Visit www.clevelandrange.com to locate a service or sales representative in your area.

Cleveland

Gas Vertical

Mixer Kettles – easyDial Control

Installation, Operation & Maintenance Manual

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

MODELS:
MKGL-40-T
MKGL-60-T
MKGL-80-T

For your future reference.

Model # _____

Serial # _____

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

Part # KE004398-2 Rev A
November 2025

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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.

The information in this document may be subject to technical and technological changes, revisions, or updates. Cleveland Range, LLC assumes no liability or responsibility regarding errata, changes, revisions, or updates.

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.

Cleveland Range, LLC décline toute responsabilité pour tout cas de décès, blessure, dommage matériel ou dommage aux biens résultant de l'utilisation, de la mauvaise utilisation ou du manquement d'utilisation des renseignements contenus dans ce document.

Cleveland Range, LLC s'est efforcé à fournir des renseignements précis dans ce document mais ne peut garantir que ce document soit exempt d'erreurs et d'omissions non intentionnelles.

Les renseignements contenus dans ce document peuvent être assujettis à des changements techniques et technologiques, des révisions ou des mises à jour.

Cleveland Range, LLC décline toute obligation ou responsabilité concernant les errata, modifications, révisions ou mises à jour.

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.

Cleveland Range, LLC se ha esforzado en suministrar información precisa en este documento, pero no puede garantizar que este documento esté exento de errores y de omisiones no intencionales.

La información contenida en este documento podría estar sujeta a cambios técnicos o tecnológicos, revisiones o actualizaciones. Cleveland Range, LLC declina toda obligación o responsabilidad con respecto a erratas, modificaciones, revisiones o actualizaciones.

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.

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Cleveland

WARRANTY DISCLAIMER

Our Kettles, Mixers, Skillets, and Steamers are designed for commercial kitchen environments. To ensure optimal performance, longevity, and safety, the following conditions must be maintained:

- **Humidity & Moisture:** The equipment is designed to operate within standard commercial kitchen humidity levels of **40% to 65%** relative humidity. Prolonged exposure to humidity levels exceeding **65%** may compromise electrical components, cause condensation-related issues, and reduce equipment lifespan. Proper ventilation is essential to maintaining safe conditions.
- **Steam, Condensate & Water Exposure:** While the equipment can withstand occasional water splashes and steam exposure, direct and prolonged contact with high-pressure steam or continuous water spray may cause damage and void the warranty. Effective ventilation is required to manage steam buildup.
- **Ambient Temperature:** The recommended operating temperature range is **13°C (55°F) to 39°C (102°F)**. Exposure to temperatures beyond this range may impact performance, lead to malfunctions, or pose safety risks.
- **Ventilation Requirements:** Proper ventilation must be maintained to prevent excessive heat and humidity buildup, which can lead to overheating, reduced efficiency, and premature wear. Gas-fired equipment must only be installed under a ventilation hood in a room with adequate makeup air. Always consult local regulations to ensure compliance with ventilation standards.
- **Water Quality:** Follow Cleveland Range's water quality guidelines to ensure optimal equipment performance. Softening hard water reduces deposits, and filtration removes corrosive elements. Regular descaling, as recommended, prevents scale buildup. Consult a water treatment specialist and follow local regulations for proper management**.**
- **Installation and Preventive Maintenance:** Follow Cleveland Range's installation and preventive maintenance guidelines to ensure proper functioning and longevity of the units. Regular upkeep prevents issues and ensures optimal performance. Failure to follow the schedule may lead to reduced efficiency and breakdowns.
- **Drainage System:** Failure to follow Cleveland Range specifications may result in damage. Do not place a drain beneath the unit, as excessive moisture can shorten the lifespan of electrical and gas components, leading to potential malfunctions or hazards.

Failure to adhere to these conditions may result in decreased efficiency, equipment damage, or safety hazards and may void the manufacturer’s warranty.

FOR YOUR SAFETY / POUR VOTRE SÉCURITÉ / PARA SU SEGURIDAD

FOR YOUR SAFETY	POUR VOTRE SÉCURITÉ	PARA SU SEGURIDAD
Do not store or use gasoline or any other flammable liquids and vapours in the vicinity of this or any other appliance.	**Ne pas entreposer ou utiliser d'essence ou d'autres liquides ou vapeurs inflammables à proximité de cet appareil ou de tout autre appareil.**	**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 instalacion 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.	Ne pas pulvériser des aérosols dans le voisinage de cet appareil alors qu'il est en fonctionnement.	No pulverice aerosoles en las proximidades de este aparato mientras está en funcionamiento.
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.	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.	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.
This appliance is not for use by children and they must be supervised not to play with it.		
Retain this manual for your reference.	Conservez ce manuel pour votre référence.	Guarde este manual para su referencia.

WARNING / AVERTISSEMENT / ADVERTENCIA

	Inspect unit daily for proper operation. / Inspecter le bloc quotidiennement pour garantir le fonctionnement normal. / Inspeccione diariamente el funcionamiento correcto de la unidad.		Stand clear of product discharge path when discharging hot product. / Se tenir loin du chemin de purge des produits lors de la purge des produits chauds. / Manténgase alejado de la trayectoria de descarga del producto al descargar producto caliente.
	Heavy. / Lourd. / Pesado Team or mechanical lift. / Levage en équipe ou mécanique. / Levantamiento en equipo o mecánico.		Surfaces may be extremely hot! Use protective equipment. / Les surfaces peuvent être extrêmement chaudes! Utiliser des équipements de protection. / ¡Las superficies pueden estar muy calientes! Utilice equipo protector.
	Keep clear of pressure discharge. / Se tenir hors de portée de la purge des soupapes de surpression. / Manténgase alejado de la descarga de presión.		Keep hands away from moving parts and pinch points. / Tenir les mains à l'abri des pièces mobiles et des angles. / Mantenga las manos lejos de las piezas movibles y los puntos de presión.
	Hot product and surfaces. / Produit et surfaces chaudes. / Producto y superficies calientes. Do not touch. / Ne pas toucher. / No la toque.		Do not fill kettle above recommended level marked on outside of kettle. / Ne pas remplir le chaudron au-delà du niveau indiqué à l'extérieur. / No llene la marmita por encima del nivel recomendado marcado en la parte exterior de la marmita.
	Unit must be anchored as per manual. / Unité doit être ancrée selon les directives du manuel.		Opening the drain cock will lead to the outflow of the hot contents of the boiling pan. Wear protective equipment when discharging hot product. / L'ouverture du robinet de vidange entraînera l'écoulement du contenu chaud de la marmite. Porter des équipements de protection lors de la purge des produits chauds. / La apertura de la llave de drenaje provocará la salida del contenido caliente de la marmita. Utilice equipo protector al descargar producto caliente.
	Floor may become slippery from product spillage. / Déversement de produit peut causer de plancher à être glissante. / Derrame de producto puede causar piso a ser resbaladizo.		In case of emergency or breakdown, refer to "Emergency" in OPERATING THE KETTLE section. / En cas d'urgence ou de panne, reportez-vous à « Urgence » dans la section FONCTIONNEMENT DE LA BOUILLOIRE. / En caso de emergencia o avería, consulte "Emergencia" en la sección FUNCIONAMIENTO DEL HERVIDOR.
	Do not lean on or place objects on kettle lip. / Ne pas adosser ou placer des objets contre le bord de chaudron. / No se apoye en la tapa de la marmita ni coloque objetos sobre ella.		Do not remove guards or operate without them. / Ne pas supprimer les gardes ou fonctionner sans eux. / No retire los guardias ni funcionar sin ellos.
	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.		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.

	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.
	Shut off power at main fuse disconnect prior to servicing. / Couper l'alimentation sur le principal fusible sectionneur avant l'entretien. / Apague la alimentación eléctrica en el fusible desconectador principal antes de darle servicio.		Ensure kettle is at room temperature and pressure gauge is showing zero or less prior to removing any fittings. / S'assurer que le chaudron se trouve dans une température ambiante et que le manomètre affiche zéro ou moins avant de déposer les raccords. / Asegúrese de que la marmita está a temperatura ambiente y el manómetro está mostrando cero o menos antes de quitar cualquier accesorio.
	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. Exploiter 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.		
POWER SUPPLY / SOURCE DE COURANT / FUENTE DE ALIMENTACIÓN			
	Appliance must <u>not</u> be supplied through an external switching device that is regularly switched on and off. / L'appareil ne doit pas être alimenté par un interrupteur externe régulièrement allumé et éteint. / El aparato no debe ser alimentado a través de un dispositivo de conmutación externo que se encienda y apague periódicamente.		
MAINTENANCE / ENTRETIEN / MANTENIMIENTO			
	The pressure relief valve must be inspected every six months. / La soupape de décharge doit être inspectée à tous les six mois. / La válvula de descarga de presión debe ser inspeccionada cada seis meses. Have a qualified service technician inspect your unit yearly. / L'unité doit être inspectée annuellement par un technicien de service qualifié.		
	Greasing must be performed every six months, as outlined in the maintenance procedures, to prevent wear or damage. / La lubrification doit être effectuée tous les six mois, conformément aux procédures de maintenance, afin d'éviter l'usure ou les dommages. / La lubricación debe realizarse cada seis meses, según los procedimientos de mantenimiento, para evitar el desgaste o los daños.		

NOTICE

FOR THE USER

Read the Operating instructions thoroughly before using this equipment.

FOR THE INSTALLER

Read the Installation instructions thoroughly before installing or servicing this equipment.

Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death.

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.

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.

MODEL NUMBER LEGEND:

1	2	3	-	4	-	5

1 – Type of Equipment	2 – Type of Power	3 – Type of Mount	4 – Designation of Capacity in Gallon	5 – Tilting Options
MK = Mixer Kettle TMK = Twin Mixer Kettle	E = Electricity G = Gas D = Direct Steam	L = Legs or Frame M = Modular (Cabinetized) T = Table Top	From 3 Gallon to 200 Gallon	Blank = Stationary T = Tilting

INSTALLATION

GENERAL

Environment:

Operating Criteria	Acceptable Range
Ambient Air Temperature	15-40 degrees Celsius
Relative Humidity	0-80%
Altitude	0-3000 meters
Location	Inside building, under ventilation hood

Ensure 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
MKGL-40-T	780 lbs.	850 lbs.
MKGL-60-T	855 lbs.	925 lbs.
MKGL-80-T	930 lbs.	1,000 lbs.

UNCRATING

Caution:

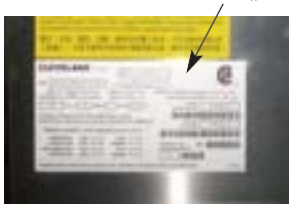
Straps under tension and will snap when cut.

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.

Operation of these units can produce significant levels of steam and condensate, it is recommended they 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.

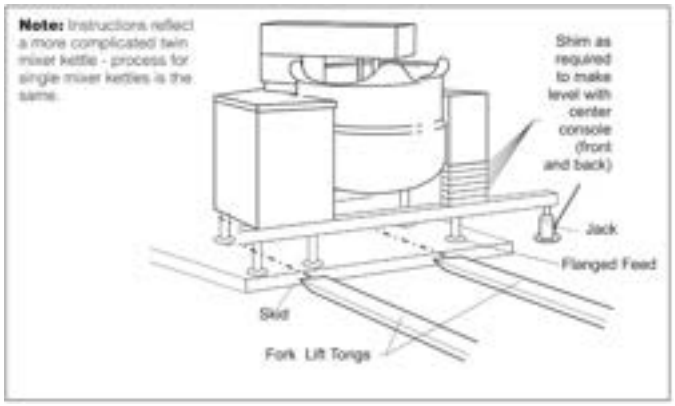
COMPRESSED AIR CONNECTION

Mixer Kettles with an air activated discharge valve require a minimum of 90 PSI to operate correctly.

If the unit is also supplying air to a Metering Filling Station then a pressure of 100 PSI at a minimum volume of 25 CFM is required.

The air supplied to the mixer should be clean and dry. No oil should be added to the supply air. We recommend the compressed air system be equipped with a drier, filter, and automatic water dump on the air compressor receiver tank. If the distance between the tank and the unit is less than 100 feet then a minimum line size of 3/4" is required. A distance of 100 to 300 feet requires a minimum 1" line.

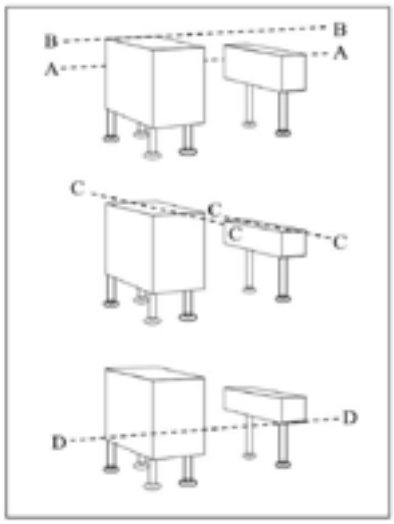
POSITIONING



MOVING UNIT

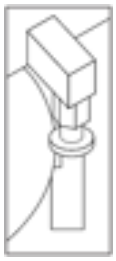
1. While still on skid, move unit as close to final installation position as possible.
2. Prepare unit for lifting as shown in diagram.
3. Lift gently with a forklift or jacks and remove skid.
4. Lower gently to ground and remove forklift and blocking.
5. If unit has to be re-positioned, slide gently. Do not twist or push one side of unit excessively and cause binding on trunnions.

LEVELING



1. With straight-edge, line the backs of the consoles up with each other (dotted line **A**).
2. Adjust the heights according to the table below (dotted line **B**). Adjustments are made by turning flanges on back feet only.
3. Level consoles individually from front to back (dotted lines **C**). Adjustments are made by turning flanges on front feet only.
4. Re-check the height difference at the back (dotted line **B**) and the front (dotted line **D**) of the consoles as specified in the table below. Adjust if necessary.

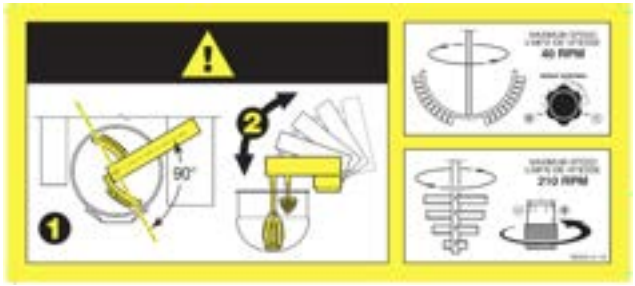
Model #	Console – Console Height Difference
MKGL-40-T	3/16”
MKGL-60-T	2 3/16”
MKGL-80-T	2 11/16”



5. Check that mixer bridge is level and guide pins (see illustration) lock smoothly without binding. If not repeat steps **1** through **4**.

NOTE: See Operating Instructions before operating unit.

6. Make electrical connections (see electrical service connections) and test mixer bridge as follows:
   A/ Raise mixer bridge: Move the bridge to its highest position.
   B/ Swing bridge out over center console to far left and lower bridge.
   C/ Bridge pins should enter pin hole on kettle perfectly. If not return to step 1 and repeat levelling steps.



   D/ Raise bridge and swing to far right (for twin mixers only).
   E/ Repeat steps B and C (for twin mixers only).
7. Once positioned and levelled, permanently secure the kettle's flanged feet to the floor using stainless steel lag bolts and floor anchors (supplied by the installer). Secure each of the flanged feet with one bolt in each hole. Seal joints of flanged feet with a silicone sealant.

ADDITIONAL TIPS:

- Verify that the hydraulic hoses are free from pinching and properly routed during movement of the arm.
- On twin mixer models, repeat all bridging and alignment checks for both sides.
- Ensure all electrical connections and safety systems are correctly installed before final operation.

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.

Install in accordance with local codes and/or the National Electric Code ANSI/NFPA No 70-1981 (USA) or the Canadian Electric Code CSA Standard C22.1 (Canada). A separate fused disconnect switch must be supplied and installed. The kettle must be electrically grounded by the installer.

NOTE: This appliance is not GFI (GFCI) compatible.

The electric supply must match the power requirements specified on the kettle's rating plate. The copper wiring must be adequate to carry the required current at the rated voltage. Refer to the specification sheet for electrical specifications.

1. Ensure main power is turned off before connecting wires.
2. Remove the screws at the rear of the center console cover, and remove the cover. A wiring diagram is affixed to the underside of the console cover.
3. Feed permanent copper wiring 18" through the cut-out in the bottom of the console. Connect wiring in junction box in the bottom of the console.
4. Turn main power back on.
5. Check for correct rotation of electric motor (access by removing top front cover on center console). If rotation is incorrect, disconnect main power and reverse any two of the three live lines.
6. Replace the console cover and secure it with screws.

FOR POWER TILT UNITS ONLY

NOTE: Ensure the electrical supply matches the kettle's requirements as stated on the rating label.

This kettle is built to comply with CE standards. Many local codes exist, and it is the responsibility of the owner and installer to comply with these codes.

CLEANING

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

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. Supply power to the kettle by placing the fused disconnect switch to the "ON" position.
3. Turn POWER switch ON. Easy Dial control screen should be energized within 4 seconds.

4. Raise mixer bridge and swing to side, then tilt the kettle (Refer to GENERAL OPERATION). At approximately 20° tilt, the Easy Dial screen should show “Tilted”.
   The elements have automatically been shut off by the kettle’s safety circuit. This is a normal condition when the kettle is in a tilted position.
5. Raise the kettle to the upright position. The Easy Dial screen should go back to normal and the “Tilted” message disappears.
6. Run the mixer in Cook/ON mode (Refer to Quick Start Guide for Easy Dial Controls). Heating symbol should come on. The unit should keep on heating regardless of the time, if the set temperature is not satisfied. Then the heating symbol will cycle ON and OFF, indicating the heating elements are cycling ON and OFF to maintain temperature.

MIXER

1. Raise Bridge - If bridge does not raise then check motor rotation. Bridge should not raise until speed control is turned to minimum and then adjusted back up.
2. Swing Bridge - Bridge when fully raised should swing without hitting any object, i.e. control housing, kettle lip. Check that hydraulic hoses are not being pinched by stops on swivel assembly.
3. Tilt Kettle - Kettle tilts smoothly both down and back up. If power tilt, check that micro switches are adjusted properly (kettle is level in upright position and drains fully when tilted) and are not being crushed by gear.
4. Lower Bridge - Raise bridge. Switch to mix. Turn speed control to zero to reset micro switch then set speed control to number four. Check that unit does not begin to mix until bridge has lowered part way into the kettle. Check that mixer bridge pin lowers into pin hole correctly
5. Speed Control - Main - Main agitator arm not rotating when set at "0" but will start to move slowly on "1". Speed control makes positive contact with micro switch.
6. Speed Control - Secondary- Set main speed control to five. Adjust secondary control from minimum to maximum. Look for considerable speed variance.
7. Water Faucets - Turn on hot water faucet. Turn off and check for leaks in piping and drips from faucet spout. Repeat above with cold water faucet.
8. Product Discharge - Add water to kettle. Check for leaks from valve. Open and close valve a few times and check for leaks again.

⚙ Transformer Tapping Adjustment Instructions for 208-240V Range

Factory configuration

- Unit is factory-configured for **208V** operation.

When to adjust

If the supply voltage is **240V**, the transformer tapping must be changed to ensure performance.

Procedure

1. **Turn Off Power**
    - Disconnect power supply to the unit before performing any adjustments.

2. **Locate the Front operating panel**

3. **Open the panel and locate the transformer.**

4. **Identify the tapping selector on the transformer.**

5. **Current position: Tap 3 (208V)**

- Required position: **Tap 4 (230V)**

6. **Move the connection from position 3 → position 4.**

7. **Verify connection**
   - Ensure all connections are secure.
   - Close the inverter housing properly.
8. **Restore power**
   - Reconnect supply voltage.
   - Confirm unit operation 240V supply.

⚠ Attention

The unit is configured for 208V. Verify supply voltage is 208V.
If supply is 240V, tap transformer to 240V.

-KE605282

⚠ 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

D. VACUUM/PRESSURE GAUGE
Indicate steam pressure in PSI inside steam jacket as well as vacuum in inches of mercury.

1. MAIN POWER SWITCH
Power switch for unit.

2. MIX/LIFT SWITCH
Sets hydraulics to mix or lift mode.

3. UP/DOWN SWITCH
When unit is in lift mode, mixer bridge can be raised or lowered with this switch.

4. MIXER SPEED CONTROL
Controls speed of agitators and mixer bridge lift.

5. EMERGENCY STOP BUTTON
Stops hydraulic system (agitators and mixer bridge lift).

6. DATA LOGGER SWITCH
Switch to control the data logger.

7. DATA LOGGER PUSH BUTTON
Push button to load the data onto a USB stick.

8. INTERRUPT SWITCH
Interrupts flow without resetting water meter.

9. START SWITCH
Starts water flow to kettle.

10. ON/OFF SWITCH
Power switch to water meter.

11. WATER METER CONTROL
Display and setting for water meter.

12. easyDial CONTROLLER
Digital temperature control and indicator.

13. CONTROLLER SWITCH
Switch to activate or bypass (manual operation) the controller.

14. DATA LOGGER USB PORT
Port to insert USB stick and load the data.

OPERATING CONTROLS AND INDICATORS
(CONTINUED)

12. MIXER BRIDGE
Encloses agitator motors.

13. MAIN AGITATOR ARM
Provides most of the product movement.

14. SECONDARY AGITATOR ARM
Provides reverse agitation and product lift in kettle.

15. SECONDARY SPEED CONTROL KNOB
Controls speed of secondary agitator arm.

16. FAUCET SPOUT
Delivers water to the kettle.

17. HOT WATER VALVE
Turns on hot water.

18. COLD WATER VALVE
Turns on cold water.

19. 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, this valve opens automatically to relieve this pressure.

20. HAND TILT WHEEL
Used for tilting the kettle up or down. Replaced by switch on power tilt units.

21. BUTTERFLY VALVE
Discharge valve for product in the kettle.

22. WATER LEVEL SIGHT GLASS
Displays water level in steam jacket.

23. AIR REGULATOR SWITCH
Used to open and close the air valve (optional/not shown).

OPERATING THE KETTLE

Intended Use:

Processing of food and pharmaceuticals in non-residential locations. Not for the making of dough or other heavy dough like products.

Intended Users:

- Supervised and trained staff during production periods.
- Trained maintenance and service personnel.

Removable component weights

Lbs (kg)	40 gal	60 gal	80 gal	100 gal	125 gal	150 gal
Main arm with blades	21 (9.5)	23 (10.4)	25 (11.3)	28 (12.7)	32 (14.5)	32 (14.5)
Baffle arm	7 (3.2)	7 (3.2)	8 (3.6)	10 (4.5)	12 (5.4)	12 (5.4)
Secondary arm	8 (3.6)	8 (3.6)	10 (4.5)	12 (5.4)	13 (5.9)	13 (5.9)
Screen	7 (3.2)	8 (3.6)	9 (4.1)	10 (4.5)	14 (6.4)	14 (6.4)
Air valve complete	12 (5.4)					
Air cylinder only	8 (3.6)					
Air valve body only	4 (1.8)					

Noise level

Noise level maximum 80 Decibels.

Mixing Arm Rotation speeds

Arm	Speed (RPM)
Primary	0-40
Secondary	0-210

Rim (loading) heights

Rim heights are given below. It is up to owners of the equipment to ensure the operators are performing the loading in a safe and acceptable manner.

Size	Height
40	40.5
60	43.75
80	44.75

Emergency

In the event of a fire or other emergency.

Turn off unit

Shut off power supplies including Electrical, Gas or Steam as applicable. (If safe to do so.)

Using fire extinguishers is only recommended if you are trained and feel safe to do so. Use only Fire extinguishers rated ABC.

This is a pressure vessel and with a properly operating safety valve will not exceed rated pressures. Jacket contains water and trace amounts of rust inhibitor and/or antifreeze.

WARNING:

This unit has been fitted with a warning buzzer for bridge movement and a cover and screen to prevent contact with moving mixer arms. Do not remove or bypass these safeties.

1. Perform daily pre-startup inspection (See ***Daily Pre-Startup Inspection*** in ***Preventive Maintenance***)
2. Preheat the kettle by following ***Quick Start Guide for easyDial Controls.***

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.

Operating Suggestions

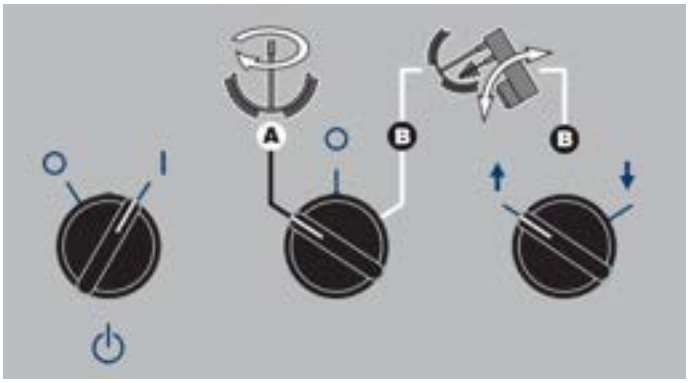
Cleveland Range Mixer Kettles are simple and safe to operate. The following tips will allow you to maximize the use of your new mixer.

If a mixer bridge is equipped with a temperature probe for a controller or thermometer, the probe must be submerged a minimum of three inches in the product for accurate readings.

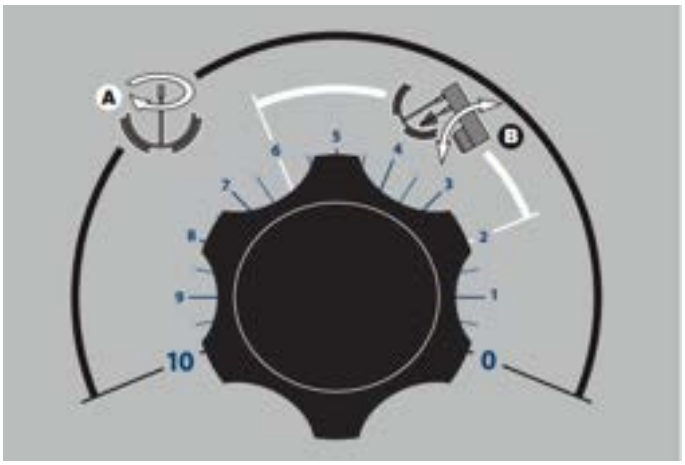
Safety

As a safety precaution the MIXER SPEED CONTROL must first be turned to zero before unit will start to mix.

Always remember, like a cooking pot the kettles become very hot when cooking. Avoid contact with bare skin.



MAIN POWER SWITCH | MIX/LIFT SWITCH | UP/DOWN SWITCH



MIXER SPEED CONTROL SWITCH

GENERAL OPERATION

1. Turn MAIN POWER SWITCH on.

2. Turn Steam Control Valve to control heat kettle.

Lifting & Lowering Bridge

WARNING: Ensure FAUCET SPOUT is out of way before raising or lowering bridge.

1. Turn MIX/LIFT SWITCH to lift icon "B".

2. Turn MIXER SPEED CONTROL to "0" and back up to "5".

3. Turn and hold UP/DOWN SWITCH to up arrow to raise or down arrow to lower.

Mixing

1. Turn MIX/LIFT SWITCH to mix icon "A".

2. Turn MIXER SPEED CONTROL SWITCH to "0" and slowly adjust to desired speed.

3. Adjust SECONDARY SPEED CONTROL KNOB to desired speed.

Tilting Kettle

1. Raise MIXER BRIDGE and swing to side.

2. For manual tilt: Turn HANDWHEEL.

3. For power tilt: Turn POWER TILT CONTROL SWITCH.

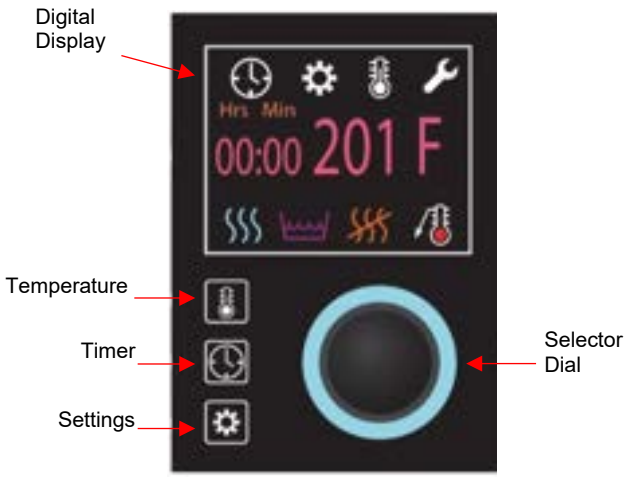
WARNING: Do not tilt kettle when mixer agitators are in kettle bowl.

Product Discharge Valve

1. For butterfly valve: Push handle in and pull upwards to open.

2. For air valve: Turn Air Regulator Switch to open or close.

easyDial OPERATING INSTRUCTIONS



Settings include:

Units: Select C or F degrees

Buzzer: Select Cook/ON (cook & simmer)

Cook/Hold (cook & continuous cook)

Cook/OFF (cook & off)

Display: Select Double (time & temperature)

Single (time or temperature)

Diagnostic: Select NO or YES

Exit: Select YES to return to main screen

Indicator Lights
(Illuminated when power turned on)

1. Time
2. Settings
3. Temperature
4. Diagnostics
5. Heat ON
6. Low Water (kettles only)
7. Ignition Failure (gas models)
8. Product Temperature Probe

Diagnostic Functions (OK/Fail)

1. **Safety:** monitors safety functions when unit is tilted.
2. **Main Heater:** monitors main heating element safety contactor that remains ON all the time.
3. **Second Heater:** monitors operating contactor that is responsible for cycling the unit.
4. **Water Level:** monitors water level in steam jacket.
5. **Jacket Sensor:** monitors RTD (surface temp) sensor inside the jacket.
6. **Product Sensor:** when Probe is connected.

TO ADJUST SETTINGS:

NOTE: The last setting used becomes the default settings for when you power off and back on. To exit from **Settings** menu, toggle down to **Exit** select **Yes** and press **Settings**.

COOKING WITHOUT PRODUCT PROBE

1. From the Bird House Control Panel, turn the "TEMPERATURE CONTROLLER" switch to the **LEFT** to power ON the unit.

2. Push **Settings** to display the **Settings Screen**.

3. Setting the **Units**:
Turn **Selector Dial** to select degrees **F**ahrenheit or **C**elsius.

4. Setting the **Buzzer** (& Cooking Mode):
Push Settings to toggle to **Buzzer**.
Turn **Selector Dial** to select **Cook/ON** or **Cook/Hold** or **Cook/OFF**.

5. Setting the **Display**:
Push **Settings** to toggle to **Display**.
Turn **Selector Dial** to select **Double** or **Single**.

Double Mode
Time & Temperature

Single Mode

6. **Diagnostics**:
Push **Settings** to toggle to **Diagnostics**.
Turn **Selector Dial** to select **No** or **Yes**.
If **Yes** selected, the diagnostic tests will begin when you exit the Settings Screen.

7. Exiting the **Settings**:
Push **Settings** to toggle to **Exit**.
Turn **Selector Dial** to select **Yes**.
Push **Settings** to **Exit**.
These settings will now become the default settings for when your unit is turned off and on.

Cook/ON

For cooking by temperature only. The temperature will run continuously until manually turned off.

Setting the timer activates a buzzer (for adding spices, etc.).

1. From the Bird House Control Panel, turn the "TEMPERATURE CONTROLLER" switch to the **LEFT** to power on the unit

2. Adjust **Settings** to **Cook/ON**. Exit Settings.

3. Push **Temperature** to select temperature.
4. Turn **Selector Dial** to desired temperature.
5. Push **Temperature** to enter setting. This will start the cooking cycle.

To set a buzzer for adding spices etc. (optional)

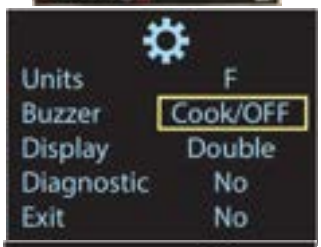
6. Push **Time** to select **Hrs** and **Min**.
7. Turn **Selector Dial** to set the buzzer to desired time.
8. Push **Time** to start timing.

Cook/OFF

For cooking by time and temperature, the timer countdown turns off the heat. The heating cycle will start for a set time then shut down.

1. From the Bird House Control Panel, turn the "TEMPERATURE CONTROLLER" switch to the **LEFT** to power on the unit

2. Adjust **Settings** to **Cook/OFF**. Exit Settings.



3. Push **Temperature** to select temperature.
4. Turn **Selector Dial** to desired temperature.
5. Push **Temperature** to start the cooking cycle.

6. Push **Time** to select **Hrs** and **Min**.
7. Turn **Selector Dial** to set the buzzer and turn off the cooking cycle.
8. Push **Time** to start timing.

Cook/HOLD

For initial heating for a timed period then producing a hold temperature.

Setting the timer activates a buzzer (for adding spices, etc.).

1. From the Bird House Control Panel, turn the "TEMPERATURE CONTROLLER" switch to the **LEFT** to power on the unit

2. Adjust **Settings** to **Cook/HOLD**. Exit Settings.

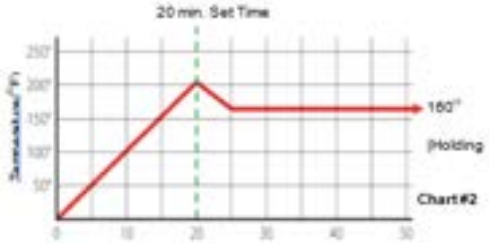
3. Push **Temperature** to select temperature.
4. Turn **Selector Dial** to set desired initial unit temperature.

5. Push **Temperature** to toggle to holding temperature setting.
6. Turn **Selector Dial** to set desired holding temperature.

7. Push **Temperature** to start cooking.

If a timer is not set, when the unit reaches the selected temperature, it will retain that temperature as shown in Chart #1.

If a timer is set, when the set time has passed, the unit will drop to the holding temperature and retain that temperature as shown in Chart #2.



8. Push **Time** to select **Hrs** and **Min**.
9. Turn **Selector Dial** to set the timer to desired time.
10. Push **Time** to start timing.

Cooking with Product Probe

Heat can be controlled by a temperature probe placed in the product. When the product reaches a set temperature the unit jacket cycles off.

Can be used as an internal product probe or for simmering liquid products.

1. From the Bird House Control Panel, turn the "TEMPERATURE CONTROL" switch RIGHT to turn the unit ON and cook with the product probe.

2. Push **Temperature** to select temperature.
3. Turn **Selector Dial** to set desired unit temperature (must be greater than temperature of probe).

4. Push **Temperature** to enter setting and toggle to the product probe temperature setting.
5. Turn **Selector Dial** to set desired product probe temperature.
6. Push **Temperature** to enter setting.

Cook with Time

1. Push Time to select **Hrs** and **Min**.
2. Turn **Selector Dial** to set the timer to desired time.
3. Push **Time** to start timing

DATA LOGGER (KE604411) DOCUMENTATION

HOW TO USE

A microSD card must be inserted at all times for the system to run. Whenever the switch is turned on, a new file is created on the microSD card. The date, time and temperature probe reading is logged into this file every 30 seconds. The format of the log is year, month, day, hour, minute, second, temperature.

For example, the log entry “21,04,10,15,17,09,32.0” reflects 32 degrees Fahrenheit logged at 3:17:09 PM on April 10, 2021.

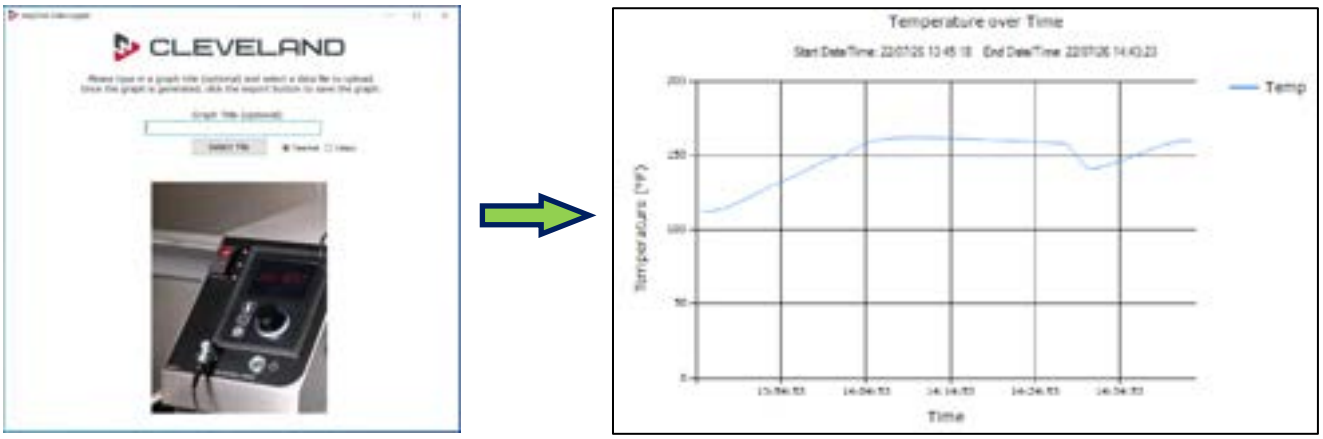
To transfer the data to a USB drive, plug in a USB drive, ensure the switch is turned off, and press the USB transfer button. The USB transfer button will be ignored if the switch is turned on.

When the USB button is pressed, the green USB button light will turn on and remain on until the transfer is complete. Once the transfer is complete, the green USB light will flash on and off until the USB drive is removed.

If a USB is not inserted and the USB button is pressed, the USB button light will remain on waiting for a USB to be inserted. This will eventually time out at 20 seconds and the light will turn off.

SAVING GRAPH IN FARENHEIT OR CELCIUS

To create graph of Temperature over Time, upload data file to easyDial Data Logger app provided by CLEVELAND RANGE to generate graph in either Fahrenheit or Celsius.



BOOT UP PROCESS

As soon as the device has been programmed, it will immediately calibrate the ADC. Please ensure that a 100-Ohm (+/-0.1%) resistor is connected to the device before programming. If recalibration is required, the microcontroller may be programmed again, or a button sequence (see below) can be entered to recalibrate with a 100-Ohm (+/-0.1%) resistor connected. The device will then enter the real time clock setup.

REAL TIME CLOCK SETUP

During this setup, the user will be prompted “d1” to “d5”. When prompted “d1” on the display, press any of the up or down keys to begin incrementing or decrementing the values.

d1 = Year	Range: 21 - 50	For example:
d2 = Month	Range: 01 - 12	d1 = 21 d2 = 04 d3 = 18
d3 = Day	Range: 01 - 31	d4 = 13 d5 = 48
d4 = Hour	Range: 00 - 23	Time Entered = April 18, 2021, 1:48 PM
d5 = Minute	Range: 00 - 59	

Note, the setup does include a roll over effect for value selection. For example, when selecting the hour, the user may decrement at “00” to get to “23” quicker rather than incrementing 23 times. Also note, the real time clock will deal with leap year on its own, and it is the user’s responsibility to enter the correct date for proper functionality.

For example, entering Feb 30, 2021 will be accepted by the real time clock, but may result in functionality errors.

BUTTON SEQUENCES

The system comes with 2 button sequences. Please note, a microSD card must be inserted at all times to enter these sequences.

Sequence 1 = Hold "Up" and "Enter" buttons down for 5 seconds

This will allow the user to re-enter the date and time for the real time clock. The seven segment displays will flash "c1" 3 times, then display "d1" indicating the start of the real time clock detailed above in the real time clock setup.

Sequence 2 = Hold "Down" and "Enter" buttons down for 5 seconds

This sequence is used to recalibrate the ADC. This sequence should be used once a 100-Ohm (+/-0.1%) resistor is connected to the device. The seven segment displays will flash "ca" 3 times, then turn off, indicating a successful calibration.

DEBUG MESSAGES

While the Switch is OFF

- E0 - MicroSD is mounted
- E8 - Mounting MicroSD Card (May remain on screen during boot up for up to 15 seconds to create configuration files)
- E9 - MicroSD is not mounted

When the switch is turned ON

- E1 - Creating New File and Log First Entry
- E2 - File created, Logging Periodically
- When Switch is Turned Off, E0 or E9 will be shown

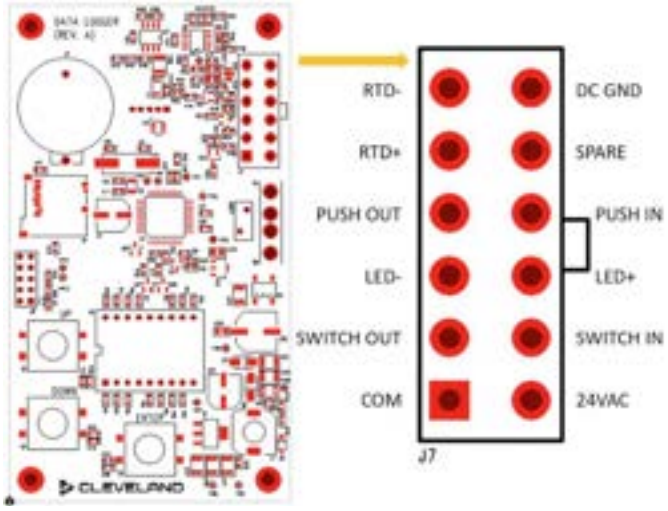
If the USB Transfer button is pressed

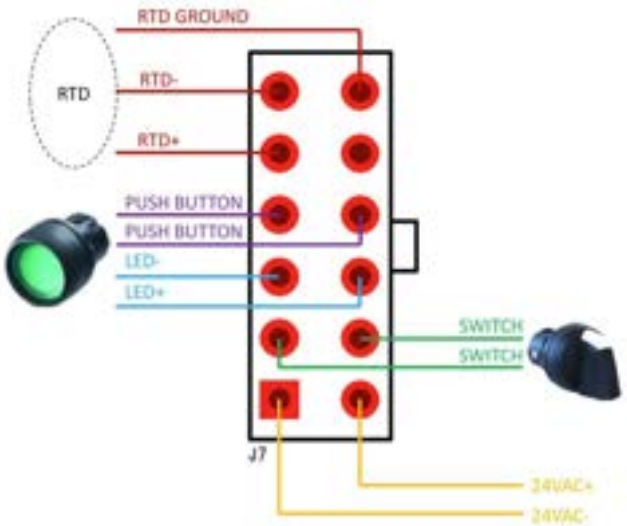
- F0 - Button Press Detected, Opening File on MicroSD
- F1 - MicroSD Card File Opened, Read First Line
- F2 - First Line Read, Create/Open USB File
- F3 - USB File Opened, Write First Line Read Earlier from MicroSD
- F4 - First Line Written, Transfer all contents from MicroSD Card File
- F5 - File Transferred, Close Both Files and Delete MicroSD File
- F6 - File Deleted and USB File Closed, Clear All Transfer Buffers
- F7 - All Files Transferred, Wait for USB Dismount (USB LED Flashing)

During this sequence, F0 would be seen first for a few seconds, followed by F1-F6 repeated for every data file on the microSD card, and finally F7 would be seen while the USB and microSD files are being closed. Once the USB Button LED begins to flash, the USB may be ejected.

Warning, ejecting the USB or microSD card during transfer may corrupt the drives.

WIRING DIAGRAMS

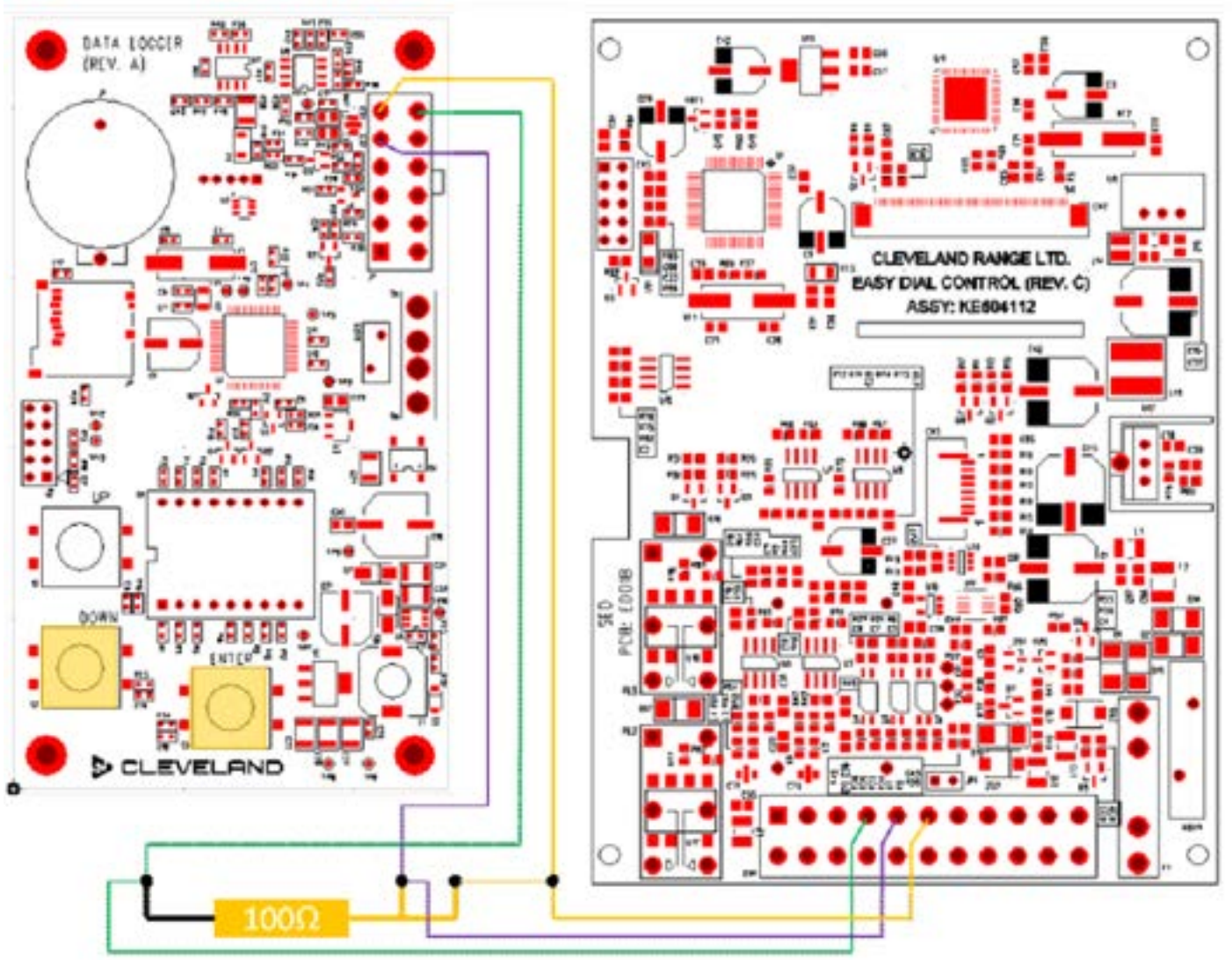




NOTE: For a 2-wire RTD, please tie RTD+ and RTD- together and connect to one end of the RTD and connect RTD GROUND to the other end of the RTD.

Service Instruction

Datalogger-Easy Dial Control Calibration using 100ohm resistor.



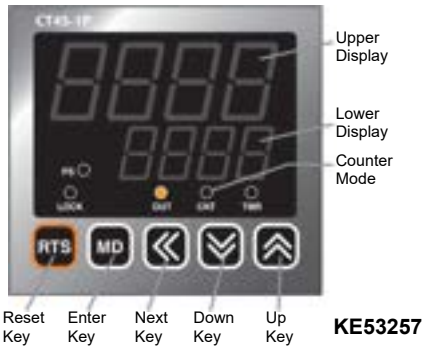
Note: Datalogger with EDC are calibrated in factory. Calibration will only be required if either Datalogger/Easy Dial Control or both Datalogger and Easy Dial Control are replaced.

Turn off the unit. Connect the 2 yellow wires and 1 black wire from the resistor as shown here. Once the 3 wires are connected, turn on the unit. Press and hold the “Down” and “Enter” button together for about 10 seconds until you see “ca” displayed on the 7-segment LED. You can then release both buttons and the calibration is completed. Turn off the unit again. You can remove the 100-ohm resistor and connect wires back to EDC and Datalogger.

DIGITAL WATER METER OPERATING INSTRUCTIONS

(USED AFTER APRIL 2019)

NOTE: The digital counter has been pre-set at the factory and should operate satisfactory. If installing a new counter (or the configuration settings to your existing digital counter become corrupted) you must configure the digital counter as shown below (**Configuring a Digital Counter**) prior to operation.



KE53257

1. Turn POWER switch "ON".

5. Turn START switch to **RESET**. Delivery will start at **0** and stop at preset volume.

2. Switch water to “Hot” or “Cold”. (If option available).

6. To stop delivery at any time, turn INTERRUPT switch to ●.

3. To advance in setting value change mode, press « key until the digit you want to change is flashing in the lower display window. Then use the ^ or v key to change the value of the flashing digit.

When all digits are selected (lower display window) for the required quantity of water press the **MD** key to complete the change of setting value and return to run mode. The selection will not be registered in the memory if **MD** is not pressed.

7. To complete delivery after interrupting, turn START switch to **CONTINUE**.

8. Push **RST** button to rest counter to **0** without starting delivery.

4. Locate delivery spout over desired kettle.

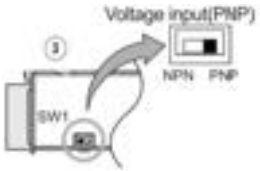
9. Select Hot or Cold water if this option is available.

Configuring a Digital Counter

This procedure is only necessary when installing a replacement counter or settings to existing counter become corrupted.

1. Power must be off.
2. Squeeze toward (1) and pull toward (2) as illustrated. (CTS/CTY Series)
3. Select input logic by using input logic switch (SW1) inside Counter/Timer.
4. Push case in opposite direction of (2).
5. Turn power on.

NOTE: Turn OFF the power before changing input logic. (PNP/NPN).



Editing Parameter Settings

After changing the switch position (see above instructions - **Configuring a Digital Counter**), edit the parameters as follows:

NOTE: The PS indicator light will turn off while the counter is in configuration mode.

1. Press and hold **MD** key for 3 seconds to enter parameter configuration mode. Use **MD** key to step through the parameters.
2. When the desired parameter description is shown in the upper display (see **Parameters Chart**), press ⩓ or ⩔ key to change the parameter.
3. When the desired setting is shown, press the **MD** key to move to the next parameter.
4. To exit configuration mode, press and hold **MD** key for 3 seconds.

Parameters Chart

Use **MD** key to step through **Parameters**

Parameter Description	Parameter Sign	Required Setting
Counter/Timer	[C-t]	CoUn
Input Mode	[in]	UP
Output Mode	[out.n]	C
Max. Counting Speed	[CPS]	30
Decimal Point	[dP]	----
Min. Reset Time	[rSt]	20
Input Logic	[SIG]	PnP
Prescale Decimal Point	[SC.dP]	---.-
Prescale Value	[SCL]	001.0
Start Point Value	[Strt]	0000
Memory Protection	[dAtA]	CLr
Key Lock	[LoCK]	L.oFF

Use ⩓ or ⩔ key to step to the **Required Setting**

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

Harsh Cleaners

Do not use harsh detergents or cleaners that are chloride-based, caustic, highly acidic, or contain quaternary salts.

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

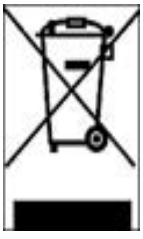
Do not leave water sitting in unit when not in use.

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. Clean the scraper blades as follows:
    a) Remove retaining ring and slide scraper blades off agitator arm.
    b) Place parts in a pan of warm water to soak.
    c) Clean in a sink, using a warm water and mild detergent solution.
    d) Rinse with fresh water.
    e) Allow to dry thoroughly on a flat, clean surface.
12. 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

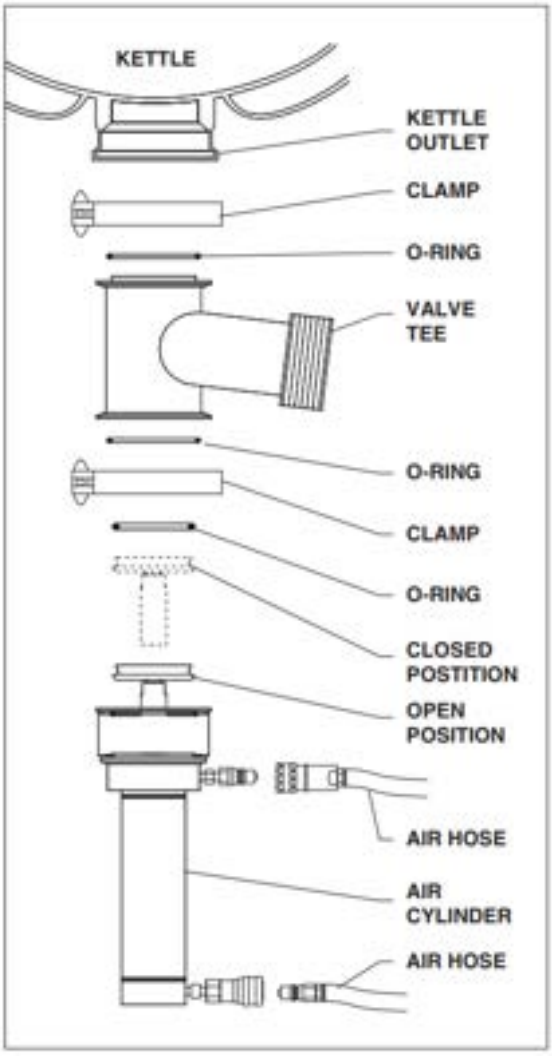
This unit is recyclable. Do not dispose in landfill.

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.

FLUSH PISTON VALVE

***Daily** - clean valve as follows:*



1. Open product valve.
2. Disconnect air hoses.
3. Remove air cylinder.
4. Remove valve tee.
5. Remove all O-rings.
6. Clean air cylinder, do not submerge in water. Wipe clean and sanitize.
7. Clean and sanitize tee and O-rings.
8. Grease and reinstall O-rings.
9. Reinstall tee to kettle outlet.
10. Reinstall air cylinder to bottom of tee.
11. Reconnect air hoses.
12. Close valve and check for alignment.

BUTTERFLY VALVE

***Daily** - clean valve as follows*

1. Open the four nuts
2. Separate all the parts.
3. Clean all the parts.
4. Assemble all the parts and tight the nuts properly

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. Product Discharge Valve (B) opens and closes.
4. Bridge (C) lifts up and screen is in place.
5. Pressure Gauge (D) is in the green when unit is cold.
6. All switches are functioning correctly

SIX MONTH SERVICE INSPECTION

1. Perform daily startup inspection.
2. Gasket (G) around top cover is in good condition.
3. Tilt hand (H) 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.
9. Check for hydraulic leaks.
10. Check safety systems have not been bypassed.

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).
8. Replace hydraulic oil and filter.

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.

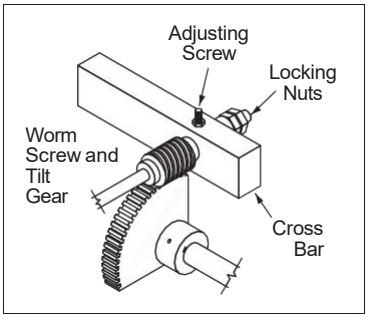


Illustration inverted for clarity.

Grease Nipples.

TROUBLESHOOTING GUIDES

Error Message: Safety Problem

This error message shows up when:

a) Any of the temperature probes (Jacket and/or Product probe) is damaged (short or open).

b) The Product probe is removed while EDC is controlling the system.

c) The probe temperature is higher than the "Software Fuse Temperature (SFT)"

(Kettle SFT is 288°F).

Error Message: Safety Problem

This error message shows up when:

a) High limit safety thermostat is failing while the EDC is controlling the system.

b) To reset, unit needs to cool down and the power needs to be turned OFF and back ON.

In any case, run the Diagnostics.

Error Message: Tilted

This error message shows up when the unit is tilted. Ensure the unit is not tilted to start/continue cooking.

6. Pressure Gauge

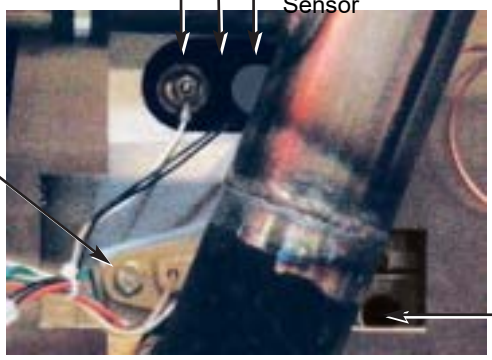
5. Kettle Jacket Water Sight Glass

16. High Limit Tube

9. Water Level Probe

10. RTD Sensor

11. Ignitor



7. Gas Valve (showing hose for Pressure tap)

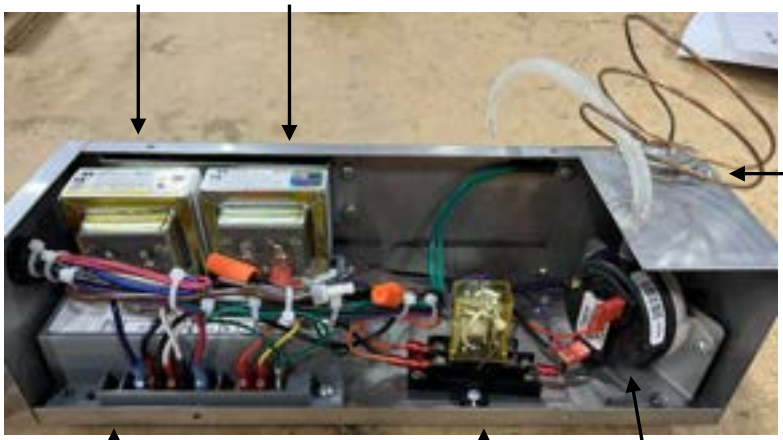
8. Blower

12. Flame Sight Glass

5. Kettle Jacket Water Sight Glass
6. Pressure Gauge
7. Gas Valve
8. Blower
9. Water Level Probe
10. RTD Sensor
11. Ignitor
12. Sight Glass
13. 14V Transformer
14. 24V Ignition Transformer
16. High Limit
17. Ignition Module
18. Relay
19. Air Switch

13. 14V Transformer

14. 24V Ignition Transformer



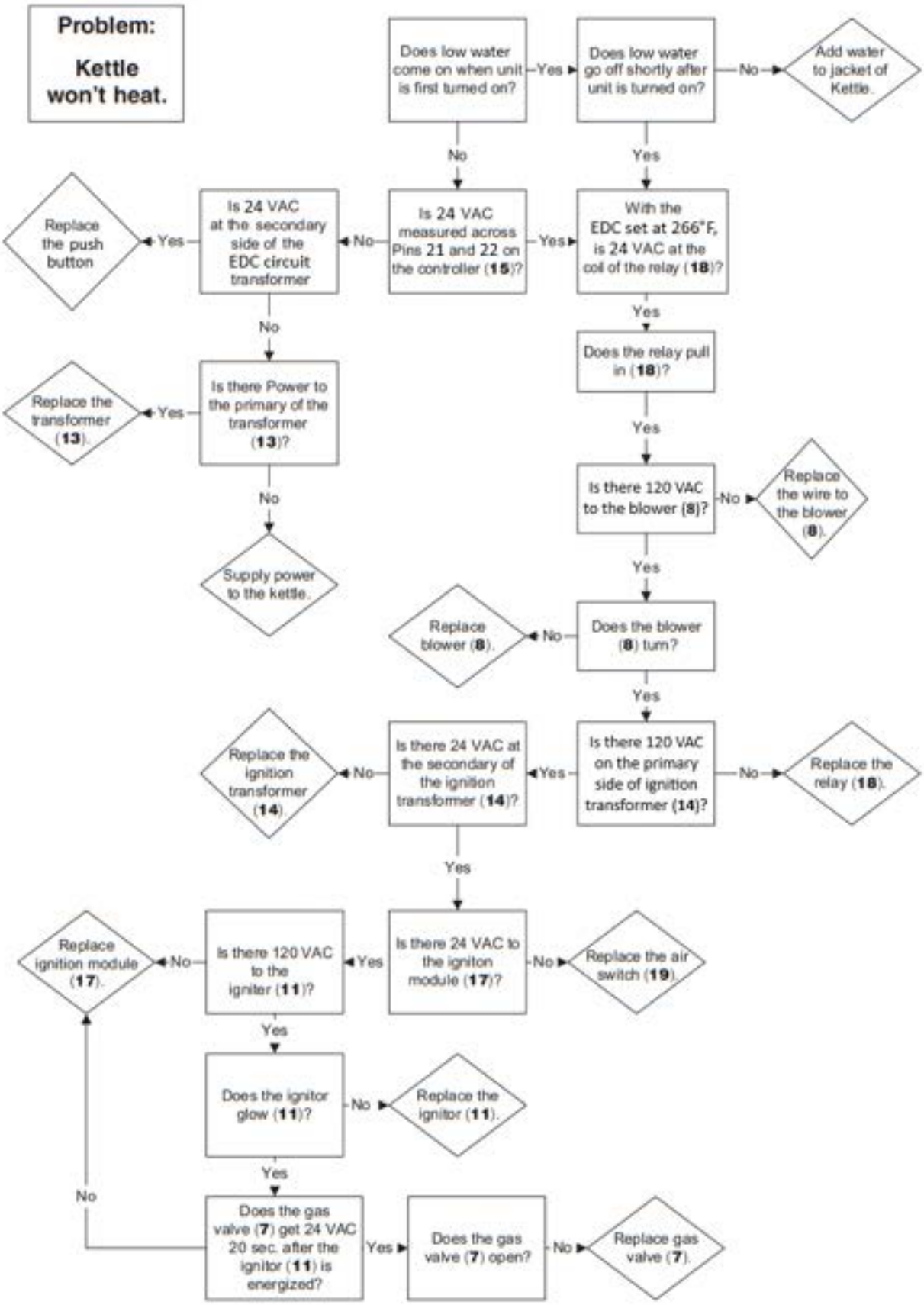
16. High Limit

17. Ignition Module

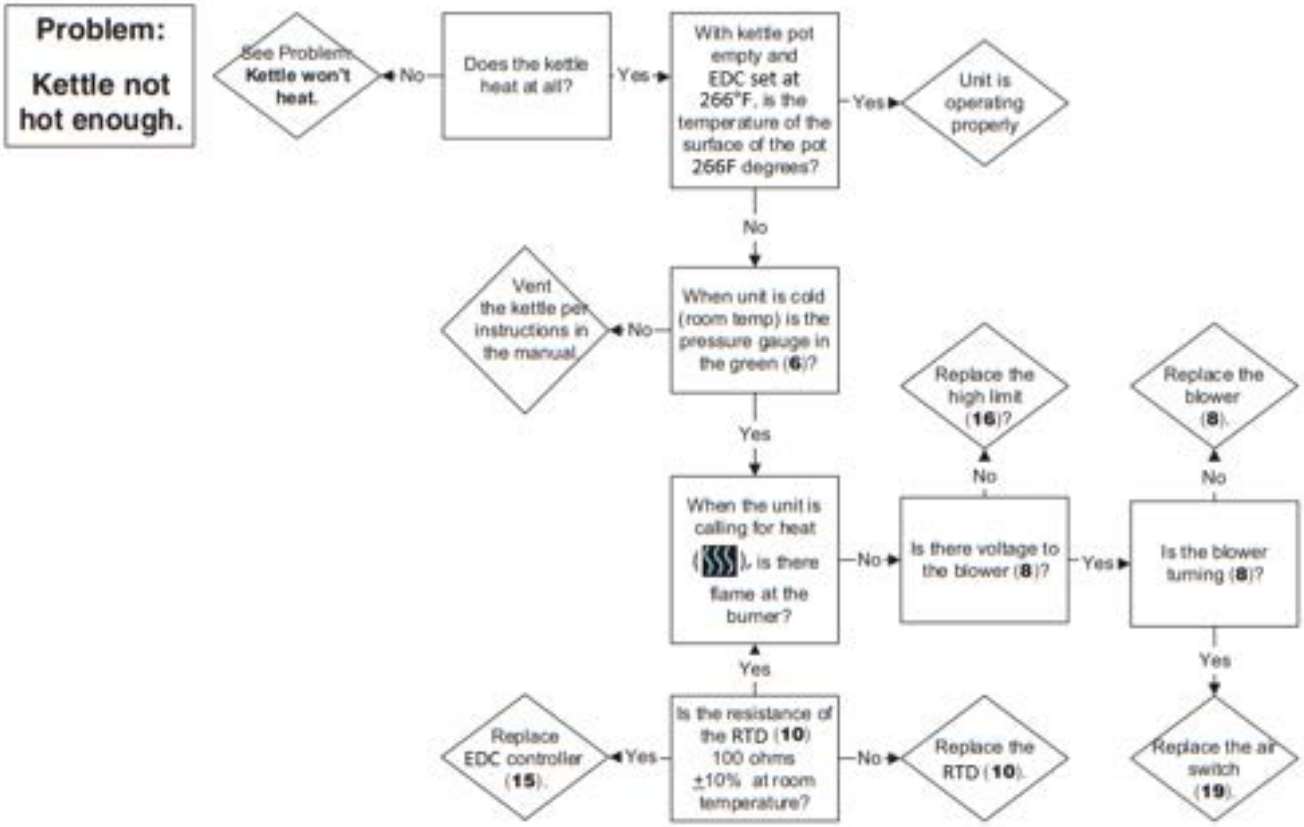
18. Relay

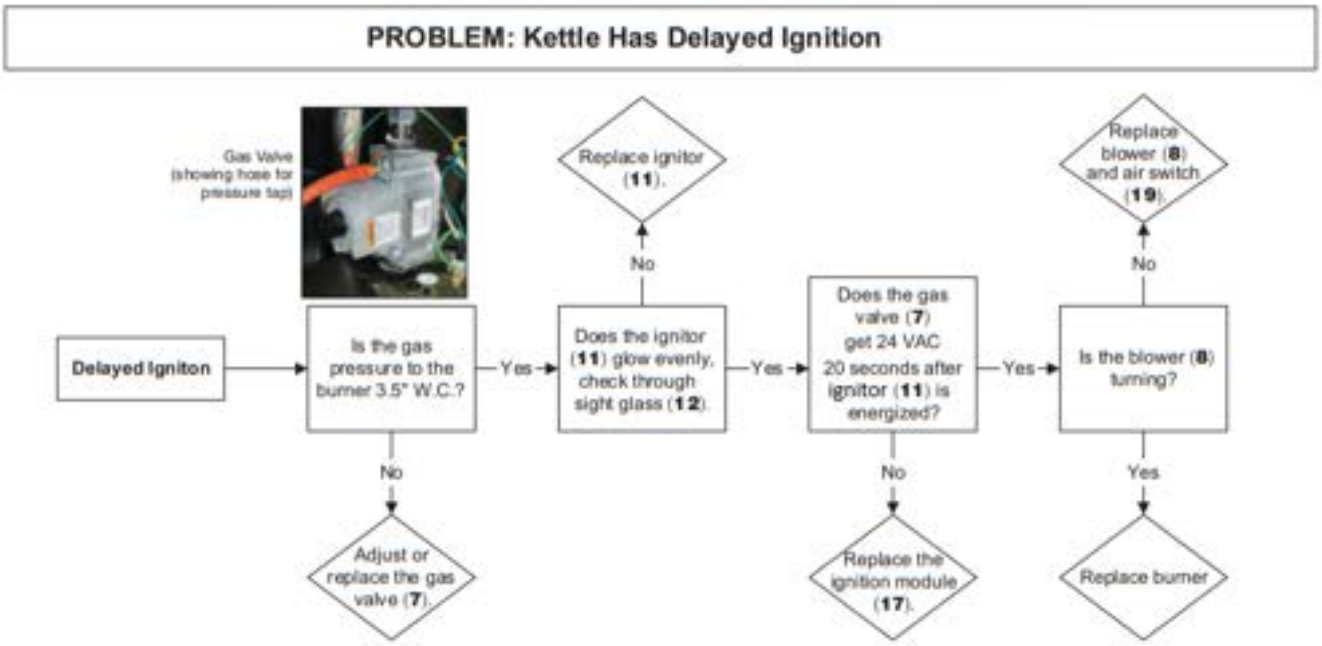
19. Air Switch

TROUBLESHOOTING GUIDES *(continued)*

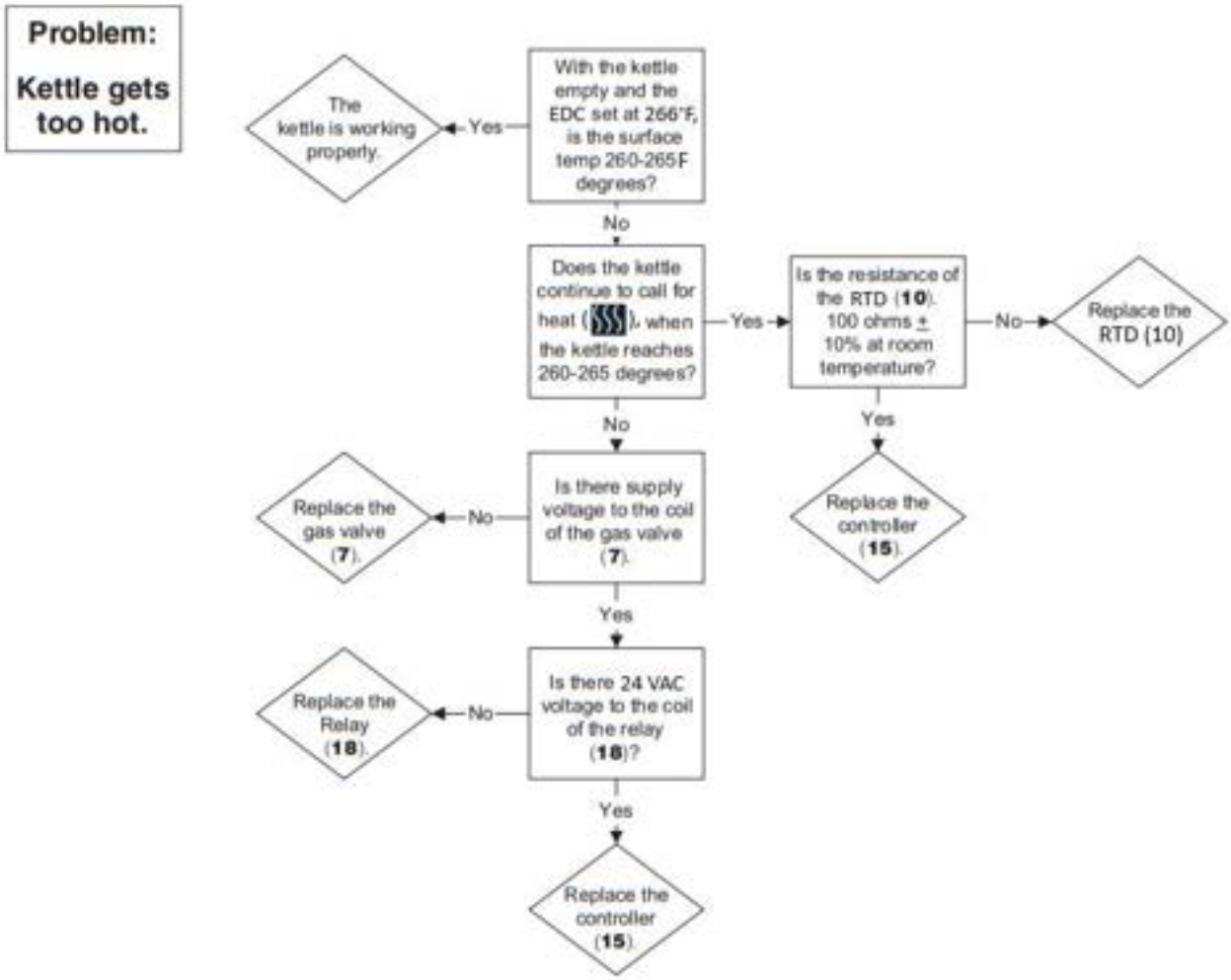


TROUBLESHOOTING GUIDES *(continued)*

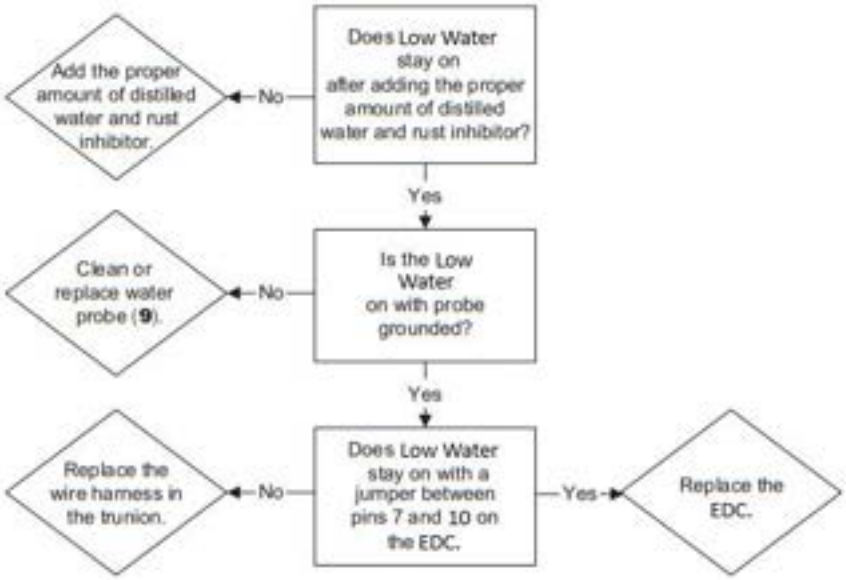




TROUBLESHOOTING GUIDES *(continued)*

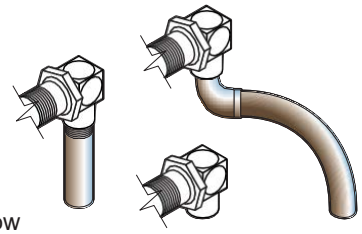


PROBLEM: Low Water Indicator Stays On



KETTLE SAFETY INSPECTION AND TESTING

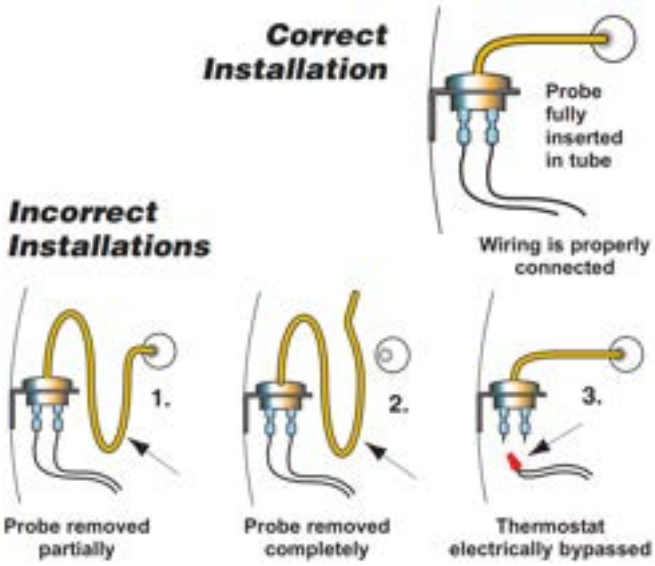
SAFETY VALVE INSTALLATION:



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

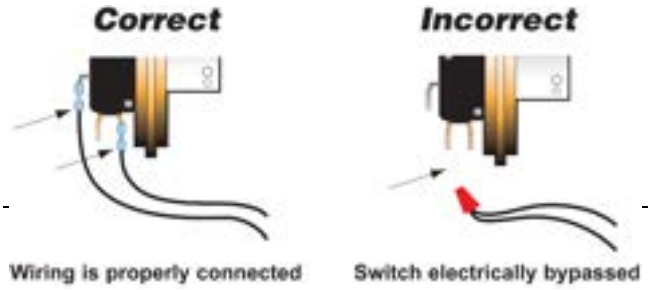
Modifications are unacceptable.

SAFETY THERMOSTAT:



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.

GAS KETTLE AIR SWITCH:



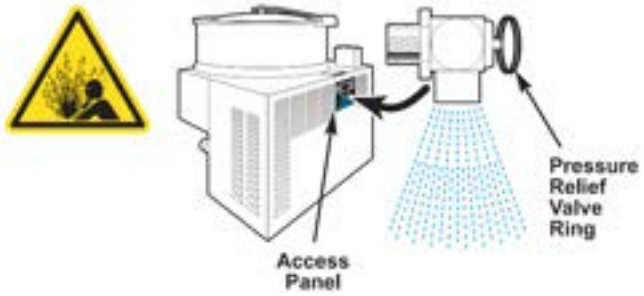
LOW WATER LEVEL PROBE:

Probe properly attached

K **Probe bypassed by running (A) an additional wire**

K **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 temperature to 266°F (max.) on Cook-ON mode. Allow the kettle to heat until the unit cycles off.
2. Turn On-Off Switch to 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.

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.
With results obtained for CO2 use chart to determine dilution factor for gas type used.
Enter these numbers in the following formula to determine the concentration of carbon monoxide in an air free sample of flue gas.

% CO (PPM)	% CO2

Dilution Factor

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

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 to 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.

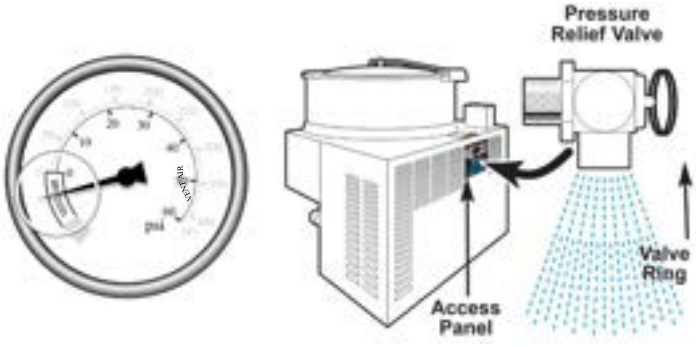
4. Sight Glass

   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

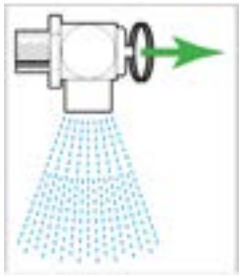


The following venting procedure should be followed when the Vacuum/Pressure Gauge needle is in the "VENT AIR" zone:

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 266°F on Cook-ON mode. 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:

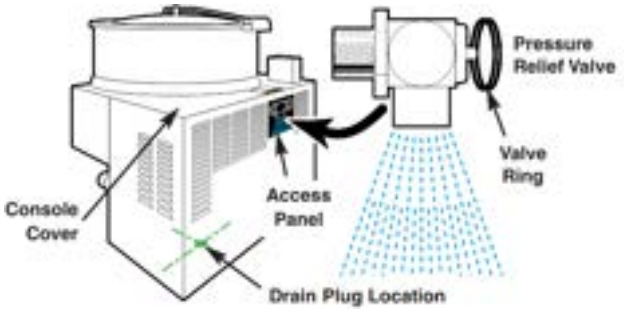
Improper refilling of kettle jacket will result in irreversible damage to unit.

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.

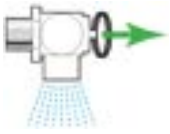
If the red "low water" light comes on during use (while the kettle is in an upright position), the water level has reached a critically low level. The low water protection control has automatically shut off the gas burner. The following procedure must be completed before further use:

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 ensure vessel is not pressurized.

4. Pull Pressure Relief Valve Ring open to ensure 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).

Sight Glass

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.

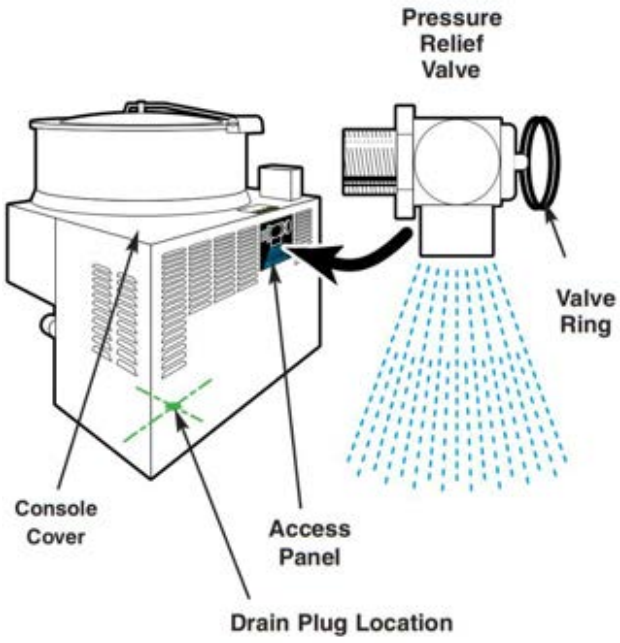
DANGER:

Rust inhibitor can be dangerous.

Read label and follow safety instructions.

WARNING:

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



PRESSURE RELIEF VALVE PERIODIC TESTING PROCEDURE

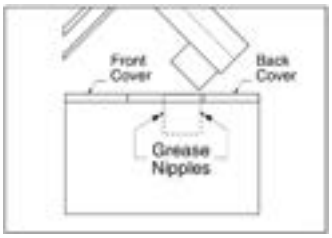
1. Ensure kettle is at room temperature and pressure gauge showing zero or less pressure.
2. Shut off and disconnect gas supply.
3. Remove electrical plug from power source.
4. Remove bolts holding kettle to tabletop.
5. Pull ring on pressure relief valve to ensure there is no pressure within the kettle 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.

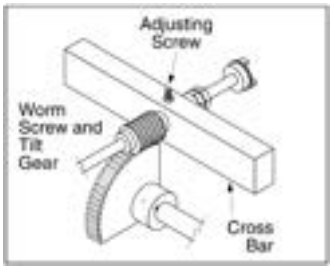
LUBRICATION

Lubricate the following parts every three months to ensure smooth operation and reduce wear.



MIXER BRIDGE HOUSING

There are two grease nipples on the mixer bridge swivel housing which are accessed by removing the front and back covers on the 18" console.



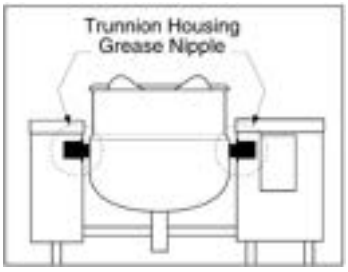
TRUNNION HOUSING, WORM SCREW AND TILT GEAR

These parts are accessed through the front cover on the 18" console.

Apply grease to gear teeth. Check for excessive play and adjust with adjusting screw located on top of cross bar.

KETTLE TRUNNIONS

Accessed via the top covers on the 10" and 18" consoles. Each has two grease nipples.



HYDRAULIC OIL REPLACEMENT PROCEDURE

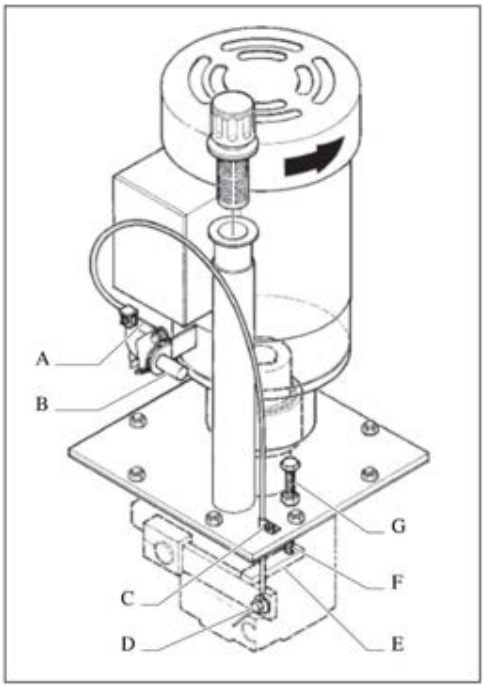
One of the most important maintenance tasks is to change the hydraulic oil yearly. Under heavy usage the oil should be changed every nine months. It is important to change the oil regularly to prevent its breakdown which leads to the damaging of components.

The oil filter should be changed at the same time as the hydraulic oil. A clean filter prevents particles from damaging the other components in the system.

Replace the hydraulic fluid as follows:

⇒ Disconnect power to unit.
⇒ Remove the front top panel on the main console.
⇒ Remove chrome vent cap from breather pipe located beside electric motor.
⇒ Remove plug bolt from bottom left front corner of main console to drain oil into your catch pail.
⇒ Remove oil filter.
⇒ Replace plug bolt.
⇒ Refill unit through breather pipe using approximately 12 U.S. gallons of Tellus 32 hydraulic oil (oil should be 6 1/2" deep in tank).
⇒ Install new oil filter (Part# SE50094).
⇒ Replace chrome vent cap and front top panel.
⇒ Reconnect power to unit.
⇒ Run unit to remove any air in the lines.

RE-INSTALLING SPEED CONTROL CABLE

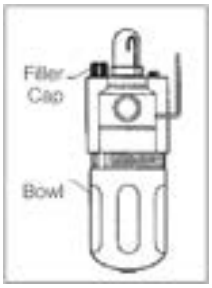


1. Turn sprocket of speed control so that wire "**A**" is fully extended towards shaft "**B**".
2. Insert end of cable through bracket "**C**".
3. Insert wire so it protrudes approximately 1/2" to 5/8" through hole in bolt "**D**". Tighten bolt and bend end of wire.
4. Bring pump arm "**E**" up until it hits stop bolt "**F**" and tighten screw "**C**".
5. Reassemble unit. Speed control knob will go on pointing toward minimum setting.
6. Turn mixer on with speed control set at minimum setting.
7. If scraper arm is turning, loosen nut "**G**" and back stop bolt "**F**" off a few turns. Next loosen screw "**C**" and slowly pull up cable until scraper arm stops turning. Retighten screw "**C**". Gently turn stop bolt "**F**" down until it hits arm. Lock in place by tightening nut "**G**".
8. Scraper arm should now go from no rotation to fast rotation by turning speed control knob.

NOTE: Mixer may run rough and noisy for one or two hours if air has become trapped in the line.

AIR LINE LUBRICATOR OIL FILLING PROCEDURE

1. Disconnect air supply and bleed system.
2. Remove cover on console
3. Check for oiler location.
4. Inspect oil level in bowl.
5. Remove filler cap.
6. Add mineral oil as required.
7. Replace filler cap and console cover.



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