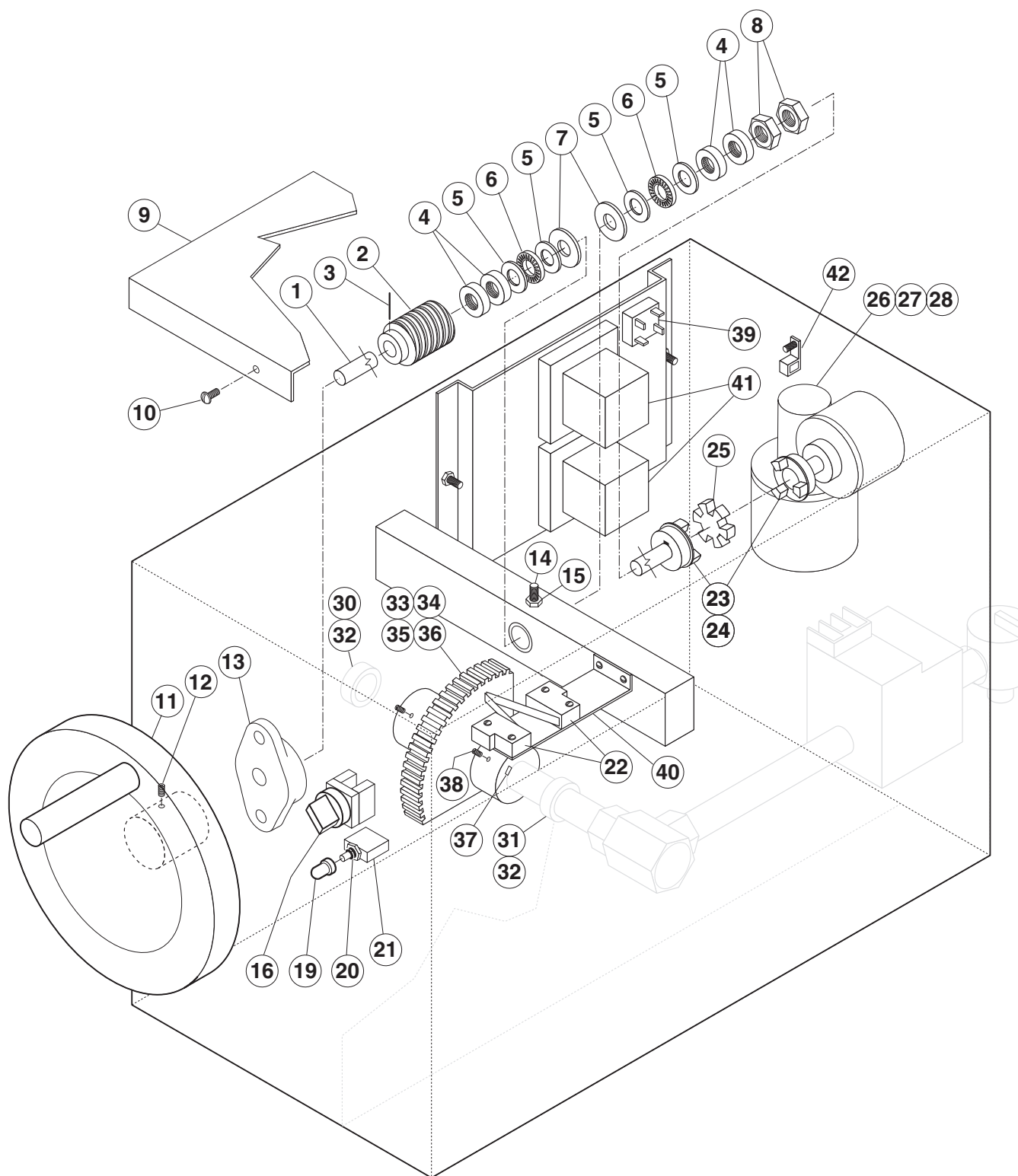
ELECTRICAL COMPONENT BOX - 115 VOLT UNITS



ITEM	PART #	DESCRIPTION	QTY.
1	KE003654	COMPONENT BOX WELDMENT; KGL/-T	1
2	KE53469-5	IGNITION CONTROL; KGL/T (CSA/CE/AGA APPROVED)	1
4	KE53838-20	TRANSFORMER;120 V PRIMARY/24 V SECONDARY60HZ, 20 VA	1
6	KE53838-27	TRANSFORMER;120 V PRIMARY/14 V SECONDARY60HZ, 20 VA	1
7	KE603765	TRANSFORMER BRACKET	1
8	KE00458-1	KETTLE CONTROL BOX	1
9	KE50303-1	ELECTRONIC BOX HOLDER	1
10	KE53599-1	GASKET; KGL/KGL-T	1
16	KE55069-6	THERMOSTAT;SAFETY(KGT/KGL)	1
17	KE54833-3	SNAP-IN BUSHING; 0.875 DIA.	1
18	KE53440	COVER; COMPONENT BOX (KGL/-T)	1
19	KE53620	BRACKET FOR COMPONENT BOX	1
22	KE55501-1	TUBE; AIR SWITCH	1
23	KE50753-7	RELAY; SPDT/10A/12VDC #MJN1CF-DC12	1
24	FA15018-4	SCREW; PHILIPS 8-32X3/8"L	4
25	FA15018-3	SCREW; PHILIPS 8-32X1/4"L	6
26	FA10243	SCREW; SLOT 8-32X3/4"L	2
27	FA15018-7	SCREW; PHILIPS 6-32X1/4"L	2
28	KE02400-1	AIR PRESSURE SWITCH ASSEMBLY; DOMESTIC AND CE	1
29	KE54662-1	HEAT SHRINKABLE TUBING; 3/126 ID 12" LONG	1
30	KE54661-2	VARFLO SLEEVING 12" LONG	1
31	NPN00163	CONNECTOR; MARR NO. 2	1
32	KE54668-1	TERMINAL; FULLY INSULATED AMP#2-520181-2 OR 182-2	2
33	KE50988-1	POTENTIOMETER; C/W ON/OFF SW REV LOG TAPER	1
34	KE50567-1	LIGHT; RED-WATER INDICAT #249-7867-3331-504	1
35	KE50567-3	LIGHT; GREEN-HEAT INDICAT #249-7967-3332-504	1
36	KE51005	ROTARY SEAL; #N9030 X 1/4 (AMP-HEXSEAL)	1
37	KE52412	CONNECTOR; MARR NO. 1	2
38	WHKGLT	WIRING HARNESS; KGL40-100	1

Items #10, 18, 24-27, 29-37 not show for clarity.

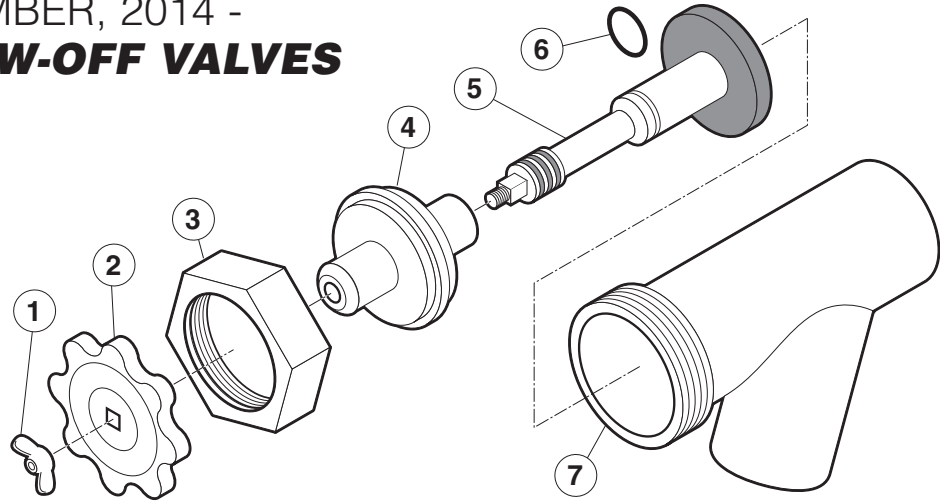
GEARBOX ASSEMBLY



GEARBOX ASSEMBLY

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	KE54644	TILT SHAFT, MANUAL TILT	1
	KE52836-2	TILT SHAFT, POWER TILT	1
2.	KE50315	WORM	1
3.	FA95005	TENSION PIN	1
4.	KE52193-1	THRUST BEARING SPACER	2
5.	KE52192	THRUST WASHER	4
6.	KE52191	ROLLER BEARING	2
7.	FA30088	WASHER	2
8.	FA95008	JAM NUTS	2
9.	KE54642-1	LID FOR GEARBOX, 40 GALLON KETTLES	1
	KE54642-2	LID FOR GEARBOX, 60 GALLON KETTLES	1
	KE54642-3	LID FOR GEARBOX, 80 GALLON KETTLES	1
10.	FA95062	PAN HD. PHILLIPS SCREW	6
11.	KE00508	HANDWHEEL ASSEMBLY	1
12.	FA19505	HANDWHEEL ALLEN SCREW, HEX SOCKET	1
13.	KE51730	TILT SHAFT BEARING	1
14.	FA19177	HEX SOCKET SET SCREW 5/16-24 X 1"	1
15.	FA20047	JAM NUT 5/16-24	1
16.	KE003209-11	Complete Switch	1
	KE603208-4	Momentary Switch Activator	1
	KE603208-7	Contact Section Holder, Latch	1
	KE603208-9	Contact Block	4
19.	KE50580	WATER RESISTANT BOOT	1
20.	FA05002-34	"O" RING, CIRCUIT BREAKER	1
21.	KE50579-1	CIRCUIT BREAKER	1
22.	KE51007	MICRO SWITCH	2
	FA10139	MACHINE SCREW #6-32 X 1" LG	4
	KE50498	MICRO SWITCH INSULATION	2
	FA32004	TOOTH LOCK WASHER #6	4
23.	KE50582	CPLG. ONTARIO BELTING #G-100 5/8 BORE	2
24.	FA95055-6	SQUARE KEY 3/16 X 3/16 X 1" LG	1
25.	KE50583	RUBBER INSERT, ONTARIO BELTING "BUNA N"	1
26.	KE52832-1	MOTOR	1
27.	FA10487	HEX HD SCREW 1/4-20 X 1" LG	4
28.	FA31008	SPLIT LOCKWASHER 1/4" DIA	4
29.	FA20026	HEX NUT 1/4 - 20	4
30.	KE517112	LEFT HAND BEARING	1
31.	KE517111	RIGHT HAND BEARING	1
32.	KE51886	GREASE NIPPLE	2
33.	KE001234-1	MICRO SWITCH TRIGGER/SEGMENT GEAR WELDMENT	1
34.	FA10772	SOCKET HD. CAP SCREW	2
35.	FA20030	HEX NUT 3/8-16	2
36.	FA95007-4	RETAINING RING	1
37.	FA95055-1	SQUARE KEY	1
38.	FA19201	HEX SOCKET SET SCREW 3/8-24	1
39.	KE50581	BRIDGE RECTIFIER	1
40.	KE52246	BRACKET	1
41.	KE50753-10	RELAY	2
42.	KE50473	GROUND LUG	1

PRIOR TO NOVEMBER, 2014 -
TANGENT DRAW-OFF VALVES
(1.5, 2" & 3")

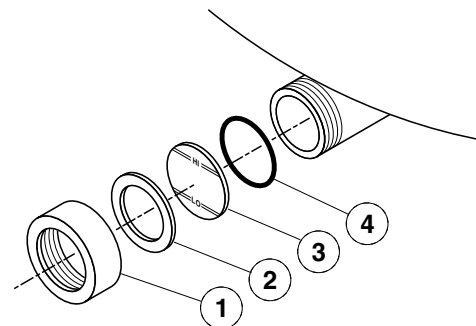


ITEM NO.	PART NO.	DESCRIPTION	QTY.
1. - 7.	KE50219	1.5" DRAW-OFF ASSEMBLY	1
	KE50972-B	2" DRAW-OFF ASSEMBLY	1
	KE50973	3" DRAW-OFF ASSEMBLY	1
1.	SE50019	WING NUT, TD-1.5	1
	FA95049	WING NUT, TD-2	1
	FA21501-2	ACCORN NUT, TD-2	1
	FA21501-1	ACCORN NUT, TD-3	1
2.	SE50017	KNOB, TD-1.5	1
	KE52755	KNOB, TD-2	1
	SE50018	KNOB, TD-3	1
3.	FI05180-3	HEX NUT, TD-1.5	1
	FI05180-1	HEX NUT, TD-2	1
	FI05180-2	HEX NUT, TD-3	1
4.	SE50011	RETAINER, TD-1.5	1
	KE52753	RETAINER, TD-2	1
	SE50013	RETAINER, TD-3	1
5.	SE50008	PISTON, TD-1.5	1
	KE52752	PISTON, TD-2	1
	SE50010	PISTON, TD-3	1
	KE53290-1	PISTON, TD-3 (CORRECTIONAL PACKAGE)	1
6.	FA05002-24	"O" RING, TD-1.5	1
	FA05002-24	"O" RING, BUNA-N (A-111), TD-2	1
	FA05002-38	"O" RING, TD-3	1
7.	SE50005	VALVE BODY, TD-1.5	1
	KE50972-B	VALVE BODY, TD-2	1
	KE50973	VALVE BODY, TD-3	1

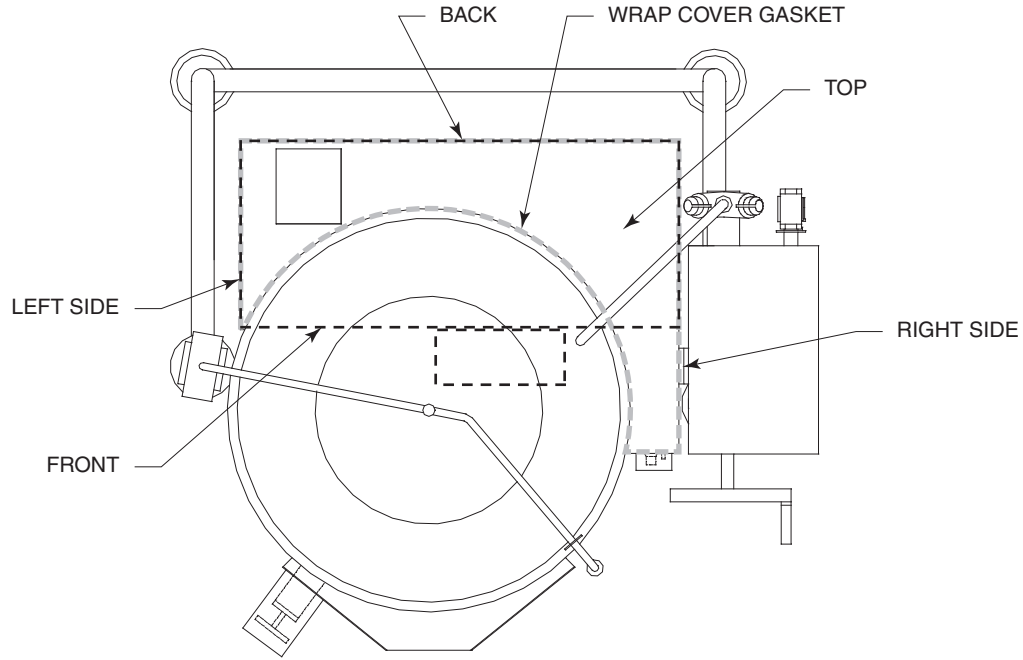
TDV 05/14

SIGHT GLASS

ITEM ON.	PART NO.	DESCRIPTION	QTY.
1.	KE50955	RETAINING COVER	1
2.	KE52871	GASKET	1
3.	KE51053-1	SIGHT GLASS	1
4.	FA05002-30	"O" RING	1



WRAP COVERS



KETTLE	TOP (c/w gasket)	FRONT	LEFT SIDE	RIGHT SIDE	BACK	SERVICE WRAP COVER GASKET	TRANSFORMER COVER	TRANSFORMER COVER GASKET
KGL-40	KE01479	KE53483-4	KE54253	KE01432	KE02186-1	KE54419-1	KE53871	RB01851 (1ft.)
KGL-60	KE01479-1	KE53483-5	KE54253-1	KE01432-1	KE02186-2	KE54419-2	KE53871	RB01851 (1ft.)
KGL-80	KE01479-2	KE53483-6	KE54253-2	KE01432-2	KE02186-3	KE54419-3	KE53871	RB01851 (1ft.)
KGL-100	KE01479-3	KE53483-7	KE54253-3	KE01432-3	KE02186-4	KE54419-4	KE53871	RB01851 (1ft.)
KGL-40-T	KE01479	KE53483	KE54253	KE01432	KE02186-1	KE54419-1	KE53871	RB01851 (1ft.)
KGL-60-T	KE01479-1	KE53483-1	KE54253-1	KE01432-1	KE02186-2	KE54419-2	KE53871-1	RB01851 (1ft.)
KGL-80-T	KE01479-2	KE53483-2	KE54253-2	KE01432-2	KE02186-3	KE54419-3	KE53871-1	RB01851 (1ft.)
KGL-40-SH	KE01479-6	KE53483-5	KE54253-1	KE01432-1	KE02186-2	KE54419-2	KE53871	RB01851 (1ft.)
KGL-60-SH	KE01479-5	KE53483-7	KE54253-3	KE01432-3	KE02186-4	KE54419-4	KE53871	RB01851 (1ft.)
KGL-40-TSH	KE01479-6	KE53483-1	KE54253-1	KE01432-1	KE02186-2	KE54419-2	KE53871-1	RB01851 (1ft.)

SPARE PARTS LIST

The following is a spare parts listing of parts that wear during normal use or are apt to be misplaced during normal operation. These parts should be kept on hand to prevent loss of time due to a minor problem.

PART NUMBER	DESCRIPTION	QUANTITY
KE00458-1	KETTLE SOLID STATE CONTROL BOX	1
KE50753-7	RELAY, 120V	1
KE55069-6	SAFETY THERMOSTAT	1
SE00114	POTENTIOMETER WITH ON/OFF SWITCH, C/W ITEM #4	1
KE50569-1	KNOB, POTENTIOMETER	1
KE00515	THERMISTOR	1

The following is a recommended list of spare parts that may be required if the service agency is of some distance away or if down time must be kept to a minimum and spare parts are required for the service agent on site.

PART NUMBER	DESCRIPTION	QUANTITY
KE54941-5	1/2" FPT, 50 PSI., FOR ASME KETTLES	1
KE54941-31	1/2" FPT, 50 PSI., FOR CE KETTLE	1
KE53838-27	TRANSFORMER, 120-14V.	1
KE53469-5	IGNITION CONTROL	1
KE00458-1	KETTLE SOLID STATE CONTROL BOX	1
KE024004	AIR PRESSURE SWITCH	1
KE53838-20	TRANSFORMER 120-24V	1
KE52752	PISTON, TD-2	1
SE50010	PISTON, TD-3	1
KE55486-2	L.E.D., RED	1
KE55486-3	L.E.D., GREEN	1
KE50429-2	PRESSURE GAUGE	1
KE53437-3	IGNITOR	1

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