

# Technical Training Handbook and Reference Guide



**Technical Training Handbook  
and  
Reference Guide**

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**Section 3 :  
Direct Steam Kettles**

# Direct Steam Kettle

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## DIRECT STEAM KETTLES

Project \_\_\_\_\_  
 Item \_\_\_\_\_  
 Quantity \_\_\_\_\_  
 FCSI Section \_\_\_\_\_  
 Approval \_\_\_\_\_  
 Date \_\_\_\_\_

### TRI-LEG/PEDESTAL, DIRECT STEAM

STATIONARY, 2/3 STEAM JACKETED

25, 40, 60, 80, 100, 125, 150, 200 OR 250 GALLONS

(100, 150, 225, 300, 375, 475, 575, 760 OR 950 LITERS)

#### Cleveland Standard Features

- Spring-assisted Cover: domed, hinged, one-piece rotatable (not available on KDL-250)
- Type 304 Stainless Steel construction, #4 finish on kettle and supports
- 2" diameter Tangent Draw-off Valve with Drain Strainer
- 50 psi Steam Jacket Rating on 25 - 100 gal. models, 35 psi Steam Jacket Rating on 125 - 250 gal. models
- 50 psi chrome plated Safety Valve on 25 - 100 gal. models, 35 psi chrome plated Safety Valve on 125 - 250 gal. models
- Condensate Drain Valve with insulated handle
- For Tri-leg Models: Tri-leg supports of 1.63" O.D., Type 304 Stainless Steel tubular construction, with level adjustable Flanged Feet for Floor Bolting
- For Pedestal Models: Pedestal support of Type 304 Stainless Steel with .75" thick floor plate, (level adjustable for sloping floors), comes with Stainless Steel Collar for sealing
- Faucet Mounting Bracket
- Steam Control Inlet Valve
- Typical approvals include NSF and ASME

#### Options & Accessories

- Type 316 Stainless Steel Kettle Liner for high acid food products (316-G)
- Lift-off Covers (CL)
- Chrome plated Steam Control Kit includes: Steam Traps, Condensate Strainers, Check Valves, nipples and fittings, factory assembled and mounted on kettle (SCK1)
- 100 psi Pressure Option (PO) (for 125 gallons and larger)
- Cooking Baskets and Tri-Basket Supports (BS and TBS)
- Measuring Strips (MS)
- Gallon Markings (KM)
- Kettle Accessory Kit (KAK) includes:
  - Clean-up Brush (CB)
  - 36" Kettle Whip (KW)
  - Draw-off Brush (DB)
  - 36" Kettle Paddle (KP)
  - 36" Kettle Brush (KB)
  - 24 oz. Ladle (KL)
- Swing Funnels for drain (SF)

- MODELS:  KDL-25  KDL-80  KDL-150  KDP-40  
 KDL-40  KDL-100  KDL-200  KDP-60  
 KDL-60  KDL-125  KDL-250  KDP-80  
 KDP-100



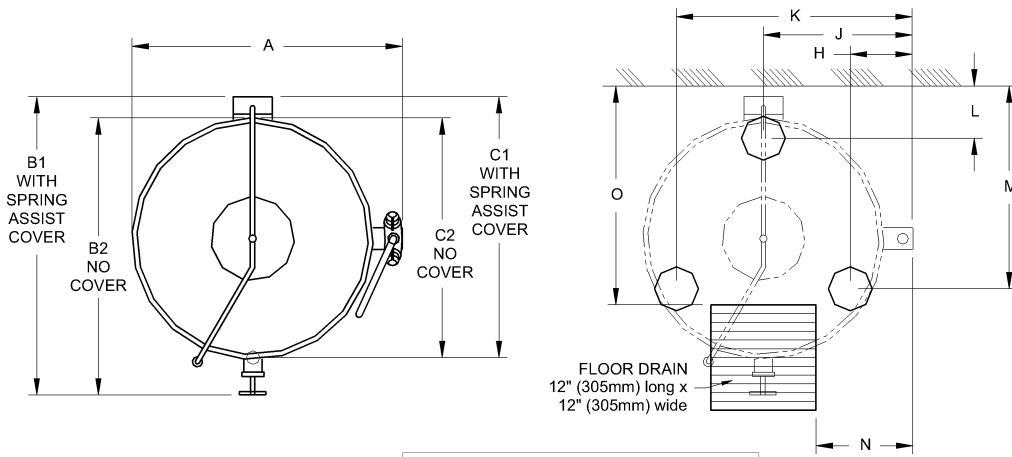
Shown with optional Steam Control Kit

#### Short Form Specifications

Shall be CLEVELAND, Direct Steam Kettle, Tri-leg or Pedestal stationary, Model KD\_\_ - \_\_\_\_ . 2/3 Steam Jacketed, Type 304 Stainless Steel with 50 psi Steam Jacket Rating on 80 - 100 gallon, 35 psi on 125 gallon and larger. Supports to be Stainless Steel. Includes spring-assisted, Domed Cover and 2" Tangent Draw-off Valve; heavy reinforced Rolled Rim. To operate, connect directly to a steam source supplying from 5 to 45 psi steam.

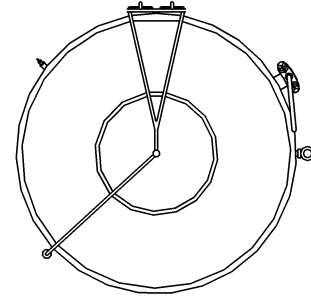
- Pressure Reducing Valve for regulating incoming steam pressure of over 45 psi (PRV-K)
- Hot and cold or cold only Kettle Filler with 60" Hose (DKF-K or SKF-K)
- Automatic Water Meter (GMF or LMF)
- Drain Strainers (DS-)
- Water Meter Stand (SWM)
- 3" diameter Tangent Draw-Off Valve w/Strainer (TD3)
- 3" diameter Butterfly Valve (BV3)
- Pre-Rinse Spray Head and Hose (PRSK)
- Correctional Packages
- Insulated Outer Jacket (IOJ)

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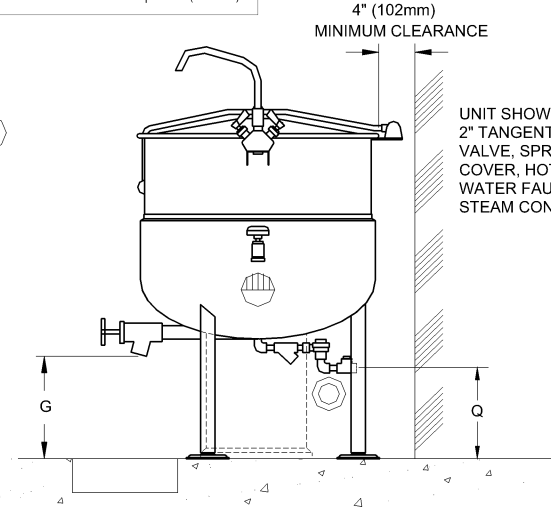
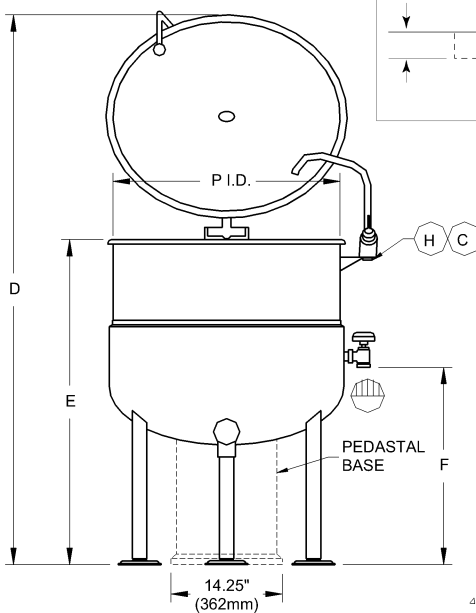
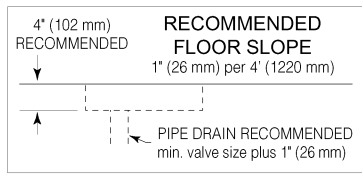


**CAPACITIES:** (in 8 oz. servings, other sizes may be calculated.)

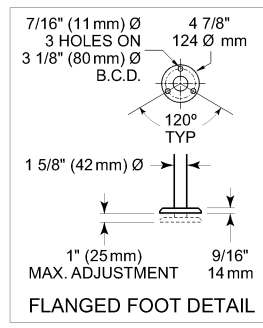
25 Gallon / 100 liters	400 servings
40 Gallon / 150 liters	640 servings
60 Gallon / 225 liters	960 servings
80 Gallon / 300 liters	1280 servings
100 Gallon / 375 liters	1600 servings
125 Gallon / 475 liters	2000 servings
150 Gallon / 575 liters	2400 servings
200 Gallon / 760 liters	3200 servings
250 Gallon / 950 liters	4000 servings



SPRING ASSIST COVER FOR 80 GALLON KETTLES AND UP



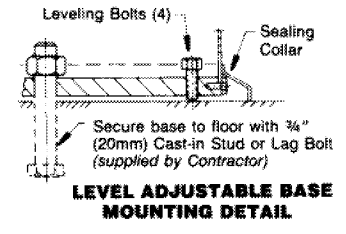
UNIT SHOWN WITH 2" TANGENT DRAW-OFF VALVE, SPRING ASSIST COVER, HOT AND COLD WATER FAUCET AND STEAM CONTROL KIT.



**DIMENSIONS**

GALS./ LITERS		A	B1	B2	C1	C2	D	E	F	G	H	J	K	L	M	N	O	P.I.D.	Q
25	IN	26 1/2	32	29 3/16	26 7/8	24 1/8	59	37	22 1/8	14 1/2	7	14 3/4	22 1/2	6 3/8	19 13/16	8 3/4	22 3/16	21	12 1/2
100	mm	674	813	742	683	613	1499	940	639	369	178	375	572	162	504	223	564	534	318
40	IN	31 1/8	35 7/8	33 1/16	31 3/16	28 7/16	62 1/8	36 7/8	22 1/2	12 1/2	7 11/32	17 1/4	27 5/32	6 13/32	23 9/16	11 1/4	26 7/16	26	10 1/2
150	mm	791	912	408	793	723	1578	937	572	318	187	362	690	163	599	286	672	661	267
60	IN	34 5/8	38 7/8	36 1/8	34 1/8	31 3/8	69 3/4	39	21 7/8	11 1/8	7 5/8	19	30 1/8	6 3/8	26 1/4	13	29 3/8	29 1/2	9 1/8
225	mm	879	988	918	867	797	1772	991	556	283	194	483	766	162	667	331	747	750	232
80	IN	38 1/8	41 1/4	38 1/2	36 1/2	33 3/4	74 7/8	40 7/8	23	11	7 3/4	20 3/4	33 3/4	6 3/8	28 3/4	14 3/4	31 3/4	33	9
300	mm	969	1048	978	928	858	1902	1039	585	280	197	528	858	162	731	375	807	839	229
100	IN	40 5/8	43 1/8	40 3/8	38 3/8	35 5/8	79 3/8	43	23 7/8	11 1/8	8	22	36	6 3/8	30 3/4	16	33 5/8	35 1/2	9 1/8
375	mm	1032	1096	1023	975	905	2017	1093	607	283	204	559	915	162	782	407	855	902	232
125	IN	45 1/8	46 5/8	43 1/2	41 7/8	38 3/4	83 1/4	43	24 7/8	10 7/8	8 1/4	24 1/4	40 1/4	6 3/8	34	18 1/4	36 3/4	40	8 7/8
475	mm	1147	1185	1105	1064	985	2115	1092	632	277	210	616	1023	162	864	464	934	1016	225
150	IN	45 1/8	46 5/8	43 1/2	41 7/8	38 3/4	88 3/8	47 7/8	24 7/8	10 7/8	8 1/4	24 1/4	40 1/4	6 3/8	34	18 1/4	36 3/4	40	8 7/8
575	mm	1147	1185	1105	1064	985	2245	1217	632	277	210	616	1023	162	864	464	934	1016	225
200	IN	50 1/8	46 5/8	43 3/8	41 7/8	38 3/4	94	49 1/4	29 3/8	10 5/8	7 7/8	26 3/4	45 5/8	7 1/4	34 3/8	20 3/4	36 3/4	45	8 5/8
760	mm	1274	1185	1102	1064	985	2388	1251	747	270	201	680	1159	185	874	528	934	1143	219
250	IN	53 1/8	48 7/8	45 5/8	44 1/8	39 1/4	104 1/4	54	32 3/4	10 1/4	8 1/8	28 1/4	48 3/8	7 1/4	36 7/8	22 1/4	37 1/4	48	8 1/4
950	mm	1350	1242	1159	1121	997	2648	1372	82	261	207	718	1229	185	937	566	947	1220	210

DIRECT STEAM	DRAINAGE	WATER	CLEARANCE
Steam Supply: • Furnish 3/4" IPS minimum line. • Operating Pressure 5 to 45 psi.	1/2" NPT Condensate Return with Strainer and Trap.	1/2" NPT Hot Water Inlet 1/2" NPT Cold Water Inlet When ordered with optional faucet.	RIGHT = 0" LEFT = 0" REAR = 400"



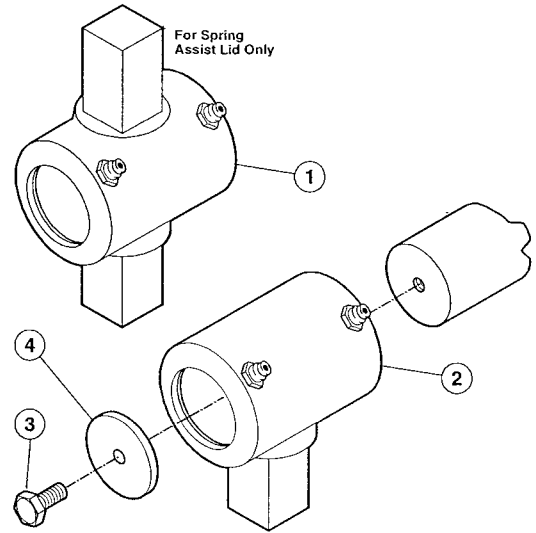
**NOTES:**

Cleveland Range reserves right of design improvement or modification, as warranted. Many regional, state and local codes exist and it is the responsibility of the owner and installer to comply with the codes. Installation of backflow preventers, vacuum breakers and other specific code requirements is the responsibility of the owner and installer. Cleveland Range equipment is built to comply with applicable standards for manufacturers. Included among those approval agencies are U.L., A.G.A., NSF, ASME/N.Bd., CSA, CGA, ETL and others.

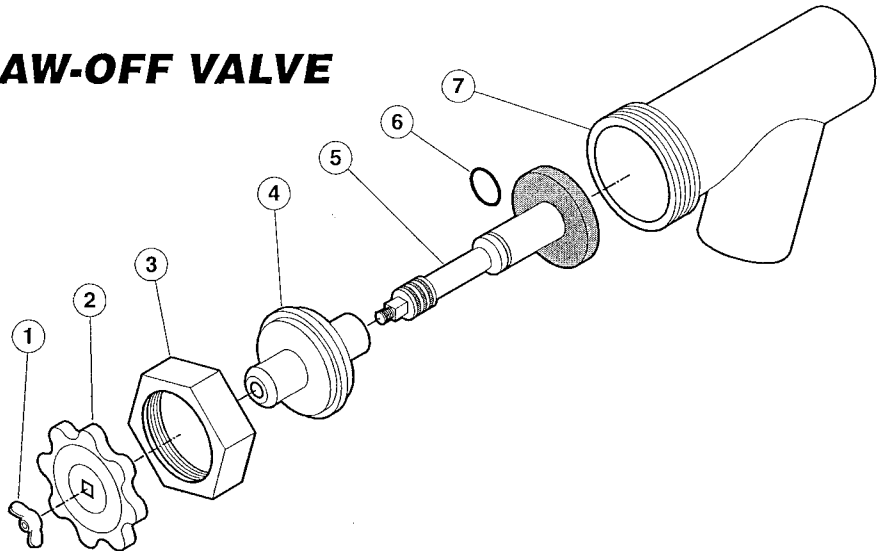
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# TRUNNION ASSEMBLY

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	KE00354	Trunnion Bearing Casting .....	1
	KE00354-D	Trunnion Bearing Casting .....	1
		(without roller bearings, used prior to July 1984)	
	KE51711	Roller Bearing .....	2
<b>Note:</b> Units without roller bearings cannot be replaced by units with roller bearings.			
2.	KE00351	Trunnion Bearing Casting .....	1
	KE00351-D	Trunnion Bearing Casting .....	1
		(without roller bearings, used prior to July 1984)	
3.	KE00349	Bolt, 5/16-18 x 1/2" .....	1
4.	KE50666	Spherical Washer .....	1

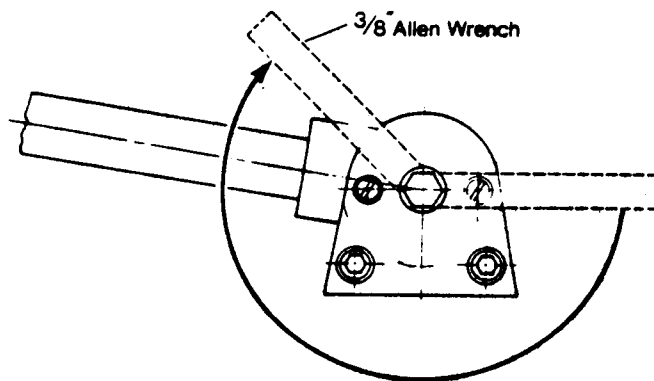


# 2" TANGENT DRAW-OFF VALVE



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1. - 7.	KE50972-B	Draw-Off Assembly .....	1
1.	FA95049	Wing Nut .....	1
2.	KE527551	Knob .....	1
3.	KE52754	Hex Nut .....	1
4.	KE52753	Retainer .....	1
5.	KE52752	Piston .....	1
6.	FA00111	"O" Ring .....	1
7.	KE52751	Valve Body .....	2

## ALL KETTLES AND SKILLETS 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.

## TABLE TYPE, DIRECT STEAM

TILTING, 2/3 STEAM JACKETED  
 3 or 6 GALLONS (11 or 23 LITERS)

MODELS:  KDT-3-T  
 KDT-6-T

### Cleveland Standard Features

- Type 304 Stainless Steel construction, with #4 finish on kettle and supports
- Manual Tilting, balanced design
- Mounting Lugs for Tilt Handle provided on both sides
- High capacity Pouring Lip
- 50 psi Steam Jacket Rating
- 50 psi chrome plated Safety Valve
- Steam Control Valve
- Typical approvals include NSF and ASME

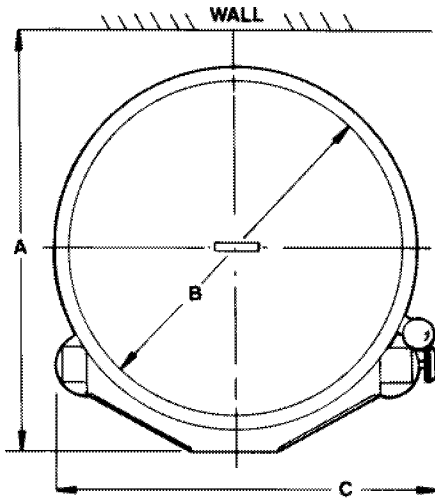
### Options & Accessories

- Type 316 Stainless Steel kettle interior for high acid food products (316)
- Kettle stand or table (ST28)
- Food Strainers (FS)
- Steam Pressure Reducing Valve, where supply pressure exceeds 45 psi (PRV)
- Steam Condensate Trap and Strainer, chrome plated
- Steam supply Moisture Separator/Trap (MS)
- Single or Double Pantry Faucet with Swing Spout (SPK or DPK)
- Steam Control Kit: includes Steam Trap, Condensate Strainer, Check Valve, nipples and fittings (SCK2)
- One piece, Lift-off Cover (CL-)
- Adapter Top, required when mounting to ST28 Stand (AK)

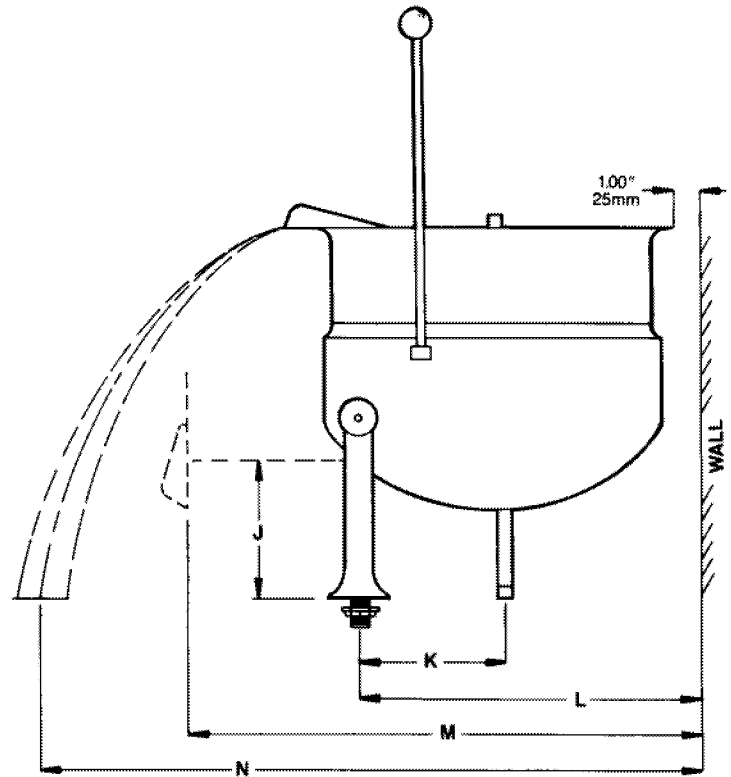
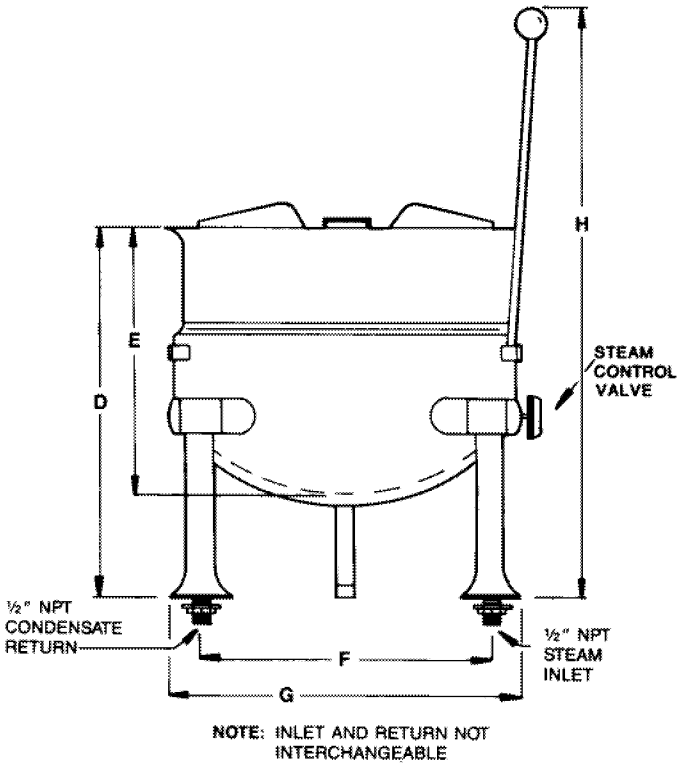


### Short Form Specifications

Shall be CLEVELAND, Direct Steam Kettle, Table mounted, Tilting; Model KDT - \_\_\_\_ - T, \_\_\_\_ gallons, Tilting 2/3 Steam Jacketed. Type 304 Stainless Steel kettle and supports. 50 psi Steam Jacket Rating; Steam Control Valve. Trunnion mounted, self-lubricated Steam Control Valve. (Table not included.)

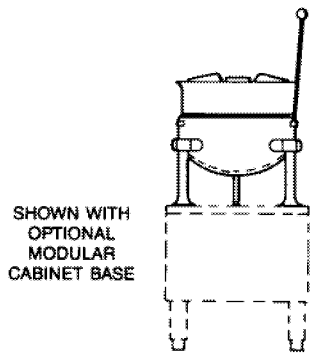


CAPACITIES: (in 4 oz. servings,  
other sizes may be calculated.)  
3 Gallon / 11 liters . . . 48 servings  
6 Gallon / 23 liters . . . 160 servings



GALS.	LITER		A	B	C	D	E	F	G	H	J	K	L	M	N
3	11	IN	14.00	10.00	15.13	12.50	8.25	10.00	12.50	23.00	7.00	4.00	11.00	15.00	21.00
		mm	356	254	384	317	210	254	317	584	178	102	279	381	533
6	23	IN	17.50	13.38	15.13	15.31	11.00	12.00	14.50	24.50	6.75	6.00	14.50	21.19	27.50
		mm	445	400	384	389	279	305	368	622	171	152	368	538	699

DIRECT STEAM	CLEARANCE
Steam Supply: Furnish 1/2" IPS minimum line. Operating pressure 5 to 45 psi with a 50 psi Safety Valve.	RIGHT=4.00" LEFT =4.00" REAR =1.00"

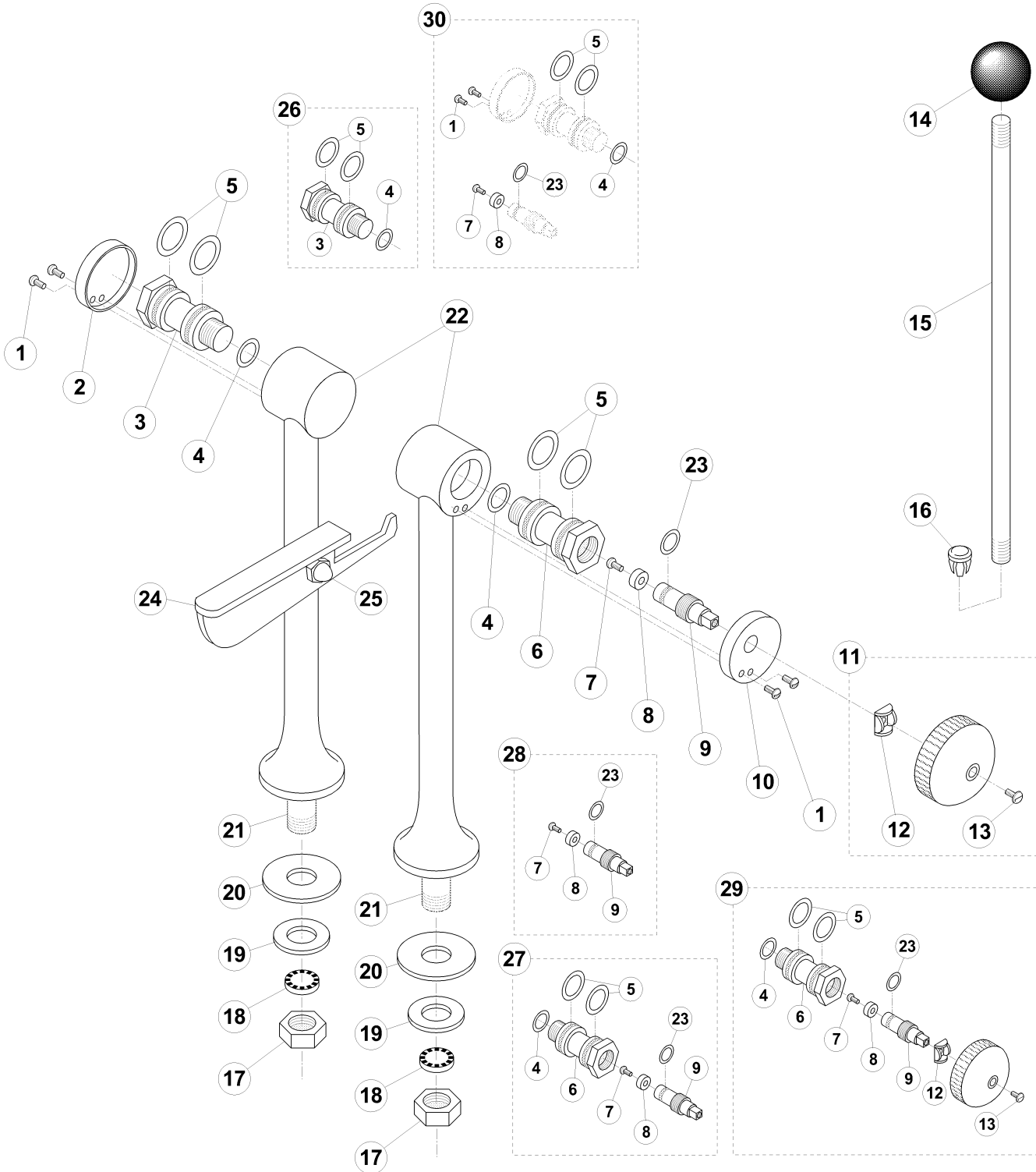


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# SERVICE PARTS

## STEAM CONTROL ASSEMBLY



# STEAM CONTROL ASSEMBLY

ITEM NO.	PART NO.	DESCRIPTION	QTY.
1.	FA11056	Binding Head Screw, 6-32 x 1/2" Ig. ....	4
2.	KE50458	End Cap, condensate return ....	1
3.	KE50455-1	Trunnion, condensate return ....	1
4.	FA05002-35	"O" Ring ....	2
5.	FA05002-37	"O" Ring ....	4
6.	KE50460-1	Trunnion, steam inlet ....	1
7.	FA11089	Binding Head Screw, 8-32 x 1/4" Ig. ....	1
8.	KE51713	Washer, steam valve ....	1
9.	KE50459	Operating Stem ....	1
10.	KE50457	End Cap, steam inlet ....	1
11.	SE00028	Steam Control Knob Assembly (c/w Item No. 12, 13 & Knob) ....	1
12.	KE51888	Retaining Washer ....	1
13.	FA11092	Binding Head Screw, 8-32 x 1/2" Ig. ....	1
14.	KE50151-E	Knob, threaded (after 07/94) ....	1
	KE50151	Knob, non threaded (prior to 06/94) ....	1
15.	KE50886-1	Handle, KDT-1-T ....	1
	KE50886-2	Handle, KDT-3-T ....	1
	KE50886-3	Handle, KDT-6-T & KDT-12-T ....	1
	KE50886-4	Handle, KDT-20-T ....	1
16.	KE50475	Plug Button ....	1
17.	KE52697	Lock Nut, 1/2" NPS ....	2
18.	FA32500	Lockwasher ....	2
19.	FA30502	Washer, satin coat ....	2
20.	KE50467	Washer, Foot ....	2
21.	KE50465	Service Pipe, KDT-1-T & KDT-3-T ....	2
	KE50462	Service Pipe, KDT-6-T. ....	2
	KE50463	Service Pipe, KDT-12-T ....	2
	KE50464	Service Pipe, KDT-20-T ....	2
22.	KE00203	Leg Assembly ....	2
23.	FA05002-12	"O" Ring ....	1
24.	KE01115	Marine Lock Latch, KDT-12-T & KDT20-T only ....	1
25.	KE52632	Crown Nut, KDT-12-T & KDT20-T only ....	1
26.	SE00096	Steam Outlet Assembly ....	1
27.	SE00011	Trunnion Assembly, steam inlet ....	1
28.	SE00029	Operating Stem Assembly, steam inlet ....	1
29.	SE00030	Steam Inlet Control Assembly ....	1
30.	SE00112	"O" Ring Replacement Kit ....	1
	00908	O ring lube	

Requires Knob -  
Item No.  
KE50151-E

