



PARTS LIST FOR
HSP-3504-3MGH/3MGR/3MGK
HSP-3003-3MGH/3MGR/3MGV
HSP-3004-3MGH
(AFTER SERIAL #15074024)

ENGINE OIL GRADE:		PUMP OIL GRADE:	Mi-T-M PUMP OIL #AW-4085-0016
HONDA/SUBARU/KOHLER/ROBIN:	SAE10W-30	PUMP OIL CAPACITY:	
VANGUARD:	ABOVE 40°F = SAE30	HSP-3004 / HSP-3504	15 oz.
	BELOW 40°F = SAE10W-30	HSP-3003	14 oz.
ENGINE OIL CAPACITY:		BTU INPUT:	
HONDA (GX270, GX390):	37 oz.	HSP-3004 / HSP-3504	294,000 / hour
SUBARU (EX27, EX40):	40.6 oz.	HSP-3003	253,000 / hour
KOHLER (CH440):	44.8 oz.	PRESSURE NOZZLE SIZE:	
VANGUARD:	40 oz.	HSP-3003 / HSP-3504	3.5
		HSP-3004	4.0

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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NOTES

DATE	SERIAL NUMBER	REASON
2/15/2012	#15070469	ADDED KOHLER ENGINE
10/07/2009	#15048210	ELECTRODE PLATE CHANGE
4/30/2012	#15074024	IGNITION COIL ASSEMBLY UPDATE

NOTES

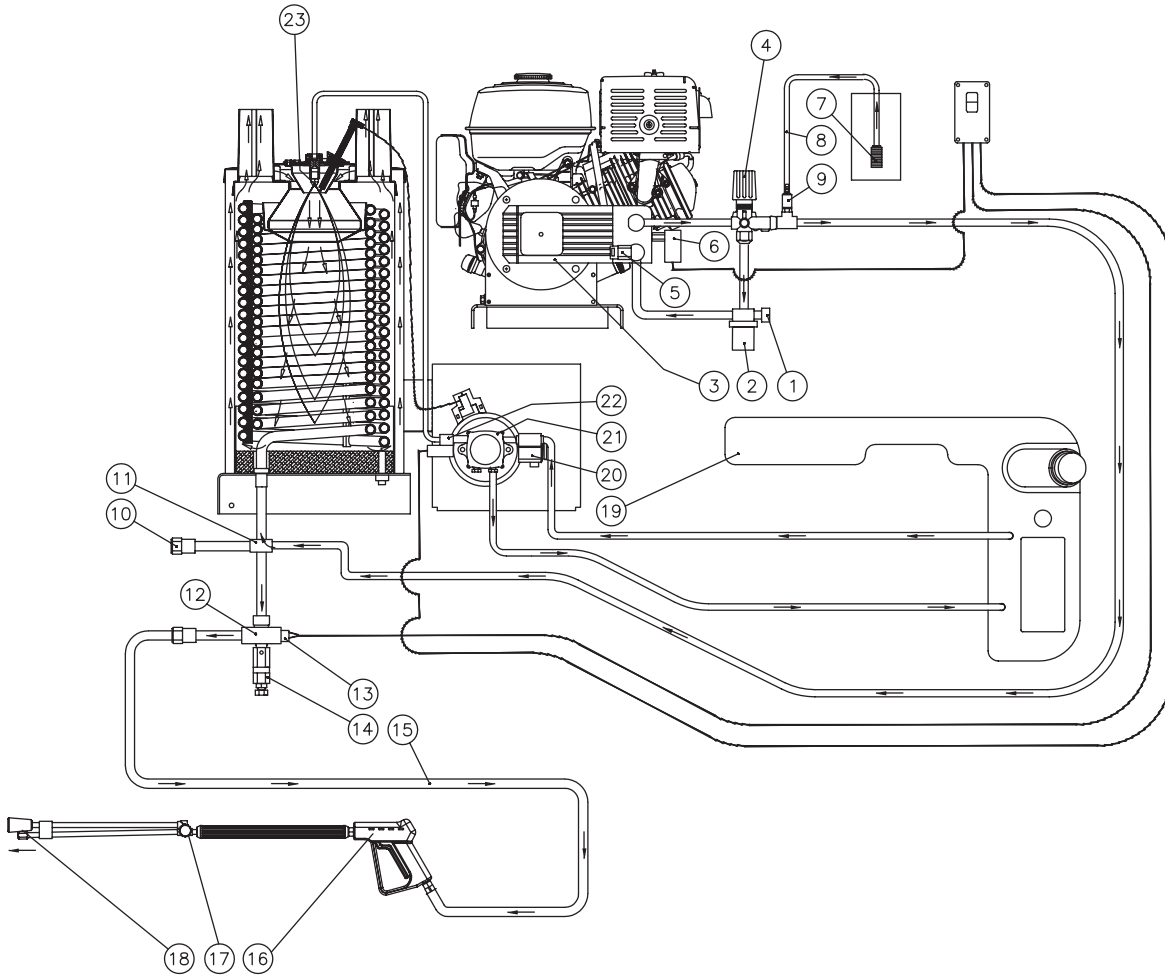
SPECIFICATIONS

MODEL NUMBER	HSP-3504-3MGH	HSP-3504-3MGR	HSP-3504-3MGK	HSP-3004-3MGH
Operating Pressure (PSI/Bar):	3500/241 (+/- 5%)			3000/207 (+/- 5%)
Water Volume (GPM/lpm):	3.3/12.5 (+/- 5%)			3.5/13.3 (+/- 5%)
Outlet Water Temperature (F/C):	140°F/78°C (+/- 20°F) rise above inlet ambient (210°F/ 99°C maximum)			
Engine:	Honda	Robin Subaru	Kohler	Honda
Model	GX390	EX40	CH440	GX390
Engine Type	Four Stroke, Overhead Valve, Single Cylinder			
Oil Type	SAE10W-30			
Oil Capacity (oz./ liter)	37/1.1	40.6/1.2	44.8/1.3	37/1.1
Low Oil Protection	Oil Alert™	Oil Guard™	Oil Sentry™	Oil Alert™
Fuel Type	Unleaded Gasoline 86 Octane Minimum			
Fuel Capacity (gal./ liter)	1.72/6.5	1.85/7.0		1.72/6.5
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			Adjustable
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 # 5,954,494)			
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	434/197	428/194
Unit Shipping Weight (Lbs/kg):	551/250	553/251	557/253	551/250
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			

SPECIFICATIONS

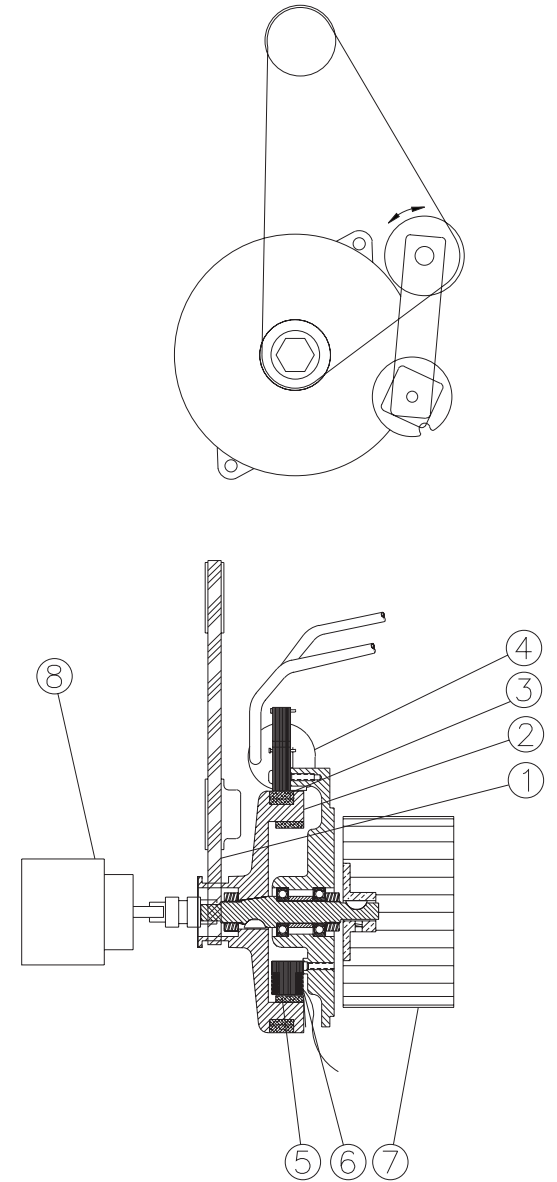
MODEL NUMBER	HSP-3003-3MGH	HSP-3003-3MGR	HSP-3003-3MGV
Operating Pressure (PSI/Bar):	3000/207 (+/- 5%)		
Water Volume (GPM/lpm):	2.90/11.0 (+/- 5%)		
Outlet Water Temperature (F/C):	130°F/ 72°C (+/- 20°F) rise above inlet ambient (210°F/ 99°C maximum)		
Engine:	Honda	Robin	Vanguard
Model	GX270	EX27	9 Horse
Engine Type	Four Stroke, Overhead Valve, Single Cylinder		
Oil Type	SAE10W-30		Above 40°F = SAE30 / Below 40°F = SAE10W-30
Oil Capacity (oz./liter)	37/1.1		40 oz.
Low Oil Protection	Oil Alert™	Oil Sensor	Oil Guard™
Fuel Type	Unleaded Gasoline 86 Octane Minimum		
Fuel Capacity (gal./liter)	1.6/6.0		2.0/7.6
Starting	Recoil Rope		
Maximum No Load RPM	3600 (+/- 100)		
High Pressure Pump:	Direct Driven, Oil Bath, Triplex Piston		
Oil Type	SAE30W Non-Detergent		
Oil Capacity (oz./liters)	14/41		
Plungers	Ceramic		
Manifold	Forged Brass		
Valves	Stainless Steel		
Unloader	Adjustable		
Inlet Water Strainer	Removable Clear Bowl for inspection and cleaning of Stainless Steel Screen		
Thermal Relief 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	1.50 60° A Delavan		
Fuel Consumption (GPH/ LPH)	1.81 GPH Continuous Burning		
Electro Magnetic Firing (EMF) System:	Belt Driven (Patent # 5,954,494)		
Ignition	Transistorized Magneto		
Control Voltage	12 Volt DC		
Blower	Forced Air		
Heat Exchanger:	Vertical, Top fired, Dual Spiral Coil		
BTU Input	253,000		
Efficiency	83% 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		
Unit Shipping Weight (Lbs/kg):	551/250		
Unit Net Dimension (In/cm):	43Lx30Wx41H/109 x76Wx104H		
Unit Shipping Dimension (In/cm):	46.5Lx31.5Wx48.5H/118Lx80Wx123H		

FLOW CHART



OMHSP090-040705-FRZ

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.

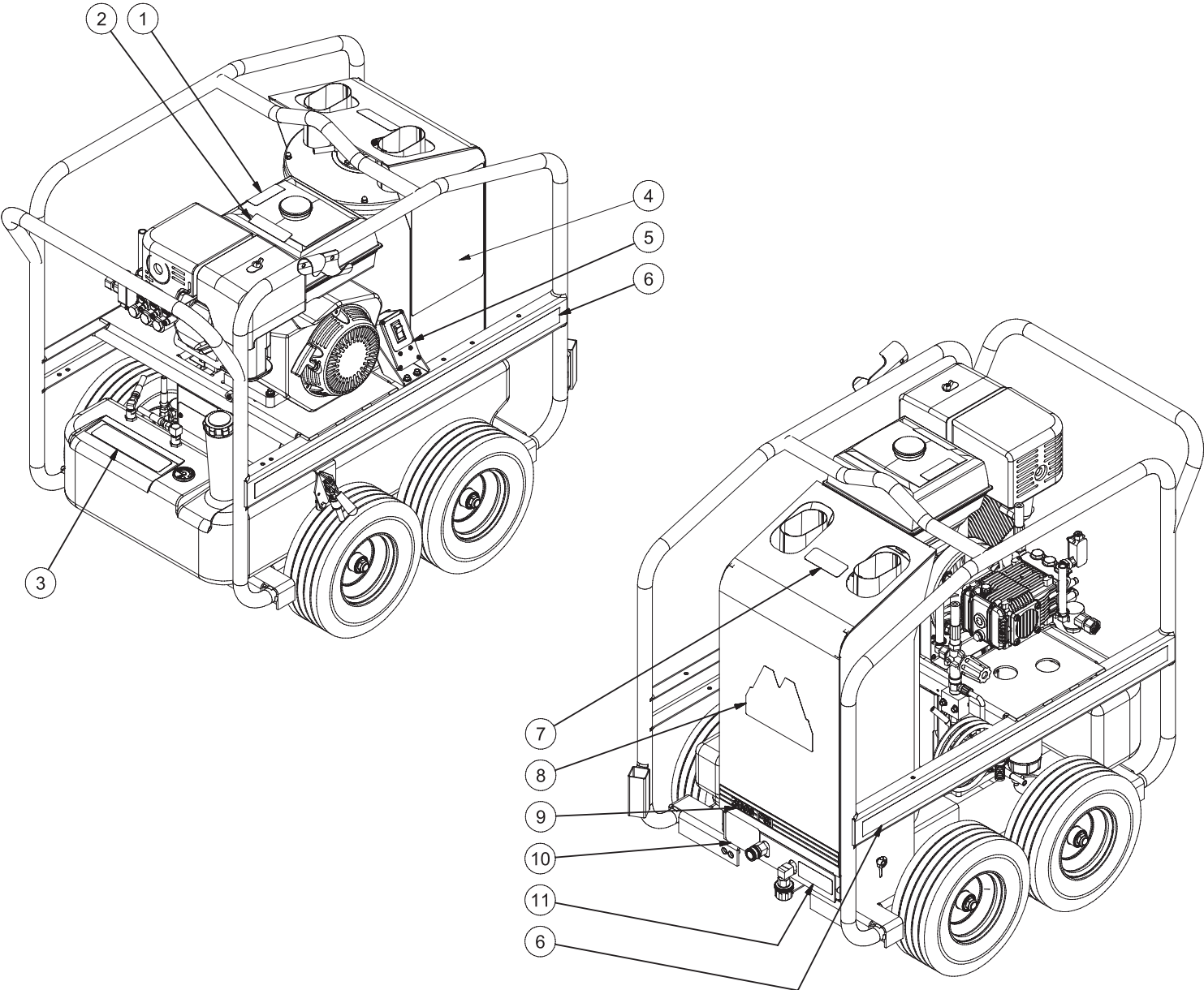
EMF SYSTEM: The patented Electro Magnetic Firing (EMF) System is an integrated system which gives all the requirements for combustion.

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.

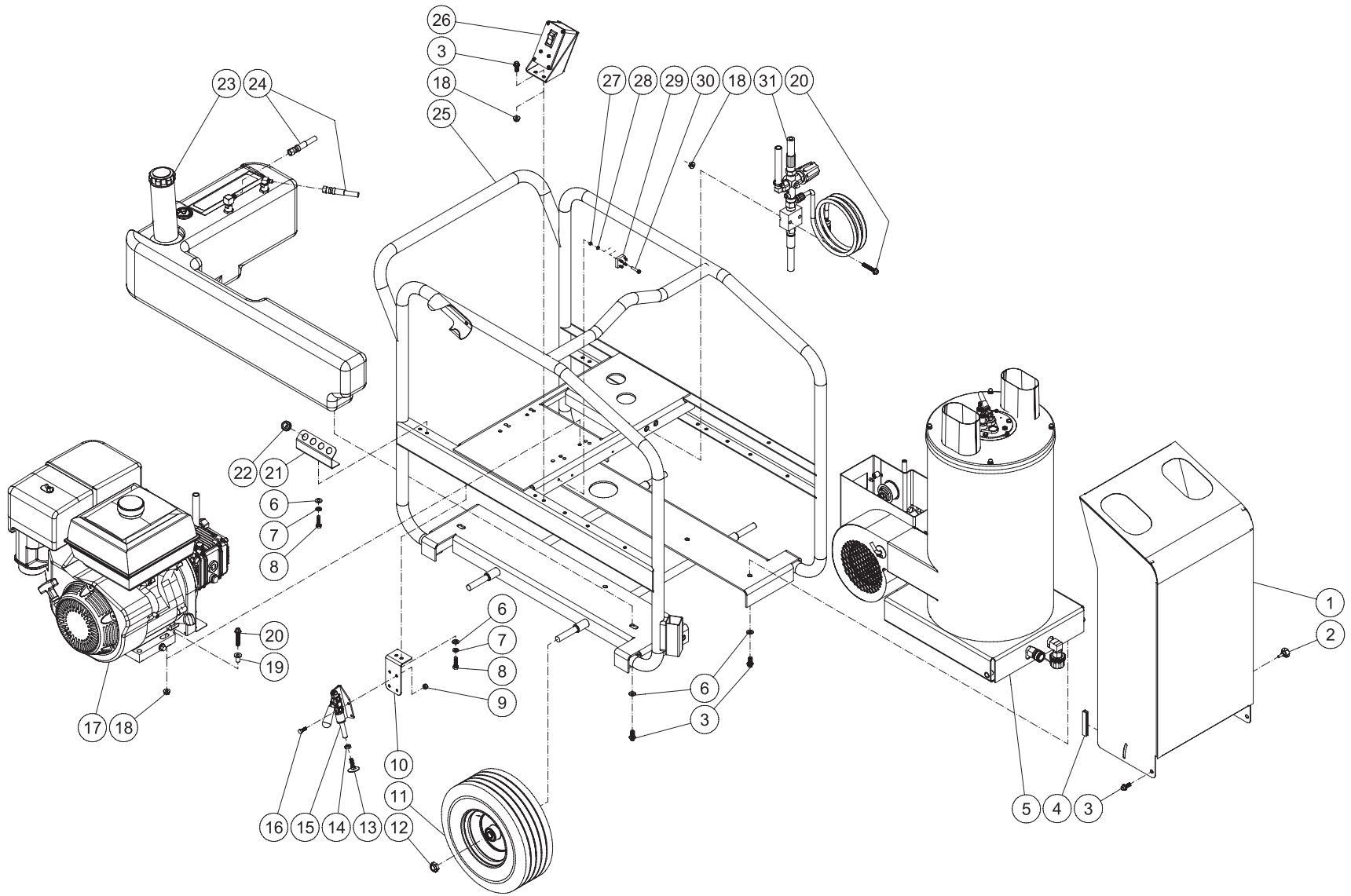
DECAL PLACEMENT



HSP LG DECAL PLACEMENT - MITM 071913

DECAL PLACEMENT			
ITEM	DESCRIPTION	PART #	QTY
1	DECAL - RISK OF FIRE (SEE 71-0010)	N/A	1
2	DECAL - RISK OF BURNS (SEE 71-0010)	N/A	1
3	DECAL - CAUTION: RISK OF FIRE (SEE 71-0010)	N/A	1
4	DECAL - WARNING/CAUTION/OPERATION (SEE 71-0010)	N/A	1
5	DECAL - BURNER ON/OFF (SEE 71-0010)	N/A	1
6	DECAL - Mi-T-M STRIPE	34-2192	2
7	DECAL - HOT SURFACES (SEE 71-0010)	N/A	1
8	DECAL - Mi-T-M	34-2170	1
9	DECAL - 14" STRIPE	34-2565	1
-	DECAL - 14" STRIPE W/3500PSI	34-2569	1
10	DECAL - DATA PLATE	N/A	1
11	DECAL - WARNING: RISK OF EXPLOSION (SEE 71-0010)	N/A	1
-	DECAL SET	71-0010	1

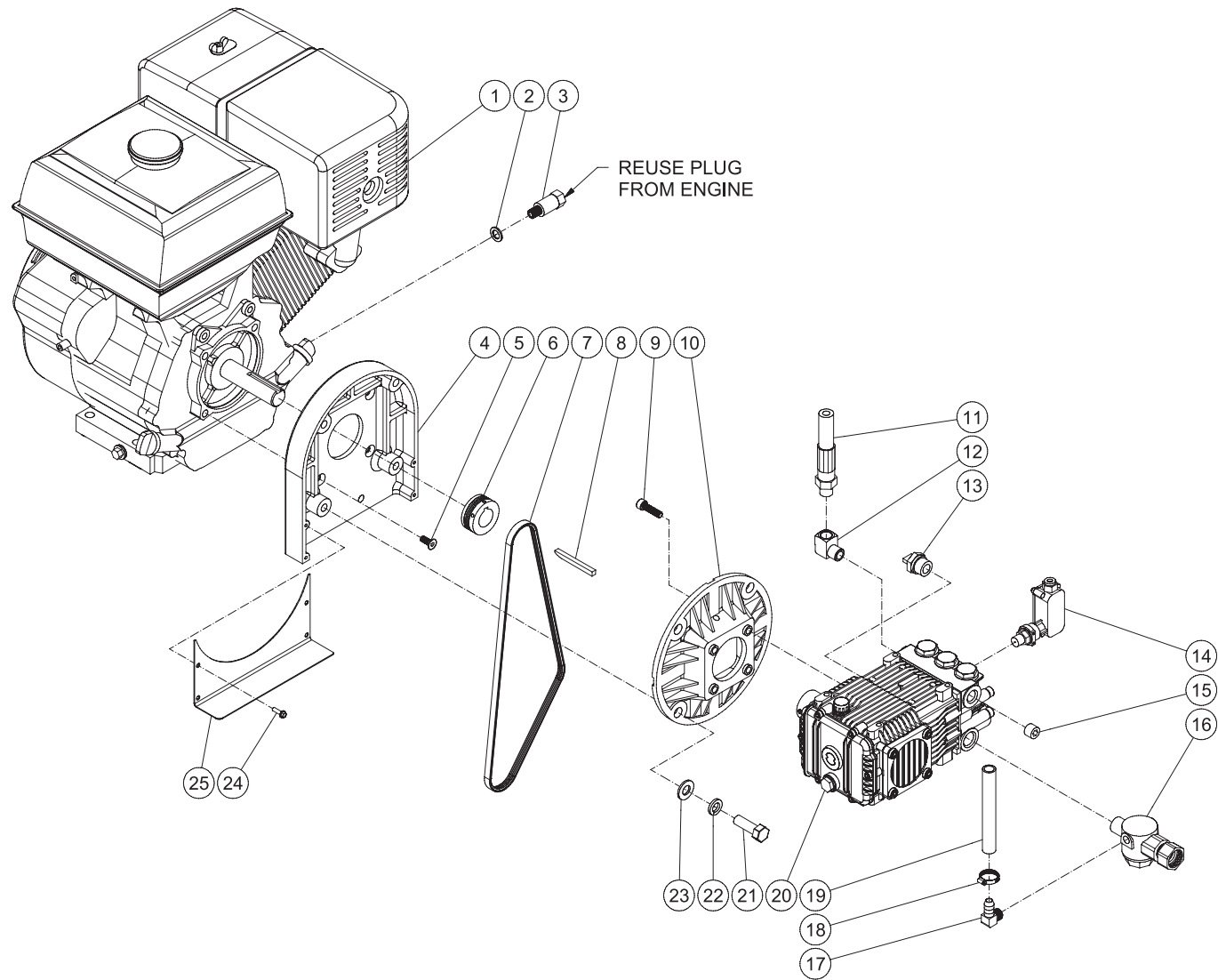
FRAME (AFTER SERIAL #15010743)



HSP099 011215 K MID

HSP099 011215 KMD			
FRAME ASSEMBLY			
ITEM	DESCRIPTION	Mi-T-M #	QTY
1	HOOD	20-0379A01	1
2	KNOB	62-0057	1
3	BOLT	27-9524	11
4	EDGING *(ONE FOOT REQUIRED)	33-0020	1
5	HEAT EXCHANGER / EMF ASSY	N/A	1
6	WASHER	28-0003	11
7	LOCKWASHER	29-0007	4
8	BOLT	27-0068	4
9	LOCKNUT	30-0155	2
10	BRAKE BRACKET	20-1358A01	1
11	WHEEL	14-0127	4
12	LOCKNUT	30-0117	4
13	BOLT	27-9550	1
14	NUT	30-0004	1
15	PUSH/PULL TOGGLE CLAMP	33-0400	1
16	BOLT	27-0015	2
17	ENGINE/ PUMP ASSEMBLY	N/A	1
18	NUT	30-3023	8
19	ENGINE SHIM	33-0169	4
20	BOLT	27-9529	6
21	NOZZLE HOLDER	20-1198A01	1
22	GROMMET	33-0001	4
23	FUEL TANK ASSEMBLY	850-0193	1
24	FUEL HOSE	15-0147	2
25	FRAME	5-0120A01	1
26	ELECTRIC BOX ASSEMBLY	N/A	1
27	NUT	30-6001	1
28	STAR WASHER	28-1009	1
29	BRIDGE RECTIFIER	32-1114	1
30	BOLT	27-8807	1
31	UNLOADER/ MANIFOLD ASSEMBLY	N/A	1
*MUST ORDER IN ONE FOOT LENGTHS			

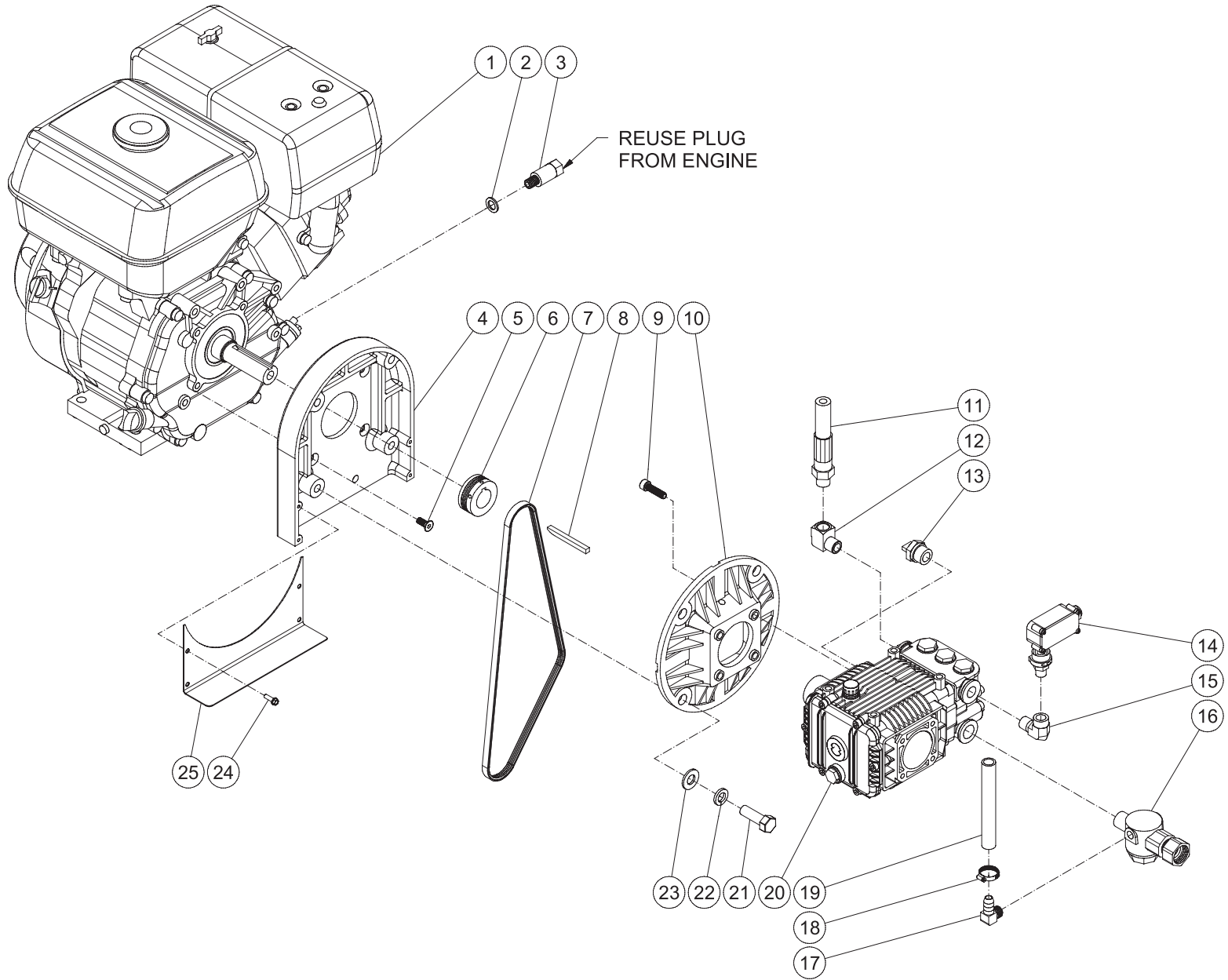
ENGINE/ PUMP ASSEMBLY (HSP-3004, 3504)



HSP100-070113-CH

HSP100 070113 CH			
ENGINE/PUMP ASSEMBLY			
ITEM	DESCRIPTION	PART #	QTY
1	ENGINE - HONDA	1-0086	1
-	ENGINE - HONDA 13.0 HP RECOIL - RED	1-0205	1
-	ENGINE - KOHLER 429CC RECOIL	1-0208	1
-	ENGINE - ROBIN 14.0HP RECOIL	1-0176	1
2	WASHER	28-0605	1
-	WASHER-ALUM .533 X .800 X .070	28-0606	1
3	OIL DRAIN	24-0143	1
-	OIL DRAIN EXTENSION	24-0142	1
4	ADAPTER FLANGE	38-0049	1
5	BOLT	27-0418	4
6	SHEAVE	10-0077	1
7	BELT	11-0037	1
8	KEY	43-0088	1
9	BOLT	27-8434	4
10	ADAPTER PLATE	38-0051	1
11	HIGH PRESSURE HOSE	15-0194	1
12	ELBOW	23-0034	1
13	RELIEF VALVE	22-0005	1
14	PRESSURE SWITCH	22-0171	1
15	PLUG	23-0244	1
16	WATER FILTER	19-0096	1
17	ELBOW	23-0119	1
18	HOSE CLAMP	42-0011	1
19	HOSE *(TWO FEET REQUIRED)	15-0007	1
20	PUMP	3-0194	1
21	BOLT	27-0218	4
22	LOCKWASHER	29-0010	4
23	WASHER	28-0006	4
24	BOLT	27-9526	4
25	BELTGUARD	20-0384A01	1
*MUST ORDER IN ONE FOOT LENGTHS			

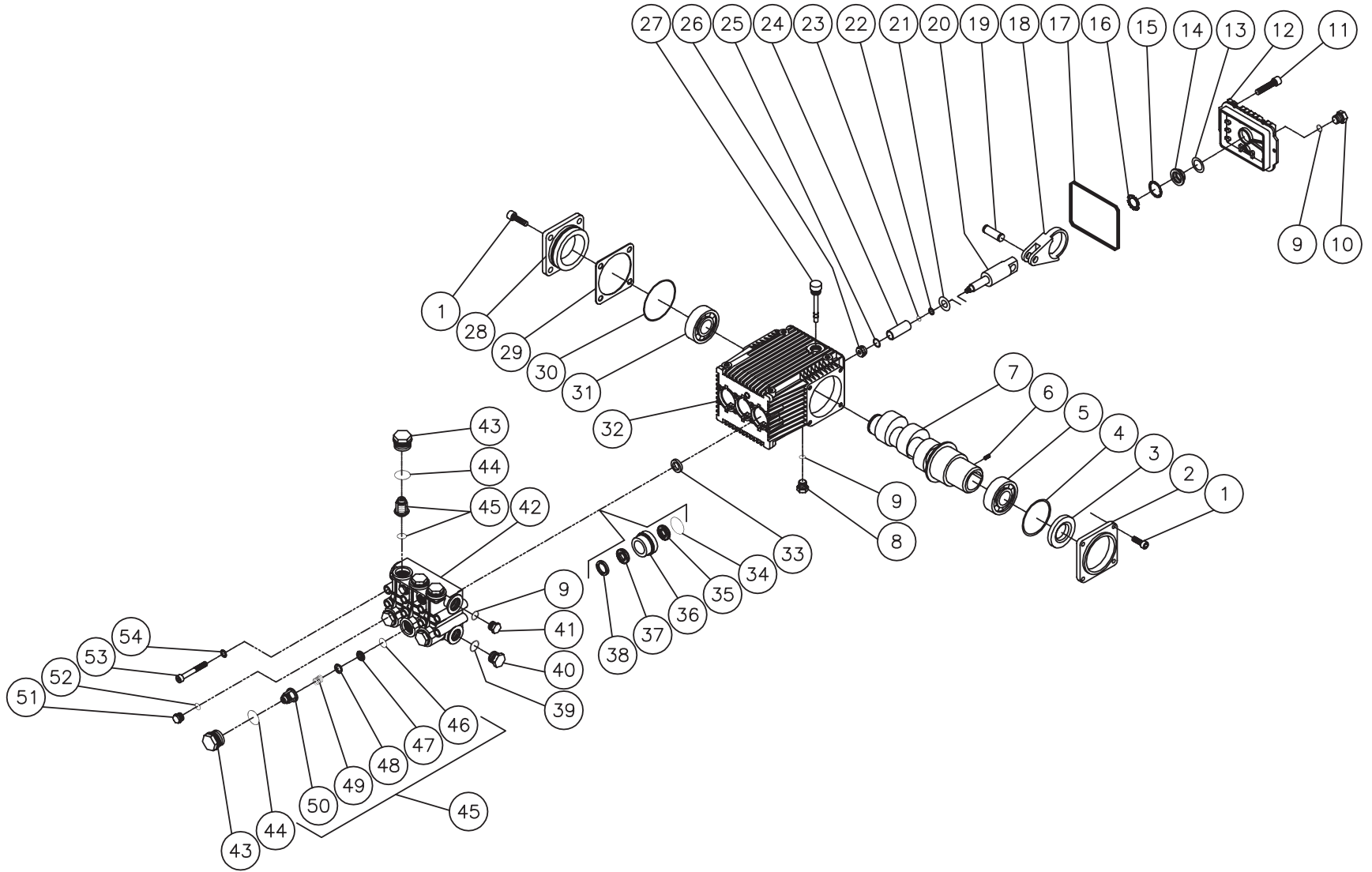
ENGINE/ PUMP ASSEMBLY (HSP-3003)



HSP134 072213 CH

HSP134 072213 CH			
ENGINE/PUMP ASSEMBLY			
ITEM	DESCRIPTION	Mi-T-M #	QTY
1	ENGINE - HONDA	1-0162	1
-	ENGINE - SUBARU	1-0134	1
2	WASHER - HONDA	28-0605	1
3	OIL DRAIN - HONDA	24-0143	1
-	OIL DRAIN - SUBARU	70-0380	1
4	ADAPTER FLANGE	38-0049	1
5	BOLT	27-0418	4
6	SHEAVE	10-0077	1
7	BELT	11-0037	1
8	KEY	43-0088	1
9	BOLT	27-8434	4
10	ADAPTER PLATE	38-0051	1
11	HIGH PRESSURE HOSE	15-0194	1
12	ELBOW	23-0034	1
13	RELIEF VALVE	22-0005	1
14	PRESSURE SWITCH	22-0171	1
15	ELBOW	24-0004	1
16	WATER FILTER	19-0096	1
17	ELBOW	23-0119	1
18	HOSE CLAMP	42-0011	1
19	HOSE *(TWO FEET REQUIRED)	15-0007	1
20	PUMP	3-0241	1
21	BOLT	27-0218	4
22	LOCKWASHER	29-0010	4
23	WASHER	28-0006	4
24	BOLT	27-9526	4
25	BELTGUARD	20-0384A01	1
*MUST ORDER IN ONE FOOT LENGTHS			

HIGH PRESSURE PUMP (3-0194)

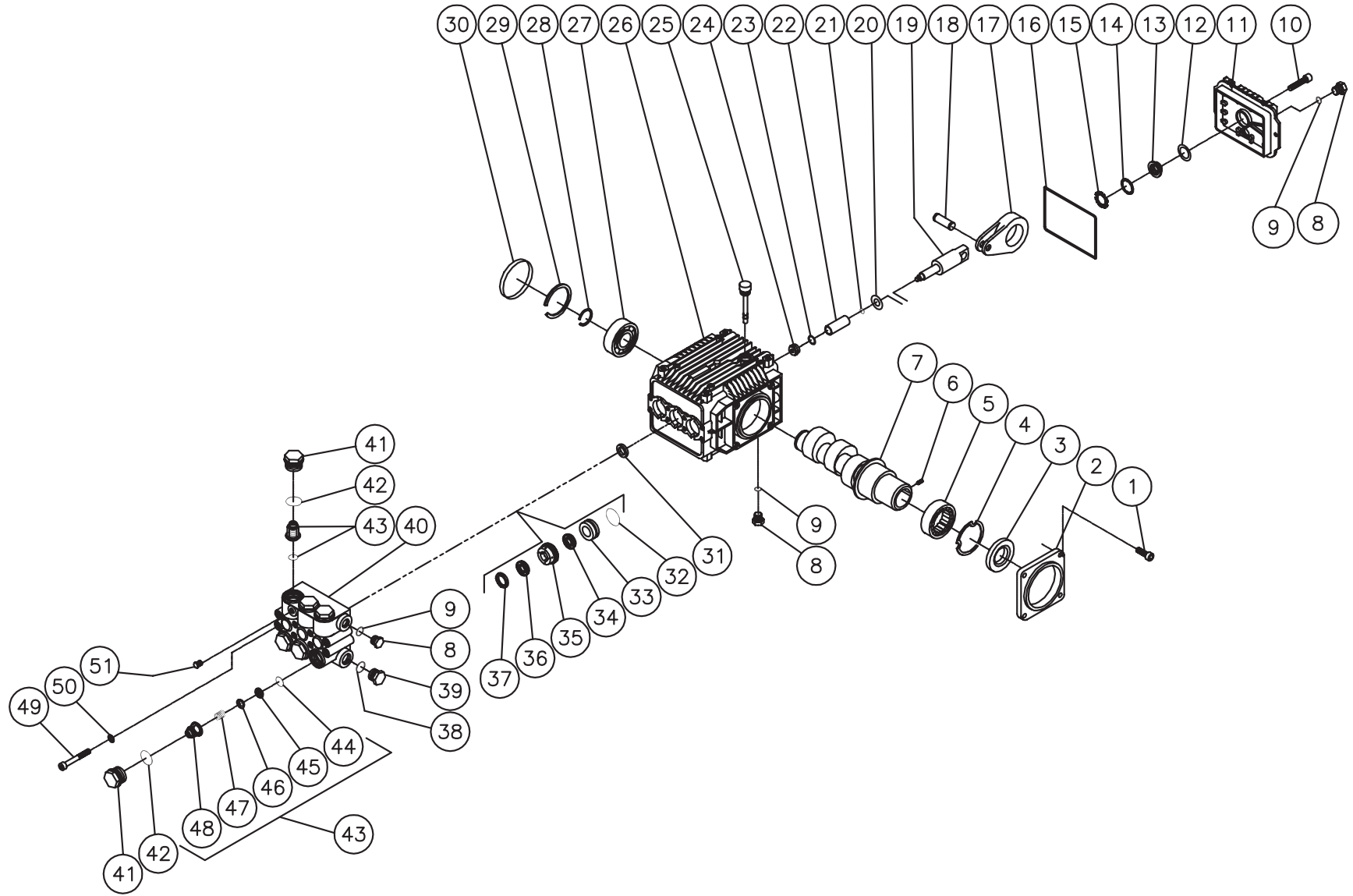


3-0194.070214 ALC

PUMP ASSEMBLY								
REF.	DESCRIPTION	PART #	QTY.	REF.	DESCRIPTION	PART #	QTY.	
1	BOLT	27-8884	8	29	SHIM- 0.1MM (QTY. VARIES 1-3)	46-0704	-	
2	SHAFT COVER	46-0713	1	-	SHIM- 0.2MM (QTY. VARIES 1-3)	46-0705	-	
3	OIL SEAL (SEE KIT 70-0337)	26-0194	1	30	O-RING (SEE KIT 70-0337)	25-0380	1	
4	O-RING (SEE KIT 70-0337)	25-0397	1	31	BEARING (AFTER SERIAL #28511)	48-0072	1	
5	BEARING	48-0062	1	-	BEARING (BEFORE SERIAL #28511)	48-0061	1	
6	SET SCREW	27-8886	1	32	CRANKCASE	46-0811	1	
7	CRANKSHAFT (AFTER SERIAL #28511)	46-0959	1	33	OIL SEAL (SEE KIT 70-0337)	46-0931	3	
-	CRANKSHAFT (BEFORE SERIAL #28511)	46-0734	1	34	O-RING (SEE KIT 70-0177)	25-0384	3	
8	PLUG	39-0102	1	35	LOW PRESSURE SEAL (SEE KIT 70-0177)	46-0707	3	
9	O-RING	25-0325	3	36	PACKING RETAINER	46-0708	3	
10	PLUG	39-0086	1	37	V-PACKING (SEE KIT 70-0177)	46-0709	3	
11	BOLT	27-8885	6	38	SUPPORT RING (SEE KIT 70-0178)	46-0710	3	
12	CRANKCASE COVER	46-0719	1	39	O-RING	25-0372	1	
13	O-RING	25-0370	1	40	PLUG	39-0088	1	
14	OIL SIGHT GLASS	46-0670	1	41	PLUG	39-0086	1	
15	REFLECTOR	46-0824	1	42	MANIFOLD	46-0711	1	
16	RETAINER	46-0671	1	43	VALVE CAP BRASS	39-0095	6	
17	O-RING (SEE KIT 70-0337)	25-0398	1	-	VALVE CAP STAINLESS STEEL	39-0105	-	
18	CONNECTING ROD (AFTER SERIAL #28511)	46-0922	3	44	O-RING	25-0160	6	
-	CONNECTING ROD (BEFORE SERIAL #28511)	46-0697	3	45	VALVE ASSEMBLY KIT (INC. 46-50)	70-0179	1	
19	PISTON PIN	46-0698	3	46	O-RING (SEE KIT 70-0179)	25-0386	6	
20	PLUNGER ROD	46-0699	3	47	VALVE SEAT (SEE KIT 70-0179)	N/A Sep.	6	
21	SLINGER WASHER (SEE KIT 70-0352)	46-0700	3	48	VALVE PLATE (SEE KIT 70-0179)	N/A Sep.	6	
22	BACK-UP RING (SEE KIT 70-0352)	25-0404	3	49	VALVE SPRING (SEE KIT 70-0179)	N/A Sep.	6	
23	O-RING (SEE KIT 70-0352)	25-0382	3	50	VALVE CAGE (SEE KIT 70-0179)	N/A Sep.	6	
24	PISTON (SEE KIT 70-0352)	46-0701	3	51	PLUG	39-0096	2	
25	WASHER (SEE KIT 70-0352)	26-0191	3	52	O-RING	25-0387	2	
26	NUT (SEE KIT 70-0352)	30-6020	3	53	BOLT	27-8440	8	
27	OIL DIPSTICK	39-0090	1	54	LOCKWASHER	29-0154	8	
28	BEARING CAP	46-0703	1					

REPLACEMENT KITS				
Mi-T-M KIT #	DESCRIPTION	ITEMS	# OF ASSEMBLIES	# OF CYLINDERS
70-0177	KIT - HIGH PRESSURE SEALS	34, 35, 37	3	3
70-0178	KIT - SUPPORT RINGS	38	3	3
70-0179	KIT - VALVE KIT	46-50	6	3
70-0337	KIT - OIL SEALS KIT	3, 4, 17, 30, 33	1,1,1,1,3	3
70-0352	KIT - PISTON KIT	21-26	3	3

HIGH PRESSURE PUMP (3-0241)

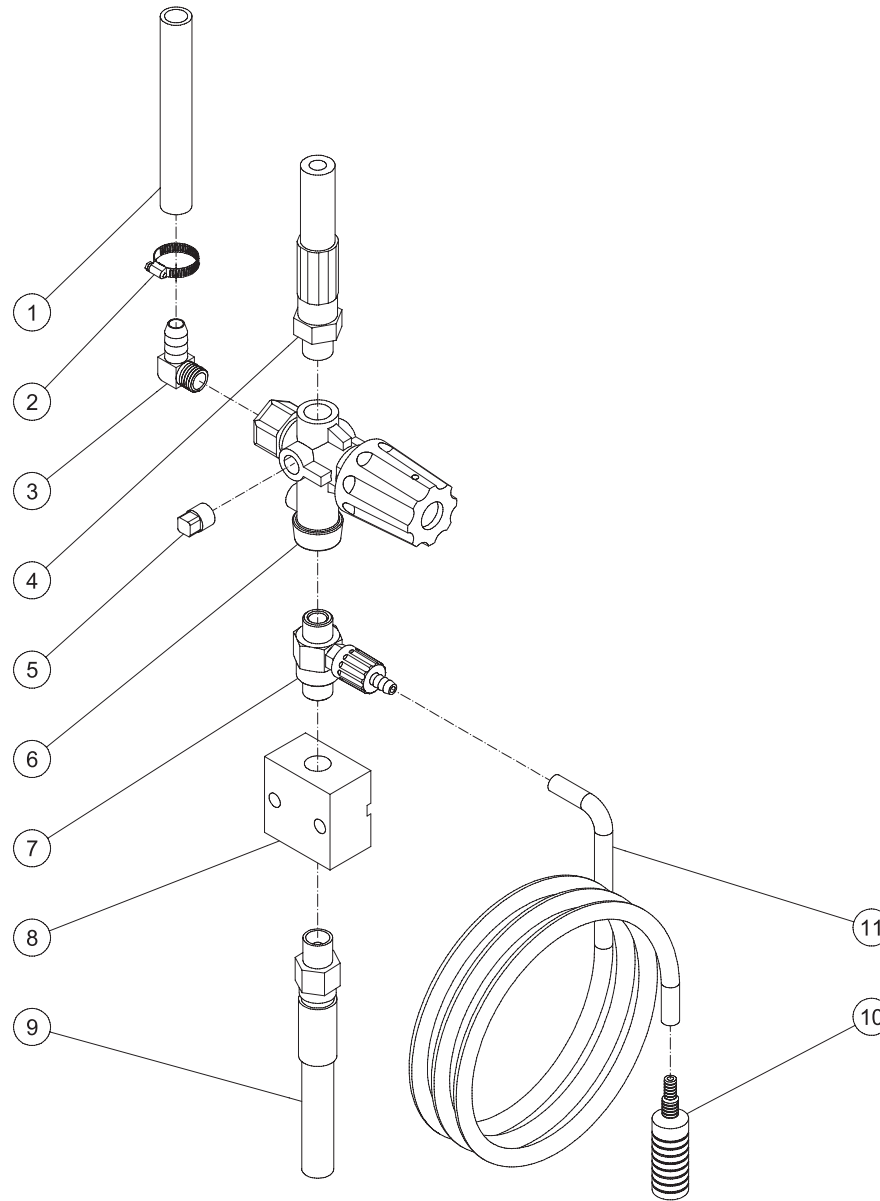


3-0241 040814ALC

PUMP ASSEMBLY (3-0241)							
REF. #	DESCRIPTION	PART #	QTY.	REF. #	DESCRIPTION	PART #	QTY.
1	BOLT	27-8432	4	27	BEARING	48-0063	1
2	FLANGE	46-0713	1	28	RETAINING RING	46-0732	1
3	OIL SEAL	26-0192	1	29	RETAINING RING	46-0676	1
4	RETAINING RING	46-0667	1	30	BEARING CAP	46-0725	1
5	NEEDLE BEARING	48-0059	1	31	OIL SEAL	26-0193	3
6	SET SCREW	27-8886	1	32	O-RING	25-0399	3
7	CRANKSHAFT	46-0717	1	33	LOW PRESSURE RETAINER	46-0726	3
8	PLUG	39-0086	3	34	LOW PRESSURE SEAL (SEE KIT 70-0181)	46-0727	3
9	O-RING	25-0325	3	35	PACKING RETAINER	46-0728	3
10	BOLT	27-8888	6	36	V-PACKING (SEE KIT 70-0181)	46-0729	3
11	CRANKCASE COVER	46-0719	1	37	SUPPORT RING (SEE KIT 70-0182)	N/A	3
12	O-RING	25-0370	1	38	O-RING	25-0372	1
13	OIL SIGHT GLASS	46-0670	1	39	PLUG	39-0088	1
14	REFLECTOR	46-0824	1	40	MANIFOLD	46-0730	1
15	RETAINER	46-0671	1	41	VALVE CAP	39-0087	6
16	O-RING	25-0398	1	42	O-RING	25-0160	6
17	CONNECTING ROD	46-0720	3	43	SINGLE VALVE ASSEMBLY (SEE KIT 70-0161)	46-0731	6
18	PISTON PIN	46-0721	3	44	O-RING	25-0386	6
19	PLUNGER ROD	46-0722	3	45	VALVE SEAT (SEE KIT 70-0161)	N/A	6
20	WASHER	28-1027	3	46	VALVE PLATE (SEE KIT 70-0161)	N/A	6
21	O-RING	25-0371	6	47	VALVE SPRING (SEE KIT 70-0161)	N/A	6
22	PISTON	46-0723	3	48	VALVE CAGE (SEE KIT 70-0161)	N/A	6
23	WASHER	26-0187	3	49	HEAD BOLT	27-8875	8
24	PISTON NUT	30-6016	3	50	LOCKWASHER	29-0153	8
25	OIL DIPSTICK	39-0090	1	51	PLUG	39-0097	1
26	CRANKCASE	46-0724	1				

REPLACEMENT KITS				
KIT #	DESCRIPTION	ITEMS	# OF ASSEMBLIES	# OF CYLINDERS
70-0181	Kit- High Pressure Seal (Inc. 3 each 32, 34, 36)	32, 34, 36	3	3
70-0182	Kit- Support Ring (Includes 3 each 37)	37	3	3
70-0161	Kit- Valve (Includes 6 each 44-48)	44-48	6	3

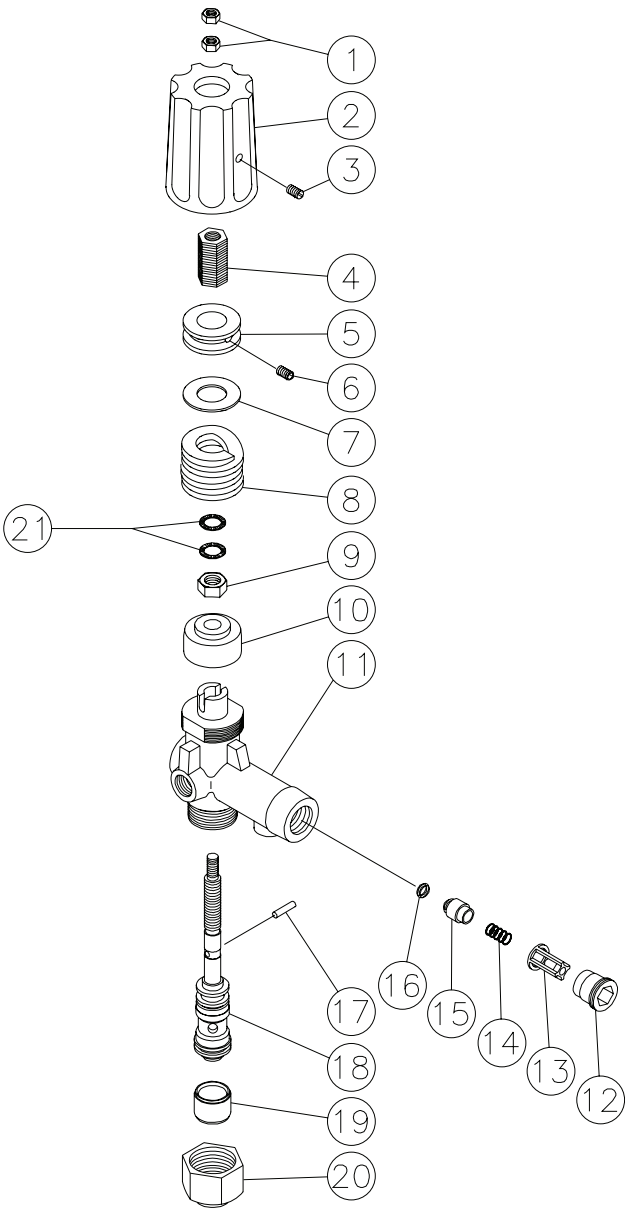
UNLOADER/MANIFOLD ASSEMBLY



OMHSP080 070113 CH

UNLOADER/MANIFOLD ASSEMBLY			
ITEM	DESCRIPTION	PART #	QTY
1	HOSE *(TWO FEET REQUIRED)	15-0007	1
2	HOSE CLAMP	42-0011	1
3	ELBOW	23-0119	1
4	HIGH PRESSURE HOSE	15-0194	1
5	PLUG	23-0238	1
6	UNLOADER	850-0252	1
7	CHEMICAL INJECTOR	50-0052	1
8	MANIFOLD BLOCK	51-0026	1
9	HP HOSE	15-0202	1
10	STRAINER	19-0050	1
11	CHEMICAL HOSE *(SIX FEET REQUIRED)	15-0021	1
*MUST ORDER IN ONE FOOT LENGTHS			

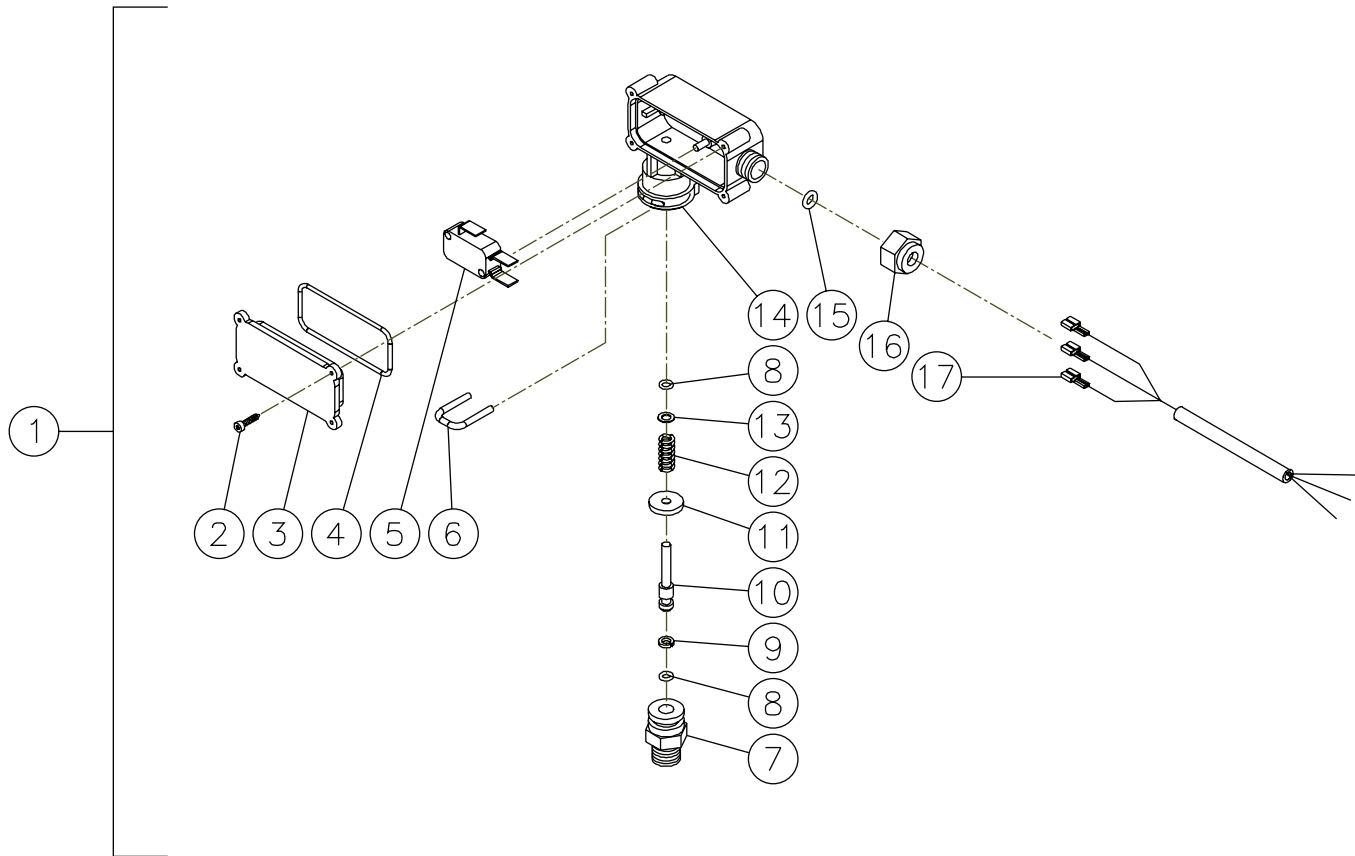
UNLOADER (850-0252)



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	

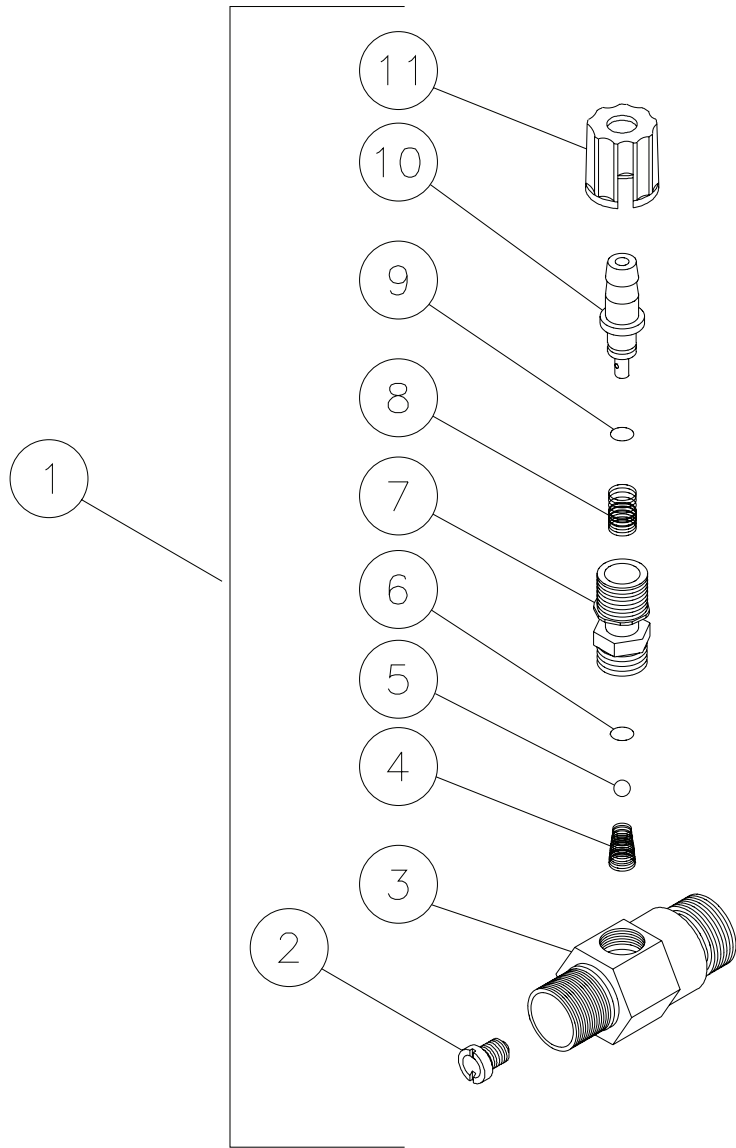
PRESSURE SWITCH (22-0171)



22-0171 & 22-0243-120799-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	

DETERGENT INJECTOR (50-0052)

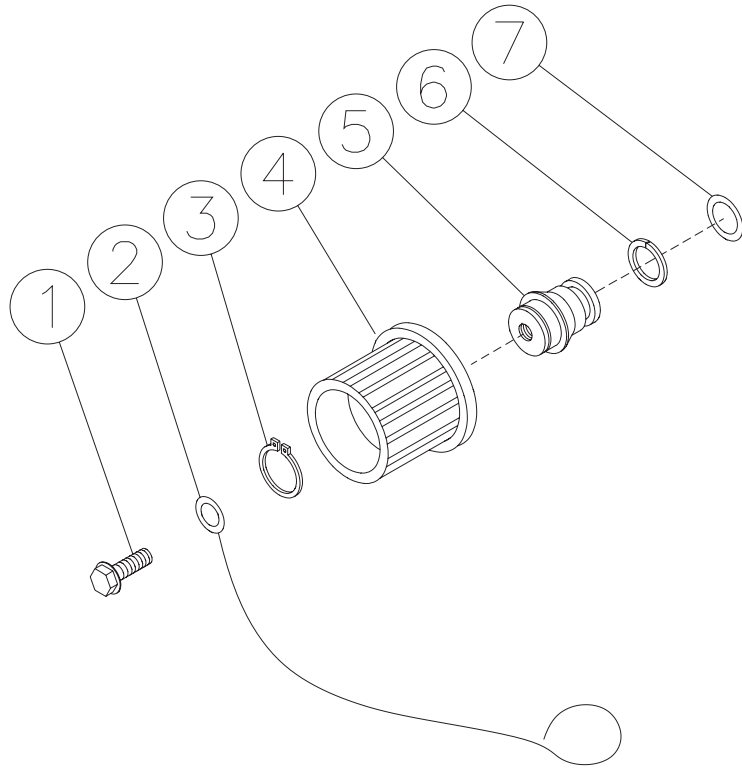


50-0052-072701-RD

DETERGENT INJECTOR (50-0052)			
REF. #	DESCRIPTION	PART #	QTY.
1	Detergent Injector (Inc. 2-11)	50-0052	1
2	Orifice (2.1mm)	50-0057	1
3	Injector Body	N/A	1
4	Spring (See 852-0056)	N/A Sep.	1
5	Ball (See 852-0056)	N/A Sep.	1
6	O-ring (See 852-0056)	N/A Sep.	1
7	Piston Retainer	50-0156	1
8	Spring	49-0056	1
9	O-ring (See 852-0056)	N/A Sep.	1
10	Adjustable Shutter Barb	50-0157	1
11	Adjustment Knob	50-0158	1
	Injector Repair Kit (Includes 4-6, 8)	852-0056	

50-0052-072701-RD

COIL DRAIN PLUG (850-0218)



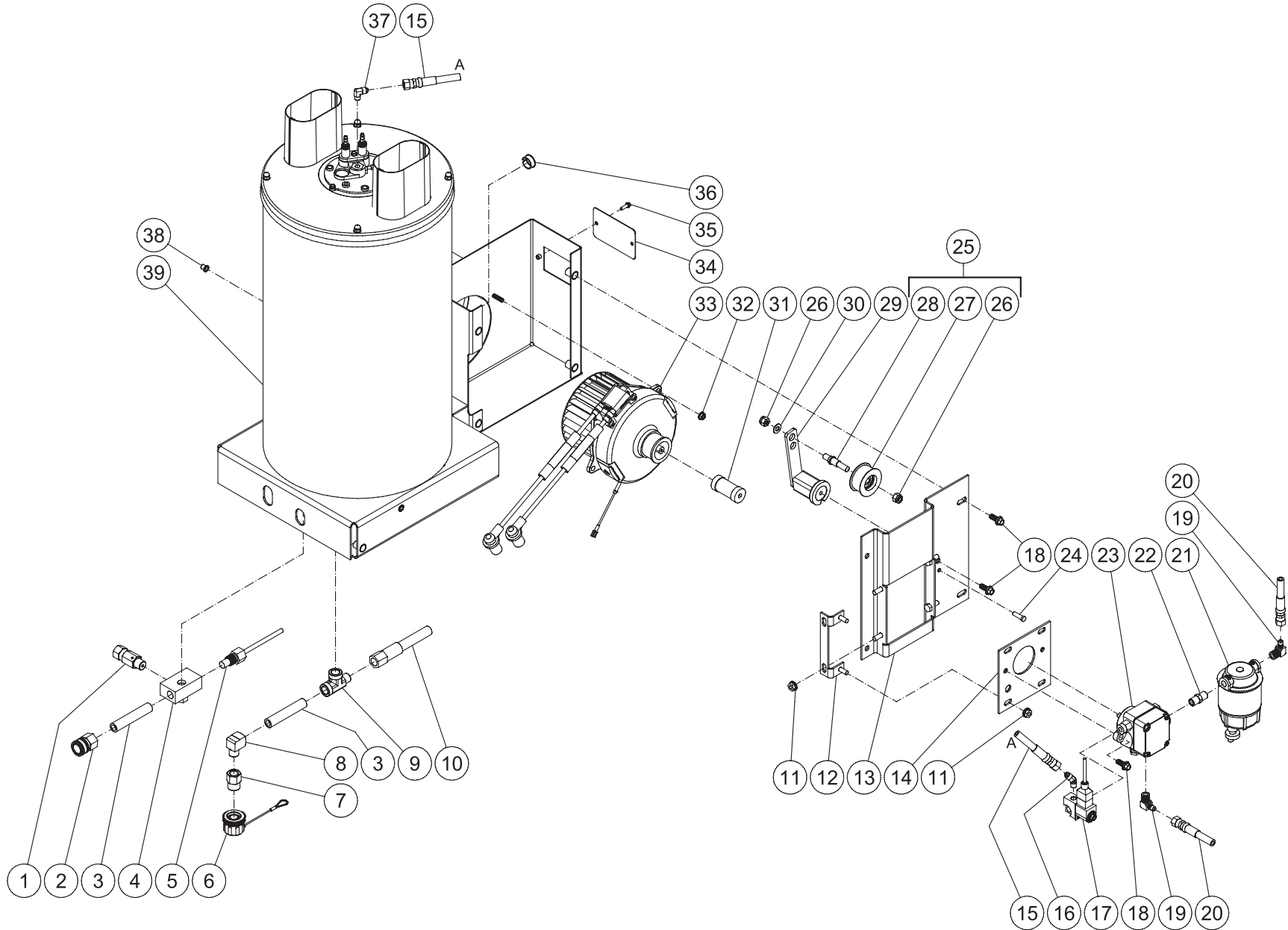
850-0218-041597-BAR

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

850-0218-041597-BAR

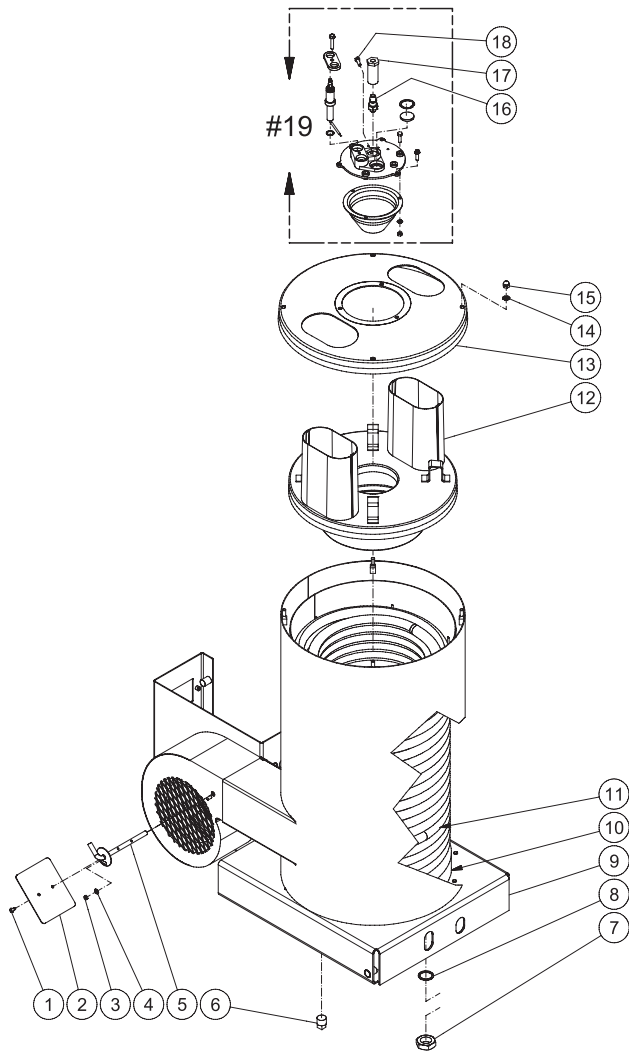
HEAT EXCHANGER/EMF SYSTEM (AFTER SERIAL #15070469)

HSP083 122214 KMD

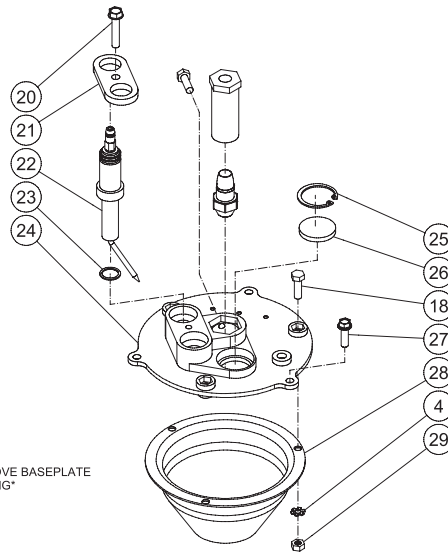


HSP083 122214 KMD			
HEAT EXCHANGER/EMF SYSTEM			
ITEM	DESCRIPTION	PART #	QTY
1	PRESSURE RELIEF VALVE	22-0273	1
2	QC SOCKET	17-0004	1
3	PIPE NIPPLE	24-0165	2
4	OUTLET CONNECTOR	24-0138	1
5	HI LIMIT SWITCH	32-0798	1
6	DRAIN PLUG ASSEMBLY	850-0218	1
7	ADAPTER	23-0279	1
8	ELBOW	23-0034	1
9	STREET TEE	23-0058	1
10	HP HOSE	15-0202	1
11	NUT	30-3023	8
12	BRACKET	20-0360A01	2
13	FUEL PUMP BRACKET	20-0381A01	1
14	FUEL PUMP PLATE	20-0363A01	1
15	HP FUEL HOSE	15-0165	1
16	ELBOW	23-0288	1
17	FUEL SOLENOID	44-0100	1
18	BOLT	27-9524	7
19	ELBOW	23-0237	2
20	FUEL HOSE	15-0147	2
21	FUEL FILTER / WATER SEPERATOR	19-0070	1
22	NIPPLE	24-0145	1
23	FUEL PUMP	3-0020	1
24	IDLER PIN	33-0211	1
25	TENSIONER SHEAVE SHAFT ASSEMBLY	850-0166	1
26	LOCKNUT	30-0159	2
27	SHEAVE ASSEMBLY	850-0177	1
28	IDLER SHAFT	33-0212	1
29	TENSIONER	10-0071	1
30	WASHER	28-0003	1
31	COUPLING	33-0225	1
32	NUT	30-3022	2
33	EMF ASSEMBLY	850-0403	1
34	ACCESS PANEL	20-0386A01	1
35	BOLT	27-9526	2
36	ELECTRICAL BUSHING	32-0427	2
37	ELBOW	23-0287	1
38	ELECTRICAL BUSHING	32-0426	1
39	HEAT EXCHANGER ASSEMBLY	850-0226	1

BOILER ASSEMBLY (850-0226) AFTER SERIAL #15048210

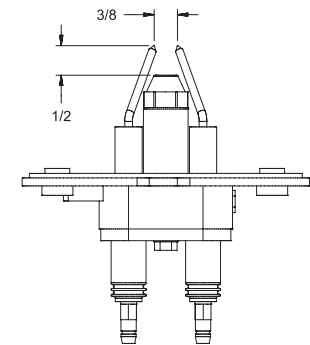
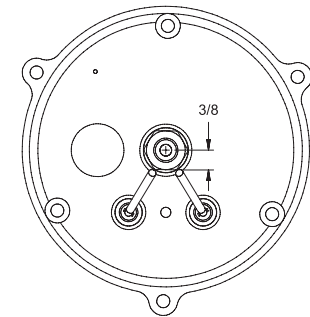


LOCATED ABOVE BASEPLATE ON COIL FITTING



ITEM #19
850-0351

ELECTRODE GAP SETTINGS

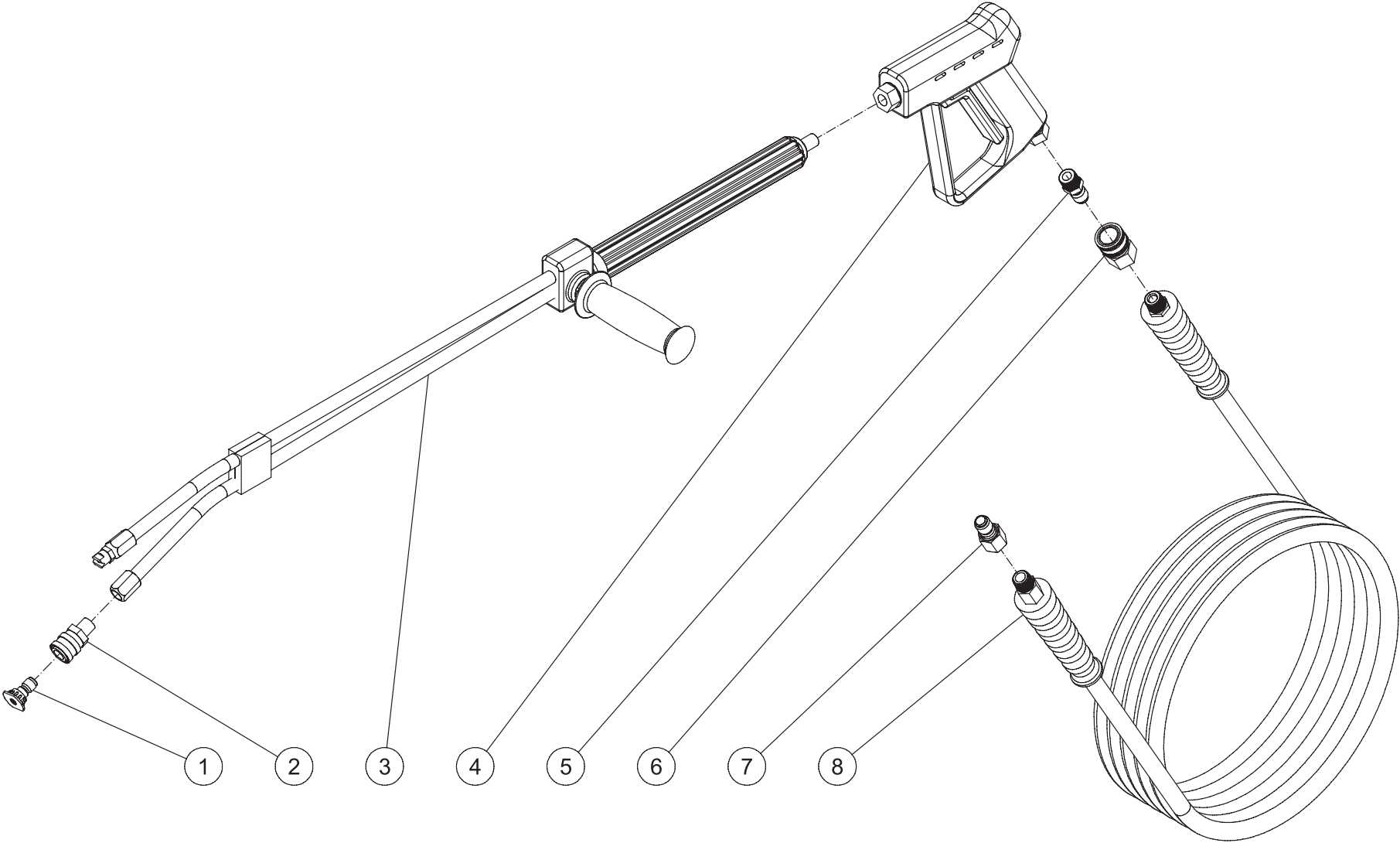


ELECTRODE PLATE ASSY 062308-CH

850-0226 092413 CH

850-0226 092413 CH			
BOILER ASSEMBLY			
ITEM	DESCRIPTION	PART #	QTY
1	BOLT	27-8879	2
2	AIR DIVERTER	20-0378A01	1
3	NUT	30-0137	1
4	STAR WASHER	28-1009	4
5	AIR DIVERTER STEM	20-0377A01	1
6	PLUG	24-0034	1
7	NUT	30-0121	2
8	WASHER	28-0521	2
9	OUTER WRAP	20-0376A01	1
10	INSULATION	33-0250	1
11	HEAT EXCHANGER COIL	66-0011	1
12	INNER PAN ASSEMBLY	20-0372	1
13	TOP PAN	20-0371A01	1
14	LOCKWASHER	28-1028	4
15	ACORN NUT	30-6002	4
16	FUEL NOZZLE (3004/ 3504)	18-0308	1
-	NOZZLE-OIL (3000/ 3003)	18-0368	1
17	FUEL NOZZLE HOLDER	23-0292	1
18	BOLT	27-8878	4
19	ELECTRODE ASSEMBLY KIT (INC. 4, 18, 20-29)	850-0351	1
20	BOLT	27-8807	1
21	ELECTRODE BRACKET	20-1094A01	1
22	ELECTRODE	32-0987	2
23	WASHER	28-0523	2
24	ELECTRODE PLATE	38-0065	1
25	SNAP RING	33-0254	1
26	SIGHT GLASS	33-0252	1
27	BOLT	27-9526	3
28	CONE	20-0373	1
29	NUT	30-6001	3

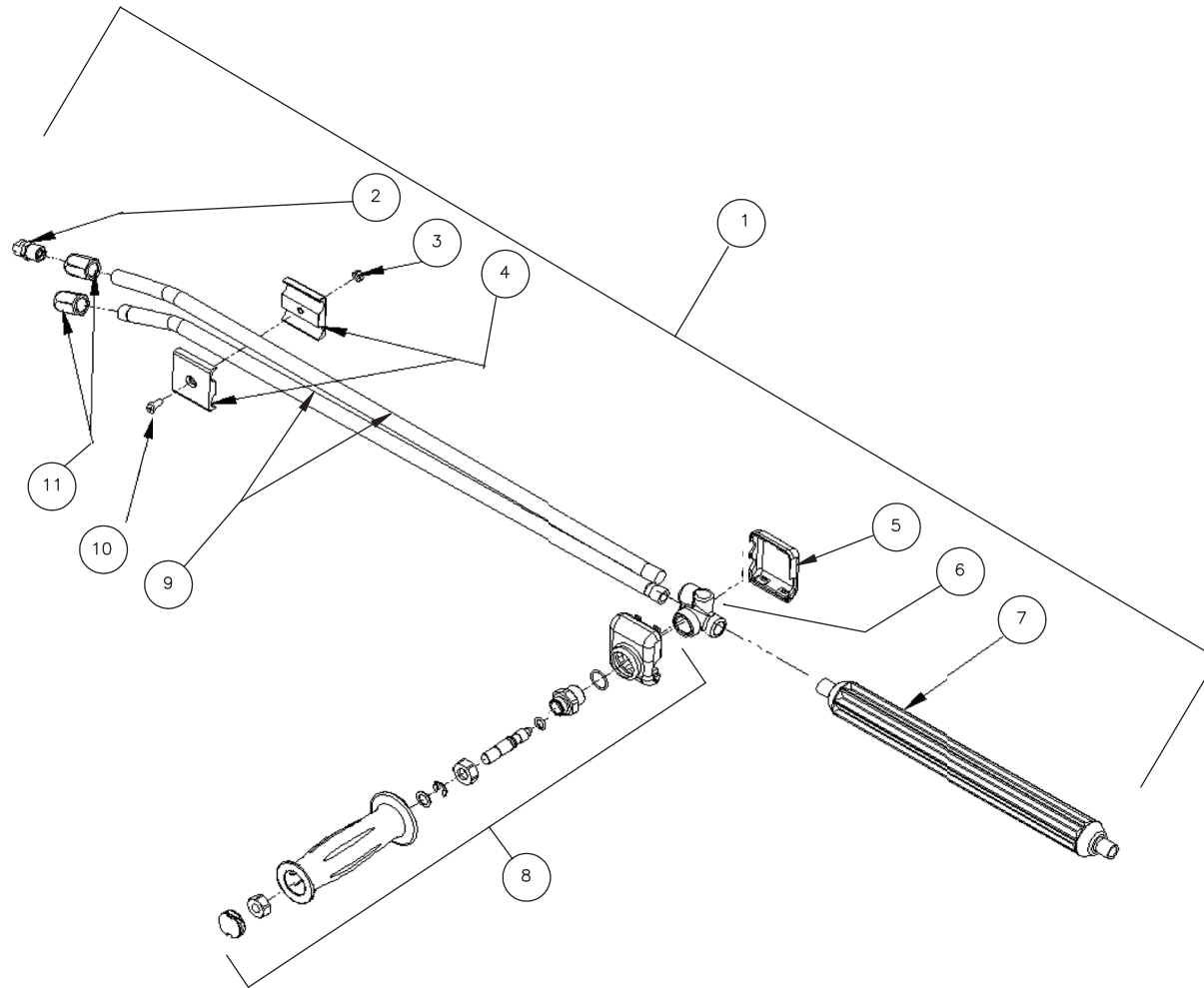
GUN / WAND / HOSE ASSEMBLY



HSP LG - GUN_WAND_HOSE ASSY 011215 KMD

HSP LG - GUN_WAND_HOSE_ASSY 011215 KMD			
GUN / WAND / HOSE ASSEMBLY			
ITEM	DESCRIPTION	PART #	QTY
1	NOZZLE (3003, 3504)	18-0392	1
-	NOZZLE 15035 QC (3003, 3504)	18-0393	1
-	NOZZLE 25035 QC (3003, 3504)	18-0395	1
-	NOZZLE 40035 QC (3003, 3504)	18-0396	1
-	NOZZLE 00040 QC (3004)	18-0397	1
-	NOZZLE 15040 QC (3004)	18-0399	1
-	NOZZLE 25040 QC (3004)	18-0400	1
-	NOZZLE 40040 QC (3004)	18-0401	1
2	QC SOCKET	17-0028	1
3	DUAL LANCE	16-0416	1
4	GUN	16-0001	1
5	QUICK CONNECT	17-0005	1
6	QC SOCKET	17-0004	1
7	QUICK CONNECT	17-0006	1
8	HOSE	15-0166	1

DUAL LANCE ASSEMBLY (16-0417)

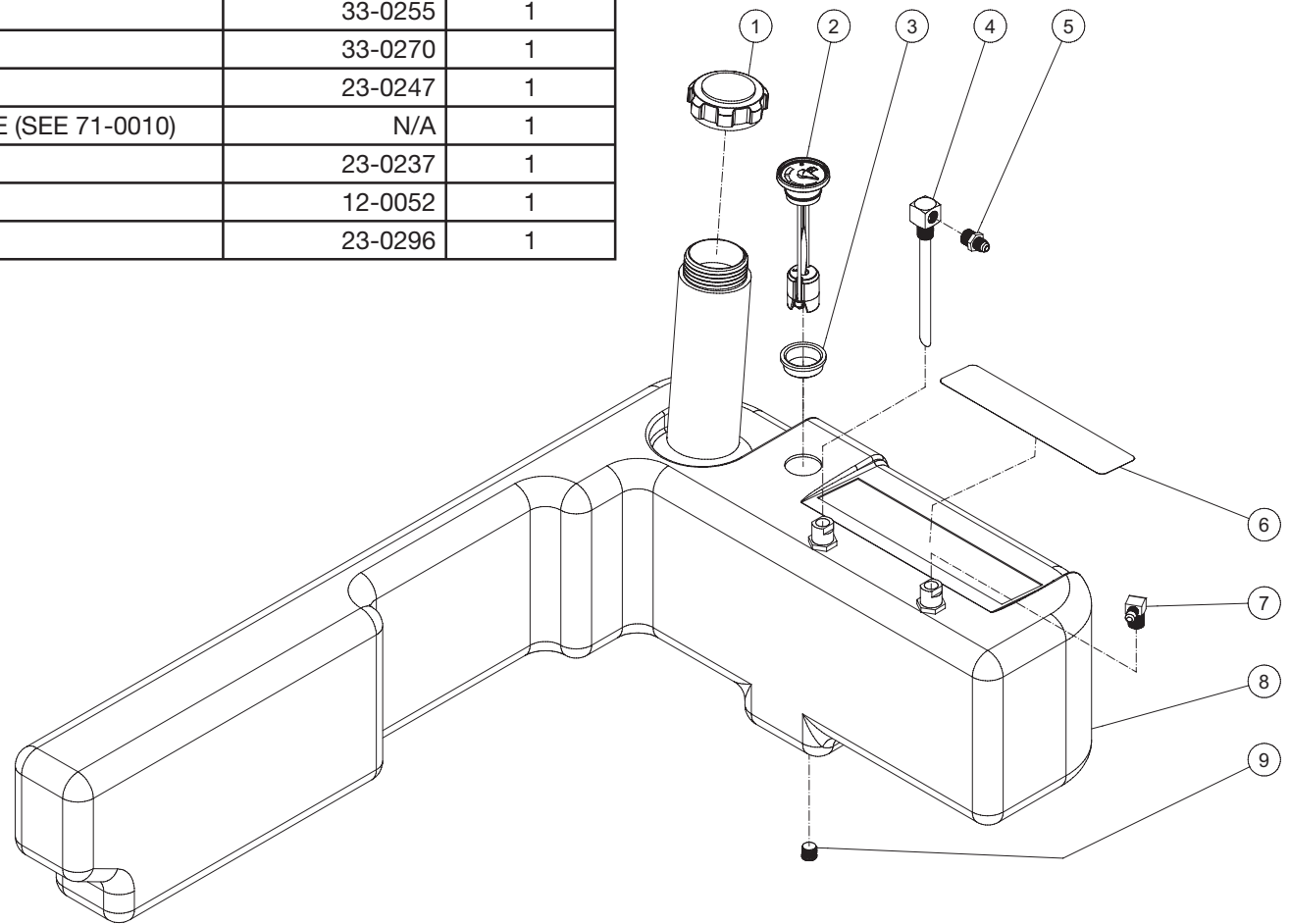


16-0416_16-0417-102405-RZ

DUAL LANCE ASSEMBLY (16-0416 & 16-0417)			
REF. #	DESCRIPTION	PART #	QTY.
1	Dual Lance Assembly - 36" (Inc. 2-11)	16-0416	1
-	Dual Lance Assembly - 48" (Inc. 2-11)	16-0417	1
2	Detergent Nozzle	18-0110	1
3	Nut	30-6001	1
4	Clamp	16-0420	2
5	Lower Valve Cover (See 16-0416 or 16-0417)	N/A Sep.	1
6	Housing (See 16-0416 or 16-0417)	N/A Sep.	1
7	Lance	16-0419	1
8	Handle Repair Kit	70-0419	1
9	Lance (See 16-0416)	N/A Sep.	2
-	Lance (See 16-0417)	N/A Sep.	2
10	Screw	27-8196	1
11	Nozzle Adapter	24-0280	2

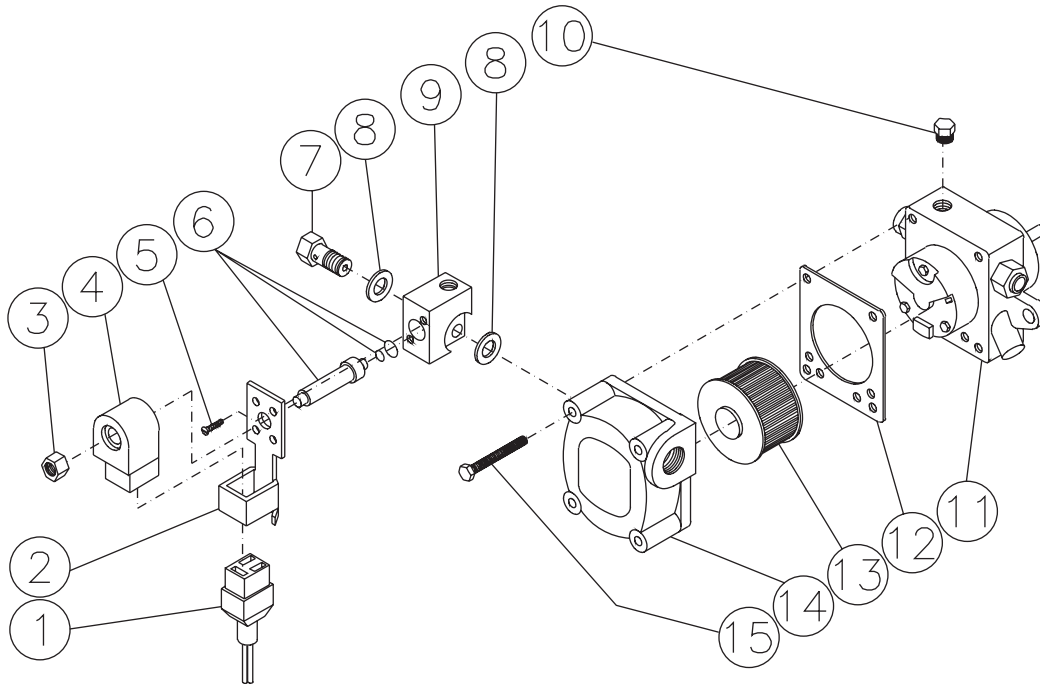
FUEL TANK (850-0248)

850-0193 070113 CH			
FUEL TANK			
ITEM	DESCRIPTION	PART #	QTY
1	FUEL CAP	12-0033	1
2	FUEL GAUGE	22-0475	1
3	FUEL GAUGE GROMMET	33-0255	1
4	FUEL PICK UP	33-0270	1
5	NIPPLE	23-0247	1
6	DECAL - CAUTION: RISK OF FIRE (SEE 71-0010)	N/A	1
7	ELBOW	23-0237	1
8	FUEL TANK	12-0052	1
9	PLUG	23-0296	1



850-0193 070113 CH

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

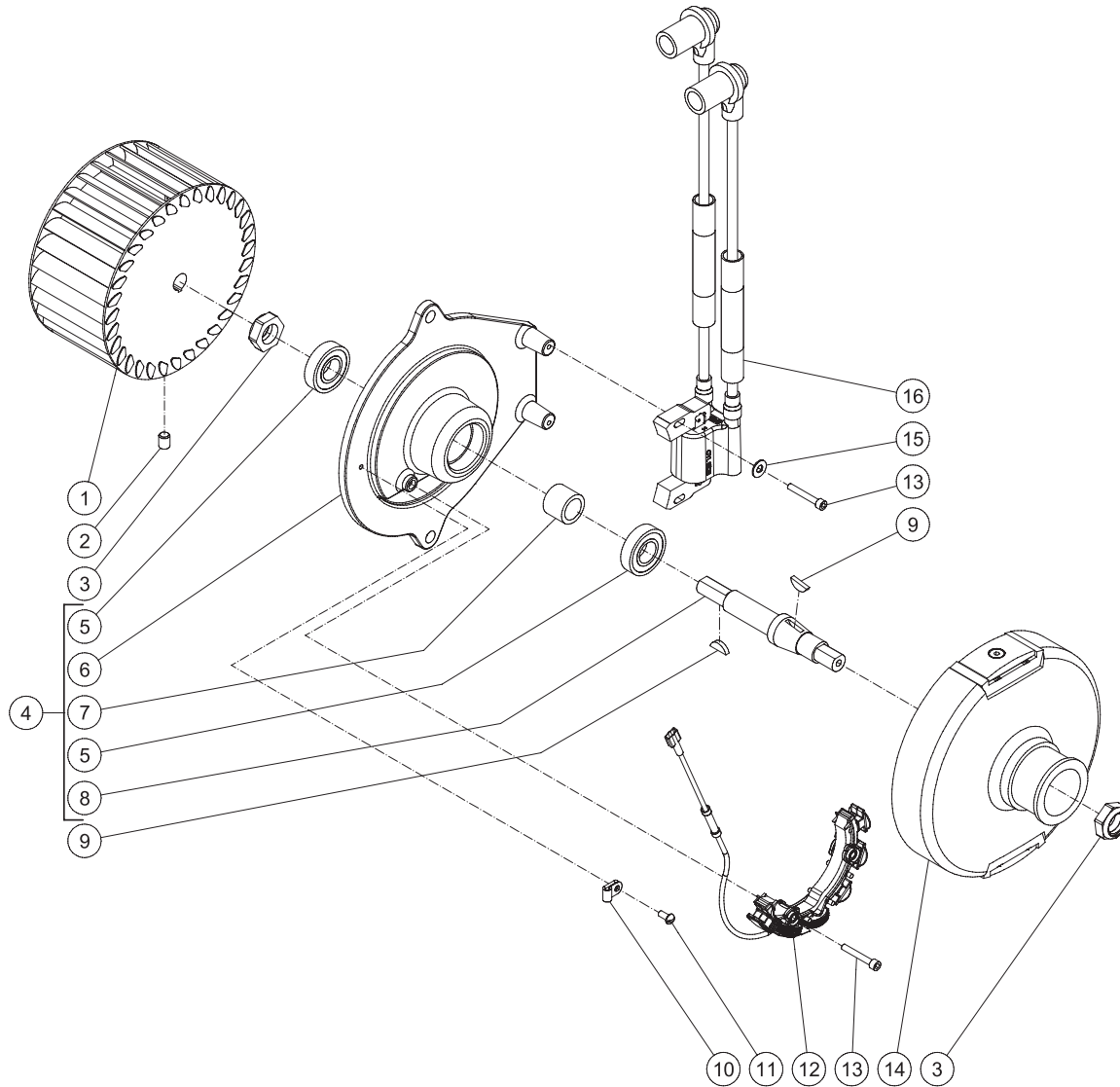


0MHSP049-080902-BAR

FUEL PUMP (3-0020) & FUEL SOLENOID (44-0100)			
REF. #	DESCRIPTION	PART #	QTY.
1	Cord-Din Connector	32-0443	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

0MHSP049-080902-BAR

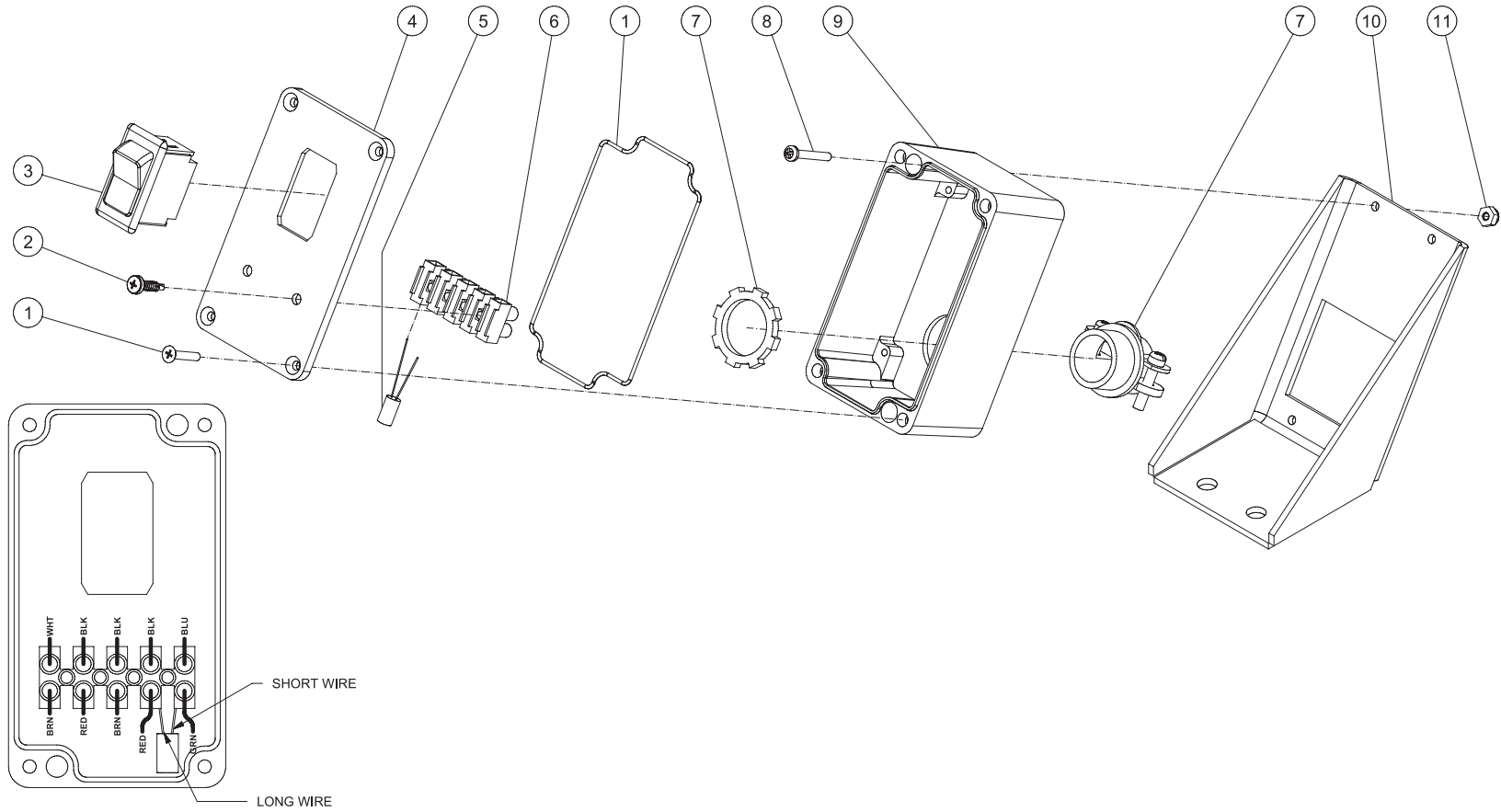
EMF SYSTEM (850-0403) (AFTER SERIAL #15074024)



850-0403 031113 CH

850-0403 031113 CH			
EMF SYSTEM			
ITEM	DESCRIPTION	PART #	QTY
-	EMF ASSEMBLY	850-0403	1
1	BLOWER FAN	44-0099	1
2	SET SCREW	30-3021	1
3	LOCKNUT	30-0177	2
4	BLOWER FLANGE ASSEMBLY	850-0402	1
5	SEALED BEARING	48-0041	2
6	BLOWER FLANGE	38-0066	1
7	SPACER	33-0206	1
8	BLOWER SHAFT	20-0347	1
9	WOODRUFF KEY	43-0080	2
10	CLAMP	32-0403	1
11	SCREW	27-2070	1
12	STATOR ASSEMBLY	850-0401	1
13	BOLT	27-0740	4
14	HUB	38-0041	1
15	WASHER	28-0001	2
16	IGNITION ASSEMBLY	850-0413	1

ELECTRIC BOX



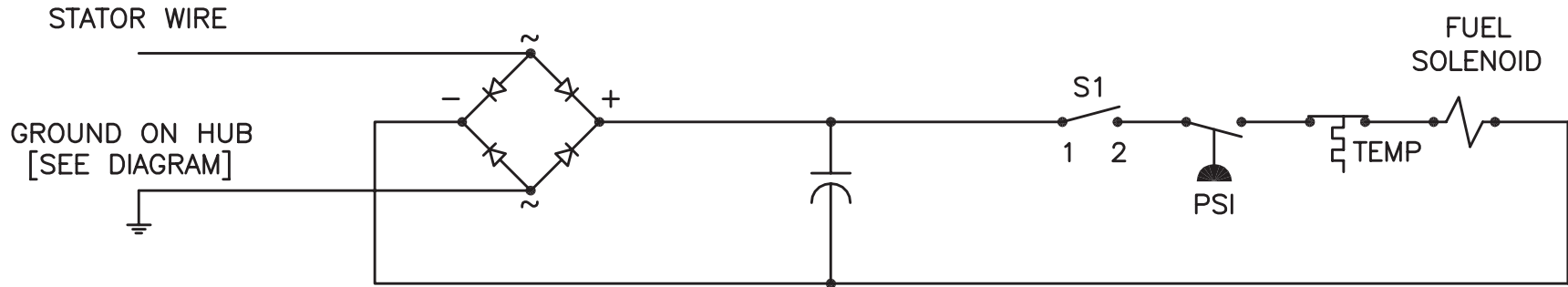
OMHSP082 070513 CH

ELECTRICAL BOX ASSEMBLY

ITEM	DESCRIPTION	PART #	QTY
1	ELECTRIC BOX HARDWARE KIT	70-0169	1
2	SCREW	27-3350	2
3	ROCKER SWITCH	32-0422	1
4	ELECTRIC BOX LID	32-0430A01	1
5	CAPACITOR	32-1113	1
6	TERMINAL STRIP	32-0394	1
7	CONNECTOR	32-0085	1
8	BOLT	27-8497	2
9	ELECTRIC BOX	32-0429A01	1
10	ELECTRIC BOX BRACKET	20-0380A01	1
11	LOCKNUT	30-0152	2

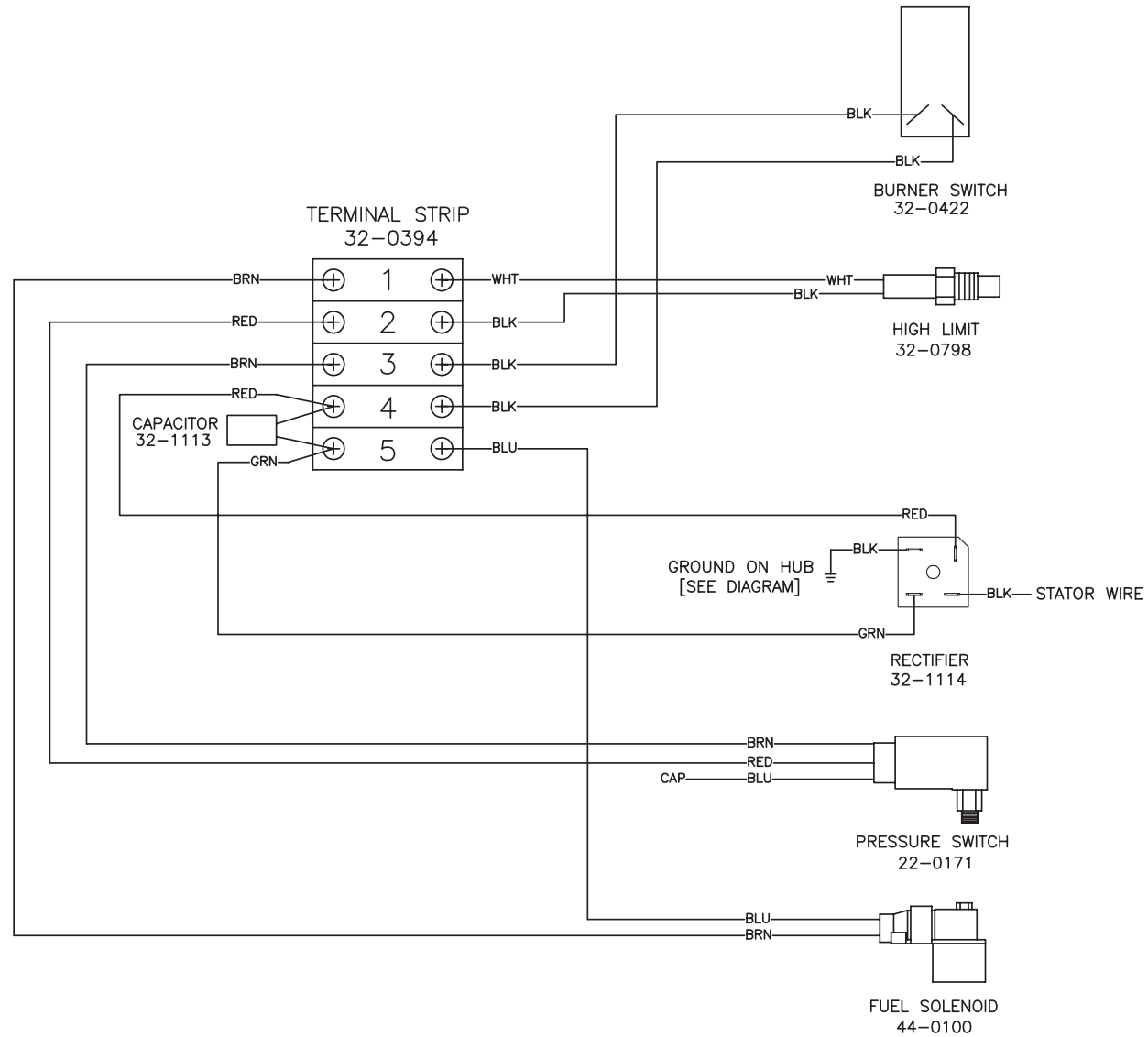
WIRING SCHEMATIC (AFTER SERIAL #15070469)

SCHEMATIC



WIRING DIAGRAM (AFTER SERIAL #15070469)

NOTE: LONG WIRE ON CAPACITOR GOES IN TERMINAL POSITION 4
SHORT WIRE ON CAPACITOR GOES IN TERMINAL POSITION 5



WD - HSP LARGE 040714 CH

Manufactured by Mi-T-M
8650 Enterprise Drive, Peosta IA 52068
563-556-7484/ Fax 563-556-1235