

PARTS LIST FOR
3003/3004/3504 SERIES
PORTABLE
GASOLINE DRIVEN/DIRECT DRIVE
TOP FIRED OIL HEATED
HOT WATER PRESSURE WASHER
(AFTER SERIAL #15074024)

ENGINE OIL GRADE:

HONDA/KOHLER:

SAE10W-30

ENGINE OIL CAPACITY:

HONDA (GX270, GX390):

37 oz.

KOHLER (CH440):

44.8 oz.

PUMP OIL GRADE:

PUMP OIL CAPACITY:

3004 / 3504

3003

PUMP OIL #AW-4085-0016

15 oz.

14 oz.

BTU INPUT:

3004 / 3504

3003

294,000 / hour

253,000 / hour

PRESSURE NOZZLE SIZE:

3003 / 3504

3004

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.

Table of Contents

| | |
|---|----|
| NOTES | 4 |
| SPECIFICATIONS..... | 5 |
| FLOW CHART | 6 |
| EMF SYSTEM | 6 |
| GENERAL THEORY OF OPERATION | 7 |
| DECAL PLACEMENT | 8 |
| FRAME (AFTER SERIAL #15010743) | 10 |
| ENGINE/ PUMP ASSEMBLY (3004, 3504)..... | 12 |
| ENGINE/ PUMP ASSEMBLY (3003)..... | 14 |
| HIGH PRESSURE PUMP (3-0194)..... | 16 |
| HIGH PRESSURE PUMP (3-0241)..... | 18 |
| UNLOADER/MANIFOLD ASSEMBLY..... | 20 |
| UNLOADER (850-0252)..... | 22 |
| PRESSURE SWITCH (22-0171)..... | 24 |
| DETERGENT INJECTOR (50-0052)..... | 26 |
| COIL DRAIN PLUG (850-0218)..... | 27 |
| HEAT EXCHANGER/EMF SYSTEM (AFTER SERIAL #15070469)..... | 28 |
| BOILER ASSEMBLY (850-0226) AFTER SERIAL #15048210 | 30 |
| ELECTRODE GAP SETTINGS..... | 30 |
| GUN / WAND / HOSE ASSEMBLY | 32 |
| DUAL LANCE ASSEMBLY (16-0417) | 34 |
| FUEL TANK (850-0248)..... | 36 |
| FUEL PUMP (3-0020) & FUEL SOLENOID (44-0100) | 37 |
| EMF SYSTEM (850-0403) (AFTER SERIAL #15074024) | 38 |
| ELECTRIC BOX | 40 |
| WIRING SCHEMATIC (AFTER SERIAL #15070469) | 42 |
| WIRING DIAGRAM (AFTER SERIAL #15070469) | 43 |

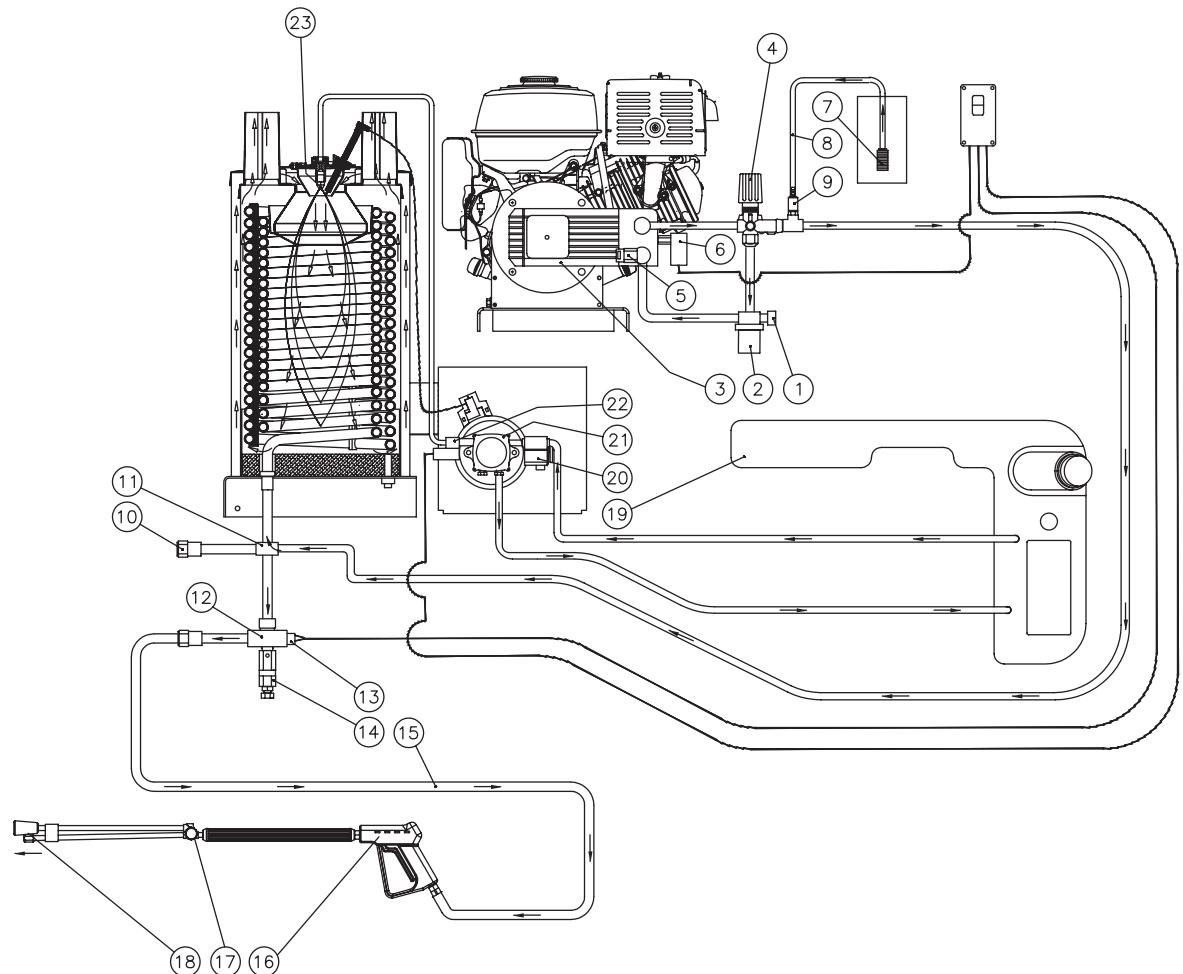
NOTES

| 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 |

SPECIFICATIONS

| | | | | |
|---------------------------------------|--|-------------------|-------------------|---|
| Operating Pressure (PSI/Bar): | 3500/241 (+/- 5%) | 3000/207 (+/- 5%) | 3500/241 (+/- 5%) | 3000/207 (+/- 5%) |
| Water Volume (GPM/lpm): | 3.3/12.5 (+/- 5%) | 3.5/13.3 (+/- 5%) | 3.3/12.5 (+/- 5%) | 2.90/11.0 (+/- 5%) |
| Outlet Water Temperature (F/C): | 140°F/78°C (+/- 20°F) rise above inlet ambient (210°F/ 99°C maximum) | | | 130°F/ 72°C (+/- 20°F) rise above inlet ambient (210°F/ 99°C maximum) |
| Engine: | Honda | Kohler | Honda | |
| Model | GX390 | CH440 | GX270 | |
| 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 | |
| Low Oil Protection | Oil Alert™ | Oil Sentry™ | Oil AlertTM | |
| Fuel Type | Unleaded Gasoline 86 Octane Minimum | | | |
| Fuel Capacity (gal./ liter) | 1.7/6.4 | | 1.6/6.0 | |
| Starting | Recoil Rope | | | |
| Maximum No Load RPM | 3600 (+/- 100) | | | |
| High Pressure Pump: | Direct Driven, Oil Bath, Triplex Piston | | | |
| Oil Type | Pump Oil #AW-4085-0016 | | | SAE30W Non-Detergent |
| Oil Capacity (oz./liters) | 15/.44 | | | 14/.41 |
| Plungers | Ceramic | | | |
| Manifold | Forged Brass | | | |
| Valves | Stainless Steel | | | |
| Unloader | Preset | Adjustable | 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 | | | 5/5/1921 |
| 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 | | | 1.50 60° A Delavan |
| Fuel Consumption (GPH/ LPH) | 2.1 GPH Continous Burning | | | 1 .81 GPH Continous 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 | | | 253,000 |
| Efficiency | 86% with #2 Fuel Oil/ Diesel | | | 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 | 434/197 | 428/194 | |
| Unit Shipping Weight (Lbs/kg): | 551/250 | 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 | | | |

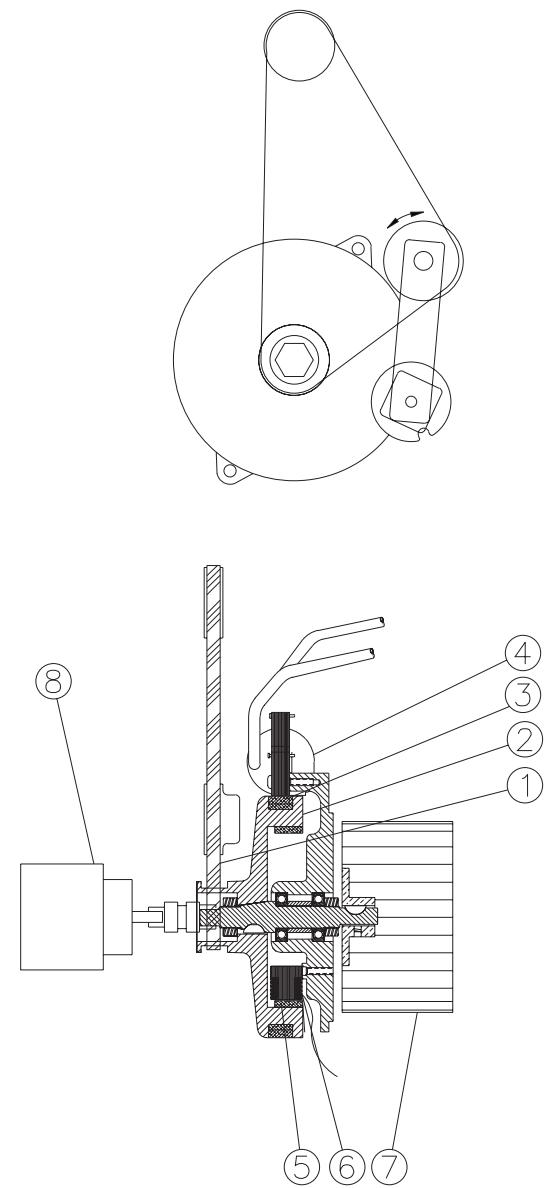
FLOW CHART



OMHSP090-040705-RZ

©Copyright 2005

EMF SYSTEM



OMHSP046-072996-BAR

EX-9508-121217

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 bypass 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.

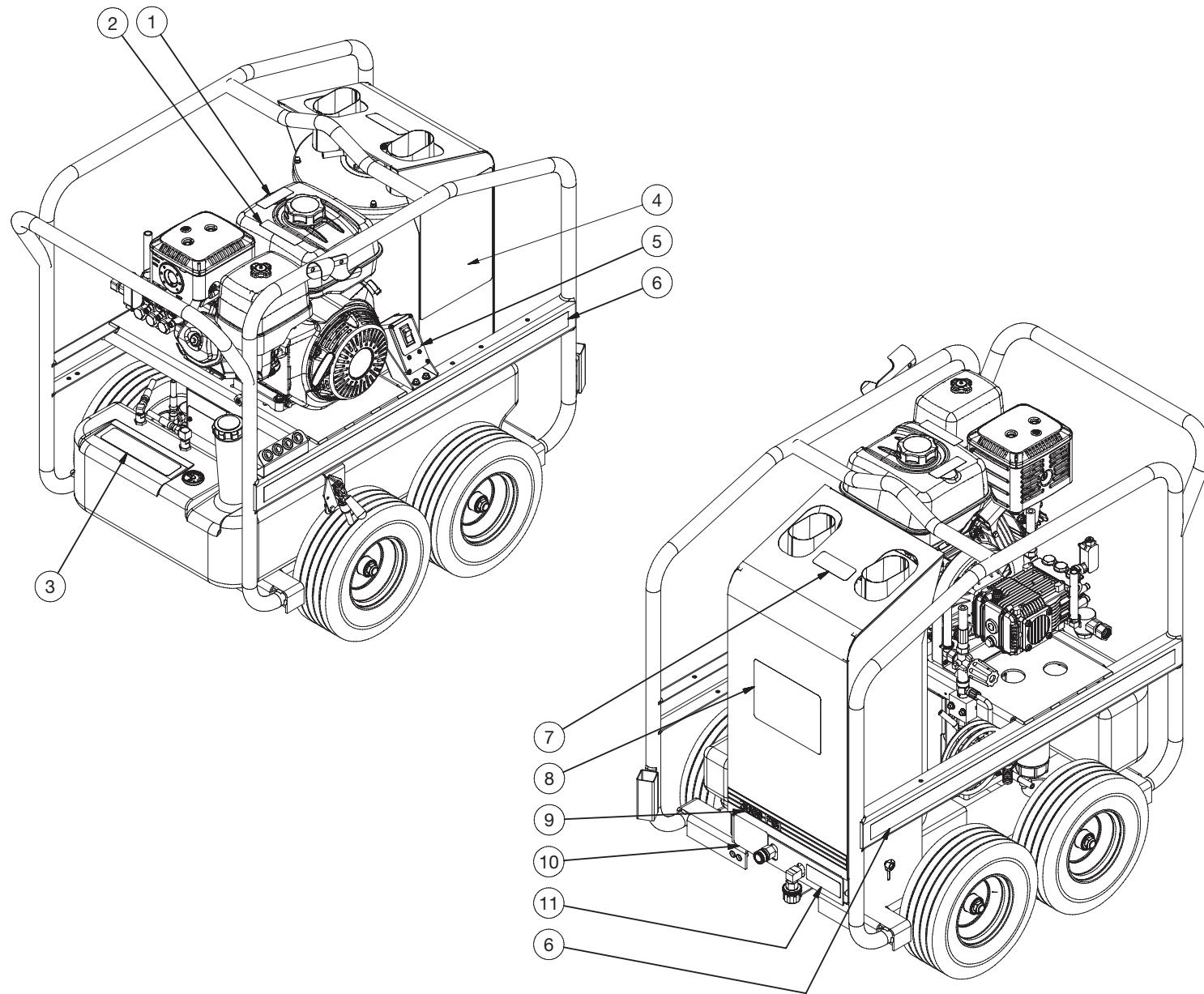
EMF SYSTEM: The patented Electro Magnetic Firing (EMF) System is an integrated system which gives all the requirements for combustion.

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 to the hub by means of a flexible coupler.

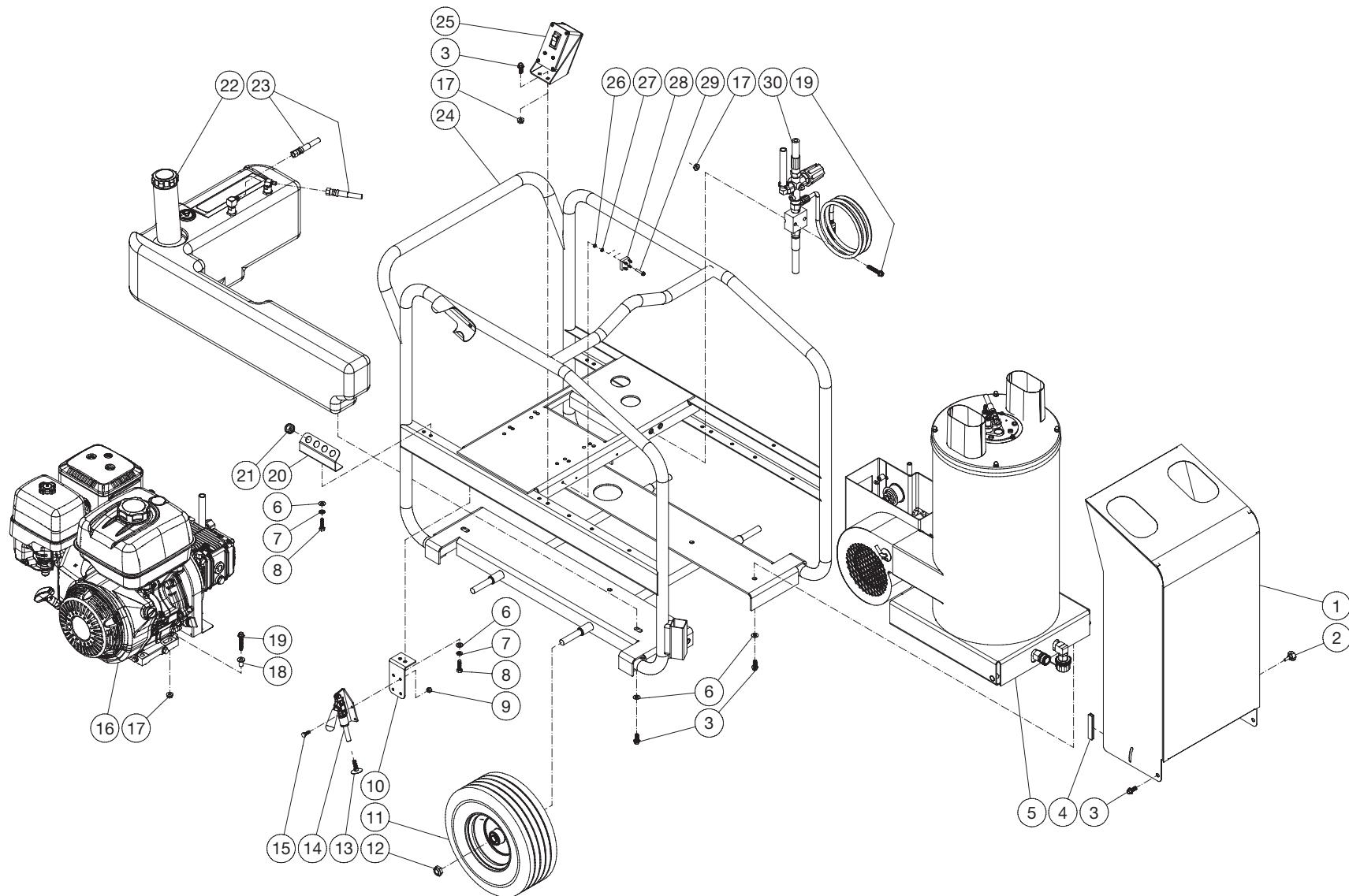
DECAL PLACEMENT



DH LG DECAL PLACEMENT 080217 JJR

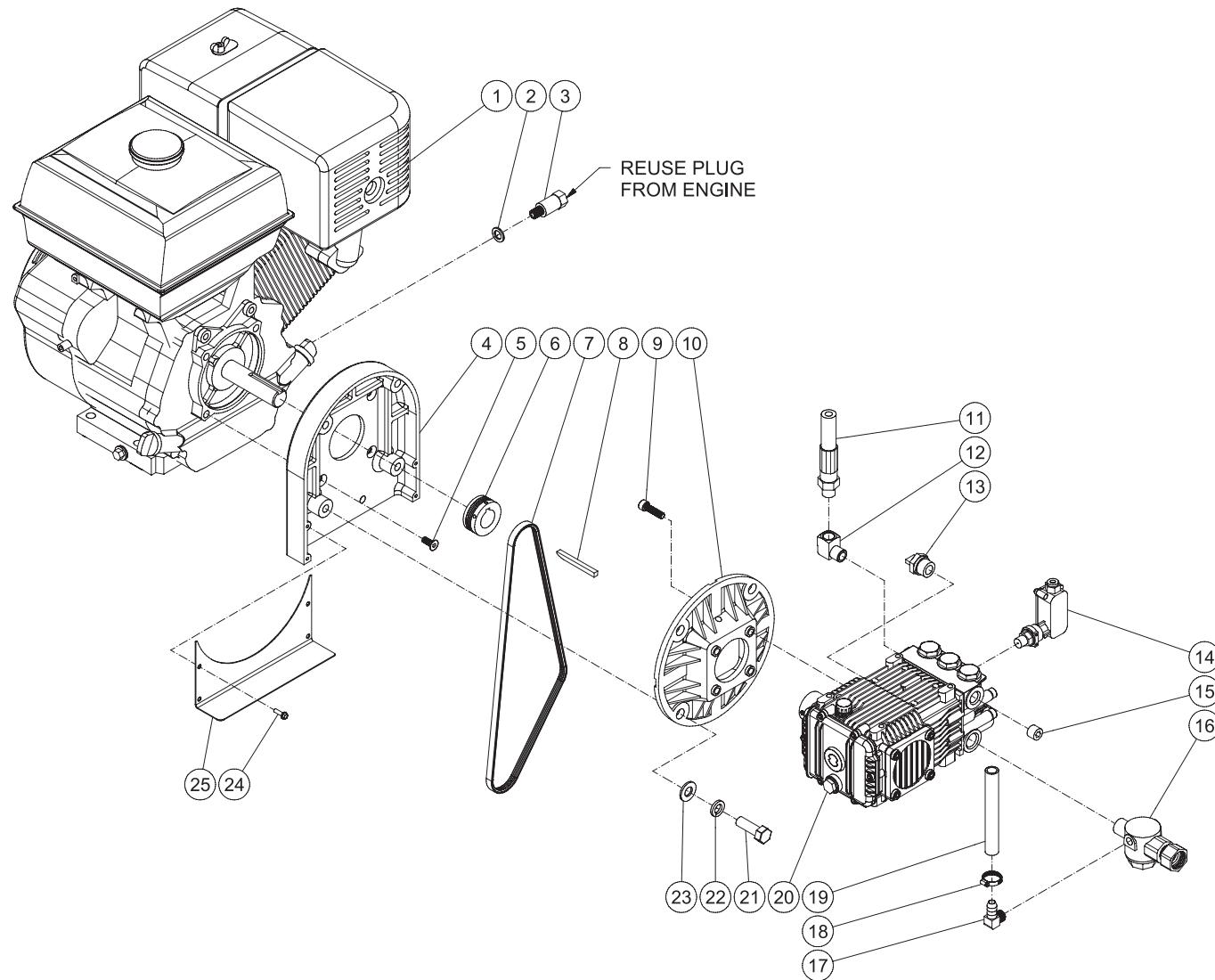
| DECAL PLACEMENT | | | |
|-----------------|--|---------|---|
| 1 | DECAL - RISK OF FIRE (SEE 71-0010) | N/A | 1 |
| 2 | DECAL - RISK OF BURNS (SEE 71-0010) | N/A | 1 |
| 3 | DECAL - CAUTION: RISK OF FIRE (SEE 71-0010) | N/A | 1 |
| 4 | DECAL - WARNING/CAUTION/OPERATION (SEE 71-0010) | N/A | 1 |
| 5 | DECAL - BURNER ON/OFF (SEE 71-0010) | N/A | 1 |
| 6 | DECAL - STRIPE | N/A | 2 |
| 7 | DECAL - HOT SURFACES (SEE 71-0010) | N/A | 1 |
| 8 | DECAL - LOGO | N/A | 1 |
| 9 | DECAL - 14" STRIPE | N/A | 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)



| FRAME ASSEMBLY | | | |
|----------------|-----------------------------|------------|-----|
| 099 080317 JJR | | | |
| ITEM | DESCRIPTION | PART # | 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 | 14-0150 | 4 |
| 12 | LOCKNUT | 30-0117 | 4 |
| 13 | BOLT | 27-9550 | 1 |
| 14 | PUSH/PULL TOGGLE CLAMP | 33-0400 | 1 |
| 15 | BOLT | 27-0015 | 2 |
| 16 | ENGINE/ PUMP ASSEMBLY | N/A | 1 |
| 17 | NUT | 30-3023 | 8 |
| 18 | SHIM | 33-0169 | 4 |
| 19 | BOLT | 27-9529 | 6 |
| 20 | NOZZLE HOLDER | 20-1198A01 | 1 |
| 21 | GROMMET | 33-0001 | 4 |
| 22 | FUEL TANK ASSEMBLY | 850-0193 | 1 |
| 23 | FUEL HOSE | 15-0147 | 2 |
| 24 | FRAME | 5-0120A01 | 1 |
| 25 | ELECTRIC BOX ASSEMBLY | N/A | 1 |
| 26 | NUT | 30-6001 | 1 |
| 27 | STAR WASHER | 28-1009 | 1 |
| 28 | BRIDGE RECTIFIER | 32-1114 | 1 |
| 29 | BOLT | 27-8807 | 1 |
| 30 | UNLOADER/ MANIFOLD ASSEMBLY | N/A | 1 |

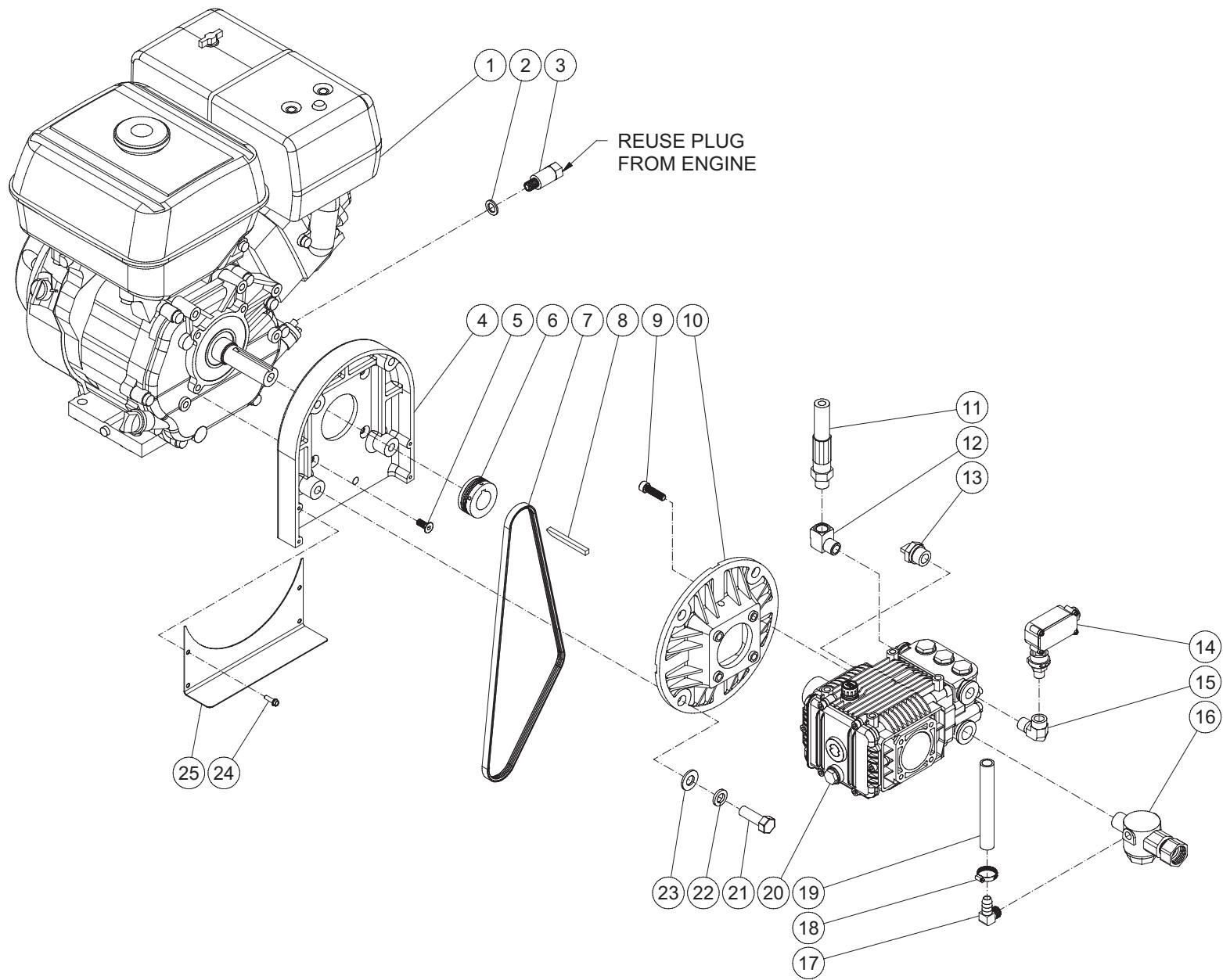
ENGINE/ PUMP ASSEMBLY (3004, 3504)



100-033017 ALC

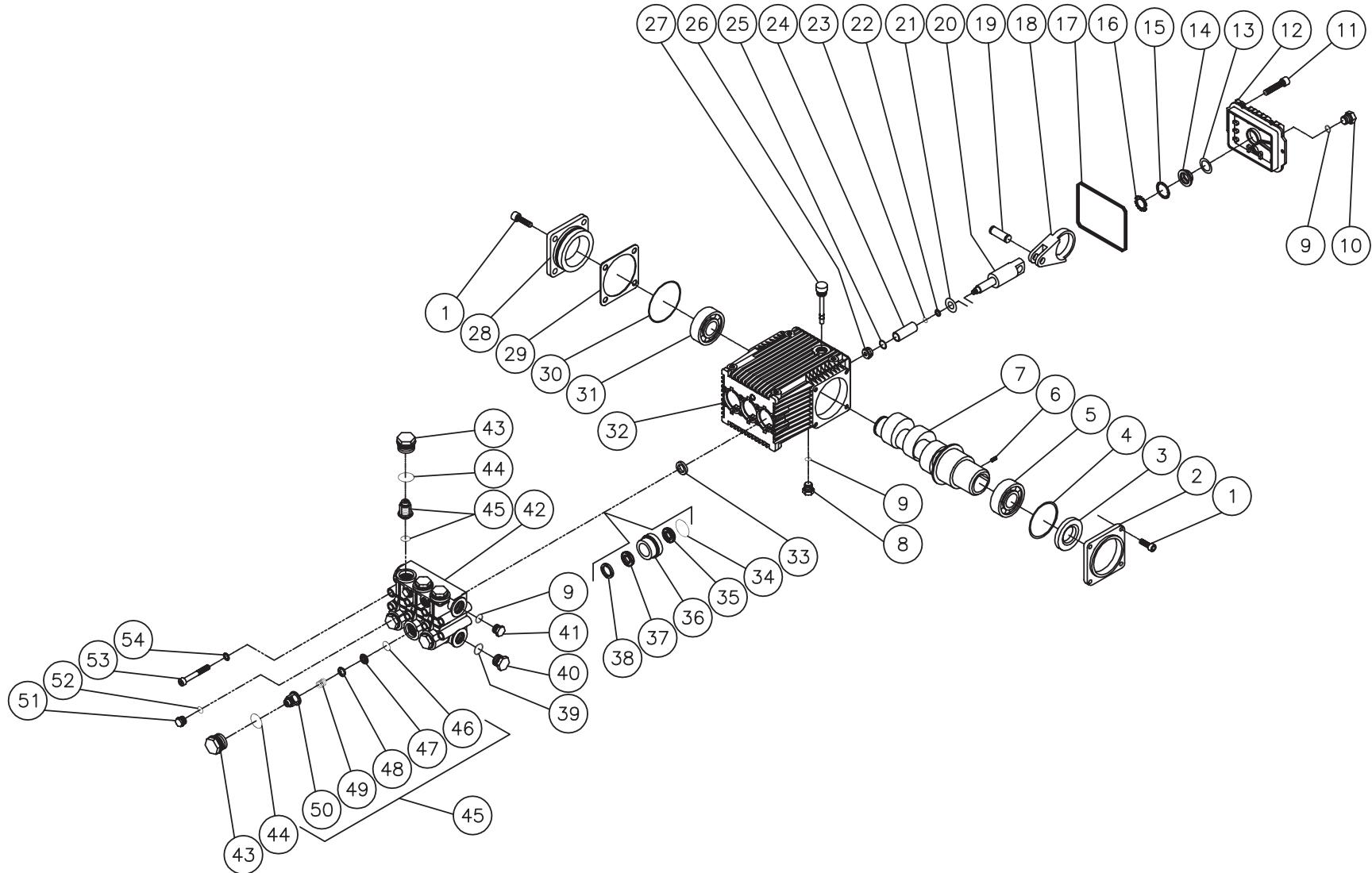
| ENGINE/PUMP ASSEMBLY | | | |
|---------------------------------|-------------------------------------|------------|-----|
| 100 033017 ALC | | | |
| ITEM | DESCRIPTION | PART # | QTY |
| 1 | ENGINE - HONDA | 1-0086 | 1 |
| - | ENGINE - HONDA 13.0 HP RECOIL - RED | 1-0205 | 1 |
| - | ENGINE - KOHLER 429CC RECOIL | 1-0208 | 1 |
| 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 (3003)



| 134 033017 ALC | | | |
|---------------------------------|---------------------------|------------|-----|
| ENGINE/PUMP ASSEMBLY | | | |
| ITEM | DESCRIPTION | PART # | QTY |
| 1 | ENGINE | 1-0162 | 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 | 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

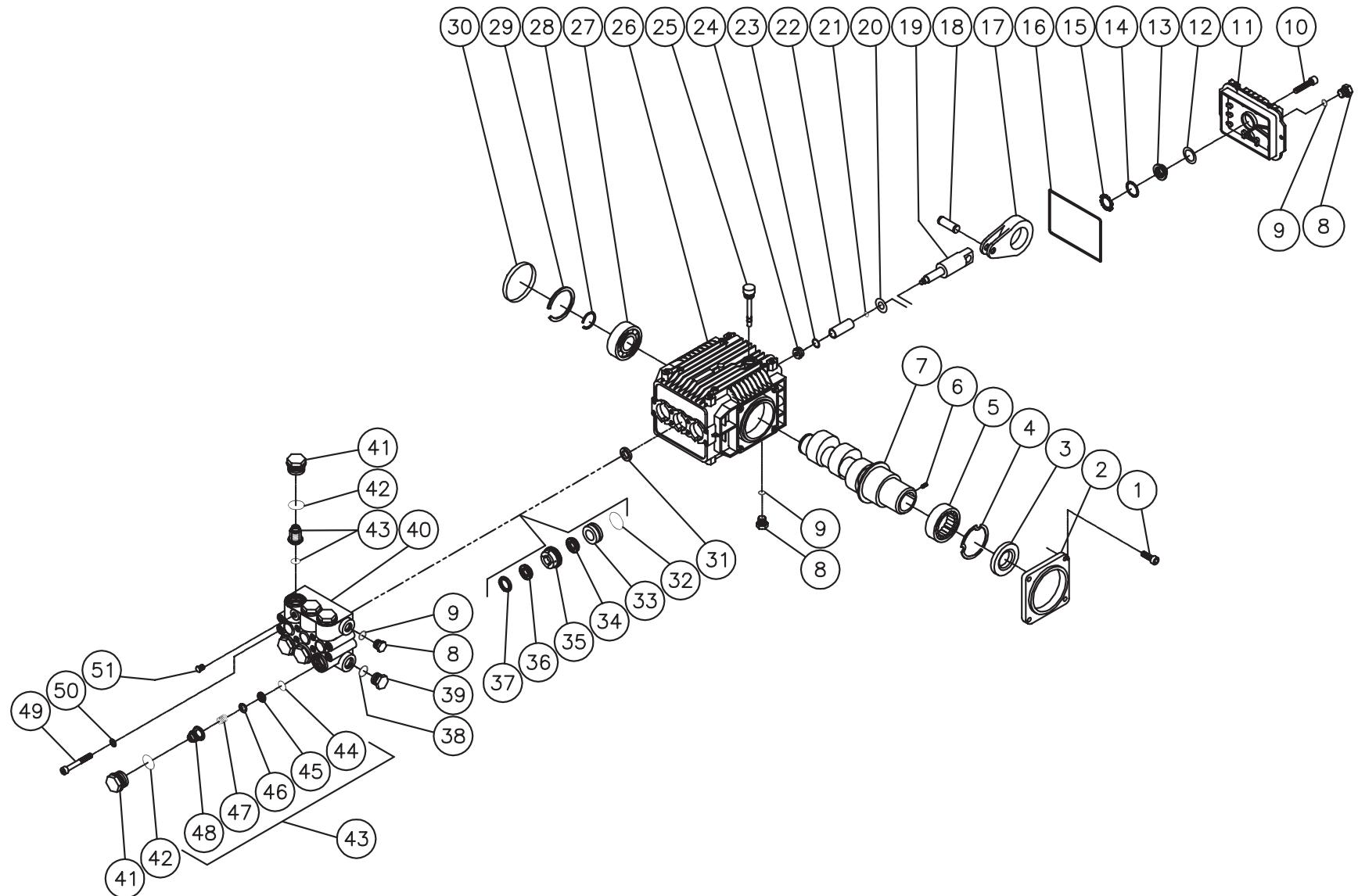
PUMP ASSEMBLY

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

REPLACEMENT KITS

| 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 (3-0241)

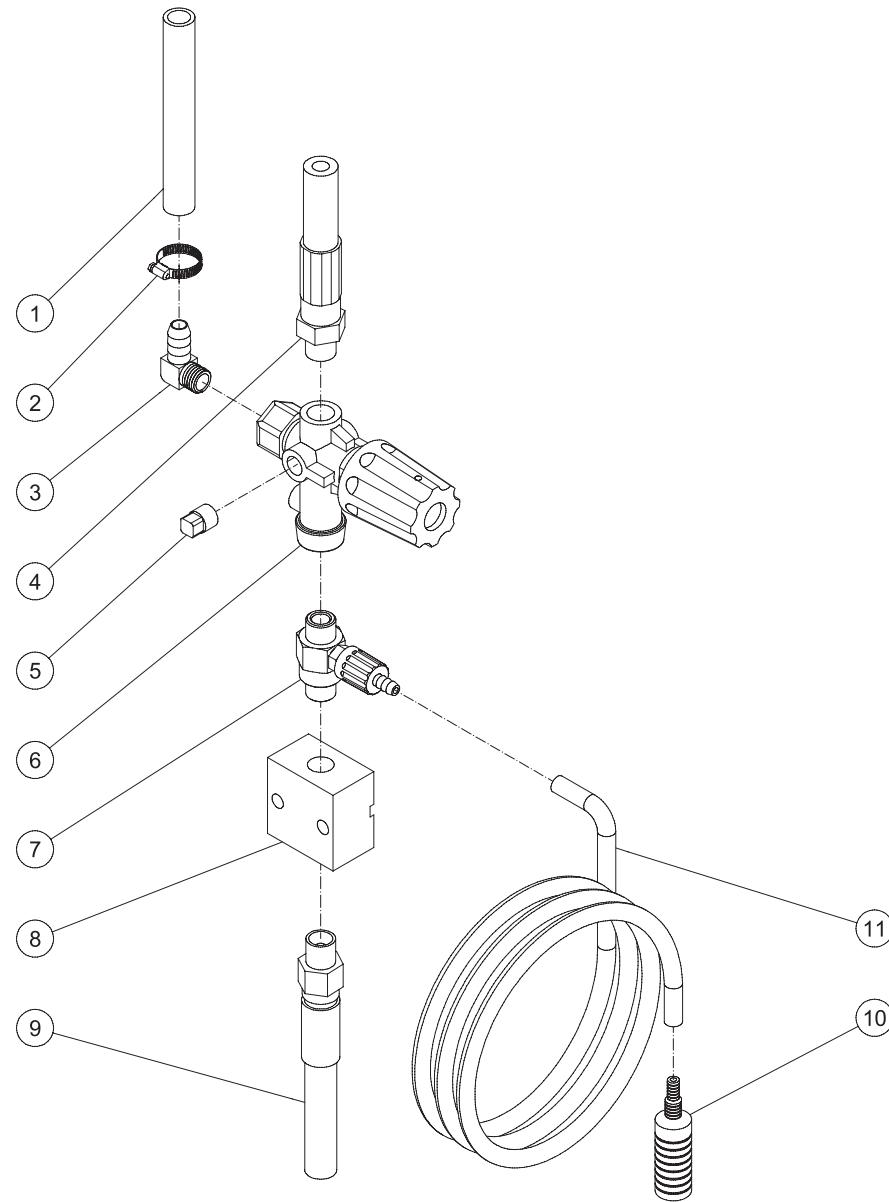


3-0241 040814ALC

| PUMP ASSEMBLY (3-0241) | | | | | 3-0241-040814 ALC | | | |
|------------------------|-----------------|---------|------|--|-------------------|---|---------|------|
| 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 | | | | | |

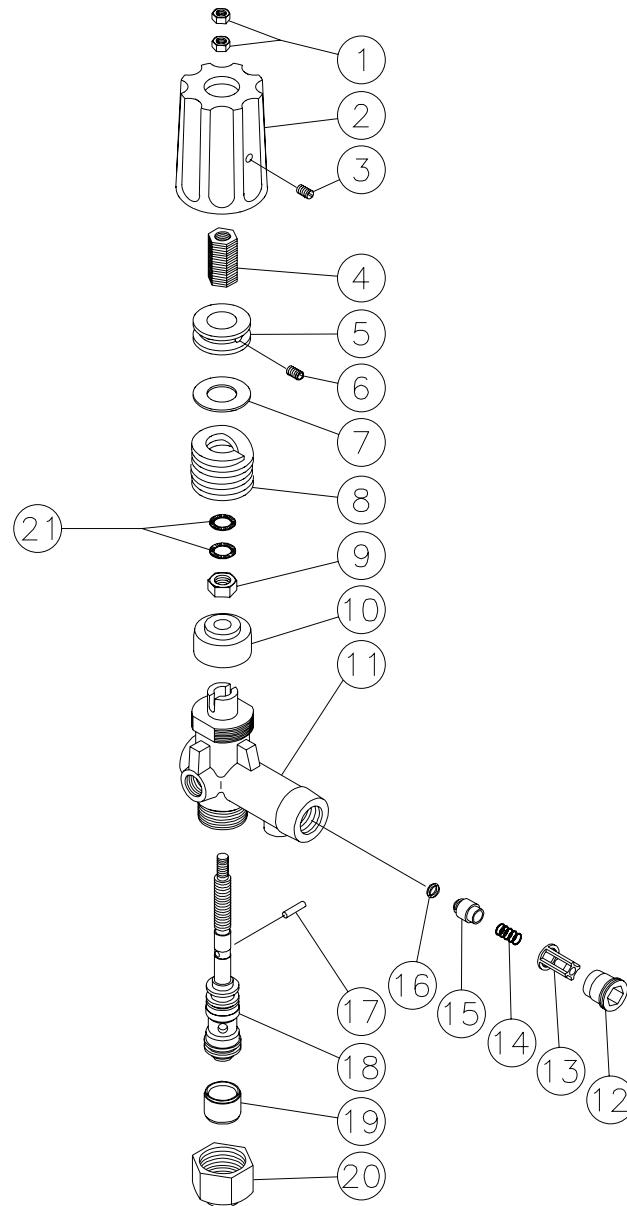
| REPLACEMENT KITS | | | | |
|------------------|--|------------|-----------------|----------------|
| KIT # | DESCRIPTION | ITEMS | # OF ASSEMBLIES | # OF CYLINDERS |
| 70-0181 | Kit- High Pressure Seal (Inc. 3 each 32, 34, 36) | 32, 34, 36 | 3 | 3 |
| 70-0182 | Kit- Support Ring (Includes 3 each 37)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

UNLOADER/MANIFOLD ASSEMBLY



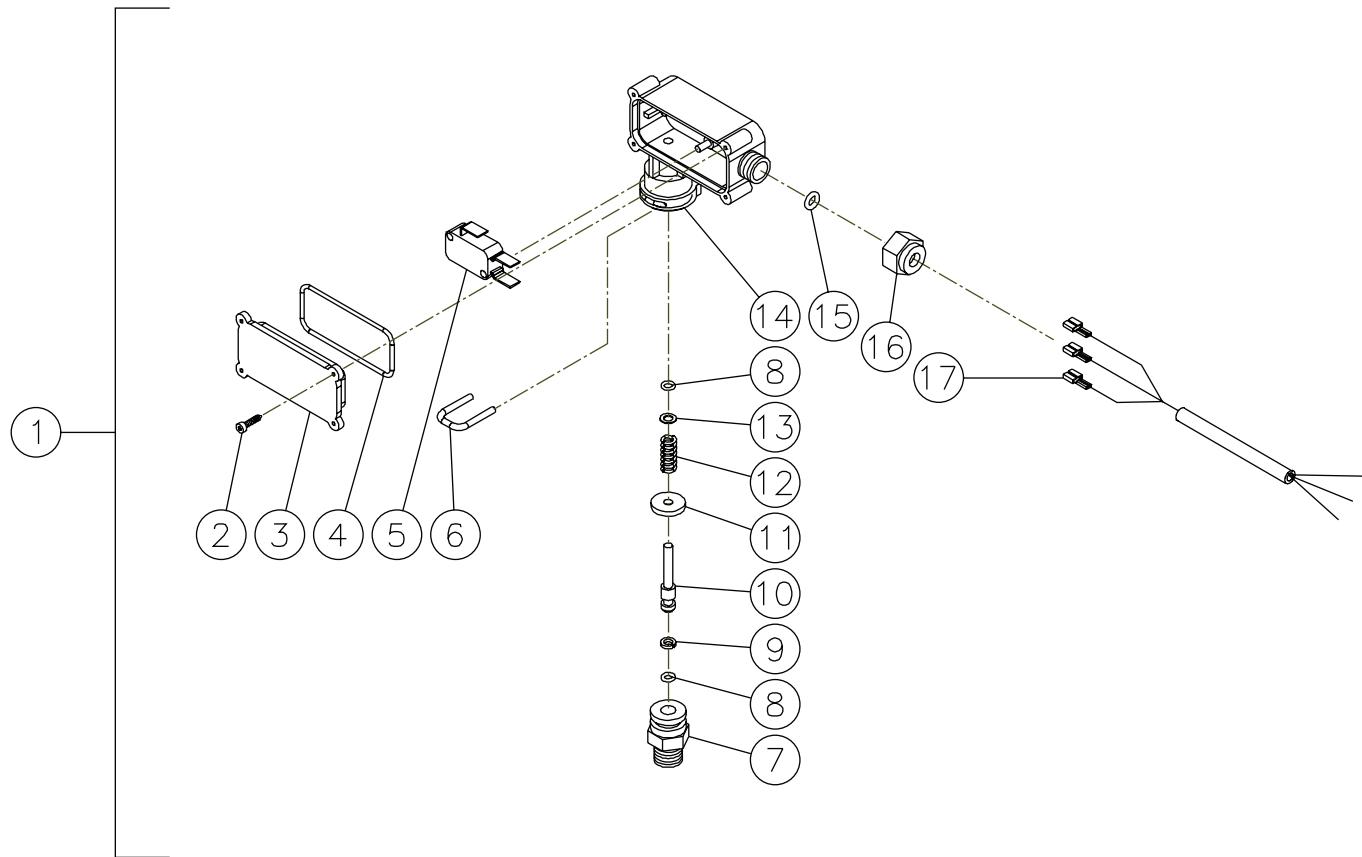
| UNLOADER/MANIFOLD ASSEMBLY | | | |
|---------------------------------|------------------------------------|----------|-----|
| ITEM | DESCRIPTION | PART # | QTY |
| 1 | HOSE *(TWO FEET REQUIRED) | 15-0007 | 1 |
| 2 | HOSE CLAMP | 42-0011 | 1 |
| 3 | ELBOW | 23-0119 | 1 |
| 4 | HIGH PRESSURE HOSE | 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)



| 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 | |

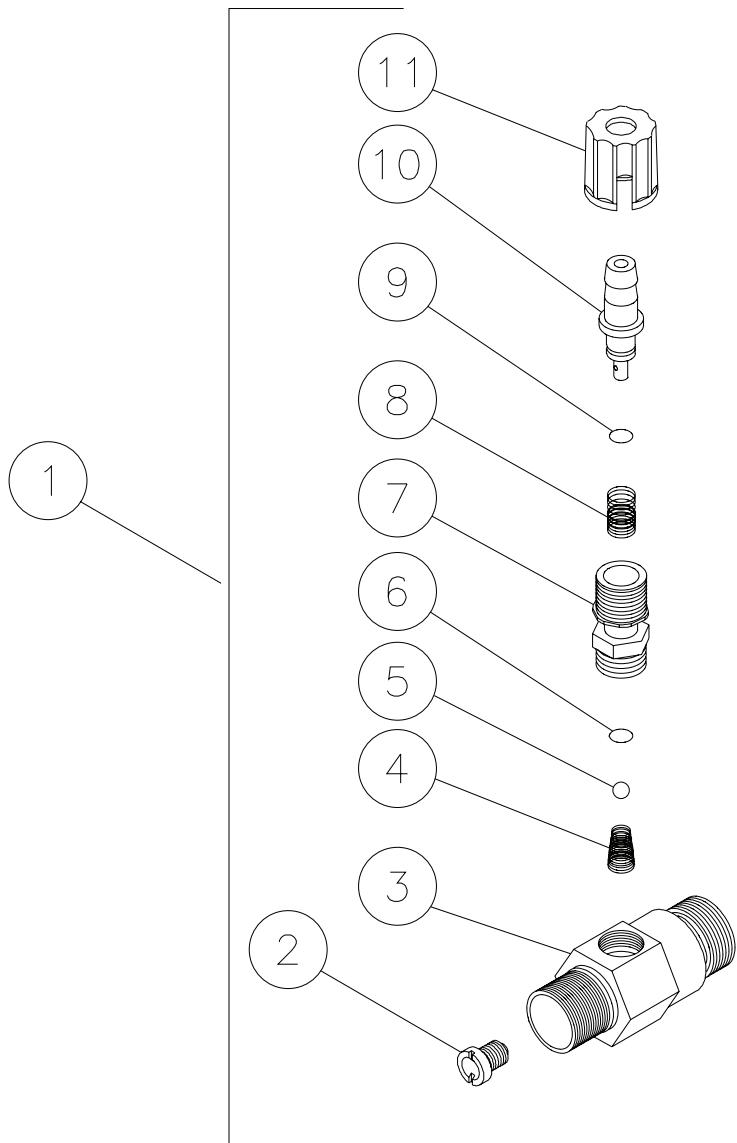
PRESSURE SWITCH (22-0171)



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 | |

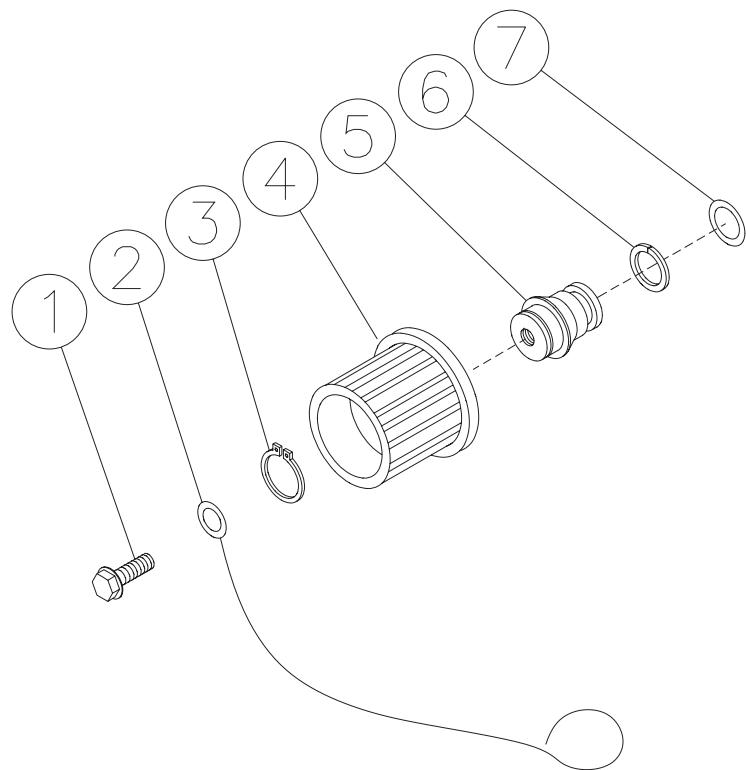
DETERGENT INJECTOR (50-0052)



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 | |

COIL DRAIN PLUG (850-0218)

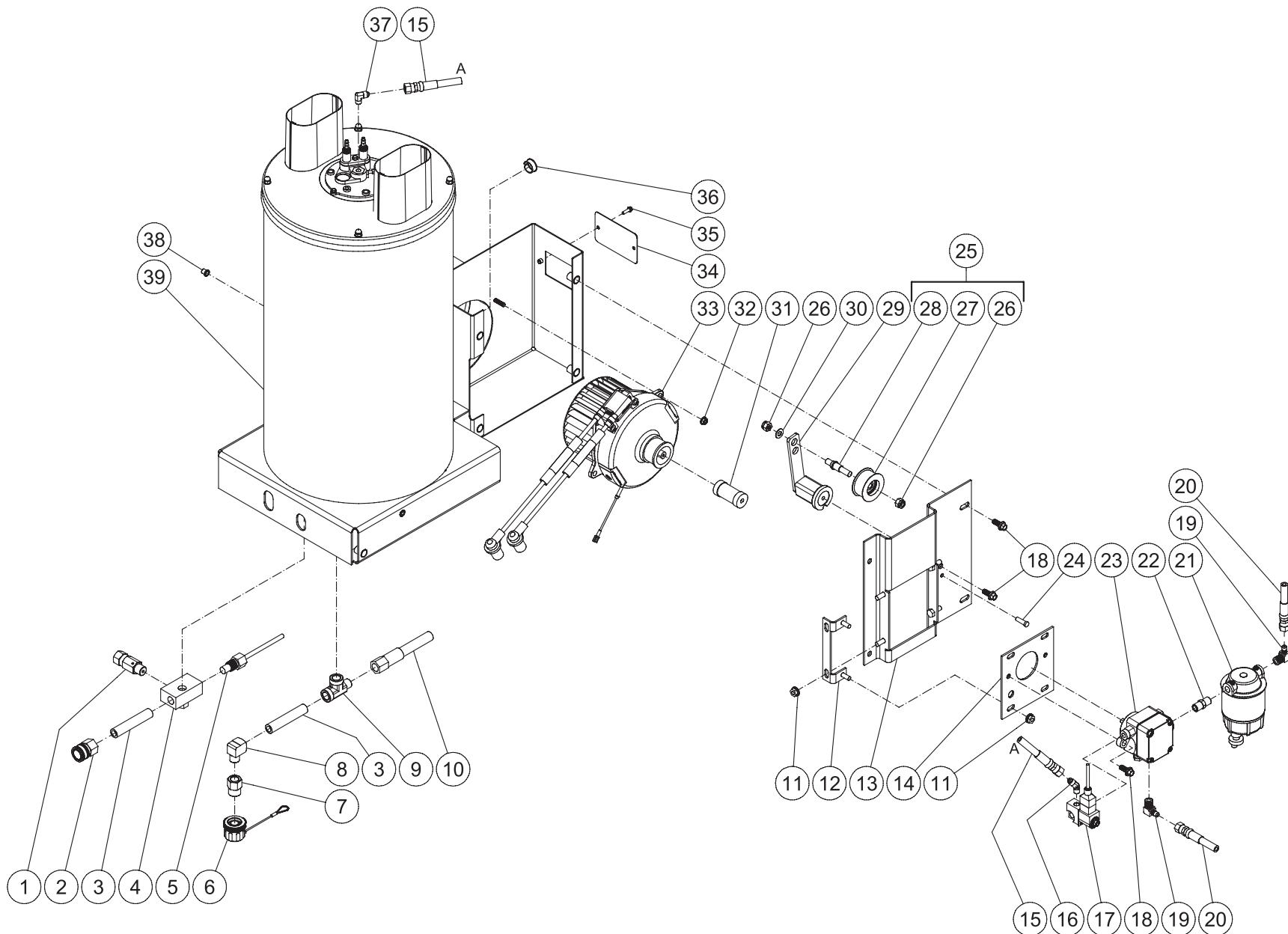


850-0218-041597-BAR

| 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

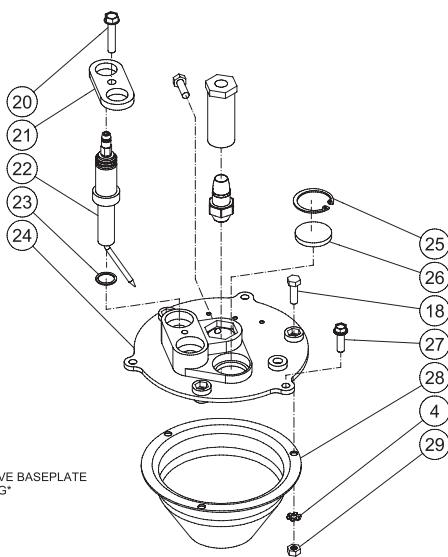
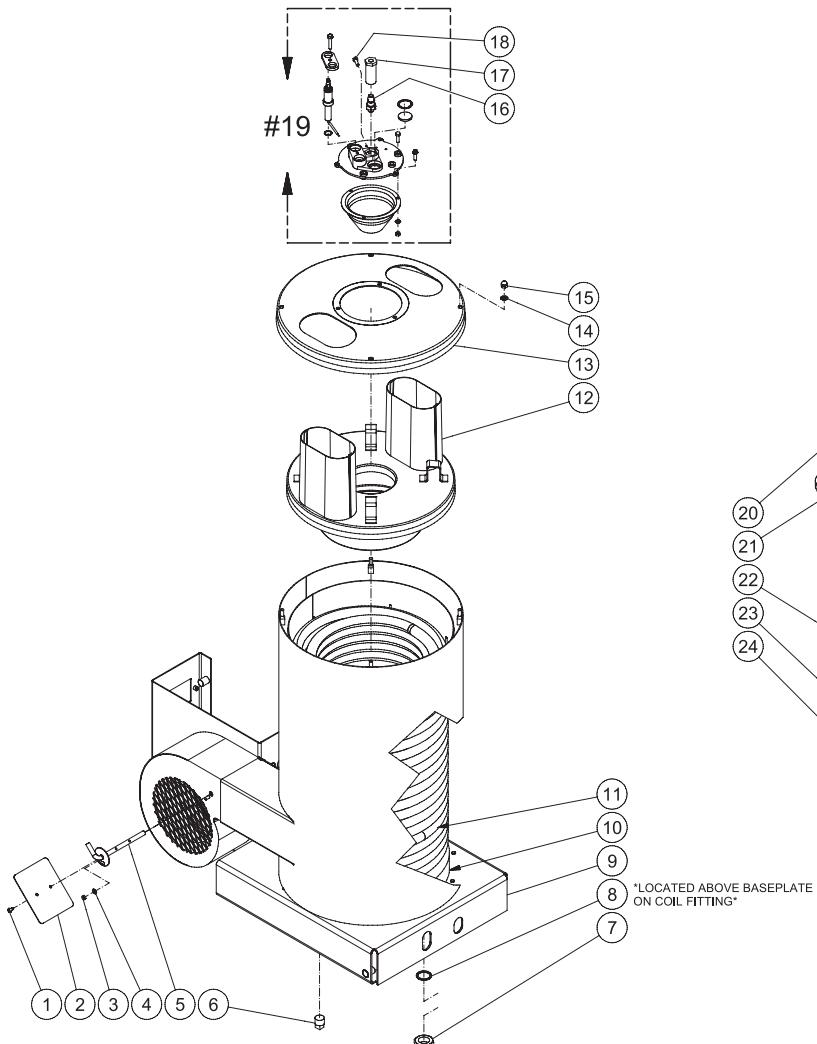
HEAT EXCHANGER/EMF SYSTEM (AFTER SERIAL #15070469)



083 122214 KMD

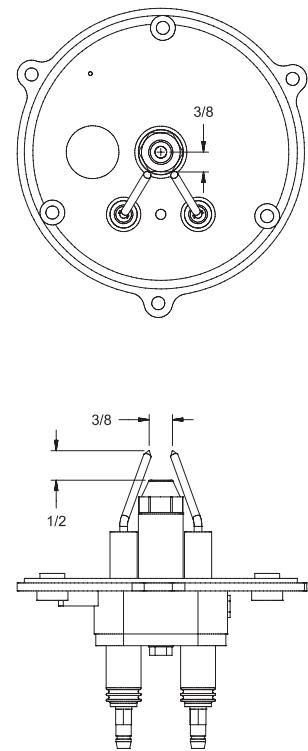
| HEAT EXCHANGER/EMF SYSTEM | | | |
|---------------------------|---------------------------------|------------|-----|
| 083 122214 KMD | | | |
| ITEM | DESCRIPTION | PART # | QTY |
| 1 | PRESSURE RELIEF VALVE | 22-0273 | 1 |
| 2 | QC SOCKET | 17-0004 | 1 |
| 3 | PIPE NIPPLE | 24-0165 | 2 |
| 4 | OUTLET 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



ITEM #19
850-0351

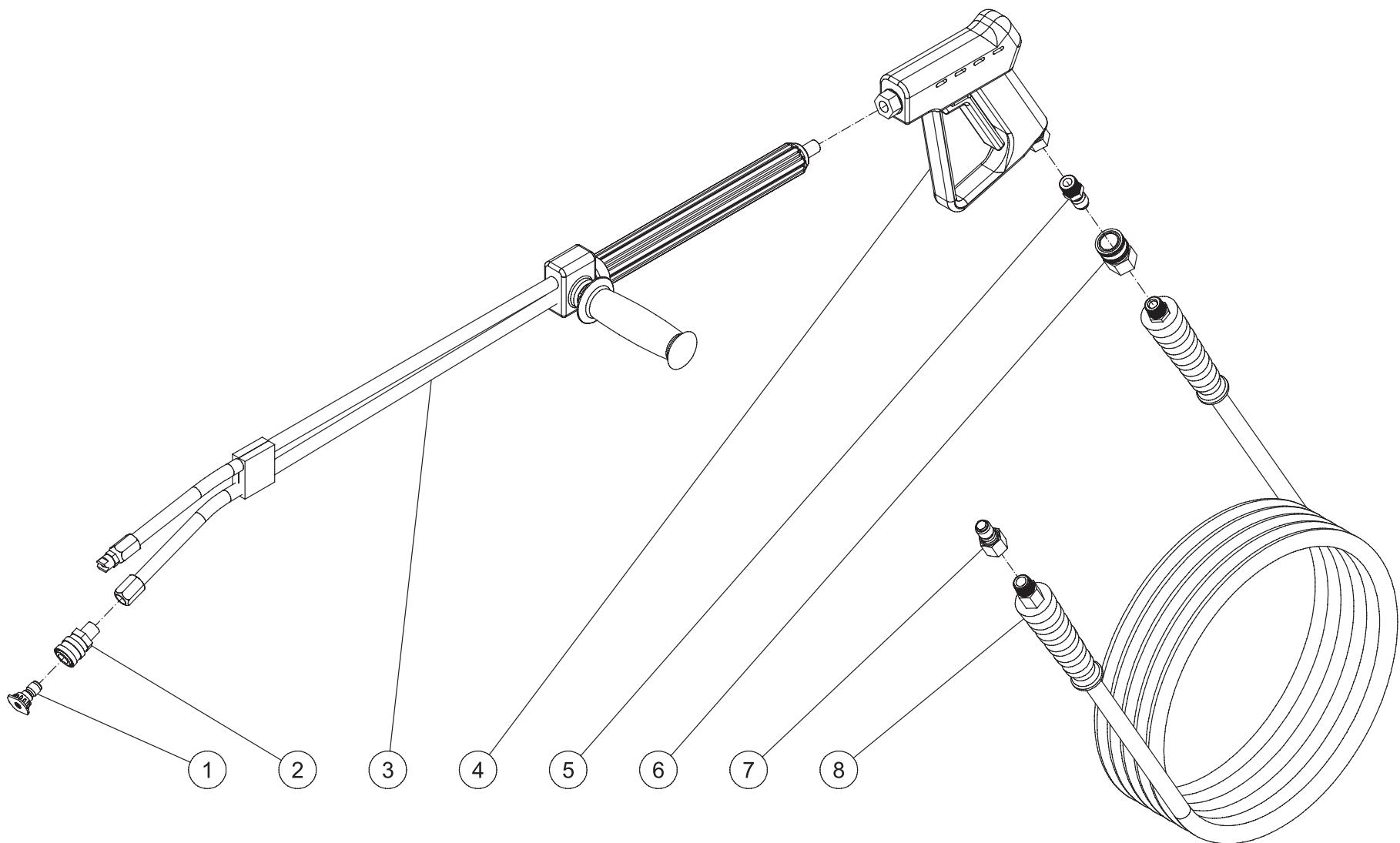
ELECTRODE GAP SETTINGS



ELECTRODE PLATE ASSY 062308-CH

| BOILER ASSEMBLY | | | |
|--------------------|--|------------|-----|
| 850-0226 092413 CH | | | |
| 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 |

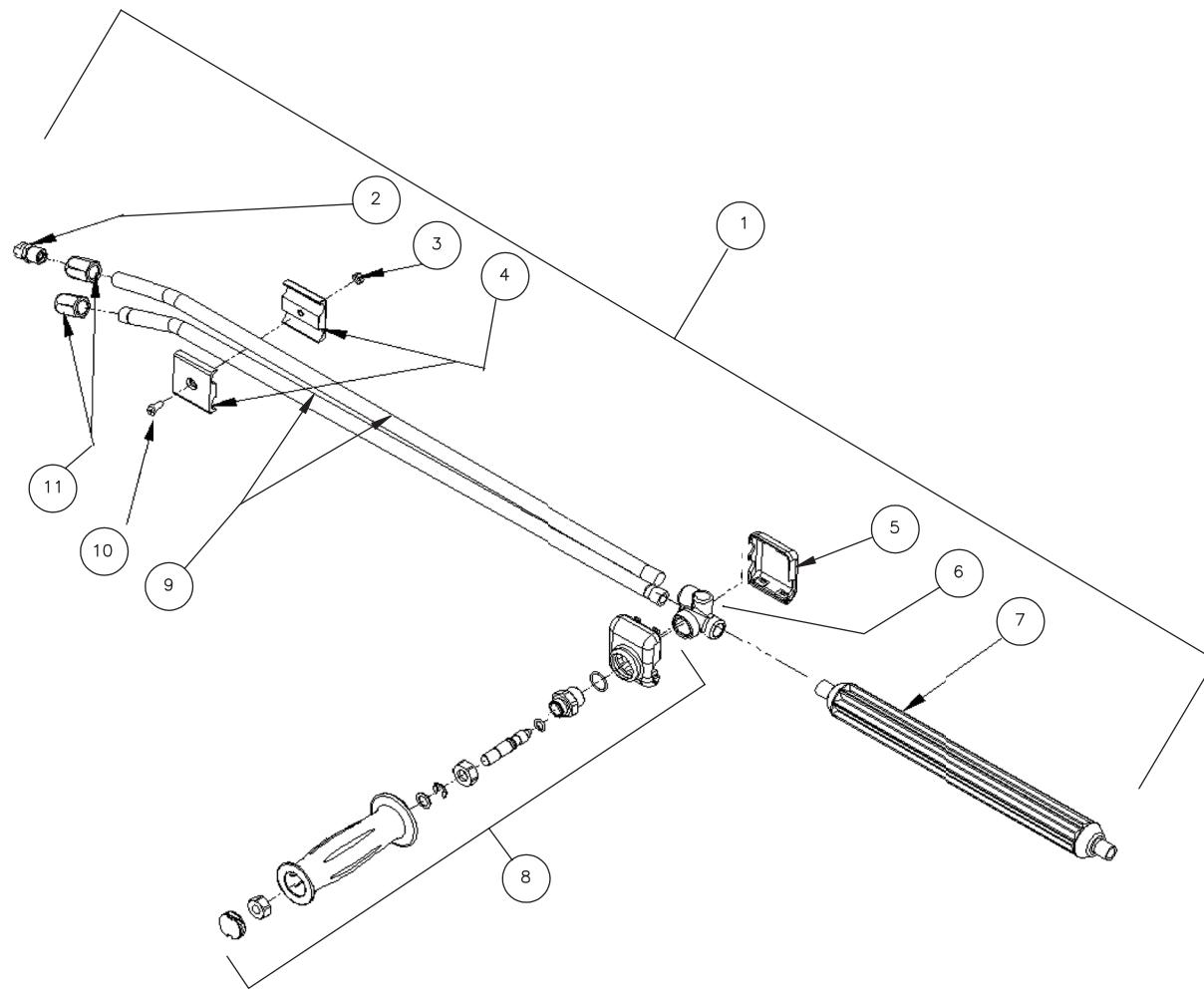
GUN / WAND / HOSE ASSEMBLY



LG - GUN_WAND_HOSE ASSY 011215 KMD

| 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)



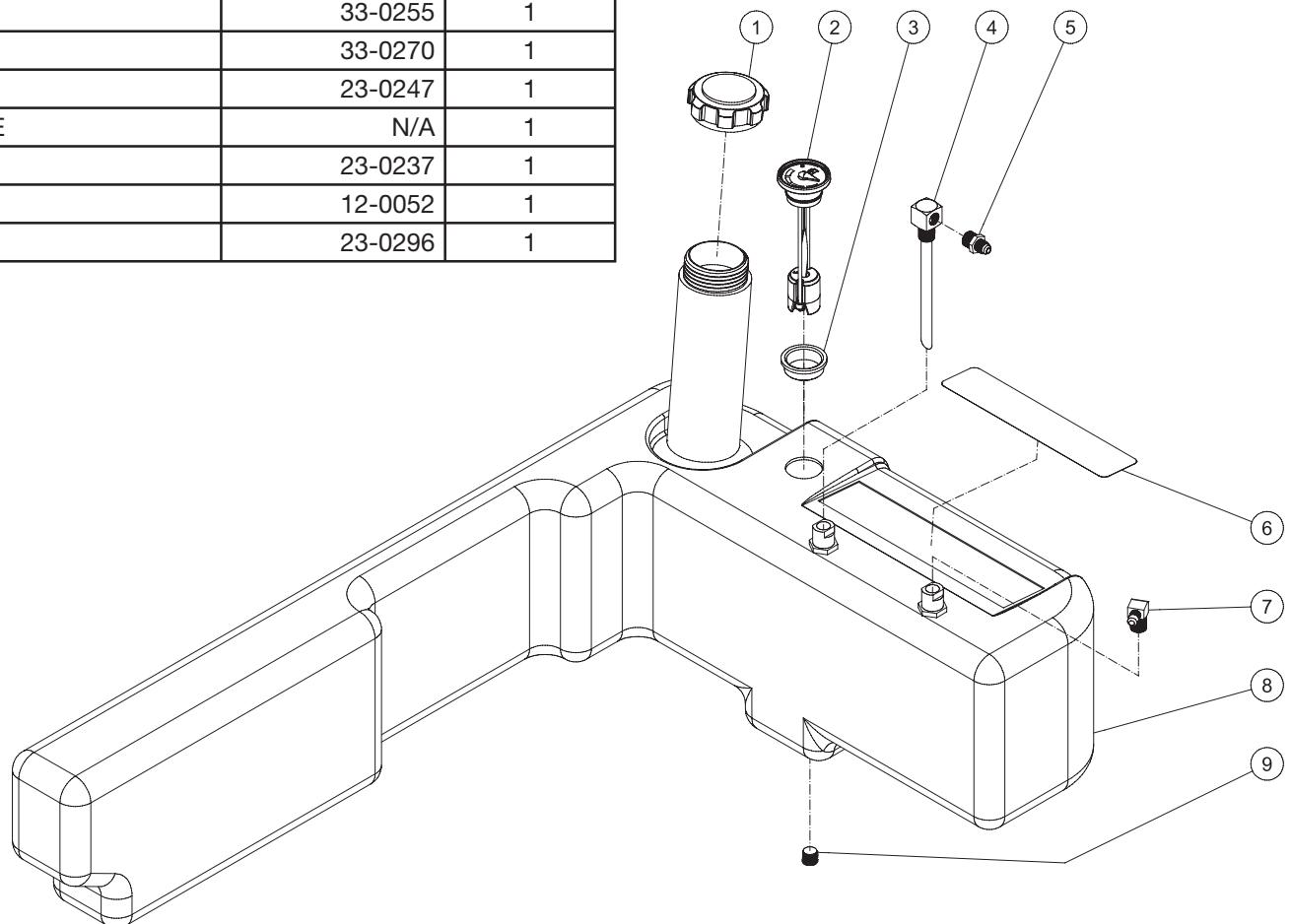
16-0416_16-0417-102405-RZ

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 |

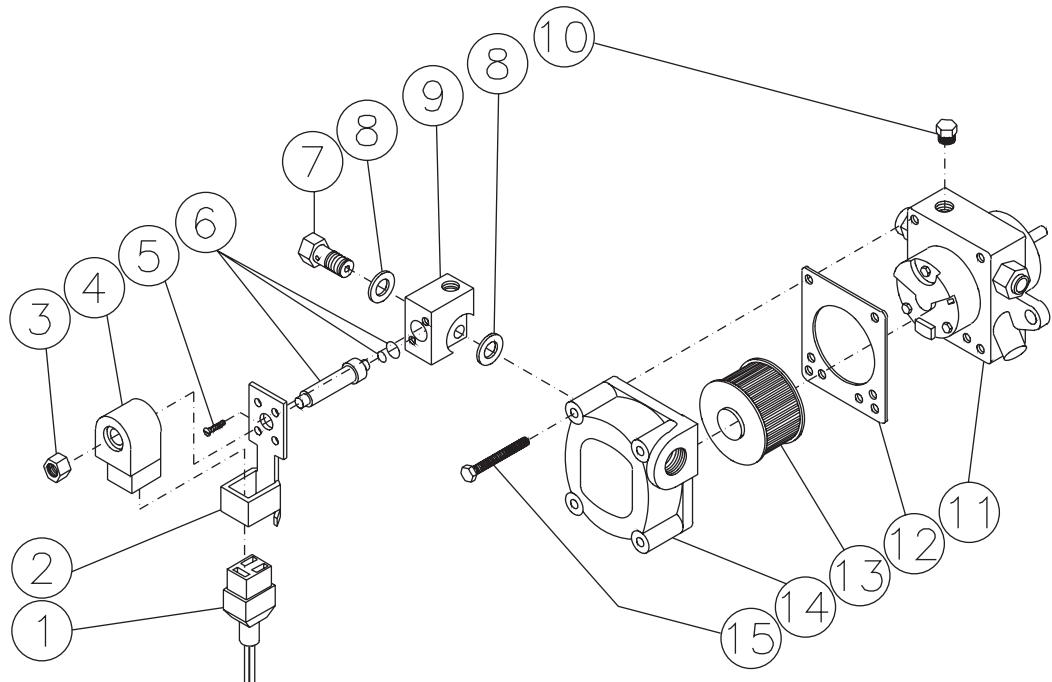
FUEL TANK (850-0248)

| 850-0193 112515 CH | | | |
|--------------------|-------------------------------|---------|-----|
| FUEL TANK | | | |
| ITEM | DESCRIPTION | PART # | QTY |
| 1 | FUEL CAP | 12-0033 | 1 |
| 2 | FUEL GAUGE | 22-0215 | 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 | N/A | 1 |
| 7 | ELBOW | 23-0237 | 1 |
| 8 | FUEL TANK | 12-0052 | 1 |
| 9 | PLUG | 23-0296 | 1 |



850-0193 112515 CH

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

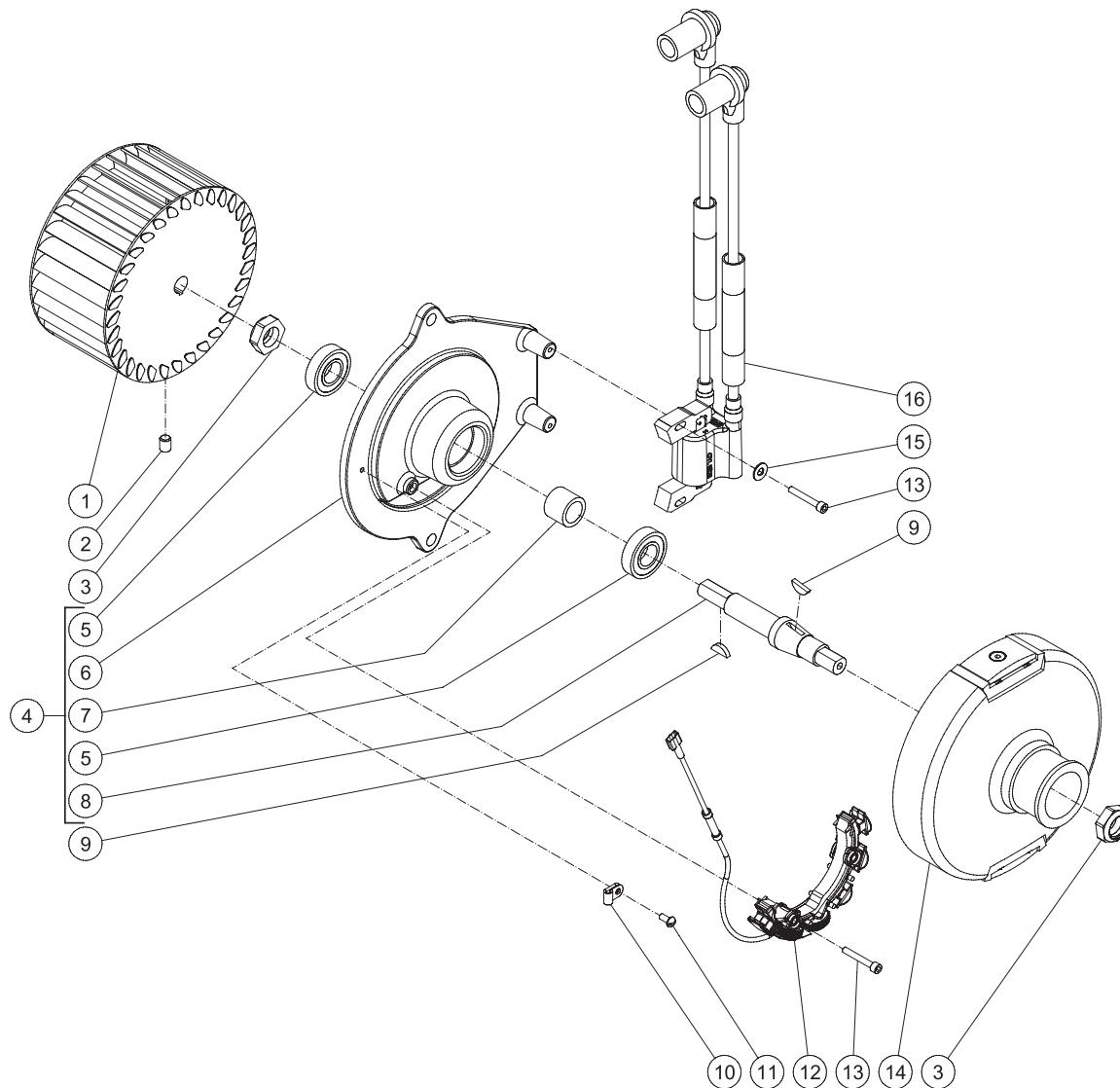


0MHSP049-080902-BAR

| 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

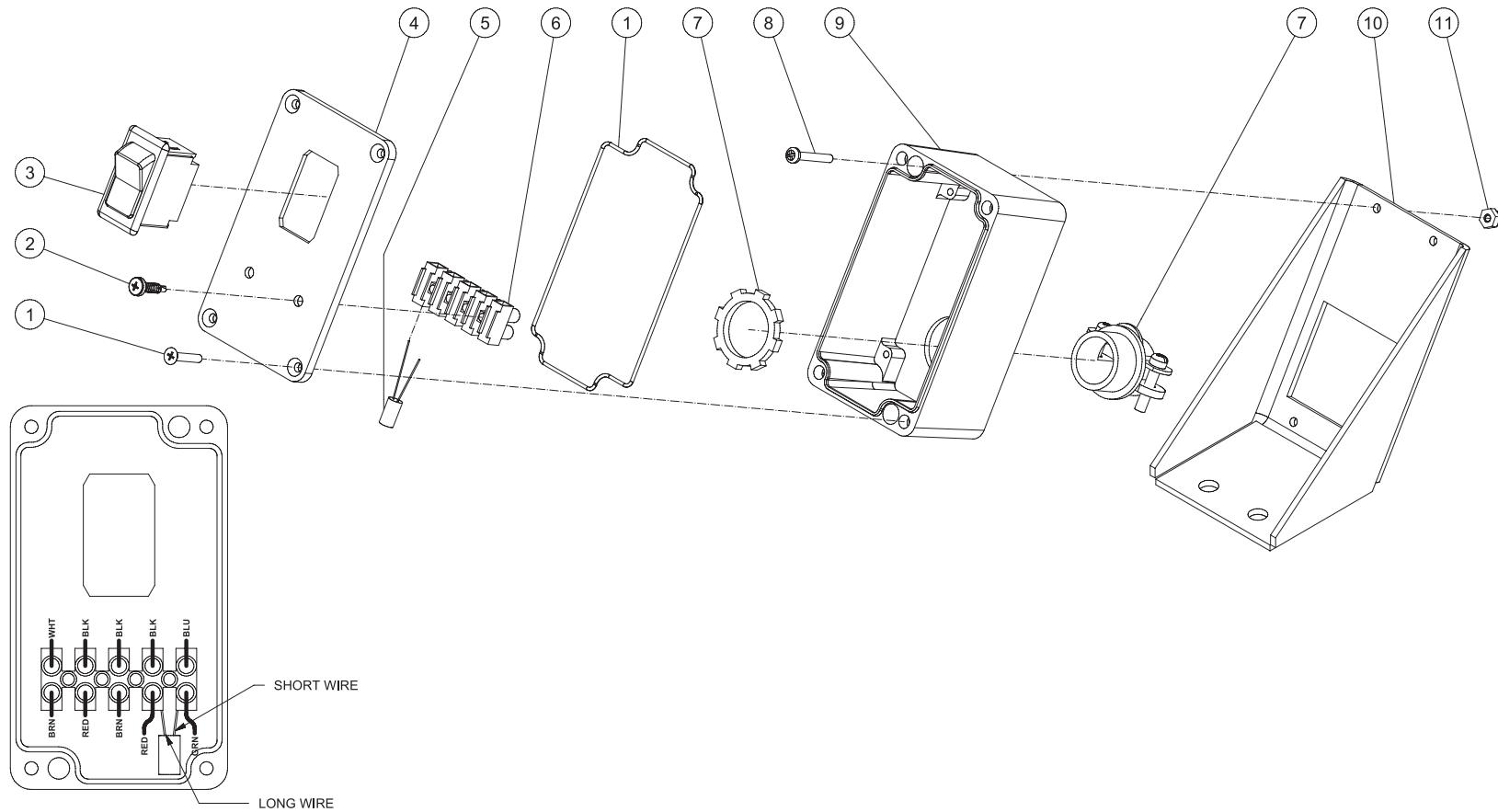
EMF SYSTEM (850-0403) (AFTER SERIAL #15074024)



850-0403 031113 CH

| EMF SYSTEM | | | |
|--------------------|------------------------|----------|-----|
| 850-0403 031113 CH | | | |
| 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 |

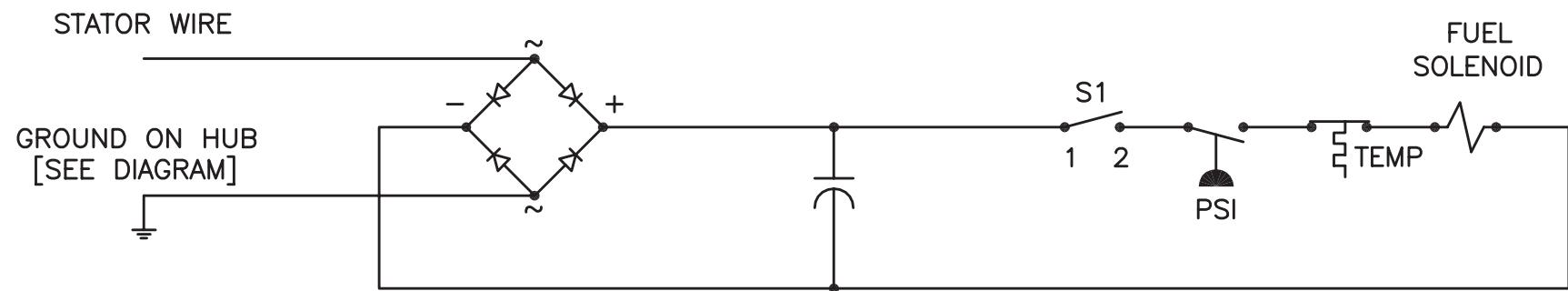
ELECTRIC BOX



| 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

