



southbend

A MIDDLEBY COMPANY

OWNER'S MANUAL

INSTALLATION

USER'S GUIDE

DIRECT STEAM TILTING KETTLE

MODELS: KDLT, KDPT

These instructions should be read thoroughly before attempting installation. Set up, installation and Performance Check should be performed by a qualified service technician. The Manufacturer, Southbend (1100 Old Honeycutt Rd., Fuquay-Varina, North Carolina 27526), informs you that unless the installation instructions for the above described Southbend product are followed and performed by a qualified service technician, (a person experienced in and knowledgeable concerning the installation of commercial gas and/or electrical cooking equipment) then the terms and conditions of the Manufacturer's Limited Warranty will be rendered void and no warranty of any kind shall apply.

If the equipment has been changed, altered, modified or repaired by other than a qualified service technician during or after the 12-month limited warranty period, then the manufacturer shall not be liable for any incidental or consequential damages to any person or to any property which may result from the use of the equipment thereafter. Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion thereto may not apply to you.

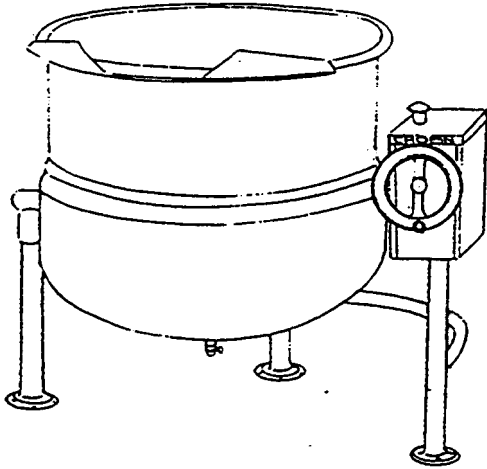
In the event you have any question concerning the installation, use, care, or service of the product, write Customer Service Department, Southbend Corporation, 1100 Old Honeycutt Rd., Fuquay-Varina, North Carolina 27526.



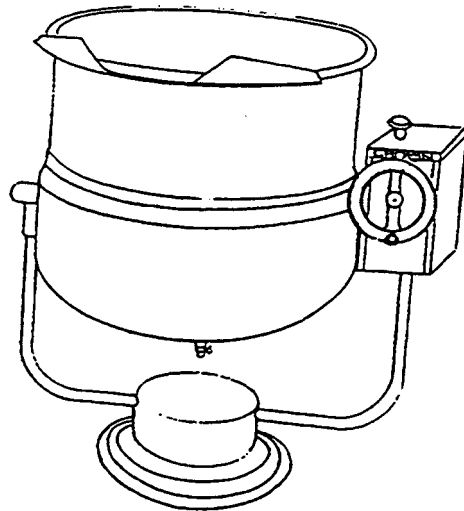
INSTALLATION AND OPERATION MANUAL

DIRECT STEAM TILTING KETTLES

20. 30. 40. 60, 80 GALLON



DLT



DPT



southbend

A MIDDLEBY COMPANY

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INSTALLATION AND OPERATION

It is recommended that this manual be read thoroughly and that all instructions be followed carefully. This manual should be retained for future reference.

ADEQUATE CLEARANCES MUST BE MAINTAINED FOR SAFE AND PROPER OPERATION

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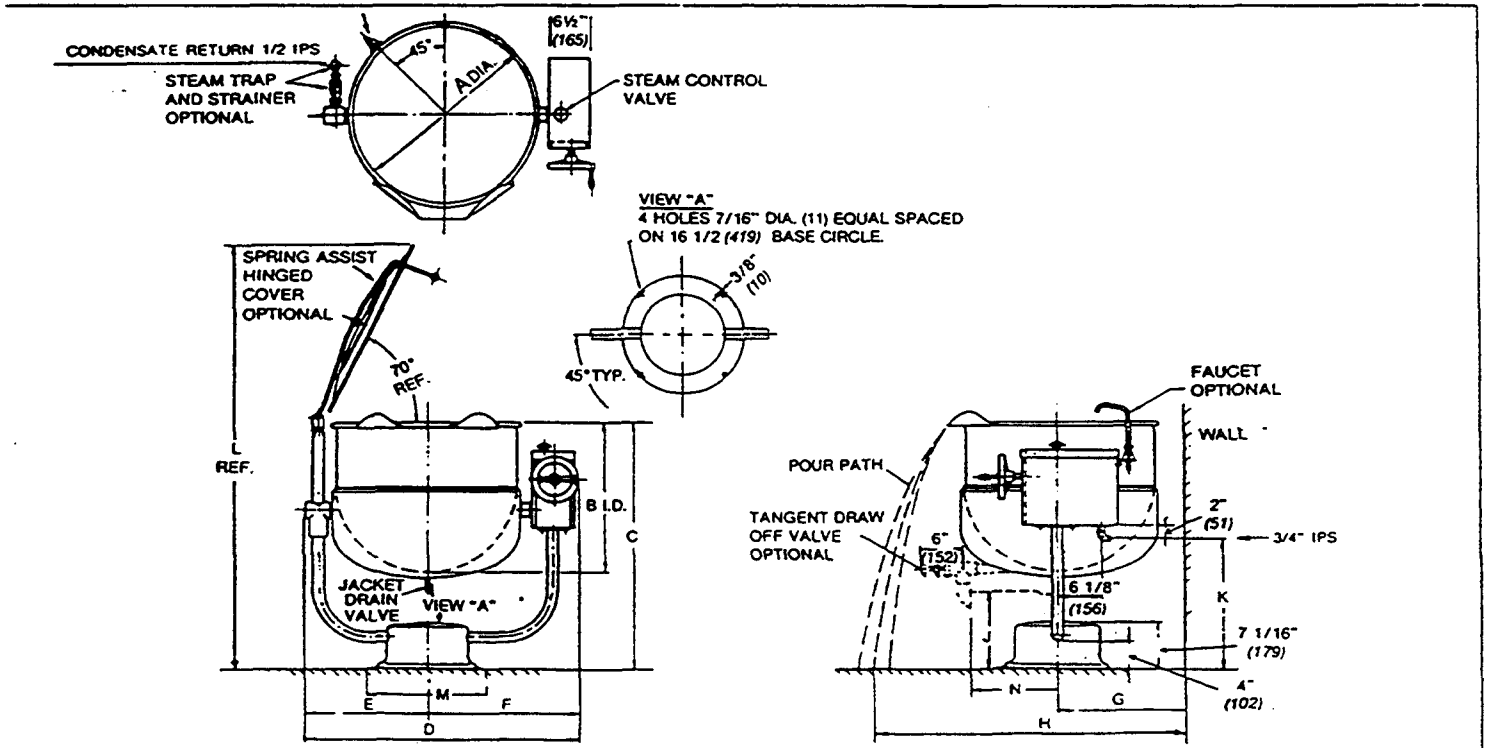
INSTALLATION & SERVICE CONNECTIONS

SERVICE CONNECTIONS

S Steam supply: 3/4" IPS (19 mm). 35 PSI (2.4 kg/cm²)

CR Condensate return: 1/2" IPS (13 mm)

Model	Capacity		A	B	C	D	E	F	G	H	J	K	L	M	N
DPT-20	20 U.S. gal.	inches	21	18	37	33-3/4	15	20	13-1/2	41	15-1/4	20-1/2	59-1/2	17-1/4	11-1/4
	76 liter	mm	533	457	940	857	381	508	343	1041	387	527	1511	438	286
DPT-30	30 U.S. gal.	inches	24	20	37	36-3/4	16-1/4	21-3/4	14	43	13-1/4	20	62-1/2	17-1/4	11-1/4
	114 liter	mm	610	508	940	933	473	553	356	7092	337	508	1587	438	298
DPT-40	40 U.S. gal.	inches	26	22-1/2	37	38-3/4	17-1/4	22-3/4	15-1/2	45	10%	18-1/2	63-1/2	17-1/4	13-1/4
	152 liter	mm	660	572	940	984	438	578	394	7743	273	470	1673	438	337
DPT-60	60 U.S. gal.	inches	29-1/2	26	40-1/2	42-1/4	19	24-1/2	17-1/2	48	10-1/4	19-1/4	71-1/2	17-1/4	16
	227 liter	mm	749	660	1030	1073	483	622	445	1219	260	489	7876	438	406
DPT-80	80 U.S. gal.	inches	33	28	42-1/2	45-5/8	20-5/8	26	19	52	9-3/4	20-1/2	76	19-1/4	16-3/4
	303 liter	mm	838	711	1080	1162	524	660	1483	1067	248	527	1930	489	425



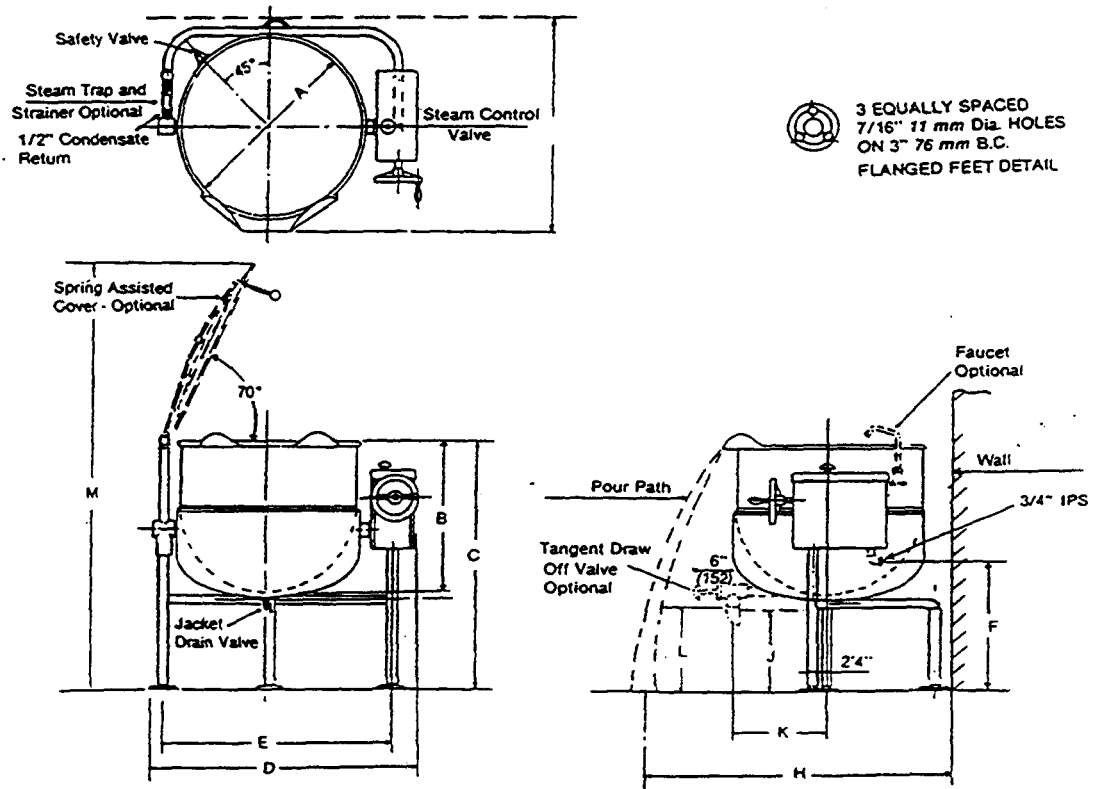
As continued product improvement is a policy of Crown specifications are subject to change without notice.

INSTALLATION & SERVICE CONNECTIONS

SERVICE CONNECTIONS

S Steam supply: 3/4" IPS (19 mm)
 CR Condensate return: 1/2" IPS (13 mm)

Model	Capacity		A	B	C	D	E	F	G	H	J	K	L	M
DLT-20	20 U.S. gal. 76 liter	inches mm	21 535	18 460	37 940	34-3/4 885	28-1/2 724	22 559	28-1/2 724	41 1041	15-1/4 390	12 305	16-7/8 440	59-1/2 1512
DLT-30	30 U.S. gal. 114 liter	inches mm	24 670	20 510	37 940	37-3/4 960	31-1/2 800	20-3/4 527	30 762	42-1/2 1080	13-1/4 335	12-1/2 377	14-7/8 390	62-1/2 1588
DLT-40	40 U.S. gal. 752 liter	inches mm	26 660	22-1/2 570	37 940	39-3/4 1010	33-1/2 850	20-1/4 574	32 873	45 1143	10-3/4 275	13 330	12-3/8 374	64 1626
DLT-60	60 U.S. gal. 227 liter	inches mm	29-1/2 750	26 660	40-1/2 1030	43-1/4 1100	37 940	18-3/4 476	35-3/4 910	48-1/2 1232	10-1/4 260	13-3/4 350	12-3/8 374	71-1/2 1816
DLT-80	80 U.S. gal. 303 liter	inches mm	33 840	28 710	42-1/2 1080	46-3/4 1185	40-1/2 1030	20 508	40 1076	52-1/2 1334	9-3/4 250	14-1/2 368	12-3/8 374	76 1930



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INSTALLATION INSTRUCTIONS

DIRECT STEAM CONNECTED JACKETED KETTLES

- a) Select a location to provide drainage for kettle pour path when tilted and for draw-off valve if so equipped.
- b) Mark hole locations through flanged adjustable feet on DLT models and through pedestal base on DPT models. Remove kettle.
- c) On hole locations marked, drill holes and insert expansion shields to accommodate 5/16" size lag bolts.
- d) Reposition kettle. On DLT models level kettle by making necessary adjustment on flanged foot.
- e) Bolt down kettle and seal with Silastic or other equivalent sealing compound. Sealant must be applied not only to bolt heads but also around flanges or pedestal base making contact with floor surface to fulfil NSF requirements.
- f) Connect steam line (3/4" pipe size) to the kettle, making sure there is a steam control valve strainer fairly convenient to the kettle.
- g) Connect kettle condensate return line to a drain or to a boiler return line. Each kettle return line must have a suitable steam trap. Boiler return lines must have a check valve.
- h) Safety relief valve on kettle must not be plugged as it is set to relieve excess pressure in the kettle.
- i) If incoming steam pressure is greater than kettle maximum operation pressure then a pressure reducing valve must be installed in the line.
- j) If large amounts of water accumulate in the steam line it will be necessary to install one or more ball float traps in the line to eliminate the water.
- k) A steam line pressure gauge is also recommended to determine the actual amount of steam coming to the kettle.
- l) Check for proper operation.

INTRODUCTION

DIRECT STEAM CONNECTED JACKETED KETTLES

DESCRIPTION

All Crown direct connected steam jacketed kettles pertaining to this manual are direct steam operated pressure vessels of a double-wall stainless steel construction forming a steam chamber (jacket) enveloping the lower two thirds of the kettle bowl surface. All kettles are tilting, floor mounted in fixed positions either on legs with adjustable flanged feet (DLT Models) or pedestals (DPT Models). All kettles are equipped with a drain cock, safety relief valve and a steam control valve. Options on kettles are hinged spring assisted stainless steel lid covering the kettle bowl opening and a sanitary stainless steel tangent draw-off valve as an alternate method for the removal of the food product from the kettle bowl.

CAPACITIES

All models are suffixed with either -20, -30, -40, -60, -80 or -100 to indicate the capacity of that kettle in US gallons. Thus a DLT-40 is a two thirds jacketed direct steam kettle mounted on legs with a capacity of 40 gallons (US). If the letter F is added to the suffix, this then indicates that the kettle is full jacketed direct steam kettle mounted on a pedestal with a capacity of 30 gallons (US).

FUNCTIONING MODE

Crown direct connected steam jacketed kettles consist of a stainless steel bowl and a stainless steel jacket which envelopes two thirds of the lower surface of the bowl thus forming a sealed pressure vessel (chamber) into which steam is introduced by means of a manual control valve.

The kettle bowl is the container for the food product which ideally should be of a liquid or semi-liquid consistency to achieve complete contact with the bowl surface and thus fully absorb the heat transmitted through that surface.

The temperatures required for the cooking process to function adequately must be greater than the boiling point of the liquid food product, viz. water. Further, the greater the steam pressure used, the higher the temperature and consequently the quicker the cooking process. For example, steam pressurized at 30 p.s.i. attains a temperature of 274 degrees fahrenheit (135 degrees fahrenheit).

OPERATING PROCEDURES

DIRECT STEAM CONNECTED JACKETED KETTLES

OPERATING PROCEDURE

- a) If kettle has draw-off valve, close it.
- b) Fill kettle with product to desired level.
- c) Slow turn the steam control valve ON to full open position (counter clockwise).
- d) The water or food should boil 3-4 minutes per gallon. If it does not then incoming pressure should be checked to determine that it is adequate to operate the kettle efficiently.
- e) Regulate steam control valve depending on type of food being prepared.
- f) When food is cooked, turn off steam, remove food and clean kettle immediately to prevent residue from drying on kettle bowl surface.

CLEANING PROCEDURES

DIRECT STEAM CONNECTED JACKETED KETTLES

CLEANING PROCEDURE

Your kettle should be cleaned immediately after each use.

- a) Ensure that steam supply is OFF.
- b) Pre-rinse inside of kettle thoroughly and drain to remove any food particles.
- c) Using a nylon brush, clean kettle with a mild detergent and warm water rinse. Never use steel wool or scouring powder as it will scratch stainless steel.
- d) Tilt kettle fully or open the tangent draw-off valve if one is provided to allow soap and water solution to drain. Rinse with clean water.
- e) On Kettle equipped with a draw-off valve, by hand, turn the large hex nut counter-clockwise until it is completely disengaged from thread. Grasp knob to valve and slowly pull out valve stem and disc. Do not allow disc to come in contact with hard surfaces since damage to disc may occur and result in valve leakage. Wash the valve stem, disc and handle. Insert nylon brush with detergent into interior of valve body and tangent draw-off tube and brush vigorously. Replace valve stem assembly and engage hex nut fully by hand. Flush kettle with clean warm water. Leave valve open when kettle is not in use.

WARNING

It is **NOT RECOMMENDED** to use cleaning agents that are corrosive.

Use of cleaning agents that contain chloride, acids or salts are corrosive and may cause pitting and corrosion when used over a period of time; this will reduce the life of the appliance.

Should pitting or corrosion occur this is not covered by warranty.

Follow the recommended cleaning instructions. Use a mild detergent, warm water and rinse thoroughly.

TROUBLESHOOTING MAINTENANCE

DIRECT STEAM CONNECTED JACKETED KETTLES

PREVENTIVE MAINTENANCE

No preventive maintenance is required other than adhering to the Cleaning Procedure instructions.

DRAW-OFF VALVE LEAKS

If leak occurs through the valve stem, replace the "O" ring. If the leak can be attributed to faulty sealing occurring between the stem disc and valve seat, then quite often this problem can be corrected by cleaning off the dried on food residue with an extremely fine emery cloth or rubber vulcanized stem piece has been damaged and must be replaced.

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 pressure on incoming steam line at kettle is within 5 p.s.i. of rated kettle pressure. Note the pressures approaching the rated kettle pressure are liable to set off the safety relief valve. If required pressure is available to kettle, then possibly volume of steam is not sufficient. Minimum 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 core of the steam supply pipe may have debris or scalants that impede steam flow and will require disassembly and inspection.