



Mi-T-M® CORPORATION

OPERATOR'S MANUAL

PRESSURE WASHERS

Electrically Heated



Mi-T-M® CORPORATION, 8650 Enterprise Drive, Peosta, IA 52068
Tel: (800) 553-9053 Fax: (563) 556-1235
e-mail: corp@mitm.com Website: <http://www.mitm.com>

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IMPORTANT SAFETY INSTRUCTIONS

1. Read all safety and operating instructions before using the unit.
2. Read all electrical hook up instructions.
3. Read warnings on additive containers.
4. Ventilate work area when using toxic or pungent additives to reduce your exposure to toxic fumes.
5. Use protective wear, especially for the eyes and skin.
6. Be careful of slippery floors. Some additives make a normally safe area extremely slippery and dangerous.
7. Keep children away from the machine and wash area.
8. Do not change nozzle size. Each machine is designed to operate with a specific size nozzle. An incorrect nozzle could cause excessive pressure resulting in pump damage and possible personal injury. Refer to parts list for correct nozzle size.
9. Do not point the nozzle where damage or injury could result (eg. eyes, skin). The water discharge from this unit is under extremely high pressure.
10. Do not point the nozzle toward an electrical outlet as you risk severe shock and personal injury.

PRE-OPERATING INSTRUCTIONS

When unpacking the unit, if you find damage due to shipping, contact your dealer or Mi-T-M Corporation immediately,

ELECTRICAL SUPPLY

Arrange with an electrician to install a properly grounded, three phase service. To protect the receptacle from splashes, the recommended height above the ground level is a minimum of four feet. A ground fault interrupter (GFI) should be used. Make sure the supply voltage is correct. The voltage is shown on the rating plate of the unit, or see "Specifications, Features and Options" sheet in this manual.

IMPORTANT!

DO NOT CHANGE THE AC PLUG ON THE UNIT TO A DIFFERENT TYPE DO NOT CUT OFF THE GROUND PIN OR THE OPERATOR WILL BE EXPOSED TO SEVERE SHOCK. KEEP ELECTRICAL CORDS AND CONNECTIONS DRY AT ALL TIMES.

INCOMING WATER SUPPLY

Connect a garden hose to the water inlet of the unit. The water supply must be able to deliver 5-8 gallons per minute at a minimum pressure of 5 psi. See "Specifications, Features and Options" sheet in this manual.

HIGH PRESSURE NOZZLE

Attach the high pressure nozzle (sent with operator's manual), to the trigger gun extension.

OPERATING INSTRUCTIONS

When unpacking the unit, if you find damage due to shipping, contact your dealer or Mi-T-M Corporation immediately,

HOT PRESSURE WASHER MODE (P Units only)

SET-UP PROCEDURE:

1. Connect water supply to inlet on back of unit (minimum pressure 15 psi and maximum inlet pressure 60 psi) (maximum temperature 55° F or 13° C).
2. Connect high pressure hose and trigger gun to outlet on lower front of unit.
3. Connect electrical supply (fused disconnect)

OPERATING PROCEDURE:

Control (see 'Electrical Control Panel')

Number

- 8 1. Push "Heater Reset" button - green light comes on
- 7 2. Move toggle switch to "Pump On" position
- 5 3. Turn temperature control to desired temperature (see 'Specifications' for maximum temps.)
- 6 4. Move toggle switch to "Heater On" position
- 1&2 5. When cleaning gun trigger is squeezed, the red indicator lights for thermostat and heater will go on.
- 2 6. When water reaches desired temperature, the "Heater On" light will shut off as the unit maintains the desired temperature.
- 1&2 7. At maximum temperature, both red lights remain on continuously. Both lights shut off when trigger is released.

SHUT DOWN PROCEDURE:

- 6 1. Move heater switch to "OFF".
2. Keep trigger depressed until discharge water is cold.
- 7 3. If unit will be subjected to temperatures below freezing, antifreeze protection must be applied.

STEAM CLEAN MODE (S Units only)

SET-UP PROCEDURE:

1. Connect water supply to inlet on back of unit (minimum pressure 15 psi and maximum inlet pressure 60 psi) (maximum temperature 55° F or 13° C).
2. Connect the steam hose and steam wand to outlet on lower front of unit.

OPERATING PROCEDURE:

Control (see 'Electrical Control Panel')

Number

- 8 1. Push "Heater Reset" button (green light should come on)
- 7 2. Move toggle switch to "Pump On" position
- 5 3. Turn temperature control to 305° F (152° C) position
- 6 4. Move toggle switch to "Heater On" position (red light indicator for the thermostat and until the maximum temperature is reached)
5. The water flow will change to steam as the temperature increases (about three minutes until the maximum temperature is reached)
- 1&2 6. Both red lights should now remain on.

OPERATING INSTRUCTIONS Continued

HOT PRESSURE WASHER MODE (PS Units only)

SET-UP PROCEDURE:

1. Connect water supply to inlet on back of unit (minimum pressure 15 psi and maximum inlet pressure 60 psi) (maximum temperature 55° F or 13° C).
2. Connect high pressure hose and trigger gun to outlet on lower front of unit.

OPERATING PROCEDURE:

Control (see 'Electrical Control Panel')

Number

- 3 1. Turn selector switch on the Electrical Panel to "Pressure Wash"
- 8 2. Push "Heater Reset" button - green light comes on
- 7 3. Move toggle switch to "Pump On" position
- 5 4. Turn temperature control to desired temperature (see 'Specifications' for maximum temps.)
- 6 5. Move toggle switch to "Heater On" position
- 1&2 6. When cleaning gun trigger is squeezed, the red indicator lights for thermostat and heater will go on.
- 2 7. When water reaches desired temperature, the "Heater On" light will shut off as the unit maintains the desired temperature.
- 1&2 8. At maximum temperature, both red lights remain on continuously. Both lights shut off when trigger is released.

SHUT DOWN PROCEDURE:

- 6 1. Move heater switch to "OFF".
2. Keep trigger depressed until discharge water is cold.
3. Move pump switch to "OFF".

STEAM CLEAN MODE (PS Units only)

SET-UP PROCEDURE:

1. Connect water supply to inlet on back of unit (minimum pressure 15 psi and maximum inlet pressure 60 psi) (maximum temperature 55° F or 13° C).
2. Connect the steam hose and steam wand to outlet on lower front of unit.

OPERATING PROCEDURE:

Control (see 'Electrical Control Panel')

Number

- 3 1. Turn selector switch on the Electrical control panel to "Steam Clean".
- 8 2. Push "Heater Reset" button (green light should come on)
- 7 3. Move toggle switch to "Pump On" position
- 5 4. Turn temperature control to 305° F (152° C) position
- 6 5. Move toggle switch to "Heater On" position (red light indicator for the thermostat and until the maximum temperature is reached)
6. The water flow will change to steam as the temperature increases (about three minutes until the maximum temperature is reached)
- 1&2 7. Both red lights should now remain on.

SAFETY COMPONENTS

FLOW SWITCH

The flow switch prevents the burner from being turned on if there is insufficient water. Proper water flow causes the magnetic core to be pushed up, causing the reed contact to close. This contact is interlocked with the main heater contactor.

UNLOADER VALVE

The Unloader allows all of the water delivered by the pump to return to the pump suction side. If the trigger gun is closed (shut) the valve goes into the “bypass mode”. The pump runs without pressure. However, the pump may be SEVERELY DAMAGED, due to excessive overheating, if left running in the “bypass mode” or “Gun-Off” situation for more than 6 minutes.

SAFETY RELIEF VALVE

The Relief Valve prevents the machine from being subjected to abnormally high pressures. If this situation occurs, the valve will blow off relieving the pressure in the coil. This valve may also operate if the unloader is adjusted too high.

THERMOSTAT

The built-in thermostat stops the unit from overheating. Maximum temperature of the unit is 300° F. (150° C) Above this temperature, the thermostat contactor turns off the third set of heaters.

LOW PRESSURE SWITCH

The Pressure Switch ensures that there is pressure, and therefore there is water flow at the head of the pump. This control does not operate at less than 3 psi. Therefore if the water is turned off, the machine will not operate.

HIGH LIMIT SWITCH

The high limit switch is a thermostat which operates at a higher temperature than the thermostat, about 305° F (150° C). This switch is not adjustable and will only operate when the other controls fail to keep the water temperature within the normal operating range. This switch cuts the power to all of the heaters.

FUSIBLE PLUG

The fusible plug is a safety relief device designed to operate at about 380° F. At this temperature it should only blow off if all of the other safety devices have failed. This is a one time device and must be replaced if it releases. More importantly, the cause of this blow off must be determined before refitting the machine.

THINGS TO CHECK REGULARLY

1. Check for SYSTEMS LEAKS. Leaks in the pressure side of the system can cause premature wear (or even failure) of the pump. The WARNING signal for this kind of leak is "frequent" cycling of the Unloader. ("FREQUENT" means more than once every 2 minutes in the "Gun-Off" position.) Check the gun and swivel joints for leaks.
2. Check the OIL LEVEL at least once a week. Add ONLY the type and grade of oil specified for this pump. (See Parts List.)
3. CHANGE OIL as recommended.
4. After you use chemical additives, thoroughly FLUSH the system with clean water.
5. Inspect the POWER CORD regularly. Also check the POWER OUTLET SOCKET. For safety, replace worn or damaged parts immediately.
6. Never run the washer without water. TURN WATER ON FIRST.
7. PROTECT FROM FREEZING! When transporting your washer in temperatures below 32°F (0°C), WINTERIZE the pump, hoses and gun.

WINTERIZING YOUR PRESSURE WASHER

1. Shut off the water supply and disconnect the hose at the water source.
2. Put the end of the water hose into a 4 litre jug of windshield washer anti-freeze.
3. Turn on Cleaner and open gun until liquid comes out of nozzle "foamy" or "soapy". CAUTION: If your high pressure hose is longer than 26 feet, the 4 litre bottle of anti-freeze may empty before liquid from the nozzle gets foamy.
4. Put gun in "OFF" position for 5 seconds to get anti-freeze into bypass line. Shut off motor.
5. Disconnect the water hose at the machine.
6. The unit, pressure hose and gun are now winterized.

SERVICE AND MAINTENANCE

Before carrying out maintenance work or repairs, disconnect the plug from the power supply.

MAINTENANCE SCHEDULE:

WEEKLY:

Check the oil level of the high pressure pump. If the oil is milky or the oil level is below the minimum mark, change or fill with SAE 20W or 30W non-detergent oil.

YEARLY:

Oil Change: Remove the drain plug of the water pump, drain the oil, and clean and replace the drain plug. Fill oil up to the red dot inside the oil glass (Use SAE 20W or 30W non-detergent oil).

Coil Maintenance: Liming of the coils is caused by mineral deposits from the water and occurs in hard water areas. The deliming procedure requires special caution and tools. It is recommended that the local service person is contacted if problems arise.

Checking For Scale or Liming in Coil

1. Remove outlet orifice and check for liming. Clean orifice if needed.
2. Remove outlet gun.
3. Install a pressure gauge between the water pump and coil inlet.
4. Check condition of your water pump and unloader valve. Water pump and unloader valve failure will cause low pressure readings.
5. Turn on pump without water outlet gun or outlet orifice. If pressure reading is above 50 psi, have your machine descaled.
6. If your machine is satisfactory, reassemble.

Descaling: If pressure drop of over 50 psi is experienced in the coil, descaling is recommended. Descaling requires the use of highly corrosive chemicals as well as the use of special protective clothing.

1. Have a 20L pail of descaling chemical available.
2. Plumb the pump section into the pail of descaling compound with a screen on the end of the suction line.
3. Plumb a hose from the machine outlet back into the pail of descaling compound.
4. Turn the pump on and circulate the compound through the machine for about 20 minutes.
5. After that time the chemical being pumped out of the coil should be running thin and dirty rather than foaming heavily.
6. Remove the extra plumbing and reconnect machine together and run clean cold water through the machine for five minutes.

SPECIFICATIONS, FEATURES & OPTIONS

Electric Model Specifications

*Output temperatures are based on an input temperature of 55 deg. F

	EH-2303-0M30	EH-3004-0M30
Pressure PSI - Steam	-	-
Pressures PSI - Press	2300	3000
Volume GPH - Steam	-	-
Volume GPM - Press	3.0	3.9
Water Flow Supply Rate @ 5 psi	6.0	8.0
Nozzle Size	4.0	4.5
Temperature Steam °C	-	-
Temperature Steam °F	-	-
Temperature Press °C	60	82
Temperature Press °F	140	180
Electric Motor - HP	5	7.5
POWER REQUIREMENTS		
Volts (3 Phase)	575/460	575/460
Amps @ 575V	42	80
Amps @ 460V	51	125
KW	36	72
DIMENSIONS		
Length	38	38
Width	21	21
Height	30	30

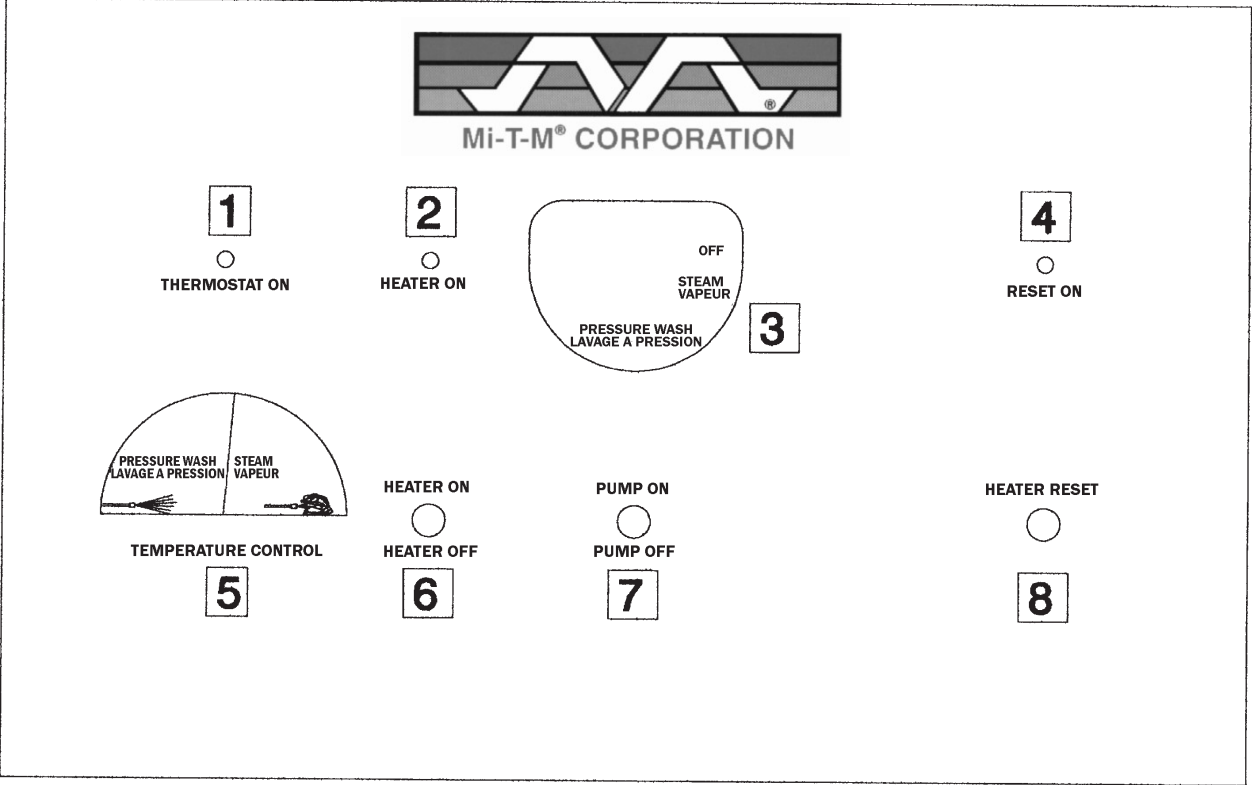
NOTES:

1. Standard features include CSA Inspection, auto start/stop, and 50' of hose.
2. Portability cart is optional

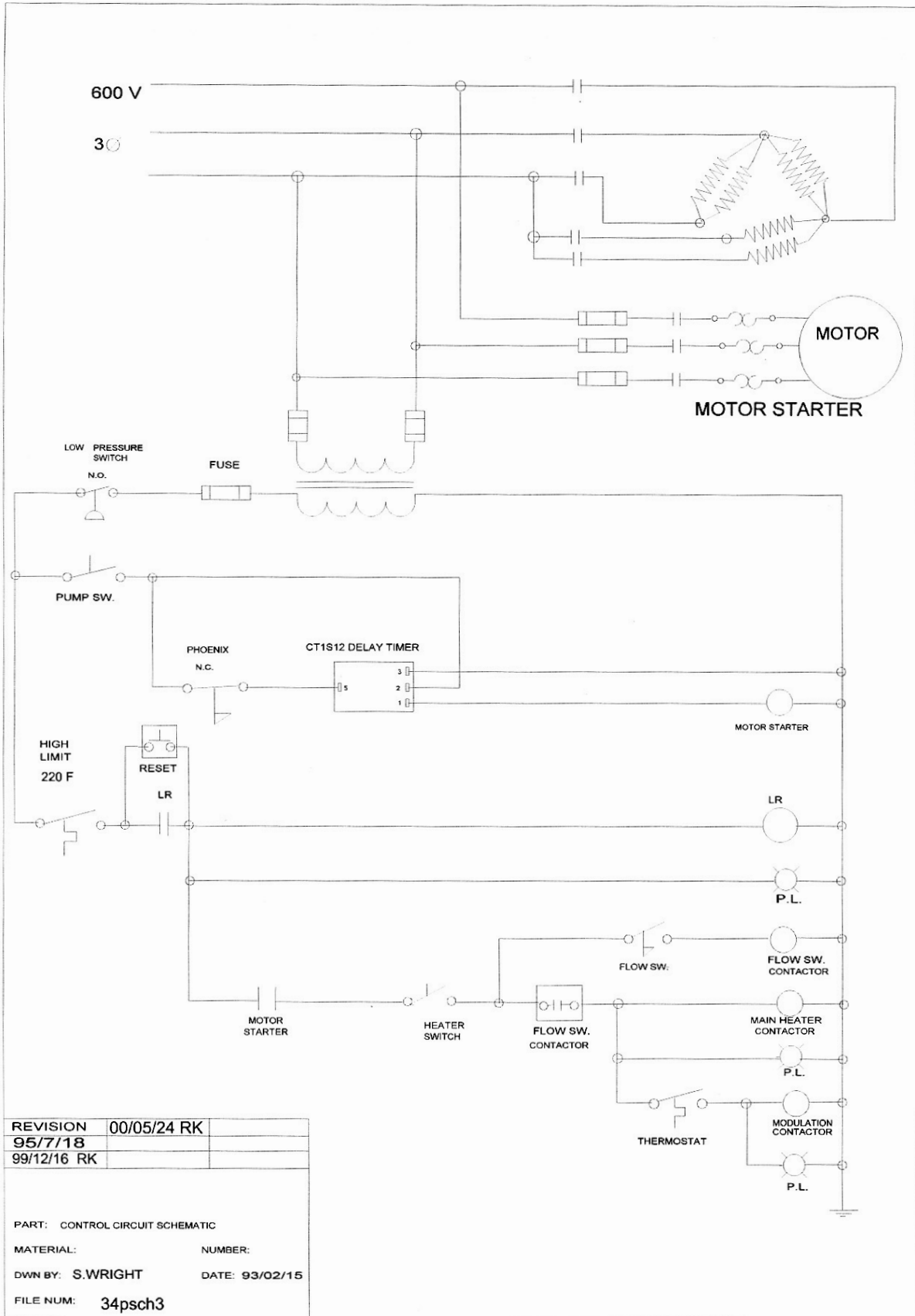
HOSE: Pressure washer hose is rated for 3000 psi and 250 F.

WATER PUMP: Three-Plunger high pressure pump with ceramic plungers

ELECTRICAL CONTROL PANEL



EH-3004-0M30 SCHEMATIC



REVISION	00/05/24 RK	
95/7/18		
99/12/16 RK		

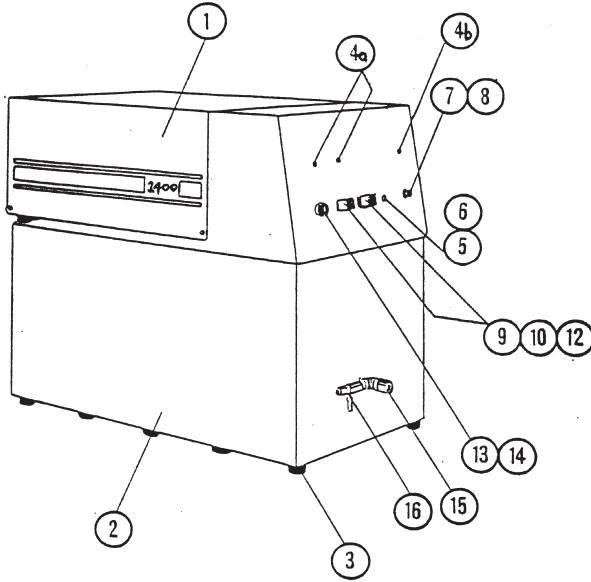
PART: CONTROL CIRCUIT SCHEMATIC

MATERIAL: NUMBER:

DWN BY: S.WRIGHT DATE: 93/02/15

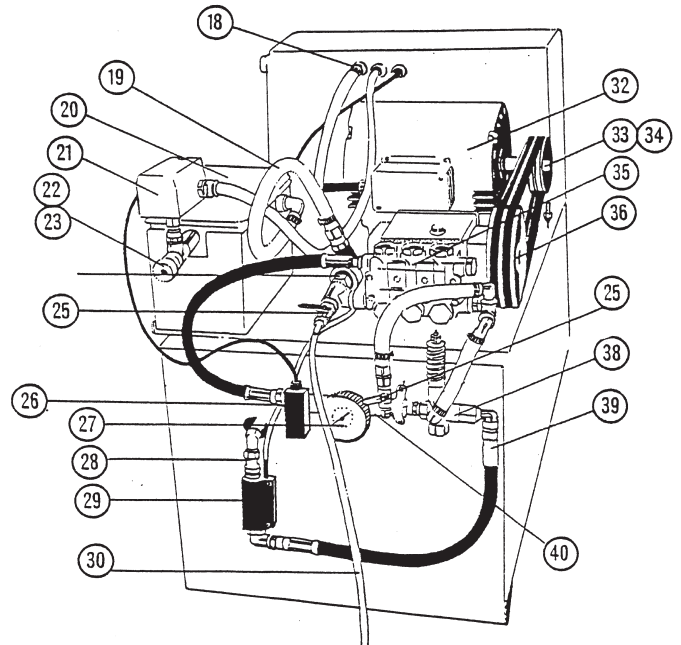
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ELECTRICALLY HEATED PARTS BREAKDOWN

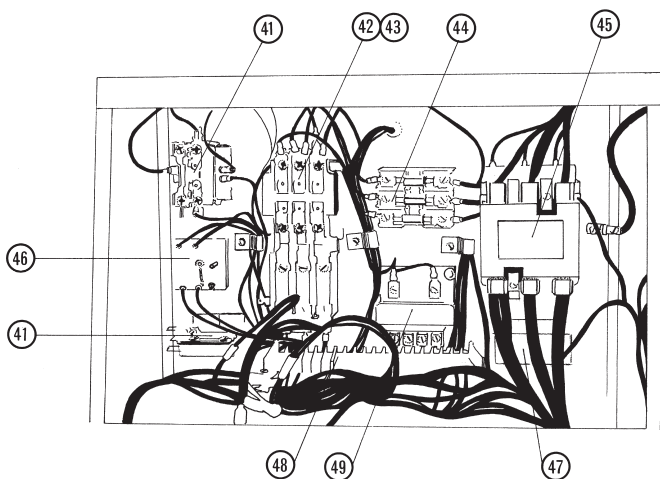


ITEM NO.	PART NO.	DESCRIPTION
1	EP: 24751	Cover
2	EP: 24757	frame panels
3	FA: 315-006	rubber feet
4	EL: 2191L1-24V	red pilot lights
4	EL: 2191L5-24V	green pilot lights
5	EL: GGC5	1 1/4 fuses
6	EL: 345603	fuse holder
7	EL: 110PMOFF	reset push button switch
8	EL: N3030	push button switch boot
9	EP: 703701	on/off plate
10	EL: 1131/26	pump toggle switch boot
11	EL: CA11	steam/pump select switch (optional)
12	EL: CA201-73	heater toggle switch
13	EL: TRV	thermostat
14	EP: 40034	thermostat knob
15	EP: 22208	snap coupling
16	PU: SRI	relief valve

ITEM NO.	PART NO.	DESCRIPTION
18	EL: 3200	nylon strain relief
19	FI: PVC128	PVC bypass hose
20	EP: 15020	float box (optional)
21	EL: 69WR3	inlet pressure switch
22	FI: 201-W	cap nut
23	EP: 22191	cap nut adapter
25	PU: CMVL	brass valve chemical
26	EP: 33396	pressure switch
27	PU: HO25FF	pressure gauge (optional)
28	FI: 66-6-6	swivel coupling
28	FI: 2501-6-6	3/8 FP X 3/8 JIC elbow
29	PU: ST5	flow switch
30	FI: JFT64	1/4" soapline tubing
32	EN: KH2	0.75 HP motor - 32S-36, 34S-36
32	EN: KH7	1.5 HP motor - 32P-34,32P-36,32PS-36
32	EN: KH22	5.0 HP motor-34P-36,34P-38,34P-72,34PS-72
32	EN: KH27	7.5 HP motor - 35P-72
33	DR: AK25	motor pulley - 1.5 HP, 0.75 HP
33	DR: AK44	motor pulley - 1.5 HP, 0.75 HP, 5 HP
33	DR: 2AK30	motor pulley - 5 HP
33	DR: 2AK30	motor pulley - 7.5 HP
35	T9961	General Pump - 32P-24,32P-36,32PS-36
35	TS1331	General Pump - 34P-36,34P-48,34PS-72
35	T1321	General Pump - 34P-72
35	TS2011	General Pump - 34P-72
36	PU:2PY140A24	Pump Pulley - T9961, TS1331, TS2011
36	PU:2PY160A24	Pump Pulley - T1321
36	DR:2AK30	Pump Pulley - T1321
36	DR:2AK49QT	Pump Pulley - TS2011
38	PU: UVP1060	Unloader
39	FI: A48LD18	18" coil to panel hose
40	EP: 27570	manifold

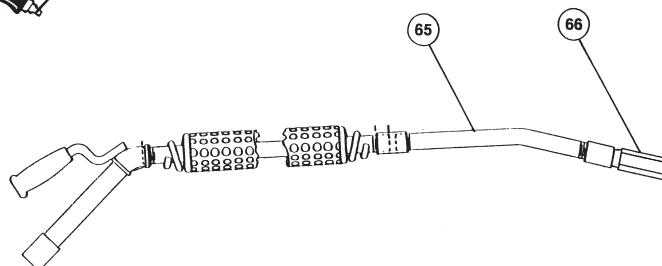
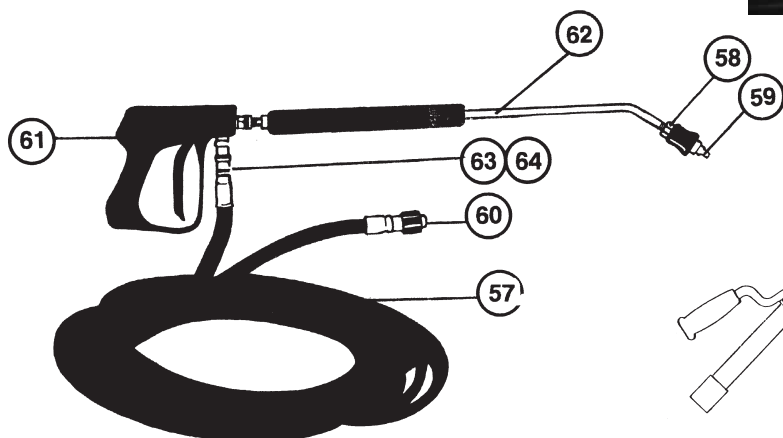
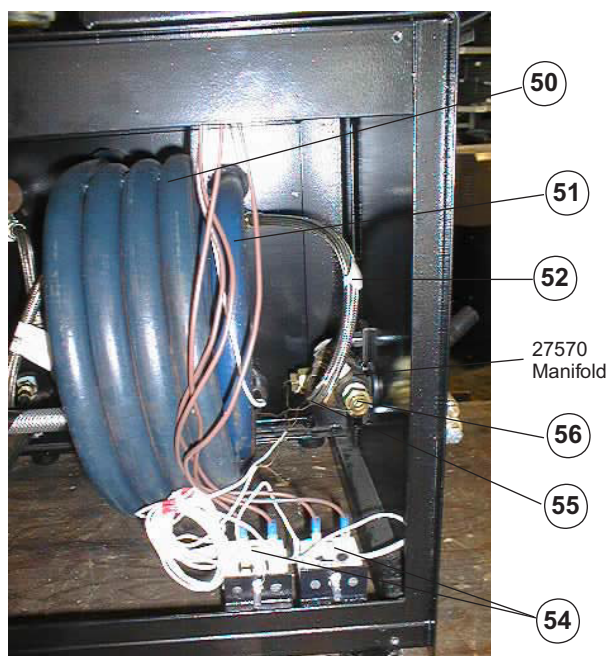


ELECTRICALLY HEATED PARTS BREAKDOWN



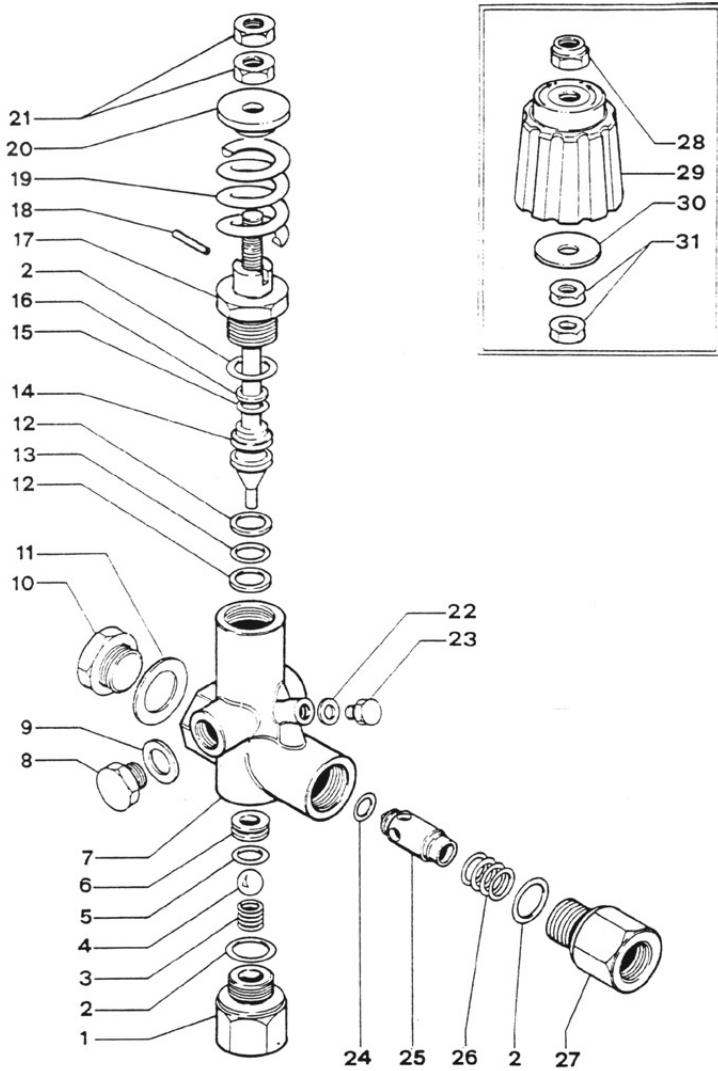
ITEM NO.	PART NO.	DESCRIPTION
41	EL: 45DG10AJ	reset contactor & flow switch contactor
42	EL: S1210	motor starter - 35P-72
43	EL: T9EI	overload relay
44	EL: ATDR15	motor circuit fuses
45	EL: 42DF35AJ	heater contactor-P-36
45	EL: 42GE35AJ	heater contactor-34P-72,34PS-72,34S-72,35P-72
46	EL: CT1S12	delay timer - all machines except 32S-36, 34S-72
47	EL:45DG10AJ	thermostat contactor-32P-34,32P-36,32PS-36,34P-48
47	EL:45EG20AJ	thermostat contactor-34P-72,34PS-72,34S-72,35P-72
48	EL:1492-CA1	terminal blocks
49	EL:MH50AG	600/24 volt transformer
50	EP:40176/40174	heater coil (outer) - 72 KW
51	EP:40173/40171	heater coil (inner) - 36 KW, 72 KW
51	EP:40179	575V heater coil (inner) - 48 KW
52	FI:2807-6-14	heater hoses 14"
52	FI: 2807-6-18	heater hose 18"
52	FI: 2807-6-36	heater hose 36"
54	EL: TRV	high limit switch
55	EP: 50760	fuseable plug
56	EP: 40096	thermostat well bushing

ITEM NO.	PART NO.	DESCRIPTION
57	EL: 21186	50' hose
58	PU: ASN	adjustable soap nozzle
59	1/4 MEG	high pressure nozzle (see pg. 4 for size)
60	EP: 22209	snap plug
61	PU: G250V	trigger gun
62	PU: Z9	lance
63	EP:22208	snap coupling
64	EP: 22209	snap plug
65	EP: 17130	Steam wand
65	EP: 17123	steam nozzle



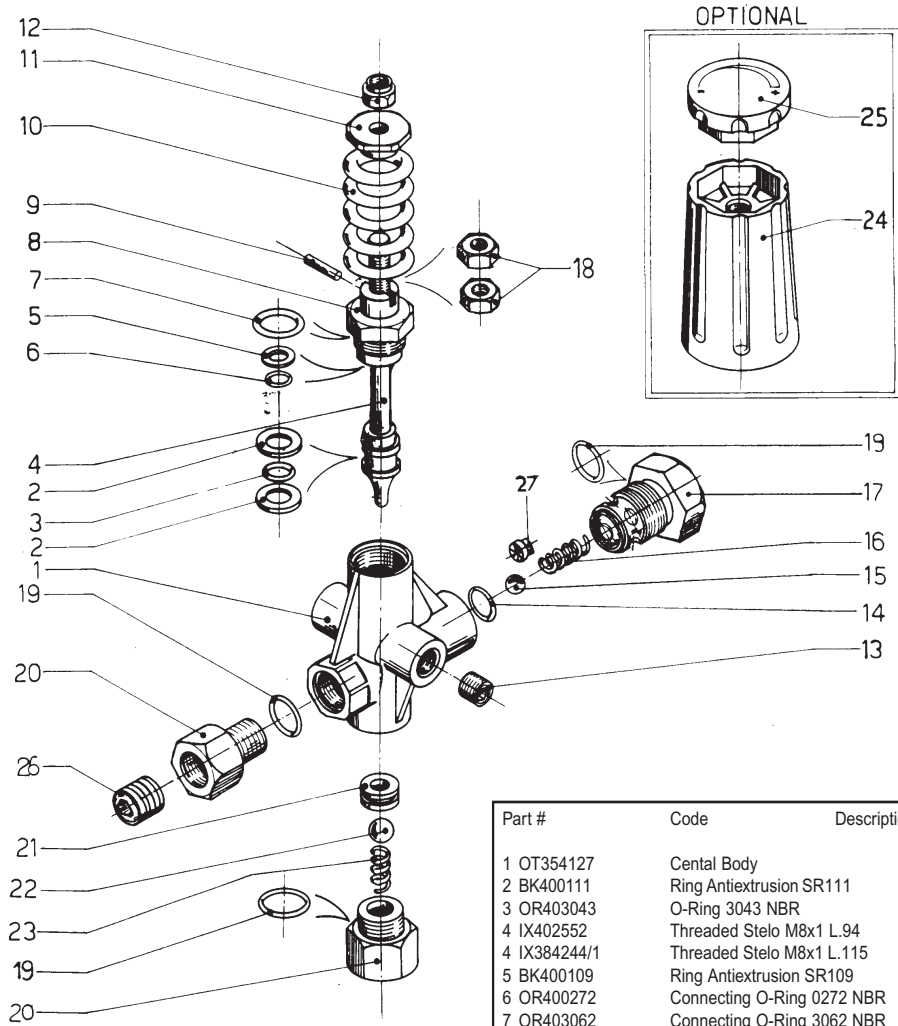
UNLOADER VALVE

UVP 1060



ITEM	DESCRIPTION	PART NUMBER
1	Inlet Fitting	60.0024.31
2	O Ring	10.3068.00
3	Ball spring	60.0015.51
4	S. S. Ball	14.7443.10
5	O Ring	10.3059.01
6	Seat	30.0011.51
7	Valve Housing	60.0020.35
8, 10	Plug	60.0028.31
9, 11	Washer	14.4042.00
12	Back Ring	10.4013.00
13	O Ring	10.3060.00
14	Piston Rod	60.0013.51
15	Back Ring	10.4008.01
16	O Ring	10.3055.00
17	Piston Housing	60.0014.31
18	Pin	153.1021.00
19	Spring	60.0032.61
20	Spring Guide	60.0011.31
21	Nut	11.4574.00
22	Washer	14.3911.00
23	Plug	28.0013.31
24	O Ring	10.3213.00
25	Check Valve	60.0017.31
26	Spring	60.0018.51
27	Outlet Fitting	60.0019.31
28	Nut	11.4589.10
29	Handle	60.027.22
30	Washer	14.3720.40

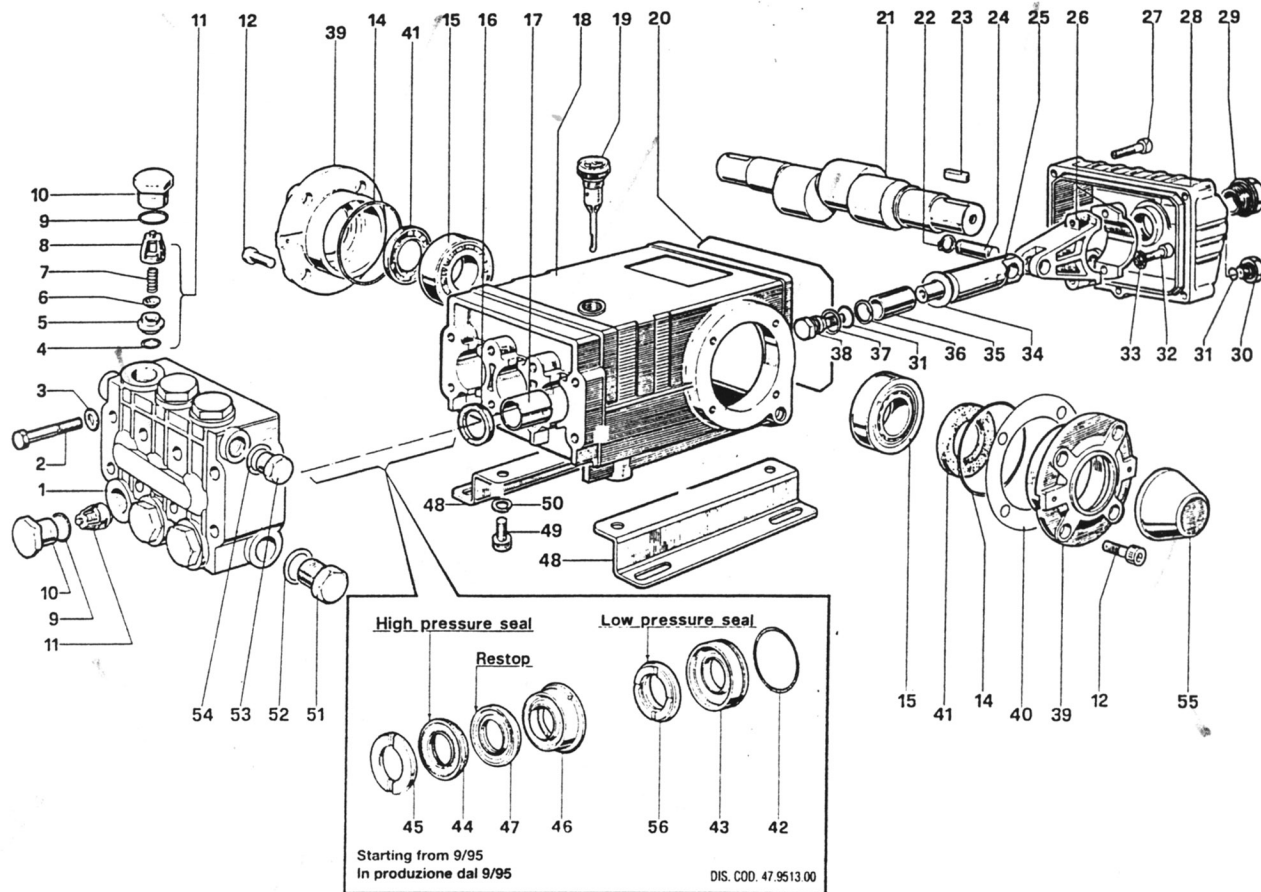
UNLOADER - MTM



Part #	Code	Description	No.
1	OT354127	Cental Body	1
2	BK400111	Ring Antiextrusion SR111	2
3	OR403043	O-Ring 3043 NBR	1
4	IX402552	Threaded Stelo M8x1 L.94	1
4	IX384244/1	Threaded Stelo M8x1 L.115	1
5	BK400109	Ring Antiextrusion SR109	1
6	OR400272	Connecting O-Ring 0272 NBR	1
7	OR403062	Connecting O-Ring 3062 NBR	1
8	OT402549	Connector M18x1	1
9	SE406873	Pin 3x14	1
10	M0354240	Spring 120	1
10	M0354241	Spring 180	1
11	OT402550	Spring Plate	1
12	VI387473	Nut. M8x1	1
13	OT354458	Cap G 1/4	1
14	OR350112	O-Ring Viton 112	1
15	SF351332	Ball 13/32" AISI 440	1
16	M0354676/1	Spring Inox	1
17	OT384674	Connector Guide Ball	1
18	VI355588/1	Nut M8x1 Zinc	2
19	OR400117	O-Ring 0117 NBR	3
20	OT402554	Connector G 3/8	2
21	IX402553	Ball	1
22	SF230000	Ball 11/32" AISI 440	1
23	M0400001	Spring	1
24	MA350000/1	Knob	1
25	PL354152	Knob Cover	1
26	OT354457	Cap G 3/8	1
27	OT355293	Plate Ball	1

Note: Kit 00035150 includes: Part# 2,3,5,6,7,9,14,15,16,18,19,21,22,23,27)

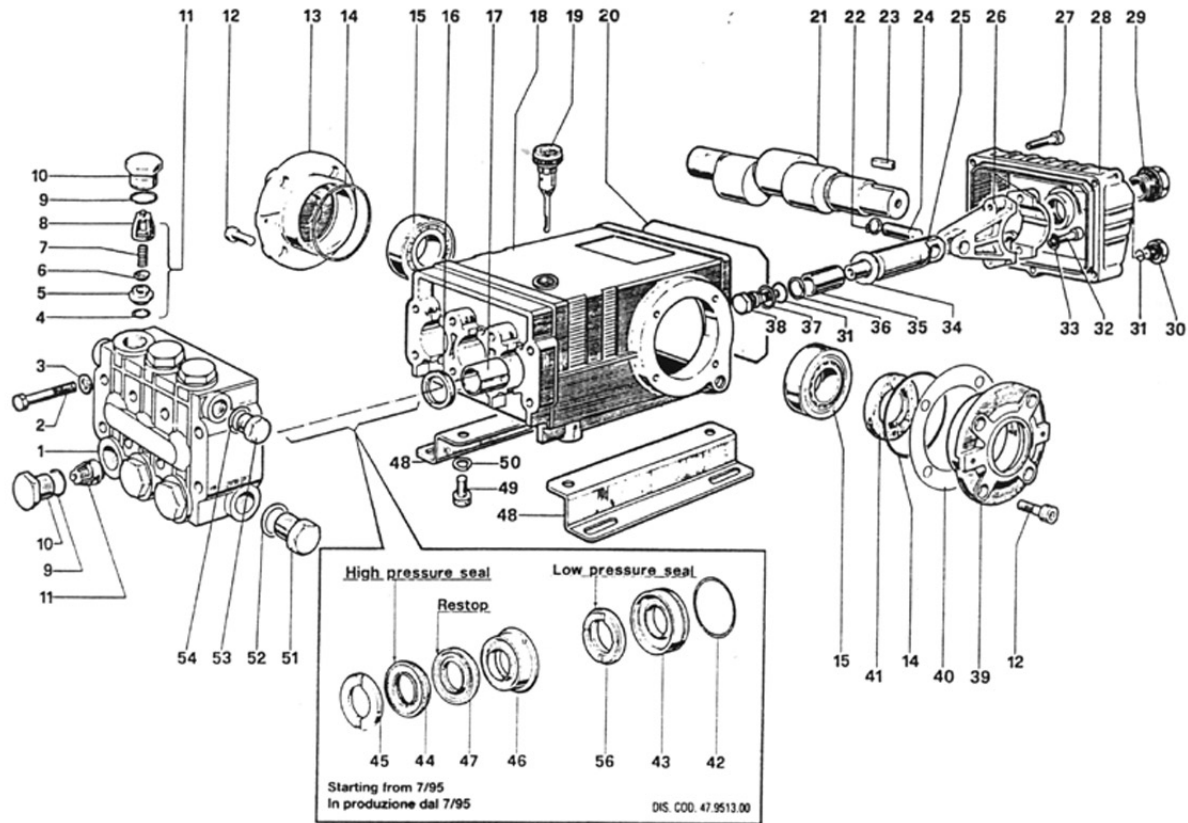
GENERAL PUMP TS1331



ITEM	DESCRIPTION	PART #	QTY	INCLUDED IN KIT
1	Pump Head	47.1208.41	1	
2	Screws	99.3206.00	8	
3	Washers	96.7020.00	8	
4	O-Rings	90.3841.00	6	1
5	Valve Seals	36.2003.66	6	1
6	Valve Plates	36.2001.76	6	1
7	Springs	94.7376.00	6	1
8	Valve Guides	36.2002.51	6	1
9	O-Rings	90.3847.00	6	5
10	Caps	98.2220.00	6	5
11	Valve Assembly	36.7032.01	6	1
12	Screws	99.3039.00	8	
14	O-Rings	90.3913.00	2	
15	Tapered Roller Bearings	91.8375.00	2	
16	Oil Seals	90.1625.00	3	2
17	Bushings	90.9126.00	3	
18	Crankcase	47.0204.22	1	
19	Oil Dip Stick	98.2106.00	1	
20	Cover Gasket	90.3922.00	1	
21	Crankshaft - T1331	47.0204.35	1	
22	Snap Rings	90.0557.00	6	
23	Key	91.4878.00	1	
24	Wrist Pins	97.7380.00	3	
25	Piston Guides	47.0505.54	3	
26	Connection Rods	47.0300.01	3	
27	Screws	99.1837.00	5	
28	Rear Crankcase Cover	47.1601.22	1	
29	Oil Level Indicator	97.5968.00	1	

ITEM	DESCRIPTION	PART #	QTY	INCLUDED IN KIT
30	Cap	98.2041.00	1	
31	O-Rings	90.3585.00	4	6
32	Screws	99.3099.00	6	
33	Washers	96.7014.00	6	
34	Washers	96.7286.00	3	6
35	Pistons	47.0404.09	3	
36	Anti-Extrusion Rings	90.5067.00	3	6
37	Washers	96.7280.00	3	6
38	Piston Screws	47.2195.66	3	6
39	Side Crankcase Cover	47.1500.22	1	
40	Shims	97.5678.00	2	
41	Oil Seal	90.1648.00	1	3
42	Oil Rings	90.3616.00	3	28
43	Packing Retainers	47.0805.70	3	28
44	Packings	90.2705.00	6	8 & 28
45	Head Rings	46.1000.51	6	7 & 28
46	Intermediate Rings	47.2169.70	3	9 & 28
47	"Long Life" Rings	90.2704.00	3	9 & 28
48	Pump Feet	47.2000.74	2	
49	Screws	99.3644.00	4	
50	Washers	96.7106.00	4	
51	Cap	98.2176.00	1	
52	Washer	96.7514.00	1	
53	Cap	98.2100.00	1	
54	Washer	96.7380.00	1	
55	Cover Cap	47.2124.51	1	
56	Packings	90.2710.00	3	29 & 148

GENERAL PUMP T2011



ITEM	DESCRIPTION	PART #	QTY	INCLUDED IN KIT
1	Pump Head	47.1209.41	1	
2	Screws	99.3206.00	8	
3	Washers	96.7020.00	8	
4	O-Rings	90.3841.00	6	1
5	Valve Seats	36.2003.66	6	1
6	Valve	36.2001.76	6	1
7	Springs	94.7376.00	6	1
8	Valve Guides	36.2002.51	6	1
9	O-Rings	90.3847.00	6	5
10	Caps	98.2222.00	6	5
11	Valve Assembly	36.7032.01	6	1
12	Screws	99.3039.00	8	
13	Crankcase Cover	47.1501.22	1	
14	O-Rings	90.3913.00	2	
15	Tapered Roller Bearings	91.8375.00	2	
16	Oil Seals	90.1625.00	3	2
17	Bushings	90.9126.00	3	
18	Crankcase	47.0104.22	1	
19	Oil Dip Stick	98.2106.00	1	
20	Cover Gasket	90.3922.00	1	
21	Crankshaft - TS2011	47.0206.35	1	
22	Snap Rings	90.0557.00	6	
23	Key	91.4878.00	1	
24	Wrist Pins	97.7380.00	3	
25	Piston Guides	47.0503.56	3	
26	Connection Rods	47.0300.01	3	
27	Screws	99.1912.00	5	
28	Rear Crankcase Cover	47.1601.22	1	

ITEM	DESCRIPTION	PART #	QTY	INCLUDED IN KIT
29	Oil Level Indicator	97.5968.00	1	
30	Cap	98.2041.00	1	
31	O-Rings	90.3585.00	4	6
32	Screws	99.3099.00	6	
33	Washers	96.7014.00	6	
34	Washers	96.7286.00	3	6
35	Pistons	47.0404.09	3	
36	Anti-Extrusion Rings	90.5067.00	3	6
37	Washers	96.7280.00	3	6
38	Piston Screws	47.2195.66	3	6
39	Side Crankcase Cover	47.1500.22	1	
40	Shims	97.5678.00	2	
41	Oil Seal	90.1648.00	1	3
42	Oil Rings	90.3616.00	3	28
43	Packing Retainers	47.0805.70	3	28
44	Packings	90.2705.00	6	8 & 28
45	Head Rings	46.1000.51	6	7 & 28
46	Intermediate Rings	47.2169.70	3	9 & 28
47	"Long Life" Rings	90.2704.00	3	9 & 28
48	Pump Feet	47.2000.74	2	
49	Screws	99.3644.00	4	
50	Washers	96.7106.00	4	
51	Cap	98.2176.00	1	
52	Washer	96.7514.00	1	
53	Cap	98.2100.00	1	
54	Washer	96.7380.00	1	
56	Packings	90.2710.00	3	28 & 69

TROUBLESHOOTING

TROUBLE	POSSIBLE CAUSE	REMEDY
Low Pressure	Loose belt on pump	Tighten pump
	Leaks in water system	Tighten all fittings
	Insufficient water supply	Fill tank or increase line size to machine
	Outlet orifice worn or wrong size	Replace with correct orifice. CAUTION: Do not use smaller than recommended. Excessive pressure will damage pump.
	Gun control unloader valve bypass leak	Repair or replace unloader valve
	Dirty or worn check valves in pump	Replace or clean. Refer to high pressure pump manual.
Excessive Pressure	Cylinder cups leaking and/or worn cylinder sleeves	Replace. Refer to high pressure pump manual.
	Outlet orifice restricted	Remove orifice at tip of gun and clean. Flush coil with water before replacing.
	Scale or dirt in coils	Descale coils
Relief Valve Operates	Pump speed too high	Check water output GPM
	Relief valve set at low pressure	Re-adjust relief valve
	Relief valve dripping after adjustment	Replace valve
Weak or no chemical at nozzle	Unloader valve stuck	Repair unloader valve
	Clogged soap screens	Clean or replace
Pump motor heating or overloading	Air leak around soap siphon	Tighten all fittings and tubings check valve and/or metering valve leaking
	Motor wet	Allow to dry. Have motor checked by qualified repair station.
Pump motor heating and clean.	Outlet orifice restricted	Remove orifice at tip of gun or overloading
	Undersize outlet orifice	Replace with correct size
	Coil scaling up	Descale coil
	Water pump out of oil	Fill to correct level. Check for leaks
	Overload switch operated	Allow motor to cool CAUTION: Switch may automatically reset.
	Faulty motor	Repair or replace
Water temperature too low	Thermostat adjustment	Adjust the thermostat to desired temperature
	Coils liming up	Descale

MI-T-M® WARRANTY

Warranty does not include damage from negligence, abuse or freezing and is limited to the repair or replacement of the part(s).

Warranty parts(s) will be repaired or replaced F. O. B. our factory or at any Mi-T-M® authorized depot, without charge, providing permission is first obtained from our factory and the part(s) returned prepaid. If on site inspection is requested, a labour charge will apply.

All parts will be repaired or replaced at Mi-T-M® discretion.

	WARRANTY PERIOD	LABOR
PUMP		
- oil end	2 years	1 year
- manifold	2 years	1 year
- wet end	No warranty	No labor
(includes 'o' rings, packing and valves)		
MOTOR / ENGINE	Original Manufacturer's Warranty	
FABRICATED PARTS	1 year	1 year
(coil wrap, handle, frame, belt guard, etc.)		
BURNER	1 year	1 year
TRANSFORMER	1 year	1 year
MISCELLANEOUS	1 year	1 year
(cords, floats, electrodes, switches, fuel pumps, thermostats, blower fans etc.)		
UNLOADER	90 days	90 days
CONTROL & SAFETY SWITCHES	90 days	90 days
WEAR ITEMS	No Warranty	No Labor
(belts, hose, gun, wand, nozzle, quick couplers, 'o' rings, seals, gaskets, filters, chemical injectors, etc.)		
HEAT EXCHANGE COIL		
Schedule 40	2 years	1 year
Schedule 80	3 years	1 year
Electric	3 years	1 year

Any replacement during the warranty period will have a warranty of one (1) year or the balance of the original warranty, whichever is greater.

Mi-T-M® will not replace coils under warranty if the coils have been subjected to misuse such as:

1. freezing
2. lime deposit
3. other foreign material deposit
4. shock or vibration.

