



KPS/KLS-DS Series

**DIRECT STEAM STATIONARY FLOOR KETTLE
INSTALLATION - OPERATION - MAINTENANCE**



BLODGETT OVEN COMPANY

www.blodgett.com
44 Lakeside Avenue, Burlington, Vermont 05401 USA
Manufacture Service Questions: 866-518-3977

PART NUMBER 170098 REV B (04/11)

THIS MANUAL MUST BE RETAINED FOR FUTURE REFERENCE. READ, UNDERSTAND AND FOLLOW THE INSTRUCTIONS AND WARNINGS CONTAINED IN THIS MANUAL.

FOR YOUR SAFETY

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND 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.

NOTIFY CARRIER OF DAMAGE AT ONCE

IT IS THE RESPONSIBILITY OF THE CONSIGNEE TO INSPECT THE CONTAINER UPON RECEIPT OF SAME AND TO DETERMINE THE POSSIBILITY OF ANY DAMAGE, INCLUDING CONCEALED DAMAGE. WE SUGGEST THAT IF YOU ARE SUSPICIOUS OF DAMAGE TO MAKE A NOTATION ON THE DELIVERY RECEIPT. IT WILL BE THE RESPONSIBILITY OF THE CONSIGNEE TO FILE A CLAIM WITH THE CARRIER. WE RECOMMEND THAT YOU DO SO AT ONCE.

IMPORTANT - READ FIRST - IMPORTANT

- CAUTION:** BE SURE ALL OPERATORS READ, UNDERSTAND AND FOLLOW THE OPERATING INSTRUCTIONS, CAUTIONS, AND SAFETY INSTRUCTIONS CONTAINED IN THIS MANUAL.
- WARNING:** THIS UNIT IS INTENDED FOR USE IN THE COMMERCIAL HEATING, COOKING AND HOLDING OF WATER AND FOOD PRODUCTS, PER THE INSTRUCTIONS CONTAINED IN THIS MANUAL. ANY OTHER USE COULD RESULT IN SERIOUS PERSONAL INJURY OR DAMAGE TO THE EQUIPMENT AND WILL VOID WARRANTY.
- WARNING:** KETTLES MUST BE INSTALLED BY PERSONNEL QUALIFIED TO WORK WITH PLUMBING. IMPROPER INSTALLATION CAN RESULT IN INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT.
- WARNING:** AVOID ANY EXPOSURE TO ESCAPING STEAM. STEAM CAN CAUSE SEVERE BURNS.
- WARNING:** AVOID ALL DIRECT CONTACT WITH HOT EQUIPMENT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.
- WARNING:** AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN KETTLES. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.
- CAUTION:** DO NOT OVER FILL THE KETTLE WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS A MINIMUM OF 2-3" (5-8 cm) BELOW THE KETTLE BODY RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING AND SAFE PRODUCT TRANSFER.
- WARNING:** TAKE SPECIAL CARE TO AVOID CONTACT WITH HOT KETTLE BODY OR HOT PRODUCT WHEN ADDING INGREDIENTS, STIRRING OR TRANSFERRING PRODUCT TO ANOTHER CONTAINER.
- CAUTION:** KEEP FLOORS IN FRONT OF KETTLE WORK AREA CLEAN AND DRY. IF SPILLS OCCUR, CLEAN IMMEDIATELY, TO AVOID SLIPS OR FALLS.
- WARNING:** FAILURE TO CHECK SAFETY VALVE OPERATION PERIODICALLY COULD RESULT IN PERSONAL INJURY AND/OR DAMAGE TO EQUIPMENT.
- WARNING:** WHEN TESTING, AVOID ANY EXPOSURE TO THE STEAM BLOWING OUT OF THE SAFETY VALVE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.
- CAUTION:** MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES AND CLOTHING. PRECAUTIONS SHOULD BE TAKEN. WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD AND PROTECTIVE CLOTHING. CAREFULLY READ THE WARNINGS AND FOLLOW THE DIRECTIONS ON THE LABEL OF THE CLEANER TO BE USED.
- CAUTION:** USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY THE MANUFACTURER OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE OPERATOR INJURY AND DAMAGE TO THE EQUIPMENT, AND WILL VOID ALL WARRANTIES.
- IMPORTANT:** SERVICE PERFORMED BY OTHER THAN FACTORY AUTHORIZED PERSONNEL WILL VOID WARRANTIES.

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References

KLENZADE SALES CENTER ECOLAB. Inc.
370 Wabasha St. Pau , Minnesota 55102
800/352-5326 or 612/293-2233

NSF INTERNATIONAL
789 N. Dixboro Road
P.O. Box 130140
Ann Arbor, Michigan 48113-0140

ZEP MANUFACTURING CO.
1310-T Seaboard Industrial Blvd.
Atlanta, Georgia 30318

Equipment Description



The direct steam heated kettles covered in this manual are one-piece, welded constructions of 18.8 type 304 stainless steel, which are listed by the National Sanitation Foundation. They have bar rims with a continuous seal weld on the underside. The kettles are ASME shop inspected, and registered with the national board for operation at pressures up to 25 PSI. They are finished to 180 emery grit interior, and a bright semi-deluxe exterior. The table on page 4 shows standard kettle sizes.

Steam from a remote source passes directly into the jacket. Steam pressure forces condensate out through the condensate outlet. The units operate safely and efficiently at steam pressures from five to 25 PSI. A safety valve works to release any pressure above the 25 PSI limit. If required, higher jacket pressure (PSI) kettles can be provided. A globe valve is required on the steam inlet, and a strainer, steam trap and check valve are needed on the condensate outlet. Each of these may be ordered as an option.

The kettles are emptied by tangent draw-offs. The standard draw-off on current models is a compression disk type, fabricated from 316 stainless steel with a 2 inch outer diameter (O.D.). The draw-off has a removable stainless steel strainer which has $\frac{1}{4}$ inch perforations. Options for the draw-off include a three-inch O.D., a strainer with $\frac{1}{8}$ inch perforations, and a solid disk strainer.

Models KPS and KLS are deep kettles with 2/3 jackets. On units with capacities of 40 gallons or less, a one-piece hinged stainless steel dome cover is furnished. On larger units the cover is counter-balanced with a spring-assisted actuator.

Model KLS stands on stainless steel, tubular legs, that are continuously welded to the kettle. The legs are fitted with adjustable stainless steel floor flanges.

Model KPS stands on a stainless steel pedestal base. The outer surface of the base is flanged down vertically to permit proper sealing to the floor or deck. These units are provided with a standard faucet bracket.

Equipment Description

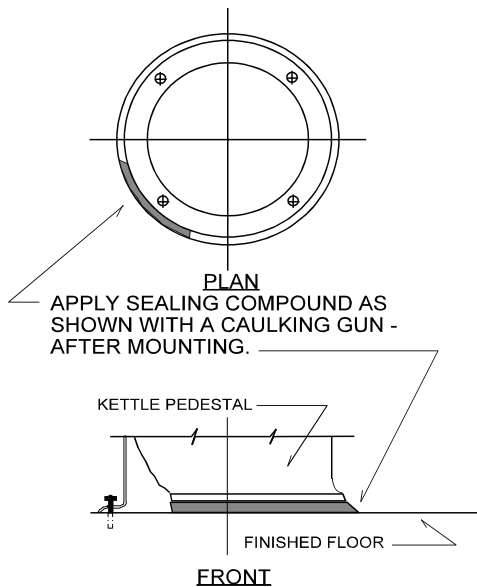
MODEL	Kettle Capacity	Inside Diameter	Rim Height	Overall Width	Front-to-Back	Base Style
20DS-KPS	20 Gallons 75 liters	20 inches 508 mm	36 inches 914 mm	22 inches 559 mm	26-1/4 inches 667 mm	Pedestal
40DS-KPS	40 Gallons 150 liters	26 inches 660 mm	36 inches 914 mm	28 inches 711 mm	31-3/4 inches 807 mm	Pedestal
60DS-KPS	60 Gallons 225 liters	30 inches 762 mm	39 inches 991 mm	32 inches 813 mm	36 inches 914 mm	Pedestal
80DS-KPS	80 Gallons 300 liters	32 inches 813 mm	43 inches 1092 mm	34 inches 864 mm	39 inches 991 mm	Pedestal
100DS-KPS	100 Gallons 375 liters	36 inches 914 mm	44 inches 1118 mm	38 inches 965 mm	40 inches 1016 mm	Pedestal
20DS-KLS	20 Gallons 75 liters	20 inches 508 mm	36 inches 914 mm	24 inches 610 mm	27-1/2 inches 699 mm	Tubular Leg
40DS-KLS	40 Gallons 150 liters	26 inches 660 mm	36 inches 914 mm	30 inches 762 mm	33 inches 838 mm	Tubular Leg
60DS-KLS	60 Gallons 225 liters	30 inches 762 mm	39 inches 991 mm	34 inches 864 mm	37 inches 940 mm	Tubular Leg
80DS-KLS	80 Gallons 300 liters	32 inches 813 mm	43 inches 1092 mm	36 inches 914 mm	38 inches 965 mm	Tubular Leg
100DS-KLS	100 Gallons 375 liters	36 inches 914 mm	44 inches 1118 mm	40 inches 1016 mm	40 inches 1016 mm	Tubular Leg

Optional Equipment may include:

1. Cooking basket system
2. Fill faucet with swing spout
3. Kettle brush kit
4. Cover with actuator (40-gallon kettle)
5. Steam trap assembly

Installation

WARNING
THIS UNIT MUST BE INSTALLED BY
PERSONNEL QUALIFIED TO WORK WITH
PLUMBING. IMPROPER INSTALLATION CAN
CAUSE INJURY TO PERSONNEL AND/OR
DAMAGE TO EQUIPMENT.



For proper sanitation, a continuous seal is required between pedestals or flanges and the mounting surface.

All Models

1. Installation under a ventilation hood is recommended.
2. If the steam supply pressure is greater than the maximum working pressure stamped on the nameplate, you must install a pressure reducing valve in the steam supply line near the kettle.
3. Connect the steam supply line to the steam inlet fitting. To obtain the full heating capability of the kettle, the steam supply line must be as large as the steam inlet fitting.
4. The safety valve is preset to relieve jacket pressure that exceeds its rated limit. Do not try to adjust the valve setting, and do not allow the valve outlet or lever to be blocked.
5. Connect the kettle condensate return line to the boiler return line, or to a drain. A suitable steam trap, strainer, and check valve must be installed. (See piping diagram, Page 14-15).
6. Any mechanical change must be approved by the Food Service Engineering Department.

Floor-Mounted Models

1. Install the unit on a level surface. Ensure that there is adequate clearance at the sides and rear, as required by the specification drawings. Anchor the pedestal or legs securely to the floor.
2. Apply a continuous bead of clear silicone sealant (No. 732 or equivalent) to the junction between the pedestal or leg flange and the surface, as shown. Fill all cracks and crevices, and wipe excess away.

Initial Start-Up

IMPORTANT
BE SURE ALL OPERATORS READ,
UNDERSTAND AND FOLLOW THE OPERATING
INSTRUCTIONS, CAUTIONS, AND SAFETY
INSTRUCTIONS CONTAINED IN THIS MANUAL.

WARNING
AVOID EXPOSURE TO ESCAPING STEAM,
WHICH CAN CAUSE SEVERE BURNS.



Test the safety valve each day.

Now that the kettle has been installed, you should test it to ensure that it is operating correctly.

1. Remove all literature and packing materials from inside and outside of the unit.
2. Pour a small amount of water into the kettle.
3. Open the steam inlet valve.
4. When the water begins to boil, inspect all of the fittings to ensure that there are no leaks.
5. Check the safety valve by pulling out on its chain, (or lifting its lever on older models) far enough to let steam escape. Then let it snap back into place to reseal the valve so that it will not leak.
6. Shut down the unit by closing the steam inlet valve.
7. Operate the drawoff valve to ensure that it functions across the normal range of operation.

If the unit functions as described above, it is ready for use. If the unit does not function as intended, contact your local Certified Service Agency.

Operation

WARNING
AVOID EXPOSURE TO ESCAPING STEAM,
WHICH CAN CAUSE SEVERE BURNS.

WARNING
AVOID ALL DIRECT CONTACT WITH HOT
FOOD OR WATER IN THE KETTLE. DIRECT
CONTACT COULD RESULT IN SEVERE BURNS.
TAKE SPECIAL CARE TO AVOID CONTACT
WITH HOT KETTLE BODY OR HOT PRODUCT,
WHEN ADDING INGREDIENTS, STIRRING OR
TRANSFERRING PRODUCT TO
ANOTHER CONTAINER.

CAUTION
DO NOT OVERFILL THE KETTLE WHEN
COOKING, HOLDING OR CLEANING. KEEP
LIQUIDS AT LEAST 2-3" (5-8 cm) BELOW
THE KETTLE BODY RIM TO ALLOW
CLEARANCE FOR STIRRING, BOILING
PRODUCT AND SAFE TRANSFER.



To heat the kettle, open the condensate return valve and the steam inlet valve. Adjusting the inlet valve allows the operator to control the heating rate. Opening the valve more allows steam to flow into the jacket faster, and thereby heats the product faster.

The kettle operates efficiently with steam pressures from five PSI to the maximum working pressure for which the kettle was designed. The maximum allowable pressure (normally 25 PSI for standard units) is stamped on the kettle.

Once a day, while there is still steam pressure in the jacket, bleed off any entrapped air and double check the operation of the safety valve. Pull out on its chain, (or lift the lever on older models) far enough to let steam escape. Then let it snap back into place to reseal the valve so that it will not leak.

Sequence of Operation

The following “action-reaction” outline is provided to help you understand how the equipment functions.

When the steam inlet valve is opened, steam flows into the jacket at a pressure determined by the boiler system, or by the pressure reducing valve which serves the kettle. In the jacket steam releases its heat to the kettle as it condenses into water. The steam trap allows condensate (water) to leave the kettle while holding the steam in.

When the steam supply is shut off, condensation of the remaining steam produces a vacuum in the jacket, but the check valve in the condensate return line keeps water from flowing back into the jacket.

Maintenance

WARNING
WHEN TESTING, AVOID ANY EXPOSURE
TO THE STEAM BLOWING OUT OF THE
SAFETY VALVE. DIRECT CONTACT
COULD RESULT IN SEVERE BURNS.



Test the safety valve each day.

NOTICE: Contact an authorized representative when repairs are required.

Periodic Maintenance

A Service Log is provided at the back of this manual with the warranty information. Each time maintenance is performed on your kettle, enter the date on which the work was done, what was done, and who did it. Keep this manual on file and available for operators to use.

Periodic inspection will minimize equipment down time and increase the efficiency of operation. The following points should be checked:

1. Once a day, with pressure in the jacket, check the operation of the pressure relief safety valve. Lift the lever of the safety valve until steam is released.

Then release the lever and let the valve snap shut. If the lever does not activate, or there is no evidence of discharge, or the valve leaks, immediately discontinue use of the kettle and contact a qualified service representative.
2. At least once every 90 days, inspect fittings and valves for signs of damage or wear.

NOTE: Service performed by other than factory authorized personnel will void all warranties.

Cleaning

WARNING

AVOID ANY DIRECT CONTACT WITH HOT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.

CAUTION

MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES, AND CLOTHING. PRECAUTIONS SHOULD BE TAKEN. WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD, AND PROTECTIVE CLOTHING. READ THE WARNINGS AND FOLLOW THE DIRECTIONS ON THE LABEL OF THE CLEANER CAREFULLY.

CAUTION

DO NOT MIX DIFFERENT KETTLE DRAWOFF ASSEMBLY PARTS WHEN WASHING. THEY ARE NOT INTERCHANGEABLE

NOTICE

NEVER LEAVE A CHLORINE SANITIZER IN CONTACT WITH STAINLESS STEEL SURFACES LONGER THAN 30 MINUTES. LONGER CONTACT CAN CAUSE STAINING AND CORROSION.



Scrapers or steel wool can harm the kettle surface.



Use only a sponge, cloth or plastic brush to clean the kettle.

A. Suggested Tools

1. Cleaner, such as Klenzade HC-10 or HC-32 from ECOLAB, Inc
2. Long- and short-handled kettle brushes in good condition
3. Brush suitable for cleaning the draw-off port
4. Sanitizer such as Klenzade XY-12
5. Film remover such as Klenzade LC-30

B. Procedure

1. Clean food-contact surfaces as soon as possible after use, preferably while the kettle is still hot. If the unit is in continuous use, thoroughly clean and sanitize the interior and exterior at least once every 12 hours.
2. Scrape and flush out food residues with lukewarm water. After flushing the kettle, close the draw-off valve.
3. Prepare a hot solution of the detergent/ cleaning compound as instructed by the supplier. Set some of this solution aside to use in cleaning the draw-off valve and pipe.
4. Clean the unit thoroughly, inside and outside.
5. Drain the kettle.
6. Disassemble the tangent draw-off valve. Clean the draw-off pipe and each valve part with a brush.
7. Rinse the kettle and draw-off parts thoroughly with warm water, then drain completely.
8. As part of the daily cleaning, clean all external and internal surfaces that may have been soiled. Remember to check such areas as the underside of the cover.
9. To remove burned-on materials, use a brush, sponge, cloth, plastic or rubber scraper, or plastic wool with the cleaning solution. To reduce effort required in washing, let the detergent solution sit in the kettle and soak into the residue. Do not use abrasive materials or metal tools that might scratch the surface. Scratches make the surface harder to clean and provide places for bacteria to grow.
10. Do not use steel wool, which may leave particles in the surface and cause eventual corrosion and pitting.
11. The outside of the unit may be polished with a stainless steel cleaner such as “Zepper” from Zep Manufacturing Co.

Cleaning

12. When equipment needs to be sanitized, use a solution equivalent to one that supplies 200 parts per million available chlorine. Obtain advice on sanitizing agents from your supplier of sanitizing products. Following the supplier's instructions, apply the agent after the unit has been cleaned and drained. Drain and thoroughly rinse off the sanitizer.
13. It is recommended that each piece of equipment be sanitized just before use.
14. If there is difficulty removing mineral deposits or a film left by hard water or food residues, clean the kettle thoroughly and use a deliming agent, in accordance with the manufacturer's directions. Rinse and drain the unit thoroughly before further use.
15. If cleaning problems persist, contact your cleaning product representative for assistance. The supplier has a trained technical staff with laboratory facilities to serve you.

Troubleshooting

Your kettle will operate smoothly and efficiently if properly maintained. However, the following is a list of checks to make in the event of a problem. If the actions suggested do not solve the problem, call your qualified Service Representative. If an item on the list is followed by * , the work should be done by a qualified service representative.

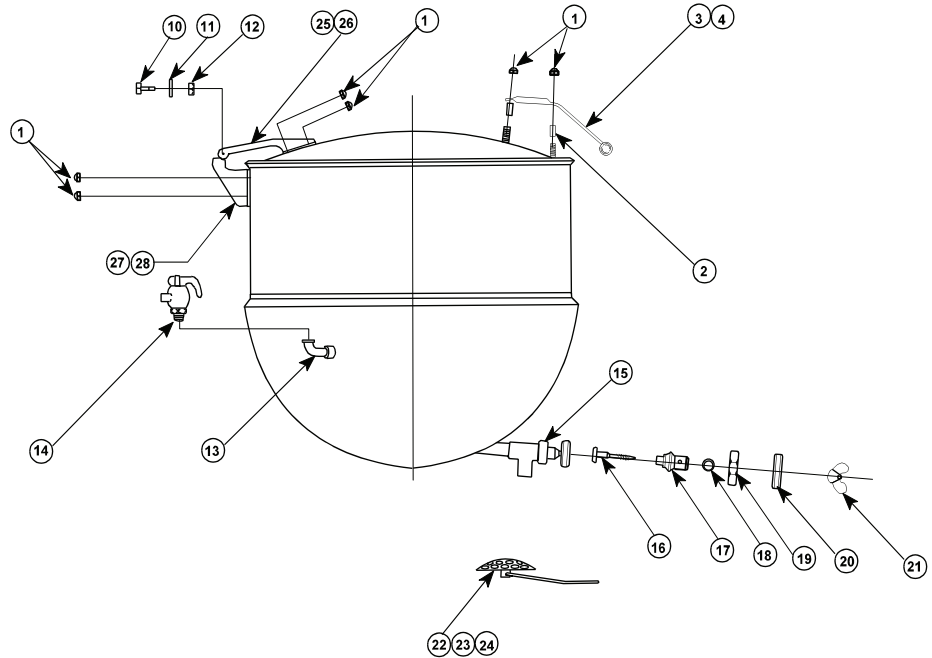
USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY THE MANUFACTURER AND/OR AUTHORIZED DISTRIBUTOR CAN CAUSE INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.

SYMPTOM	WHO	WHAT TO CHECK (* indicates work that should only be performed by a qualified service representative)
Kettle will not heat.	User	a. That the steam inlet valve is open. b. That the steam supply line is turned on. c. That the condensate return valve is open. d. That the boiler is operating properly. Steam should be supplied at a pressure greater than five PSI.
	Authorized Service Rep Only	e. Steam supply line for blockage.* f. Condensate return line for blockage.* g. Steam trap operation.*
Safety valve leaks a small amount of steam.	User	a. For contamination that prevents seating the valve. With substantial pressure in the jacket, lift the valve lever briefly all the way up, to blow the valve clean then let it snap back down to seat the valve.
	Authorized Service Rep Only	b. Safety valve for defects. Defective valve MUST be replaced with a valve rated at the same pressures.*
Safety valve leaks a large amount of steam.	Authorized Service Rep Only	a. Steam supply pressure.* b. Safety valve for defects. Defective valve MUST be replaced with a valve rated at the same pressures.*
Pipe fitting leaks.	User	a. Is the fitting tight?
	Authorized Service Rep Only	b. If tightening the packing gland does not stop the leak, replace the packing.*

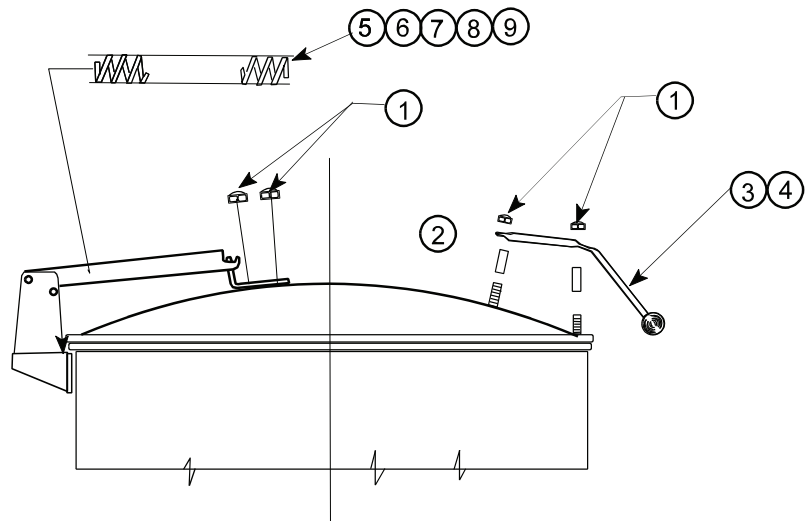
Parts List

Key	Description	Part #
1	¼"-20 N.C. CAP NUT	005471
2	SPACER	012733
3	HANDLE (COVERS W/ACTUATOR)	047712
3	COVER ACTUATOR	120521
3	COVER HANDLE	120915
3	U-HANDLE	010245
4	KNOB (FRICTION)	010245
5	SPRING (28" & 30" COVERS)	012303
6	SPRING (32" & 36" COVERS)	012413
7	SPRING (38" & 42" COVERS)	012533
8	SPRING (44" & 48" COVERS)	012565
9	SPRING (50" COVERS)	012566
10	½"-20 N.F. X 1" LG HEX HD CAPSCR.	002212
11	½" BRASS WASHER	002213
12	½"-20 N.F. JAM NUT	010668
13	¾" I.P.S. STREET ELBOW	011004
14	#25-¾" SAFETY VALVE	011004
15	2" DRAW-OFF VALVE COMPLETE	009046
15	2" DRAW-OFF TUBE	038418
15	3" DRAW-OFF VALVE COMPLETE	012262
16	STEM FOR 2" VALVE	009048
16	STEM FOR 3" VALVE	001908
17	BONNET FOR 2" VALVE	009047
17	BONNET FOR 3" VALVE	003925
18	O-RING FOR 2" VALVES	009034
19	HEX NUT 2" VALVE	009354
19	HEX NUT 3" VALVE	003927
20	HANDLE FOR 2" VALVE	170061
20	HANDLE FOR 3" VALVE	012209
21	WING NUT FOR 1½" & 2" VALVES	009028
22	REMOVABLE STRAINER 9" DIA ¼" HOLES	009007
23	REMOVABLE STRAINER 9" DIA 1/8" HOLES	009040
24	REMOVABLE STRAINER 9" DIA NO HOLES	009057
24	STRAINER, ¼" PER.	009986
24	STRAINER, VERTICAL	009987
25	R.H. COVER HINGE	002292
26	L.H. COVER HINGE	002293
27	R.H. HINGE HALF	012877
28	L.H. HINGE HALF	012878

To order parts, contact your authorized Service Agency. Supply the model designation, part description, part number, quantity, and where applicable, voltage and phase.



Models KPS & KLS, 10-40 Gallon Inclusive



Models KPS & KLS, 60+ Gallon Inclusive

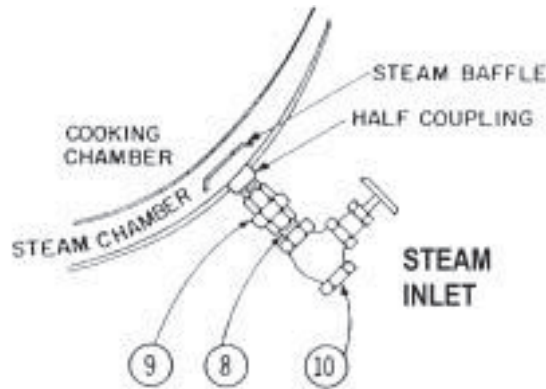
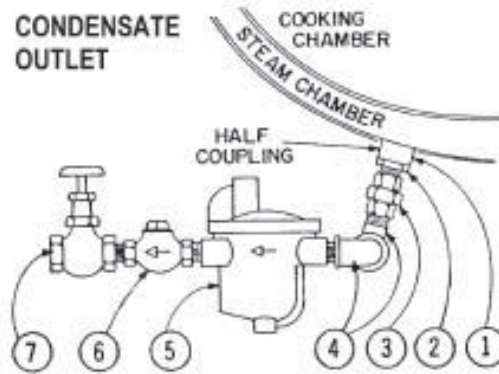
Piping Diagram*

Bucket Type Steam Trap Assembly

*All of the fittings illustrated are required for proper and safer installation and operation, and are NOT PROVIDED as standard with the unit. Steam trap assemblies can be purchased in two versions.

1. COMPLETELY PIPED — Complete, preassembled, with nipples and fittings, as shown in the diagram.
2. LOOSE — Unassembled, without nipples and fittings, but includes steam trap, check valve, globe valve and gate valve.

NOTE - All steam trap assemblies are shipped in a separate container and are not mounted on the kettle to prevent damage during shipment. A steam pressure reducing valve (PRV) is available at extra cost for installation when steam pressure exceeds the kettle's maximum working pressure. It is to be mounted on the steam inlet side, just before the steam valve (globe valve), as close to the kettle as possible.



Item No.	Description
1	Bushing
2	Close Nipple
3	Female Union
4	Street Elbow
5	Bucket Steam Trap
6	Swing Check Valve
7	Gate Valve
8	Globe Valve
9	Close Nipple
10	Female Union

INLET SIZE	OUTLET SIZE	USED ON	PART NUMBER		
			STANDARD FINISH	ROUGH CHROME PLATE	POLISHED CHROME PLATE
1/2" I.P.S.	1/2" I.P.S.	20DS-KLS 20DS-KPS	025373	044884	062999
3/4" I.P.S.	1/2" I.P.S.	40/60DS-KLS 40/60DS-KPS	025374	040618	040624
1" I.P.S.	3/4" I.P.S.	80/100DS-KLS 80/100DS-KPS	025923	065788	024149

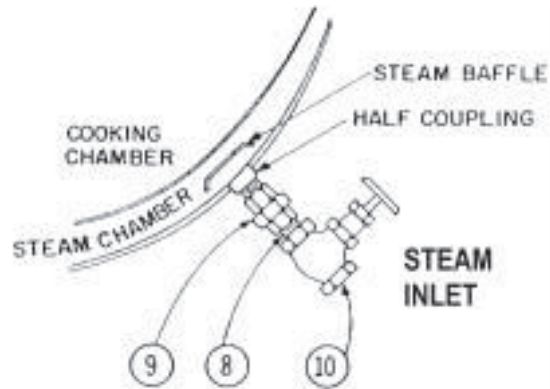
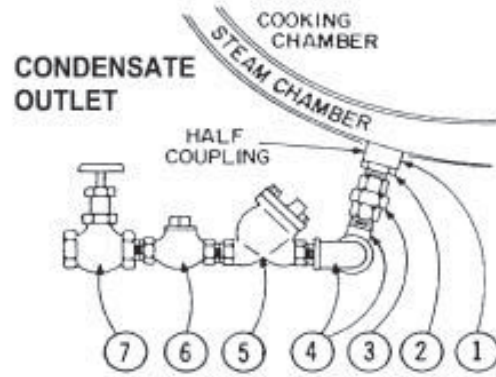
Piping Diagram*

Thermostatic Type Steam Trap Assembly

*All of the fittings illustrated are required for proper and safer installation and operation, and are NOT PROVIDED as standard with the unit. Steam trap assemblies can be purchased in two versions.

1. COMPLETELY PIPED — Complete, preassembled, with nipples and fittings, as shown in the diagram.
2. LOOSE — Unassembled, without nipples and fittings, but includes steam trap, check valve, globe valve and gate valve.

NOTE - All steam trap assemblies are shipped in a separate container and are not mounted on the kettle to prevent damage during shipment. A steam pressure reducing valve (PRV) is available at extra cost for installation when steam pressure exceeds the kettle's maximum working pressure. It is to be mounted on the steam inlet side, just before the steam valve (globe valve), as close to the kettle as possible.



Item No.	Description
1	Bushing
2	Close Nipple
3	Female Union
4	Street Elbow
5	Thermostatic Steam Trap
6	Swing Check Valve
7	Gate Valve
8	Close Nipple
9	Female Union
10	Globe Valve

INLET SIZE	OUTLET SIZE	USED ON	PART NUMBER		
			STANDARD FINISH	ROUGH CHROME PLATE	POLISHED CHROME PLATE
1/2" I.P.S.	1/2" I.P.S.	20DS-KLS 20DS-KPS	045171	059473	090530
3/4" I.P.S.	1/2" I.P.S.	40/60DS-KLS 40/60DS-KPS	041065	050948	040685
1" I.P.S.	3/4" I.P.S.	80/100DS-KLS 80/100DS-KPS	045171	048763	040686



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44 Lakeside Avenue, Burlington, Vermont 05401 USA
Telephone: 866-518-3977