



# INSTALLATION, OPERATION, SERVICE & PARTS MANUAL

## SS, SL & ST STEAM JACKETED KETTLES

### MODELS

SS25	ML-52561
SS30	ML-52562
SL40	ML-52563
SS60	ML-52659
SL80	ML-52655
ST100	ML-52656
ST125	ML-52657
ST150	ML-52658
SS25WM	ML-52765
SS30WM	ML-52709
SL40WM	ML-52671
SS60WM	ML-52710
SL80WM	ML-52673
ST100WM	ML-52674



For additional information on Vulcan-Hart Company or to locate an authorized parts and service provider in your area, visit our Web site at [www.vulcanhart.com](http://www.vulcanhart.com)



## **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, Batterymarch 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 receptacle. Do not cut or remove the grounding prong from this plug. If the appliance is not equipped with a grounding plug, and electrical 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.**

# SS, SL & ST SERIES STEAM JACKETED KETTLES

## OPERATING, MAINTENANCE AND PARTS MANUAL

# INDEX

Vulcan series Steam Jacketed Kettles are produced with the best possible workmanship and material. Proper installation is vital if best performance and appearance is to be achieved.

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

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# IMPORTANT NOTES FOR OPERATORS

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**CAUTION:** Clean and flush the kettle immediately after use, especially if the item cooked contained salt or vinegar in any concentration. The jackets are constructed of Type 304 Stainless Steel but can pit or corrode under adverse conditions, and prompt, careful cleaning will help prevent such.

**CAUTION:** The draw off faucet plug and body are made of relatively soft dairy metal. The plug must be handled with care to prevent damage to its tapered surface which would prevent it from seating properly in the body thus causing the faucet to leak. A light lubricant (cooking oil) on mating surfaces of plug and body will prevent a sticking plug. An aerosol can of a superior dry lubricant is available from Vulcan-Hart (see parts list).

On manually controlled units, steam flow to unit is controlled by two valves in parallel lines. The large valve gives a high steam flow rate for rapid heat up. With the large valve closed, the small valve allows accurate control of low steam flow rates required for maintaining the steady simmer boil desired for cooking.

On thermostatically controlled units, steam flow is controlled by a solenoid valve in the steam line; the valve is open only when its coil is energized. The solenoid coil, the thermostat switch and the pressure limit switch are wired in series and connected to power thru the two-pole on-off switch to which the cord and plug supplies 120 volt AC power. One signal light glows when the on-off switch to which the cord and plug

supplies 120 volt AC power. One signal light glows when the on-off switch is on, the other signal light glows only when the solenoid valve is energized. The thermostat senses temperature in the steam jacket. At dial setting 5 to 6, the thermostat switch will open and stop steam flow when jacket pressure starts to exceed zero gauge pressure. The high dial settings are for cooking, the lower settings for holding. At the higher dial settings, the steam pressure in the jacket will drop 2 to 2½ p.s.i. after the thermostat acts to cut the steam off before it acts to cut the steam on. The pressure limit switch is an added safety feature. It acts to de-energize the solenoid valve should jacket pressure reach 12 p.s.i., and will close again only when jacket pressure drops below 3 p.s.i.

A mounted pressure gauge is provided to show steam pressure in the jacket.

The pressure relief valve is a device to protect the kettle against excessive pressure. The pressure relief valve will open and reduce jacket pressure since it will pass steam at a higher rate than the supply piping will deliver it.

The vacuum check valve prevents a vacuum in the jacket which could damage the outer jacket.

The automatic air vent lets air out of the jacket as steam enters but closes to prevent steam escape.



# USE, CARE, CLEANING & PERIODIC MAINTENANCE

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## USE

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

## OPERATION

When the food draw-off valve is turned off (no liquid or food product flow), the 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° 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 7 o'clock position. A pin locks the valve plug into the valve body and you can only remove or replace the valve plug when the valve handle is in the 7 o'clock position. Kettles built during July 2003 thru March 1992 - this removable position is with the valve handle at the 4 o'clock position. Kettles built before March 1992 - the removable position is at 6 o'clock.

**IMPORTANT:** (Do not attempt to slide valve plug into valve body when valve handle is in any other than it's removable 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 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 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 lubricate. Make sure all interior mating surfaces are covered with this lubricate before carefully sliding the valve plug into the valve body. Caution: Make sure the valve plug handle is in it's removable position when the plug is slipped carefully into the valve body.

**NOTE:** A 4 oz. tube of Petro-Gel Lubricant 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.

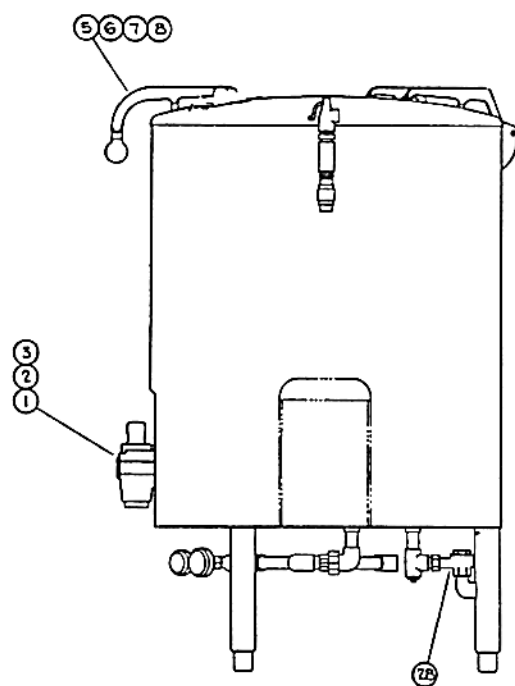
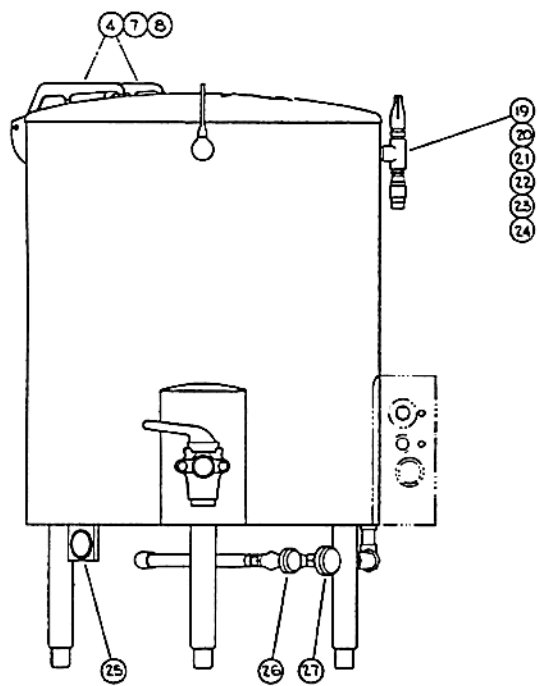
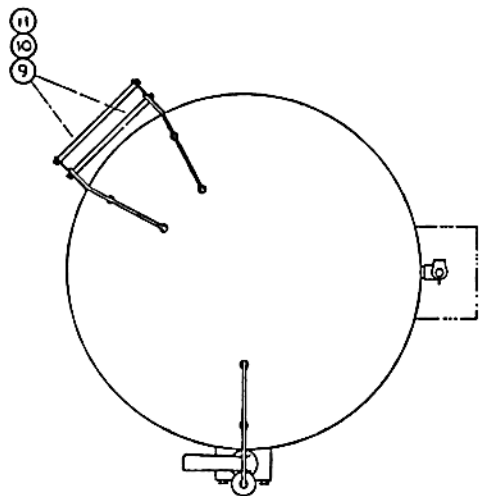
To correct a badly leaking draw-off valve (leaking after lubricant applied), examine the tapered surface of each and carefully dress any raised places with a very fine file or with emery cloth. Do not cut below the metal surface when removing any raised places. Coat plug lightly with lapping compound, 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 the 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 draw-off valve is bolted to the kettles so it can be easily removed from the empty kettle for complete inspection or if repair becomes necessary.



# PARTS LIST

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

ITEM NO.	DESCRIPTION	QTY.	PART NUMBER
1	2" flanged draw-off valve		817900
	3" flanged draw-off valve		817899
2	Gasket for draw-off valve	1	833394
3	Mounting screw, 5/8-18x1 1/4	4	SC-119-38
4	Cover hinge, left	1	817615
	Cover hinge, right	1	817615-1
5	Cover handle	1	840551
6	Cover handle ball	1	817564
7	Nut handle & hinge to cover 1/4-20 S.S. acorn	7	NS-025-04
8	Lockwasher	7	WL13-14
9	Cover hinge & stop rod - 29" O.D. kettle	2	817115-3
	Cover hinge & stop rod - 36" O.D. kettle		817115-5
10	Hinge rod nut, 1/4-20 acorn	4	NS-025-04
11	Lockwasher for above	4	WL-006-17
19	Pressure relief valve 3/4"	1	833489
20	Vacuum breaking check valve, 1/2"	1	833238
21	Tee, 3/4"	1	FP-083-78
22	1/2" close nipple	1	FP-054-08
23	3/4" x 1/2" reducing bushing	1	FP-084-16
24	3/4" close nipple	1	FP-054-27
25	Pressure gauge	1	833152
26	Simmer valve, 1/4"	1	833566
27	Steam supply valve, 1/2"		833567
	Steam supply valve, 3/4"	1	833568-11
	Steam supply valve, 1"		833569
28	Thermostatic steam trap	1	880016
	Faucet lubricant	1 tube	833652
<b>WITH THERMOSTATIC CONTROL</b>			
	Thermostat with dial	1	833220
	Pressure gauge	1	833152
	"Power-On" signal light	1	833393-10
	"Heat-On" signal light	1	833393-11
	Signal light gasket	2	833483
	Signal light clamp bar	1	833995
	Clamp bar screw, 8-32x1/2	1	SC-093-05
	Contact block	2	906996
	Pressure limit switch	1	833488
	Pressure limit switch bracket	1	833994
	Solenoid valve - 3/4"	1	898318-11



# SERVICE PROCEDURES

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## TO CORRECT LEAKING DRAW OFF FAUCET

Remove plug from body of faucet. Examine tapered surface of each and carefully dress and raised places with very fine file or emery cloth. Do not cut below surface in removing any raised places. Coat plug lightly with lapping compound, insert plug in body and rotate to seat plug in body. Use medium grade of 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 lightly (with non-toxic lubricant) to prevent plug from sticking.

Faucet plug is best lubricated with easily applied dry tape lubricant in aerosol can offered by Vulcan-Hart (see parts list). To use, spray a light coating on mating surfaces of faucet plug and body and allow to dry for 10 minutes. The lubricant prevents the plug from sticking and helps prevent leaky faucets. It is nontoxic and fully safe. Cooking oil may be used to lubricate the plug, but the dry lubricate is much more effective.

## ON THERMOSTAT CONTROLLED UNITS ONLY TO SERVICE THERMOSTAT

To recalibrate, remove dial by pulling it forward, and slightly turn the small screw in center of hollow dial shaft.

Recalibration is indicated if thermostat with dial at highest setting fails to shut off burners before pressure relief valve opens or if it shuts burners off before jacket pressure reaches 8 p.s.i.

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

## ON THERMOSTAT CONTROLLED UNITS ONLY TO SERVICE PRESSURE LIMIT SWITCH

This service is indicated if a circuit check shows switch is not closed to allow main burners to operate, or if switch is opening at too low a pressure. It was factory set to open at 12 p.s.i. and to close at 3 p.s.i.

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

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