# INSTALLATION & OPERATION MANUAL

## GS, GL, & GT SERIES
## FULLY STEAM JACKETED GAS KETTLES

| MODEL | |
|---|---|
| GS40ES | ML-152056 |
| GS60E | ML-52660 |
| GL80E | ML-52637 |
| GT100E | ML-52638 |
| GT125E | ML-52639 |
| GT150E | ML-52640 |




**GS40ES**

For additional information on Vulcan or to locate an authorized parts and service provider in your area, visit our website at www.vulcanequipment.com

VULCAN
DIVISION OF ITW FOOD EQUIPMENT GROUP, LLC
WWW.VULCANEQUIPMENT.COM

3600 NORTH POINT BLVD.
BALTIMORE, MD 21222

**FORM 30960 Rev. D (September 2018)**

# IMPORTANT FOR YOUR SAFETY

**THIS MANUAL HAS BEEN PREPARED FOR PERSONNEL QUALIFIED TO INSTALL GAS EQUIPMENT, WHO SHOULD PERFORM THE INITIAL FIELD START-UP AND ADJUSTMENTS OF THE EQUIPMENT COVERED BY THIS MANUAL.**

**POST IN A PROMINENT LOCATION THE INSTRUCTIONS TO BE FOLLOWED IN THE EVENT THE SMELL OF GAS IS DETECTED. THIS INFORMATION CAN BE OBTAINED FROM THE LOCAL GAS SUPPLIER.**

## IMPORTANT

**IN THE EVENT A GAS ODOR IS DETECTED, SHUT DOWN UNITS AT MAIN SHUTOFF VALVE AND CONTACT THE LOCAL GAS COMPANY OR GAS SUPPLIER FOR SERVICE.**

## FOR YOUR SAFETY

**DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS OR LIQUIDS 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.**

**IN THE EVENT OF A POWER FAILURE, DO NOT ATTEMPT TO OPERATE THIS DEVICE.**

**RETAIN THIS INSTRUCTION MANUAL FOR FUTURE REFERENCE**

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# Installation, Operation and Care of GS, GL, & GT SERIES FULLY STEAM JACKETED GAS KETTLES

### SAVE THESE INSTRUCTIONS FOR FUTURE USE

## GENERAL

Your Vulcan steam jacketed kettle is produced with quality workmanship and material. Proper installation, usage and maintenance will result in many years of satisfactory performance.

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

## INSTALLATION

Prior to installation check the electrical service and type of gas supply (natural or propane) to make sure they agree with the specifications on the machine data plate located on the lower-left inside front cover.

### UNPACKING

This kettle was inspected before leaving the factory. The carrier assumes full responsibility for the safe delivery upon acceptance of the shipment. Check for possible shipping damage immediately after receipt.

If the kettle is found to be damaged, complete the following steps:

1. Carrier must be notified within 5 business days of receipt.
2. Carrier's local terminal must be notified immediately upon discovery (note time, date, and who was spoken to), and follow up and confirm with written or electronic communication.
3. All original packing materials must be kept for inspection purposes.
4. The kettle cannot have been moved, installed, or modified.
5. Notify Vulcan Customer Service immediately at 800-814-2028.

### LOCATION

Position the kettle in its final location. Check that there are sufficient clearances for operating and servicing the kettle, and for proper clearance of the cover when raised. Keep the kettle free and clear from all combustible substances. Minimum clearance from combustible and non-combustible construction is 2" (5.0 cm) at the rear and 6" (15.2 cm) at each side.

The kettle draw off valve should be located near a floor drain.

Do not obstruct the flow of air into and around the kettle. This air flow is necessary for proper combustion of gases and for ventilation of the kettle. Provisions for ventilation and incoming air supply for the equipment in the room must be in accordance with the National Fuel Gas Code ANSI Z223.1 (latest edition).

## LEVELING

Place a spirit level on the rim of the kettle with the cover open. Turn the feet in or out to level the kettle in both the left-to-right and front-to-rear directions. Kettle must be bolted to floor by all three legs with two bolts per leg.

## INSTALLATION CODES AND STANDARDS

In the United States, Vulcan kettles must be installed in accordance with state and local codes, with the National Fuel Gas Code, (ANSI-Z223.1, latest edition) available from the American Gas Association, 1515 Wilson Boulevard, Arlington, VA 22209, with the National Electrical Code (ANSI/NFPA No. 70, latest edition) available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269 and with Vapor Removal from Cooking Equipment, (NFPA-96, latest edition) available from NFPA.

In Canada, the kettle must be installed in accordance with local codes, with the National Fuel Gas Code (CAN/CGA-B149.1, latest edition) available from the Canadian Gas Association, 178 Rexdale Boulevard, Etobicoke, Ontario, Canada M9W 1R3, and with the Canadian Electrical Code (CSA C22.2 No.3, latest edition) available from the Canadian Standards Association, 178 Rexdale Boulevard, Etobicoke, Ontario, Canada M9W 1R3.

## GAS CONNECTION

**⚠ WARNING The gas supply connection and any pipe joint compound must be resistant to the action of propane gases.**

Codes require that a gas shutoff valve be installed in the gas line ahead of the kettle.

Connect the 3/4" NPT gas supply line to the gas supply connection on the kettle. Make sure the pipes are clean and free of obstructions, dirt and piping compound.

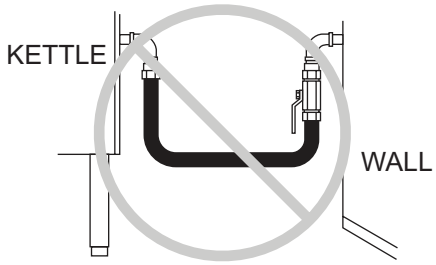
The gas line must be capable of delivering gas to the kettle without excessive pressure drop at the rate specified on the nameplate. Suggested gas supply line pressure is 7" Water Column (1.75 kPa) for natural gas and 11" Water Column (2.75 kPa) for propane. Burner manifold pressure is 3.5" Water Column (0.875 kPa) for natural gas and 10" Water Column (2.5 kPa) for propane.

The proper sizing and installation of the gas connection is important for the machine to operate within its design specifications. In some installations, the gas supply may not be sufficient enough to allow all the gas equipment to operate properly at peak loads; or when other equipment with a high BTU/hr. input requirement is operating. The connection to the machine becomes even more important in this type of location. Flexible gas connectors with quick disconnect or swivel fittings (when used) and gas connectors beyond the length necessary will reduce the BTU/hr. flow capacity to the machine.

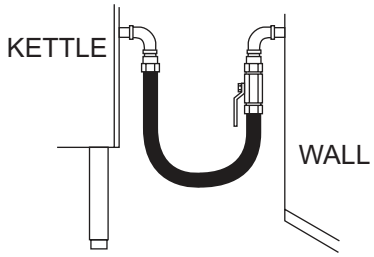
**NOTE:** Do not use corrugated stainless steel tubing for commercial gas equipment supply connections.

**NOTE:** A straight gas connection is the ideal condition for the rated BTU/hr. flow capacity of the connector. If a straight connection is not possible and a flexible gas connector is used, do not twist, kink or excessively flex the connector beyond a U shape. Flexing the gas connector as described will restrict gas flow and will damage the connector.

Changing a flexible gas connector may raise the BTU/hr. flow capacity enough to allow the machine to operate within its design specifications. (i.e. Removing the quick disconnect fitting, installing a shorter gas connector or installing a larger diameter gas connector.) An alternative may be to move the equipment to a different gas supply location in the kitchen. (i.e. Closer to the main supply into the kitchen or away from other equipment with high BTU/hr. input requirements.)




**INCORRECT INSTALLATION**




**CORRECT INSTALLATION**

**⚠ WARNING Prior to lighting, check all joints in the gas supply line for leaks. Use soap and water solution. Do not use an open flame.**

After piping has been checked for leaks, all piping receiving gas should be fully purged to remove air.

**Gas Connection Data**

Flex Line Information below is courtesy of Dormont MFG. Co.®

| FLEXIBLE GAS CONNECTORS BTU/hr. FLOW CAPACITY [1, 2] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | LENGTH [3] | | | | LENGTH [3] | | | |
| | End Fittings - (1) Quick Disconnect & (1) Threaded | | | | End Fittings - Both Threaded | | | |
| ID | 36" | 48" | 60" | 72" | 36" | 48" | 60" | 72" |
| 1/2" | 77,000 | 68,000 | 60,000 | 55,000 | 120,000 | 106,000 | 93,000 | 86,000 |
| 3/4" | 218,000 | 180,000 | 158,000 | 139,000 | 256,000 | 225,000 | 198,000 | 175,000 |
| 1" | 379,000 | 334,000 | 294,000 | 279,000 | 512,000 | 451,000 | 397,000 | 350,000 |
| 1 1/4" | 615,000 | 541,000 | 476,000 | 419,000 | 946,000 | 833,000 | 733,000 | 645,000 |

1. Flow rating BTU/hr. 0.64 SP. GR @ 0.5 inch W.C. pressure drop.
2. BTU/hr. flow capacities are based on Dormont Mfg. Co. Supr-Safe gas line connectors and are provided for reference. Additional quick disconnect fittings, swivels, or manual shut off valves will reduce the BTU/hr. flow capacities listed in this table. If other flexible gas connectors are used, check the manufacturer's specifications for BTU/hr. flow capacities. Supr-Safe is a registered trademark of the Dormont Manufacturing Company.
3. The maximum length for a flexible gas connector is 72" per National Fuel Code standards.

| BLACK IRON PIPE BTU/hr. FLOW CAPACITY [1, 2, 3] | | | | | | |
|---|---|---|---|---|---|---|
| **Natural Gas** | **Nominal Inside Diameter of Pipe** | | | | | |
| **Pipe Length** | **1/2"** | **3/4"** | **1"** | **1 1/4"** | **1 1/2"** | **2"** |
| **15'** | 76,000 | 172,000 | 345,000 | 750,000 | 1,220,000 | 2,480,000 |
| **30'** | 52,000 | 120,000 | 241,000 | 535,000 | 850,000 | 1,780,000 |
| **45'** | 43,000 | 99,000 | 199,000 | 435,000 | 700,000 | 1,475,000 |
| **60'** | 38,000 | 86,000 | 173,000 | 380,000 | 610,000 | 1,290,000 |
| **75'** | | 77,000 | 155,000 | 345,000 | 545,000 | 1,120,000 |
| **90'** | | 70,000 | 141,000 | 310,000 | 490,000 | 1,000,000 |

1. Flow rating BTU/hr. 0.64 SP. GR @ 0.3 inch W.C. pressure drop.
2. BTU/hr. flow capacities are based on Schedule 40 pipe, include a tolerance for pressure losses in gas piping systems are provided for reference.
3. Count each 90° elbow as 3' of gas pipe for the purpose of calculating total pipe length.

## TESTING THE GAS SUPPLY SYSTEM

When test pressures exceed 1/2 psig (3.45 kPa), the kettle and its individual shutoff valve must be disconnected from the gas supply piping system.

When test pressures are 1/2 psig (3.45 kPa) or less, the kettle must be isolated from the gas supply system by closing its individual manual shutoff valve.

## FLUE

DO NOT obstruct the flow of flue gases from the flue located on the rear of the kettle. It is recommended that the flue gases be ventilated to the outside of the building through a ventilation system installed by qualified personnel. The flue on the kettle should not be directly connected to any ventilation system. From the termination of the flue to the filters of the hood venting system, a minimum clearance of 18" (116 cm) must be maintained.

Information on the construction and installation of ventilating hoods must be obtained from Vapor Removal from Cooking Equipment, NFPA-96 (latest edition), available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

## FAUCET BRACKET

A bracket is provided for mounting a faucet on the kettle; this would allow the addition of water to the kettle for the convenience of the food preparer. A faucet is available as an accessory.

**NOTICE** **Do not use tap water** from faucet to fill kettle jacket. Refer to Jacket Water and Jacket Water Treatment on page 16.

## ELECTRICAL CONNECTION

**⚠ WARNING Electrical and grounding connections must be in accordance with local codes, or in the absence of local codes, with the National Electrical Code, ANSI/NFPA 70, or the Canadian Electrical Code, CSA C22.2, as applicable.**

**⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedure.**

All kettles are connected to 120 volt, 60 Hz. supply through the pigtail leads in the supply junction box located inside the control panel.

Remove the control box cover. Connect electrical supply to the terminal block per the wiring diagram located inside the control box cover. Use copper wire suitable for at least 75°C. Connect a ground wire to the ground lug in the junction box.

**NOTICE** Earth ground is required for proper operation of electonic ignition. Replace the control box cover.

## BEFORE FIRST USE

Use a non-corrosive, grease-dissolving commercial cleaner to clean the protective metal oils from all surface parts and the interior of the kettle. Follow the cleaner manufacturer's directions. Rinse thoroughly with warm water to remove all traces of the cleaner. Drain the kettle's interior cooking area. Wipe dry with a clean cloth.

# OPERATION

**⚠ WARNING The kettle and its parts are hot. Use care when operating, cleaning and servicing the kettle.**

Before operating, check the jacket water level by looking at the sight glass at the rear of the kettle with both upper and lower valves open. The water level should be at the midpoint of the sight glass. If water is below the recommended level or if it is murky, refer to Jacket Water and Jacket Water Treatment, page 16. Also check the flue at the rear of the kettle for any obstructions before operating.

## CONTROLS — KETTLES WITH ELECTRONIC IGNITION (CURRENT CONSTRUCTION, FIG. 1)

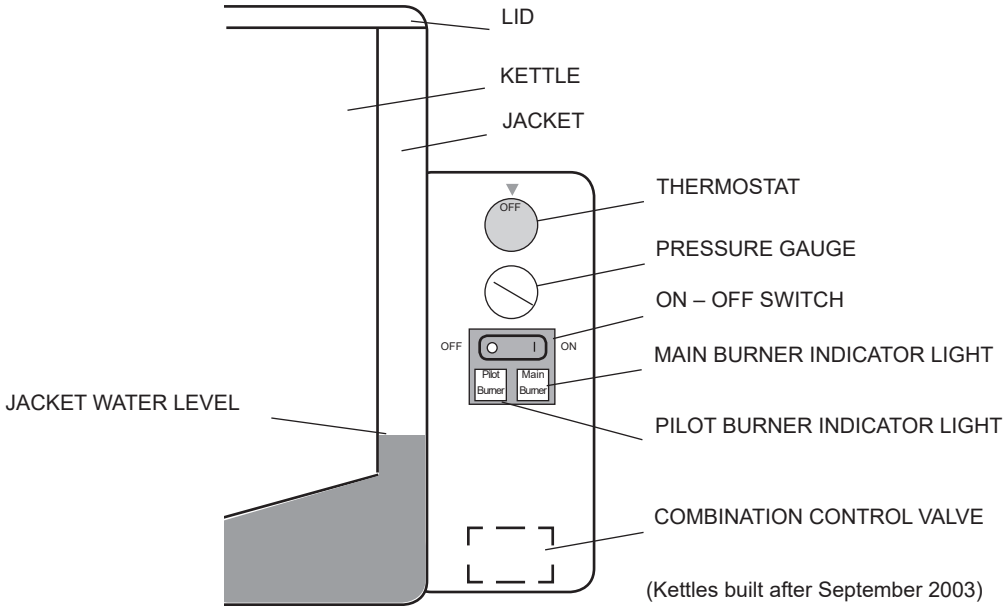



**Fig. 1**

| | | |
|---|---|---|
| Thermostat | — | Controls heat in the kettle. Dial settings are for low, simmer, and boil. |
| Pressure Gauge | — | Indicates pressure in the jacket, normal operating range is 0 to 12 psig. |
| On – Off Switch | — | Located below pressure gauge, when turned to ON, initiates electronic ignition to start the Pilot and Main Burner. |
| Pilot Burner Indicator Light | — | When lit, the electronic ignition system is attempting to light the Pilot or the Pilot has been lit; it remains lit when the Main Burner is on. |
| Main Burner Indicator Light | — | When lit, the Main Burner is providing heat to the kettle. |
| Combination Control Valve | — | Located inside box, this valve controls gas flow to the Main Burner. |

## KETTLE FEATURES — COMMON TO ALL CONSTRUCTIONS (FIG. 2)

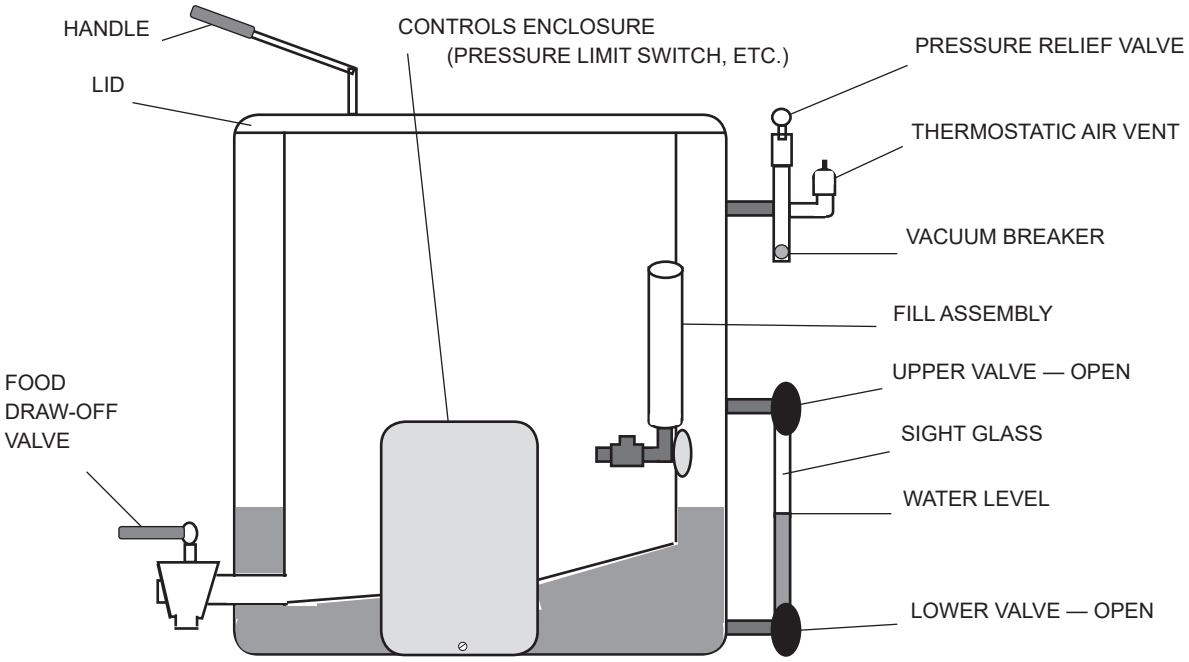



**Fig. 2**

| | | |
|---|---|---|
| Low Water Cutoff | — | Pilot and Main Burner won't operate if water level in jacket is low. |
| Pressure Relief Valve | — | The pressure relief valve is rated so that it will relieve generated steam faster than the burners can generate it. |
| Pressure Limit Switch | — | Protect the kettle against excessive pressure should the thermostat malfunction. |
| Thermostatic Air Vent | — | Allows air to vent out of the jacket as steam is generated; closes at approximately 180°F (82.2°C) to prevent the steam from escaping. |
| Vacuum Breaker | — | Allows air to enter the jacket after cooldown, preventing negative pressure. |
| Sight Glass Assembly | — | Visually shows the water level in the jacket when both valves are open and pressure is equalized. |
| Fill Assembly | — | Tube where water can be added to the jacket. A manual valve and a check valve are provided to protect you should the manual valve be inadvertently opened while the jacket is under pressure. |
| Food Draw-Off Valve | — | Allows food and liquid to be drawn off from the kettle. |

### FOOD DRAW-OFF VALVE

The food draw-off valve is designed to allow food and liquid to be removed from the kettle in an easy manner. When the food draw-off valve is off, the valve handle is pointed to either the 9 o'clock position or the 3 o'clock position as you look down on the valve. In this off position, no liquid or food product will flow. To open the valve and allow liquid or food product to flow, lift handle and slowly turn handle clockwise. With the valve handle pointing to the 9 o'clock position, the valve is fully open. Turn the valve 180 degrees counter clockwise to close the valve and shut off the flow of food. Stir the food product in the kettle thoroughly before opening the draw-off valve; this makes the food product evenly mixed before it flows into a suitable food service pan or stock pot. Pans or pots may be placed on a portable dolly for ease of movement and handling. Refer to Cleaning, page 14.

## TURNING ON A KETTLE EQUIPPED WITH ELECTRONIC IGNITION (APPLIES TO FIG. 1)

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

1. Remove the control panel cover screw.
2. Remove the control box cover (lift, pull out at bottom, lower).
3. Turn knob of the combination control valve counterclockwise until it stops at the ON position.
4. Replace the control panel cover and screw. Check proper jacket water level: Refer to Fig. 2, page 10, and Jacket Water and Jacket Water Treatment, page 16.
5. Make sure gas supply is on. Turn the On-Off switch to the ON position.
6. On kettles built after September 2003, the pilot begins sparking and the pilot burner indicator light illuminates. The pilot burner and indicator light remain on as long as the On-Off switch remains on. If the pilot burner goes out, the kettle controls automatically attempt to relight the pilot for 90 seconds, followed by a 5 minute wait (this repeats until pilot lights or switch is turned off).
7. The lit pilot can be viewed through the view port at lower front of kettle.
8. Use thermostat to regulate cooking temperatures.

## SHUTDOWN

Turn the thermostat dial to the lowest setting. Turn On-Off switch Off.

## EXTENDED SHUTDOWN

Turn the thermostat dial to the lowest setting. Turn On-Off switch Off, Close manual gas valve at supply connection.

# STAINLESS STEEL EQUIPMENT CARE AND CLEANING

(Supplied courtesy of NAFEM. For more information, visit their web site at www.nafem.org)

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

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

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

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

**Enemies of Stainless Steel**

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

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

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

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

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

**So what does all this mean? Don’t Despair!**

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

1. **Use the proper tools.**

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

2. **Clean with the polish lines.**

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

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

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

**4. Treat your water.**

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

**5. Keep your food equipment clean.**

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

**6. Rinse, rinse, rinse.**

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

**7. Never use hydrochloric acid (muriatic acid) on stainless steel.**

**8. Regularly restore/passivate stainless steel.**

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

**Review**

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

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

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

# CLEANING

**⚠ WARNING The kettle and its parts are hot. Use care when operating, cleaning or servicing the kettle.**

**⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedure, before cleaning or servicing.**

**NOTICE** Never spray the exterior of the kettle or control box with water under any condition. Failure to comply will void the warranty.

The kettle interior and exterior should be thoroughly washed after each use when a different food is to be cooked next or when cooking is completed for the day. If the unit is used continuously through the day, it should be cleaned and sanitized once every 12 hours.

Empty the kettle. Close draw-off valve and add water to the kettle for cleaning to prevent residue from drying and sticking to the inside of the kettle.

- Never use harsh or corrosive cleaning chemicals.
- Never scrape the inside of the kettle with abrasive cleansers, metal tools or steel scouring pads, which will scratch the surface, spoil the appearance and make it more difficult to thoroughly clean.
- Add mild, non-chlorine, non-chloride, and non-bleach detergent and scrub the kettle interior with a nylon brush.
- Loosen stuck-on food by allowing it to soak at a low temperature setting.
- Thoroughly rinse the interior and dry with a soft cloth.
- Rinse the exterior and dry with a soft cloth.

## COMPRESSION DRAW-OFF VALVE CLEANING INSTRUCTIONS

### Daily After Use

Remove draw-off valve stem assembly for cleaning (Fig. 3).

1. Turn the valve handle counterclockwise until it stops.
2. Pull the valve handle back until it stops.
3. Turn large hex nut counterclockwise until the valve stem assembly is loose.
4. Pull the assembly straight out of the valve body.
5. Remove wing nut and handle. Unscrew valve stem from bonnet.
6. Wash valve body and stem assembly with mild soap and water, and then rinse. Make sure all food residue is removed from inside valve body.
7. Leave assembly apart to air dry.

Install draw-off valve assembly:

1. Apply Petrol-Gel lubricant to valve stem threads, O-Ring, rubber plug face and large hex nut threads.
2. Thread the valve stem into bonnet till valve stem can be pulled through bonnet.
3. Insert valve stem into valve body.
4. Install large hex nut hand tight.
5. Install valve handle, lock washer and wing nut onto the valve stem.
6. Turn valve handle clockwise until closed. Do not overtighten.

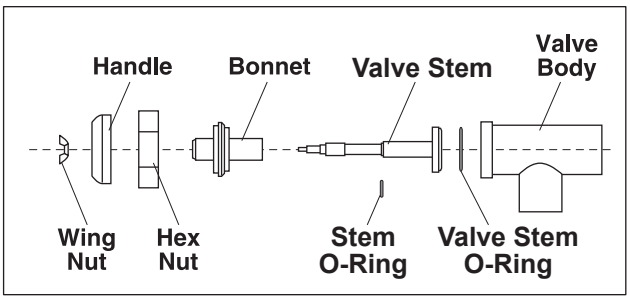



**Fig. 3**

## PLUG VALVE CLEANING INSTRUCTIONS

**NOTICE** During disassembly, cleaning and reassembly of the valve, take special care to avoid damage to the mating surfaces of the valve plug and valve body. Do not allow the valve plug to contact metal or hard surfaces during cleaning. Do not use metal utensils or scouring pads to clean the valve's mating surfaces. Do not drop valve plug. Damage to the mating surfaces will result in a leaky valve. Damaged valves are not covered under warranty.

### Daily After Use

Remove draw-off valve plug for cleaning (Fig. 4).

1. Unscrew the retaining ring and remove it and the bottom washer.
2. Pull the valve plug straight up to remove from valve body.
3. Wash valve body, plug, washer and retaining ring with mild soap and water, and then rinse.
4. Leave assembly apart to air dry.

Care should be taken not to scratch, ding or dent the valve plug to prevent valve leakage.

If multiple kettles are in use, care should be taken to keep each plug separate and returned to its original valve body.

Install draw-off valve plug.

1. Apply Petrol-Gel lubricant to valve plug face.

**NOTE:** A 4 oz. tube of Petrol-Gel lubricant, (Part # 00-833652) is furnished with your kettle. You can reorder through your local service agency or food service equipment dealer. There are no substitutes for this lubricant. If you fail to lubricate the valve body and plug after cleaning or use a substitute lubricant, this could damage the mating surfaces which is not covered under warranty.

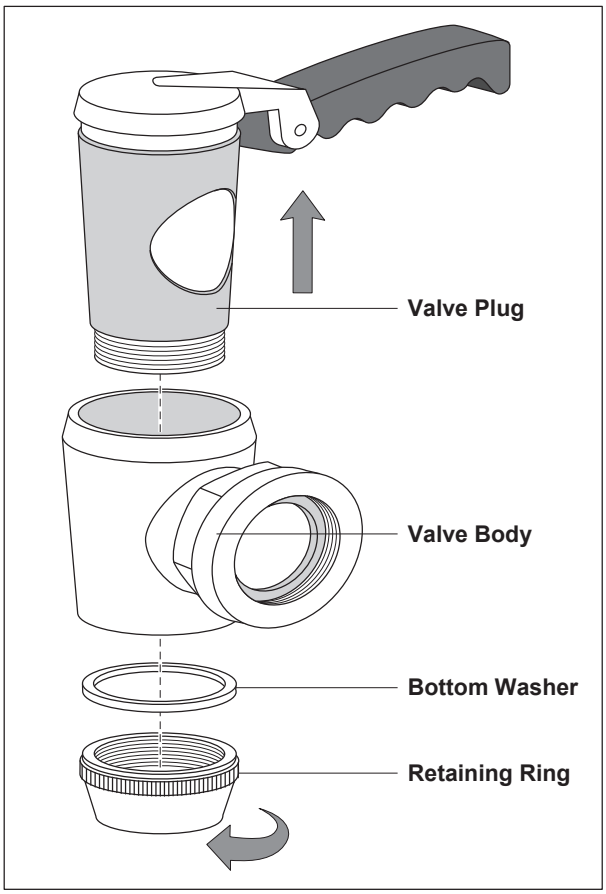



**Fig. 4**

2. Holding the valve handle, slide the plug down into the valve body.
3. Install the bottom washer, making sure to align the key with the groove in the valve plug.
4. Install the retaining ring and hand tighten.

If the valve is hard to open, then the ring has been overtightened.

# MAINTENANCE

**⚠ WARNING The kettle and its parts are hot. Use care when operating, cleaning or servicing the kettle.**

**⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedure, before cleaning or servicing.**

## PRESSURE RELIEF VALVE

Open the pressure relief valve at least once a day to avoid lime build-up. If leakage occurs or if the valve opens below the rated psi, it will need to be replaced by your Vulcan authorized servicer.

## LOW WATER CUT-OFF

This device must be removed and inspected for lime build-up at least once a year. The float must move freely in its cage. Clean if necessary. Replace if lime or sludge cannot be removed to allow the float to move freely. Contact your local Vulcan authorized servicer.

## JACKET WATER AND JACKET WATER TREATMENT

**NOTICE** Fill kettle jacket with distilled water only. Using chlorinated tap water will result in a jacket failure due to internal corrosion. A Jacket failure due to corrosion from using chlorinated water is not covered under warranty.

The kettle jacket is filled at the factory with only distilled water mixed with a boiler treatment corrosion inhibitor. During normal kettle operation, it should not be necessary to frequently add water to the kettle jacket. If the water level in the sight glass falls below half, add distilled water to the jacket through the fill tube. The water level in the sight glass should be maintained to just above the halfway position in the sight glass.

If the water in the sight glass appears dirty, it is necessary to have a qualified service technician remove the fluid in the kettle, perform a delime or cleaning operation and refill the kettle with distilled, chemically pure water with a boiler treatment additive.

To refill a GS40ES, GS60E, GL80E, GT100E, GT125E, and GT150E kettle, drain unit and add 21 gallons of distilled water and a half bottle of rust inhibitor; Vulcan part number 00-833651.

To purge with a hose, remove drain plug and pull the low water cut off. Use hose with spray nozzle and flush until clean. Add new distilled water and rust inhibitor.

## HOOD VENTILATION SYSTEM

Annually, when cool, check the ventilation system and clear any obstructions.

## SERVICE AND PARTS INFORMATION

To obtain service and parts information concerning the kettle, contact the Vulcan Service Office in your area (refer to listing supplied with the kettle), or contact the Vulcan Service Department at the address on the front cover of this manual.

Parts and service are also available at **www.vulcanequipment.com**.

Steam Technical Service e-mail address. **steam.tech@itwfeg.com**