



## **COOK/CHILL GAS HORIZONTAL AGITATOR STATIONARY MIXER KETTLES**

- MODELS:**  HA-MKGL-60-CC  
 HA-MKGL-80-CC  
 HA-MKGL-100-CC



### **Cleveland Standard Features**

- Full 60, 80 or 100 gallon working capacity
- Type 316 stainless steel for all food contact surfaces
- Precise solid state temperature control
- Solid state low water safety controls in a plug-in module
- L.E.D. indicators for heat cycle and low water warning
- 3" diameter air operated flush mounted piston draw-off valve with variable control (requires air compressor)
- Flush mounted, easily removable temperature probe
- Spring assisted, hinged stainless steel cover
- Three (3) horse power horizontal agitator drive
- Variable mixer speed control from 5 to 20 r.p.m. with agitator start/stop controls
- Spring loaded blades scrape the entire heated surface area
- Internal mixing fins for efficient, uniform mixing of products
- Easily removable agitator without the use of tools
- 190 M-BTU high efficiency power burner heating system for fast heat-up and recovery times
- "Glow type" automatic safety ignition system
- Kettle steam jacket permanently filled with treated distilled water
- 50 psi steam jacket rating and safety valve
- Front mounted combination pressure-vacuum gauge
- Heavy duty rim bar
- Hot and cold water kettle filler with swing spout
- Standard for Natural Gas operation
- Standard Electrical for agitator drive is 208V/3Ph/60Hz
- AGA, CGA, NSF approved
- Accepted for use in USDA inspected facilities

**Note:** This **COOK-CHILL Mixer Kettle** requires a control panel for operation which must be specified separately

### **Standard Features for remote mounted Cook-Chill Kettle Control Panel:**

- Precise, consistent temperature control with digital read-out
- Time/Temperature chart recorder to provide permanent record of batch production
- Automatic water meter for cold water
- Automatic and manual heating control
- Built to U.L. specifications

### **Options & Accessories**

- Dual remote mounted cook-chill kettle control panel
- Kettle mounted control center with time/temperature chart recorder
- Dolly for horizontal agitator

ITEM NUMBER \_\_\_\_\_

JOB NAME / NUMBER \_\_\_\_\_



### **Short Form Specifications**

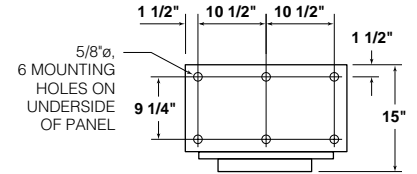
Shall be CLEVELAND Model HA-MKGL-\_\_\_\_-CC, gas fired, \_\_\_\_ gallon operating capacity, COOK/CHILL, stationary horizontal agitator mixer kettle, 190M BTU High Efficiency Power Burner heating system, type 316 Stainless Steel for all food contact surfaces, 50 psi jacket rating, Spring Assist Cover, 3HP Motor Drive for mixer arm with variable speed control, 3" Air Operated Piston Draw-off Valve, Flush Mounted Temperature Probe, Water Fill Faucet for hot and cold water.

**NOTE:** Specify remote or kettle mounted cook/chill control panel

- Stainless steel bi-fold hinged cover
- Electric chain hoist for loading products
- Loading buckets
- Kettle Accessory Kit (KAK) includes:
  - Clean-up Brush (CB)       36" Kettle Paddle (KP)
  - 36" Kettle Whip (KW)       36" Kettle Brush (KB)
  - Draw-off Brush (DB)       24 oz. Ladle (KL)
- Water fill faucet with swing spout for cold water only (SPK)
- Option for propane gas operation (PG)
- Voltage option for agitator drive other than standard 208V/3Ph/60Hz

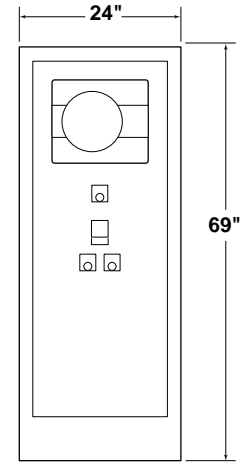
# SPECIFICATIONS

<b>ELECTRICAL SUPPLY</b>  <b>VOLTS:</b> 208/240 <b>PHASE:</b> 3 <b>AMPS:</b> 15 <b>FREQ:</b> 60 HZ	<b>GAS SUPPLY (PIPING 3/4" NPT)</b>  <b>TYPE:</b> NAT or LP <b>BTU PER CU. FT.:</b> 1000 (NAT), 2500 (LP) <b>SUPPLY PRESSURE:</b> 4" to 14" W.C. <b>BTU RATINGS:</b> 190,000 per hour	<b>A AIR SUPPLY (PIPING 1/2" NPT)</b>  <b>PRESSURE:</b> 90 - 100 PSI <b>FLOW RATE:</b> 1/2 cfm (for piston draw-off valve) 25 cfm (for food pump operation)	<b>APPROX. SHIPPING WEIGHTS</b>  <b>60 GAL -</b> 980 LBS. 446 KG. <b>80 GAL -</b> 1070 LBS. 487 KG. <b>100 GAL -</b> 1150 LBS. 523 KG.
		<b>H/C HOT &amp; COLD WATER</b>  3/4" NPT CONNECTION 40-60 PSI PRESSURE	

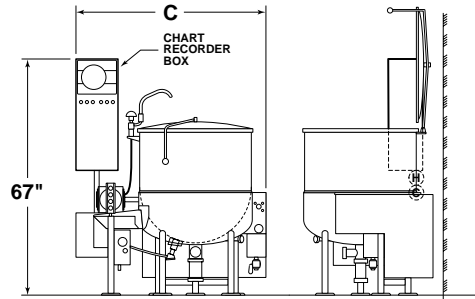
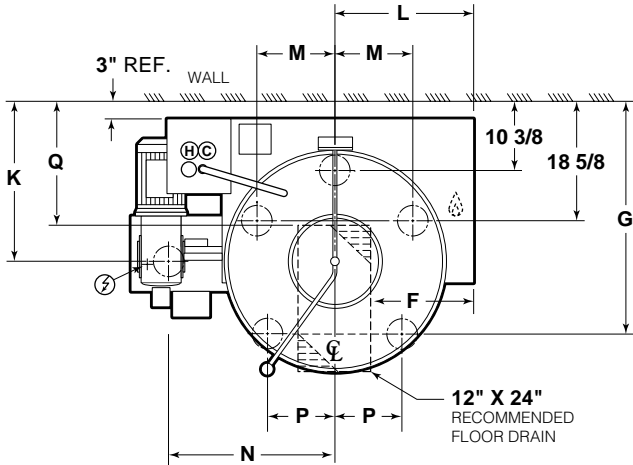


## REMOTE CONTROL PANEL FLOOR MOUNT MODEL (HA-SE-CC)

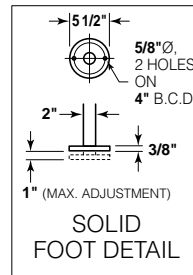
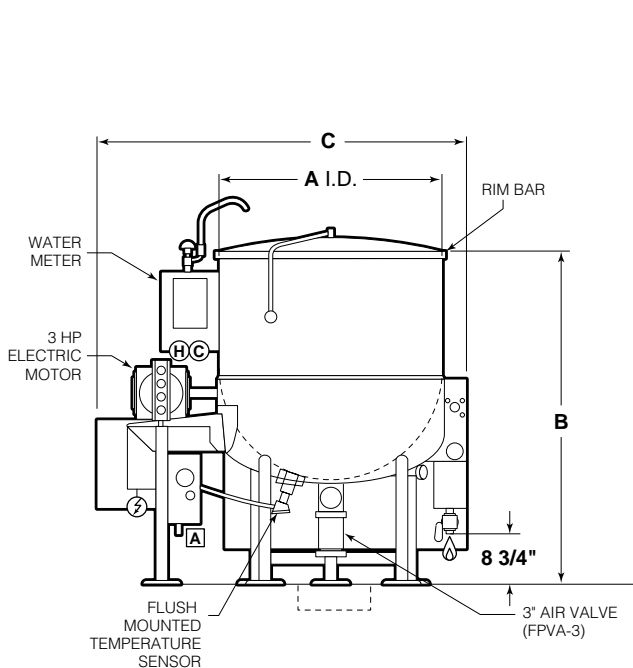
- REMOTE OR KETTLE MOUNTED CONTROL FEATURES
- TEMPERATURE CONTROL WITH DIGITAL READ OUT
  - TIME/TEMPERATURE CHART RECORDER
  - AUTOMATIC WATER METER FOR COLD WATER ONLY



**MINIMUM CLEARANCE**  
 FRONT: 36", SIDES: 12", REAR: 0"  
**APPROX. SHIPPING WEIGHT**  
 650 LBS., 296 KG.

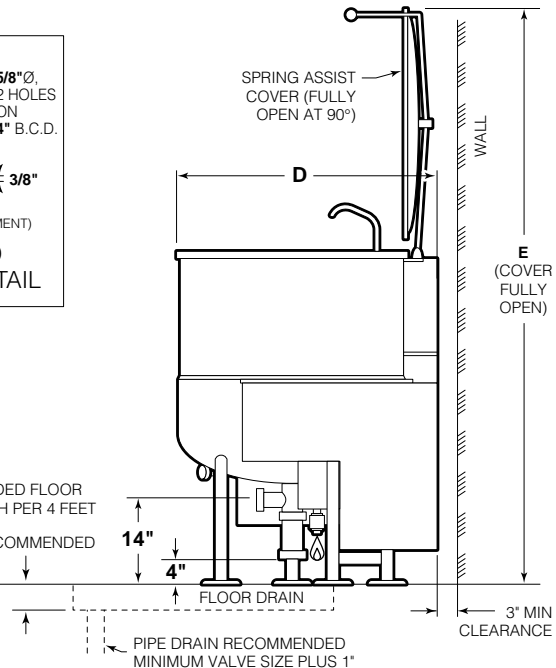


OPTIONAL KETTLE MOUNTED CONTROL PANEL WITH CHART RECORDER



RECOMMENDED FLOOR SLOPE 1 INCH PER 4 FEET

SPRING ASSIST COVER (FULLY OPEN AT 90°)



## DIMENSIONS

MODEL	A	B	C	D	E	F	G	K	L	M	N	P	Q
HA-MKGL-60-CC	29 1/2"	48 1/4"	50"	36 1/2"	83"	13 1/8"	34 5/8"	23 7/8"	19 1/8"	10 3/32"	24"	9 3/4"	17 7/8"
HA-MKGL-80-CC	33"	51 3/4"	58"	39"	90"	14 7/8"	35 15/16"	24 5/8"	20 7/8"	11 17/32"	26"	9 3/4"	18 5/8"
HA-MKGL-100-CC	35 1/2"	54 1/4"	60 1/2"	40 3/4"	96"	16 1/8"	37 1/8"	25 1/4"	22 1/8"	12 3/4"	27 1/4"	11"	19 1/4"

**NOTES:** MANUFACTURER MUST BE NOTIFIED IF UNIT WILL BE OPERATING ABOVE 2000' ALTITUDE. CONSULT FACTORY FOR MANUFACTURED GAS. ALL VERTICAL DIMENSIONS SHOWN ARE MINIMUM. FEET ARE ADJUSTABLE TO +1" MAXIMUM.

Cleveland Range reserves right of design improvement or modification, as warranted.



### **COOK/CHILL GAS HORIZONTAL AGITATOR TILTING MIXER KETTLES**

- MODELS:**  HA-MKGL-60-TCC  
 HA-MKGL-80-TCC  
 HA-MKGL-100-TCC



#### **Cleveland Standard Features**

- Full 60, 80 or 100 gallon working capacity
- Type 316 stainless steel for all food contact surfaces
- Precise solid state temperature control
- Solid state low water safety controls in a plug-in module
- L.E.D. indicators for heat cycle and low water warning
- 3" diameter air operated flush mounted piston draw-off valve with variable control (requires air compressor)
- Flush mounted, easily removable temperature probe
- Spring assisted, hinged stainless steel cover
- Three (3) horse power horizontal agitator drive
- Variable mixer speed control from 5 to 20 r.p.m. with agitator start/stop controls
- Spring loaded teflon blades scrape the entire heated surface area
- Internal mixing fins for most efficient, uniform mixing of products
- Easily removable agitator without the use of tools
- 190 M-BTU high efficiency power burner heating system for fast heat-up and recovery times
- "Glow type" automatic safety ignition system
- Power tilt mechanism with case hardened self-locking worm and segment gear
- Kettle steam jacket permanently filled with treated distilled water
- 50 psi steam jacket rating and safety valve
- Front mounted combination pressure-vacuum gauge
- Heavy duty rim bar
- Hot and cold water kettle filler with 60" hose
- Standard for Natural Gas operation
- Standard Electrical for agitator drive is 208V/3Ph/60Hz
- AGA, CGA, NSF approved
- Accepted for use in USDA inspected facilities

**Note:** This COOK-CHILL Mixer Kettle requires a control panel for operation which must be specified separately

#### **Standard Features for remote mounted Cook-Chill Kettle Control Panel:**

- Precise, consistent temperature control with digital read-out
- Time/Temperature chart recorder to provide permanent record of batch production
- Automatic water meter for cold water
- Automatic and manual heating control
- Built to U.L. specifications

#### **Options & Accessories**

- Dual remote mounted cook-chill kettle control panel
- Kettle mounted control center with time/temperature chart recorder
- Dolly for horizontal agitator

ITEM NUMBER \_\_\_\_\_

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#### **Short Form Specifications**

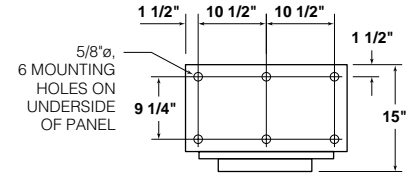
Shall be CLEVELAND Model HA-MKGL- \_\_\_\_ -TCC, gas fired, \_\_\_\_ gallon operating capacity, COOK/CHILL, tilting horizontal agitator mixer kettle, 190M BTU High Efficiency Power Burner heating system, type 316 Stainless Steel for all food contact surfaces, 50 psi jacket rating, Spring Assist Cover, 3HP Motor Drive for mixer arm with variable speed control, 3" Air Operated Piston Draw-off Valve, Flush Mounted Temperature Probe, Water Fill Faucet for hot and cold water.

**NOTE:** Specify remote or kettle mounted cook/chill control panel

- Stainless steel bi-fold hinged cover
- Electric chain hoist for loading products
- Loading buckets
- Food Strainer (FS)
- Kettle Accessory Kit (KAK) includes:
  - Clean-up Brush (CB)       36" Kettle Paddle (KP)
  - 36" Kettle Whip (KW)       36" Kettle Brush (KB)
  - Draw-off Brush (DB)       24 oz. Ladle (KL)
- Water fill faucet with swing spout for cold water only (SPK)
- Option for propane gas operation (PG)
- Voltage option for agitator drive other than standard 208V/3Ph/60Hz

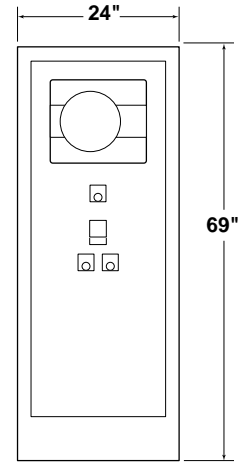
# SPECIFICATIONS

<b>ELECTRICAL SUPPLY</b>  <b>VOLTS:</b> 208/240 <b>PHASE:</b> 3 <b>AMPS:</b> 15 <b>FREQ:</b> 60 HZ	<b>GAS SUPPLY (PIPING 3/4" NPT)</b>  <b>TYPE:</b> NAT or LP <b>BTU PER CU. FT.:</b> 1000 (NAT), 2500 (LP) <b>SUPPLY PRESSURE:</b> 4" to 14" W.C. <b>BTU RATINGS:</b> 190,000 per hour	<b>A AIR SUPPLY (PIPING 1/2" NPT)</b>  <b>PRESSURE:</b> 90 - 100 PSI <b>FLOW RATE:</b> 1/2 cfm (for piston draw-off valve) 25 cfm (for food pump operation)	<b>APPROX. SHIPPING WEIGHTS</b>  <b>60 GAL -</b> 1050 LBS. 478 KG. <b>80 GAL -</b> 1160 LBS. 528 KG. <b>100 GAL -</b> 1365 LBS. 621 KG.
		<b>H/C HOT &amp; COLD WATER</b>  3/4" NPT CONNECTION 40-60 PSI PRESSURE	

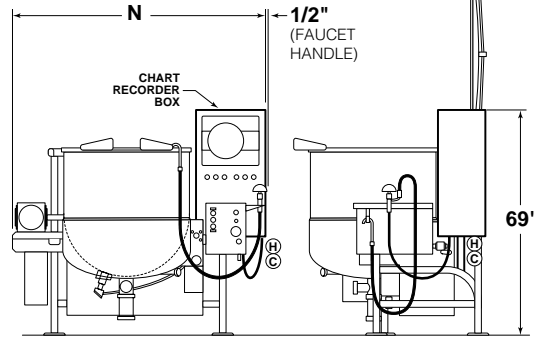
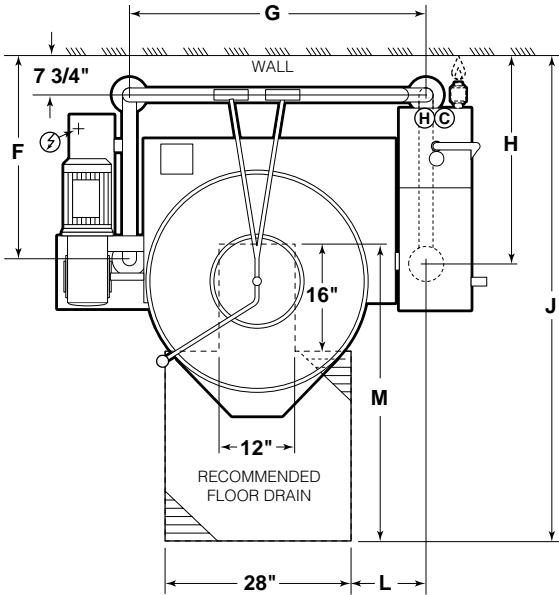


## REMOTE CONTROL PANEL FLOOR MOUNT MODEL (HA-SE-CC)

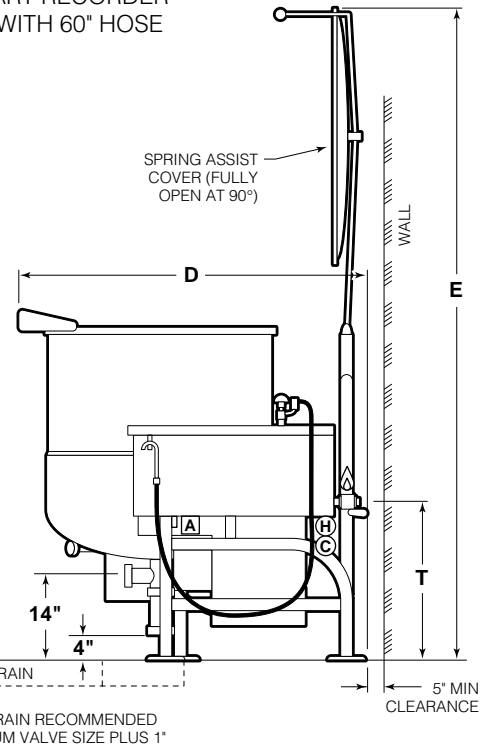
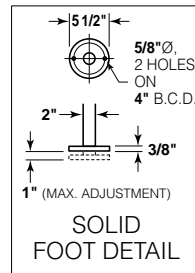
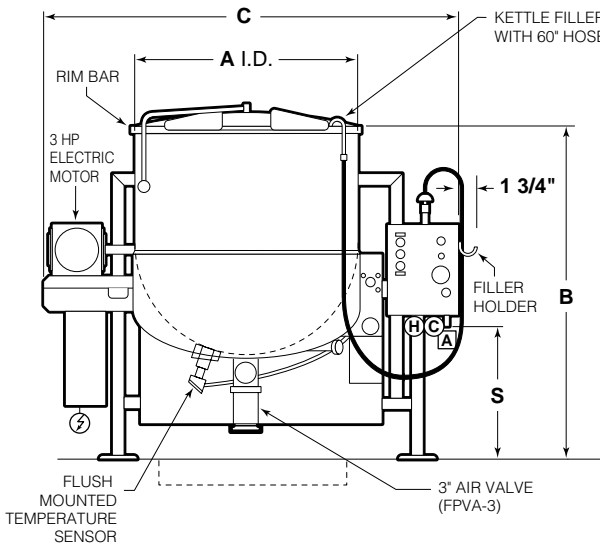
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- TEMPERATURE CONTROL WITH DIGITAL READ OUT
  - TIME/TEMPERATURE CHART RECORDER
  - AUTOMATIC WATER METER FOR COLD WATER ONLY



**MINIMUM CLEARANCE**  
 FRONT: 36", SIDES: 12", REAR: 0"  
**APPROX. SHIPPING WEIGHT**  
 650 LBS., 296 KG.



## OPTIONAL KETTLE MOUNTED CONTROL PANEL WITH CHART RECORDER INCLUDES KETTLE FILLER WITH 60" HOSE



## DIMENSIONS

MODEL	A	B	C	D	E	F	G	H	J	L	M	N	S	T
HA-MKGL-60-TCC	29 1/2"	48 1/4"	61 5/8"	46 3/4"	93"	27 3/4"	42"	30 5/8"	78"	10 3/8"	53"	65 5/8"	19 1/4"	24 1/2"
HA-MKGL-80-TCC	33"	51 3/4"	65 3/8"	52"	98"	30 3/4"	45 11/16"	33 5/8"	84"	11 7/16"	57"	69 3/8"	20 3/4"	26 3/16"
HA-MKGL-100-TCC	35 1/2"	54 1/4"	68 3/8"	55"	104"	32 3/4"	48 3/16"	35 5/8"	95 5/8"	11 5/8"	66"	72 3/8"	22"	27 5/8"

**NOTES:** MANUFACTURER MUST BE NOTIFIED IF UNIT WILL BE OPERATING ABOVE 2000' ALTITUDE. CONSULT FACTORY FOR MANUFACTURED GAS. ALL VERTICAL DIMENSIONS SHOWN ARE MINIMUM. FEET ARE ADJUSTABLE TO +1" MAXIMUM.

Cleveland Range reserves right of design improvement or modification, as warranted.



# Operators Manual

Installation, Operation & Service

## GAS MIXING KETTLES HORIZONTAL AGITATOR

**MODEL:** HA-MKGL-60      HA-MKGL-60-T  
          HA-MKGL-80      HA-MKGL-80-T  
          HA-MKGL-100    HA-MKGL-100-T  
  
          HA-MKGL-60-CC    HA-MKGL-60-CC-T  
          HA-MKGL-80-CC    HA-MKGL-80-CC-T  
          HA-MKGL-100-CC   HA-MKGL-100-CC-T



Enodis

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Visit our web site at [www.clevelandrange.com](http://www.clevelandrange.com)

SE95022 Rev. 2

# FOR THE USER

## **IMPORTANT!**

**ENSURE KETTLE IS AT ROOM TEMPERATURE AND PRESSURE GAUGE IS SHOWING ZERO OR LESS PRESSURE PRIOR TO REMOVING ANY FITTINGS.**

### **FOR YOUR SAFETY**

DO NOT STORE OR USE GASOLINE OR ANY OTHER FLAMMABLE LIQUIDS AND VAPOURS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

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

## **IMPORTANT**

The following points are to insure the safe installation and operation of this equipment:

- Insure all gas and electrical supplies match rating plate and electrical stickers.
- Observe all clearance requirements.
- Disconnect the electrical power supply to the appliance before cleaning or servicing unit.
- All service must be performed by a qualified Cleveland Range Technician.
- Do not obstruct the flow of combustion and ventilation air.

The installation and connection must comply with current local codes, or in the absence of local codes, with CAN/CGA-B149.1 and .2 installation code or with the national fuel gas code, ANSI Z223.1-L988.

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

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

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

**RETAIN THIS MANUAL FOR YOUR REFERENCE.**

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# INSTALLATION

## GENERAL

Installation of the kettle must be accomplished by qualified 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, A.G.A., NSF, ASME/N.Bd., CSA, CGA, 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 to provide proper make-up air flow as well as sufficient clearance for servicing.

Dimensions and clearance specifications are shown on the specification sheet and in the Clearance Requirements section. Do not install kick plates or otherwise obstruct the flow of combustion and ventilation air.

Check rating plate to ensure that kettle has been equipped to operate with the type of gas available at the installation.

## VENTILATION

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

## INSPECTION

Before unpacking visually inspect the unit for evidence of damage during shipping. If damage is noticed, do not unpack the unit, follow shipping damage instructions.

## SHIPPING DAMAGE INSTRUCTIONS

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

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

## CLEARANCE REQUIREMENTS

See SPECIFICATION DRAWINGS on page #3-4.

## KETTLE

1. When removing the kettle from the platform, handle with care to prevent scratching or any other damage. It is imperative that the kettle be level before bolting to the floor. This will prevent any twist or out of roundness to the kettle and will stop deflection of the agitator. Make sure the kettle is securely bolted to the floor and follow the procedure listed below:
  - ⇒ Raise the flange on the leg under the motor so that it sets freely (stationary kettles only).
  - ⇒ Position the kettle in its permanent location, check clearances and level the kettle by turning the adjustable feet.
  - ⇒ Lower the flange or flanges under the motor channel. Over adjustment, whether up or down, could cause misalignment and cause damage to the agitator drive shaft and hub (stationary kettles only).
2. Next you must check the alignment of the drive shaft for a uniform clearance between the hub and the shaft. In order to check for clearance you must remove the seal cover plate and pull the seal back. you can check the distance for clearance by using a wire feeler gauge.
3. If adjustment is required for side direction, loosen the motor bolts, center the shaft and retighten. If vertical alignment is needed, loosen the motor bolts and add a shim to raise or remove a shim to lower. Retighten bolts. When this is complete, check to see if the agitator shaft coupling slides freely for easy removal of the agitator.
4. Once positioned and leveled, permanently secure the kettle's flanged feet to the floor using 1/2 x 2 1/2 inch lag bolts and floor anchors (supplied by the installer). Two bolts per leg are required to secure each of the flanged feet.

## **GAS**

It is recommended that a sediment trap (drip leg) be installed in the gas supply line. If the gas pressure exceeds 14" water column, a pressure regulator must be installed, to provide a maximum of 14" water column gas pressure to the gas control valve.

Connect the gas supply piping to the input side of the gas control valve. Location and pressure data are shown on the specification sheet.

Installation must be in accordance with local codes and/or the National Fuel Gas Code ANSI Z223.1-1988 (USA) or the Installation Codes for Gas Burning Appliances and Equipment CAN1 B149.1 and B149.2 (Canada). Use a gas pipe joint compound which is resistant to L.P. gas. Test all pipe joints for leaks with soap and water solution. Ensure that the gas pressure regulator is set for the manifold pressure indicated on the gas rating plate.

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

## **ELECTRICAL**

Electrical installation must be in accordance with local codes and/or the National Electric Code ANSI/NFPA 70-1990 (USA) or the Canadian Electrical Code CSA Standard C22.1 (Canada). The kettle must be electrically grounded by the installer.

A separate fused disconnect switch must be supplied and installed in the high voltage electrical supply line.

The wire gauge size and electric supply must match the power requirements specified on the kettle's rating plate. The waterproof conduit enclosed permanent copper wiring must be adequate to carry the required current at the rated voltage. Refer to the specification sheet or rating label for electrical specifications and location of electrical connections.

Remove the screws securing the component cover (located to the left rear side of kettle), and remove the cover. A wiring diagram is affixed to the inside of the cover. Feed conduit enclosed permanent copper wiring through the cut-out in the bottom of the console and fasten to the terminal block. Fasten the ground wire to the ground lugs connected to the frame, beside the terminal block. Replace the console cover and secure it with the screws.

## **WATER**

The sealed jacket of the gas-fired kettle is precharged with the correct amount of a water-based formula, and therefore, no water connection is required to the kettle jacket.

## **CLEANING**

After installation the kettle must be thoroughly cleaned and sanitized prior to cooking. See CLEANING INSTRUCTIONS on page #7-9.

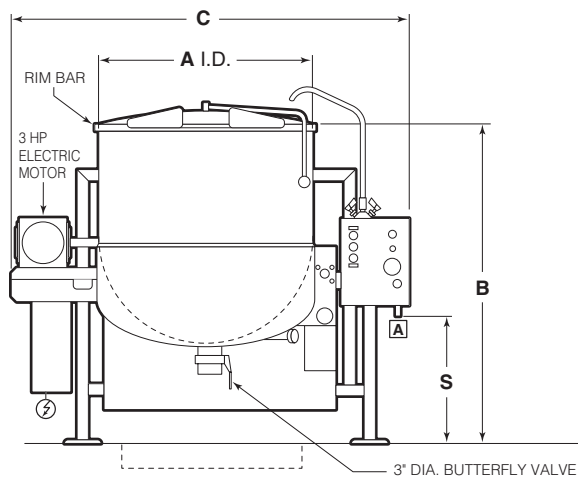
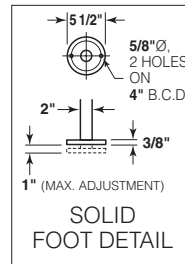
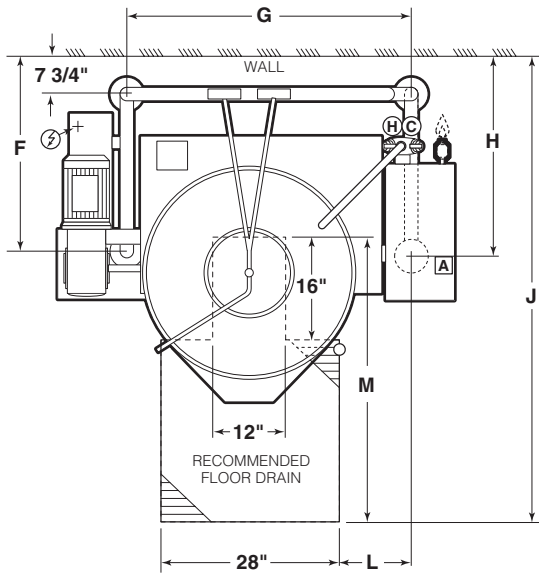
## **WARRANTY**

Our Company supports a worldwide network of Maintenance and Repair Centres. Contact your nearest Maintenance and Repair Centre for replacement parts, service, or information regarding the proper maintenance and repair of your cooking equipment

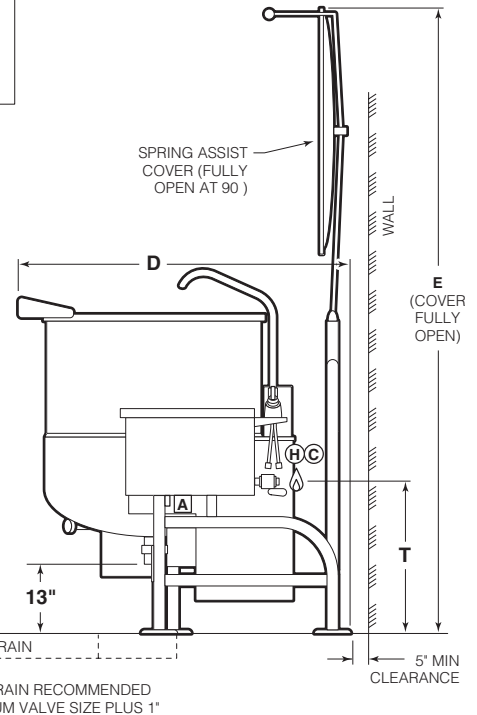
In order to preserve the various agency safety certification (UL, A.G.A., NSF, ASME/Ntl. Bd., etc.), only factory-supplied replacement parts should be used. The use of other than factory supplied replacement parts will void warranty.

# SPECIFICATION DRAWING - STATIONARY MODELS

<b>ELECTRICAL SUPPLY</b> <b>VOLTS:</b> 208/240 <b>PHASE:</b> 3 <b>AMPS:</b> 15 <b>FREQ:</b> 60 HZ			<b>GAS SUPPLY (PIPING 3/4" NPT)</b> <b>TYPE:</b> NAT or LP <b>BTU PER CU. FT.:</b> 1000 (NAT), 2500 (LP) <b>SUPPLY PRESSURE:</b> 4" to 14" W.C. <b>BTU RATINGS:</b> 190,000 per hour		<b>AIR SUPPLY (PIPING 1/2" NPT)</b> <b>PRESSURE:</b> 90 - 100 PSI (only required for optional 3" dia. piston draw-off valve)		<b>APPROX. SHIPPING WEIGHTS</b> <b>60 GAL -</b> 1010 LBS. 458 KG. <b>80 GAL -</b> 1120 LBS. 508 KG. <b>100 GAL -</b> 1325 LBS. 601 KG.
<b>APPROVALS</b> <b>AGA</b> <input checked="" type="checkbox"/> <b>CGA</b> <input checked="" type="checkbox"/> <b>NSF</b> <input checked="" type="checkbox"/>			<b>H/C HOT &amp; COLD WATER</b> 1/2" NPT CONNECTION 40-60 PSI PRESSURE		<b>CLEARANCE</b> RIGHT: 3', LEFT: 3' REAR: 5' (ALLOW 12" SPACE MINIMUM ON LEFT SIDE FOR SERVICE)		



RECOMMENDED FLOOR SLOPE 1 INCH PER 4 FEET  
6" RECOMMENDED



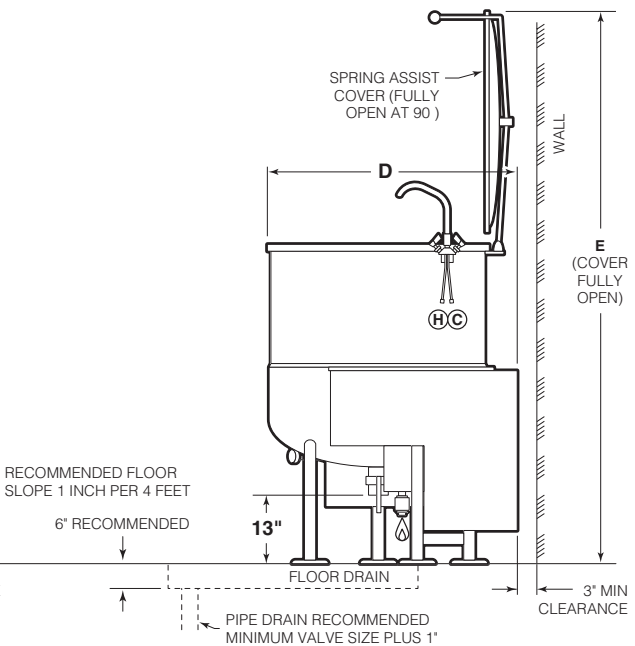
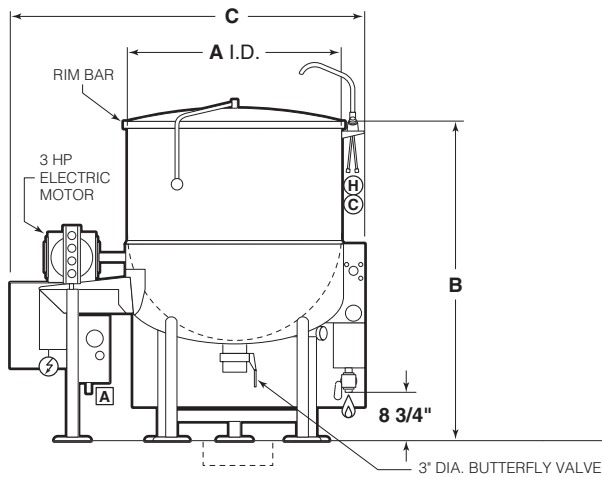
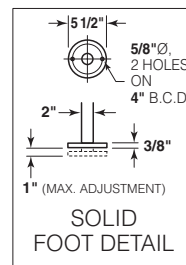
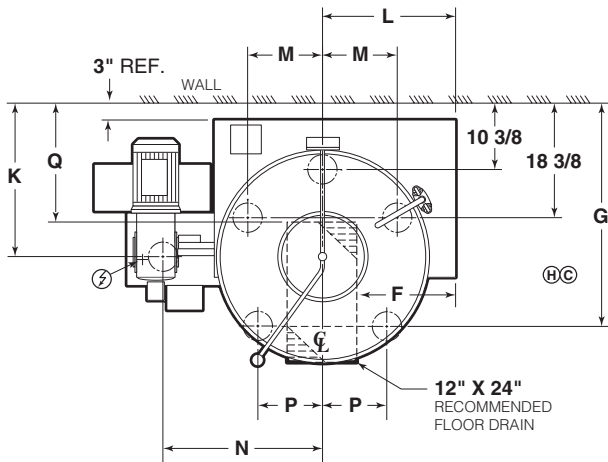
## DIMENSIONS

MODEL	A	B	C	D	E	F	G	H	J	L	M	S	T
HA-MKGL-60-TCC	29 1/2"	48 1/4"	61 5/8"	46 3/4"	93"	27 3/4"	42"	30 5/8"	78"	10 3/8"	53"	19 1/4"	24 1/2"
HA-MKGL-80-TCC	33"	51 3/4"	65 3/8"	52"	98"	30 3/4"	45 11/16"	33 5/8"	84"	11 7/16"	57"	20 3/4"	26 3/16"
HA-MKGL-100-TCC	35 1/2"	54 1/4"	68 3/8"	55"	104"	32 3/4"	48 3/16"	35 5/8"	95 5/8"	11 5/8"	66"	22"	27 5/8"

**NOTES:** CLEVELAND RANGE EQUIPMENT IS BUILT TO COMPLY WITH APPLICABLE STANDARDS FOR MANUFACTURERS, INCLUDED AMONG THOSE APPROVAL AGENCIES ARE: U.L., A.G.A., NSF, ASME/N.B.D., CSA, CGA, ETL, AND OTHERS. INSTALLATIONS OF BACK FLOW PREVENTERS, VACUUM BREAKERS AND OTHER SPECIFIC CODE REQUIREMENTS ARE THE RESPONSIBILITY OF THE OWNER AND INSTALLER. ALL VERTICAL DIMENSIONS SHOWN ARE MINIMUM. FEET ARE ADJUSTABLE TO +1" MAXIMUM. MANUFACTURER MUST BE NOTIFIED IF UNIT WILL BE OPERATING ABOVE 2000' ALTITUDE. CONSULT FACTORY FOR MANUFACTURED GAS.

# SPECIFICATION DRAWING - TILTING MODELS

<b>ELECTRICAL SUPPLY</b>	<b>GAS SUPPLY (PIPING 3/4" NPT)</b>	<b>AIR SUPPLY (PIPING 1/2" NPT)</b>	<b>APPROX. SHIPPING WEIGHTS</b>
<b>VOLTS:</b> 208/240 <b>PHASE:</b> 3 <b>AMPS:</b> 15 <b>FREQ:</b> 60 HZ	<b>TYPE:</b> NAT or LP <b>BTU PER CU. FT.:</b> 1000 (NAT), 2500 (LP) <b>SUPPLY PRESSURE:</b> 4" to 14" W.C. <b>BTU RATINGS:</b> 190,000 per hour	<b>PRESSURE:</b> 90 - 100 PSI (only required for optional 3" dia. piston draw-off valve)	
<b>APPROVALS</b>		<b>H/C HOT &amp; COLD WATER</b>	
<b>AGA</b> ✓	<b>CGA</b> ✓	<b>NSF</b> ✓	<b>60 GAL -</b> 940 LBS. 428 KG. <b>80 GAL -</b> 1030 LBS. 469 KG. <b>100 GAL -</b> 1110 LBS. 505 KG.
		<b>CLEARANCE</b> RIGHT: 3", LEFT: 3" REAR: 3" (ALLOW 12" SPACE MINIMUM ON LEFT SIDE FOR SERVICE)	
		<b>1/2" NPT CONNECTION</b> 40-60 PSI PRESSURE	



## DIMENSIONS

MODEL	A	B	C	D	E	F	G	K	L	M	N	P	Q
HA-MKGL-60-CC	29 1/2"	48 1/4"	50"	36 1/2"	83"	13 1/8"	34 5/8"	23 7/8"	19 1/8"	10 3/32"	24"	9 3/4"	17 7/8"
HA-MKGL-80-CC	33"	51 3/4"	58"	39"	90"	14 7/8"	35 15/16"	24 5/8"	20 7/8"	11 17/32"	26"	9 3/4"	18 5/8"
HA-MKGL-100-CC	35 1/2"	54 1/4"	60 1/2"	40 3/4"	96"	16 1/8"	37 1/8"	25 1/4"	22 1/8"	12 3/4"	27 1/4"	11"	19 1/4"

**NOTES:** CLEVELAND RANGE EQUIPMENT IS BUILT TO COMPLY WITH APPLICABLE STANDARDS FOR MANUFACTURERS. INCLUDED AMONG THOSE APPROVAL AGENCIES ARE: UL, A.G.A., NSF, ASME/N.B.D., CSA, CGA, ETL, AND OTHERS. INSTALLATIONS OF BACK FLOW PREVENTERS, VACUUM BREAKERS AND OTHER SPECIFIC CODE REQUIREMENTS ARE THE RESPONSIBILITY OF THE OWNER AND INSTALLER. ALL VERTICAL DIMENSIONS SHOWN ARE MINIMUM. FEET ARE ADJUSTABLE TO +1" MAXIMUM. MANUFACTURER MUST BE NOTIFIED IF UNIT WILL BE OPERATING ABOVE 2000' ALTITUDE. CONSULT FACTORY FOR MANUFACTURED GAS.

## MIXER KETTLES

### Kettle Placement

- Level
- Centered on hoist rail
- All legs bolted to floor
- Gear box properly supported
- Proper clearance
- Pasta basket and batch bucket clearances
- Floor drains and poor paths

### Electrical Requirements

- Voltage
- Phase
- Amp draw
- Wire Size
- Check motor rotation

### Water requirements

1. **Hot and cold water supply (Potable)**
  - Line size
  - Maximum water pressure
  - Line strainers
  - Pressure regulator
  - Water quality
2. **Chilled Water**
  - Line sizes (in and out)
  - Locate and inspect line strainer
  - Check for leaks

### Steam Requirements

- Locate steam source
- Line sizes (in and out)
- Steam pressure
- Steam gauge
- Check safety valve operation
- Check for leaks

### Air Requirements

- Line size
- Pressures
- Check lubricator
- Check for leaks

Model no. \_\_\_\_\_  
Serial no. \_\_\_\_\_

Comments:

# OPERATING INSTRUCTIONS



**NOTE:**  
Location of  
switches may  
vary dependant  
on customers  
specific options

- A**
- Red Low Water Indicator Light**  
When lit, in the upright position, indicates kettle gas burner has cut out and unit requires more water. Occasional pulsing of this light is normal.
  - Green Heat Indicator Light**  
When lit, indicates gas burner is on; cycles on-off with solid state controls.
  - Solid State Temperature Control Knob / On-Off Toggle Switch**  
Controls electrical power to kettle, and allows operator to select kettle heat increments from minimum, 1-10. A setting of 7 or higher will boil water
  - Amber Ignition Failure Indicator Light**  
Indicates failure of heating system to ignite



**Water Meter Digital Counter** (not shown)  
Location may vary dependant on customer's specific options

- D**
- Fill Interrupt Switch**  
Interrupts water fill cycle
  - Potable Fill Water Switch**  
Selects hot or cold water
  - Fill Cycle Switch**  
Start/continue cycle switch
- E**
- Product Discharge Valve Switch**  
Toggle momentary switch to desired valve opening

- B**
- Agitator Stop Button**  
Stops agitator in case of emergency
  - Agitator Start Switch**  
Starts agitator. Agitator power control switch must be ON
  - Agitator Power Switch**  
Allows power to agitator. When not in use, turn control power OFF
  - Agitator Speed Control Switch**  
Turn clockwise until desired speed is reached
- C**
- Power tilt control switch**  
Tilts kettle for pouring; some kettles have manual hand tilt
  - Reset circuit breaker**  
Protects power tilt system from overload. Push to reset

- 1 Temperature Sensor**  
Senses temperature of product
- 2 Automatic Dump Valve**  
Empties kettle of either food product or wash water
- 3 Sight Glass**  
For checking water level of kettle jacket
- 4 Vacuum /Pressure Gauge**  
Indicates steam pressure inside steam jacket in PSI, as well as vacuum in inches of mercury
- 5 Gas Shut-Off Valve**
- 6 Air Quick Connect**  
Push yellow tab down to release air pressure before disconnecting air hose
- 7 Kettle Filler Nozzle**

## General

**WARNING:** Do not attempt to operate this appliance during a power failure. Keep appliance and area free and clear of combustibles.

Before turning kettle on, ensure that following conditions exist:

- If you are cooking an egg or milk product, do not pre-heat kettle.
- The vacuum/pressure gauge needle is in green zone; if it is not and is in "vent air" zone, call your service agent to repair leak.
- The electrical service to kettle is turned on

**NOTE:** The kettle should be sanitized prior to the daily production run - see CLEANING INSTRUCTIONS on page #7-9.

## Mixing ("AGITATOR ")

### **WARNING:**

- Never add product to kettle while agitator is running.
- Do not put hands in kettle.
- Watch for loose clothing near agitator.

1. Turn "**SPEED CONTROL**" to "**0**".
2. Switch agitator to "**ON**".
3. Push agitator "**START**" to initiate mixing.
4. Turn "**SPEED CONTROL**" to desired mixing speed.
5. To stop mixing action, push agitator stop button.

**NOTE:** Mixing speed depends on the product consistency. The faster the mixing speed the more damage may be done to fragile product.








## Heating (General Notes)

- The green light cycles on and off, indicating that burners are cycling to maintain set temperature.
- The red "low water" light should not be lit during operation. This light indicates that water level is critically low and that gas burners have automatically shut off. Before further use, refer to RESERVOIR FILL INSTRUCTIONS on page #32 for adding distilled water.
- Occasional flashing of the red "low water" light is ok while kettle is heating.

## Manual Heating

1. Switch "POWER" to "ON".
2. Turn temperature control knob to desired setting.
3. Switch "**CONTROLLER**" to "**BYPASS**".
4. After closing discharge valve, place product in kettle.

## Automatic Heating

1. Switch "**CONTROLLER**" to "**ACTIVE**".
2. Turn temperature control knob to "**10**".
3. Continually push function key "  " until "**OFF**" is displayed.
4. Push and hold key "  " or "  " until desired temperature is set.
5. To Start: push function key "  " until "**Ctrl**" is displayed.
6. Push down key "  ".
7. To Stop: push function key "  " until "**OFF**" is displayed.
8. Push down key "  ".
9. After closing discharge valve, place product in kettle.



## Emptying the Kettle

1. To open automatic dump valve:
  - Turn PRODUCT DISCHARGE VALVE switch clockwise to JOG TO OPEN. Release switch to the HOLD position when desired valve opening is achieved.
  - To close valve, turn switch counterclockwise to CLOSED position.
2. To avoid splashing, slowly empty kettle contents into an appropriate container by partially opening dump valve.


**NOTE:** When pumping with a Metering Filling Station the speed of the agitator arm must be sufficient to suspend the heavier items in the mix in order to achieve an even distribution in your packaged items.

3. Immediately clean kettle as outlined in CLEANING INSTRUCTIONS on page #7-9.

## Water Meter

1. Switch "**POTABLE FILL WATER**" to "**HOT**" or "**COLD**".
2. Set required volume by first pushing the "  " key until the digit you want to change is flashing in the lower display. Then use the "  " key to change the value of the selected digit.

When all digits are set, press the "**ENT**" key.

3. Locate delivery spout over kettle.
4. Turn switch to "**RESET**". Delivery will start at "**0**" and stop at preset volume.
5. To stop delivery at any time, turn "**FILL INTERRUPT**" switch to "  ".
6. To complete delivery after interrupting, turn switch "**FILL CYCLE**" to "**CONTINUE**".

# CLEANING INSTRUCTIONS

## PRE-PRODUCTION SANITIZING PROCEDURE

**NOTE:** *The kettle must be sanitized prior to the daily production run.*

1. Fill kettle to hemisphere and start the agitator.
2. Add 5.25% bleach to make a 50 ppm solution - refer to chart.

Amount of water in the kettle	Amount (5.25%) of bleach to add
20 gal / 76L . . .	5 tbsp / 75ml
30 gal / 114L . . .	7 1/2 tbsp / 113ml
40 gal / 151L . . .	10 tbsp (5/8 cup) / 150ml
50 gal / 190L . . .	12 1/2 tbsp. (3/4 cup + 1 tbsp) / 188ml
60 gal / 227L . . .	1 cup / 225ml

Sanitizing Solution Chart

3. Bring the temperature to 80°F (100°F max.) or lukewarm.

**NOTE:** Do not allow solution to get hot.

4. Empty by opening valve and letting the contents of the kettle drain.
5. If you are using a metering filling station in conjunction to the kettle attach the metering filling station to the kettle and pump on continuous setting for one minute. Make sure the transport hose (3" food hose from kettle to metering filling station) does not drag on the floor.

## GENERAL

Your Cleveland kettle must be cleaned regularly to maintain its fast, efficient cooking performance, and to ensure its continued safe, reliable operations.

- ⇒ Always turn off equipment power before using water.
- ⇒ When cleaning kettle exterior, allow kettle to cool before washing.
- ⇒ Never use steel wool for cleaning kettle; particles may become embedded and rust.
- ⇒ Use warm water and mild detergent solution, followed by a clear rinse and a properly diluted sanitizing solution (see "SANITIZING SOLUTION CHART" on this page) to sanitize kettle after cleaning.
- ⇒ Do not use chloride cleaners: they may damage stainless steel surface
- ⇒ For difficult cleaning applications, one of the following can be used: alcohol, baking soda, vinegar, or a solution of ammonia in water.

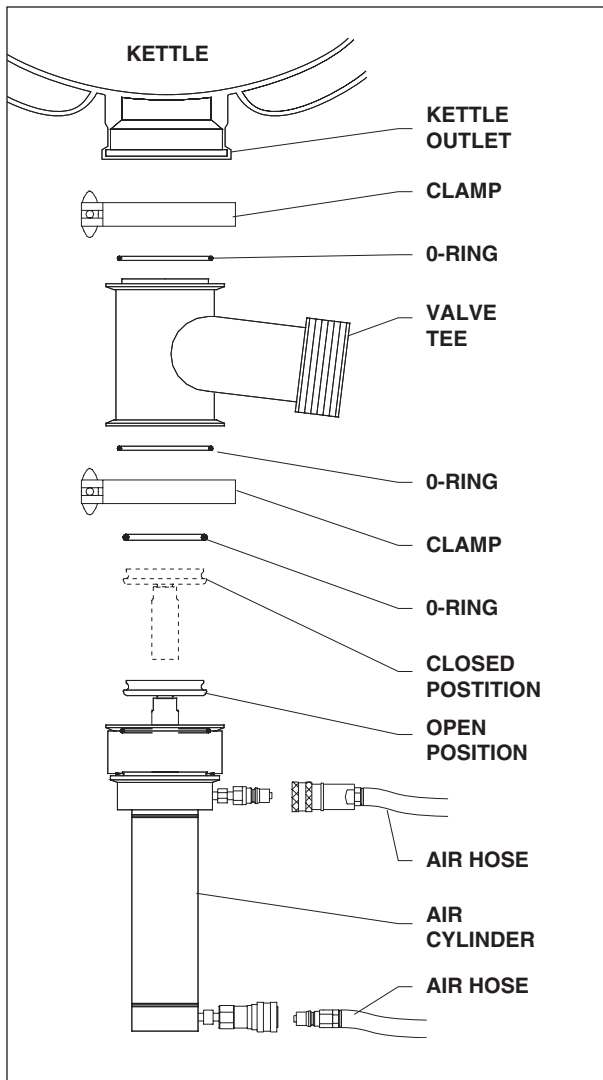
**NOTE:** Do not mix ammonia and chlorine solution.

1. Fill kettle as needed with warm water and a mild detergent solution.
  - ⇒ To remove starch and other residue, allow kettle to soak 5-10 minutes.
2. Using a nylon brush, remove food deposits inside kettle.
  - ⇒ If food is stuck, allow kettle to soak at a low temperature setting (below 120°F).
3. Open dump valve to drain wash water.

**NOTE:** Interior of tilt kettles can be cleaned more easily when slightly tilted.

## PRODUCT VALVE

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



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

## SCRAPER BLADES

**To remove and clean scraper blades:**

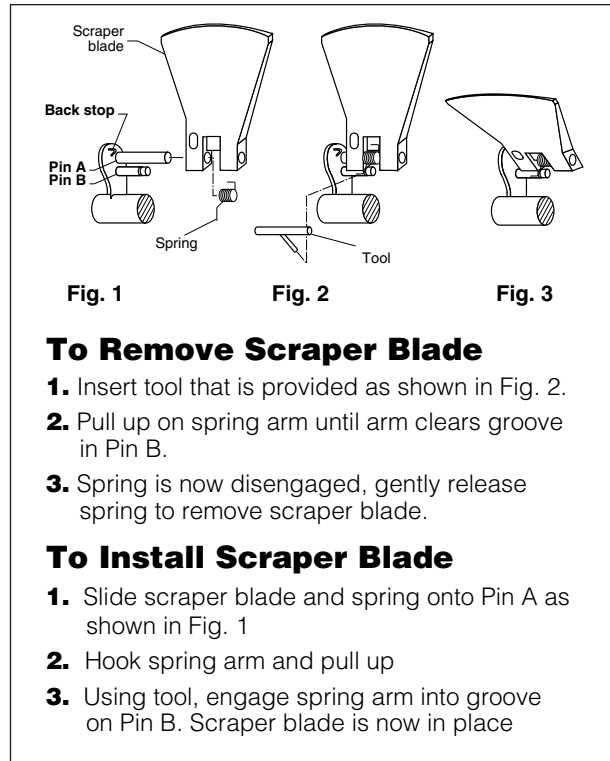


Fig. 1

Fig. 2

Fig. 3

### To Remove Scraper Blade

1. Insert tool that is provided as shown in Fig. 2.
2. Pull up on spring arm until arm clears groove in Pin B.
3. Spring is now disengaged, gently release spring to remove scraper blade.

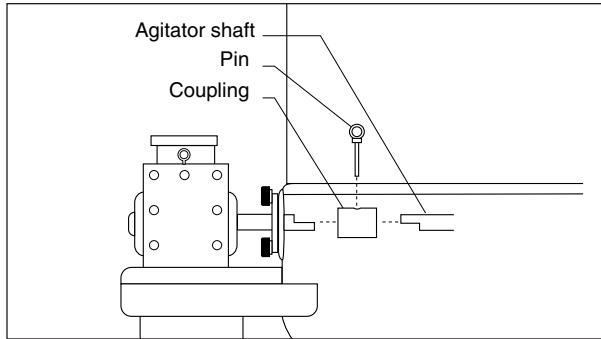
### To Install Scraper Blade

1. Slide scraper blade and spring onto Pin A as shown in Fig. 1
2. Hook spring arm and pull up
3. Using tool, engage spring arm into groove on Pin B. Scraper blade is now in place

1. Remove scraper blades using the tool to release the spring from the retaining pin and sliding the blade off the shaft.
2. Place parts in a pan of warm water to soak.
3. Clean in a sink, using a warm water and mild detergent solution.
4. Rinse with fresh water and then sanitize using a properly diluted sanitizing solution.
5. Allow to dry thoroughly on a flat, clean surface.

## AGITATOR

**To remove and clean agitator (two-person job):**

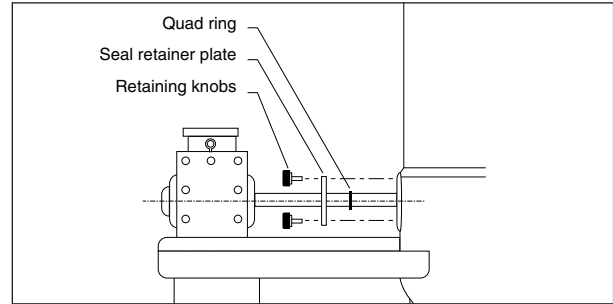


Removing Agitator

1. Remove scraper blades.
2. Rotate agitator until pull pin is on top side.
3. Turn power OFF.
4. Pull pin out.
5. Slide coupling toward kettle wall, and carefully lift agitator pulling back to lift out.
6. Clean in a sink, using a warm water and mild detergent solution.
7. Rinse with fresh water and then sanitize using a properly diluted sanitizing solution.

## QUAD RING

**To clean agitator quad ring:**

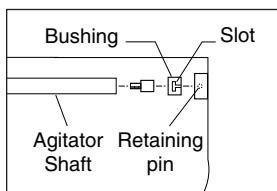


Cleaning Quad Ring

1. Remove retaining knobs.
2. Slide shaft seal retainer plate and quad ring away from kettle body.
3. Clean quad ring, shaft, and seal retainer plate with clean cloth.
4. Rinse with fresh water and then sanitize using a properly diluted sanitizing solution.
5. Apply light coat of food safe grease to both sides of the quad ring.
6. Slide quad ring back into original position, making sure it does not twist.
7. Slide retainer plate back toward kettle, replacing retaining knobs.
8. Tighten with hand pressure only.

## AGITATOR BUSHING

**With agitator out, remove bushing by:**



1. Remove bushing by turning 1/4 turn and pulling away from the kettle wall.

2. Clean, rinse and sanitize bushing and bushing mounting area.
3. Lubricate metal surfaces with food safe grease.
4. Install bushing by locating retaining pin and sliding bushing on.
5. Rotate to lock into position.

## SANITIZING

Now that the kettle is completely clean, sanitize kettle. Using a spray bottle, spray 50ppm sanitizing solution on kettle's interior and exterior. Allow to dry thoroughly.

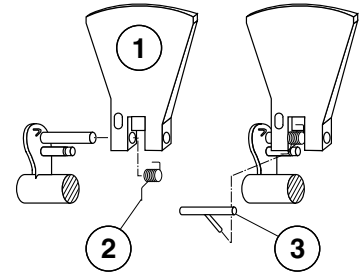
- ⇒ When kettle is not in use, leave cover off.
- ⇒ Do not leave water standing in kettle overnight.

**NOTE:** Before adding product to kettle, refer to PREPRODUCTION SANITIZING PROCEDURE on page #7.

# SERVICE PARTS

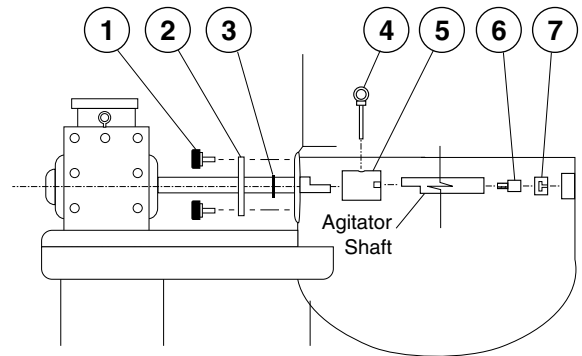
## SCRAPER BLADES

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	KE54602	SCRAPER BLADE .....	7
2.	KE54608	SPRING .....	7
3.	KE01976	SPRING REMOVAL TOOL .....	1



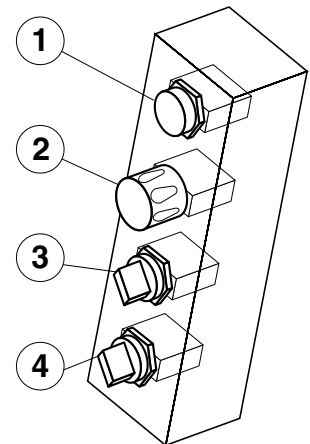
## AGITATOR SEAL ASSEMBLY

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	KE01911	RETAINING KNOBS .....	3
2.	KE54592	SEAL RETAINER PLATE ..	1
3.	FA05002-8	"O" RING .....	1
4.	KE54594	PIN .....	1
5.	KE54583	COUPLING .....	1
6.	KE54593	IDLER PIN .....	1
7.	KE54590	BUSHING .....	1

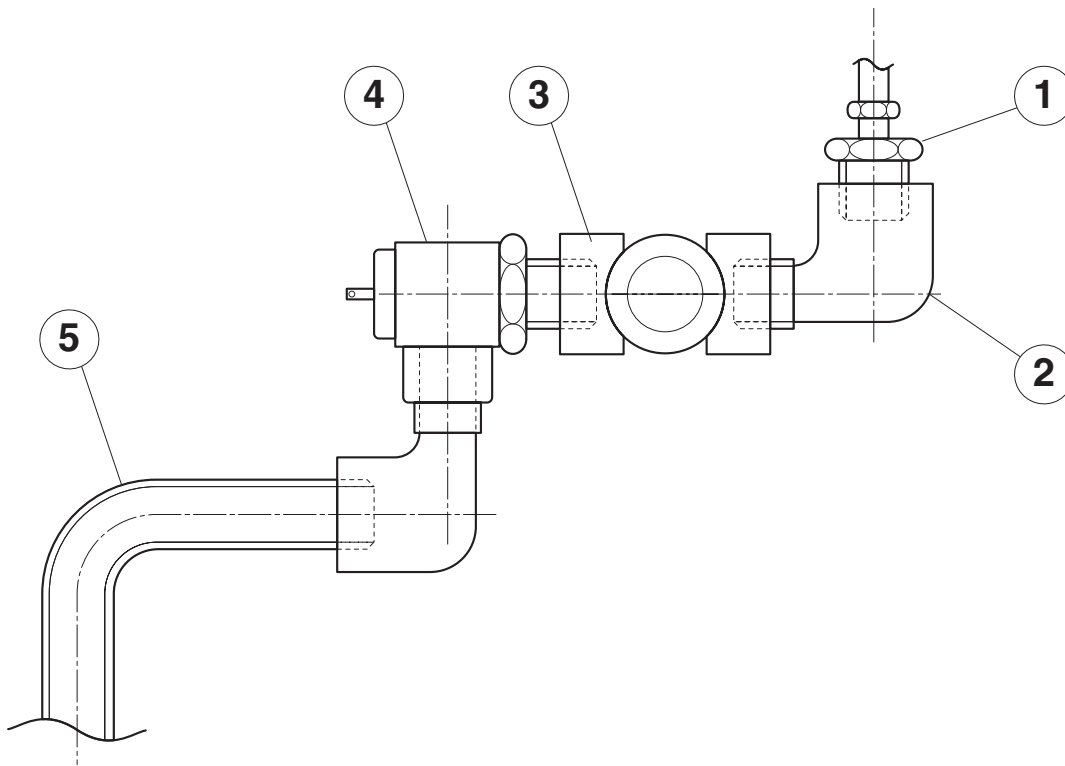


## OPERATING CONTROLS

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	KE54531	AGITATOR STOP .....	1
2.	KE54530	AGITATOR START .....	1
3.	KE54529	POWER ON/OFF SWITCH .....	1
4.	KE54532	SPEED CONTROL .....	1



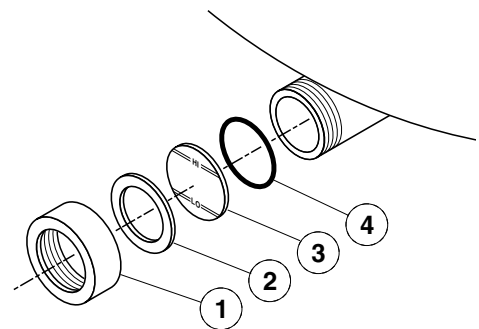
# PRESSURE RELIEF ASSEMBLY



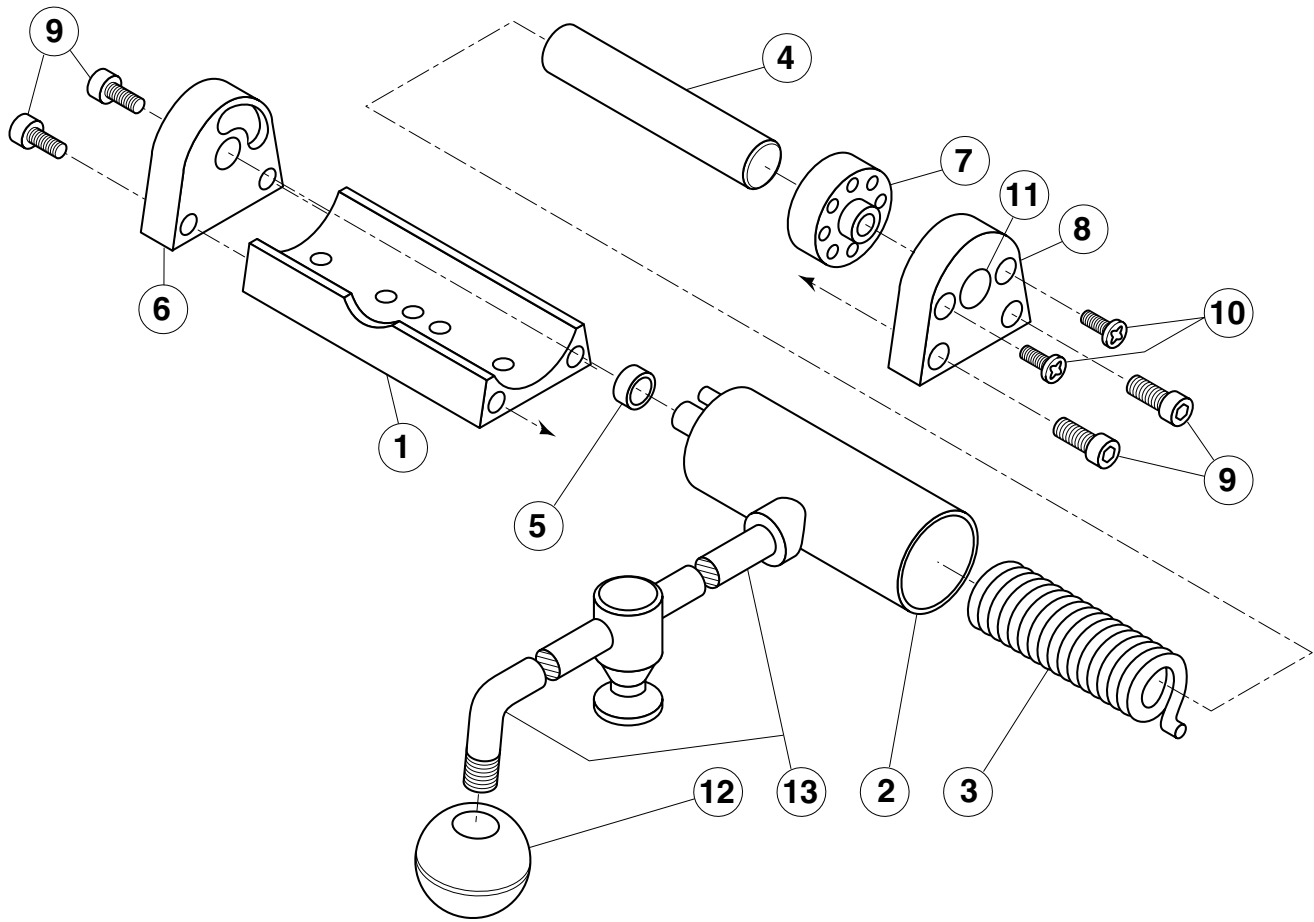
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	FA05049	Male Connector, 1/2" pipe - 1/4" tube	1
2.	FI00151	Street elbow, 1/2"	2
3.	FI00178	Tee, 1/2" FPT, brass	1
4.	KE51723	Safety valve, 1/2" FPT, 50 psi.	1
5.	KE54223	Blow down tube	1

# SIGHT GLASS

ITEM ON.	PART NO.	DESCRIPTION	QTY.
1.	KE50955	Retaining cover	1
2.	KE52871	WASHER	1
3.	KE51053-1	SIGHT GLASS	1
4.	FA05002-30	"O" RING	1

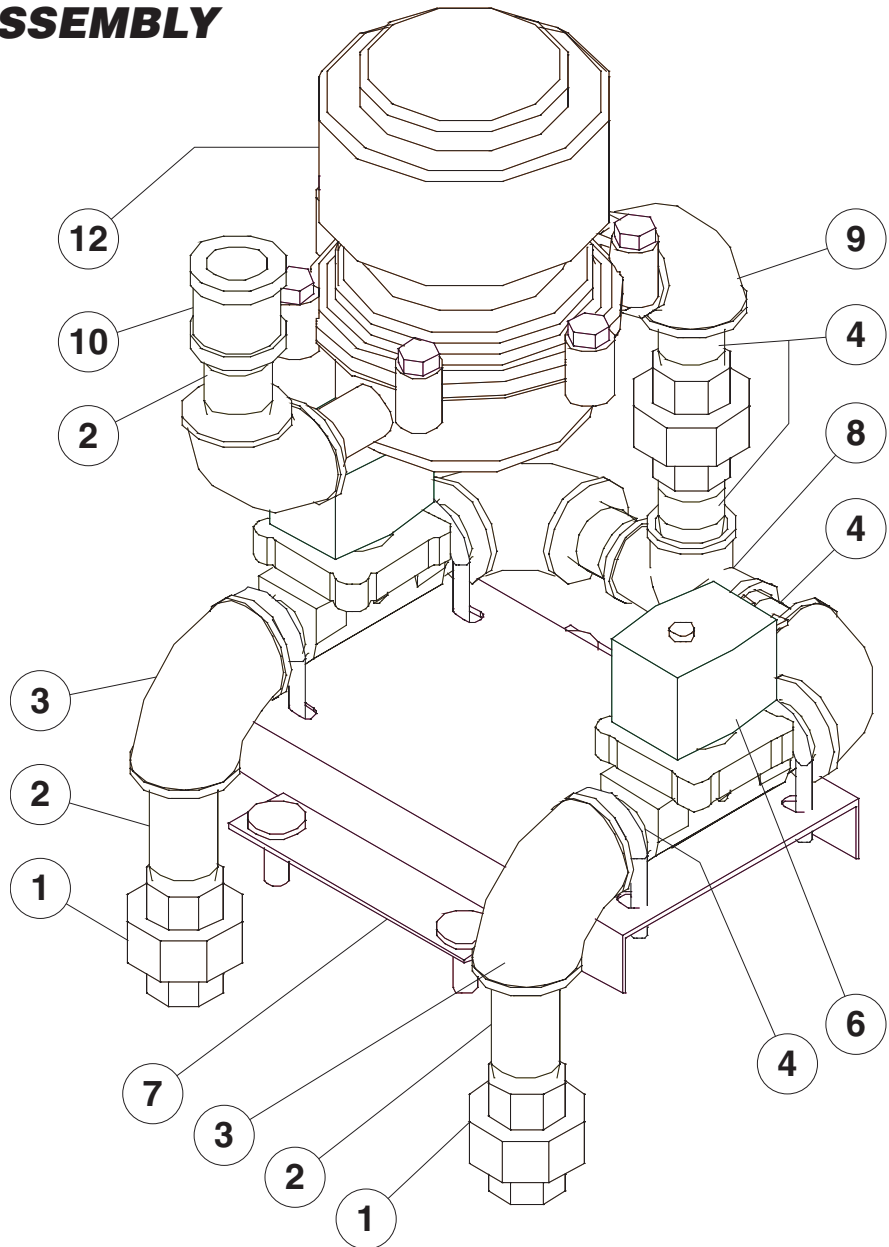


# HINGE ASSEMBLY



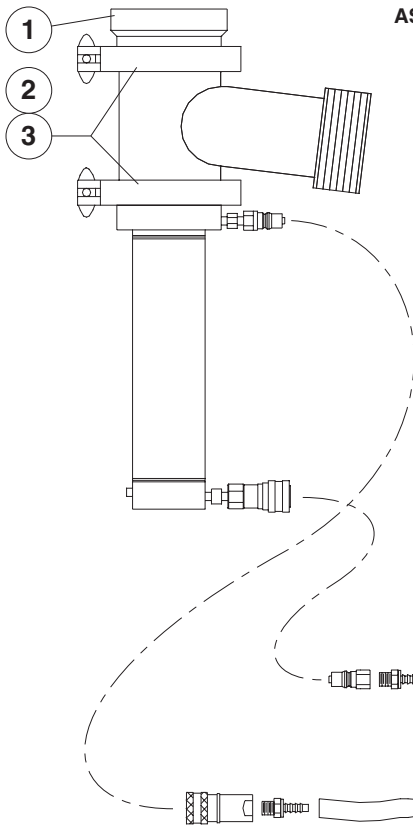
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1. - 11	KE00597-4	Hinge Assembly	2
1.	KE50882	Hinge Base	1
2.	KE51217	Hinge Cylinder	1
3.	KE50121-1	Hinge Spring	1
4.	KE50823-1	Hinge Pin	1
5.	KE50824	Hinge Bearing	1
6.	KE50819-1	Hinge End Piece, LHS	1
7.	KE50820	Hinge Insert	1
8.	KE50819	Hinge End Piece, RHS	1
9.	FA11284	Screw, Socket Head, 1/4-20 x 1/2	4
10.	FA11507	Cutting Screw,	2
11.	KE54907-10	Plug Button	1
12.	KE50151-12	Knob	1
13.		Cover Handle (specify model)	1

# WATER METER ASSEMBLY

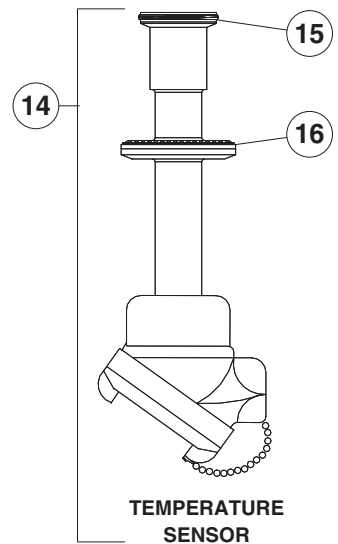
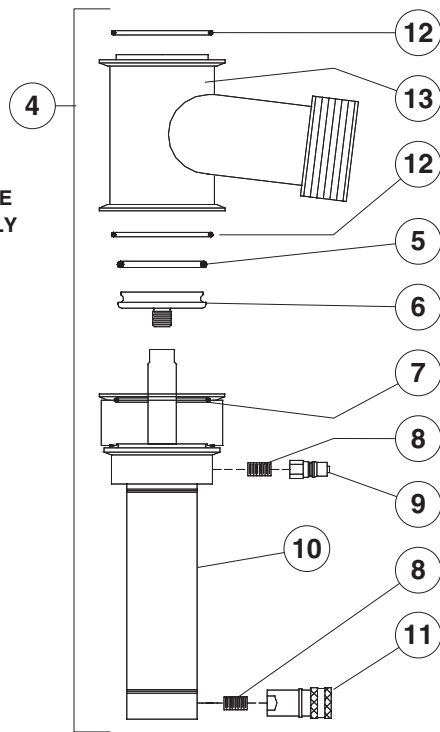


<b>ITEM ON.</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
1.	FI00096	3/4 BRASS UNION	3
2.	F100629-2	3/4 NPT X 2 112 BRASS NIPPLE	3
3.	FI00063	3/4 NPT BRASS ELBOW	4
4.	F100629-36	3/4 NPT CLOSE BRASS NIPPLE	8
5.	KE55228	U-BOLT, 1/4-20	4
6.	KE54834-4	SOLENOID VALVE	2
7.	KE02290	MOUNTING PLATE ASSY, HOT COLD WM	1
8.	R00179	3/4 NPT BRASS FEMALE TEE	1
9.	FI00365	3/4 X 1 REDUCING BRASS ELBOW	2
10.	FI00267	3/4 NPT BRASS COUPLING	1
11.	FA21008	S.S. NUT 1/4-20	8

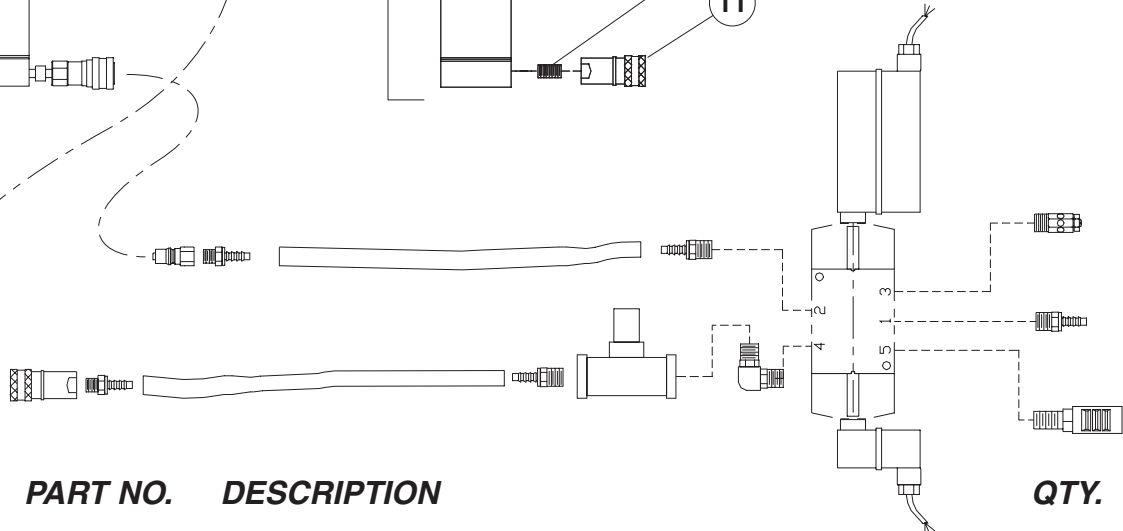
# VALVE & TEMPERATURE SENSOR ASSEMBLIES



**AIR VALVE ASSEMBLY  
FPVA-3**

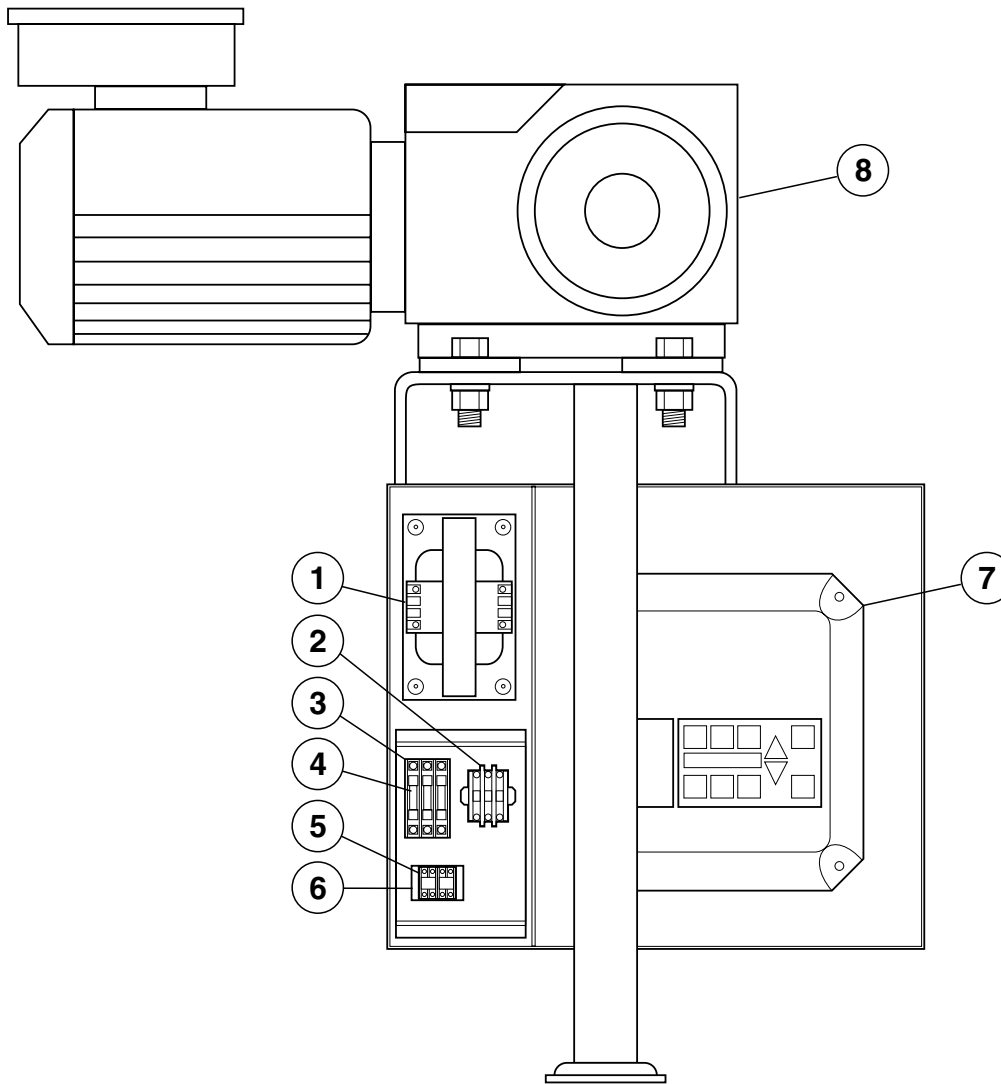


**TEMPERATURE SENSOR**



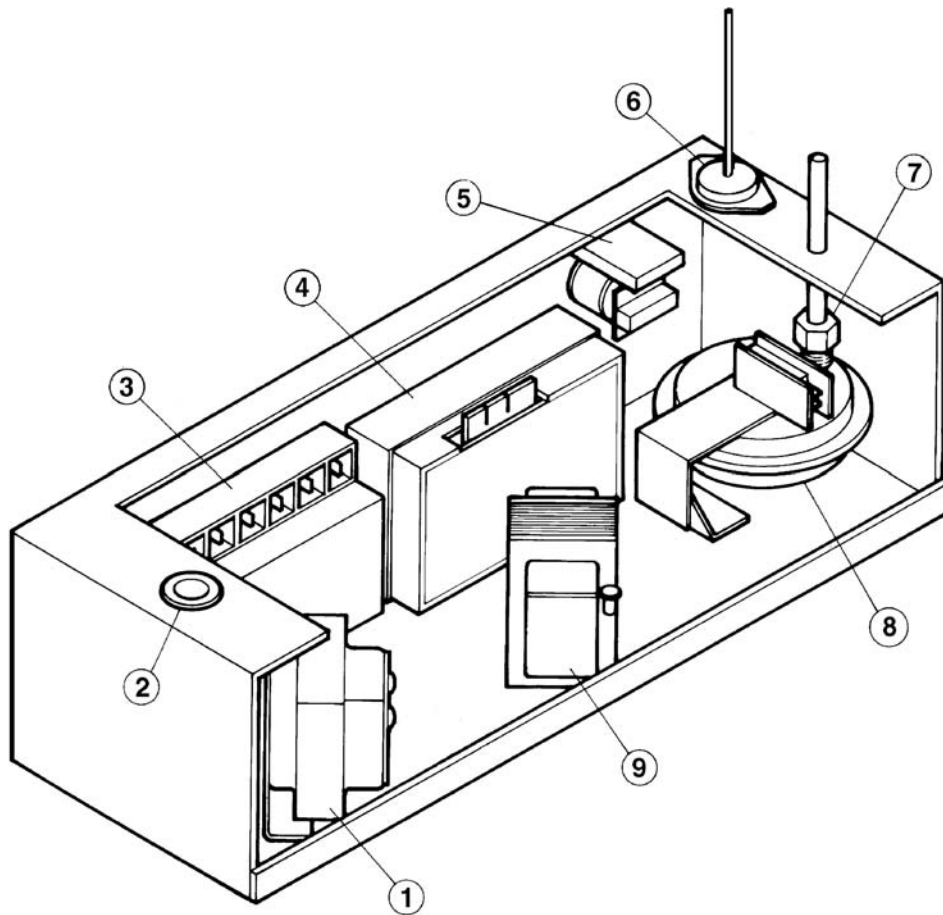
ITEM ON.	PART NO.	DESCRIPTION	QTY.
1.	KE55210	WELD RING, KETTLE BOTTOM OUTLET	1
2.	FI05144-3	SANI CLAMP, 3"	2
3.	KE52154-4	GASKET, SANI CLAMP, 3"	2
4.	KE02291	COMPLETE ACTUATOR AND DISCHARGE VALVE ASSEMBLY <i>INCLUDES PARTS 5 - 13.</i>	1
5.	KE55248	BUNA-N O-RING	1
6.	KE55249	REPLACEABLE S.S. PLUNGER HEAD	1
7.	KE55250	BUNA-N O-RING	1
8.	KE55251	1/8 NPT S.S. HYDRAULIC CLOSE NIPPLE	2
9.	KE55252	MALE S.S. QUICK DISCONNECT	1
10.	KE55253	AIR OPERATED CYLINDER	1
11.	KE55254	FEMALE S.S. QUICK DISCONNECT	1
12.	KE55255	BUNA-N O-RING	2
13.	KE55256	FEMALE S.S. QUICK DISCONNECT	1
14.	KE54924	TEMPERATURE SENSOR ASSEMBLY	1
15.	FA05002-46	O-RING, FOOD GRADE, SIZE A0123, EPDM E 692-75	1
16.	KE52154-3	GASKET, SANI CLAMP, 1 1/2" WHITE TEFLON	1

# GEARMOTOR - ELECTRICAL ASSEMBLY



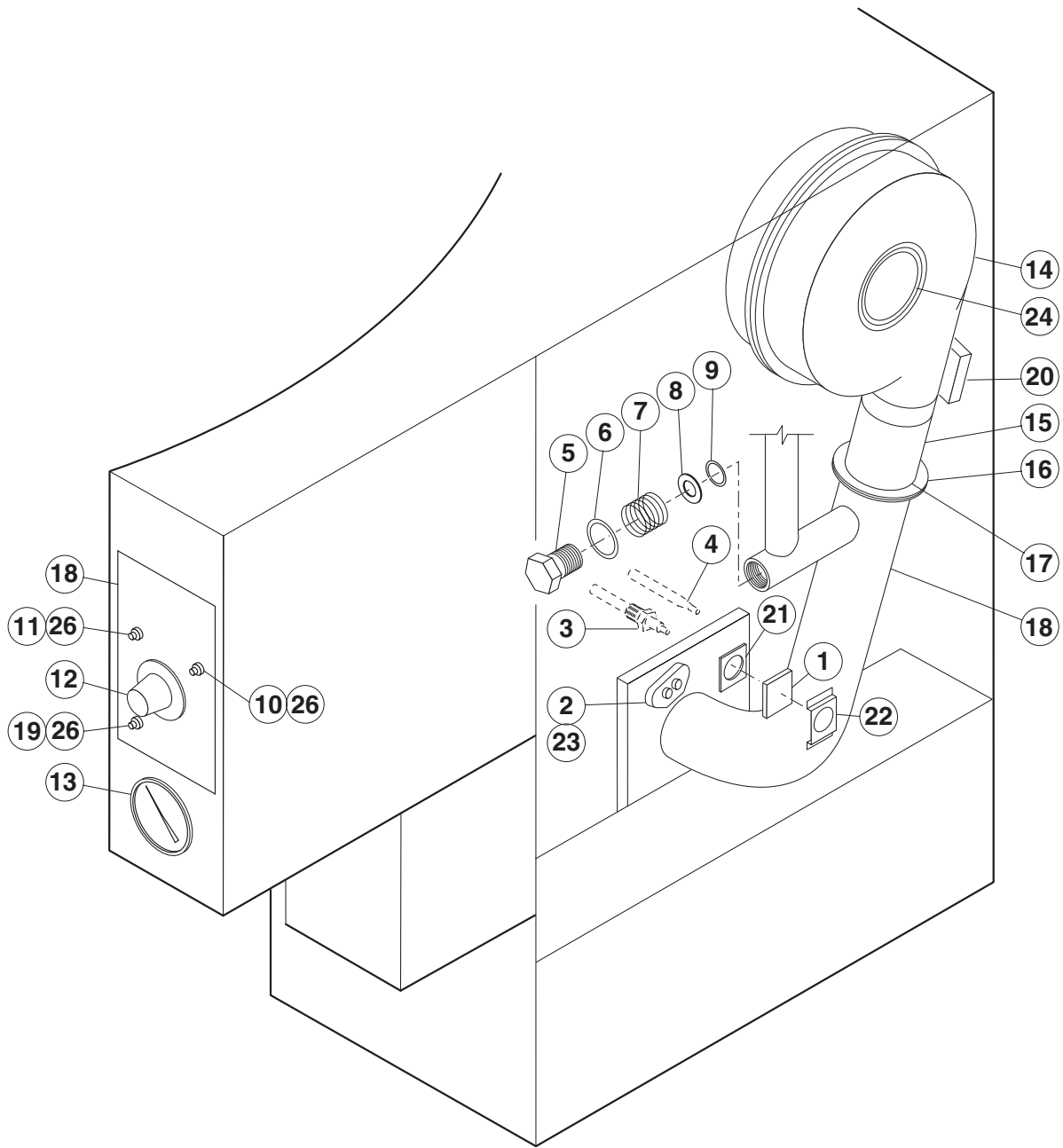
<b>ITEM NO.</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
1.	KE53838-2	TRANSFORMER, 200-240V/440-480V .....	1
2.	KE50750-2	CONTACTOR .....	1
3.	KE51139-1	FUSE HOLDER .....	3
4.	KE52936-2	15A FUSE, KLKR .....	3
5.	PR50003	TERMINAL BLOCK	
6.	PR50005	TERMINAL BLOCK BRACKET .....	1
7.	KE54528	A.C. INVERTER .....	1
8.	KE54527-1	GEAR MOTOR, 200V/340V .....	1
	KE54527-2	GEAR MOTOR, 230V/460V .....	1

# KETTLE - ELECTRICAL COMPONENTS



<b>ITEM ON.</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
1.	KE53838-19	TRANSFORMER, 120-16V. ....	1
	KE53444	TRANSFORMER BRACKET ....	1
2.	KE54833-3	BUSHING ....	1
3.	KE53469	IGNITION MODULE ....	1
4.	KE00458	SOLID STATE CONTROL ....	1
	KE50303	SOLID STATE CONTROL BRACKET ....	1
5.	KE50753-7	RELAY ....	1
6.	KE53316	SAFETY THERMOSTAT ....	1
7.	FI05050	BRASS NUT #7/16-24 ....	1
8.	KE53436	AIR SWITCH ....	1
	KE53432	AIR SWITCH BRACKET ....	1
9.	KE53838-20	TRANSFORMER 120-24V ....	1

# KETTLE - GAS COMPONENTS



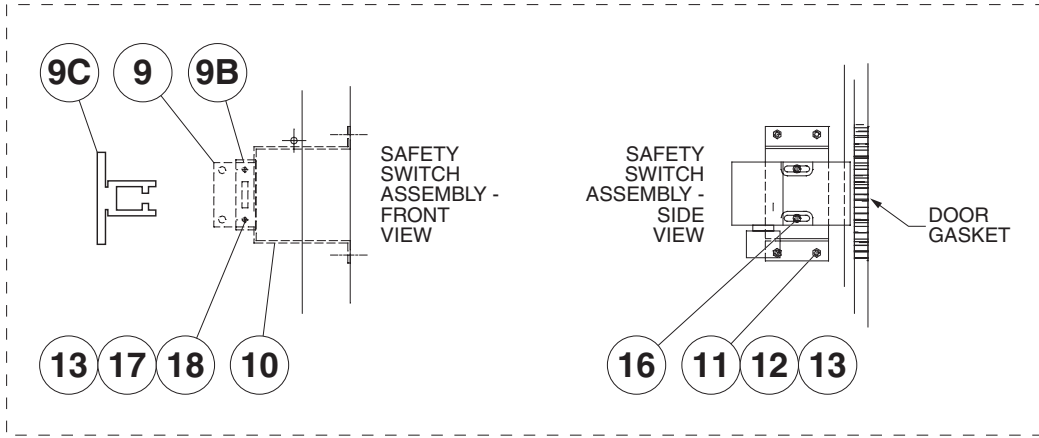
<b>ITEM ON.</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
1.	KE53617	SIGHT GLASS .....	1
2.	KE53437	IGNITOR .....	1
3.	KE50556-1	WATER LEVEL PROBE .....	1
4.	KE00515	THERMISTOR .....	1
5.	FI05213	PLUG .....	1
6.	FA05002-4	"O" RING .....	1
7.	KE53422	SPRING .....	1
8.	<b>GAS ORIFICE:</b>		
	KE53403-6	NATURAL GAS - SEA LEVEL TO 2000' .....	1
	KE53403-7	PROPANE GAS - SEA LEVEL TO 2000' .....	1
	KE53403-10	NATURAL GAS - 2000' TO 4000' .....	1
	KE53403-11	PROPANE GAS - 2000' TO 4000' .....	1
	KE53403-10	NATURAL GAS - 4000' TO 6000' .....	1
	KE53403-14	PROPANE GAS - 4000' TO 6000' .....	1
	KE53403-17	NATURAL GAS - 6000' TO 8000' .....	1
	KE53403-18	PROPANE GAS - 6000' TO 8000' .....	1
	KE53403-17	NATURAL GAS - 8000' TO 10,000' .....	1
	KE53403-22	PROPANE GAS - 8000' TO 10,000' .....	1
9.	FA05002-29	"O" RING .....	1
10.	KE50568-1	L.E.D. GREEN .....	1
11.	KE50567-1	L.E.D. RED .....	1
12.	<b>TEMPERATURE CONTROL ASSEMBLY:</b>		
	KE50569-1	KNOB .....	1
	SE00114	POTENTIOMETER WITH ON/OFF SWITCH, C/W SEAL .....	1
	KE51005	SEAL .....	1
13.	KE50429-2	PRESSURE GAUGE .....	1
14.	KE53441	BLOWER, 110 V, 60 HZ .....	1
15.	KE53441-1	BLOWER, 220 V, 50 HZ .....	1
16.	KE01426-1	MIXING CHAMBER, 60 GALLON KETTLES .....	1
17.	KE53402-1	AIR ORIFICE, 190K BTU BURNER .....	1
18.	FI05212	PIPE .....	1
19.	KE95087-1	OPERATING INSTRUCTION LABEL .....	1
20.	KE50567-2	L.E.D. AMBER .....	1
21.	KE54239	CAPACITOR .....	1
22.	KE53618	SIGHT GLASS GASKET .....	1
23.	KE53619	SIGHT GLASS RETAINER .....	1
24.	KE53570	GASKET FOR IGNITOR .....	1
25.	KE54420	AIR INTAKE WASHER (NATURAL GAS) .....	1
	KE54420-1	AIR INTAKE WASHER (PROPANE) .....	1
26.	FA05002-18	"O" RING .....	3

# CONTROL BOX - ELECTRICAL

For front panel control switches see -

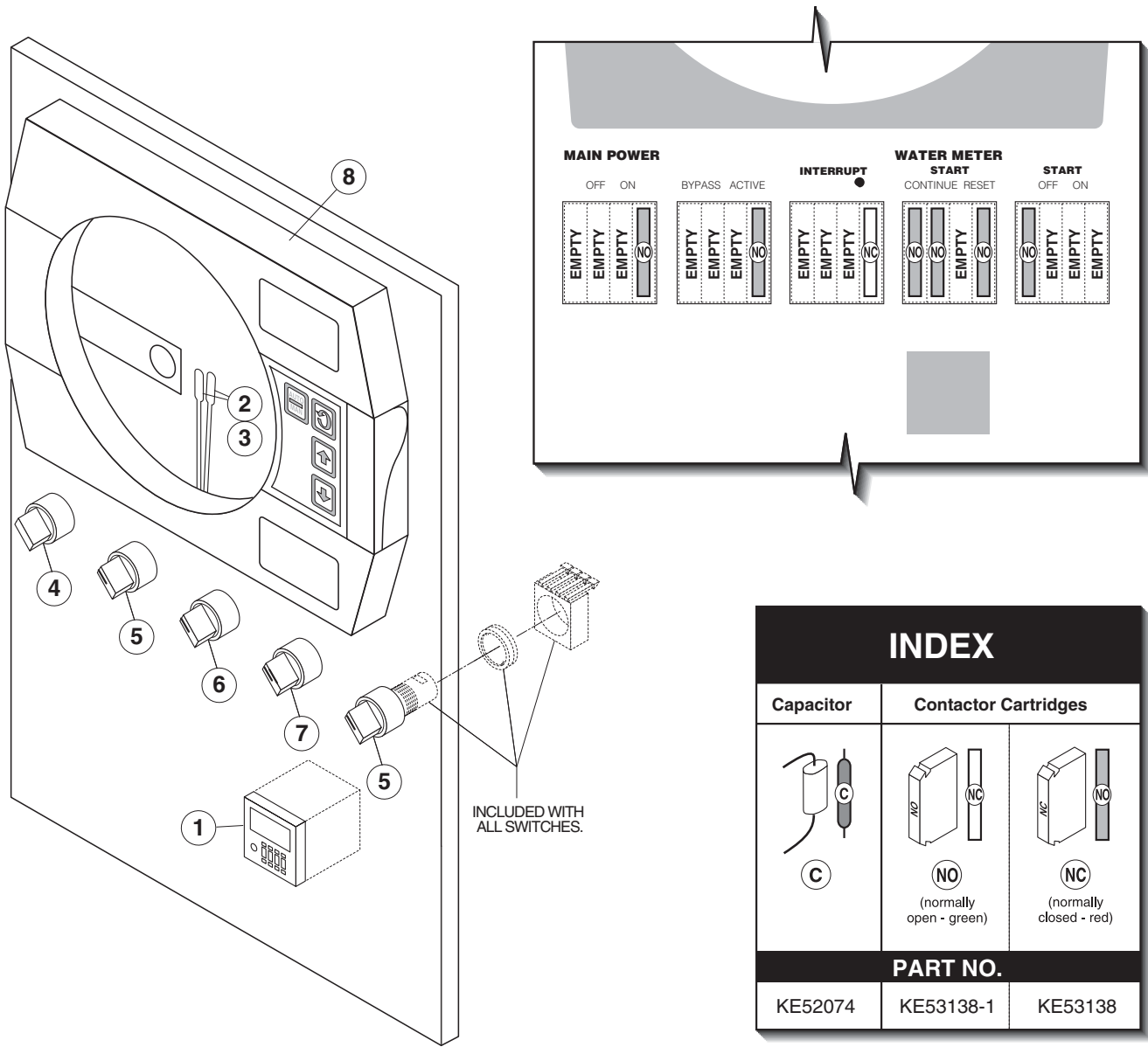
SIDE BOX - TILT MECHANISM & SWITCHES on page #23-24.

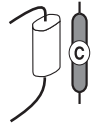
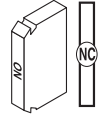
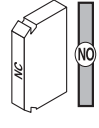
CONTROL BOX - WATER METER & CHART RECORDER on page #21.



<b>ITEM ON.</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
1.	KE55287-1	PANEL, REMOTE CONTROL, DUAL FLOOR	.1
	KE55187-2	PANEL, REMOTE CONTROL, DUAL WALL	.1
	KE55287-3	PANEL, REMOTE CONTROL SINGLE FLOOR	.1
	KE55287-4	PANEL, REMOTE CONTROL, SINGLE WALL	.1
2.	KE55284-1	COMPONENT MOUNTING PLATE DUAL PANEL	.1
	KE55284-2	COMPONENT MOUNTING PLATE SINGLE PANEL	.1
3.	KE55286-1	MOUNTING BRACKET, INCOMING, DUAL PANEL	.1
	KE55286-2	MOUNTING BRACKET, INCOMING, SINGLE PANEL	.1
4.	KE54860	FAN	.2
5.	KE55283	VENT COVER PLATE	.4
6.	KE55288-1	MOUNTING RAIL, DUAL CONTROL PANEL	.1
	KE55288-2	MOUNTING RAIL SINGLE CONTROL PANEL	.1
7.	KE55298	MOTOR PROTECTOR SWITCH	.2/1
8.	KE50750-4	CONTACTOR, 230 VAC, 50 AMP	.1
	KE50750-2	CONTACTOR, 230 VAC, 30 AMP	.1
9.	KE55297-1	SAFETY INTERLOCK SWITCH	.1
9B.	KE55297-2	TOTALLY FLEXIBLE ACTUATOR	.1
9C.	KE55297-3	GD2 STANDARD ACTUATOR	.1
10.	KE55285	MOUNTING BRACKET, DOOR INTERLOCK SWITCH	.1
11.	FA40000-15	WELD STUD, #10-32 X 1/2, S.S.	.4
12.	FA21007	HEX NUT, #10-32, S.S.	.4
13.	FA32006	TOOTH LOCK WASHER, #10, S.S.	.6
14.	FA11091	SCREW, #8-32 X 3/8, S.S.	.16
15.	FA21004	NUT, #8-32, S.S.	.16
16.	FA11146	SCREW, #10-32 X 1/2, S.S.	.11/8
17.	FA40000-14	WELD STUD, #10-24 X 3/4, S.S.	.2
18.	FA21006	HEX NUT, #10-24, S.S.	.2
19.	KE55271	LABEL, REMOTE CONTROL PANEL	.2/1
20.	KE55292-1	LABEL TERMINAL STRIP REMOTE PANEL	.1
21.	KE55292-4	LABEL TERMINAL STRIP REMOTE PANEL	.1
22.	KE55292-3	LABEL, TERMINAL STRIP, REMOTE PANEL	.1
23.	KE50753-10	RELAY, 120 V HOT COLD WATER BYPASS	.6/3
24.	KE52106	TERMINAL BLOCK	.4/2
25.	KE50377	TERMINAL BLOCK	.4
26.	KE50376	TERMINAL BLOCK END	.1
27.	KE50374	TERMINAL BLOCK MOUNTING BRACKET	.2/1
28.	SK50055-1	TERMINAL BLOCK	.14/7
29.	SK50054-1	TERMINAL BLOCK END	.4/2
30.	KE54761-2	TERMINAL BLOCK MOUNTING RAIL	.2/1
31.	SK50054-2	TERMINAL BLOCK END	.4/2
32.	KE54761	TERMINAL BLOCK MOUNTING RAIL	.1
33.	KE90425-1	WIRING DIAGRAM, DUAL REMOTE CONTROL PANEL	.1
	KE90425-2	WIRING DIAGRAM, SINGLE REMOTE CONTROL PANEL	.1
34.	KE90401-2	WIRING DIAGRAM, DUAL WATER METER OPTION	.1
35.	KE55232	WIRING DIAGRAM, 3" AIR VALVE OPTION	.1
36.	KE54528	AC INVERTER	.2/1
37.	KE53838-2	TRANSFORMER, 200- 240V	.2/1
38.	KE52936-2	FUSE, 15 AMP	.6/3
39.	KE51139-1	FUSE HOLDER	.6/3
40.	KE50750-2	CONTACTOR	.2/1

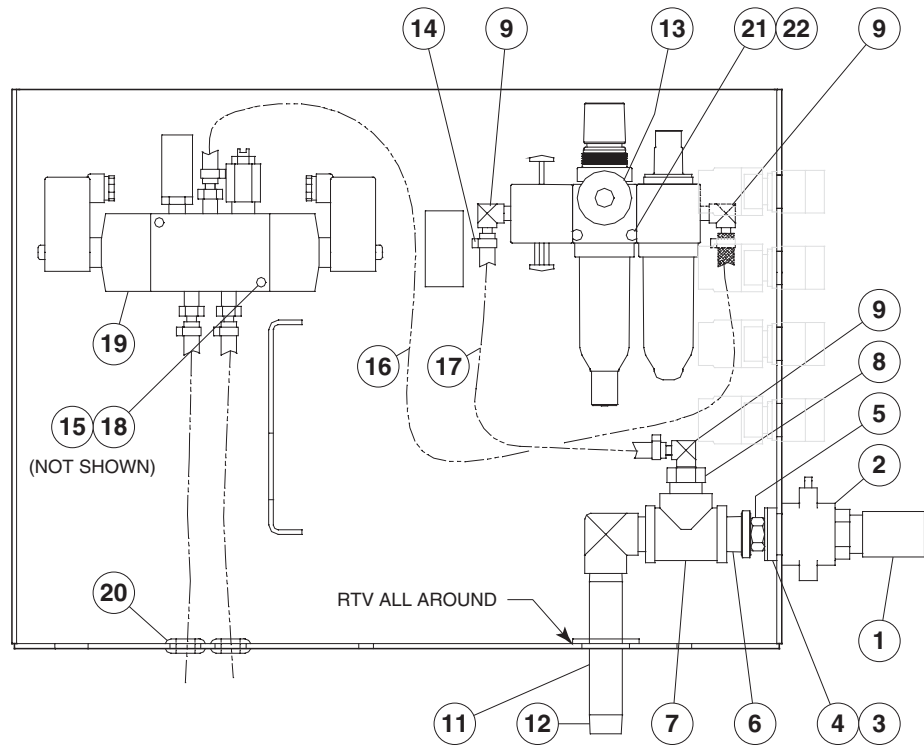
# CONTROL BOX - WATER METER & CHART RECORDER



INDEX		
Capacitor	Contactor Cartridges	
		
(C)	(NO) (normally open - green)	(NC) (normally closed - red)
PART NO.		
KE52074	KE53138-1	KE53138

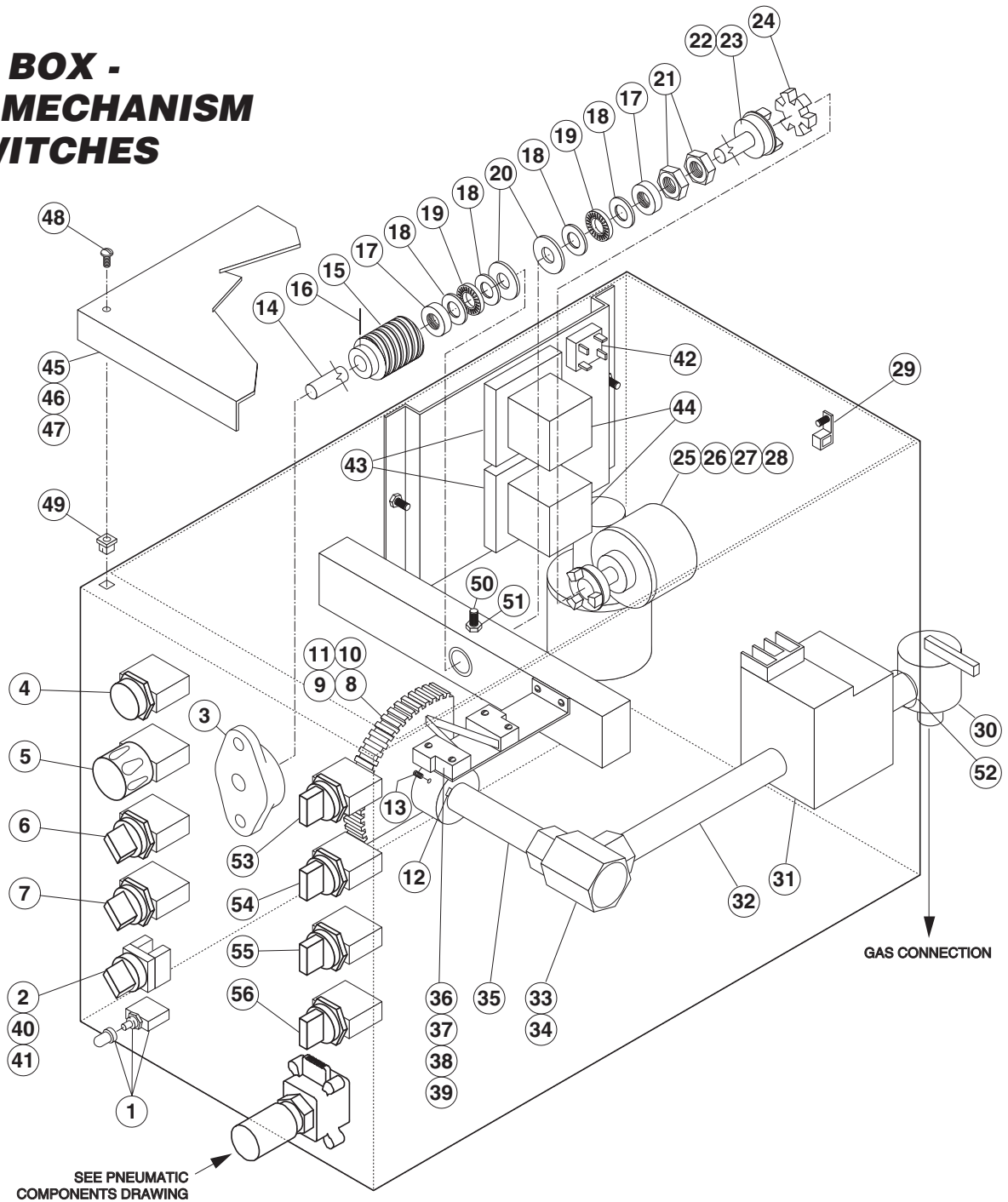
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	KE53257	Digital Counter	1
2.	SE50354	Pen Tip, red (pkg. of 5)	1
3.	SE50354	Pen Tip, green (pkg. of 5)	1
4.	KE01808	Switch Assembly, On/Off - Maintained	1
5.	KE01808	Switch Assembly, On/Off - Maintained	2
6.	KE01810	Momentary Spring Return Switch Assembly	1
7.	KE01811	Momentary Spring Return Switch Assembly	2
8.	KE53136-1	Chart Recorder	1

# SIDE BOX - PNEUMATICS



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	FA05166	QUICK CONNECT .....	1
2.	KE54280	SLIDE VALVE .....	1
3.	FA30512	SPACER WASHER .....	1
4.	FA32500	TOOTH LOCK WASHER 7/8" DIA. ....	1
5.	KE52697	NUT 1/2 NPS BRASS .....	1
6.	KE52931	AIR FITTING .....	1
7.	F100178	TEE 1/2 NPT .....	1
8.	FI00351	BUSHING 1/2 MIP X 1/4 FIP .....	1
9.	FI05318	HOSE BARB 90° ELBOW .....	3
10.	FI00151	90° STREET ELBOW 1/2 NPT .....	1
11.	FA30090	WASHER 15/16 ID X 1 3/4 OD X 1/8 .....	1
12.	7100595-8	NIPPLE 1/2 NPT X 4 1/2" LONG .....	1
13.	KE55238	FILTER-REGULATOR-LUBRICATOR BLOCK .....	1
14.	F105220-1	GEAR CLAMP .....	4
15.	FA21006	10-24 S.S. NUT .....	2
16.	KE532177	PNEUMATIC HOSE 1/4 I.D. X 31" L .....	1
17.	KE532176	PNEUMATIC HOSE 1/4 I.D. X 12 1/2" L .....	1
18.	FA30000	FLAT WASHER #10, ZINC PLATED .....	2
19.	KE02292	AIR SOLENOID ASSEMBLY .....	1
20.	KE50555-3	GROMMET .....	2
21.	FA21008	1/4-20 NUT S.S. ....	2
22.	FA30002	FLAT WASHER 1/4 DIA., ZINC PLATED .....	2

# SIDE BOX - TILT MECHANISM & SWITCHES



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	KE50579	CIRCUIT BREAKER .....	1
	FA00012	"O" RING, CIRCUIT BREAKER .....	1
	KE50580	WATER RESISTANT BOOT .....	1
2.	KE53137-3	MOMENTARY SWITCH ACTIVATOR .....	1
3.	KE51730	TILT SHAFT BEARING .....	1
4.	KE54531	AGITATOR STOP .....	1
5.*	KE54530	AGITATOR START .....	1
6.*	KE54529	POWER ON/OFF SWITCH .....	1
7.*	KE54532	SPEED CONTROL .....	1
8.	KE01889	MICRO SWITCH TRIGGER/WORM GEAR WELDMENT .....	1

9.	FA10772	SOCKET HD. CAP SCREW	.2
10.	FA20048	JAM NUT	.2
11.	FA95050	RETAINING RING	.1
12.	FA95055-1	SQUARE KEY	.1
13.	FA19201	HEX SOCKET SET SCREW 3/8-24	.1
14.	KE52836-2	TILT SHAFT	.1
15.	KE50315	WORM	.1
16.	FA95005	TENSION PIN	.1
17.	KE52193	THRUST BEARING SPACER	.2
18.	KE52192	THRUST WASHER	.4
19.	KE52191	ROLLER BEARING	.2
20.	FA30088	WASHER	.2
21.	FA95008	JAM NUTS	.2
22.	KE50582	CPLG. ONTARIO BELTING #G-100 5/8 BORE	.2
23.	FA95014	SQUARE KEY 3/16 X 3/16 X 1" LG	.1
24.	KE50583	RUBBER INSERT, ONTARIO BELTING "BUNA N"	.1
25.	KE52832	MOTOR "BODINE" #NSH-54RL	.1
26.	FA10487	HEX HD SCREW 1/4-20 X 1" LG	.4
27.	FA31008	SPLIT LOCKWASHER 1/4" DIA	.4
28.	FA20026	HEX NUT 1/4 - 20	.4
29.	KE50473	GROUND LUG	.1
30.	FO1518-1	GAS SHUT-OFF VALVE	.1
31.	KE02053	COMBINATION GAS VALVE NATURAL GAS	.1
32.	FI05223-1	SPECIAL NIPPLE	.1
33.	FI05222	SWIVEL ELBOW	.1
34.	FI05231	FLUSH BUSHING 3/4M TO1/2F	.1
35.	FI05226-11	NIPPLE 1/2 X 10" LG	.1
36.	KE51007	MICRO SWITCH	.2
37.	FA10139	MACHINE SCREW #6-32 X 1" LG	.4
38.	KE50498	MICRO SWITCH INSULATION	.2
39.	FA32004	TOOTH LOCK WASHER #6	.4
40.	KE53184	CONTACT SECTION HOLDER (LATCH)	.1
41.	KE53138-1	CONTACT BLOCK	.4
42.	KE50581	BRIDGE RECTIFIER	.1
43.	KE54535	EDGE CONNECTOR (11 PIN)	.2
44.	KE50753-10	RELAY	.2
45.	KE54491	LID FOR GEARBOX	.1
46.	KE53599-8	GASKET	.2
47.	KE53599-9	GASKET	.2
48.	FA95062	PAN HD. PHILLIPS SCREW	.4
49.	FA95074	NYLON ANCHOR NUT	.1
50.	FA19177	HEX SOCKET SET SCREW 5/16-24 X 1/2	.1
51.	FA20047	JAM NUT 5/16-24	.1
52.	KE54606	GAS VALVE LOCKWASHER	.1
53.	KE01812-1	SWITCH, JOG TO OPEN AIR VALVE	.1
54.*	KE01810	SWITCH, FILL INTERRUPT	.1
55.*	KE01808-1	SWITCH, HOT/COLD SELECTION	.1
56.*	KE01809	SWITCH, FILL CYCLE	.1

\* SWITCHES MAY BE LOCATED ON REMOTE CONTROL PANEL.

# ***MAINTENANCE***

## **INSPECTION AND MAINTENANCE CHECKLIST**

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

### MONTHLY INSPECTION

- Inspect all switches for damage. Replace rubber boots or switches as required.
- Check that the automatic dump valve works fully and smoothly and no air leaks are evident.
- Check that the 3 way regulator shuts off the incoming air and completely vacates the air from the air hose to the metering filling station.
- Tilt kettle and check for smooth operation in both directions.
- Inspect gear and worm assembly in gear box for play - tighten Allen screws if required.
- Inspect gasket material on covers for integrity.
- Check spring assist covers for tightness to handle and insure spring is holding cover up - adjust if required. Refer to HINGE ADJUSTMENT INSTRUCTIONS on page #30.
- When kettle is cold check that pressure gauge needle is in the green zone indicating a vacuum in kettle - if venting is required refer to KETTLE VENTING PROCEDURE on page #31.
- Inspect mixer blades for cracks or other damage - replace as required. Refer to NEW SCRAPER BLADE INSTALLATION PROCEDURE on page #29.
- Check quad ring and replace if required. Refer to QUAD RING REPLACEMENT PROCEDURE on page #29.
- Inspect oiler in gear box and fill with oil if required. Refer to OILER FILLING PROCEDURE on page #30.
- Inspect air filter cartridge and replace if required. Refer to AIR FILTER REPLACEMENT PROCEDURE on page #29.

### SIX MONTH MAINTENANCE

- Grease trunnion housings in gear box and on outboard bearings.
- Test pressure relief valve. Refer to PRESSURE RELIEF VALVE TESTING PROCEDURE on page #33.

## OPERATING SEQUENCE - HEATING

STEP	ACTION	RESULT 1	RESULT 2
1.	Close main circuit breaker.	120 volts is supplied by primary contactor to kettle On/Off switch and tilt relay contacts. Power supplied to tilt assembly.	
2.	On/Off switch on kettle switched to ON.	120/16 volt transformer supplies power to control boxes.	Amber LED is illuminated.
3.	Control box.	<b>A/</b> Requires grounded probe to function (pin #5). <b>B/</b> More that 6 volts at pin #2. Control box energizes 12 volt DC relay (pin #6).	<b>a/</b> Green LED illuminates. <b>b/</b> 12 VDC relay contacts close.
4.	12 VDC relay contacts close.	<b>A/</b> Blower energizes. <b>B/</b> 120/25 volt transformer energizes. <b>C/</b> 120 volt supplied to ignition module.	<b>a/</b> Air switch contacts close. <b>a/</b> 25 volts supplied to ignition module.
5.	Ignition module.	Supplies 120 volts to ignition.	Within 20 seconds ignitor glows red.
6.	120 volts turned off to ignitor.	<b>A/</b> Gas valve is energized. <b>B/</b> Ignitor becomes sensor.	<b>a/</b> Burner ignites. <b>a/</b> If temperature drops in chamber gas valve is de-energized within five seconds. <b>b/</b> Ignitor will try twice more to light before locking out.
7.	Temperature reached.	<b>A/</b> Less than 6 volts at pin #2. Control box de-energizes 12 volt DC relay (pin #6)	<b>a/</b> Green LED turns off. <b>b/</b> 12 VDC relay contacts open. <b>c/</b> Blower turns off. <b>d/</b> 25 volt transformer de-energizes.

**QUICK CHECKS:** Potentiometer - Range 0 - 50K, Safety Thermostat - Normally Closed, Thermistor - Range 0 - 100K, Water Level Probe - Must be submerged in water for burners to work

## OPERATING SEQUENCE - AGITATOR

1.	On/Off switch closed.	<b>A/</b> Three phase contactor closes to supply power to variable speed drive.	<b>a/</b> Indicator light is energized.
2.	Start button momentarily depressed.	<b>A/</b> Power to agitator motor.	<b>a/</b> Motor comes up to speed.
3.	Speed control turned up.	<b>A/</b> Motor speed increases.	

## OPERATING SEQUENCE - POWER TILT

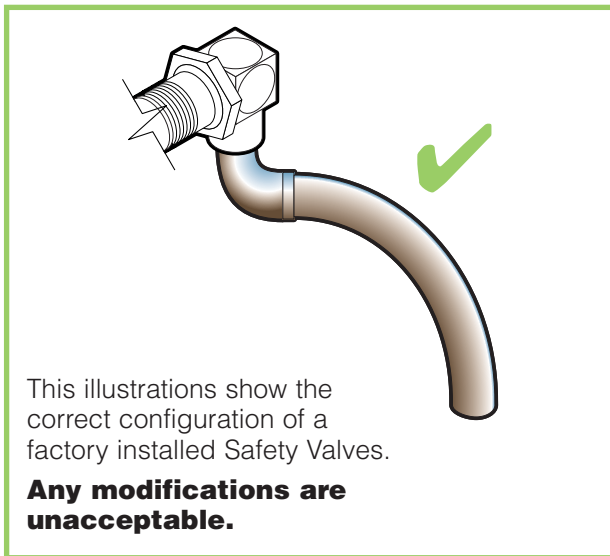
1.	Turn and hold tilt switch in down position.	<b>A/</b> Relay 2 is energized.	<b>a/</b> Tilt motor is energized.
2.	Kettle tilts until limit switch is depressed.	<b>A/</b> Power interrupted to down side of tilt switch.	<b>a/</b> Relay de-energized. <b>b/</b> Motor stops.
3.	Turn and hold tilt switch in up position.	<b>A/</b> Relay 1 is energized.	<b>a/</b> Tilt motor is energized.
4.	Kettle tilts until limit switch is depressed.	<b>A/</b> Power interrupted to up side of tilt switch.	<b>a/</b> Relay de-energized. <b>b/</b> Motor stops.

# KETTLE SAFETY INSPECTION CHECKLIST

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.

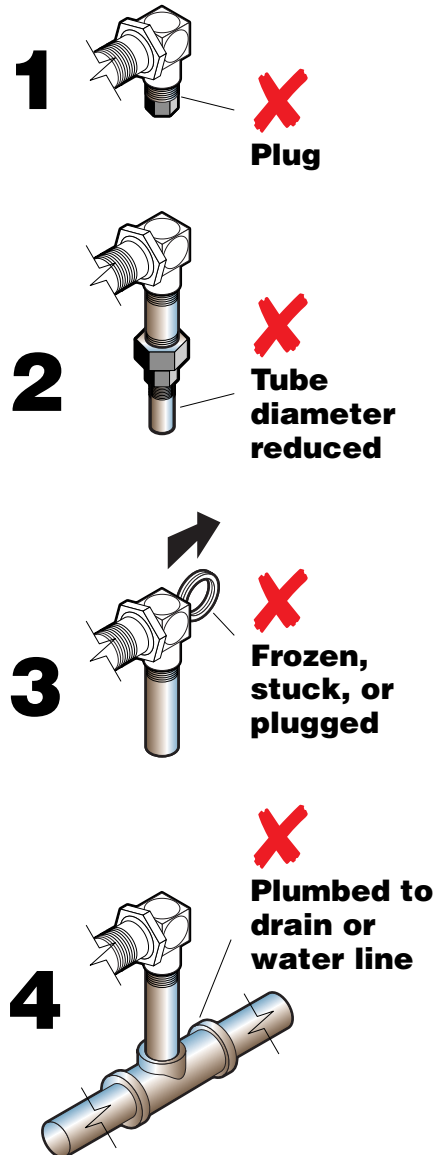
**No safety features designed into the equipment should ever be tampered with.** Tampering with or bypassing controls is a very dangerous practice and unfortunately we have seen several cases of this. Following is a short list of the most common and the most dangerous alterations performed on kettles.

## SAFETY VALVE:

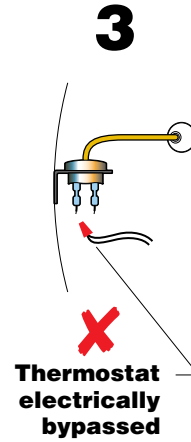
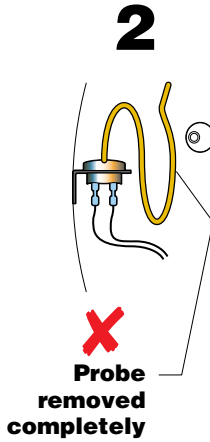
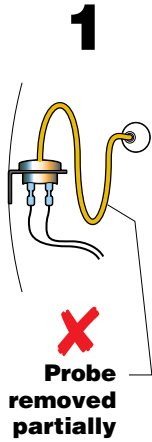
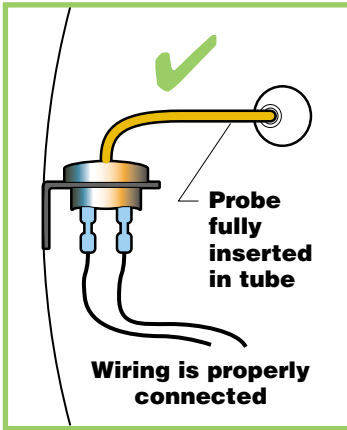


### Incorrect Installations

- 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 page #33, PRESSURE RELIEF VALVE PERIODIC TESTING.
- 4** Safety valve is plumbed to a drain or water line creating back pressure and reducing flow.



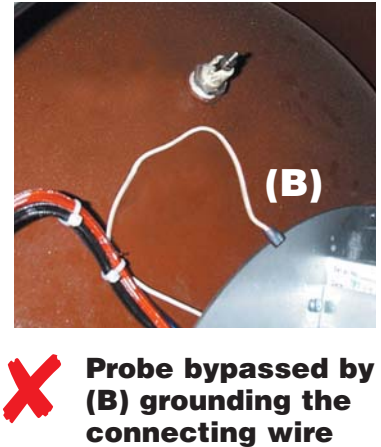
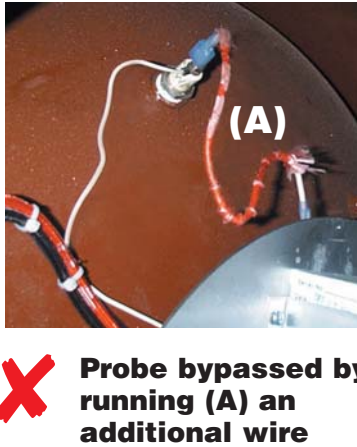
## SAFETY THERMOSTAT:



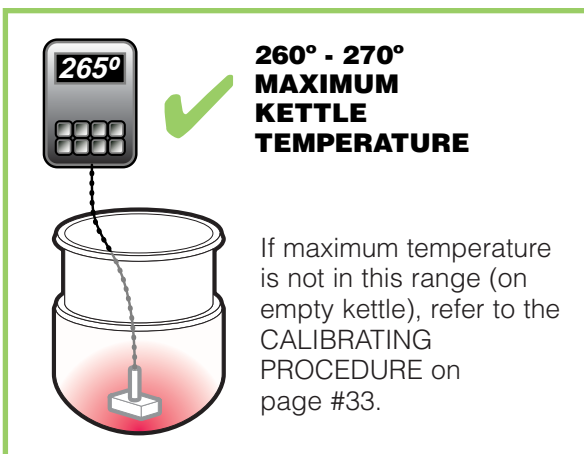
### Incorrect Installations

- 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.

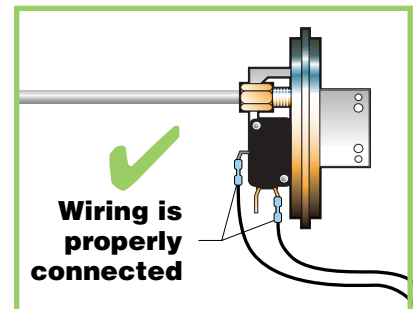
## Low Water Level Probe:



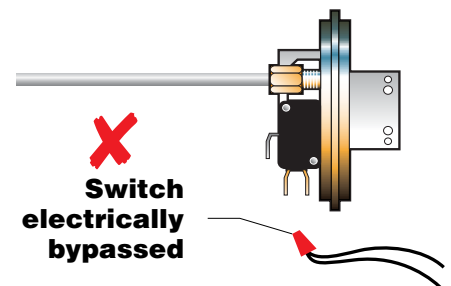
## Operating Thermostat:



## Air Switch:

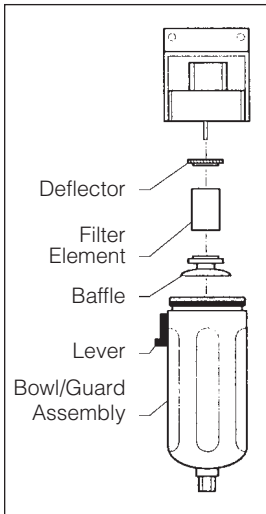


### Incorrect Installation



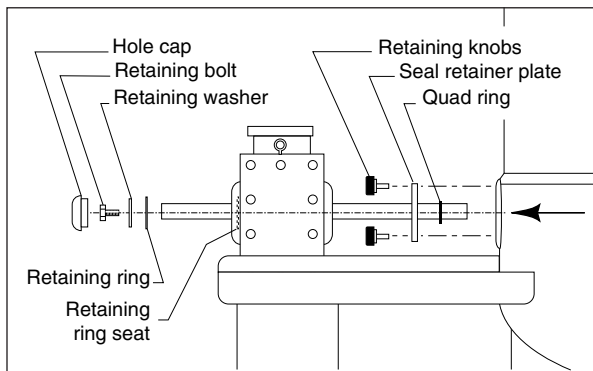
## AIR FILTER REPLACEMENT PROCEDURE

1. Disconnect air supply and bleed system.
2. Remove cover on console (see SIDE BOX - PNEUMATICS on page #22).



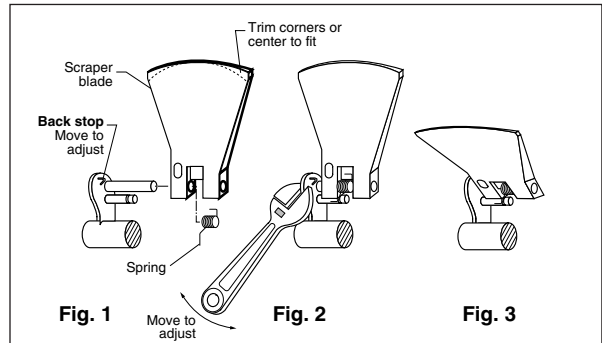
3. Check for filter location.
4. Push lever down and rotate bowl/guard assembly 1/8 turn.
5. Push down on bowl/guard assembly and remove.
6. Unscrew baffle and remove filter element, inspect and replace filter if required.
7. Replace filler cap and cover.

## QUAD RING REPLACEMENT PROCEDURE



1. Remove agitator as per cleaning instructions.
2. Remove hole cap, retaining bolt and retaining washer.
3. Snap retaining ring out from seating inside motor.
4. Remove retaining knobs.
5. Slide seal retainer plate away from kettle.
6. Slide shaft away from kettle body to allow clearance for removing quad ring.
7. Remove quad ring.
8. Slide new quad ring back into original position, making sure it does not twist.
9. Apply light coat of food-safe grease.
10. Slide retainer plate back toward kettle, replacing retaining knobs -tighten with hand pressure only.
11. Reassemble.

## NEW SCRAPER BLADE INSTALLATION PROCEDURE



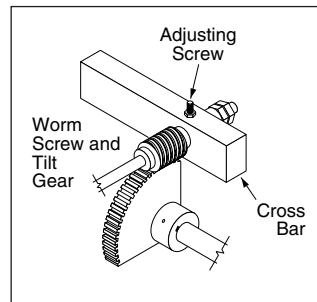
When installing a new scraper blade there may be some adjustments required to make it lay flat to follow the contour of the kettle. If the blade does not fit, you may have to grind either the two edges of the blades, or the center of the blade

Note: When there is too much or too little pressure on the scraper blade, bend the back stop down to decrease the pressure or bend it up to increase the pressure on the blade, when scraping the kettle surface (see Fig. 1)

Note: If only one corner of the scraper blade is touching the kettle surface, use a crescent wrench and slightly twist the scraper holder so the entire blade scrapes the kettle wall with even pressure

## LUBRICATION PROCEDURE

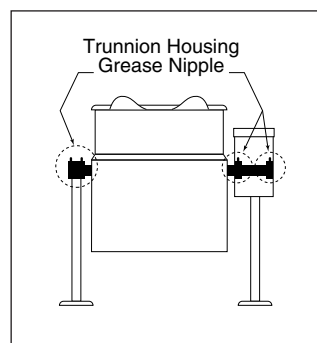
Lubricate the following parts every three months to insure smooth operation and reduce wear.



### 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.

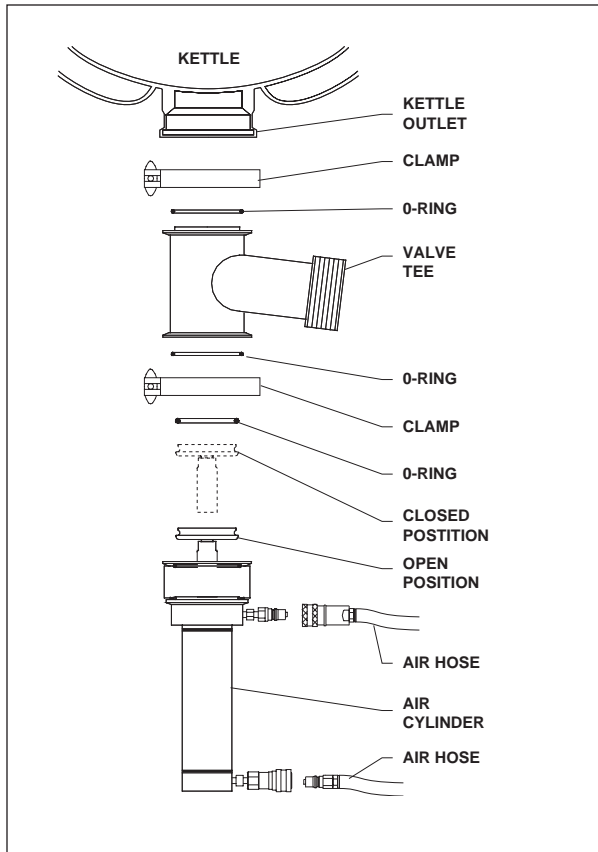


### KETTLE TRUNNIONS

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.

## PRODUCT VALVE

### Replacing O-Rings



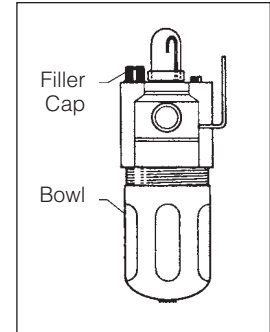
1. Open product valve.
2. Disconnect air hoses.
3. Remove air cylinder.
4. Remove valve tee.
5. Remove all O-rings, grease and reinstall new O-rings as required.
6. Reinstall tee to kettle outlet.
7. Reinstall air cylinder to bottom of tee.
8. Reconnect air hoses.
9. Close valve and check for alignment.

## BUSHING REPLACEMENT PROCEDURE

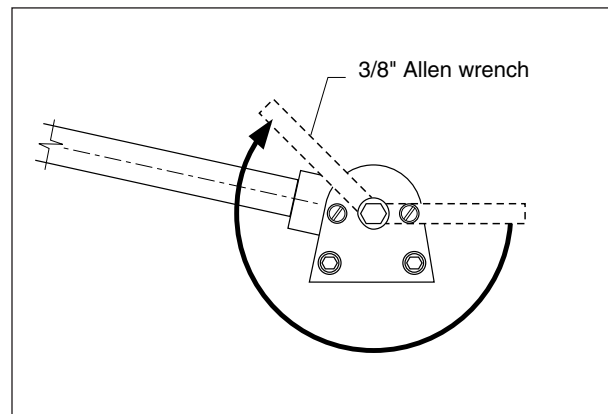
1. Remove agitator as per cleaning instructions.
2. Remove bushing by turning 1/4 turn and pulling away from the kettle wall.
3. Lubricate metal surfaces with food safe grease.
4. Install new bushing by locating retaining pin and sliding bushing on.
5. Rotate to lock into position.
6. Reassemble agitator.

## OIL FILLING PROCEDURE

1. Disconnect air supply and bleed system.
2. Remove cover on console (see SIDE BOX - PNEUMATICS on page #22).
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.

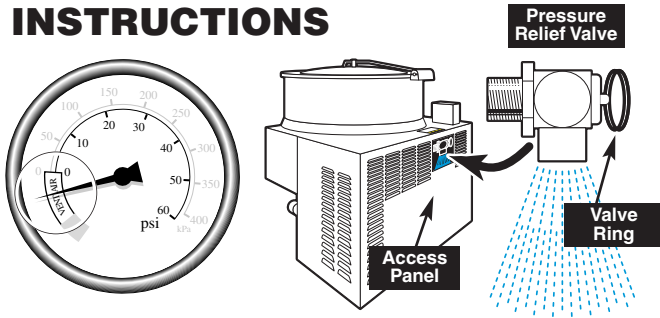


## HINGE ADJUSTMENT INSTRUCTIONS



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.

# KETTLE VENTING INSTRUCTIONS

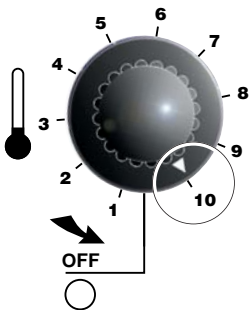


The following venting procedure should be followed when the Vacuum/Pressure Gauge needle is in the "VENT AIR" zone:

**NOTE:** Check for and eliminate leaks prior to venting (See REPAIRING LEAKS IN STEAM JACKETED KETTLE FITTINGS on page #31).

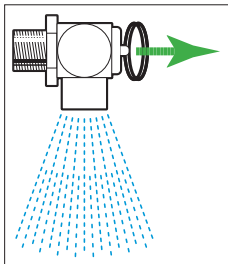
**DANGER: PRESSURE RELIEF VALVE WILL EXHAUST HIGH TEMPERATURE STEAM. CONTACT WITH SKIN COULD RESULT IN SERIOUS BURNS. KEEP FACE, HANDS AND BODY CLEAR OF DISCHARGE.**

**DANGER: WORKING ON MACHINES WITH POWER COULD RESULT IN SEVERE ELECTRICAL SHOCK.**

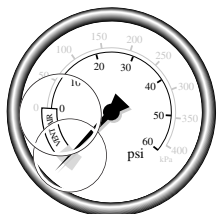


1. Remove Access Panel from back of main kettle console.
2. Turn kettle ON and set temperature control to **10**, heat the empty kettle until unit cycles off.
3. Vent kettle by pulling Valve Ring eight to fifteen times, holding valve open for two seconds each time.

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



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



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

# VACUUM LEAK TEST PROCEDURE

If the kettle will not hold vacuum, test for leaks at:

- A. Water Level Probe.
- B. Pressure Relief Valve/Pressure Gauge and connecting plumbing.
- C. Boiler Drain Cap.
- D. Sight Glass.

## LEAK TEST PROCEDURE:

1. Heat kettle until unit cycles off.
2. Shut off power to the kettle at the fused disconnect switch.
3. Spread Bubble Type Leak Detector over suspected areas and watch closely for bubbles.
4. Repair areas as required.

# REPAIRING LEAKS IN STEAM JACKETED KETTLE FITTINGS

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

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

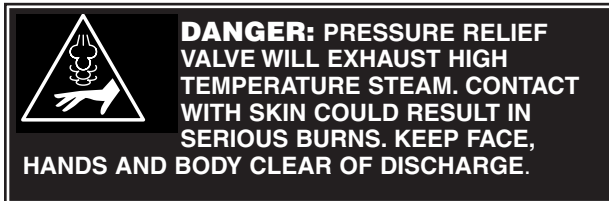
1. Water Level Probe  
Remove, clean threads, apply teflon thread sealant and reinstall.
2. Pressure Relief Valve  
A/ Inspect for signs of leaks. Replace if required.  
B/ Remove, clean threads, apply teflon thread sealant and reinstall.
3. Pressure Gauge  
A/ Inspect face of gauge. If it contains moisture on the inside of face replace.  
B/ Check tightness of plumbing connection to pressure Gauge.
3. Sight Glass  
A/ Check tightness of sight glass.  
B/ Replace "O" ring if required.

## RESERVOIR FILL PROCEDURES

**WARNING: IMPROPER REFILLING OF KETTLE JACKET WILL RESULT IN IRREVERSIBLE DAMAGE TO UNIT.**

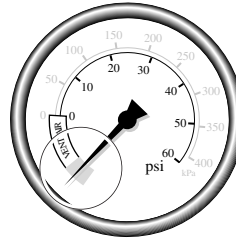
The kettle's water level must be maintained at the proper level. Under normal operating conditions, the sealed water reservoir should never require the addition of water.

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

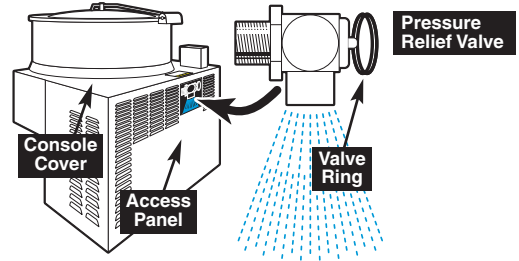


**NOTE:** Have a qualified service technician repair the leakage problem and add water to the unit. Ensure that the red "low water" light is on when the kettle is upright. On tilting kettles, it is normal for the red light to come on when the kettle is in a tilted position.

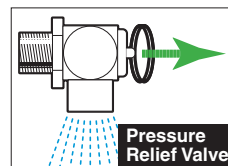
**CAUTION:** Only distilled water should be used when adding water to a partially filled water reservoir (If unit is completely empty see KETTLE JACKET FILLING & DRAINING PROCEDURES on page #34). Local tap water conditions may cause kettle damage which is not covered under warranty. Rust inhibitor is purchased locally. Read directions and do not exceed manufacturer's recommendation (excessive rust inhibitor can also cause solidification).



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



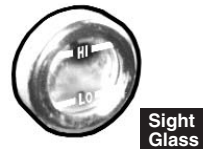
3. Remove Access Panel from back of main kettle console.



4. Pull Pressure Relief Valve Ring open to insure vessel is not pressurized.
5. Remove main kettle Console Cover.

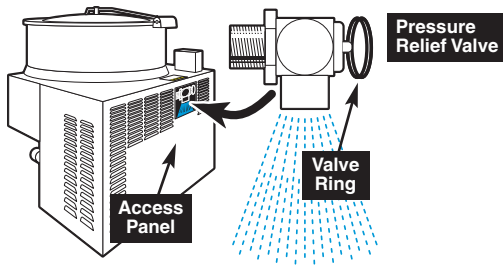
**Important-** Pull ring on Pressure Relief Valve prior to removal to insure vessel is not pressurized.

6. Remove 1/4" copper tubing and reducer bushing.
7. Add distilled water using a funnel if necessary. Fill the unit to the high level mark on the Sight Glass.
8. Apply a thread sealant (i.e. Teflon tape) to the reducer bushing threads and replace.
9. Replace main kettle Console Cover and Access Panel.

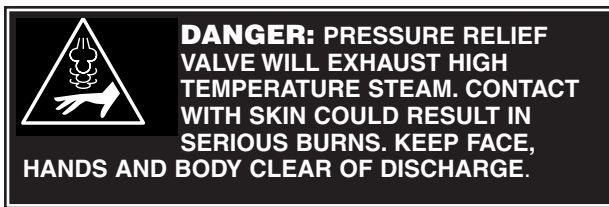


10. Restore power to unit at the fused disconnect switch.
11. The kettle must now be vented. (Refer to the KETTLE VENTING INSTRUCTIONS on page #31).

## PRESSURE RELIEF VALVE PERIODIC TESTING

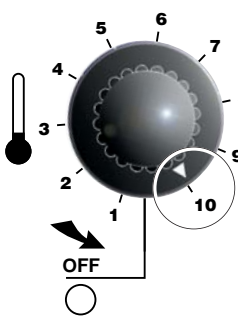


Most insurance agencies require periodic testing of pressure relief valves used on pressure vessels. This procedure will allow you to safely and quickly test your kettle's pressure relief valve. We recommend this test be performed twice a year.

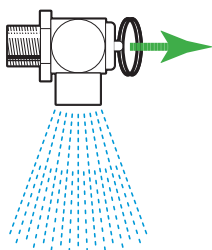


**NOTE:** The following instruction is intended for use by qualified service personnel.

**WARNING:** Kettle surface will be hot and steam will be released during testing. Take necessary precautions including the use of gloves and eye protection to prevent personal injury.



1. With the kettle empty, turn unit ON and set temperature control to **10**. Allow the kettle to heat until the unit cycles off.
2. Switch unit OFF and disconnect main power at fused disconnect switch.
3. Remove Access Panel at back of main kettle console.
4. Pull Pressure Relief Valve Ring open for a maximum of one second. Repeat test three to four times. Each time the mechanism should move freely and be accompanied by a rapid escape of steam.



## NOTES:

If valve appears to be sticking replace pressure relief valve.

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

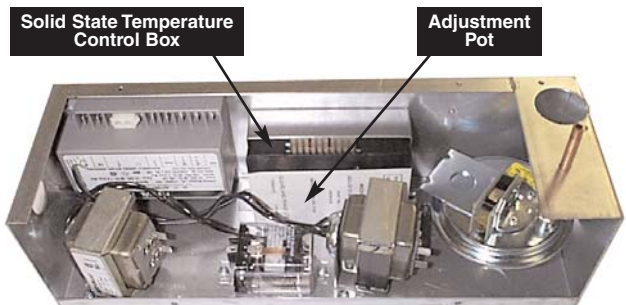
See service bulletin (KETTLE JACKET FILLING AND DRAINING PROCEDURES on page #34) for full instructions on the correct method for draining and refilling kettle jacket.

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

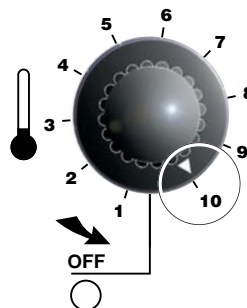
5. Replace Access Panel.

6. Reconnect main power at fused disconnect switch..

## CALIBRATING PROCEDURE



1. Insure the unit has a vacuum before you begin calibrating procedures. If unit requires venting refer to KETTLE VENTING INSTRUCTIONS on page #31.



2. Turn kettle ON and set temperature control to **10**.
3. Allow the unit to cycle twice.
4. Check temperature of the inner kettle surface with a digital surface thermometer.
5. Temperature should be between 260°F and 265°F.
6. Using a screw driver adjust temperature by turning the potentiometer on the Solid State Temperature Control Box. Turn very little. Turn clockwise to INCREASES and counter-clockwise to DECREASE temperature.
7. Allow the unit to cycle twice.
8. Check temperature of the inner kettle surface with a digital surface thermometer.
9. Repeat steps 4. through 8. until unit is calibrated.

## KETTLE JACKET FILLING & DRAINING PROCEDURES

Under normal circumstances the kettle does not require the draining of all fluid. If the red "low water" light is on, follow the RESERVOIR FILL PROCEDURES (page #33) in this manual.

If unit must be drained follow the procedures described on the following pages.

**WARNING: IMPROPER REFILLING OF KETTLE JACKET WILL RESULT IN IRREVERSIBLE DAMAGE TO UNIT.**

Use only a mixture of water and rust inhibitor to refill kettle jacket (see instructions below).

Contact your local water treatment company and purchase rust inhibitor with the specifications described below.

## Recommended Corrosion Inhibitors for Closed Systems

### DESCRIPTION

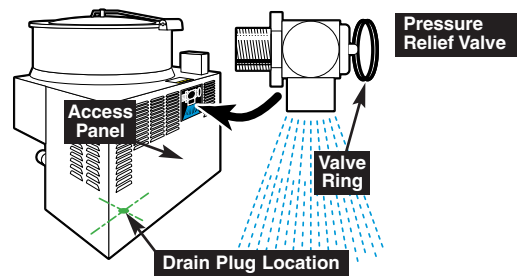
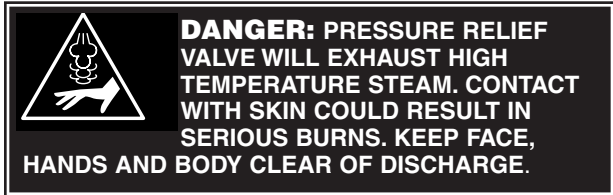
Recommended for our units is a blend of SODIUM NITRITE and BORAX for corrosion inhibition of ferrous metals and axoles for copper and copper alloy corrosion protection. Product should be formulated for hot or cold closed recirculating water systems.

Source the chemicals stated above from your local water treatment company. Mix only with water and follow manufactures recommended mixing rate.

### DISPOSAL OF INHIBITOR

Do not dispose of chemicals in any system which may discharge into water supplies used for drinking or washing or that could accidentally discharge into such systems, or into stream accessible to animals.

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



1. Remove Access Panel at back of main kettle console.
2. Pull pressure relief valve chain to ensure there is no pressure within the kettle jacket.
3. Remove 1/4" copper tubing and reducer bushing.
4. Remove drain plug cap (located underneath the kettle on the right rear). Allow kettle jacket to drain.
5. Replace filler plug and add water until it shows on sight glass. Remove Drain Plug cap and allow water to drain. Repeat until water drains clear.

**Refilling Unit** (see RESERVOIR FILL PROCEDURES on page #32 for details).



# AC INVERTER PROGRAMMING INSTRUCTIONS

The WFC Series AC Inverters come wired for external use and must be installed for use in a side panel control (See WIRING DIAGRAMS on page #37-38). Refer to owners manual for complete instructions and explanations. Manual used for the following was FORM 1094.

After installation is complete the inverter must be reprogrammed to Cleveland's modifications of the factory settings. All modifications are achieved in Access Level 2.

1. Turn agitator power on. The top four LED indicators will illuminate momentarily - wait for the three green LED's to go out before proceeding.
2. Press the PROGRAM and SHIFT keys simultaneously to reach Access Level 2. The display display will now read:
3. Use the UP/DOWN arrow keys to select the program parameter for change.
4. Press the SHIFT key. The program number will blink indicating that that the data value may be changed.
5. Use the UP/DOWN arrow keys to select the new data code.
6. Press the ENTER key. The display will indicate **\*\*STORED\*\*** for one second, then revert to the normal parameter display.
7. Press the PROGRAM key to exit the programming mode or the UP/DOWN keys to select an new parameter for change.

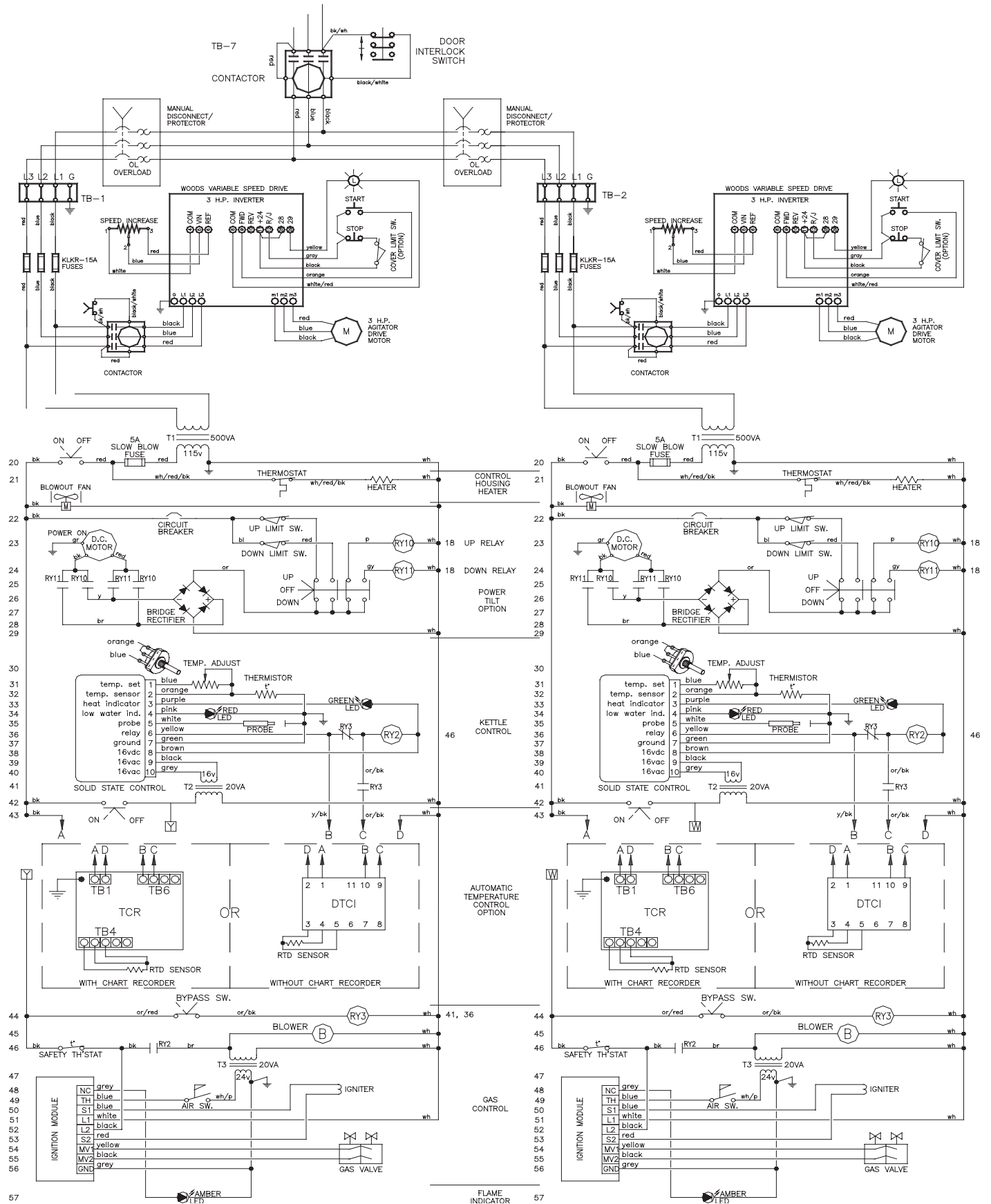
## PROGRAM CODE SUMMARY:

#	Name	Description	Data Range	Factory Setting	Units	Access Level	Customer Setting
01	MODEL	Model Number	0-65000	Note 1	---	1	
02	RVLVL	Software Revision	0-640	Note 1	---	2	
03	IRAT	Rated Current	2-200	Note 1	A	2	
05	SERNO	Serial Number	0-65000	---	---	2	
06	REP	Repair Date	0-65000	---	---	2	
07	FLT3	Last Fault	---	---	---	1	
08	FLT2	2nd Fault	---	---	---	2	
09	FLT1	1st Fault	---	---	---	2	
12	FOUT	Output Frequency	0-400	---	Hz	1	
13	VOUT	Output Voltage	0-100	---	%	1	
14	IOUT	Output Current	0-650	---	A	1	
15	LOAD	Drive Load	0-200	---	%	1	
16	TORQ	Load Torque	0-200	---	%	1	
17	TEMP	Inverter Temp	2-105	---	C	1	
18	TIME1	Total Run Time	0-65000	---	h	2	
19	TIME2	Power On Hours	0-65000	---	h	2	
<b>21</b>	<b>MODE</b>	<b>Input Mode</b>	<b>0-36</b>	<b>0</b>	<b>---</b>	<b>1</b>	<b>4</b>
24	FSEL	Reference Select	0-18	0	---	2	
27	TLSEL	Torque Limit Select	0-6	0	---	2	
<b>31</b>	<b>FMIN</b>	<b>Min. Frequency</b>	<b>0.00-400</b>	<b>0</b>	<b>Hz</b>	<b>1</b>	<b>14</b>
<b>32</b>	<b>FMAX</b>	<b>Max. Frequency</b>	<b>20.00-400</b>	<b>60</b>	<b>Hz</b>	<b>1</b>	<b>70</b>
33	F2	Preset Speed #2 - Jog	0.00-400	5	Hz	1	
34	F3	Preset Speed #3	0.00-400	20	Hz	2	
35	F4	Preset Speed #4	0.00-400	40	Hz	2	
36	F5	Preset Speed #5	0.00-400	60	Hz	2	
37	F6	Preset Speed #6	0.00-400	0	Hz	2	
38	F7	Preset Speed #7	0.00-400	0	Hz	2	
39	FTL	Min. Frequency in Torque Limit	0.00-400	10	Hz	2	
41	RSEL	Ramp Selector	0-7	0	---	2	
<b>42</b>	<b>ACC1</b>	<b>Acceleration Time #1</b>	<b>0.10-600</b>	<b>3</b>	<b>s</b>	<b>1</b>	<b>9</b>

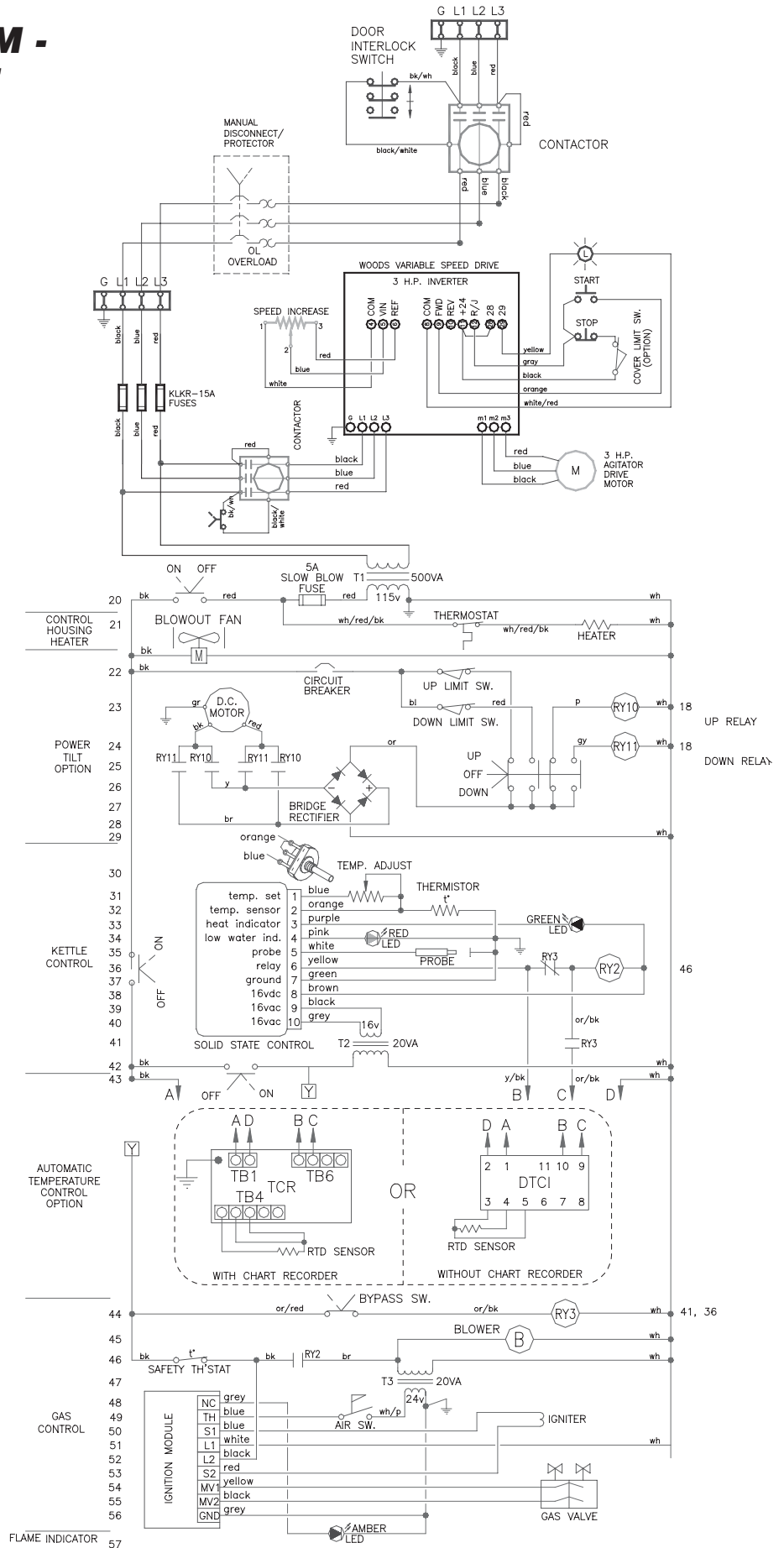
<b>43</b>	<b>DEC1</b>	<b>Deceleration Time #1</b>	<b>0.10-600</b>	<b>3</b>	<b>s</b>	<b>1</b>	<b>1</b>
44	ACC2	Acceleration Time #2	0.10-600	1	s	2	
45	DEC2	Deceleration Time #2	0.10-600	1	s	2	
46	DECTL	Torq. Limit Response Time	0.10-30	1	s	2	
47	DCBRK	DC Brake Time	0-5	0.2	s	2	
48	DCVLT	DC Brake voltage	0-15	Note1	%	2	
<b>51</b>	<b>VSEL</b>	<b>V/Hz Characteristic Selector</b>	<b>0-5</b>	<b>0</b>	<b>---</b>	<b>2</b>	<b>2</b>
<b>52</b>	<b>BOOST</b>	<b>Torque Boost</b>	<b>0-25</b>	<b>Note 1</b>	<b>%</b>	<b>1</b>	<b>8</b>
<b>53</b>	<b>FKNEE</b>	<b>V/Hz Knee Frequency</b>	<b>26-640</b>	<b>60</b>	<b>Hz</b>	<b>2</b>	<b>75</b>
54	SKBND	Skip Fresq. Hysteresis Band	0.20-20	1	Hz	2	
55	SK1	Skip Frequency #1	0.00-400	0	Hz	2	
56	SK2	Skip Frequency #2	0.00-400	0	Hz	2	
57	SK3	Skip Frequency #3	0.00-400	0	Hz	2	
58	SK4	Skip Frequency #4	0.00-400	0	Hz	2	
59	MVOLT	Rated Motor Voltage	185-480	Note 1	V	2	
61	LTLF	Load Torq. Limit Forward	5-150	150	%	2	
62	LTLR	Load Torq. Limit Reverse	5-150	150	%	2	
63	RTLFL	Regenerative Torq. Limit FWD	5-110	80	%	2	
64	RTLRL	Regenerative Torq. Limit REV	5-110	80	%	2	
65	SLIP	Slip Compensation	0-10*	0	%	1	
66	STAB	Current Stability	0-5	2	---	2	
<b>67</b>	<b>TOL</b>	<b>Timed Overload Trip Point</b>	<b>0-100</b>	<b>0</b>	<b>%</b>	<b>2</b>	<b>100</b>
68	NRST	Restart Number	0-8	0	---	2	
69	DRST	Restart Delay	0-60*	0	s	2	
6C	TOLC	Timed Overload Characteristic	0-7	0	---	2	
71	METER	Analog Meter Output	0-7	1	---	1	
72	ST1	Auxiliary Output #1	0-11	6	---	2	
73	ST2	Auxiliary Output #2	0-11	3	---	2	
74	ST3	Auxiliary Output #3	0-11	7	---	2	
<b>75</b>	<b>STR</b>	<b>Auxiliary Relay (Fault)</b>	<b>0-11</b>	<b>2</b>	<b>---</b>	<b>2</b>	<b>3</b>
<b>81</b>	<b>PRGNO</b>	<b>Special Program Number</b>	<b>0-65000</b>	<b>0</b>	<b>---</b>	<b>2</b>	<b>2</b>
82	START	Inverter Start Options	0-7	0	---	2	
<b>83</b>	<b>PWM</b>	<b>Carrier Frequency Selector</b>	<b>0-1</b>	<b>0</b>	<b>---</b>	<b>2</b>	<b>1</b>
84	DISP	Display Option Full Setting	0-65000	0	---	2	
85	UNITS	Display Units	ALPHA	RPM_1	---	2	
86	LANG	Display Language	0-3	0	---	2	
87	ACODE	Security Access Code	0-999	0	---	2	
A2	RATIO	Master Slave Speed Ratio (Note 2)	50-2000	100	%	2	
B1	OPTNO	Option Board Number	0-6	0	---	2	
Cx	CNTLx	Event Control (1-9)	BINARY (8)	0	---	2	
Ex	ECNTx	Event Counts (1-9)	0-65535	0	---	2	

**Bolded** areas indicate Cleveland modifications of factory settings.

# WIRING DIAGRAM - DUAL REMOTE



# WIRING DIAGRAM - SINGLE REMOTE



# Symbol Legend (page 1 of 2)

□ English □ French □ Spanish □ Italian □ German □ Chinese-Simplified □ Chinese-Traditional

	<p>RISK OF ELECTRICAL SHOCK DANGER DE SECOUSSE ÉLECTRIQUE PELIGRO DE ELECTROCHOQUE PERICOLO DI SCOSSA STROMSCHLAG-GEFAHR 有触电危險 有觸電危險</p>		
	<p>SPLASHPROOF ANTIÉCLABOUSSURES A PRUEBA DE SALPICADURAS PROTETTO CONTRO GLI SPRUZZI SPRITZWASSERDICHT 防濺水的 防濺水的</p>		
	<p>DISCONNECT ELECTRICAL SUPPLY BEFORE WORKING ON KETTLE COUPER LE COURANT AVANT D'INTERVENIR SUR L'ÉQUIPEMENT DESCONECTAR LA ALIMENTACION ELECTRICA ANTES DE REALIZAR TRABAJOS EN EL EQUIPO DISINSERIRE LA CORRENTE PRIMA DI LAVORARE SULLA MACCHINA STROMVERSORGUNG AUSSCHALTEN, BEVOR AM GERÄT GEARBEITET WIRD 操作设备前切断电源 操作設備前切斷電源</p>		
	<p>MAIN POWER ALIMENTATION ÉLECTRIQUE ALIMENTACION PRINCIPAL ALIMENTAZIONE HAUPTSTROM 主电源 主電源</p>		<p>ON MARCHE ENCENDIDO ACCESO AN 开 開</p>
	<p>OFF ARRÊT APAGADO SPENTO AUS 关 關</p>		<p>PAUSE, INTERRUPTION PAUSE, INTERRUPTION PAUSA, INTERRUPCION PAUSA, INTERRUZIONE PAUSE, UNTERBRECHUNG 暫停，间断 暫停，間斷</p>
	<p>CONTINUE CONTINUER CONTINUAR CONTINUA WEITER 继续 繼續</p>		<p>RESET RÉENCLANCHER RECONECTAR RESET NULLSTELLEN 重新设定 重新設定</p>
	<p>START OF ACTION DÉBUT DE L'ACTION INICIAR FUNCIONAMIENTO INIZIO OPERAZIONE FUNKTION STARTEN 开始操作 開始操作</p>		<p>STOP OF ACTION ARRÊT DE L'ACTION PARAR FUNCIONAMIENTO ARRESTO OPERAZIONE FUNKTION STOPPEN 停止操作 停止操作</p>
	<p>FAST START DÉMARRAGE RAPIDE INICIO RAPIDO AVVIAMENTO RAPIDO SCHNELLER START 快启动 快啓動</p>		<p>FAST STOP, EMERGENCY ARRÊT RAPIDE D'URGENCE PARADA RAPIDA, EMERGENCIA ARRESTO RAPIDO, EMERGENZA SCHNELLER STOPP, NOTFALL 快止动，紧急 快止動，緊急</p>

# Symbol Legend (page 2 of 2)

□ English □ French □ Spanish □ Italian □ German □ Chinese-Simplified □ Chinese-Traditional

	<p>AUTOMATIC TEMPERATURE CONTROL            COMMANDE AUTOMATIQUE DE LA TEMPÉRATURE            AJUSTE AUTOMATICO DE TEMPERATURA            CONTROLLO AUTOMATICO TEMPERATURA            AUTOMATISCHE TEMPERATURREGELUNG</p>		<p>LOW WATER            NIVEAU BAS DE L'EAU            NIVEL DE AGUA BAJO            LIVELLO BASSO            WASSERSTAND NIEDRIG</p>
	<p>BURNER AND/OR ELEMENT ENERGIZED            BRÛLEUR ET/OU ÉLÉMENT ALLUMÉ            QUEMADOR O ELEMENTO ENCENDIDO            FIAMMA E/O ELEMENTO ATTIVATI            BRENNER ODER ELEMENT EINGESCHALTET</p>		<p>IGNITION FAILURE            PANNE D'ALLUMAGE            FALLO DE ENCENDIDO            MANCATA ACCENSIONE            ZÜNDUNGSFEHLER</p>
	<p>HEATING            ÉBULLITION            CALEFACCION            RISCALDAMENTO            HEIZUNG</p>		<p>COOLING            REFROIDISSEMENT            REFRIGERACION            RAFFREDDAMENTO            KÜHLUNG</p>
	<p>HEAT ADJUSTMENT            RÉGLAGE DE LA CHALEUR            REGULACION DE CALOR            REGOLAZIONE RISCALDAMENTO            WÄRMEREGULIERUNG</p>		<p>MIXER BRIDGE            PONT DU MÉLANGEUR            PUENTE DE MEZCLADORA            MENSOLA MESCOLATORE            MISCHER-BRÜCKE</p>
	<p>LEFT KETTLE            BOUILLLOIRE GAUCHE            HERVIDOR IZQUIERDO            BOLLITORE SINISTRO            LINKER KOCHKESSEL</p>		<p>RIGHT KETTLE            BOUILLLOIRE DROITE            HERVIDOR DERECHO            BOLLITORE DESTRO            RECHTER KOCHKESSEL</p>
	<p>MIX            MÉLANGER            MEZCLAR            MESCOLATURA            MISCHEN</p>		<p>LIFT            LEVER            LEVANTAR            SOLLEVARE            HEBEN</p>
	<p>UP            HAUT            ARRIBA            SU            RAUF</p>		<p>DOWN            BAS            ABAJO            GIÙ            RUNTER</p>
	<p>HOT WATER            EAU CHAUDE            AGUA CALIENTE            ACQUA CALDA            HEISSES WASSER</p>		<p>COLD WATER            EAU FROIDE            AGUA FRIA            ACQUA FREDDA            KALTES WASSER</p>

## **SPARE PARTS LIST**

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

<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QUANTITY</b>
KE54602	SCRAPER BLADE	1
KE54608	SPRING	3
KE01911	RETAINING KNOBS	1
FA05002-8	"O" RING	3
KE54594	PIN	1
KE54834-4	SOLENOID VALVE	1
KE55248	BUNA-N O-RING	5
KE55255	BUNA-N O-RING	5
FA05002-46	O-RING, FOOD GRADE, SIZE A0123, EPDM E 692-75	5
KE52154-3	GASKET, SANI CLAMP, 1 1/2" WHITE TEFLON	5
KE55297-3	GD2 STANDARD ACTUATOR	1
KE52936-2	FUSE, 15 AMP	6
SE50354	PEN TIP, RED (PKG. OF 5)	1
SE50354	PEN TIP, GREEN (PKG. OF 5)	1

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

<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QUANTITY</b>
KE54834-4	SOLENOID VALVE	1
KE55253	AIR OPERATED CYLINDER	1
KE53469	IGNITION MODULE	1
KE00458	SOLID STATE CONTROL	1
KE50753-7	RELAY	1
KE00515	THERMISTOR	1
KE50753-10	RELAY, 120 V HOT COLD WATER BYPASS	1
KE52074	CAPACITOR	3
KE53138-1	CONTACTOR CARTRIDGE, NORMALLY OPEN	2
KE53138	CONTACTOR CARTRIDGE, NORMALLY CLOSED	2
KE50753-10	RELAY	1

## PREVENTIVE MAINTENANCE

### COOK/CHILL MIXER & PASTA KETTLES

#### A. **AUTOMATIC DUMP VALVE**

##### **Weekly**

- Check air collector regulator for moisture, dirt, and proper pressure
- Check all orings and seals and gaskets
- Check valve operation
- Lubricate with light oil when needed
- Check air hose for leaks or signs of wear

#### B. **TILT MECHANISM ( Hydraulic Tilt )**

##### **Weekly**

- Check for leaks
- Check for smooth operation
- Check switches

##### **Yearly**

- Change hydraulic fluid every two years. (1 1/2 gallons of **FOOD GRADE** hydraulic fluid) ( Shell Telis #5 )

##### **( Electric Tilt )**

##### **Weekly**

- Check for smooth operation
- Check switches

##### **Monthly**

- Check for movement in mechanism
- Grease trunnions monthly ( **Food Grade Grease** )

#### C. **AIR PRESSURE**

##### **Weekly**

- 45 psi dump valve - 15 psi for jacket purge
- Air must be clean and dry
- Check all air lines & fittings for leaks

#### D. **STEAM TRAP**

##### **Monthly**

- Check proper operation

**PREVENTIVE  
MAINTENANCE**

**COOK/CHILL MIXER & PASTA KETTLES (continued)**

**E. SAFETY VALVE**

**Weekly**

- Check for leakage
- Steam pressure 65 psi. max.
- Safety set at 100 psi.

**F. LEAKS**

**Weekly**

- Check for leaks of any type ( water - steam - hydraulic )  
( **Leaks take away from performance and will lead to costly repair** )

**G. Control Panels**

**Weekly**

- Signs of water damage
- Check operation of all controls
- Water meter operation
- Temp read outs
- Temp charting
- Temp controlling
- RTD adjustments
- Mixer operation & speed control
- Gentle heat operation
- product valve operation