VULCAN

INSTALLATION, SERVICE & PARTS MANUAL FOR GAS FIRED STEAM JACKETED KETTLES GS, GL, & GT KETTLES

VULCAN-HART COMPANY, P.O. BOX 696 LOUISVILLE, KY 40201-0696, TEL. (502) 778-2791

FORM 30767A (5-93) (Formerly 99-02-01B)

IMPORTANT

OPERATING, INSTALLATION AND SERVICE PERSONNEL

Operating information for this equipment has been prepared for use by qualified and/or authorized operating personnel.

All installation and service on this equipment is to be performed by qualified, certified, licensed and/or authorized installation or service personnel, with the exception of any marked with a □ in front of the part number.

Service may be obtained by contacting the Factory Service Department, Factory Representative or Local Service Agency.

DEFINITIONS

QUALIFIED AND/OR AUTHORIZED OPERATING PERSONNEL

Qualified or authorized operating personnel are those who have carefully read the information in this manual and are familiar with the equipment's functions or have had previous experience with the operation of the equipment covered in this manual.

QUALIFIED INSTALLATION PERSONNEL

Qualified installation personnel are individuals, a firm, corporation or company which either in person or through a representative are engaged in, and are responsible for:

1. The installation of gas piping from the outlet side of the gas meter, or the service regulator when the meter is not provided, and the connection and installation of the gas appliance. Qualified installation personnel must be experienced in such work, be familiar with all precautions required, and have complied with all requirements of state or local authorities having jurisdiction. Reference in the United States of America - National Fuel Gas code ANSI Z223.1 (Latest Edition). In Canada-Canadian Standard CAN1-B149.1 NAT. GAS (Latest Edition) or CAN1-B149.2 PROPANE (Latest Edition).
2. The installation of electrical wiring from the electric meter, main control box or service outlet to the electric appliance. Qualified installation personnel must be experienced in such work, be familiar with all precautions required, and have complied with all requirements of state or local authorities having jurisdiction. Reference: In the United States of America-National Electrical Code ANSI NFPA No. 70 (Latest Edition). In Canada-Canadian Electrical Code Part 1 CSA-C22.1 (Latest Edition).

QUALIFIED SERVICE PERSONNEL

Qualified service personnel are those who are familiar with Vulcan equipment who have been endorsed by the Vulcan-Hart Company. All authorized service personnel are required to be equipped with a complete set of service parts manuals and stock a minimum amount of parts for Vulcan equipment.

SHIPPING DAMAGE CLAIM PROCEDURE

For your protection, please note that equipment in this shipment was carefully inspected and packed by skilled personnel before leaving the factory. The transportation company assumes full responsibility for safe delivery upon acceptance of this shipment.

If shipment arrives damaged:

1. **VISIBLE LOSS OR DAMAGE** — Be certain this is noted on freight bill or express receipt and signed by person making delivery.
2. **FILE CLAIM FOR DAMAGES IMMEDIATELY** — Regardless of extent of damage.
3. **CONCEALED LOSS OR DAMAGE** — If damage is unnoticed until merchandise is unpacked, notify transportation company or carrier immediately, and file "concealed damage" claim with them. This should be done within (15) days of date of delivery is made to you. Be sure to retain container for inspection.

   We cannot assume responsibility for damage or loss incurred in transit. We will, however, be glad to furnish you with necessary documents to support your claim.

PLEASE RETAIN THIS MANUAL FOR FUTURE REFERENCE

IMPORTANT NOTES FOR ALL VULCAN APPLIANCES

1. These units are produced with the best possible workmanship and material. Proper installation is vital if best performance and appearance are to be achieved. Installer must follow the installation instructions carefully.
2. Information on the construction and installation of ventilating hoods may be obtained from the "Standard for the installation of equipment for the removal of smoke and grease laden vapors from commercial cooking equipment," NFPA No. 96 (latest edition) available from the National Fire Protection Association, Battery March Park, Quincy MA 02269.
3. For an appliance equipped with a flexible electric supply cord, the cord is equipped with a three prong (grounding) plug. This grounding plug is for your protection against shock hazard and should be plugged directly into a properly grounded three prong recepticle. Do not cut or remove the grounding prong from this plug. If the appliance is not equipped with a grounding plug, and electric supply is needed, ground the appliance by using the ground lug provided (refer to the wiring diagram).

(FOR GAS APPLIANCES ONLY)

4. Do not obstruct the air flow into and around the appliance. This air flow is necessary for proper combustion of gases and for ventilation of the appliance. Provisions for ventilation of incoming air supply for the equipment in the room must be in accordance with National Fuel Gas Code ANSI Z223.1 (latest edition).
5. Do not obstruct the flow of flue gases from the flue duct (when so equipped) located on the rear (or sides) of the appliance. It is recommended that the flue gases be ventilated to the outside of the building through a ventilation system installed by qualified personnel.
6. For an appliance equipped with casters, (1) the installation shall be made with a connector that complies with the Standard for Connectors for Movable Gas Appliances, ANSI Z21.69 (latest edition), and Addenda, Z21.69a (latest edition), and a quick-disconnect device that complies with the Standard for Quick-Disconnect Devices for Use With Gas Fuel, ANSI Z21.41 (latest edition), and Addenda, Z21.41a (latest edition) and Z21.41b (latest edition), and (2) adequate means must be provided to limit the movement of the appliance without depending on the connector and the quick–disconnect device or its associated piping to limit the appliance movement.

   If disconnection of the restraint is necessary, reconnect this restraint after the appliance has been returned to its originally installed position.
7. The appliance and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of ½ psig (3.45 k Pa).
8. The appliance must be isolated from the gas supply system by closing its individual manual shutoff valve during any pressure testing of the gas supply system at test pressures equal to or less than ½ psig (3.45 k Pa).

CAUTIONS

FOR YOUR SAFETY

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

1. **KEEP THE APPLIANCE FREE AND CLEAR FROM ALL COMBUSTIBLE SUBSTANCES.**
2. **IN THE EVENT A GAS ODOR IS DETECTED, SHUT UNIT(S) DOWN AT THE MAIN SHUTOFF VALVE AND CONTACT THE LOCAL GAS COMPANY OR GAS SUPPLIER FOR SERVICE.**
3. **POST IN A PROMINENT LOCATION, INSTRUCTIONS TO BE FOLLOWED IN THE EVENT THE SMELL OF GAS IS DETECTED. THIS INFORMATION MAY BE OBTAINED FROM A LOCAL GAS SUPPLIER.**

VULCAN GAS FIRED, STEAM JACKETED KETTLES INSTALLATION, SERVICE AND PARTS MANUAL INDEX

Your Vulcan Steam Jacketed Kettles are produced with the best possible workmanship and material. Proper usage and maintenance will result in many years of satisfactory performance.

The manufacturer suggests that you thoroughly read this entire manual and carefully follow all of the instructions provided.

A rating plate stating the unit model number, serial number, type of gas and voltage supply that the unit requires is located on the left hand lower inside front cover.

This unit is to be installed with six inch clearance at the sides and a two inch clearance at the rear adjacent to combustible construction.

Prior to installation, test the electrical service to assure that it agrees with the specifications on the machine data plate.

DESCRIPTION PAGE

WE RECOMMEND THE JACKET BE FILLED WITH CHEMICALLY PURE WATER

NOTE: If tap water is used, local water conditions may cause excessive scale build-up in the kettle jacket and malfunction of controls. Proper preventive maintenance must be performed as outlined in the operation and maintenance instructions. Therefore, before filling your appliance with tapwater, the water supply should be analyzed to make sure the hardness is no greater than 2.0 grains and the pH no greater than 7.5. If the water supply fails to meet these standards it may be necessary to install a water conditoner, on your tap water line. For information on water quality we suggest you contact your local water company and or your local water conditoner dealer.

APPLIANCE FAILURE CAUSED BY INADEQUATE WATER QUALITY IS NOT COVERED UNDER WARRANTY.

INSTALLATION INSTRUCTIONS

NOTE: A letter "E" at the end of the model number indicates electric control. An "I" at the end of the model number indicates a unit with intermittent ignition pilot.

A connection point is supplied inside the control panel for 300 watt maximum 120 volt 60 Hz supply. Any shipping damage must be reported to carrier. This should be checked and such report made before uncrating the unit.

1. Place kettle in the desired position. Check that there are sufficient clearances to service the controls, for cleaning and for proper clearance of the cover when raised. Also check to see that kettle draw off faucet is suitably located with respect to a floor drain and that all service connections gas, water etc., can be easily made. The flue box is designed for free venting into a locally approved canopy ventilating system.
2. Check to see that kettle is for operation on the type of gas to be supplied.
3. Using adjustable feet, carefully level the kettle, checking with the cover open, and a level on the rim of the kettle.

IMPORTANT: Always allow space between any other piece of equipment or a wall for acessibility.

4. Make required gas connections in compliance with applicable codes including National Fuel Gas Code (ANSI Z223.1 (latest edition). Use only pipe thread sealing compound which is resistant to the action of liquified petroleum gases. **CHECK CAREFULLY FOR GAS LEAKS.**

Suggested gas line pressure is 7" W.C. for natural and 12" W.C. for propane gas.

CAUTION: DO NOT USE AN OPEN FLAME TO CHECK FOR LEAKS, USE A SOAP SOLUTION.

5. Fill the outer jacket of the kettle to the top of band on gauge glass with a chemically pure water along with a suitable rust inhibitor. See instructions or name plate.
6. Electrical & grounding connections must comply with the applicable portions of the National Electrical Code and/or other local electrical codes.

LIGHTING A CONTINUOUS PILOT

CAUTION: Before lighting the pilot, both burner, and pilot must have been off at least five minutes.

1. **WARNING: Disconnect electrical power supply and place a tag at the disconnect switch indicating that you are working on the circuit.**
2. Remove control box cover (lift, pull out at bottom, then lower)
3. Swing disc to open lighting hole (lower front)
4. After burners have been off for at least 5 minutes, open the gas service valve, turn the knob of the combination control to the "pilot" position. Hold a flame (use a taper) to ignite the pilot (through the lighting hole) while depressing knob of the combination control completely. Keep knob depressed for about one minute after the pilot is lit. Release knob, pilot should continue burning, if not repeat this step.
5. After completing above step, turn knob and stop at the "ON" position.
6. Replace cover, replace its lock screw and reconnect the electric power.

NOTE: Pilot will not ignite the until gas line is bled free of air. This may necessitate holding the control dial in depressed position for several minutes because the pilot flow is small.

SHUT DOWN / PILOT LIGHTING ADJUSTMENTS / CALIBRATING THERMOSTAT

1. Turn thermostat dial to the "OFF" position.
2. Turn the gas service valve to "OFF".

LIGHTING AND SHUT DOWN OF AN INTERMITTENT PILOT

CAUTION: Before lighting the pilot, both burner and pilot must have been off at least 5 minutes.

A. Lighting instructions

1. Remove control panel cover (remove the cover lock screw; lift, pull out at bottom, and lower).
2. Turn knob of the combination valve counterclockwise until it stops at the "ON" position.
3. Turn master power switch (upper right hand corner of control panel) to the "ON" position (light on).
4. The pilot will begin sparking, and the pilot will light.
5. Insure pilot has been lit by viewing the pilot flame through the view port (located in the lower front of the kettle).
6. The pilot will remain lit as long as the master power switch is in the "ON" position.
7. Replace the control panel cover and lock screw.

B. Shut-Off Instructions

1. To make sure pilot and main burners inoperable, turn the knob of the combination valve clockwise until it stops.
2. To completely shut off, close the gas service valve.

ADJUSTMENTS:

The following adjustments were factory made, but slight readjustments may be required at installation to compensate for differences in gas, altitude and other variables.

ADJUSTING THE PILOT FLAME:

Remove the panel in front of the main burners (lower front of unit). The pilot should burn with a steady blue flame which envelopes ⅜" to ½" of the thermocouple tip. To adjust, on the combination control inside the control box, remove the screw cap and turn the adjusting screw clockwise to decrease the flame or counter clockwise to increase it.

ADJUSTING THE MAIN BURNER FLAME:

With the combination control dial turned from pilot to "on", with the control box cover replaced, witht he electrical power on, turn the thermostat dial to "on" and allow burners to operate. Note the flame on each burner and adjust each air shutter to give a steady blue flame. To adjust an air shutter (burners must be off), pull the burner forward, loosen the shutter locks crew, put burner back in position, adjust the shutter with the burner operating, then tighten the shutter lock screw.

CALIBRATING THERMOSTAT

Turn the thermostat dial to its highest setting and allow the burners to operate until the thermostat functions to shut them off. Note the jacket pressure as shown by pressure gauge at this instant. If the burner shuts off and jacket pressure reaches 12 to 13 p.s.i., the thermostat calibration is correct. If not, recalibrate thermostat as follows: Remove the thermostat dial by pulling it forward, turn the small screw center of the hollow dial shaft slightly counterclockwise to increase pressure, clockwise to decrease it. Check and repeat the adjustment if necessary.

MAIN BURNER AIR SUPPLY

For efficient burner operation, it is important that a proper balance of gas volume and primary air supply is maintained, resulting in complete combustion. Insufficient air supply results in a yellow streaming flame. The primary air supply is controlled by the air shutter on the front of the burner venturi.

NOTE:

1. If the appliance is to be located in a confined area, provisions must be made for an adequate air supply.
2. The burners are located on the underside of the kettle. This area must be kept clear of all obstructions and debris in order that all air openings into the combustion chamber are not blocked.
3. For proper service and operation of the appliance it is recommended that the minimum clearances to adjacent combustible construction listed on the index page always be maintained.

SERVICE GENERAL NOTES

A gas pressure regulating valve is an integral part of the combination control valve and is set for 3½" W.C. for natural gas and 11" W.C. for propane gas. Limited adjustment of this is provided by a screw under the cap at right rear of the control dial. Turn screw clockwise to increase pressure. Use a 5/64" Allen wrench.

Main burner orifices are fixed and sized to give 15,000 BTU/hr per burner.

The pilot burner has a limiting orifice, but an adjustable valve (under the cap at the left rear of the combination control dial) is provided for fine adjustment. Turn clockwise to decrease pilot flame. Pilot burner flame should be steady, blue flame which envelopes 3/8" to ½" of the thermocouple tip. The pilot burner lint screen must be clean.

Low water in the jacket shuts off the main burners but does not shut off the pilot.

The thermostat, with its dial at highest setting, should cut main burners off at a jacket pressure of 12 to 13 p.s.i. and before the pressure relief valve opens.

The pressure limit switch is set to open when the jacket pressure reaches 15 p.s.i., to close when the jacket pressure drops to 6 p.s.i.

CAUTIONS:

Before opening any gas lines on the unit, close the main gas valve (not furnished with kettle). Always check for gas leaks after reassembly.

WARNING: Disconnect electrical power supply and place a tag at the disconnect switch indicating that you are working on the circuit.

SERVICE PROCEDURES

TO SERVICE MAIN BURNERS

Burner input is fixed. Slight adjustment is possible. (See General Notes)

To adjust the air shutters, remove the panel in front of burners (lower front of units). Pull burners forward and remove to loosen shutter lock screw. Adjust shutter with burner operating and tighten lock screw.

TO SERVICE PILOT & THERMOCOUPLE

For access to the pilot, remove the panel in front of the burners and remove the main burners on each side of the pilot. Clean the pilot lint screen. Check the pilot flame and adjust if required. (See General Notes)

If proper flame cannot be secured, check to see that the pilot gas supply tubing is not clogged. Unscrew the pilot orifice fitting (hex fitting directly below pilot burner to which pilot gas supply tubing connects) and the clean pilot orifice. DO NOT enlarge orifice hole. The numbers stamped on side of fitting show size of orifice hole in thousandths of an inch (.018" for natural gas .010" for propane gas).

The only other possible causes of low pilot burner flame are low gas pressure or a clogged pilot filter in the combination control valve. See Service Procedures for the combination control valve.

To check for proper thermocouple output, use open circuit type of check (thermocouple disconnected from the combination control unit). Combination control dial must be held in pilot lighting position. Use 50 millivolt meter range. After lighting pilot, wait minimum of three minutes before taking the reading. Proper reading is 20 MV minimum. If output is low, replace the thermocouple unit.

If above is OK and the thermocouple connection to combination control is properly made (clean and properly tight), and protective shut-off drop out still occurs, the trouble is in the combination control valve. A closed circuit thermocouple output check will verify this. See instructions with your meter.

SERVICE ON COMBINATION CONTROL

During the warranty, to cure any problem in the functioning of the combination control, replace the complete control. The removed defective control must be returned to Vulcan-Hart for warranty credit to be issued. PLEASE tag the returned control to show why it was considered defective. Even beyond the warranty period, replacement of the complete control is recommended should it malfunction.

TO SERVICE THE THERMOSTAT

To recalibrate, remove the dial by pulling it forward, and turn slightly the small screw in the center of hollow dial shaft. Recalibration is indicated if the thermostat with the dial at highest setting fails to shut the burners off before the pressure relief valve opens, or if it shuts the burners off before the jacket pressure reaches 8 p.s.i.

To replace the thermostat, remove two screws under the dial, disconnect wire leads, unscrew packing gland around capillary tube where it enters jacket, unscrew the bushing in which the gland was threaded and pull the bulb from jacket. When installing a new thermostat, insert the bulb first. Be careful that the capillary tube is not bent sharply, that the packing gland seal is pressure tight, and that the terminal screws are tight.

TO SERVICE LOW WATER CUT OFF

This service is indicated if water in the steam jacket is at the proper level but the switch does not close to make the circuit across the two top terminal screws (bottom two are not used), if leakage is observed from the switch case, or if the water level is near the bottom of the gauge glass and burners will still operate.

To replace or check the switch, remove the lead wires, remove two screws and the metal cover over the switch, remove four flat head screws holding the switch in place and remove the switch. To check the switch, gently press the bottom of rocker toward the switch body, this should close the switch; then press the rocker in the other direction, this should open the switch. When installing the switch, be sure the word "TOP" on the switch is at top.

To replace the whole unit, remove the lead wires, remove the ten screws around base of metal switch cover and pull the whole unit forward. When installing a new unit, be sure the word "TOP" on the switch is at the top and that the side of the square terminal block is vertical.

TO SERVICE THE PRESSURE LIMIT SWITCH

This service is indicated if a circuit check shows the switch is not closed to allow main burners to operate, or if the switch is opening at too low a pressure. It was factory set to open at 15 p.s.i. and to close at 6 p.s.i.

To remove the switch for any service, disconnect the tubing from the bottom of the unit and remove two screws with nuts which anchor the mounting bracket for the unit.

The cut out and cut in pressure setting of the switch is shown on the dial and is adjustable with slotted square shanks at the top of the case. Adjust the cut out pressure setting first. If this adjustment does not cure the trouble, replace the whole unit.

KETTLE FOOD DRAW-OFF VALVE

USE — CARE — CLEANING & PERIODIC MAINTENANCE

USE

This food draw-off valve is designed to allow food and liquid to be drawn-off from the kettle in an easy and dependable manner.

OPERATION

When the food draw-off valve is turned off (no liquid or food product flow), valve handle will point to either the 9 o'clock or 3 o'clock position. To open (allowing liquid or food product flow), slowly pull handle forward. With the valve handle pointing to the 6 o'clock position the valve is in a fully open position. This food draw-off valve system requires a 90 degree turn, right or left, to close off food flow. To allow for evenly mixed food products to flow into a food service pan, or stock pot, you should first stir the food product load in the kettle thoroughly before opening the food draw-off valve to allow the food to flow. Pans or pots may be placed on a portable dolly for easy movement and handling.

CLEANING

With kettle empty, pull valve handle to the 4 o'clock position. Pull tapered plug from valve body. SPECIAL NOTE: (Due to a pin that locks the valve plug into the valve body you can only remove or replace the valve plug when the valve handle is in the 4 o'clock position. VERY IMPORTANT — (Do not attempt to slide valve plug into valve body when valve handle is any other than 4 o'clock position. This will damage the pin and the plug will not seat properly causing leakage between the valve body and plug). Using warm soapy water wash the entire valve body and open area into the kettle interior. Also, wash the interior and exterior of the valve plug. Caution — Do not drop or hit the valve plug. This will nick or dent the soft dairy metal.

Caution: Lubrication that must be done every day after use. After washing, lubricate the valve body and valve plug with Petro-Gel or a like and equally sanitary lubricant. Make sure all interior mating surfaces are covered with this lubrication before carefully sliding the valve plug into the valve body. Caution - Make sure the valve plug handle is in the 4 o'clock position when the plug is slipped carefully into the valve body.

NOTE: A 4 oz. tube of Petro-Gel is furnished free of charge with your kettle. You can reorder through your service agency or food service equipment dealer. There are no substitutes for this lubricant. If you are offered a substitute, make sure it is a like and equal product that is both sanitary food safe and will not break down when the kettle is brought to cooking temperature.

CAUTION

Each draw-off valve body and removable tapered draw-off plug is stamped with a set of corresponding numbers.

After cleaning make sure the body and plug numbers match before reinserting the tapered plug.

Always examine the valve plug and valve body for nicks and any heavy scratches. Do not attempt to push or force the valve plug into the valve body if there is any obstruction, nicks or heavy scratches in either the plug or body.

To correct a badly leaking draw-off valve (leaking after lubricant applied), examine the tapered surface of each and carefully dress any raised placed with a very fine file or with emery cloth. Do not cut below the metal surface when removing any raised places. Coat plug lightly with lapping compound, insert plug in body and rotate to seat plug in body. Use a medium grade of lapping compound first and finish with a fine grade of lapping compound. Valve grinding compound from an automobile supply house is suitable for this.

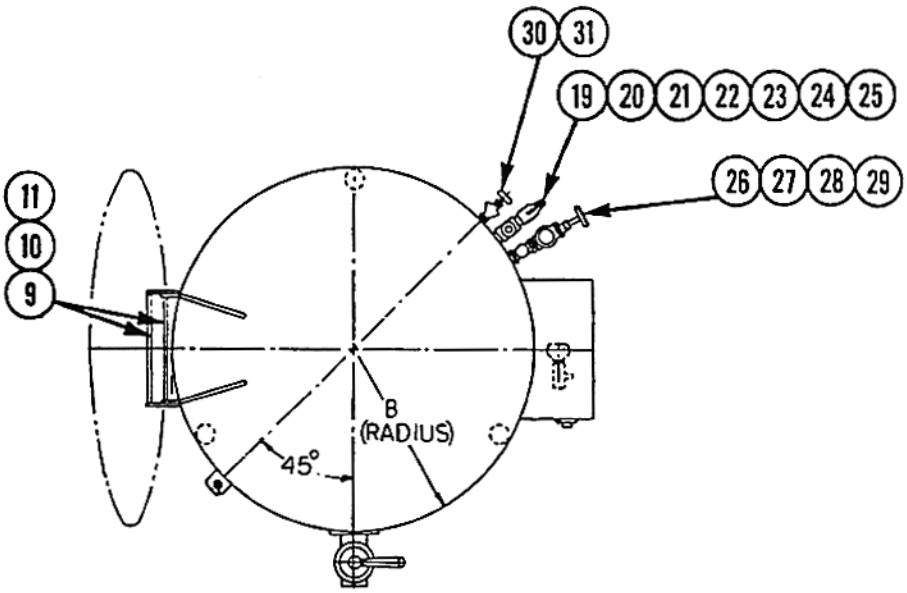
Clean surfaces thoroughly after use of lapping compound. Lubricate surfaces with non-toxic Petro-Gel to prevent the plug from sticking.

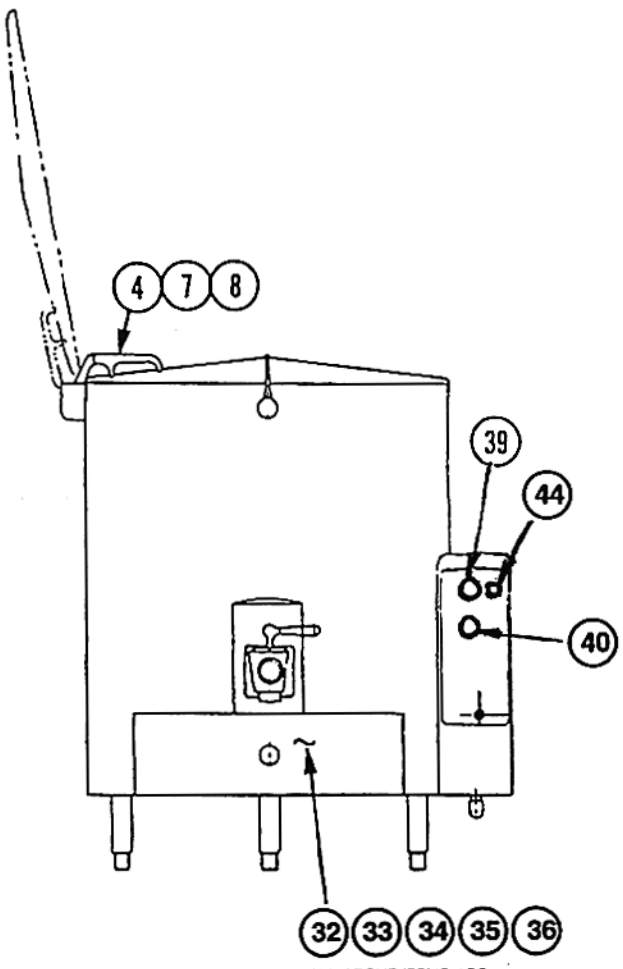
WARNING

If the food draw-off valve plug and inside of valve body are not lubricated, undesirable leakage can occur or (VERY IMPORTANT) when the kettle is up to cooking temperature and the operator attempts to open the draw-off valve, the valve plug could stick in a partially open position.

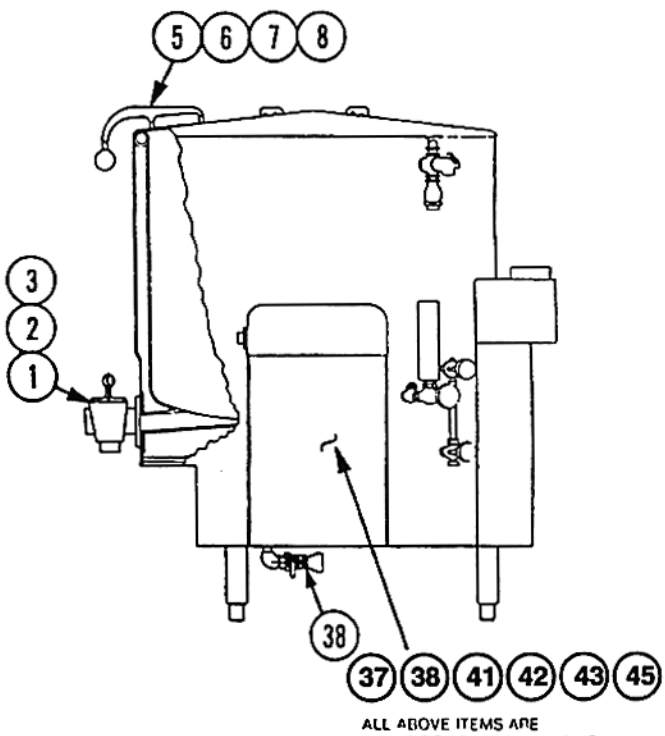
NOTE: The food drawoff valve is bolted to the kettle so it can be easily removed from the empty kettle for complete inspection or if repair becomes necessary.

PART ITEM NUMBERS





ALL ABOVE ITEMS ARE
INSIDE OF FRONT PANEL



ALL ABOVE ITEMS ARE
INSIDE OF CONTROL HOUSING

PARTS LIST

ITEM NO.	DESCRIPTION	QTY.	PART NO.
1	1½" Faucet 2" Faucet 3" Faucet	1	836799-1 836799-2 836799-3
2	Gasket for 1½" faucet Gasket for 2" faucet Gasket for 3" faucet	1	831700 831713 833394
3	1½" Faucet mounting screw, ½-20x1¼ 2" Faucet mounting screw ½-20x1¼ 3" Faucet mounting screw, ⅝-18x1¼	2 2 4	SC-119-36 SC-119-36 SC-119-38
4	Cover hinge, left Cover hinge, right	1 1	817615 817615-1
5	Cover handle	1	817168-4
6	Cover handle ball	1	817564
7	Nut, handle & hinge to cover-¼-20 S.S. Acorn	7	NS-025-04
8	Jam nut for above	7	NS-047-86
9	Cover hinge & stop rod—20½" O.D. kettle Cover hinge & stop rod—25" O.D. kettle Cover hinge & stop rod—29" O.D. kettle Cover hinge & stop rod—33" O.D. kettle Cover hinge & stop rod—36½" O.D. kettle	2	817115-1 817115-2 817115-3 817115-4 817115-5
10	Hinge rod acorn nut, ¼"-20	4	NS-025-04
11	Lock washer for above	4	WL-006-17
19	Pressure relief valve ¾"	1	833489
20	Air vent ¾"	1	833239
21	Vacuum breaking check valve, ½"	1	833238
22	Cross ¾"	1	FP-083-92
23	¾" Close nipple	1	FP-054-27
24	½" Close nipple	1	FP-054-08
25	¾" x ½" Reducing bushing	1	FP-084-16
26	Fill pipe assembly	1	836082-1
27	Fill valve	1	833501
28	Check valve	1	833648
29	½" Close nipple	2	FP-054-08
30	Gauge glass only	1	833493-11
	Washers for gauge glass above	2	817098-5
31	Gauge glass assembly complete	1	833493

NOTE: In ordering parts, always give Model and Serial numbers of the kettle for which they are ordered.

PARTS LIST (Cont.)

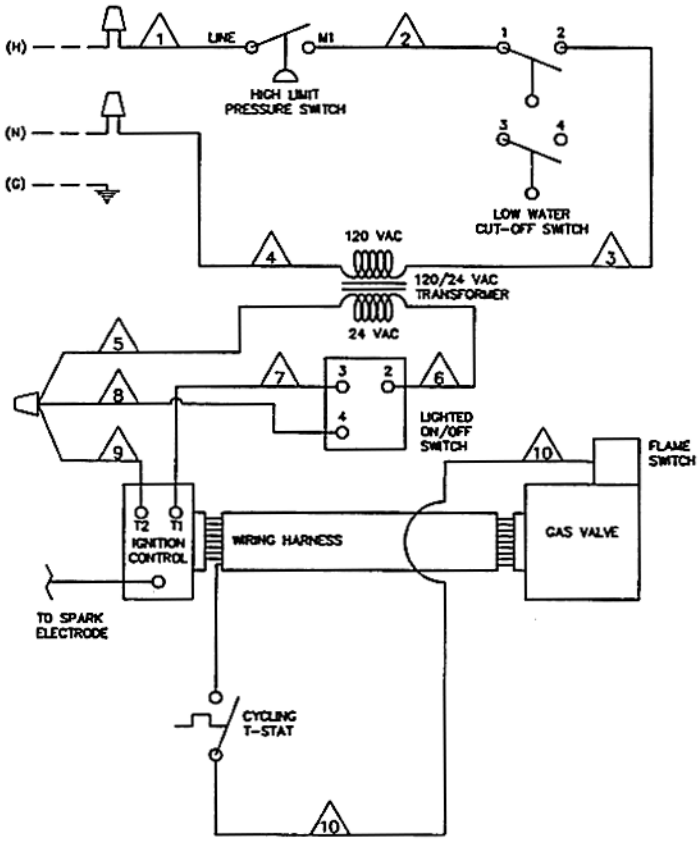
ITEM NO.	DESCRIPTION	QTY.	PART NO.
32	Burner fitting natural gas (#48 DMS) 25", 33" & 36" diameter kettles	5, 8 or 9	800665-10
	Burner fitting natural gas (#49 DMS) 29" diameter kettles	7	800665-25
	Burner fitting natural gas (#50 DMS) 20½" diameter kettles	4	800665-15
	Burner fitting, propane gas (#57 DMS) All diameter kettles	4 to 9	800665-12
33	Main burner assembly—propane and natural gas	4 to 9	833076-1
34	Pilot burner—with orifice elbow for natural gas	1	835511
	Pilot burner—for natural & propane gas electronic ignition only	1	817617
	Pilot orifice—natural gas electronic ignition only	1	817617-1
35	Pilot orifice—propane gas electronic ignition only	1	817617-2
	Pilot orifice—elbow only propane gas	1	833682-11
36	Thermocouple only—millivoltage control	1	833681-12
	Thermocouple only—electric control	1	906955
	Flame sensor-electronic ignition	1	821078
37	Low water cut off complete—millivoltage control	1	833197-10
	Low water cut off switch only—millivoltage control	1	833197-11
	Low water cut off complete—electric control	1	833196
	Low water cut off switch only—electric control	1	833196-11
38	Combination control, natural gas—millivoltage control	1	833153-10
	Combination control, propane gas—millivoltage control	1	833153-11
	Combination control, natural gas—electric control	1	880208
	Combination control, propane gas—electric control	1	880209
	Combination control, natural gas—electronic ignition	1	817362
	Combination control, propane gas—electronic ignition	1	817362-1
39	Thermostat with dial—millivoltage control	1	833133
	Thermostat with dial—electric control	1	833220
40	Pressure gauge	1	833152
41	Ignition control—electronic ignition	1	821078
42	Wiring harness—electronic ignition	1	821076
43	Transform—electronic ignition	1	821075
44	Switch, lighted off & on—electronic ignition	1	821079
45	Pressure limit switch	1	833488
	Six ounce bottle of rust inhibitor	2 oz. per charge	833651
	Petro-Gel	1 tube	833652

NOTE: In ordering parts, always give Model and Serial numbers of the kettle for which they are ordered.

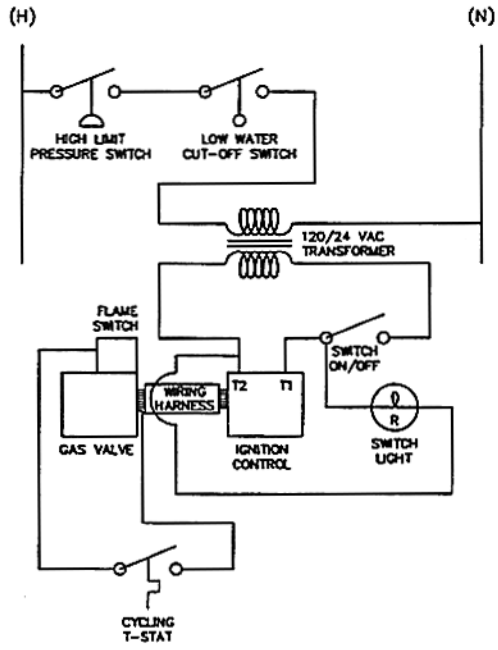
WIRING DIAGRAM
GAS KETTLES WITH ELECTRONIC IGNITION

NOTE:

ALL WIRING TO BE A MINIMUM OF 18 AWG APPLIANCE WIRE WITH A MINIMUM OF 1/32 INCH THICK THERMOPLASTIC INSULATION RATED FOR 105 C, AND 600 VOLTS.



CONNECTION DIAGRAM

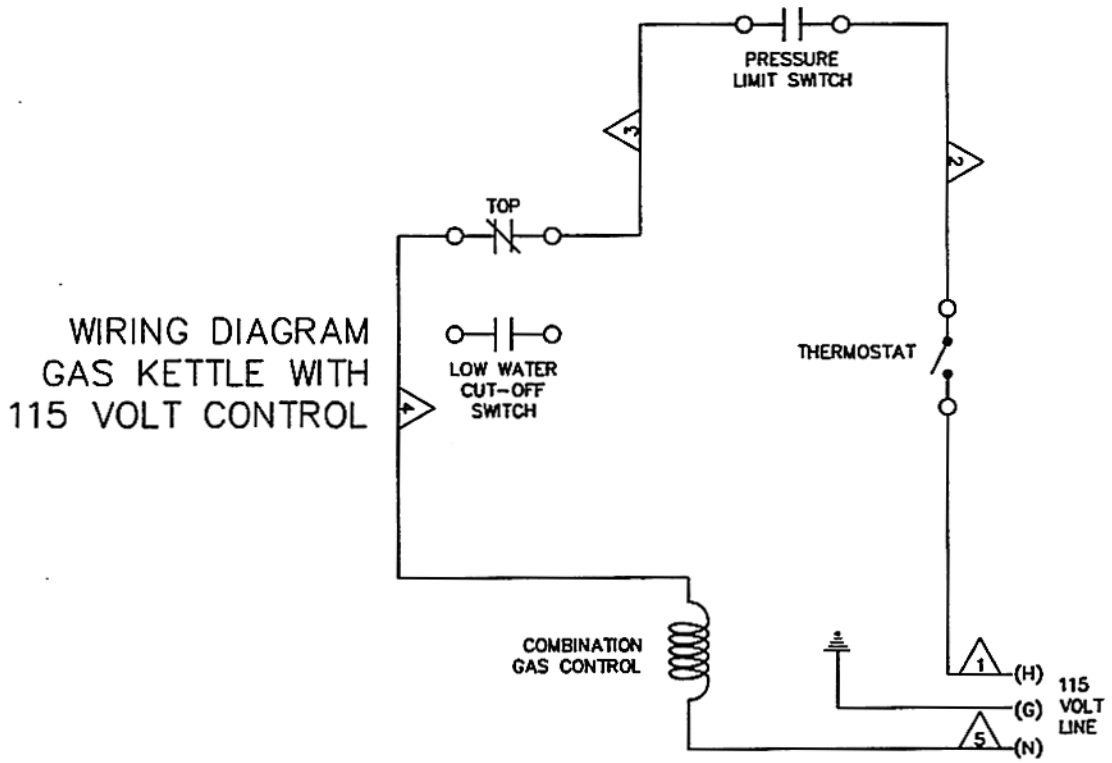


LADDER DIAGRAM

VULCAN–HART CORP.
LOUISVILLE, KY

FORM 20416

WIRING DIAGRAM
GAS KETTLES WITH CONTINUOUS PILOT



CAUTION: A SEPARATE GROUNDING WIRE MUST BE CONNECTED TO THE GROUND LUG. FOR SUPPLY CONNECTION, USE WIRES SUITABLE FOR AT LEAST 167°F (75°C).

VULCAN–HART CORP.
LOUISVILLE, KENTUCKY

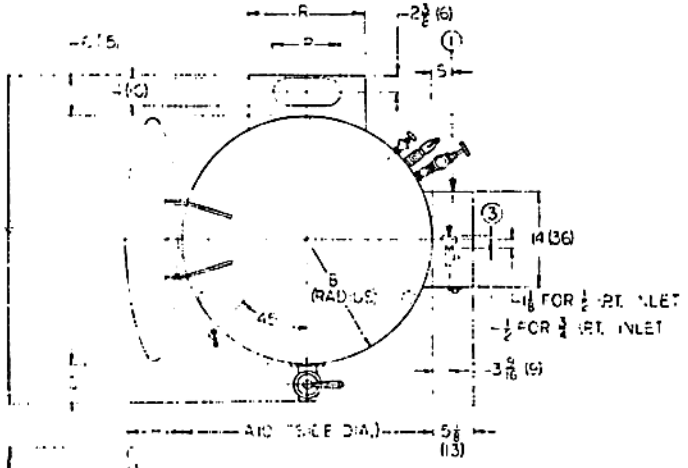
FORM 20415 (REV. A)

NOTE:
1-FEET ARE ADJUSTABLE PLUS OR MINUS 1"

2-PROJECTION OF HANDLE ON DRAW-OFF FAUCET 5" FROM CENTER LINE OF 1½" FAUCET, 6" FROM CENTER LINE OF 2" AND 3" FAUCETS

3-MIN. WALL CLEARANCE FROM COMBUSTIBLE CONSTRUCTION: SLIDES—6", AT FLUE BOX-2"

OUTSIDE DIA	INPUT — 15000 BTU/HR PER BURNER NO. BURNERS	TOTAL BTUS	GAS INLET I.P.S.
20½	4	60000	½
25	5	75000	½
29	7	105-000	¾
33	8	122-000	¾
36½	9	135-000	¾



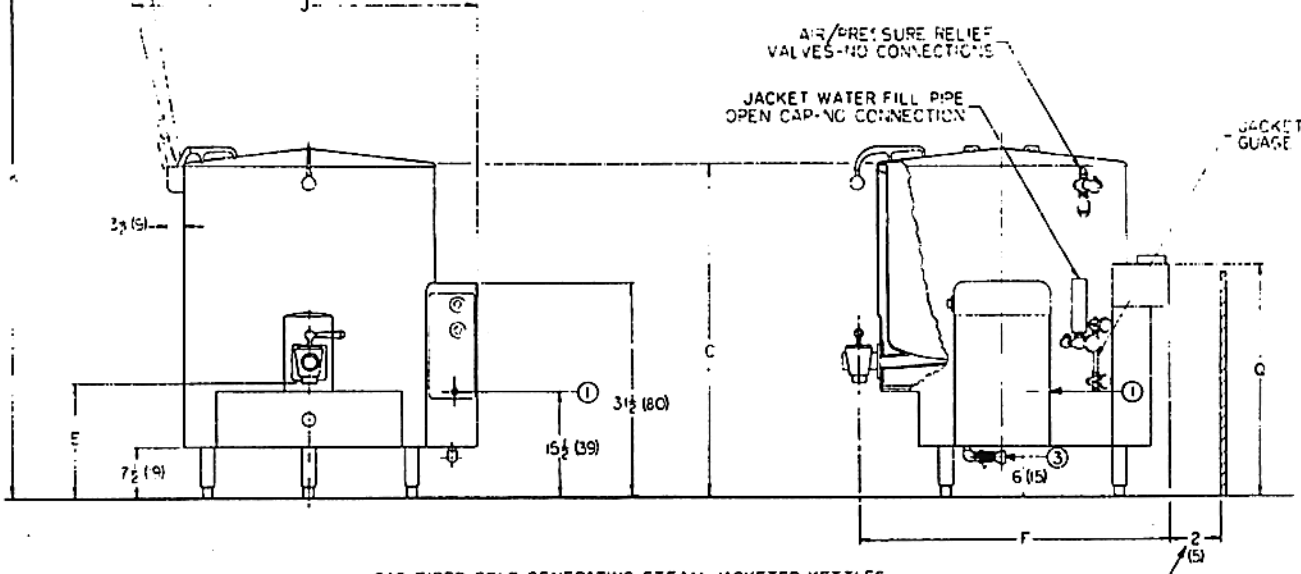
DIMENSIONS — ENGLISH

MODEL NO	CAPACITY GALS. FULL	CAPACITY GALS. WRKG.	A	B	C	AVAIL. DRAW-OFF SIZE	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
GS-13	13	10	20½	10½	33¼	*1½	2¾	17¼	27⅛	29¼	8	33⅛	53¼	9⅛	4¼	7⅛	5¼	32⅛	9¼	2¼
						2	3¼	17	27¼	29¼			60¼							
GL-20	20	17			39¼	3	5¼	18	29¼	32¼										
GS-20	20	15	25	12½	34¼	*1½	2¾	17½	32¼	33⅛	9½	39⅛	59¼	11¼	5¼	9⅛	8¼	34⅛	13¼	1¼
GL-30	30	25			40¼	2	3¾	17¼	32⅛	34⅛			65¼							
GT-40	40	35			45¼	3	6	18¼	34⅛	37			71¼							
GS-30	30	23	29	14½	35⅛	*1½	2¼	17⅛	36⅛	37¼	10¼	44⅛	64⅛	13¼	6¼	11⅛				1¼
GL-40	40	33			40¼	2	3¼	17¼	36¼	38¼			69¼							
GT-60	60	53			49	3	6¼	18¼	38½	41¼			78							
GS-40	40	31	33	16½	36¼	*1½	2¾	17¼	40¼	41¼	12	50⅛	69¼	15¼	7¼	13⅛	10	34⅛	17¼	1¼
GL-60	60	51			42¼	2	3¼	17⅛	40¼	42¼			75¼							
GT-80	80	71			49¼	3	6¼	18⅛	42¼	45⅛			82¼							
GS-60	60	48	36½	18¼	38⅛						13	54⅛	75⅛	17¼	8¼	14⅛				1¼
GL-80	80	68			44⅛	*2	3¼	17	44¼	46¼			80⅛							
GT-100	100	88			49¼								85⅛							
GT-125	125	113			55¼	3	6¼	18	46¼	48¼			92¼							
GT-150	150	138			62⅛								99							

DIMENSIONS — METRIC

MODEL NO	CAPACITY LITERS FULL	CAPACITY LITERS WRKG.	A	B	C	AVAIL. DRAW-OFF SIZE	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
GS-13	49	38	52	26	84	*4	7	44	70	74	20	85	136	23	12	20	13	83	24	5
						5	9	43	71	76										
GL-20	76	64			101	8	15	46	76	82			153							
GS-20	76	57	64	32	87	*4	7	44	81	86	24	101	150	29	14	25	21		34	2
GL-30	114	95			102	5	9	44	83	88			166							
GT-40	151	132			118	8	15	46	87	94			181							
GS-30	114	87	74	37	91	*4	7	45	92	96	27	114	165	34	17	30		87		3
GL-40	151	125			102	5	9	44	93	98			176							
GT-60	227	201			124	8	15	47	96	104			198							
GS-40	151	117	84	42	92	*4	7	45	102	106	30	127	176	39	20	34	25		43	4
GL-60	227	193			109	5	10	44	103	109			192							
GT-80	303	269			125	8	16	47	108	115			209							
GS-50	227	182	93	48	99						33	139	191	44	22	38				4
GL-80	303	257			112	*5	10	43	112	118			205							
GT-100	379	333			125								210							
GT-125	473	428			142	8	16	46	117	124			235							
GT-150	568	522			159								251							

* STANDARD SIZE DRAW-OFF



LEGEND
1. ELECTRIC CONNECTION-115V/60/1-300W. MAX. FOR THERMOSTATIC CONTROL
2. STANDARD LOCATION OF SWING SPOUT FAUCET (OPTIONAL EXTRA)
3. GAS INLET-SEE CHART

ARROWS INDICATE DIRECTION OF CONNECTION

GAS FIRED SELF GENERATING STEAM JACKETED KETTLES

H-3265 REV 4

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