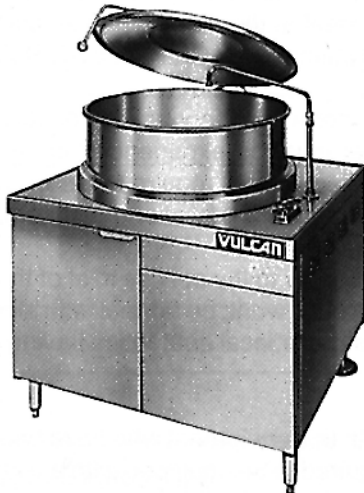
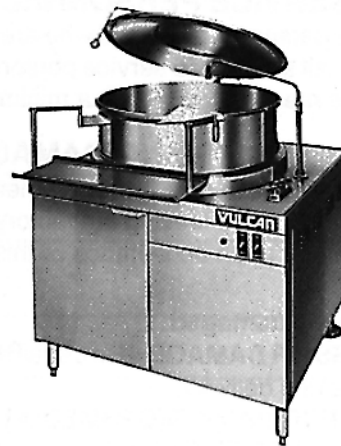


VULCAN®

**INSTALLATION, OPERATING, SERVICE
AND PARTS MANUAL FOR
DIRECT STEAM MODULAR BASE
FLOOR MOUNTED 2/3 JACKETED
STATIONARY AND MODULAR BASE
TILTING SERIES: VDMT & VDMS**



VDMS40



VDMT40

Vulcan service agencies are located throughout the United States.
For location and phone number of one near you, call your local Vulcan dealer.

VULCAN-HART CORPORATION, P.O. BOX 696, LOUISVILLE, KY 40201-0696, TEL. (502) 778-2791
TECHNICAL ASSISTANCE (800) 626-2700

IMPORTANT

OPERATING, INSTALLING AND SERVICE PERSONNEL

The operating information on 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 part marked with a □ in front of the part number.

To obtain the name and location of an authorized Vulcan service agency, contact your Food Service Equipment dealer or by calling 1-800-626-2700.

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.

1. For 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. In the absence of local codes, installation must comply with National Fuel Gas Code ANSI Z223.1 latest edition.
2. For 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. In the absence of local codes, installation must comply with the National Electrical Code ANSI NFPA No. 70 latest edition.
3. For the installation of steam piping from the source of supply to the service inlet of the 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.

QUALIFIED SERVICE PERSONNEL

Qualified service personnel are those who are familiar with this equipment who have been endorsed by our company. All authorized service personnel are required to be equipped with a complete set of service and parts manuals and stock a minimum amount of parts for this 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 must be done within fifteen (15) days of the date the delivery is made to you. Be sure to retain container for inspection.

We cannot assume responsibility for damage of 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

INDEX

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.

The manufacturer suggests that you thoroughly read

this entire manual and carefully follow all of the instructions provided. Save this manual for future reference.

A data plate with the unit model number, serial number, and direct steam supply pressure it can use is on the inner panel of the left door.

DESCRIPTION

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DESCRIPTION

The Vulcan VDMS and VDMT kettles are direct steam models mounted in a modular cabinet base. The VDMS is a modular stationary model supplied with a tangent draw off valve for food product removal.

The VDMT is a direct steam modular tilting model. It has a hydraulic pump and piston to tilt the kettle to any angle between zero and ninety degrees for complete emptying of food products. Tilting models include a pan carrier that holds a 12" x 20" pan. (Pan not supplied)

Both of these units employ kettles which are direct steam operated pressure vessels with a double wall stainless steel construction forming a steam chamber (jacket) around the lower two thirds of the kettle. These kettles

are furnished with a steam control valve and a hot and cold water fill faucet mounted on the stainless steel counter top. Every kettle has a pressure relief valve. Access to the inner cabinet area for installation or service is through the removable side panels or the doors on the front of the unit.

The kettle bowl is the container for the food product which ideally should be a liquid or semi-liquid for complete contact with the bowl surface to fully absorb the heat transmitted through the surface from the steam in the kettle jacket.

These kettles are intended to be permanently floor mounted with adjustable flanged feet.

CAPACITIES

All models end with 20, 30, 40, and 60 to indicate the capacity of that kettle in gallons. For example, model VDMT40 indicates a tilting two thirds jacketed steam kettle mounted in a cabinet base, with a capacity of 40 gallons. A VDMS40 is stationary.

INSTALLATION

WARNING: ELECTRICAL AND GROUNDING CONNECTIONS MUST COMPLY WITH APPLICABLE PORTIONS OF THE NATIONAL ELECTRICAL CODES.

WARNING: PLUMBING CONNECTIONS MUST COMPLY WITH APPLICABLE HEALTH, SAFETY AND PLUMBING CODES.

A. Select a location to provide drainage directly below the draw off valve. Allow sufficient rear clearance from the wall for the kettle cover to lift upright freely without obstructions. Allow for clearance to side service panels.

B. Level the unit. Then mark anchoring hole locations through flanged adjustable feet.

C. With hole locations marked, drill holes and insert expansion plugs to accommodate $\frac{5}{16}$ " size lag bolts.

D. Reposition the kettle. Check the level again.

E. Bolt the kettle down and seal with a high grade sealing compound. Sealant must be applied not only to bolt heads but around the flanges and must be making contact with floor surface to meet N.S. F. requirements. Wipe off excess sealant immediately.

F. Connect the steam line to the kettle, ($\frac{3}{4}$ " i.p.s., 5-35 p.s.i. pressure).

G. Connect hot and cold water supply to the faucet.

H. Connect the kettle condensate return line to a 2" open air gap drain or to a boiler return line. Each kettle return line must have a suitable steam trap (supplied by others). Boiler return lines must have a check valve (supplied by others).

I. A control box with power supply equivalent to electrical rating of the unit should be located nearby. A water proof electrical connection for the power supply to the unit must be provided (for power tilting models only).

J. The relief valve on the kettle must not be adjusted or closed off as it is set to relieve excess pressure in the kettle.

K. If the incoming steam pressure is greater than

kettle maximum operating pressure, than a pressure reducing valve (supplied by others) must be installed in the line.

L. If large amounts of water accumulate in the steam line, it will be necessary to install one or more ball float traps (supplied by others) in the line to eliminate the water.

M. A steam line pressure gauge (supplied by others) is also recommended to determine the actual amount of steam coming to the kettle.

N. Turn unit on when electrically connected, then check for proper operation.

OPERATING

WARNING: THE KETTLE IS HOT. USE CARE WHEN OPERATING AND SERVICING THE KETTLE.

- A. With tilting units turn the power switch on.
- B. Push the rocker switch to the raise or up position. Check that the kettle begins to rise. Allow the kettle to travel to its full up position then push the rocker switch to the down position and the kettle will return to the original position. The kettle will stop and hold its position at any point along the travel path if the rocker switch is released.
- C. Check that the draw off valve is closed.
- D. Fill the kettle with product to the desired level.

NOTE: Food products with milk or egg base should be placed into a cold kettle and then the cooking operation begun. Avoid sudden contact of these food products with a hot kettle surface because the food will stick to the surface.

- E. Slowly turn the steam control valve ON to the full open position (counter-clockwise). The kettle will begin to heat. It is important that the condensate return valve located on the bottom of the kettle be opened daily before starting the unit up, to allow any accumulation of water to be emptied. Not doing this reduces the efficiency of the kettle.
- F. Slowly open the relief valve to allow all air to escape. Stay clear of the valve outlet during this operation to avoid very hot steam.
- G. The water or food should boil in 3 to 4 minutes per gallon. If it does not, then incoming pressure should be checked to determine that it is adequate to operate the kettle efficiently.

- H. Regulate the steam control valve depending on the type of food being prepared.
- I. When the food is cooked, turn off the steam, remove the food through the draw off valve or by tilting. Clean the kettle immediately to prevent residue from drying on the kettle bowl.

Controls:

The electrical controls are in the upper right area of the kettle front. One control is an "ON-OFF" switch for the tilting mechanism. The second control, in the up position tilts the kettle forward to full tilt. In the down position the kettle is lowered to full down. Stopping the up or down control will hold the kettle at any position the kettle is stopped.

Pan Carrier (VDMT Model Only)

The VDMT (tilting) model is equipped with a pan carrier. This pan support is made of stainless steel and is removable, without tools, for cleaning. It holds one 12" x 20" pan and will lock the pan in a horizontal position not more than 2" from the kettle lip throughout the tilting operation.

Swing Drain

Each kettle has a swing drain to use with the draw off valve. It is removable, without tools, and has a removable strainer.

Hydraulic System (VDMT Model Only)

The hydraulic system in every VDMT kettle has been adjusted and tested at the factory and no further adjustment should be needed. If the unit fails to operate properly, all service work must be performed by a qualified service agent.

CLEANING

Your kettle should be cleaned immediately after each use when cooking a different product or when cooking is completed. Before cleaning, check that the kettle has cooled enough to touch it.

- A. Check that the steam supply and power supply is OFF.
- B. Rinse the inside of the kettle thoroughly and drain to remove any food particles.
- C. Using a nylon brush, clean the kettle with a mild detergent and water. Never use steel wool or scouring powder as it will scratch stainless steel. Plain steel wool can leave small pieces of steel wool which can rust.
- D. Tilt the kettle to its highest position or open the tangent draw off valve to allow the detergent and water solution to drain. Rinse thoroughly with clean water.
- E. By hand, turn the large hex nut on the draw off valve

counterclockwise until it is completely disengaged from the threads. Grasp the valve knob and slowly pull out the valve stem and disk. Do not allow the disk to come in contact with hard surfaces as it can be damaged and cause valve leakage. Wash the valve stem, disk and handle. Insert a nylon brush wet with detergent and water into the valve body and tangent draw off tube. Brush vigorously.

- F. Replace the valve stem assembly and turn the hex nut until snug. Rinse the kettle with clean warm water.
- G. Leave the draw off valve open when the kettle is not in use.
- H. Wipe the exterior of the kettle with a clean, damp cloth.
- I. Never spray water into the electrical controls.

MAINTENANCE

No general maintenance is required other than following the cleaning procedures.

EXTREMELY SLOW COOKING TIME

If the cooking time is abnormally slow, then the difficulty may be due to insufficient steam pressure and/or volume. First determine that the pressure on the incoming steam line at the kettle is within 5 p.s.i. of the rated kettle pressure. Note that a pressure approaching the rated kettle pressure is liable to set off the relief valve. If the required pressure is available at the kettle, then possibly the volume of steam is not sufficient. Minimum $\frac{3}{4}$ " pipe size is required to the kettle, but if the steam generating source is at a great distance from the kettle, larger pipe will be required. Finally, the inside of the steam supply pipe may have debris or scalants that impede the steam flow and the pipe will require disassembly and inspection.

DRAW OFF VALVE LEAKS

If a leak occurs through the valve stem, replace the "O" ring.

If the leak is due to faulty sealing between the stem disc and valve seat, this problem can usually be corrected by cleaning off the dried on food residue with an extremely fine emery cloth.

If the disc or valve seats are found to be excessively damaged, either or both must be replaced.

However, if only slight damage to either the disk or seat has occurred, then the following lapping procedure should correct it:

- A. Follow cleaning procedures.
- B. Remove the knob handle from the end of the stem. Unscrew and remove the bonnet from the stem. Put the knob back on the stem.
- C. Apply a fine grade lapping compound around the sealing edge of the disk and insert it into the valve, making light contact against seat.
- D. By hand, rotate the stem disk against the valve seat, allowing the stem to wobble slightly in the space previously occupied by the bonnet.
- E. Repeat steps C and D several times.
- F. Reassemble, close the valve and test it for leaks.
- G. If leakage persists, then repeat this lapping procedure.

AIR VENTING

The temperatures required for the cooking process to function adequately must be greater than the boiling point of the liquid food product, that is, water. The greater the steam pressure used, the higher the temperature and the quicker the cooking process. For example, steam pressurized at 30 p.s.i. reaches a temperature of 274 degrees F. (135 deg. C.). Since air is an unsuitable media through which heat may be transferred, the air should be exhausted from the jacket by opening the pressure relief valve until the air has been completely replace by pressurized steam.

In the initial stages of the cooking process when the steam comes in contact with the cold kettle bowl surface, it condenses and forms a large amount of water. A

separately purchased thermostatic steam trap should be plumbed to the exit end of the kettle jacket. This trap is a mechanical device that closes on high temperatures and opens when the temperature drops, allowing the water formed from the condensate to exhaust but retains the steam under pressure.

Service Parts

- | | | |
|------------------------|--------|----------------|
| 1. Power Switch | 881970 | VDMT Only |
| 2. Tilt Switch | 836985 | VDMT Only |
| 3. Relief Valve | 881980 | Specify 35psi. |
| 4. Steam Control Valve | 881984 | |

PARTS: TILTING SYSTEM

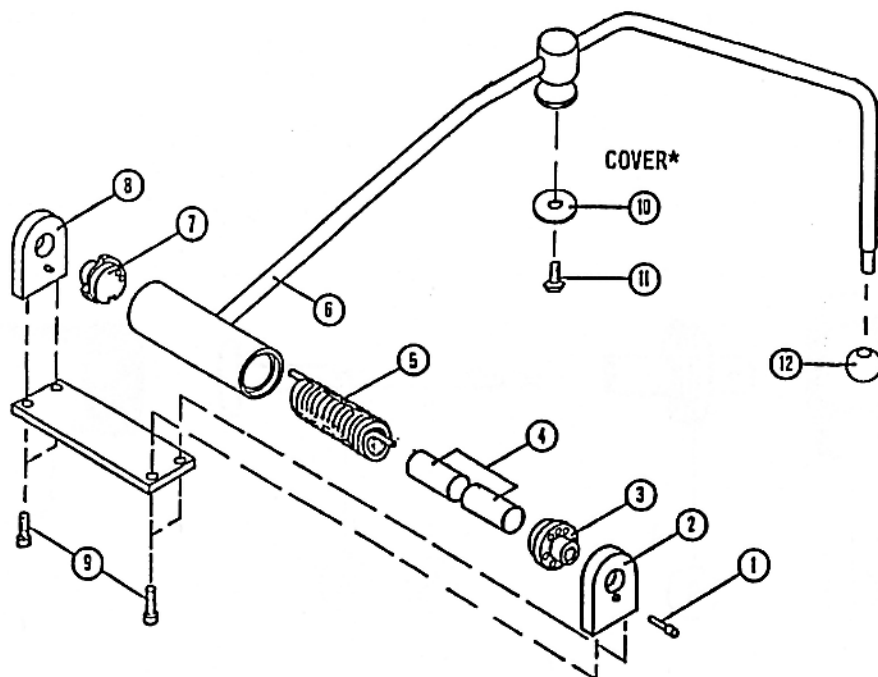
System Parameters:

Flow: 0.65 US GPM
System Pressure: 875 psi. Maximum
Fluid: Petroleum Based Oil
Motor Voltage: 115 /60/1
Control Voltage:115 /60/1

PART NO.	DESCRIPTION
840449	Reservoir
840450	Filler Breather
840451	Strainer
840452	Pump
840453	Coupling
840454	Motor
840455	Subplate
840456	Direction control Valve
840457	Check Valve Module
840458	Flow control Module
840459	Bolt Kit
840460	Hydraulic Cylinder
840461	Pin
840462	Clevis
840463	Hydraulic Hose
840464	Adapter
840465	Tube Adapter
840466	Coupling

WARNING: UNPLUG THE UNIT BEFORE SERVICING.

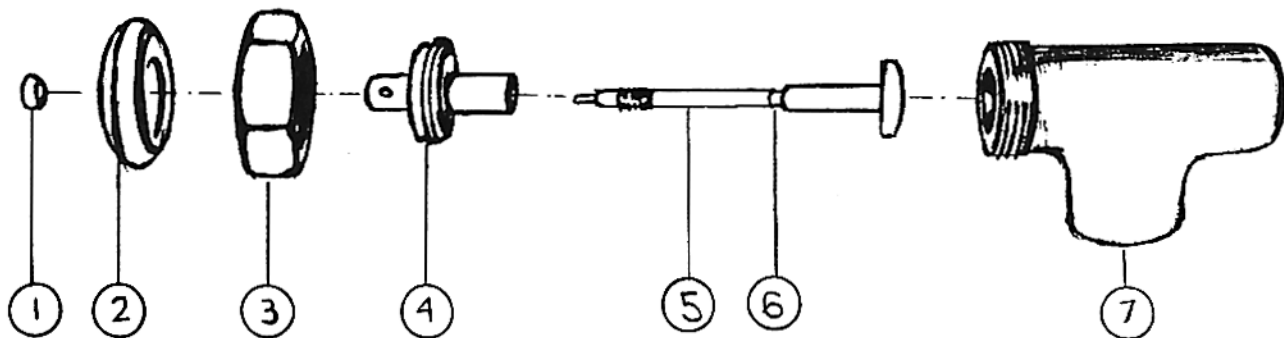
PARTS: SPRING ASSISTED HINGE ASSEMBLY (STANDARD)



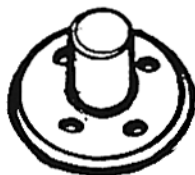
ITEM NO.	PART NO.	DESCRIPTION (30 to 40 Gal. Kettles)	QUANTITY
1	836977	Lock Pin	1
2	836978	End Lock Plate	1
3	836979	Stationary Disc	1
4	836980	Cores	2
5	836981	Spring	1
6	836982-X	Handle Assembly (Specify Model No.)	1
7	836983	Rotary Disc	1
8	836932	End Stop Plate	1
9	SC-041-50	Cap Screws	4
10	2-W6S6	Washer (Also 60 to 100 Gal. Kettles)	1
11	1-65S6	Bolt (Also 60 to 100 Gal. Kettles)	1
12	836964	Knob (Also 60 to 100 Gal. Kettles)	1

ITEM NO.	PART NO.	DESCRIPTION (60 to 100 Gal. Kettles)	QUANTITY
1	836986	Lock Pin	1
2	836987	End Lock Plate	1
3	836988	Stationary Disc	1
4	836989	Cores	2
5	836990	Spring	1
6	836991-X	Handle Assembly (Specify Model No.)	1
7	836992	Rotary Disc	1
8	836993	End Stop Plate	1
9	SC-041-01	Cap Screws	4
	*836994-X	Cover (Not Shown - Specify Model No.)	1

PARTS: DRAW OFF VALVE (OPTIONAL)



ITEM NO.	PART NO.	DESCRIPTION	QUANTITY	
	1" Valve	2" Valve		
1	836939	836939	Nut	1
2	836967	836967	Handle	1
3	836943	836944	Hex. Assembly Nut	1
4	836946	836947	Bonnet	1
5	836965	836950	Disc & Stem Assembly	1
6	836966	836953	"O" Ring	1
7	836955	836956	Valve Body	1



PART NO.	DESCRIPTION	QUANTITY
836958	Flanged Adjustable Foot	3