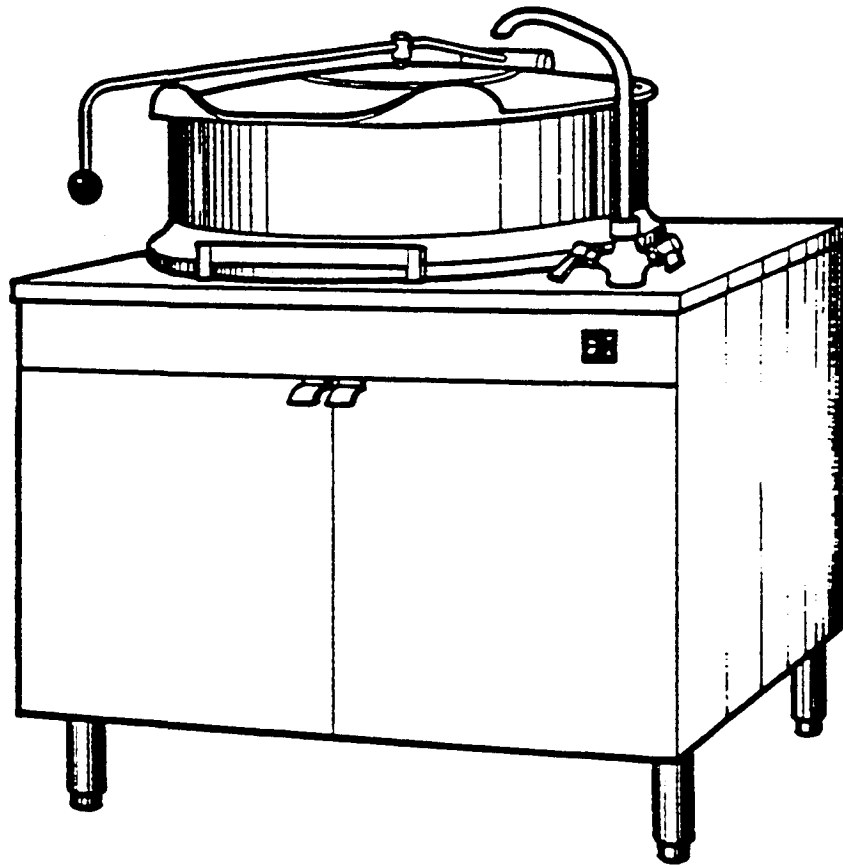


Repair Manual

Modular Direct Steam Kettle

Model :
KDM
KDM-T



Cleveland Range, Inc.

UNITED STATES

1333 East 179th St., Cleveland, Ohio 44110 Phone: (216) 481-4900 •
Telex: 98-0546 • FAX: (216) 481-3782

CANADA

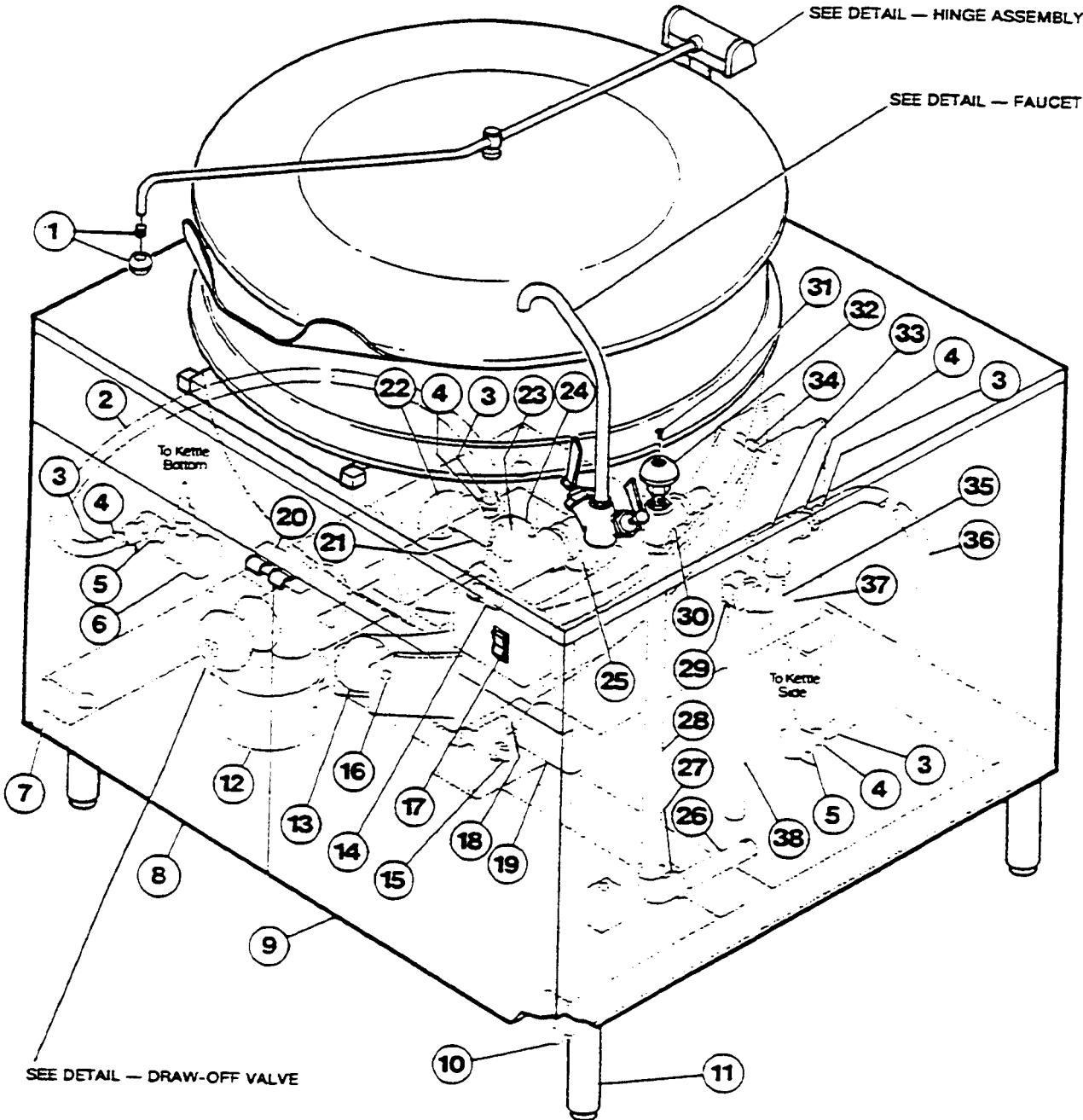
Garland Commercial Ranges
1177 **Kamato Road**
Mississauga, Ontario, Canada L4V1X4
Phone: (416) 624-0260 • **FAX:** (416) 624-0623

MODELS KDM AND KDM-T OPERATING CONTROLS AND INDICATORS

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

Item No.	Description	Function
30-32	Steam Inlet Valve. (Kettle Body Dwg.)	Opens and closes the steam supply to the kettle-
29	Pressure Relief Valve. (Kettle Body Dwg.)	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 (On power tilt units only). (Kettle Body Dwg.)	When activated the kettle will tilt forward to drain the kettle.
1-7	Draw-off Valve. (Draw-off Valve Dwg.)	This valve is used to empty the kettle of either food product or wash water. It is supplied as standard equipment.

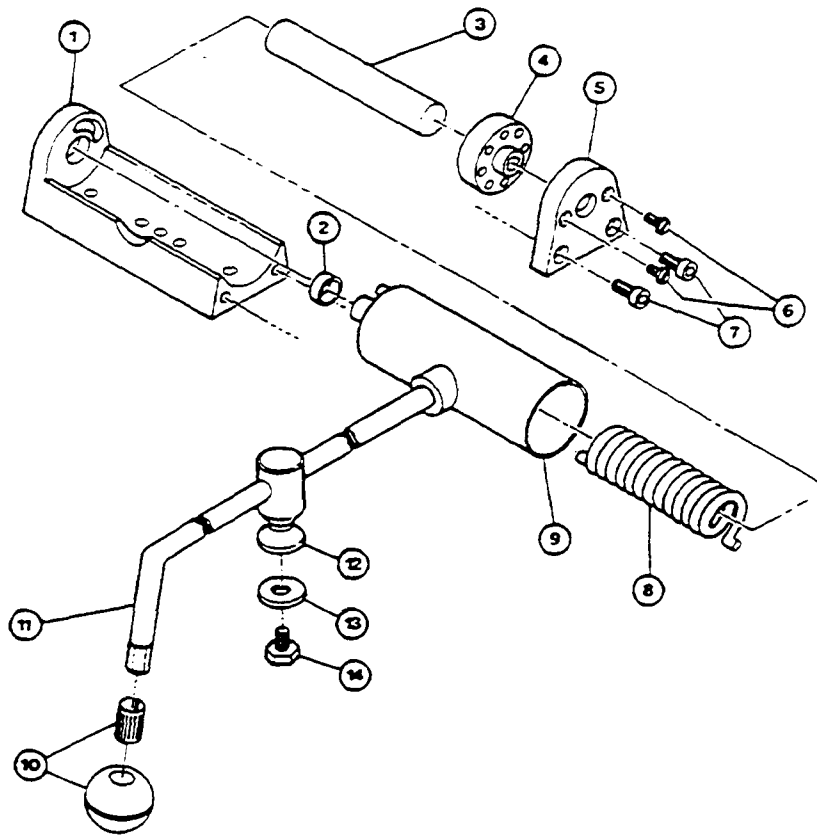
MODELS KDM AND KDM-T MAIN KETTLE BODY



MODELS KDM AND KDM-T MAIN KETTLE BODY

Item No.	Part No.	Description	Qty.
1	KE50151	Knob. Ball Type	1
2	KE51332	Hose. two Braid Hot Water Wash, 43 1/2" long	1
3	KE51391	Hose Clamp	4
4	FI 05209	Hose Fining. 1/2"	4
5	FI 05028	Swivel Elbow. 1/2"	2
6	KE51248	Steam Trap. 1/2"	1
7	KE00652	Left Door Hinge Bracket Assy.	1
8	KE00743	Left Door Assy (KDM-25)	1
	KE00745	Left Door Assy (KDM-40. KDM-60)	1
9	KE00742	Right Door Assy (KDM-25)	1
	KE00744	Right Door Assy (KDM-40. KDM-60)	1
10	KE00651	Right Door Hinge Bracket Assy	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	1
14	KE51386	Capacitor. 30-36 mF (KDM-25. KDM-40)	1
	KE51683	Capacitor. 36-43 mF (KDM-60)	1
15	FA15010	Shoulder Bolt, 1/2" x 3 1/4". 3/8-16	1 1
16	FA15009	Shoulder Bolt. 3/4" x 2 1/2". 5/8-11	1
17	SK50175	Tilt Switch	1
18-19	KE51688	Complete Power Jack	1
19	SE50025	Motor. Power Jack	1
20	KE51366	Magnetic Door Latch	1
21	KE00648	Drain Pipe Manifold	1
22	FI 00044	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 Inlet Pipe, 1/2" x 7 1/2" long	1
27	FI 00040	Elbow. 90°. 1/2"	1
28	KE51371	Steam Inlet Pipe. 1/2" x 18 1/2" long	1
29	KE51082	Safety Valve. 25 psi. 1/2"	1
30-32	SE00014	Steam inlet Valve Assy. 1/2" Brass	1
30	KE51370	Steam inlet Valve. 1/2" Brass (Item No. 31.32 not incl.)	1
31	FA11091	Screw. Valve Knob. 8/32 x 3/8" SS	1
32	KE50442	Knob. Steam Inlet Valve	1
33	F100169	Tee. 1/2"	1
34	FA15008	Shoulder Bolt 5/8" x 3 1/4". 1/2-13	1
35	F100142	Street Elbow. 1/2"	1
36	KE51333	Hose. Two Braid Hot Water Wash 23" long	1
37	KE51364	Jack Mounting Pin	1
38	KE51087	Blow Down Pipe. 1/2" x 17" long	1

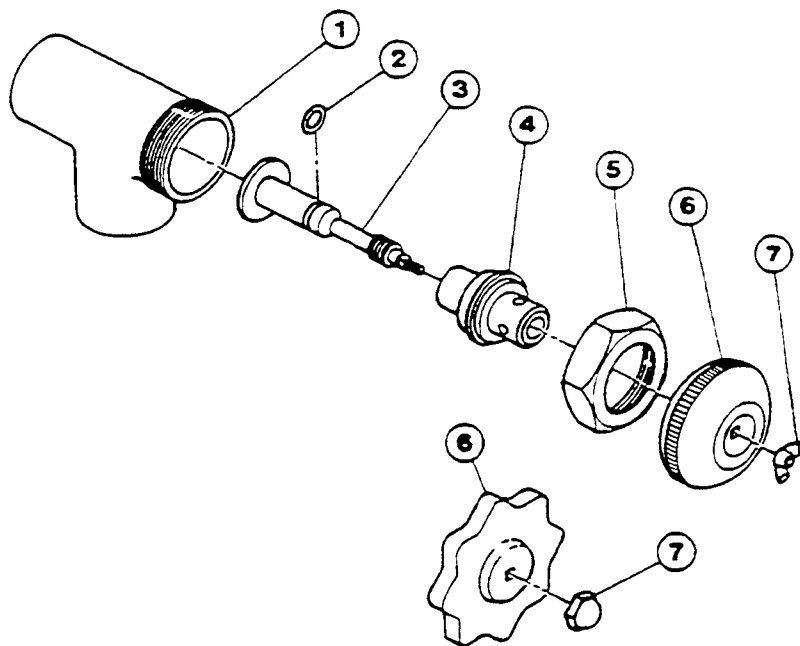
HINGE ASSEMBLY FOR MODULAR DIRECT STEAM KETTLE



Item No.	Part No.	Description	Qty
1-9	KE00598	Hinge Assy. (40 gal. and under)	1
	KE00677	Hinge Assy. (60 gal. and over)	1
1	KE51218	Body Spring Assist Hinge	1
2	KE50824	Hinge Bearing	1
3	KE50823	Pin (Hinge)	1
4	KE50820	Insert Brass Adjust	1
5	KE50819	End Piece	1
6	FA11507	Screws Adjust	2
7	FA11284	Bolts End Block	2
8	KE50122	Spring (40 gal. and under)	1
	KE50121	Spring (60 gal. and over)	1
9	KE50821	Cylinder (40 gal. and under)	1
	KE00653	Cylinder (60 gal. and over)	1
10	KE50151	Knob Ball Type	1
11		Cover Handle (Specify Model)	1
12	KE00095	Lid Holder	1
13	FA30500	Washer Lid Holder	1
14	FA11223	Bolt Lid Holder	1

Use only replacement parts which are factory supplied **as** to preserve the certification of Underwriters Laboratories, American Gas Association, Canadian Standards Association or Canadian Gas Association (as applicable). The use of other than factory supplied replacement parts will void the warranty.

KETTLE DRAW-OFF VALVE



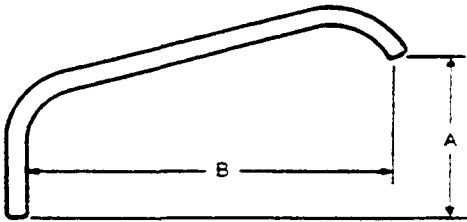
Item No.	Part No.	Description	Qty.
1-7	KE50219	1 1/2" Draw-off Valve Assy.	1
	KE50972	2" Draw-off Valve Assy.	1
	KE50973	3" Draw-off Valve Assy.	1
1	SE50005	Body (1 1/2")	1
	SE50006	Body(2")	1
	SE50007	Body(3")	1
2	FA00111	"O"Ring(1 1/2".2n	1
	FA00210	"O" Ring (3-)	1
3	SE50008	Stem (1 1/2")	1
	SE50009	Stem (2")	1
	SE50010	Stem (3")	1
4	SE50011	Bonnet (1 1/2")	1
	SE50012	Bonnet (2")	1
	SE50013	Bonnet (3")	1
5	SE50014	Hex Nut (1 1/2")	1
	SE50015	Hex Nut (2")	1
	SE50016	Hex Nut (3")	1
6	SE50017	Knob (1 1/2. 2")	1
	SE50018	Knob (3")	1
7	SE50019	Wing(Nut(1 1/2 "2")	1
	SE50063	Hex Nut (3")	1

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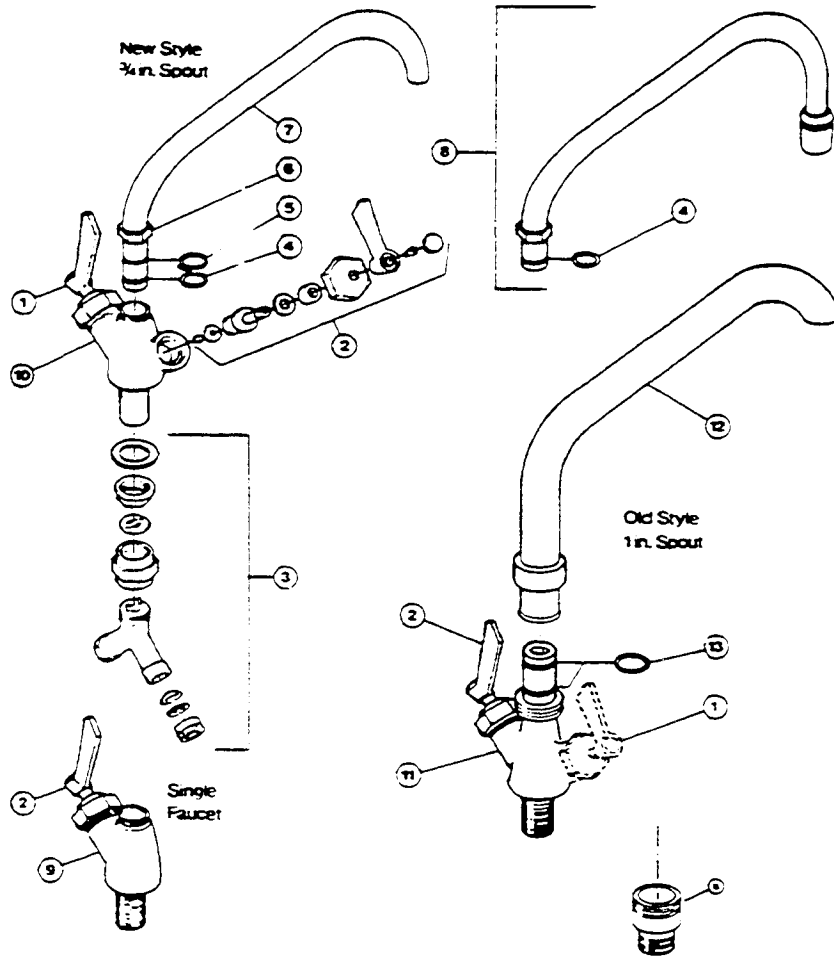
KETTLE AND SKILLET FAUCET

Item No.	Part No.	Description	Qty.
1	SE50020	Hot Water Stem Assy	1
2	SE50021	Cold Water Stem Assy.	1
3	SE50022	Yoke Connection Kit	1
4	FA00016	"O" Ring	1
5	FA95022	Retaining Ring	1
6	SE50064	Spout Nut	1
7	see chart	3/4" spout (please see 3/4" spout chart below)	1
8	N/A	3/4" spout with Aerator (please order Item No 4. 5. 6. 7)	1
9	KE51401	Single Pantry Control Valve (incl. Item No. 2)	1

Item No.	Part No.	Description	Qty
10	KE51403	Double Pantry Control Valve (incl. Item No. 1. 2. 3)	1
11	N/A	Old Style Single Pantry Control Valve (please order Item No 4. 5. 6. 7. 9)	1
	N/A	Old Style Double Pantry Control Valve (please order Item No 4.5.6.7.10)	
12	N/A	1" Spout (please order Item No. 4.5.6.7.14)	1
13	FA00115	"O" Ring	2
14	SE50061	Adapter (to adapt new style spout to old style control valve)	1



A	B	Part No.
4"	8"	KE50833
10"	9"	KE50832
6"	22"	KE50831
12 1/2"	14"	KE50830
10 3/4"	14"	KE50829
5"	14"	KE50828
24"	9"	KE50827
20"	9"	KE50826
12 1/2"	9"	KE50825



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MODULAR DIRECT STEAM KETTLE SERVICING GUIDE

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

- A/ **PROBLEM:** Kettle heats too slowly or does not come to a boil
powered by a generator the units should be operated sequentially (kettle boiling first, then start steamer).
- Probable Cause**

1 Inadequate Steam Flow

Steam Flow Rating of Cleveland Steam Generators

Gas Input BTU per	Steam Output lbs. per hour	Boiler
100.000	60	1.7
160.000	95	2-8
200.000	125	3.6
250.000	150	44
300.000	180	5.2
Electric KW Input		
18KW	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 Cleveland Kettles:
lbs. per hour with 10-15 psig steam at the kettle.

Capacity Gallon/Litre	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

The use of higher steam pressures (20-50 psig) will reduce heat up time 5 to 20%

Remedy

Check for correct steam using the chart below.
If the kettle is connected to a steamer and

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 the food product is the same

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

Probable Cause

Test and Remedy

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

MODULAR DIRECT STEAM KETTLE SERVICING GUIDE (CONTINUED)

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 1 A ohms between the red and white. If any of these readings are incorrect, replace the motor or jack. If all three readings are correct, replace the capacitor.

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

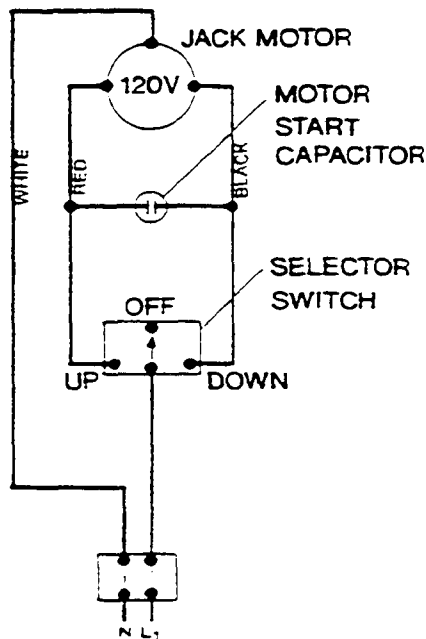
Probable Cause

1. Defective jack or capacitor

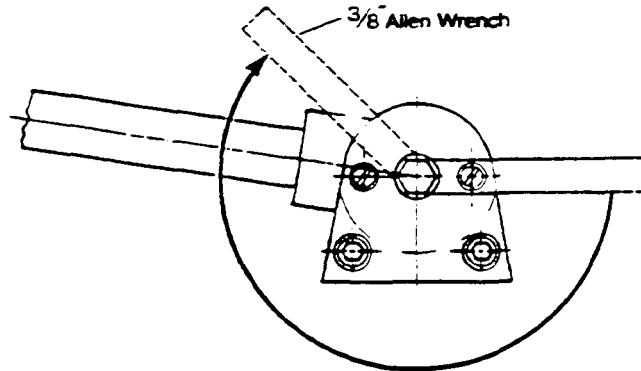
Test and Remedy

Follow procedure in section B/2.

WIRING DIAGRAM



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