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Cleveland

Electric Mixer Kettles – easyDial Controller

Operation, Installation & Maintenance Manual

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

MODELS:

MKEL-40-T

MKEL-60-T

MKEL-80-T

MKEL-100-T

For your future reference.

Model # _____

Serial # _____

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

Part # KE004378-2 Rev A
October 2025

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STATEMENT OF RESPONSIBILITIES / DÉCLARATION DE RESPONSABILITÉS / DECLARACIÓN DE RESPONSABILIDADES

This document is for use by experienced and trained Qualified Cleveland Range, LTD Authorized Service Representatives who are familiar with both the safety procedures, and equipment they service. Cleveland Range, LTD 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, LTD 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, LTD 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, LTD 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, LTD qui possèdent l'expérience et la formation ainsi que la bonne connaissance des mesures de sécurité et du matériel qu'ils entretiennent.

Cleveland Range, LTD 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.

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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, LTD 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, LTD 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, LTD, 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, LTD 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, LTD 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. 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. 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. 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. 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.
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
MK = Mixer Kettle
TMK = Twin Mixer Kettle

2 – Type of Power
E = Electricity
G = Gas
D = Direct Steam

3 – Type of Mount
L = Legs or Frame
M = Modular (Cabinetized)
T = Table Top

4 – Designation of Capacity in Gallon
From 3 Gallon to 200 Gallon

5 – Tilting Options
Blank = Stationary
T = Tilting

PRODUCT RANGE:

The range of mixer kettles, along with their Pressure and Volume, in this manual is specified in the table below:

Style	Model Number	Canadian Registration Number	Pressure PSI	Volume	PV	Category
EK	MKEL-40-T	L6537.5	50 (345)	50	172.5	2
	MKEL-60-T	L6538.5	50 (345)	68	234.6	3
	MKEL-80-T	L6539.5	50 (345)	87	300.2	3
	MKEL-100-T	L6541.5	50 (345)	105	362.3	3

INSTALLATION

GENERAL

Operating Criteria	Acceptable Range
Ambient Air Temperature	59° F to 104° F
Relative Humidity	0-80%
Altitude	0 to 9850 ft.
Voltage	See 'Electrical Connection"
Location	Inside building, under ventilation hood
Water Inlet Operating Pressure Range	275 Kpa to 1Mpa

Ensure electrical supplies match rating plate.

Installation of the kettle must be accomplished by qualified electrical installation personnel working to all applicable local and national codes. Improper installation of product could cause injury or damage.

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 shown below.

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 WEIGHT

Model #	Unit	Unit with shipping box
MKEL40T	820 lbs.	890 lbs.
MKEL60T	870 lbs.	940 lbs.
MKEL80T	1,130 lbs.	1,200 lbs.
MKEL100T	1,285 lbs.	1,355 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.

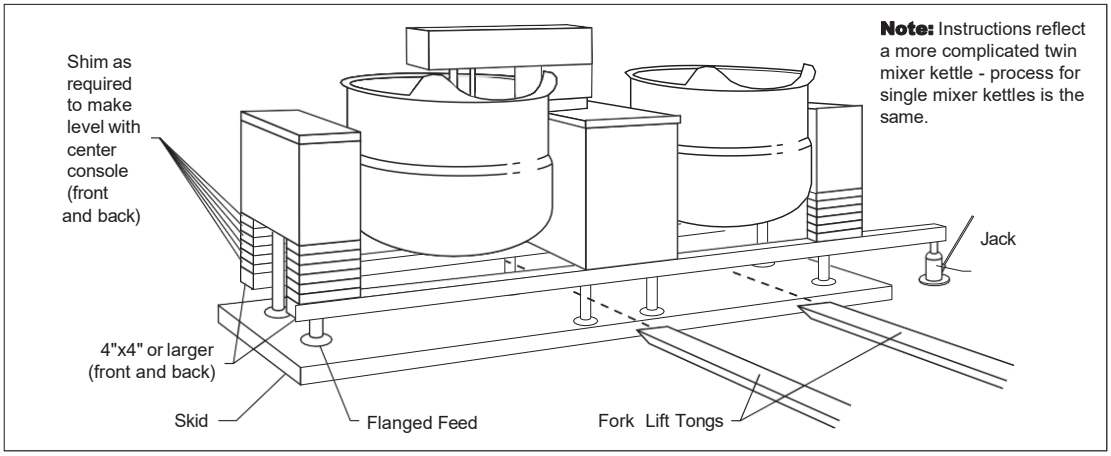
If unit is heavy, use adequate help or lifting equipment as needed.

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 national requirements.

VENTILATION

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.

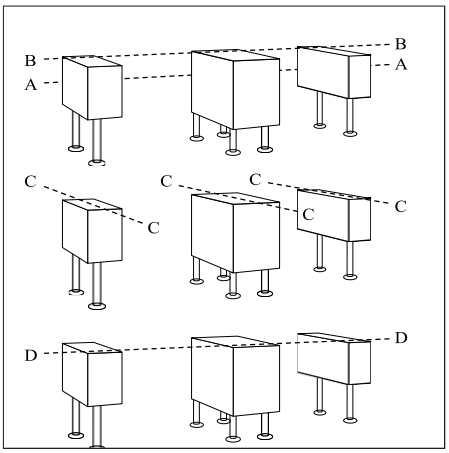
POSITIONING



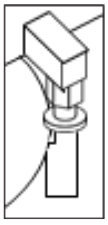
MOVING UNIT

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

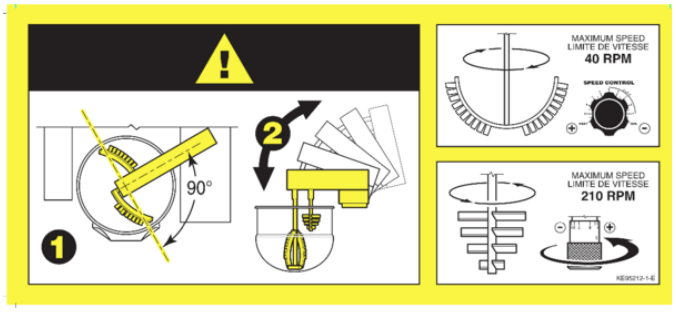


1. With straight-edge, line the backs of the consoles up with each other (dotted line **A**).
2. Level and straight-edge backs of consoles (dotted line **B**). Adjustments are made by turning flanges on back feet only.
3. Level consoles individually from front to back (dotted lines **C**). Adjustments are made by turning flanges on front feet only.
4. Re-check that the back is level (dotted line **B**) and then the front (dotted line **D**). Adjust if necessary.
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 leveling 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.

ELECTRICAL

ELECTRICAL SERVICE CONNECTIONS

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. 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.

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

1. Ensure main power is turned off before connecting wires.
2. Remove the screws at the rear of the centre 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 centre console). Ensure motor rotation follows directional arrow on side of motor (anti-clockwise). 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.

WARNING: Do not wire to an external switching device that is regularly switched on and off.

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

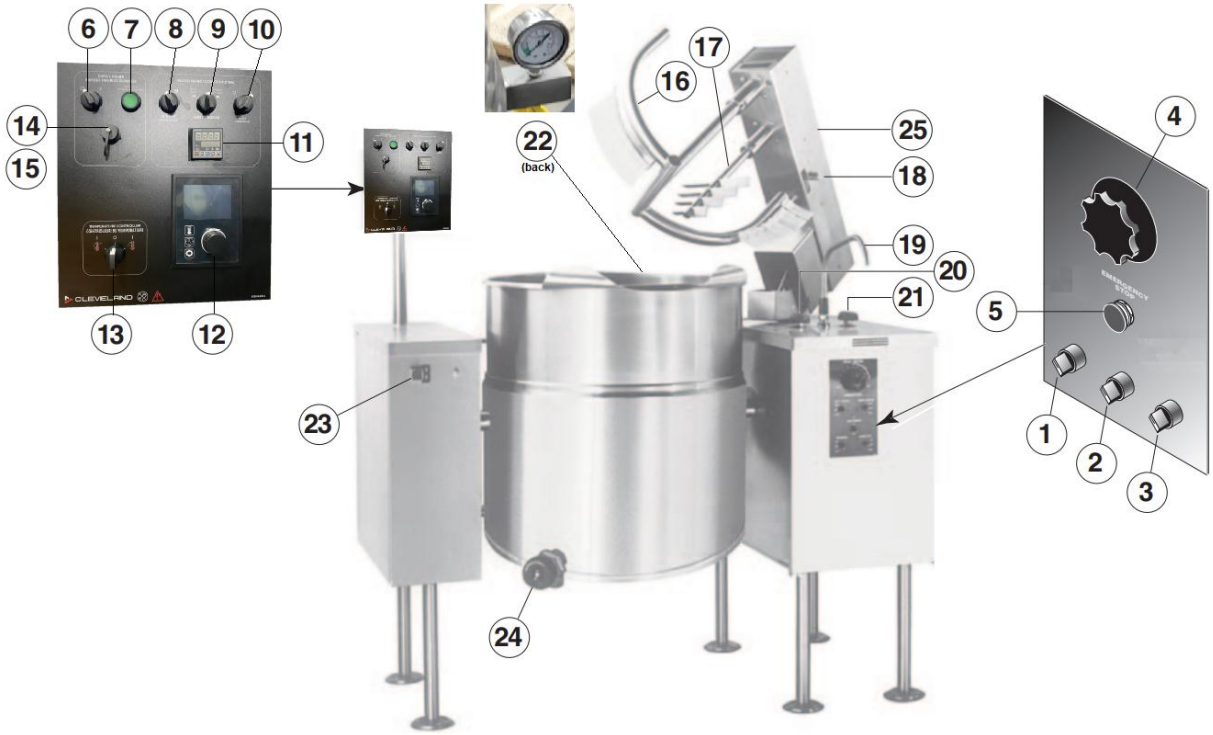
1. Raise Bridge - If bridge does not raise then check motor rotation. Bridge should not raise until speed control is turned to minimum and then adjusted back up.
2. Swing Bridge - Bridge when fully raised should swing without hitting any object, i.e. control housing, kettle lip. Check that hydraulic 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.

⚠ 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



ITEM #	ITEM	DESCRIPTION FUNCTION
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 Dial	Control 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.
15	USB Port Protective Cap	Cap to protect the USB port.
16	Main Agitator Arm	Provides most of the product movement.
17	Secondary Agitator Arm	Provides reverse agitation and product lift in kettle.
18	Secondary Speed Control Knob	Controls speed of secondary agitator arm.
19	Faucet Spout	Delivers water to the kettle.
20	Hot Water Valve	Turns on hot water.
21	Cold Water Valve	Turns on cold water.
22	Vacuum/Pressure Gauge	Indicates steam pressure in kPa inside steam jacket as well as vacuum in millimetre of mercury.
23	Power Tilt Control Switch	Used for tilting the kettle up or down. Replaced by hand tilt wheel on manual tilt units.
24	Tangent Draw-Off Valve	Used for draining product or wash water from kettle.
25	Mixer Bridge	Encloses agitator motors.

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

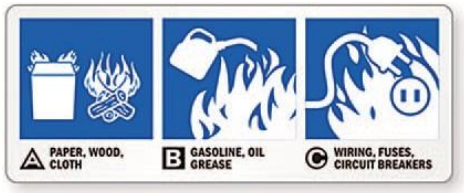
Rim (loading) heights

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 - BV3 valve	Height - PVA3 valve
40	40.5 in	40.75 in
60	43.75 in	44.25 in
80	44.75 in	46.26 in
100	44.5 in	48.75 in
125	44.5 in	48.75 in
150	48.5 in	53.5 in

Emergency

In the event of a fire or other emergency:



Turn off unit. Shut off power supplies including Electrical and Water (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

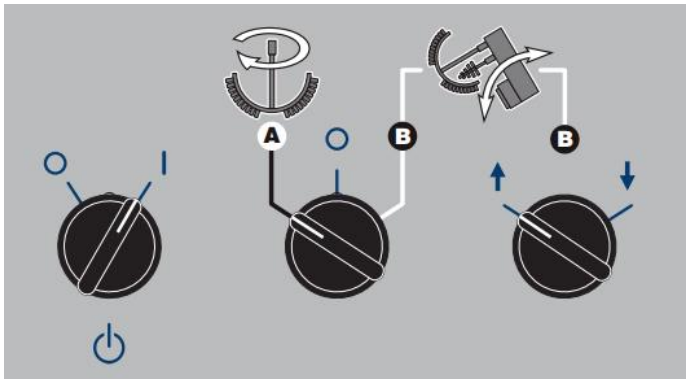
Cleveland Range Mixer Kettles are simple and safe to operate. The following tips will allow you to maximize the use of your new mixer.

If a mixer bridge is equipped with a temperature probe for a controller or thermometer, the probe must be submerged a minimum of 3” in the product for accurate readings.

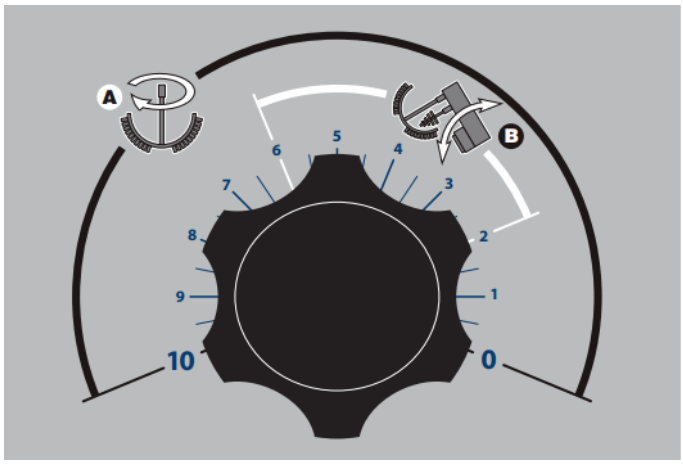
Safety

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.

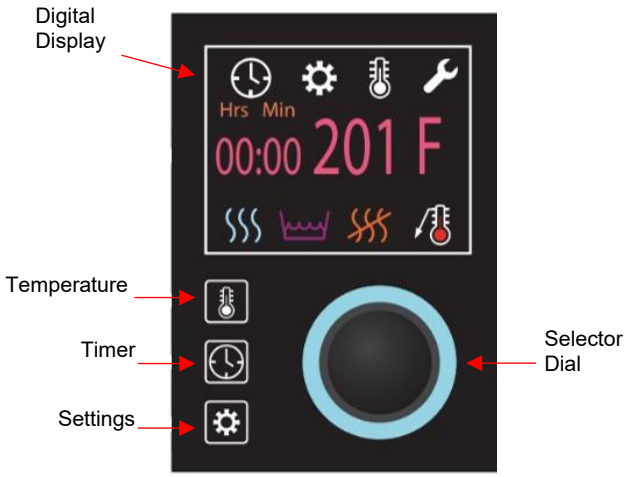
WARNING: Do not tilt kettle when mixer agitators are in kettle bowl.

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.

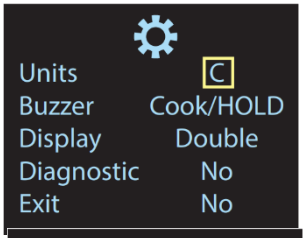
TO ADJUST SETTINGS:

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** ⚙.

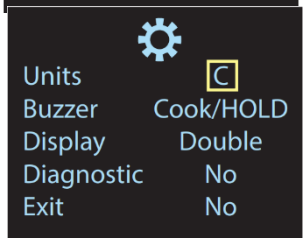
COOKING WITHOUT PRODUCT PROBE

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

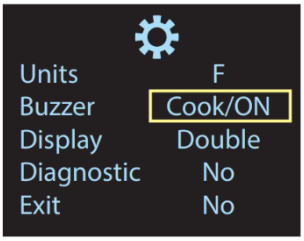
2. Push **Settings** ⚙ to display the **Settings Screen**.



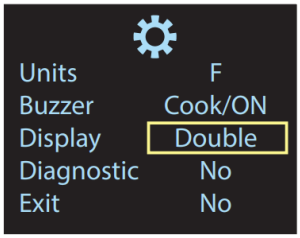
3. Setting the **Units**:
Turn **Selector Dial** to select degrees **F**ahrenheit or **C**elsius.

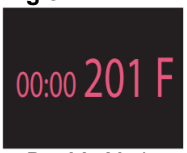


4. Setting the **Buzzer** (& Cooking Mode):
Push Settings ⚙ to toggle to **Buzzer**.
Turn **Selector Dial** to select **Cook/ON** or **Cook/Hold** or **Cook/OFF**.



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

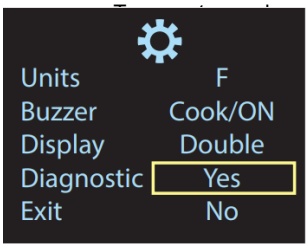




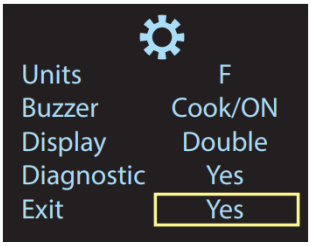
Double Mode
Time & Temperature

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.



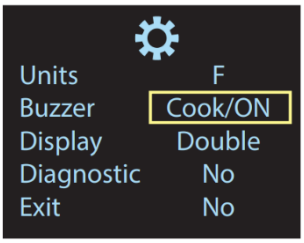
Cook/ON

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)

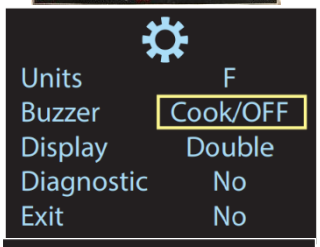
6. Push **Time** to select **Hrs** and **Min**.
7. Turn **Selector Dial** to set the buzzer to desired time.
8. Push **Time** to start timing.

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.

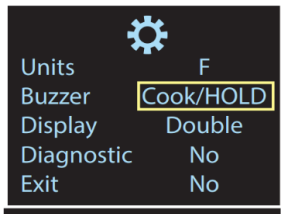
Cook/HOLD

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.

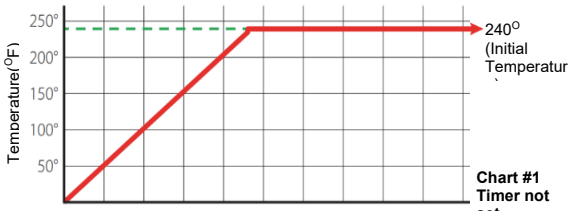


3. Push **Temperature** to select temperature.
4. Turn **Selector Dial** to set desired initial unit temperature.

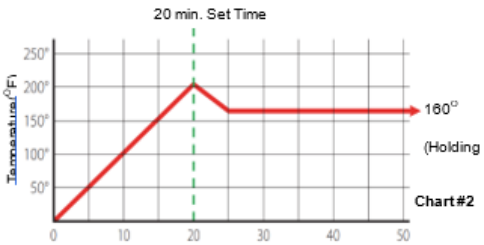
5. Push **Temperature** to toggle to holding temperature setting.
6. Turn **Selector Dial** to set desired holding temperature.

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.

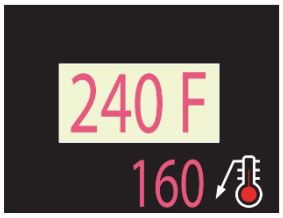
Cooking with Product Probe

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

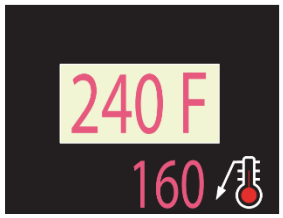
Can be used as an internal product probe or for simmering liquid products.

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.

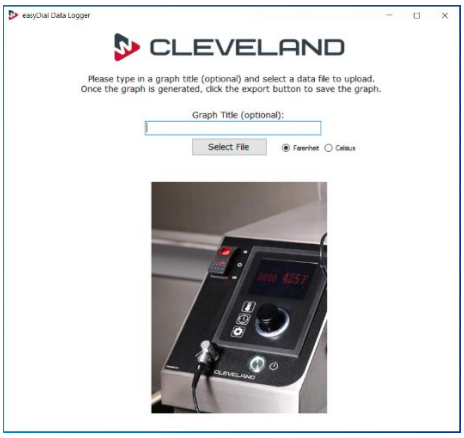
To transfer the data to a USB drive, plug in a USB drive, ensure the switch is turned off, and press the USB transfer button. The USB transfer button will be ignored if the switch is turned on.

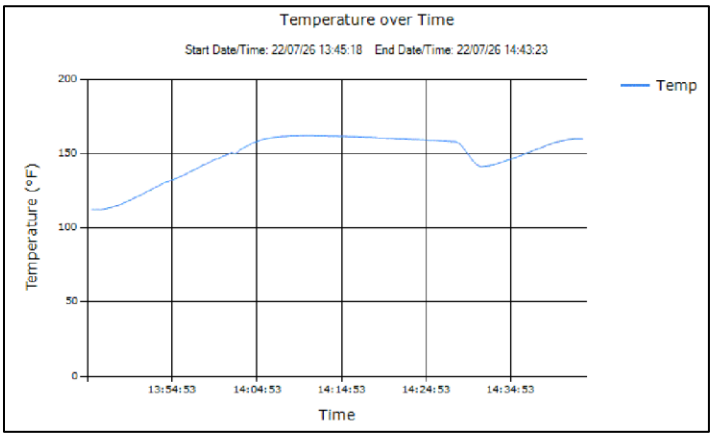
When the USB button is pressed, the green USB button light will turn on and remain on until the transfer is complete. Once the transfer is complete, the green USB light will flash on and off until the USB drive is removed.

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
d2 = Month	Range: 01 - 12
d3 = Day	Range: 01 - 31
d4 = Hour	Range: 00 - 23
d5 = Minute	Range: 00 - 59

For example:

d1 = 21 d2 = 04 d3 = 18

d4 = 13 d5 = 48

Time Entered = April 18, 2021, 1:48 PM

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

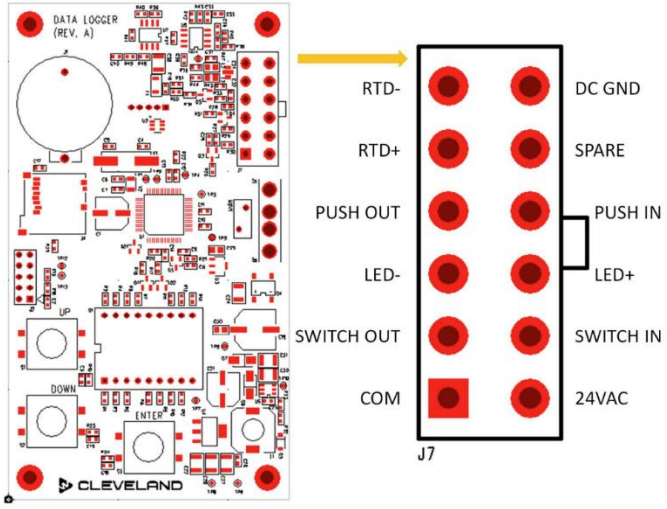
If the USB Transfer button is pressed

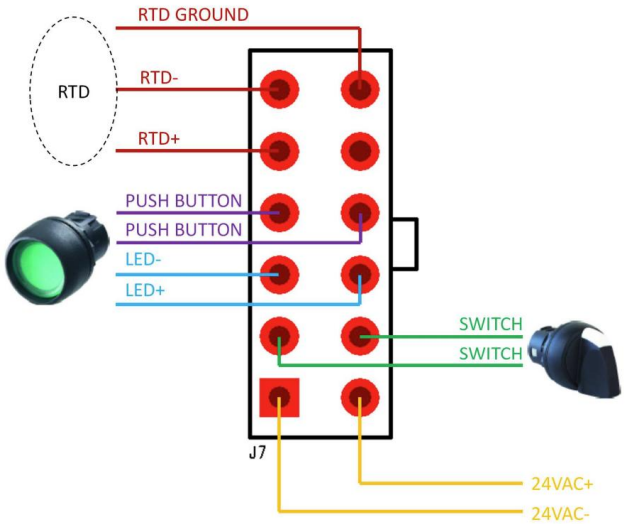
- F0 - Button Press Detected, Opening File on MicroSD
- F1 - MicroSD Card File Opened, Read First Line
- F2 - First Line Read, Create/Open USB File
- F3 - USB File Opened, Write First Line Read Earlier from MicroSD
- F4 - First Line Written, Transfer all contents from MicroSD Card File
- F5 - File Transferred, 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

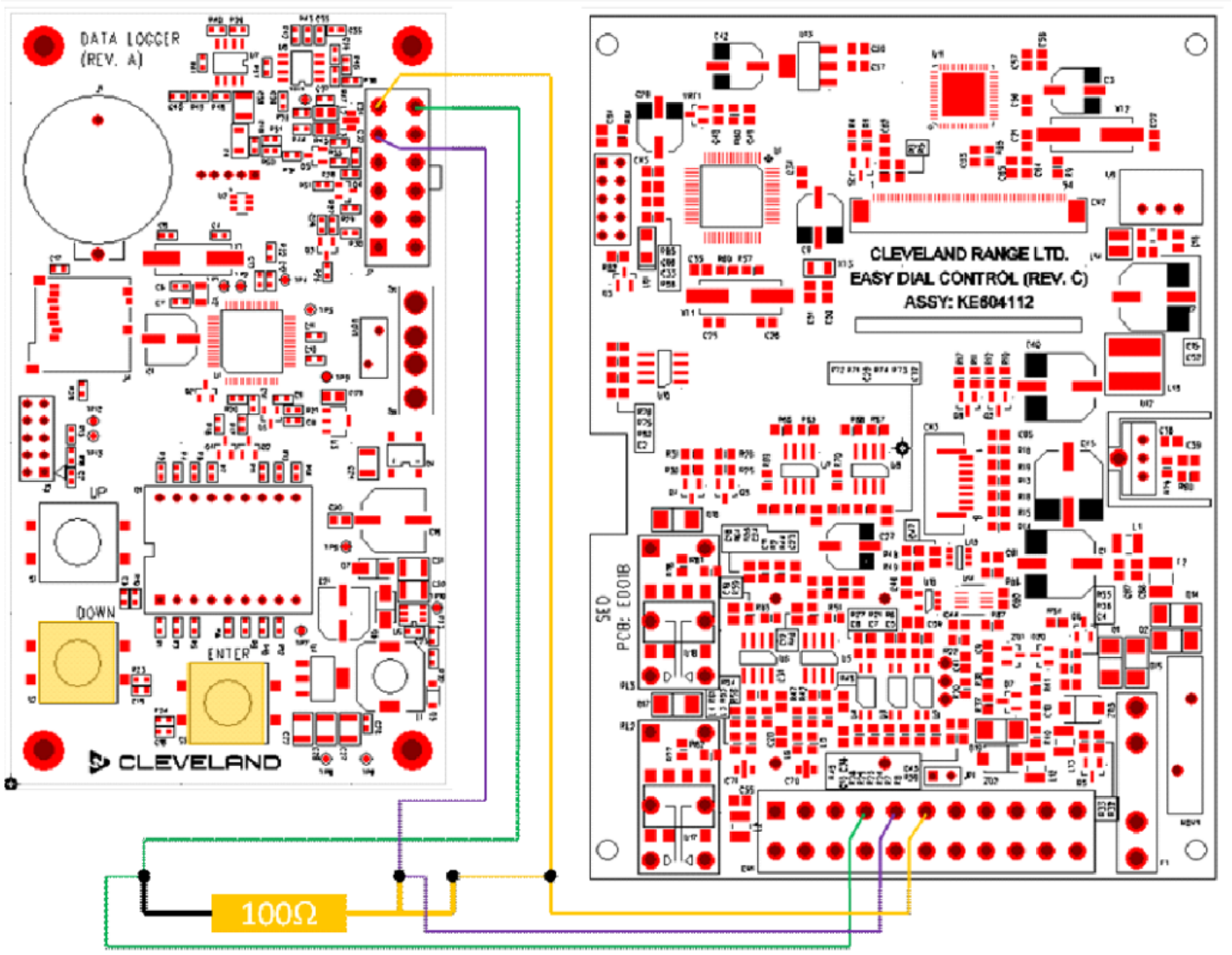




NOTE: For a 2-wire RTD, please tie RTD+ and RTD- together and connect to one end of the RTD and connect RTD GROUND to the other end of the RTD.

Service Instruction

Datalogger-Easy Dial Control Calibration using 100ohm resistor.



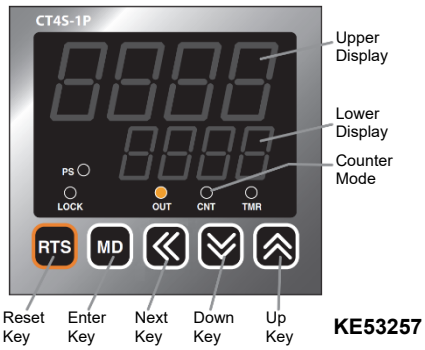
Note: Datalogger with EDC are calibrated in factory. Calibration will only be required if either Datalogger/Easy Dial Control or both Datalogger and Easy Dial Control are replaced.

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".

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

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 ⌄ 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.

4. Locate delivery spout over desired kettle.

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

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

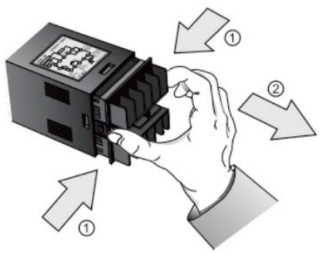
7. To complete delivery after interrupting, turn START switch to **CONTINUE**.

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

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

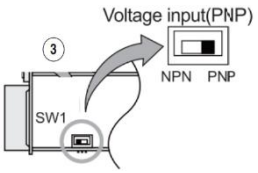
Configuring a Digital Counter

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	[i n]	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

 **Chloride 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 shall never be used for cleaning the stainless steel.
 **High Pressure Spray Hose**	Unit shall never be cleaned with a high-pressure spray hose or steam-cleaner.
 **Stagnant Water**	Do not leave water sitting in unit when not in use.

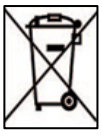
CLEANING INSTRUCTIONS

1. Turn unit off and disconnect unit from power source.
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 that is stuck to the kettle by allowing it to soak.
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 anti-freeze 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.

PREVENTIVE 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. Kettle tilts smoothly, handle is tight and kettle holds in any position (tilting models only).
2. Pressure gauge is in the green when unit is cold.

SIX MONTH SERVICE INSPECTION

1. Perform daily startup inspection.
2. Gaskets are in good condition.
3. Tilt hand 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. Replace hydraulic oil and filter.
3. Perform safety inspection using SAFETY INSPECTION CHECKLIST found in the MAINTENANCE PROCEDURES

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.

Ensure kettle is at room temperature and pressure gauge is showing zero or less pressure prior to removing any fittings.

DIAGNOSTIC GUIDE

This section contains servicing information intended for use by Authorized Service Personnel.

PROBLEM A: Kettle is not heating at all (Kettle must be on and temperature control set).

Possible Causes:

No incoming power.
Kettle is tilted.
Low water condition.
Defective ON/OFF switch.
Defective easyDial control.
Defective safety thermostat.
Defective contactor/s.
Defective 120/24 VAC transformer.
Defective elements.
Defective low water level probe.

Fault Isolation Procedure

Step	Test
1	Is there proper incoming voltage at terminal block? **Yes** Go to step #**2**. **No** Correct external power supply problem.
2	Do both contactors energize? **Yes** Check contactor contacts for pitting. Voltage across contactor terminals while in a closed position indicates a poor contact. Replace contactor/s as necessary. Check elements for short at ground or an open circuit. If element/s are defective contact the factory. Elements are not field replaceable. **No** Go to step #**3**.
3	Measure continuity across safety thermostat. Is it an open circuit? **Yes** Replace defective safety thermostat. **No** Go to step #**4**.
4	Is there 24 VAC present across the coils of the contactor/s? **Yes** Replace defective contactor/s. **No** Go to step #**5**.
5	Remove wire from low water level probe and ground it to the body of the kettle. Do the contactors now energize? **Yes** Clean or replace defective low water level probe. **No** Go to step #**6**.
6	Is there 24 VAC present at output of 24 VAC transformer? **Yes** Go to step #**7**. **No** Replace defective 120/24 VAC transformer.
7	Measure continuity of ON/OFF switch. Is it operating properly? **Yes** Replace defective easyDial control. **No** Replace defective ON/OFF switch.

PROBLEM B: Kettle heats too slowly or not hot enough (NOTE: normal max. operating pressure with an empty kettle is 30-35 PSI.

Possible Causes:

Air in jacket requires venting.	Defective contactor/s.	Defective easyDial control.
Defective safety thermostat.	Defective jacket probe (RTD)	Defective element/s.

Fault Isolation Procedure

Step	Test
1	In a cold state, does the pressure gauge read in the green zone? **Yes** Go to step #**2**. **No** There is air present in the jacket of the kettle. Follow Kettle Venting Procedure. If constant venting is required, there is a leak that should be corrected.
2	Do the contactors shut off too early? (before reaching normal maximum operating pressure) **Yes** Go to step #**3**. **No** Check contactor contacts for pitting. Voltage across terminal of contactor while energized signifies a poor contact. Replace contactor/s as necessary. Check elements for short to ground or open circuit. If elements are defective, contact the factory. Elements are not field replaceable.
3	While kettle is at room temperature, disconnect jacket probe (RTD) connections. Test resistance across any red and white wires. Is the resistance around 110 Ohms? **Yes** Go to step #**4**. **No** Replace defective jacket probe (RTD).
4	Use the encoder knob on easyDial control to increase the operating temperature to maximum 266°F. Does the kettle now achieve maximum operating pressure of 30-35 psi in an empty kettle? **Yes** Kettle is operating correctly. **No** If problem still exists, replace defective easyDial control.

PROBLEM C: Kettle is overheating.

Possible Causes:

Defective jacket probe (RTD) Defective easyDial control.

Fault Isolation Procedure

Step	Test
1	While kettle is at room temperature, disconnect jacket probe (RTD) connections. Test resistance across any red and white wires. Is the resistance around 110 Ohms? **Yes** Go to step #**2**. **No** Replace defective jacket probe (RTD).
2	Use the encoder knob on easyDial control to increase the operating temperature to maximum 266°F. Does the kettle now achieve maximum operating pressure of 30-35 PSI in an empty kettle? **Yes** Kettle is operating correctly. **No** If problem still exists, replace defective easyDial control.

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.

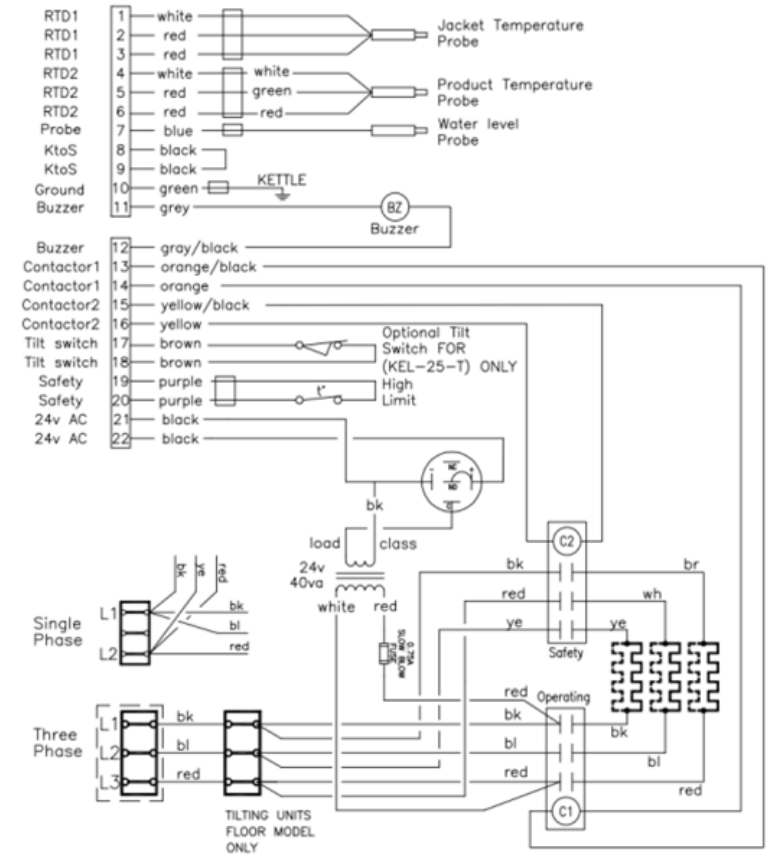
b) To reset, unit needs to cool down and the power needs to be turned OFF and back ON.

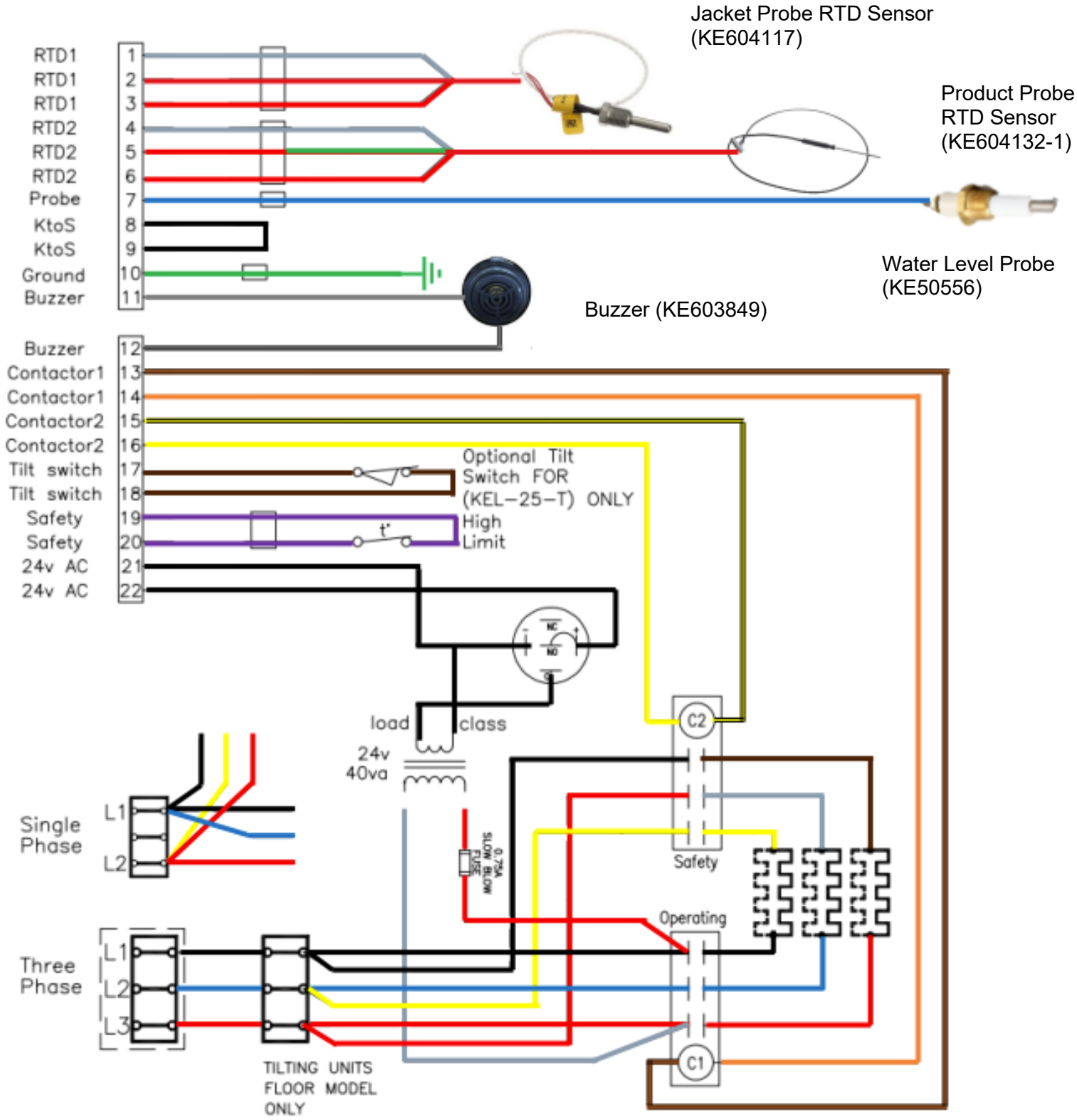
In any case, run the Diagnostics.

Error Message: Tilted

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

Schematic Review





SAFETY INSPECTION CHECKLIST

NOTE: The following instructions are intended for use by qualified service personnel.

The following steps should be completed **IN SEQUENCE**.

A. KETTLE PREPARATION

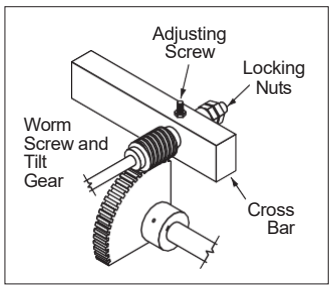
1. Disconnect main power at fused disconnect switch.
2. Kettle must be cold. If necessary, add water to kettle pot to cool unit.
3. The pressure gauge should now show a vacuum and have no indication of leakage. If gauge looks damaged replace gauge.
4. Gauge must be showing a vacuum prior to proceeding. If not check for leaks, and repair kettle prior to proceeding. Refer to REFERENCE SECTION (KETTLE VENTING INSTRUCTIONS).


Pressure Gauge in Vacuum

B. 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.

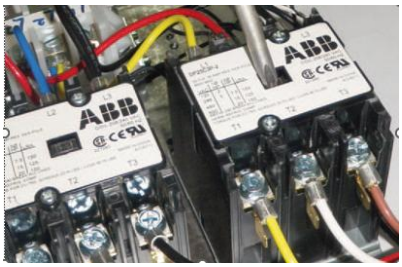

Grease Nipples



Illustrations Inverted for Clarity

C. CONTACTOR TEST

1. Remove power to unit.
2. Remove nut holding component mounting plate to console.
3. Pull plate out and place on top of console. (Depending on how the installer wired the kettle you may have to remove the supply wire and reconnect).
4. Physically push in on contacts of each contactor to check for free movement. Replace contactor(s) if required.

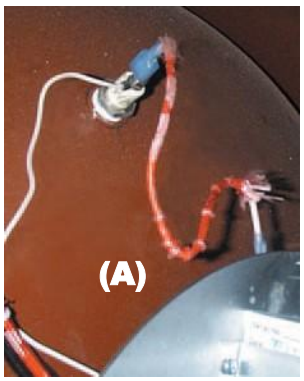


D. LOW WATER LEVEL PROBE – FUNCTIONAL TEST

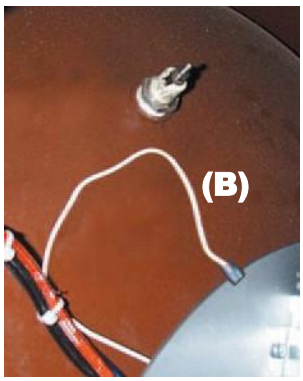
1. Turn main power on at fused disconnect switch.
2. Turn kettle on and set temperature to maximum.
3. Green light will come on and contactors close.
4. Tilt kettle over. After approximately a five-second delay the red light will come on, green light goes off and the contactors will disengage.
5. Turn kettle upright. Green light will come back on and contactors reengage.
6. Turn kettle off
7. If unit does not function as above, make required repairs.
8. Disconnect main power at fused disconnect switch.

Installation Check


✓ Probe properly attached



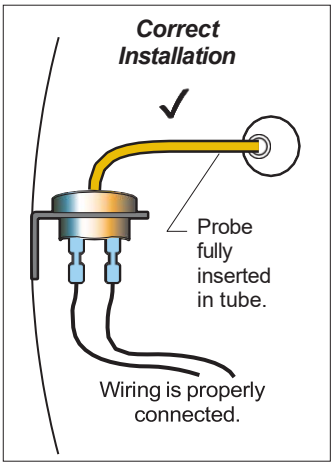
✗ Probe bypassed by **(A)** running an additional wire

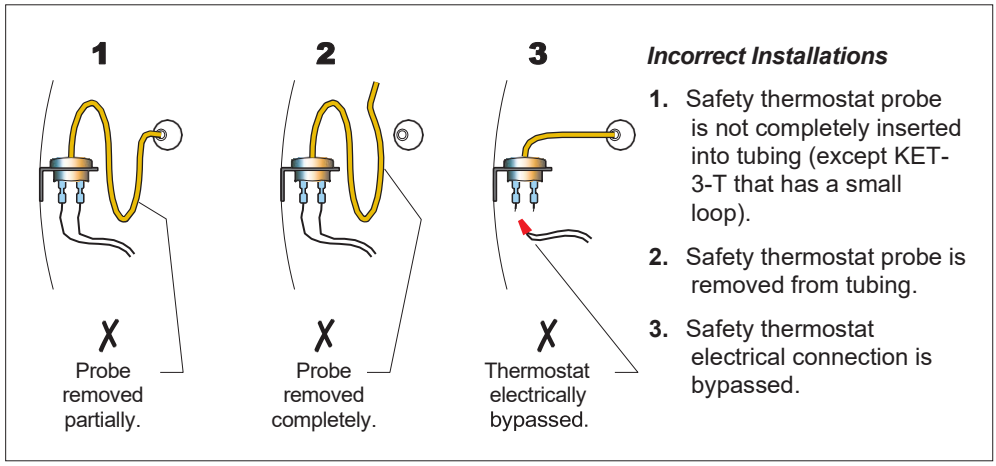


✗ Probe bypassed by **(B)** grounding the connecting wire

E. SAFETY THERMOSTAT

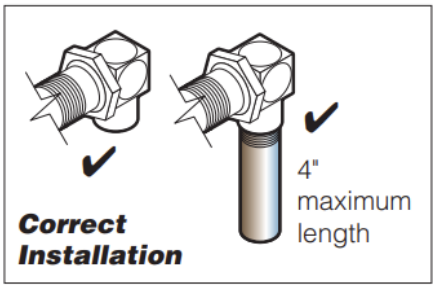
Installation Check:



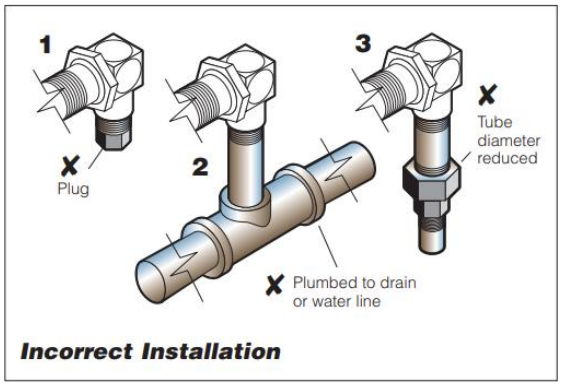


F. SAFETY VALVE

Installation Check:



The above illustrations show the variations of factory installed Safety Valves. **Any modifications are unacceptable.**



Physical Check:

1. Check that the PSI rating on the valve matches MAWP (maximum allowable working pressure) on the plate welded to the kettle.
2. Check that the Safety Valve has a "UV" stamp.
3. Check that the valve is not damaged in any way.

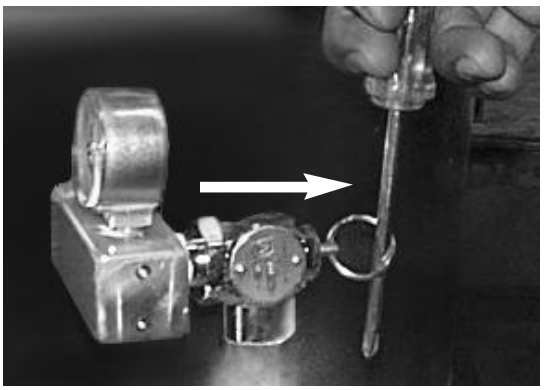
If any of the above criteria is not met, replace valve.

Pressure Relief Valve Periodic Testing Procedure

1. With the kettle empty, set temperature to maximum 266°F. Allow the kettle to heat until the unit cycles off.
2. Turn the knob to set temperature to "0" (Off) and disconnect main power at fused disconnect switch.
3. Stand to the side of the pressure relief valve discharge tube and pull valve 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.

If valve appears to be sticking replace pressure relief valve.

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



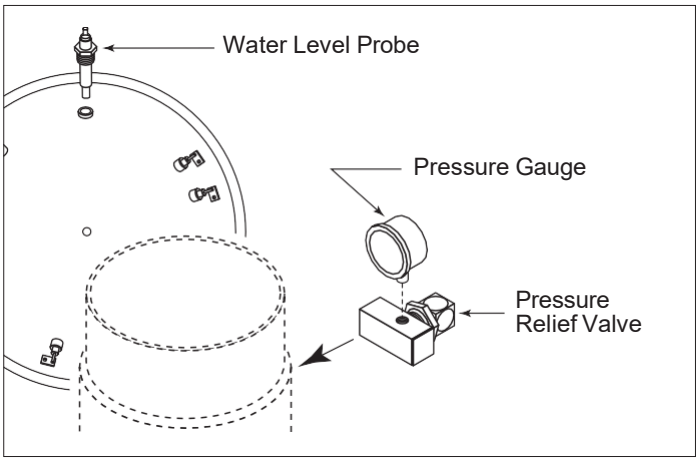
REPAIRING LEAKS IN STEAM JACKETED KETTLE FITTINGS

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 for signs of leaks. Replace if required.
- **b)** Remove, clean threads, apply teflon thread sealant and reinstall.



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.

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.

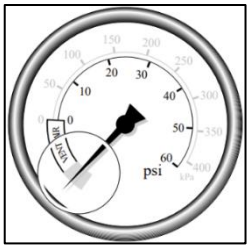
RUST INHIBITOR

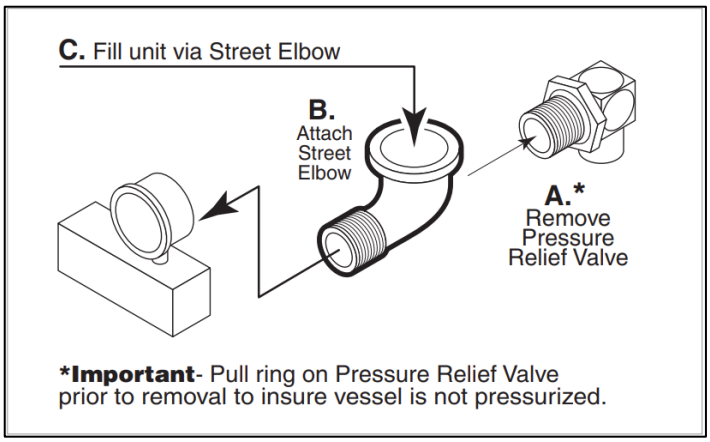
Use a “radiator rust inhibitor” that can be purchased at your local automotive centre. It should not contain any anti-freeze and preferably no lubricant.

To ensure satisfactory mixing follow the manufacturer’s instructions.

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

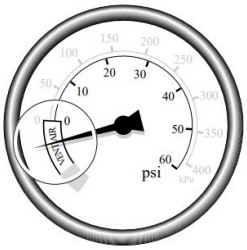
1. Ensure kettle is at room temperature and pressure gauge showing 0 PSI or less pressure.
2. Shut off power to the kettle at the fused disconnect switch.

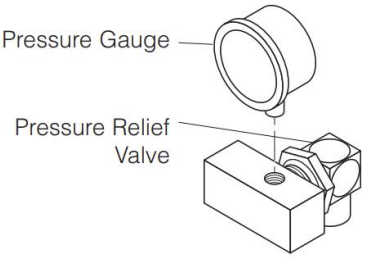




3. Pull Pressure Relief Valve (**A**) open to ensure vessel is not pressurized.
4. Remove Pressure Relief Valve (**A**).
5. Replace Pressure Relief Valve (**A**) with Street Elbow (**B**).
6. Add Spring Water (**C**) through the Street Elbow (**B**), using a funnel if necessary. Refer to SPRING WATER REQUIREMENTS chart for the proper amount required.
7. Apply a thread sealant (i.e. Teflon tape) to the Pressure Relief Valve's (**A**) thread and replace.
8. Restore power to unit at the fused disconnect switch.
9. The kettle must now be vented. (Refer to the KETTLE VENTING INSTRUCTIONS).

KETTLE VENTING INSTRUCTIONS





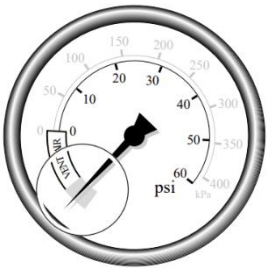
The following venting procedure should be followed when the Vacuum/Pressure Gauge needle is in the "VENT AIR" zone:

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

1. Set temperature to maximum 266°F on “Cook-On” mode. Heat the empty kettle until cycles off.
2. Vent kettle by pulling safety valve ring 8-10 times in short 2-3 second blasts with a 5 second interval between pulls.

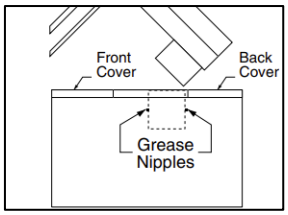
   NOTE: If unit cycles ON, stop venting and wait for kettle to cycle OFF before continuing.

3. 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.



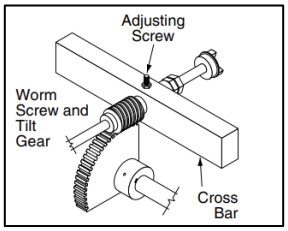
LUBRICATION PROCEDURE

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



MIXER BRIDGE HOUSING

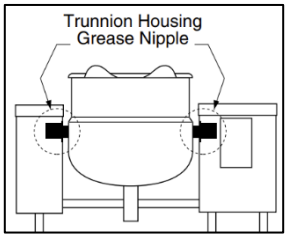
There are two grease nipples on the mixer bridge swivel housing which are accessed by removing the front and back covers on the 18" console.



TRUNNION HOUSING, WORM SCREW, AND TILT GEAR

These parts are accessed through the top cover of the console.

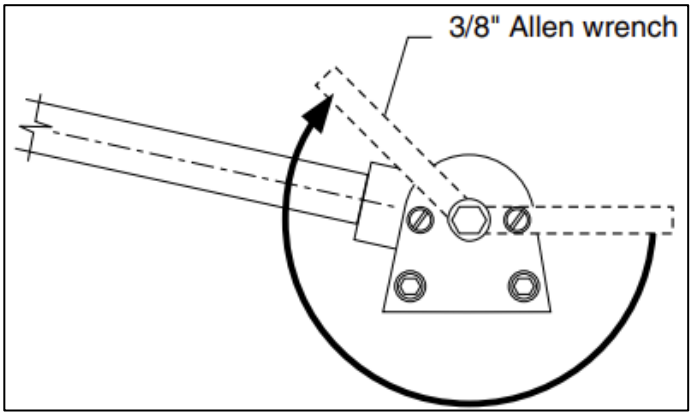
Apply grease to gear teeth. Check for excessive play and adjust with adjusting screw located on top of cross bar.



KETTLE TRUNNIONS

On the left-hand side of the kettle there are two grease nipples on the top back portion of the trunnion housing. On the right-hand side of the kettle you must remove the console cover to access the two grease nipples.

HINGE ADJUSTMENT INSTRUCTIONS



1. Insert 3/8" Allen wrench.
2. Turn clockwise to relieve tension on spring.
3. While tension is released remove one of the two slotted screws.
4. To prevent Allen wrench from springing back abruptly while the second slotted screw is removed, insert a pin (approximately 1/8) in the hole where the first slotted screw was removed from.
5. Remove second slotted screw.
6. While holding Allen wrench remove pin.
7. Turn Allen wrench clockwise to tighten or counter-clockwise to loosen tension to produce desired effect.
8. Re-insert pin in one of the two holes.
9. Tighten one slotted screw in the other hole (it may be necessary to turn Allen wrench slightly to align holes).
10. Remove pin and repeat step number 9 for other slotted screw.

RESERVOIR FILL PROCEDURE

The kettle's water level must be maintained at the proper level to submerge the heater elements. 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 heater elements. The following procedure must be completed before further use:

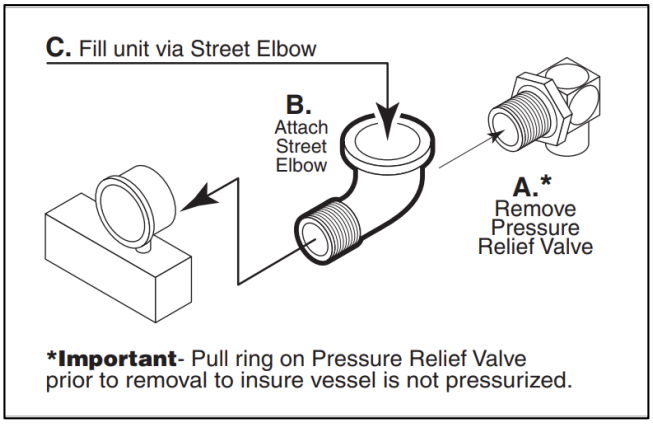
NOTE: Have a qualified service technician repair the leakage problem and add water to the unit. Ensure that the red "low water" light is on when the kettle is upright. On tilting kettles, it is normal for the red light to come on when the kettle is in a tilted position, as the elements are not submerged in water at this point.

CAUTION: Only a mixture of distilled water and rust inhibitor should be used when adding water to a partially filled water reservoir. Local tap water conditions may cause kettle damage which is not covered under warranty. Rust inhibitor is purchased locally. Read directions and do not exceed manufacturer's recommendation (excessive rust inhibitor can also cause solidification).

SPRING WATER REQUIREMENTS

Capacity	When Red “Low Water Light” comes on, add Distilled Water	When the Reservoir is Completely Empty, add Distilled Water
40 gallon	2.0 gallon	4.8 gallon
60 gallon	2.1 gallon	5.8 gallon
80 gallon	2.6 gallon	6.5 gallon
100 gallon	2.8 gallon	7.3 gallon

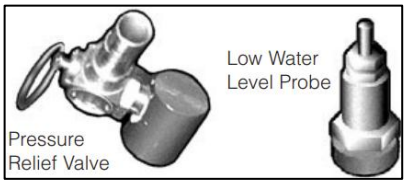
1. Ensure kettle is at room temperature and pressure gauge showing zero or less pressure.
2. Shut off power to the kettle at the fused disconnect switch.



3. Pull Pressure Relief Valve (**A**) open to ensure vessel is not pressurized.
4. Remove Pressure Relief Valve (**A**).
5. Replace Pressure Relief Valve (**A**) with Street Elbow (**B**).
6. Add Spring Water (**C**) through the Street Elbow (**B**), using a funnel if necessary. Refer to SPRING WATER REQUIREMENTS chart for the proper amount required.
7. Apply a thread sealant (i.e. Teflon tape) to the Pressure Relief Valve's (**A**) thread and replace.
8. Restore power to unit at the fused disconnect switch.
9. The kettle must now be vented. (Refer to the KETTLE VENTING INSTRUCTIONS.

DRAINING PROCEDURE

WARNING: THE FUSED DISCONNECT SWITCH MUST BE OFF BEFORE REMOVING THE KETTLES BOTTOM COVER.



1. Pull pressure relief valve to ensure there is no pressure within the kettle jacket.
2. Remove bottom covers.
3. Remove low water level probe and allow water to drain.
4. To rinse kettle jacket:
   - **a)** On tilting kettles: fill jacket from low water probe fitting.
   - **b)** On stationary kettles:
     - **i.** Replace low water probe.
     - **ii.** Remove pressure relief valve and replace with street elbow.
     - **iii.** Using a small funnel (one made of paper works great) slowly pour water into the kettle.
5. Allow kettle to drain again.
6. Repeat until water drains clear.

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.

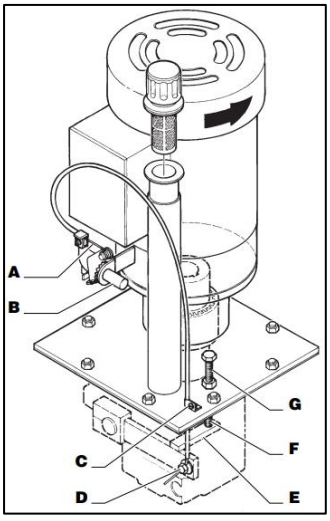
The oil filter should be changed at the same time as the hydraulic oil. A clean filter prevents particles from damaging the other components in the system.

Replace the hydraulic fluid as follows:

1. Disconnect power to unit.
2. Remove the front top panel on the main console.
3. Remove chrome vent cap from breather pipe located beside electric motor.
4. Remove plug bolt from bottom left front corner of main console to drain oil into your catch pail.
5. Remove oil filter.
6. Replace plug bolt.
7. 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.
8. Install new oil filter (Part# SE50094).
9. Replace chrome vent cap and front top panel.
10. Reconnect power to unit.
11. Run unit to remove any air in the lines.

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

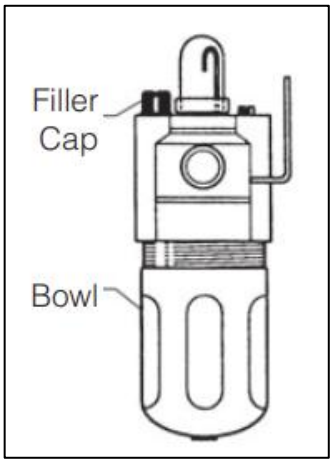
RE-INSTALLING SPEED CONTROL CABLE



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.

Cleveland

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