



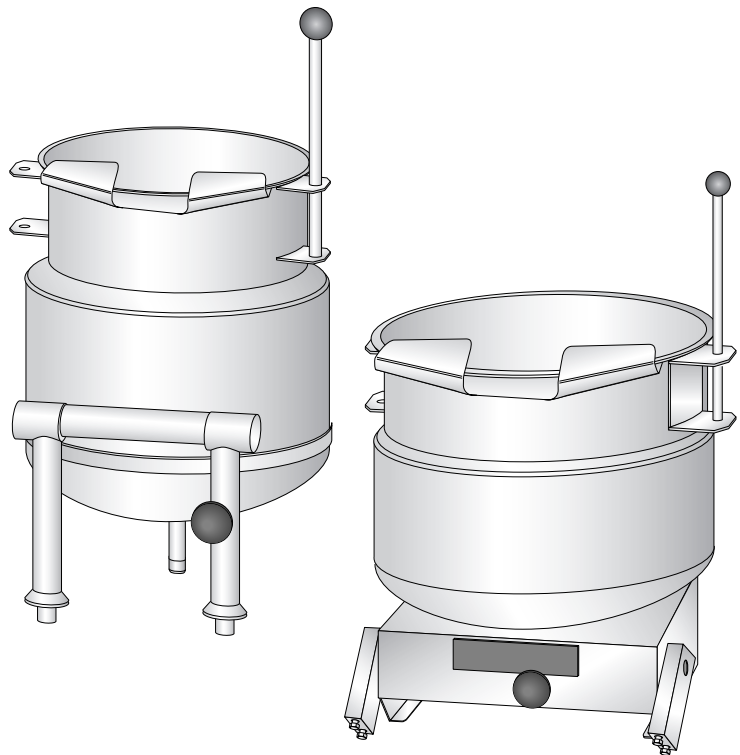
## INSTALLATION & OPERATION MANUAL

### DIRECT STEAM COUNTERTOP TILTING KETTLES

#### MODELS

K6DTT      ML-136070


K12DTT    ML-136071



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

## IMPORTANT FOR YOUR SAFETY

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

** 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.

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# INSTALLATION, OPERATION AND MAINTENANCE OF K6DTT AND K12DTT DIRECT STEAM TILTING KETTLES

SAVE THESE INSTRUCTIONS FOR FUTURE USE

## GENERAL

Vulcan countertop tilting kettles are produced with quality workmanship and material. Proper installation, usage and maintenance will result in many years of satisfactory performance. It is suggested that you thoroughly read this entire manual and carefully follow all of the instructions provided.

These kettles must be connected to a plumbing source according to applicable specifications and codes. These units are built to comply with applicable manufacturing standards and approvals. Approval agencies include UL, NSF, ASME and NB.

It is the responsibility of the owner/installer to comply with these codes.

The Direct Steam Kettles are available in both 6- and 12-gallon capacity models.

TABLE 1. MODEL CHART

Model Number	Gallons	Quarts	Liters
K6DTT	6	24	23
K12DTT	12	48	45

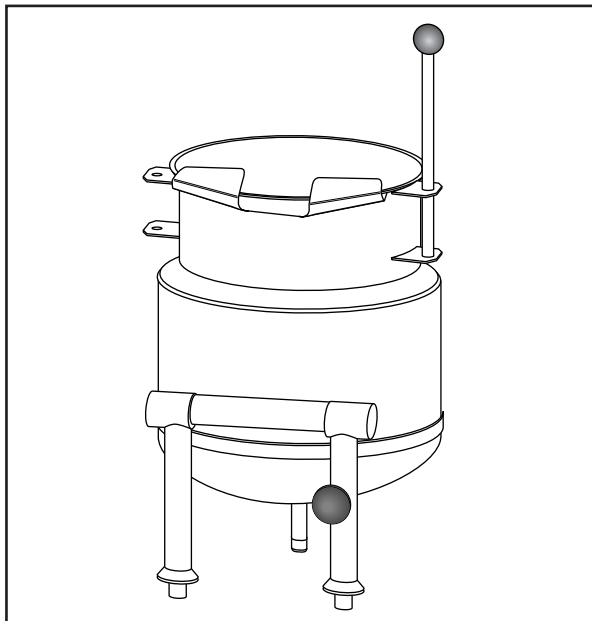


Fig. 1 K6DTT Direct Steam Tilting Kettle

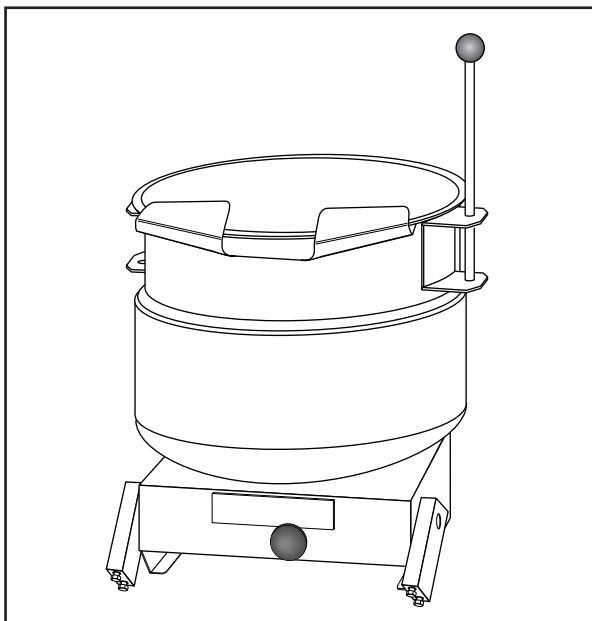


Fig. 2 K12DTT Direct Steam Tilting Kettle

# INSTALLATION

Before installing, verify that the direct steam supply required for the equipment covered by this manual agrees with the specifications on the machine data plate, located on the back of the unit. If the direct steam supply does not agree with the equipment requirements, do not proceed with the installation. Contact your dealer or Vulcan-Hart immediately.

## UNPACKING

This kettle was inspected before leaving the factory. The transportation company assumes full responsibility for safe delivery upon acceptance of the shipment.

Immediately after unpacking, check for possible shipping damage. If kettle damage is found, save the packaging material and contract the carrier within 15 days of delivery.

## INSTALLATION CODES AND STANDARDS

In the United States, Vulcan kettles must be installed in accordance with:

- 1 State and local codes
- 2 NFPA Standard NFPA-96, *Vapor Removal from Cooking Equipment*, latest edition, available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269

In Canada, Vulcan kettles must be installed in accordance with local codes.

## LOCATION

The K6DTT and K12DTT countertop tilting kettles must be positioned on a firm stand or countertop and secured in place.

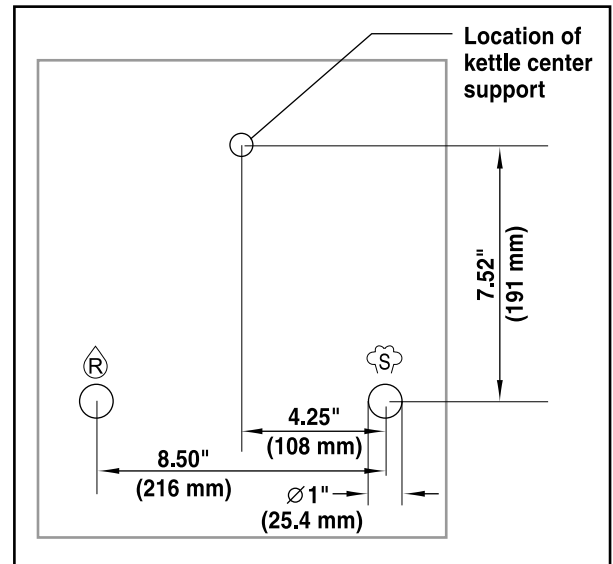
## MINIMUM CLEARANCE

**TABLE 2. MINIMUM CLEARANCE REQUIREMENTS**

Capacity in Gallons	Clearance in Inches (Back)
6	5.25
12	6.5

## INSTALLING K6DTT ON COUNTER OR STAND

Vulcan kettles must be permanently mounted on a suitable, level counter or stand. Place unit in a drained location.



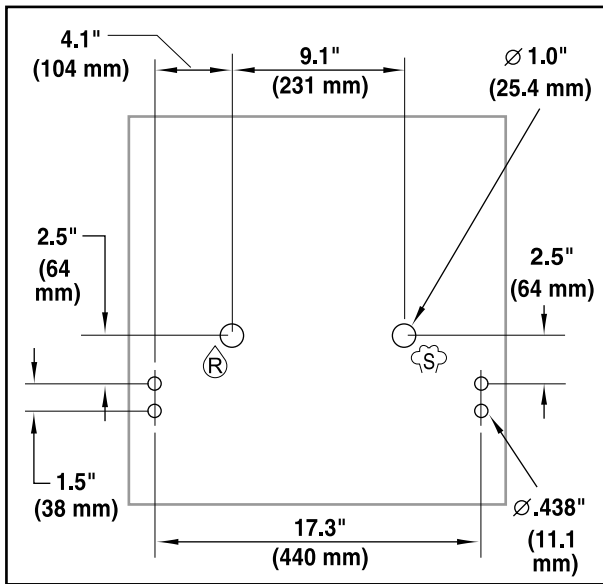
**Fig. 3 Mounting Hole Location**

1. Position the kettle on the counter with sufficient rear clearance from the wall to allow the kettle to tilt completely without obstruction according to the Minimum Clearance Requirement Chart, Table 2. Allow space for plumbing.

**DIRECT STEAM COUNTERTOP TILTING KETTLES**

- On countertop, drill two 1" holes on 8 1/2" centers for the two kettle leg stanchions.
- Remove the mounting locknuts and washers [1/2" NPT (NPSL) nuts] from the bottom of the legs.
- Prepare a clean, dry surface according to package directions on a high grade NSF listed sealant.
- Apply sealant to the flared edge of the stanchions.
- Insert the threaded portion of the stanchions through the holes. Install washers and lock nuts and tighten.
- Wipe off excess sealant.

**INSTALLING K12DTT ON TABLE OR STAND**



**Figure 4: K12DTT mounting hole location**

- Drill four 7/16" holes in table or stand top as shown in Figure 4.
- Drill two 1" holes in table or stand top as shown in Figure 4.
- Install 3/8" anchor couplings in the 1" holes.
- Set kettle on table or stand top, align holes, and attach using four 5/16" - 18 hex head screws and lock washers.
- Using flexible steel or copper tubing, connect steam and condensate lines under the kettle.

**PLUMBING CONNECTIONS**

Plumbing connections must comply with applicable sanitary, safety and plumbing codes.

**Steam Supply Connection**

**TABLE 3. STEAM TABLE**

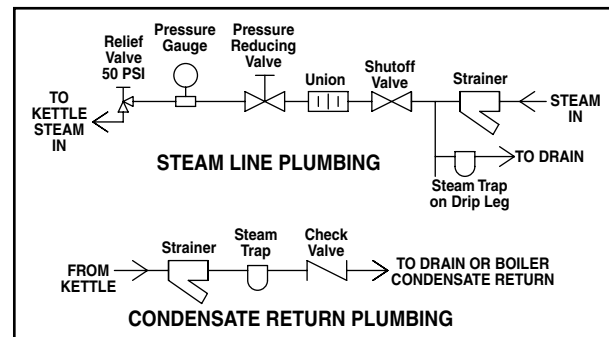
Time to boil	Fast Boil 12 minutes		Medium Boil 20 minutes		Stock Boil 30 minutes	
	lbs/hr	kg/hr	lbs/hr	kg/hr	lbs/hr	kg/hr
12 gallons	78	36	43	20	29	13

MODEL	TRUE WORKING CAPACITY	4OZ. SERVINGS
K12DTT	12 gallons, 48 quarts 45 liters	384

- Install a steam shut off valve in the steam supply line, preferably near the kettle for ease of maintenance.
- Install a pressure reducing valve (if supply pressure is more than 50 PSI), pressure relief valve, and strainer.
- Install steam traps in the line to eliminate water in the incoming steam line. Mount in a drip leg on the supply line, not directly in the supply line.
- Install steam line pressure gauge to determine actual pressure to kettle.
- Connect the steam supply line (1/2" pipe size) to the steam inlet fitting on the right leg (stanchion).

**Drain Connection**

- Install a steam steam strainer and trap in the condensate line (left side) near the kettle and run a condensate return line to the drain.
- Install a check valve and gate shut off valve near the kettle if the condensate line will be going to the boiler.



**Figure 5: K6DTT Plumbing**

## OPERATION

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

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

1. Fill kettle with product to the desired level.
2. Slowly turn the steam control valve to the full open position.
3. The water or food should boil in 3 to 4 minutes per gallon. If it does not, then check incoming pressure to determine that it is adequate to operate the kettle. Refer to table for steam supply.
4. Regulate the steam control valve according to the type of food being prepared.

## CLEANING



**⚠ WARNING** Disconnect electrical power to the machine and follow Lockout/Tagout procedures before cleaning.

**NOTE:** Do not hose down under any condition. Failure to comply will void the warranty.

The kettle interior and exterior should be washed after each use when a different food is to be cooked next or when cooking is completed for the day.

1. Add water to the kettle for cleaning and to prevent residue from drying and sticking to the inside of the kettle.
2. Loosen stuck-on food by allowing it to soak at a low temperature setting.

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.

3. Add mild detergent and scrub the kettle interior with a nylon brush.
4. Thoroughly rinse the interior and dry with a soft cloth.
5. Rinse the exterior and dry with a soft cloth.

### STAINLESS STEEL EQUIPMENT CARE AND CLEANING

**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.

## DIRECT STEAM COUNTERTOP TILTING KETTLES

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 may 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 manufacturer's 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 has a similar effect.

#### 6. Rinse, rinse, rinse.

If chlorinated cleaners are used, rinse and wipe equipment and supplies, and 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.



**Recommended cleaners for specific situations**

<b>JOB</b>	<b>CLEANING AGENT</b>	<b>COMMENTS</b>
Routine cleaning	Soap, ammonia, detergent, Medallion	Apply with cloth or sponge
Fingerprints & smears	Arcal 20, Lac-O-Nu Ecoshine	Provides barrier film
Stubborn stains & discoloration	Cameo, Talc, Zud, First Impression	Rub in direction of polish lines
Grease & fatty acids, blood, burnt-on-foods	Easy-off, De-Grease It Oven Aid	Excellent removal on all finishes
Grease & oil	Any good commercial detergent	Apply with sponge or cloth
Restoration/Passivation	Benefit, Super Sheen	

**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 chloride-free 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.  
Provided courtesy of NAFEM.*

**MAINTENANCE**

Clean the line strainers before and after the kettle on an annual basis, or more often as required.

Strainer maintenance is not covered under warranty.

## TROUBLESHOOTING

### K6DTT & K12DTT: Direct Steam Countertop Kettle Troubleshooting

SYMPTOMS	POSSIBLE CAUSES/REMEDY
Kettle not heating	<p>No steam supply/Turn on building supply valve to kettle.</p> <p>Boiler or steamer supplying kettle not on/Turn on unit.</p> <p>Building steam not turned on/Call building maintenance.</p> <p>Steam control valve closed/Open control valve to allow steam to enter kettle jacket.</p> <p>No condensate return flow, closed loop system/Condensate return valve is not open.</p> <p>Steam supply strainer dirty/Clean strainer.</p> <p>Steam not flowing/Steam supply line blockage. Call Service.</p> <p>Condensate line blockage/Clean strainer. Call Service.</p> <p>Steam trap not operating or clogged/Call Service.</p> <p>Full of condensate water/Add steam trap to building steam supply line.</p> <p>Building condensate return pump not working/Call Service.</p>
Slow cooking time or fails to boil	<p>Inadequate steam flow/Control valve not fully open to desired setting.</p> <p>Supply pressure is low/Contact building maintenance. Call Service.</p> <p>Steam supply line undersized/Contact plumber or building maintenance.</p> <p>Kettle(s) exceed steam supply capabilities/Refer to sequential start up instructions in Installation &amp; Operation manual.</p> <p>Pressure relief valve on steam supply leaking/Call Service.</p> <p>Line strainer clogged/Clean line strainer.</p> <p>Steam trap malfunction/Contact building maintenance or call Service.</p>
Trunnion seals leaking	<p>Dirty steam/Install steam strainer before kettle(s).</p> <p>Trunnion legs not mounted securely to table or table too flimsy to support kettle/Tighten trunnion leg mounting nuts/Reinforce table mounting surface.</p>
Valve leaking steam	<p>Valve packing needs tightening/Using a 20 mm wrench turn valve packing nut, closest to the knob, 1/8 turn at a time till leak stops, or call an authorized servicer.</p>

**K6DTT & K12DTT: Direct Steam Countertop Kettle Troubleshooting (continued)**

SYMPTOMS	POSSIBLE CAUSES/REMEDY
Kettle stays hot after steam control valve is fully closed	Valve seal has failed/Replace valve/Call an authorized servicer to repair. Dirty supply steam/Replace valve, install steam strainer, call authorized servicer.
Kettle making cracking sound when started up from cold	Water in jacket turning to steam/None, this does not harm the unit. Open steam control valve slowly/gradually during initial heat-up.
	<b>Note:</b> When heating issues occur with direct steam kettles, building maintenance should be notified first before calling a service company. Service calls due to building steam supply issues are not covered under warranty.

## SERVICE AND PARTS INFORMATION

To obtain service and parts information concerning this model, contact the Vulcan-Hart Service Agency in your area (refer to our website, [www.vulcanequipment.com](http://www.vulcanequipment.com) for a complete listing of Authorized Service and Parts depots).

When calling for service, the following information must be available: model number, serial number, manufacture date (MD) and steam pressure.