

Mi-T-M[®] CORPORATION

8650 Enterprise Drive, Peosta IA 52068

319-556-7484 / Fax 319-556-1235

PARTS LIST FOR

HSP-3504-3MGH/3MGV

(AFTER SERIAL #26278)

ENGINE OIL GRADE:

HONDA:

SAE10W-30

VANGUARD:

ABOVE 40°F=SAE30

BELOW 40°F=SAE10W-30

ENGINE OIL CAPACITY:

HONDA:

37 oz.

VANGUARD:

51 oz.

PUMP OIL GRADE:

Mi-T-M PUMP OIL #AW-4085-0016

PUMP OIL CAPACITY:

15 oz.

BTU INPUT:

294,000 / hour

PRESSURE NOZZLE SIZE:

3.5

This Parts Listing has been compiled for your benefit. You can be assured your hot water pressure washer was constructed and designed with quality and performance in mind. Each component has been rigorously tested to insure the highest level of quality.

The contents of this Parts Listing are based on the latest product information available at the time of publication. The manufacturer reserves the right to make changes in price, color, materials, equipment, specifications or models at any time without notice.

WARNING

THIS IS A PROFESSIONAL HIGH PRESSURE, HOT WATER PRESSURE WASHER. CAUTION SHOULD BE OBSERVED WHEN USING OR REPAIRING THIS UNIT! READ AND FOLLOW THE SAFETY WARNINGS LISTED BELOW BEFORE ATTEMPTING ANY REPAIRS ON THIS PRESSURE WASHER!

SAFETY WARNINGS

1. NEVER alter or modify the equipment. Be sure any accessory items and system components being used will withstand the pressure developed. Use only genuine manufacturer parts for repair of your pressure washer. Failure to do so can cause hazardous operating conditions and will VOID warranty.
2. NEVER make adjustments on machinery while the unit is connected to the engine without first removing the ignition cable from the spark plug. Turning over the machinery by hand during adjustment or cleaning might start the engine and machinery with it, causing serious injury to the operator.
3. Know how to stop and bleed pressures quickly. Be thoroughly familiar with controls.
4. Before servicing the unit, turn unit off, relieve the water pressure and allow the unit to cool down. Do not make repairs while the unit is running. Service in a clean, dry, flat area. Block the wheels to prevent the unit from moving. Be especially careful to properly dispose of any flammable materials.
5. After testing the machine, DO NOT leave the pressurized unit unattended. Shut off the unit and release trapped pressure before leaving.

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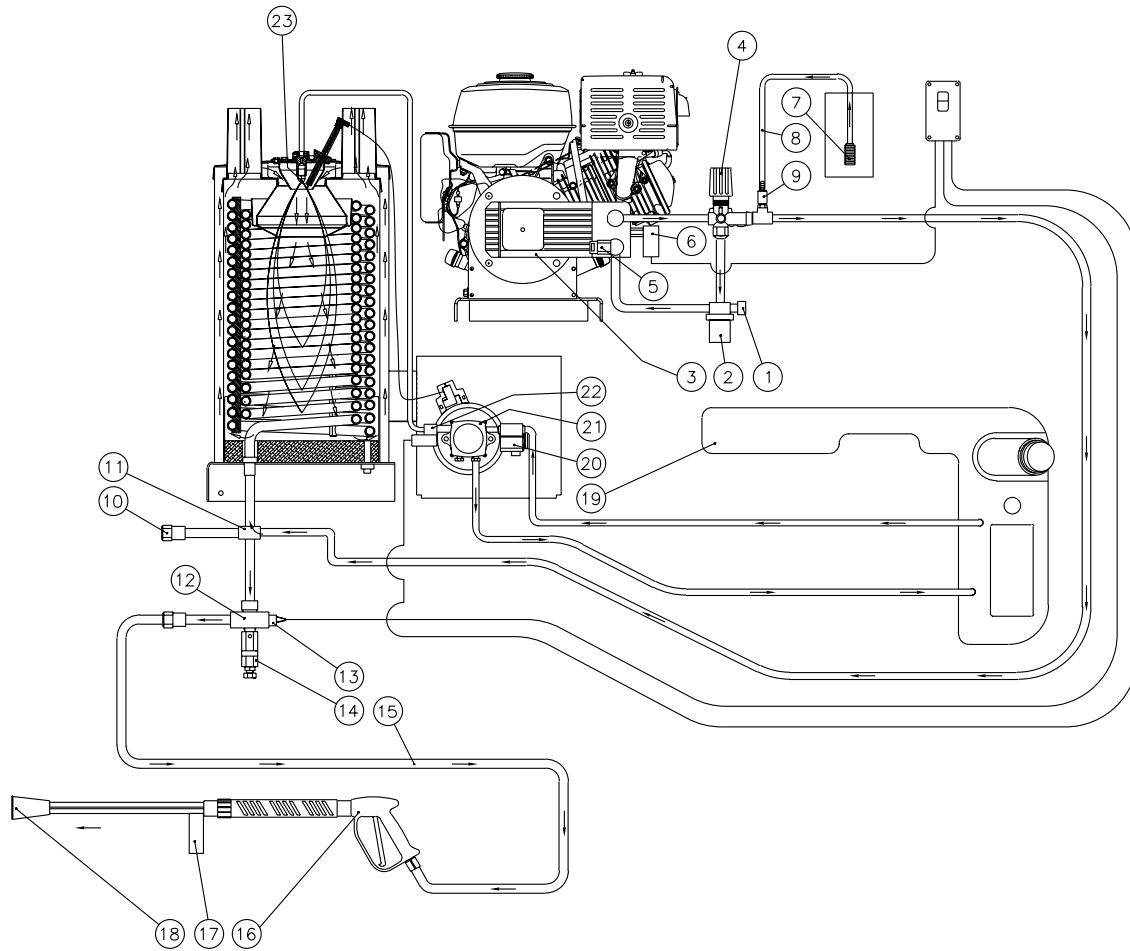
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SPECIFICATIONS

HSP-3504-3MGH/GV

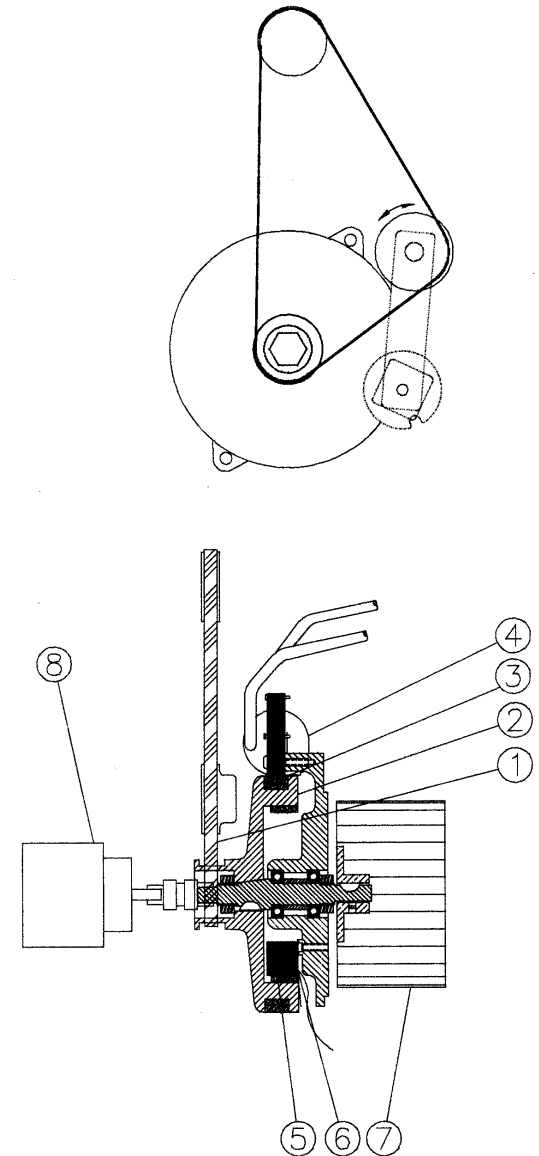
MODEL NUMBER	HSP-3504-3MGH	HSP-3504-3MGV
Operating Pressure (PSI/Bar):	3500/241 (+/- 5%)	
Water Volume (GPM/lpm):	3.3/12.5 (+/- 5%)	
Outlet Water Temperature (F/C):	140 F/78 C (+/- 20 F) rise above inlet ambient (210 F/99 C maximum)	
Engine:	Honda	Briggs & Stratton Vanguard
Horsepower	13	13
Engine Type	Four Stroke, Overhead Valve, Single Cylinder	
Oil Type	SAE10W-30	Above 40 F=SAE30/ Below 40 F=SAE 10W-30
Oil Capacity (oz./ liter)	37/1.1	51/1.5
Low Oil Protection	Oil Alert™	Oil Guard™
Fuel Type	Unleaded Gasoline 86 Octane Minimum	
Fuel Capacity (gal./ liter)	1.72/6.5	1.8/6.8
Starting	Recoil Rope	
Maximum No Load RPM	3600 (+/- 100)	
High Pressure Pump:	Direct Driven, Oil Bath, Triplex Piston	
Oil Type	Mi-T-M Pump Oil #AW-4085-0016	
Oil Capacity (oz./liters)	15/44	
Plungers	Ceramic	
Manifold	Forged Brass	
Valves	Stainless Steel	
Unloader	Preset	
Inlet Water Strainer	Removable Clear Bowl for inspection and cleaning of Stainless Steel Screen	
Heat Dump Valve	Relieves heated water during unloader bypass stage	
Detergent Injector:	Adjustable Low Pressure downstream from pump	
Burner Fuel System:		
Fuel Type	No.1 or No.2 Fuel Oil, Diesel or Kerosene	
Fuel Capacity (gal./liters)	5.5/21	
Fuel Filter/ Water Separator	Spin on (10 micron) filter/ E-Z water drain	
Fuel Pump	Two Line, Single Stage	
Fuel Pressure (PSI/ BAR)	145/10	
Fuel Nozzle	1.75 60 B Delavan	
Fuel Consumption (GPH/ LPH)	2.1 GPH Continuous Burning	
Electro Magnetic Firing (EMF) System:	Belt Driven (Patent Pending)	
Ignition	Transistorized Magneto	
Control Voltage	12 Volt DC	
Blower	Forced Air	
Heat Exchanger:	Vertical, Top fired, Dual Spiral Coil	
BTU Input	294,000	
Efficiency	86% with #2 Fuel Oil/ Diesel	
Smoke Density	0-3 per ASTM D2156	
Controls:		
On/ Off Switch	Industrial grade rocker switch	
Pressure Switch	Shuts off burner fuel supply upon trigger release	
High Limit Switch	Shuts off burner fuel supply when outlet water temp. exceeds 210 F/ 99 C	
Fuel Solenoid:	12 Volt	
Safety Relief:	Relieves excess system pressure	
Unit Net Weight (Lbs/kg):	428/194	430/195
Unit Shipping Weight (Lbs/kg):	551/250	553/251
Unit Net Dimension (In/cm):	43Lx 30Wx 41H/109L x 76W x 104H	
Unit Shipping Dimension (In/cm):	46.5L x 31.5W x 48.5H/118L x 80W x 123H	

FLOW CHART



OMHSP090-120598 -BAR

EMF SYSTEM



OMHSP046-072996-BAR

GENERAL THEORY OF OPERATION

WATER FLOW: Connect a pressurized water source to the INLET GARDEN HOSE CONNECTION (1) and turn on the water supply. The water will flow through a WATER STRAINER (2) which has a clear inspection bowl.

The water then travels into the TRIPLEX HIGH PRESSURE PUMP (3) which has an UNLOADER (4) that bypasses the water when the trigger gun is closed. To protect the pump from heated water during this bypass stage, a HEAT DUMP VALVE (5) will open at 140°F/60°C allowing the heated water to escape. The Heat Dump Valve automatically resets when the water cools. the PRESSURE SWITCH (6) controls the fuel supply to the burner.

When using detergents, the solution passes through the DETERGENT STRAINER (7) located on the DETERGENT HOSE (8). The detergent solution then travels into the ADJUSTABLE LOW PRESSURE DETERGENT INJECTOR (9).

From there, the water may be allowed to flow out of the DRAIN PLUG (10) or through the heat EXCHANGER INLET (11) where it is heated when the burner is on. As the water exits the HEAT EXCHANGER OUTLET (12), it enters a safety system which protects the operator from danger. The safety system contains a HIGH TEMPERATURE LIMIT SWITCH (13) which senses the water temperature and shuts off the fuel supply to the burner if it gets too hot. If the unloader fails to by pass the water or the burner remains on when the trigger gun is closed, the SAFETY RELIEF (14) will relieve and allow water to exit safely.

The heated water then flows through the HIGH PRESSURE HOSE (15) and to the TRIGGER GUN ASSEMBLY (16) which allows the operator to control the water spray. When the trigger gun is open, the water flows through the ADJUSTABLE PRESSURE DUAL LANCE (17) and exits the NOZZLE (18).

FUEL FLOW: The Fuel Pump draws fuel from the Fuel Tank (19) through a replaceable FUEL FILTER/WATER SEPARATOR (20) and into the Fuel Pump (21). Fuel exits the fuel pump, into a FUEL SOLENOID VALVE (22) which controls fuel flow to the Fuel Nozzle (23) where it ignites and burns in the heat exchanger.

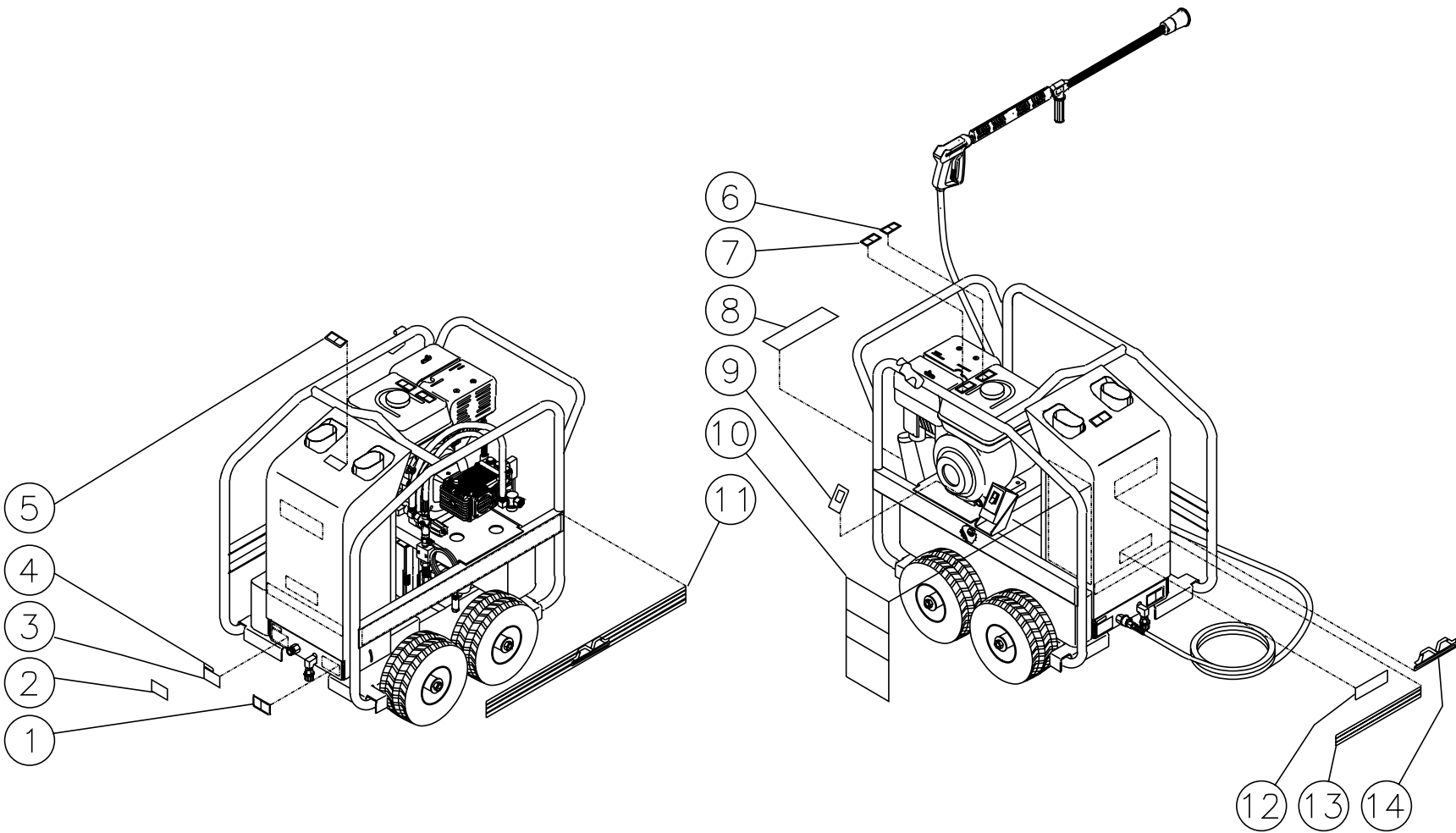
EMF SYSTEM: The patent pending Electro Magnetic Firing (EMF) System is an integrated system which gives all the requirements for combustion.

The BELT (1) from the power source turns the HUB (2) which has two EXTERIOR MAGNETS (3) attached. As these magnets spin past the IGNITION MODULE (4), a magnetic flux is created from which the ignition module produces a high voltage. This voltage arcs across the electrodes giving the spark that is needed for ignition.

This hub has an Internally MOUNTED MAGNET (5) which spins past a STATOR (6) that produces the voltage that controls the fuel supply to the heat exchanger. In addition to this, the hub also spins the BLOWER FAN (7) that forces the air into and through the heat exchanger.

The FUEL PUMP (8) is also connected the hub by means of a flexible coupler.

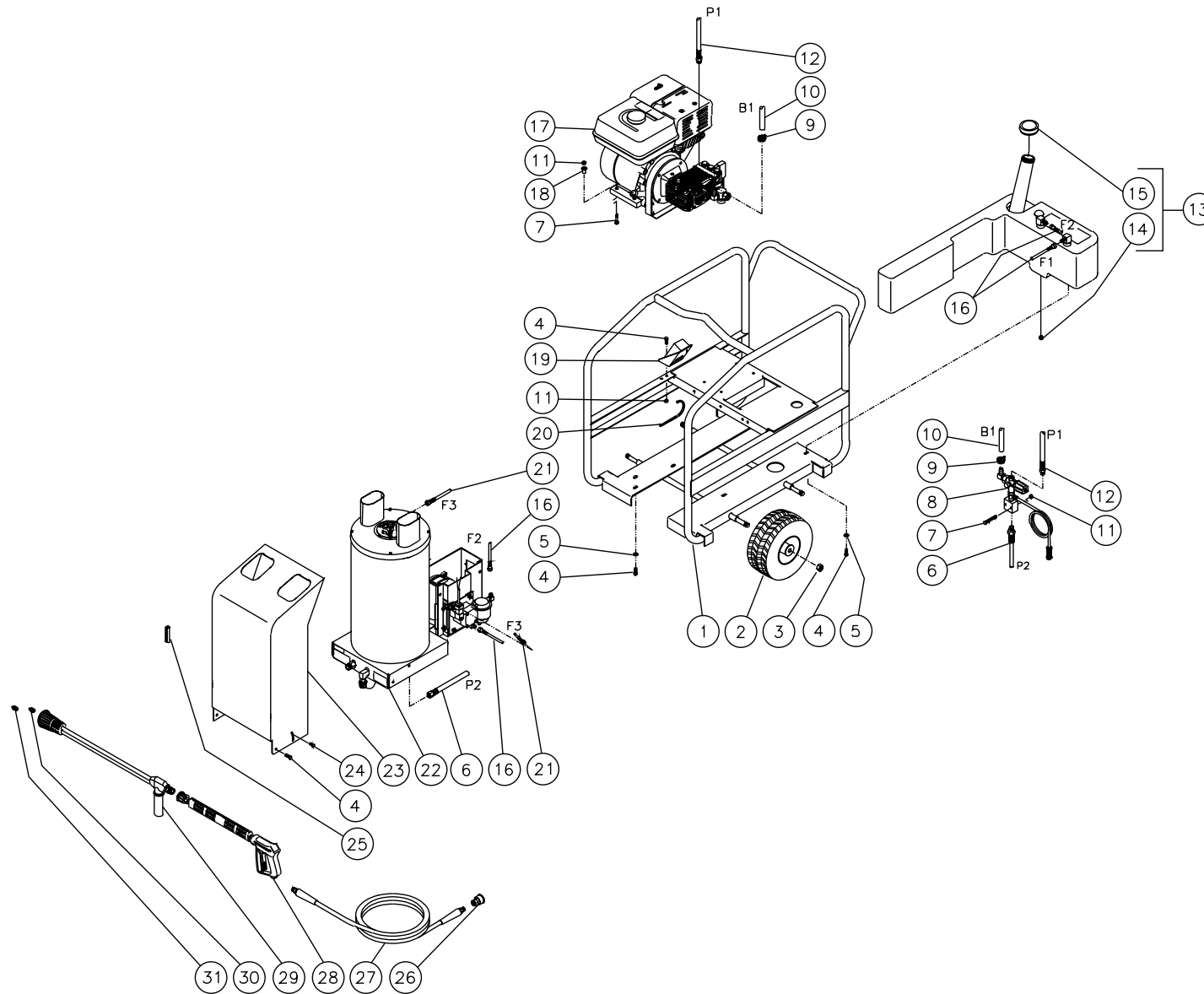
DECAL PLACEMENT



HSP-3504-3MGH/GV-022599-BAR

DECAL PLACEMENT			
REF. #	DESCRIPTION	PART #	QTY.
1	Decal- Warning: Don't Modify Plumbing (E/S)	34-0807	1
2	Decal- Clear Laminate	N/A	1
3	Decal- Data Plate	N/A	1
4	Serial Number	N/A	1
5	Decal- Warning: Hot Coil Exhaust (E/S)	34-0808	1
6	Decal- Allow to Cool (E/S)	34-0599	1
7	Decal- Hot Surface (E/S)	34-0598	1
8	Decal- Risk of Fire (E/S)	34-0806	1
9	Decal- Burner On/Off (E/S)	34-0849	1
10	Decal- Warning/ Caution/ Operation (E/S)	34-0847	1
11	Decal- Stripe	34-0725	2
12	Decal-White Die Cut	34-0034	1
13	Decal-Stripe	34-0560	1
14	Plastic Mi-T-M Logo	62-0087	1

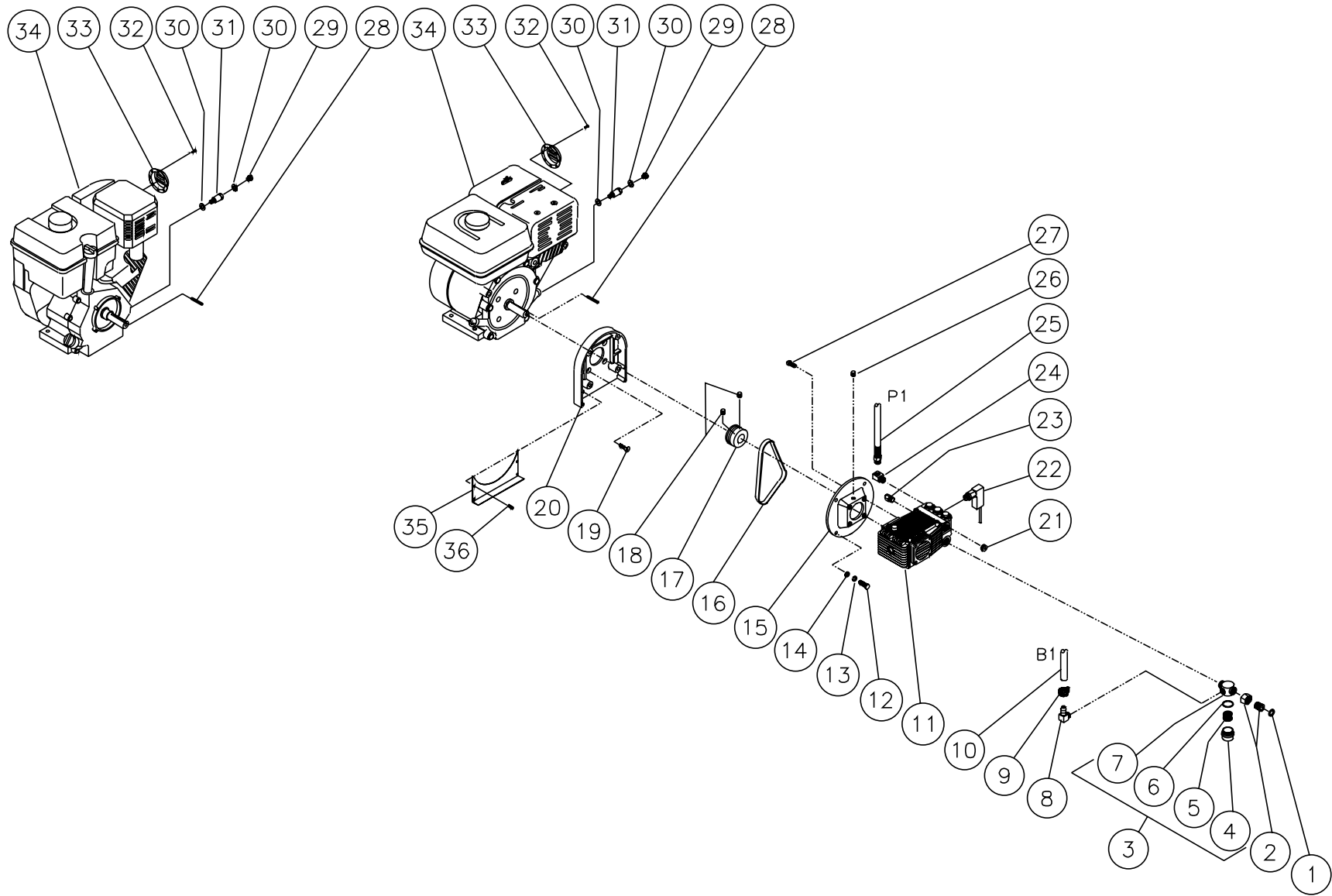
FRAME



FRAME

REF. #	DESCRIPTION	PART #	QTY.		REF. #	DESCRIPTION	PART #	QTY.
1	Frame Assembly	5-0120A01	1		17	Engine/Pump Assembly (See exploded drawing)	N/A Sep.	1
2	Wheel	14-0006	4		18	Shim	33-0169	4
3	Jam Nut	30-0117	4		19	Bracket/Electric Box Assembly (See exploded drawing)	N/A Sep.	1
4	Bolt	27-9524	12		20	Wire Tie	33-0022	4
5	Flatwasher	28-0022	8		21	Fuel Hose Assembly	15-0165	1
6	High Pressure Hose Assembly	15-0202	1		22	Heat Exchanger/EMF Assembly (See exploded drawing)	N/A Sep.	1
7	Bolt	27-9529	6		23	Hood Assembly	850-0194	1
8	Unloader/ Manifold Assembly (See exploded drawing)	N/A Sep.	1		24	Hand Knob	62-0057	1
9	Fuel Clamp	42-0011	2		25	Trim Lock *(One Foot Required)	33-0129	1
10	Hose *(Two Feet Required)	15-0007	2		26	Screw Connect	17-0035	1
11	Hex Nut	30-3023	8		27	Hose Assembly	15-0166	1
12	High Pressure Hose Assembly	15-0194	1		28	Gun/Lance Assembly	850-0181	1
13	Fuel Tank Assembly (Includes 14, 15)	850-0248	1		29	Dual Lance Assembly	850-0180	1
14	Countersunk Hex Head Plug	23-0296	1		30	Nozzle- 1503.5	18-0254	1
15	Fuel Cap	12-0033	1		31	Nozzle- 4060	18-0110	1
16	Fuel Hose	15-0147	2		*Must Order in One Foot Lengths			

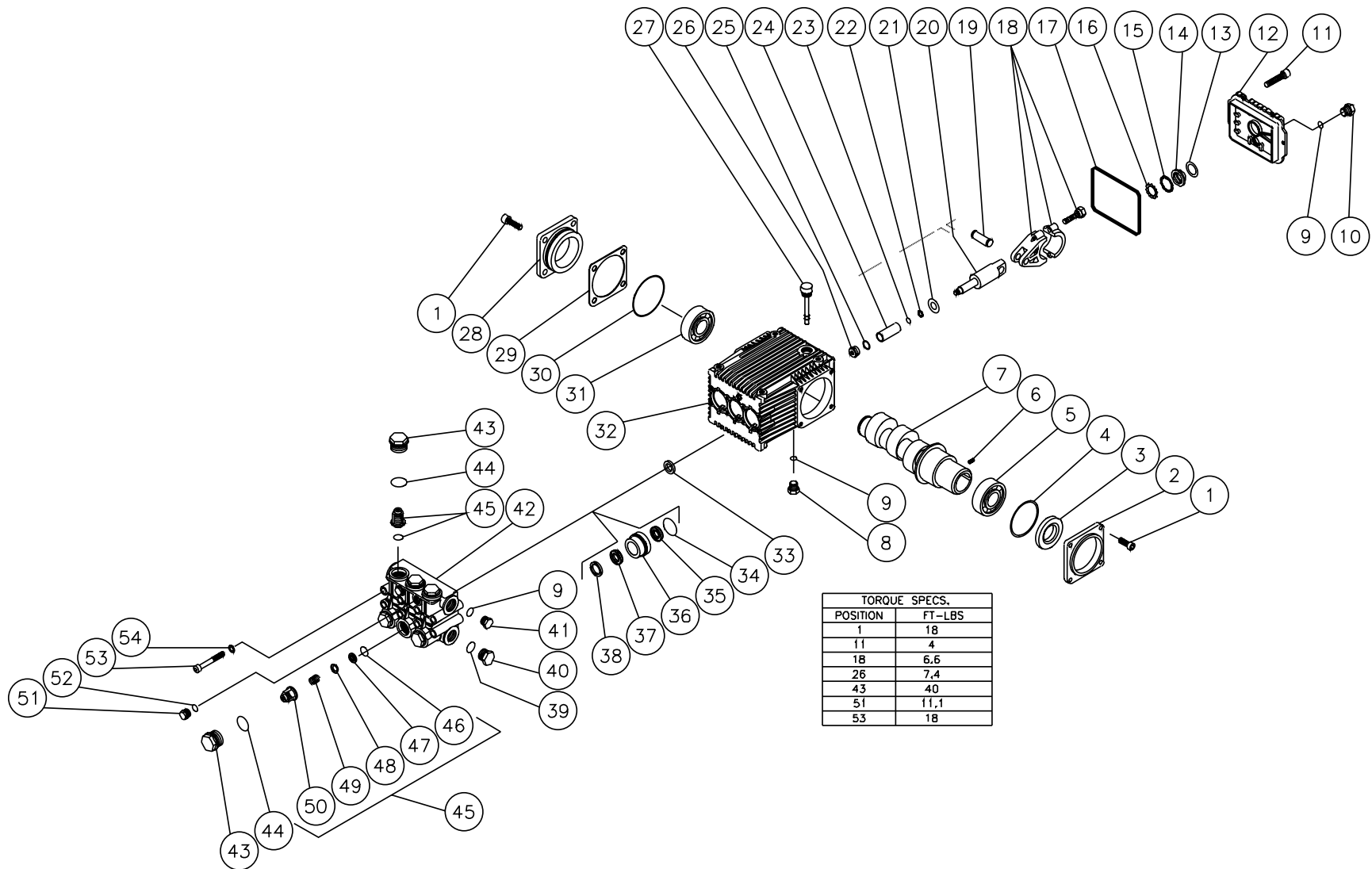
ENGINE/ PUMP ASSEMBLY



HSP100-032900-BAR

ENGINE/PUMP ASSEMBLY									
REF. #	DESCRIPTION	PART #	QTY. 3MGH	QTY. 3MGV	REF. #	DESCRIPTION	PART #	QTY. 3MGH	QTY. 3MGV
1	Hose Gasket	26-0001	1	1	23	Heat Dump Valve	22-0005	1	1
2	Hose Swivel	23-0095	1	1	24	Elbow	23-0242	1	1
3	Strainer Complete (Includes 4-7)	19-0096	1	1	25	High Pressure Hose	15-0194	1	1
4	Strainer Bowl	19-0103	1	1	26	Set Screw	27-8886	1	1
5	Screen	19-0104	1	1	27	Bolt	27-8434	4	4
6	Strainer Gasket	25-0056	1	1	28	Key- Honda	43-0088	1	-
7	Strainer Body	19-0105	1	1	-	Key- Vanguard	43-0089	-	1
8	Elbow	23-0119	1	1	29	Oil Drain Plug	N/A	1	1
9	Hose Clamp	42-0011	1	1	30	Washer- Honda	28-0605	2	-
10	Hose *(Two Feet Required)	15-0007	1	1	-	Washer- Vanguard	28-0606	-	2
11	High Pressure Pump	3-0194	1	1	31	Oil Drain Port- Honda	24-0143	1	-
12	Bolt	27-0218	4	4	-	Oil Drain Port- Vanguard	24-0142	-	1
13	Lockwasher	29-0010	4	4	32	Screw- Honda	27-8880	3	-
14	Flatwasher	28-0006	4	4	-	Screw- Vanguard	27-3093	-	3
15	Flange/ Pump Adapter	38-0051	1	1	33	Muffler Deflector- Honda	45-0055	1	-
16	Belt	11-0037	1	1	-	Muffler Deflector- Vanguard	45-0054	-	1
17	Sheave	10-0077	1	1	34	Engine- 13 H.P. Honda	1-0086	1	-
18	Set Screw	27-8895	2	2	-	Engine- 13 H.P. Vanguard	1-0090	-	1
19	Bolt	27-0418	4	4	35	Guard/Belt- Black	20-0384A01	1	1
20	Adaptor Plate	38-0049	1	1	36	Bolt	27-9526	4	4
21	Plug	23-0244	1	1	*Must Order in One Foot Lengths				
22	Pressure Switch	22-0171	1	1					

HIGH PRESSURE PUMP (3-0194)



3-0194-022200-RD

HIGH PRESSURE PUMP (3-0194)

REF.	DESCRIPTION	PART #	QTY.		REF.	DESCRIPTION	PART #	QTY.		REF.	DESCRIPTION	PART #	QTY.
1	Bolt	27-8884	8		21	Slinger Washer	46-0700	3		40	Plug	39-0088	1
2	Shaft Cover	46-0713	1		22	Back-up Ring	25-0404	3		41	Plug	39-0086	1
3	Oil Seal	26-0194	1		23	O-ring	25-0382	3		42	Manifold	46-0711	1
4	O-ring	25-0397	1		24	Piston	46-0701	3		43	Valve Cap- Brass	39-0095	6
5	Bearing	48-0062	1		25	Washer	26-0191	3		-	Valve Cap- Stainless Steel	39-0105	6
6	Set Screw	27-8886	1		26	Nut	30-6020	3		44	O-ring	25-0160	6
7	Crankshaft	46-0734	1		27	Oil Dipstick	39-0090	1		45	Single Valve Assembly (Inc. 46-50) (See 70-0179)	N/A Sep.	6
8	Plug	39-0102	1		28	Bearing Cap	46-0703	1		46	O-ring (See 70-0179)	25-0386	6
9	O-ring	25-0325	3		29	Shim- 0.1mm	46-0704	1		47	Valve Seat (See 70-0179)	N/A Sep.	6
10	Plug	39-0086	1		-	Shim- 0.2mm	46-0705	1		48	Valve Plate (See 70-0179)	N/A Sep.	6
11	Bolt	27-8885	6		30	O-ring	25-0380	1		49	Valve Spring (See 70-0179)	N/A Sep.	6
12	Crankcase Cover	46-0719	1		31	Bearing	48-0061	1		50	Valve Cage (See 70-0179)	N/A Sep.	6
13	O-ring	25-0370	1		32	Crankcase	46-0811	1		51	Plug	39-0096	2
14	Oil Sight Glass	46-0670	1		33	Oil Seal	26-0190	3		52	O-ring	25-0387	2
15	Reflector	46-0824	1		34	O-ring	25-0384	3		53	Bolt	27-8440	8
16	Retainer	46-0671	1		35	Low Pressure Seal (See 70-0177)	N/A Sep.	3		54	Lockwasher	29-0154	8
17	O-ring	25-0398	1		36	Packing Retainer	46-0708	3			High Pressure Seals (3 each 34, 35, 37)	70-0177	
18	Connecting Rod	46-0697	3		37	V-Packing (See 70-0177)	N/A Sep.	3			Support Rings (3 each 38)	70-0178	
19	Piston Pin	46-0698	3		38	Support Ring (See 70-0178)	N/A Sep.	3			Valve Kit (6 each 46-50)	70-0179	
20	Plunger Rod	46-0699	3		39	O-ring	25-0372	1					

PUMP SERVICE GUIDE

USE THE PARTS LIST ON THE PREVIOUS PAGE TO REORDER PARTS NEEDED TO SERVICE YOUR PUMP.

Fig. A

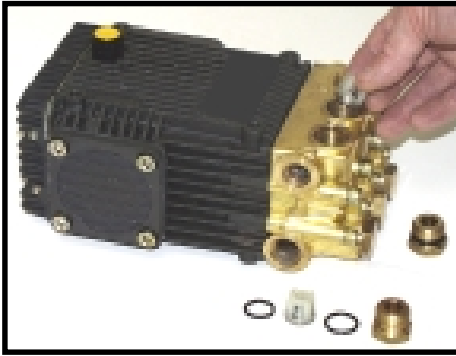
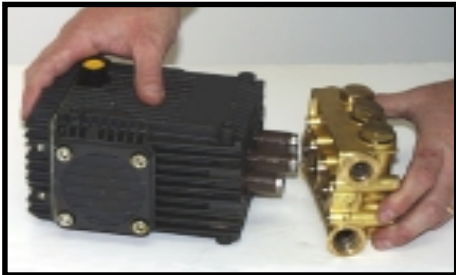


Fig. B



Fig. C



REPLACING THE VALVE ASSEMBLY:

1. In order to maintain optimum pump performance, replace all the valves at one time. The valve assemblies can be replaced without disrupting plumbing.
2. Remove the valve cap from the manifold.
3. Inspect the o-ring on the valve cap for deterioration. Replace if necessary.
4. Remove the valve assembly from the valve cavity (Fig. A).
5. Remove the o-ring inside the bottom of the valve cavity. Check for signs of severe deterioration of the o-ring. This could reflect excessive wear in the valve cavity of the manifold which is a *normal* occurrence in pumps with an extended life (over 1000 hours). Check the manifold and replace if necessary. (Note: *Normal* wear in the manifold is not covered under warranty.)
6. Install the new o-ring into the bottom of the valve cavity, then place the new valve assembly into the valve cavity.
7. Reinstall the valve cap and torque to 40 Ft/lbs (480 in/lbs).

REMOVING THE MANIFOLD:

1. Remove the head bolts on the manifold (Fig. B).



CAUTION

RISK OF DAMAGE

USE CAUTION NOT TO DAMAGE THE PLUNGERS WHEN REMOVING THE MANIFOLD HEAD FROM THE CRANKCASE.

2. Pull the manifold head from the crankcase (Fig. C). Rotate the crankshaft or tap the manifold head lightly with a rubber mallet to loosen if necessary.

NOTE: The V-packing assemblies may come off with the manifold head. If this happens, reinsert the V-packings in the order given in the "V-Packing Cross Section" illustration shown on the following page.

Fig. D



Fig. E

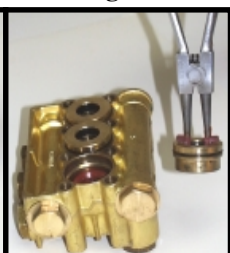


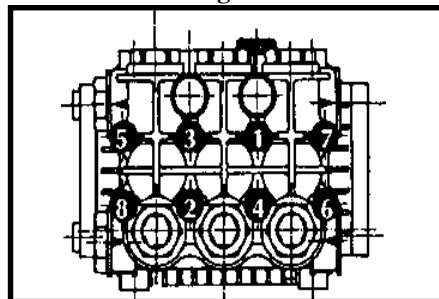
Fig. F



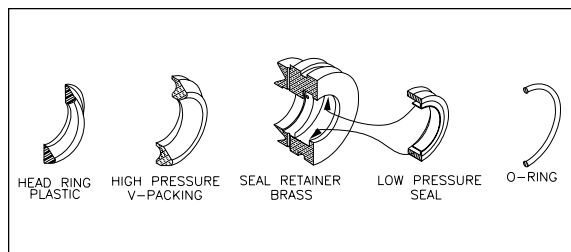
Fig. G



Fig. H



V-PACKING CROSS SECTION



REPLACING V-PACKINGS:

1. In order to maintain optimum pump performance, replace all the V-Packings at one time. The manifold must be removed from the crankcase before performing this procedure. Use of an extractor is highly recommended for V-packing removal.
2. Insert the extractor through the center of the V-packing (Fig. D) and pull the V-Packing from the manifold (Fig. E).

3. Install the V-Packings in the order shown in the drawing at left.

NOTE: A film of grease on the o-rings ensure easier installation.

4. Move on to replace plungers if necessary. If plungers do not need replacing, reinstall the manifold head as described in "Reinstalling the Manifold" (Fig. F).

REPLACING PLUNGERS:

1. Remove piston nut and washer from the piston rod.
2. Examine the plungers for cracks and wear. Replace if necessary.
3. Remove the plunger (Fig. G). If the slinger washer comes off with the plunger, replace it before installing the new plunger.
4. Install the replacement parts over the piston guide in the order given:
-Anti-extrusion ring, O-ring, Plunger, Washer.

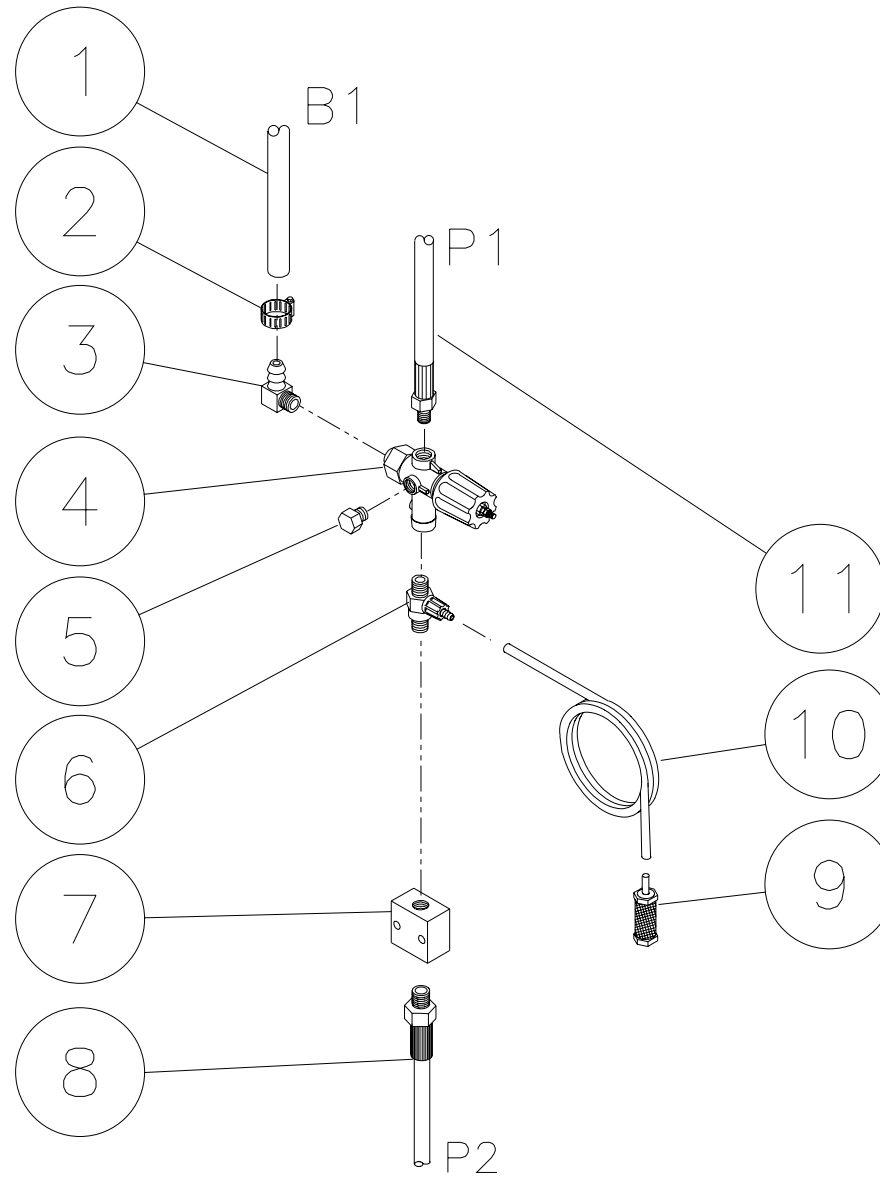
NOTE: A film of grease on the o-ring ensures easier installation.

5. Apply thread sealant to the piston guide threads.
6. Install the piston nut and torque to 7.4 Ft/lbs (89 in/lbs).

REINSTALLING THE MANIFOLD:

1. Apply a coat of grease to each plunger and reinstall the manifold head, taking care not to damage the plungers.
2. Install and tighten the head bolts as shown in the sequence at left (Fig. H). Use your fingers first, then at half the torque specified for your pump. Perform a final torque to 18 Ft/lbs (216 in/lbs).

UNLOADER/MANIFOLD ASSEMBLY

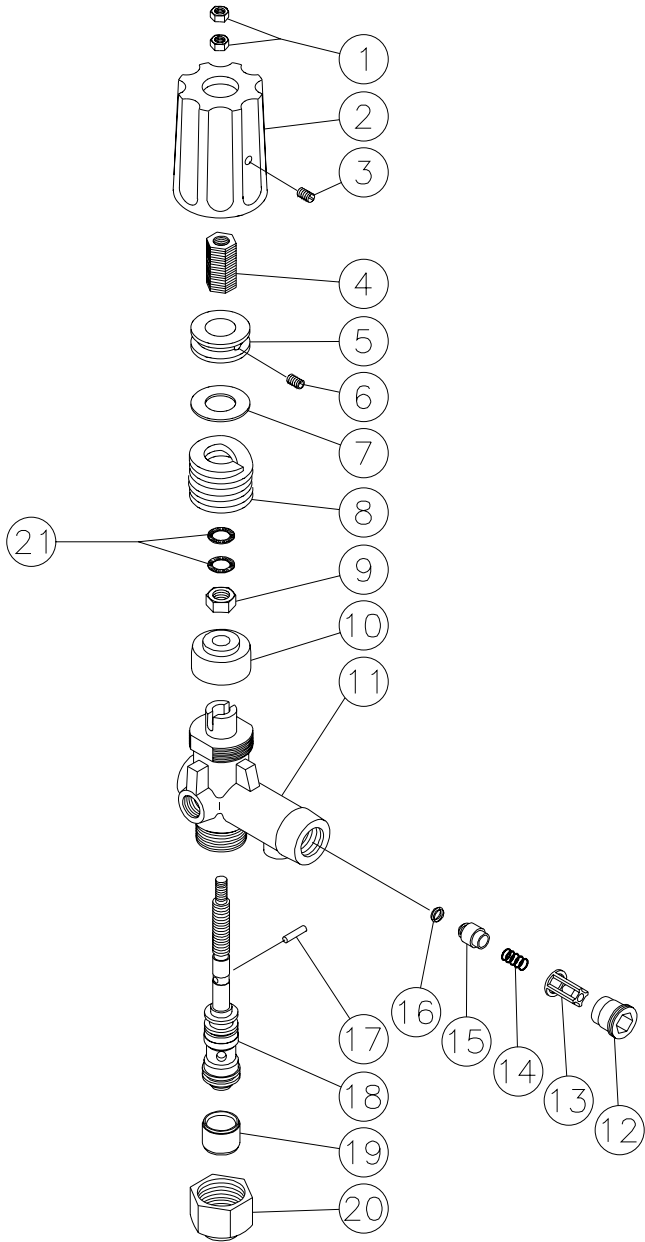


OMHSP080-120498-BAR

UNLOADER/MANIFOLD ASSEMBLY			
REF. #	DESCRIPTION	PART #	QTY.
1	Hose *(Two Feet Required)	15-0007	1
2	Hose Clamp	42-0011	1
3	Elbow	23-0119	1
4	Unloader Assembly	850-0252	1
5	Plug	23-0238	1
6	Detergent Injector	50-0052	1
7	Manifold Block	51-0026	1
8	High Pressure Hose Assembly	15-0202	1
9	Detergent Strainer	19-0050	1
10	Detergent Hose *(Six feet Required)	15-0021	1
11	High Pressure Hose Assembly	15-0194	1
*Must Order in One Foot Lengths			

UNLOADER (850-0252)

OMGEN163-101298-BAR



UNLOADER (850-0252)			
REF. #	DESCRIPTION	PART #	QTY.
1	Hex Nut	8-0362	2
2	Cover	7-0098	1
3	Set Screw	27-4280	1
4	Adjusting Insert- Brass	8-0363	1
5	Adjustment Nut	8-0364	1
6	Set Screw	8-0365	1
7	Glide Ring	8-0366	1
8	Spring	49-0104	1
9	Hex Nut	8-0367	1
10	Bushing	8-0368	1
11	Unloader Body	8-0369	1
12	Retainer	8-0269	1
13	Valve Housing	8-0104	1
14	Spring	49-0023	1
15	Valve	8-0105	1
16	O-ring	25-0036	1
17	Cylinder Pin	8-0372	1
18	Piston Repair Kit	70-0243	1
19	Spacer	8-0371	1
20	Stop Nut	8-0157	1
21	Washer	29-0154	2
	Check Valve Repair Kit (Includes 13-16)	70-0244	
	Unloader Complete	850-0252	

OMGEN163-101298-BAR

PRESSURE SETTING & TROUBLESHOOTING THE UNLOADER

TOOLS NEEDED:

5000 PSI gauge
2.5mm Allen Wrench
Small Flathead Screw Driver
Adjustable Wrench

TO SET MAXIMUM SPRAY PRESSURE AND BYPASS PRESSURE:

Refer to Parts Listing on pg.18. Install the test gauge in the auxiliary port on unloader or in discharge line after the unloader valve. With the pump operating but the trigger gun off, loosen the SET SCREW (3) and remove the COVER (2). Remove both HEX NUTS (1) and set aside. Using the 2.5 mm Allen wrench, loosen the SET SCREW (6) and turn the ADJUSTING NUT (5) with adjustable wrench **counterclockwise** so that it is flush with top of the ADJUSTING INSERT (4). Tighten the SET SCREW (6). With adjustable wrench, turn the ADJUSTING NUT (5) **clockwise** until the ADJUSTING INSERT (4) bottoms out against the HEX NUT (9). Loosen the SET SCREW (6) with 2.5 mm Allen wrench, so that the ADJUSTING NUT (5) turns freely but does not turn the ADJUSTING INSERT (4). With proper nozzle installed in spray gun, squeeze trigger and turn ADJUSTING NUT (5) **clockwise** to desired maximum spray pressure. Then tighten the SET SCREW (6) securely and release the trigger on the trigger gun. Squeeze and release trigger several times to verify consistency of spray pressure setting. Turn the ADJUSTMENT NUT (5) **counterclockwise** two full turns and then **clockwise** again until tight. Squeeze trigger and verify desired pressure setting. Spray pressure should fall within 5% of original setting. Bypass pressure (the reading on the gauge when the trigger is released) should exceed the spray pressure by approximately 15-20%. If valve fails to repeat within specifications, repeat the steps above and assure all final settings are tight. Install one HEX NUT (1) and tighten against the ADJUSTING INSERT (4). Install the second HEX NUT (1) and tighten securely against the first. Insert the COVER (2) and tighten the SET SCREW (3).

TROUBLESHOOTING:

SYSTEM WILL NOT COME UP TO FULL DESIGNATED PRESSURE:

- * Spray nozzle worn or nozzle orifice is too large in relation to pump flow rate.
- * Adjusted improperly. Refer to pressure adjustment section for proper procedures.
- * Bypass valve (within unloader) is obstructed or leaking. Remove and clean bypass cartridge or replace. Replace with #850-0252.
- * Flow rate of pump inadequate. Assure designated flow rate of pump is adequate in relation to spray nozzle size.

PRESSURE SPIKES IN DISCHARGE LINE DURING BYPASS MODE:

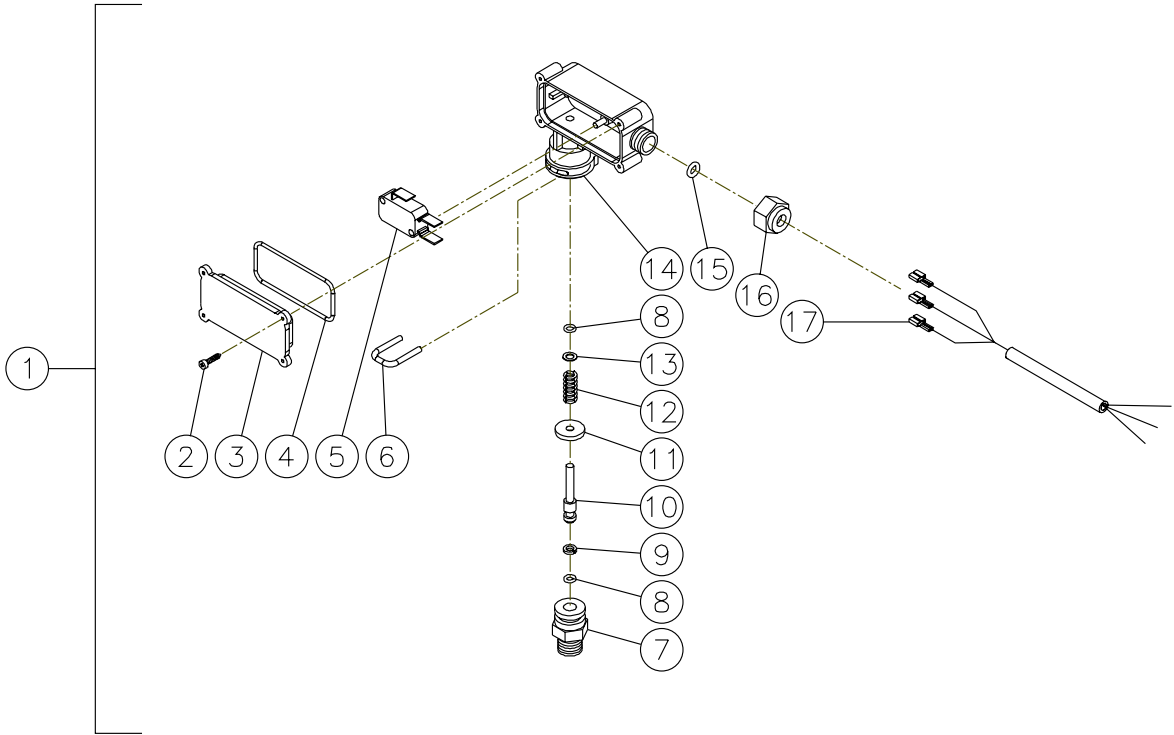
- * Pressure adjustment too tight. Refer to pressure adjustment section for proper adjustment procedures.

UNLOADER CYCLES WHILE IN BYPASS MODE:

- * External leak on unloader or in downstream fittings. Inspect all high pressure lines (including gun and hose) for any signs of leakage and repair as necessary.
- * Non-return valve. (within the unloader) damaged, obstructed or worn. Inspect and replace as necessary. Replace with #70-0244.

PRESSURE SWITCH (22-0171)

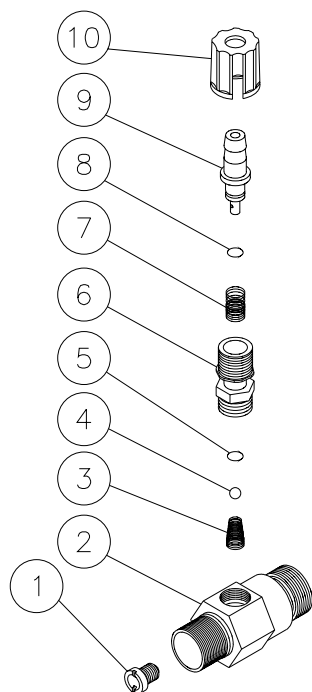
22-0171-120799-BAR



PRESSURE SWITCH (22-0171)			
REF. #	DESCRIPTION	PART #	QTY.
1	Pressure Switch	22-0171	1
2	Screw	N/A	4
3	Cover	N/A	1
4	O-ring (See 70-0306)	N/A Sep.	1
5	Micro Switch	N/A	1
6	Retainer Clip	N/A	1
7	Body	N/A	1
8	O-ring (See 70-0306)	N/A Sep.	2
9	Back-up Ring (See 70-0306)	N/A Sep.	1
10	Piston	N/A	1
11	Washer	N/A	1
12	Spring	49-0144	1
13	Washer	N/A	1
14	Plastic Housing	N/A	1
15	O-ring (See 70-0306)	N/A Sep.	1
16	Nut	N/A	1
17	Wire Assembly	N/A	1
	O-ring Repair Kit (Inc. 4, 8-9, 15)	70-0306	

22-0171 & 22-0243-120799-BAR

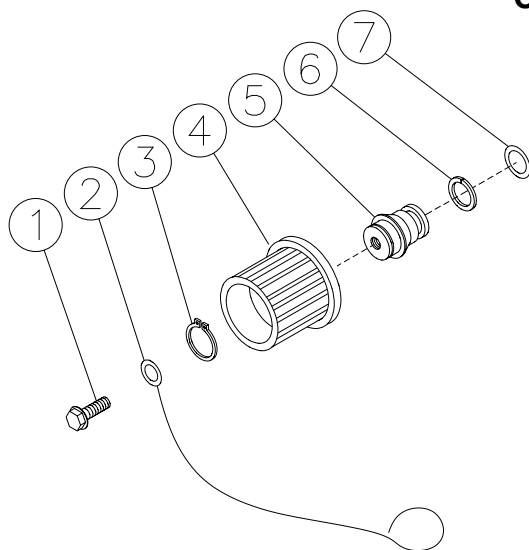
DETERGENT INJECTOR (50-0052)



OMGEN284-052898-DCE

DETERGENT INJECTOR (50-0052)			
REF. #	DESCRIPTION	PART #	QTY.
1	Orifice (2.1mm)	50-0057	1
2	Injector Body	N/A	1
3	Spring (See 852-0056)	N/A Sep.	1
4	Ball (See 852-0056)	N/A Sep.	1
5	O-ring (See 852-0056)	N/A Sep.	1
6	Piston Retainer	50-0156	1
7	Spring	49-0056	1
8	O-ring (See 852-0056)	N/A Sep.	1
9	Adjustable Shutter Barb	50-0157	1
10	Adjustment Knob	50-0158	1
	Injector Repair Kit (Includes 3-5, 8)	852-0056	

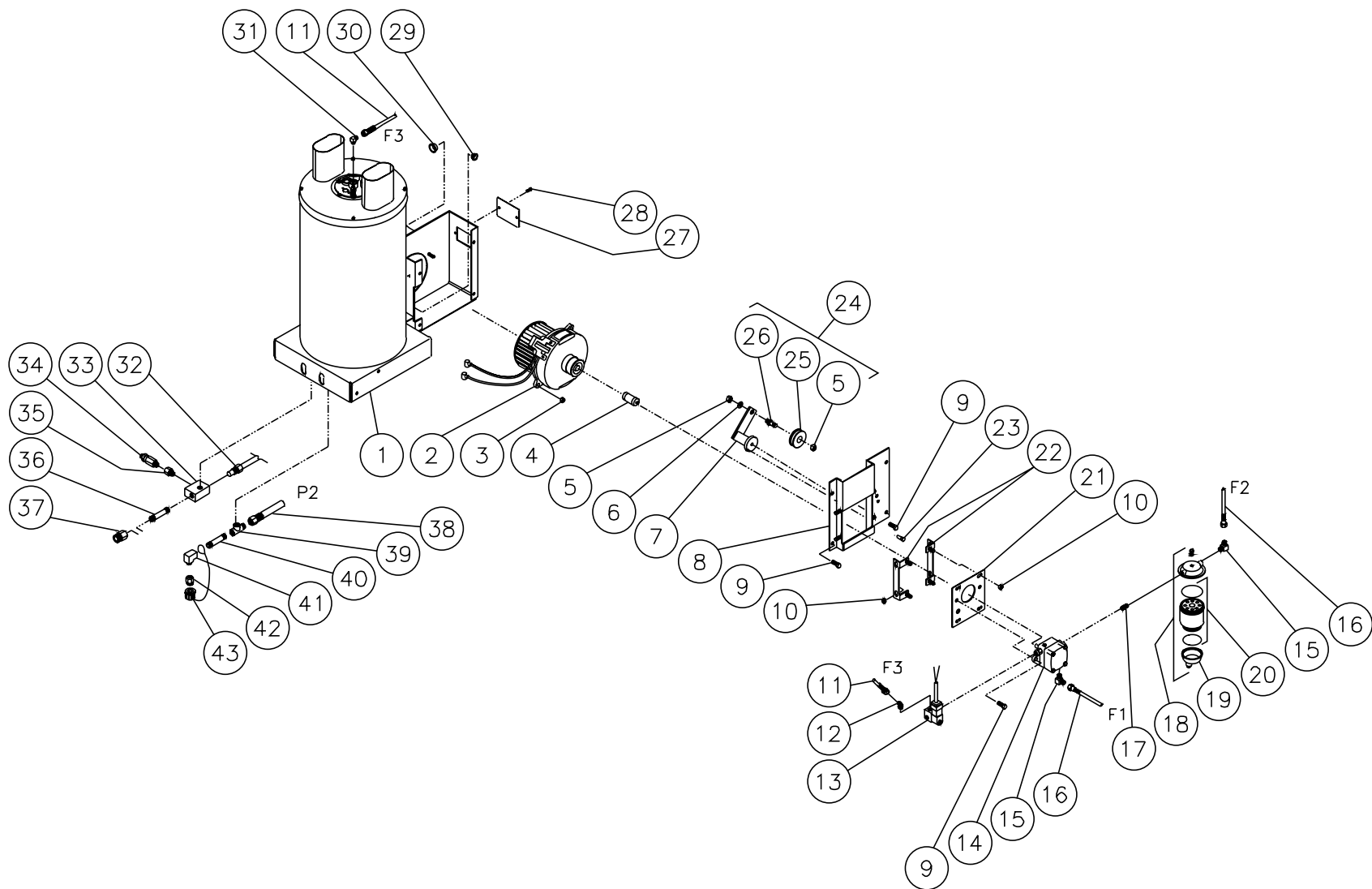
COIL DRAIN PLUG (850-0218)



850-0218-041597-BAR

COIL DRAIN PLUG (850-0218)			
REF. #	DESCRIPTION	PART #	QTY.
1	Bolt	27-9526	1
2	Retaining Cable	33-0260	1
3	Snap Ring	33-0261	1
4	Hand Wheel	16-0239	1
5	Plug	24-0147	1
6	Back-up Ring	25-0424	1
7	O-ring	25-0423	1

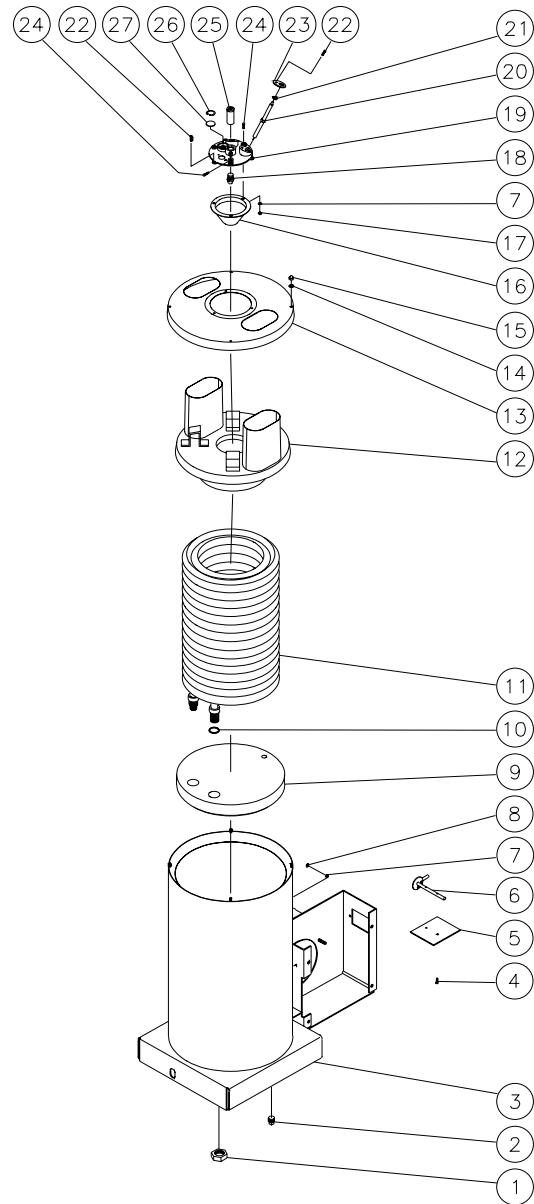
HEAT EXCHANGER/EMF SYSTEM



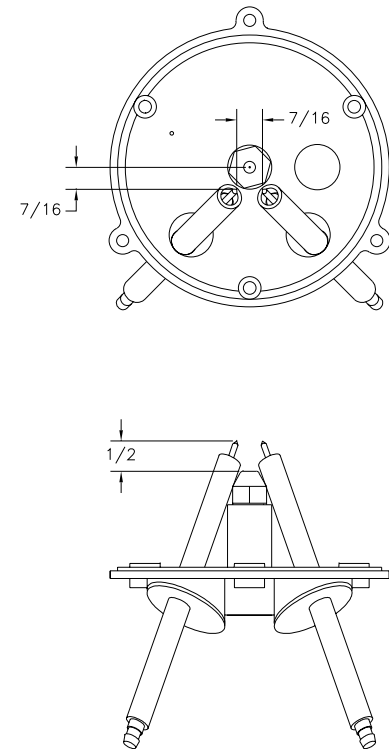
OMHSP083-032900-BAR

HEAT EXCHANGER/EMF SYSTEM								
REF. #	DESCRIPTION	PART #	QTY.		REF. #	DESCRIPTION	PART #	QTY.
1	Boiler Assembly Complete	850-0226	1		22	Bracket- Black	20-0360A01	2
2	EMF Assembly	850-0257	1		23	Pin	33-0211	1
3	Hex Nut	30-3022	2		24	Tensioner Sheave Shaft Assembly (Inc. 5, 25, 26)	850-0166	1
4	Fuel Pump Coupler	33-0225	1		25	Sheave Assembly	850-0177	1
5	Nut	30-0159	2		26	Shaft	33-0212	1
6	Flatwasher	28-0022	1		27	Access Panel- Black	20-0386A01	1
7	Tensioner Base	10-0071	1		28	Bolt	27-9526	2
8	Fuel Pump Bracket- Black	20-0381A01	1		29	Grommet	32-0426	1
9	Bolt	27-9524	7		30	Gromment	32-0427	1
10	Hex Nut	30-3023	8		31	Elbow	23-0287	1
11	Fuel Hose Assembly	15-0165	1		32	High Limit Switch	32-0423	1
12	Elbow	23-0288	1		33	Outlet Connector Block	24-0138	1
13	Fuel Solenoid- 12 Volt	44-0100	1		34	Pressure Relief Valve	22-0273	1
14	Fuel Pump	3-0020	1		35	Adapter	23-0369	1
15	Elbow	23-0237	2		36	Nipple	24-0165	2
16	Fuel Hose	15-0147	2		37	Hex Reducer	23-0197	1
17	Hex Nipple	24-0145	1		38	High Pressure Hose Assembly	15-0202	1
18	Filter Fuel Water Sperator	19-0070	1		39	Street Tee	23-0058	1
19	Fuel Water Sperator Replacement Bowl	19-0071	1		40	Elbow	23-0306	1
20	Fuel Water Sperator Replacement Filter	19-0053	1		41	Adapter	23-0279	1
21	Plate- Black	20-0363A01	1		42	Drain Plug Assembly	850-0218	1

BOILER ASSEMBLY (850-0226)

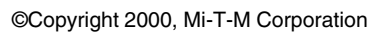


ELECTRODE GAP SETTINGS



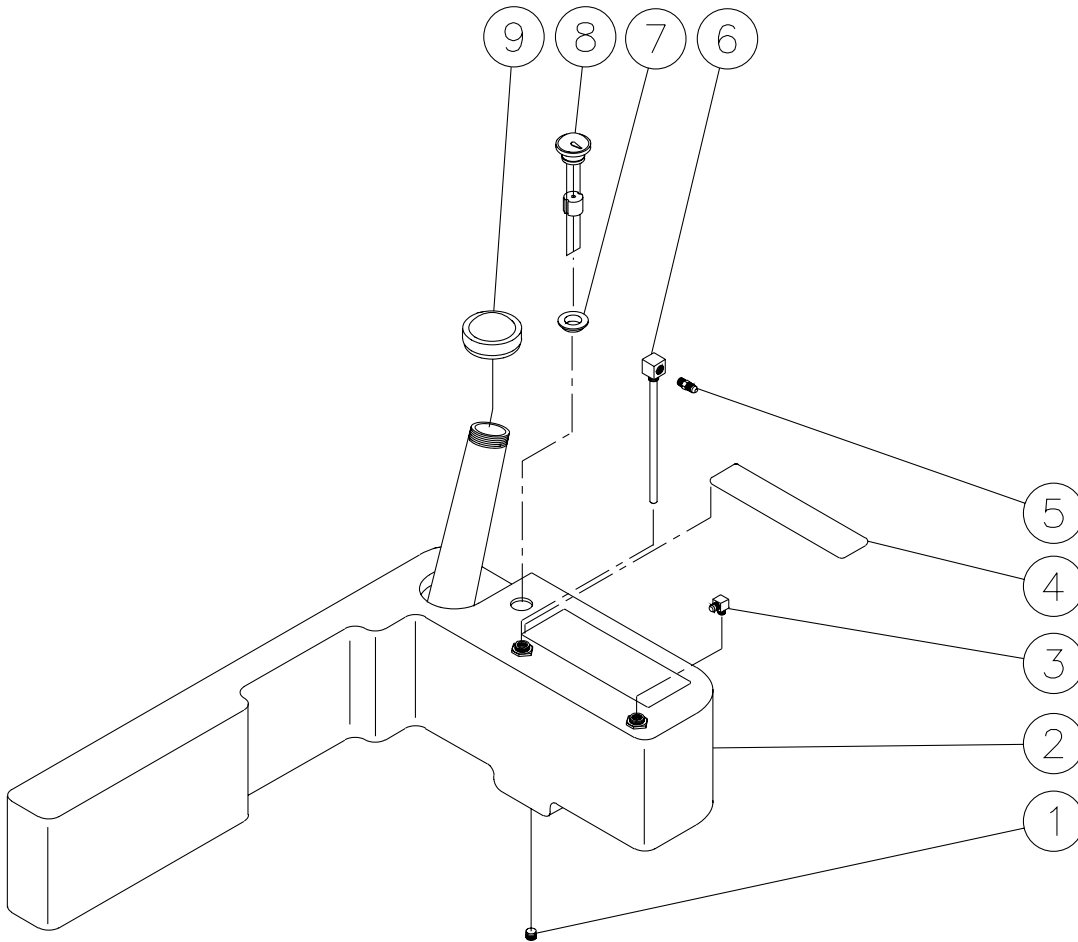
BOILER ASSEMBLY (850-0226)								
REF. #	DESCRIPTION	PART #	QTY.		REF. #	DESCRIPTION	PART #	QTY.
1	Hex Nut	30-0121	2		15	Acorn Nut	30-6002	4
2	Plug	24-0034	1		16	Cone	20-0373	1
3	Heat Exchanger Outer Wrap- Black	20-0376A01	1		17	Nut	30-6001	3
4	Bolt	27-8879	2		18	Fuel Nozzle	18-0308	1
5	Air Diverter Plate- Black	20-0378A01	1		19	Electrode Plate	38-0046	1
6	Air Diverter Stem Assembly- Black	20-0377A01	1		20	Washer	28-0523	4
7	Lockwasher	28-1009	4		21	Electrode	32-0420	2
8	Hex Nut	30-0137	1		22	Bolt	27-9526	5
9	Bottom Insulation	33-0250	1		23	Electrode Mounting Clip- Black	20-0383A01	2
10	Washer	28-0521	2		24	Bolt	27-8878	4
11	Heat Exchanger Coil Assembly	66-0011	1		25	Nozzle Holder	23-0292	1
12	Inner Pan Assembly	20-0372	1		26	Snap Ring	33-0254	1
13	Top Pan Assembly- Black	20-0371A01	1		27	Sight Glass	33-0252	1
14	Lockwasher	28-1028	4			Boiler Assembly Complete (Inc. 1-27)	850-0226	

OMHSP051-040997-BAR



GUN (850-0181) & ADJUSTABLE PRESSURE DUAL LANCE (850-0180 AND 850-0185)								
REF. #	DESCRIPTION	PART #	QTY.		REF. #	DESCRIPTION	PART #	QTY.
1	Gun/Lance Assembly (Includes 2-20)	850-0181	1		24	Handle	16-0313	1
2	Pipe Assembly	16-0016	1		25	Washer	28-1021	1
3	Plastic Housing	16-0008	1		26	Nut	30-3010	1
4	Screw	27-3230	2		27	Adaptor	23-0271	1
5	Housing	16-0012	1		28	O-ring	25-0351	1
6	Gun Repair Kit	70-0055	1		29	Piston	16-0314	1
7	Plug	39-0024	1		30	Back-up Ring	25-0352	1
8	Cover	16-0009	1		31	O-ring	25-0353	1
9	Trigger Safety Lock-off	16-0010	1		32	Upper Protector	16-0315	1
10	Trigger Pin	16-0063	1		33	Screw	27-8862	1
11	Pipe Assembly	16-0013	1		34	Lower Protector	16-0316	1
12	Adaptor	16-0283	1		35	Body	23-0272	1
13	Pipe	16-0277	1		36	Lance w/Protective Cover 36"	16-0328	2
14	Guard Lance (Right Side)	16-0320	1		-	Lance w/Protective Cover 48"	16-0317	2
15	Screw	27-8382	6		37	Nut	30-3060	2
16	Guard Lance (Left Side)	16-0321	1		38	Pipe Clamp	16-0318	2
17	Plug	39-0076	1		39	Screw	27-8861	2
18	Screw	49-0103	1		40	Nipple	24-0127	2
19	Spacer	16-0282	1		41	Nozzle Protector	16-0319	1
20	Lance Holder (See 16-0306)	N/A Sep.	1		42	Nozzle-6540	18-0110	1
21	Dual Lance Assembly (Includes 22-42) 36"	850-0185	1			Gun Assembly (Includes 12-20)	16-0001	
-	Dual Lance Assembly (Includes 22-42) 48"	850-0180	1			Lance Assembly (Includes 13-21)	16-0306	
22	Handle Plug	16-0312	1		O-ring Kit (Includes 28, 30, 31)	70-0143		
23	Nut	30-3002	1					

FUEL TANK (850-0248)

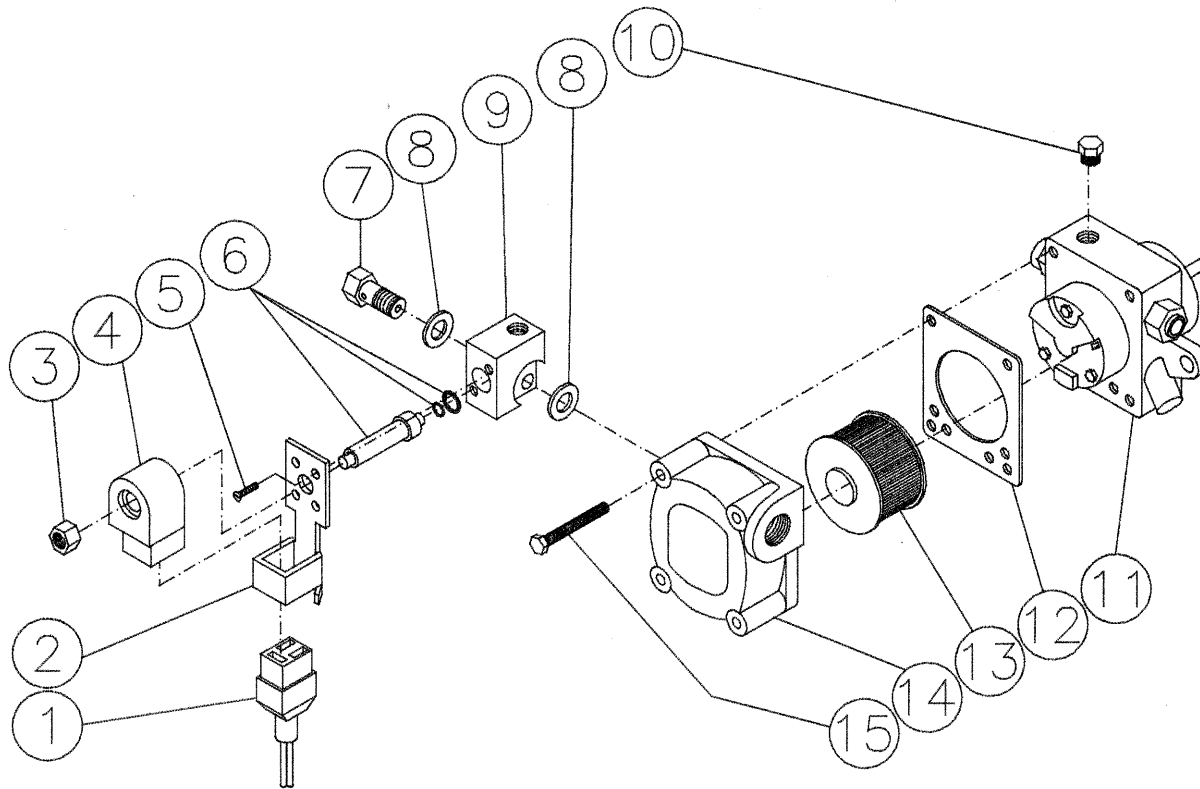


850-0193A-012098-BAR

FUEL TANK (850-0248)			
REF. #	DESCRIPTION	PART #	QTY.
1	Plug	23-0296	1
2	Fuel Tank (See 850-0193)	N/A Sep.	1
3	Elbow	23-0237	1
4	Decal-Warning: Risk of Fire (E/S)	34-0806	1
5	Flare	23-0247	1
6	Fuel Pick-up Line	33-0270	1
7	Bushing	33-0255	1
8	Fuel Indicator Gauge	22-0215	1
9	Fuel Cap-Vented	12-0033	1

850-0193-012098-BAR

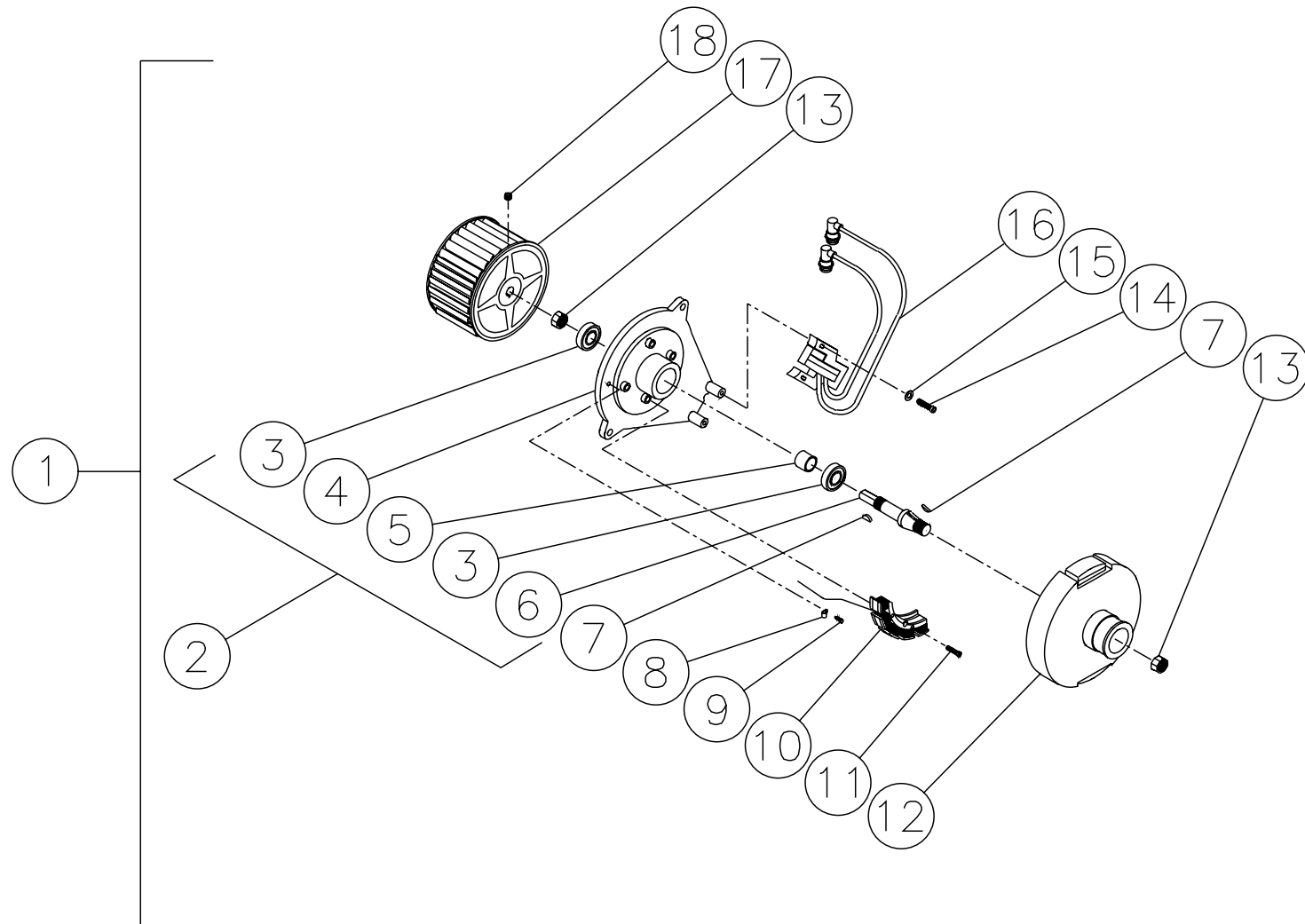
FUEL PUMP (3-0020) & FUEL SOLENOID (44-0100)



0MHSP049/071796/BAR

FUEL PUMP (3-0020) & FUEL SOLENOID (44-0100)			
REF. #	DESCRIPTION	PART #	QTY.
1	Cord-Din Connector	46-1017	1
2	Base Plate	46-1014	1
3	Nut	46-1016	1
4	Solenoid Coil- 12 Volt	46-1015	1
5	Screw	N/A	2
6	Piston	46-1012	1
7	Bolt	46-1009	1
8	Washer	26-0150	2
9	Solenoid Body	N/A	1
10	Plug	24-0082	1
11	Fuel Pump Body	N/A	1
12	Cover Gasket	26-0109	1
13	Fuel Oil Strainer	19-0034	1
14	Fuel Pump Cover	46-1005	1
15	Fuel Pump Cover Screw	46-1006	4

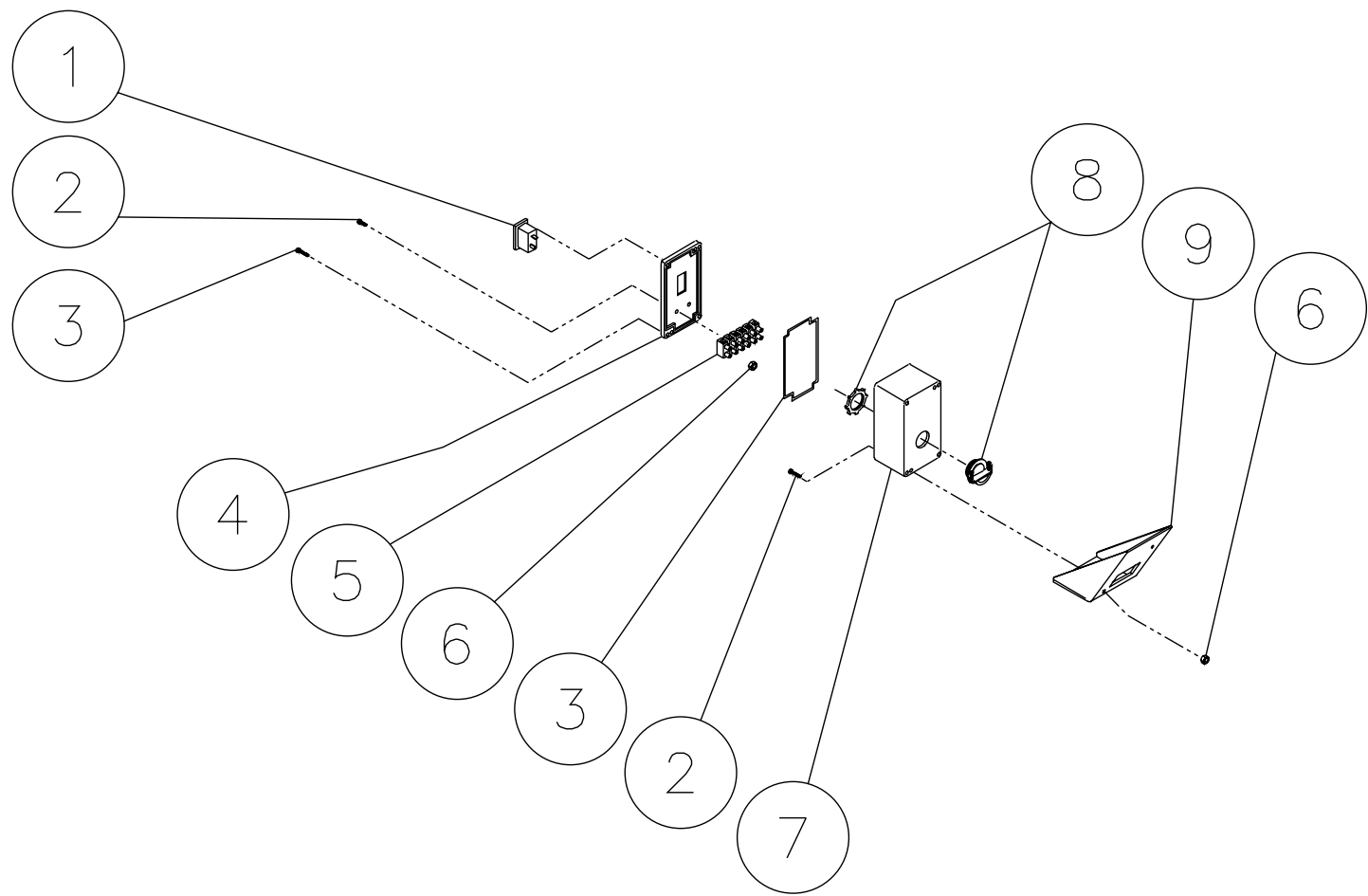
EMF SYSTEM (850-0257)



OMHSP072-113099-BAR

EMF SYSTEM (850-0257)			
REF. #	DESCRIPTION	PART #	QTY.
1	EMF Assembly	850-0257	1
2	Blower Flange Assembly	850-0258	1
3	Bearing	48-0041	2
4	Flange Blower	38-0040	1
5	Spacer	33-0206	1
6	Shaft- Blower/ Electric	20-0347	1
7	Woodruff Key	43-0080	2
8	Cable Clamp	32-0403	1
9	Screw	27-2070	1
10	Stator Coil	850-0201	1
11	Screw	27-0740	2
12	Flange Magnet Hub	38-0041	1
13	Hex Nut	30-0177	2
14	Bolt	27-8898	2
15	Flatwasher	28-0002	2
16	Ignition Coil Assembly	850-0191	1
17	Blower Fan	44-0099	1
18	Screw Set w/ Fan	30-3021	1

ELECTRIC BOX

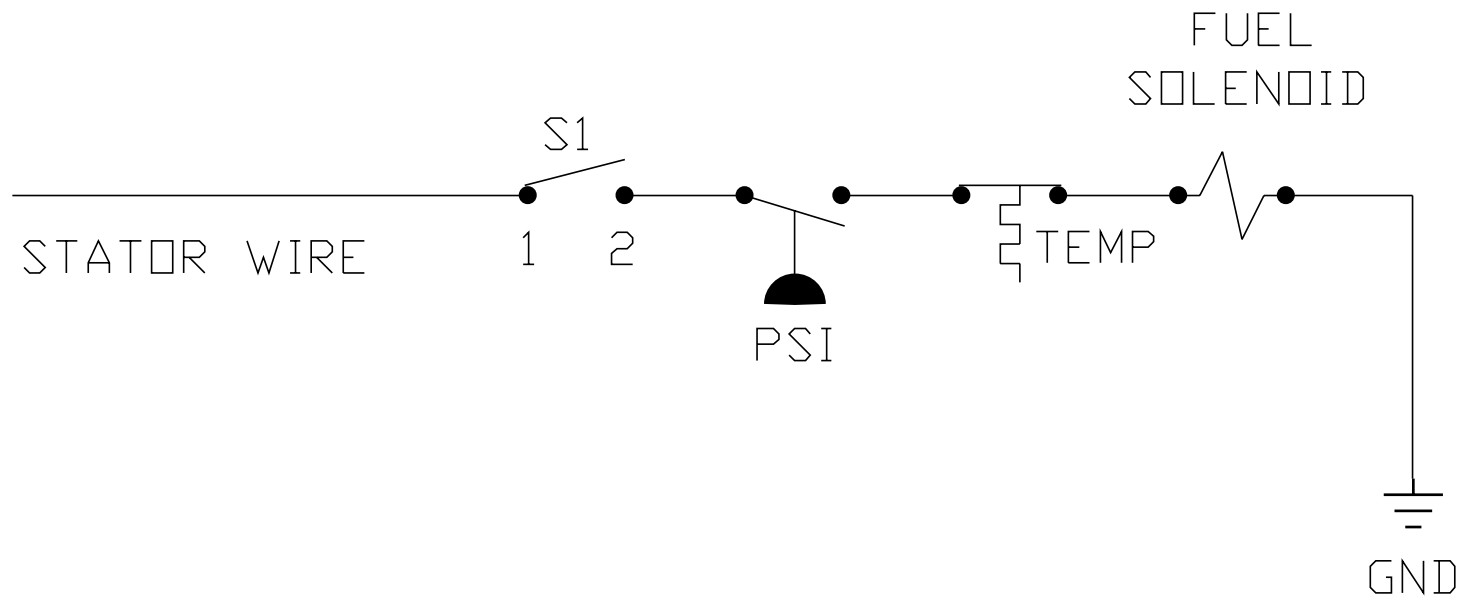


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ELECTRIC BOX			
REF. #	DESCRIPTION	PART #	QTY.
1	Switch/ Rocker	32-0422	1
2	Bolt	27-8881	4
3	Bolt and Gasket Kit	70-0169	1
4	Electric Box Lid- Black	32-0430A01	1
5	Terminal Strip	32-0394	1
6	Hex Nut	30-0152	4
7	Electric Box- Black	32-0429A01	1
8	Electrical Connector	32-0085	1
9	Electric Box Bracket- Black	20-0380A01	1

WIRING SCHEMATIC



WIRING DIAGRAM

