Operators Manual

Installation & Operation

Electric Table Top Mixers

MODELS:
MKET-12-T, MKET-20-T

For a complete Service Manual
refer to www.clevelandrange.com

Cleveland

Enodis

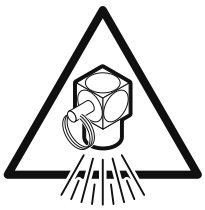
1333 East 179th St., Cleveland, Ohio, U.S.A. 44110

Phone: (216) 481-4900 Fax: (216) 481-3782
Visit our web site at www.clevelandrange.com

SE95015 Rev. 4

For your safety

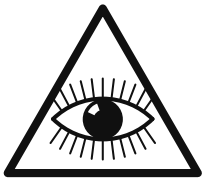
DANGER



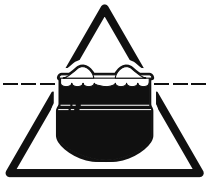
Keep clear of pressure relief discharge.

Keep hands away from moving parts and pinch points.

IMPORTANT



Inspect unit daily for proper operation.



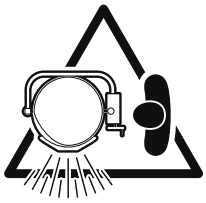
Do not fill kettle above recommended level marked on outside of kettle.

CAUTION

Surfaces may be extremely hot! Use protective equipment.

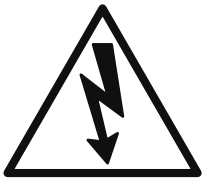
Wear protective equipment when discharging hot product.

Do not lean on or place objects on kettle lip.



Stand clear of product discharge path when discharging hot product.

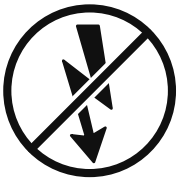
SERVICING



Shut off power at main fuse disconnect prior to servicing.

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

GAS APPLIANCES



Do not attempt to operate this appliance during a power failure.

Keep appliance and area free and clear of combustibles.

INSTALLATION

GENERAL

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/Ntl. Bd., CSA, CGA, ETL, and others. Many local codes exist, and it is the responsibility of the owner/installer to comply with these codes.

Note: Maximum voltage for LVD (low volt directive for Europe) to be 440 volts for CE marked appliances.

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.

INSTALLATION

The first installation step is to refer to the Specification Sheets or Specification Drawings for detailed clearance requirements of the kettle. Next, carefully cut open the shipping carton for easy removal of the kettle.

ASSEMBLY

Table-top models (12 gallon) must be positioned on a firm, level stand, or existing counter top, and bolted in place. These models are supplied with four threaded mounting bushings welded to the underside of the base. An optional support stand with level adjustable legs is available. Once the kettle is secure, screw tilt handle into the threaded hole provided at the right side of kettle.

Floor Type Leg Mount Models (20 gallon)

Position on a firm, level surface, and bolt flanged feet in place. Once the kettle is secure, screw tilt handle into the threaded hole provided at the right of kettle.

ELECTRICAL

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

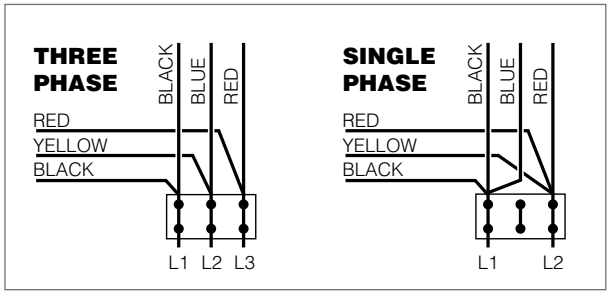
This kettle is built to comply with applicable standards of manufacturers. Included among these approval agencies are UL, NSF, ASME/Ntl. Bd., CSA, ETL, and others. Many local codes exist, and it is the responsibility of the owner and installer to comply with these codes.

The electrical 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.

Note: Maximum voltage for LVD (low volt directive for Europe) to be 440 volts for CE marked appliances.

WIRE CONNECTION

If unit does not have cord and plug option, remove the screw at the rear of the console cover and remove the cover. A wiring diagram is affixed to the underside of the cover. Feed permanent copper wiring through the cut-out in the rear or bottom of the console, and fasten to the three connection terminal block, which is mounted on the top of the console's control panel. Be sure to connect the ground wire to the separate ground terminal connector (ground lug). Replace console cover and secure it with the screw.



The kettle is wired for 3-phase operation at the factory. For single phase operation, rewire the terminal block to that shown in the above diagram.

WATER

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

INSTALLATION CHECKS

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

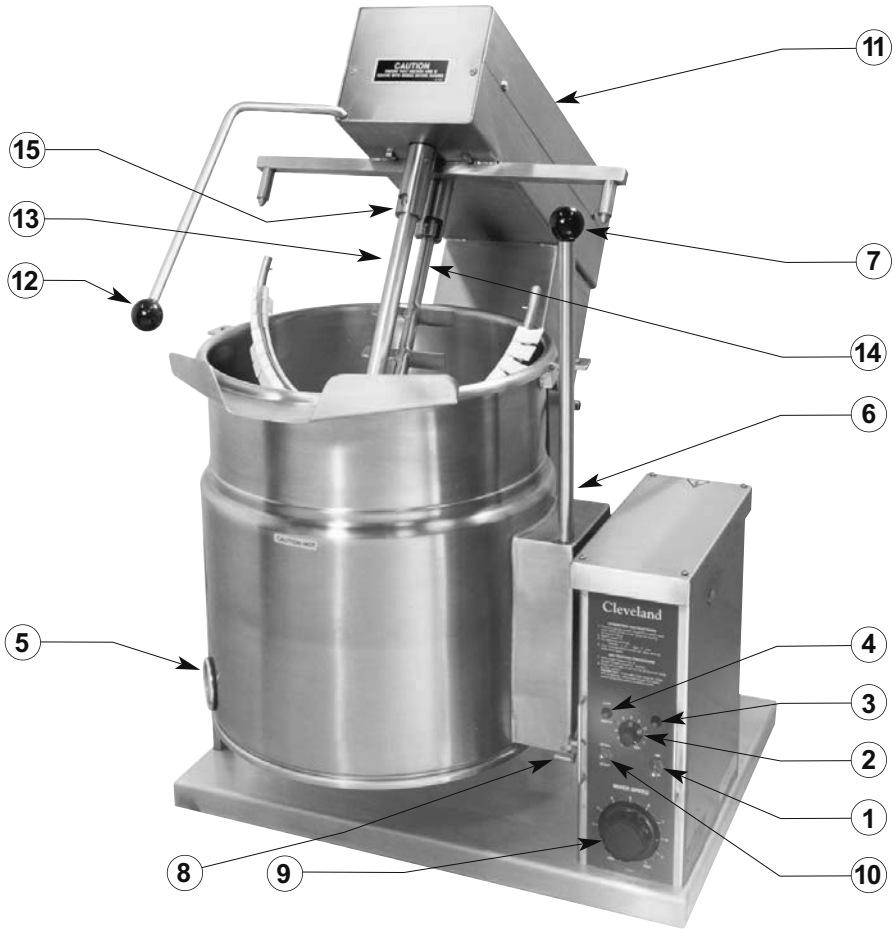
Performance Checks

1. Supply power to the kettle by placing the fused disconnect switch to the "ON" position.
2. Before turning the kettle on, read the vacuum/pressure gauge. The gauge's needle should be in the green zone.
3. Place the kettle's power ON/OFF switch to the "ON" position.
4. Turn the temperature control knob to "1" (Min.). The green LED light should remain lit, indicating the burner is lit, until the set temperature is reached (124°F/50°C). Then the green light will cycle on and off, indicating the element is cycling on and off to maintain temperature.
5. Tilt the kettle forward. After a few seconds the red "LOW WATER" light should be lit when the kettle is in a tilted position. This light indicates that the element has automatically been shut off by the kettle's safety circuit. This is a normal condition when the kettle is in a tilted position.
6. Raise the kettle to the upright position. The red "low water" light should go out when the kettle is upright.
7. Turn the temperature control knob to "10" (Max.) and allow the kettle to preheat. The green light should remain on until the set temperature (260°F/127°C) is reached. Then the green light will cycle ON and OFF, indicating the element is cycling ON and OFF to maintain temperature. Fill the kettle with cold water to the steam jacket's welded seam.
8. When all testing is complete, empty the kettle and place the power ON/OFF switch in the "OFF" position.

CLEANING

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

OPERATING INSTRUCTIONS



General Parts Drawing

ITEM #	DESCRIPTION	FUNCTION
1.	On-Off Toggle Switch	Controls electrical power to kettle.
2.	Solid State Temperature Control Knob	This control allows the operator to adjust the kettle temperature in increments from 1 (Min.) to 10 (Max.).
3.	Heat Indicator Light (Green)	When lit, indicates that the kettle burner is on. Cycles ON-OFF with burner.
4.	Low Water Indicator Light (Red)	When lit, indicates that the kettle is low on water and will not operate in this condition. This will also light when the kettle is tilted.
5.	Vacuum/Pressure Gauge	Indicates steam pressure in PSI inside steam jacket as well as vacuum in inches of mercury.
6.	Pressure Relief Valve	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.
7.	Kettle Tilt Handle	Used for tilting the kettle.
8.	Marine Lock	Prevents unit from accidental tilting.
9.	Agitator Speed Control Knob	This control allows the operator to select agitator speed increments from Min. to Max.
10.	Mixer Start Switch	Starts mixing action.
11.	Mixer Bridge	Encloses agitator motors.
12.	Mixer Bridge Tilt Handle	Used for tilting mixer bridge.
13.	Main Agitator Arm	Provides most of the product movement.
14.	Secondary Agitator Arm	Provides reverse agitation and product lift in kettle.
15.	Bayonet Mounts for Agitator Arms	Allows removal of main and secondary agitator arms without tools.

OPERATING THE KETTLE

DO NOT LEAN ON OR PLACE OBJECTS ON KETTLE LIP. SERIOUS INJURY COULD RESULT IF KETTLE TIPPED OVER, SPILLING HOT CONTENTS.

1. Before turning kettle on, read the Vacuum/Pressure Gauge (**5**). The gauges needle should be in the green zone. Once heated, the kettle's normal maximum operating pressure is approximately 10-12 psi, while cooking a water base product.

2. Ensure that the electrical service to the kettle is turned on at the fused disconnect switch.

3. Place the kettle's On-Off Toggle Switch (**1**) to the "ON" position.

Temperature Control Setting	Approximate Product Temperature °F	°C
1. (Min.)	130	54
2.	145	63
3.	160	71
4.	170	77
5.	185	85
6.	195	91
7.	210	99
8.	230	110
9.	245	118
10. (Max.)	260	127
NOTE: Certain combinations of ingredients will result in temperature variations		

Temperature Range Chart

4. Preheat the kettle by turning the Solid State Temperature Control Knob (**2**) to the desired temperature setting (see above "Temperature Range Chart"). The Heat Indicator Light (Green) (**3**) will remain lit, indicating the burner is lit, until the temperature setting is reached. When the green light goes off, the heaters are off, and preheating is complete.

NOTE: When cooking egg and milk products, the kettle should not be preheated, as products of this nature adhere to hot cooking surfaces. These types of food should be placed in the kettle before heating is begun.

5. Place food product into the kettle. The Heat Indicator Light (Green) (**3**) will cycle on and off indicating the elements are cycling on and off to maintain the set temperature.

NOTE: Do not fill kettle above recommended level marked on outside of kettle.

NOTE: The Low Water Indicator Light (Red) (**4**) should not be lit when kettle is in the upright position during kettle operation. This light indicates that the elements have been automatically shut off by the kettle's safety circuit. It is, however, normal for the red light to come on when the kettle is in a tilted position.

6. When cooking is completed place On-Off Toggle Switch (**1**) to the "OFF' position.

7. Pour the contents of the kettle into an appropriate container by tilting the kettle forward. Care should be taken to pour slowly enough to avoid splashing off the product.

NOTE: As with cleaning food soil from any cookware, an important part of kettle cleaning is to prevent food from drying on. For this reason, cleaning should be completed immediately after cooked foods are removed.

APPROXIMATE BOILING TIMES

The accompanying chart shows approximate times required for electric kettles of various capacities to boil water. The temperature control knob must be set at “10” (Max.) throughout the heat-up period. Water will boil about 1/3 faster if the kettle is filled only to the outer steam jacket’s welded seam. resulting in a kettle filled to 2/3 capacity.

Kettle Capacity	Minutes
12 gallon/45 litre	25
20 gallon/80 litre	40

Approximate Boiling Times

MIXING

1. Turn Mixer Start Switch (**10**) to ON.

2. Turn Agitator Speed Control Knob (**9**) until desired speed is achieved.

MARINE LOCK

Your unit is equipped with a marine lock to prevent accidental tilting. The following procedure should be used to tilt the kettle.

1. Grasp the tilt handle.

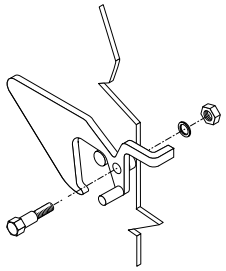
2. Hold the latch down to unlock tilting mechanism.

3. Pull the handle to tilt kettle.

4. To lock, return the kettle to its upright position and push handle back.

NOTE: Inspect lock daily to ensure it is free moving and does not bind or stick. Clean lock if necessary.

MARINE LOCK TESTING PROCEDURE



1. Check that lock clears stop pin on side box without rubbing when kettle is tilted (Figure **A**).

2. Check side to side play. Lock should remain fully over stop pin when pushed to it's maximum side to side play (Figure **B**).

3. Check that the kettle when pushed fully upright moves the lock to a closed position. To check this:

A/ Hold the latch firmly in the unlocked position while tilting the kettle back to an upright position.

B/ The kettle sidebox will force the lock into a new position.

C/ Hold the lock in this position and try to tilt the kettle forward. The latch should prevent the kettle from tilting.

4. Check shoulder bolt is firmly seated against console body.

5. Check on inside of console box that shoulder bolt locknut is secure.

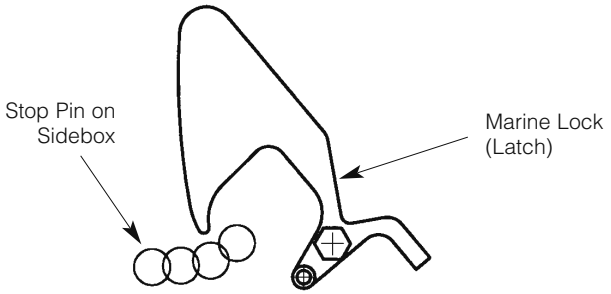


Figure **A** (Side View)

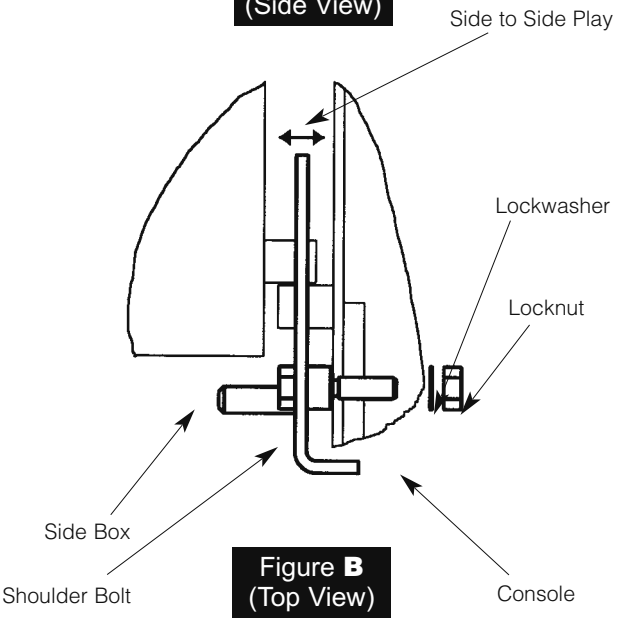


Figure **B** (Top View)

CLEANING INSTRUCTIONS

CARE AND CLEANING

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

WARNINGS

⇨ 

Chloride Cleaners

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

⇨ 
Wire Brush &

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. 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 the Nafem Stainless Steel Equipment Care and Cleaning manual (supplied with unit).

AGITATOR ASSEMBLY

1. Place the Kettle's On-Off Toggle Switch (**1**) to the "OFF' position.
2. Raise Mixer Bridge (**11**).
3. Push Main Agitator Arm towards Bayonet Mount (**15**), rotate counterclockwise and then pull out to remove. Repeat process for Secondary Agitator Arm (**14**).
4. Scraper blades can be removed by sliding them up the arm and rotating until free.
5. Clean all parts.

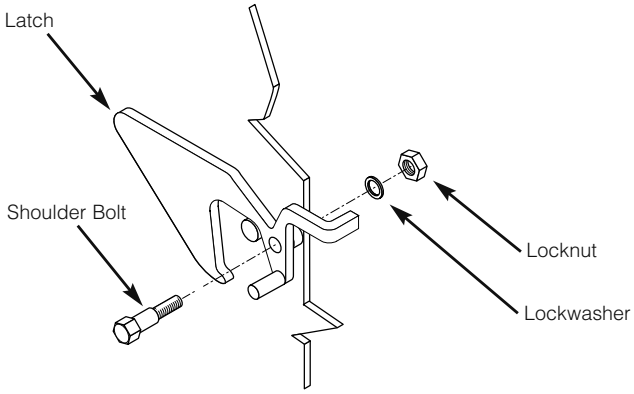
MARINE LOCK

Use a small nylon bristle brush to remove food and debris from pivot point. If lock is still sticking have maintenance disassemble and clean pieces individually and reassemble.**Disassembly**

1. Disconnect power from kettle.
2. Remove console cover from top of kettle's console.
3. Remove locknut and lockwasher from inside console.
4. Remove shoulder bold from latch.
5. Clean all parts.

Re-Assembly

6. Apply locktight to shoulderbolt where illustrated. Replace shoulder bolt and latch and tighten firmly.



7. Replace lockwasher and locknut inside the console and tighten firmly.
8. Test Marine Lock. See Marine Lock Testing Procedure.
9. Replace console cover.

STAINLESS STEEL EQUIPMENT CARE AND CLEANING

(Suppied courtesy of Nafem. For more information visit their web site at www.nafem.org)

Contrary to popular belief, stainless steels ARE susceptible to rusting.

Corrosion on metals is everywhere. It is recognized quickly on iron and steel as unsightly yellow/orange rust. Such metals are called "active" because they actively corrode in a natural environment when their atoms combine with oxygen to form rust.

Stainless steels are passive metals because they contain other metals, like chromium, nickel and manganese that stabilize the atoms. 400 series stainless steels are called ferritic, contain chromium, and are magnetic; 300 series stainless steels are called austenitic, contain chromium and nickel; and 200 series stainless, also austenitic, contains manganese, nitrogen and carbon. Austenitic types of stainless are not magnetic, and generally provide greater resistance to corrosion than ferritic types.

With 12-30 percent chromium, an invisible passive film covers the steel's surface acting as a shield against corrosion. As long as the film is intact and not broken or contaminated, the metal is passive and stain-less. If the passive film of stainless steel has been broken, equipment starts to corrode. At its end, it rusts.

Enemies of Stainless Steel

There are three basic things which can break down stainless steel's passivity layer and allow corrosion to occur.

1. Mechanical abrasion
2. Deposits and water
3. Chlorides

Mechanical abrasion means those things that will scratch a steel surface. Steel pads, wire brushes and scrapers are prime examples.

Water comes out of the faucet in varying degrees of hardness. Depending on what part of the country you live in, you may have hard or soft water. Hard water may leave spots, and when heated leave deposits behind that if left to sit, will break down the passive layer and rust stainless steel. Other deposits from food preparation and service must be properly removed.

Chlorides are found nearly everywhere. They are in water, food and table salt. One of the worst chloride perpetrators can come from household and industrial cleaners.

So what does all this mean? Don't Despair!

Here are a few steps that can help prevent stainless steel rust.

1. *Use the proper tools.*

   When cleaning stainless steel products, use non-abrasive tools. Soft cloths and plastic scouring pads will not harm steel's passive layer. Stainless steel pads also can be used but the scrubbing motion must be in the direction of the manufacturers' polishing marks.

2. *Clean with the polish lines.*

   Some stainless steel comes with visible polishing lines or "grain." When visible lines are present, always scrub in a motion parallel to the lines. When the grain cannot be seen, play it safe and use a soft cloth or plastic scouring pad.

3. *Use alkaline, alkaline chlorinated or non-chloride containing cleaners.*

   While many traditional cleaners are loaded with chlorides, the industry is providing an ever-increasing choice of non-chloride cleaners. If you are not sure of chloride content in the cleaner used, contact your cleaner supplier. If your present cleaner contains chlorides, ask your supplier if they have an alternative. Avoid cleaners containing quaternary salts; it also can attack stainless steel and cause pitting and rusting.

4. *Treat your water.*

   Though this is not always practical, softening hard water can do much to reduce deposits. There are certain filters that can be installed to remove distasteful and corrosive elements. To insure proper water treatment, call a treatment specialist.

5. *Keep your food equipment clean.*

   Use alkaline, alkaline chlorinated or non-chloride cleaners at recommended strength. Clean frequently to avoid build-up of hard, stubborn stains. If you boil water in stainless steel equipment, remember the single most likely cause of damage is chlorides in the water. Heating cleaners that contain chlorides have a similar effect.

6. *Rinse, rinse, rinse.*

   If chlorinated cleaners are used, rinse and wipe equipment and supplies dry immediately. The sooner you wipe off standing water, especially when it contains cleaning agents, the better. After wiping equipment down, allow it to air dry; oxygen helps maintain the stainless steel's passivity film.

7. *Never use hydrochloric acid (muriatic acid) on stainless steel.*
8. *Regularly restore/passivate stainless steel.*

Recommended cleaners for specific situations

Job	Cleaning Agent	Comments
Routine cleaning	Soap, ammonia, detergent, Medallion	Apply with cloth or sponge
Fingerprints & smears	Arcal 20, Lac-O-Nu Ecoshine	Provides barrier film
Stubborn stains & discoloration	Cameo, Talc, Zud, First Impression	Rub in direction of polish lines
Grease & fatty acids, blood, burnt-on-foods	Easy-off, De-Grease It Oven Aid	Excellent removal on all finishes
Grease & oil	Any good commercial detergent	Apply with sponge or cloth
Restoration/Passivation	Benefit, Super Sheen	

Review

1. Stainless steels rust when passivity (film-shield) breaks down as a result of scrapes, scratches, deposits and chlorides.
2. Stainless steel rust starts with pits and cracks.
3. Use the proper tools. Do not use steel pads, wire brushes or scrapers to clean stainless steel.
4. Use non-chlorinated cleaners at recommended concentrations. Use only chloride- free cleaners.
5. Soften your water. Use filters and softeners whenever possible.
6. Wipe off cleaning agent(s) and standing water as soon as possible. Prolonged contact causes eventual problems.

To learn more about chloride-stress corrosion and how to prevent it, contact the equipment manufacturer or cleaning materials supplier.

Developed by Packer Engineering, Naperville, Ill., an independent testing laboratory.

MAINTENANCE

ALL SERVICE MUST BE PERFORMED BY A QUALIFIED SERVICE TECHNICIAN.

Cleveland Range equipment requires little preventative maintenance. We do however provide the following chart as a guideline for inspection and maintenance to keep your unit functioning at 100%.

INSPECTION AND MAINTENANCE CHECK LIST

The following check should be completed every six months or more frequently if unit is in a high volume facility.

WARNING: It is imperative that damaged seals be repaired immediately to prevent equipment failure and/or damage.

ITEM	CHECK
CONSOLE COVER SEAL	Insure there are four screws firmly holding down the cover. If not replace screws and/or missing or worn nylon anchor nuts.
BOTTOM COVER GASKET	Check to see it is in place and is not cracked or split.
TILTING	Check that kettle tilts smoothly. Grease as described in Bearing Lubrication Procedure.
TILT HANDLE	Check handle for tightness. If loose apply lock tight and reinstall. Check handle knob is on end of handle and firmly tightened. If loose apply lock tight and reinstall.
PRESSURE GAUGE	Check that the gauge does not have moisture on its inside face. Replace if moisture is present. Check that the gauge shows a vacuum (needle is well into the Green zone) when cold and shows between 25-40 psi when unit is hot. If not follow Vacuum Leak Test Procedure. Check that the "O" Ring is in place and is not cracked or split. Check that the gauge is firmly held against the "O" Ring and kettle body. Tighten if necessary. Refer to Pressure Gauge "O" Ring Replacement Procedure if replacement of gauge or "O" Ring is required.
PRESSURE RELIEF VALVE	Check pressure relief valve as described in Pressure Relief Valve Testing Procedure.
TEMPERATURE CHECK	Following Calibrating Procedure check the inner kettle surface temperature with a digital surface thermometer and adjust if required.

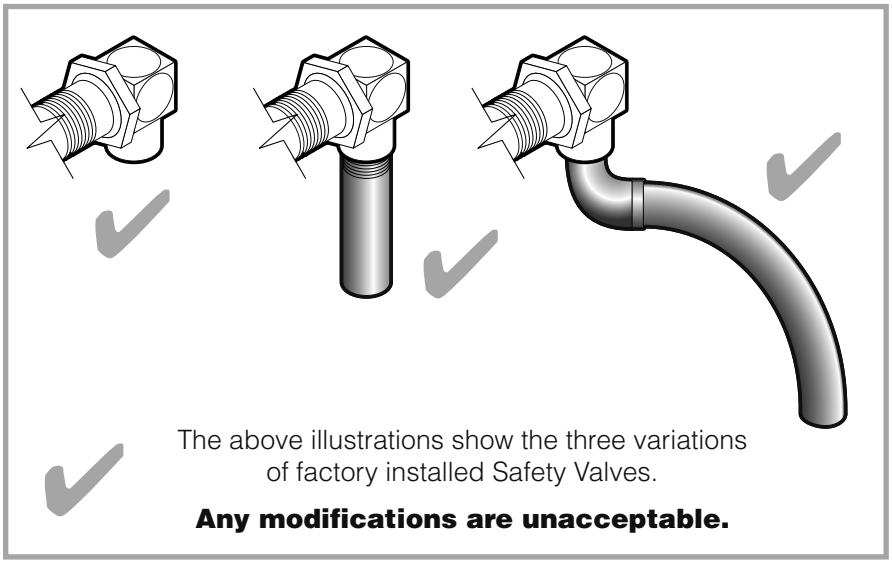
Kettle Safety Inspection Checklist

Just recently a competitor's steam jacketed kettle exploded causing serious personal injury and damage to a kitchen. In most cases these accidents are caused by poor maintenance and/or incorrect installation.

We at Cleveland would like to restate that regular inspection and maintenance of units is essential to obtain trouble free and safe operation of equipment. Inspections must include testing of the pressure relief valve and checks of the operating system to insure that it has not been altered.

***No safety features designed into the equipment should ever be tampered with**. Tampering with or bypassing controls is a very dangerous practice and unfortunately we have seen several cases of this. Following is a short list of the most common and the most dangerous alterations performed on kettles.*

SAFETY VALVE:



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

Any modifications are unacceptable.

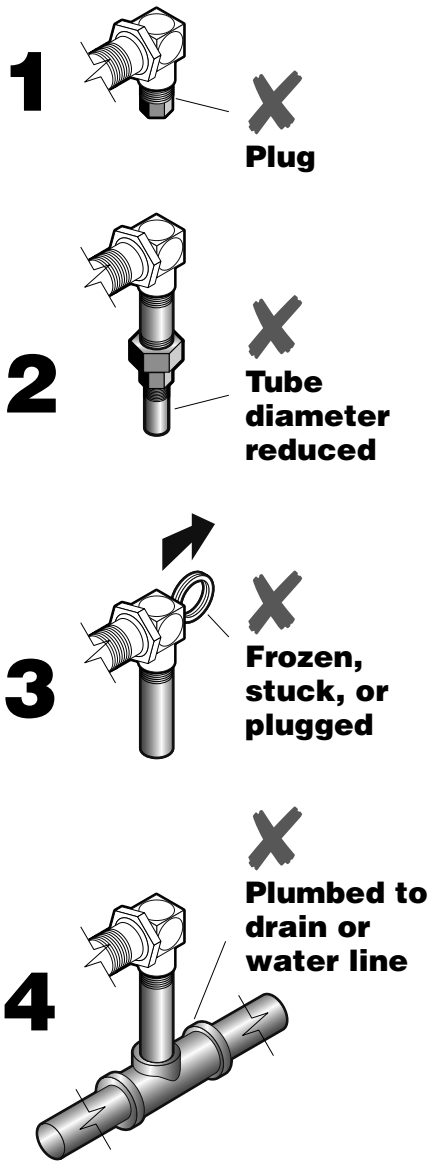
Incorrect Installations

1 Safety valve has plug threaded into the discharge opening preventing any steam from escaping.

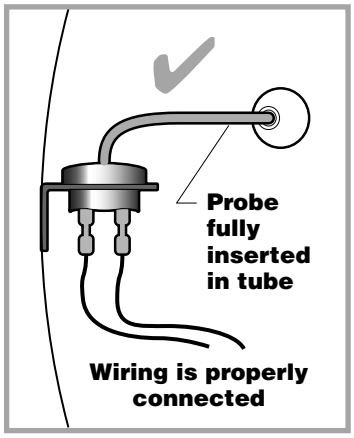
2 Safety valve's tube diameter has been reduced.

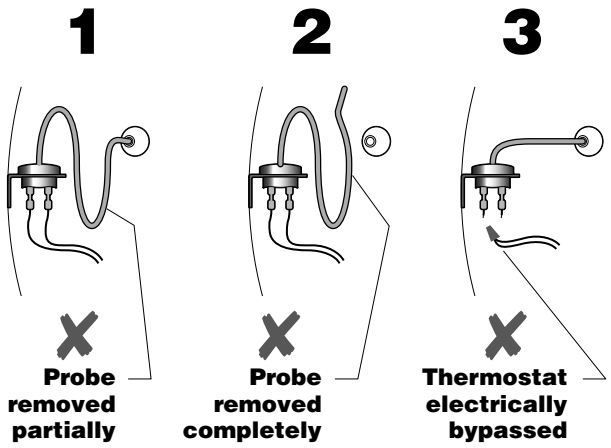
3 Safety valve is sticking, frozen shut or plugged. To test, refer to Service Bulletin SE90038 rev. 2, "Pressure Relief Valve Periodic Testing".

4 Safety valve is plumbed to a drain or water line creating back pressure and reducing flow.



SAFETY THERMOSTAT:





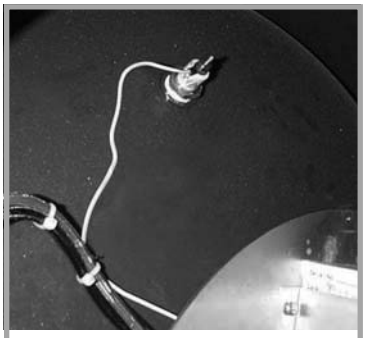
Incorrect Installations

1 Safety thermostat probe is not completely inserted into tubing.

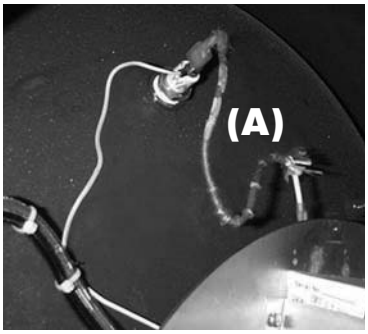
2 Safety thermostat probe is removed from tubing.

3 Safety thermostat electrical connection is bypassed.

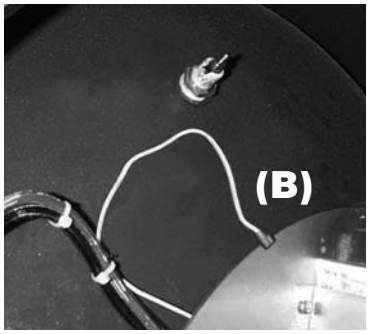
Low Water Level Probe:



Probe properly attached

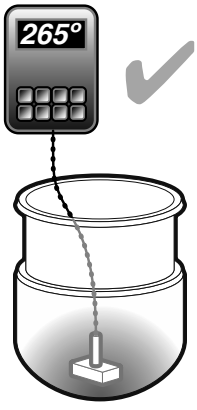


Probe bypassed by running (A) an additional wire



Probe bypassed by (B) grounding the connecting wire

Operating Thermostat:



260° - 270° MAXIMUM KETTLE TEMPERATURE

If maximum temperature is not in this range (on empty kettle), refer to the “Calibrating Procedure” in the unit’s Installation, Operation & Service Manual.