

KTT/KTC-G Series

GAS TABLE TOP TILTING KETTLE

INSTALLATION - OPERATION - MAINTENANCE



BLODGETT OVEN COMPANY

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PART NUMBER 170081 REV A (04/11)

THIS MANUAL MUST BE RETAINED FOR FUTURE REFERENCE. READ, UNDERSTAND AND FOLLOW THE INSTRUCTIONS AND WARNINGS CONTAINED IN THIS MANUAL.

FOR YOUR SAFETY

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

POST IN A PROMINENT LOCATION

INSTRUCTIONS TO BE FOLLOWED IN THE EVENT USER SMELLS GAS. THIS INFORMATION SHALL BE OBTAINED BY CONSULTING YOUR LOCAL GAS SUPPLIER. AS A MINIMUM, TURN OFF THE GAS AND CALL YOUR GAS COMPANY AND YOUR AUTHORIZED SERVICE AGENT. EVACUATE ALL PERSONNEL FROM THE AREA.

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.

NOTIFY CARRIER OF DAMAGE AT ONCE

IT IS THE RESPONSIBILITY OF THE CONSIGNEE TO INSPECT THE CONTAINER UPON RECEIPT OF SAME AND TO DETERMINE THE POSSIBILITY OF ANY DAMAGE, INCLUDING CONCEALED DAMAGE. WE SUGGEST THAT IF YOU ARE SUSPICIOUS OF DAMAGE TO MAKE A NOTATION ON THE DELIVERY RECEIPT. IT WILL BE THE RESPONSIBILITY OF THE CONSIGNEE TO FILE A CLAIM WITH THE CARRIER. WE RECOMMEND THAT YOU DO SO AT ONCE.

IMPORTANT - READ FIRST - IMPORTANT

- WARNING:** FAILURE TO DISCONNECT POWER BEFORE SERVICING COULD RESULT IN ELECTROCUTION AND DEATH.
- 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.
- WARNING:** THE UNIT MUST BE INSTALLED BY PERSONNEL QUALIFIED TO WORK WITH GAS, ELECTRICITY AND PLUMBING. UNIT MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES.
- WARNING:** DO NOT ATTACH THE UNIT TO A TYPE "B" VENT. IT COULD CAUSE FIRE OR PROPERTY DAMAGE.
- WARNING:** DO NOT CONNECT ANY PIPING TO THE PRESSURE RELIEF VALVE. IT MUST BE FREE TO VENT STEAM AS NEEDED. TO AVOID BURNS FROM THE VENTED STEAM THE VALVE DISCHARGE SHOULD POINT DOWNWARD.
- DANGER:** ELECTRICALLY GROUND THE UNIT AT THE TERMINAL PROVIDED. FAILURE TO GROUND THE UNIT COULD RESULT IN ELECTROCUTION AND DEATH.
- CAUTION:** BE SURE ALL OPERATORS READ, UNDERSTAND AND FOLLOW THE OPERATING INSTRUCTIONS, CAUTIONS AND SAFETY INSTRUCTIONS CONTAINED IN THIS MANUAL.
- CAUTION:** DO NOT OVERFILL THE KETTLE WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS A MINIMUM OF 2-3" (5-8 CM) BELOW THE KETTLE BODY RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING AND SAFE TRANSFER OF PRODUCT.
- CAUTION:** KEEP FLOORS IN FRONT OF KETTLE WORK AREA CLEAN AND DRY. IF SPILLS OCCUR, CLEAN IMMEDIATELY TO AVOID SLIPS OR FALLS.
- WARNING:** KEEP WATER AND SOLUTIONS OUT OF CONTROLS AND BURNERS. NEVER USE A HIGH PRESSURE HOSE TO CLEAN KETTLE SURFACES.
- CAUTION:** MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES AND CLOTHING. TAKE PRECAUTIONS: WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD AND PROTECTIVE CLOTHING. CAREFULLY READ WARNINGS AND FOLLOW DIRECTIONS ON CLEANER LABELS .
- WARNING:** DO NOT STAND ON OR APPLY UNNECESSARY WEIGHT OR PRESSURE ON THE KETTLE FRONT OR POURING LIP. THIS COULD RESULT IN THE OVERLOAD AND FAILURE OF THE TILT MECHANISM, AND POSSIBLE SERIOUS INJURY AND BURNS TO THE OPERATOR AND OTHERS.
- NOTICE:** NEVER LEAVE A SANITIZER IN CONTACT WITH STAINLESS STEEL SURFACES LONGER THAN 30 MINUTES. LONGER CONTACT CAN CAUSE CORROSION.
- WARNING:** FAILURE TO PERIODICALLY CHECK PRESSURE RELIEF VALVE OPERATION COULD RESULT IN PERSONAL INJURY AND/OR DAMAGE TO EQUIPMENT.
- WARNING:** WHEN TESTING, AVOID EXPOSURE TO THE STEAM BLOWING OUT OF THE PRESSURE RELIEF VALVE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

IMPORTANT - READ FIRST - IMPORTANT

WARNING: TO AVOID INJURY, READ AND FOLLOW ALL PRECAUTIONS STATED ON THE LABEL OF THE WATER TREATMENT COMPOUND.

WARNING: BEFORE REPLACING ANY PARTS, DISCONNECT THE UNIT FROM THE ELECTRIC POWER SUPPLY AND CLOSE THE MAIN GAS VALVE. ALLOW FIVE MINUTES FOR GAS TO VENT.

CAUTION: USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY THE MANUFACTURER OR AUTHORIZED DISTRIBUTORS CAN CAUSE INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.

WARNING: KEEP AREA AROUND KETTLE FREE AND CLEAR OF ALL COMBUSTIBLE MATERIALS. FAILURE TO DO SO COULD RESULT IN FIRE OR PROPERTY DAMAGE.

CAUTION: HEATING AN EMPTY KETTLE MAY CAUSE THE RELEASE OF STEAM FROM THE PRESSURE RELIEF VALVE.

IMPORTANT: SERVICE PERFORMED BY OTHER THAN FACTORY AUTHORIZED PERSONNEL WILL VOID ALL WARRANTIES.

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References

CSA INTERNATIONAL
8501 East Pleasant Valley Road
Cleveland, Ohio 44131

NSF INTERNATIONAL
798 N. Dixboro Rd.
P.O. Box 130140
Ann Arbor, Michigan 48113-0140

UNDERWRITERS LABORATORIES, INC.
333 Pfingsten Road
Northbrook, Illinois [60062](#)

KLENZADE SALES CENTER ECOLAB, Inc.
[370](#) Wabasha
St. Paul, Minnesota [55102](#)

NATIONAL FIRE PROTECTION ASSOCIATION
60 Battery March Park
Quincy, Massachusetts 02269

NFPA/54 -Installation Gas Appliances & Piping
NFPA/70 - The National Electric Code

ZEP MANUFACTURING COMPANY
1310-T Seaboard Industrial Boulevard
Atlanta, Georgia 30318

Equipment Description

FIRING RATE, BTU/hr	
5G-KTT, 10G-KTT 5G-KTC, 10G-KTC	10G-KTT, 12G-KTT 10G-KTC, 12G-KTC
31,000	52,000

KTT-G and KTC-G models are stainless steel, steam-jacketed, table top mounted kettles with a self-contained, gas heated steam source. The KTC has a crank tilt hand wheel, and the KTT has a handle that allows the operator to manually tilt the kettle. The kettle body is welded into one solid piece and furnished with a reinforced rim and welded-in "butterfly" shaped pouring lip. The interior of the kettle is polished to a 180 emery grit finish, and the exterior is given a bright high buff finish. The unit is A.S.M.E. shop inspected and registered with the National Board for a design pressure of 50 PSIG.

The self-contained steam source is heated by propane or natural gas and is equipped with electronic ignition. Charged at the factory with chemically pure water containing rust inhibitors, the steam source provides kettle temperatures of 150°F to approximately 295°F.

Controls for the KTC unit include a crank tilt handwheel, thermostat, pressure gauge, pressure relief valve, low water cut-off, On/Off switch, indicator lamp, gas regulator valve, and water level sight glass. Controls for the KTT are the same as the above, with the exception of the crank tilt hand wheel.

The gas supply shuts off automatically when the kettle is tilted.

The unit must be specified for use with natural gas or propane. For other gas types, consult factory. Service connections are required for gas and 115V electricity.

Model	Kettle Capacity	Jacket Capacity	Kettle Body Diameter	Kettle Body Depth	Base Width	Base Depth
5G-KTT 5G-KTC	5 Gal. (20 Qt.) 19 liter	6 Qt 5.7 liter	14 inches 356 mm	11 inches 279 mm	28 inches 711 mm	24 inches 610 mm
6G-KTT 6G-KTC	6-Gal. (24 Qt.) 23 liter	6 Qt 5.7 liter	14 inches 356 mm	12-1/2 inches 318 mm	28 inches 711 mm	24 inches 610 mm
10G-KTT 10G-KTC	10 Gal. (40 Qt.) 38 liter	12 Qt 11.4 liter	16-1/2 inches 419 mm	14-1/2 inches 368 mm	28 inches 711 mm	26-3/4 inches 680 mm
12G-KTT 12G-KTC	12 Gal. (48 Qt.) 45 liter	12 Qt 11.4 liter	16-1/2 inches 419 mm	16 inches 406 mm	28 inches 711 mm	26-3/4 inches 680 mm

Options available include:

1. One-piece, Lift-off cover
2. Holder for Lift-off Cover
3. Basket insert
4. Rice Strainer
5. Stand that supports the unit and holds a pan in position for filling
6. Water fill swing faucet
7. 316 stainless steel interior (must be indicated on initial order)

Inspection & Unpacking

CAUTION
SHIPPING STRAPS ARE UNDER TENSION AND CAN SNAP BACK WHEN CUT. TAKE CARE TO AVOID PERSONAL INJURY OR DAMAGE TO THE UNIT BY STAPLES LEFT IN THE WALLS OF THE CARTON.

CAUTION
THIS UNIT WEIGHS BETWEEN 214 AND 240 POUNDS (98 TO 109 Kg) DEPENDING ON SIZE. INSTALLER SHOULD USE PROPER EQUIPMENT TO LIFT SAFELY.

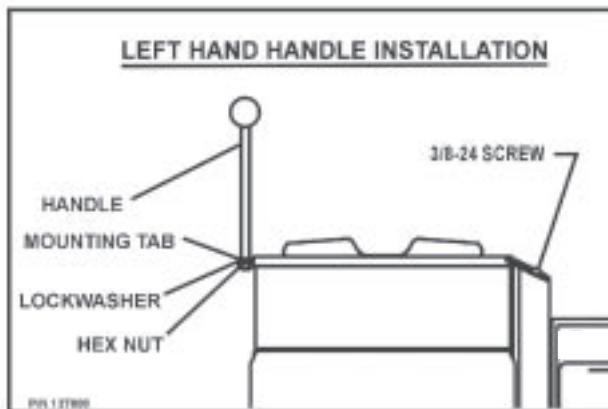


The kettles are shipped from the factory strapped on a pallet.

The unit arrives completely assembled, except for the tilting handle on hand tilt models which is shipped inside the kettle. The unit is strapped on a skid and in a heavy carton. Inspect the carton carefully for damage. Open the container and check the unit for hidden damage. Report shipping damage or shipment errors to the delivery agent.

Write down the model number, serial number, and installation date for your unit at the top of the Service Log on Page 33. Keep this manual with the unit.

To remove the kettle from the box, cut any straps from around the box. Detach the box sides from the skid. Pull the box up off the unit, taking care to avoid damage or injury from any staples left in the box walls. When installation is to begin, cut the straps holding the kettle on the skid, and lift the kettle straight up off the skid. Examine the packing materials to make sure no loose parts are discarded with the materials. On hand tilt models, the tilting handle may be screwed into its socket. Attach handle to the kettle on left side or right side as shown below.



Installation

WARNING
THE KETTLE MUST BE INSTALLED BY PERSONNEL QUALIFIED TO WORK WITH GAS, ELECTRICITY AND PLUMBING. IMPROPER INSTALLATION CAN CAUSE INJURY TO PERSONNEL AND/OR DAMAGE TO THE EQUIPMENT.

WARNING
THIS UNIT IS FOR COMMERCIAL USE. DO NOT USE HOME OR RESIDENTIAL GRADE GAS CONNECTIONS. THEY DO NOT MEET GAS CODES AND COULD BE HAZARDOUS.

The kettle should be installed in a ventilated room for efficient performance. Items which might obstruct or restrict the flow of air for combustion and ventilation must be removed. The area directly around the appliance must be cleared of any combustible material.

1. Installation on combustible floors is allowed. Minimum clearances between the unit and combustible surfaces is as follows:

	Minimum Clearance from Combustible walls	Recommended Clearances
Left Side	1 in.	1 in.
Right Side	0 in.	12-16 in. for servicing
Rear	1 in.	3 in. for faucet bracket

2. We recommends installation of the unit under a vent hood. The base must be fastened to a working surface or stand.
3. Complete the piping to the gas service main using ½ inch IPS pipe or an approved equivalent.
4. Provide 115 VAC, 60 cycle, 1 phase, 1 AMP electric service. Local codes and/or The National Electrical Code should be observed in accordance with ANSI/NFPA-70 latest edition. AN ELECTRICAL GROUND IS REQUIRED. The electrical schematic is located on the inside of the service panel and in this manual.
5. Electrical connection to the unit must be water resistant sealtite conduit type or equal and utilize the water resistant conduit fitting provided on the unit.
6. The installation must conform with local codes or the American National Standards Z223.1 - latest edition National Fuel Gas Code. The kettle should be installed in an adequately ventilated room with provision for adequate air supply. The best ventilation will employ a vent hood and exhaust fan with no direct connection between the vent duct and the kettle flue. DO NOT obstruct the flue or vent duct after installation.
7. **PRESSURE TEST WARNING**
 - a) Test pressure exceeding ½ PSIG (3.45 kPa). During pressure testing of the gas supply piping system at pressures exceeding ½ PSIG, the appliance and its individual shutoff valve must be disconnected from the gas supply piping system.
 - b) Test pressure equal to or less than ½ PSIG (3.45 kPa). During pressure testing of the gas supply piping system at pressures equal to or less than ½ PSIG, the kettle must be isolated from the gas supply piping system by closing its individual manual shutoff valve.

Installation

8. Adequate space for proper servicing and operation is required. DO NOT block any air intake spacings to the combustion chamber or obstruct air flow.
9. After the kettle has been connected to the gas supply, check all gas joints for leaks. A soap solution or other suitable gas leak detector should be used. Do not use flame when checking for leaks.
10. Once the unit is anchored to a mounting surface, apply a small bead of silicone caulk around the perimeter of the kettle base and seal the joint.
11. Make sure the water level is correct in the jacket, by confirming that the level is near the middle of the sight glass. If the water level is low, follow the instructions in Jacket Filling and Water Treatment in the Maintenance section of this manual.
12. Check to be sure that the open end of the elbow on the outlet of the pressure relief valve is directed downward. Be sure to read and follow the instructions on the attached pressure relief valve tag.

Initial Start-Up

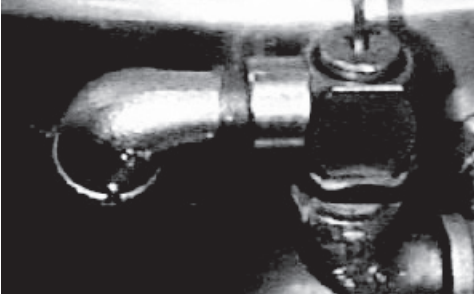
IMPORTANT
BE SURE ALL OPERATORS READ,
UNDERSTAND AND FOLLOW THE OPERATING
INSTRUCTIONS, CAUTIONS, AND SAFETY
INSTRUCTIONS CONTAINED IN THIS MANUAL.

WARNING
DO NOT STAND ON OR APPLY UNNECESSARY
WEIGHT OR PRESSURE ON THE KETTLE FRONT
OR POURING LIP. THIS COULD RESULT IN
THE OVERLOAD AND FAILURE OF THE TILT
MECHANISM, AND POSSIBLE SERIOUS INJURY
AND BURNS TO THE OPERATOR AND OTHERS.

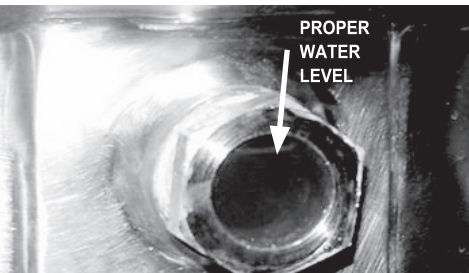
After the kettle has been installed, the installer should test to ensure that it is operating correctly.

1. Remove literature and packing materials from inside and outside of the unit.
2. Add water to the kettle to a depth of at least one inch.
3. Make sure the supplies of gas and electric power are on.
4. Follow the “To Start Kettle Heating” instructions in the Operation section of this manual. Begin heating the water at the highest thermostat setting. The indicator light should come on and heating should continue until the water boils.
5. To turn off the unit, follow “To Stop Kettle Heating” in the Operation Section of this manual.

If the kettle functions as described, it is ready for use. If the unit does not operate as designed, contact an authorized Service Agent.



Make sure that the open end of the elbow on the pressure relief valve is directed downward.



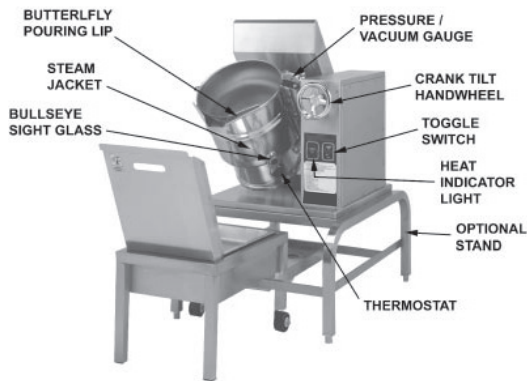
Correct water level

Operation

CAUTION
ANY POTENTIAL USER OF THE EQUIPMENT
MUST BE TRAINED IN SAFE AND CORRECT
OPERATING PROCEDURES.

WARNING
KEEP AREA AROUND KETTLE FREE AND
CLEAR OF ALL COMBUSTIBLE MATERIALS.
DO NOT ATTEMPT TO LIGHT ANY BURNER
WITH A FLAME.

CAUTION
HEATING AN EMPTY KETTLE MAY CAUSE
THE RELEASE OF STEAM FROM THE
PRESSURE RELIEF VALVE.



Crank tilt model shown on optional stand.

A. Controls

Operator controls for the kettle are:

1. Manual gas valve which controls the supply of gas from the main to the unit.
2. On-Off (toggle) switch. This switch turns the control circuit power supply on or off.
3. Thermostat dial, which turns the thermostat on or off, and sets the kettle operating temperature.
4. Crank tilt handwheel which controls kettle movement.

B. Operating Procedure

1. To Start Kettle:
 - a. CHECK THE WATER LEVEL IN THE JACKET EVERY DAY. The level should be in the middle of the sight glass. If the water level is low, see Jacket Filling in the Maintenance section of this manual.
 - b. Check the pressure/vacuum gauge. If the gauge does not show 20 to 30 inches of vacuum (i.e., a reading of 20 to 30 below zero), see Jacket Vacuum in the Maintenance section of this manual.
 - c. DO NOT attempt to light any burner with a flame.
 - d. Open the main supply gas valve (handle in line with the pipe).
 - e. Turn the toggle switch to ON.
 - f. Turn the thermostat to the desired heat setting.
2. To Stop Kettle Heating:
 - a. To tilt the body of the kettle forward, turn the hand crank on the front of the cabinet counter-clockwise. The body will stay in the position it holds when you stop cranking. To return the kettle body to its upright position, turn the crank clockwise.
 - b. Product may also be transferred by means of the optional draw-off valve, if the kettle is so equipped.
3. To Relight Kettle
 - a. Close main gas supply valve.
 - b. Set on-off switch to OFF.
 - c. Set thermostat to OFF.
 - d. Wait five minutes, then proceed as directed under *To Start Kettle Heating*.
4. If electric power fails, do not attempt to operate the unit. When power is restored, proceed as directed in *To Start Kettle Heating*.

Operation

WARNING

AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE KETTLE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

TAKE CARE TO AVOID CONTACT WITH HOT KETTLE BODY OR HOT PRODUCT, WHEN ADDING INGREDIENTS, STIRRING OR TRANSFERRING PRODUCT TO ANOTHER CONTAINER.

CAUTION

DO NOT OVERFILL THE KETTLE WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS 2-3" (5-8 cm) BELOW THE KETTLE RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING PRODUCT AND SAFE TRANSFER.

CAUTION

DO NOT TILT KETTLE BODY WITH COVER OR BASKET INSERT IN PLACE. COVER MAY SLIDE OFF, CAUSING INJURY TO OPERATOR.

WARNING

WHEN TILTING KETTLE:

- 1) WEAR PROTECTIVE OVEN MITT AND PROTECTIVE APRON.
- 2) USE DEEP CONTAINER TO CONTAIN AND MINIMIZE PRODUCT SPLASHING.
- 3) PLACE CONTAINER ON STABLE, FLAT SURFACE, CLOSE TO THE KETTLE.
- 4) STAND AWAY FROM POUR PATH OF HOT CONTENTS.
- 5) POUR SLOWLY, KEEP CONTROL OF KETTLE, AND RETURN KETTLE BODY SLOWLY TO UPRIGHT POSITION AFTER CONTAINER IS FILLED OR TRANSFER IS COMPLETE.
- 6) DO NOT OVERFILL CONTAINER. AVOID DIRECT SKIN CONTACT WITH HOT CONTAINER AND ITS CONTENTS.



Left the rear of the lid first.

5. To Transfer Product or Empty Kettle:

Crank Tilt Kettles:

The kettle body is tilted using the crank tilt handwheel. Turning the crank clockwise tilts the kettle body; counter-clockwise returns it to an upright position. The kettle body will remain in any tilted position.

Hand Tilt Kettles:

The kettle is designed to be tilted in a controlled manner. Grasp the insulated plastic ball firmly. Maintain a firm grip on handle when tilting, keeping kettle body in a tilted position or SLOWLY returning the kettle body to an upright position.

6. Use of Common Accessories

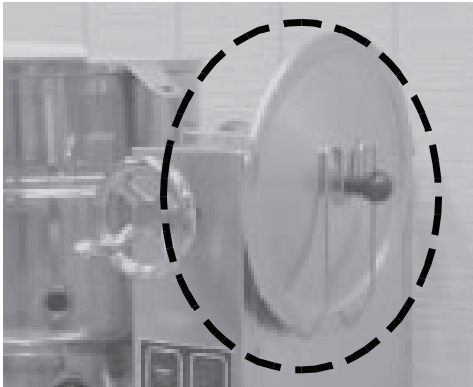
Lift-Off Cover:

- a. As with stock pot cooking, an optional lift off cover will speed up the heating of water and food products. A cover helps retain heat in the cooking vessel and reduces the amount of heat and humidity released into the kitchen. Use of a cover can reduce some product cook times and help maintain the temperature, color and texture of products being held or simmered for extended periods.
- b. Make sure the plastic ball handle is secure on the lift off cover before using. ALWAYS use the plastic handle to place or remove cover from the kettle. Wear protective oven mitts and a protective apron.
- c. When putting the cover on the kettle, position it on top of kettle rim, with its flat edge facing the pouring lip.
- d. When removing cover:
 - 1) Firmly grasp plastic handle
 - 2) Lift rear edge (farthest from operator) 1-2" (3-5 cm) to allow any steam and water vapor to escape the cooking vessel. Wait 2-3 seconds.
 - 3) Tilt cover to 45-60° angle and allow any hot condensate or product to roll off cover back into kettle.
 - 4) Remove cover, ensuring that any remaining hot condensate or product does not drip on operator, floor or work surfaces.
 - 5) Place cover on safe, flat, sanitary, out-of-the-way surface, or return to kettle rim. Cover may also be placed in the optional holder for cover as shown in the photograph on the next page.

Operation

CAUTION

DO NOT OVER FILL THE KETTLE WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS AT A MINIMUM OF 2-3" (5-8 CM) BELOW THE KETTLE BODY RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING AND SAFE PRODUCT TRANSFER.



Basket Insert:

- a. An optional kettle basket insert can assist in cooking water-boiled products including eggs, potatoes, vegetables, shell fish, pasta and rice. The nylon mesh liner must be used when cooking product smaller than the mesh size of the basket, which is approximately 1/4" (6 mm). This includes rice and small pasta shapes.
- b. Tips For Use:
 - 1) Allow for the water displacement of the basket and product to be cooked. This may mean only filling the kettle half full of water. Test the basket and product displacement with the kettle OFF, and with cold water in the kettle.
 - 2) Load basket on a level, stable work surface.
 - 3) Lift the loaded basket with both hands. Get help from another person if the basket is too heavy for safe handling. Then slowly lower product into kettle.
 - 4) When removing basket with cooked product, lift basket straight up, ensuring bottom of basket clears the rim and pouring lip of the kettle. Wear protective oven mitts and protective apron.
 - 5) Allow hot water to fully drain from product, before moving basket away from the kettle. Do not rest kettle basket on kettle rim or pouring lip. If basket is too heavy for individual to lift and safely move, get help from another person. Remove product immediately from basket into another container, being sure to avoid contact with hot product and hot basket or place basket with food on stable, flat surface, setting it inside a solid steamer or bake pan, to catch any remaining hot water draining from product.

Sequence of Operation

The following “action-reaction” outline is provided to help understand how the kettle works.

1. When the power switch is turned on, it starts the spark igniter and opens the automatic valve for the pilot burner. The spark ignites a pilot flame, which heats the sensor. The sensor then sends a signal to turn off the spark. The flame thereafter acts as a standing pilot until the power is turned off.
2. If the pilot flame is not sensed within 90 seconds after spark begins, a timer shuts down the entire operation. To attempt a second trial for ignition, turn off the power switch. Check the gas supply valves and wait five minutes before trying again by switching power on. If you cannot establish a pilot flame in four tries, close all valves, turn off the power, and contact an authorized Service Agency.
3. When the operator sets a temperature on the thermostat, it causes the automatic valve to admit gas to the main burner, where it is ignited by the pilot flame. When the kettle reaches the set temperature, the thermostat switch opens. This stops the signal to the gas control valve and shuts off gas to the main burner. The pilot flame remains lit. When the kettle cools below the set temperature, the thermostat switch closes and starts another cycle. On and off cycling continues and maintains the kettle at the desired temperature. This action is indicated by the Heat indicator light.

The kettle has the following safety features in addition to the 90-second ignition timer:

1. Low water cutoff relay that will shut off gas supplies to all burners until the jacket water level is corrected.
2. High limit pressure switch, set to open at about 43 PSI and to shut down the burners until jacket pressure is decreased.
3. Pop safety valve, which will release steam if jacket pressure exceeds 50 PSI.
4. Tilt switch, which shuts off all burners when the kettle is tilted.
5. Gas pressure regulator built into the gas control valve.

Cleaning

WARNING
KEEP WATER AND SOLUTIONS AWAY FROM CONTROLS AND ELECTRICAL EQUIPMENT. NEVER SPRAY THE SUPPORT HOUSING OR ELECTRICAL CONNECTIONS.

CAUTION
MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES, AND CLOTHING. PRECAUTIONS SHOULD BE TAKEN. WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD, AND PROTECTIVE CLOTHING. READ THE WARNINGS AND FOLLOW THE DIRECTIONS ON THE LABEL OF THE CLEANER CAREFULLY.

WARNING
AVOID DIRECT CONTACT WITH HOT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.

NOTICE
NEVER LEAVE A CHLORINE SANITIZER IN CONTACT WITH STAINLESS STEEL SURFACES LONGER THAN 30 MINUTES. LONGER CONTACT CAN CAUSE STAINING AND CORROSION.



Use a brush, sponge, cloth, plastic or rubber scraper, or plastic wool to clean.



Don't use metal implements or steel wool when cleaning.

A. Suggested Cleaning Supplies:

1. Cleaner, such as Klenzade HC-10 or HC-32 from ECOLAB, Inc. or equivalent.
2. Kettle brushes in good condition.
3. Sanitizer such as Klenzade XY-12.
4. Film remover such as Klenzade LC-30.

B. Precautions

Before cleaning, shut off the kettle by turning the thermostat dial to "OFF," and shut off all electric power to the unit at a remote switch, such as the circuit breaker.

C. Procedure

1. Clean food-contact surfaces as soon as possible after use. If the unit is in continuous use, thoroughly clean and sanitize the interior and exterior at least once every 12 hours.
2. Scrape and flush out food residues. Be careful not to scratch the kettle with metal implements.
3. Prepare a hot solution of the detergent/ cleaning compound as instructed by the supplier. Clean the unit thoroughly. A cloth moistened with cleaning solution can be used to clean controls, housings, and electrical conduits.
4. Rinse the kettle thoroughly with hot water. Then drain completely.
5. As part of the daily cleaning program, clean all inside and outside surfaces that may have been soiled. Remember to check such parts as the underside of the cover, control housing, etc.
6. To remove burned-on foods, use a brush, sponge, cloth, plastic or rubber scraper, or plastic wool along with the cleaning solution. To reduce effort required in washing, let the detergent solution sit in the kettle for a few minutes and soak into the residue. Do NOT use abrasive materials or metal tools that might scratch the surface. Scratches make the surface harder to clean and provide places for bacteria to grow. Do not use steel wool, which will leave particles in the surface and cause eventual corrosion and pitting.
7. The outside of the unit may be cleaned with a warm water (100°F or less) spray. Do not use a high pressure spray.
8. The outside of the unit may be polished with a recognized stainless steel cleaner like "Zepper" from Zep Manufacturing Company.

Cleaning

NOTICE
NEVER LEAVE A CHLORINE SANITIZER IN
CONTACT WITH STAINLESS STEEL
SURFACES LONGER THAN 30 MINUTES.
LONGER CONTACT CAN CAUSE
STAINING AND CORROSION.

9. When the equipment needs to be sanitized, use a sanitizing solution equivalent to one that supplies 200 parts per million chlorine. Obtain advice on the best sanitizing agent from your supplier of sanitizing products. Following the supplier's instructions, apply the sanitizing agent after the unit has been cleaned and drained. Rinse off the sanitizer thoroughly.
10. It is recommended that the unit be sanitized just before use.
11. Clean the kettle thoroughly. If there is difficulty removing mineral deposits or a film left by hard water or food residues, then use a de-liming agent, following manufacturer directions.
12. Rinse and drain the unit thoroughly before further use.
13. If especially difficult cleaning problems persist, contact your cleaning product supplier for assistance. The supplier has a trained technical staff with laboratory facilities to serve you.

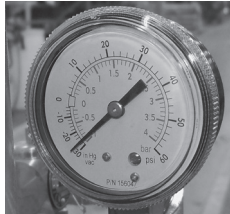
Maintenance

WARNING
AVOID ANY EXPOSURE TO THE STEAM
BLOWING OUT OF THE PRESSURE
RELIEF VALVE. SEVERE BURNS CAN
RESULT ON EXPOSED SKIN.
FAILURE TO CHECK PRESSURE RELIEF
VALVE OPERATION PERIODICALLY
COULD RESULT IN PERSONAL INJURY
AND/OR DAMAGE TO EQUIPMENT.

CAUTION
KEEP GREASE AWAY FROM ELECTRICAL
PARTS LOCATED NEAR THE GEARS.



Make sure that the open end of the elbow on the pressure relief valve is directed downward.



The pressure gauge should show a vacuum of 20 to 30 inches when the kettle is cold.

NOTICE: Contact an authorized representative when repairs are required.

A Maintenance & Service Log is provided at the back of this manual. Each time maintenance is performed on your kettle, enter the date on which the work was done, what was done, and who did it. Keep this manual on file and available for operators to use. Periodic inspection will minimize equipment down time and increase the efficiency of operation. The following points should be checked:

A. Jacket Vacuum/Removing Air from Jacket (by Operator)

Every day, while the kettle is cold, read the pressure/ vacuum gauge. A positive reading or a negative reading between zero and 20" vacuum on the pressure/ vacuum gauge indicates excess air in the jacket. Air in the jacket slows kettle heating and can prevent the kettle from reaching operating temperature.

To remove air:

1. Start the unit. (See "Operation" section).
2. Make sure the elbow on the outlet of the pressure relief valve is turned so that escaping steam is directed down toward the floor. Be sure and follow the instructions on the attached pressure relief valve tag.
3. When the pressure/vacuum gauge reaches a positive pressure reading of 5 PSI, release trapped air by lifting the pressure relief valve ring for about one second. Repeat this step, then let the valve ring snap closed, so the valve will seat properly and not leak.

B. Pressure Relief Valve (by Operator)

At least twice a month, test the pressure relief valve. Test the valve with the kettle operating at 15 PSI (105 kPa), by holding the test ring for at least five seconds. Then release the ring and permit the valve to snap shut. If the ring does not activate, if there is no discharge, or if the valve leaks, stop using the kettle immediately and contact a authorized service representative.

C. Grease / Lubrication (by Service)

Hand Tilt Models: At least twice a year, grease the two trunnion bearings. The bearings are located within the kettle support housing. Remove the access panels from the support housing with a screwdriver to gain access to the grease fittings. Use a lithium-based, multi-purpose grease. When the access panels are removed, the mounting bolts for the trunnion bearings and tilt switch can also be checked for tightness. When finished, reassemble access panels to support housing.

Crank Tilt Models: The gear housing has been fitted for proper lubrication of moving parts. Since the gears do not run in oil, periodic lubrication with grease is essential. Frequency of lubrication depends on operating conditions, but should occur at least once every six months. The use of a Number Two grade LGI lithium grease is recommended. Add grease through the Zerk fittings on the gear housing until grease flows out of the bearings around the trunnion shaft. Place a liberal amount of grease on the gear to cover the arc that is in contact with the worm gear.

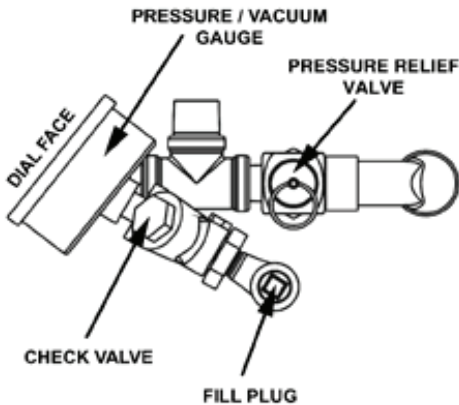
Maintenance

WARNING
TO AVOID INJURY, READ AND FOLLOW ALL PRECAUTIONS STATED ON THE LABEL OF THE WATER TREATMENT COMPOUND.

WARNING
USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY THE MANUFACTURER OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.

CAUTION
INSURE ELECTRICAL POWER IS REMOVED AND THE GAS IS TURNED OFF AT THE SHUTOFF VALVE PRIOR TO PERFORMING ANY MAINTENANCE ON THIS KETTLE.

WARNING
THIS KETTLE IS DESIGNED TO BE WATER RESISTANT. FAILURE TO FOLLOW PROPER MAINTENANCE PROCEDURES MAY VOID THE WARRANTY.



The pressure relief valve and fill plug are located directly behind the pressure/vacuum gauge.

D. Jacket Filling

Every day, before you turn on the unit, make sure the water level is approximately in the center of the water gauge glass. The jacket was filled at the factory with the proper amount of treated water, and is airtight, but over time steam may be vented and water lost.

From time to time, you may need to restore the water to its proper level. The procedure for adding water follows.

1. If you are replacing water lost as steam, use distilled water. Do not use tap water. If you are replacing treated water that was drained from the jacket, prepare more treated water as directed below.
2. Allow the kettle to cool completely. Remove the pipe plug from the jacket fill assembly. Pour in the distilled or treated water. Using a funnel will help you in this process. Hold the pressure relief valve open while you pour, to let air escape from the jacket. Continue adding water until the water level rises to the center of the round sight glass.
3. Air that gets into the jacket during the filling operation must be removed, because it will make heating less efficient. Follow the procedure in Jacket Vacuum/Removing Air From Jacket above, to restore a negative pressure reading.

E. Water Treatment

1. Fill a mixing container with the amount of water required. Use only distilled water.

Model	Kettle Capacity	Jacket Capacity
5G-KTT, 5G-KTC	5 gal (20 qt), 19 liter	6 quart, 5.7 liter
6G-KTT, 6G-KTC	6 gal (24 qt), 23 liter	6 quart, 5.7 liter
10G-KTT, 10G-KTC	10 gal (40 qt), 38 liter	12 quart, 11.4 liter
12G-KTT, 12G-KTC	12 gal (48 qt), 45 liter	12 quart, 11.4 liter

2. Hang a strip of pH test paper on the rim of the container, with about 1 inch of the strip below the surface of the water.
3. Stir the water continuously, while you slowly add water treatment compound until a color between indicating a pH of 10.5 and 11.5 is reached. (Shown on the pH test kit chart.) Judge the pH by frequently comparing the test strip with the color chart provided in the pH test kit. If there is a problem distinguishing color, use a pH meter.
4. Use a measuring cup to add the compound so that you may record the exact amount used.
5. The amount may be used again, if the same water sources and compound are used in the future. However, it is best to check the pH each time treated water is prepared.

Maintenance

WARNING
BEFORE REPLACING ANY PARTS ,
DISCONNECT THE UNIT FROM THE ELECTRIC
POWER SUPPLY.

CAUTION
FAILURE TO INSTALL ALL COVER SCREWS
MAY VOID WARRANTY.

WARNING
THIS KETTLE IS DESIGNED TO BE WATER
RESISTANT. ALL SEALS AND GASKETS
MUST BE IN PLACE AND FUNCTIONAL UPON
COMPLETION OF ANY SERVICE. FAILURE TO
DO SO WILL VOID THE WARRANTY.



F. Component Replacement

All internal wiring is marked as shown on the circuit schematic drawings. Be sure that new components are wired in the same manner as the old components.

1. Removal of right hand side cover
 - a. Remove phillips head screws.
 - b. Remove side cover.
2. Installation of right hand side cover Install all phillips head screws to maintain water resistance of electronics compartment and torque to 10 in-lbs.
3. Removal of ON/OFF switch
 - a. Remove right hand side cover (see Section #1 above).
 - b. Remove black and red wires from switch.
 - c. Unscrew nut from outside of switch.
 - e. Remove switch from inside being careful not to lose rubber gasket.
4. Installation of ON/OFF switch
 - a. Insert switch through hole in the front panel from the inside.
 - b. Insure the rubber gasket is inserted between switch and front panel.
 - c. Install knurled nut on switch and tighten to hand tight plus $\frac{1}{2}$ to $\frac{3}{4}$ turn.
 - d. Reinstall red and black wires on switch.
 - e. Reinstall right hand side cover (see Section #2 above).
5. Removal of burner "ON" indicator light
 - a. Remove right hand side cover (see Section #1 above).
 - b. Remove blue and green wires from light.
 - c. Remove nut from light on inside of electrical box.
 - d. Pull light out being careful not to lose rubber grommet.
6. Installation of burner "ON" indicator light
 - a. Install light from outside of front panel.
 - b. From inside of panel install rubber grommet then nut.
 - c. Tighten nut hand tight plus $\frac{1}{2}$ to $\frac{3}{4}$ turn.
 - d. Reattach blue and green wires.
 - e. Reinstall right hand side cover as stated in Section #2 above.
7. Removal of transformer
 - a. Remove right hand side cover (see Section #1 above).
 - b. Unplug wires from transformer terminals: two red wires, one green wire, and one white wire.
 - c. Remove both $\frac{1}{4}$ " mounting screws.
8. Installation of transformer
 - a. Mount transformer with two $\frac{1}{4}$ " mounting screws.
 - b. Install two red wires on bottom terminals, the white wire on the top right terminal and the green wire on the top left terminal.
 - c. Reinstall right hand side cover as stated in Section #2 above.

Maintenance

9. Removal of water level control board
 - a. Remove right hand side cover (see Section #1 above).
 - b. Remove wires from control board.
 - c. Squeeze plastic stand-offs behind board and pull board off.

10. Installation of water level control board
 - a. Align control board and install two ¼" mounting screws.
 - b. Install wires in the following order:
 - i. Blue wire bottom right
 - ii. Red wire second from bottom right
 - iii. Green wire upper right
 - iv. Yellow wire bottom left
 - v. Double red wire top left
 - c. Reinstall right hand side cover as stated in Section #2 above.

11. To remove Honeywell gas control module
 - a. Remove right hand side cover (see Section #1 above).
 - b. Remove wires from module terminals.
 - c. Remove the four ¼" mounting screws.

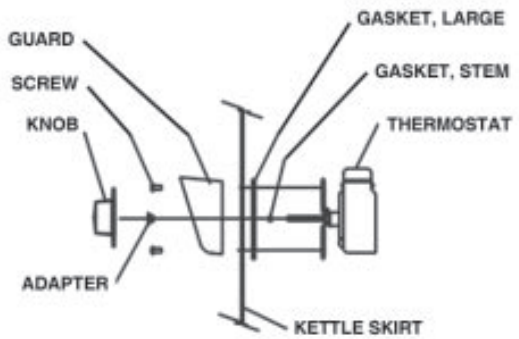
12. Installation of Honeywell gas control module
 - a. Align module and install the four ¼" mounting screws.
 - b. Reinstall wiring in the following order, starting on the left with terminal 1:
 - i. Red (MV)
 - ii. Yellow (MV/PV)
 - iii. Black (PV)
 - iv. Green 24v from burner
 - v. Green 24v ground
 - vi. Red 24v
 - vii. Terminal 9 Spark ignition lead
 - c. Reinstall right hand side cover as stated in Section #2 above.

13. Removal of tilt micro switch
 - a. Tilt kettle 90°.
 - b. Remove the right hand side cover (see Section #1 above).
 - c. Remove blue and white wires from switch.
 - d. Remove the two mounting screws.
 - e. Remove switch.

14. Installation of tilt micro switch
 - a. Tilt kettle 90°.
 - b. Align switch with mounting holes behind bracket with paddle facing forward.
 - c. Install both mounting screws and nuts.
 - d. Replace both the blue and white wires on the bottom two tabs.
 - e. Insure kettle actuates switch when it is returned to the upright position.
 - f. Reinstall right hand side cover as stated in Section #2 above.

15. Removal of gas valve
 - a. Turn off gas supply to the kettle.
 - b. Remove side cover (see #1 above).

Maintenance



Thermostat and gasket installation detail.

- c. Disconnect electrical power from the kettle.
 - d. Disconnect wiring from the gas valve.
 - e. Disconnect valve to burner tube using a ½" in-line wrench.
 - f. Remove 90° elbow.
 - g. Remove burner cover by removing three screws on cover flange and two hex head bolts located inside electrical box.
 - h. Disconnect union on gas piping located under burner cover.
 - i. Remove gas valve.
16. Installation of gas valve
 - a. Remove piping from old valve and install on new valve.
 - b. Reconnect the union under burner cover.
 - c. Reinstall burner cover.
 - d. Reinstall gas piping removed in step 19.
 - e. Insure rubber grommet is properly installed.
 - f. Reconnect electrical wiring in the following order:
 - i. Black to PV
 - ii. Yellow to MV-PV
 - iii. Blue to MV (TH)
 - g. Reinstall right hand side cover as stated in Section #2 above.
 17. Removal of thermostat
 - a. Remove thermostat knob by pulling straight out.
 - b. Remove the two mounting screws.
 - c. Remove thermostat shroud.
 - d. Tilt kettle to 90°.
 - e. Remove bottom cover.
 - f. Remove blue and red wires from thermostat.
 - g. Unscrew temperature bulb from kettle body being careful not to damage adjacent pressure switch.
 18. Installation of thermostat
 - a. Tilt kettle 90°.
 - b. Install thermostat gasket in opening in skirt.
 - c. Install second gasket on thermostat and align the screw holes with the holes in the gasket.
 - d. Place the thermostat through the hole in the kettle skirt and align screw holes.
 - e. Replace plastic spacer on thermostat shaft.
 - f. Replace the stainless knob shroud and align holes.
 - g. Start both screws but do not tighten.
 - h. Put tape on the screw threads of the thermostat bulb and insert into bottom of kettle. Tighten hand tight plus one turn.
 - i. Install bottom cover on skirt. Tighten screws and gasket to 10-12 in-lb torque.
 - j. Turn the kettle upright and tighten the two thermostat mounting screws.
 - k. Install knob by pushing straight on shaft.
 - l. If the knob appears loose, remove and gently spread the two prongs of the shaft and reinstall knob.
 - m. Check water level.
 - n. Remove air from jacket.

Maintenance

19. Removal of water level probe
 - a. Tilt kettle 90° and remove bottom cover.
 - b. Remove yellow wire from probe.
 - c. Unscrew probe from kettle jacket.

20. Installation of water probe
 - a. Apply tape to probe threads.
 - b. Screw probe into kettle jacket and torque to 150 in-lbs.
 - c. Attach yellow wire to probe.
 - d. Reinstall bottom cover.
 - e. Check water level.
 - f. Remove air from jacket.

21. Removal of pressure switch
 - a. Tilt kettle a full 90°.
 - b. Remove bottom cover.
 - c. Unplug red and white wires from switch.
 - d. Using a 9/16 open end wrench, carefully unscrew the pressure switch from the 90° elbow.

22. Installation of pressure switch
 - a. Hand start the pressure switch into the 90° elbow.
 - b. Using a 9/16 wrench, tighten the switch to 90 in-lbs.
 - c. Reattach the red and white wires to the switch.
 - d. Reinstall bottom cover.
 - e. Check water level.
 - f. Remove air from jacket.

Troubleshooting

Your kettle is designed to operate smoothly and efficiently if properly maintained. However, the following is a list of checks to make in the event of a problem. Wiring diagrams are furnished inside the service panel and in this manual. If an item on the list is followed by X, the work should be done by a qualified service representative.

WARNING

BEFORE REPLACING ANY PARTS, DISCONNECT THE UNIT FROM THE ELECTRIC POWER SUPPLY AND CLOSE THE MAIN GAS VALVE. ALLOW FIVE MINUTES FOR UNBURNED GAS TO VENT.

USING REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY THE MANUFACTURER OR AN AUTHORIZED DISTRIBUTOR CAN CAUSE OPERATOR INJURY AND EQUIPMENT DAMAGE AND WILL VOID ALL WARRANTIES.

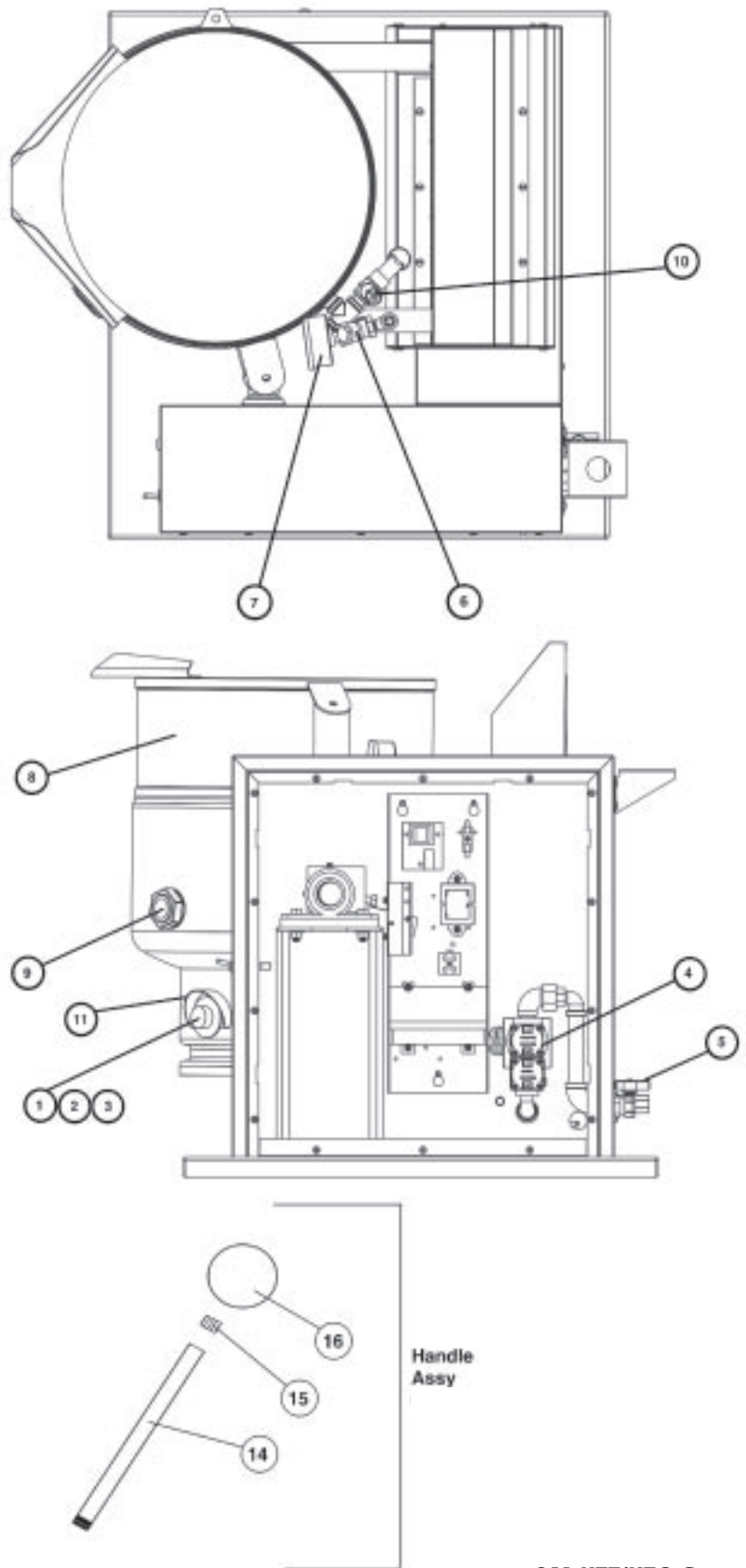
SYMPTOM	WHO	WHAT TO CHECK <small>X indicates items which must be performed by an authorized technician.</small>
Kettle is hard to tilt.	User	a. Gears for foreign materials, and lubrication.
	Auth Service Rep Only	b. Gears for alignment. X c. Worm gears or broken gears. X
Kettle continues heating after it reaches desired temperature.	User	a. Thermostat dial setting.
	Auth Service Rep Only	b. Thermostat calibration. X c. Thermostat operation. The thermostat should click when the dial is rotated to settings above and below the temperature of the kettle. X
Kettle stops heating before it reaches the desired temperature.	User	a. Thermostat dial setting.
	Auth Service Rep Only	b. Thermostat calibration. X c. Thermostat operation. The thermostat should click when the dial is rotated to settings above and below the temperature of the kettle. X
Safety Valve pops open.	User	a. For air in the jacket. See "Jacket Vacuum" in the Maintenance section. b. Thermostat dial setting.
	Auth Service Rep Only	c. For defective thermostat. The thermostat should click when the dial is rotated to settings above and below the temperature of the kettle. If defective, replace. X d. For defective safety valve. If the valve pops at pressures below 49 PSI, replace. X
Burners will not light.	User	a. That the main gas supply valve is open. (handle is in line with gas pipe). b. Gas supply to the building. c. That the kettle body is not tilted.
	Auth Service Rep Only	d. Thermostat operation. The thermostat should click when the dial is rotated to settings above and below the temperature of the kettle. X e. That tilt limit switch is closed when body is not tilted. X
System does not produce a spark.	Auth Service Rep Only	a. Thermostat, and close the contacts if they are open. X b. AC voltage between terminals on secondary side of transformer. If it is not 24 Volt, replace the transformer. X c. That the high tension cable is firmly attached and in good condition. If cracked or brittle, replace. X d. Pilot electric ceramic for crack or break. X e. Pilot spark gap. Regap. X

Troubleshooting

SYMPTOM	WHO	WHAT TO CHECK <i>X indicates items which must be performed by an authorized technician.</i>
Spark is present but the pilot will not light.	Auth Service Rep Only	a. That the pilot valve is securely connected to terminals. X b. For 24 VAC at terminals PV and PV/MV. If 24V is not present, replace the ignition control module. X b. That gas pressure is at least 3.5" W.C.(8.7818 b). X c. For gas at the pilot. If it is not flowing: (1) Check the pilot gas line for kinks and obstructions. X (2) Clean orifice, if necessary. X (3) Check magnetic operator for pilot valve on gas valve. Repair or replace as necessary. X d. That the pilot spark gap is located in the pilot gas stream. If not, adjust or replace the pilot burner. X e. For drafts. Shield the pilot burner, if necessary. X
Pilot lights, but main burner will not come on and spark does not stay on.	Auth Service Rep Only	a. For 24 V between terminals PV and PV/MV. If 24V is not present, replace the ignition control module. X b. That gas pressure is at least 3.5" W.C.(8.7818 b). X c. Electrical connections of the main valve to terminals, to be sure that they are securely attached. Check magnetic operator for pilot valve on gas valve. Repair or replace as necessary. X
Pilot lights, but main burner will not come on, the spark stays on.	Auth Service Rep Only	a. Check for bad burner ground. If necessary, repair with high temperature wire. X b. Pilot burner ceramic insulator for cracks. X c. That cable is not grounded out. If it is, correct the ground-out condition or replace cable. X d. For proper gas pressure. X e. Clean pilot assembly, or replace if necessary. X f. Tighten all mechanical and electrical connections. X g. If the pilot flame is weak, increase pilot orifice size. X h. Replace ignition control module. X
Main burner comes on but will not stay on.	Auth Service Rep Only	a. Check burner ground for bad wire or connection. Replace if necessary with high temperature wire. X b. Check for low gas supply pressure. If necessary, replace ignition control module. X

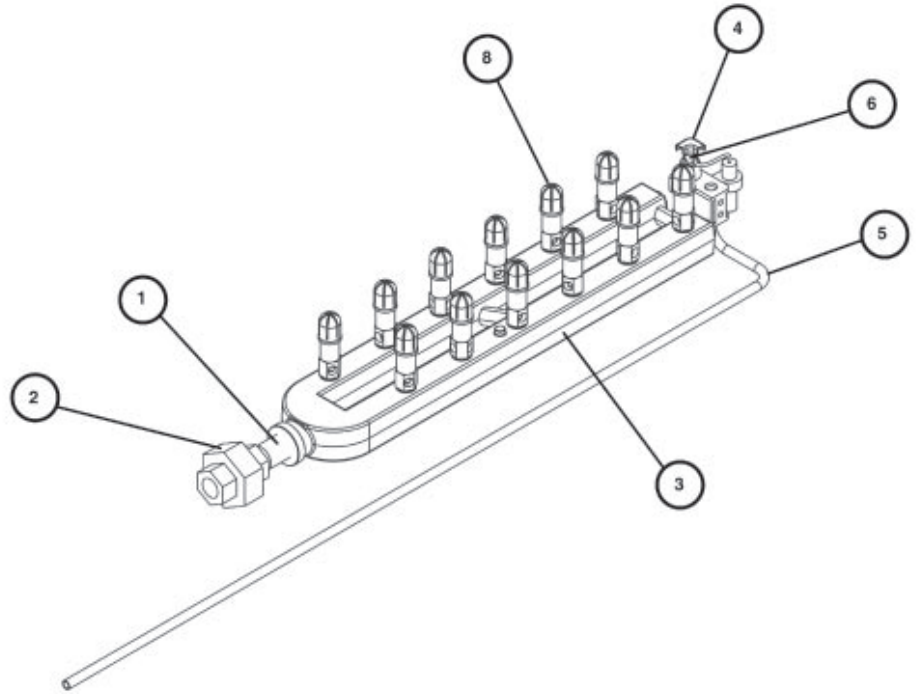
Parts List

Key	Description	Part No.
1	KNOB, THERMOSTAT	170005
2	GASKET, THERMOSTAT	123585
3	THERMOSTAT	012313
4	GAS VALVE, NAT. GAS	098443
5	GAS VALVE, MANUAL SHUT OFF	098458
6	VALVE, 1/4" SWING, CHECK	096915
7	GAUGE	084208
8	KETTLE BODY ASSY	137733
9	GLASS, SITE ROUND	108554
10	VALVE, PRESSURE RELIEF 50 PSI	097005
11	GUARD, THERMOSTAT	114830
12	SWITCH, PRESSURE (NOT SHOWN)	096963
13	ELECTRODE, WATER LEVEL (NOT SHOWN)	074623
14	SHAFT, HANDLE	018963
15	RING, 1/2"	012692
16	BALL, BLACK	156056



Parts List

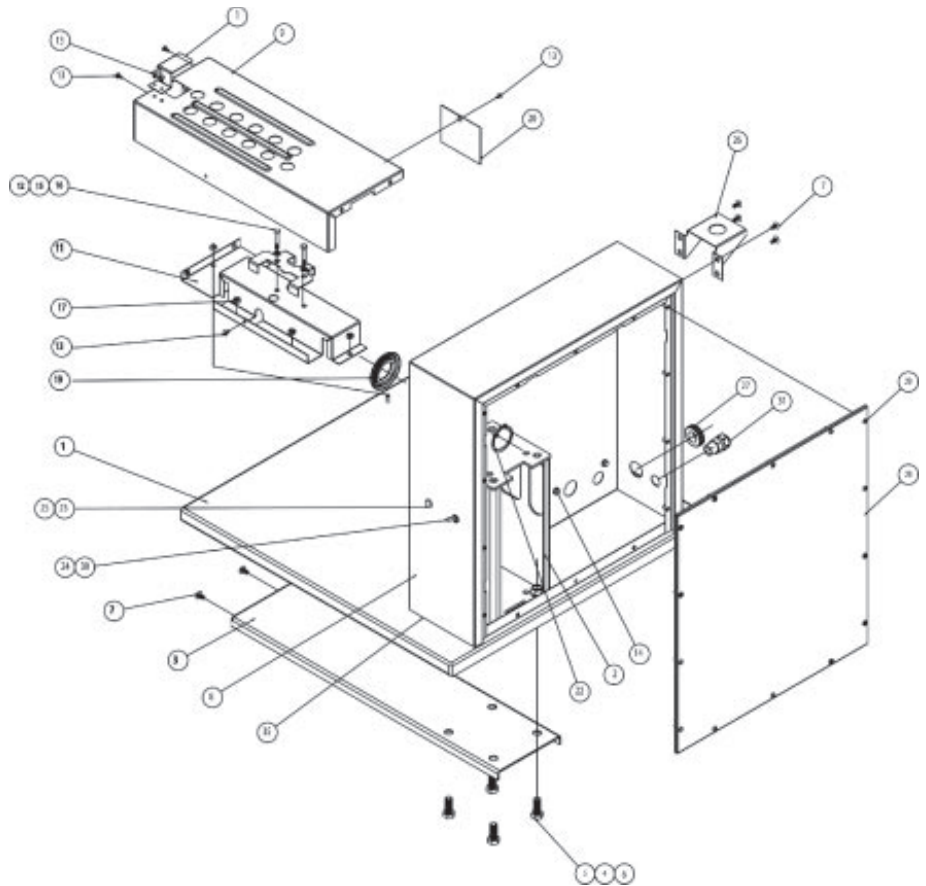
Key	Description	Part No.
1	NIPPLE, 3/8" NPT X 2"	005679
2	UNION, 3/8" NPT	005686
3	MANIFOLD, 5- AND 6-GALLON	137757
3	MANIFOLD, 10- AND 12-GALLON	137056
4	PILOT	097024
5	TUBE, PILOT	135487
6	PILOT ORIFICE SPUD NATU- RAL GAS	098648
6	PILOT ORIFICE SPUD PRO- PANE GAS	098647
7	FITTING, COMPRESSION 90 (NOT SHOWN)	004584
8	ORIFICE SEE TABLE BELOW	-



Model	# of Orifices	Natural Gas	Propane Gas	Altitude
5G-KTT 5G-KTC	8	137758	137756	0 - 2000 ft.
6G-KTT 6G-KTC	8	137758	137756	0 - 2000 ft.
10G-KTT 10G-KTC	12	135543	137756	0 - 2000 ft.
12G-KTT 12G-KTC	12	135543	137756	0 - 2000 ft.

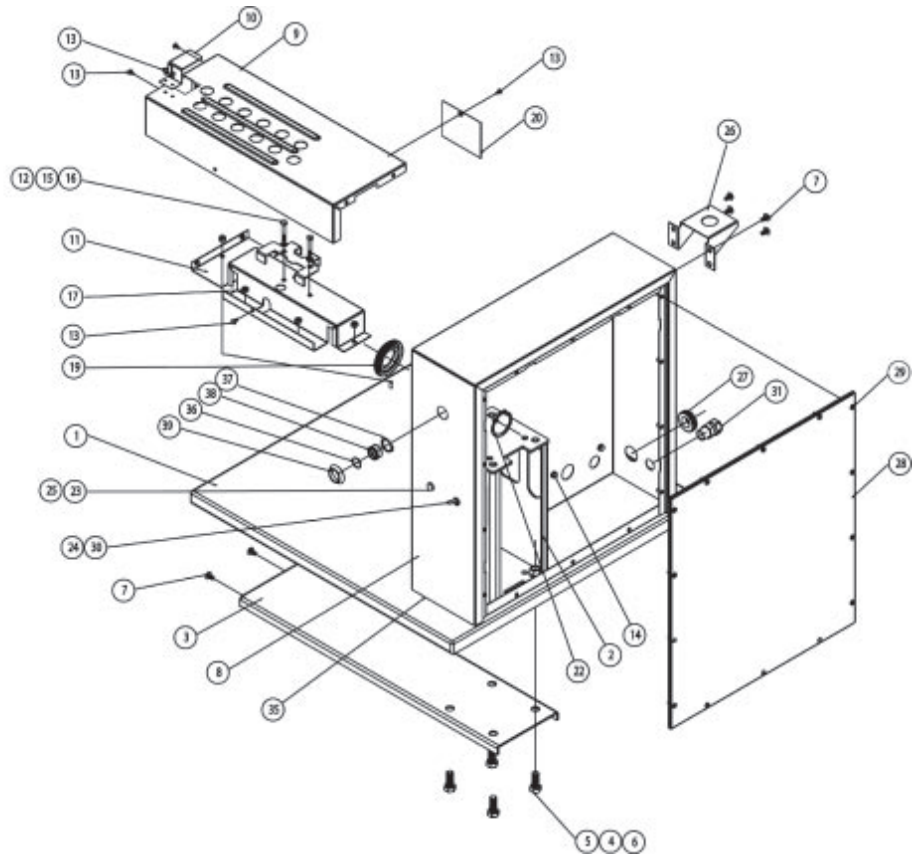
Parts List Hand Tilt Units Only

Key	Description	Part No.
1	WELDMENT, BASE	137060
2	WELDMENT, PEDESTAL	124735
3	WELDMENT, BASE SUPPORT	124729
4	WASHER LOCK ½" S.S.	005657
5	SCREW, HEX HD 1/2-13 X 1 1/4"	005623
6	NUT HEXAGON 1/2"-13	005603
7	SCREW TRUSS HD 1/4-20 X ½ S.S.	012700
8	ASM, CABINET WELD	137725
9	SHROUD BURNER WELD ASM	135526
10	SHIELD, PILOT	135524
11	BURNER BRACKET WELD ASM.	135527
12	BRACKET, BURNER SUPPORT	137353
13	SCREW, TRUSS HD #8-32 X 3/8"	005764
14	SCREW, HEX HD 1/4"-20 X 1/2"	005608
15	WASHER LOCK 1/4"	005655
16	SCREW HEX HD CAP 1/4"-20 X 1-1/2	005649
17	NUT HEXAGON KEPS 1/4"-20	012940
18	PLATE SHROUD WELD ASM.	137680
19	SEAL TRUNION	137005
20	PLATE, SHROUD WELD ASM (5/6-QT)	137700
20	PLATE, SHROUD WELD ASM (10/12-QT)	137380
21	GASKET, 3/8" THK X ½" WIDE, 6" CENTER CUT 1/4" HOLE (NOT SHOWN)	137588
22	E-RING, 1.875" DIA.	138357
23	LIGHT INDICATOR RED 24VAC	116383
24	GASKET SWITCH	137435
25	GASKET LAMP	137434
26	FAUCET BRACKET	137738
27	GROMMET 7/8" ID X 1-5/8" OD	007400
28	COVER, CABINET	137004
29	SCREW, 10-32 X ½" COMBI HEAD	137766
30	SWITCH SPST ON/OFF	006904
31	CONNECTOR STRAIGHT 3/8" SEALTITE	001669
32	HARNESS ASM	137006
33	HARNESS ASM HIGH VOLTAGE	137456
34	STRAP CABLE TY-RAP	011093
35	SEALANT RTV #732, GREY	001711



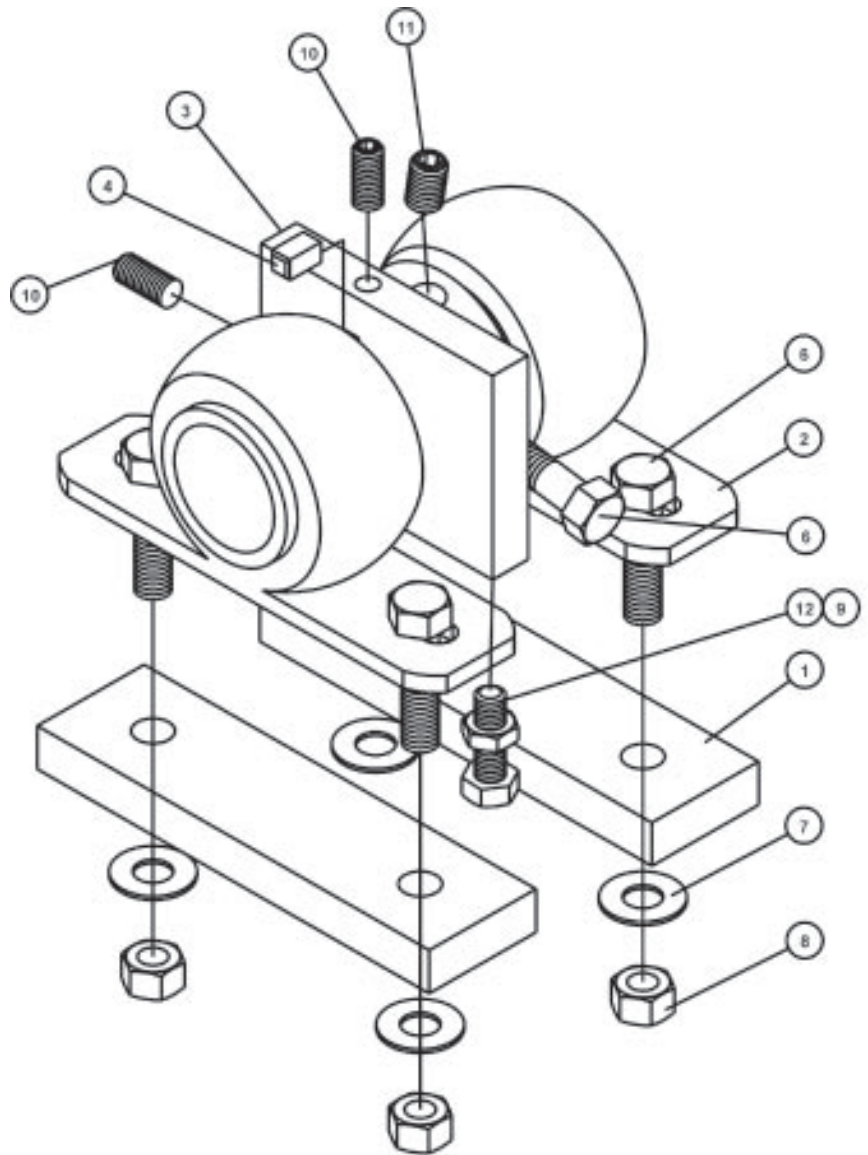
Parts List Crank Tilt Units Only

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6	NUT HEXAGON 1/2"-13	005603
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8	ASM, CABINET WELD	137725
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31	CONNECTOR STRAIGHT 3/8" SEALTITE	001669
32	HARNESS ASM	137006
33	HARNESS ASM HIGH VOLTAGE	137456
34	STRAP CABLE TY-RAP	011093
35	SEALANT RTV #732, GREY	001711
36	O-RING #018	138359
37	E-RING, 1.00"	138356
38	COLLAR, SHAFT SEAL, .750"	138354
39	SEAL, SHAFT 1.00"	136088



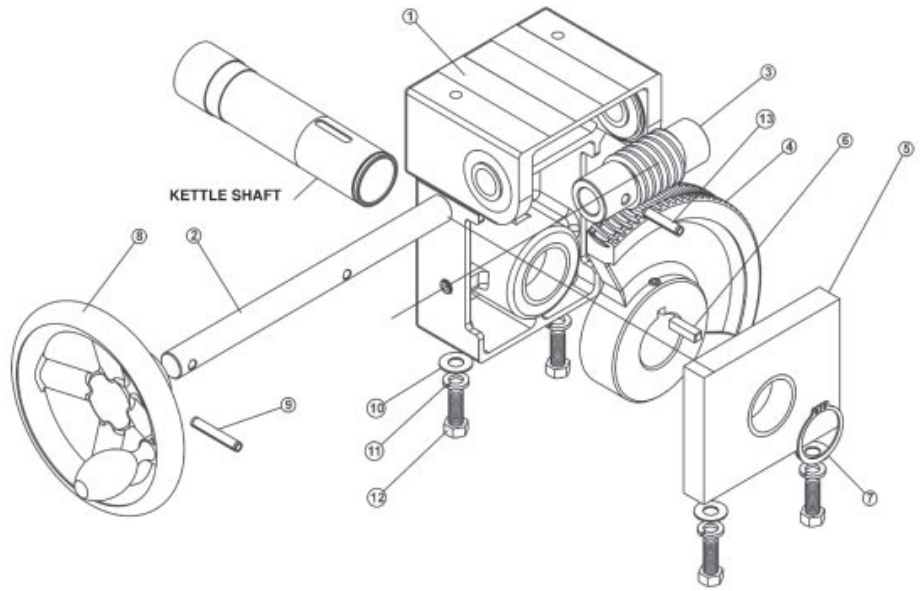
Parts List Hand Tilt Units Only

Key	Description	Part No.
1	SPACER, PILLOW BLOCK	137692
2	PILLOW BLOCK	002989
3	STOP, MANUAL TILT	137697
4	KEY, 1/4 SQ X .5" LG	137746
5	COLLAR SET 1-1/2" ID X 2-1/4" OD X 3/4" THK	003118
6	SCREW HEX HD CAP 3/8"-16 X 1-1/2"	005615
7	WASHER FLAT 3/8"	005830
8	NUT HEX 3/8"-16	005619
9	NUT HEX 5/16"-18	005602
10	SCREW SET SOCKET	086617
11	SCREW SET SOCKET	003400
12	SCREW HEX HD CAP 5/16"-18 X 1"	005613



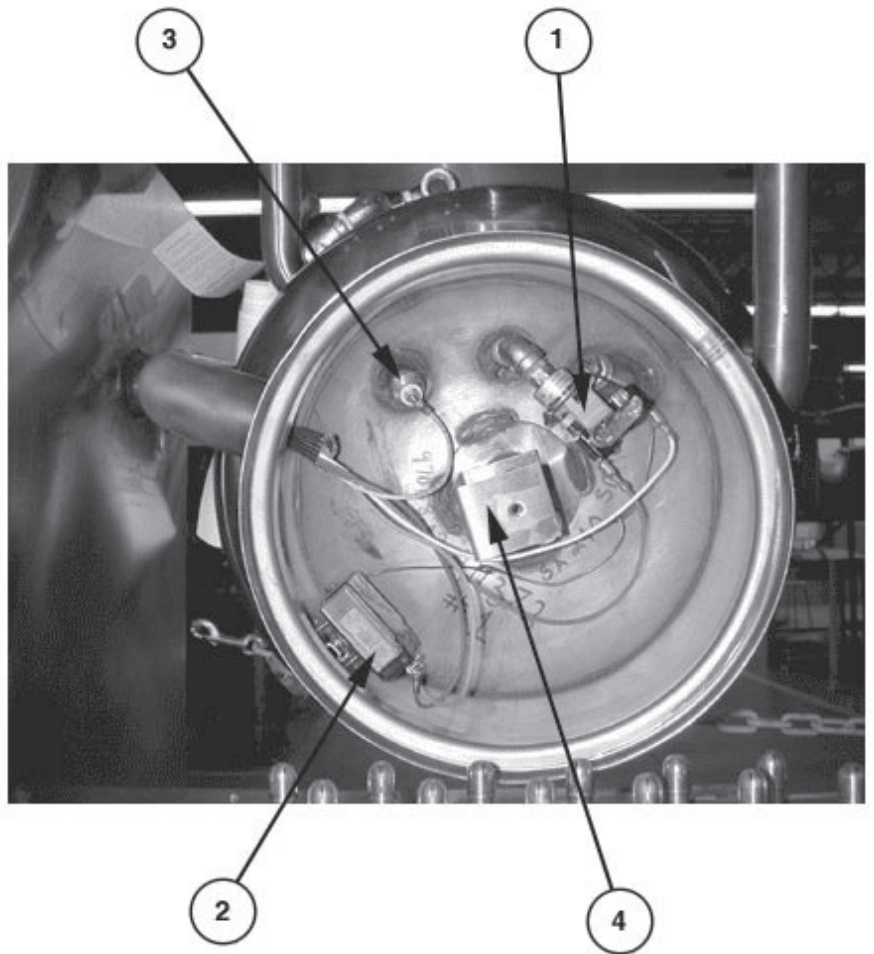
Parts List Crank Tilt Units Only

Key	Description	Part No.
1	ASSEMBLY, GEAR CARRIER	124741
2	SHAFT, WORM	122374
3	GEAR, WORM	128001
4	ASSEMBLY, GEAR SECTOR	128028
5	ASSEMBLY, BEARING BLOCK	128021
6	KEY, 1/4 SQ X 1" LG.	122371
7	RETAINING RING 1.500	124764
8	ASSEMBLY, HANDWHEEL	124719
9	PIN, ROLL 1/4" X 1.63 LG.	128036
10	WASHER, FLAT 3/8"	005830
11	WASHER, LOCK 3/8"	005618
12	SCREW, 3/8-16 X 1" HEX HD	005612
13	PIN, ROLL 1/4" X 1.25" LG.	012614



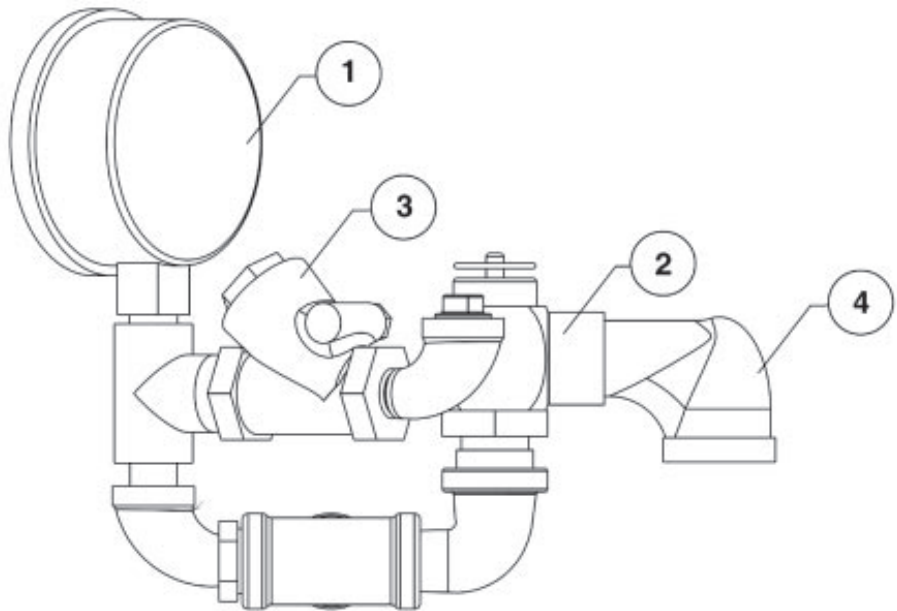
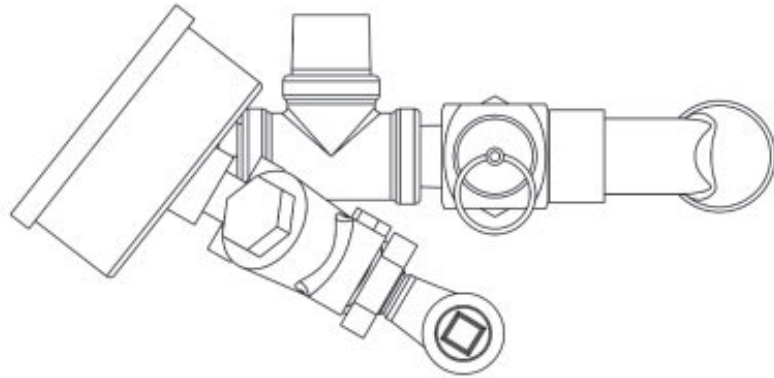
Parts List

Key	Description	Part No.
1	PRESSURE SWITCH	096963
2	THERMOSTAT	012313
3	WATER LEVEL ELECTRODE	015589
4	BRACKET	137736
5	COVER (NOT SHOWN)	003141
6	GASKET, BOTTOM COVER (NOT SHOWN)	137969
7	SCREW, ¼-20 X 1 ½ (NOT SHOWN)	012597
8	GASKET, BOTTOM COVER SCREW (NOT SHOWN)	137968



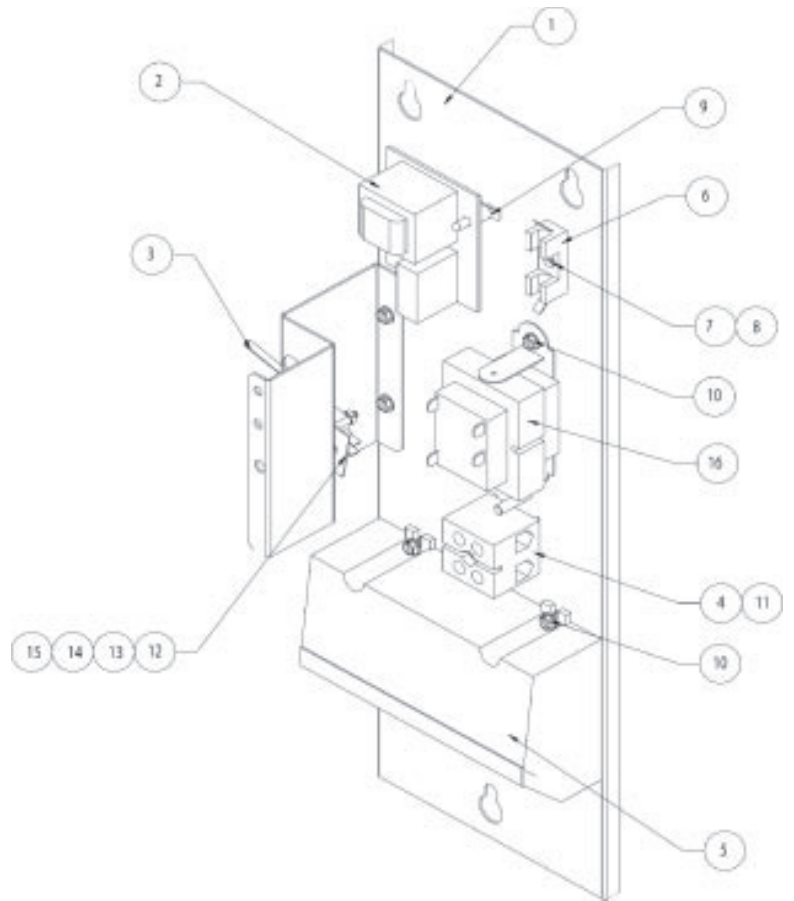
Parts List

Key	Description	Part No.
1	GAUGE, COMPOUND PRES-SURE W/DUAL	170003
2	VALVE, PRESSURE RELIEF 50 PSI	097005
3	ASSY, WATER FILL SUB	137438
4	ELBOW, 1/2" NPT 90 DEG STREET BLK	096905

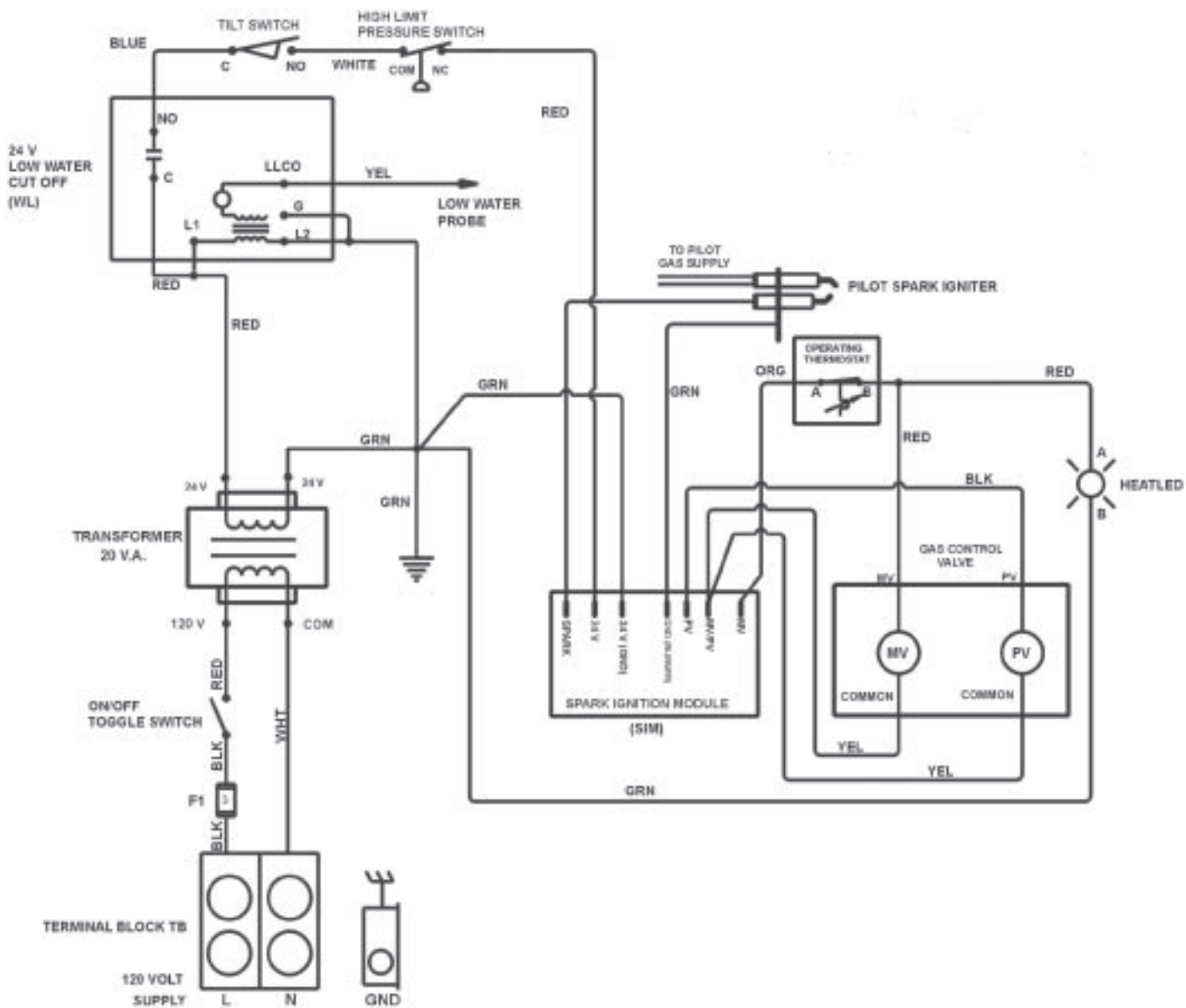


Parts List

Key	Description	Part No.
1	ELEC. MOUNTING BRACKET	137489
2	CONTROL, WATER LEVEL, 24 V	122192
3	MICRO SWITCH	002982
4	TERMINAL BLOCK, TWO POLE	003887
5	IGNITION MODULE	085153
6	FUSE, HOLDER, TYPE 3 AG	077854
7	FUSE, THREE AMP TYPE 3 AG	077853
8	SCREW, 6-32 X 3/8 LG (FOR #6)	009697
9	P. C. BOARD MOUNTING POST	099901
10	SCREW, 8 X 3/8 LG. HEX SLOT (FOR #5 AND #17)	069789
11	SCREW #8-32 X 1-1/4 RND HEAD (FOR #4)	005056
12	SCREW, ROUND HEAD 4-40 X 3/4 LG. (FOR #3)	003122
13	BARRIER INSULATION (FOR #3)	003490
14	WASHER SHAKEPROOF LOCK, #6 (FOR #3)	005715
15	NUT, HEX 4-40 (FOR #3)	003121
16	TRANSFORMER, 20 VA 120 V	137487



Wiring Diagram



Service Log

Model No:	Purchased From:
Serial No:	Location:
Date Purchased:	Date Installed:
Purchase Order No:	For Service Call:

Date	Maintenance Performed	Performed By



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