

Parts & Service



Spray Star 1750D
Diesel Model 17-500

SN: 175GD139

November 2010

Product Support:

Hwy 55 & Poplar Ave; Cameron WI 54822

1-800-891-9435 productsupport@smithco.com

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Thank you for purchasing a **SMITHCO** product.

Read this manual and all other manuals pertaining to the Spray Star 1750 carefully as they have safety, operating, assembly and maintenance instructions. Failure to do so could result in personal injury or equipment damage.

Keep manuals in a safe place after operator and maintenance personnel have read them. Right and left sides are from the operator's seat, facing forward.

All **SMITHCO** machines have a Serial Number and Model Number. Both numbers are needed when ordering parts. The serial number plate on the Spray Star 1750 is located on the left main frame, by front bumper. Refer to engine manual for placement of engine serial number.

For easy access record your Serial and Model numbers here.

| | | | |
|--|----------------------|----------------------|-----------|
| SMITHCO | | | CE |
| <small>WAYNE, PENNSYLVANIA 19087 USA 610-688-4009 Fax 610-688-6069</small> | | | |
| SERIAL NO. | kW/hp | DATE OF MFG. | |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | |
| MODEL NO. | lb/kg Empty | lb/kg Full | |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | |



Information needed when ordering replacement parts:

1. Model Number of machine
2. Serial Number of machine
3. Name and Part Number of part
4. Quantity of parts

SAFE PRACTICES

1. It is your responsibility to read this manual and all publications associated with this machine.
2. Never allow anyone to operate or service the machine or its optional equipment without proper training and instructions. Never allow minors to operate any equipment.
3. Learn the proper use of the machine, the location and purpose of all the controls and gauges before you operate the equipment. Working with unfamiliar equipment can lead to accidents.
4. Wear all the necessary protective clothing and personal safety devices to protect your head, eyes, ears, hands and feet. Operate the machine only in daylight or in good artificial light.
5. Inspect the area where the equipment will be used. Pick up all debris you can find before operating. Beware of overhead obstructions and underground obstacles. Stay alert for hidden hazards.
6. Never operate equipment that is not in perfect working order or without decals, guards, shields, or other protective devices in place.
7. Never disconnect or bypass any switch.
8. Carbon monoxide in the exhaust fumes can be fatal when inhaled, never operate a machine without proper ventilation.
9. Fuel is highly flammable, handle with care.
10. Keep engine clean. Allow the engine to cool before storing and always remove the ignition key.
11. Disengage all drives and set park brake before starting the engine.
12. Never use your hands to search for oil leaks. Hydraulic fluid under pressure can penetrate the skin and cause serious injury.
13. This machine demands your attention. To prevent loss of control or tipping of the vehicle:
 - A. Use extra caution in backing up the vehicle. Ensure area is clear.
 - B. Do not stop or start suddenly on any slope.
 - C. Reduce speed on slopes and in sharp turns. Use caution when changing directions on slopes.
 - D. Stay alert for holes in the terrain and other hidden hazards.
14. Before leaving operator's position:
 - A. Disengage all drives.
 - B. Set park brake.
 - C. Shut engine off and remove the ignition key.
 - D. If engine has to run to perform any maintenance keep hands, feet, clothing and all other parts of body away from moving parts.
15. Keep hands, feet and clothing away from moving parts. Wait for all movement to stop before you clean, adjust or service the machine.
16. Keep the area of operation clear of all bystanders.
17. Never carry passengers.
18. Stop engine before making repairs/adjustments or checking/adding oil to the crankcase.
19. Use parts and materials supplied by **SMITHCO** only. Do not modify any function or part.
20. Use caution when booms are down as they extend out beyond the center line of the machine.
21. The tank is a confined space, take precaution.

These machines are intended for professional maintenance on golf courses, sports turf, and any other area maintained turf and related trails, paths and lots. No guaranty as to the suitability for any task is expressed or implied.



SPECIFICATIONS SPRAY STAR 1750D

WEIGHTS AND DIMENSIONS

| | |
|------------------------|--------------------|
| Length | 120" (305 cm) |
| Width | 65" (165 cm) |
| Width With Boom Open | 240" (610 cm) |
| Height w/ ROPS | 77" (195 cm) |
| Height w/ Booms Folded | 110" (279 cm) |
| Wheel Base | 68" (173 cm) |
| Weight Empty | 1750 lbs (794 kg) |
| Weight Full | 3500 lbs (1588 kg) |

SOUND LEVEL (DB)

| | |
|-------------------|--------|
| At ear level | 96 dBA |
| At 3 ft (0.914 m) | 89 dBA |
| At 30 ft (9.14 m) | 85 dBA |

ENGINE

| | |
|--------------------|--|
| Make | Briggs & Stratton 954T Turbo Diesel |
| Model# | 58A447 |
| Type / Spec# | 0302E2 |
| Horsepower | 34 hp (25 kW) |
| Fuel | No. 2 Diesel |
| Cooling System | Liquid Cooled |
| Lubrication System | Full Pressure |
| Alternator | 40 Amp |

WHEELS & TIRE

Front: Two 20 x 10.00 x 10 NHS Multi-Rib; 20 psi (1.4 bar)
Rear: Two 24 x 13.00 x 12 NHS Multi-Trac; 20 psi (1.4 bar)

SPEED

Infinitely Variable 0-12 m.p.h. (0-20 kph)

BATTERY

| | |
|--------------------------|----------------|
| Automotive type | 24F - 12 volt |
| BCI Group | Size 24 |
| Cold Cranking Amps | 900 minimum |
| Ground Terminal Polarity | Negative (-) |
| Maximum Length | 10.25" (26 cm) |
| Maximum Width | 6.88" (17 cm) |
| Maximum Height | 10" (25 cm) |

FLUID CAPACITY

| | |
|--------------------------|-------------------------------------|
| Crankcase Oil | See Engine Manual |
| Fuel | 7 gallon (26.5 liters) |
| Hydraulic Fluid | 5 gallon (19 liters) |
| Grade of Hydraulic Fluid | SAE 10W-40 API Service SJ or higher |

OPTIONAL EQUIPMENT

| | | | |
|--------|---|--------|--|
| 15-618 | Water Meter Kit (Liters) | 14-515 | Water Meter Kit (Gallons) |
| 15-619 | Chemical Cleanload | 17-506 | Clear water Wash Tank |
| 15-622 | Canopy | 17-521 | Electric Hose Reel |
| 17-505 | Foam Marker | 17-507 | Manual Hose Reel |
| 15-493 | 18" Dry Boom | 10-300 | 18' Spray Boom w/ Contour Wheels |
| 17-503 | 20' Spray Boom | 17-525 | 18.5' HD Super Boom |
| 15-835 | Tank Rinsing System | 17-550 | 15' HD Super Boom |
| 17-834 | Hose Reel Mount Kit for Booms | 15-833 | Hose Reel mount Kit for HD Booms (17-525/17-550) |
| 16-129 | Manual Rewind Hose Reel, 200-foot/61-meter capacity | | |
| 16-906 | Electric Rewind Hose Reel, 200-foot/61-meter capacity | | |



MAINTENANCE



Before servicing or making adjustments to machine, stop engine and remove key from ignition.

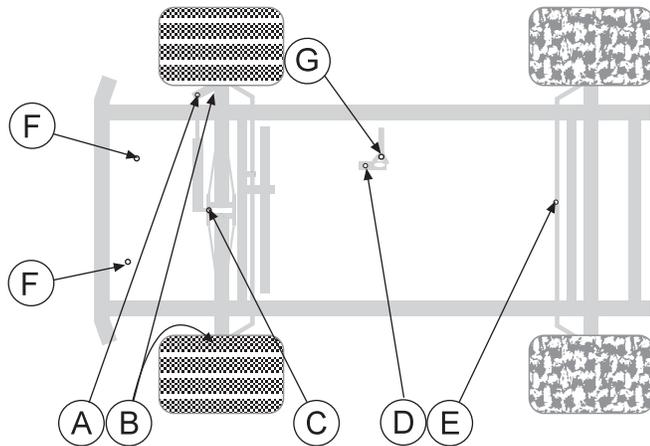
NOTE: Use all procedures and parts prescribed by the manufacturer's. Read the engine manual before operation.

LUBRICATION

Use No. 2 General purpose lithium base grease and lubricate every 100 hours. The Spray Star 1750 has 9

grease fittings.

- A. One on the rod end of hydraulic cylinder.
- B. One on each the right and left spindles.
- C. One on the center front pivot.
- D. One on the idler arm.
- E. One on the brake relay.
- F. One on each of the pedal relays.
- G. One on the shift arm.



ELECTRICAL CONNECTIONS

Use dielectric grease on all electrical connections.

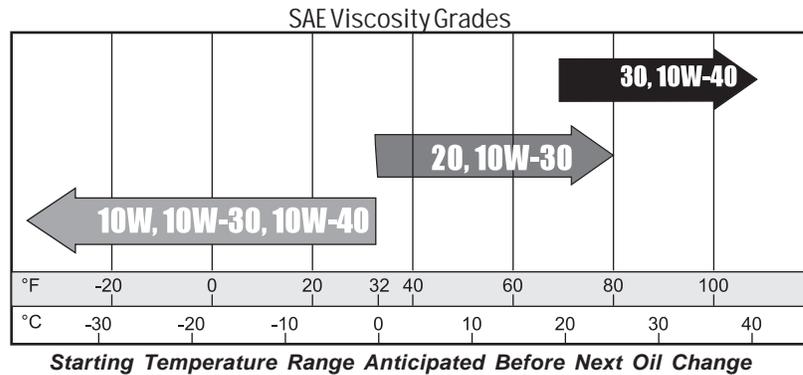
AIR CLEANER ON ENGINE

1. Unclip the two clips, remove the cover and pull out the element.
2. To service, clean by tapping gently on flat surface. Do not oil. Replace if very dirty or damaged.
3. Clean out the inside of the body and cover.
4. Place the element into the body and put the cover back on..

NOTE: Do not use petroleum solvents, e.g., kerosene, which will cause cartridge to deteriorate. Do not use pressurized air to clean cartridge. Pressurized air can damage cartridge.

ENGINE OIL

Change and add oil according to chart below based on air temperature at the time of operation. Do not overfill. Use a high quality detergent oil classified "For Service SJ or higher" oil. Use no special additives with recommended oils. Do not mix oil with gasoline.



HYDRAULIC OIL

1. Use SAE 10W-40 API Service SJ or higher motor oil.
2. For proper warranty, change oil every 500 hours or annually, whichever ever is first.
3. Oil level should be 2-2½" (5-6.4cm) from top of the tank when fluid is cold. Do not overfill.
4. After changing oil, run the machine for a few minutes. Check oil level and for leaks.
5. Always use extreme caution when filling hydraulic oil tank or checking level to keep system free of contaminants. Check and service more frequently when operating in extremely cold, hot or dusty conditions.
6. If the natural color of the fluid has become black or smells burnt, it is possible that an overheating problem exists.
7. If fluid becomes milky, water contamination may be a problem.
8. If either of the above conditions happen, change oil immediately after fluid is cool and find the cause. Take fluid level readings when the system is cold.
9. In extreme temperatures you can use straight weight oil. We recommend SAE 30W API Service SG when hot (above 90°F (33°C)) and SAE 10W API Service SJ or higher when cold (below 32°F (0°C) ambient temperature. Use either motor oil or hydraulic oil, but do not mix.
10. Oil being added to the system must be the same as what is already in the tank. Mark the tank fill area as to which type you put in.

MAINTENANCE

TIRE PRESSURE

Caution must be used when inflating a low tire to recommended pressure. Over inflating can cause tires to explode. All tires should be 20 psi (1.4bar). Improper inflation will reduce tire life considerably.

WHEEL MOUNTING PROCEDURE

1. Set park brake. Turn machine off and remove key.
2. Block wheel on opposite corner.
3. Loosen nuts slightly on wheel to be removed.
4. Jack up machine being careful not to damage underside of machine.
5. Place wheel on hub lining up bolt holes.
6. Torque to 64-74 ft/lb (87-100Nm) using a cross pattern. Retorque after first 10 hours and every 200 hours thereafter.
7. Lower machine to ground and remove blocks and jack.

BATTERY

Batteries normally produce explosive gases which can cause personal injury. Do not allow flames, sparks or any ignited object to come near the battery. When charging or working near battery, always shield your eyes and always provide proper ventilation.

Battery cable should be disconnected before using "Fast Charge".

Charge battery at 15 amps for 10 minutes or 7 amps for 30 minutes. Do not exceed the recommended charging rate. If electrolyte starts boiling over, decrease charging.

Always remove grounded (-) battery clamp first and replace it last. Avoid hazards by:

1. Filling batteries in well-ventilated areas.
2. Wear eye protection and rubber gloves.
3. Avoid breathing fumes when electrolyte is added.
4. Avoid spilling or dripping electrolyte.



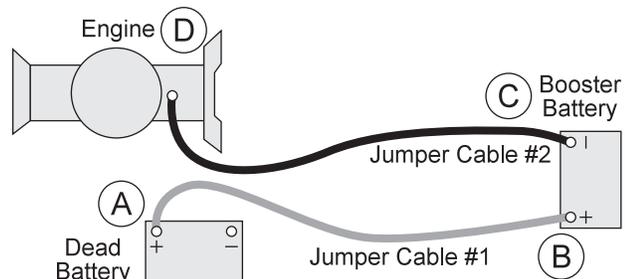
Battery Electrolyte is an acidic solution and should be handled with care. If electrolyte is splashed on any part of your body, flush all contact areas immediately with liberal amounts of water. Get medical attention immediately.



Use of booster battery and jumper cables. Particular care should be used when connecting a booster battery. Use proper polarity in order to prevent sparks.

TO JUMP START (NEGATIVE GROUNDED BATTERY):

1. Shield eyes.
2. Connect ends of one cable to positive (+) terminals of each battery, first (A) then (B).
3. Connect one end of other cable to negative (-) terminal of "good" battery (C).
4. Connect other end of cable (D) to engine block on unit being started (NOT to negative (-) terminal of battery)



To prevent damage to other electrical components on unit being started, make certain that engine is at idle speed before disconnecting jumper cables.



Before servicing or making adjustments to the machine, stop engine, set park break, block wheels and remove key from ignition.



Follow all procedures and **ONLY** use parts prescribed by the manufacturer. Read the engine manual before maintenance.

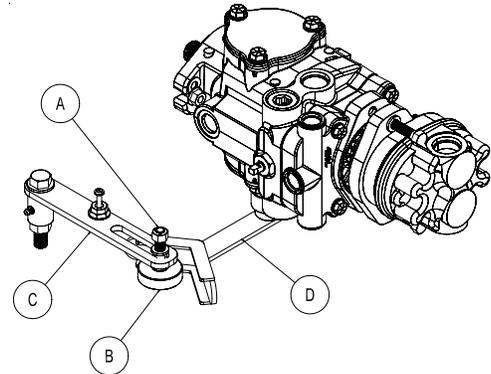
The suggested maintenance checklist is not offered as a replacement for the manufacturer's engine manual but as a supplement. You must adhere to the guidelines established by the manufacturer for warranty coverage. In adverse conditions such as dirt, mud or extreme temperatures, maintenance should be more frequent.

| Maintenance Service Interval | Maintenance Procedure |
|------------------------------------|--|
| After the first 5 operating hours | Torque the wheel lug nuts. (64-74 ft/lb (87-100 Nm)) |
| | Change the engine oil and filter. |
| After the first 20 operating hours | Replace hydraulic filter |
| Before each use daily | Check the engine oil. |
| | Check the hydraulic fluid level. |
| | Check the tire pressure. |
| | Check condition of hydraulic hoses and fittings. |
| | Inspect and clean the machine. |
| Every 25 hours | Inspect cooling system. |
| | Check the battery fluid level and cable connections. |
| Every 100 hours | Change oil when operating under heavy load or high |
| | Change the engine oil and filter. |
| | Change hydraulic filter |
| | Check engine for leaks or loose parts. |
| | Check air cleaner. |
| | Check tire pressure (20 psi (1.4 bar)). |
| | Torque the wheel lug nuts. (64-74 ft/lb (87-100 Nm)) |
| | Grease Machine. |
| Check belt tension (where needed) | |
| Every 200 Hours | Torque the wheel lug nuts. (64-74 ft/lb (87-100 Nm)) |
| Every 250 hours | Change oil filter |
| | Change hydraulic filter |
| | Clean battery terminals |
| Every 400 hours | Check spark plugs |
| Every 500 hours or yearly | Lubricate machine |
| | Visual inspection of machine and hydraulic hoses |
| | Change oil. |
| | Torque lug nuts. |
| | Check battery terminals and electrolyte level. |
| | Change all filters. |

WHEEL CREEP

"Creep" is when the engine is running and hydrostatic transmission is in neutral, but due to inadequate alignment, wheels still move. Do the following procedure to stop this motion.

1. Lift up and support machine so rear wheels are off the ground and can turn freely.
2. In the engine compartment, the hydrostatic transmission is on the left side. The shift arm (D) is under the pump and comes out the side. The idler arm (B) has a bearing that runs in the notch of the shift arm. Loosen bolt (A).
3. With engine running, move bearing (B) so it centers on the shift arm (D) and 'wheel creep' stops.
4. Tighten all fasteners and test by using foot pedal linkage to see that 'creep' is removed.
5. Turn engine off and lower machine.



SPRAY PUMP WITH ELECTRIC CLUTCH BELT

Located to the right of the engine. Should have approximately 1/2" (13mm) of deflection in the center of the top strand. Loosen and tighten the 5/16 -18 x 1 1/4 set screw located on the foot of the pump mount.

PARK BRAKE

Turn knob clockwise on end of park brake to tighten. Turn it counter clockwise to loosen. If finer adjustment is needed turn clevis on brake cable to adjust length of cable.

SPEED CALIBRATION NUMBERS

The speed calibration numbers for the Spray Star 1752 is 612.

STORAGE

If the engine will be out of service for two or more months, use the following storage procedure.

1. Clean the exterior surfaces of the engine.
2. Change the oil and filter while the engine is still warm from operation.
3. The fuel system must be completely emptied, or the gasoline must be treated with a stabilizer to prevent deterioration.

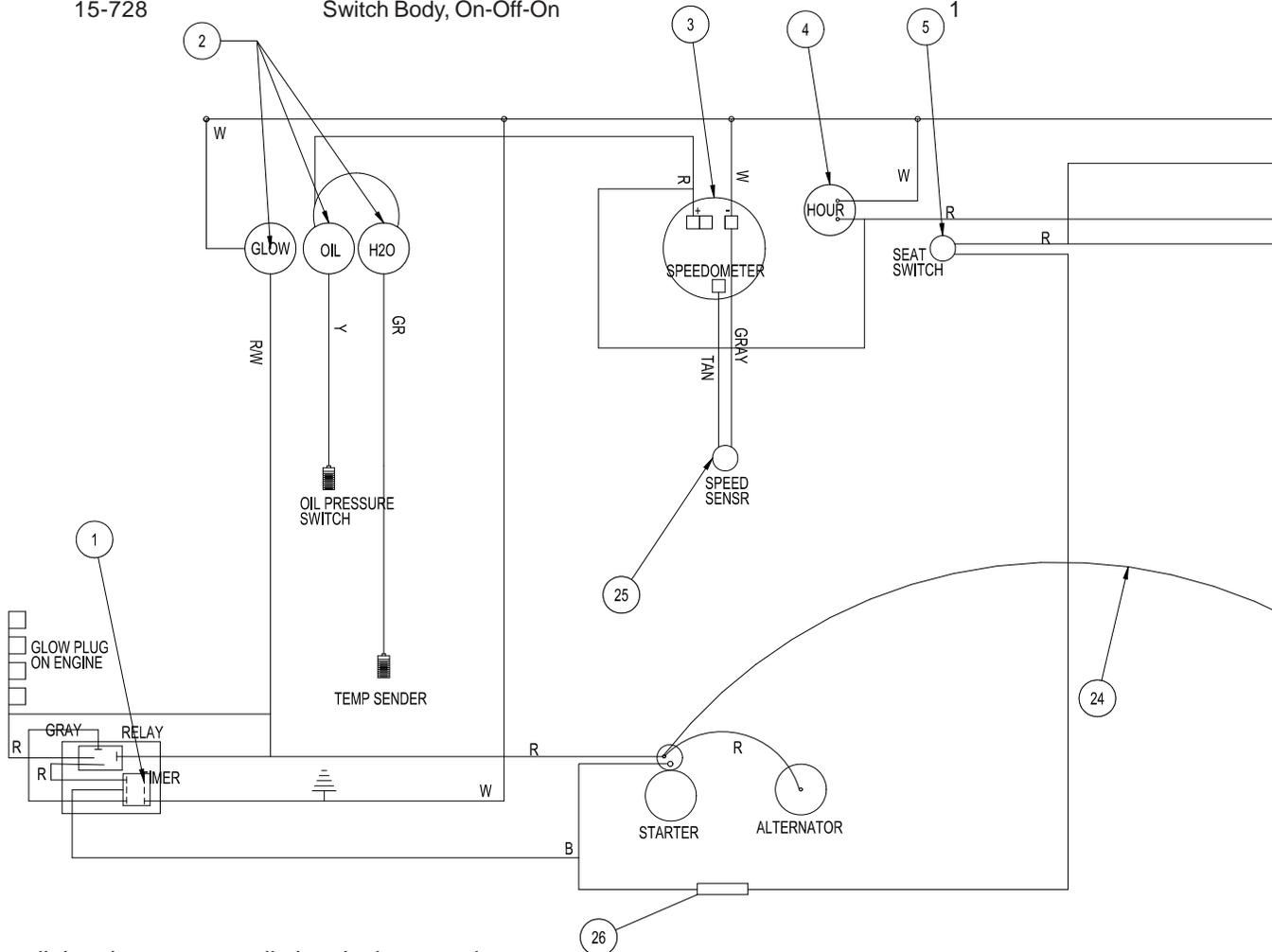
If you choose to use a stabilizer, follow manufacturers recommendations, and add the correct amount for the capacity of fuel system. Fill fuel tank with clean, fresh gasoline. Run engine for 2-3 minutes to get stabilized fuel into carburetor. Close fuel shut-off valve when unit is being stored or transported.

To empty the system, drain fuel tank and carburetor, or run engine until tank and system are empty.

4. Remove the spark plugs. Add one tablespoon of engine oil into each spark plug hole. Install plugs, but do not connect the plug leads. Crank the engine two or three revolutions.
5. Store machine in a clean, dry place.

WIRING DIAGRAM

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|--------|------------------------|----------|
| 1 | 77-223 | Timer | 1 |
| 2 | 50-359 | Warning Light | 3 |
| 3 | 10-556 | Speedometer | 1 |
| 4 | 12-017 | Hour Meter | 1 |
| 5 | 14-292 | Seat Switch | 1 |
| 6 | 13-488 | Ignition Switch | 1 |
| 7 | 17-524 | Lights | 2 |
| 8 | 10-241 | Wire Pigtail | 1 |
| | 15-725 | Mount Panel End | 1 |
| | 15-727 | Switch Actuator | 1 |
| 9 | 15-782 | Rocker Switch, Unlit | 1 |
| | 15-729 | Mount Panel Middle | 1 |
| | 15-726 | Switch Body, Light | 1 |
| 10 | 15-732 | Actuator, Green | 1 |
| | 15-729 | Mount Panel Middle | 1 |
| | 15-726 | Switch Body, Light | 1 |
| 11 | 15-731 | Actuator, Amber | 1 |
| | 15-729 | Mount Panel Middle | 1 |
| | 15-727 | Switch Actuator | 1 |
| 12 | 15-728 | Switch Body, On-Off-On | 1 |
| | 15-725 | Mount Panel End | 1 |
| | 15-727 | Switch Actuator | 1 |
| | 15-728 | Switch Body, On-Off-On | 1 |

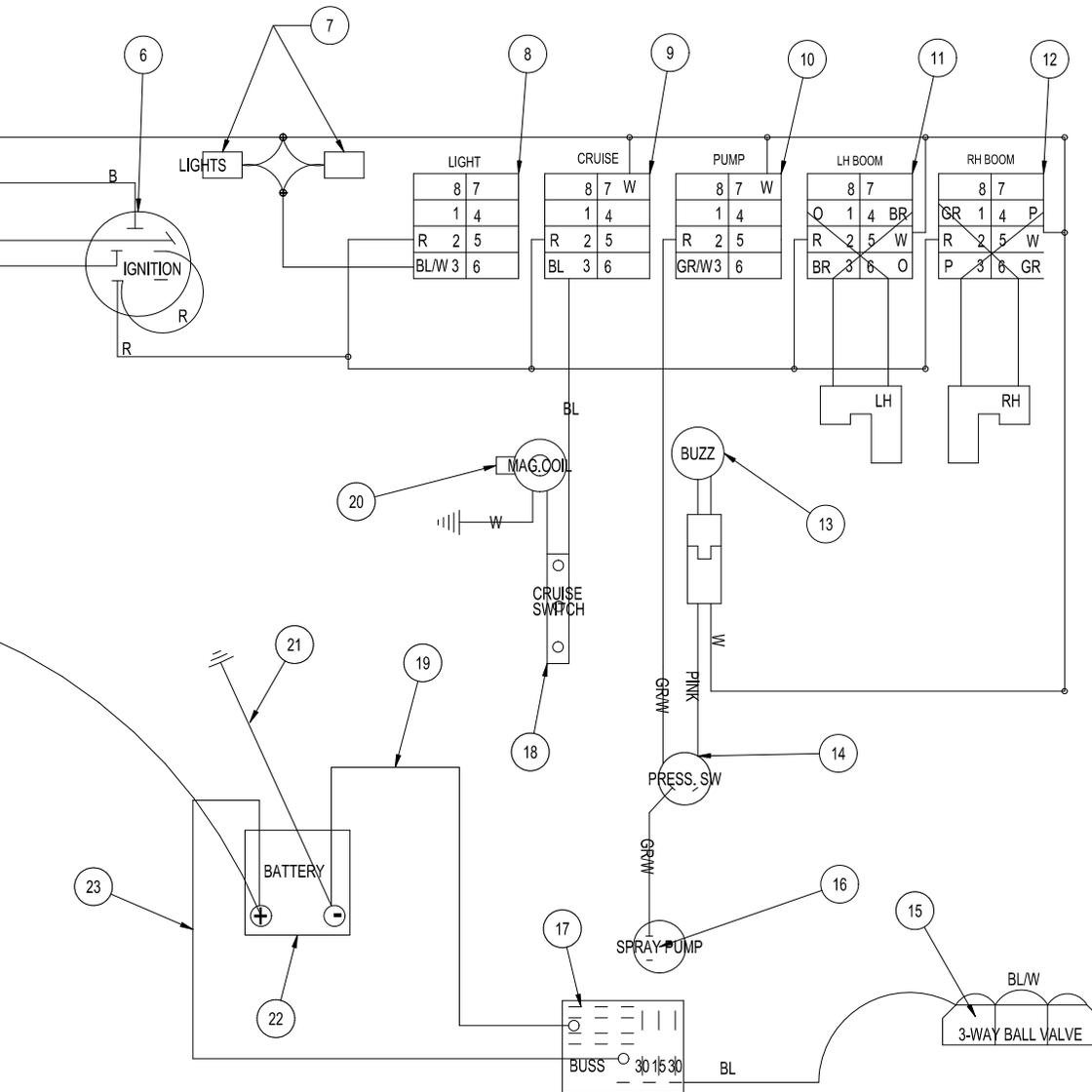


Use dielectric grease on all electrical connections.

To reset circuit breaker on ball valve, you must disconnect power to computer.

WIRING DIAGRAM

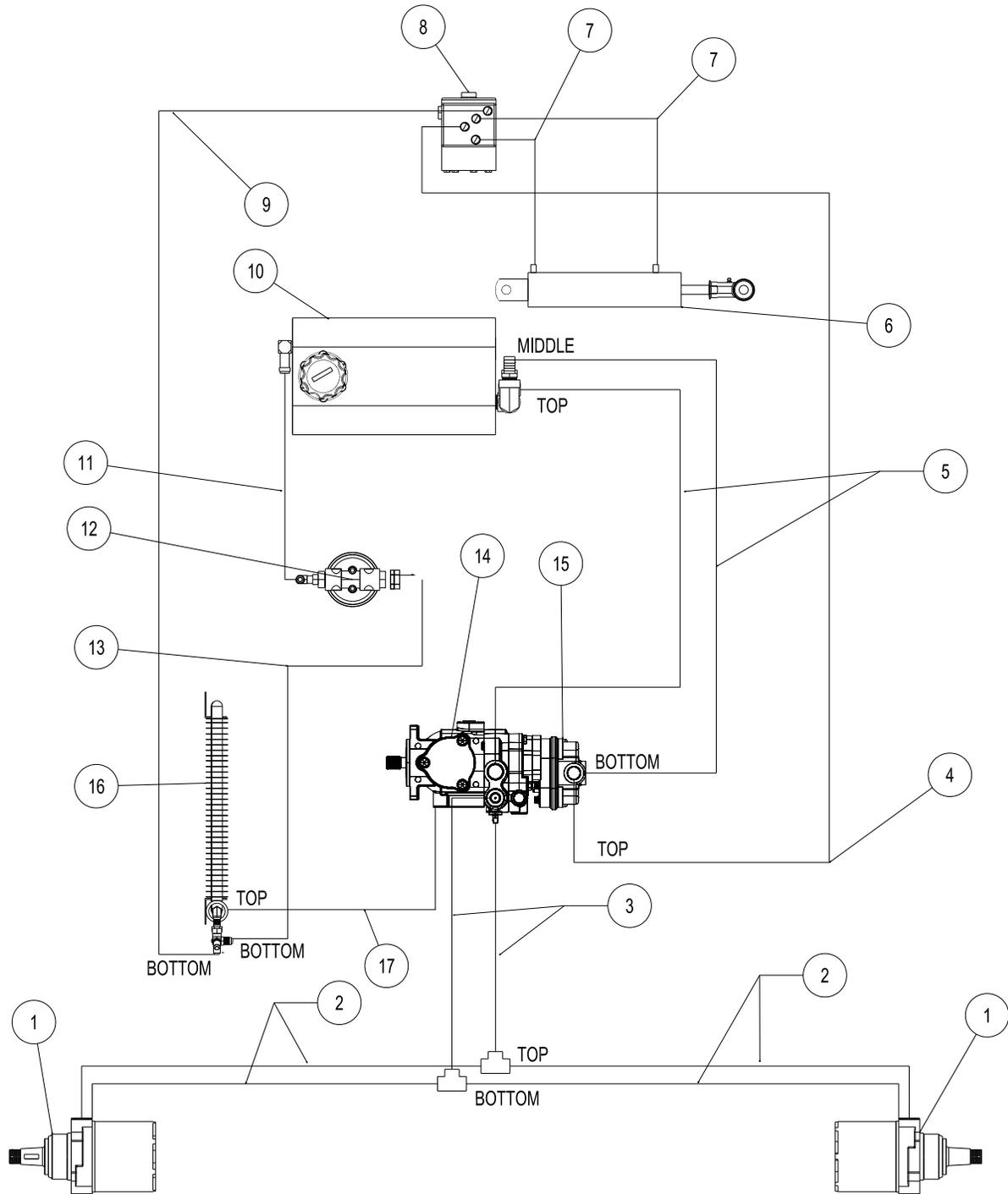
| REF# | PART# | DESCRIPTION | QUANTITY |
|------|--------|-------------------------------------|----------|
| 13 | 77-207 | Buzzer | 1 |
| 14 | 33-480 | Pressure Switch | 1 |
| 15 | 15-743 | 3-Way Ball Valve | 1 |
| 16 | 16-998 | Hypro Pump | 1 |
| 17 | 33-271 | Fuse Block | 1 |
| | 33-272 | Fuse, 15 AMP | 1 |
| | 33-273 | Fuse, 30 AMP | 2 |
| 18 | 33-509 | Cruise Foot Switch | 1 |
| 19 | 30-107 | Wire Harness Battery Ground to Fuse | 1 |
| 20 | 33-084 | Magnetic Coil | 1 |
| 21 | 76-327 | Ground Battery Cable | 1 |
| 22 | 33-216 | Battery | 1 |
| 23 | 30-106 | Wire Harness Battery to Fuse | 1 |
| 24 | 48-157 | Positive Battery Cable | 1 |
| 25 | 16-883 | Speed Sensor | 1 |
| 26 | 77-261 | Circuit Breaker 40 amp | 1 |
| | 8977 | Boot | 1 |
| NA | 15-789 | Main Wire Harness | 1 |



| Color Code Chart | |
|------------------|--------|
| Bl | Blue |
| Br | Brown |
| Y | Yellow |
| G | Green |
| O | Orange |
| R | Red |
| B | Black |
| P | Purple |
| W | White |

HYDRAULIC DIAGRAM

Diagrams

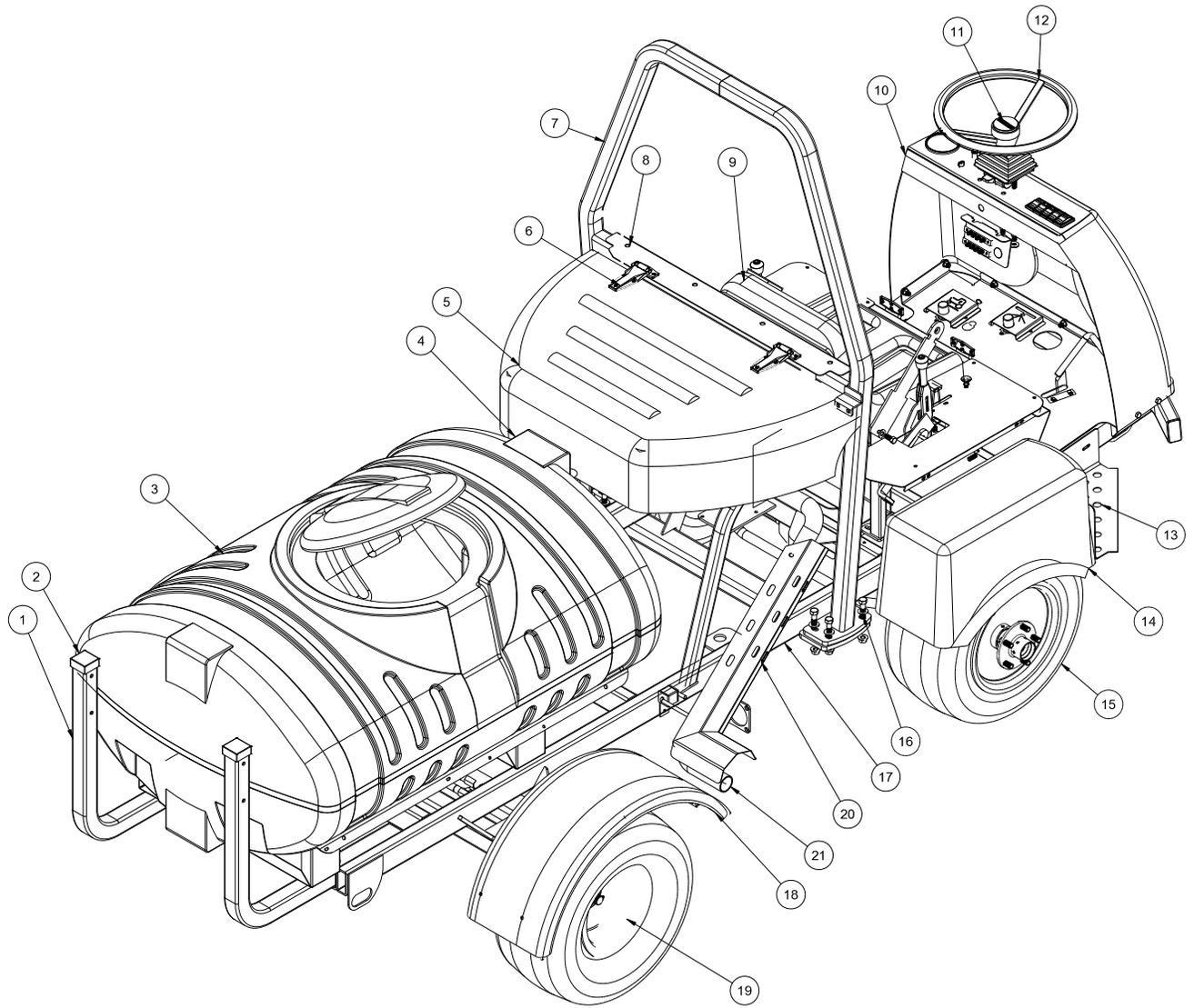


HYDRAULIC DIAGRAM PARTSLIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|---------|--|----------|
| 1 | 76-238 | Wheel Motor | 2 |
| 2 | 15-681 | Hydraulic Hose 23" | 4 |
| 3 | 15-682 | Hydraulic Hose 46 ³ / ₄ " | 2 |
| 4 | 15-685 | Hydraulic Hose 101" | 1 |
| 5 | 8832-33 | ³ / ₄ " Suction Hose | 2 |
| | 18-040 | Hose Clamp | 4 |
| 6 | 15-839 | Hydraulic Cylinder | 1 |
| 7 | 15-687 | Hydraulic Hose 75 ¹ / ₂ " | 2 |
| 8 | 15-301 | Orbitrol | 1 |
| 9 | 15-686 | Hydraulic Hose 107 ¹ / ₂ " | 1 |
| 10 | 60-473 | Hydraulic Oil tank | 1 |
| 11 | 8917-26 | ³ / ₈ " Suction Hose | 1 |
| | 18-040 | Hose Clamp | 2 |
| 12 | 26-016 | Oil Filter | 1 |
| | 23-031 | Replacement Filter | 1 |
| 13 | 42-045 | Hydraulic Hose | 1 |
| 14 | 77-239 | Hydrostatic Pump | 1 |
| 15 | 30-098 | Gear Pump | 1 |
| 16 | 15-624 | Cooler | 1 |
| 17 | 15-683 | Hydraulic Hose | 1 |

BODY & FRAME DRAWING

Parts

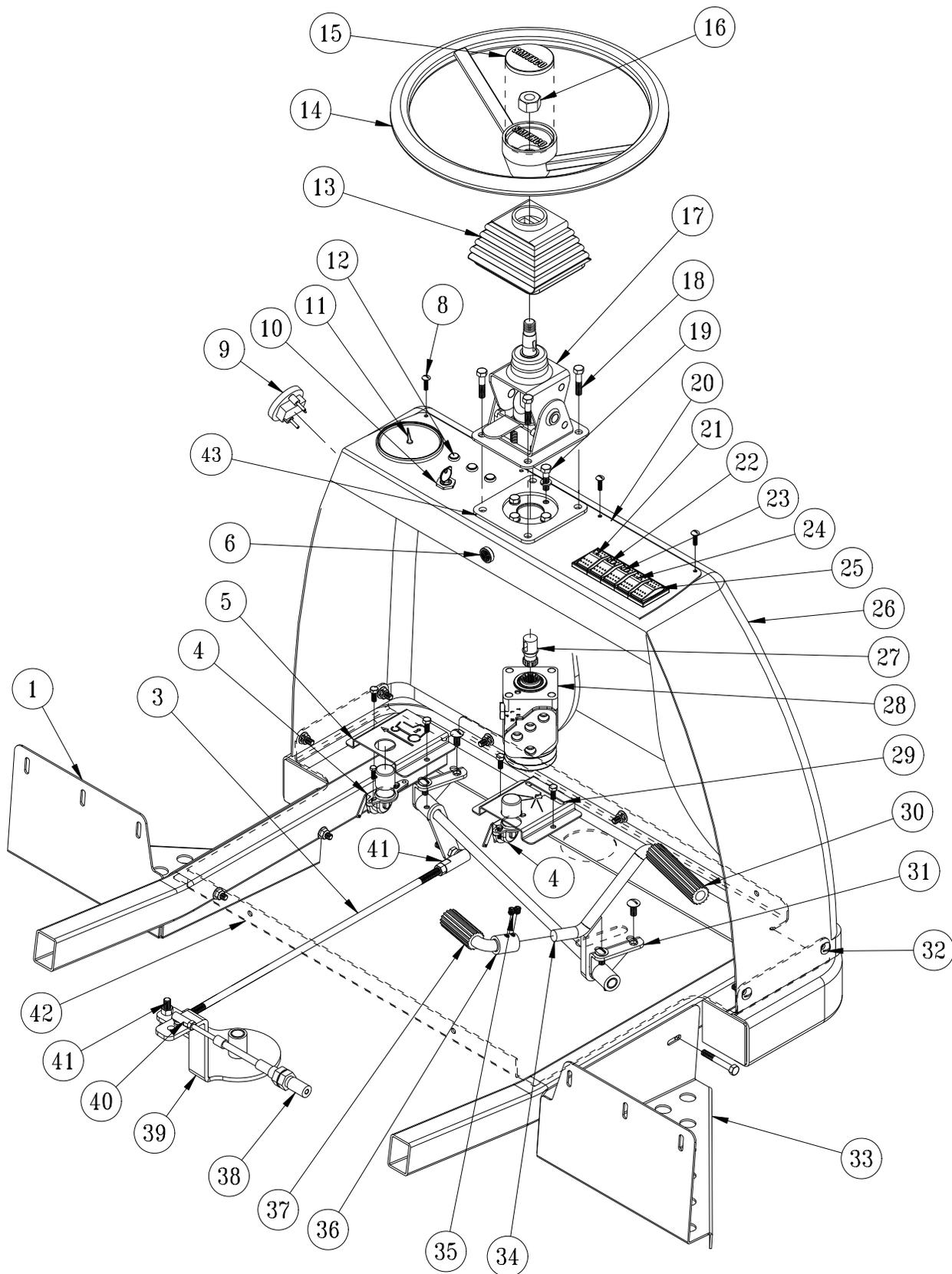


BODY & FRAME PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|---------------|--|----------|
| 1 | 15-753 | Boom Support Tube | 2 |
| 2 | 16-557 | Square Cap | 2 |
| 3 | 14-451 | Spray Tank | 1 |
| | 14-532 | Lid | 1 |
| | 16-169 | Strainer Basket | 1 |
| | 15-787 | Hood Support | 1 |
| 4 | 50-081 | Rubber Bumper | 1 |
| | HNTL-38-16 | Lock Nut $\frac{3}{8}$ - 16 | 1 |
| | 15-765 | Read Hood (fiberglass) | 1 |
| | 27-055 | Hinge | 2 |
| 5 | HSM-10-32-063 | Machine Screw #10 - 32 x $\frac{5}{8}$ | 6 |
| | HSM-10-32-100 | Machine Screw #10 - 32 x 1 | 6 |
| | HNFL-10-32 | Flange Lock Nut #10 - 32 | 12 |
| 7 | 15-762 | Roll Bar | 1 |
| 8 | 15-756 | Back Panel | 1 |
| 9 | 14-270 | Seat | 1 |
| 10 | 15-822 | Nose Cone (fiberglass) | 1 |
| | 17-524 | Oval Lights | 2 |
| | 10-421 | Pigtail | 1 |
| 11 | 13-726 | Cap | 1 |
| 12 | 13-718 | Steering Wheel | 1 |
| 13 | 15-751 | RH Step | 1 |
| | 15-752 | LH Step | 1 |
| 14 | 15-823 | RH Front Fender | 1 |
| | 15-767 | LH Front Fender | 1 |
| 15 | 16-857 | Tire and Wheel | 2 |
| | 16-857-01 | Tire 20 x 10.00 - 10NHS 4 Ply | 2 |
| | 16-857-02 | Wheel | 2 |
| 16 | HB-12-13-200 | Bolt $\frac{1}{2}$ - 13 x 2 | 8 |
| | HW-12 | Washer $\frac{1}{2}$ | 8 |
| | HNFL-12-13 | Flange Lock Nut $\frac{1}{2}$ - 13 | 8 |
| 18 | 15-701 | Main Frame | 1 |
| 19 | 10-168 | Rear Fender | 2 |
| | 10-154 | Rear Fender Bracket | 4 |
| 20 | 16-225 | Tire and Wheel | 2 |
| | 16-225-01 | Tire 24 x 13.00 - 12NHS 4 Ply | 2 |
| | 16-225-02 | Wheel | 2 |

NOSE CONE DRAWING

Parts



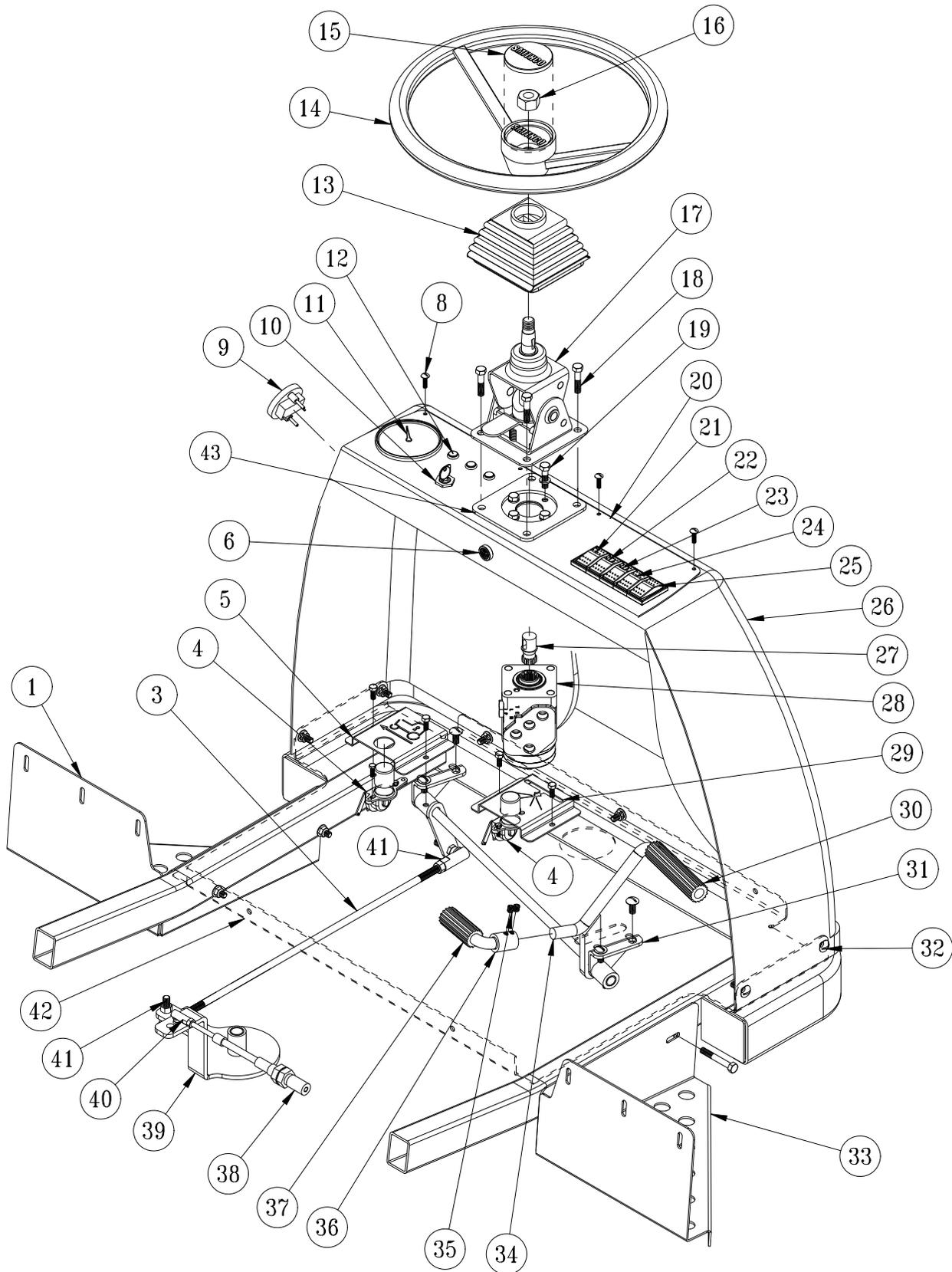
NOSE CONE PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|----------------|--|----------|
| 1 | 15-751 | Right Step | 1 |
| 3 | 15-761 | Long foot Pedal Rod | 1 |
| 4 | 33-509 | Master Control Switch | 2 |
| | HSTP-14-20-075 | Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 4 |
| 5 | 15-757 | Cruise Switch Plate | 1 |
| | HB-14-20-075 | Bolt $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 2 |
| | HNFL-14-20 | Flange Lock Nut $\frac{1}{4}$ - 20 | 2 |
| 6 | 77-207 | Buzzer | 1 |
| 8 | HSM-10-32-100 | Machine Screw 10 - 32 x 1 | 6 |
| | HWLM-6 | Lock Washer #6 | 6 |
| | HNFL-10-32 | Flange Lock Nut 10-32 | 6 |
| 9 | 12-017 | Hour Meter | 1 |
| 10 | 13-488 | Key Switch | 1 |
| 11 | 10-556 | Speedometer | 1 |
| 12 | 50-359 | Warning Indicator Lights | 3 |
| 13 | 76-364 | Square Boot | 1 |
| 14 | 13-718 | Steering Wheel | 1 |
| 15 | 13-726 | Center Cap | 1 |
| 16 | HNJ-58-18 | Jam Nut $\frac{5}{8}$ - 18 | 1 |
| 17 | 76-362 | Tilt Steering Column | 1 |
| 18 | HB-516-18-125 | Bolt $\frac{5}{16}$ - 18 x $1\frac{1}{4}$ | 4 |
| | HNFL-516-18 | Flange Lock Nut $\frac{5}{16}$ - 18 | 4 |
| 19 | HBM-6-1-16 | Metric Bolt | 4 |
| | HWLM-6 | Metric Lock Washer | 4 |
| 20 | 15-754 | Dash Panel | 1 |
| | 30-017 | Decal, Dashboard | 1 |
| 21 | Lights | | |
| | 15-725 | Mount Panel End | 1 |
| | 15-727 | Switch Actuator | 1 |
| | 15-782 | Rocker Switch, Unlit | 1 |
| 22 | Cruise Control | | |
| | 15-729 | Mount Panel Middle | 1 |
| | 15-726 | Switch Body, Light | 1 |
| | 15-732 | Actuator, Green | 1 |
| 23 | Spray Pump | | |
| | 15-729 | Mount Panel Middle | 1 |
| | 15-726 | Switch Body, Light | 1 |
| | 15-731 | Actuator, Amber | 1 |
| 24 | Right Boom | | |
| | 15-729 | Mount Panel Middle | 1 |
| | 15-727 | Switch Actuator | 1 |
| | 15-728 | Switch Body, On-Off-On | 1 |
| 25 | Left Boom | | |
| | 15-725 | Mount Panel End | 1 |
| | 15-727 | Switch Actuator | 1 |
| | 15-728 | Switch Body, On-Off-On | 1 |
| 26 | 15-822 | Nose Cone (Fiberglass) | 1 |
| | 50-400 | Rubber Grommet | 1 |
| | 17-824 | Oval Lights | 2 |
| | 10-421 | Pigtail | 1 |
| 27 | 48-187 | Stub Shaft | 1 |

(Continued on next page)



NOSE CONE DRAWING

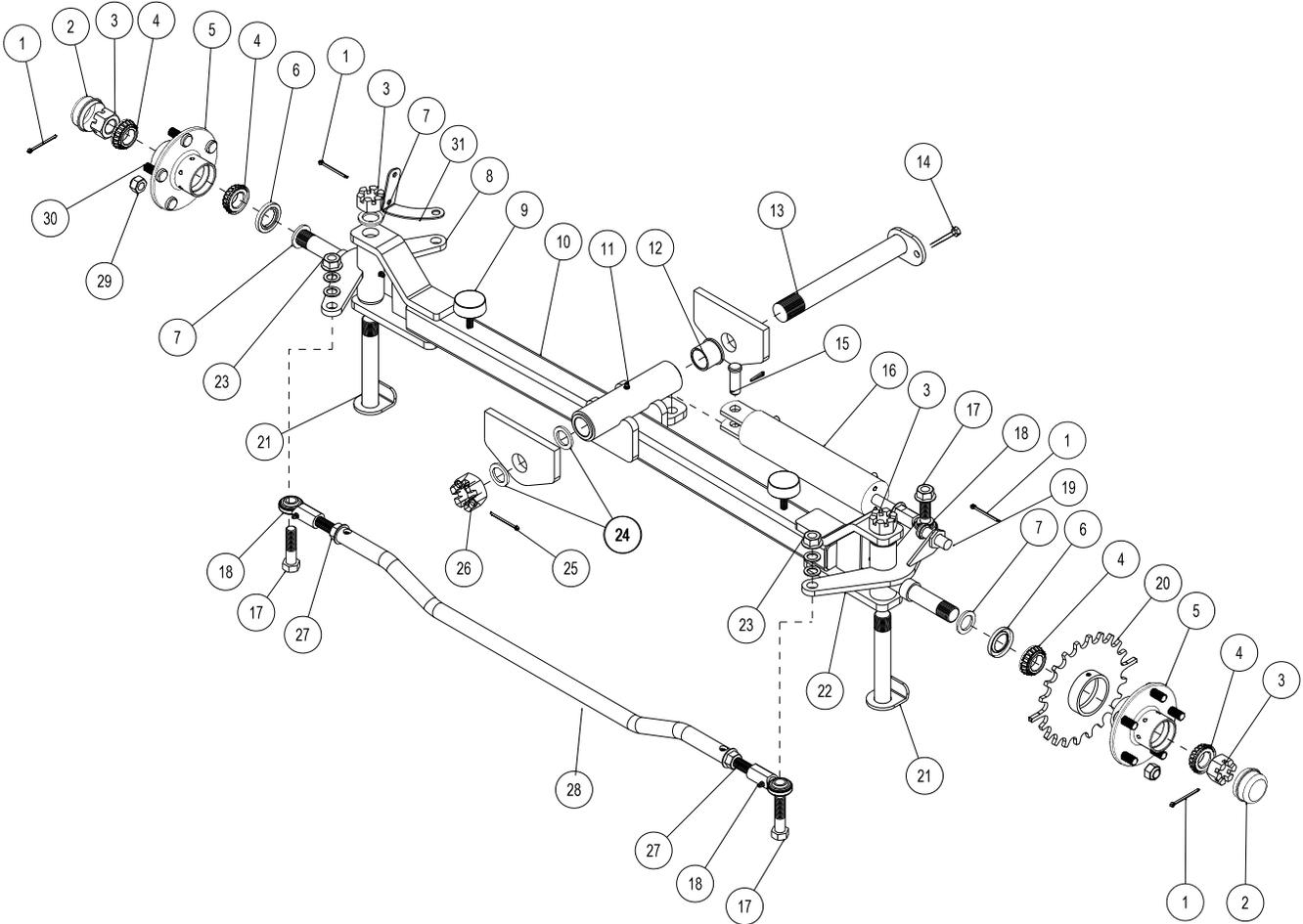


Parts

NOSE CONE PARTSLIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-------------------|--|----------|
| 28 | 15-301 | Orbitrol | 1 |
| | 18-169 | Adapter | 4 |
| 29 | 15-758 | Sprayer Switch Plate (part of 440 system) | 1 |
| | HB-14-20-075 | Bolt $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 2 |
| | HNFL-14-20 | Flange Lock Nut $\frac{1}{4}$ - 20 | 2 |
| 30 | 76-299 | Pedal Pad | 1 |
| 31 | 76-296 | Pedal Mount | 2 |
| | HSTP-516-18-075 | Machine Screw $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 4 |
| | HNFL-516-18 | Flange Lock Nut $\frac{5}{16}$ - 18 | 4 |
| 32 | HSTP-516-18-150 | Machine Screw $\frac{5}{16}$ - 18 x $1\frac{1}{2}$ | 7 |
| | HNFL-516-18 | Flange Lock Nut $\frac{5}{16}$ - 18 | 7 |
| 33 | 15-752 | Left Step | 1 |
| 34 | 15-820 | Foot Pedal Assembly | 1 |
| | HG-14-28-180 | Grease Fitting $\frac{1}{4}$ - 28 x 180° | 2 |
| | HMB-12-14 | Machine Bushing $\frac{1}{2}$ x 14GA | 5 |
| 35 | HSSHS-5/16-18-038 | Socket Head Set Screw, $\frac{5}{16}$ - 18 | 2 |
| 36 | 15-821 | Reverse Pedal | 1 |
| 37 | 76-332 | Pedal Pad | 1 |
| 38 | 15-760 | Short Foot Pedal Rod | 1 |
| 39 | 15-692 | Pedal Relay | 1 |
| | 33-084 | Magnetic Coil | 1 |
| 40 | 21-173 | Ball Joint $\frac{3}{8}$ - 24 | 1 |
| | HWL-38 | Washer $\frac{3}{8}$ | 1 |
| | HN-38-24 | Nut $\frac{3}{8}$ - 24 | 2 |
| 41 | 21-173 | Ball Joint $\frac{3}{8}$ - 24 | 2 |
| | HWL-38 | Washer $\frac{3}{8}$ | 2 |
| | HN-38-24 | Nut $\frac{3}{8}$ - 24 | 4 |
| 42 | 15-701 | Main Frame | 1 |
| 43 | 15-844 | Shim Plate | 1 |

FRONT AXLE DRAWING

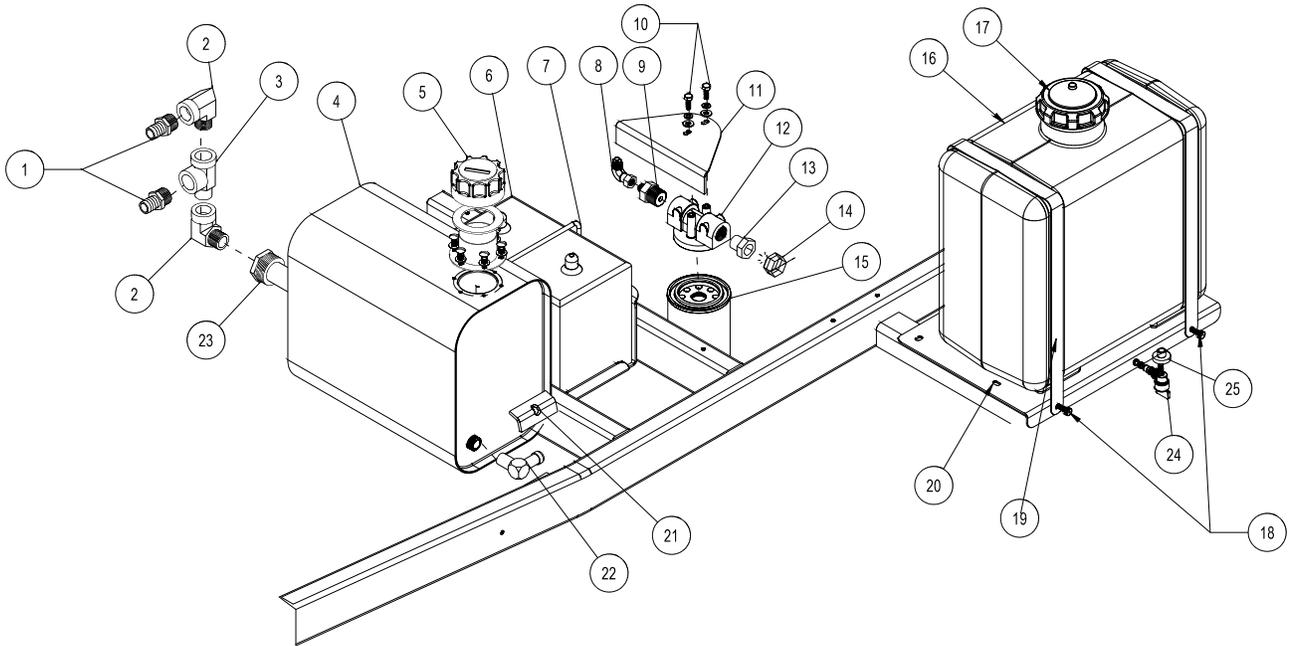


Parts

FRONT AXLE PARTSLIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|------------------|--|----------|
| 1 | HP-18-150 | Cotter Pin $\frac{1}{8}$ x $1\frac{1}{2}$ | 4 |
| 2 | 80-167* | Dust Cap | 2 |
| 3 | HNAR-100-14 | Slotted Hex Jam Nut | 4 |
| 4 | 11-043* | Bearing | 4 |
| 5 | 80-019 | Hub (includes all * items) | 2 |
| 6 | 11-041* | Oil Seal | 2 |
| 7 | HMB-100-10 | Machine Bushing 1 x 10GA | 6 |
| 8 | 15-696 | Spindle - LH | 1 |
| 9 | 50-081 | Rubber Insulators | 2 |
| 10 | 15-699 | Front Axle | 1 |
| 11 | HG-14-28-180 | Grease Fitting $\frac{1}{4}$ - 28 x 180° | 1 |
| 12 | 18-153 | Bushing (part of 15-699) | 2 |
| 13 | 14-344 | Axle Pin | 1 |
| 14 | HB-516-18-125 | Bolt $\frac{5}{16}$ - 18 x $1\frac{1}{4}$ | 1 |
| | HNTL-516-18 | Lock Nut $\frac{5}{16}$ - 18 | 1 |
| 15 | HCP-58-175 | Clevis Pin $\frac{5}{8}$ x $1\frac{3}{4}$ | 1 |
| | HP-18-100 | Cotter Pin $\frac{1}{8}$ x 1 | 1 |
| 16 | 75-714 | Hydraulic Cylinder | 1 |
| | 18-168 | Elbow | 2 |
| | 14-254 | Seal Kit | |
| 17 | HB-58-11-250 | Bolt $\frac{5}{8}$ - 11 x $2\frac{1}{2}$ | 3 |
| 18 | 18-154 | Rod End | 3 |
| 19 | 16-883 | Magnetic Sensor | 1 |
| | HNJ-34-16 | Jam Nut $\frac{3}{4}$ - 16 | 1 |
| 20 | 10-265 | Hub with Sprocket | 1 |
| | HSSHS-516-18-038 | Socket Head Set Screw $\frac{5}{16}$ -18 x $\frac{3}{8}$ | 2 |
| 21 | 16-076 | King Pin | 2 |
| 22 | 15-695 | Spindle - RH | 1 |
| 23 | HNTL-58-11 | Lock Nut $\frac{5}{8}$ - 18 | 3 |
| | HMB-58-14 | Machine Bushing $\frac{5}{8}$ x 14GA | 6 |
| 24 | HMB-114-10 | Machine Bushing $1\frac{1}{4}$ x 10GA | 2 |
| 25 | HP-18-200 | Cotter Pin $\frac{1}{8}$ x 2 | 1 |
| 26 | HNA-114-12 | Axle Nut $1\frac{1}{4}$ -12 | 1 |
| 27 | HNJ-58-18 | Jam Nut $\frac{5}{8}$ - 18 | 3 |
| 28 | 15-690 | Tie Rod | 1 |
| 29 | HNL-12-220* | Lug Nut $\frac{1}{2}$ - 20 | 10 |
| 30 | 27-022-02* | Stud $\frac{1}{2}$ - 20 | 10 |
| 31 | 15-715 | Sensor Bracket (1752D only) | 1 |

OIL AND FUEL TANK DRAWING



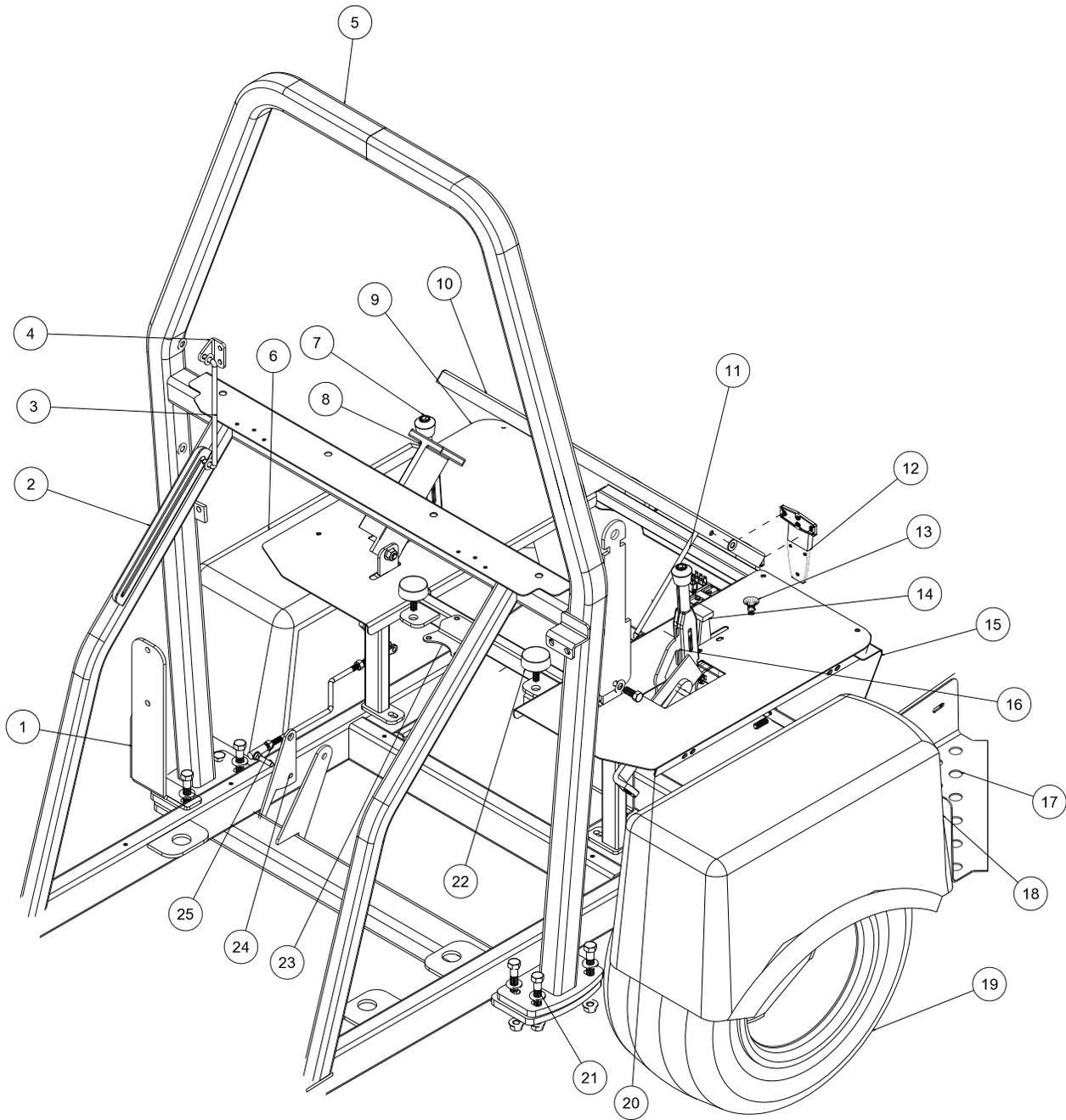
Parts

OIL AND FUEL TANK PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|---------------|----------------------------|----------|
| 1 | 18-249 | Barb Fitting | 2 |
| 2 | 18-140 | Street Elbow | 2 |
| 3 | 18-093 | Straight Tee | 1 |
| 4 | 60-473 | Oil Tank | 1 |
| 5 | 13-747 | Filler Breather | 1 |
| | 15-586-03 | Gas Tank Neck | 1 |
| | HSM-10-32-063 | Machine Screw 10 -32 x 5/8 | 6 |
| | HWL-10 | Lock Washer #10 | 6 |
| 6 | 33-216 | Battery | 1 |
| 7 | 15-785 | Battery Hold Down | 1 |
| | HNFL-14-20 | Flange Lock Nut 1/4 - 20 | 2 |
| 8 | 18-202 | Elbow | 1 |
| 9 | 23-183 | Male Connector | 1 |
| 10 | HB-14-20-075 | Bolt 1/4 - 20 x 3/4 | 2 |
| | HW-14 | Washer 1/4 | 2 |
| | HWL-14 | Lock Washer | 2 |
| 11 | | Part of Main Frame | |
| 12 | 26-016 | Oil Filter | 1 |
| 13 | 18-008 | Pipe Thread Reducer | 1 |
| 14 | 23-143 | Connector | 1 |
| 15 | 23-031 | Replacement Filter | 1 |
| 16 | 73-049 | 7 Gallon Fuel Tank | 1 |
| 17 | 73-050 | Cap with Gauge | 1 |
| 18 | HB-14-20-125 | Bolt 1/4 -20 x 3/4 | 2 |
| | HNFL-14-20 | Flange Loc Nut 1/4 -20 | 2 |
| 19 | 73-051 | Gas TANK Strap | 2 |
| 20 | 15-824 | Tank Mount | 1 |
| 21 | 75-792 | Tank Hold Down | 2 |
| | HB-516-18-150 | Bolt 5/16 - 18 x 1 1/2 | 2 |
| | HW-516 | Washer 5/16 | 4 |
| | HNFL-516-18 | Flange Nut 5/16 - 18 | 2 |
| 22 | 23-142 | Connector | 1 |
| 23 | 60-213 | Strainer | 1 |
| 24 | 26-055 | Shut Off Valve | 1 |
| 25 | 26-054 | Bushing Insert | 1 |

SEAT PANEL DRAWING

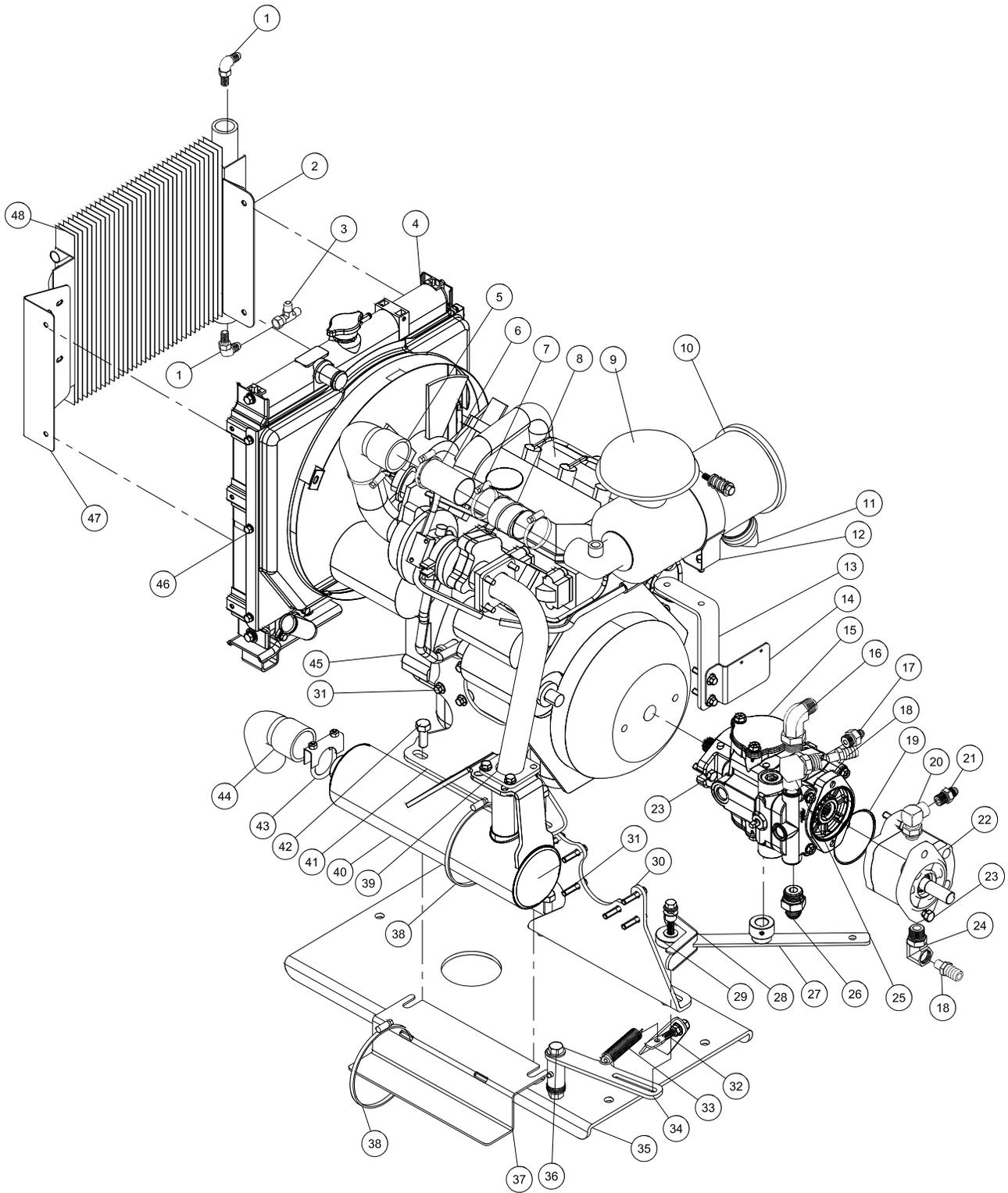
Parts



SEAT PANEL PARTSLIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|---|----------|
| 1 | 15-708 | Valve Mount | 1 |
| 2 | 15-723 | Hood Latch | 12 |
| 3 | 15-786 | Hood Rod | 1 |
| | HW-38 | Washer ³ / ₈ | 4 |
| | HP-18-075 | Cotter Pin ¹ / ₈ x ³ / ₄ | 2 |
| 4 | 10-211 | Hood Rod Mount | 1 |
| 5 | 15-762 | Roll Bar | 1 |
| 6 | 15-767 | Front Fender - LH | 1 |
| | 15-781 | Plastic Cup Holder | 1 |
| 7 | 60-106 | Speed Boss Lever | 1 |
| 8 | 76-198-03 | Seat Belt | 1 |
| | HB-716-14-100 | Bolt ⁷ / ₁₆ -14 x 1 | 2 |
| | HW-716 | Washer ⁷ / ₁₆ | 2 |
| | HNTL-716-14 | Lock Nut ⁷ / ₁₆ -14 | 2 |
| 9 | 15-713 | Side Panel - LH | 1 |
| 10 | 15-714 | Seat Panel | 1 |
| 11 | 15-786 | Hood Rod | 1 |
| | HW-38 | Washer ³ / ₈ | 4 |
| | HP-18-075 | Cotter Pin ¹ / ₈ x ³ / ₄ | 2 |
| 12 | 27-055 | Hinge | 2 |
| | HSM-10-32-063 | Machine Screw #10-32 x ⁵ / ₈ | 12 |
| | HN-10-32 | Nut #10 - 32 | 12 |
| 13 | 80-020 | Choke Cable | 1 |
| 14 | 34-160 | Throttle Cable | 1 |
| | 34-160-01 | Inner Cable | 1 |
| 15 | 15-711 | Front Panel | 1 |
| | HBFL-516-18-075 | Flange Bolt ⁵ / ₁₆ - 18 x ³ / ₄ | 2 |
| | HNFL-516-18 | Flange Nut ⁵ / ₁₆ -18 | 2 |
| 16 | 60-106 | Park Brake | 1 |
| 17 | 15-751 | Step - RH | 1 |
| | 15-752 | Step - LH | 1 |
| 18 | 15-823 | Front Fender - RH | 1 |
| 19 | 16-857 | Tire and Wheel | 2 |
| | 16-857-01 | Tire 20 x 10.00 - 10NHS 4 Ply | 2 |
| | 16-857-02 | Wheel | 2 |
| 20 | 15-712 | Side Panel - RH | 1 |
| 21 | HB-12-13-200 | Bolt ¹ / ₂ - 13 x 2 | 8 |
| | HW-12 | Washer ¹ / ₂ | 8 |
| | HNFL-12-13 | Flange Lock Nut ¹ / ₂ - 13 | 8 |
| 22 | 50-081 | Rubber Insulator | 2 |
| | HNTL-38-16 | Lock Nut ³ / ₈ - 16 | 2 |
| 23 | 15-794 | Fuel Filter Bracket | 1 |
| 24 | 15-706 | Speed Boss Arm | 1 |
| 25 | 15-707 | Spray Boss Linkage | 1 |
| | 11-100 | Linkage Yolk | 1 |
| | 21-462 | Ball Joint | 1 |

ENGINE, PUMPS AND EXHAUST DRAWING



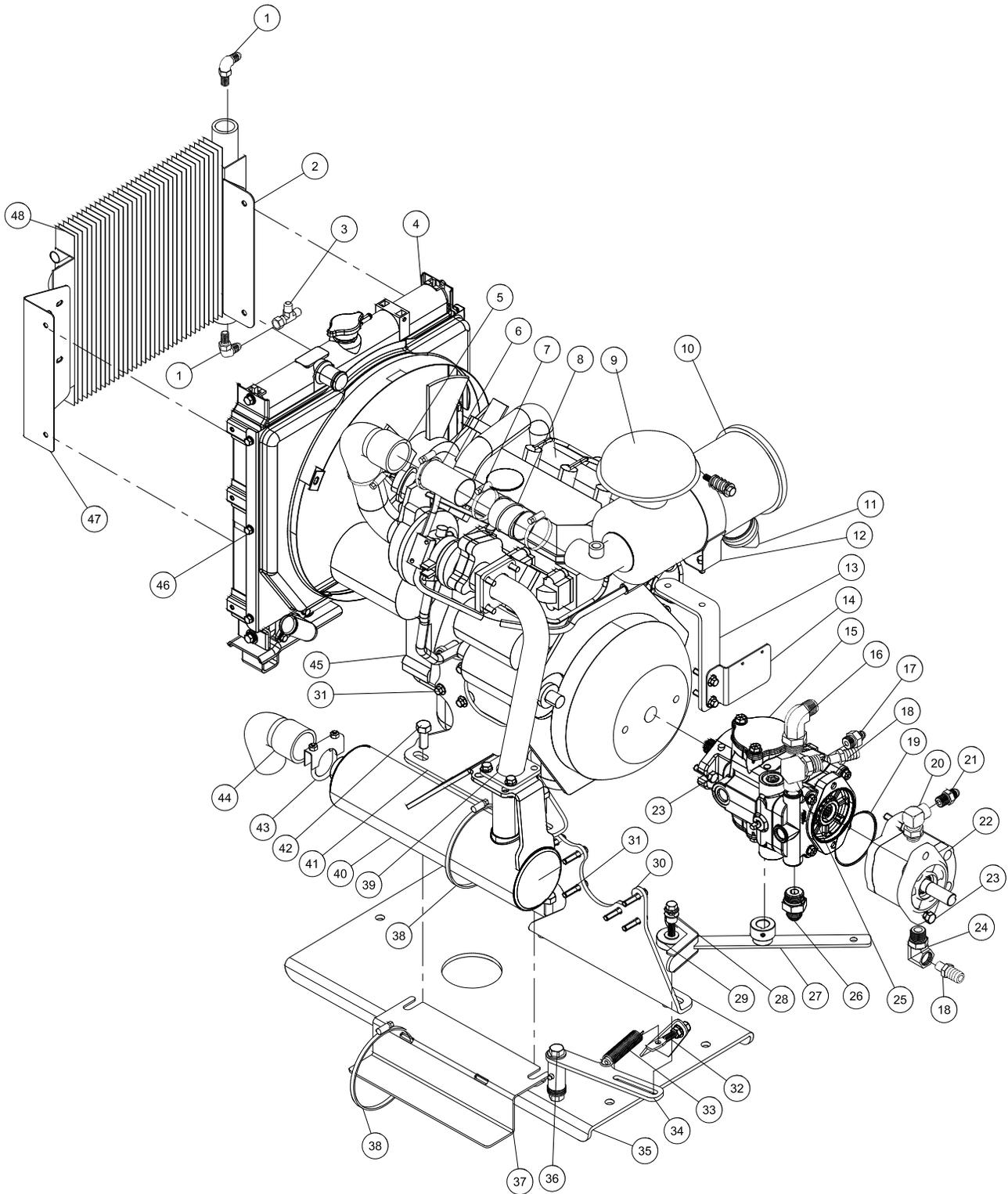
Parts

ENGINE, PUMPS AND EXHAUST PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|----------------|---|----------|
| 1 | 18-168 | Elbow $\frac{3}{8}$ Straight Thread | 2 |
| 2 | 15-801 | Front Cooler Bracket | 1 |
| 3 | 18-190 | Tee | 1 |
| 4 | | Radiator | 1 |
| 5 | 27-113 | Rubber Elbow | 1 |
| 6 | 15-803 | Tube | 1 |
| 7 | 18-116 | Hose Clamp | 4 |
| 8 | 8959-2 | Flex Hose | 1 |
| 9 | 42-076-02 | Air Cleaner Cap | 1 |
| 10 | 76-395-04 | Air Cleaner | 1 |
| 11 | 42-076-03 | Air Cleaner Cartridge | 1 |
| 12 | | Band | 1 |
| 13 | 15-796 | Air Cleaner Mount | 1 |
| 14 | 15-795 | Timer Mount | 1 |
| | HB-516-18-075 | Bolt $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 2 |
| 15 | 77-239 | Pump | 1 |
| 16 | 18-204 | Elbow | 1 |
| 17 | 18-241 | Straight Thread Connector | 1 |
| 18 | 18-133 | Barb Fitting $\frac{1}{2}$ MPT x $\frac{3}{4}$ HB | 2 |
| 19 | 23-145 | O-Ring | 1 |
| 20 | 23-129 | Elbow | 1 |
| 21 | 23-188 | Male Connector $\frac{3}{8}$ | 1 |
| 22 | 30-098 | Gear Pump | 1 |
| 23 | HB-38-16-125 | Bolt $\frac{3}{8}$ - 16 x $1\frac{1}{4}$ | 4 |
| | HW-38 | Washer $\frac{3}{8}$ | 4 |
| | HWL-38 | Lock Washer $\frac{3}{8}$ | 4 |
| 24 | 23-127 | Adjustable Elbow | 1 |
| 25 | 23-130 | Elbow | 1 |
| 26 | 15-702 | Adapter | 1 |
| 27 | 15-693 | Shift Arm | 1 |
| | HSSH-14-20-031 | Socket Head Set SCrew $\frac{1}{4}$ - 20 x $\frac{5}{16}$ | 1 |
| 28 | HB-38-16-200 | Bolt $\frac{3}{8}$ - 16 x 2 | 1 |
| | HW-38 | Washer $\frac{3}{8}$ | 5 |
| | HWL-38 | Lock Washer $\frac{3}{8}$ | 1 |
| | HN-38-16 | Nut $\frac{3}{8}$ - 16 | 1 |
| 29 | 14-266 | Ball Bearing | 1 |
| | 42-183 | Spacer | 1 |
| | 18-270 | Oilite Bushing | 1 |
| 30 | 15-804 | Front Engine Mount | 1 |
| | HB-12-13-125 | Bolt $\frac{1}{2}$ - 13 x $1\frac{1}{4}$ | 2 |
| | HW-12 | Washer $\frac{1}{2}$ | 2 |
| | HNFL-12-13 | Flange Whiz Lock Nut $\frac{1}{2}$ - 13 | 2 |
| 31 | HBM-8-1.25-25 | Metric Bolt M8-1.25 - 25 | 14 |
| | HW-516 | Washer $\frac{5}{16}$ | 14 |
| | HWLM-8 | Metric Lock Washer M8 | 14 |
| 32 | 42-604 | Spade Bolt | 1 |
| | HNFL-38-16 | Flange Lock Nut $\frac{3}{8}$ - 18 | 2 |
| 33 | 15-843 | Spring | 1 |
| 34 | 15-807 | Idler Arm | 1 |
| 35 | 15-793 | Engine Plate | 1 |

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ENGINE, PUMPS AND EXHAUST DRAWING

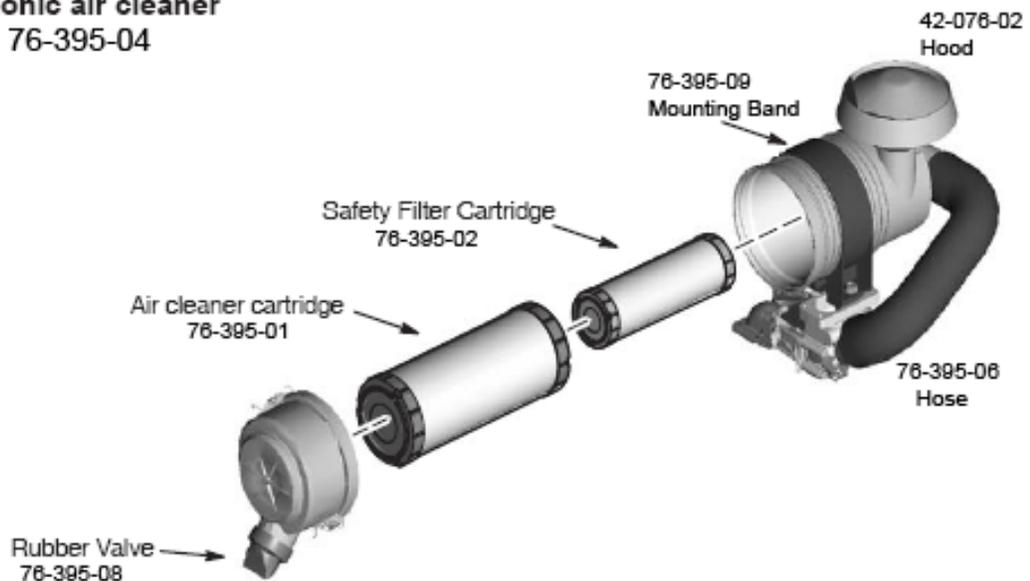


Parts

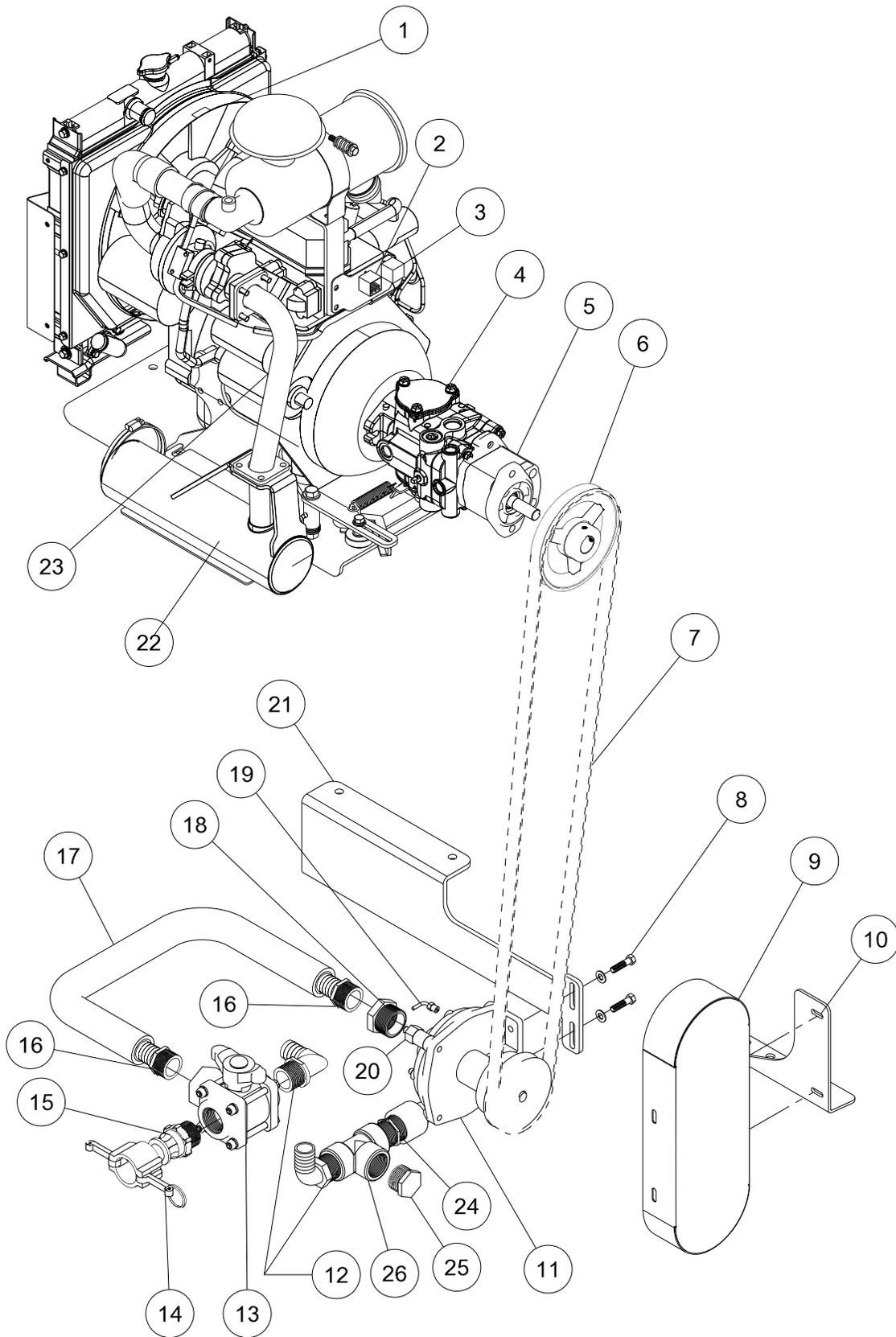
ENGINE, PUMPS AND EXHAUST PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|--|----------|
| 36 | HB-12-13-350 | Bolt $\frac{1}{2}$ - 13 x $1\frac{1}{2}$ | 1 |
| | HMB-12-14 | Machine Bushing $\frac{1}{2}$ - 14GA | 2 |
| | HN-12-13 | Nut $\frac{1}{2}$ - 13 | 1 |
| 37 | 15-799 | Muffler Support | 1 |
| 38 | 15-819 | Hose Clamp | 2 |
| 39 | 15-806 | Tailpipe Assembly | 1 |
| | HB-516-18-100 | Bolt $\frac{5}{16}$ - 18 x 1 | 4 |
| | HBFL-516-18-075 | Bolt $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 4 |
| | HNFL-516-18 | Flange Whiz Lock Nut $\frac{5}{16}$ - 18 | 8 |
| 40 | 43-122 | Muffler | 1 |
| 41 | 15-805 | Rear Engine Plate | 1 |
| 42 | HB-12-13-150 | Bolt $\frac{1}{2}$ - 13 x $1\frac{1}{2}$ | 2 |
| | HW-12 | Washer $\frac{1}{2}$ | 2 |
| | HNFL-12-13 | Flange Whiz Lock Nut $\frac{1}{2}$ - 13 | 2 |
| 43 | 50-111 | Muffler Clamp | 1 |
| 44 | 15-809 | Exhaust Elbow | 1 |
| 45 | 15-791 | Engine B&S 954T Turbo Diesel | 1 |
| | 21-161 | Wire Block | 1 |
| 46 | HBM-6-1-16 | Metric Hex Bolt M6 -1 x 16 | 4 |
| | HWLM-6 | Metric Lockwasher | 4 |
| 47 | 15-802 | Rear Cooler Bracket | 1 |
| 48 | 15-624 | Oil Cooler | 1 |

Cyclonic air cleaner 76-395-04



SPRAY PUMP DRAWING

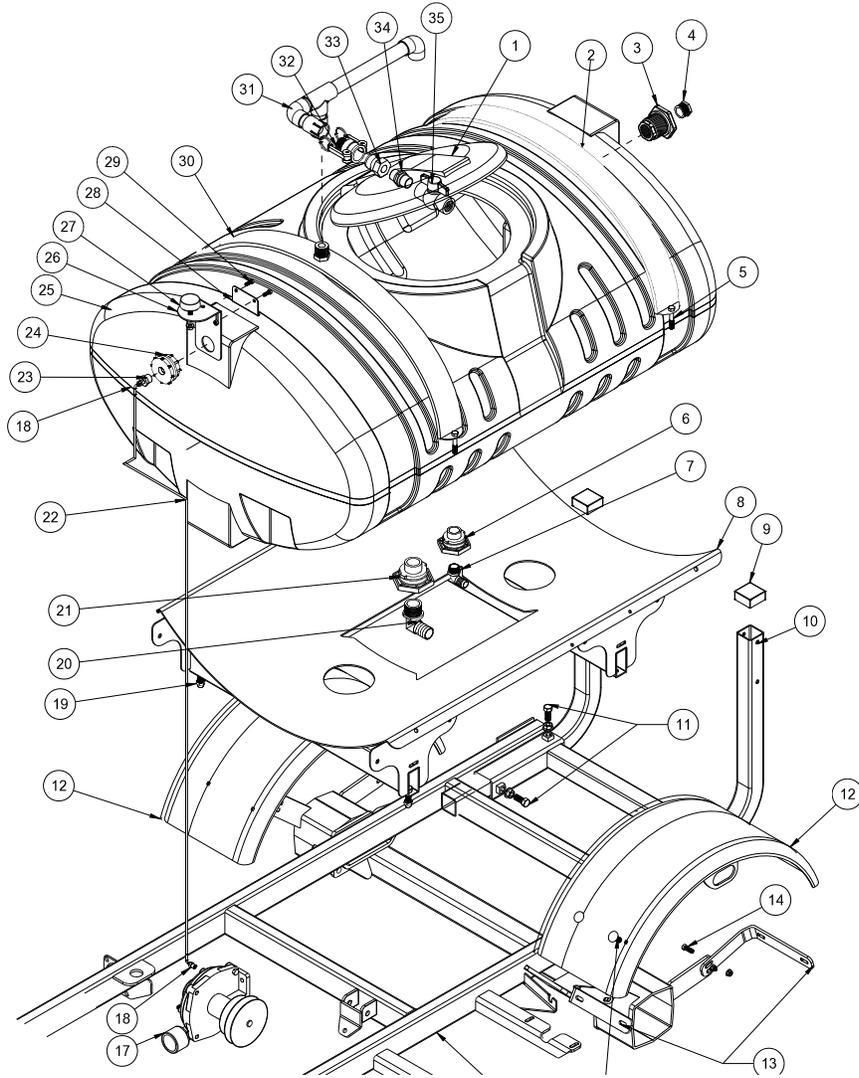


Parts

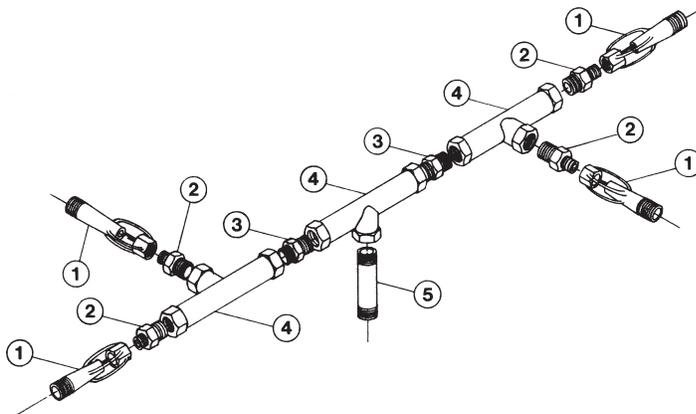
SPRAY PUMP PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|----------------|------------------------------|----------|
| 1 | 15-791 | Engine B&S 954T Turbo Diesel | 1 |
| | 21-161 | Wire Block | 1 |
| 2 | 77-223 | Timer | 1 |
| 3 | | Relay | 1 |
| 4 | 77-239 | Pump | 1 |
| 5 | 30-098 | Gear Pump | 1 |
| 6 | 17-522 | Pulley | 1 |
| | 30-136 | Hub | 1 |
| 7 | 15-790 | Belt | 1 |
| 8 | HBFL-38-16-075 | Flange Bolt 3/8 - 16 x 3/4 | 2 |
| | HW-38 | Washer 3/8 | 2 |
| | HNL-38-16 | Finage Lock Nut 3/8 -16 | 2 |
| 9 | 15-800 | Belt Guard | 1 |
| 10 | 15-798 | Belt Guard Mount | 1 |
| 11 | 16-998 | Spray Pump | 1 |
| 12 | 16-156 | Elbow | 1 |
| 13 | 18-372 | 3-Way Valve | 1 |
| | 18-372-01 | T-Handle | 1 |
| 14 | 16-935 | Quick Coupler Cap | 1 |
| 15 | 16-180 | Quick Coupler Male | 1 |
| 16 | 16-161 | Fitting | 2 |
| 17 | 8897-19 | Discharge Hose 1 1/4" x 19" | 1 |
| | 18-222 | Hose Clamp | 2 |
| 18 | 16-825 | Hex Bushing | 1 |
| 19 | 33-494 | Male Elbow | 1 |
| 20 | 33-480 | Pressure Switch | 1 |
| 21 | 15-797 | Pump Mount | 1 |
| 22 | 43-122 | Muffler | 1 |
| 23 | 15-806 | Tailpipe Assembly | 1 |
| 24 | 16-880 | Nipple | 1 |
| 25 | 10-389 | Plug | 1 |
| 26 | 18-390 | Tee | 1 |

TANK DRAWING



TURBO-QUADAGITATOR DRAWING



TANK PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|--|----------|
| 1 | 14-532 | 16" Hinged Lid Well with Gasket | 1 |
| | 14-532-01 | Gasket (for Lid) | 1 |
| 2 | 14-322 | Tank Strap | 1 |
| 3 | 16-945 | 1" Double Thread Fitting | 1 |
| 4 | 16-162 | 1" Hex Plug | 1 |
| 5 | HB-38-16-400 | Bolt $\frac{3}{8}$ - 16 x 4 | 2 |
| | HB-38-16-350 | Bolt $\frac{3}{8}$ - 16 x $3\frac{1}{2}$ | 2 |
| | HNTL-38-16 | Lock Nut $\frac{3}{8}$ - 16 | 4 |
| 6 | 16-150 | $\frac{1}{2}$ " Double Thread Fitting (part of tank) | 1 |
| 7 | 16-155 | Elbow | 1 |
| 8 | 15-733 | Tank Carrier | 1 |
| 9 | 16-557 | Square Cap | 2 |
| 10 | 15-753 | Boom Support Tube | 2 |
| 11 | HB-12-13-150 | Bolt $\frac{1}{2}$ - 13 x $1\frac{1}{2}$ | 4 |
| | HNJ-12-13 | Jam Nut $\frac{1}{2}$ - 13 | 4 |
| 12 | 10-168 | Rear Fender | 2 |
| 13 | 10-154 | Rear Fender Brackets | 4 |
| 14 | HBFL-516-18-075 | Flange Bolt $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 8 |
| | HNFL-516 - 18 | Flange Nut $\frac{5}{16}$ - 18 | 8 |
| 15 | HBC-516-18-100 | Carriage Bolt $\frac{5}{16}$ - 18 x 1 | 8 |
| | HNFL-516-18 | Flange Lock Nut $\frac{5}{16}$ - 18 | 8 |
| 16 | 15-701 | Main Frame | 1 |
| 17 | 16-998 | Hypro Pump | 1 |
| 18 | 33-494 | Male Elbow | 2 |
| 19 | HB-12-13-125 | Bolt $\frac{1}{2}$ - 13 x $1\frac{1}{4}$ | 4 |
| | HNFL-12-13 | Flange Nut $\frac{1}{2}$ - 13 | 4 |
| 20 | 16-156 | Elbow | 1 |
| 21 | 16-194 | $1\frac{1}{4}$ Anti Vortex Fitting (part of tank) | 1 |
| 22 | 8954-30 | Clear Hose $\frac{3}{16}$ | 1 |
| 23 | 33-496 | Reducer Bushing $\frac{1}{2}$ to $\frac{1}{8}$ | 1 |
| 24 | 33-495 | Bulkhead Fitting | 1 |
| 25 | 14-451 | Spray Tank | 1 |
| | 16-169 | Strainer Basket | 1 |
| 26 | 15-787 | Hood Support | 1 |
| 27 | 50-081 | Rubber Bumper | 1 |
| | HNFL-38-16 | Flange Nut $\frac{3}{8}$ - 16 | 1 |
| 28 | 15-788 | Stop Adjustment | 1 |
| 29 | HB-14-20-075 | Bolt $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 2 |
| | HNFL-14-20 | Flange Nut $\frac{1}{4}$ - 20 | 2 |
| 30 | 14-327 | Front Tank Strap | 1 |
| 31 | 14-365 | Air Gap Filler | 1 |
| 32 | 16-962 | 1" Coupler | 1 |
| | 16-962-01 | Buna-N Gasket (for 16-962) | 1 |
| 33 | 16-961 | 1" Adapter | 1 |

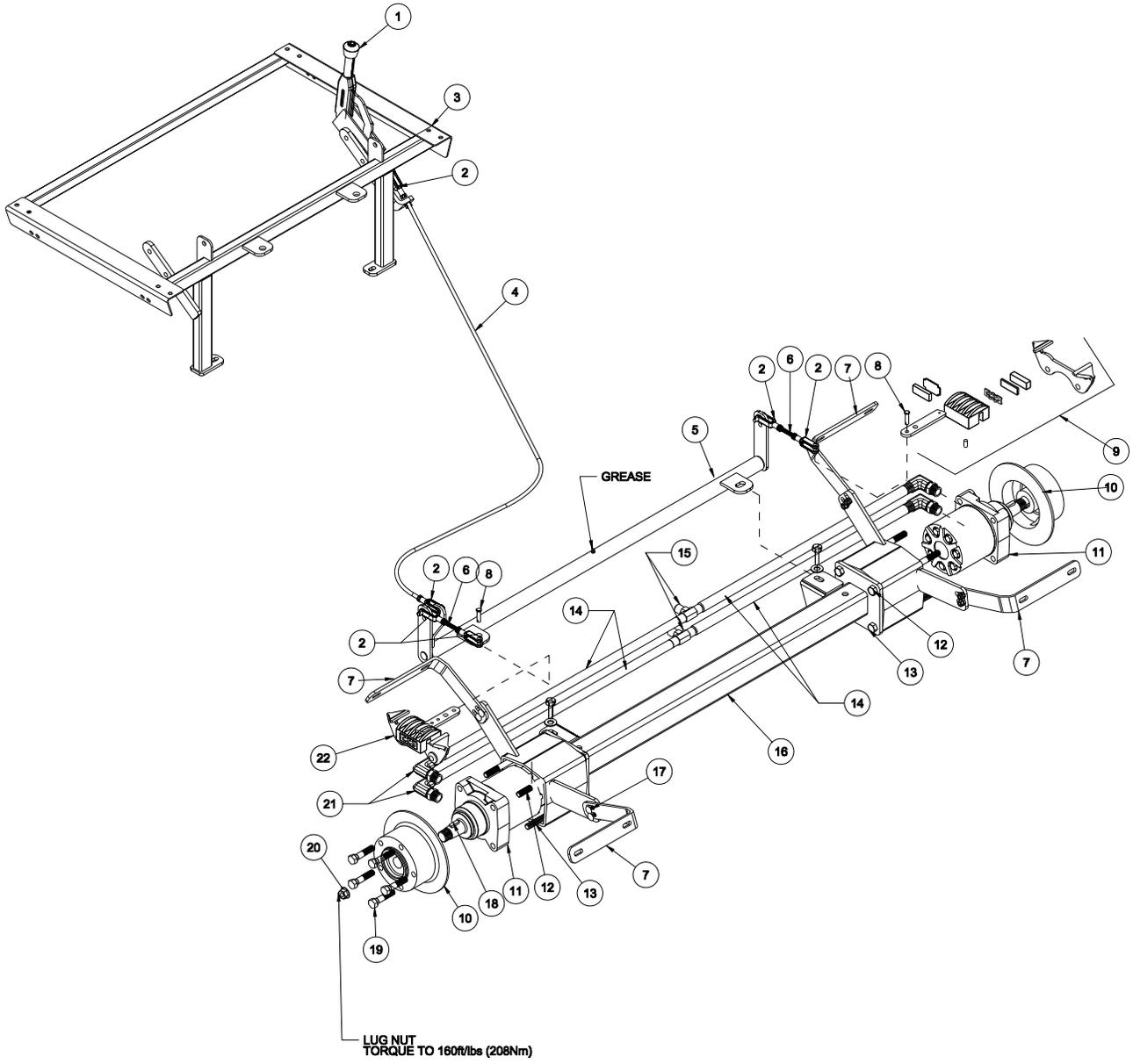
TURBO-QUAD AGITATOR PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|--------|---|----------|
| 1 | 16-036 | Agitator Jet (Includes one each $\frac{1}{8}$ ", $\frac{5}{32}$ ", and $\frac{3}{16}$ " orifices) | 4 |
| 2 | 16-173 | Reducer $\frac{3}{4}$ x $\frac{1}{2}$ | 4 |
| 3 | 16-158 | Close Nipple $\frac{3}{4}$ x $\frac{3}{4}$ | 2 |
| 4 | 16-157 | Female Pipe Thread Tee $\frac{3}{4}$ x $\frac{3}{4}$ x $\frac{3}{4}$ | 3 |
| 5 | 16-172 | Nylon Nipple $\frac{3}{4}$ NPT x $3\frac{1}{2}$ | 1 |



PARK BRAKE AND REAR AXLE DRAWING

Parts



PARK BRAKE AND REAR AXLE PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|--|----------|
| 1 | 60-106 | Park Brake Lever Kit | 1 |
| 2 | 11-100 | Linkage Yoke $\frac{5}{16}$ " | 6 |
| | HN-516-24 | Nut $\frac{5}{16}$ - 24 | 6 |
| 3 | 15-722 | Seat Frame | 1 |
| 4 | 60-347 | Brake Cable | 1 |
| 5 | 15-691 | Brake Relay | 1 |
| 6 | 34-021 | Short Rod | 2 |
| | HN-516-24 | Nut $\frac{5}{16}$ -24 | 4 |
| 7 | 10-154 | Rear Fender Bracket | 4 |
| 8 | HCP-516-100 | Clevis Pin $\frac{5}{16}$ x 1 | 5 |
| | HP-18-075 | Cotter Pin $\frac{1}{8}$ x $\frac{3}{4}$ | 5 |
| 9 | 76-241 | Right Caliper CW | 1 |
| | 34-101-02 | Pad Kit | 1 |
| 10 | 76-239 | Brake Disc 5-hole | 2 |
| 11 | 76-238 | Wheel Motor | 2 |
| | HMB-12-14 | Machine Bushing $\frac{1}{2}$ x 14GA | 4 |
| 12 | HB-12-13-800 | Bolt $\frac{1}{2}$ - 13 x 8 | 4 |
| | HNFL-12-13 | Flange Lock Nut $\frac{1}{2}$ - 13 | 4 |
| 13 | HB-12-13-750 | Bolt $\frac{1}{2}$ - 13 x $7\frac{1}{2}$ | 4 |
| | HNFL-12-13 | Flange Lock Nut $\frac{1}{2}$ -13 | 4 |
| 14 | 15-681 | Hydraulic Hose | 4 |
| 15 | 34-057 | Tee | 2 |
| 16 | 15-700 | Rear Axle | 1 |
| 17 | HBFL-516-18-075 | Flange Bolt $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 8 |
| | HNFL-516 - 18 | Flange Nut $\frac{5}{16}$ - 18 | 8 |
| 18 | HWK-516-100 | Woodruff Key $\frac{5}{16}$ x 1 (comes with wheel motor) | 2 |
| 19 | 60-268 | Lug Bolt $\frac{1}{2}$ - 20 x $1\frac{5}{16}$ | 10 |
| 20 | 14-265 | Lug Nut (comes with wheel motor) | 2 |
| 21 | 34-122 | Short Elbow | 4 |
| 22 | 76-240 | Left Caliper CCW | 1 |
| | 34-101-02 | Pad Kit | 1 |

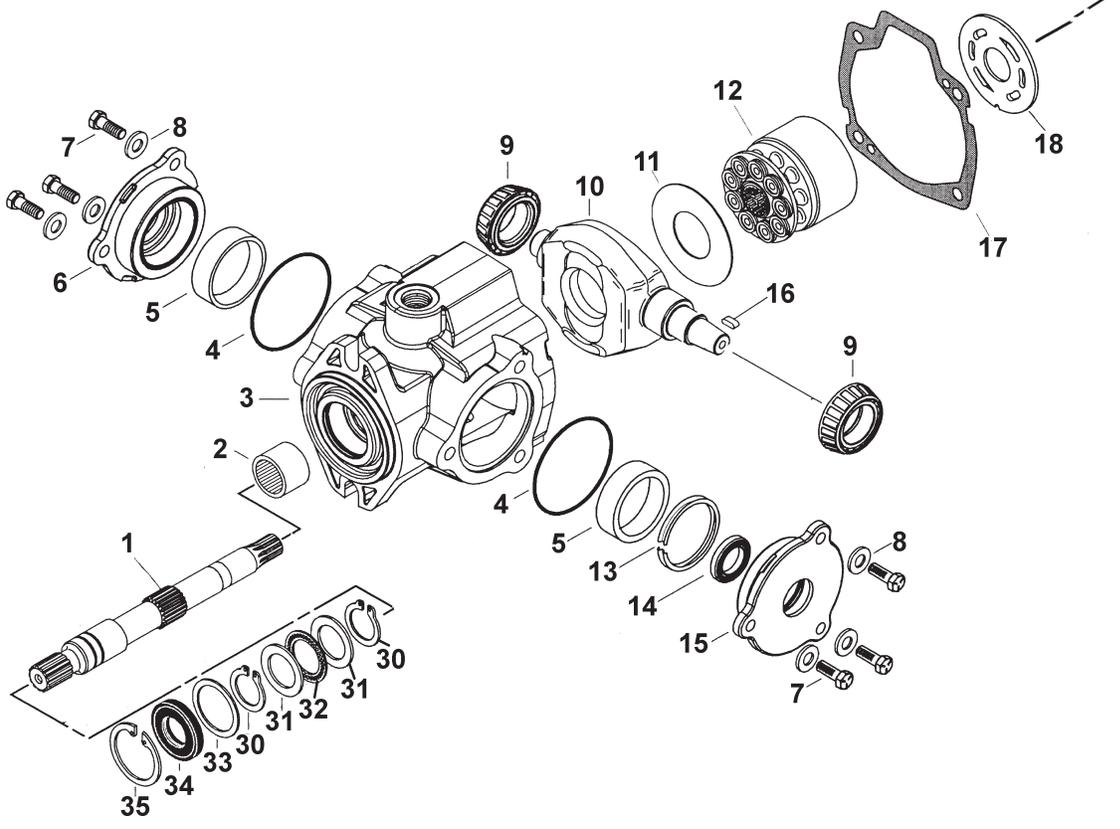
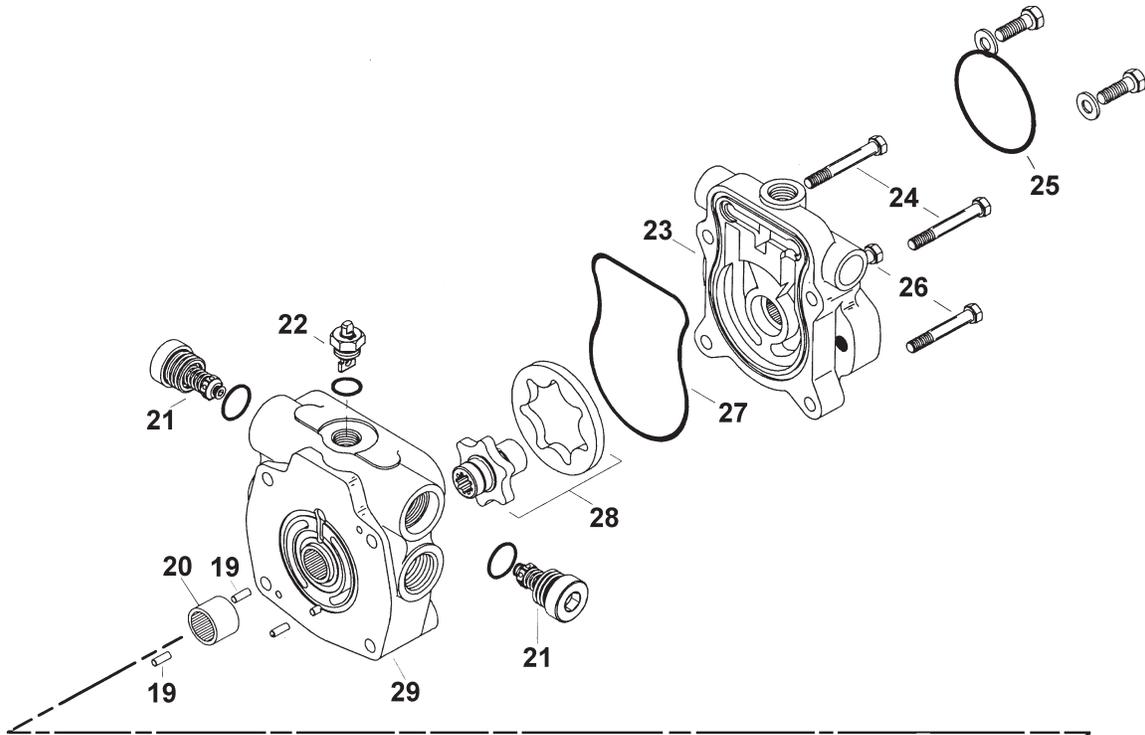
15-301 ORBITROL PARTS LIST

| REF # | PART # | DESCRIPTION | QUANTITY |
|-------|-----------|-----------------------------------|----------|
| 1 | 10-576-04 | Dust Seal | 1 |
| 2 | | Housing | 1 |
| 3** | | O-Ring Seal | 3 |
| 4** | | Quad Seal | 1 |
| 5 | 10-576-03 | Thrust Bearing | 1 |
| 6 | 10-576-02 | Bearing Race | 2 |
| 7 | | Manual Steering Relief Valve | 1 |
| 8** | | O-ring | 1 |
| 9 | | Plug | 1 |
| 10‡ | | Standard Torque Centering Springs | 1 |
| 11 | | Sleeve | 1 |
| 12 | 15-301-06 | Wear Plate | 1 |
| 13 | 10-576-01 | Drive | 1 |
| 14 | 15-301-08 | Drive Pin | 1 |
| 15 | | Spool | 1 |
| 16‡ | | Spring Retaining Ring | 1 |
| 17 | 10-576-05 | Gerotor | 1 |
| 18** | | O-Ring | 1 |
| 19** | | Seal Ring | 1 |
| 20 | 15-301-03 | End Cap | 1 |
| 21 | 10-576-06 | Cap Screw | 7 |
| ** | 15-301-01 | Seal Kit | 1 |
| ‡ | 15-301-15 | Centering Spring Kit | 1 |

15-301 ORBITROL SPECIFICATIONS

| | |
|---------------------------------|---|
| Inlet Relief Valve Setting | 1020 psi (70 bar) |
| Nominal Flow | 3 gpm (11 lpm) |
| Displacement | 4.50 cu. in/ R (73.8 cu cm/R) |
| Check Valve for Manual Steering | Yes |
| Inlet Pressure Rating | 2030 psi (140 bar) |
| Return Pressure Rating | 145 psi (10 bar) Maximum |
| Fluid | SAE 10W-40 API Service SJ or higher Motor Oil |
| Ports | 9/16 - 18 SAE O-Ring 4 Ports |

77-239 EATON HYDROSTATIC PUMP DRAWING (DIESEL)



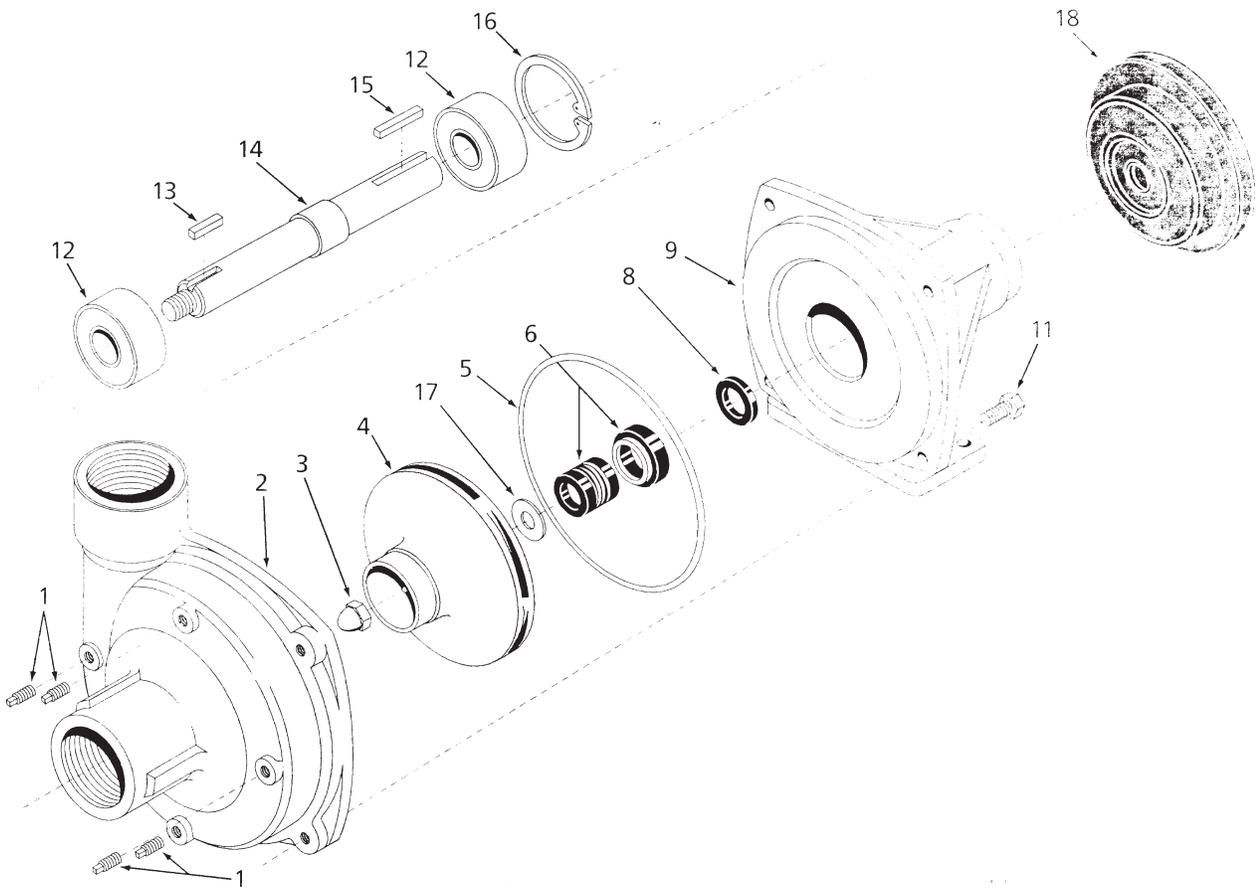
Parts

77-239 EATON HYDROSTATIC PUMP PARTS LIST (DIESEL)

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------|-------------------------------|----------|
| 1 | 60-343-52 | Drive Shaft (splined) | 1 |
| 2 | 60-343-08 | Needle Bearing (with housing) | 1 |
| 3 | 77-239-01 | Housing | 1 |
| 4 | 77-239-02 | O-Ring | 1 |
| 5 | 77-239-03 | Thrust Bearing | 2 |
| 6 | 77-239-04 | Trunnion Cover | 1 |
| 7 | 77-239-05 | Pan Head Screw | 2 |
| 8 | 77-239-06 | Washer | 6 |
| 9 | 77-239-07 | Cone Bearing | 2 |
| 10 | 77-239-08 | Cam Plate | 1 |
| 11 | 77-239-09 | Swash Plate Insert | 1 |
| 12 | 60-343-21 | Rotating Kit | 1 |
| 13 | 77-239-10 | Crush Ring | 1 |
| 14* | 60-343-12 | Shaft Seal | 1 |
| 15 | 77-239-11 | Seal Cover | 1 |
| 16 | 77-239-12 | Key | 1 |
| 17* | 77-239-13 | Gasket | 1 |
| 18 | 77-239-14 | Back Plate | 1 |
| 19 | 33-058-27 | Dowel Pin | 2 |
| 20 | 60-343-23 | Bearing | 1 |
| 21 | 77-239-15 | Relief Valve (4000 psi) | 2 |
| 22 | 77-239-16 | Tow Valve Assembly | 1 |
| 23 | 76-160 | Charge Pump Adaptor | 1 |
| 24 | 77-239-17 | Cap Screw | 2 |
| 25* | 77-130 | O-Ring (mounting kit) | 1 |
| 26 | 77-239-18 | Cap Screw | 2 |
| 27* | 77-239-19 | O-Ring | 1 |
| 28 | 60-343-43 | Gerotor and Coupler | 1 |
| 29 | 77-239-20 | Endcover Assembly | 1 |
| 30* | 77-239-21 | Retaining Ring | 2 |
| 31 | 60-343-05 | Bearing Race | 1 |
| 32 | 60-343-06 | Thrust Bearing | 1 |
| 33 | 60-343-03 | Washer | 2 |
| 34* | 60-343-02 | Shaft Seal | 1 |
| 35* | 60-343-01 | Retaining Ring | 1 |

* 77-239-22 Seal Kit

16-998 HYPRO PUMP DRAWING



Parts

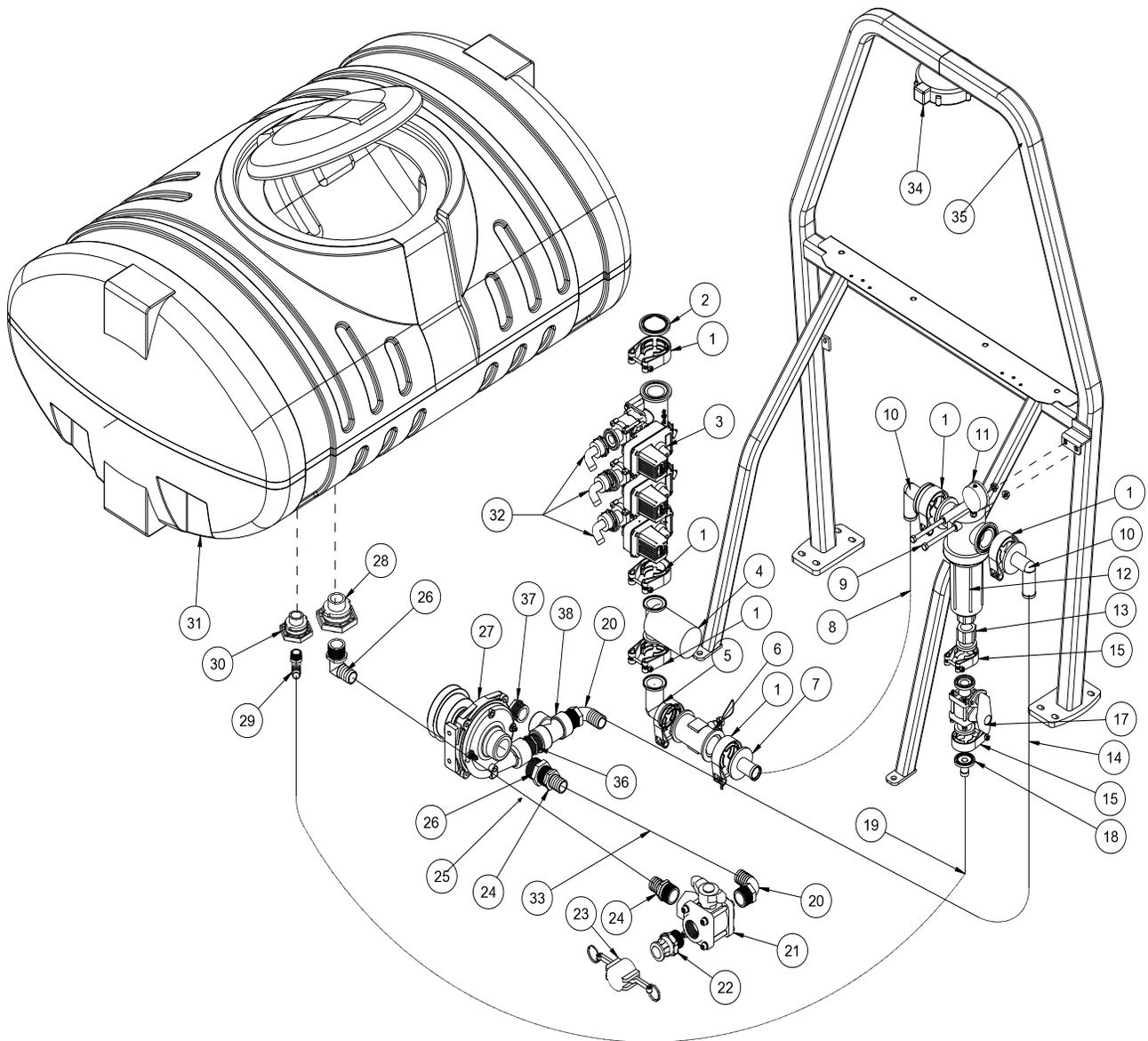
16-998 HYPRO® PUMP PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------|-----------------------------------|----------|
| 1 | 16-998-01 | Drain Plug | 4 |
| 2 | 16-998-02 | Pump Casing | 1 |
| 3 | 16-998-03 | Impeller Nut | 1 |
| 4 | 16-966-16 | Impeller | 1 |
| 5* | 16-467 | O-Ring | 1 |
| 6* | 16-998-05 | Mechanical Seal (Silicon Carbide) | 1 |
| 8* | 16-966-06 | Slinger Ring | 1 |
| 9 | 16-998-06 | Mounting Flange | 1 |
| 11 | 16-998-07 | Bolt | 4 |
| 12 | 16-966-10 | Ball Bearing | 2 |
| 13 | 16-998-08 | Key | 1 |
| 14 | 16-998-09 | Pump Shaft | 1 |
| 15 | 16-822-20 | Key | 1 |
| 16 | 16-966-13 | Bearing Retainer | 1 |
| 17* | 16-998-10 | Gasket | 1 |
| 18 | 16-994-01 | Clutch | 1 |
| * | 16-967 | Silicone - Carbon Seal Kit | |

NOTE:

When servicing the spray pump or filter, all control valves must be shut off if there is liquid in the tank.

1752D PLUMBING DRAWING (RAVEN 440)

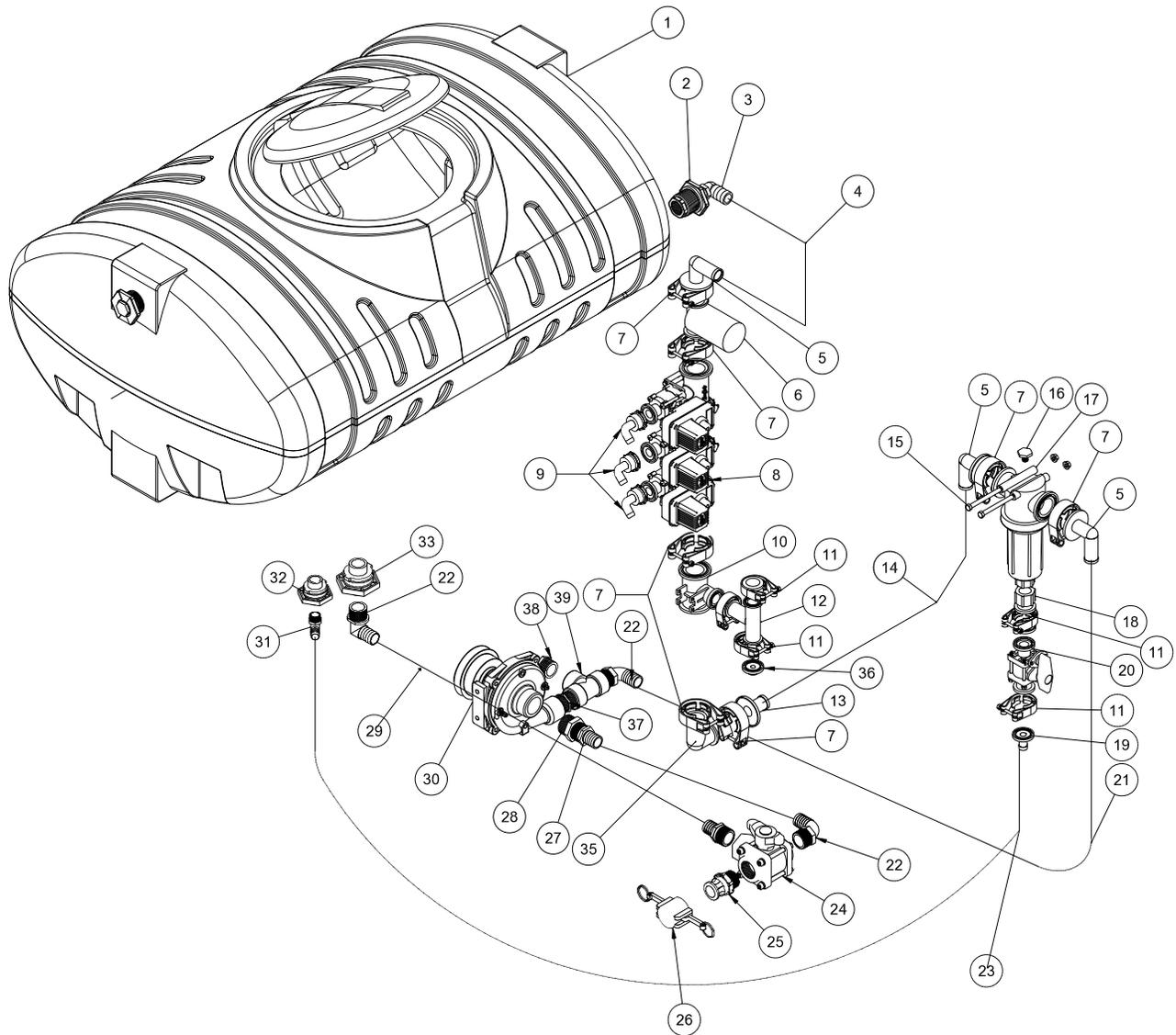


Accessories

1752D PLUMBING PARTS LIST (RAVEN 440)

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|--------------|---|----------|
| 1 | 15-741 | 75 Series Clamp | 7 |
| 2 | 15-742 | #75 Inlet Cover | 1 |
| 3 | 15-743 | Manifold Ball Valve | 1 |
| 4 | 16-524 | Motorized Control Valve | 1 |
| 5 | 15-734 | #75 Elbow Coupling | 1 |
| 6 | 18-373 | Flow Meter | 1 |
| | 18-373-01 | Sensor | 1 |
| 7 | 15-744 | #75 Hose Barb | 1 |
| 8 | 8897-56 | 1 ¹ / ₄ Discharge Hose 56" | 1 |
| | 18-116 | Hose Clamp | 2 |
| 9 | HB-38-16-500 | Bolt ³ / ₈ - 16 x 5 | 2 |
| | HNFL-38-16 | Flange Nut ⁵ / ₁₆ - 18 | 2 |
| 10 | 15-739 | #75 90° Hose Barb | 2 |
| 11 | 16-281 | Liquid Filled Gauge | 1 |
| 12 | 15-737 | Flanged Strainer | 1 |
| 13 | 15-735 | #50 x 1" FPT Fitting | 1 |
| 14 | 8897-67 | 1 ¹ / ₄ Discharge Hose 67" | 1 |
| | 18-116 | Hose Clamp | 2 |
| 15 | 15-740 | 50 Series Clamp | 2 |
| 17 | 15-738 | Flanged Ball Valve | 1 |
| 18 | 15-808 | Flange Hose Barb, Straight | 1 |
| 19 | 8896-55 | 1 Suction Hose 55" | 1 |
| | 18-116 | Hose Clamp | 1 |
| | 18-040 | Hose Clamp | 1 |
| 20 | 16-156 | Elbow | 3 |
| 21 | 18-372 | 3-Way Valve | 1 |
| | 18-372-01 | T-Handle | 1 |
| 22 | 16-180 | Quick Coupler Male | 1 |
| 23 | 16-935 | Quick Coupler Cap | 1 |
| 24 | 16-161 | Fitting | 2 |
| 25 | 8897-38 | 1 ¹ / ₄ Discharge Hose 38" | 1 |
| | 18-116 | Hose Clamp | 2 |
| 26 | 16-825 | Hex Bushing | 1 |
| 27 | 16-998 | Pump | 1 |
| 28 | 16-194 | 1 ¹ / ₄ Anti Vortex Fitting (comes with tank) | 1 |
| 29 | 16-155 | Elbow | 1 |
| 30 | 16-150 | 1/2" Double Threaded Fitting (comes with tank) | 1 |
| 31 | 14-451 | Spray tank | 1 |
| 32 | 15-553 | ³ / ₄ -90° Hose Barb | 3 |
| | 8887-120 | ³ / ₄ " Orange PVC Hose x 120" | 3 |
| | 18-040 | Hose Clamp | 3 |
| 33 | 8897-19 | 1 ¹ / ₄ Discharge Hose 19" | 1 |
| | 18-116 | Hose Clamp | 2 |
| 34 | 10-408-01 | Phoenix 10 GPS | 1 |
| 35 | 15-762 | ROPs | 1 |
| 36 | 16-880 | Nipple | 1 |
| 37 | 10-389 | Plug | 1 |
| 38 | 18-390 | Tee | 1 |
| NS | 15-818 | #75 Fitting Oring | |
| | 15-817 | #50 Fitting Oring | |

1754D PLUMBING DRAWING (RAVEN203)

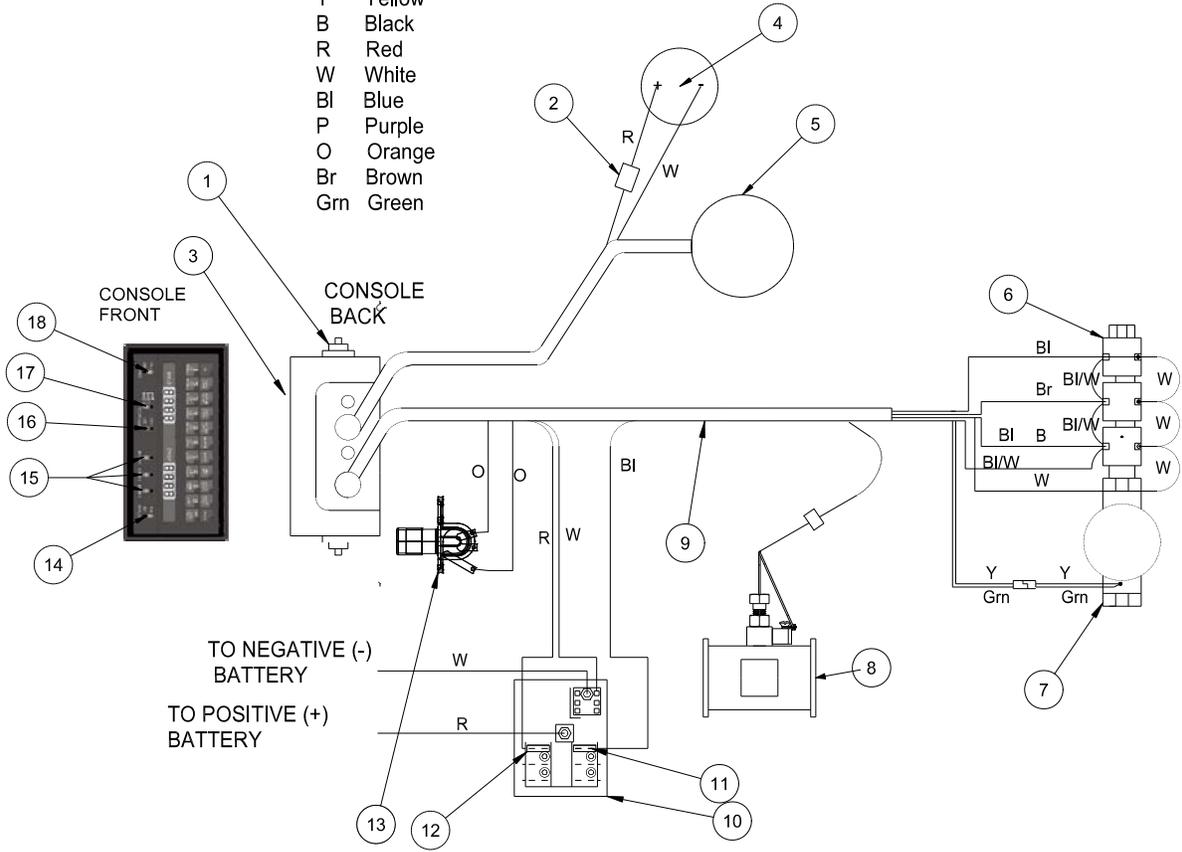


Accessories

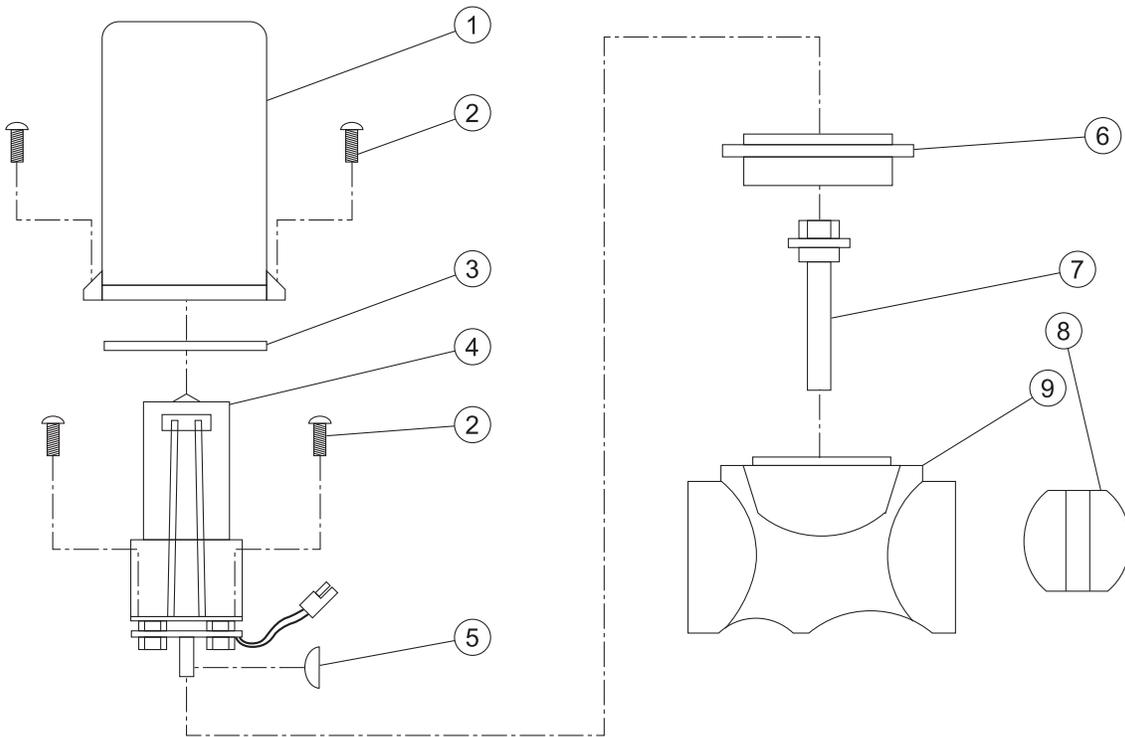
1754D PLUMBING PARTS LIST (RAVEN 203)

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|--------------|---|----------|
| 1 | 14-451 | Spray Tank | 1 |
| 2 | 16-945 | Double Thread Fitting (inside tank) | 1 |
| 3 | 15-779 | Hose Barb | 1 |
| 4 | 8889-27 | 1 ¹ / ₄ Suction Hose 27" | 1 |
| | 18-116 | Hose Clamp | 2 |
| 5 | 15-739 | #75 90° Hose Barb | 3 |
| 6 | 16-524 | Motorized Control Valve | 1 |
| 7 | 15-741 | 70 Series Clamp | 7 |
| 8 | 15-743 | Manifold Ball Valve | 1 |
| 9 | 15-553 | 3 ³ / ₄ -90° Hose Barb | 3 |
| | 8887-120 | 3 ³ / ₄ " Orange PVC Hose x 120" | 3 |
| | 18-040 | Hose Clamp | 3 |
| 10 | 15-775 | Reducer Tee | 1 |
| 11 | 15-740 | 50 Series Clamp | 6 |
| 12 | 15-776 | #50 Tee | 1 |
| 13 | 15-744 | #75 Hose Barb | 1 |
| 14 | 8897-60 | 1 ¹ / ₄ Discharge Hose 60" | 1 |
| | 18-116 | Hose Clamp | 2 |
| 15 | HB-38-16-500 | Bolt ³ / ₈ - 16 x 5 | 2 |
| | HNFL-38-16 | Flange Nut ³ / ₈ - 16 | 2 |
| 16 | 15-780 | Poly Hex Plug | 1 |
| 17 | 15-737 | Flanged Strainer | 1 |
| 18 | 15-735 | #50 1" FTP Fitting | 1 |
| 19 | 15-808 | Flanged Hose Barb Straight | 1 |
| 20 | 15-738 | Flanged Ball Valve | 1 |
| 21 | 8897-70 | 1 ¹ / ₄ Discharge Hose 70" | 1 |
| | 18-116 | Hose Clamp | 2 |
| 22 | 16-156 | Elbow | 3 |
| 23 | 8896-55 | 1" Suction Hose 55" | 1 |
| | 18-116 | Hose Clamp | 1 |
| | 18-040 | Hose Clamp | 1 |
| 24 | 18-372 | 3-Way Valve | 1 |
| | 18-372-01 | T-Handle | 1 |
| 25 | 16-180 | Quick Coupler Male | 1 |
| 26 | 16-935 | Quick Coupler Cap | 1 |
| 27 | 16-161 | Fitting | 2 |
| 28 | 16-825 | Hex Bushing | 1 |
| 29 | 8897-38 | 1 ¹ / ₄ Discharge Hose 38" | 1 |
| | 18-116 | Hose Clamp | 2 |
| 30 | 16-998 | Pump | 1 |
| 31 | 16-155 | Elbow | 1 |
| 32 | 16-150 | 1 ¹ / ₂ " Double Threaded Fitting (comes with tank) | 1 |
| 33 | 16-194 | 1 ¹ / ₄ Anti Vortex Fitting (comes with tank) | 1 |
| 34 | 8897-19 | 1 ¹ / ₄ Discharge Hose 19" | 1 |
| | 18-222 | Hose Clamp | 2 |
| 35 | 15-734 | #75 Elbow Coupling | 1 |
| 36 | 16-880 | Nipple | 1 |
| 37 | 18-390 | Tee | 1 |
| 38 | 10-389 | Plug | 1 |
| NS | 15-818 | #75 Fitting Oring | |
| | 15-817 | #50 Fitting Oring | |

WIRE CODE
 Y Yellow
 B Black
 R Red
 W White
 Bl Blue
 P Purple
 O Orange
 Br Brown
 Grn Green

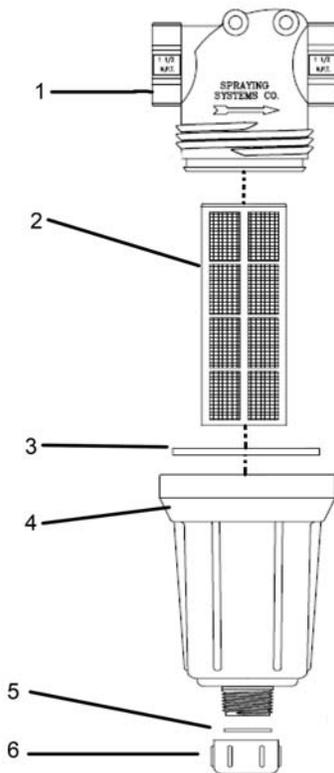


CONTROLS 1754D SYSTEM (RAVEN 203)



| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------|---|----------|
| 1 | 16-958-01 | Mounting Bracket | 1 |
| 2 | 16-898 | Boom Switch | 3 |
| 3 | 16-900 | Mounting Knob | 2 |
| 4 | 16-899 | Master Switch | 1 |
| 5 | 18-418 | Console with Liquid Filled Pressure Gauge | 1 |
| 6 | 33-090-02 | Liquid Filled Pressure Gauge | 1 |
| 7 | 16-958-02 | Fuse Holder | 1 |
| | 16-525-03 | Fuse 15 AMP | 1 |
| 8 | 16-895 | Pressure Switch | 1 |
| 9 | 16-902 | Cable Assembly 6ft Enclosure Hook-Up | 1 |
| 10 | 16-958-05 | Union Fitting | 1 |
| 11 | 16-524 | Motorized Control Valve | 1 |
| 12 | 15-743 | Manifold Valve | 1 |
| 13 | 15-775 | Tee | 1 |
| 14 | 16-955 | Tubing | 1 |
| 15 | 16-902 | Cable Assembly 72" Solenoid Hook-Up | 1 |
| 16 | 33-271 | Fuse Block | 1 |
| 17 | 33-508 | Auto Blade Type Fuse 15 amp | 1 |
| 18 | 10-225 | Wire Harness (fuse block to electric valve) | 1 |
| 19 | 33-273 | Auto Blade Type Fuse 30 Amp | 1 |

16-524 MOTORIZED CONTROL VALVE DRAWING



| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------|---------------------------|----------|
| 1 | 16-870 | | 1 |
| 2* | 16-524-01 | | 6 |
| 3 | 16-897 | Seal | 1 |
| 4 | 16-875 | Motor Assembly | 1 |
| 5* | 16-957 | Woodruff Key | 1 |
| 6* | 16-524-04 | Isolation Flange Assembly | 1 |
| 7* | 16-524-02 | Coupler Shaft | 1 |
| 8* | 16-956 | Butterfly | 1 |
| 9* | 16-524-03 | Valve Body Assembly | 1 |
| * | 16-524-05 | 1" Valve ISO-Body Kit | |

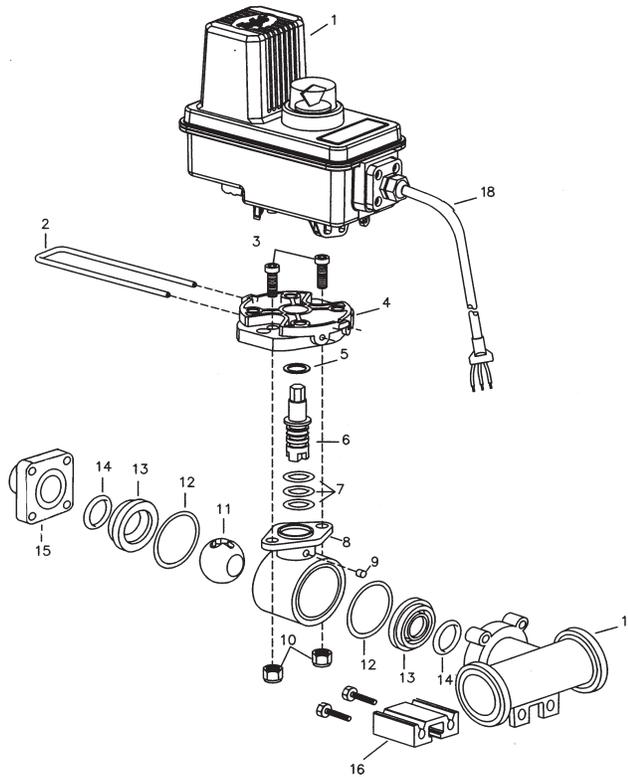
WHEN SERVICING VALVE:

Replace valve body with ISO-Body Kit if valve has been leaking internally.

Replace motor assembly if the motor will not run or if the printed circuit board is corroded.

Before reassembling valve, remove the coupler shaft from the valve body. Apply Loctite to coupler shaft and woodruff key. Place the coupler shaft (Ref 7) and the woodruff key (Ref 5) onto the motor shaft. Plug motor into the valve connector coming from Sprayer Control Console. Check that the motor rotates in both directions. Motor must stop when coupler CAM releases printed circuit board switch button.

When reassembling valve, grease both sealing surfaces of coupler shaft. Insert coupler shaft into Iso-flange and be sure seal properly seats on shaft. Install on valve body and apply RTV 738 to mounting holes. Reassemble remaining items as shown in parts diagram on opposite side.



| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------|-------------------------|----------|
| 1 | 15-737-01 | Strainer Head 75 Series | 1 |
| 2 | 16-968-03 | 50 Mesh Strainer | 1 |
| 3 | 14-521-02 | EPDM Gasket | 1 |
| 4 | 14-521-03 | Bowl 1" NPT | 1 |
| 5 | 14-521-04 | EPDM Rubber gasket | 1 |
| 6 | 14-521-05 | Cap | 1 |

TURBO TURFJET TIPS

This is a wide-angle (110°), hollow-cone, drift-reduction nozzle. Replaces conventional flooding nozzles in broadcast applications.

FEATURES:

- Color-coding makes it easy to match nozzle flow rates for easy identification.
- Color-coding is available in sizes 1/4 TTJ02-VS through 1/4 TTJ15-VS.
- Uniform spray distribution.
- A large orifice opening and passages minimize clogging.
- The Turbo TurfJet nozzle's patented design element, a secondary swirl chamber in the nozzle cap, alters the swirling action of the liquid so that the fewer driftable lines are discharged from the secondary orifice.
- Spraying Pressure 25-75 PSI (1.5-5 bar).

NOZZLE TILT

Delavan's extensive research on spray patterns has proven that a tilt of about 45° for flood Nozzles or tips will significantly improve the spray pattern uniformity.

The nozzle tilt reduces the effect of boom height variation and allows the spray nozzle to maintain a more fully developed pattern even when the nozzle outlet is below the recommended height for the best spray pattern uniformity.

RECOMMENDED OVERLAP AND NOZZLE HEIGHT

Adjust spray height in the field to overlap a minimum of 30% of each edge of pattern. Adjust nozzle height until this is achieved. If a decision to tilt the nozzle is made, do it before measuring the width of the spray on the ground and adjusting nozzle height. See example below.

DRIFTABLE FINES PRODUCED

(0.5 gpm at 40 psi)

| Nozzle (.5 gpm Output) | Percent of Spray Volume less than 200 microns |
|---------------------------|--|
| Turbo TurfJet | < 1% |

XR TEEJET TIPS

This is an extended range flat spray tip. It is excellent for Contact Pesticides and Growth Regulators and good for Systemic Pesticides.

Contact Pesticides and Growth Regulators - At medium pressures (20-30 psi) provides medium size droplets for good surface coverage and less drift. At higher pressures (30-60 psi) produces smaller droplets for better coverage. Wide angle 110° tips produce slightly smaller droplets than 80° tips at equal pressures.

Systemic Pesticides - At lower pressures (15-20 psi) produces larger spray droplets and reduces drift while still providing uniform coverage along the boom.

FEATURES:

- Excellent spray distribution over a wide range of pressures (15-60 psi).
- Ideal for rigs equipped with sprayer controllers.
- Reduces drift at lower pressures, better coverage at higher pressures.
- Available in stainless steel and hardened stainless steel in 80° and 110° tip spray angles with VisiFlo color coding.

RECOMMENDED OVERLAP

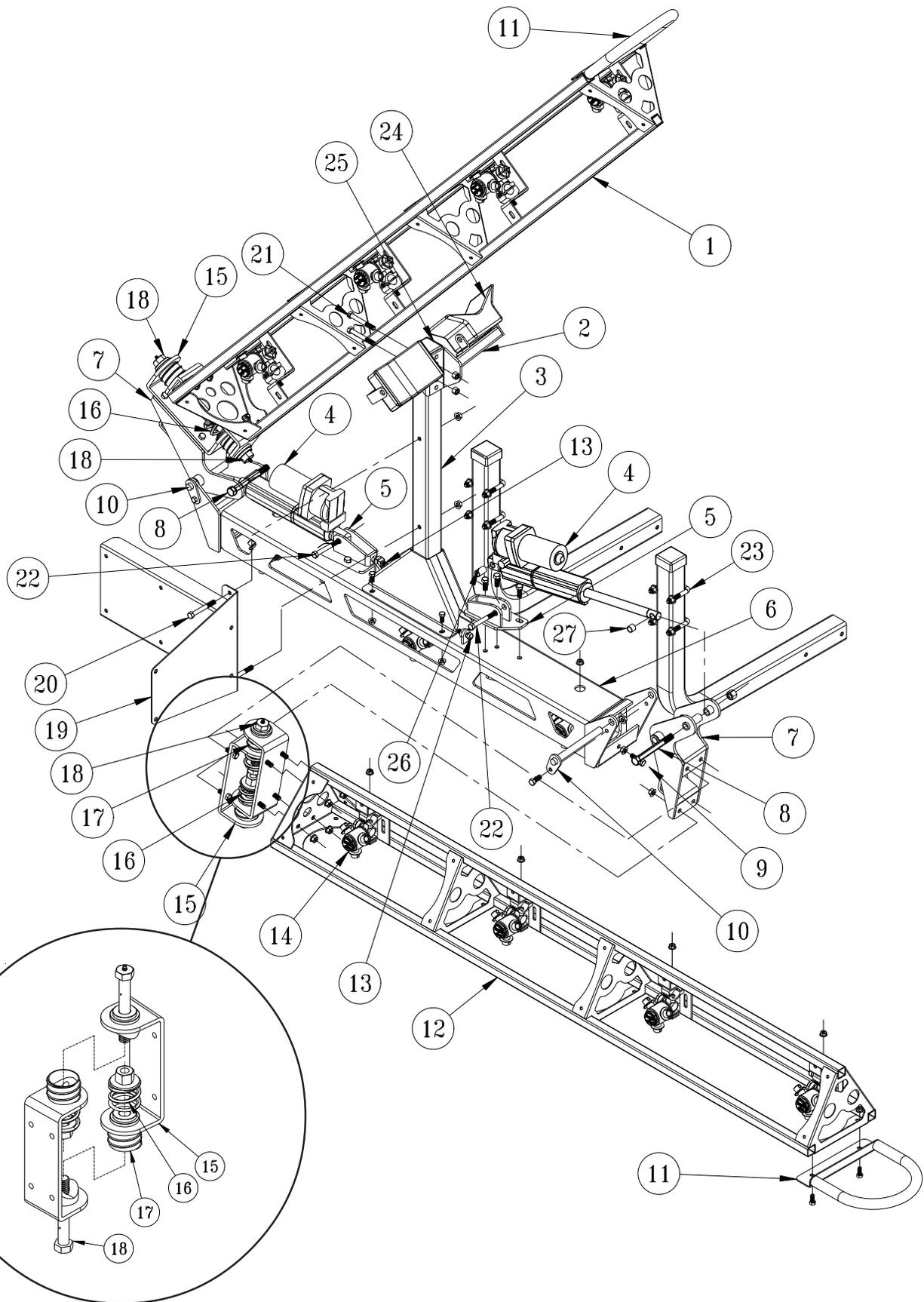
Adjust nozzle spray height to overlap 30% of each edge of pattern.

NOZZLE HEIGHT

Suggested spray nozzle height with 20" spacing, tip spray angle of 80° should be 17-19", tip spray angle of 110° should be 12-14".



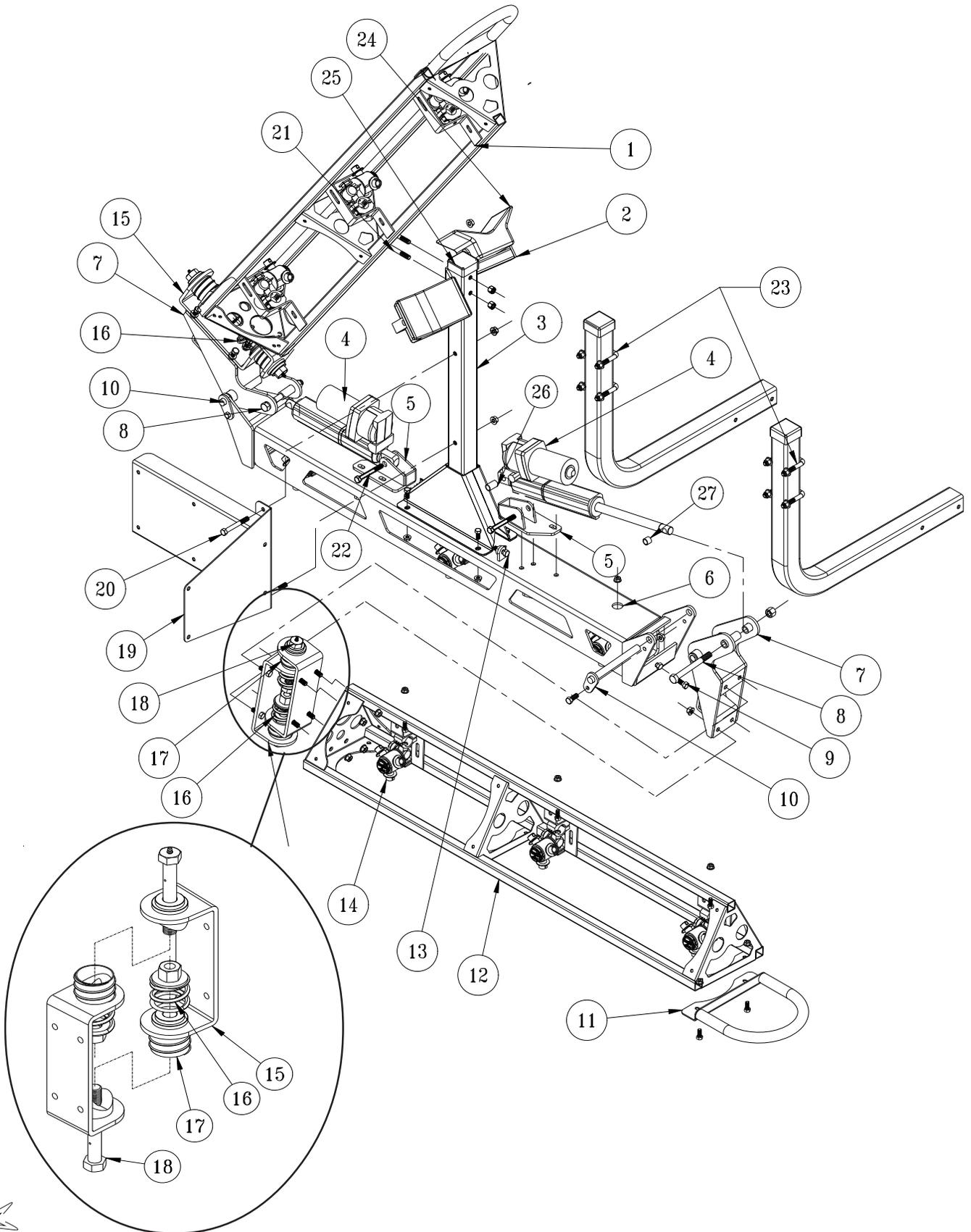
17-525 HEAVY BOOM



| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|---|----------|
| 1 | 17-531 | Left Boom Arm | 1 |
| 2 | 17-544 | Nest Plate | 1 |
| 3 | 17-533 | Boom Nest post | 1 |
| | HBFL-516-18-075 | Bolt, $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 4 |
| | HNFL-516-18 | Flange Lock Nut, $\frac{5}{16}$ - 18 | 4 |
| 4 | 17-553 | 8" Elelctric Hydraulic Actuator | 2 |
| 5 | 17-545 | Ram Mount | 2 |
| | HB-38-16-100 | Bolt, $\frac{3}{8}$ - 16 x 1 | 6 |
| | HW-516 | Washer, $\frac{5}{16}$ | 6 |
| | HNFL-38-16 | Flange Lock Nut, $\frac{3}{8}$ -16 | 6 |
| 6 | 17-528 | Boom Center | 1 |
| 7 | 17-529 | Arm Pivot Hinge | 2 |
| 8 | HB-12-13-500 | Bolt, $\frac{1}{2}$ - 13 x 5 | 2 |
| | HNTL-12-13 | Lock Nut, $\frac{1}{2}$ - 13 | 2 |
| 9 | HB-38-16-250 | Bolt, $\frac{3}{8}$ - 16 x 2 $\frac{1}{2}$ | 2 |
| | HNTL-38-16 | Lock Nut, $\frac{3}{8}$ - 16 | 2 |
| 10 | 17-530 | Hinge Pin | 2 |
| | HB-516-18-075 | Bolt, $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 2 |
| 11 | 17-541 | Boom End Guard | 2 |
| | HBFL-516-18-075 | Bolt, $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 4 |
| | HNFL-516-18 | Flange Lock Nut, $\frac{5}{16}$ - 18 | 4 |
| 12 | 17-532 | Right Boom Arm | 1 |
| 13 | HSSQS-38-16-150 | Square Head Set SCrew , $\frac{3}{8}$ -16 x 1 $\frac{1}{2}$ | 2 |
| 14 | 33-506 | Body (see nozzle drawing) | 11 |
| | HB-516-18-075 | Bolt, $\frac{5}{16}$ -18 x $\frac{3}{4}$ | 11 |
| | HNFL-516-18 | Flange Lock Nut, $\frac{5}{16}$ -18 | 11 |
| 15 | 17-527 | Boom Hinge | 4 |
| | HB-38-16-100 | Bolt, $\frac{3}{8}$ - 16 x 1 | 16 |
| | HNFL-38-16 | Lock Nut, $\frac{3}{8}$ - 16 | 16 |
| 16 | 17-539 | Compression Spring | 4 |
| 17 | 9026-2 | Rubber Duct Hose x 2" | 4 |
| 18 | 17-540 | Tapped Bolt | 4 |
| | HW-34 | Washer, $\frac{3}{4}$ | 4 |
| | HNTL-34-10 | Lock Nut, $\frac{3}{4}$ -10 | 4 |
| | HG-14-28-180 | Grease Fitting, $\frac{1}{4}$ - 28 x 180° | 4 |
| 19 | 17-535 | Clean Load Mount | 1 |
| 20 | HB-38-16-300 | Bolt, $\frac{3}{8}$ - 16 x 3 | 2 |
| | HNTL-38-16 | Lock Nut, $\frac{3}{8}$ - 16 | 2 |
| 21 | HB-38-16-300 | Bolt, $\frac{3}{8}$ - 16 x 3 | 2 |
| | HW-38 | Washer, $\frac{3}{8}$ | 2 |
| | HNTL-38-16 | Lock Nut, $\frac{3}{8}$ - 16 | 2 |
| 22 | HCP-12-300 | Clevis Pin, $\frac{1}{2}$ - 3 | 2 |
| | HHP-18 | Bridge Pin, $\frac{1}{8}$ | 2 |
| 23 | 17-537 | Square U-bolt with Nut | 4 |
| 24 | 17-543 | Y -bow Stop | 2 |
| | HB-12-13-500 | Bolt, $\frac{1}{2}$ - 13 x 5 | 2 |
| | HNTI-12-13 | Lock Nut, $\frac{1}{2}$ - 13 | 2 |
| 25 | 16-557 | Rubber Cap | 1 |
| 26 | 18-234 | 1" Bushing (part of 17-553) | 2 |
| 27 | 18-036 | $\frac{1}{2}$ " Bushing (part of 17-553) | 2 |



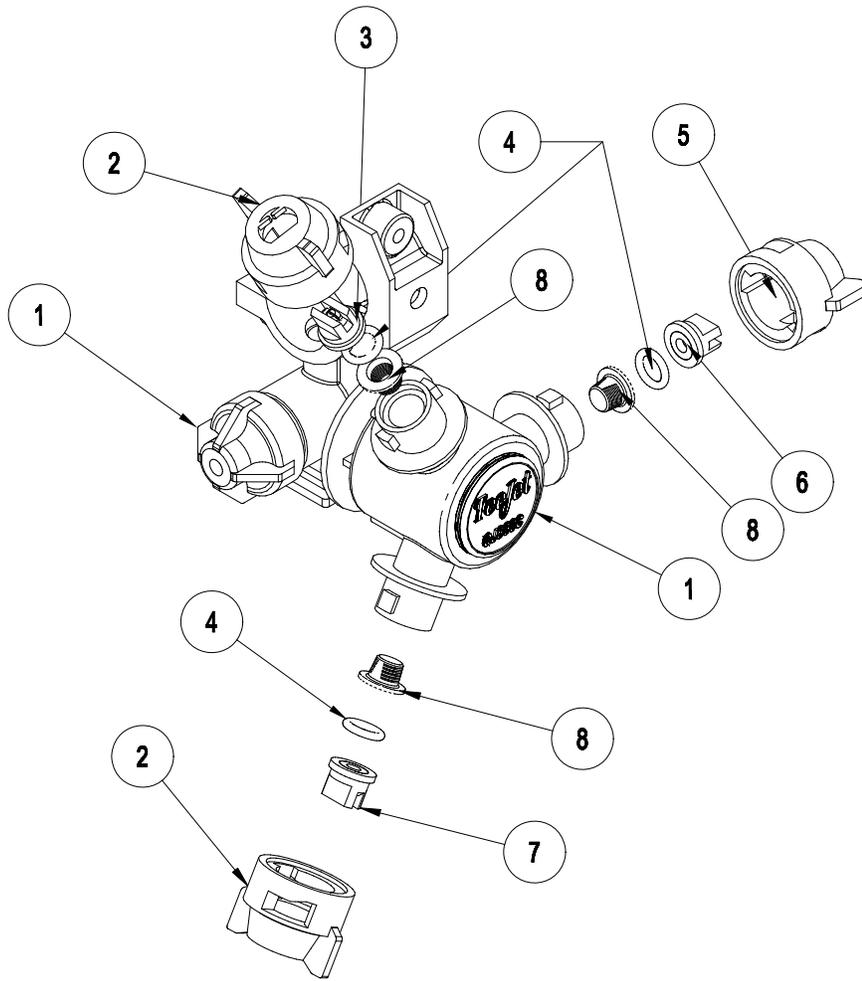
17-550 15' SMITHCO SUPER BOOM



Accessories

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|--|----------|
| 1 | 17-551 | Left Boom Arm | 1 |
| 2 | 17-544 | Nest Plate | 1 |
| 3 | 17-533 | Boom Nest post | 1 |
| | HBFL-516-18-075 | Bolt, $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 4 |
| | HNFL-516-18 | Flange Lock Nut, $\frac{5}{16}$ - 18 | 4 |
| 4 | 17-553 | 8" Electric Actuator | 2 |
| 5 | 17-545 | Actuator Mount | 2 |
| | HB-38-16-100 | Bolt, $\frac{3}{8}$ - 16 x 1 | 6 |
| | HW-516 | Washer, $\frac{5}{16}$ | 6 |
| | HNFL-38-16 | Flange Lock Nut, $\frac{3}{8}$ -16 | 6 |
| 6 | 17-528 | Boom Center | 1 |
| 7 | 17-529 | Arm Pivot Hinge | 2 |
| 8 | HB-12-13-500 | Bolt, $\frac{1}{2}$ - 13 x 5 | 2 |
| | HNTL-12-13 | Lock Nut, $\frac{1}{2}$ - 13 | 2 |
| 9 | HB-38-16-250 | Bolt, $\frac{3}{8}$ - 16 x 2 $\frac{1}{2}$ | 2 |
| | HNFL-38-16 | Flange Lock Nut, $\frac{3}{8}$ -16 | 2 |
| 10 | 17-530 | Hinge Pin | 2 |
| | HB-516-18-075 | Bolt, $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 2 |
| 11 | 17-541 | Boom End Guard | 2 |
| | HBFL-516-18-075 | Bolt, $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 4 |
| | HNFL-516-18 | Flange Lock Nut, $\frac{5}{16}$ - 18 | 4 |
| 12 | 17-552 | Right Boom Arm | 1 |
| 13 | HSSQS-38-16-150 | Square Head Set Screw, $\frac{3}{8}$ -16 x 1 $\frac{1}{2}$ | 2 |
| 14 | 33-506 | Body (see nozzle drawing) | 9 |
| | HB-516-18-075 | Bolt, $\frac{5}{16}$ -18 x $\frac{3}{4}$ | 9 |
| | HNFL-516-18 | Flange Lock Nut, $\frac{5}{16}$ -18 | 9 |
| 15 | 17-527 | Boom Hinge | 4 |
| | HB-38-16-100 | Bolt, $\frac{3}{8}$ - 16 x 1 | 16 |
| | HNFL-38-16 | Lock Nut, $\frac{3}{8}$ - 16 | 16 |
| 16 | 17-539 | Compression Spring | 4 |
| 17 | 9026-2 | Rubber Duct Hose x 2" | 4 |
| 18 | 17-540 | Tapped Bolt | 4 |
| | HW-34 | Washer, $\frac{3}{4}$ | 4 |
| | HNTL-34-10 | Lock Nut, $\frac{3}{4}$ -10 | 4 |
| | HG-14-28-180 | Grease Fitting, $\frac{1}{4}$ - 28 x 180° | 4 |
| 19 | 17-535 | Clean Load Mount | 1 |
| 20 | HB-38-16-300 | Bolt, $\frac{3}{8}$ - 16 x 3 | 2 |
| | HNTL-38-16 | Lock Nut, $\frac{3}{8}$ - 16 | 2 |
| 21 | HB-38-16-300 | Bolt, $\frac{3}{8}$ - 16 x 3 | 2 |
| | HW-38 | Washer, $\frac{3}{8}$ | 2 |
| | HNTL-38-16 | Lock Nut, $\frac{3}{8}$ - 16 | 2 |
| 22 | HCP-12-300 | Clevis Pin, $\frac{1}{2}$ - 3 | 2 |
| | HHP-18 | Bridge Pin, $\frac{1}{8}$ | 2 |
| 23 | 17-537 | Square U-bolt with Nut | 4 |
| 24 | 17-543 | Y -bow Stop | 2 |
| | HB-12-13-500 | Bolt, $\frac{1}{2}$ - 13 x 5 | 2 |
| | HNTL-12-13 | Lock Nut, $\frac{1}{2}$ - 13 | 2 |
| 25 | 16-557 | Square Rubber Cap | 1 |
| 26 | 18-036 | 1" Bushing (part of 15-553) | 2 |
| 27 | 18-234 | $\frac{1}{2}$ " Bushing (part of 15-553) | 2 |

TRIPLE NOZZLE ASSEMBLY DRAWING



| REF# | PART# | DESCRIPTION | QUANTITY |
|------|--------|-----------------------------|----------|
| 1 | 33-506 | Body | 1 |
| 2 | 33-538 | Cap - Gray | 2 |
| 3 | 33-553 | Nozzle - Gray (XR11006-VS) | 1 |
| 4 | 16-800 | Viton Gasket | 3 |
| 5 | 33-537 | Cap - Red | 1 |
| 6 | 33-552 | Nozzle - Red (XR11004-VS) | 1 |
| 7 | 33-554 | Nozzle - White (XR11008-VS) | 1 |
| 8 | 16-802 | Strainer | 1 |

Quantity is per nozzle body. For 18' booms multiply quantity by 11.

Quantity is per nozzle body. For 15' booms multiply quantity by 9.

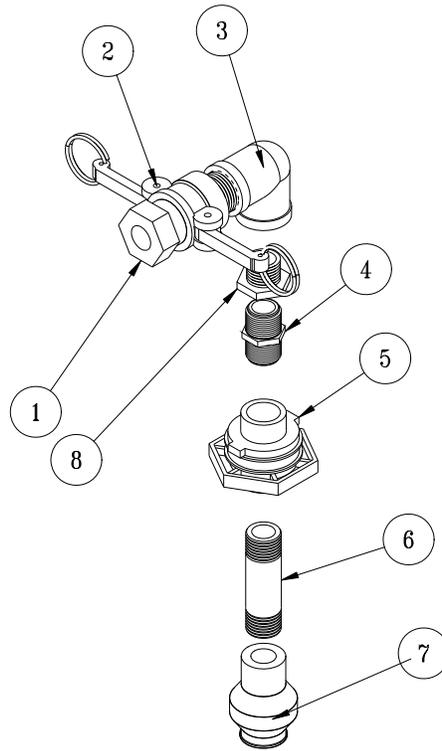
Nozzles are located 20" (51 cm) apart on the right, left, and center tubes. There are predrilled holes in all tubes. The Nozzle should be at a 45° angle to the ground for proper application.

For re-ordering Nozzle Kits the following numbers apply

33-540 Triple Nozzle Kit for 18' Booms

33-541 Triple Nozzle Kit for 15' Booms

15-835 TANK RINSING SYSTEM

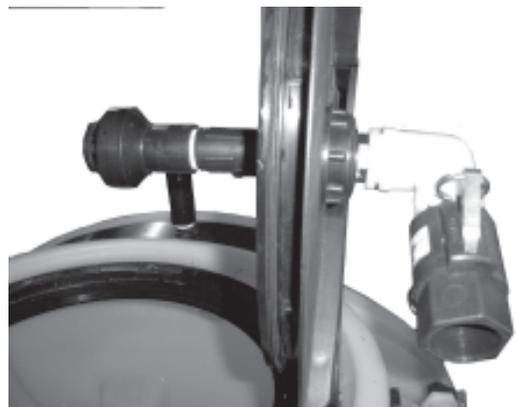


| REF#PART# | DESCRIPTION | QUANTITY | |
|-----------|-------------|-----------------------|---|
| 1 | 16-961 | 1" Adapter | 1 |
| 2 | 16-962 | 1" Coupler | 1 |
| 3 | 16-864 | 1" FTP Elbow | 1 |
| 4 | 16-158 | Close Nipple | 1 |
| 5 | 16-150 | Double Thread Fitting | 1 |
| 6 | 16-172 | 4" Nipple | 1 |
| 7 | 15-834 | Tank Rinsing Nozzle | 1 |
| 8 | 16-163 | Reducer Bushing | 1 |

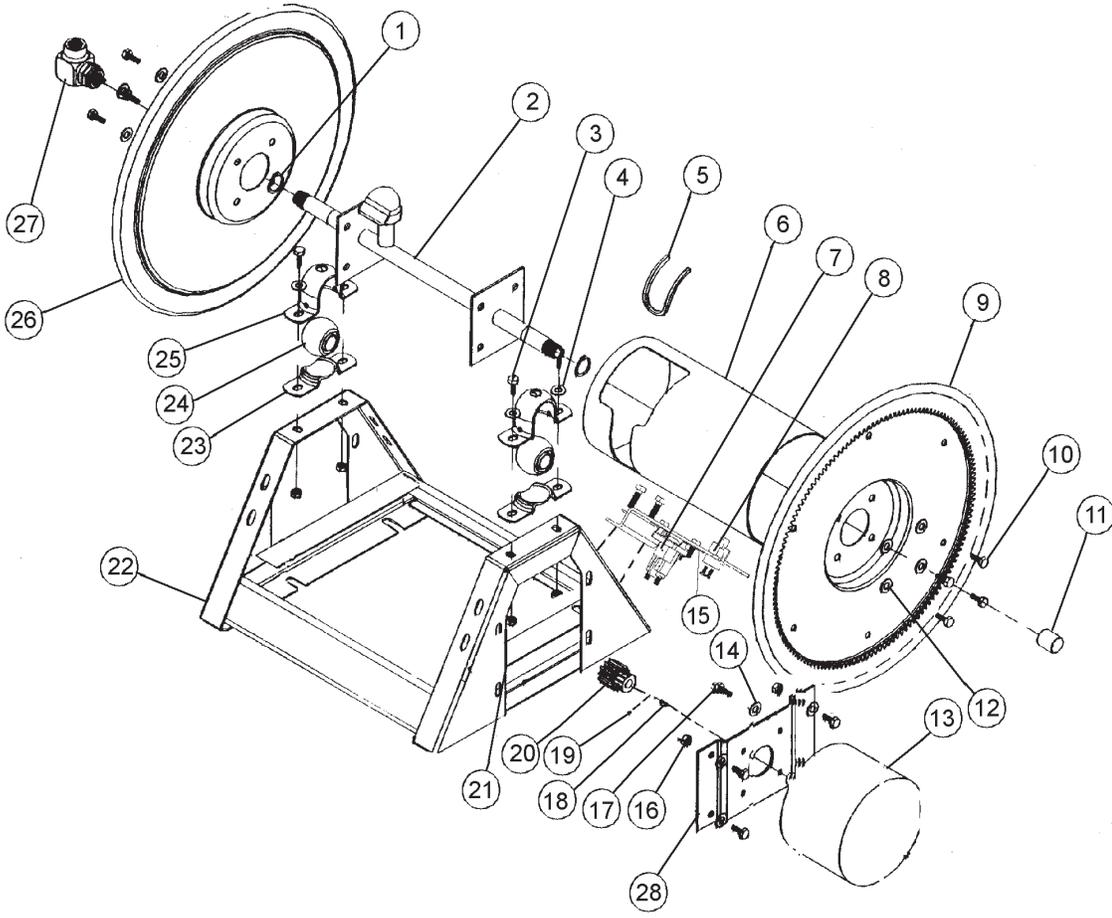
Drill 1-3/4" hole 5" from outside edge of cover.

Install Tank Rinsing kit as shown, with the Double Thread Fitting (Ref 5) going into the cover.

Basket Must be removed During Use.



16-906 ELECTRIC HOSE REEL DRAWING

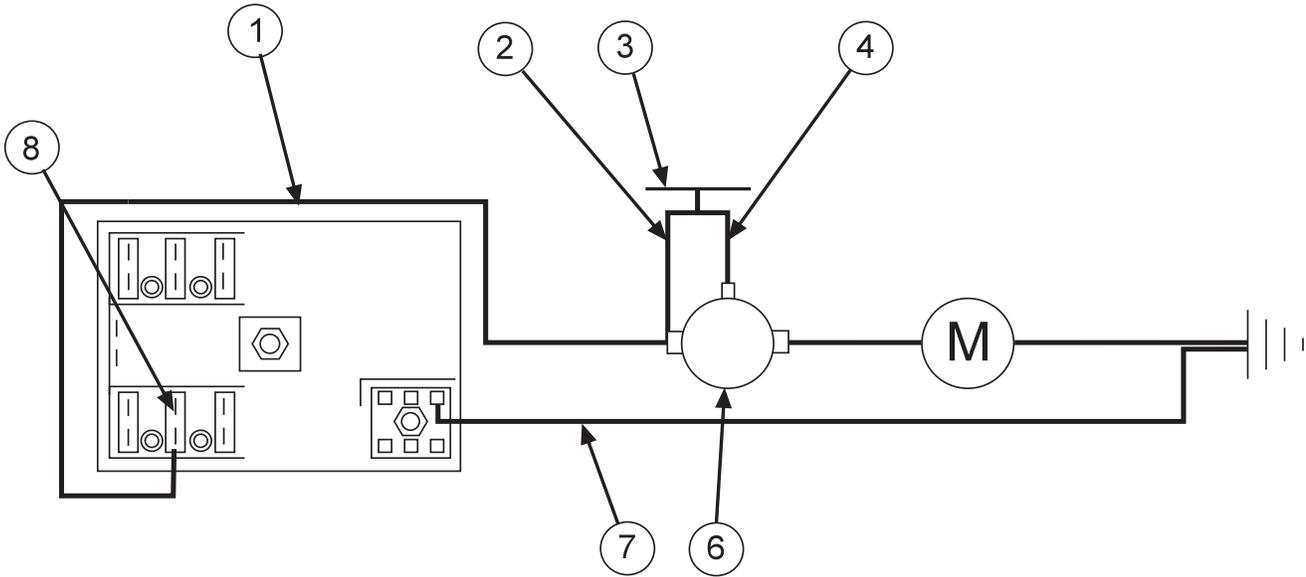


Accessories

16-906ELECTRIC HOSE REEL PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|---------------|--|----------|
| 1 | 16-906-25 | Retaining Ring | 2 |
| 2 | 16-906-22 | Axle Assembly | 1 |
| 3 | HB-38-16-100 | Bolt $\frac{3}{8}$ - 16 x 1 | 4 |
| 4 | HW-38 | Washer $\frac{3}{8}$ | 4 |
| 5 | 16-906-27 | Trim, Drum Edge | 1 |
| 6 | 16-906-21 | Drum Center | 1 |
| 7 | 13-750 | Solenoid | 1 |
| | HB-14-20-075 | Bolt $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 2 |
| | HWL-14 | Lockwasher $\frac{1}{4}$ | 2 |
| | HN-14-20 | Nut $\frac{1}{4}$ - 20 | 2 |
| 8 | 33-251 | Switch | 1 |
| 9 | 16-906-19 | Disc and Gear Assembly | 1 |
| 10 | HB-516-18-075 | Bolt $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 8 |
| 11 | 16-906-26 | Pipe Cap $\frac{3}{4}$ | 1 |
| 12 | HWL-516 | Lockwasher $\frac{5}{16}$ | 8 |
| 13 | | Motor 12VDC | 1 |
| 14 | HW-516 | Washer $\frac{5}{16}$ | 4 |
| 15 | 33-252 | Switch and Solenoid Brkt | 1 |
| | HB-516-18-075 | Bolt $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 2 |
| | HW-516 | Washer $\frac{5}{16}$ | 2 |
| | HWL-516 | Lockwasher $\frac{5}{16}$ | 2 |
| | HN-516-18 | Nut $\frac{5}{16}$ - 18 | 2 |
| 16 | HNTL-516-18 | Lock Nut $\frac{5}{16}$ - 18 | 4 |
| 17 | HB-516-18-100 | Bolt $\frac{5}{16}$ -18 x 1 | 4 |
| 18 | 16-906-17 | Key | 1 |
| 19 | | Set Screw | 2 |
| 20 | 16-906-29 | Pinion | 1 |
| 21 | HNTL-38-16 | Lock Nut $\frac{3}{8}$ - 16 | 4 |
| 22 | 16-906-18 | Frame Assembly | 1 |
| 23 | 16-906-08 | Mounting Pillow Block (Bottom) | 2 |
| 24 | 16-906-24 | Bearing | 2 |
| 25 | 16-906-07 | Mounting Pillow Block (Top) | 2 |
| 26 | 16-906-20 | Disc 17 $\frac{1}{2}$ | 1 |
| 27 | 16-906-23 | Swivel Assembly $\frac{3}{4}$ | 1 |
| | 16-906-30 | Seal Kit (For 16-906-23) | 1 |
| 28 | 16-906-28 | Bracket 12VDC | 1 |
| 29 | 16-980 | Mount Bracket | 2 |
| | HB-516-18-175 | Bolt $\frac{5}{16}$ - 18 x 1 $\frac{3}{4}$ | 4 |
| | HW-516 | Washer $\frac{5}{16}$ | 4 |
| | HNTL-516-18 | Lock Nut $\frac{5}{16}$ - 18 | 4 |
| | 16-982 | Electric Hose Reel (only) | 1 |

ELECTRIC HOSE REEL WIRING DIAGRAM



| REF# | PART# | DESCRIPTION | QUANTITY |
|---------------------------|------------|---|----------|
| | 8843-132 | Flexguard ³ / ₈ ID | 1 |
| 1 | 8919-144 | 10GA Red Wire 144" | 1 |
| | 8901 | Slide-On Connector | 1 |
| 2 | 16-979 | Wire, Switch to Solenoid Hot Terminal | 1 |
| 3 | 33-251 | Push Button Switch | 1 |
| 4 | 16-978 | Wire, Switch to Solenoid Start Terminal | 1 |
| 6 | 13-750 | Solenoid | 1 |
| SOLENOID TERMINALS | | | |
| | HN -516-24 | ⁵ / ₁₆ - 24 Hex Nut | 2 |
| | HN -10-32 | 10 - 32 Hex Nut | 1 |
| 7 | 8931-144 | 10GA White Wire 144" | 1 |
| | 8901 | Slide-On Connector | 1 |
| 8 | 33-273 | Auto Blade Type Fuse 30Amp | 1 |

CONNECTION INSTRUCTIONS

Route wire harness along side of tank and over to fuse block taking care to stay clear of moving parts or hot engine components. Cut off excess wire and strip back ³/₈". Place one 8963 heat shrink (¹/₄ x 1¹/₄) on each wire before crimping 8901 slide on connectors to the red and white wires. Connect the two wires to the fuse block first the red to the (+) positive and the white to the (-) negative. Put the 33-273 auto blade type fuse (30 amp) into fuse block.



Make certain you are connecting positive (+) to positive; negative (-) to negative while attaching power leads. If you do not observe polarity, damage will result to electrical components.

Use Dielectric Grease On All Electrical Connections

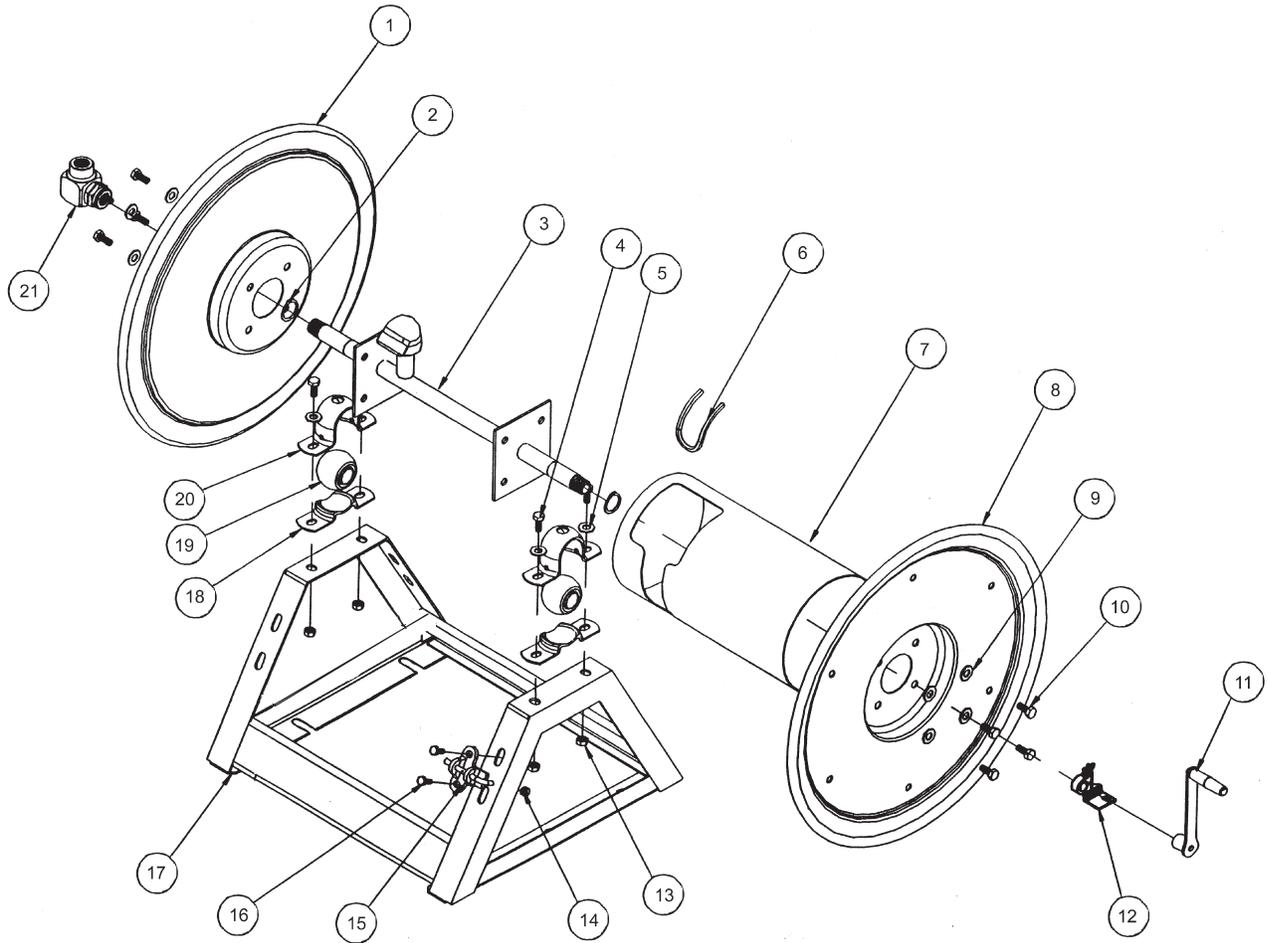
OPERATIONAL CHECK:

1. Pull hose off drum at least one full revolution. A clicking noise should be heard from locking mechanism.
2. Let the hose retract.
3. Pull the hose off until the first click is heard. Drum should lock when the hose tension is removed.
4. Continue pulling the hose, no more than one revolution, until no clicking is heard. Hose should rewind when tension is removed.

HOSE REPLACEMENT PROCEDURE:

1. Facing swivel, turn the hose drum clockwise until all of the hose is removed from the drum and the drum is held by locking mechanism. Make sure spring is locked.
2. Remove hose clamps and disconnect hose from swivel. Remove old hose.
3. Insert new hose through roller guide, connect to swivel and reinstall hose clamps. Use spring guard over hose to protect the hose from being cut by the drum.
4. Remove check ball from old hose and install on replacement hose.
5. Carefully, keeping the tension on the hose, pull the hose to release the locking mechanism. Let the hose wind on the drum.

16-129 MANUAL HOSE REEL DRAWING

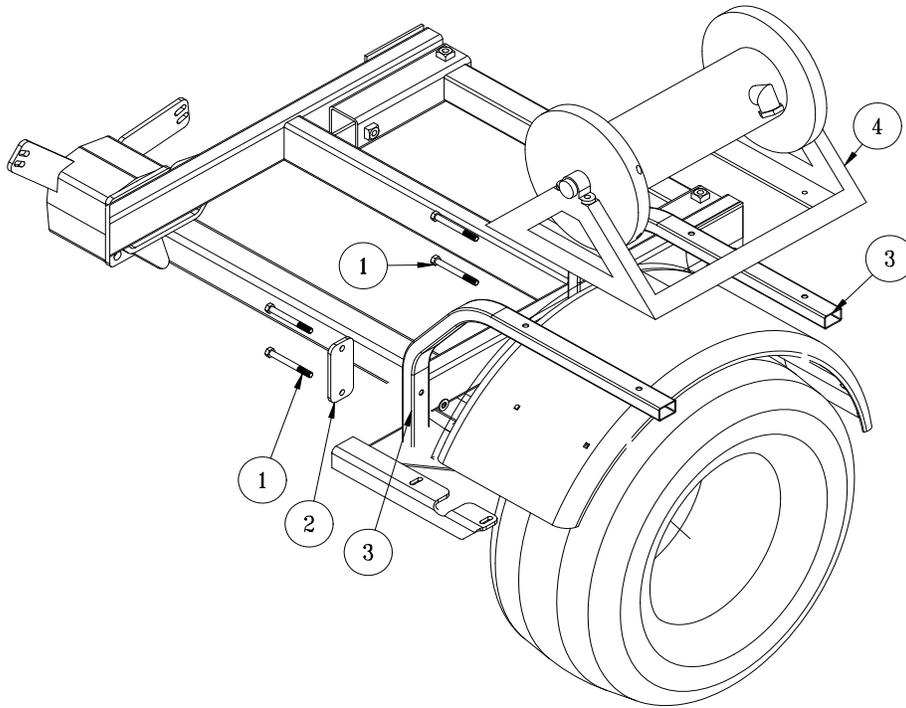


Accessories

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|---------------|--|----------|
| 1 | 16-129-11 | Disc 17 ¹ / ₂ | 1 |
| 2 | 16-906-25 | Retaining Ring | 2 |
| 3 | 16-906-22 | Axle Assembly ³ / ₄ | 1 |
| 4 | HB-38-16-100 | Bolt ³ / ₈ - 16 x 1 | 4 |
| 5 | HW-38 | Washer ³ / ₈ | 4 |
| 6 | 16-906-27 | Trim, Drum Edge | 1 |
| 7 | 16-906-21 | Drum Center | 1 |
| 8 | 16-906-20 | Disc 17 ¹ / ₂ , Crank Side | 1 |
| 9 | HWL-516 | Lockwasher ⁵ / ₁₆ | 8 |
| 10 | HB-516-18-075 | Bolt ⁵ / ₁₆ - 18 x ³ / ₄ | 8 |
| 11 | 16-129-09 | Crank Assembly ³ / ₄ | 1 |
| 12 | 16-129-10 | Brake Assembly ³ / ₄ | 1 |
| 13 | HNTL-38-16 | Lock Nut ³ / ₈ - 16 | 4 |
| 14 | HNTL-516-18 | Lock Nut ⁵ / ₁₆ - 18 | 2 |
| 15 | 16-129-08 | Lock Pin Assembly | 1 |
| 16 | HB-516-18-075 | Bolt ⁵ / ₁₆ - 18 x ³ / ₄ | 2 |
| | HW-516 | Washer ⁵ / ₁₆ | 2 |
| 17 | 16-129-07 | Frame Assembly | 1 |
| 18 | 16-906-08 | Mounting Pillow Block (Bottom) | 2 |
| 19 | 16-906-24 | Bearing | 2 |
| 20 | 16-906-07 | Mounting Pillow Block (Top) | 2 |
| 21 | 16-906-23 | Swivel Assembly ³ / ₄ | 1 |
| | 16-906-30 | Seal Kit (For 16-906-23) | 1 |
| 22 | 16-980 | Mount Bracket | 2 |
| | HB-516-18-175 | Bolt ⁵ / ₁₆ - 18 x 1 ³ / ₄ | 4 |
| | HW-516 | Washer ⁵ / ₁₆ | 4 |
| | HNTL-516-18 | Lock Nut ⁵ / ₁₆ - 18 | 4 |

15-833 HOSE REEL MOUNT DRAWING

For 17-525 Boom
17-550 Boom

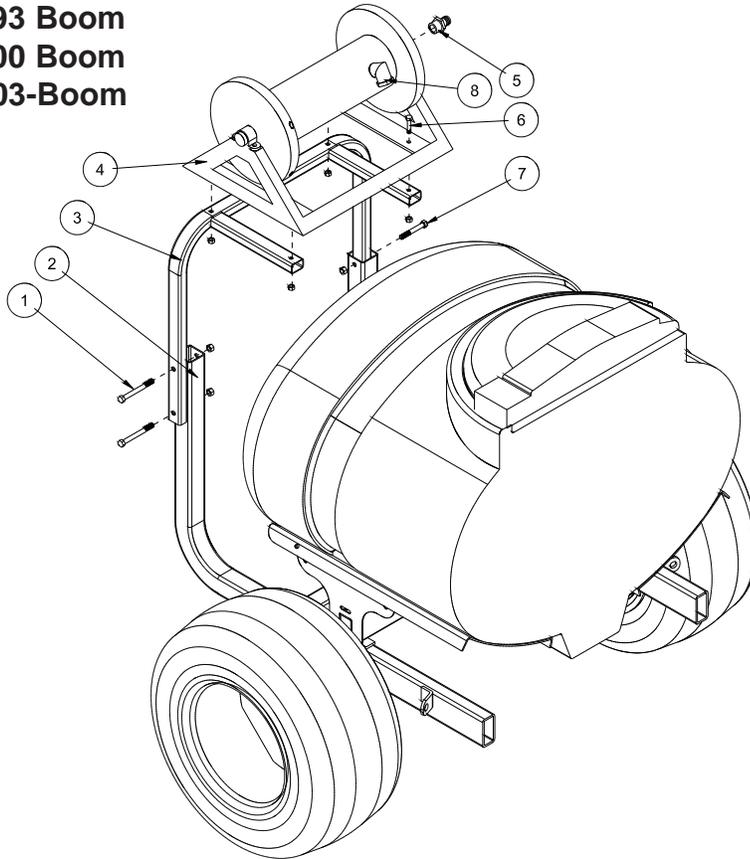


| REF# | PART# | DESCRIPTION | QUANTITY |
|------|--------------|--|----------|
| 1 | HB-38-16-350 | Bolt $\frac{3}{8}$ - 16 x 3 $\frac{1}{2}$ | 2 |
| | HNTL-38-16 | Lock Nut $\frac{3}{8}$ - 16 | 2 |
| 2 | 15-831 | Hose Reel Clamp | 2 |
| 3 | 15-832 | Hose Reel Mount Bracket | 2 |
| 4 | 16-906 | Electric Hose Reel | 1 |
| | 16-129 | Manual Hose Reel | 1 |
| | 18-249 | Brass Fitting $\frac{3}{4}$ MPT x $\frac{3}{4}$ HB | 1 |

1. Wear protective clothing when draining the tank and taking apart the lines.
2. Drain tank and spray system in a safe and approved method insuring that no chemical or water remain in tank as you will be taking apart lines.
3. Remove key from ignition, set park brake and block wheels.
4. Install hose reel mount on the left side of the machine over the rear wheel.
5. Use the clamps and bolts to secure the mount to the machine.
6. Put hose reel on hose reel bracket with fitting to the rear of machine. Use four bolts $\frac{5}{16}$ - 18 x 1 $\frac{1}{2}$ and four $\frac{5}{16}$ - 18 lock nuts to hold in place. Tighten bolts.
7. Put 18-249 barb fitting into hose reel.

17-834 HOSE REEL MOUNT DRAWING

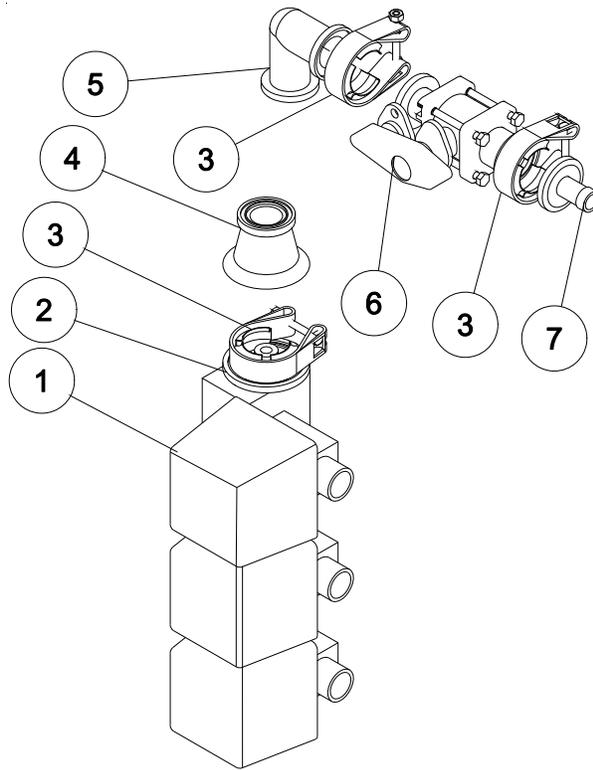
For **15-493 Boom**
10-300 Boom
17-503-Boom



| REF# | PART# | DESCRIPTION | QUANTITY |
|------|---------------|--|----------|
| 1 | HB-38-16-350 | Bolt $\frac{3}{8}$ - 16 x $3\frac{1}{2}$ | 2 |
| | HNTL-38-16 | Lock Nut $\frac{3}{8}$ - 16 | 2 |
| 2 | 14-325 | Boom Carrier (part of machine) | 2 |
| 3 | 10-221 | Hose Reel Mount | 1 |
| 4 | 16-906 | Electric Hose Reel | 1 |
| | 16-129 | Manual Hose Reel | 1 |
| 5 | 18-249 | Brass Fitting $\frac{3}{4}$ MPT x $\frac{3}{4}$ HB | 1 |
| 6 | HB-516-18-150 | Bolt $\frac{5}{16}$ - 18 x $1\frac{1}{2}$ | 4 |
| | HNTL-516-18 | Lock Nut $\frac{5}{16}$ - 18 | 4 |
| 7 | HB-38-16-250 | Bolt $\frac{3}{8}$ - 16 x $2\frac{1}{2}$ | 2 |
| | HNTL-38-16 | Lock Nut $\frac{3}{8}$ - 16 | 2 |
| 8 | 16-295 | Hose Fitting | 1 |

1. Wear protective clothing when draining the tank and taking apart the lines.
2. Drain tank and spray system in a safe and approved method insuring that no chemical or water remain in tank as you will be taking apart lines.
3. Remove key from ignition, set park brake and block wheels.
4. Remove square rubber covers on boom carriers.
5. Place hose reel bracket inside the boom carrier tube on left side and outside on right side with arms pointing toward front of machine.
6. Lower bracket until top hole in bracket lines up with hole in upright. Bolt as shown.
7. Put hose reel on hose reel bracket with fitting on left side of machine. Use four bolts $\frac{5}{16}$ - 18 x $1\frac{1}{2}$ and four $\frac{5}{16}$ - 18 lock nuts to hold in place. Tighten bolts.
8. Put 18-249 barb fitting into hose reel.

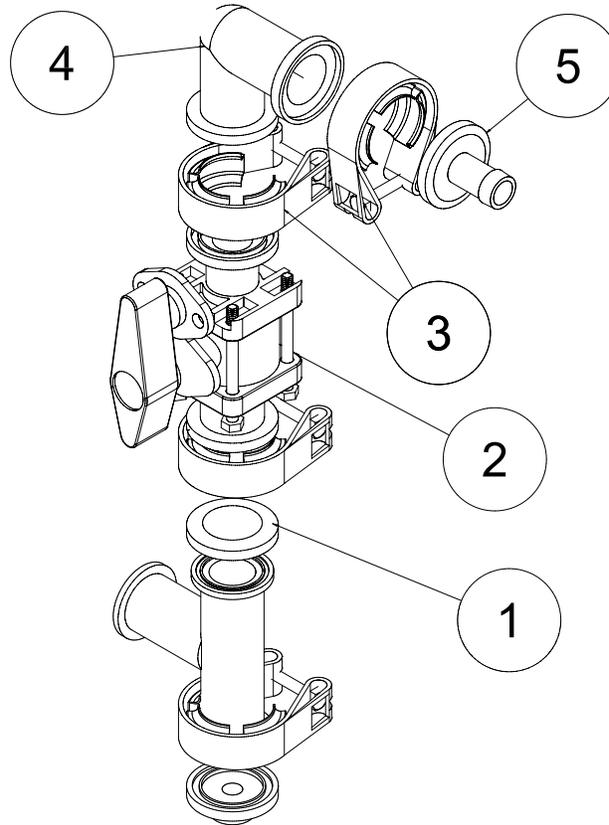
1752 (RAVEN 440) HOSE REEL PLUMBING



| REF# | PART# | DESCRIPTION | QUANTITY |
|------|--------|---------------------|----------|
| 1 | 15-743 | Electric ball Valve | 1 |
| 2 | 15-742 | Inlet Cover | 1 |
| 3 | 15-740 | 50 Series Clamp | 3 |
| 4 | 15-748 | Reducer Coupling | 1 |
| 5 | 15-736 | #50 Elbow Coupling | 1 |
| 6 | 15-738 | Flanged Ball Valve | 1 |
| 7 | 15-749 | Hose Barb | 1 |

INSTALLATION INSTRUCTIONS

1. On the top of the Electric Spray Control Valve (Ref 1) you will find a cover. Remove clamp, o-ring and cover. Install a 15-748 reducer (Ref 4) in place of the cover you just removed. Reinstall clamp and o-ring and tighten. The cap will not be used again.
2. Install a 15-736 Elbow onto the top of the reducer with a 15-740 clamp (Ref 3) and O-ring. Rotate it 90° so it points to the rear of the machine, then tighten clamp.
3. Install the 15-738 ball valve (Ref 6) onto the elbow using a 15-740 clamp and O-ring. Tighten with the handle on the top or side.
4. Install the 15-749 Hose Barb (Ref 7) onto the open end of the ball valve with a 15-740 clamp and o-ring. Tighten.
5. Route the orange $\frac{3}{4}$ " hose from the hose barb to the hose barb on the hose reel and secure with a 18-040 Hose clamp.
6. Secure the orange hose to the machine with a nylon tie strap.

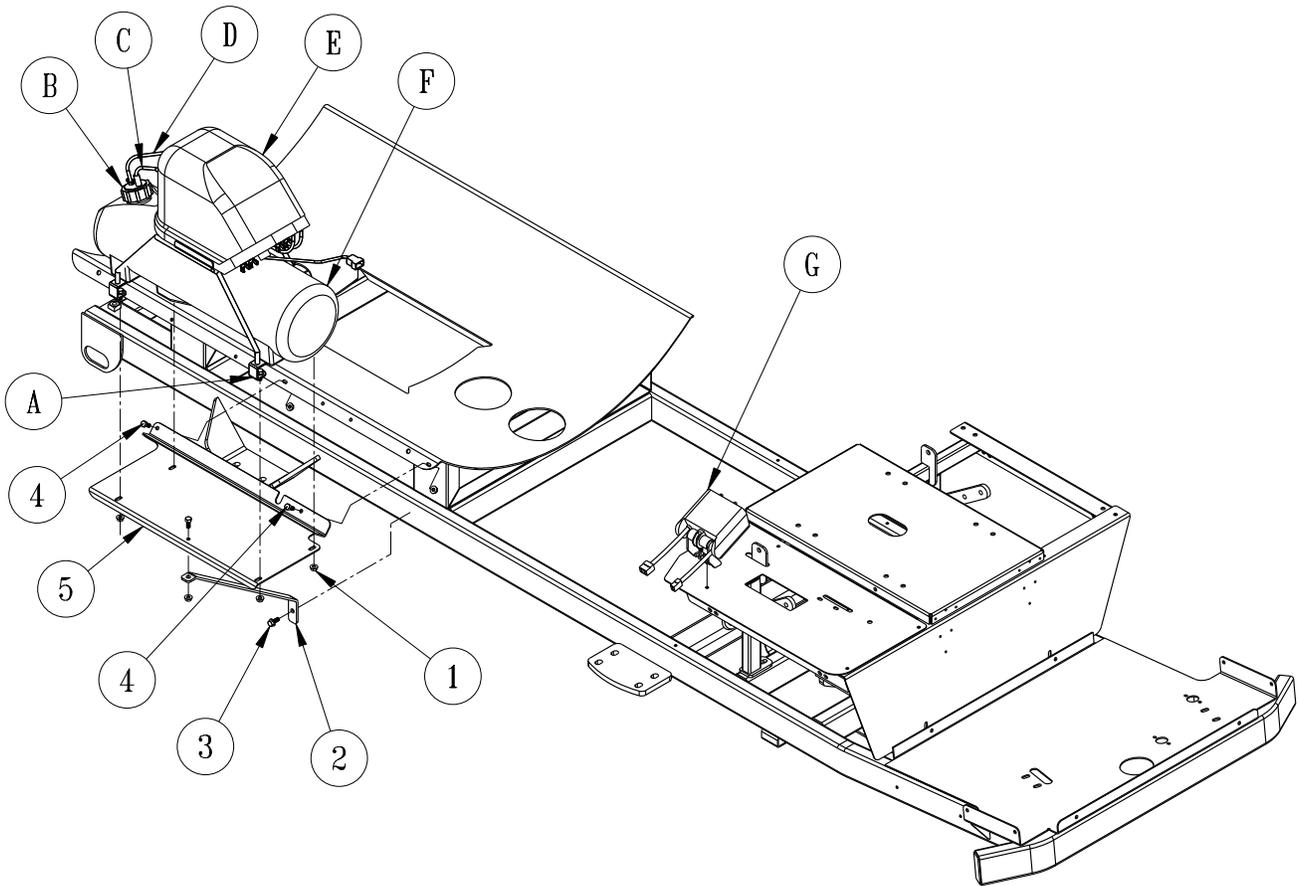


| REF# | PART# | DESCRIPTION | QUANTITY |
|------|--------|--------------------|----------|
| 1 | 15-778 | Blank Guage Port | 1 |
| 2 | 15-738 | Flanged Ball Valve | 1 |
| 3 | 15-740 | 50 Series Clamp | 2 |
| 4 | 15-736 | #50 Elbow Coupling | 1 |
| 5 | 15-749 | Hose Barb | 1 |

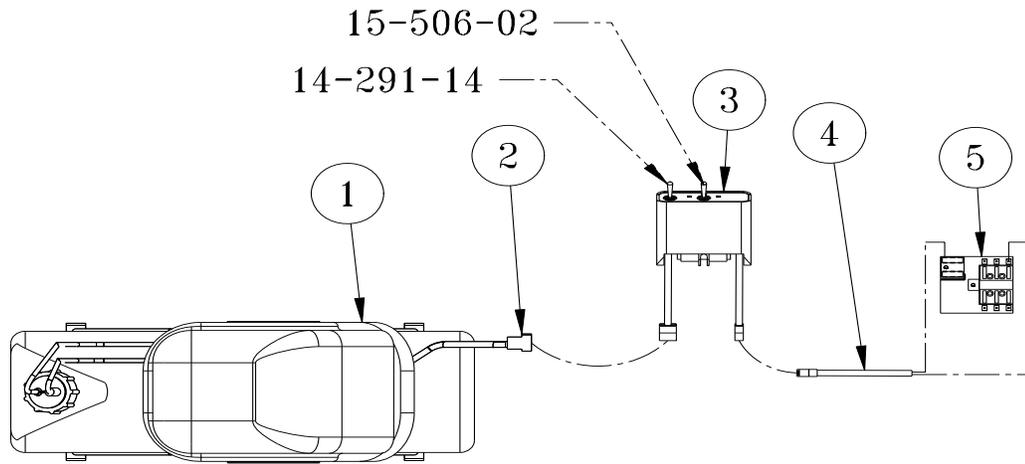
INSTALLATION INSTRUCTIONS

1. Between the boom control valves and the fuel tank you will find a tee fitting with a black cap on top of it. Remove the clamp and the cap.
2. Install the 15-738 ball valve (Ref 2) onto the top of the tee using the clamp and o-ring you removed in step 1. The Handle can be positioned so it clears the other hoses by rotating it before the clamp is tightened. Tighten clamp when ball valve is in the position you wanted.
3. Install the 15-736 Elbow (Ref 4) on top of the ball valve pointing to the back of the machine and secure with 15-740 clamp(Ref 3) and O-ring. Tighten.
4. Install the 15-749 flanged hose barb (Ref 5) on to the open end of the elbow with a 15-740 clamp and O-ring. Tighten.
5. Route the orange $\frac{3}{4}$ " hose from the hose barb you just installed to the hose barb on the hose reel. Secure with an 18-40 hose clamp. Secure orange hose to machine with 22-075 nylon ties.
6. You will have a reducer coupling, clamp and cap left over that you will not need.

17-505 FOAM MARKER FOR 1750 DRAWING

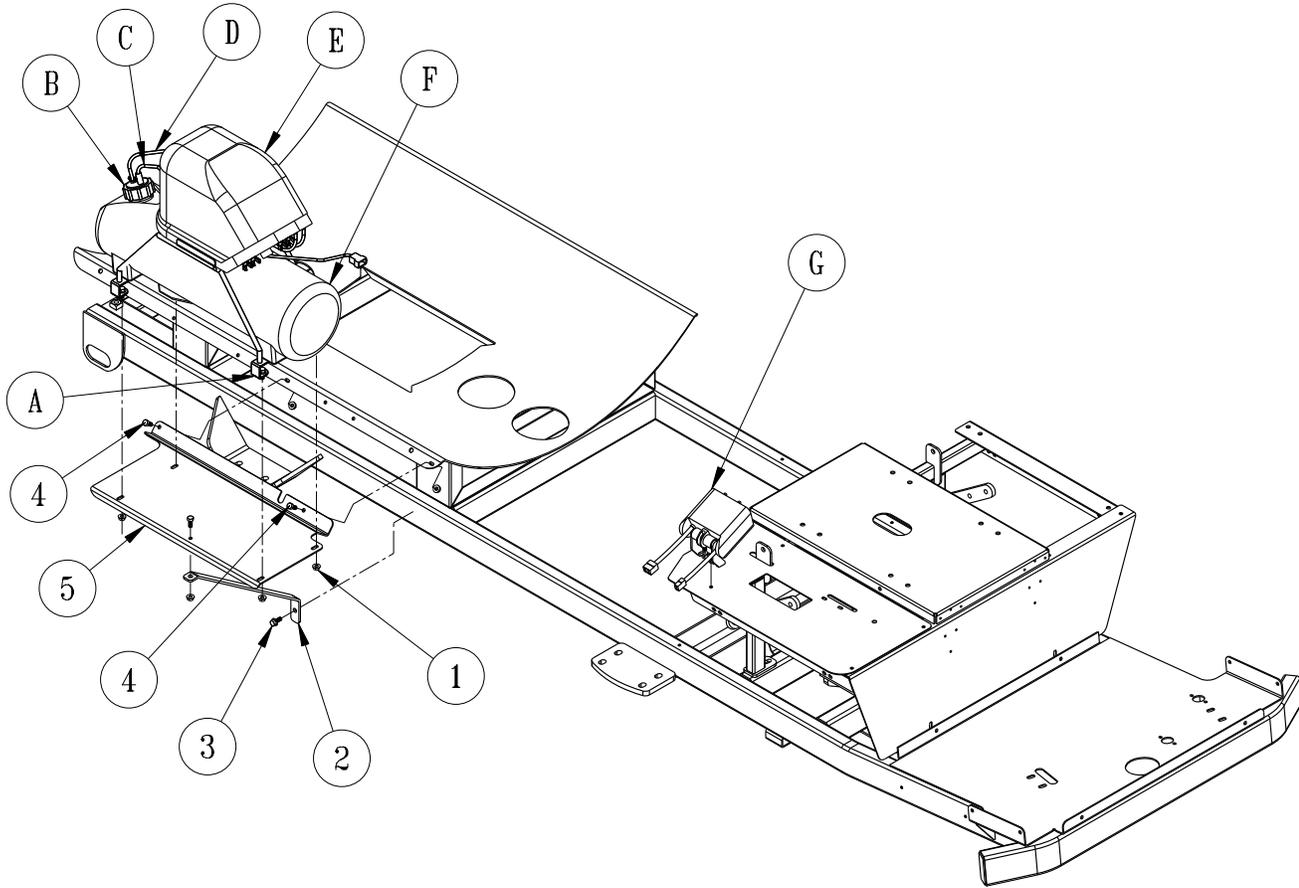


| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|---|----------|
| 1 | HBFL-516-18-075 | Flange Bolt, $\frac{5}{16}$ -18 x $\frac{3}{4}$ | 7 |
| | HNFL-516-18 | Flange Lock Nut, $\frac{5}{16}$ - 18 | 7 |
| 2 | 15-689 | Foamer Bottom Brace | 1 |
| 3 | HBFL-516-18-075 | Flange Bolt, $\frac{5}{16}$ -18 x $\frac{3}{4}$ | 1 |
| 4 | HN-14-20-075 | Hex Bolt, $\frac{1}{4}$ -20 x $\frac{3}{4}$ | 2 |
| | HBFL-14-20 | Flange Lock Nut, $\frac{1}{4}$ -20 | 2 |
| 5 | 15-755 | Mount Plate | 1 |
| A | 14-291-04 | Tank Bracket | 2 |
| B | 14-284-02 | Cap Assembly | 1 |
| C | | Blue Tube | 1 |
| D | | Clear Tube | 1 |
| E | 14-291-03 | Compressor Only | 1 |
| | 14-291-01 | Black Cover | 1 |
| F | 14-291-02 | Foamer Tank | 1 |
| G | 14-291-05 | Double Switch Box | 1 |
| | 33-508 | Fuse | 1 |
| | 15-506-02 | Center Switch | 1 |
| | 14-291-14 | Switch | 1 |
| A-G | 14-291 | Foamer (includes parts A-G) | 1 |



| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------|------------------------------|----------|
| 1 | 14-291-03 | Compressor | 1 |
| 2 | 15-504-04 | Wiring Harness | 1 |
| 3 | 14-291-05 | Switch Box | 1 |
| | 33-508 | Fuse | 1 |
| | 15-506-02 | Center Switch | 1 |
| | 14-291-14 | Switch | 1 |
| 4 | 15-509 | Power Cable | 1 |
| 5 | 33-271 | Fuse Block (part of machine) | 1 |
| | 33-508 | Fuse 15 amp | 1 |

17-505 FOAM MARKER FOR 1750 DRAWING



Accessories

Safety: Before working on machine stop engine, set park brake, remove key from ignition and block wheels. Disconnect negative (-) battery terminal.

1. Mount the switch box to the panel to the right of the operator's seat. Remove the drill screw on the right hand rear side and mount the Switch Box (Ref. G) using this screw. The switch box must be mounted facing towards the operator's seat.

WIRING

Use dielectric grease on all electrical connections. Connect power cable (15-509) to the switch box. Turn the switch off. Route the power wire to the fuse block (on the inside of the engine cover) out of the way of any heat or moving parts. Use nylon ties as needed. Cut the power wire with enough length to connect the fuse block. Put the slide on terminal with heat shrink onto the wire ends and connect to fuse block. Red to positive(+), black to negative(-). Insert 10 amp fuse into slot which has red wire attached to it.

MOUNTING THE FOAMER UNIT

1. Position the Mount Plate (Ref. 5) as illustrated and mount to the Tank Carrier using two $\frac{1}{4}$ -20 x $\frac{3}{4}$ Flange Bolts and $\frac{1}{4}$ -20 Flange Lock Nuts. Leave loose.
2. Connect Brace (Ref. 2) to the Mount Plate using one $\frac{5}{16}$ -18 x $\frac{3}{4}$ Flange Bolt and $\frac{5}{16}$ -18 Flange Lock Nut. Tighten. Bolt Brace (Ref. 2) to the tapped hole in the mainframe using one $\frac{5}{16}$ -18 x $\frac{3}{4}$ Flange Bolt. Tighten.
3. Tighten hardware connecting Mount Plate (Ref. 5) to the Tank Carrier.
4. Place Foamer unit (Refs. A-G) on the Mount Plate (Ref. 5) and bolt in place with four $\frac{5}{16}$ -18 x $\frac{3}{4}$ Flange Bolts and $\frac{5}{16}$ -18 Flange Lock nuts (Ref. 1). Foamer must be placed with the Cap Assembly (Ref. B) facing to the **rear** of the machine.
5. Tighten hardware.

CONNECTING THE CAP ASSEMBLY

Connect the blue tube to the tank cap connector which is also connected to the large blue tube which hangs below the cap. This is the soap outlet tube. Connect the clear tube to the other connector on the tank cap. This is the air input tube. Tighten connectors hand tight, assembly tank cap onto tank.

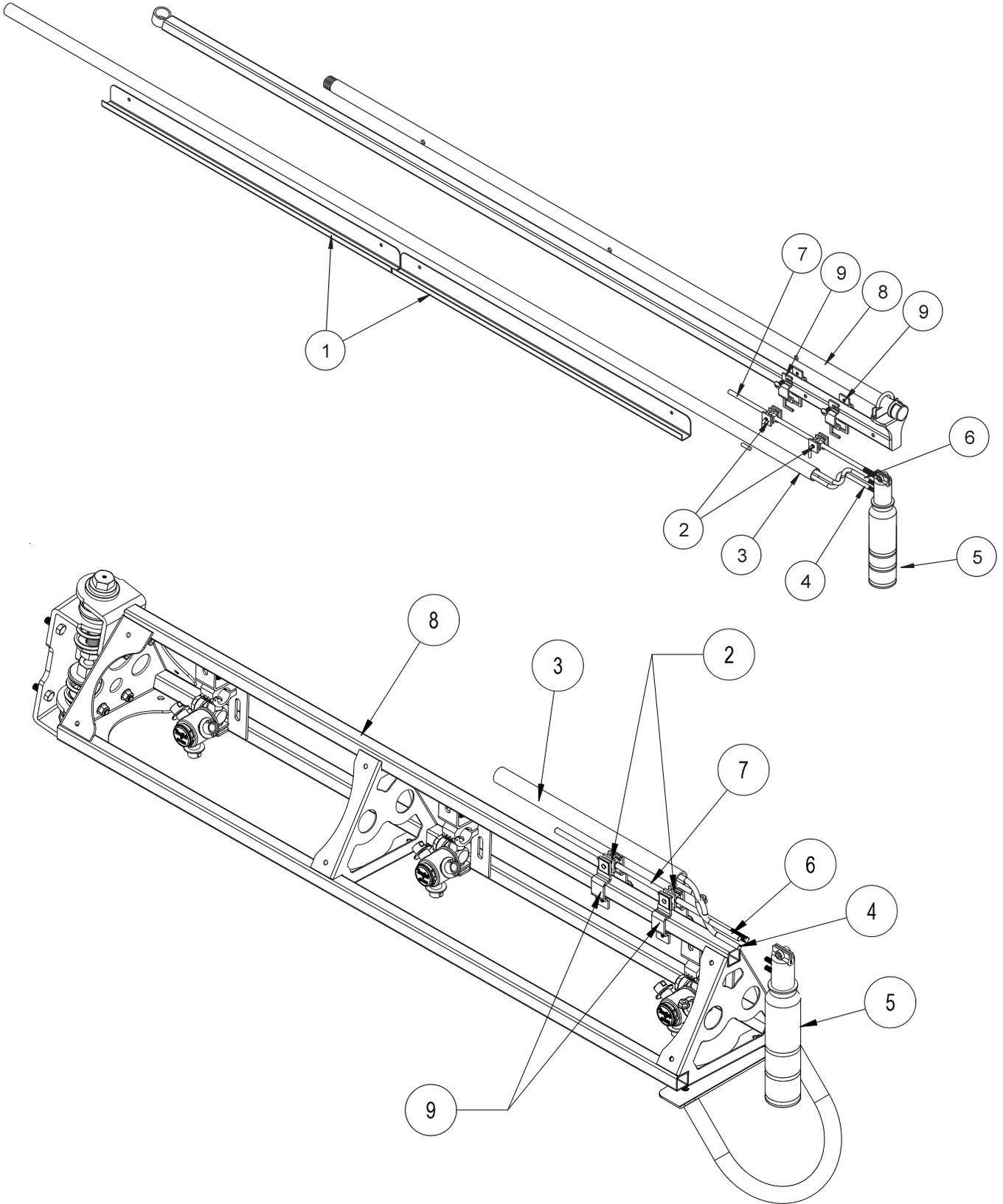
HOSES

Being careful not to cut the tubing, cut the oversleeve back approximately 2" (5 cm) to expose blue and clear tubing. Remove blue wing nut from top connector of foam nozzle and slide it on the blue tube with the threads facing toward end of tube. Slide blue tube all the way over the top of the small tube on foam nozzle. Slide wing nut back to the threads and hand tighten. Follow the same steps for the clear tube and tube nut.

Route the tubing along underside of main frame using tie downs as necessary.

Install opposite ends of air-liquid tubes to compressor, again cutting back the oversleeve approximately 2" (5 cm) and inserting blue and clear tubes for the left boom section into the tubing connectors on the right side of compressor as far as possible. Follow the same steps for the right boom tubing. Notice the right boom is inserted into left side of compressor. To release tubing from compressor, hold black ring around tubing, and pull tube out.

FOAMER NOZZLE MOUNT & HOSE GUARD MOUNT DRAWING



Accessories

17-505 FOAM MARKER PARTSLIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|--------------|---|------------|
| 1 | 15-537 | Foamer Hose Guard 31" | 4 |
| | HSDPS-14-075 | Stainless Steel Pan Head Drill Screw $\frac{1}{4} \times \frac{3}{4}$ | 8 |
| 2 | 16-987 | Foam Nozzle Mounting Kit | 1 per boom |
| 3 | 15-507 | Foamer Tubing | 2 |
| 4 | | Clear Tubing | |
| 5 | 15-511 | Foam Nozzle | 2 |
| 6 | | Blue Tubing | |
| 7 | 15-510-01 | Nozzle Mounting Rod | 2 |
| 8 | | Boom | |
| 9 | 16-795 | Square Clamp | 4 |

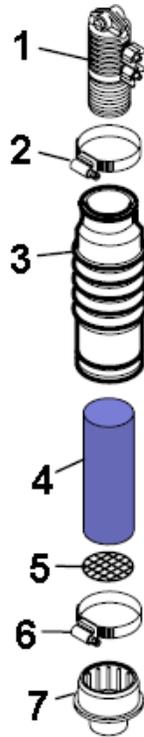
- Slide hose clamp onto drop tube of foam nozzle and attach restrictor bell.
- Place splined end of Nozzle mounting rod (Ref 7) into top of foam nozzle (Ref 5). Tighten screw.
- Slide two foam nozzle mounts (Ref 2) onto the rod. Place square clamps (Ref 9) on foam nozzle mounts and mount the square clamps to the boom (Ref 8). Adjust foam nozzle mounts and clamps so nozzle assembly will clear end of boom. Tighten foam nozzle mounts and square clamps to prevent side to side movement. Do the same to the other side.
- Being careful not to cut the tubing (Ref 3), cut the oversleeve back approximately 2" (5 cm) to expose blue (Ref 6) and clear tubing (Ref 4).
- Remove blue wing nut from top connector of foam nozzle and slide it on the blue tube with the threads facing toward end of tube. Slide blue tube all the way over the top of the small tube on foam nozzle. Slide wing nut back to the threads and hand tighten. Follow the same steps for the clear tube and tube nut.
- Route the tubing along underside of main frame using tie downs as necessary.
- Install opposite ends of air-liquid tubes to compressor, again cutting back the oversleeve approximately 2" (5 cm) and inserting blue and clear tubes for the left boom section into the tubing connectors (Ref A) on the right side of compressor as far as possible.
- Follow the same steps for the right boom tubing. Notice the right boom is inserted into left side of compressor. To release tubing from compressor, hold black ring around tubing, and pull tube out.
- Hose's must be routed on bottom of the boom square tubing.
- Mark 6 inches in from inside edge of foamer nozzle mounting bracket on square boom tubing.
- Place hose guard (Ref 1) flush with top of square tubing with edge on previous mark. The channel covers hoses on the bottom of the square tubing.
- Install hose guard using 2 drill screws (you may want to drill a $\frac{3}{16}$ pilot hole first).
- Place another hose guard against first and install in same manner.
- Repeat process for other boom side.
- Connect small plastic electrical plug under compressor to electrical extension cable.
- Cut cable and strip casing, allowing enough length to connect to fuse block.
- Strip and connect slide on connectors to each wire and use the heat shrink.
- Connect black negative (-) wire to the ground and connect red wire to the positive (+).
- Insert 10 amp fuse into slot which red wire was attached to.

FOAM MARKER



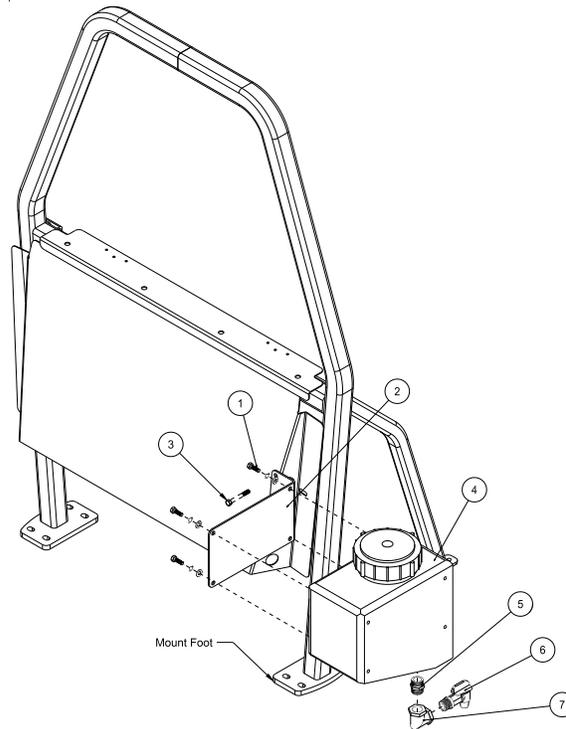
| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------|--------------------------|----------|
| 1 | 15-507 | Foamer Tubing | 2 |
| 2 | 14-291-02 | Tank | 1 |
| 3 | 14-291-01 | Black Cover | 1 |
| | 14-291-03 | Compressor Complete | 1 |
| 4 | 14-284-02 | Cap Assembly | 1 |
| 5 | 14-291-04 | Tank Bracket | 1 |
| 6 | 14-291-05 | Double Switch Box | 1 |
| 7 | 15-511 | Foam Nozzle | 1 |
| 8 | 15-510-01 | Nozzle Mounting Rod | 1 |
| 9 | 16-987 | Foam Nozzle Mounting Kit | 1 |
| | 14-536 | Compressor Sub-assembly | |

15-511 FOAM NOZZLE SUB ASSEMBLY DRAWING



| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------|--------------------------|----------|
| 1* | 15-511-01 | Foam Nozzle Inlet Body | 1 |
| | 15-510-01 | Nozzle Mounting Rods | 2 |
| 2* | | Hose Clamp | 1 |
| 3* | | Drop Tube | 1 |
| 4 | 15-511-08 | Foam Sponge | 1 |
| 5 | 15-511-09 | Stainless Steel Screen | 1 |
| 6 | | Hose Clamp | 1 |
| 7 | 14-284-09 | Foam Nozzle Reducer | 1 |
| * | 15-511-07 | Foam Nozzle Sub Assembly | |

17-506 FRESH WATER TANK DRAWING



| REF# | PART# | DESCRIPTION | QUANTITY |
|------|---------------|--|----------|
| 1 | HB-516-18-075 | Bolt $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 4 |
| | HW-516 | Washer $\frac{5}{16}$ | 4 |
| | HWL-516 | Lock Washer $\frac{5}{16}$ | 4 |
| 2 | 15-750 | Tank Mount Bracket | 1 |
| 3 | HB-38-16-275 | Bolt $\frac{3}{8}$ - 16 x $2\frac{3}{4}$ | 2 |
| | HNFL-38-16 | Flange Lock Nut $\frac{3}{8}$ - 16 | 2 |
| 4 | 10-234 | 3 Gallon Rectangular Tank | 1 |
| 5 | 16-158 | Close Nipple $\frac{3}{4}$ x $\frac{3}{4}$ | 1 |
| 6 | 16-960 | Spigot $\frac{3}{4}$ NPT | 1 |
| 7 | 16-151 | Elbow FPT $\frac{3}{4}$ x $\frac{3}{4}$ | 1 |

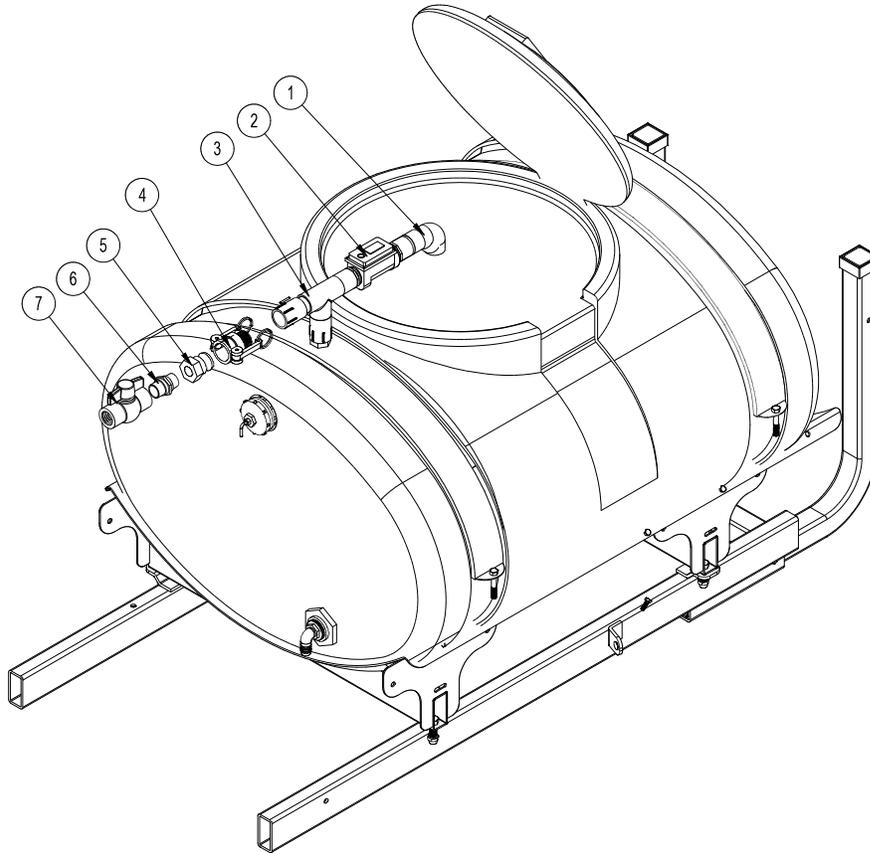
1. Fresh Water Wash Tank mounts on the left side of the Roll Bar just above the sprayer control valve.
2. Clamp the mount bracket to the roll bar post approximately 19" up from the mount foot and then mark the holes onto the tube with a center punch. Drill the two holes using a $\frac{3}{8}$ drill bit.
3. Secure the bracket to the post with two $\frac{3}{8}$ x $2\frac{3}{4}$ bolts and flange lock nuts. Then tighten.
4. Install the nipple (Ref 5), elbow (Ref 7) and spigot (Ref 6) into the bottom of wash tank (Ref 4). Use thread tape on all threads.
5. Mount the tank onto the mount bracket (Ref 2) using four $\frac{5}{16}$ x $\frac{3}{4}$ bolts, washers and lockwashers. Tighten.
6. Rinse tank with clear water and check for leaks around fittings.



This tank is for fresh clear water **ONLY**. Do not put chemicals in this tank.

14-515 WATER METER KIT (GALLONS)

15-618 WATER METER KIT (LITERS)



| REF # | PART # | DESCRIPTION | QUANTITY |
|-------|--------|---|----------|
| 1 | 14-524 | Filler Outlet | 1 |
| 2 | 14-514 | Water Meter (Gallons) | 1 |
| | 14-527 | Water Meter (Liters) | 1 |
| 3 | 14-525 | Filler Inlet | 1 |
| 4 | 16-962 | 1" Quick Coupler (already on machine) | 1 |
| 5 | 16-961 | 1" Adapter Quick Coupler (already on machine) | 1 |

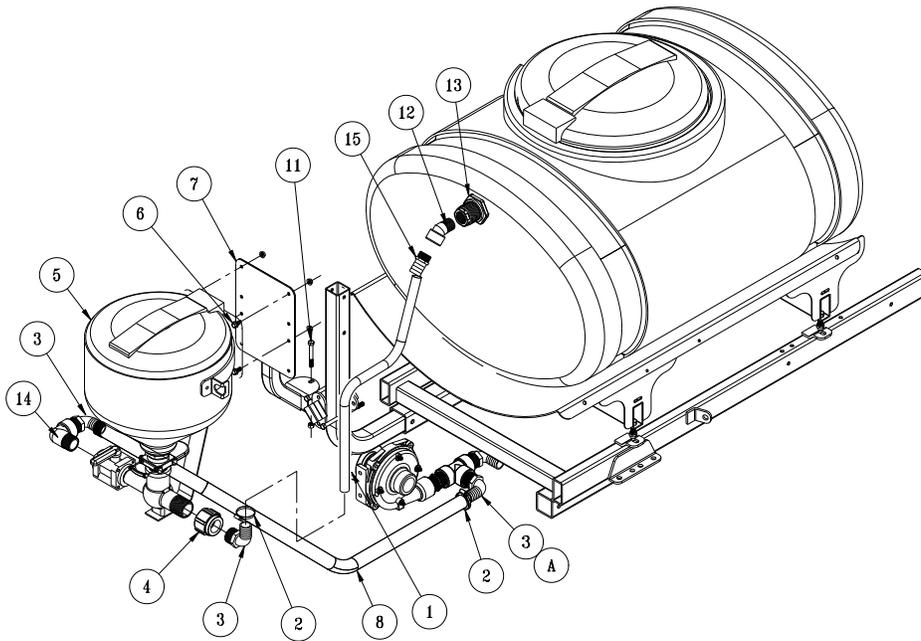
1. Thoroughly flush the service line upstream of the meter to remove dirt and debris.
2. The DLJ Meter is for use **only** with **COLD WATER** up to 122°F (50°C)
3. Slowly open any upstream valves to prevent damage to the meter.

Gallons to Cubic feet Conversion :

Multiply gallons reading by 0.1337 to get cubic feet.

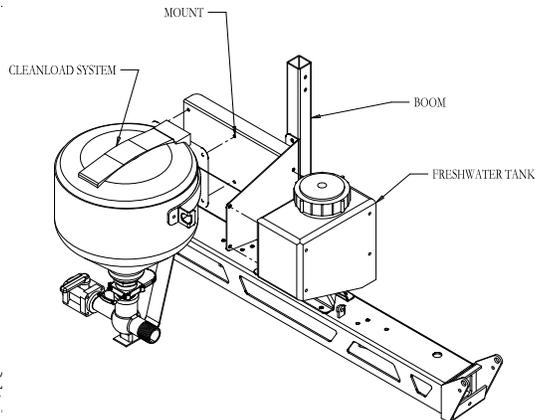
There are 7.48052 gallon per cubic foot.

15-619 CHEMICAL CLEANLOAD SAFE FILL SYSTEM



| REF# | PART # | DESCRIPTION | QUANTITY |
|------|-----------------|------------------------------|----------|
| 1 | 8897-25 | 1 1/4" Discharge Hose 25" | 1 |
| 2 | 18-116 | Hose Clamp | 4 |
| 3 | 16-156 | 90° Hose Barb | 3 |
| 4 | 18-391 | Coupling | 1 |
| 5 | 15-620 | Cleanload Assembly | 1 |
| 6 | HBFL-516-18-075 | Flange Bolt, 5/16 - 18 x 3/4 | 4 |
| | HNFL-516-18 | Flange Lock Nut, 5/16 - 18 | 4 |
| 7 | 15-816 | Mixer Mount | 1 |
| 8 | 8897-88 | 1 1/4" Discharge Hose 88" | 1 |
| 9 | 16-880 | Close Nipple | 1 |
| 10 | 18-390 | Pipe tee | 1 |
| 11 | HB-38-16-300 | Hex Bolt, 3/8 - 16 x 3 | 1 |
| | HNTL-38-16 | Lock Nut, 3/8 - 16 | 1 |
| 12 | 15-971 | Fitting 45° | 1 |
| 13 | 16-945 | Fitting (part of tank) | 1 |
| 14 | 16-972 | Street Elbow | 1 |
| 15 | 15-779 | Hose barb | 1 |

Accessories



When placing a 17-525/17-550 Heavy Boom on the Sprayer you will have to relocate the Chemical Cleanload System and the Fresh Water tank. There is a mount provided for you, please see in the illustration.



15-619 CHEMICAL CLEANLOAD INSTALLATION INSTRUCTIONS

1. Make sure sprayer tank is empty and flush all chemical residue from sprayer. Always wear protective clothing, goggles and gloves.
2. Disconnect outlet hose from the spray pump then the 90° fitting from the pump.
3. Install the close nipple, tee, elbow and the 90° elbow that was removed from the pump. Always use thread sealant on all fittings. Tighten all Fittings. One of the 90° fittings should point towards the right side of the machine and the other one needs to point to the back of the machine.
4. Reinstall the outlet hose onto the spray pump and tighten hose clamp.
5. Install 88" of 1 1/4" suction hose onto the elbow on the pump that points back and tighten hose clamp.
6. Route the 88" hose to the back of the sprayer so it connects over the top of the left boom support tube.
7. Install Mixer Mount (Ref 7) onto the left hand side of the center boom section. The Mount will slide over the 2" tube under the actuator. Secure Mixer Mount with 3/8 x 3 bolt and lock nut. Tighten.
8. Mount Cleanload Assembly onto mixer mount using 5/16 x 3/4 flange bolts and flange nuts. Tighten.
9. Install 18-391 reducer coupling (Ref 4) onto outlet side. Then a 16-156 90° elbow (Ref 3) into the coupling pointing up and one into valve with yellow handle. Tighten fittings so that the elbow in the valve is pointing up and forward. The outlet fitting should be pointing up.
10. Remove the plug from the top back of the spray tank and install 16-159 hose barb (Ref 12) and tighten. Now the 25" hose can be installed from the tank to the outlet fitting and tighten with clamps.
11. The hose from the spray pump can be connected to the inlet fitting and tightened with clamps.
12. Make sure all hardware, fittings and clamps are tight. Add about 25 gallons of water to the spray tank. Start sprayer and circulate water through system to check for leaks.
13. Be sure to read start up, loading and shutdown instructions for Cleanload Assembly before using with chemicals. When working with chemicals **Always** wear protective clothing, goggles and gloves.

TROUBLE SHOOTING

| Symptom | Corrective Action |
|--|---|
| Low education rate | Check pump pressure and flow. Cleanload Eductor performance is based on flow and pressure to the system. Note requirements for high education rates. |
| | Increase outlet hose size back to tank. |
| Plugged or clogged bottle rinse nozzle | Disassemble rotary portion of nozzle from lower valve assembly and back flush until nozzle ports are clear of debris. |
| Plugged or clogged tank rinse nozzle | Disassemble rotary portion of nozzle from NPT hose barb and back flush until nozzle ports are clear of debris. Remove screen and flush with water to clear away foreign material. |
| Fitting leaks | Check for cracks in fitting. Replace fitting if necessary. Disassemble and add more joint seal in compound if leak occurs on threads. |

OPERATING INSTRUCTION

STARTUP

1. All Cleanload valves must be closed prior to starting: inlet ball valve, knife valve and hopper rinse ball valve.
2. Open lid to check for foreign objects which may hinder performance or contaminate the system.
3. Close and lock lid by turning cover clockwise.
4. Divert pump flow to Cleanload inlet line. A pressure of 30 PSI minimum and 150 PSI maximum must be used. Highest pressures increase eduction rate and available wand suction.
5. Turn inlet ball valve on (yellow handle).
6. Open knife valve, located on the bottom of hopper, by pushing handle in (red handle).
7. Unlock and open lid slowly by turning cover counterclockwise.

LOADING LIQUID OR POWDERED CHEMICAL INTO HOPPER

8. Pour required amount of chemical into hopper. Avoid splashing liquids or powdered chemicals outside of hopper.
9. Rinse empty chemical containers if applicable. Place container opening over container rinse valve and press down. This will activate the rinse valve and rinse container.
10. Rinse Cleanload hopper. Close and lock lid by turning cover clockwise. Release the safety locking band on the hopper rinse ball valve and turn on for 20 seconds. Close ball valve and return locking band to locked position.
11. Open lid and inspect for chemical residue. Repeat step 10 as necessary.
12. Close knife valve by pulling red handle out towards you. Turn inlet (yellow handle) off.

LOADING LIQUID AND/OR POWDERED CHEMICAL WITH SUCTION LANCE

Note: Lance suction is dependent upon eductor pressure and flow. For best results, use highest pressure available up to 150 PSI maximum.

8. Insert lance body with o-ring into eductor until the o-ring is sealed.
9. Use the free end of the lance to pierce bag or container to vacuum powdered or liquid chemical.
10. Rinse lance. Place lance end into a clean container of water to rinse lance assembly.
11. Remove lance body from eductor and drain any remaining fluid into hopper.
12. Close knife valve (red handle). Turn inlet valve (yellow handle) off.

SHUTDOWN

1. Ensure that:
 - All valves are closed. Be sure to close knife valve first. (Close by pulling red handle out towards you.)
 - Chemical residue has been cleaned.
 - Hopper lid is closed and locked by turning cover clockwise.
2. Divert pump flow back to normal operation.

This is a list of decals located on the Spray Star 1750. Part number, description and location will help in reordering decals.

| | | |
|--------|-----------------------------|---------------------------|
| 14-510 | Decal, Tank Volume | Side of Spray Tank |
| 14-520 | Decal, Tank Volume 1750 Top | Lifd Well of Tank |
| 14-511 | Decal, Rear tank Volume | Rear of Tank |
| 15-463 | Decal, Spray Pump | Left Seat Panel |
| 15-636 | Decal, Spray Star 1750 | Tank Sides |
| 15-637 | Decal, Control Panel | Right Control Panel |
| 15-672 | Decal, Dash | Dashboard |
| 15-719 | Decal, Speed Control | Left Control Panel |
| 16-228 | Decal, Towing | Front Seat Panel |
| 25-279 | Decal, Hot and Moving Parts | Cooler Mount |
| 25-307 | Decal, Gas | Cooler Mount |
| 25-286 | Decal, Pinch Point | Left and Right Side Panel |
| 25-298 | Decal, Warning Hot | Back Seat Panel |
| 25-356 | Decal, Tire Pressure | All 4 Tires |
| 25-373 | Decal, Smithco | Front Nose Cone |
| 25-381 | Decal, 96 dBA | Panel Behind Seat |
| 27-077 | Decal, Smithco - Round | Steering Wheel |
| 27-093 | Decal, Hydraulic Oil | On Oil Reservoir |
| 25-277 | Decal, Battery | Battery Plate |
| 34-147 | Decal, Smithco | Nosecone |

QUICK REFERENCE REPLACEMENT PARTS

REPLACEMENT FILTERS

| | |
|-----------|---|
| 23-031 | Hydraulic Oil Filter |
| 13-531 | Oil Filter |
| 42-076-03 | Air Cleaner Cartridge |
| 13-488 | Key Switch |
| 76-310 | Key Set |
| | Engine Coupler Flange w/ 13 tooth hub Briggs #821354 |

REPLACEMENT BELTS

| | |
|--------|-----------------|
| 15-704 | Spray Pump Belt |
|--------|-----------------|

SEAL KITS

| | |
|-----------|------------------------------|
| 15-301 | Power Steering Orbital Motor |
| 15-301-01 | Seal Kit |
| 15-839 | Hydraulic Cylinder |
| 14-531 | Seal Kit |
| 11-158 | Linear Actuators |
| 11-158-01 | Seal Kit |
| 76-238 | Wheel Motors |
| 14-080 | Seal Kit |
| 76-398 | Hydrostatic Pump |
| 77-239-22 | Seal Kit |
| 76-197 | Gear Pump |
| 76-197-08 | Seal Kit |

FLUIDS

| | |
|-----------------|---|
| Engine Oil | SAE 10W-40 API Service SJ or higher Motor Oil |
| Hydraulic Fluid | SAE 10W-40 API Service SJ or higher Motor Oil |

OTHER PARTS

| | |
|-----------|---|
| 14-532 | Hinged Cover On Tank with Gasket |
| 14-532-01 | Gasket For Cover |
| 15-818 | #75 Fitting Oring |
| 15-817 | #50 Fitting Oring |
| | Spark Plugs Champion type RC12YC (Gap 0.040 inch (1.02mm)) |

The Smithco Commercial Products Two-Year Limited Warranty

Smithco, Inc. (Smithco) warrants your 2007 or newer Smithco Commercial Product ("Product") purchased after January 1, 2007, to be free from defects in materials or workmanship for the period of time listed below. Where a warrantable condition exists, Smithco will repair the Product at no cost to you including diagnosis, labor (at the Smithco standard labor rate, subject to the Smithco flat rate schedule), and parts.

Warranty Duration is:

- (1) Two years, 1500 operational hours* from the date of delivery to the original purchaser or three years from the date of original manufacturer of the product, whichever occurs first. (*Products equipped with hour meter).
- (2) Products used in rental situations are covered for 90 days from date of delivery to original user/ renter.

Owner Responsibilities:

As the Product owner, you are responsible for required maintenance and adjustments stated in your Owner's Manual. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim. **You are particularly responsible to train all present and future operators of this product on the safe operation of this product at your location.**

Instructions for Obtaining Warranty Service:

You are responsible for notifying the Authorized Smithco Products Distributor from whom you purchased the Product as soon as you believe a warrantable condition exists and not later than 30 days from discovery of the condition.

If you need help locating an Authorized Smithco Distributor, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Smithco Product Support Department
200 W Poplar PO Box 487
Cameron, Wisconsin 54822

Telephone: 1-800-891-9435

E-Mail: ProductSupport@smithco.com

Maintenance Parts:

Parts scheduled for replacement as required maintenance ("Maintenance Parts"), are warranted for the period of time up to the scheduled replacement time for that part.

Items/Conditions Not Covered:



Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. The items/conditions listed below are not covered by this warranty:



Product failures which result from the use of non-Smithco replacement parts, or from installation and use of add-on, modified, or unapproved accessories are not covered.



Product failures which result from failure to perform required maintenance and/or adjustments are not covered.



Product failures that result from operating the Product in an abusive, negligent or reckless manner are not covered.



This warranty does not apply to parts subject to consumption through use, unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to: blades, tines, teeth, scarifiers, rakes, plates, wear plates, castor wheels, tires, batteries, filters, belts, nozzles, etc.



This warranty does not apply to failures caused by out-side influence. Items considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved coolants, lubricants, additives, or chemicals, etc.



This warranty does not apply to normal “wear and tear” items. Normal “Wear and Tear” includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows, etc.



Smithco may require the return of failed parts or components in order to determine the validity of any warranty claim.



Smithco will not be obligated to replace components of other manufacturers if inspection by the original component manufacturer indicates that failure was due to normal wear and tear, expected consumption through use or improper care or service.

Other Legal Disclaimers:

The above remedy for product defects through repair or replacement by an authorized Smithco distributor or dealer is the purchaser’s sole remedy for any defect. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

THERE ARE NO OTHER EXPRESS WARRANTIES OTHER THAN THOSE SET FORTH ABOVE. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE ARE LIMITED TO THE DURATION OF THE LIMITED WARRANTIES CONTAINED HEREIN.

Some states may not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

THE SMITHCO COMPANY IS NOT LIABLE FOR INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF THE PRODUCT, INCLUDING ANY COST OR EXPENSE OF PROVIDING A SUBSTITUTE PRODUCT OR SERVICE DURING PERIODS OF MALFUNCTION OR NON-USE.

Some states may not allow the exclusion of indirect, incidental or consequential damages, so the above exclusion may not apply to you.

Smithco neither assumes, nor authorizes any person to assume for it, any other liability in connection with the sale or use of this product.

SMITHCO, INC.

Wayne, PA 19087

