

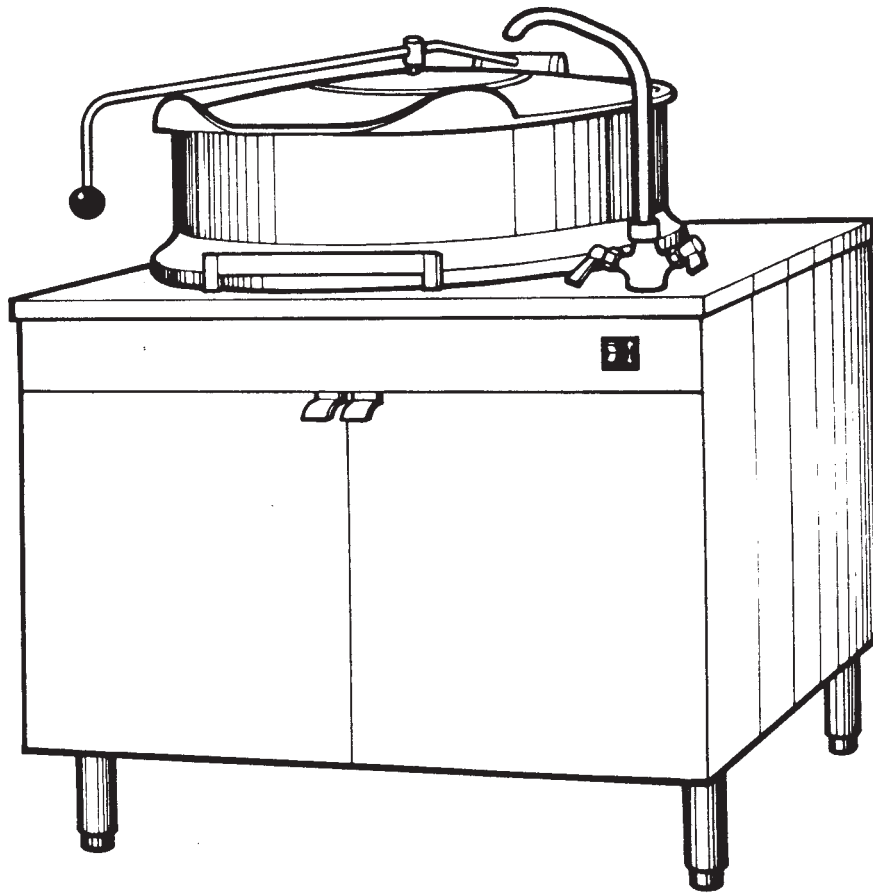


# Operators Manual

Installation, Operation & Service

## Modular Direct Steam Kettles

**MODELS:**  
KDM, KDM-T



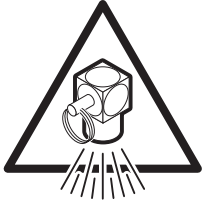
Enodis

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# For your safety

## DANGER

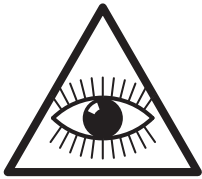


Keep clear of pressure relief discharge.

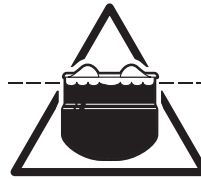


Keep hands away from moving parts and pinch points.

## IMPORTANT



Inspect unit daily for proper operation.



Do not fill kettle above recommended level marked on outside of kettle.

## CAUTION



Surfaces may be extremely hot! Use protective equipment.



Wear protective equipment when discharging hot product.

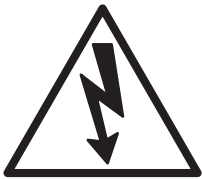


Do not lean on or place objects on kettle lip.



Stand clear of product discharge path when discharging hot product.

## SERVICING

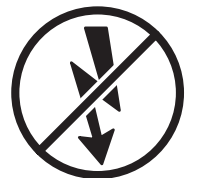


Shut off power at main fuse disconnect prior to servicing.



Ensure kettle is at room temperature and pressure gauge is showing zero or less prior to removing any fittings.

## GAS APPLIANCES



Do not attempt to operate this appliance during a power failure.



Keep appliance and area free and clear of combustibles.

# STAINLESS STEEL EQUIPMENT CARE AND CLEANING

(Supplied courtesy of Nafem. For more information visit their web site at [www.nafem.org](http://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 stain-less. 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 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.

## Recommended cleaners for specific situations

Job	Cleaning Agent	Comments
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.

## **INSTALLATION INSTRUCTIONS FOR DIRECT STEAM KETTLES**

**WARNING:** Installation of kettle must be accomplished by qualified installation personnel, working to all applicable local and national codes. Improper installation of product could cause injury or damage.

This equipment is built to comply with applicable standards for manufacturers. Included among those approval agencies are: UL, NSF, ASME/Ntl.Bd., CSA, ETL, and others. Many local codes exist, and it is the responsibility of the owner and installer to comply with these codes.

### **INSPECTION**

Before unpacking visually inspect the unit for evidence of damage during shipping. If damage is noticed, do not unpack the unit, follow shipping damage instructions.

### **SHIPPING DAMAGE INSTRUCTIONS**

If shipping damage to the unit is discovered or suspected, observe the following guidelines in preparing a shipping damage claim.

1. Write down a description of the damage or the reason for suspecting damage as soon as it is discovered. This will help in filling out the claim forms later.
2. As soon as damage is discovered or suspected, notify the carrier that delivered the shipment.
3. Arrange for the carrier's representative to examine damage.
4. Fill out all carrier claims forms and have the examining carrier sign and date each form.

## **INSTALLATION**

The first installation step is to refer to the specification sheet for clearance requirements, in order to determine the location of kettle. Next, carefully cut open shipping carton for easy removal of the kettle.

### **ASSEMBLY**

Position the kettle in its permanent location, in a floor depression or next to an open drain. Level the kettle's cabinet by turning the adjustable feet.

### **INSTALLATION OF SERVICE CONNECTIONS**

Install service connections as required. Locations and other data are shown on the specification sheet.

### **STEAM**

All steam plumbing to and from the kettle and steam boiler should be thoroughly cleaned and inspected for dirt and debris before final connections to kettle are made. Refer to the specification sheet for the minimum allowable size of the branch steam supply plumbing (from the steam "main" plumbing or a nearby boiler). Generally, kettles require 1/2" i.p.s. pipe if the kettles' total capacity is 20 gallons or less, and 3/4" i.p.s. pipe if total capacity exceeds 20 gallons. Kettles require 5-50 psi steam pressure. If steam supply pressure exceeds 50 psi, a pressure reducing valve is required. Steam inlet is at right side of kettle, as seen from front.

### **CONDENSATE**

The steam condensate trap must be plumbed to an open, free-venting drain, using minimum 1/2" NPT plumbing. The condensate line is limited to a maximum rise of 10 feet in order for the steam pressure to adequately force the

condensate through the plumbing. Any higher rise requires a pump.

If the steam boiler to which this kettle is installed has a condensate return, a 1/2" (13mm) steam strainer, a 1/2" (13mm) steam trap, and a 1/2" (13mm) check valve must be installed on the output (condensate) side of the kettle.

## WATER

The water faucet, with swing spout, requires 1/2 inch O.D. copper tube plumbing for hot/or cold water supplies to the faucet (if so equipped).

## DRAIN

Kettle may require the attachment of drain extension piping to carry condensate and draw-off liquid away from the cabinet, to the floor drain. The drain extension piping must have a gravity flow, be 1 1/2" diameter, (i.p.s.) minimum, and must vent freely to the air (not plumbed solidly into the floor drain).

## ELECTRICAL

Kettles require a permanent 115 volt electrical connection. Refer to the specification sheet for precise location. A kettle that is connected to electricity must be grounded by the installer, and installed in accordance with local codes and/or the National Electrical Code ANSI/NFPA No. 70-1981. Installation in Canada must be in accordance with the Cdn. Electric Code CSA Standard C22.1.

## FINAL INSTALLATION CHECK

1. Ensure that tangent draw-off valve is closed.
2. Partially fill the kettle with water.
3. Slowly turn the steam supply valve's knob counter-clockwise, to the open position.

4. Release the safety valve, ensuring that the steam escapes freely. Stay clear of steam exhaust when releasing the safety valve.
5. Observe that the water in the kettle comes to a boil.
6. Close the steam supply valve.
7. Drain off the water by opening the draw-off valve or tilting the kettle forward. To raise the kettle, press the top of the rocker switch. To lower the kettle, press the bottom of the rocker switch.

## OPERATION

Ensure that there is an adequate steam supply to the kettle.

Ensure that tangent draw-off valve is closed before filling the kettle. To keep solid food particles out of the draw-off valve, place either the solid or the perforated disc (strainer) in the bottom of the kettle. Use the solid disc if the liquid is to be retained, and the perforated disc if the liquid is to be drained off.

Turn the steam control valve to the full open position by turning the knob counter-clockwise, then allow kettle to pre-heat.

NOTE: When cooking egg and milk products, the kettle should NOT be pre-heated, as products of this nature adhere to hot cooking surfaces. These types of foods should be placed in the kettle before heating is begun.

Fill kettle with product to desired level.

When the product has reached the desired temperature, regulate the heat, as required, by turning the steam control valve clockwise for less steam, and therefore, a lower temperature.

When cooking is complete, close the steam control valve by turning the knob clockwise until it stops turning.

Power-pour kettles are provided with a rocker-type center-off switch for raising and lowering the kettle. To raise the kettle, press the top of the switch. To lower the kettle, press the bottom of the switch. Release the switch, allowing it to return to the center "off" position when the desired degree of tilt has been reached. Limit switches are provided that automatically stop the tilt motion at the maximum limit of movement in either direction.

To raise and lower manual tilt, floor mounted kettles, turn the handwheel counter-clockwise to lower and clockwise to raise.

For kettle/steamer combinations: If the boiler in a steamer is supplying steam to a kettle, always heat the kettle first. After the kettle contents are heated, and the boiler's steam pressure returns to normal, the steamer may be used. Pressure steamer compartments should be sequentially started, and preheated before cooking.

NOTE: As with cleaning food soil from any cookware, an important part of kettle cleaning is to prevent foods from drying on.

For this reason, cleaning should be completed immediately after cooked foods are removed. Please refer to the "Care and Cleaning" instructions for detailed kettle washing procedures.

## CARE AND CLEANING

Your Cleveland kettle must be cleaned regularly to maintain its fast, efficient cooking performance, and to ensure its continued safe, reliable operation.

**WARNING:** Do not use chlorine base detergent.

1. Prepare a warm water and mild detergent solution in the kettle.
2. Remove food soil inside the kettle using a nylon brush. Do not use a metal bristle brush, as this may permanently damage the kettle's stainless steel surface.
3. Loosen food which is stuck to the kettle by allowing it to soak at a low temperature (simmer or low boil).
4. Open the draw-off valve or tilt kettle forward to drain the wash water.

Draw-off valve should be cleaned as follows:

- a. Remove the drain strainer from the bottom of the kettle. Thoroughly wash and rinse the strainer, either in a sink or a dishwasher, then replace it into the kettle.
- b. Disassemble the draw-off valve, first by turning the valve knob counter-clockwise, then turning the large hex nut counter-clockwise, until valve stem is free of the valve body.
- c. In a sink, wash and rinse the valve stem, hex nut, and knob. Wash and rinse the inside of the valve body using a nylon brush. Kettle brushes and other accessories are available from the Company.
- d. Reassemble the draw-off valve by reversing the procedure for disassembly. **THE VALVE'S HEX NUT SHOULD BE HAND TIGHT ONLY.**
5. Rinse the kettle interior thoroughly, then drain rinse water.
6. Leave the cover and draw-off valve open when the kettle is not in use.

7. Using mild soapy water and a damp sponge, wash the exterior of the kettle, rinse, and dry. Avoid soaking the electric control panel. Always turn off equipment power before using water to wash equipment. **DO NOT HOSE DOWN THE KETTLE.**

**NOTE:** For more difficult cleaning applications, one of the following can be used: alcohol, baking soda, vinegar, or a solution of ammonia in water. Avoid the use of chloride cleansers, which may damage the kettle's stainless steel surface.

**WARNING:** Steel wool should never be used for cleaning the cooking chamber of the kettle. Particles of the steel wool become embedded in the cooking surface and rust, and may corrode the stainless steel.

## MAINTENANCE

The kettles require very little preventive maintenance, other than daily cleaning. Each kettle is equipped with a steam trap in the line from the kettle outlet to the drain, to remove the condensate that forms inside the steam jacket. A good steam trap at startup releases air and wet steam into the drain line for a few minutes, then holds the steam within the steam jacket. During cooking, the trap periodically releases accumulated condensate. If the kettle's cooking performance becomes inadequate after long use, replacement of the steam trap with a new one may restore kettle operation to peak efficiency. At least once a year test the pressure relief valve. See Pressure Relief Testing Procedures.

### DRAW-OFF VALVE MAINTENANCE

To correct a leak at the draw-off valve, the source of the leak must first be determined. Leaks from around the valve stem are corrected by simply replacing the

"O" ring. Faulty seating of the valve stem disc against the valve body may cause dripping from the valve even when the valve is tightly closed. This can often be corrected by cleaning any residue from the disc and seat.

A worldwide network of Maintenance and Repair Centers, which are regional distributors of parts and service. Contact your nearest Maintenance and Repair Center for the name of an authorized service agency in your area, or for replacement parts, or information regarding the proper maintenance and repair of your equipment. In order to preserve the various agency safety certifications (UL, A.G.A., CSA, CGA, NSF, ASME/Ntl. Bd., etc.), only factory-supplied replacement parts should be used. The use of other than factory-supplied replacement parts will void the warranty.

### PRESSURE RELIEF VALVE TESTING PROCEDURE

**WARNING:** Kettle will be hot. Use gloves for protection.

The pressure relief valve must be checked at least once a year as part of the normal maintenance performed on any direct steam kettle.

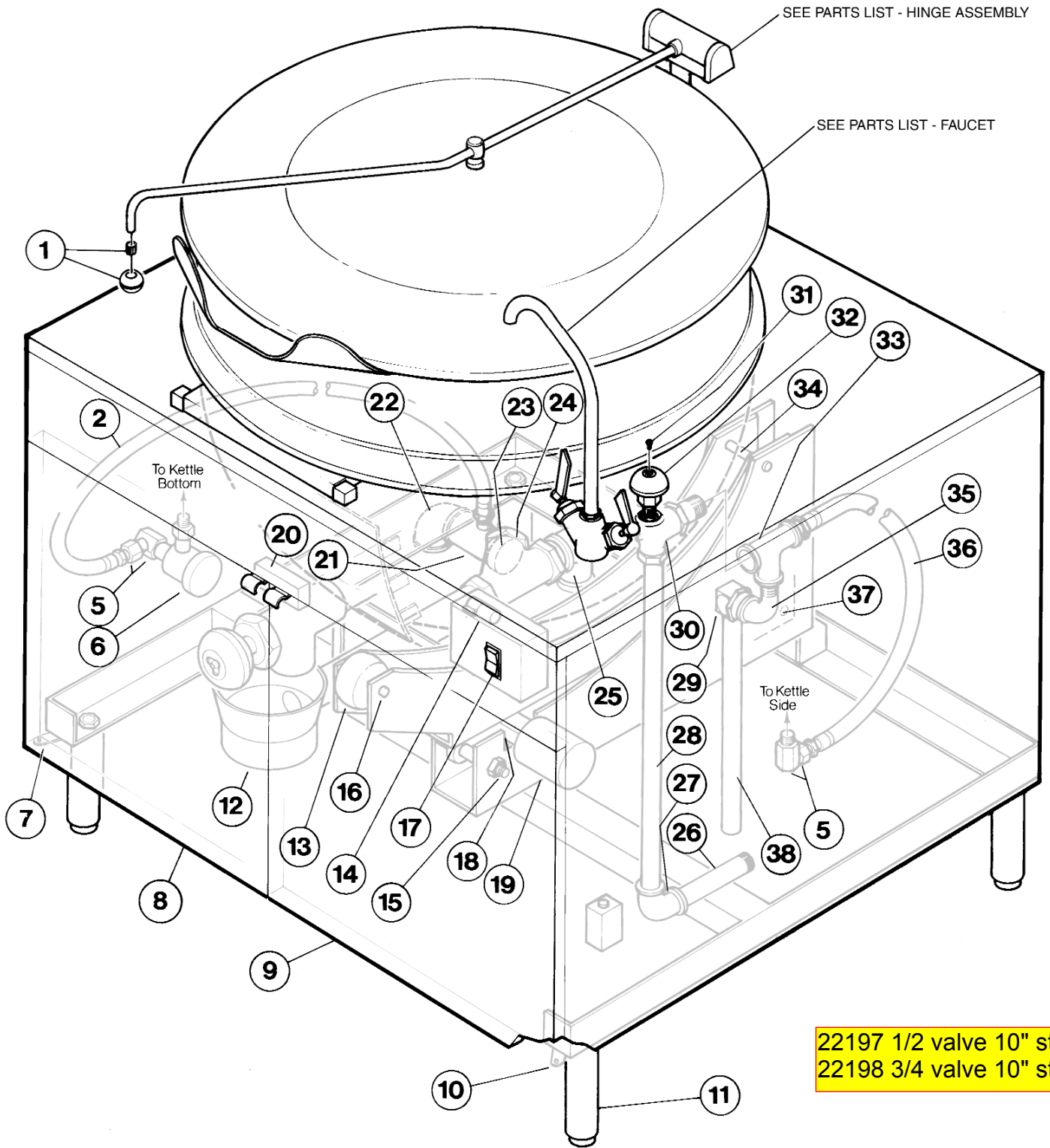
1. Ensure steam supply is turned on to kettle.
2. Stand to the side of the pressure relief valve discharge tube and pull ring three or four times to insure free movement. Hold valve open for two seconds each time, insuring there is rapid steam escape each time.
3. If valve appears to be sticking replace pressure relief valve.

## OPERATING CONTROLS & INDICATORS

For your better understanding and confidence, the following explanation of the control system used on this kettle is offered.

ITEM NO.	DESCRIPTION	FUNCTION
30-32	Steam Inlet Valve ( Pg. 231-06DR )	Opens and closes the steam supply to the kettle.
29	Pressure Relief Valve ( Pg. 231-06DR )	In the unlikely event that there is an excess steam build-up in the jacket, this valve automatically opens to relieve this pressure.
17	Tilt Switch ( Pg. 231-06DR )	When activated the kettle will tilt forward to drain the kettle.
1- 7	Draw-Off Valve ( Pg. 600-02TD )	This valve is used to empty the kettle of either food product or wash water. It is supplied as standard equipment.

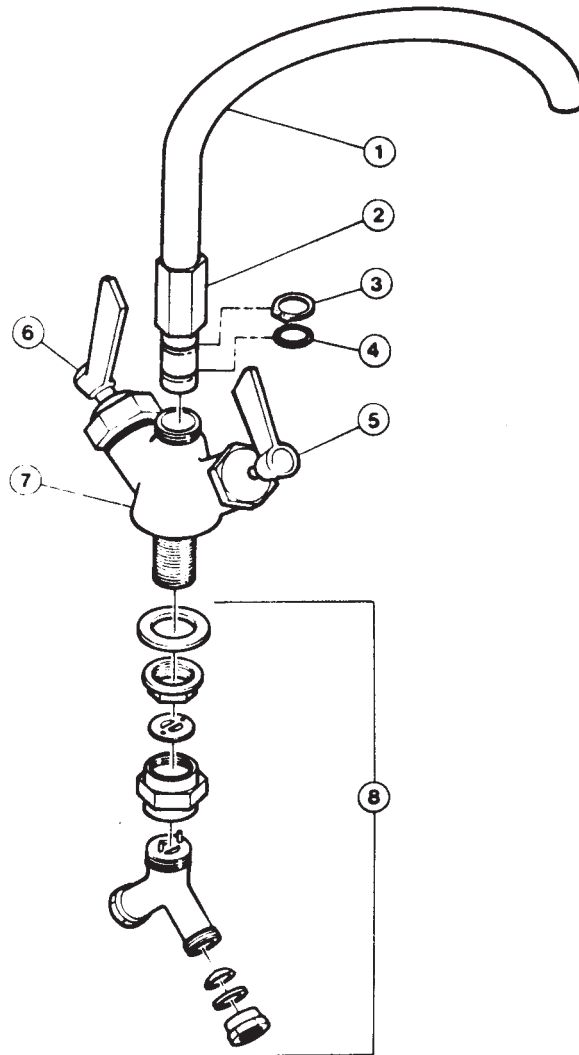
# KETTLE BODY



# **PARTS LIST - KETTLE BODY**

<b>ITEM NO.</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
1.	KE50151-1	Knob, ball type	1
2.	T40294	Hose, Condensate (KDM-25)	1
	T40295	Hose, Condensate (KDM-40, KDM-60)	1
5.	F105028	Swivel Elbow, 1/2"	2
6.	KE51248-1	Steam Trap, 1/2"	1
7.	KE02211-1	Left Door Hinge Bracket Assy. (used after June 02, 2000)	1
	KE00652	Left Door Hinge Bracket Assy. (used prior to June 02, 2000)	1
8.	KE02210-1	Left Door Assy. (KDM-25)	1
	KE02210-3	Left Door Assy. (KDM-40, KDM-60)	1
9.	KE02210-2	Right Door Assy. (KDM-25)	1
	KE02210-4	Right Door Assy.(KDM-40,KDM-60)	1
10.	KE02211-2	Right Door Hinge Bracket Assy. (used after June 02, 2000)	1
	KE00651	Right Door Hinge Bracket Assy. (used prior to June 02, 2000)	1
11.	KE51340	Leg	4
12.	KE00665	Swing Funnel Assy. (KDM-25)	1
	KE00666	Swing Funnel Assy. (KDM-40)	1
	KE00667	Swing Funnel Assy. (KDM-60)	1
13.	KE51365	Roller Wheel, 3" Dia.	1
14.	KE51683	Capacitor, 36-43 mF	1
15.	FA15010	Shoulder Bolt, 1/2" X 3 1/4", 3/8-16	1
16.	FA15009	Shoulder Bolt, 3/4" X 2 1/2", 5/8-11	1
17.	SK50680	Tilt Switch	1
18.	KE51688	Power Jack, c/w Motor	1
19.	SE50025	Motor, Power Jack	1
20.	KE51366-1	Magnetic Door Latch (used after October 11, 2001)	1
	KE51366	Magnetic Door Latch (used prior to October 11, 2001)	1
21.	KE00648	Drain Pipe Manifold	1
22.	FI00040-2	Straight Elbow, 90, 1 1/2"	1
23.	F100191	End Cap, 1 1/2"	1
24.	KE51367	Check Valve, 1 1/4"	1
25.	FI00136	Street Elbow, 90, 1 1/4"	1
26.	KE51372	Steam In Pipe 1/2" X 7 1/2" LG	1
27.	FI00040-1	Straight Elbow, 90, 1/2"	1
28.	KE51371	Steam In Pipe, 1/2" X 18 1/2" LG.	1
29.	KE54941-7	Safety Valve, 25 PSI, 1/2"	1
30.	KE02055-1	Steam Inlet Valve Assy. 1/2" Brass	1
31.	FA11091	Screw, Valve Knob, 8/32 X 3/8" SS	1
32.	KE50442	Knob, Steam Inlet Valve	1
33.	FI00169	Tee, 1/2"	1
34.	FA15008	Shoulder Bolt 5/8" X 3 1/4", 1/2-13	1
35.	FI00142	Street Elbow, 1/2"	1
36.	T40292	Hose, Steam (KDM-25)	1
	T40293	Hose, Steam (KDM-40, KDM-60)	1
37.	KE51364	Jack Mounting Pin	1
38.	KE51087	Blow Down Pipe, 1/2" X 17"LG.	1

# PARTS LIST - FAUCET

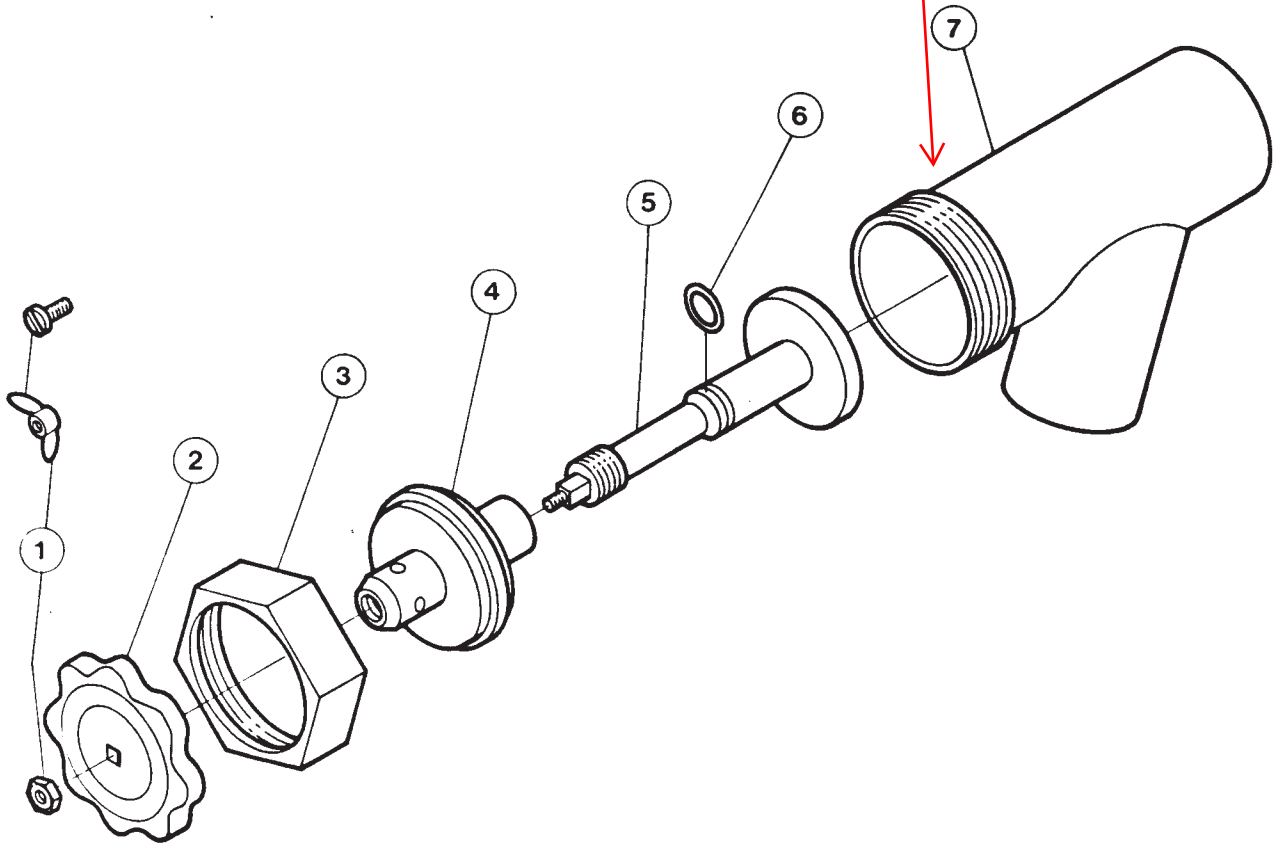


ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	<b>KE50825-6</b> KE50825	3/4" Spout for KDM 25/40 for KDM 60	1
2	KE51404 KE51736	Spout nut, short (used on spout KE50832) Spout nut, tall (used on spout KE50825)	1 1
3	FA95022	Retaining ring	1
4	FA00016	"O" ring	1
5	SE50021	Cold water stem assembly	1
6	SE50020	Hot water stem assembly	1
7	KE51403	Double pantry control valve (c/w item no. 5,6,8)	1
8	SE50022	Yoke connection kit	1

# PARTS LIST - 2" TANGENT DRAW-OFF VALVE

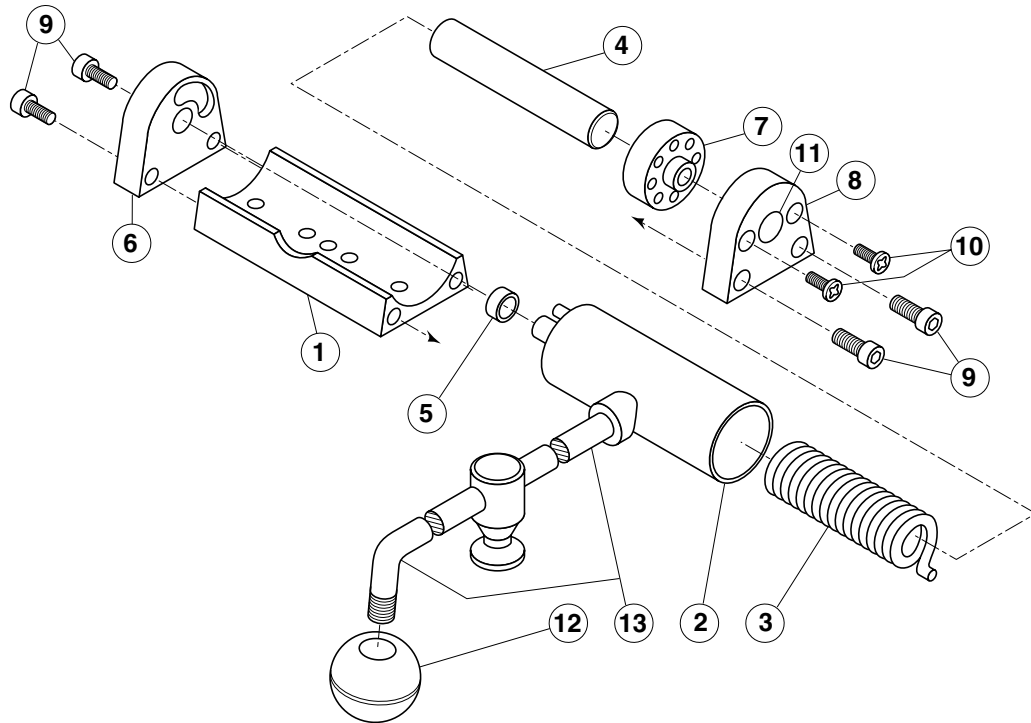
JUNE 1990 to PRESENT

1.5 inch for 25 gallon  
 Valve KE50219  
 Stem SE50008  
 Bonnet SE50011  
 Knob SE50017



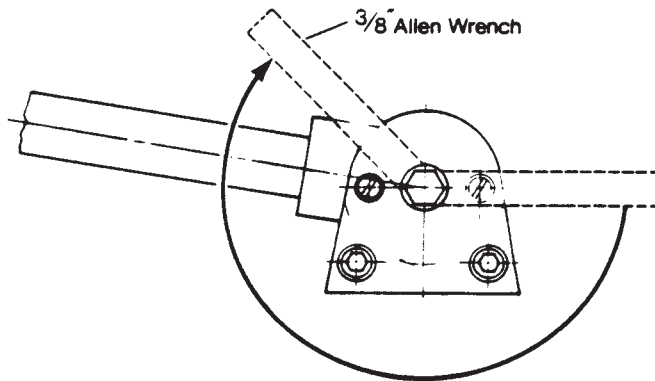
ITEM NO.	PART NO.	DESCRIPTION	QTY.
1. to 7.	KE50972-B	Draw-off assembly	1
	KE509721	Draw-off assembly, for KDM-40-T	
1.	FA21008	Hex nut	1
	FA95049	Wing nut	
	FA11134	Screw, for KDM-40-T	
2.	KE527551	Knob	1
3.	KE52754	Hex nut	1
4.	KE52753	Retainer	1
5.	KE52752	Piston	1
	KE53290	Piston, for KDM-40-T	
6.	FA00111	"O" Ring	1
7.	KE52751	Valve body	1
	KE53289	Valve body, for KDM-40-T	

# HINGE ASSEMBLY



ITEM NO.	PART NO.	DESCRIPTION	QTY.
		<b>Hinge Assembly</b>	
1. - 11	KE00597-1	25 - 40 Gallon, 20 Gallon Full Jacketed	.1
	KE00597-2	60 - 80 Gallon, 30 - 40 Gallon Full Jacketed	.1
	KE00597-3	100 - 150 Gallon, 60 - 100 Gallon Full Jacketed	.1
	KE00597-4	KDM-60, KDM-60-T, Cook Tank	.1
	KE00597-5	KDL-200, KDL-250, KDL-150-F, KDL-250-F	.1
1.	KE50822	Hinge Base	.1
2.	KE51217	Hinge Cylinder	.1
3.	KE50121-2	<b>Hinge Spring Light</b> - for KE50597-2	.1
	KE50121-1	<b>Hinge Spring Heavy</b> - for KE50597-1, KE50597-3, KE50597-4, KE50597-5, .	.1
4.	KE50823-1	Hinge Pin	.1
5.	KE50824	Hinge Bearing	.1
6.	KE50819-1	Hinge End Piece	.1
7.	KE50820	Hinge Insert	.1
8.	KE50819	Hinge End Piece	.1
9.	FA11284	Screw, Socket Head	.4
10.	FA11507	Cutting Screw,	.2
11.	SK50418	Plug Button	.1
12.	KE50151-2	Knob	.1
13.		Cover Handle (specify model)	.1

## HINGE ADJUSTMENT INSTRUCTIONS



1. Insert 3/8" Allen wrench.
2. Turn clockwise to relieve tension on spring.
3. While tension is released remove one of the two slotted screws.
4. To prevent Allen wrench from springing back abruptly while the second slotted screw is removed, insert a pin (approximately 1/8") in the hole where the first slotted screw was removed from.
5. Remove second slotted screw.
6. While holding Allen wrench remove pin.
7. Turn Allen wrench clockwise to tighten or counter-clockwise to loosen tension to produce desired effect.
8. Re-insert pin in one of the two holes.
9. Tighten one slotted screw in the other hole (it may be necessary to turn Allen wrench slightly to align holes.)
10. Remove pin and repeat step number 9 for other slotted screw.

## SERVICING GUIDE

This section contains information intended for use by Authorized Service Personnel only.

### A/ PROBLEM : Kettle heats too slowly or does not come to a boil.

Probable Cause	Remedy
1. Inadequate steam flow.	Check for correct steam using chart below. If kettle is connected to a steamer and powered by a generator the units should be operated sequentially (kettle boiling first, then start steamer).
2. Steam trap not operating properly.	The trap should open periodically to dump condensate, then close. If it does not open or close it should be cleaned or replaced.
3. Food batches are not always the same.	When checking make certain that the original state (ie. fresh or frozen) and quantity of food product is the same.

#### STEAM FLOW RATING OF STEAM GENERATORS

GAS INPUT BTU/HOUR	STEAM OUTPUT LBS./HOUR	BOILER H.P.
100,000	60	1.7
160,000	95	2.8
200,000	125	3.6
250,000	150	4.4
300,000	180	5.2
-----		
ELECTRIC KW INPUT		
18 KW	60	1.7
24 KW	70	2.0
27 KW	90	2.6
36 KW	120	3.5
48 KW	150	4.3

#### STEAM FLOW RATE REQUIREMENTS FOR KETTLES

Capacity Gal./Lit.	Fast Cooking	Medium Speed Cooking	Stock Kettle
5/ 17	11	9	6
10/ 42	22	18	11
25/ 95	55	44	28
40/151	88	70	44
60/227	132	105	66

Note: Above shows lbs. per hour with 10-15 psig steam at the kettle. The use of higher steam pressures (20-25 psig) will reduce heat-up time 5 to 20 % .

**B/ PROBLEM :** Kettle fails to tilt. (NOTE: A thermal overload in jack motor does not allow constant consecutive tilting.)

Probable Cause	Remedy
1. Defective tilt switch.	Shut off power to unit and remove entire control housing cover box to expose tilt switch. Test switch for proper continuity. Replace if necessary.
2. Defective jack or capacitor.	Remove cover from upper junction box. This will access the wire connections to the power jack. Measure the resistance across each of the three wires. It is not necessary to disconnect the wiring if proper contact can be made between the probe and connectors. The resistance should read (approximately): 14 ohms between the black and white, 29 ohms between the black and red, and 14 ohms between the red and white.

**C/ PROBLEM :** Kettle fails to lift at normal speed.

Probable Cause	Remedy
1. Defective jack or capacitor.	Follow procedure in section B/2.

**WIRING DIAGRAM**

