

# MASTER HEATER MMV-400

## HIGH PRESSURE FORM NO. 2568 (12/69)

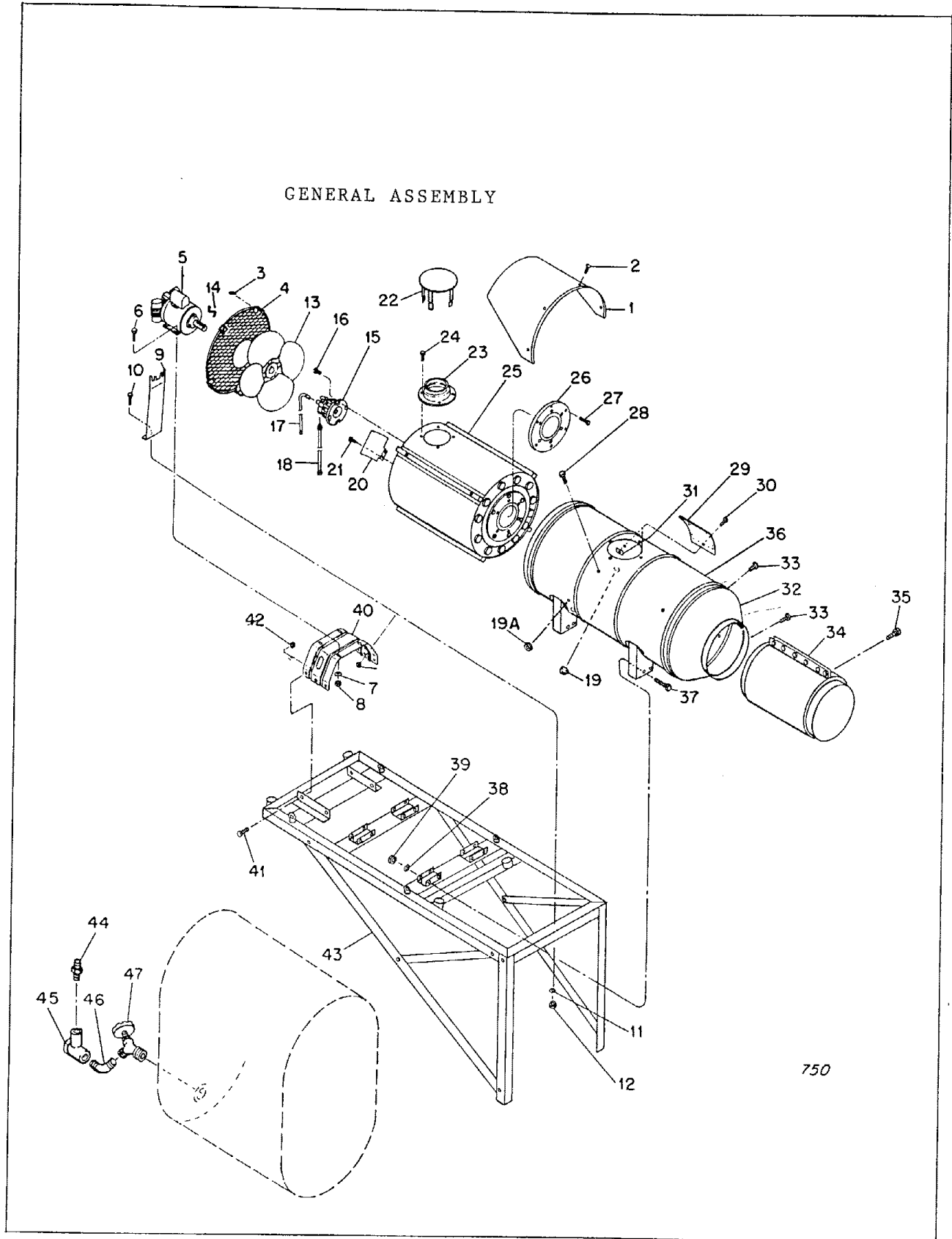
### MODEL MMV-400 HEATER ASSEMBLY

Index No.	Part Number	Part Name or Description	Quan.
4-		GENERAL ASSEMBLY	
1	M15835	Cowl	1
2	M11084-29	Screw, Self-tapping, hex hd No. 10-12 x 3/4 in., Type "A" (Cowl and Screen to Shell)	7
3	M11271-6	Nut, Tinnerman (Cowl and Screen to Shell)	7
4	M17531G1	Guard Screen Assy	1
5	REF	Motor and Pump Assembly (See Fig. 6)	NA
6	HC6-10C	Screw, Hex hd, 3/8-16 x 1-1/4 in. (Motor to Support)	4
7	WP-6C	Washer, Plain, 3/8 in. (Motor to Support)	4
8	NTC-6C	Nut, Torque Lock, 3/8-16	4
9	M16793	Bracket, Support	1
10	HF3-4C	Screw, Hex hd, No. 10-32 x 1/2 in. (Bracket to Frame)	1
11	WLM-3C	Lockwasher, No. 10 (Bracket to Frame)	1
12	NPF-3C	Nut, Hex, No. 10-32	1
13	M16050	Fan	1
14	M18026	Key, Fan Locating	1
15	REF	Burner Head Assembly (See Fig. 7)	NA
16	M12461-63	Screw, Hex hd, 1/4-20 x 1/2 in. (Burner Head Attaching)	2
17	M10816G28	Electrode Lead Assembly	2
-	M14941-3	Tubing, Shrink (on electrode leads at transformer end)	2
-	M3486-8	Tubing, Varnished, 12 in. long (over electrode leads inside heater shell)	2
18	M16049	Fuel Line (Pump to Burner)	1
19	M3530	Grommet, 7/8 in. (Fuel line through Shell)	1
19A	1000576	Grommet	2
20	M15853	Deflector, Air	5
21	M12461-62	Screw, Hex hd, 1/4-20 x 3/8 in. (De- flectors to Heat Exchanger)	10
22	M19012-1	Cover Assembly, Stack	1
23	M15844	Casting, Exhaust	1
24	M10908-27	Screw, Self-tapping, hex hd, No. 10-32 x 1/2 in. (Exhaust Casting to Heat Exchanger)	

Index No.	Part Number	Part Name or Description	Quan.
25	M15836G2	Heat Exchanger Assembly	1
26	M17389G1	Front Head Assembly	1
27	M12461-27	Screw, Hex hd, No. 10-32 x 1/2 in. (Front head to Heat Exchanger)	6
28	M12461-27	Screw, Hex hd, No. 10-32 x 1/2 in. (Heat Exchanger Assembly to Outer Shell)	8
29	M4812-3	Door, Access	1
30	M11084-27	Screw, Hex hd, No. 10-12 x 1/2 in. (Access Door)	1
31	M11271-6	Nut, Tinnerman	1
32	M19932	Cone, Outer Shell	1
33	M10908-26	Screw, Self-tapping, Hex hd., No. 10-32 x 3/8 in. (Cone to Shell and Duct)	10
34	M19384-1	Duct Assembly	1
35	M10908-29	Screw, Hex hd, No. 10-32 x 3/4 in., Type "S"	6
36	M18331G1	Outer Shell Assembly	1
37	HC4-20C	Screw, Hex hd, 1/4-20 x 2-1/2 in. (Outer Shell to Frame)	8
38	WP-4C	Washer, Plain 1/4 in. (Outer Shell to Frame)	8
39	NTC-4C	Nut, Torque Lock, 1/4-20 (Outer Shell to Frame)	8
40	M16169	Support, Motor	1
41	HC4-6C	Screw, Hex hd, 1/4-20 x 3/4 in. (Motor Support to Frame)	6
42	NTC-4C	Nut, Torque Lock, 1/4-20 (Motor Support to Frame)	6
43	M19004-1	Mounting Frame Assembly	1
-	M19016-1	Top Frame Assembly	1
-	M19934	End Frame Assembly	1
-	M19938	Side Brace, L. H.	1
-	M19937	Side Brace, R. H.	1
-	M19022	Brace	2
-	HC8-10C	Screw, Hex hd, 1/2-13 x 1-1/4 in.	10
-	WLM-8	Washer, Lock, 1/2 in.	10
-	NPF-8C	Nut, Hex, 1/2-13	10
-	M15087G1	Valve Assy, Strainer	1
44	M20105	Valve Assy, Check	1
45	M15088	Elbow, Sediment Strainer	1
46	M15075	Elbow, Angle	1
47	M15076	Valve, Angle type	1

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## GENERAL ASSEMBLY



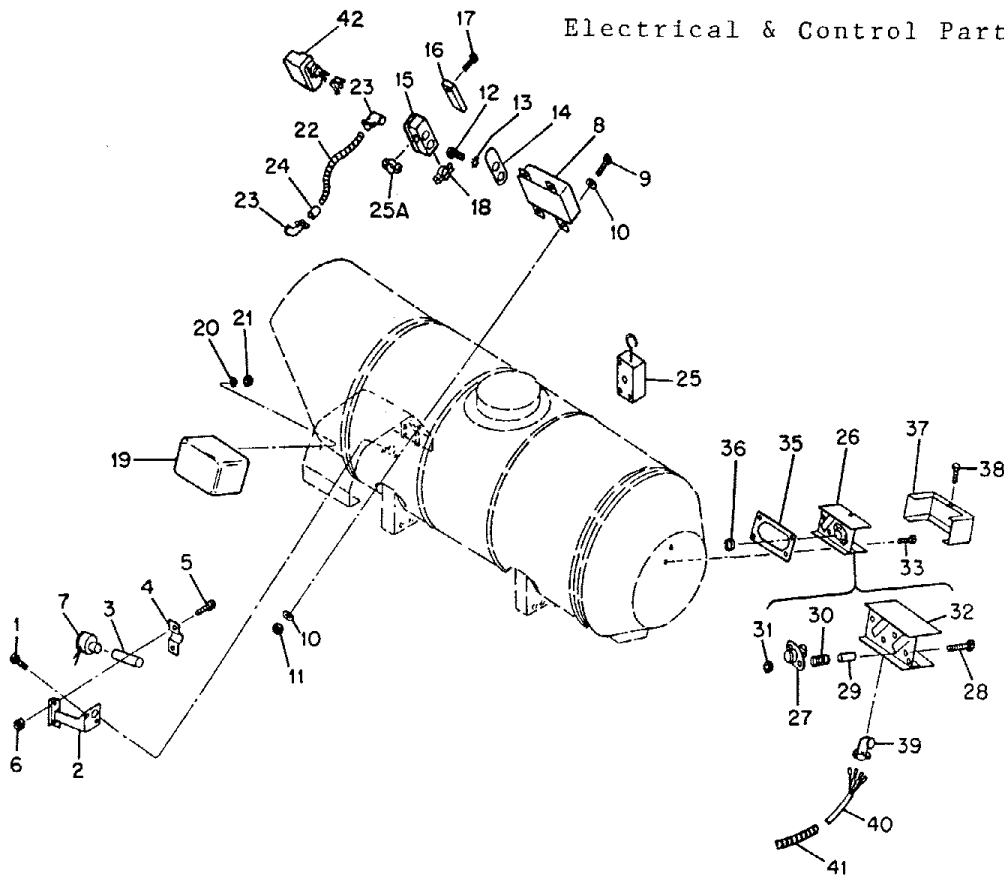
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## MODEL MMV-400 HEATER ASSEMBLY

Index No.	Part Number	Part Name or Description	Quan.	Index No.	Part Number	Part Name or Description	Quan.
5- ELECTRICAL AND CONTROL PARTS							
1	M11084-38	Screw, Self-tapping, hex hd, No. 8-15 x 3/8 in., Type "A" (Photo Cell Bracket to Combustion Chamber Head)	2	-	56022	Connector, 90° (Conduit to Utility Box)	1
2	M13961	Bracket, Photo Cell	1	-	M15141-1	Conduit, 9 in. long (Motor leads)	1
3	M13962	Tubing, Photo Cell	1	22	M15141-9	Conduit, 12 in. long (Solenoid Leads)	1
4	M13963	Clamp, Tubing	1	23	56022	Connector, 90° (Solenoid Conduit at Solenoid and Utility Box)	2
5	FHC1-4C	Screw, Fillister hd, No. 6-32 x 1/2 in. (Clamp to Bracket)	2	-	M15140	Connector, Straight, Solenoid and Motor Leads	4
6	NTC-1C	Nut, Torque Lock, No. 6-32	2	24	M15454	Insulator, Conduit (In Solenoid Lead Conduit)	2
7	M9211-5	Photo Cell	1	-	69321-3S	Terminal (Solenoid)	2
-	M15141-4	Conduit, 24 in. long (Photo Cell Leads to Control)	1	25	M16141	Thermostat Assembly	1
-	56022	Connector, 90° (Photo Cell Lead Conduit)	2	25A	M15140	Connector, Straight (Thermostat Conduit to Utility Box)	1
8	M15435	Penn Control (Type 686C)	1	26	M12656G3	Controls and Box Assembly	1
9	HC4-6C	Screw, Hex hd, 1/4-20 x 3/4 in. (Control to Motor Support)	4	27	M12303-2	Thermostat, Limit (Limit Switch)	1
10	WP-4C	Washer, Plain, 1/4 in.	8	28	M12461-20	Screw, Hex hd, No. 8-32 x 1-1/8 (Limit thermostat to Control Box)	2
11	NTC-4C	Nut, Torque Lock, 1/4-20	4	29	M12297-2	Collar	2
12	M3586	Bushing, 1/2 in. (Utility Box to Control)	2	30	M18305	Spring	2
13	50460	Locknut, 1/2 in. (Utility Box to Control)	2	31	NPC-2C	Nut, Hex, No. 8-32	2
14	M5652	Spacer (Utility Box to Control)	2	32	M12657G1	Control Box Assembly	1
15	M3307	Box, Utility	1	33	M10908-28	Screw, Self-tapping, hex hd, hex hd, No. 10-32 x 5/8 in., Type "S" (Control Box to Outer Shell)	4
16	M5837	Cover, Utility Box	1	35	M16710	Gasket	1
17	FC1-2C	Screw, Flat hd, No. 6-32 x 1/4 in. (Cover to Box)	2	36	M12662-2	Spacer	1
-	M15714-2	Connector, Wire (Set-screw type with removable shell, In Utility Box)	3	37	M12661	Cover, Control Box	1
18	M15140	Connector, Straight (Service Cord to Utility Box)	1	38	M10908-1	Screw, Self-tapping, Hex hd, No. 6-32 x 1/4 in. (Cover to Control Box)	1
19	M3259-3	Transformer	1	39	56022	Connector, 90° (Conduit to Control Box and Utility Box)	2
20	WLM-4C	Lockwasher, 1/4 in. (Transformer Mounting)	2	40	M5845G24	Cable Assembly	1
21	NPC-4C	Nut, Hex, 1/4-20	2	41	M15141-7	Conduit, 51 in. long (Control Box to Utility Box)	1
-	M14941-3	Tubing, Shrink (Transformer End)	2	42	M20302	Relay	1
-	M15141-10	Conduit, 10 in. long (Transformer to Utility Box)	1	-	M20308	Decal, Operating Instructions	1
-	M15140	Connector, Straight (Conduit to Transformer)	1	-	M4950	Decal, Caution	1
				-	M19956	Decal, Nameplate	1
				-	M13337	Decal, Caution	1
				-	M19955	Wiring Diagram	1
				-	M20532-1	Decal, Pump Pressure	1

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## Electrical & Control Parts



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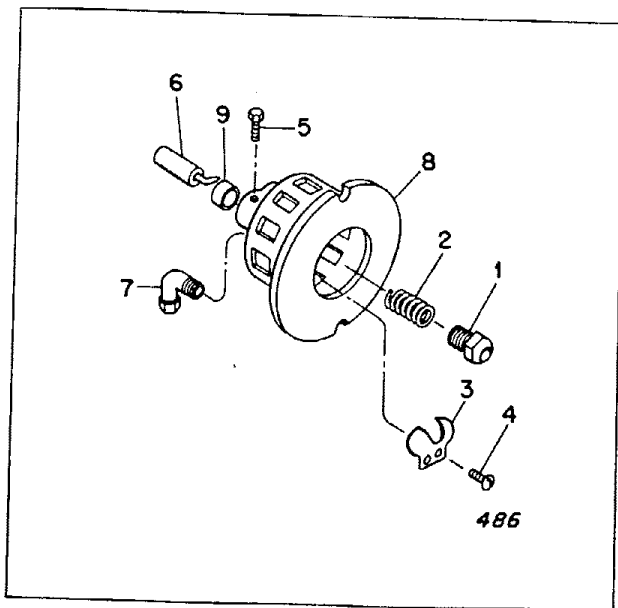


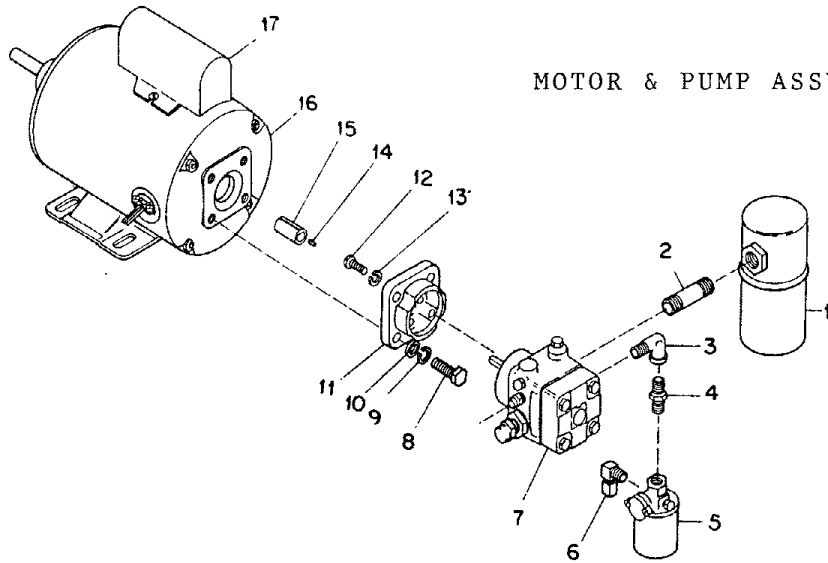
Figure 7. Burner Assembly

## BURNER HEAD ASSEMBLY

Index No.	Part Number	Part Name or Description	Quan.
7-	Ref	BURNER HEAD ASSEMBLY	NA
1	M18303	. Nozzle	1
2	M4274	. Spring	1
3	M3978	. Deflector, Air	1
4	RC1-2C	. Screw, Rd hd., No. 6-32 x 1/4 in.	2
5	HF3-3C	. Screw, Hex hd., No. 10-32 x 3/8 in.	2
6	M3981	. Electrode	2
7	69248	. Elbow	1
-	REF	. Burner Body and Bushing Assy	NA
8	M18304	. Burner Body	1
9	M16712	. Bushing, Electrode	2

NA - Not Available as an assembly. Order individual parts.

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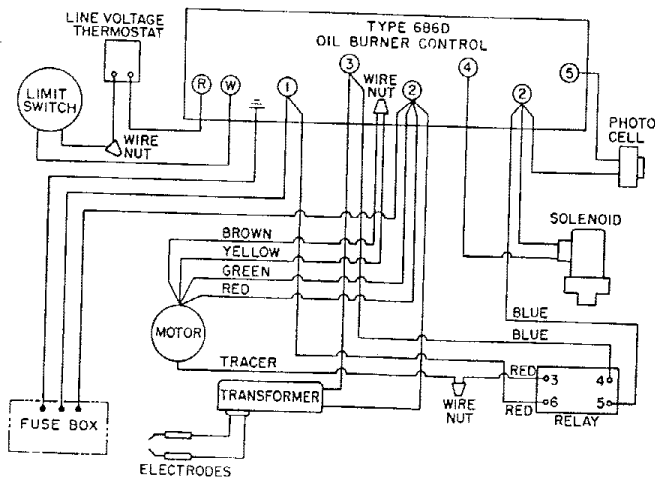


MOTOR & PUMP ASSY

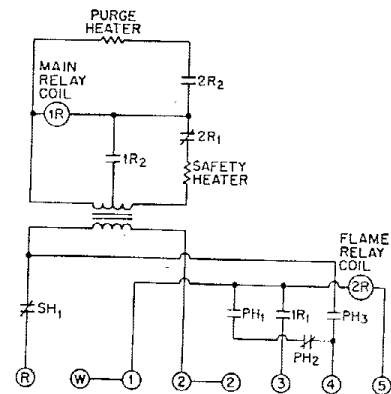
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Index No.	Part Number	Part Name or Description	Quan.
6-	REF	Motor and Pump Assembly (See figure 4)	NA
1	M3973	. Filter	1
-	M3301-1	. . Cartridge, Filter (Replacement)	1
-	M3301-2	. . Gasket, Filter (Replacement)	1
-	M4307	. . Can, Filter	1
2	M17499-2	. Nipple, Pipe 1/4 x 2	1
3	57379	. Elbow, Street, 90°	1
4	69246	. Nipple, Hex, 1/8 pipe	1
5	M3974-1	. Solenoid Valve, Fuel	1

Index No.	Part Number	Part Name or Description	Quan.
6	1000513	. Connector, Male	1
7	M18363	. Pump	1
8	HC5-7C	. Screw, Hex hd	4
9	WLM-5C	. Lockwasher	4
10	WP-5C	. Washer, Flat (Bottom only)	2
11	M18365	. Adapter	1
12	RF3-6C	. Screw, Rd hd, 10-32 x 3/4	3
13	WLM-3C	. Lockwasher	3
14	M18436	. Spring	1
15	M18336	. Coupling	1
16	M16006	. Motor	1
17	M12650-1	. Capacitor	1
-	M18975	Pump Repair Kit	1



M19955



INTERNAL WIRING OF  
TYPE 686D CONTROL