

PARTS LIST FOR
3004/3504/4004 SERIES
PORTABLE
GASOLINE DRIVEN/DIRECT DRIVE
TOP FIRED OIL HEATED
HOT WATER PRESSURE WASHER
ELECTRIC START

GH-3504-0EGH Replacement Parts

For parts Call 888-279-9274

ENGINE OIL GRADE:
HONDA/SUBARU/KOHLER:
VANGUARD:
ENGINE OIL CAPACITY:
HONDA (GX390):
SUBARU (EX27, EX40):
KOHLER (CH440):
VANGUARD (408cc):
Mi-T-M (420cc):

SAE10W-30
SAE10W-30
37 oz.
40.6 oz.
44.8 oz.
32 oz.
37.2 oz.

PUMP OIL GRADE:
PUMP OIL CAPACITY:
4004
3004 / 3504
BTU INPUT:
3004 / 3504 / 4004
PRESSURE NOZZLE SIZE:
3504 / 4004
3004

PUMP OIL #AW-4085-0016
18.5 oz.
15 oz.
294,000 / hour
3.5
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

SERIAL BREAK NUMBER:

#15010743

05/02/05

#15048210

02/15/2012

#15070469

04/30/2012

#15074024

03/07/2018

#11057621

04/06/2021

SERIAL BREAK EXPLANATION:

ADDED BRAKE ASSEMBLY TO UNIT.

CHANGED GUN FROM 850-0181 TO 16-0001.

CHANGED LANCE FROM 850-0180 TO 16-0417.

CHANGES WITH IN 850-0226

ADDED KOHLER ENGINE

IGNITION COIL ASSEMBLY UPDATE. EMF CHANGES NEW STATOR COIL/HUB ASSEMBLY

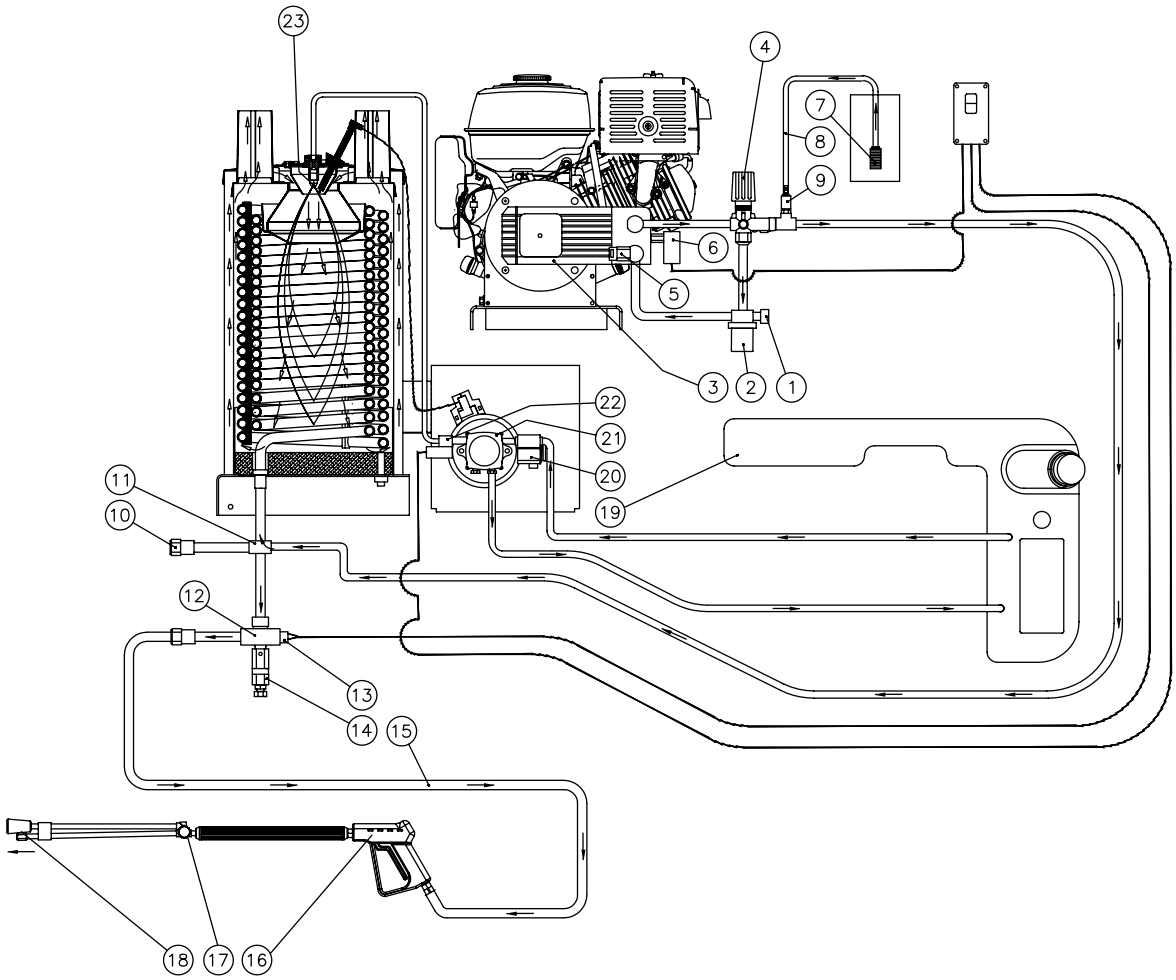
REMOVED SUBARU ENGINES

ADDED MITM AND VANGUARD ENGINES

SPECIFICATIONS

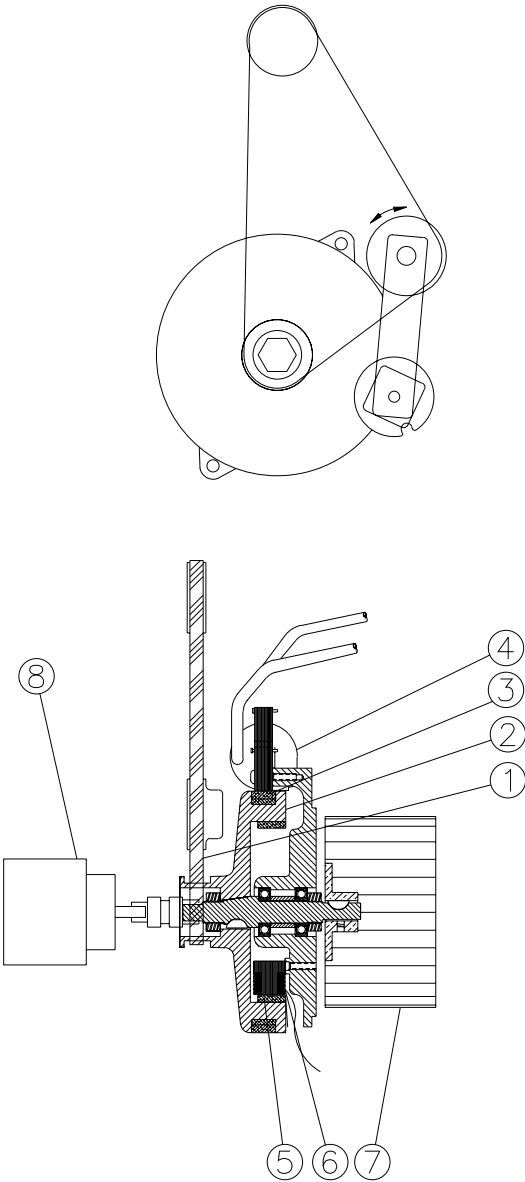
	4004	4004	3504	3504	3504	3504	3004
Operating Pressure (PSI/Bar):	4000/276 (+/-5%)		3500/241 (+/- 5%)				3000/207 (+/- 5%)
Water Volume (GPM/lpm):	3.3/12.5 (+/- 5%)						3.5/13.2(+/- 5%)
Outlet Water Temperature (F/C):	140°F/78°C (+/- 20°F) rise above inlet ambient (210°F/ 99°C maximum)						
Engine:	Honda	Kohler	Honda	Kohler	Mi-T-M	Vanguard	Honda
Model	GX390	CH440	GX390	CH440	420cc	408cc	GX390
Engine Type	Four Stroke, Overhead Valve, Single Cylinder						
Oil Type	SAE10W-30						
Oil Capacity (oz./ liter)	37/1.1	44.8/1.3	37/1.1	44.8/1.3	37.2/1.1	32/0.95	37/1.1
Low Oil Protection	Oil Alert™	Oil Sentry™	Oil Alert™	Oil Sentry™	Oil Alert™	Oil Sensor	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	1.85/7.0	1.8/6.8	1.5/5.7	1.72/6.5
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)	18.5/ .55		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 # 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	434/197	428/194	434/197	432/196	435/197	428/194
Unit Shipping Weight (Lbs/kg):	551/250	557/253	551/250	557/253	555/252	558/253	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						

FLOW CHART



OMHSP090-040705-RZ

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.

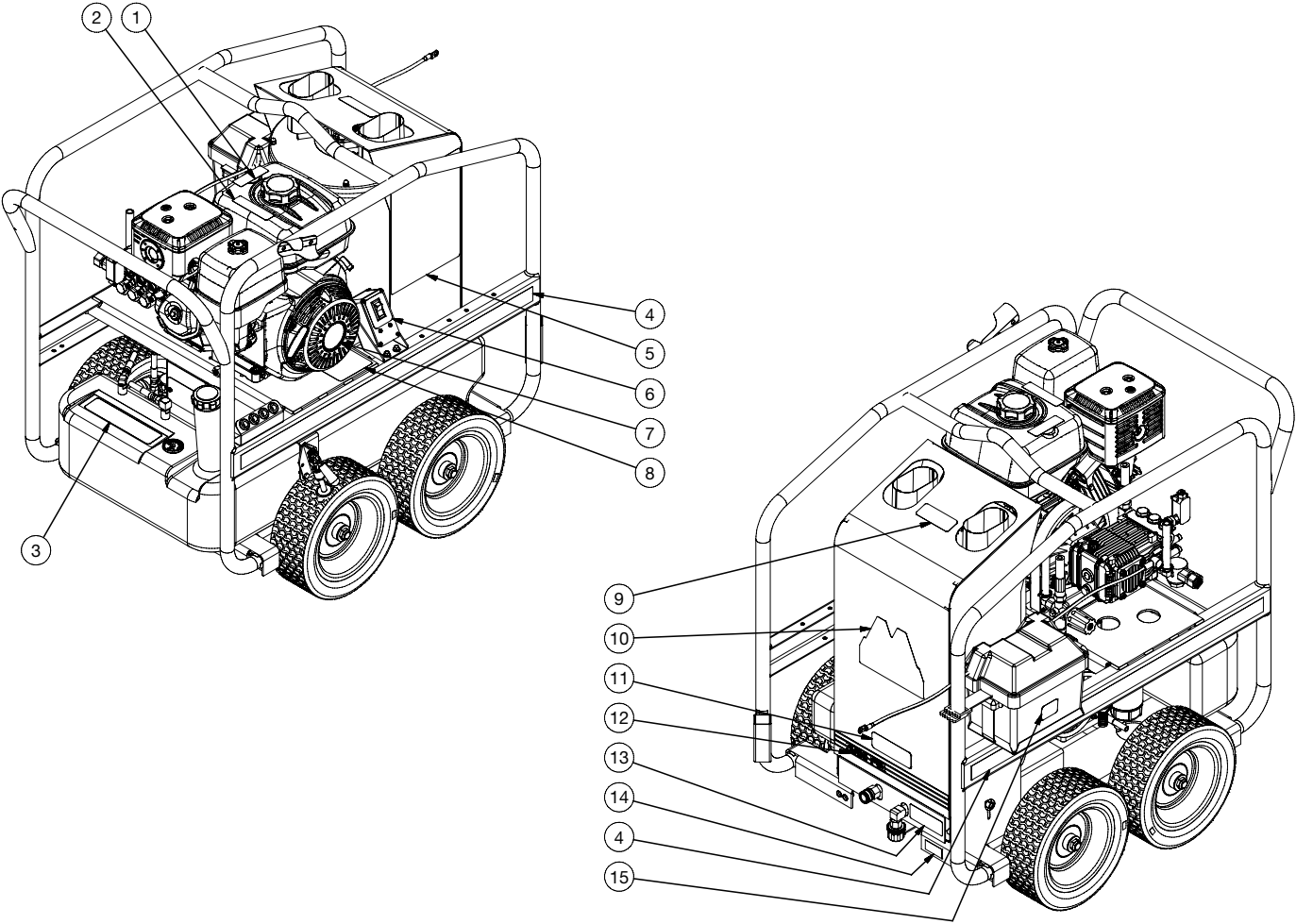
EMF SYSTEM: The patented Electro Magnetic Firing (EMF) System is an integrated system which gives all the requirements for combustion.

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

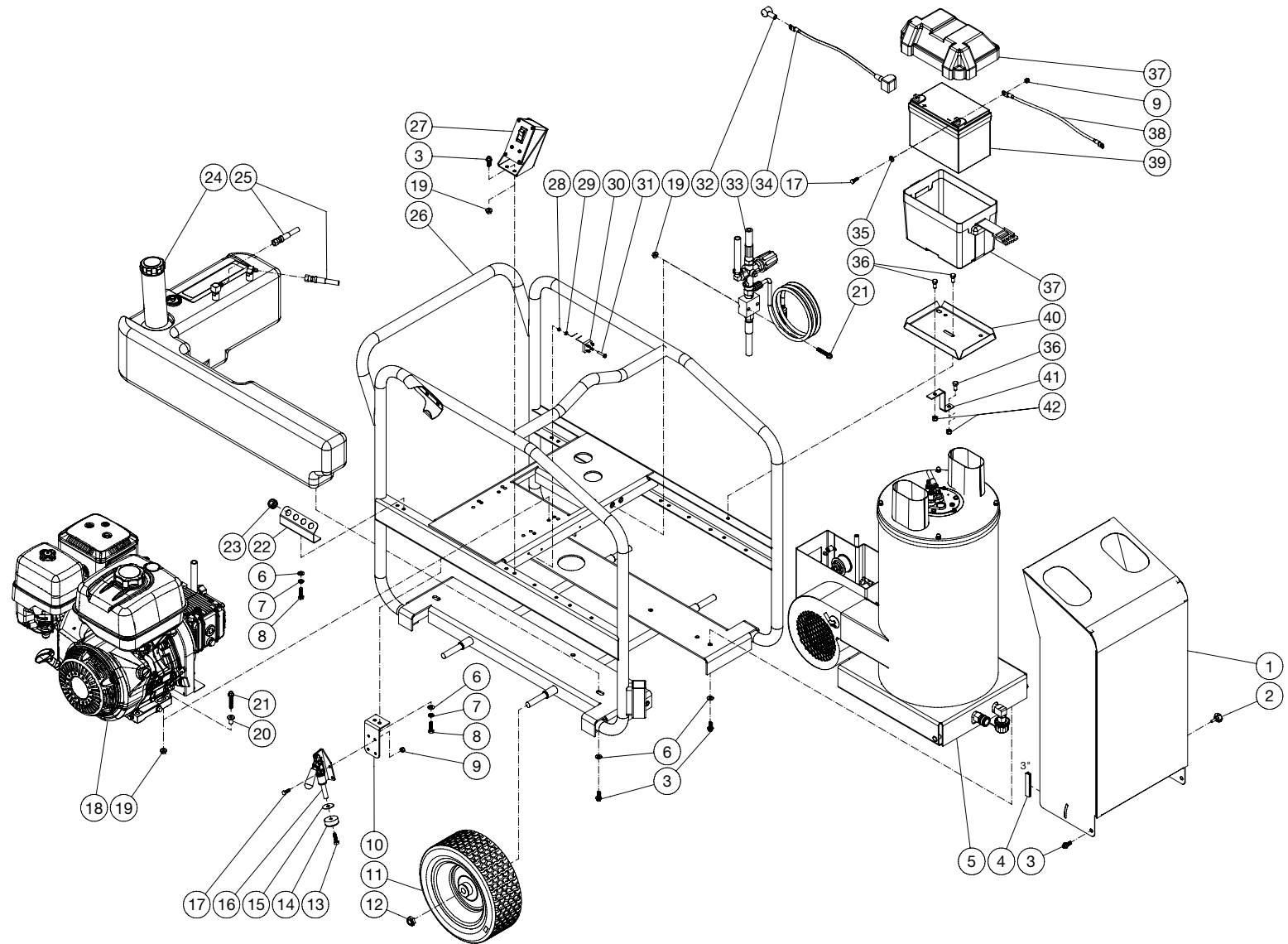


GH-3004_3504_4004-0EGH_0EGM DECAL PLACEMENT 031824

DECAL PLACEMENT

GH-3004_3504_4004-0EGH_0EGM DECAL PLACEMENT 031824			
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 - Mi-T-M STRIPE	N/A	2
5	DECAL - WARNING/CAUTION/OPERATION (SEE 71-0010)	N/A	1
6	DECAL - BURNER ON/OFF (SEE 71-0010)	N/A	1
7	DECAL - REWIND 420CC	34-2865	1
8	DECAL - DATA PLATE	N/A	1
9	DECAL - HOT SURFACES (SEE 71-0010)	N/A	1
10	DECAL - Mi-T-M	N/A	1
11	DECAL - GRAINGER 800# LARGE (SEE 71-0010)	N/A	1
12	DECAL - 14" STRIPE	N/A	1
-	DECAL - 14" STRIPE W/3500PSI	N/A	1
-	DECAL - 14" STRIPE W/4000PSI	N/A	1
13	DECAL - WARNING: RISK OF EXPLOSION (SEE 71-0010)	N/A	1
14	DECAL - MADE IN USA	34-3553	1
15	DECAL - RISK OF INJURY (SEE 71-0010)	N/A	1
-	DECAL SET	71-0010	1

FRAME ASSEMBLY

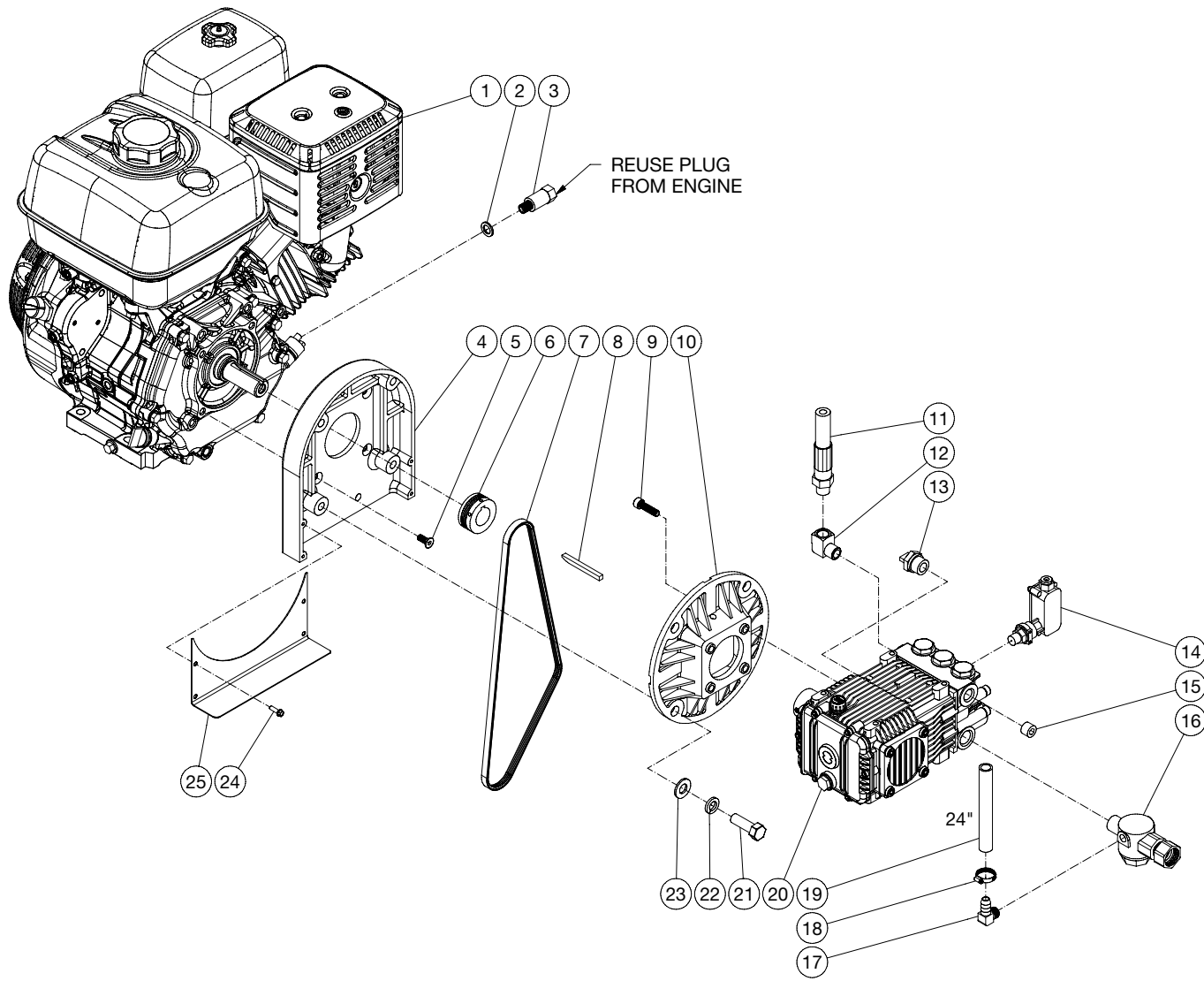


For parts Call 888-279-9274

FRAME ASSEMBLY

GH-3004_3504_4004-0EGH_0EGM UNIT ASSY 031824			
FRAME ASSEMBLY			
ITEM	DESCRIPTION	PART #	QTY
1	HOOD	20-0379A18	1
2	KNOB	62-0057	1
3	BOLT	27-9524	11
4	EDGING *(ONE FOOT REQUIRED)	33-0020	1
5	HEAT EXCHANGER / EMF ASSEMBLY	N/A	1
6	WASHER	28-0003	11
7	LOCKWASHER	29-0007	4
8	BOLT	27-0068	4
9	LOCKNUT	30-0155	4
10	BRAKE BRACKET	20-1358A18	1
11	WHEEL	14-0150	4
12	LOCKNUT	30-0117	4
13	BOLT	27-0067	1
14	ISOLATOR	14-0174	1
15	WASHER	28-0057	1
16	PUSH/PULL TOGGLE CLAMP	33-0400	1
17	BOLT	27-0015	4
18	ENGINE/ PUMP ASSEMBLY	N/A	1
19	NUT	30-3023	8
20	SHIM	33-0169	4
21	BOLT	27-9529	6
22	NOZZLE HOLDER	20-1198A18	1
23	GROMMET	33-0001	4
24	FUEL TANK ASSEMBLY	850-0193	1
25	FUEL HOSE	15-0147	2
26	FRAME	5-0120A18	1
27	ELECTRIC BOX ASSEMBLY	N/A	1
28	NUT	30-6001	1
29	STAR WASHER	28-1009	1
30	BRIDGE RECTIFIER	32-1114	1
31	BOLT	27-8807	1
32	TERMINAL PROTECTOR	33-0508	1
33	UNLOADER/ MANIFOLD ASSEMBLY	N/A	1
34	CABLE	32-9112	1
35	WASHER	28-0002	4
36	BOLT	27-0066	3
37	BATTERY BOX	33-0092	1
38	CABLE	32-9113	1
39	BATTERY	32-1077	1
40	BATTERY RETAINER	20-0264A18	1
41	BRACKET	13-0124A18	1
42	LOCKNUT	30-0157	3

ENGINE/ PUMP ASSEMBLY (3004, 3504, 4004)

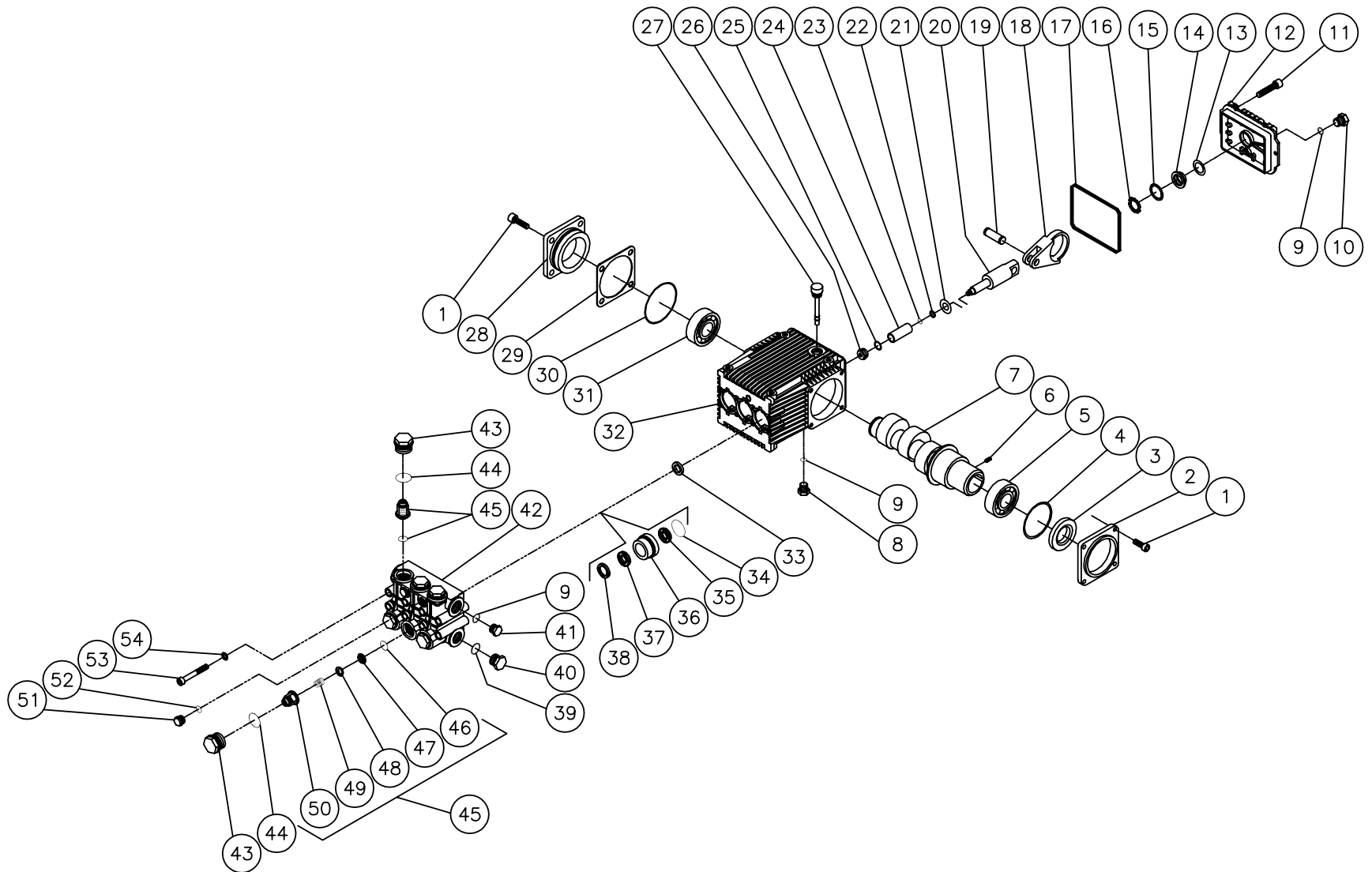


ENGINE/ PUMP ASSEMBLY (3004, 3504, 4004)

For parts Call 888-279-9274

HSP100 ELEC START 030624			
ENGINE/ PUMP ASSEMBLY			
ITEM	TITLE	PART #	QTY
1	ENGINE - HONDA ELEC START	1-0087	1
-	ENGINE - MITM ELEC START	1-0216	1
2	WASHER	28-0605	1
3	OIL DRAIN	24-0143	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 (3004 / 3504)	3-0194	1
-	PUMP (4004)	3-0476	1
21	BOLT	27-0218	4
22	LOCKWASHER	29-0010	4
23	WASHER	28-0006	4
24	BOLT	27-9526	4
25	BELTGUARD	20-0384A18	1
*MUST ORDER IN ONE FOOT LENGTHS			

HIGH PRESSURE PUMP (3-0194)



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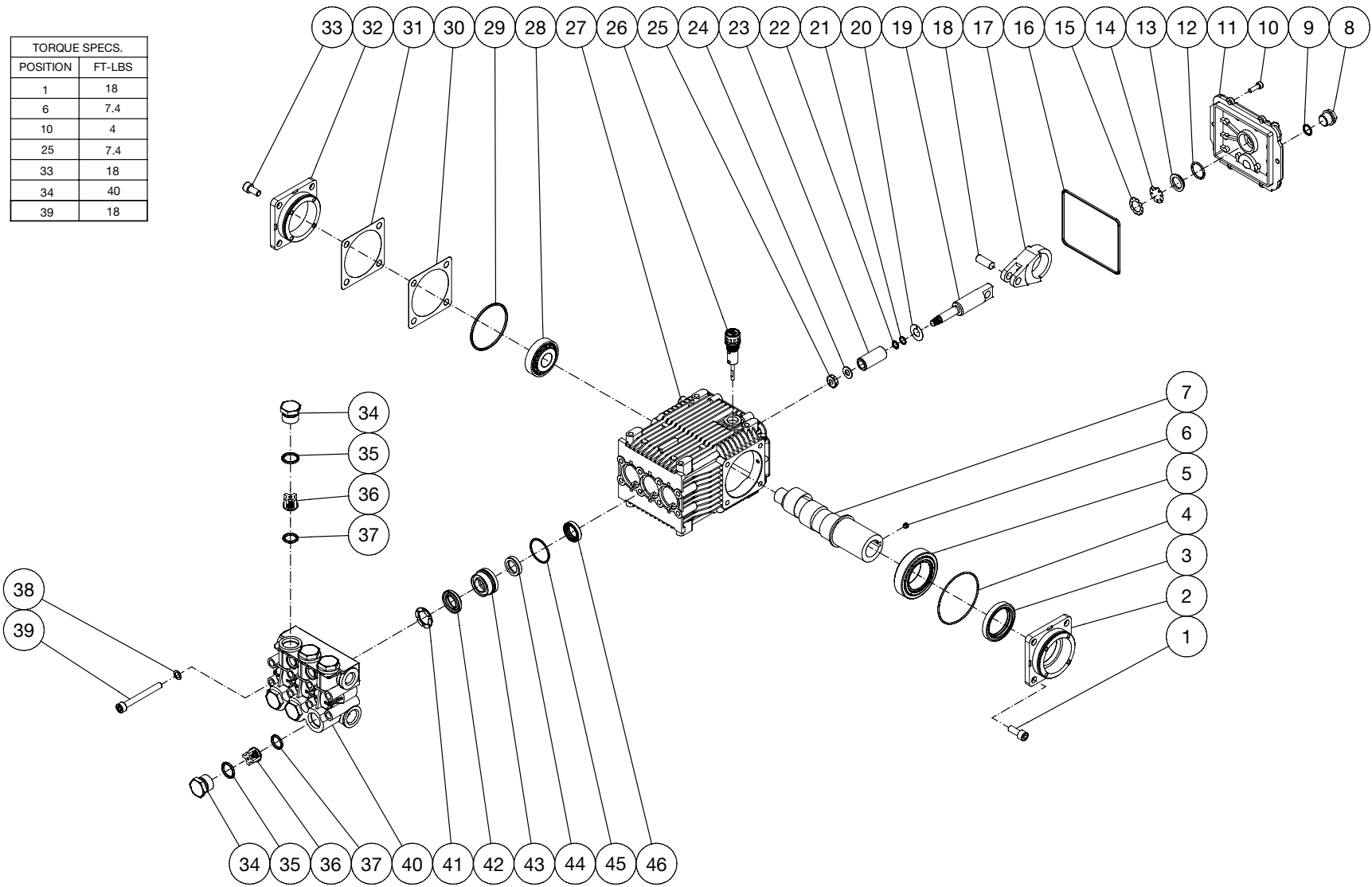
HIGH PRESSURE PUMP (3-0194)

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				
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 (3-0476)

TORQUE SPECS.	
POSITION	FT-LBS
1	18
6	7.4
10	4
25	7.4
33	18
34	40
39	18



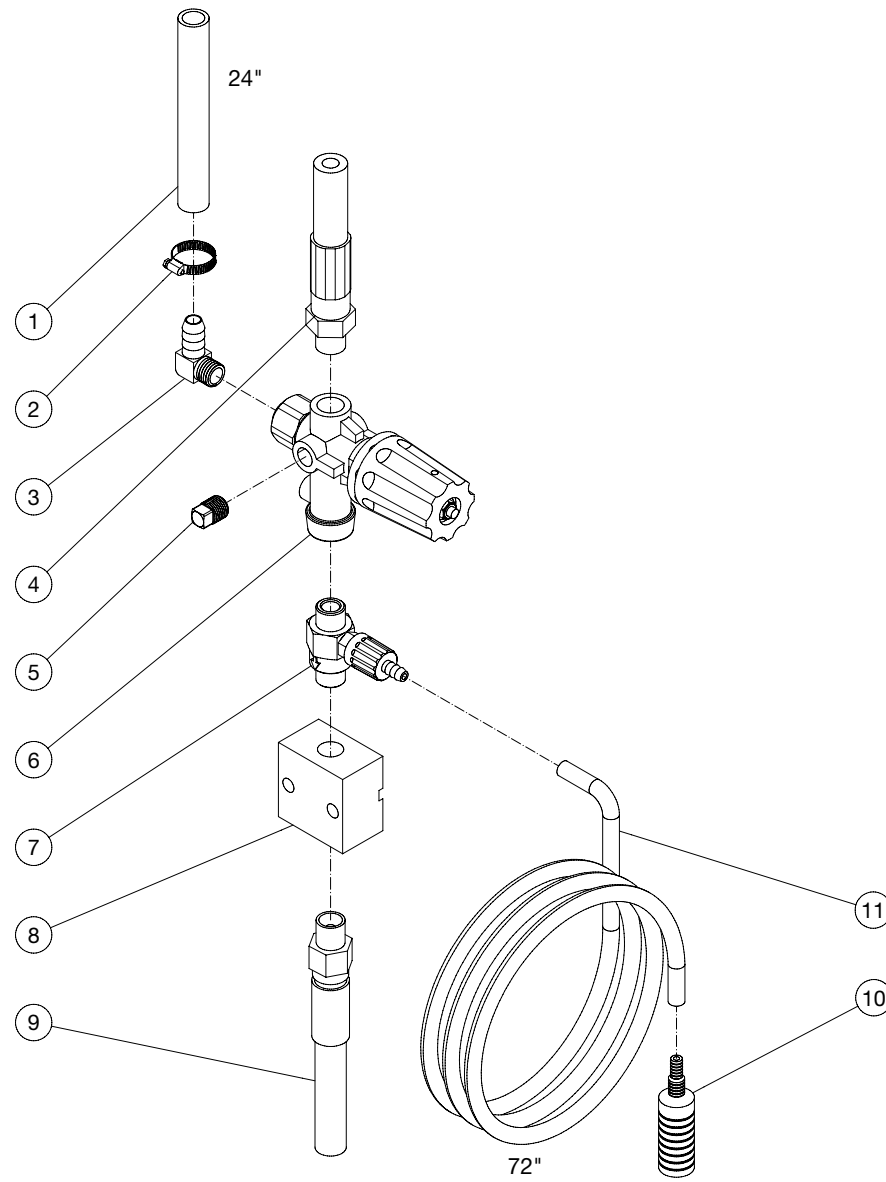
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HIGH PRESSURE PUMP (3-0476)

3-0476 120123							
PUMP ASSEMBLY							
ITEM	DESCRIPTION	PART #	QTY		ITEM	DESCRIPTION	PART # QTY
1	SCREW	27-8432	4		24	WASHER/GASKET (SEE KIT 70-0352)	26-0191 3
2	SHAFT COVER - ELECTRIC (SEE KIT 70-0337)	46-0713	1		25	NUT (SEE KIT 70-0352)	30-6020 3
3	OIL SEAL (SEE KIT 70-0337)	26-0194	1		26	OIL DIPSTICK	39-0090 1
4	O-RING	25-0397	1		27	CRANKCASE	46-1198 1
5	BEARING	48-0062	1		28	BEARING	48-0072 1
6	SET SCREW	27-8886	1		29	O-RING (SEE KIT 70-0337)	25-0380 1
7	CRANKSHAFT	46-0959	1		30	SHIM	46-0705 (1-3)
8	PLUG	39-0086	1		31	SHIM	46-0704 (1-3)
9	O-RING	25-0325	1		32	BEARING CAP/SUPPORT	46-0703 1
10	BOLT	27-8885	6		33	BOLT	27-8884 4
11	CRANKCASE COVER	46-0719	1		34	VALVE CAP	39-0095 6
12	O-RING	25-0370	1		35	O-RING	25-0160 6
13	OIL SIGHT GLASS	46-0670	1		36	VALVE (SEE KIT 70-0179)	SEE KIT 6
14	OIL REFLECTOR	46-0824	1		37	O-RING (SEE KIT 70-0179)	25-0386 6
15	SPRING RETAINER	46-0671	1		38	LOCKWASHER	29-0154 8
16	O-RING (SEE KIT 70-0337)	25-0398	1		39	BOLT	27-8440 8
17	CONNECTING ROD	46-0922	3		40	MANIFOLD - 18mm BRASS	46-0711 1
18	PISTON PIN	46-0698	3		41	SUPPORT RING (SEE KIT 70-0178)	46-0710 3
19	PLUNGER ROD	46-0699	3		42	V PACKING (SEE KIT 70-0177)	46-0709 3
20	SLINGER WASHER (SEE KIT 70-0352)	46-0700	3		43	PACKING RETAINER	46-0708 3
21	O-RING (SEE KIT 70-0352)	25-0404	3		44	LOW PRESSURE SEAL (SEE KIT 70-0177)	46-0707 3
22	O-RING (SEE KIT 70-0352)	25-0382	3		45	O-RING (SEE KIT 70-0177)	25-0384 3
23	PISTON (SEE KIT 70-0352)	46-0701	3		46	OIL SEAL (SEE KIT 70-0337)	46-0931 3

REPLACEMENT KITS				
KIT	DESCRIPTION	ITEMS	# OF ASSEMBLIES	# OF CYLINDERS
70-0337	OIL SEALS	3,4,16,29,46	1,1,1,1,3	-(3)
70-0352	PISTONS	20-25	3	3
70-0177	HIGH PRESSURE SEALS	42,44,45	3	3
70-0178	SUPPORT RINGS	41	3	3
70-0179	VALVES	36,37	6	3

UNLOADER/MANIFOLD ASSEMBLY

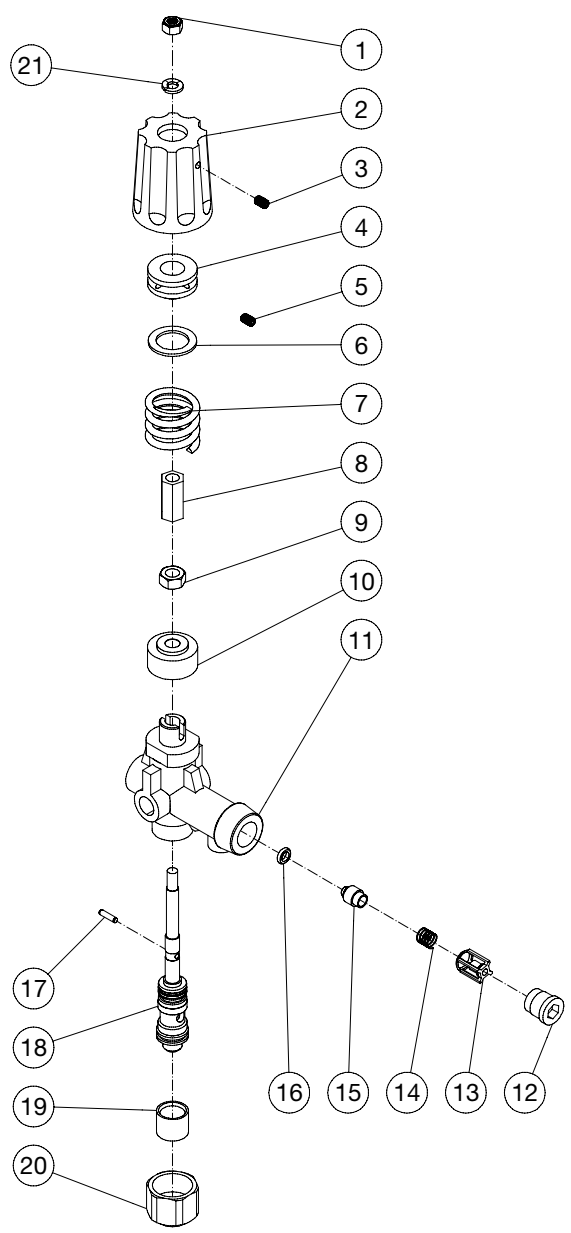


UNLOADER/MANIFOLD ASSEMBLY

For parts Call 888-279-9274

0MHSP080 080524			
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	24-0009	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)



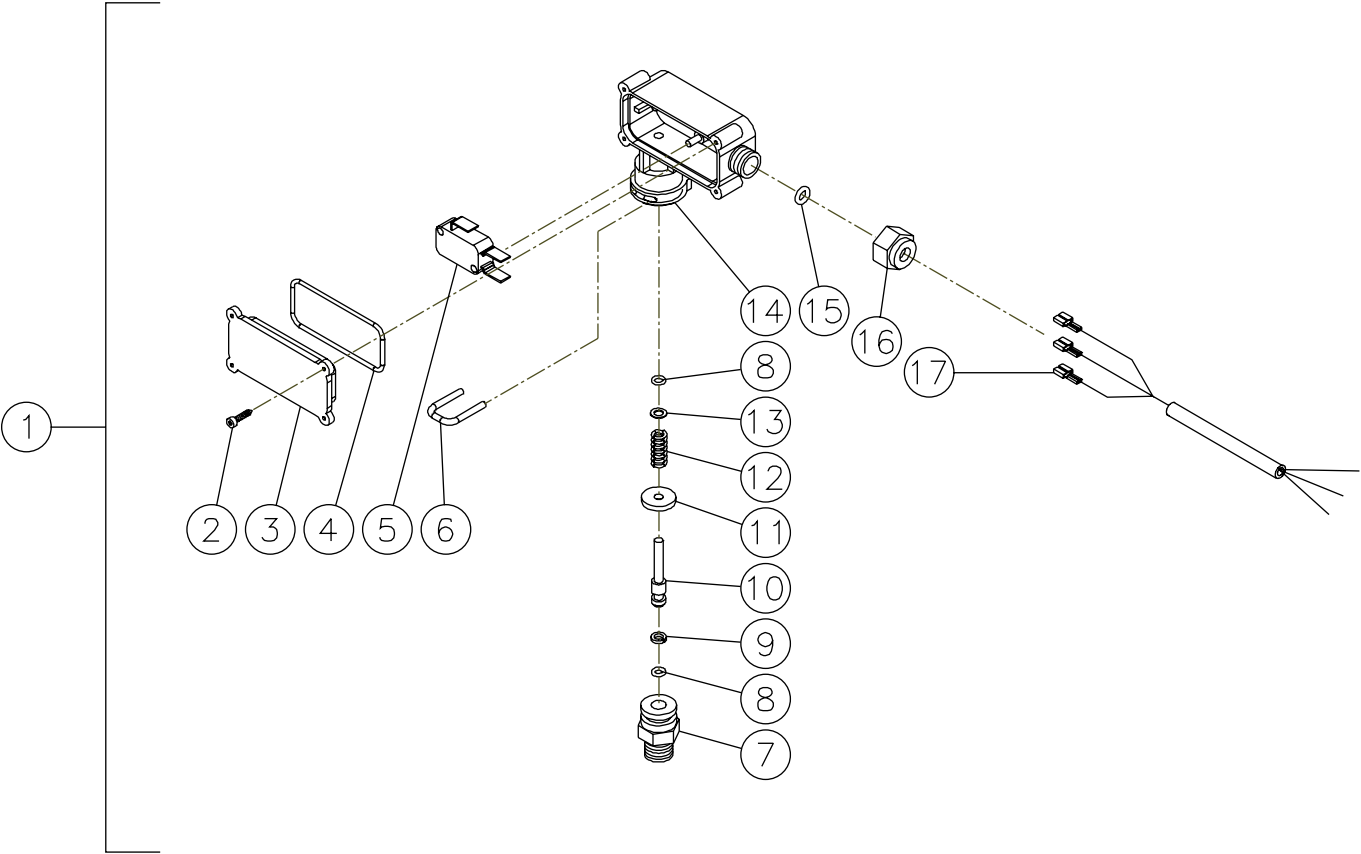
850-0252 070723

UNLOADER (850-0252)

850-0252 070723			
UNLOADER			
ITEM	TITLE	PART #	QTY
1	NUT	8-0362	1
2	UNLOADER	7-0098	1
3	SCREW	27-4280	1
4	NUT	8-0364	1
5	SCREW	8-0365	1
6	RING	8-0366	1
7	SPRING	49-0104	1
8	INSERT	8-0363	1
9	NUT	8-0367	1
10	BUSHING	8-0368	1
11	UNLOADER	8-0369	1
12	RETAINER	8-0269	1
13	HOUSING (SEE KIT 70-0244)	8-0104	1
14	SPRING (SEE KIT 70-0244)	49-0023	1
15	VALVE (SEE KIT 70-0244)	8-0105	1
16	O-RING (SEE KIT 70-0244)	25-0036	1
17	PIN	8-0372	1
18	PISTON ASSEMBLY	70-0243	1
19	SPACER	8-0371	1
20	NUT	8-0157	1
21	LOCKWASHER	29-0006	1

KIT #	DESCRIPTION	ITEMS	# OF ASSEMBLIES
70-0243	PISTON ASSY REPAIR KIT	18	1
70-0244	CHECK VALVE KIT	13,14,15,16	1

PRESSURE SWITCH (22-0171)

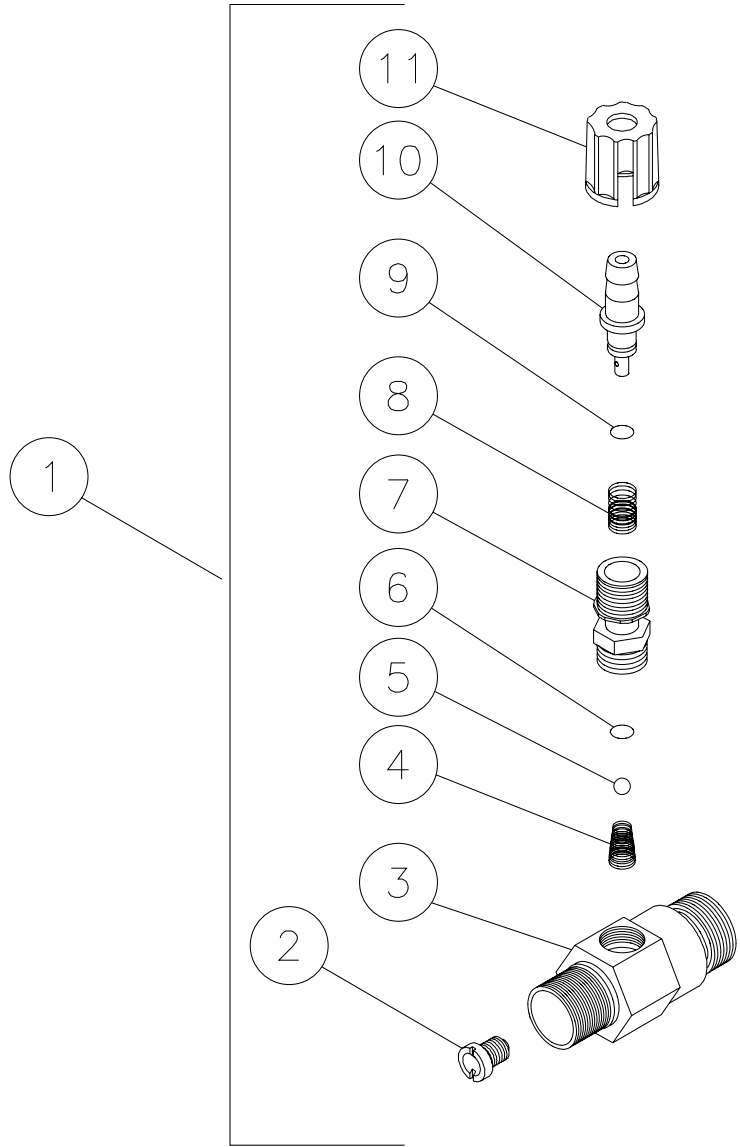


PRESSURE SWITCH (22-0171)

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	

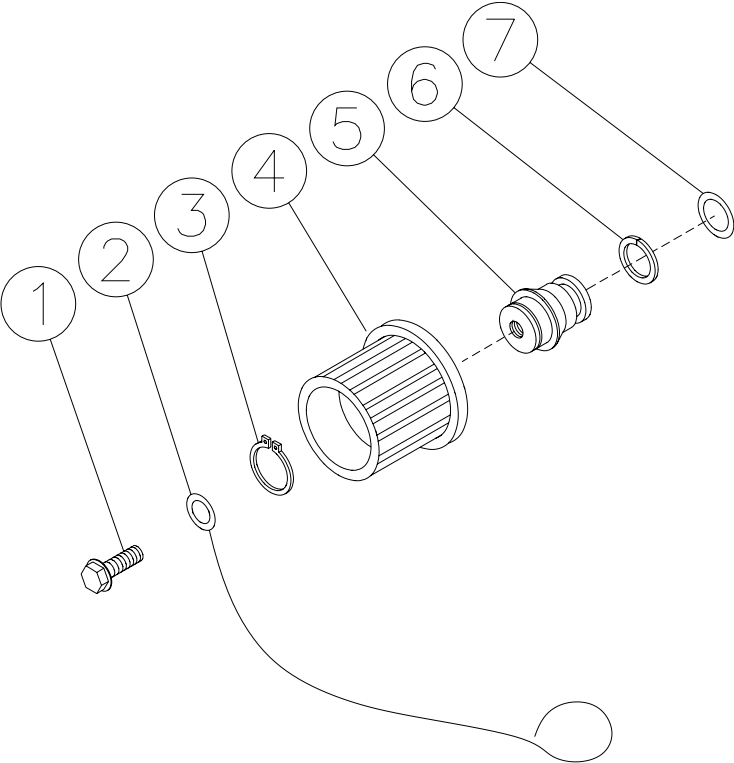
DETERGENT INJECTOR (50-0052)



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	

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

OMHSP083-850-0226-022207-CAW



26

EX-1190-100924

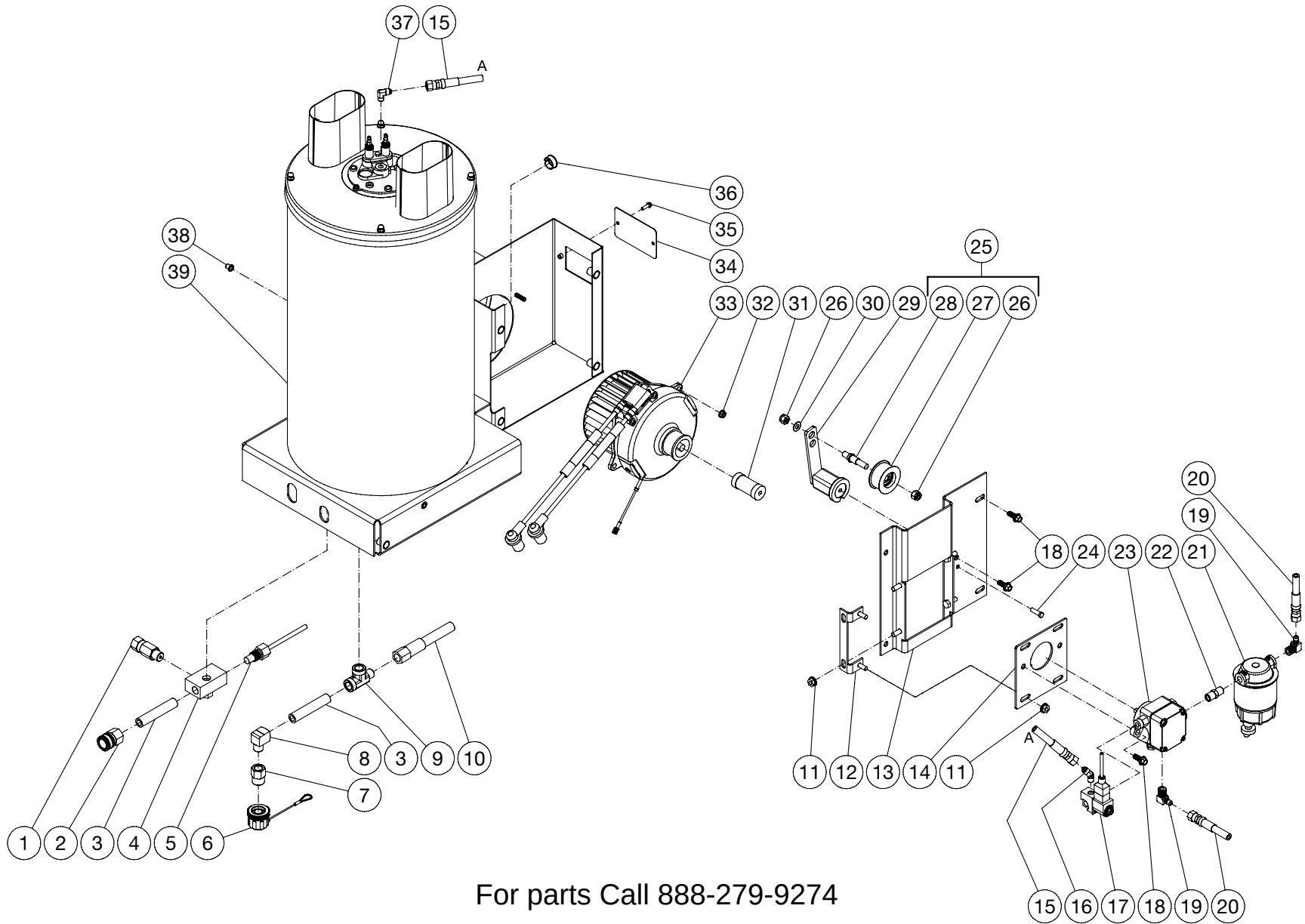
HEAT EXCHANGER/EMF SYSTEM (BEFORE SERIAL #15070469)

For parts Call 888-279-9274

OMHSP083_850-0226-0802307 CH

HEAT EXCHANGER/EMF SYSTEM								
REF. #	DESCRIPTION	PART #	QTY.		REF. #	DESCRIPTION	PART #	QTY.
1	Boiler Assembly Complete	850-0226	1		22	Bracket	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	20-0386A01	1
7	Tensioner Base	10-0071	1		28	Bolt	27-9526	2
8	Fuel Pump Bracket	20-0381A01	1		29	Grommet	32-0426	1
9	Bolt	27-9524	7		30	Grommet	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	Nipple	24-0165	2
15	Elbow	23-0237	2		36	Hex Reducer	23-0197	1
16	Fuel Hose	15-0147	2		37	High Pressure Hose Assembly	15-0202	1
17	Hex Nipple	24-0145	1		38	Street Tee	23-0058	1
18	Filter Fuel Water Seperator	19-0070	1		39	Elbow	23-0034	1
19	Fuel Water Seperator Replacement Bowl	19-0071	1		40	Adapter	23-0279	1
20	Fuel Water Seperator Replacement Filter	19-0053	1		41	Drain Plug Assembly	850-0218	1
21	Plate	20-0363A01	1					

HEAT EXCHANGER/EMF SYSTEM (AFTER SERIAL #15070469)

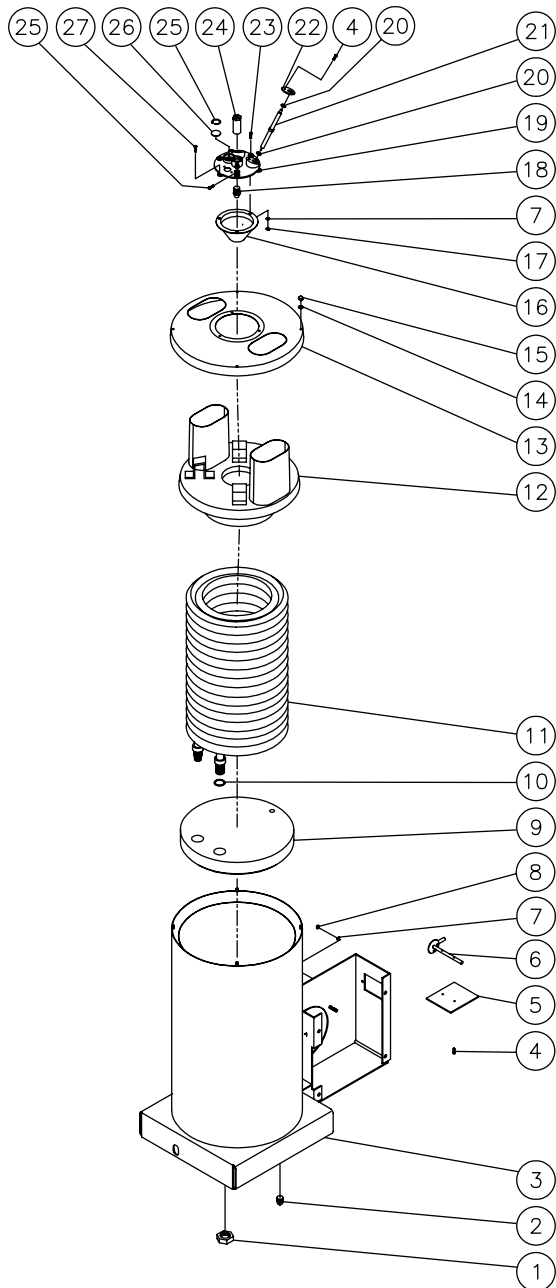


For parts Call 888-279-9274

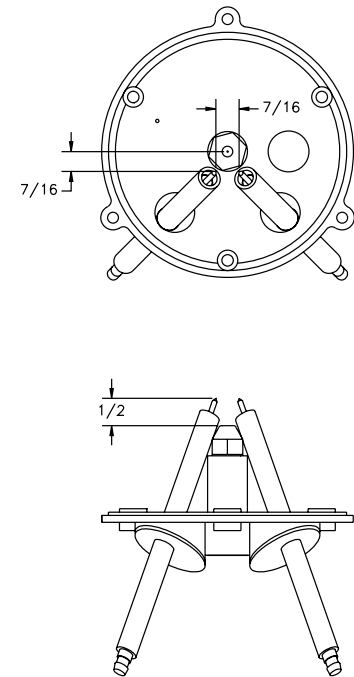
HEAT EXCHANGER/EMF SYSTEM (AFTER SERIAL #15070469)

HSP083 072324			
HEAT EXCHANGER / EMF SYSTEM			
ITEM	TITLE	PART #	QTY
1	PRESSURE RELIEF VALVE (4004)	22-0541	1
-	PRESSURE RELIEF VALVE (3003 / 3504)	22-0273	1
2	QUICK CONNECT 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	20-0360A18	2
13	FUEL PUMP BRACKET	20-0381A18	1
14	FUEL PUMP PLATE	20-1698A18	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	20-0386A18	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) BEFORE SERIAL #15048210



ELECTRODE GAP SETTINGS



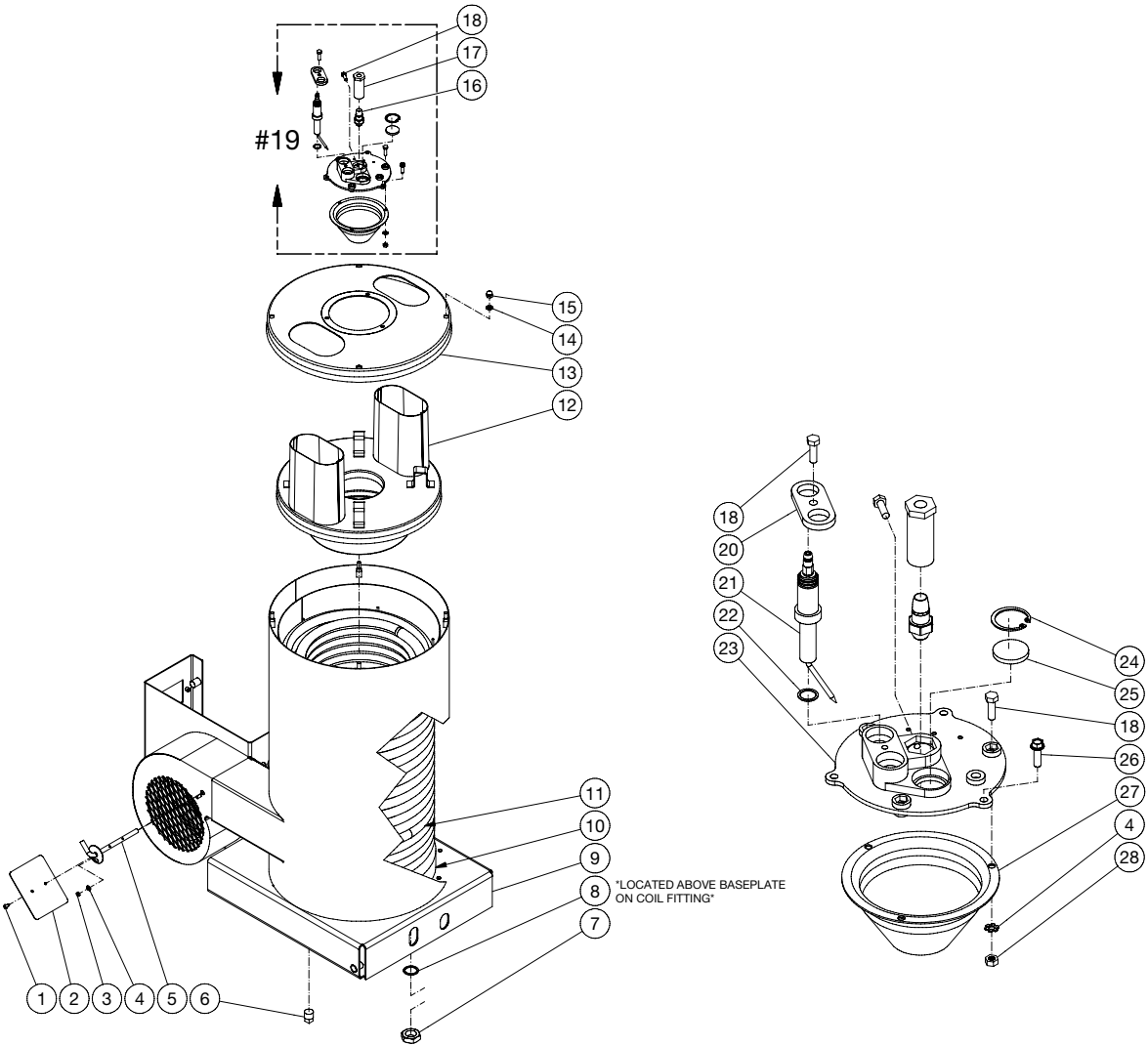
HSP111-042799-BAR

BOILER ASSEMBLY (850-0226) BEFORE SERIAL #15048210

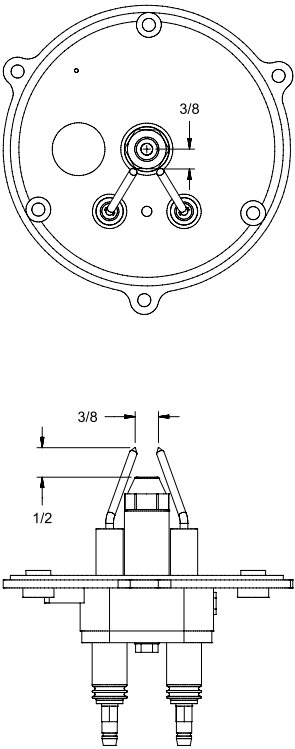
850-0226-090606-PO

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	Electrode Mounting Clip- Black	20-0383A01 2
9	Bottom Insulation	33-0250	1		23	Bolt	27-8878 4
10	Washer	28-0521	2		24	Nozzle Holder	23-0292 1
11	Heat Exchanger Coil Assembly	66-0011	1		25	Snap Ring	33-0254 1
12	Inner Pan Assembly	20-0372	1		26	Sight Glass	33-0252 1
13	Top Pan Assembly- Black	20-0371A01	1		27	Bolt	27-9526 3
14	Lockwasher	28-1028	4			Boiler Assembly Complete (Inc. 1-27)	850-0226

BOILER ASSEMBLY (850-0226) AFTER SERIAL #15048210



ELECTRODE GAP SETTINGS



For parts Call 888-279-9274

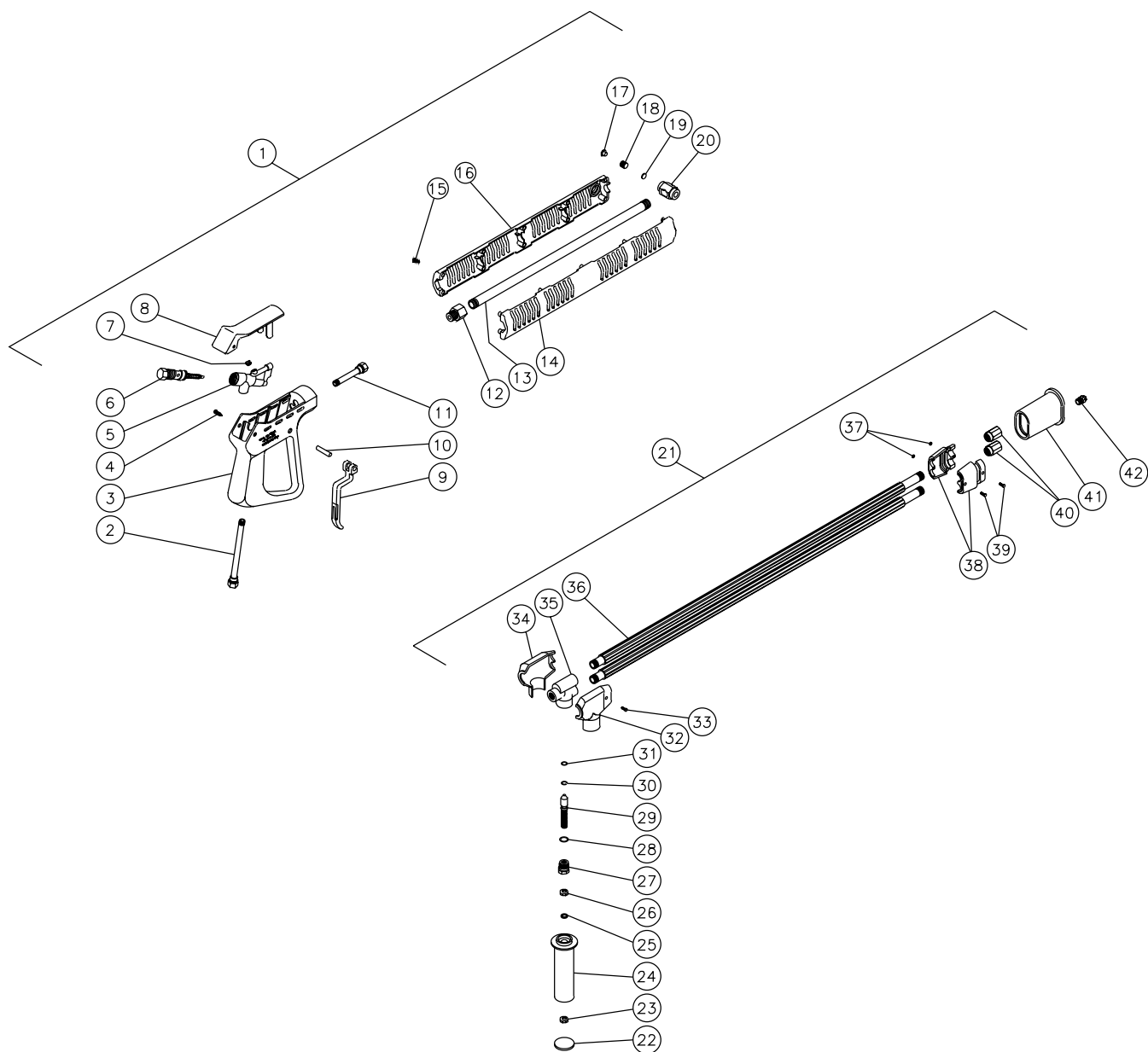
850-0226 112923

ELECTRODE PLATE ASSY 062308-CH

BOILER ASSEMBLY (850-0226) AFTER SERIAL #15048210

850-0226 112923			
BOILER ASSEMBLY			
ITEM	DESCRIPTION	PART #	QTY
1	BOLT	27-8879	2
2	AIR DIVERTER	20-0378A18	1
3	NUT	30-0137	1
4	STAR WASHER	28-1009	4
5	AIR DIVERTER STEM	20-0377A18	1
6	PLUG	24-0034	1
7	NUT	30-0121	2
8	WASHER	28-0521	2
9	OUTER WRAP	20-0376A18	1
10	INSULATION	33-0250	1
11	HEAT EXCHANGER COIL	66-0011	1
12	INNER PAN ASSEMBLY	20-0372	1
13	TOP PAN	20-0371A18	1
14	LOCKWASHER	28-1028	4
15	ACORN NUT	30-6002	4
16	FUEL NOZZLE (3004 / 3500/ 3504 / 4004))	18-0308	1
-	NOZZLE-OIL (3000/ 3003)	18-0368	1
17	FUEL NOZZLE HOLDER	23-0292	1
18	BOLT	27-8878	5
19	ELECTRODE ASSEMBLY KIT (INC. 4, 18, 20-29)	850-0351	1
20	ELECTRODE BRACKET	20-1094A18	1
21	ELECTRODE	32-0987	2
22	WASHER	28-0523	2
23	ELECTRODE PLATE	38-0065	1
24	SNAP RING	33-0254	1
25	SIGHT GLASS	33-0252	1
26	BOLT	27-9526	3
27	CONE	20-0373	1
28	NUT	30-6001	3

GUN (850-0181) & ADJUSTABLE PRESSURE DUAL LANCE (850-0180)

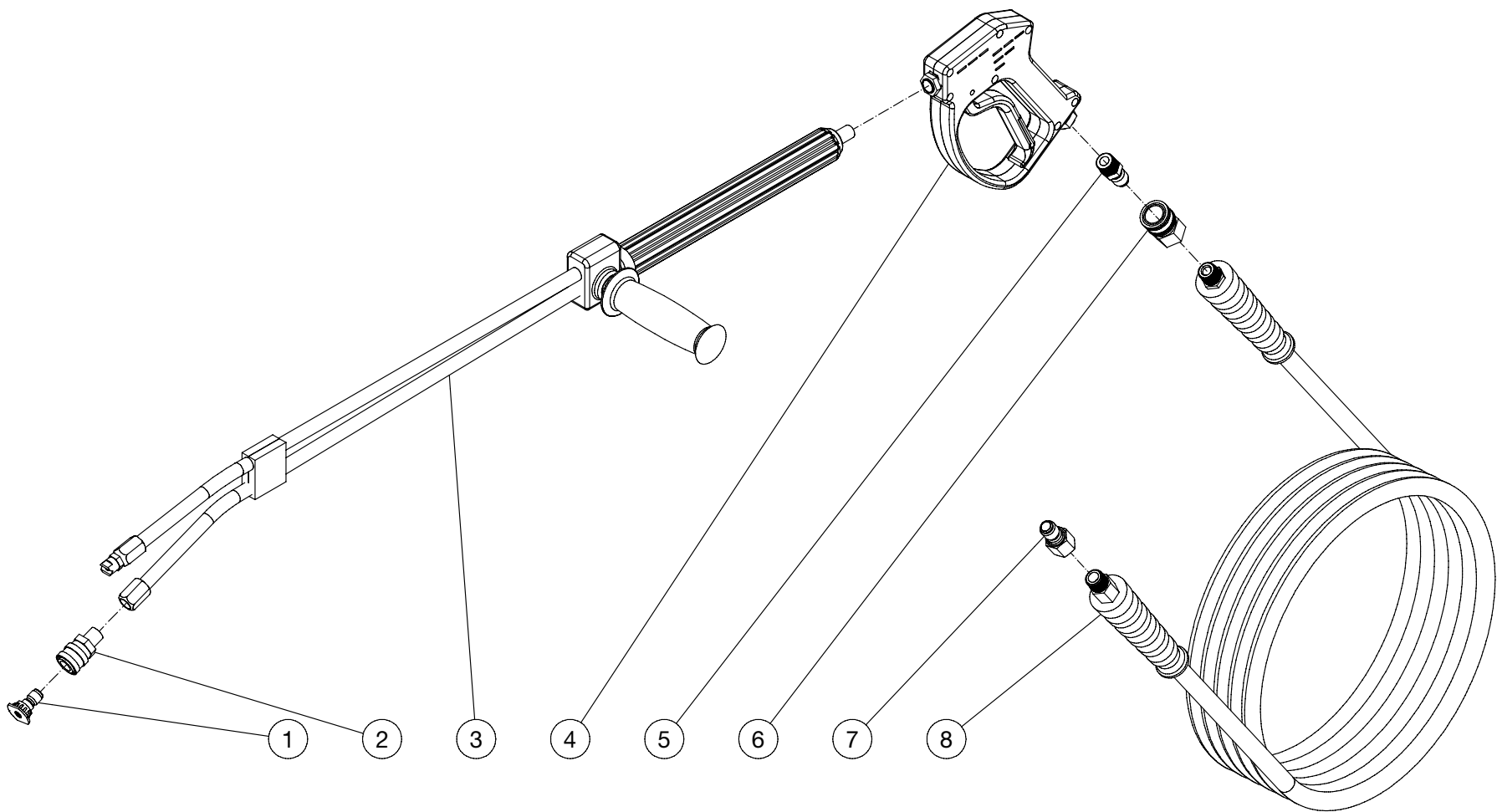


GUN (850-0181) & ADJUSTABLE PRESSURE DUAL LANCE (850-0180)

OMHSP031_850-0180-051597-JTR

GUN/WAND (850-0181) & ADJUSTABLE PRESSURE DUAL LANCE (850-0180)								
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 48"	16-0317	2
14	Guard Lance (Right Side)	16-0320	1		37	Nut	30-3060	2
15	Screw	27-8382	6		38	Pipe Clamp	16-0318	2
16	Guard Lance (Left Side)	16-0321	1		39	Screw	27-8861	2
17	Plug	39-0076	1		40	Nipple	24-0127	2
18	Screw	49-0103	1		41	Nozzle Protector	16-0319	1
19	Spacer	16-0282	1		42	Nozzle- 4060	18-0110	1
20	Lance Holder (See 16-0306)	N/A Sep.	1			Gun Assembly (Includes 12-20)	16-0001	
21	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					

GUN / WAND / HOSE ASSEMBLY



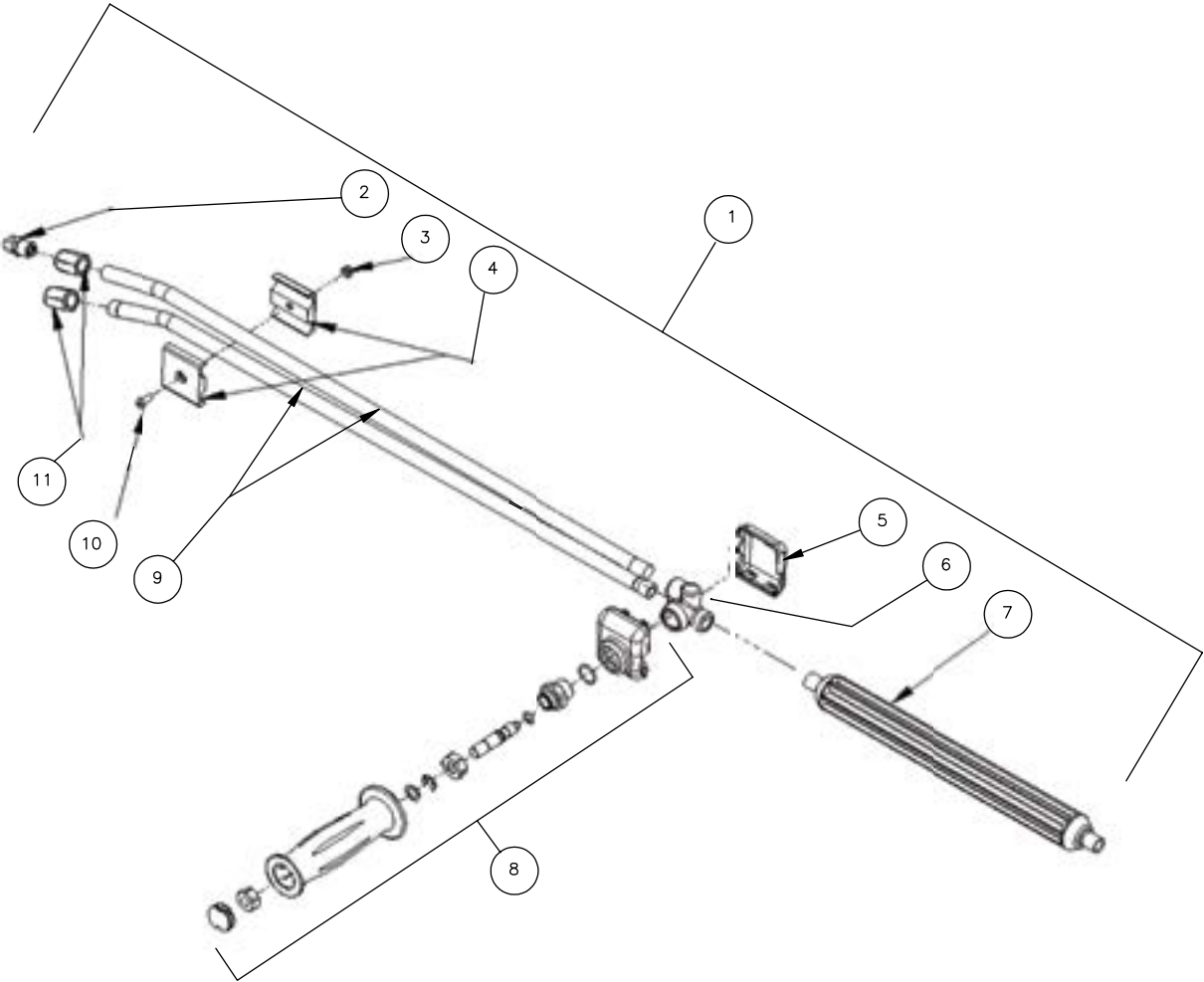
HSP LG - GUN_WAND_HOSE ASSY 112723

GUN / WAND / HOSE ASSEMBLY

For parts Call 888-279-9274

HSP LG-GUN WAND HOSE ASSY 112723			
GUN/WAND/HOSE ASSEMBLY			
ITEM	DESCRIPTION	PART #	QTY
1	NOZZLE	18-0392	1
-	NOZZLE 15035 QC	18-0393	1
-	NOZZLE 25035 QC	18-0395	1
-	NOZZLE 40035 QC	18-0396	1
2	QC SOCKET	17-0028	1
3	DUAL LANCE (3003)	16-0416	1
-	DUAL LANCE - 48.00" (3504, 4004)	16-0417	1
4	GUN	16-0446	1
5	QUICK CONNECT	17-0005	1
6	QUICK CONNECT SOCKET	17-0004	1
7	QUICK CONNECT	17-0006	1
8	HOSE (3504, 4004)	15-0166	1
-	HOSE (3003)	15-0146	1

DUAL LANCE ASSEMBLY



16-0416_16-0417-102405-RZ

DUAL LANCE ASSEMBLY

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

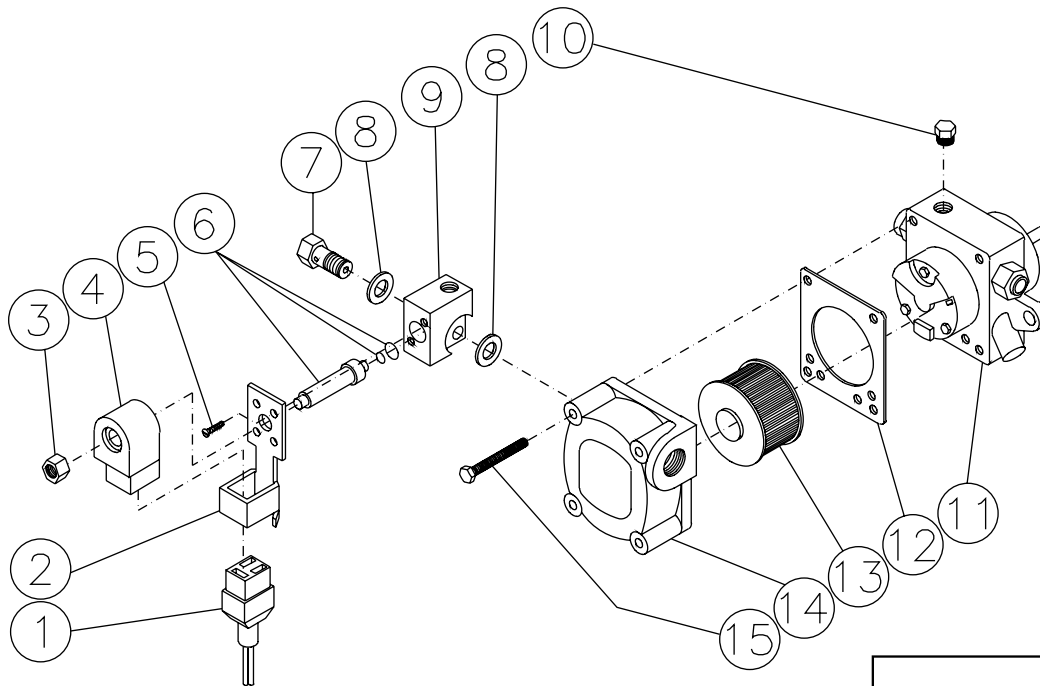
850-0193-012098-BAR



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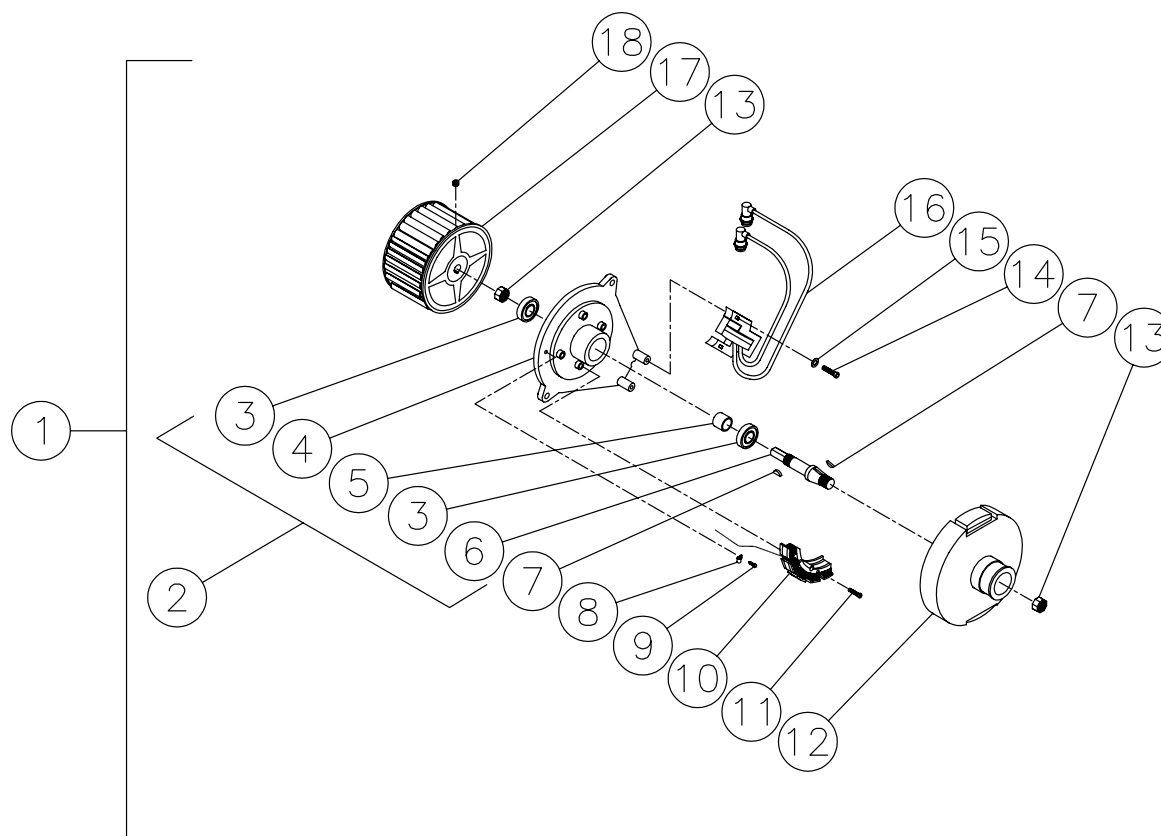
EX-1190-100924

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



0MHSP049 052920			
FUEL PUMP (3-0020) & FUEL SOLENOID (44-0100)			
REF. #	DESCRIPTION	PART #	QTY.
1	CORD-DIN CONNECTOR	32-0443	1
2	BASE PLATE	N/A	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	N/A	1
8	WASHER	N/A	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	N/A	1
15	FUEL PUMP COVER SCREW	46-1006	4

EMF SYSTEM (850-0257) (BEFORE SERIAL #15070469)



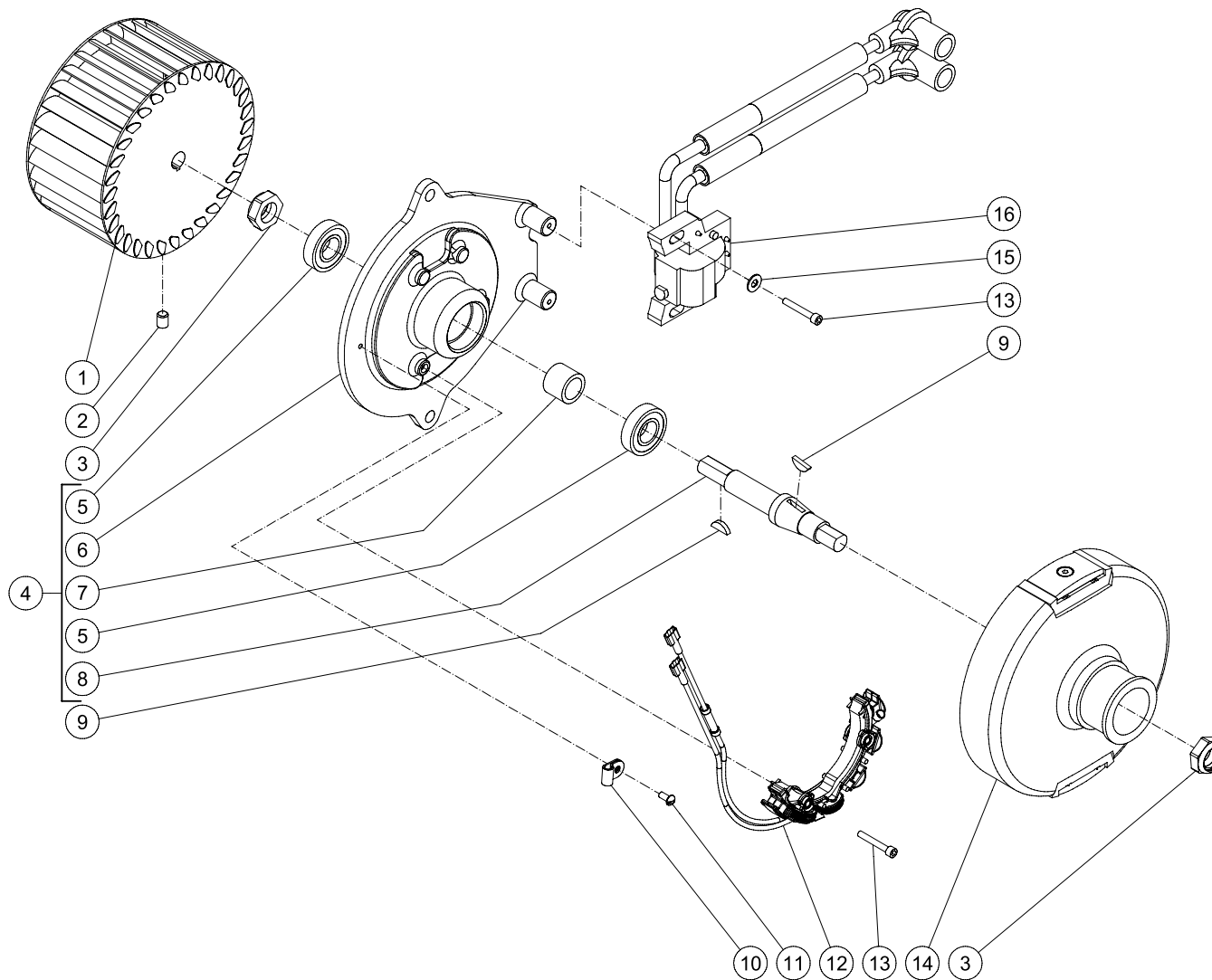
For parts Call 888-279-9274

EMF SYSTEM (850-0257) (BEFORE SERIAL #15070469)

OMHSP072-052908-CH

EMF SYSTEM (850-0257)			
REF. #	DESCRIPTION	PART #	QTY.
1	EMF Assembly	850-0257	1
2	Blower Flange Assembly	850-0162	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

EMF SYSTEM (850-0403) (AFTER SERIAL #15070469)

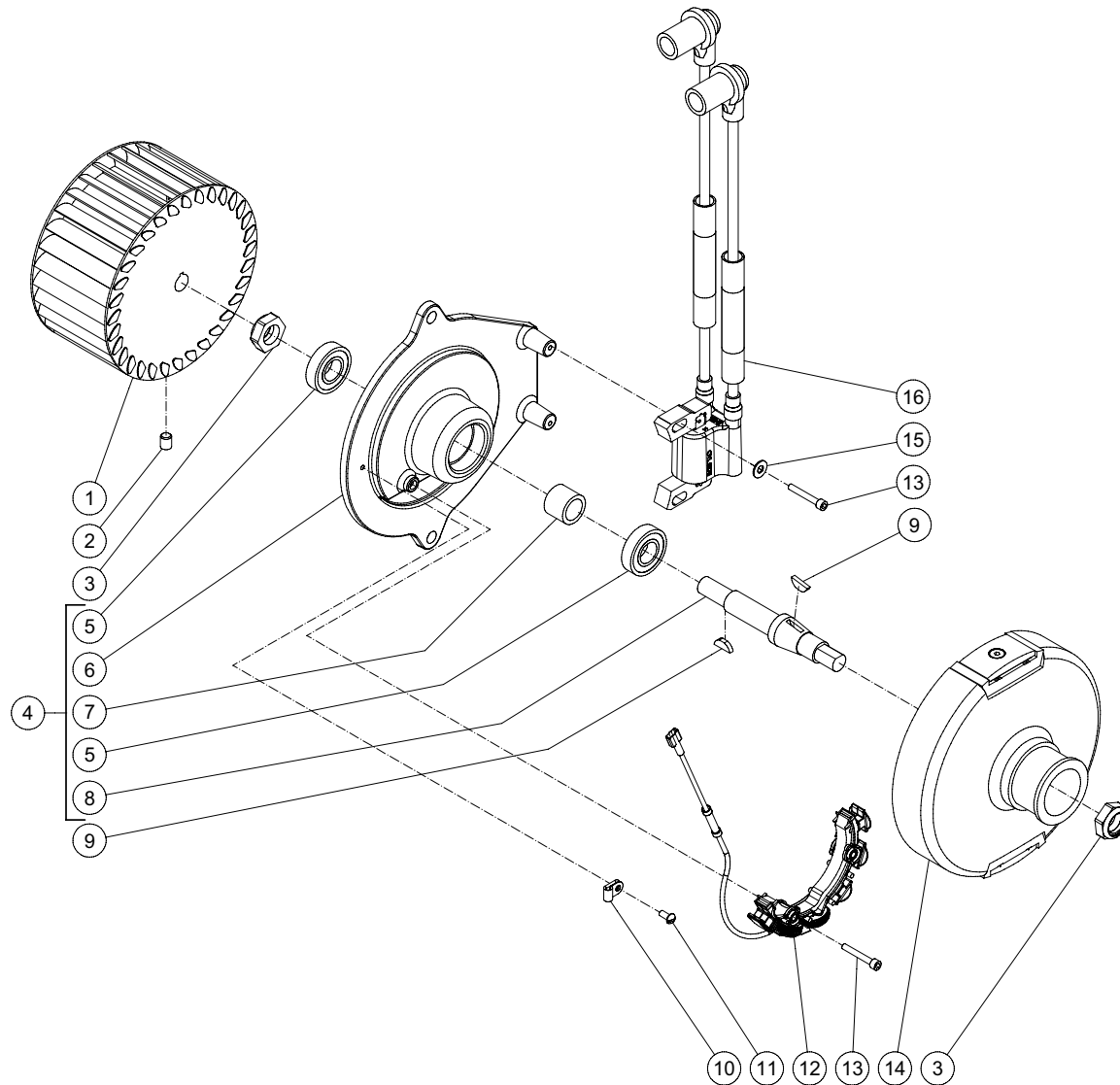


For parts Call 888-279-9274

EMF SYSTEM (850-0403) (AFTER SERIAL #15070469)

850-0403 011112 CH			
EMF SYSTEM			
ITEM	DESCRIPTION	PART #	QTY
-	EMF ASSEMBLY	850-0403	1
1	BLOWERN 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	32-0428	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	850-0191	1

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

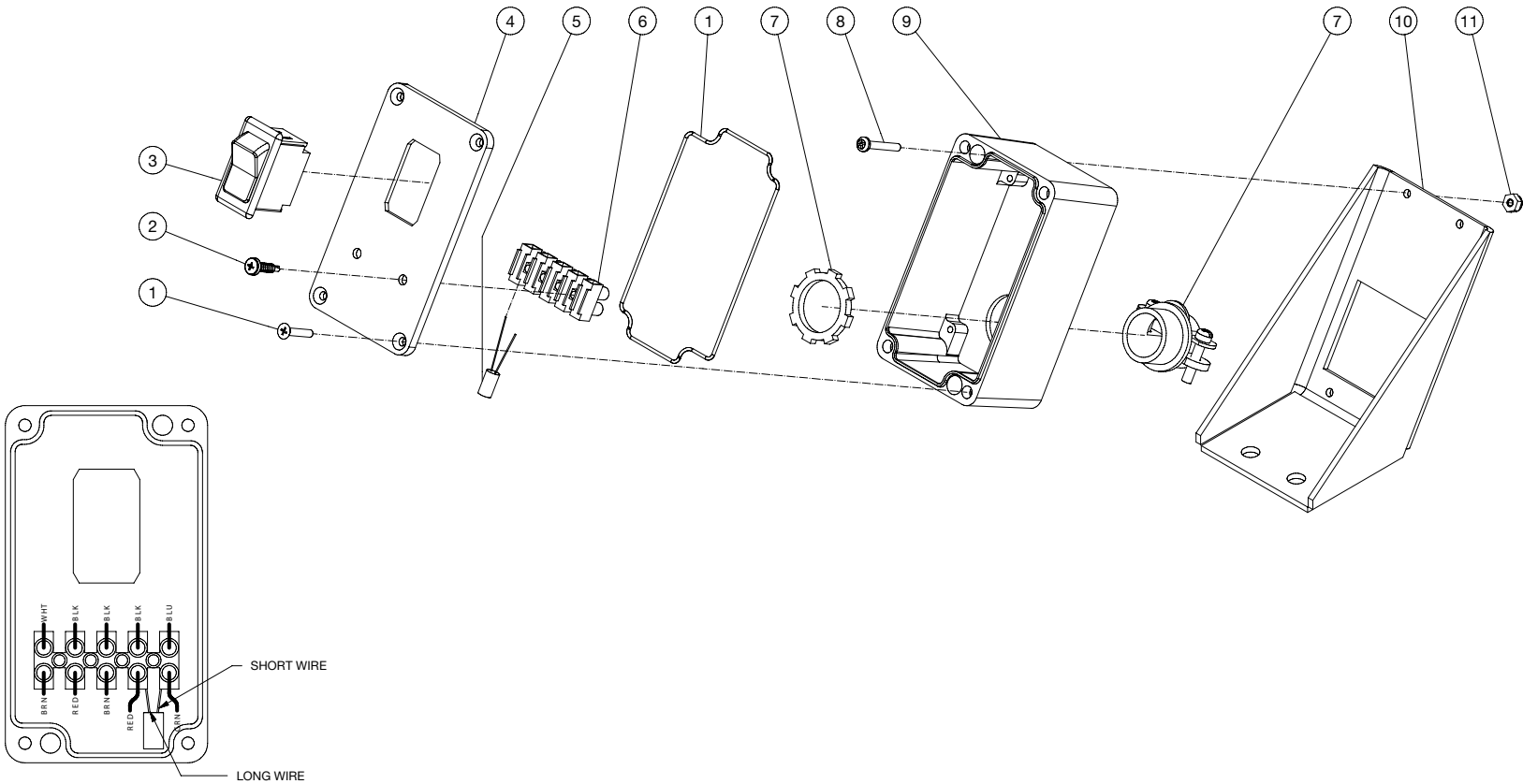


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EMF SYSTEM (850-0403) (AFTER SERIAL #15074024)

850-0403 111319 ATL			
EMF SYSTEM			
ITEM	DESCRIPTION	PART #	QTY
-	EMF ASSEMBLY	850-0403	1
1	BLOWER FAN	44-0099	1
2	SET SCREW	27-4264	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

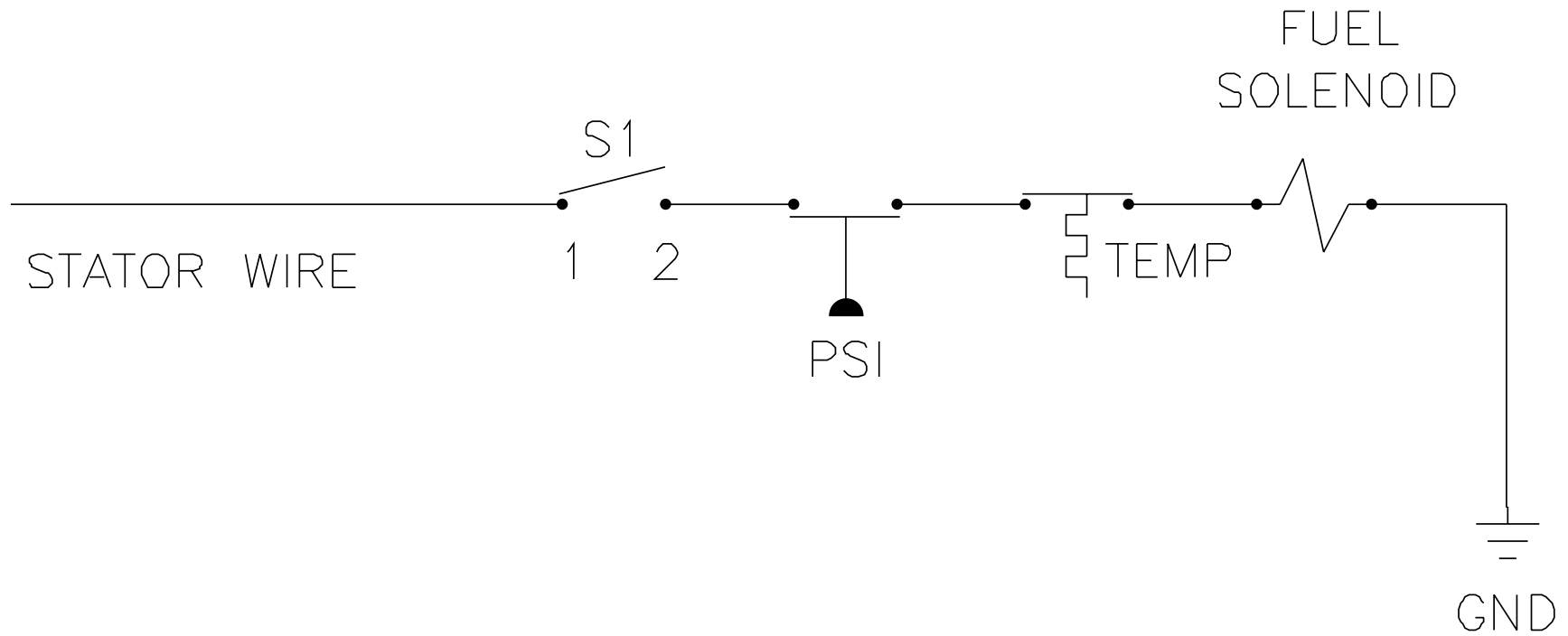
ELECTRIC BOX



ELECTRIC BOX

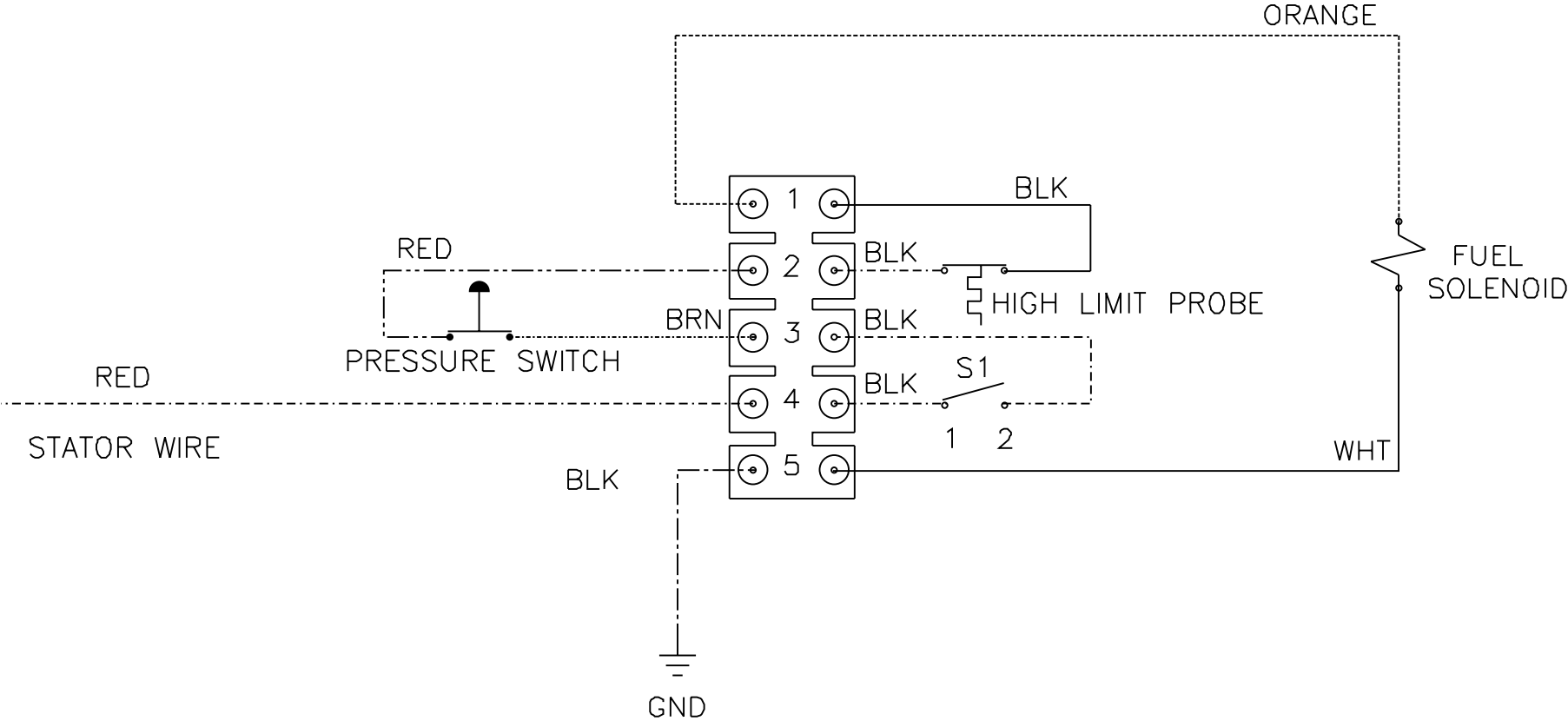
OMHSP082 050520 JRC			
ELECTRIC BOX ASSEMBLY			
ITEM	TITLE	PART #	QTY
1	ELECTRIC BOX HARDWARE KIT	70-0169	1
2	SCREW	27-3350	2
3	ROCKER SWITCH	32-0422	1
4	ELECTRIC BOX LID	32-0430A18	1
5	CAPACITOR	32-1113	1
6	TERMINAL STRIP	32-0394	1
7	CONNECTOR	32-0085	1
8	BOLT	27-8497	2
9	ELECTRIC BOX	32-0429A18	1
10	ELECTRIC BOX BRACKET	20-0380A18	1
11	LOCKNUT	30-0152	2

WIRING SCHEMATIC (BEFORE SERIAL #15070469)



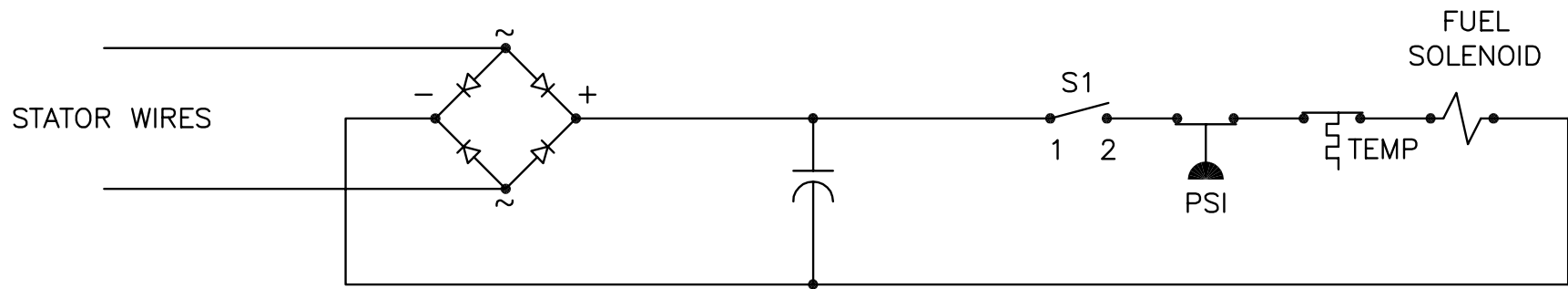
OMHSP050A-071797-BAR

WIRING DIAGRAM (BEFORE SERIAL #15070469)

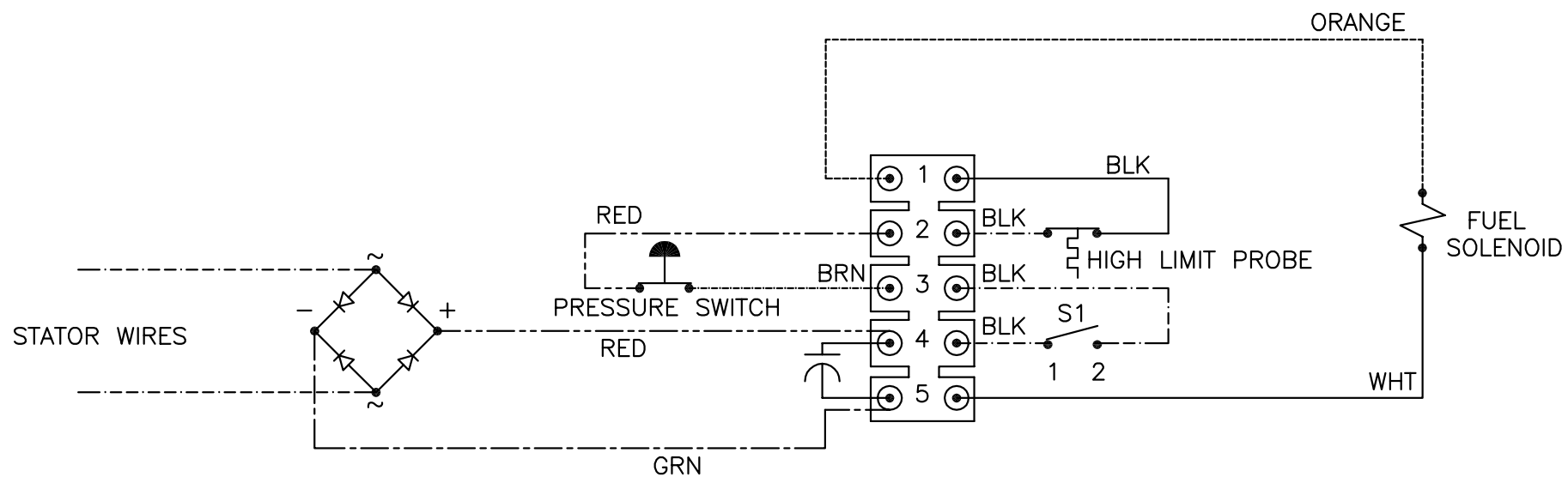


OMHSP050B-071797-BAR

WIRING SCHEMATIC (AFTER SERIAL #15070469)



WIRING DIAGRAM (AFTER SERIAL #15070469)



For parts Call 888-279-9274