

MODEL A & MODEL A I STEAM COOKERS

Manual & Automatic

PARTS and SERVICE MANUAL

Market Forge

Everett Ma. 01249 Tel. 387-4100

Facsimile #617-387-4456

TABLE OF CONTENTS

Subject	Code No.	Page
HOW TO USE THIS MANUAL	5101	3
BASIC OPERATING INSTRUCTIONS	5101	3
ILLUSTRATION AND PARTS LIST - AUTOMATIC A-1 COOKER	5102	4
ILLUSTRATION AND PARTS LIST-MANUAL A-1 COOKER	5103	5
ILLUSTRATION AND PARTS LIST-AUTOMATIC A COOKER	5104	6
ILLUSTRATION AND PARTS LIST-MANUAL A COOKER	5108	7
MODEL A-1 DOOR ASSEMBLY	5106	8
MODEL A DOOR ASSEMBLY	5107	9
WATTS PRESSURE REDUCING VALVE-A-1 COOKER	5010	10
STRONG PRESSURE REDUCING VALVE-A COOKER	5108	11
STEAM MANIFOLD AND VALVE ASSEMBLY	5109	12
SERVICING THE STEAM SUPPLY VALVE	5110	13
STEAM PRESSURE GAUGE ASSEMBLY	5110	13
CONTROL BOX ASSEMBLY	5111	14
SUGGESTED STEAM CONNECTIONS	5112	15
WIRING DIAGRAM	5113	16
SCHEMATIC DIAGRAM	5114	17

YOUR "SET IT AND FORGET IT" MARK-FORE MODEL "A" AND "A-1" STEAM COOKERS

are the ultimate in steam cooking advancement and were developed through extensive research and engineering skills to satisfy an urgent demand for an easy-to-operate, easy-to-service steam cooker.

Independently controlled cooking compartments constitute a remarkable and superior feature.

Each compartment can be used alone, or all three can be employed simultaneously because each has its own timing, steam control and signal devices.

The careful factory workmanship of Market Forge craftsmen in developing this newest scientific triumph in steam cooking equipment is your guarantee of efficient, dependable performances.

HOW TO USE THIS MANUAL

This manual contains maintenance and service instructions for Model "A" and "A-1" automatic and manually operated steam cookers. The exploded view drawings of components are aids to the identification, disassembly and assembly of parts. The parts listings provide information necessary for ordering replacement parts (proper part names and part numbers). When requesting parts or service, always furnish the model and serial number of your machine. The serial number is located on the left side under the bezzel on the control panel. A listing of Factory Authorized Service Agencies who maintain Market Forge equipment will be supplied without charge upon request.

ORDERING REPAIR PARTS

Many repair parts on the Model "A1" steam cooker are not interchangeable with parts on the "A" cooker. It is necessary, therefore, to furnish the following information when ordering repair parts.

1. Quantity, part number and description of part.
2. Model and Serial number for which the part is required.

3. Please specify how you wish merchandise shipped. If this information is not furnished we will ship the best and most economical way.

NOTE- All part orders received before 2:00 P.M. are shipped the same day the order is received.

BASIC OPERATING INSTRUCTIONS FOR AUTOMATIC

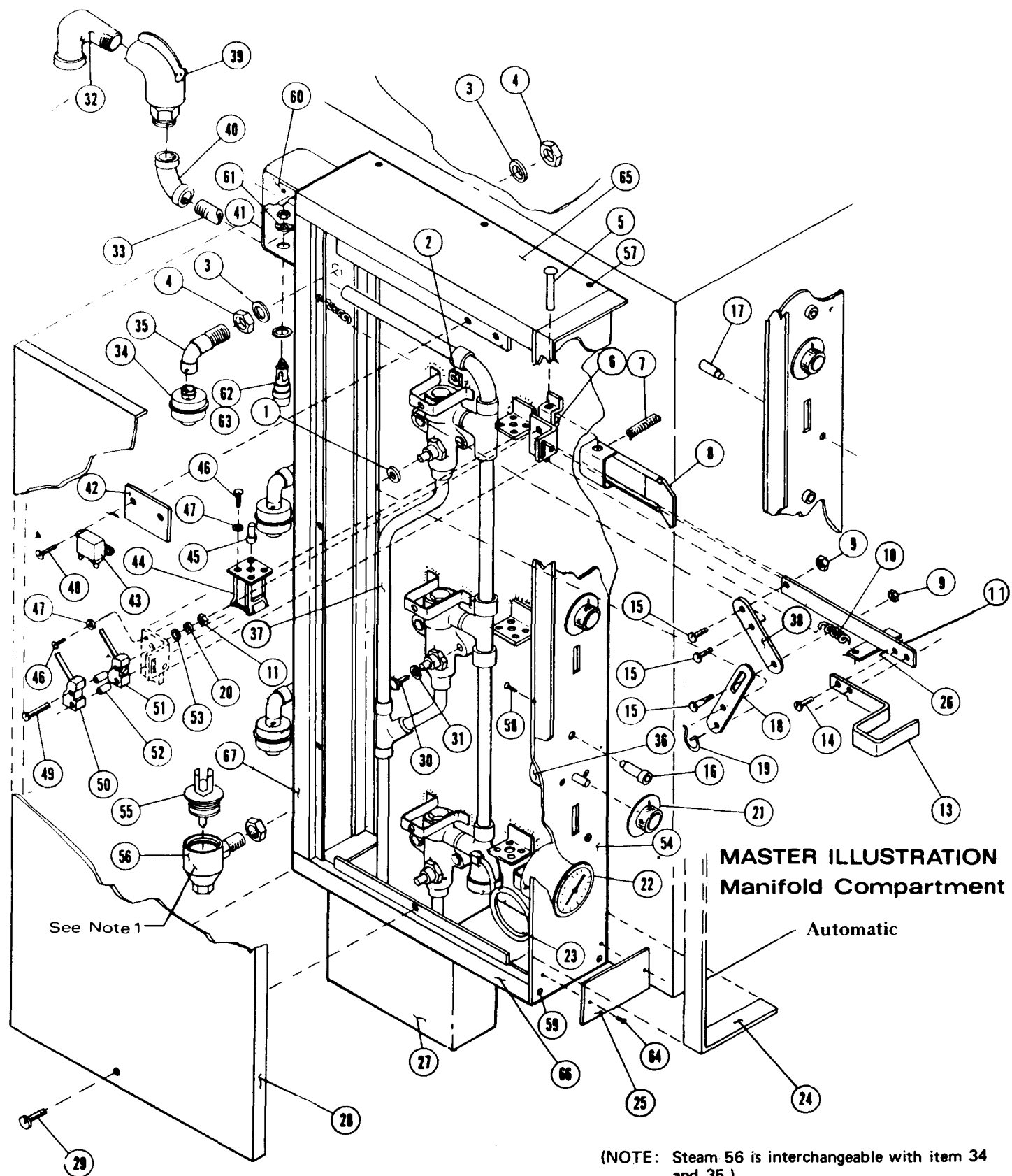
1. Check to be sure the steam pressure gauge registers between 4 and 5 pounds.
2. Place pans of food into the cooking compartment to be used.
3. Close and latch the door.
4. Turn the door wheel clockwise to seal the cooking compartment.

WARNING: Do not permit steam to leak. Set the door tight enough to make a firm seal. Steam leakage will cause undue wear to the gasket.

5. Turn timer pointer clockwise to the 60 minute mark, and then to the desired cooking time.
6. Pull the operating handle out and allow it to lock in this position. The pilot light will signify this cooking compartment is in operation. At the end of the cooking cycle the AUTOMATIC controls will release the operating handle, shutting off the steam supply and exhausting the steam from the cooking compartment. The pilot light will be turned off and the buzzer will signify that cooking has been terminated.
7. Press the buzzer release knob to silence the buzzer.

FOR MANUALLY OPERATED

- 1 through 5 Same as Automatic.
6. Set timer. When bell rings, lift handle and push in to shut off cooker.



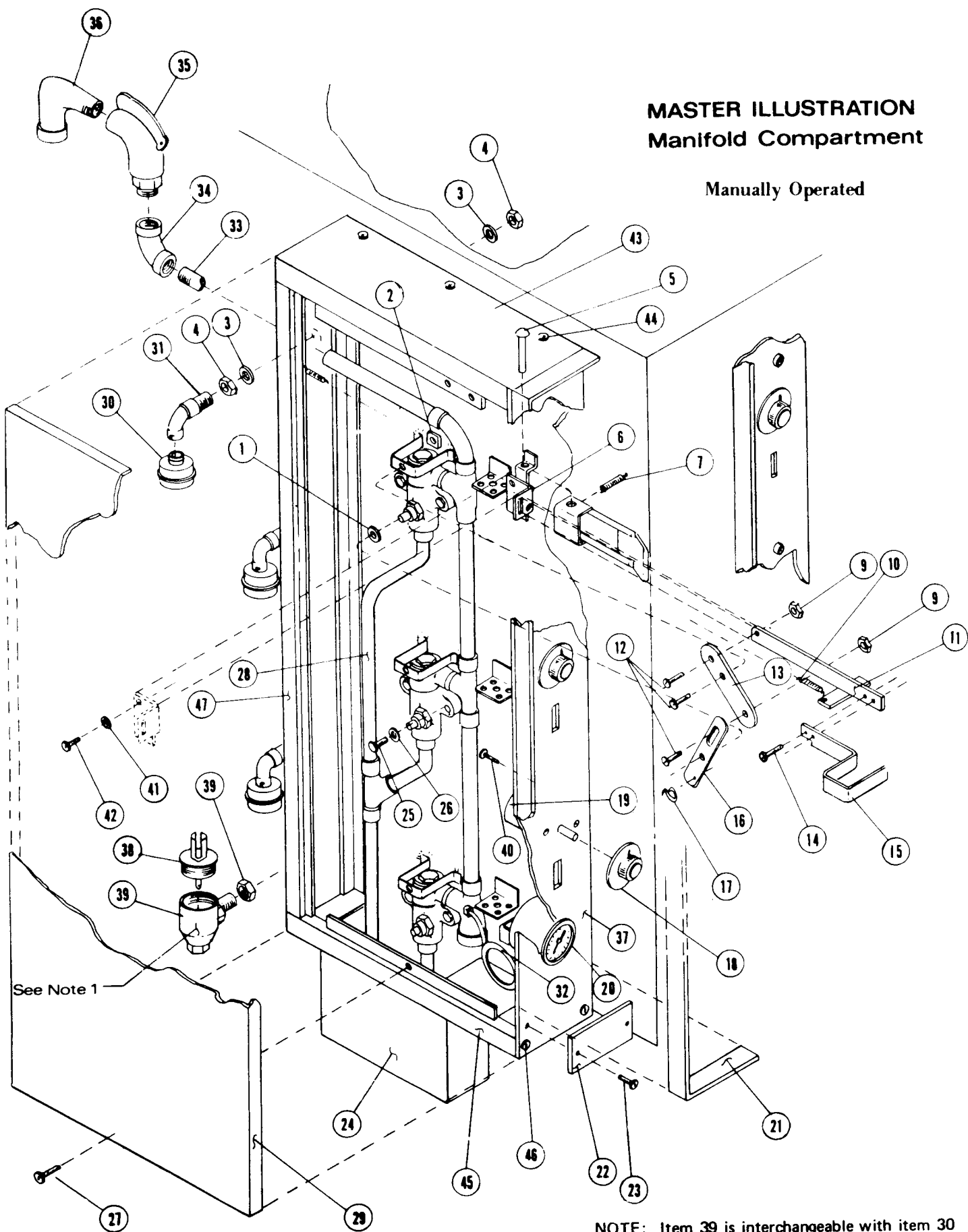
Manifold Compartment A-1 Cooker Automatic * Indicates Interchangeable Parts A1 & Old 'A'

Cooker

Master Illustration

Parts List

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1	10-2445*	1" O.D. x 3/8 St. St. Washer	38	90-8534*	Pivot Arm
2	10-2328 *	1/4" x 20" Elastic Stop Nut	39	10-4742*	Safety Valve 3/4" 8 lbs. chrome
3	10-2652 *	Gasket		10-4741*	Safety Valve 3/4" 8 lbs. brass
4	10-3343*	Lock nut	40	10-1053	Elbow 3/4" IPS, 90°
5	10-2988*	Rd. Hd. Rivet	41	10-5164 *	Junction Box Cover
6	10-2427	1/2" I.D. Plated washer		10-2652	Gasket
7	10-2777	3/8" O.D. x 1 1/2" long spring	42	90-9195	Insulator-Buzzer
8	90-8331	Latch Handle Ass'y.	43	10-6682	Buzzer
9	10-2328	Stop Nut	44	10-5997*	Solenoid
10	10-2755 *	Spring-Operating Arm	45	90-8905	Push Rod-Solenoid
11	10-2331	No. 6-32 Hex Nut (Cad. Pl.)	46	10-2160	No. 10-32 x 3/8 Philips Truss Hd. Scr. (Cadm. Pl.)
12	90-9212	Operating Handle Ass'y.	47	10-2505*	No. 10 Lock washer (Cadm. Pl.)
13	90-9215	Control Handle	48	10-1717	No. 8-32 x 3/8 Rd. Hd. Screw
14	10-1881	No. 10-32 x 3/8 Fl. Hd. Screw	49	10-2151	No. 6- 32 x 2 1/4 Ig. Rd. Hd. Mach. Screw
15	10-1967	Shoulder Screw for linkage	50	10-5613*	Micro Switch (Solenoid)
16	90-8926	Signal light term ass'y.	51	10-5511*	Micro Switch (Buzzer)
17	90-9214	Shaft Reset Button	52	90-9223	Spacer
18	90-8537*	Valve Actuating Arm	53	10-2428	Flat Washer
19	10-2756*	Synchronizer Spring	54	90-9226	Name plate Panel—Auto 2 comp.
20	10-2515*	No. 6 Lock Washer		90-9229	Name plate Panel—Auto 3 comp.
21	90-7189	Timer Knob		90-8308	Name plate Panel—Auto 4 comp
22	10-4748*	Pressure Gauge	55	10-4619*	Replacement element for Steam Trap painted cap
23	90-8963	Copper Tubing 3/16" O.D. x 18"		10-5625*	Replacement element for Steam Trap chrome cap
	10-4370	Brass Nut	56	10-4559*	1/2" Steam trap complete painted (obs)
	10-4371	Brass Sleeve (Female)		90-4003*	1/2" Steam Trap complete chrome (obs)
24	90-9219	Bezel (2 comp.)	57	10-2154	No. 10 Ty. "B" Pan Hd. Screw 1/2" Ig. (Cad. Pl.)
	90-9220	Bezel (3 comp.)	58	10-1975	No. 4-40 x 7/16 Flat Hd.Scr.
	90-7537	Bezel (4 comp.) Pol. Only	59	10-1949	No. 6 Ty. "A" Pan Hd. Screw 3/8 Ig. (Cad. Pl.)
25	10-6238	Identification Name plate	60	10-5614*	Junction Box
26	10-1654	Drive Pin	61	10-5680	Air Adapter
27	90-8549*	Shield Ass'y. Manifold	62	10-5972	Fuse Holder Buss H.K.P.
28	90-9188	Side Panel-St. St. (2 comp.)	63	10-5973	Fuse Buss M.D.L. 8/10 amp. Slow
	90-9199	Side Panel-St. St. (3 comp.)	64	10-1703	No. 2 Drive Screw
	90-9203	Side Panel-St. St. (4 comp.)	65	90-9237	Top Cover Ass'y. - St. St. (2,3&4 Comp.)
	90-9189	Side Panel—Enamel (2 comp.)		90-9238	Top Cover Ass'y. Enamel (2 & 3 Comp.)
	90-9200	Side Panel—Enamel (3 comp.)	66	90-9186	Bottom Enclosure- St. St.
29	10-1740	No. 8-32 x 3/4" Truss Head Screw		90-9187	Bottom Enclosure - Enamel
30	10-2124*	3/8-16 x 1 1/8 Hex Hd. Screw	67	90-9184	Back Side Enclosure - St. St. (2 Comp.)
31	10-2503*	3/8" Lock washer (cad. Pl.)		90-9231	Back Side Enclosure - St. St. (3 comp.)
32	10-1059	3/4" Std. 90° street elbow		90-9896	Back Side End. Ass'y. - St. St. (4 comp.)
33	10-3761	Nipple 3/4" IPS 71/4" Ig.		90-9185	Back Side End. - Enamel (2 comp.)
34	10-6156	Steam Trap		90-9232	Back Side Enclosure - Enamel (3 comp.)
35	10-6157	Adapter Sub—ass'y.			
36	10-5514*	Timer			
37	90-8144	Comb. Steam & Exhaust Header (2 comp.)			
	90-8145	Comb. Steam & Exhaust Header (3 comp.)			
	90-8146	Comb. Steam & Exhaust Header (4 comp.)			



**MASTER ILLUSTRATION
Manifold Compartment**

Manually Operated

See Note 1

NOTE: Item 39 is interchangeable with item 30 and 31.

Manifold Compartment A-1 Cooker Master Illustration Parts List

ITEM	PART NO.	DESCRIPTION
1	102445*	1" O.D. x 3/8 St. St. washer
2	102328*	1/4" x 20 Elastic stop nut
3	10-2652*	Gasket
4	103343*	Lock nut
5	10-2988*	Rd. Hd. Rivet
6	10-2427	1/2" I.D. plated washer
7	10-2777	3/8" O.D. x 1 1/2" long
8	90-8331	Latch Handle Ass'y.
9	10-2328	Stop nut
10	10-2755*	Spring Operating Arm
11	90-9212	Operating Handle Ass'y.
12	10-1967*	Shoulder Screw for linkage
13	90-8534*	Pivot Arm
14	10-1881	No. 10-32 x 3/8 fl. hd. screw
15	90-9215	Control Handle
16	90-8537*	Valve Actuating Arm
17	10-2756*	Synchronizer Spring
18	10-6307	Timer Knob
19	10-5520*	Timer
20	10-4748*	Pressure Gauge
21	90-9219	Bezel (2 comp.)
	90-9220	Bezel (3 comp.)
	90-7537	Bezel (4 comp.) Pol. Only
22	106238	Identification name plate
23	10-1703	No. 2 Drive Screw
24	90-8549*	Shield Ass'y. Manifold
25	10-2124*	3/8" - 16 x 1 1/8" Hex. Hd. Cap Screw
26	10-2503*	3/8" Lock Washer (cad. p.)
27	10-1740	No. 8 - 32 x 3/4 Truss Hd Screw
28	90-8144	Comb. steam & exhaust header (2 comp.)
	90-8145	Comb. steam & exhaust header (3 comp.)
	90-8146	Comb. steam & exhaust header (4 comp.)
29	90-9188	Side Panel-St. St. (2 comp.)
	90-9199	Side Panel-St. St. (3 comp.)
	90-9203	Side Panel-St. St. (4 comp.)
	90-9189	Side Panel-Enamel (2 comp.)
	90-9200	Side Panel-Enamel (3 comp.)
30	10-6156	Steam Trap
31	10-6157	Adapter Sub—Ass'y.
32	90-8963	Copper Tubing 3/16" O.D. x 18"
	10-4370	Brass Nut

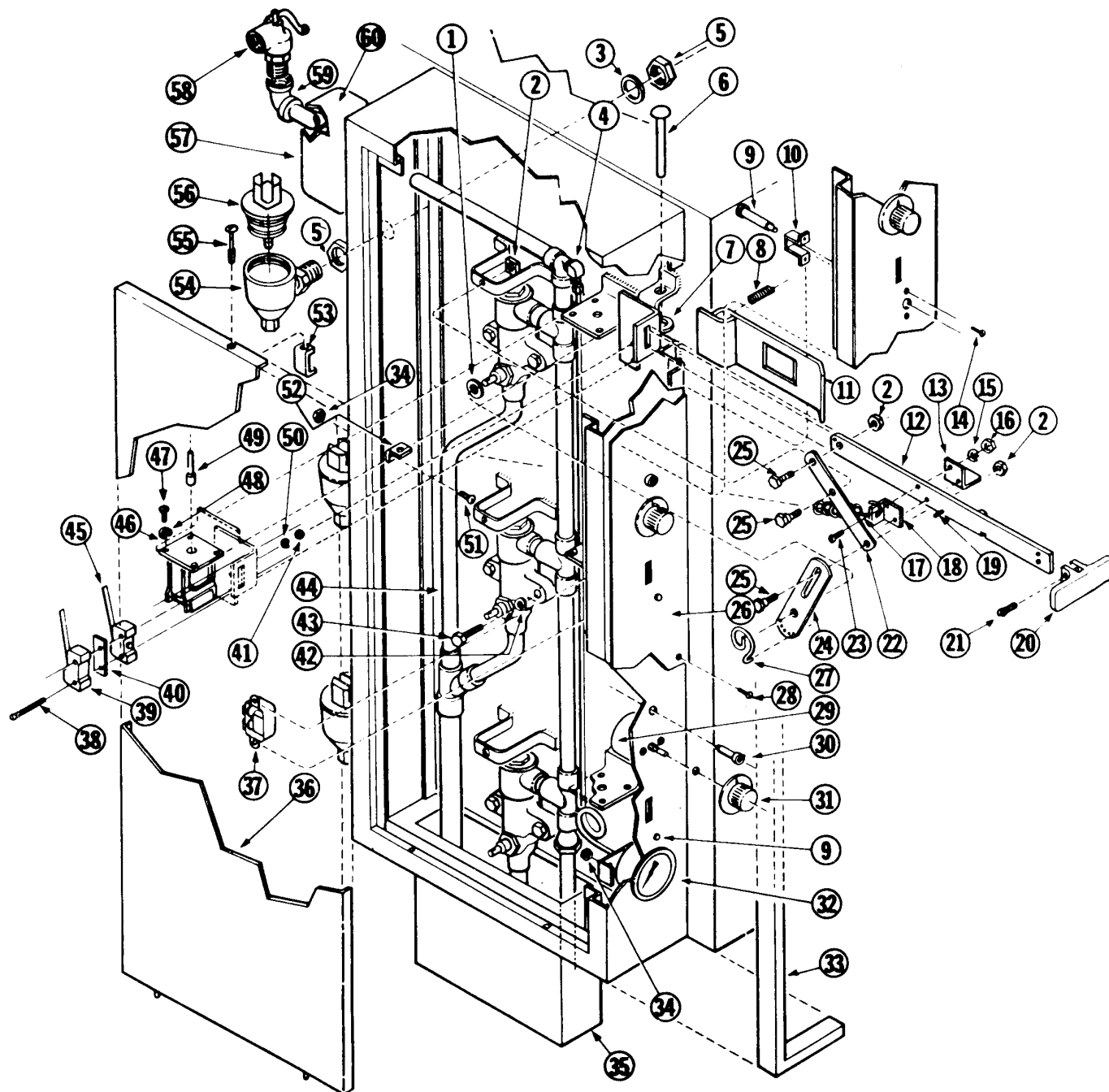
Manually Operated

ITEM	PART NO.	DESCRIPTION
	10-4371	Brass Sleeve (Female)
33	10-3761	Nipple 3/4" IPS 7 1/4" lg.
34	10-1053	Elbow 3/4" IPS 90°
35	10-4741*	Safety Valve 3/4" 8 lbs. brass
	10-4742*	Safety Valve 3/4" 8 lbs. chrome
36	10-1059	3/4" Std. 90°Street Elbow
37	105846	Name plate Panel (2 comp.)
	10-5847	Name plate Panel (3 comp.)
	90-8312	Name plate Panel (4 comp.)
38	10-4619*	Replacement element for Steam Trap Painted cap.
	10-5625*	Replacement element for Steam Trap Chrome cap.
39	10-4559*	1/2" Steam trap complete painted (obs)
	90-4003*	1/2" Steam trap complete chrome (obs)
40	10-1975	No. 4-40x7/16" Flat Hd. Scw.
41	10-2505	Lock Washer
42	10-2160	No. 10-32 x 3/8 Phil Truss Hd. Screw
43	909237	Top Cover Ass'y. - St. St. (2,3, &4 comp.)
	909238	Top Cover Ass'y. - Enamel (2 &3 comp.)
44	10-2154	No. 10 - Ty "B" Pan Hd. Screw 1/2" Lg. (Cad. Pl.)
45	90-9186	Bottom Enclosure - St. St. (2,3, &4 comp.)
	90-9187	Bottom Enclosure — Enamel (2 & 3 comp.)
46	10-1949	No. 6 Ty. "A" Pan Hd. Screw 3/8 Lg. (cad p(.))
47	90-9184	Back Side Enclosure - St. St. (2 comp.)
	90-9231	Back Side Enclosure - St. St. (3 comp.)
	90-9896	Back Side End. Ass'y. - St. St. (4 comp.)
	90-9185	Back Side Enclosure - Enamel (2 comp.)
	90-9232	Back Side Enclosure - Enamel (3 comp.)

MASTER ILLUSTRATION

Manifold Compartment

Automatically Operated



Manifold Compartment A Cooker Automatically Operated

Master Illustration Parts List

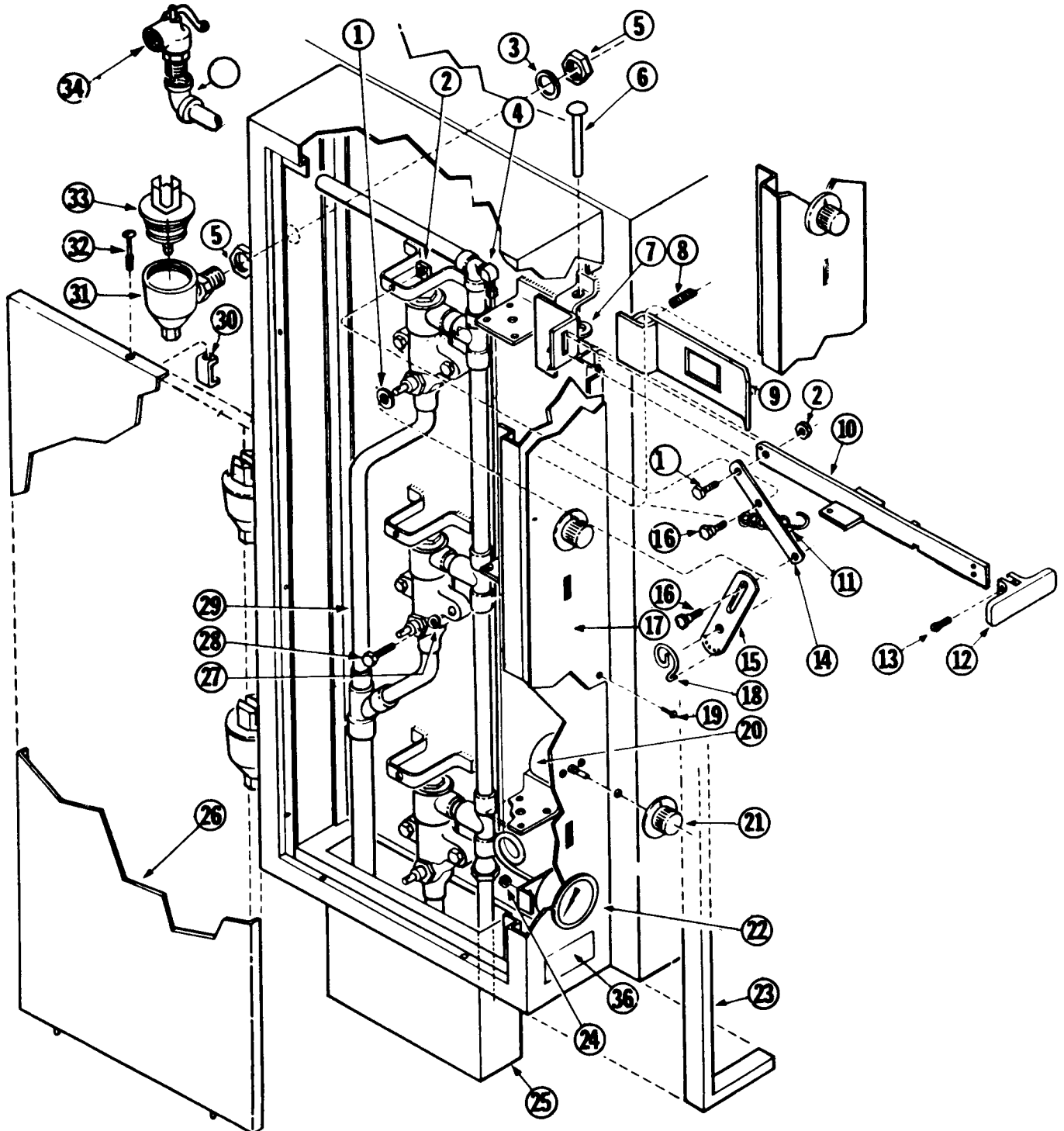
(OBSOLETE)

Item	Part No.	Description	Item	Part No.	Description
1	10-2445*	1" OD x 3/8 St. St. Washer	35	90-8549*	Manifold Shield St. St.
2	10-2328*	1/4-20 Elastic stop nut		90-8541	Manifold Shield Painted
3	10-2652*	7/8 x 1 x 1/16 Composition Gasket	36	90-8434	Side Panel St. St. 2 comp.
4	10-1910	3/16" Tube x 1/8" Taper pipe thread		90-8435	Side Panel St. St. 3 comp.
5	10-3343*	1/2" Lock nut Nickel Plated		90-8436	Side Panel St. St. 4 comp.
7	90-8387	1/2" I.D. plated washer		90-8430	Side Panel Painted 2 comp.
8	10-2757	3/8" O.D. x 1" long Spring		90-8431	Side Panel Painted 3 comp.
9	90-8546	Shaft for reset button		90-8432	Side Panel Painted 4 comp.
10	90-8545	Bracket for reset button	37	10-4563	Buzzer
11	90-8524	Latch handle assembly	38	10-1888	#10 Cad plated lock washer
12	90-8550	Operating Arm Assembly	39	10-5613*	Solenoid Micro switch
13	90-8547	Left Bracket	40	90-4159	Insulator
14	10-1975	4-40-1/2 Flat hd. screw	41	10-2337	6/32 St. St. hex nut
15	10-2505*	10/32 x 1/16" Lock washer	42	10-2503*	3/8" Lock washer cad. pl.
16	10-2339	10/32 St. St. hex nut	43	10-2124*	3/8" - 16 x 1 1/8" hex hd. cap screw
17	10-2755*	Spring for Operating Arm	44	90-8498	Comb steam & exhaust header
18	90-8531	Spring Bracket		90-8496	Comb steam & exhaust header -
19	10-1908	1/8" x 1 1/4" drive pin		90-8604	Comb steam & exhaust header -
20	90-8669	Operating Handle	45	10-5511*	Buzzer micro switch
21	10-1922	8/32 x 1/2 Oval hd. screw cad. pl.	46	10-5997*	115V solenoid
22	90-8534*	Pivot Arm	47	10-1701	1/4 - 20 x 3/8 Rd hd mach screw cad
23	10-1852	10/24 x 3/4 Rd. Hd. mach. screw	48	10-2508	1/4 x 3/32 x 1/16 St. St. lock washer
24	90-8537*	Valve actuating arm	49	90-8542	Push rod for Solenoid
25	90-8533	Shoulder Screw for Linkage	50	10-2515*	#6 x 3/6 x 1/32 lock washer cad pl
26	90-8573	Side Enclosure St. St. 2 comp.	51	10-1760	10/32 x 1/2" St. St. mach screw
	90-8575	Side Enclosure St. St. 3 comp.	52	90-4399	Spring clip
	90-8577	Side Enclosure St. St. 4 comp.	53	90-8739	Panel clip
	90-8574	Side Enclosure Painted 2 comp.	54	10-4559*	1/2" steam trap complete brass
	90-8576	Side Enclosure Painted 3 comp.		90-4003*	1/2" steam trap complete chrome
	90-8578	Side Enclosure Painted 4 comp.	55	10-1921	Retaining screw - side enclosure
27	10-2756*	Valve Synchronizer Spring	56	104619*	Replacement element for steam trap
28	10-1845	8/32 x 1/4 St. St. self tapping screw		10-5625*	Replacement element for steam trap
29	10-5514*	0-60 minute electric timer	57	10-5614	Junction box
30	10-5499	115V Pilot Light	58	10-4742*	3/4 - 8# Safety valve chrome
31	10-4713	Timer knob		10-4741*	3/4 - 8# Safety valve brass
32	10-4748*	0-30# Pressure Gauge	59	10-3455	3/4" B. I. elbow
33	90-8683	Bezel 2A		90-7304	3/4" chrome elbow
	90-8684	Bezel 3A	60	10-5164*	Junction box (Cover)
34	10-2339	#10 Hex nut St. St.			

MASTER ILLUSTRATION

Manifold Compartment

Manually Operated

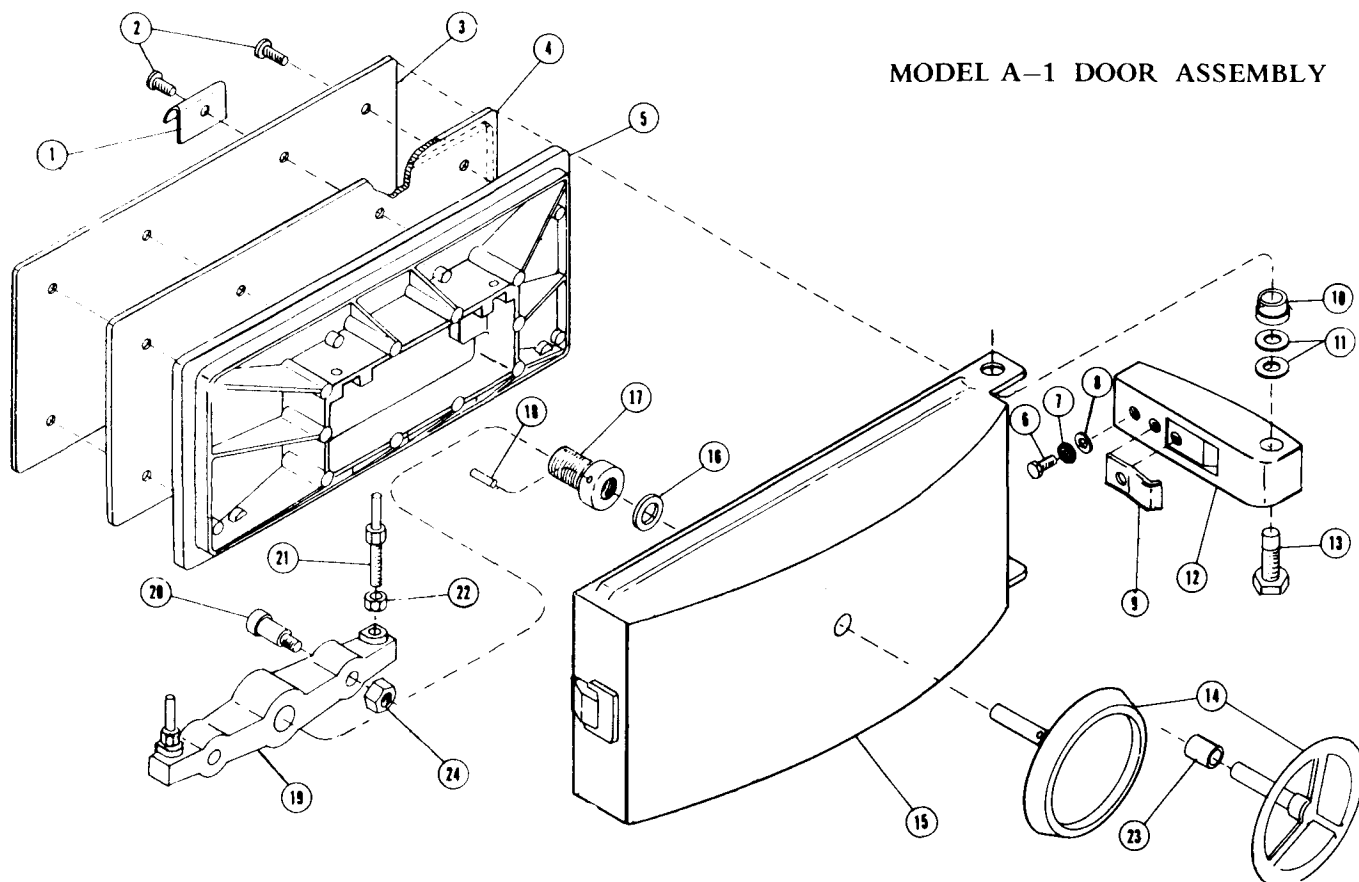


Manifold Compartment A Cooker Manually Operated

(OBSOLETE)

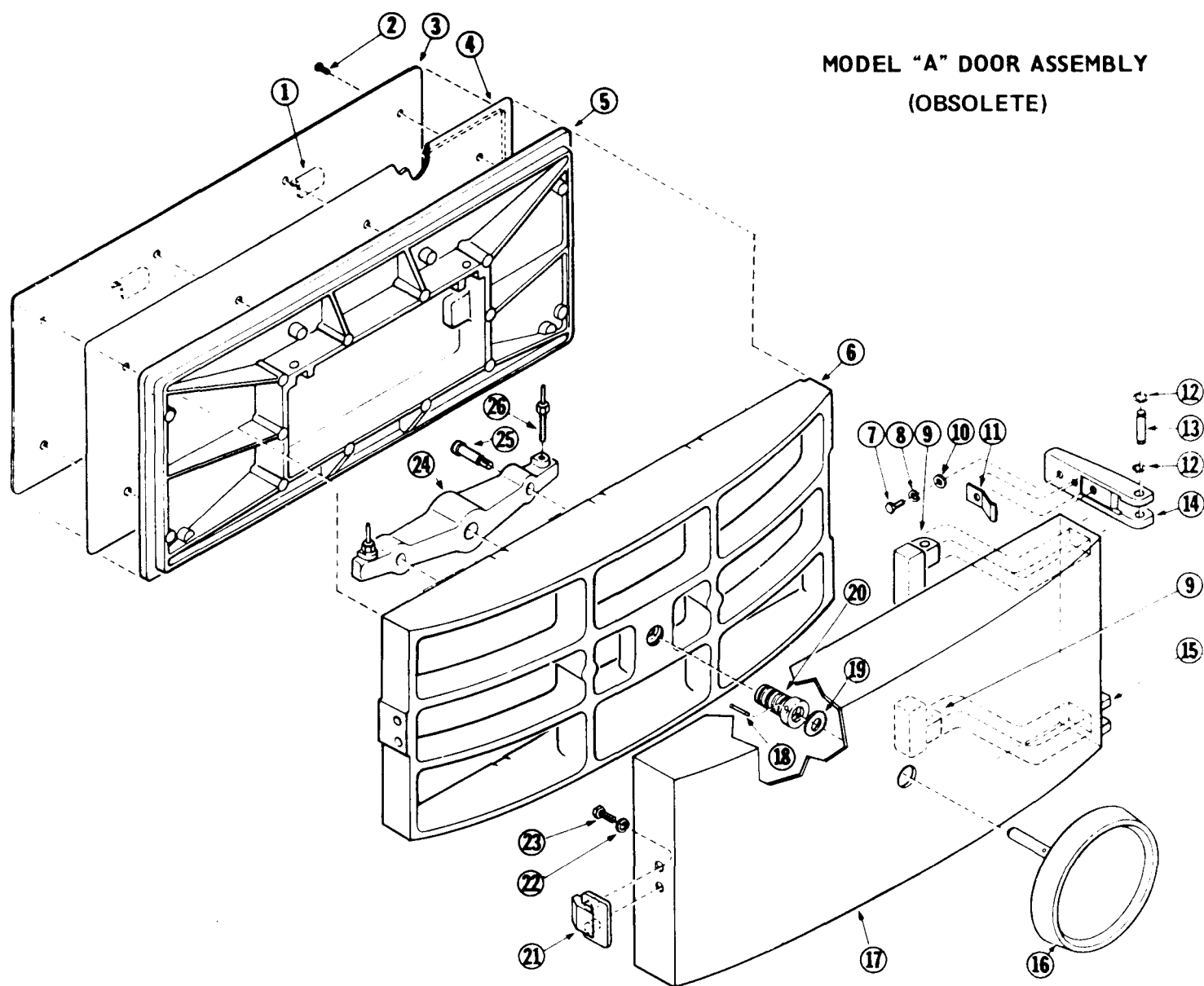
Master Illustration Parts List

Item	Part No.	Description	Item	Part No.	Description
1	10-2445*	1" O.D. x 3/8" St. St. Washer	25	90-8549*	Manifold Shield St. St.
2	10-2328*	1/4-20 Elastic Stop Nut		90-8541	Manifold Shield Painted
3	10-2652*	7/8x1 x 1/16 Composition Gasket	26	90-8434	Side Panel St. St. 2 Comp.
4	10-1910	3/16" Tube x 1/8" Taper Pipe Thread w/ Fitting		90-8435	Side Panel St. St. 3 Comp.
5	10-3343*	1/2" Lock nut Nickel Plated		90-8436	Side Panel St. St. 4 Comp.
6	10-2988*	1/2" x 3 1/2" Rd.Hd. Rivet		90-8430	Side Panel Painted 2 Comp.
7	90-8387	1/2" I.D. Plated Washer		90-8431	Side Panel Painted 3 Comp.
8	10-2757	3/8" O.D. x 1" Long Spring		90-8432	Side Panel Painted 4 Comp.
9	90-8524	Latch Handle Assembly	27	10-2503*	3/8" Lock washer Cad. Pl.
10	90-8550	Operating Arm Assembly	28	10-2124*	3/8"-16x1 1/8" Hex. Hd. Cap Screw
11	10-2755*	Spring for Operating Arm	29	90-8498	Comb. Steam Supply & Exhaust Header 2 Comp.
12	90-8669	Operating Handle		90-8496	Comb Steam Supply & Exhaust Header 3 Comp.
13	10-1922	8/32 x 1/2 Oval Hd. Screw Cad. Pl.		90-8604	Comb Steam Supply & Exhaust Header 4 Comp.
14	90-8534*	Pivot Arm	30	90-8739	Panel Clip
15	90-8537*	Valve Actuating Arm	31	10-4559*	1/2" Steam Trap Complete Brass (obs)
16	10-1967*	Shoulder Screw for Linkage		90-4003*	1 /2" Steam Trap Complete Chrome
17	90-8573	Side Enclosure St. St. 2 Comp.	32	10-1921	Retaining Screw - Side Enclosure
	90-8575	Side Enclosure St. St. 3 Comp.	33	10-4619*	Replacement Element for Steam Trap Painted Cap.
	90-8577	Side Enclosure St. St. 4 Comp.		10-5625*	Replacement Element for Steam Trap Chrome Cap.
	90-8574	Side Enclosure Painted 2 Comp.	34	10-4742*	3/4" - 8# Safety Valve Chrome
	90-8576	Side Enclosure Painted 3 Comp.		10-4741*	3/4" - 8# Safety Valve Brass
	90-8578	Side Enclosure Painted 4 Comp.	35	10-3455	3/4" B. 1. Elbow
18	10-2756*	Valve Synchronizer Spring		90-7304	3/4 "Chrome Elbow
19	10-1845	8/32 x 1/4 St. St. Self Tapping Screw	36	10-0435	Name Plate 2A
20	10-5220*	0 - 60 Minute Mechanical Timer		10-0434	Name Plate 3A
21	10-4713	Timer Knob		90-8583	Name Plate 4 A Upper
22	10-4748*	0 - 30# Pressure Gauge		90-8588	Name Plate 4A Lower
23	90-8683	Bezel 2A			
	90-8684	Bezel 3A			
24	10-2339	#10 Hex Nut St. St.			

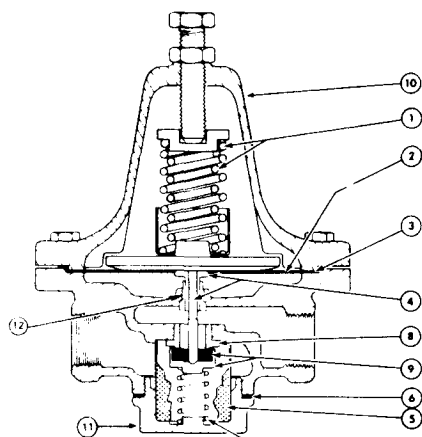


MODEL A-1 DOOR ASSEMBLY.

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1	90-8310	Model A-1 Hand Grip	13	10-1981	Pivot Hinge
2	10-1945	Gasket Screws	14	90-8113	Handwheel — Polished Solid
3	90-8311	Model A-1 Gasket Plate		90-8328	Handwheel -Spoked (Enamel)
4	10-0433	Model A-1 Door Gasket	15	90-8126	Outer Door Ass'y.— Polished
5	90-8514	Model A-1 Inner Door		90-8320	Outer Door Ass'y.— Enameled
6	10-2135	5/16-18 x 3/4 Hex. Hd. Bolt	16	10-2423	Thrust Washer
7	10-2426	11/32 I.D. x 3/4 O.D. Flat Washer St. St.	17	10-3080	Door Bushing
8	10-1909	5/16" Thredseal	18	10-1696	Roll Pin
9	90-8114	Spring Door Release	19	90-8124	Strong Back
10	10-3079	(Pivot Bearing Interchangeable)	20	10-2012	Cap Screw
11	10-2427	1/16 Thk. x 1" O.D. Flat Washer	21	10-1973	Support Stud Ass'y.
12	90-8111	Hinge — Polished upper and lower	22	10-2302	Hex. Nut 3/8-16
	90-8316	Hinge — Enameled upper and lower	23	90-8317	(Bushing for spoke wheel only)
	90-8147	Inner Door Ass'y (Items 1-5)	24	10-2013	Hex. Jam Nut 3/8-16



Item	Part No.	Description			
1	90-8518	Model A Gasket Plate Handle	15	90-8520	Inner Hinge Bracket - Bottom - Polished
2	10-1704	Gasket Screws		10-0426	Inner Hinge Bracket - Bottom - Painted
3	90-8517	Model A Gasket Plate	16	90-8559	Handwheel stainless steel
4	10-0433	Model A Door Gasket		90-8560	Handwheel painted
5	90-8514	Model A Inner Door	17	90-8680	Outer Shell Assembly painted
6	90-8504	Model A Outer Door		90-8507	Outer Shell Assembly St. St.
7	10-2124	3/8" Hex Head Cap Screw x 1-1/8" long St. St.	18	10-1690	Roll Pin
8	10-2426	11/32 I.D. x 3/4" O.D. Flat Washer St. St.	19	10-2423	Thrust Washer
9	90-8519	Inner Hinge Bracket - Top - Polished	20	90-8511	Door Bushing
	10-0427	Inner Hinge Bracket - Top - Painted	21	90-8480	Door Latch
10	10-1909	5/16" Thread seal	22	10-2426	11/32" I.D. x 3/4" O.D. Flat Washer St. St.
11	90-8523	Spring Door Release	23	10-1907	1/4-20 x 5/8" long Hex Head Screw cad. plated
12	10-4121	Retaining Ring	24	90-8513	Strong Back
13	90-8879	Door Hinge Pin	25	10-2071	3/8-16 x 2 1/2" long Hex Head cap Screw
14	90-8677	Outer Hinge Bracket - Polished	26	10-1839	Inner Door Support Pin
	10-0474	Outer Hinge Bracket - Painted			



**Replacement Parts for
Type W3/4 Pressure Reducing
Valve**

ITEM NO.	PART NO.	DESCRIPTION
1	10-1083	Adjusting Spring
2	10-1082	Diaphragm
3	10-1075	Diaphragm Gasket
4	10-1076	Diaphragm Button & Stem Assembly
5	10-1077	Strainer
6	10-1078	Bottom Plug Gasket
7	10-1079	Bottom Spring
8	10-1080	Seat
9	10-1081	Disc Assembly
10	10-1033	3/4" Complete Valve-Painted
11	10-1034	3/4" Complete Valve-Chrome
12	10-0893	Valve Stem Guide

WATTS PRESSURE REDUCING VALVES - 3/4"

To provide adequate steam pressure regulation, your unit may be equipped with a Watts steam pressure reducing valve. The 3/4" Watts pressure reducing valve is designed to operate from a 7 to 50 P.S.I. source of steam pressure and reduce this to 5 P.S.I. for delivery to your cooker. Installation must be made from your source of steam supply, through the pressure reducing valve, and into the manifold input part of the steam cooker.

WARNING: Before final connection is made, blow down your steam line to remove all dirt, scale, packing and compound which may have accumulated during the installation of piping to the cooker.

OPERATION OF WATTS 3/4" REDUCING VALVE

Steam enters the valve at the inlet port and passes upward through the seat (8) into the discharge side of the valve. As pressure in the discharge side increases, it forces the diaphragm (2) upward, overcoming the tension of the adjusting spring (1) and closing valve. As the pressure drops, the adjusting spring forces the diaphragm down, reopening the valve. Where demand and initial pressures are fairly constant, the valve opens to the proper position and maintains the desired reduced pressure.

ADJUSTING WATTS 3/4" REDUCING VALVE

1. Release the adjusting screw lock nut and loosen the adjusting screw enough to release all tension on adjusting spring (1).
2. Turn steam on slowly. Then turn adjusting screw clockwise just enough to allow the valve to open slightly. Allow cooker to operate in this manner several minutes.
3. Turn adjusting screw down slowly, at intervals, until reduced pressure reaches the desired Point. (5 P.S.I.)
4. Tighten adjusting screw lock nut.
5. If chattering noise should occur turn adjusting screw located in bottom half of valve body, clockwise or counter-clockwise, until chattering stops.

INSPECTION - MAINTENANCE

Reports of unsatisfactory regulation of the pressure reducing valve is usually due to dirt, pipe compound, etc., blocking the internal strainer, or gumming up the seat and disc assembly. To clean the strainer, seat, and disc assembly remove the bottom plug (6) and remove strainer screen (5), bottom spring (7) and disc assy. (9) Clean the lower part of the valve. This can be accomplished without removing the valve from the line or unbolting the cover. If cleaning the strainer and disc assy. does not correct fault, the disc assy. and seat should be replaced. Also the top cover should be removed and the diaphragm button stem assembly should be removed and cleaned.

REPAIRS

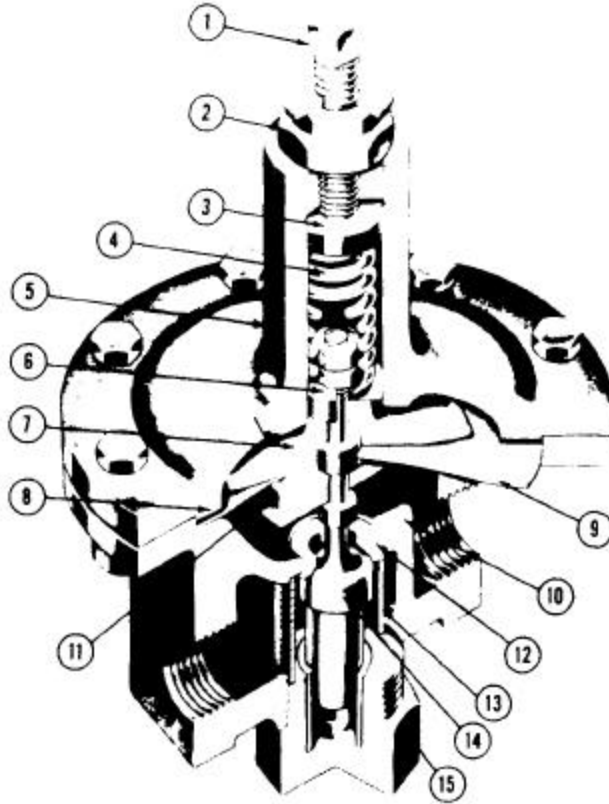
The following item should be cleaned or replaced should the valve fail to operate properly.

1. Both the disc assembly (9) and strainer (5) are removed by removing the bottom plug (11) and bottom spring (7). Upon cleaning or replacing these items, be sure that the disc assembly (9) is seated properly on the stem assembly (4) otherwise the stem assembly will be bent restricting its movement and the regulation of steam through the valve.
2. Should there be a restriction in the diaphragm button and stem assembly (4) it will cause a drop in steam flow or large fluctuations in steam pressure. It is then necessary to replace diaphragm button and stem assembly (4), valve stem guide (12) and diaphragm gasket (3) as well as those items in step 1.

Upon completion of the above and removal of any loose scale, which may be found in the valve, the valve should be reassembled; and upon installation, function properly.

**STRONG PRESSURE REDUCING VALVE
TYPE "K"— 3/4 INCH**

(OBSOLETE)



The 3/4" Strong Pressure Reducing Valve, Type K is designed to operate from a 20 to 100 P.S.I. source of steam and reduce this to 5 P.S.I. for delivery to your steam cooker.

With the introduction of a pressure reducing valve to your input line, it is recommended that a pressure gauge be also installed on the supply side so that the actual steam input pressure may be constantly record-ed. The selection of a pressure gauge must be made to operate within the range of pressure experienced from your source of supply. The reduced pressure may con-stantly be read on the steam cooker pressure gauge.

WARNING: Before final installation connection is made, blow down your steam line to remove all dirt, scale, packing, and compound which may have accumulated within the new piping.

OPERATION OF TYPE K REDUCING VALVES

Steam enters inlet port and passes upward through seat (12) into discharge side of valve. As pressure in discharge side increases, diaphragm (9) is forced upward overcoming tension of adjusting spring (4) and closing valve. As pressure drops, adjusting spring (4) forces diaphragm (9) down, reopening valve.

3/4" PRESSURE REDUCING VALVE Parts List

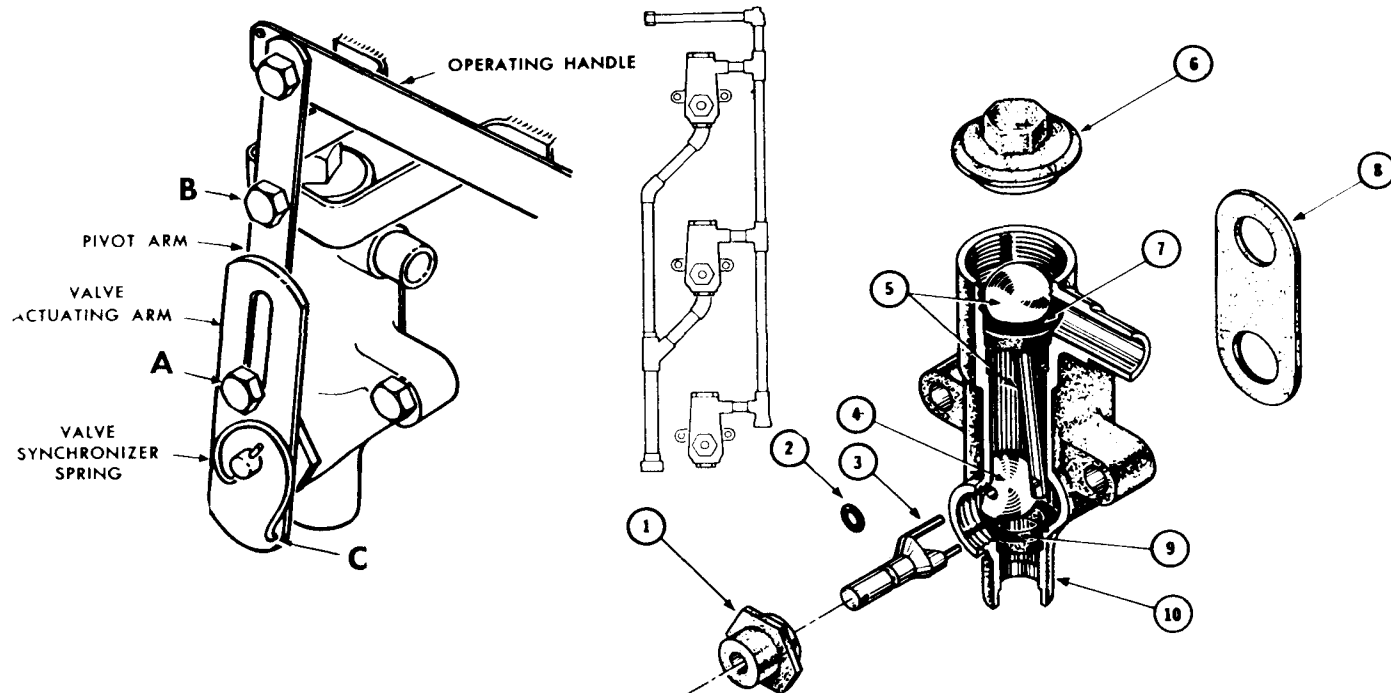
Item	Description	Part No
1	Adjusting Screw	104824
2	Adjusting Spring Cap	10-4825
3	Spring Washer	10-4826
4	Adjusting Spring, Green 15 lb	10-4827
5	Cover	104828
6	Upper Stem Guide	104829
7	Upper Diaphragm Block	10-4830
8	Cover Gasket	10-4831
9	Diaphragm (with gasket)	104782
10	Body (with seat insert)	10-4832
11	Lower Diaphragm Plate	10-3833
12	Seat Insert	10-4834
13	Strainer Screen	10-4783
14	Disc (pressed on stem)	10-4835
15	Bottom Plug	10-4836

ADJUSTING TYPE K REDUCING VALVES

1. Release the adjusting screw lock nut and loosen adjusting screw (1) enough to release all tension on adjusting spring (4).
2. Turn steam on slowly. Then turn adjusting screw (1) down just enough to allow the valve to open slightly. Allow cooker to operate in this manner several minutes.
3. Turn adjusting screw (1) down slowly, at intervals until reduced pressure reaches the desired point.
4. Tighten adjusting screw lock nut.

INSPECTION - MAINTENANCE - REPAIRS

Reports of unsatisfactory regulation of the pressure reducing valve is usually due to dirt, pipe compound, etc., blocking the internal strainer or gumming up the internal mechanism. To clean the strainer, unscrew bottom plug (16) and remove strainer screen (13). Clean the lower part of the valve. This can be accomplished without removing the valve from the line or unbolting the cover. If cleaning the strainer does not correct fault, remove the valve from the line and dis-assemble. After thoroughly cleaning, the seat insert (12) and disc (14) should be ground together, using a very fine abrasive or compound. The seat insert and disc are of the ball type and must be "wobbled" when lapping. Avoid excessive lapping as this will cause ridges to form and make tight seating impossible.



ITEM	PART NO.	DESCRIPTION
1	10-3774	Valve Synchronizer Bearing & Seal
2	10-1133	O Ring 1/4 I.D. x 3/8" O.D. x 1/16" thick
3	90-4153	Valve Synchronizer
4	90-0483	Exhaust Valve Ball
5	90-2419	Valve Synchronizer Lever & Supply Ball Assembly
6	10-0410	Valve Bonnet
7	90-2442	Supply Valve Seat
8	10-2696	Valve Body Gasket
9	90-2443	Exhaust Valve Seat
10	90-2434	Supply & Exhaust Valve - comp.

THE STEAM MANIFOLD AND VALVE ASSEMBLY

The steam manifold and valve assembly provides a means of steam input and exhaust control for each cooking compartment. Though complete removal of the manifold and valve assembly will be necessary to replace a complete valve, each may be serviced in its position by following these service instructions.

TO DISASSEMBLE VALVE

1. Shut off the steam supply to the cooker.
2. Unfasten the pivot arm at points A and B.
3. Unfasten the valve synchronizer spring at point C remove to free valve actuating arm and spacer.

4. Remove the pivot stud to allow more working room.
5. Remove valve cap (6) and valve bonnet (1).
6. Pull out valve synchronizer (3).
7. Lift out valve synchronizer lever and ball assembly (5).
8. Insert a pencil in the hole of valve synchronizer ball (4) and lift out through the front portal.

TO ASSEMBLE VALVE

1. Slip valve synchronizer ball (4) into the valve with the hole facing the front portal.
2. Drop valve synchronizer lever and ball assembly (5) in from the top opening of the valve with cut out on the lever facing ball (4).
3. Manipulate valve synchronizer (3) in position (large prong in ball - smaller prong in lever).
4. Screw on valve bonnet (1) and valve cap (6).
5. Place the spacer over the shaft of the valve synchronizer.
6. Place the valve actuating arm over the shaft of the valve synchronizer with the bushing facing the valve.
7. Fit the valve synchronizer spring into the hole in the shaft of the valve synchronizer and secure it in place with the screw and the flex-loc nut.
8. Secure the pivot stud into the wall and assemble the pivot arm fastening at point A and then at point B.

TO SERVICE SUPPLY VALVE AGAINST LEAKS

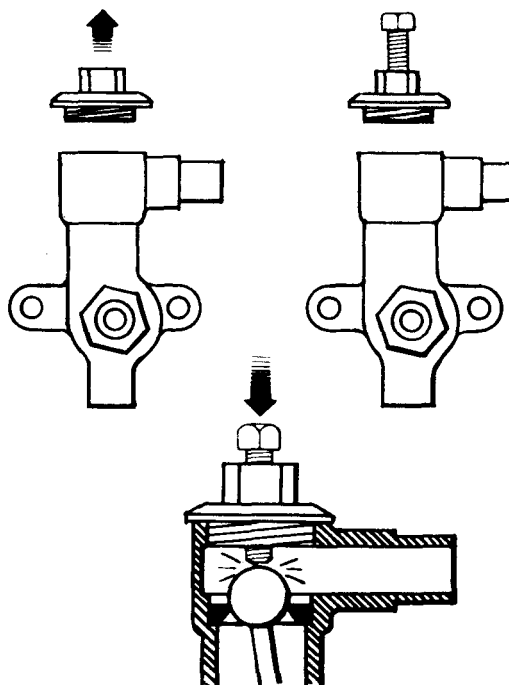
Remove the interference of the pivot arm by detaching it at the actuating arm junction and from the pivot stud. Remove the pivot stud and proceed as follows:

1. Remove existing valve cap (6). (It is not necessary to remove the valve.)
2. Replace valve cap (6) with the seating tool after having retarded the bolt to a point where it will not prematurely strike the ball in the valve.
3. After the seating tool is well secured, screw down the bolt to make contact with the ball assembly and apply pressure to force the ball to "make" a new seat.
4. Remove the seating tool and replace it with original valve cap(6). (We recommend an application of "Rectorseal" to threads to make a secure fit.)
5. Repeat the above process if the first attempt does not stop the valve from leaking.

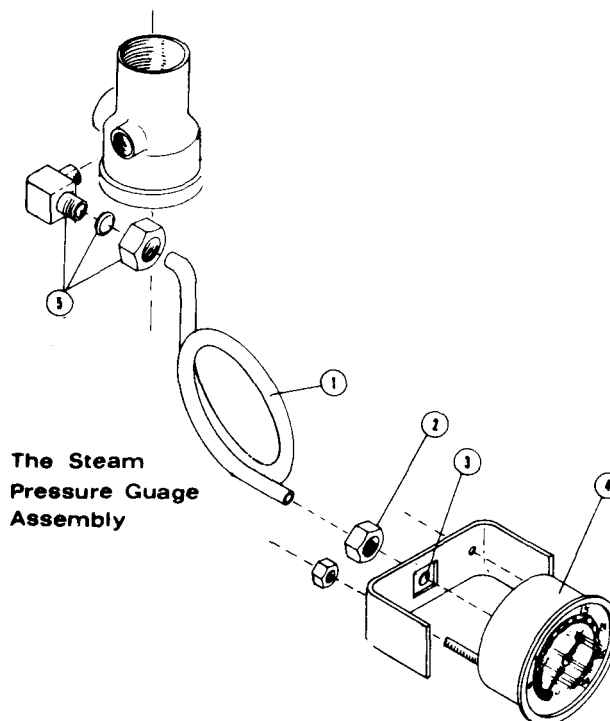
(Seating tool may be obtained from the factory.)

THE STEAM PRESSURE GAUGE ASSEMBLY

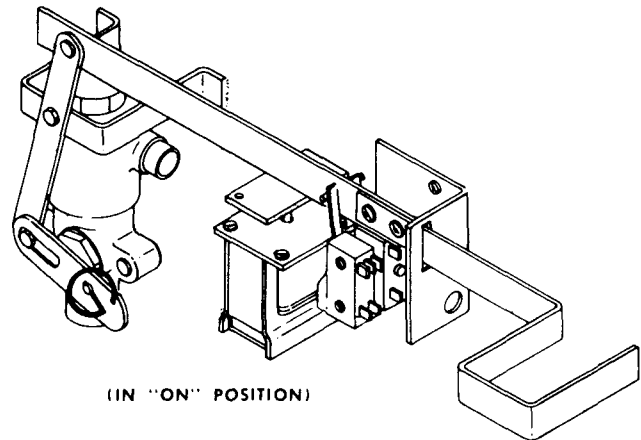
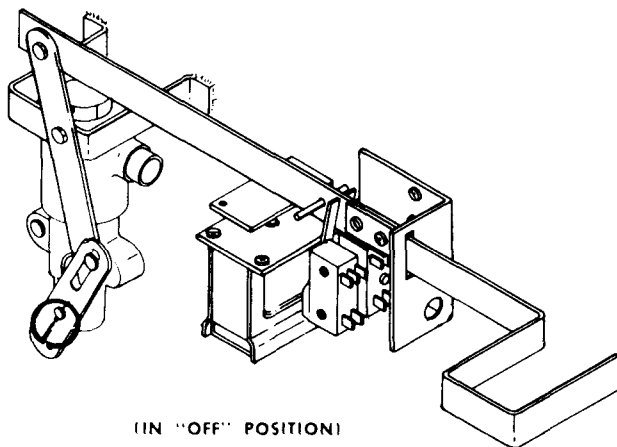
To remove the complete steam pressure gauge assembly, it will first be necessary to remove the side panel. The steam pressure gauge may then be detached by removing item (2) and then removing the two nuts which hold the pressure gauge bracket in place. The gauge is then removed from the front of cooker. To reassemble, reverse the above procedure.



ITEM	PART NO.	DESCRIPTION
1	90-8693	3/16 "O. D. Tubing (Model A-1)
	15-7054	3/16 " O. D. Tubing (Model A)
2	10-4370	Brass Nut for Compression Fitting
3	10-4371	Brass Sleeve for 3/16 "
		Compression Fitting
4	10-4748	0-30 No. Pressure Gauge
5	10-3360	1/8 "IPS Male x 3/16 O.D. Tube Elbow



The Steam Pressure Gauge Assembly



THE CONTROL BOX ASSEMBLY

The control box assembly is a device which converts an electrical impulse into a mechanical action. The mechanical action, stemming from the sudden release of a spring loaded system of levers, shuts off the steam supply, exhausts the steam from the cooking chamber, switches off a pilot light, and sets off a buzzer. This action is preset manually, with the simple action of setting the timer to the cooking timer required and pulling out the operating handle into the "on" position. The illustrations of "on" and "off" positions will serve to familiarize you with the proper relationship of the inner parts of the control box assembly.

HOW IT WORKS

When in "off" position; the valve will be closed restricting the steam from passing into the cooking compartment, the pilot light will be off, the buzzer inactive and the solenoid de-energized.

When the timer is set for the required cooking time and the operating handle is pulled to the "on" position; the valve will be opened to allow steam into the cooking compartment, the pilot light will light up, signifying *that* cooking is taking place, the buzzer and solenoid will still be de-energized.

When the cycle on the timer clock has been completed, a flow of current will energize the solenoid forcing the solenoid push rod to lift and disengage the operating handle. The operating handle now freed from the bumper and stop bar will spring back to the "off" position. The innermost micro-switch, released from the pressure of the pin of the operating handle will break the circuit to the solenoid, and the pilot light and the solenoid both will become inactive. The nearer solenoid having been pushed into a locked position under the buzzer lock will remain in contact operating the buzzer until released by pushing the buzzer release knob by hand.

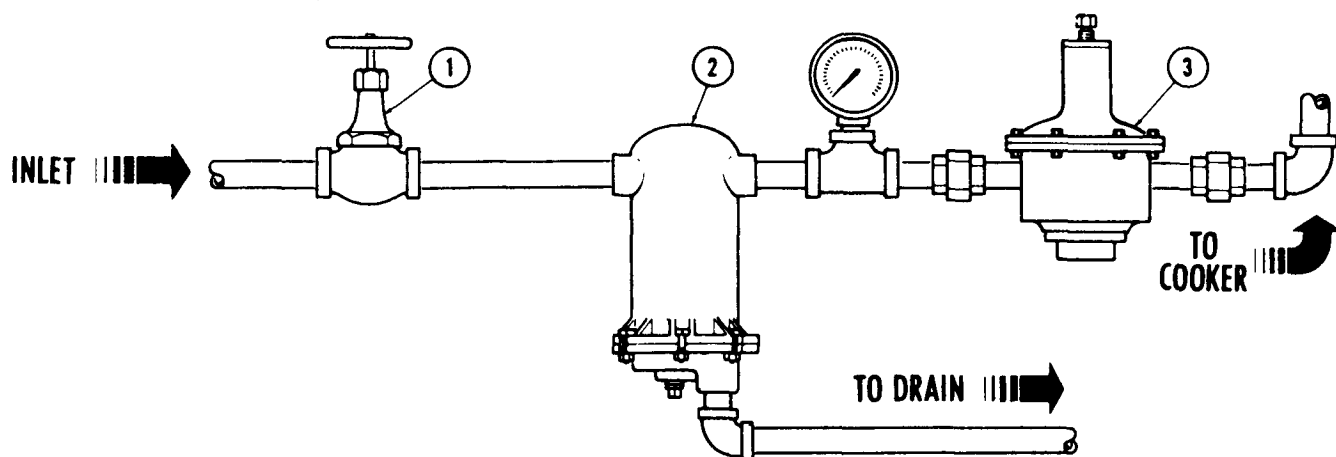
TROUBLE-TEST AND REMEDIES

If the operating handle will not lock in the "on" position:

- Check first that timer has been set. Check that the stop bar is properly secured.
- Check that solenoid and bracket is positioned properly.

If the operating handle fails to retract to "off" position:

- Check the valve synchronizer spring for looseness. Check all linkage for binding or loosened parts.
- Check switch on timer for continuity.
- Check micro switch for bent arm.
- Check for blown fuse and then for defective wiring or defective solenoid.



SUGGESTED STEAM CONNECTIONS

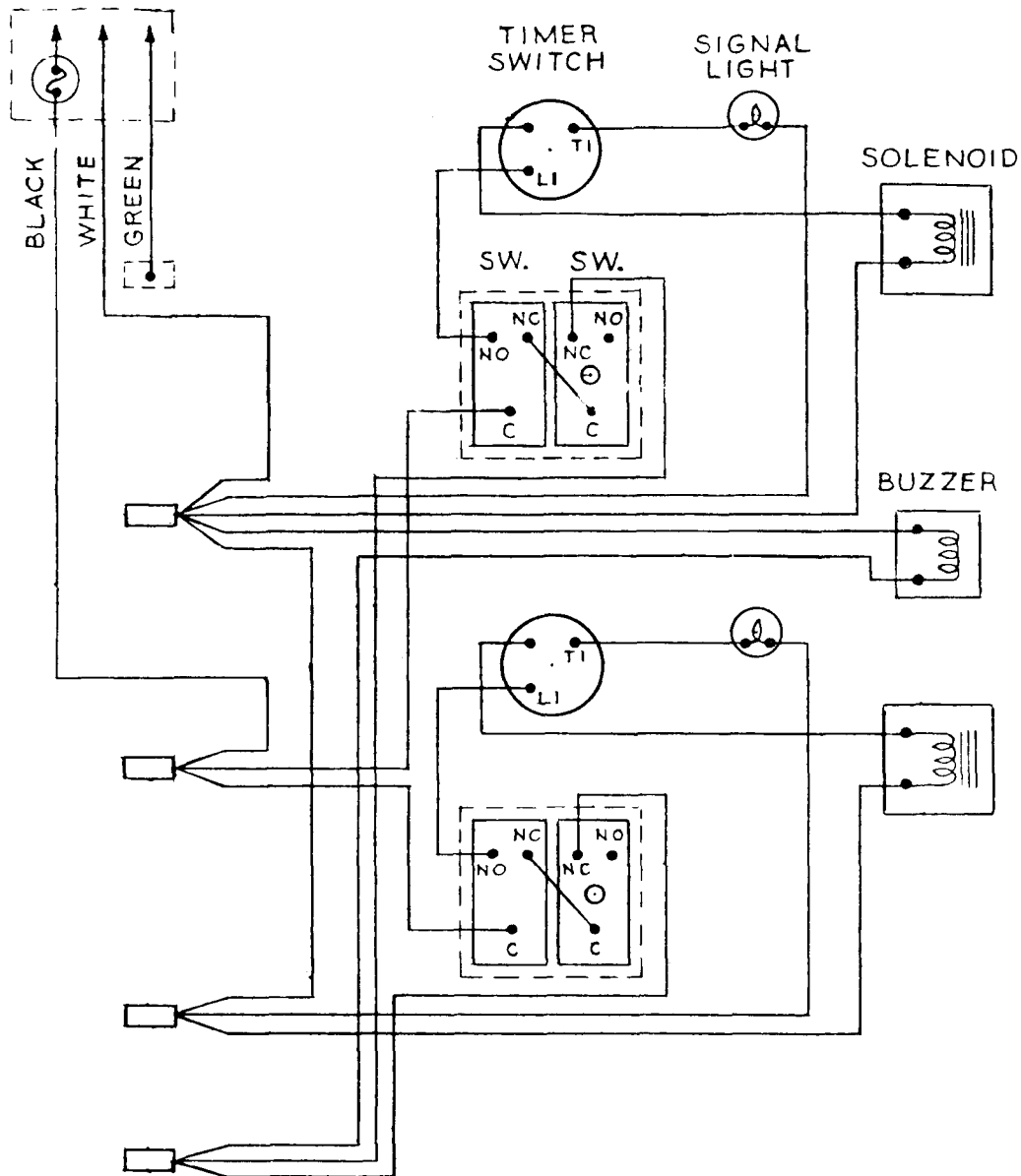
The illustration shows a recommended system of installation which provides: a pressure gauge to measure the pressure input at the source of supply, a globe valve for emergency shut-off, a ball-float trap to prevent dirt and water from entering the cooking units, and a pressure regulating valve to reduce and regulate steam pressures for delivery.

ITEM	PART NO.	DESCRIPTION
1	10-2821	3/4" Globe Valve
2	10-5336	Ball Float Trap
3	10-1033	3/4" Pressure Reducing Valve 5 lb. - enamel
	10-1034	3/4" Pressure Reducing Valve 5 lb. - chrome

..... NOTES

**A-1 Cooker (Automatic) 2,3
&4 Compartment 120 Volt, 60
Hz 240 Volt, 50 Hz **Drawing
No. 90-9240****

**A-1 Cooker (Automatic) 2,3
&4 Compartment 120 Volt, 60
Hz 240 Volt, 50 Hz **Drawing
No. 90-9240****



1. Wiring for 2 compartment as shown. For 3 & 4 compartment similar except for no. req'd. of Timers, Switches, Solenoids, Lights & Connectors.
2. On 3 & 4 compartment wiring use Marr Conn. #10-5172 when connecting more than 3 wires.

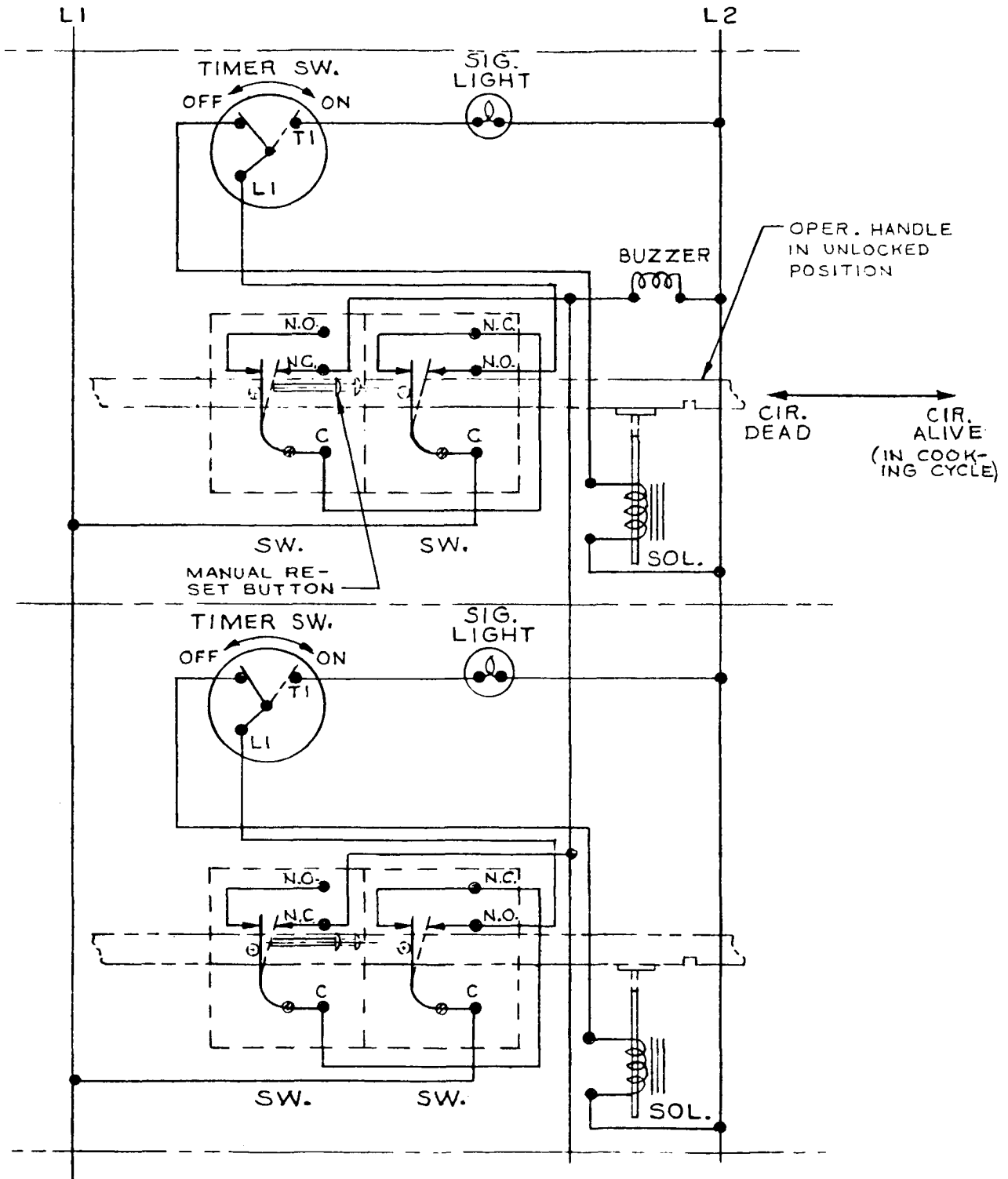
1. Wiring for 2 compartment as shown. For 3 & 4 compartment similar except for no. req'd. of Timers, Switches, Solenoids, Lights & Connectors.
2. On 3 & 4 compartment wiring use Marr Conn. #10-5172 when connecting more than 3 wires.

1. Dw'g. No. B-90-9217 or B-90-8727 Guide Bracket & Micro Switch Ass'y. made up as a sub-ass'y. with leads 90-8915, 90-8916, 90-8917, & 90-8918.
2. Use B-90-9217 on A-1 Cooker. Use B-90-8727 on 'A' Cooker.

1. Dw'g. No. B-90-9217 or B-90-8727 Guide Bracket & Micro Switch Ass'y. made up as a sub-ass'y. with leads 90-8915, 90-8916, 90-8917, & 90-8918.
2. Use B-90-9217 on A-1 Cooker. Use B-90-8727 on 'A' Cooker.

Schematic Diagram

A-1 Cooker (Automatic) 2,3 &
4 Compartment 120 V., 60
Hz 240 V., 50 Hz **Drawing**
No. **B-90-9240**



SCHEMATIC NOTE:

End of Cooking Cycle Timer at zero, Control Arm in unlocked position. Light, Solenoid & Buzzer de-energized. (Buzzer silenced by reset button on switch.)