

Parts & Service



Spray Star 2000D

Truck Model 20-700-A

TeeJet Radion® 8140 2002D

TeeJet® 744 2004D

TeeJet Aeros/DynaJet® 2005D/2006D

TeeJet Radion/DynaJet® 2007D/2008D

SN: 200D324

Product Support:

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INTRODUCTION

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

Read this manual and all other manuals pertaining to the Spray Star 2000 Diesel carefully as they contain 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.



WARNING:
Engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.
For more information visit
www.P65Warning.ca.gov

WARNING

Failure to follow cautious operating practices can result in serious injury to the operator or other persons. The owner must understand these instructions, and must allow only trained persons who understand these instructions to operate this vehicle.


All **Smithco** machines have a Serial Number and Model Number. Both numbers are needed when ordering parts. Refer to engine manual for placement of engine serial number.

For product and accessory information, help finding a dealer, or to register your product please contact us at www.Smithco.com.

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

For easy access record your Serial and Model numbers here.

SMITHCO		
WAYNE, PENNSYLVANIA 19087 USA 610-688-4009 Fax 610-688-6069		
		
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"/>

SMITHCO CUSTOMER SERVICE 1-800-891-9435

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. Stop engine before making repairs/adjustments or checking/adding oil to the crankcase.
18. Use parts and materials supplied by **Smithco** only. Do not modify any function or part.
19. Use caution when booms are down as they extend out beyond the center line of the machine.
20. 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 2000

WEIGHTS AND DIMENSIONS

Length	132" (335cm) - w/ booms 137" (348 cm) - w/ Cleanload 151" (384 cm)
Width	72" (183cm)
Height w/ Booms Folded	110" (279 cm)
Wheel Base	61" (155cm)
Weight Empty	2090 lbs (948kg)
Weight Loaded	3705 lbs (1681 kg)

SOUND LEVEL (DB)

At ear level	98 dBA
--------------	--------

ENGINE

Make	Kubota
Model#	D1105-E3B
Horsepower	25 hp (18.5 kW)
Fuel	No.1-D or No. 2-D, S500: Low Sulfur Diesel (LSD) less than 500 ppm or 0.05 wt. % No.1-D or No.2-D, S15: Ultra Low Sulfur Diesel (ULSD) less than 15 ppm or 0.0015 wt. %
Cooling System	Liquid Cooled
Lubrication System	Full Pressure
Alternator	15 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; 18 psi (1.3 bar)

SPEED

Infinitely Variable	0-10 m.p.h. (0-16 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 Motor Oil

OPTIONAL EQUIPMENT

15-618	Water Meter Kit (liters)	14-515	Water Meter Kit (Gallons)
20-503	Chemical Cleanload Safe Fill	15-850	Sunshade Canopy
30-009	Manual Rewind Hose Reel, 200-foot/61-meter capacity		
30-010	Electric Rewind Hose Reel, 200-foot/61-meter capacity		
30-004	Foam Marker	30-006	Fresh Water Wash Tank- Rear Mount
15-835	Tank Rinsing System	20-758	Fresh Water Wash Tank - Front Mount
17-585	18' HD Super Boom	17-580	20' HD Super Boom
31-004	All Weather Top	20-760	26 Gal Wash System



MAINTENANCE

⚠ CAUTION

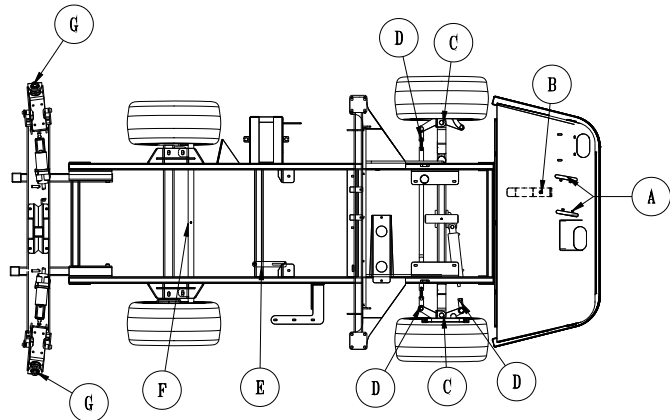
Before servicing or making adjustments to machine, stop engine and remove key from ignition.

⚠ IMPORTANT

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

Use No. 2 General purpose lithium base grease and lubricate every 100 hours. The Spray Star 2000 has 14 grease fittings.

- A. One on each pedal mount.
- B. Pedal relay.
- C. Right and left spindles.
- D. All three rod ends.
- E. Idler arm.
- F. Brake relay.
- G. Top and bottom pivot bolts on boom



ELECTRICAL CONNECTIONS

Use dielectric grease on all electrical connections.

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. Re-torque after first 10 hours and every 200 hours thereafter.
7. Lower machine to ground and remove blocks and jack.

TIRE PRESSURE

Caution must be used when inflating a low tire to recommended pressure. Over inflating can cause tires to explode. Front tires should be 20 psi (1.4bar) and rear tires should be 18 psi (1.3 bar). Improper inflation will reduce tire life considerably.

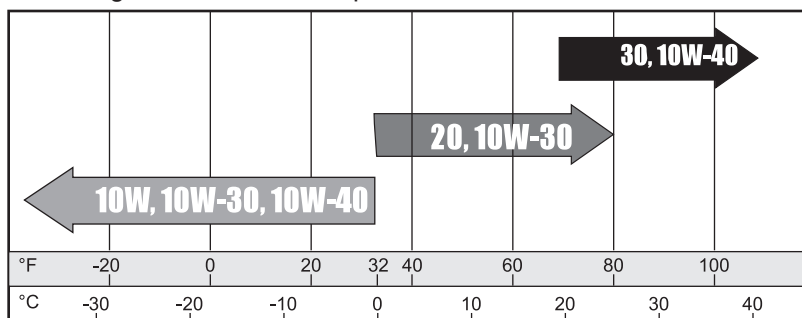
ENGINE OIL

With strict emission control regulations now in effect, the CF-4 and CG-4 engine oils have been developed for use with low sulfur fuels, for On-Highway vehicle engines. When Non-Road engines run on high sulfur fuel, it is advisable to use a "CF or better" classification engine oil with Total Base Number (a minimum TBN of 10 is recommended).

Check the engine oil before starting or more than 5 minutes after stopping the engine. If oil level is low, remove oil filler plug and add new oil to the prescribed level. Do not overfill.

Engine oil should be MIL-L2104C or have properties of API Classifications CD grades or higher. Change the type of Engine oil according to the ambient temperature.

O= Recommended	X= Not Recommended	
Lubricating Oil Class	Fuel	
CF-4	O	X
CG-4	O	X



Starting Temperature Range Anticipated Before Next Oil Change

HYDRAULIC OIL

1. Use SAE 10W-40 API Service SJ or higher motor oil.
2. For proper warranty, change oil the first 50 hours and then every 500 hours or annually, which 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

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.

WARNING

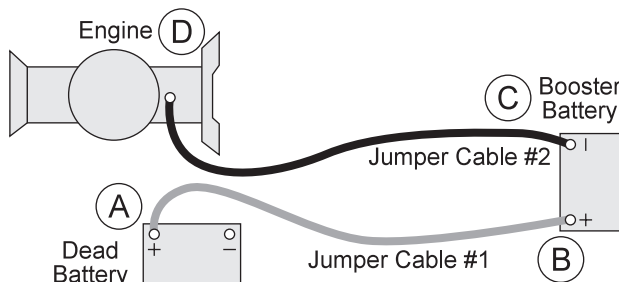
Battery Electrolyte is an acidic solution and should be handled with care. If electrolyte is splashed on any part of your body, flush all contact areas immediately with liberal amounts of water. Get medical attention immediately.

WARNING

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.

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 fuel. Run engine for 2-3 minutes to get stabilized fuel into carburetor. Close fuel shut-off valve when unit is being stored or transported.

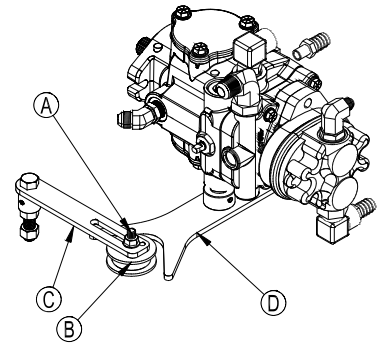
To empty the system, drain fuel tank and carburetor, or run engine until tank and system are empty.

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.

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 BELT

Located to the right of the engine. The belt should have approximately $\frac{1}{2}$ " (13mm) of deflection in the center of the top strand. Loosen and tighten the $\frac{3}{8}$ -16 x $1\frac{1}{4}$ bolts located on the foot of the pump mount.

MASTER BOOM SWITCH (FOOT SWITCH)

The master boom switch, located on the left floorboard is used to override the master switch on the computer console of the spray systems. By pushing down it will turn on/off the booms. *For the TeeJet System* the Master Switch on the computer **must be on** for the master boom control switch to work.

GROUND SPEED CONTROL (FOOT SWITCH)

The ground speed control does not work the same as an automotive type cruise. The ground speed control is located on the center floorboard and is used to lock forward speed.

TO ENGAGE:

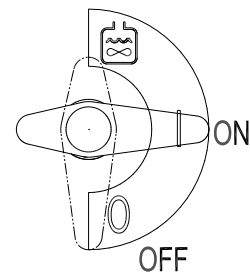
1. Flip rocker switch 'On' (green light).
2. Obtain desired speed with foot pedal.
3. Step on foot switch to lock speed.
4. Push foot switch again to disengage.

SPRAY BOSS CONTROL - ORANGE

Engages and disengages speed boss. Forward is engage and all the way back is disengage. When the lever is engaged it sets a stop for the accelerator. The accelerator pedal must be used to maintain this speed. To adjust speed use the knob on the end of the lever, counter clockwise increases speed and clockwise decreases speed. Disengage the lever and you will have full accelerator pedal range.

TANK AGITATION

The valve to turn on and off the tank agitation is located on the front of the seat panel, drivers right hand side. Rotate valve handle down to shut off and rotate back up to turn on..



SERVICE CHART

⚠ CAUTION

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

⚠ IMPORTANT

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.

Duplicate this page for routine use

Maintenance Check Item	For the week of:						
	Mon	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Check the Safety Seat Switch							
Check Steering Operation							
Check the fuel level							
Check the engine oil level.							
Check the condition of the air filter							
Clean the engine cooling fins.							
Check for unusual engine noises							
Check the hydraulic oil level							
Check hydraulic hoses and fittings for damage							
Check for fluid leaks.							
Check the tire pressure (20-30 psi)							
Check the Instrumentation							
Inspect electrical system for frayed wires							
Check neutral start							
Change oil filter.							
Change oil.							
Lubricate Machine and Booms							
Ensure all warning decals are intact.							

Areas of Concern		
Inspection Performed by:		
Item	Date	Information

SERVICE CHART

Item	Maintenance Procedure
After the first 8 operating hours	Torque the wheel lug nuts. (64-74 ft/lb (87-100 Nm)) Change the engine oil filter.
Before each use daily	Check the engine oil level. Clean area around muffler and controls. Check the hydraulic fluid level. Check the tire pressure. Check condition of hydraulic hoses and fittings. Check for oil or water leaks. Proper function of glow lamp timer.
After the first 50 hours	Change Hydraulic Oil Filter. Change Engine oil and filter.
Every 100 hours	Clean or change air filter. ^{1&2} Clean fuel filter element. ¹ Lubricate machine. Check the battery fluid level and cable connections.. Check fan belt tension and damage.
Every 200 hours	Check radiator hoses and clamp bands. Change engine oil. ¹ Check idle speed. Replace oil filter cartridge. ¹ Change hydraulic oil filter. ¹ Check air intake line. ¹ Torque the wheel lug nuts. (64-74 ft/lb (87-100 Nm))
Every 500 hours or yearly	Clean Water Jacket and radiator interior. Replace fan belt.
Every 800 hours	Check valve clearance.
Every 1500 hours	Check injection nozzle pressure.
Every 3000 hours	Check turbo charger. Check injection pump. Check injection timing.
Every 2 years	Change radiator coolant (L.L.C.) Replace radiator hoses and clamp bands. Replace fuel hoses and clamps. Replace intake air lines.

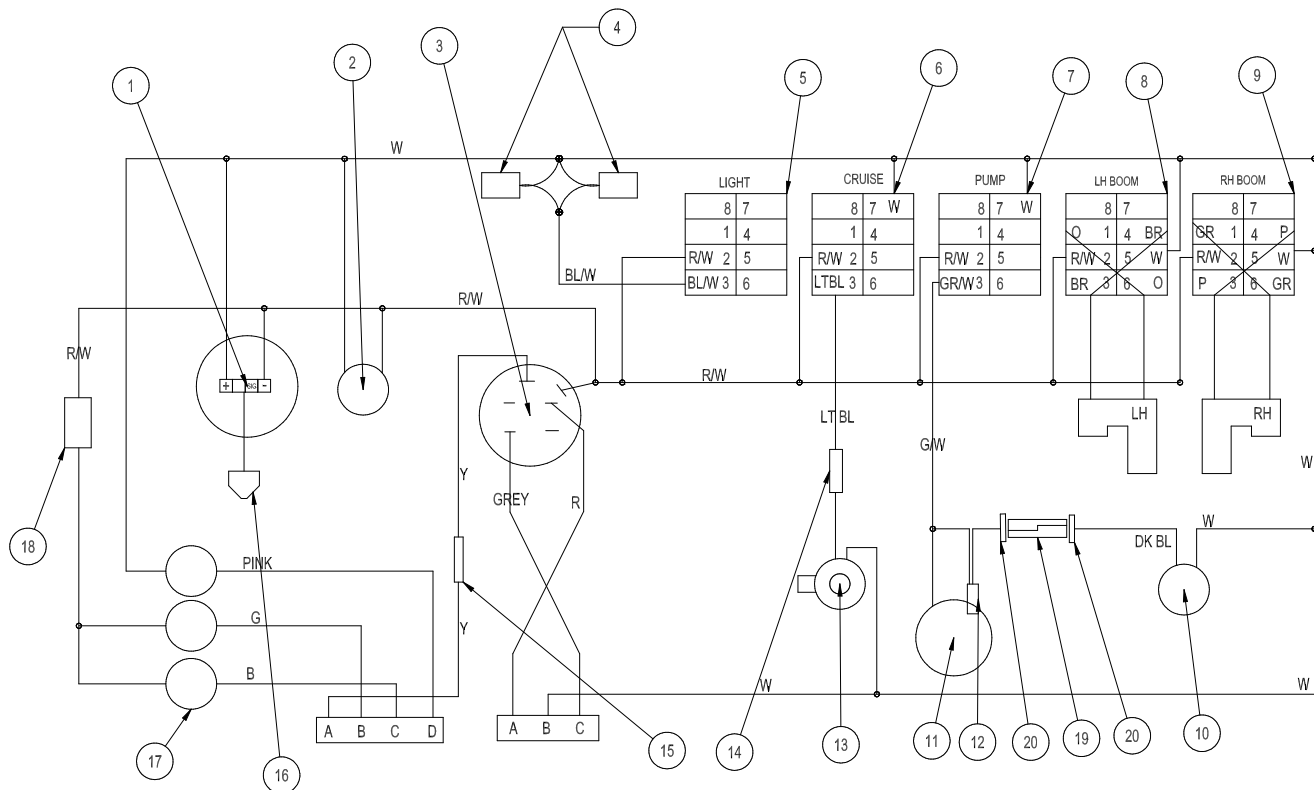
¹ In dusty conditions or when airborne debris is present, clean more often.

² Replace after every 6 times of cleaning

20-612 MAIN WIRE HARNESS DIAGRAM

Use dielectric grease on all electrical connections.

Service



Color Code Chart

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

20-612 MAIN WIRE HARNESS PARTS LIST

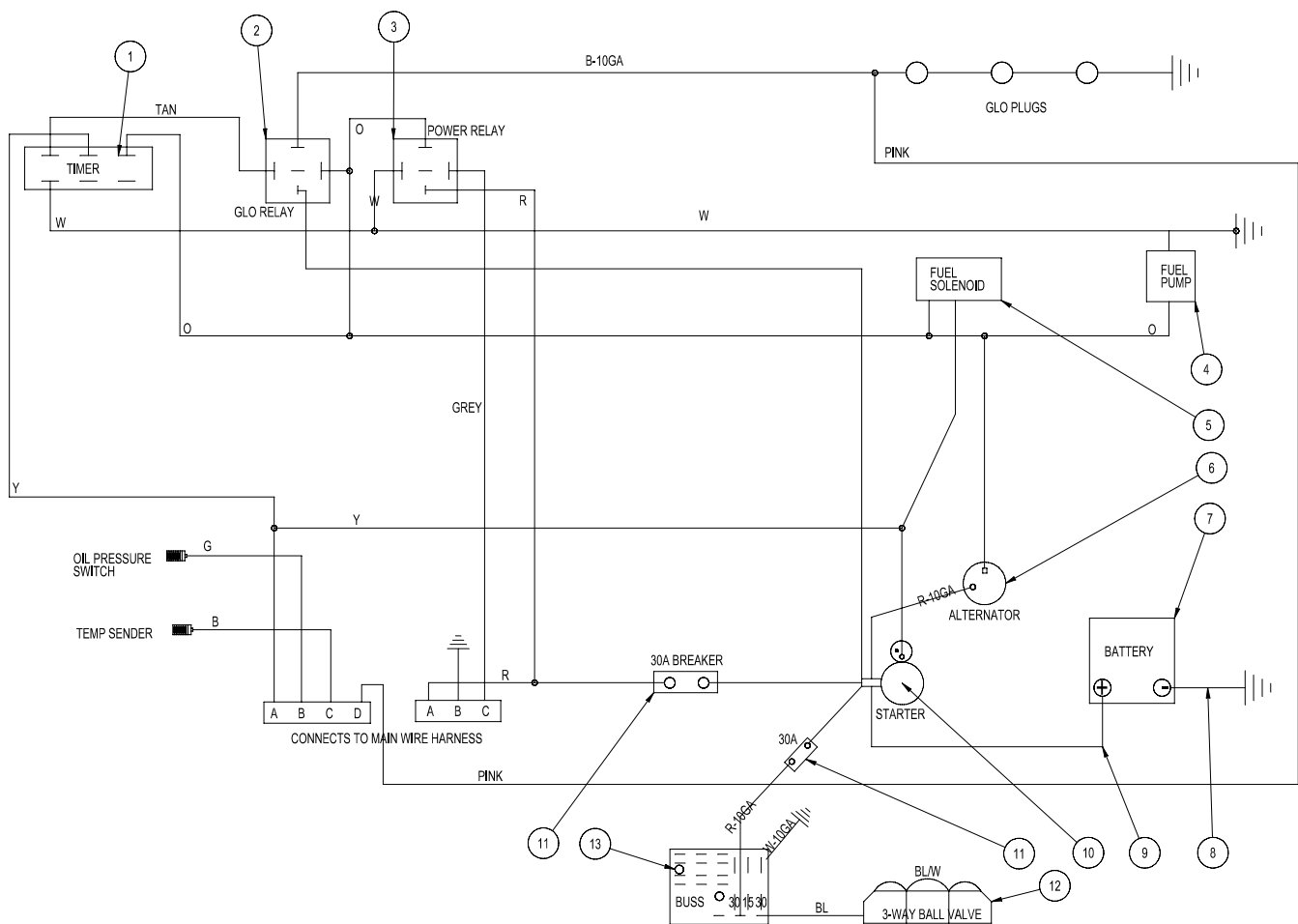
REF#	PART#	DESCRIPTION	QUANTITY
1	20-730	Speedometer	1
2	12-804	Hour Meter	1
3	13-488	Ignition Switch	1
4	32-014	Lights	2
5	Lights		
	15-725	Mount Panel End	1
	15-782	Non-Lighted Switch, On-None-Off	1
	15-727	Rocker - No light	1
6	Cruise		
	15-729	Mount Panel Middle	1
	15-726	Lighted Switch	1
	15-732	Rocker , Green	1
7	Pump		
	15-729	Mount Panel Middle	1
	15-726	Lighted Switch	1
	15-731	Rocker, Amber	1
8	Left Boom		
	15-729	Mount Panel Middle	1
	15-728	Centering Switch, Momentary, On-Off-On	1
	15-727	Rocker - No light	1
9	Right Boom		
	15-725	Mount Panel End	1
	15-727	Rocker - No light	1
	15-728	Centering Switch, Momentary, On-Off-On	1
10	77-207	Buzzer	1
11	16-998	Spray Pump	1
12	33-480	Pressure Switch	1
13	33-084	Magnetic Coil	1
14	33-509	Master Boom Switch	1
15	14-292	Seat Switch	1
16	20-730-01	Speedometer Antenna	1
17	50-359	Glo - Oil - Temperature Lights	3
18	20-733	10AMP Circuit Breaker	1
	8977	Red Circuit Breaker Boot	1
19	9016	Weather Pack	1
	9018	Seal	2
20	9017	Weather Pack Terminal	2



20-613 ENGINE WIRE HARNESS DIAGRAM

Use dielectric grease on all electrical connections.
To reset circuit breaker on ball valve, you must disconnect power to computer.

Service



Color Code Chart

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

20-613 ENGINE WIRE HARNESS PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	77-223	Timer	1
2	30-042-06	Glo Relay	1
3	30-042-06	Power Relay	1
4		Fuel Pump	1
5		Fuel Solenoid	1
6		Alternator	1
7	33-216	Battery	1
	8-603	Battery Strap	1
8	48-147	Negative Battery Cable	1
9	50-323	Red Battery Cable	1
10		Starter	1
11	20-693	50A Breaker	2
	8977	Red Circuit Breaker Boot	2
12	18-372	3-Way Ball Valve	1
13	33-271	Buss Fuse Block	1

All wires 14GA unless stated in drawing.

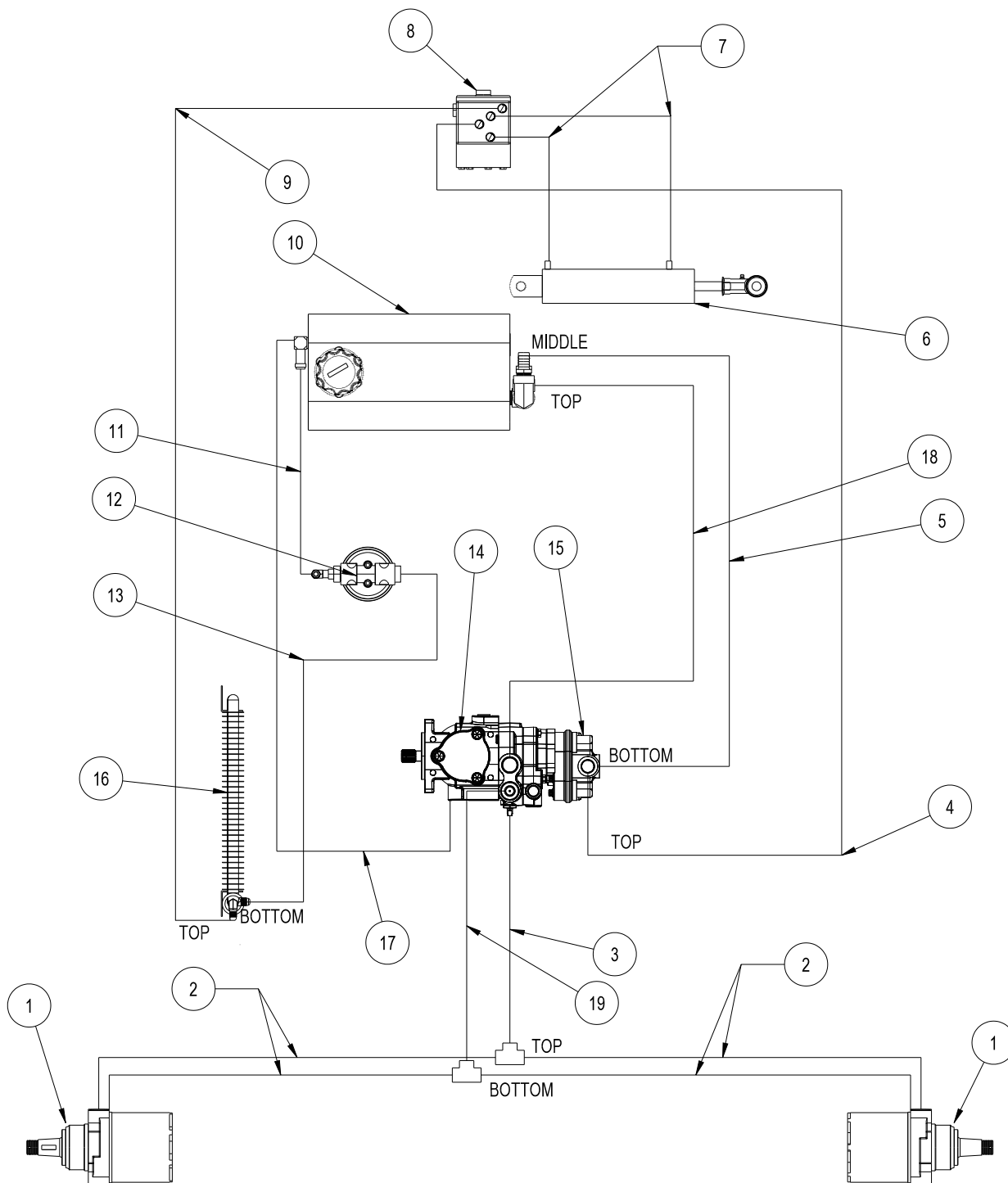
Service



HYDRAULIC DIAGRAM

Use dielectric grease on all electrical connections.

Diagrams



HYDRAULIC DIAGRAM PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	43-116	Wheel Motors	2
	14-080	Wheel Motor Seal Kit	2
2	15-681	Hose	4
3	20-572	Hydraulic Hose	1
4	20-574	Hydraulic Hose	1
5	8832-29	3/4 Suction Hose	1
	18-040	Hose Clamp	2
6	15-839	Hydraulic Cylinder	1
	14-531	Cylinder Seal Kit	1
7	20-575	Hydraulic Hose	2
8	15-301	Orbitor	1
	15-301-01	Orbitor Seal Kit	1
9	20-573	Hydraulic Hose	1
10	60-473	Oil Tank	1
11	20-564	Hydraulic Hose	1
12	20-576	Oil Filter Assembly	1
	20-576-01	Replacement Filter	1
13	20-563	Hydraulic Hose	1
14	76-638	Hydrostatic Pump	1
	77-239-23	Hydrostatic Pump Seal Kit	1
15	76-197	Gear Pump	1
	76-197-08	Gear Pump Seal Kit	1
16	15-624	Oil Cooler	1
17	20-570	Hydraulic Hose	1
18	8832-27	3/4 Suction Hose	1
	18-040	Hose Clamp	2
19	20-571	Hydraulic Hose	1

Diagrams

PUMP DISPLACEMENT

76-638 Hydrostatic Pump

Displacement	Variable to 1.44 in ³ /R (23.6 cm ³ /R)
	22.44 gpm (84.94 lpm) at 3600 rpm
Max Operating Speed	3600 rpm
Rated Pressure	3000 psi (206.8 bar)
Max Pressure	5000 psi (344.7 bar)
Max Inlet Vacuum	6 in Hg (.203 bar)
Max Inlet Temperature	225°F (107°C)
Max Allowable Case Pressure	25 psi (1.72 bar)

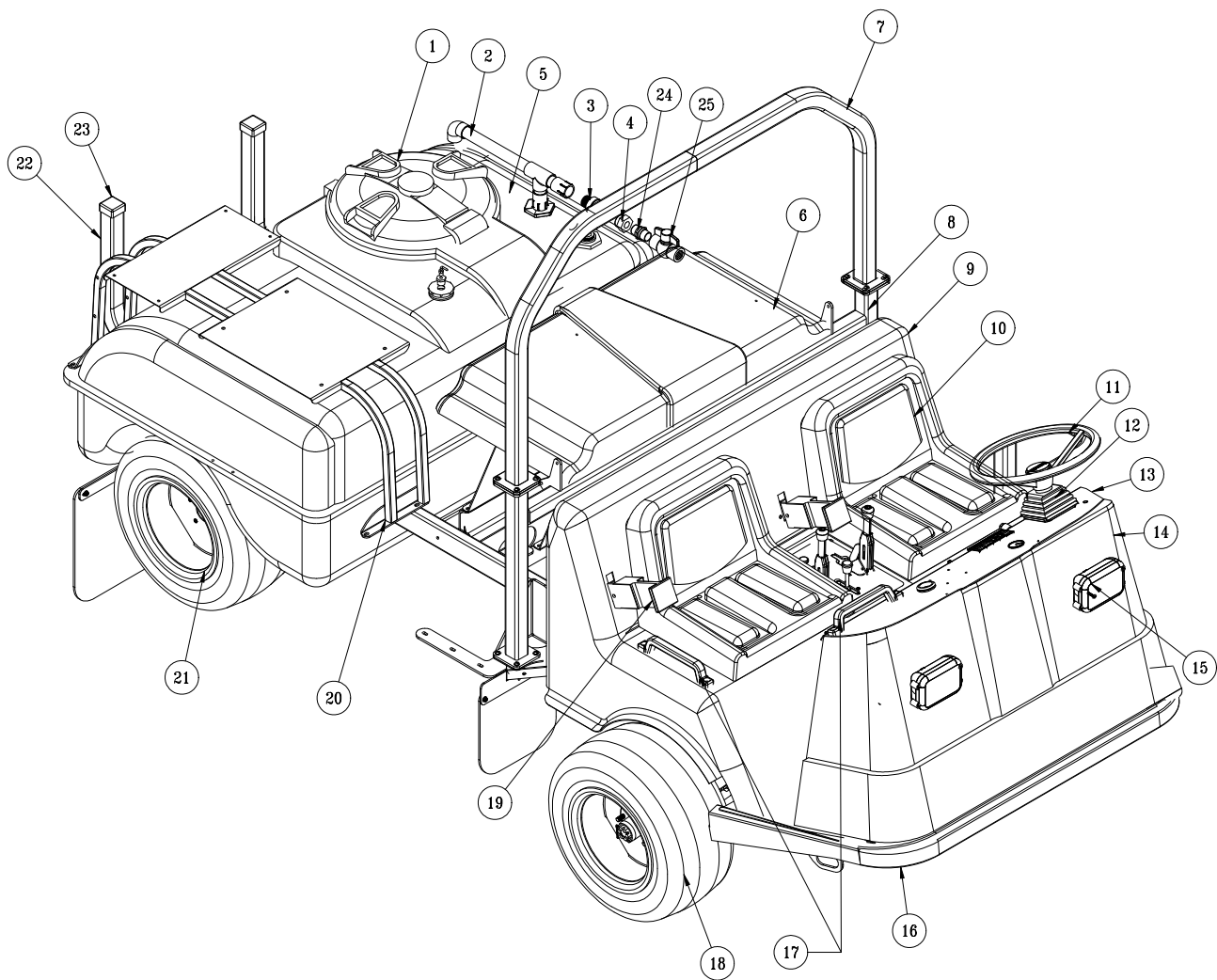
76-197 Gear Pump

Displacement	.40 in ³ /R (6.6 cm ³ /R) 6.23 gpm (25.39 lpm)
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Over tightened fittings will result in crushing the cone which will create a leak.

BODY & FRAME DRAWING

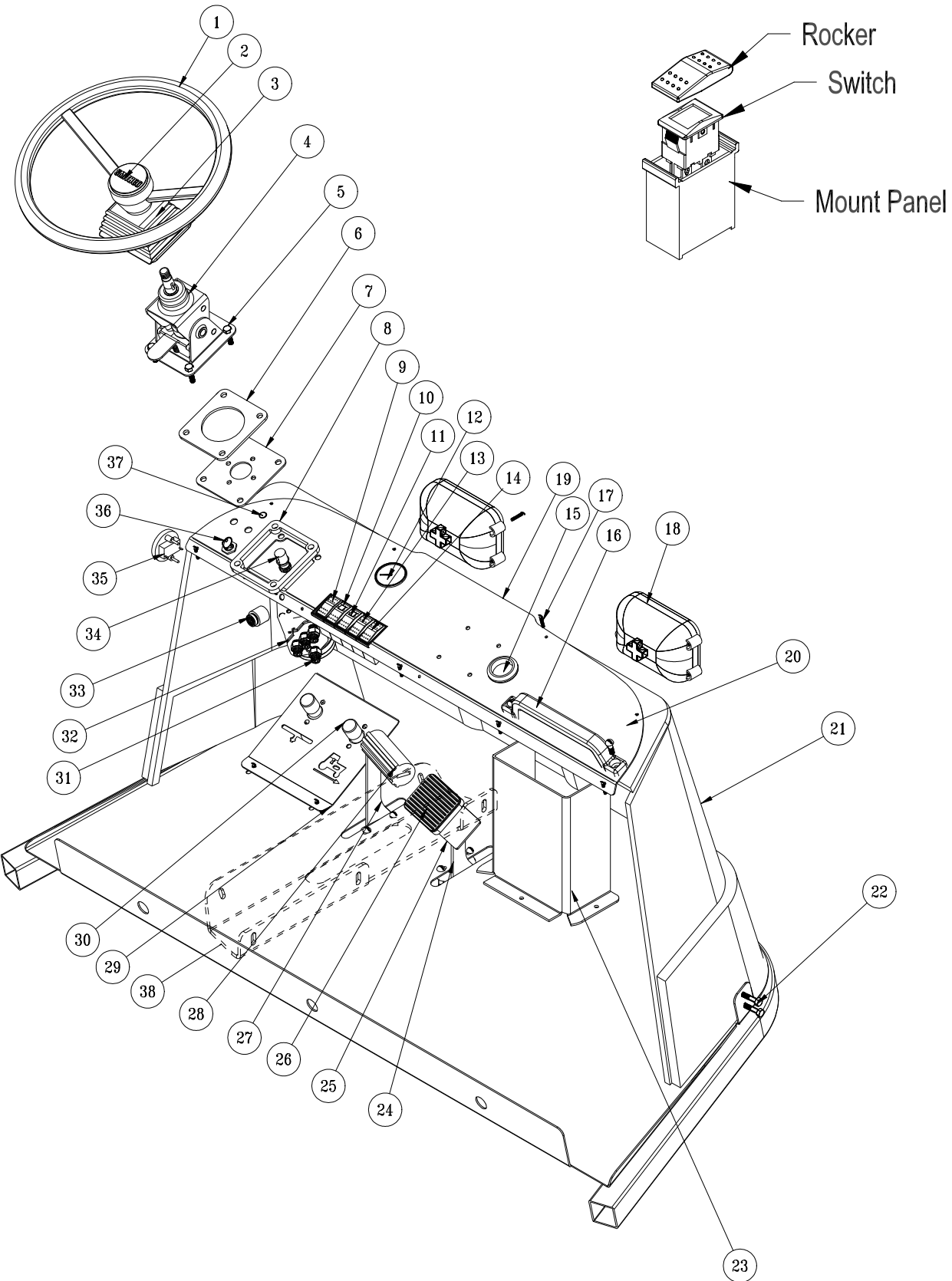
Diagrams



BODY & FRAME PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	16-953	16" Lid	1
	16-953-01	Gasket for Lid	1
	16-169	Strainer Basket	1
2	14-365	Air Gap Filler	1
3	16-961	Adapter	1
4	16-962	Coupler	1
	16-962-01	Buna-N Gasket	1
5	20-592	200 Gallon Tank (Fiberglass)	1
	20-529	Decal, Spray Star 2000	2
	20-593	Decal, Site Gauge	1
6	20-750	Rear Hood (fiberglass)	1
7	20-611	Roll Bar	1
8	20-780	Roll Bar Base	1
9	31-045	Seat Assembly (Fiberglass)	1
10	14-294	Seat (includes * items)	2
	*14-292	Seat Switch	1
	*14-800	Seat Rail	2
	*HSP-1260-340-250	Seat Spacers	8
11	13-718	Steering Wheel	1
	13-726	Center Cap	1
12	76-364	Square Boot	1
	76-362	Mini Tilt steering	1
13	20-734	Dash Panel	1
14	31-044	Nose Cone (fiberglass)	1
15	32-014	Head Light	2
16	20-535	Main Frame	1
17	76-443	Black Handle	3
	HSTP-516-18-100	Phillips Machine Screw, $\frac{5}{16}$ -18 x 1	6
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ -18	6
18	16-857	Front Tire and Wheel	2
	16-857-01	Tire, 20 x 10.00 - 10NHS 4-ply	2
	42-161-02	Wheel	2
19	76-198-03	Seat Belt	2
20	20-552	Accessory Mount	1
21	16-225	Tire & Wheel	2
	16-225-01	Tire, 24 x 13.00 - 12NHS 4 Ply	2
	16-225-02	Wheel	2
22	17-615	Boom Support Tube	2
23	16-557	Square Cap	2
24	16-851	1" Nipple	1
25	18-448	1" Ball Valve	1

NOSE CONE DRAWING



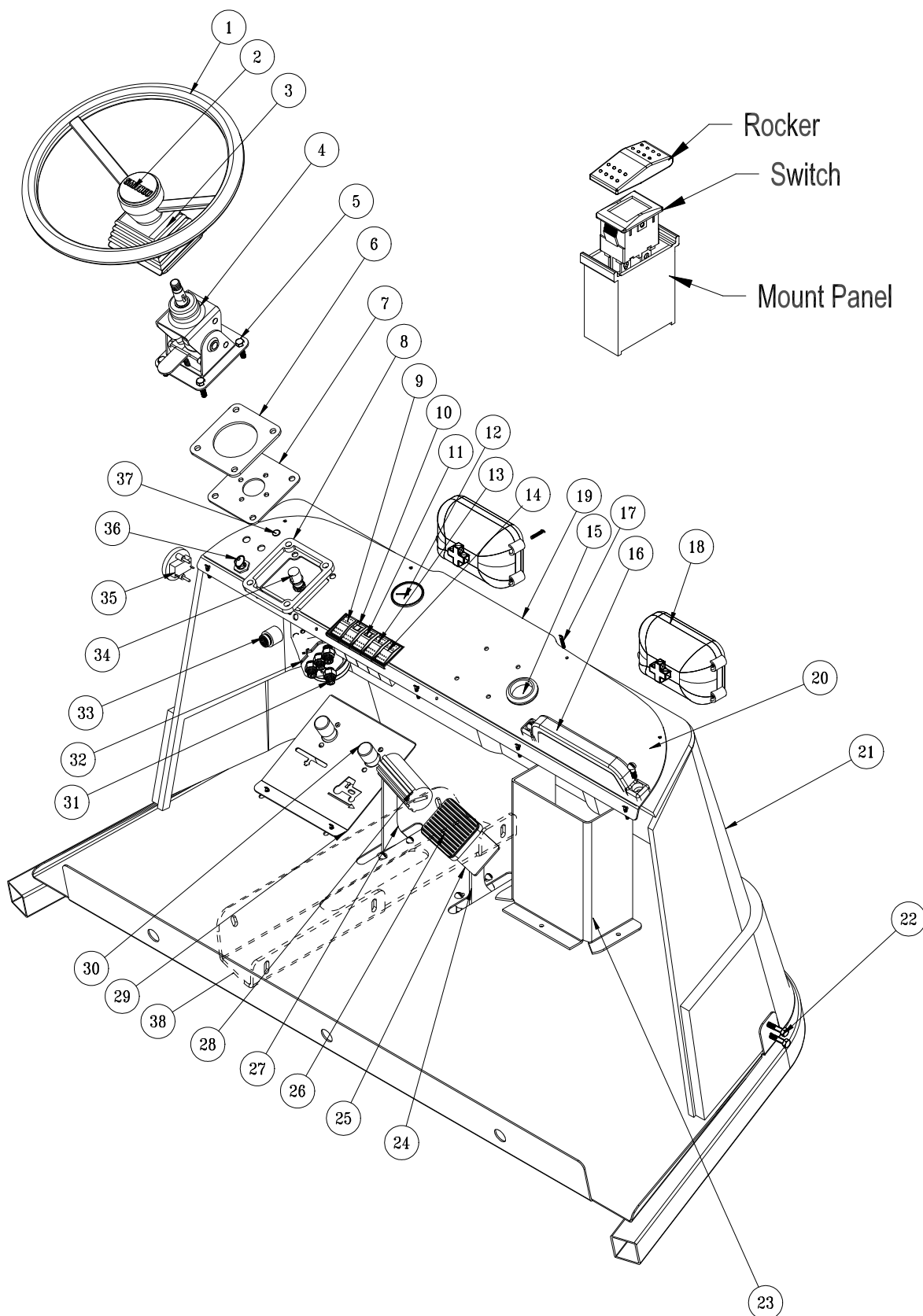
Parts

NOSE CONE PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	27-077	Decal, Smithco Round	1
2	10-751	Steering Wheel	1
3	76-364	Square Boot	1
4	76-362	Mini Tilt steering	1
5	HB-516-18-150	Hex Bolt, $\frac{5}{16}$ - 18 x $1\frac{1}{2}$	4
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ -18	4
6	15-844	Tilt Steering Spacer	1
7	31-056	Tilt Steering Plate	1
8	31-057	Steering Spacer	1
9	LIGHTS		
	15-725	Mount Panel End	1
	15-727	Rocker, No Light	1
	15-782	Non lighted Switch	1
10	CRUISE		
	15-732	Rocker, Green	1
	15-726	Lighted Switch	1
	15-729	Mount Panel Middle	1
11	PUMP		
	15-731	Rocker, Amber	1
	15-726	Lighted Switch	1
	15-729	Mount Panel Middle	1
12	20-730	GPS Speedometer	1
13	RIGHT BOOM		
	15-727	Rocker, No Light	1
	15-729	Mount Panel Middle	1
	15-728	Centering Switch, Momentary On-Off-On	1
14	LEFT BOOM		
	15-725	Mount Panel End	1
	15-727	Rocker, No Light	1
	15-728	Centering Switch, Momentary On-Off-On	1
15	50-400	Grommet	1
16	76-443	Black Handle	1
	HSTP-516-18-100	Phillips Machine Screw, $\frac{5}{16}$ -18 x 1	2
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ -18	2
17	HSM-10-32-100	Machine Screw, #10 -32 x 1	17
	HNFL-10-32	Flange Whiz-loc Nut, #10 -32	17
18	32-014	Head Light	2
19	20-734	Dash Panel	1
	20-598	Cover Panel (if not using Star Command)	1
20	20-545	Decal, Dash Panel	1
21	31-044	Nose Cone (fiberglass)	1
22	HSTP-516-18-150	Phillips Machine Screw, $\frac{5}{16}$ -18 x $1\frac{1}{2}$	7
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ -18	7
23	31-062	Hose Guard	1
24	HB-38-16-125	Hex Bolt, $\frac{3}{8}$ -16 x $1\frac{1}{4}$	1
	HNTL-38-16	Nylon Lock Nut, $\frac{3}{8}$ -16	1
25	31-050	Reverse Pedal	1
26	45-022	Molded Pedal Pad	1

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NOSE CONE DRAWING

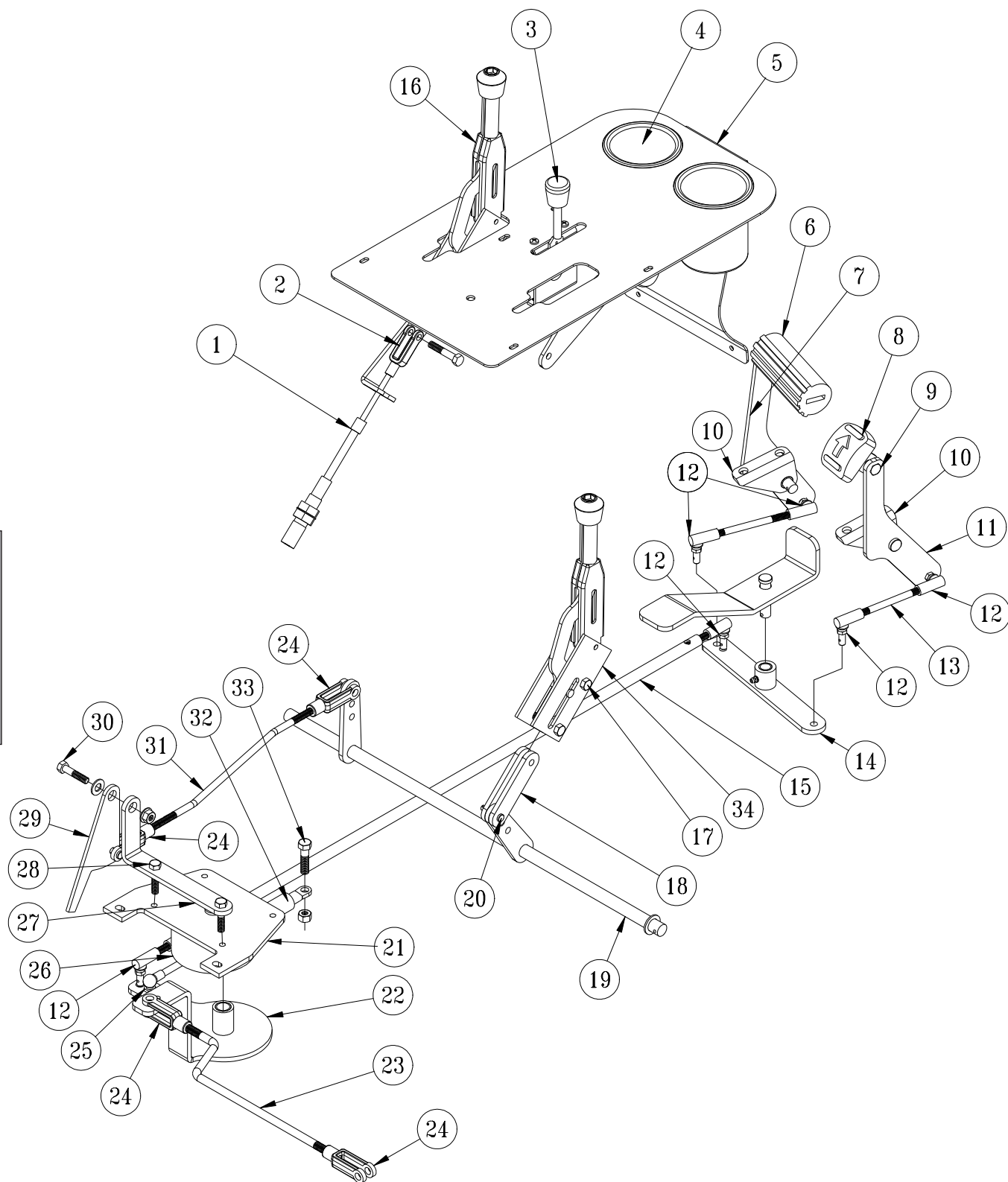


NOSE CONE PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
27	10-163	Forward Foot Pedal	1
28	48-066	Pedal Grip	1
29	31-049	Button Plate	1
	HB-14-20-075	Hex Bolt, $\frac{1}{4}$ -20 x $\frac{3}{4}$	2
	HNFL-14-20	Flange Whiz-loc Nut, $\frac{1}{4}$ - 20	2
30	33-509	Master Control Switch	2
	HSTP-14-20-075	Machine Screw, $\frac{1}{4}$ -20 x $\frac{3}{4}$	4
31	18-169	Adapter	4
32	15-301	Orbitor	1
33	77-207	Buzzer	1
34	48-187	Stub shaft	1
35	12-804	Hour Meter	1
36	13-488	Ignition	1
37	50-359	Warning Indicator Light	1
38	20-634	Front Frame Adapter	1

LINKAGE DRAWING

Parts

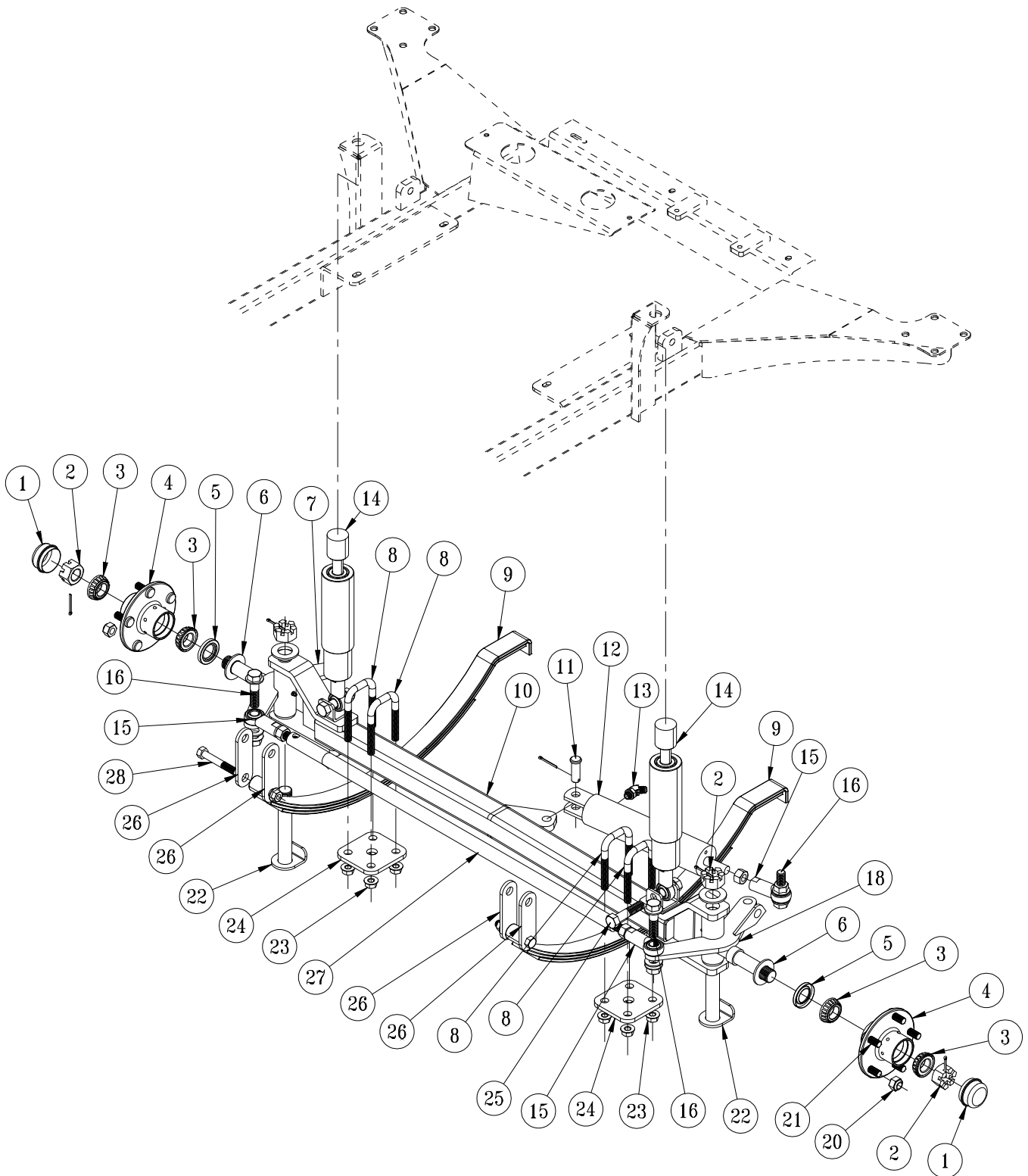


LINKAGE PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	50-108	Cable	1
2	11-100	Linkage Yoke	1
	HN-516-24	Hex Nut, $\frac{5}{16}$ -24	2
	HB-516-18-175	Hex Bolt, $\frac{5}{16}$ -18 -1 $\frac{3}{4}$	1
	HNTL-516-18	Nylon Lock Nut, $\frac{5}{16}$ - 18	1
3	45-118	Throttle Control w/ Cable	1
4	15-781	X-large Cup Holder	2
5	20-646	Center Console	1
	20-645	Decal, Center Console	1
6	48-066	Pedal Grip	1
7	10-163	Forward Foot Pedal	1
8	45-022	Molded Pedal Pad	1
9	HB-38-16-125	Hex Bolt, $\frac{3}{8}$ -16 x 1 $\frac{1}{4}$	1
	HNTL-38-16	Nylon Lock Nut, $\frac{3}{8}$ -16	1
10	76-296	Pedal Mount	2
	18-234	Bushing	4
	HG-14-28-180	Grease Zerk	2
11	31-050	Reverse Pedal	1
12	21-462	Ball Joints, $\frac{5}{16}$ - 24	6
	HWL-516	Lock Washer, $\frac{5}{16}$	6
	HN-516-24	Hex Nut, $\frac{5}{16}$ - 24	12
13	31-054	Pedal Rod	2
14	10-178	Relay	1
	18-234	Bushing	2
	HG-14-28-180	Grease Zerk	1
	HMB-12-14	Machine Bushing, $\frac{1}{2}$ x 14GA	1
	HP-18-100	Cotter Pin	1
15	20-567	Foot Pedal Rod	1
16	60-106	Park Brake	1
17	HB-516-18-175	Hex Bolt, $\frac{5}{16}$ -18 x 1 $\frac{3}{4}$	2
	HW-516	Flat Washer, $\frac{5}{16}$	1
	HNFL-516-18	Flange Whiz-loc Nut $\frac{5}{16}$ -18	2
18	20-565	Spray Boss Link	2
19	20-551	Relay Bar	1
	HP-18-100	Cotter Pin	1
20	HB-516-18-100	Hex Bolt, $\frac{5}{16}$ -18 x 1	1
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ -18	1
21	30-027	Relay Plate	1
22	15-692	Pedal Relay	1
23	20-609	Short Shift Link	1
24	21-351	Linkage Yoke, $\frac{3}{8}$ - 24	4
	HN-38-24	Hex Nut, $\frac{3}{8}$ - 24	4
25	26-034	Ball Stud, 10mm	1
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ -18	1
26	33-084	Magnetic Coil	1
27	20-559	Speed Control Pivot Mount	1
28	HB-14-20-100	Hex Bolt, $\frac{1}{4}$ -20 x 1	2
	HNFL-14-20	Flange Whiz-loc Nut, $\frac{1}{4}$ -20	2
29	15-706	Speed Boss Arm	1
30	HB-38-16-125	Hex Bolt, $\frac{3}{8}$ -16 x 1 $\frac{1}{4}$	1
	HW-38	Flat Washer, $\frac{3}{8}$	3
	HNTL-38-16	Nylon Lock Nut, $\frac{3}{8}$ -16	1
31	20-542	Speed Control Rod	1
32	20-649	Dampener	1
33	HB-38-16-150	Hex Bolt, $\frac{3}{8}$ -16 x 1 $\frac{1}{2}$	1
	HNCL-38-16	Center Nylon Lock Nut, $\frac{3}{8}$ -16	1
34	60-106	Spray Boss(orange)	1



FRONT AXLE DRAWING



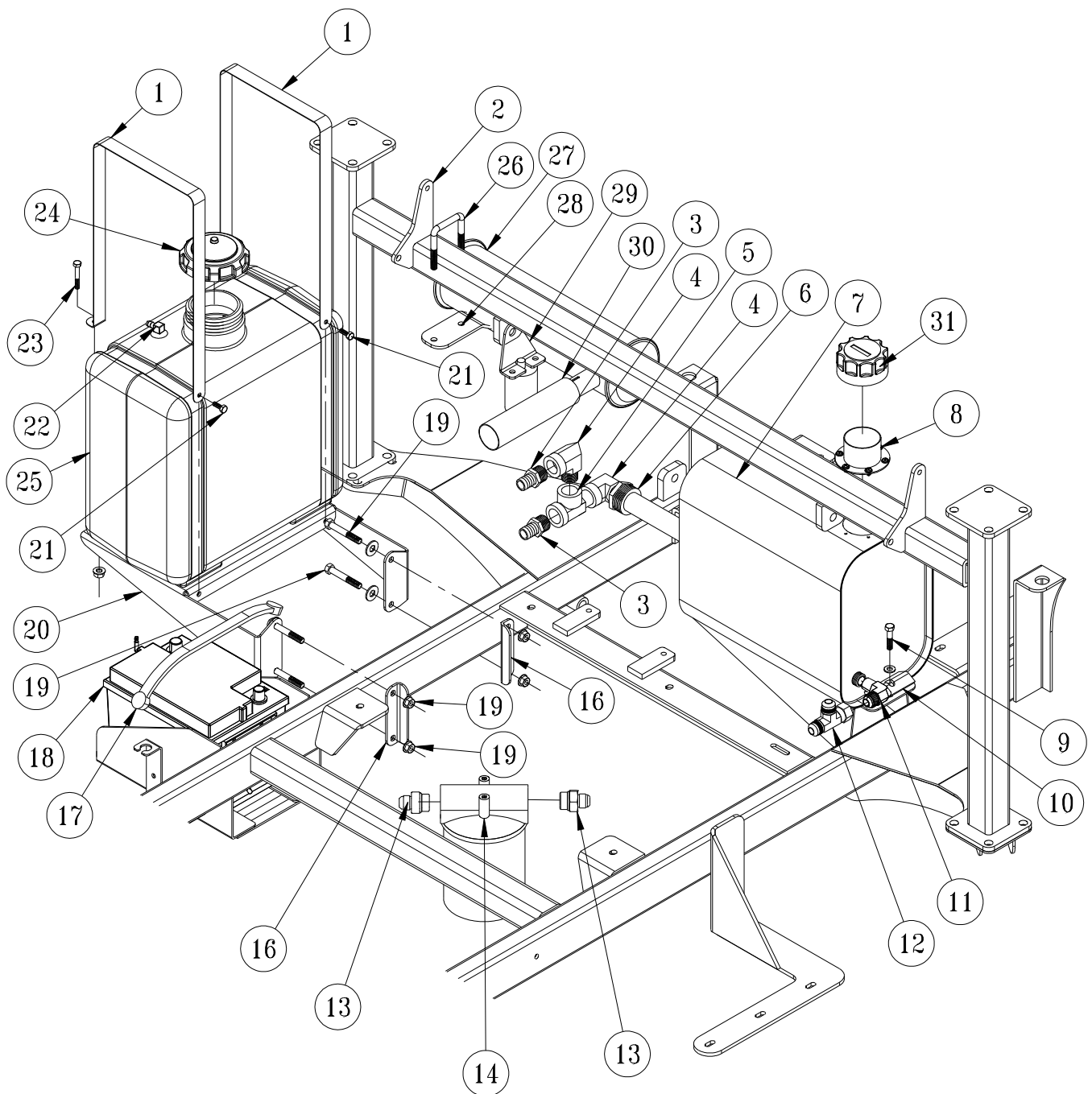
Parts

FRONT AXLE PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1*	80-167	Dust Cap	2
2	HNAR-100-14	Slotted Jam Nut, 1 - 14	4
	HP-18-150	Cotter Pin, $\frac{1}{8}$ - $1\frac{1}{2}$	4
3*	11-043	Bearing with Races	4
4	80-019	Hub (includes all * items)	2
5*	11-041	Oil Seal	2
6	HMB-100-10	Machine Bushing 1 x 10GA	2
7	15-696	Left Spindle	1
8	20-555	U-Hex Bolt	4
9	20-740	Leaf Spring	2
10	20-530	Front Axle	1
11	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
12	15-839	Hydraulic Cylinder	1
	14-531	Cylinder Seal Kit	1
13	18-188	45° Elbow	2
14	20-617	Shock Absorber	2
15	18-154	Rod End	3
	HG-14-28-90	Grease Fitting, $\frac{1}{4}$ - 28 x 90°	3
	HNJ-58-18	Jam Nut, $\frac{5}{8}$ - 18	3
16	HB-58-11-250	Hex Bolt, $\frac{5}{8}$ - 11 x $2\frac{1}{2}$	3
	HMB-58-14	Machine Bushing, $\frac{5}{8}$ x 14GA	6
	HNTL-58-11	Nylon Lock Nut, $\frac{5}{8}$ - 11	3
18	15-695	Right Spindle	1
20*	HNL-12-20	Lug Nut, $\frac{1}{2}$ - 20	10
21*	27-022-02	Stud, $\frac{1}{2}$ - 20 x $1\frac{7}{16}$	10
22	16-076	King Pin	2
23	HNFL-12-13	Flange Whiz-loc Nut, $\frac{1}{2}$ - 13	8
24	20-538	Spring Mount	2
25	HB-58-11-300	Hex Bolt, $\frac{5}{8}$ - 11 x 3	2
	HNTL-58-11	Nylon Lock Nut, $\frac{5}{8}$ - 11	2
26	20-539	Spring Shackle	4
27	14-573	Tie Rod	1
28	HB-916-18-325	Hex Bolt, $\frac{9}{16}$ - 18 x $3\frac{1}{4}$	4
	HNTL-916-18	Nylon Lock Nut, $\frac{9}{16}$ - 18	4



OIL AND FUEL TANK DRAWING



Parts

OIL AND FUEL TANK PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	73-051	Tank Strap	2
2	20-561	Roll Bar Base	1
3	18-249	Barb Fitting	2
4	18-140	Street Elbow	2
5	18-093	Straight Tee	1
6	60-213	Strainer	1
7	60-473	Oil Tank	1
8	13-586-03	Neck	1
	HSM-10-32-063	Machine Screw, 10 - 32 x $\frac{5}{8}$	6
	HWL-10	Lock Washer 10	6
9	HB-516-18-150	Hex Bolt, $\frac{5}{16}$ - 18 x $1\frac{1}{2}$	2
	HW-516	Flat Washer, $\frac{5}{16}$	2
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ - 18	2
10	75-792	Tank Hold Down	2
11	23-187	Male Elbow	1
12	34-058	Swivel Tee	1
13	15-702	Adapter	2
14	20-576	Oil Filter Assembly	1
16	32-050	Tank Mount Bracket	2
17	8-603	Battery Strap - Rubber	1
18	33-216	Battery	1
19	HB-38-16-250	Hex Bolt, $\frac{3}{8}$ - 16 x $2\frac{1}{2}$	4
	HNFL-38-16	Flange Whiz-loc Nut, $\frac{3}{8}$ - 16	4
	HW-38	Flat Washer, $\frac{3}{8}$	4
20	20-630	Tank Mount	1
21	HB-14-20-075	Hex Bolt, $\frac{1}{4}$ - 20 x $\frac{3}{4}$	2
	HNFL-14-20	Flange Whiz-loc Nut, $\frac{1}{4}$ - 20	2
22	30-125	Top Draw Valve	1
23	HB-14-20-175	Hex Bolt, $\frac{1}{4}$ - 20 x $1\frac{3}{4}$	2
	HNFL-14-20	Flange Whiz-loc Nut, $\frac{1}{4}$ - 20	2
24	73-050	Cap & Gauge	1
25	73-049	Fuel Tank	1
	26-054	Bushing Insert	1
	26-055	Shut Off valve	1
26	17-537	Square U-Hex Bolt	1
27		Engine Air Cleaner	1
28	20-607	Air Cleaner Mount	1
29	20-620	Fuel Filter Mount	1
30	20-608	Air Inlet Tube	1
31	13-747	Filler Breather	1
	13-586-01	Cap Gasket	1
	13-586-02	Bottom gasket	1
NS	8800-16	$\frac{1}{4}$ " Fuel Hose x 16"	1
NS	8800-21	$\frac{1}{4}$ " Fuel Hose x 21"	1
NS	8800-24	$\frac{1}{4}$ " Fuel Hose x 24"	1
NS	18-186	Hose Clamp	6

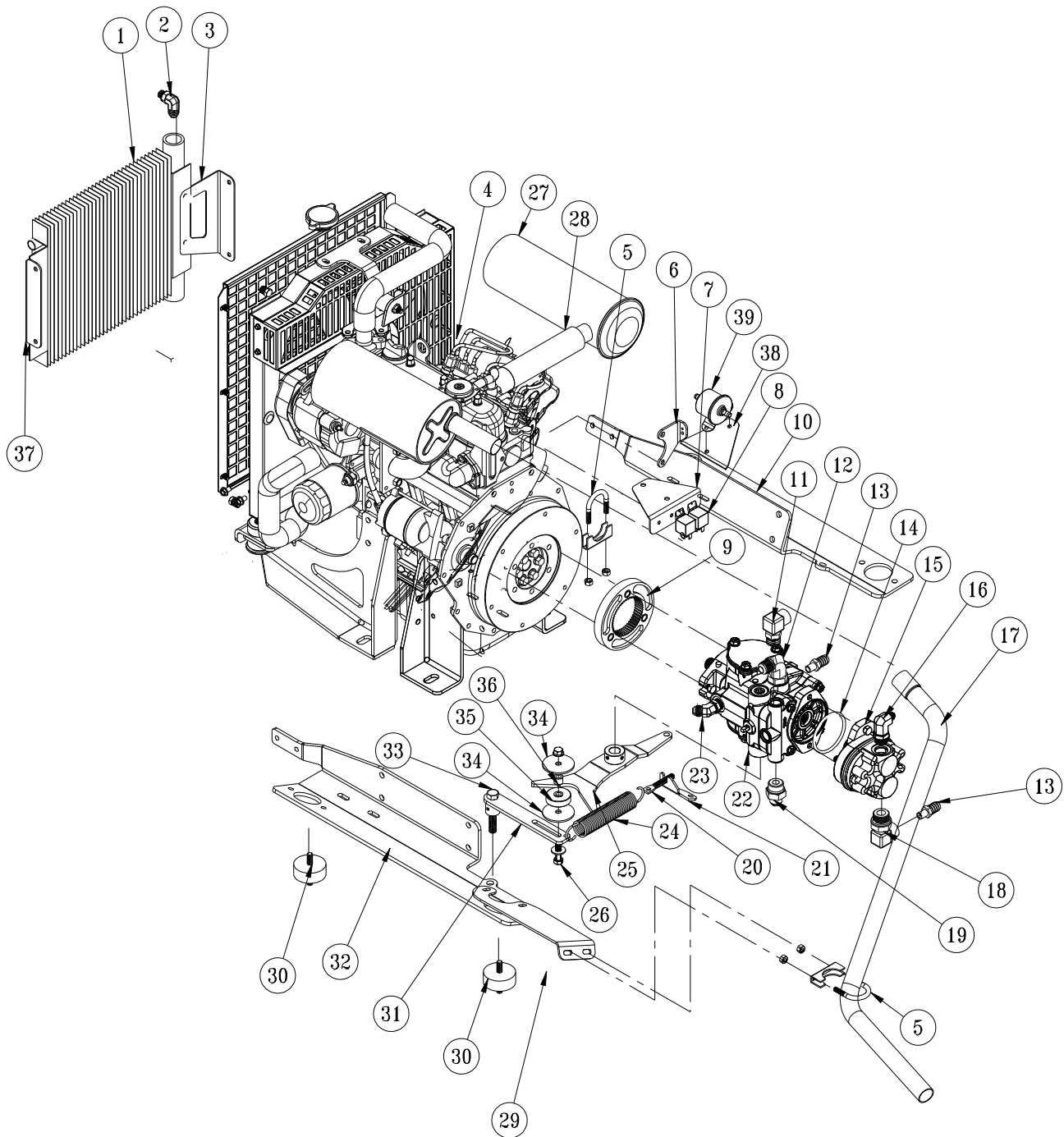
SEAT PANEL DRAWING



SEAT PANEL PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	20-270	Rear Hood (fiberglass)	1
2	20-749	Shock Mount	2
3	20-611	Roll Bar	1
	HB-12-13-150	Hex Bolt, $\frac{1}{2}$ -13 x $1\frac{1}{2}$	16
	HNFL-12-13	Flange Whiz-loc Nut, $\frac{1}{2}$ -13	16
4	8-563	Gas Shock	2
5	26-034	Ball Stud, 10MM	4
	HNM-10-1.5	Metric Nut, 10 x 1.5	4
6	20-554	Hinge	1
7	20-580	Roll Bar Brace	2
	HB-12-13-150	Hex Bolt, $\frac{1}{2}$ -13 x $1\frac{1}{2}$	4
	HNFL-12-13	Flange Whiz-loc Nut, $\frac{1}{2}$ -13	4
8	14-294	Seat Kit (includes * items)	2
	*14-292	Seat Switch	1
	*14-800	Seat Rails	2
	*HSP-1260-340-250	Seat Spacer	4
9	50-081	Rubber Bumper	4
	HNFL-38-16	Flange Whiz-loc Nut, $\frac{3}{8}$ -16	4
10	31-062	Hose Guard	1
11	30-288	Pedal Guard	1
	HB-516-18-100	Hex Bolt, $\frac{5}{16}$ - 18 x 1	4
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ - 18	4
12	20-535	Main Frame	1
13	16-857	Front Tire and Wheel	2
	16-857-01	Tire, 20 x 10.00 - 10NHS 4-ply	2
	42-161-02	Wheel	2
14	31-052	Seat Panel	2
15	76-198-03	Seat Belt	2
	HB-716-14-100	Hex Bolt, $\frac{7}{16}$ - 14 x 1	2
	HNTL-716-14	Nylon Lock Nut, $\frac{7}{16}$ - 14	2
16	31-066	Seat Frame	1
17	20-780	Roll Bar Base	1
18	20-543	Strainer Mount	1
	17-537	Square U-Hex Bolt	1
19	18-134	Rubber Grommet	1
20	20-550	Hood Rest	1
21	15-013	Rubber Bumper	2
	HNFL-14-20	Flange Whiz-loc Nut, $\frac{1}{4}$ - 20	2
22	15-437	Hold Down	1
	HSM-10-32-112	Machine Screw, 10 - 32 - $1\frac{1}{8}$	2
	HNFL-10-32	Flange Whiz-loc Nut, 10 - 32	2
23	20-549	Hood Bumper Pad	1
24	HB-516-18-100	Hex Bolt, $\frac{5}{16}$ - 18 x 1	4
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ - 18	4
25	20-659	Mud Flap	2
26	20-661	RH Front Mud Flap Bracket	1
	20-662	LH Front Mud Flap Bracket (not shown)	1
27	HB-14-20-075	Hex Bolt, $\frac{1}{4}$ - 20 x $\frac{3}{4}$	6
	HWF-14	Fender Washer, $\frac{1}{4}$	6
	HNFL-14-20	Flange Whiz-loc Nut, $\frac{1}{4}$ - 20	6

ENGINE AND PUMPS DRAWING



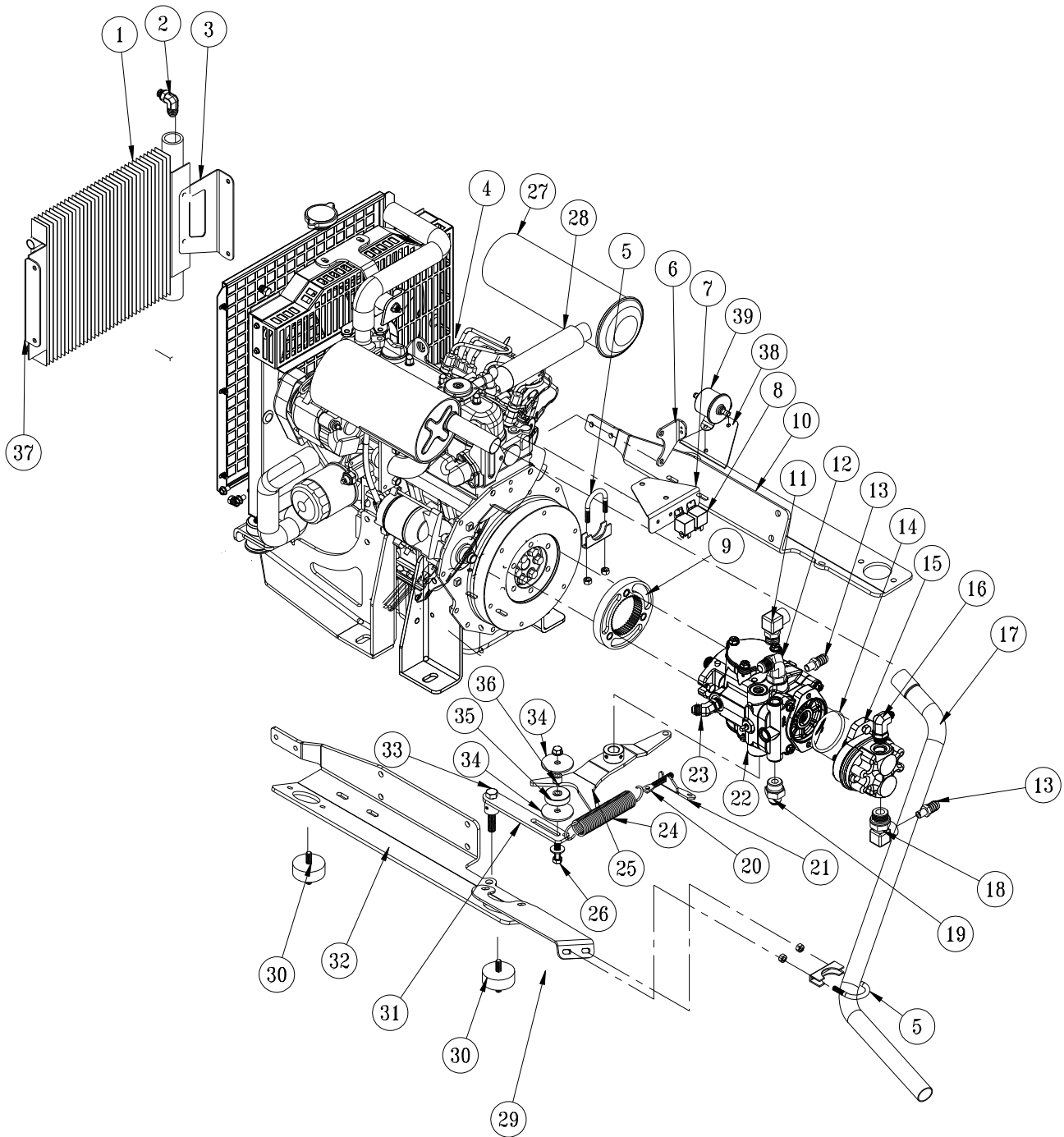
Parts

ENGINE AND PUMPS PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	15-624	Oil Cooler	1
	HB-516-18-075	Hex Bolt, $\frac{5}{16}$ - 18 x $\frac{3}{4}$	4
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ - 18	4
2	18-438	Fitting	2
3	20-624	Right Oil Cooler Mount	1
	HB-516-18-075	Hex Bolt, $\frac{3}{8}$ - 16 x $\frac{3}{4}$	4
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{3}{8}$ - 16	4
4	20-614	25HP Kubota Diesel Engine	1
5	18-220	Muffler Clamp	2
6	20-647	Cable Mount	1
7	20-622	Timer/Relay Mount	1
8	30-042-06	Relay	2
	HB-14-20-075	Hex Bolt, $\frac{1}{4}$ - 20 x $\frac{3}{4}$	2
	HNFL-14-20	Flange Whiz-loc Nut, $\frac{1}{4}$ - 20	2
9	30-042-12	Flange	1
10	20-626	Right Engine Plate	1
	HB-716-14-150	Hex Bolt, $\frac{7}{16}$ - 14 x $1\frac{1}{2}$	2
	HWL-716	Lock Washer, $\frac{7}{16}$	2
11	23-130	Elbow	1
12	18-204	Elbow	2
13	18-133	Barb Fitting	2
14	23-145	O-ring	1
15	76-197	Gear Pump	1
	HB-38-16-100	Hex Bolt, $\frac{3}{8}$ - 16 x 1	2
	HW-38	Flat Washer, $\frac{3}{8}$	2
	HWL-38	Lock Washer, $\frac{3}{8}$	2
16	32-022	Straight Thread Elbow	1
17	20-610	Tailpipe	1
18	23-133	90° Adjustable Elbow	1
19	15-702	Adapter	2
20	42-604	Spade Hex Bolt	1
	HNFL-38-16	Flange Whiz-loc Nut, $\frac{3}{8}$ - 16	2
21	20-621	Centering Spring Mount	1
22	76-638	Hydrostatic Pump	1
	HB-38-16-125	Hex Bolt, $\frac{3}{8}$ - 16 x $1\frac{1}{4}$	2
	HW-38	Flat Washer, $\frac{3}{8}$	2
	HWL-38	Lock Washer $\frac{3}{8}$	2
23	18-266	45° Elbow	1
24	21-445	Spring	1
25	20-652	Shift Arm	1
26	HB-38-16-175	Hex Bolt, $\frac{3}{8}$ - 16 x $1\frac{3}{4}$	1
	HW-38	Flat Washer, $\frac{3}{8}$	1
	HNTL-38-16	Nylon Lock Nut $\frac{3}{8}$ - 16	1
27		Air Cleaner (comes with engine)	1
28	20-608	Air Inlet tube	1
29	20-623	Tailpipe Brace	1
30	20-618	Rubber Insulator	4
31	20-581	Idler Arm	1
	HG-14-28-180	Grease Zerk, $\frac{1}{4}$ - 28 x 180°	1
32	20-627	Left Engine Plate	1
	HB-716-14-150	Hex Bolt, $\frac{7}{16}$ - 14 x $1\frac{1}{2}$	2
	HWL-716	Lock Washer, $\frac{7}{16}$	2

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ENGINE AND PUMPS DRAWING

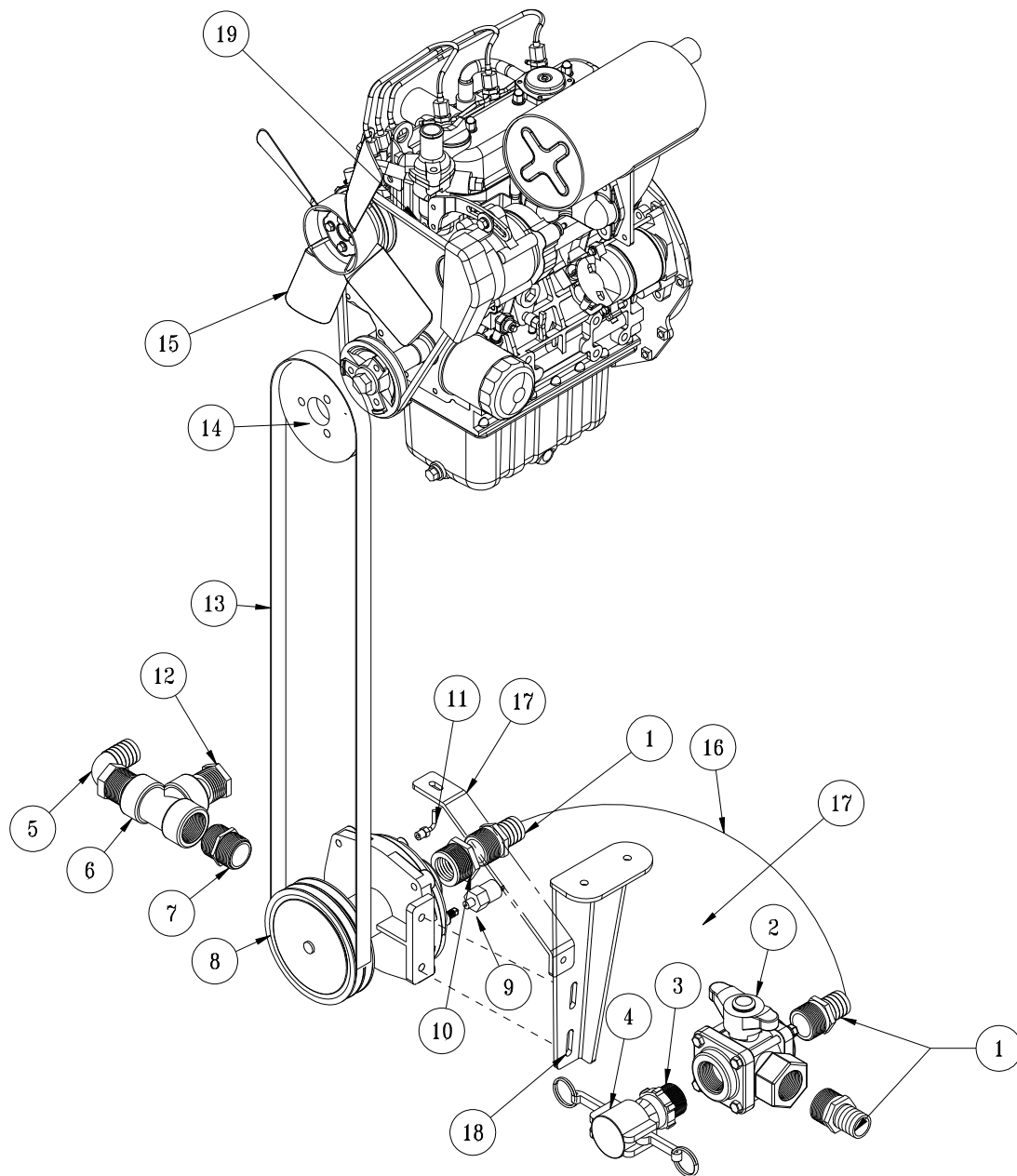


Parts

ENGINE AND PUMPS PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
33	HB-12-13-300	Hex Bolt, $\frac{1}{2}$ - 13 x 3	1
	HMB-12-14	Machine Bushing, $\frac{1}{2}$ x 14GA	2
	HWL-12	Lock Washer, $\frac{1}{2}$	1
	HN-12-13	Hex Nut, $\frac{1}{2}$ -13	1
34	20-594	Guide Disk	2
35	14-266	Ball Bearing	1
36	18-270	Spacer	1
37	20-625	Left Oil Cooler Mount	1
	HB-516-18-075	Hex Bolt, $\frac{3}{8}$ - 16 x $\frac{3}{4}$	4
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{3}{8}$ - 16	4
38	20-619	Fuel Pump Mount	1
39	30-130	Fuel Pump	1

SPRAY PUMP DRAWING



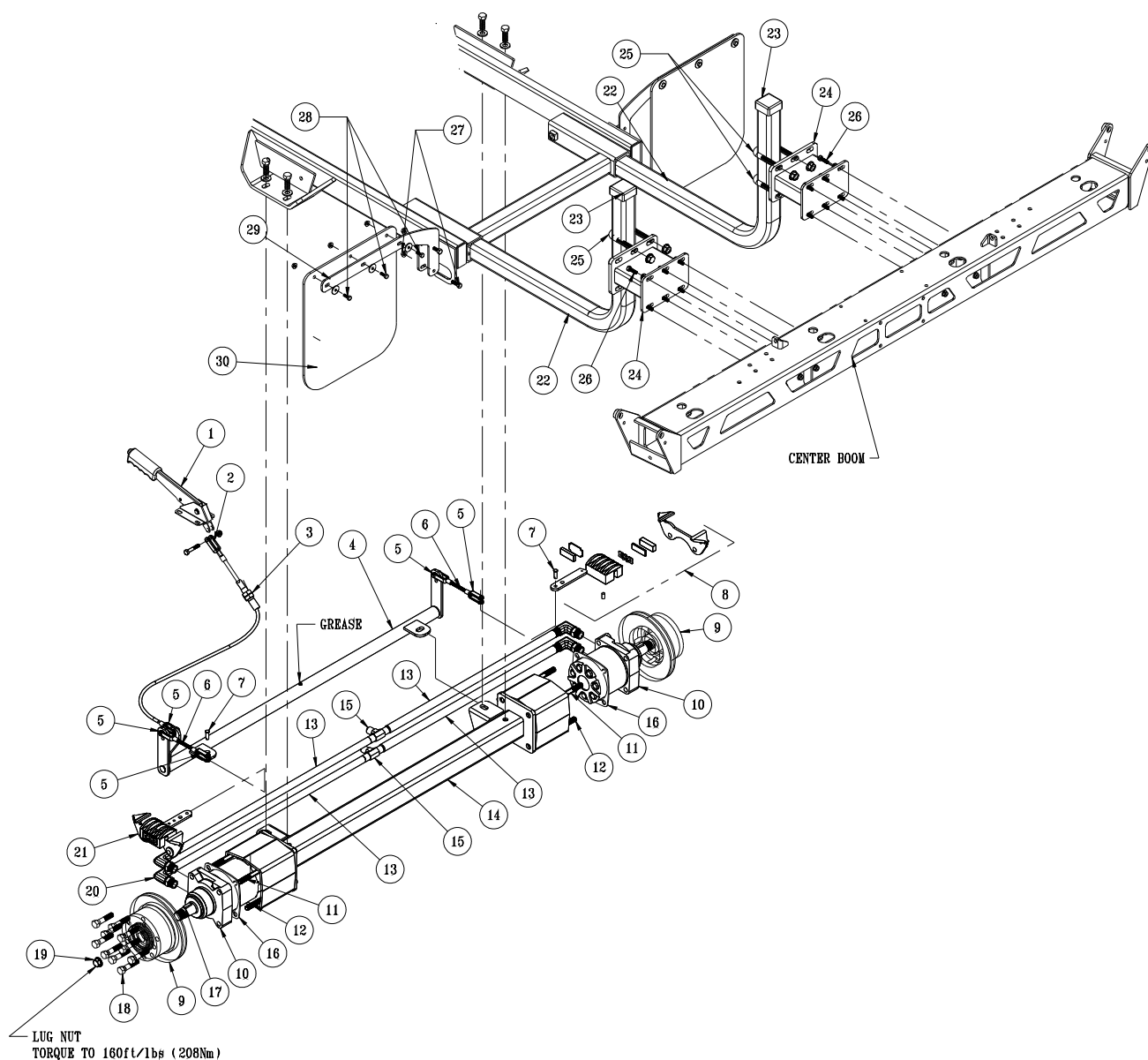
Parts

SPRAY PUMP PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	16-161	Fitting	3
2	18-372	3-Way Valve	1
3	16-180	Quick Coupler	1
4	16-935	Quick Coupler Cap	1
5	16-156	Elbow	1
6	18-390	Pipe Tee	1
7	16-880	Close Nipple	1
8	16-998	Hypro® Pump	1
9	33-480	Pressure Switch	1
10	16-973	Reducer	1
11	18-475	Male Elbow	1
	9038-41	1/4 Tubing (to top of tank)	1
12	10-389	Plug	1
13	15-124	Belt L444	1
14	30-206	Pulley	1
	HKSQ-14-150	Square Key, 1/4 - 1 1/2	1
15	20-614	25HP Kubota Diesel Engine	1
16	8897-44	Discharge Hose	1
	18-116	Hose Clamp	2
17	20-629	Pump Brace	1
18	20-616	Pump Mount	1
19	30-042-11	Fan Belt	1

REAR AXLE DRAWING

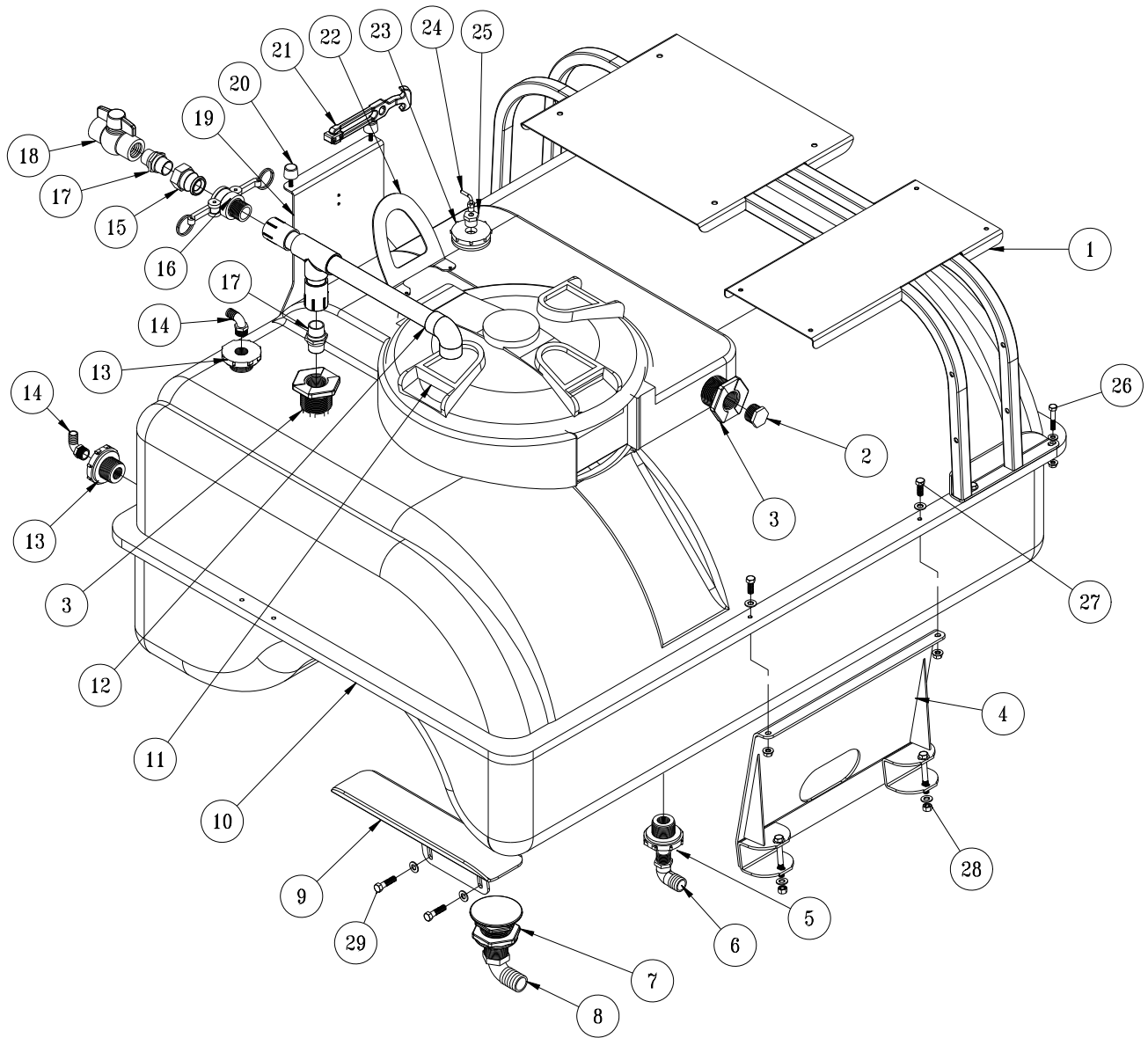
Parts



REAR AXLE PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	60-106	Park Brake Handle	1
2	11-100	Linkage Yoke	1
	HN-516-18	Hex Nut, $\frac{5}{16}$ - 18	1
3	50-108	Cable	1
	60-536	Bellows	1
4	15-691	Brake Relay	1
5	11-100	Linkage Yoke, $\frac{5}{16}$	4
	HN-516-24	Nut, $\frac{5}{16}$ - 24	4
6	34-021	Rod	2
7	HCP-516-100	Clevis Pin, $\frac{5}{16}$ x 1	2
	HP-18-075	Cotter Pin, $\frac{1}{8}$ x $\frac{3}{4}$	2
8	76-241	Right Caliper CW	1
	34-101-02	Pad Kit	1
9	76-239	Brake Disc, 8"	2
10	43-116	Wheel Motor (includes * items)	2
	14-080	Wheel Motor Seal Kit	2
11	HB-12-13-800	Hex Bolt, $\frac{1}{2}$ - 13 x 8	4
	HNFL-12-13	Flange Whiz-loc Nut, $\frac{1}{2}$ - 13	4
12	HB-12-13-750	Hex Bolt, $\frac{1}{2}$ - 13 x $7\frac{1}{2}$	4
	HNFL-12-13	Flange Whiz-loc Nut, $\frac{1}{2}$ - 13	4
13	15-681	Hydraulic Hose	4
14	20-531	Rear Axle	1
15	34-057	Tee	2
16	20-595	Wheel Motor Spacer	2
17*	HWK-516-100	Woodruff Key, $\frac{5}{16}$ x 1	2
18	60-268	Lug Hex Bolt, $\frac{1}{2}$ - 20	10
19*	14-265	Nut, 1 - 20	2
20	34-122	Short Elbow	4
21	76-240	Left Caliper CCW	1
22	17-615	Boom Tube	2
23	16-557	Square Cap	2
24	17-614	Boom Spacer	2
25	20-555	U-Hex Bolt	4
	HNFL-12-13	Flange Whiz-loc Nut, $\frac{1}{2}$ - 13	8
26	HB-516-18-100	Hex Bolt, $\frac{5}{16}$ - 16 x 1	12
	HW-516	Flat Washer, $\frac{5}{16}$	12
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ - 16	12
27	HB-516-18-100	Hex Bolt, $\frac{5}{16}$ - 16 x 1	4
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ - 16	4
28	HB-14-20-075	Hex Bolt, $\frac{1}{4}$ - 20 x $\frac{3}{4}$	6
	HWF-14	Fender Washer, $\frac{1}{4}$	6
	HNFL-14-20	Flange Whiz-loc Nut, $\frac{1}{4}$ - 20	6
29	20-547	Rear Mud Flap Bracket	2
30	20-657	Mud Flap	2

SPRAY TANK DRAWING

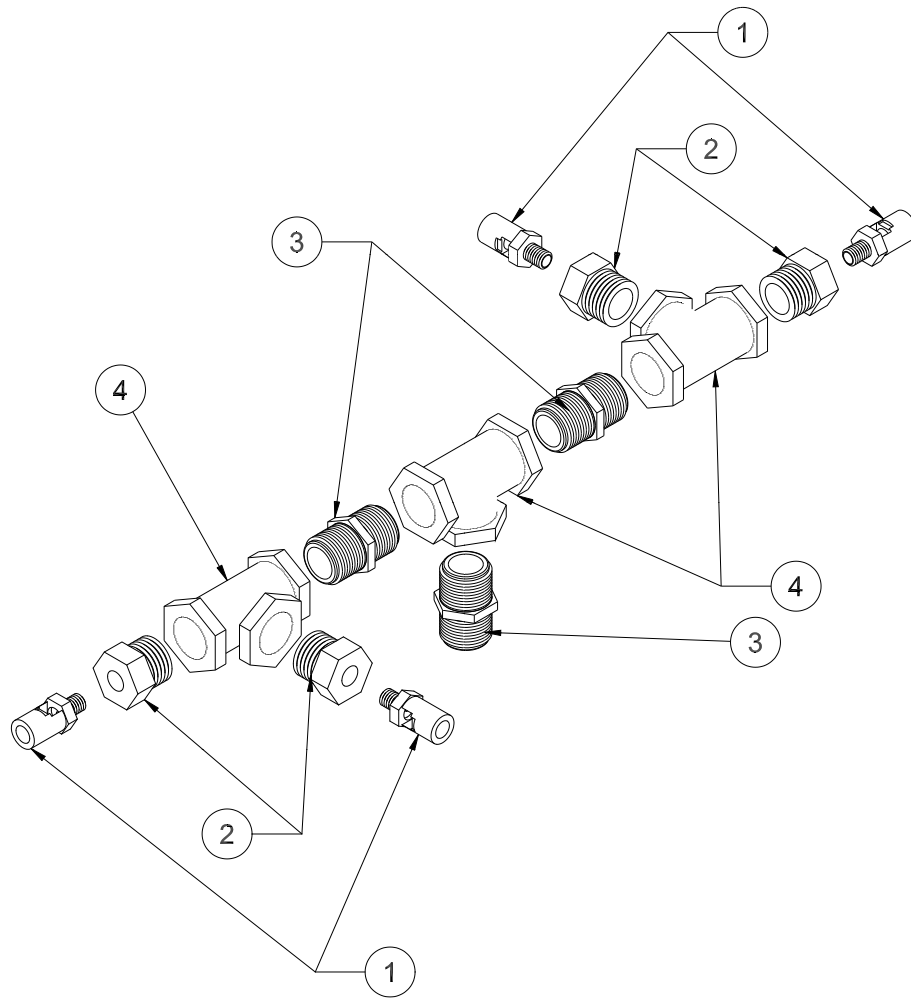


Parts

SPRAY TANK PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	20-552	Accessory Mount	1
2	16-162	Hex Plug 1"	2
3	16-945	Double Thread Fitting	2
4	20-537	Tank Support	1
5	16-150	Double Thread Fitting (part of tank)	1
6	16-155	Elbow	1
7	16-194	Anti-Vortex Fitting (part of tank)	1
8	16-156	Elbow	1
9	20-534	Tank Pad Plate	2
	20-526	Tank Pad	2
10	20-592	200 Gallon Tank (Fiberglass)	1
	20-529	Decal, Spray Star 2000	2
	20-593	Decal, Site Gauge	1
11	16-953	16" Lid	1
	16-953-01	Gasket for Lid	1
	16-169	Strainer Basket	1
12	14-365	Air Gap Filler	1
13	16-150	Double Thread Fitting	2
14	16-185	Elbow	2
	8902-32	Clear Flow Tubing 32"	1
	18-224	Hose Clamps	2
15	16-961	Adapter	1
16	16-962	Coupler	1
	16-962-01	Buna-N Gasket	1
17	16-851	Close Nipple	2
18	18-448	1" Ball Valve	1
19	20-550	Hood Rest	1
20	15-013	Rubber Bumper	2
	HNFL-14-20	Flange Whiz-loc Nut, 1/4 -20	2
21	15-437	Hold Down	1
	HSM-10-32-112	Machine Screw, 10 - 32 -1 1/8	2
	HNFL-10-32	Flange Whiz-loc Nut, 10-32	2
22	10-639	Lid Stop	1
	HRS-36-100	Rivet, 3/16 x 1	2
	HW-316	Flat Washer, 3/16	2
23	33-495	Bulk Head Fitting	1
24	18-475	Male Elbow	1
	9038-41	1/4 Tubing	1
25	33-496	Reducer Bushing	1
26	HB-516-18-175	Hex Bolt, 5/16 -18 x 1 3/4	4
	HW-516	Flat Washer, 5/16	4
	HNFL-516-18	Flange Whiz-loc Nut, 5/16-18	4
27	HB-38-16-1-3/4	Hex Bolt, 3/8 - 16 x 1 3/4	2
	HW-3/8	Flat washer, 3/8	2
	HNFL-38-16	Flange Whiz-loc Nut, 3/8-16	2
28	HB-38-16-300	Hex Bolt, 3/8 - 16 x 3	2
	HW-38	Flat Washer, 3/8	4
	HNTL-38-16	Lock Nut, 3/8 - 16	2
29	HB-38-16-100	Hex Bolt, 3/8 - 16 x 1	4
	HW-38	Flat Washer, 3/8	4
	HNFL-38-16	Flange Whiz-loc Nut, 3/8 -16	4
NS	20-663	Tank Lid Gasket	1

TURBO-QUAD AGITATOR DRAWING

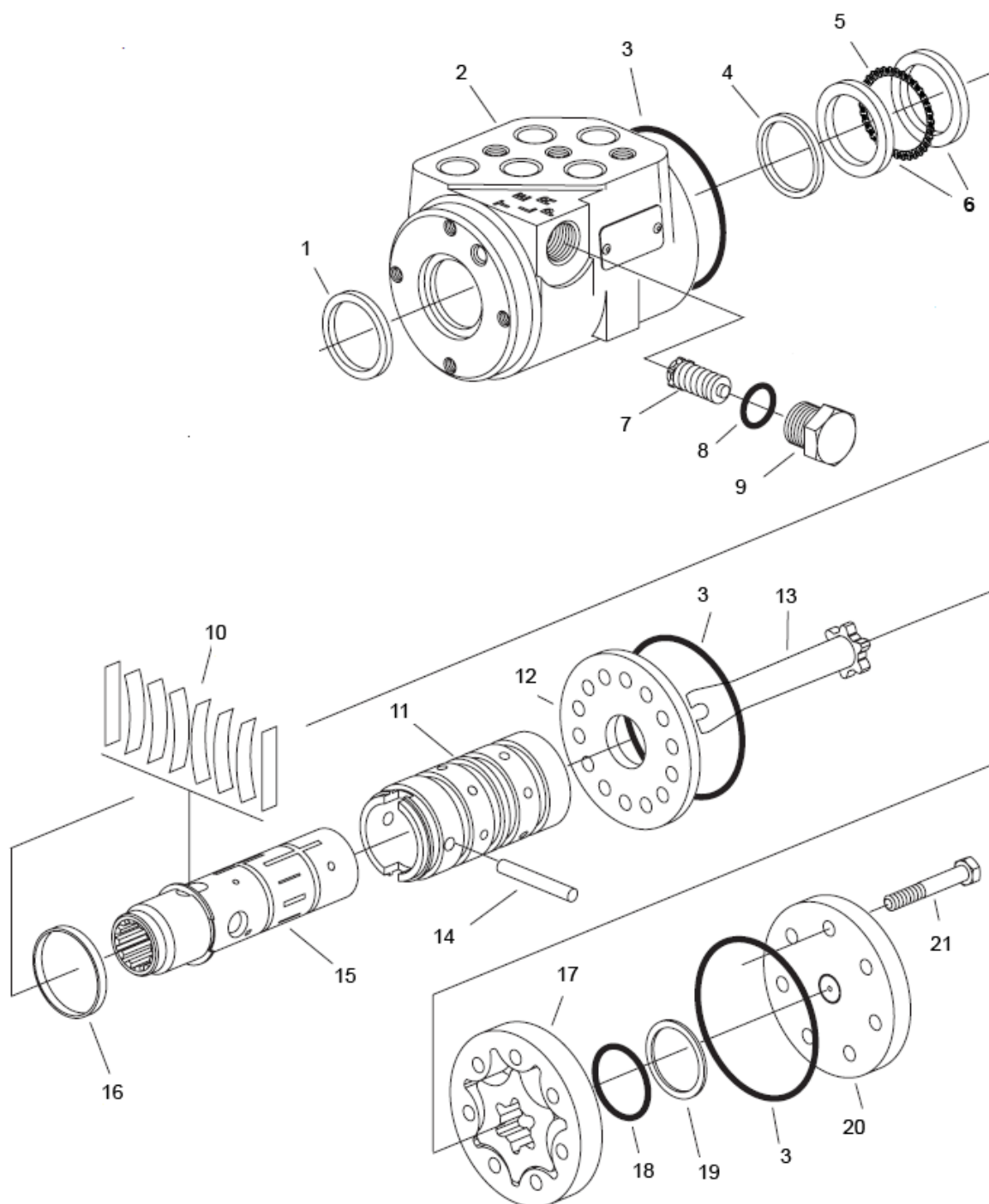


Parts

TURBO-QUAD AGITATOR PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	18-510	Mini Eductor	4
2	16-288	Reducer, $\frac{3}{4}$ x $\frac{1}{4}$	4
3	16-158	Close Nipple, $\frac{3}{4}$ x $\frac{3}{4}$	3
4	16-157	Female Pipe Thread Tee, $\frac{3}{4}$ x $\frac{3}{4}$ x $\frac{3}{4}$	3

15-301 ORBITOR DRAWING



Parts

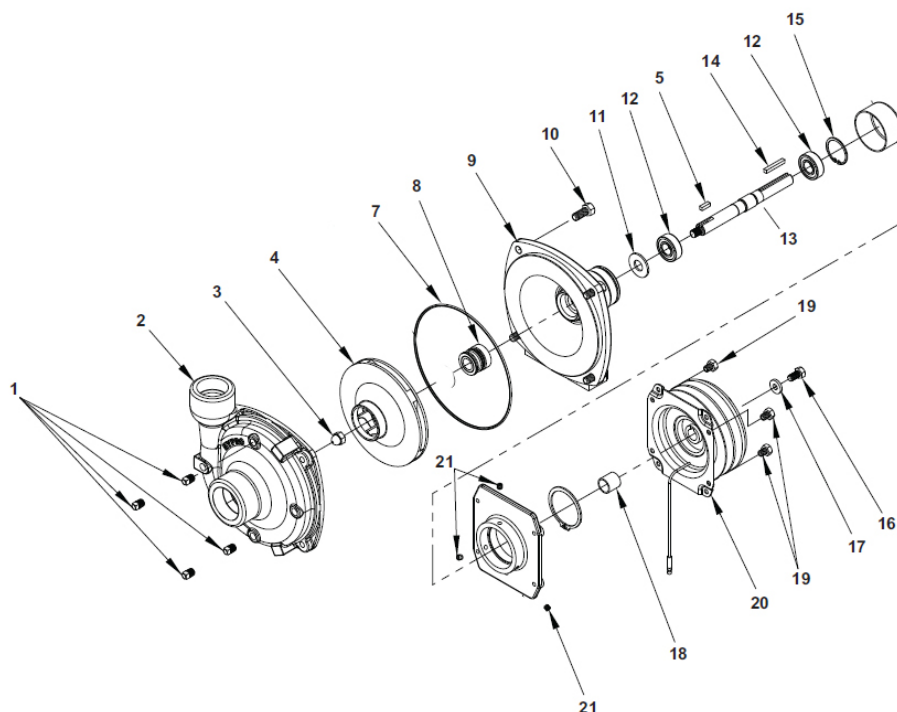
15-301 ORBITOR PARTS LIST

REF #	PART #	DESCRIPTION	QUANTITY
1**		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 ORBITOR 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

16-998 HYPRO® PUMP



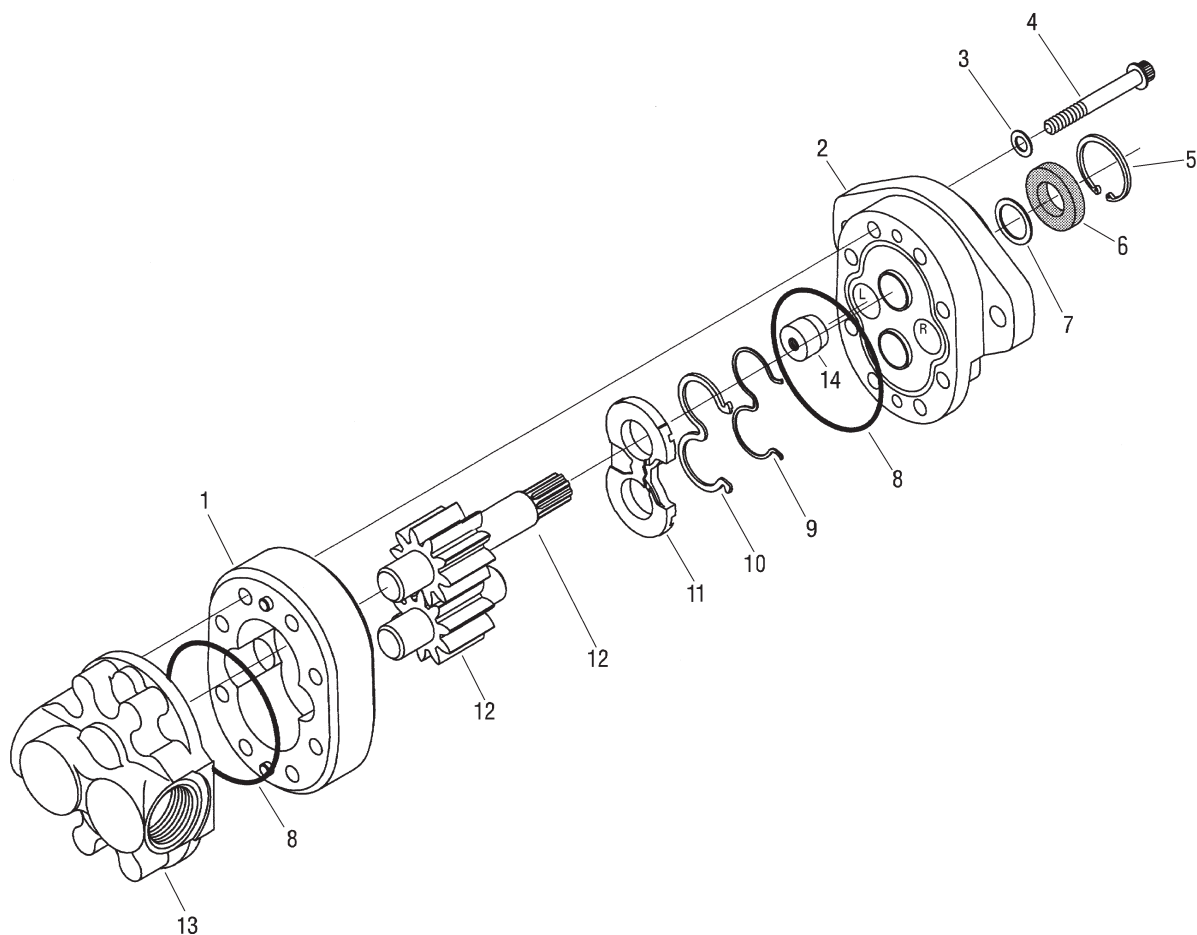
⚠ IMPORTANT

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

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	16-966-11	Key	1
7*	16-998-04	O-Ring	1
8*	16-967	Mechanical Seal (Silicon Carbide)	1
9	16-998-06	Mounting Flange	1
10	16-998-07	Hex Bolt	
11	16-966-06	Slinger Ring	1
12	16-966-10	Ball Bearing	2
13	16-966-12	Pump Shaft	1
14	16-822-20	Key	1
15	16-966-13	Bearing Retainer	1
16	16-994-05	Hex Bolt	1
17	16-994-06	Retaining Washer	1
18	16-994-03	Spacer	1
19		Hex Bolt	4
20	16-994-01	Clutch	1
21	16-994-04	Set Screw	3
	16-998-12	Pump Only	

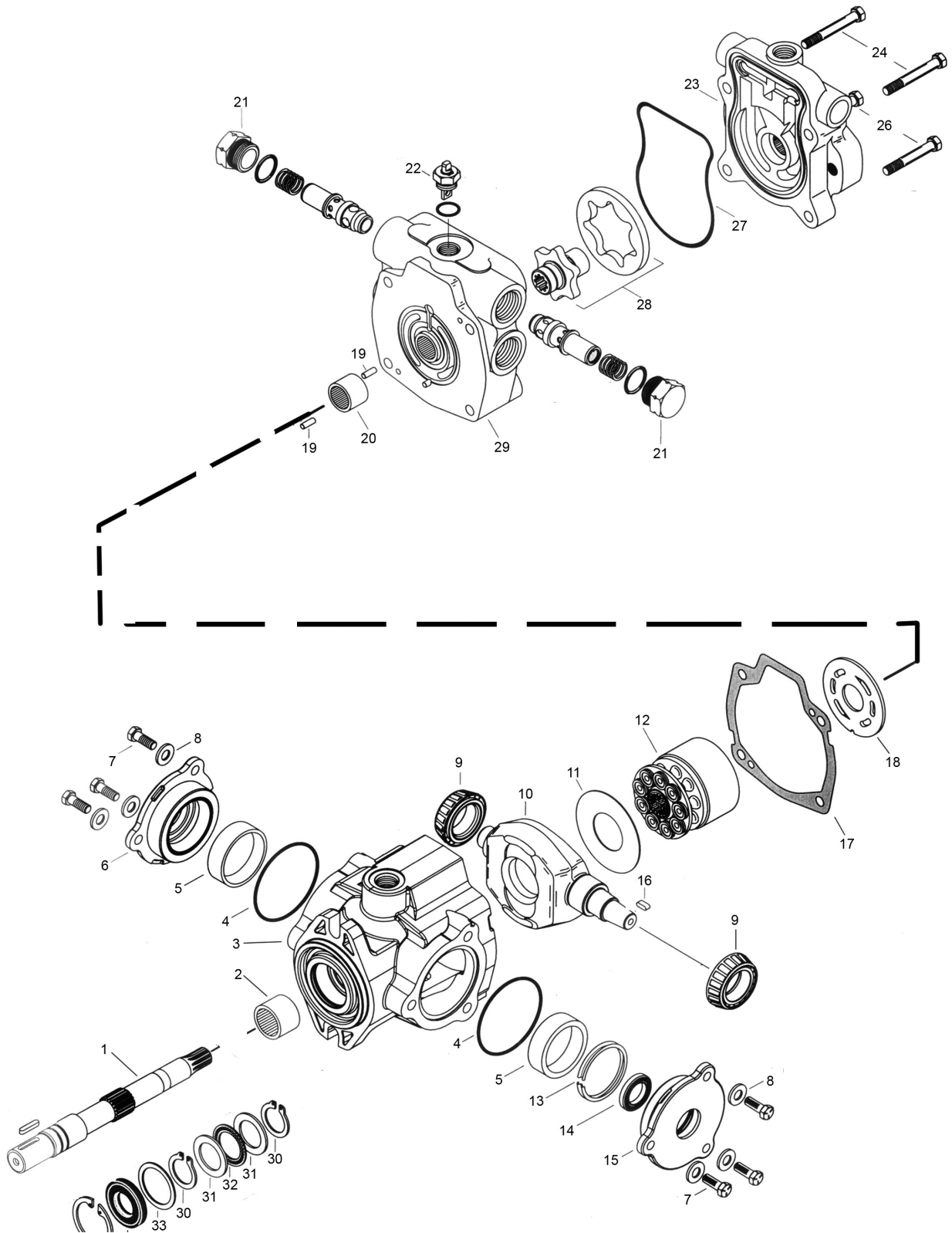
* 16-967 Silicone - Carbon Seal Kit

76-197 EATON GEAR PUMP PARTS LIST



REF#	PART#	DESCRIPTION	QUANTITY
1		Body	1
2	76-197-01	Front Plate	1
3*		Washer	4
4	76-197-06	Cap Screw	8
5	76-197-07	Retaining Ring	1
6*		Shaft Seal	1
7	33-061-15	Washer	1
8*		O-Ring	2
9*		Backup Gasket	1
10*		Seal	1
11*		Wear Plate	1
12	76-197-04	Shaft (comes with Idler Gear)	1
13	76-197-02	Back Plate	1
14*		Plug	1
*	76-197-08	Seal Kit	

76-638 HYDROSTATIC PUMP DRAWING



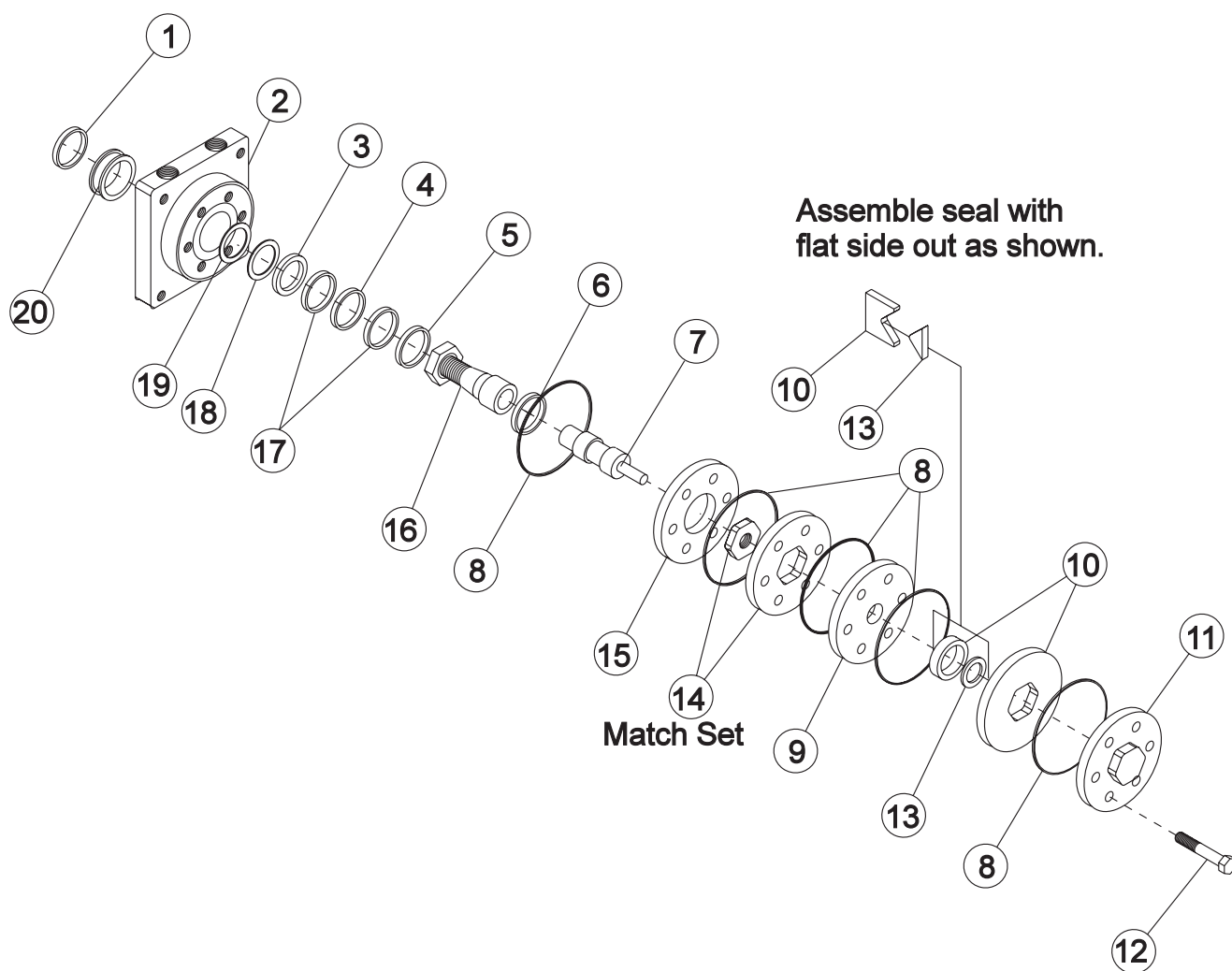
Parts

76-638 HYDROSTATIC PUMP PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	76-398-01	Drive Shaft (splined)	1
2		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		Key	1
17*	77-239-13	Gasket	1
18	76-482-01	Back Plate	1
19		Dowel Pin	2
20		Bearing	1
21	77-239-15	Relief Valve	2
22	77-239-16	Tow Valve Assembly	1
23		Cap Screw	2
26	77-239-18	Cap Screw	2
27*	77-239-19	O-Ring	1
28	60-343-43	Gerotor and Coupler	1
29		End Cover 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

* 77-239-23 Seal Repair Kit

43-116 REAR WHEEL MOTOR DRAWING



Parts

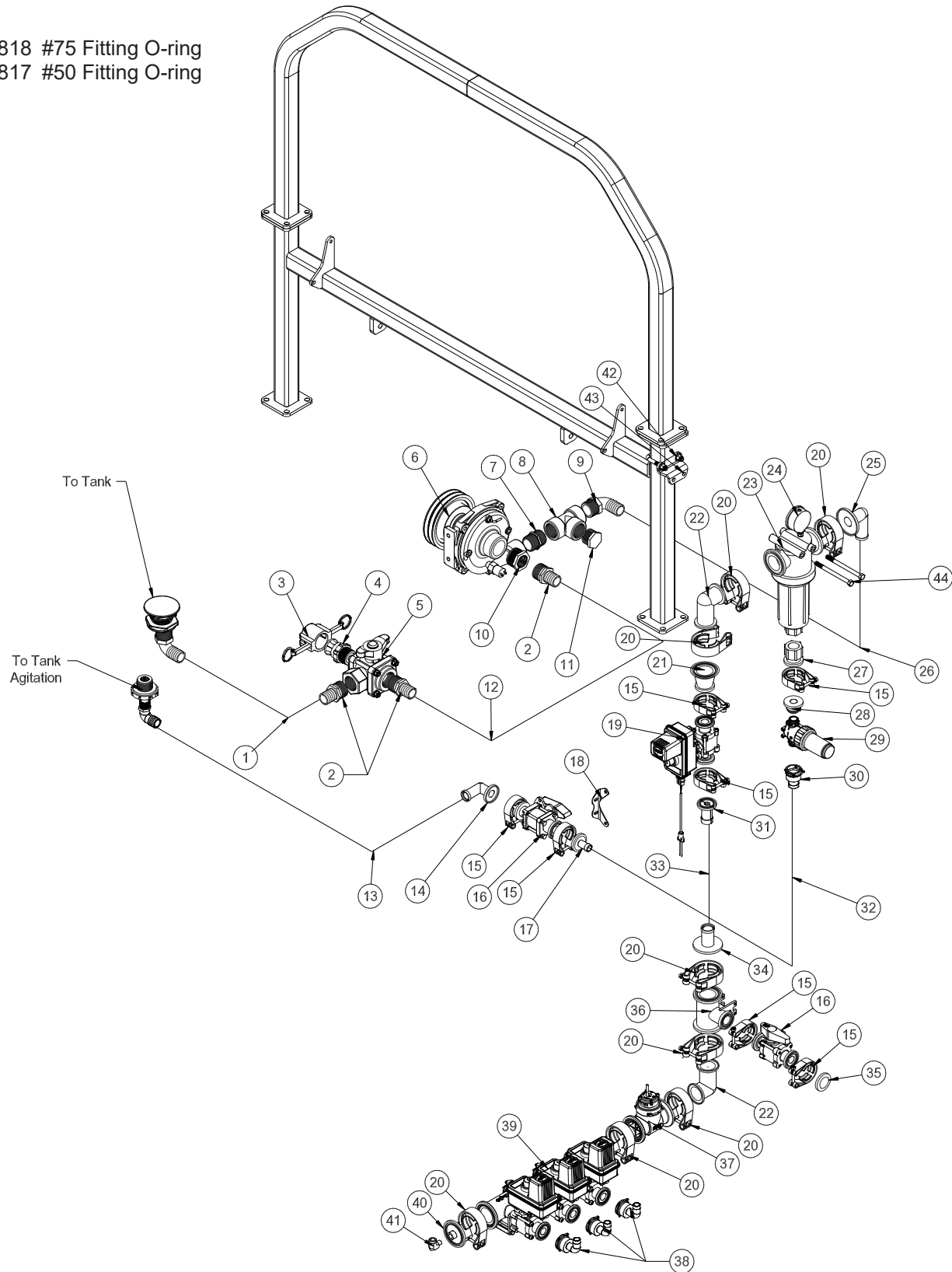
43-116 REAR WHEEL MOTOR PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1*		Water & Dirt Seal	1
2†	13-615-05	Service Housing Assembly	1
3*		Inner Seal	1
4†	13-032-27	Thrust Bearing	1
5†	13-032-28	Inner Bearing	1
6	13-032-29	Thrust Bearing	1
7	43-116-01	Drive Link	1
8*		Ring Seal	5
9	13-032-31	Manifold	1
10	13-032-32	Commutator Assembly (matched set)	1
11	13-032-33	End Cover	1
12	43-116-02	Hex Bolt	7
13*		Commutator Seal (matches with #10)	1
14	43-116-03	Rotor Set (matched set)	1
15	13-032-35	Plate Wear	1
16	13-615-04	Coupling Shaft	1
	HWK-516-100	Woodruff Key, $\frac{5}{16}$ x 1	1
	14-265	Nut, 1 - 20	1
17†	13-032-37	Thrust Washer	2
18*		Backup Washer	1
19*		Backup Washer	1
20†	13-032-38	Outer Bearing	1
*	14-080	Seal Kit	1
†	Included in 13-615-05 Service Housing Assembly		

2002D PLUMBING DRAWING (RADION® 8140)

15-818 #75 Fitting O-ring

15-817 #50 Fitting O-ring



IMPORTANT

If using Simulated Speed with a Radion 8140, one needs to change back to Ground Speed for proper rate control when spraying.

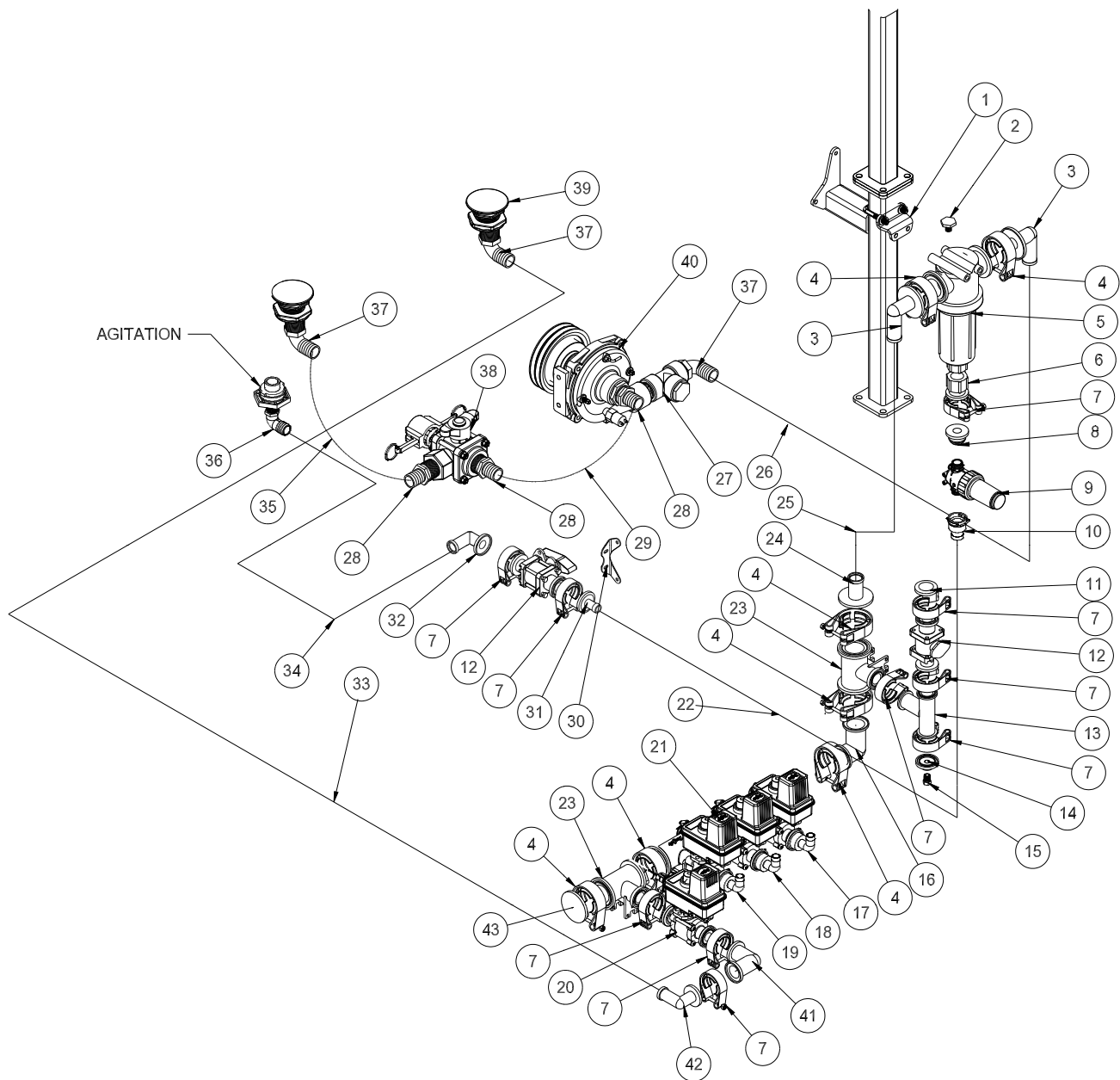
2002D PLUMBING PARTS LIST (RADION® 8140)

REF#	PART#	DESCRIPTION	QUANTITY
1	8896-80	1" Discharge Hose x 80"	1
	18-222	Hose Clamp	2
2	16-161	Fitting	3
3	16-935	Quick Coupler Cap	1
4	16-180	Quick Coupler	1
5	18-372	3-Way Valve	1
6	16-998	Hypro® Pump	1
7	16-880	Close Nipple	1
8	18-390	Pipe Tee	1
9	16-156	Elbow	1
10	16-973	Reducer	1
11	10-389	Plug	1
12	8897-44	Discharge Hose	1
	18-116	Hose Clamp	2
13	8897-28	1 1/4" Discharge Hose x 28"	1
	18-116	Hose Clamp	2
14	15-746	#50 90° Hose Barb	1
15	15-740	#50 Series Clamp	7
16	15-738	Flanged Ball Valve	2
17	15-808	#50 Straight Barb	1
18	20-689	Valve Bracket	1
19	20-785	Regulator Valve	1
20	15-741	#75 Series Clamp	8
21	15-748	Reducer Coupling (#75 to #50)	1
22	15-734	#75 Elbow Coupling	2
23	15-737	Flanged Strainer	1
	16-968-03	Screen (50 mesh)	1
24	16-281	Liquid Filled Gauge	1
25	15-739	#75 90° Hose Barb	1
26	8897-58	1 1/4" Discharge Hose x 58"	1
	18-116	Hose Clamp	2
27	15-735	#50 x 1 FTP Fitting	1
28	15-825	#50 Male Quick Coupler	1
29	14-801	Agitator Line Strainer, 50 Mesh	1
	14-802	Replacement 50 Mesh Screen	1
30	15-869	1" Hose Barb Outlet	1
	15-553-01	Clip	1
	15-553-02	O-ring	1
31	15-870	#50 1 1/4" Hose Barb	1
32	8896-72	1" Discharge Hose x 72"	1
	18-222	Hose Clamp	2
33	8897-13	1 1/4" Discharge Hose x 13"	1
	18-116	Hose Clamp	2
34	15-744	#75 Hose Barb	1
35	15-778	Blank Gauge Port Flange	1
36	15-775	Reducer Tee	1
37	20-684	#802 Flow Meter	1
38	15-553	3/4 - 90° Hose Barb	3
	9032	3/4" Black Hose x (Left Boom 18ft) or 135"(Left Boom 20ft)	1
	9032-84	3/4" Black Hose x 84" (Center Boom)	1
	9032	3/4" Black Hose x (Right Boom 18') or 135"(Right Boom 20ft)	1
	18-040	Hose Clamp	6
39	15-743	453 Manifold	1
40	15-882	#75 Gauge Port	1
41	18-007	Straight Elbow	1
42	17-537	Square U-Hex Bolt	1
43	20-543	Strainer Mount	1
44	HB-38-16-550	Hex Bolt, 3/8 - 16 x 5 1/2	2
	HNFL-38-16	Flange Whiz-loc Nut, 3/8 - 16	2

2004D PLUMBING DRAWING (TEEJET® 744)

15-818
15-817

#75 Fitting O-ring
#50 Fitting O-ring

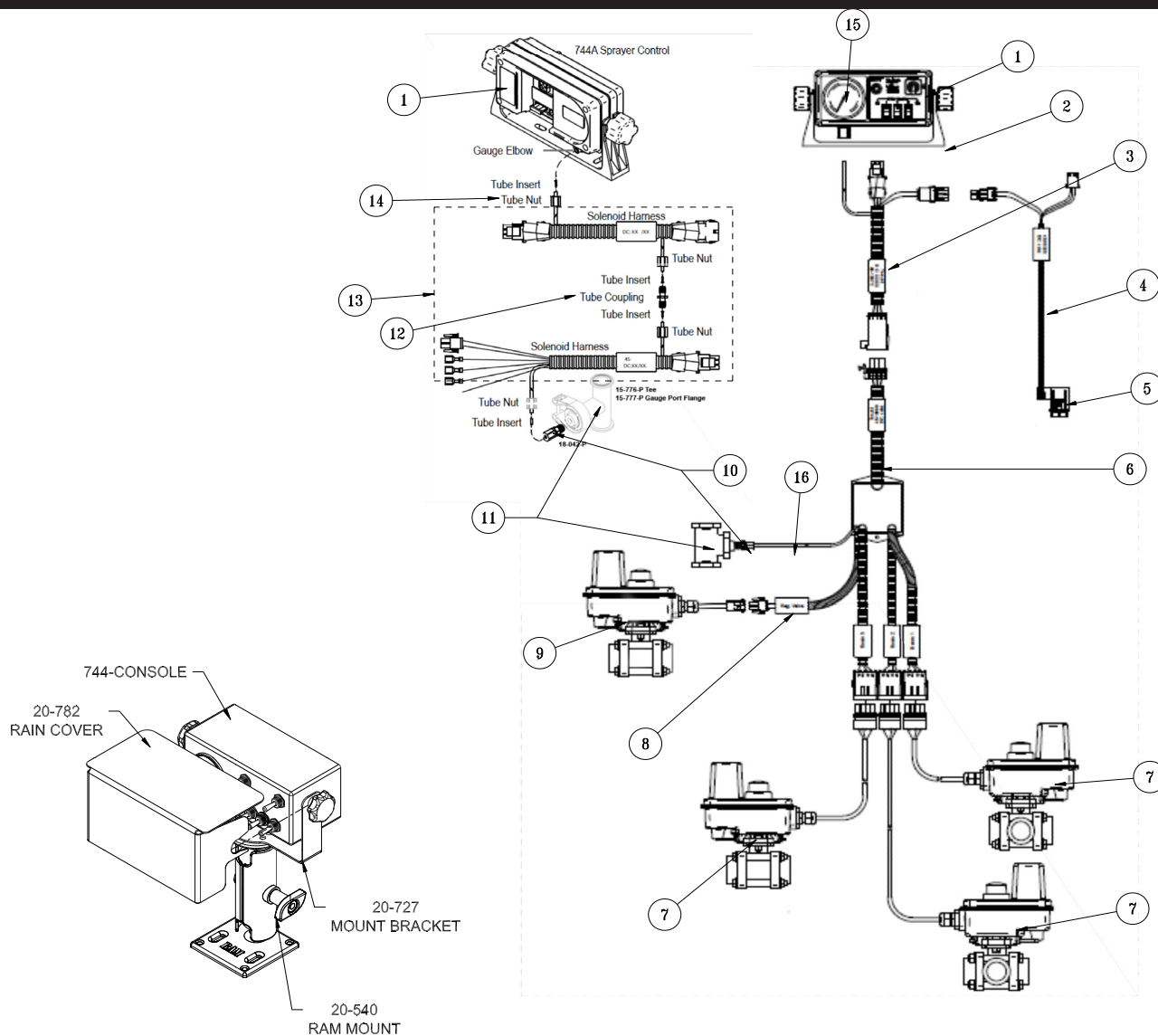


REF#	PART#	DESCRIPTION	QUANTITY
1	20-543	Strainer Mount	1
	17-537	Square U-Hex Bolt	1
2	15-780	Poly Hex Plug	1
3	15-739	#75 90° Hose Barb	2
4	15-741	#75 Series Clamp	7
5	15-737	Flanged Strainer	1
	16-968-03	Screen (50 mesh)	1
6	15-735	#50 x 1 FTP Fitting	1

2004D PLUMBING PARTS LIST (TEEJET® 744)

REF#	PART#	DESCRIPTION	QUANTITY
7	15-740	#50 Series Clamp	10
8	15-825	#50 Male Quick Coupler	1
9	14-801	Agitator Line Strainer, 50 Mesh	1
	14-802	Replacement 50 Mesh Screen	
10	15-869	1" Hose Barb Outlet	1
	15-553-01	Clip	1
	15-553-02	O-ring	1
11	15-778	Blank Gauge Port Flange	1
12	15-738	Flanged Ball Valve	2
13	15-776	#50 Tee	1
14	15-777	Gauge Port Flange	1
15	18-042	REDUCER	1
	20-688-04	Tubing to 744 Console	1
16	15-734	#75 Elbow Coupling	1
17	15-553	3/4 - 90° Hose Barb (Left Boom)	1
	9032	3/4" Black Hose x (Left Boom 18ft) or 135"(Left Boom 20ft)	1
	18-040	Hose Clamp	2
18	15-553	3/4 - 90° Hose Barb (Center Boom)	1
	9032-84	3/4" Black Hose x 84"	1
	18-040	Hose Clamp	2
19	15-553	3/4 - 90° Hose Barb (Right Boom)	1
	9032	3/4" Black Hose x (Right Boom 18") or 135"(Right Boom 20ft)	1
	18-040	Hose Clamp	2
20	16-524	Motorized Control Valve	1
21	15-743	453 Manifold	1
22	8896-72	1" Discharge Hose x 72"	1
	18-222	Hose Clamp	2
23	15-775	Reducer Tee	2
24	15-744	#75 Hose Barb	1
25	8897-22	1 1/4" Discharge Hose x 22"	1
	18-116	Hose Clamp	2
26	8897-18	1 1/4" Discharge Hose x 18"	1
	18-116	Hose Clamp	2
27	18-390	Pipe Tee	1
	10-389	Plug	1
28	16-161	Fitting	3
29	8897-44	Discharge Hose	1
	18-116	Hose Clamp	2
30	20-689	Valve Bracket	1
31	15-808	#50 Straight Barb	1
32	15-746	#50 90° Hose Barb	1
33	8897-35	1 1/4" Discharge Hose x 35"	1
	18-116	Hose Clamp	2
34	8896-80	1" Discharge Hose x 80"	1
	18-222	Hose Clamp	2
35	8897-28	1 1/4" Discharge Hose x 28"	1
	18-116	Hose Clamp	2
36	16-155	Elbow	1
37	16-156	Elbow	3
38	18-372	3-Way Valve	1
39	16-194	Anti-Vortex Fitting	1
40	16-998	Hypro® Pump	1
41	15-736	Elbow	1
42	15-976	#50 90° Elbow	1
43	15-742	#75 Cover	1

WIRING 2004D SYSTEM (TEEJET® 744)



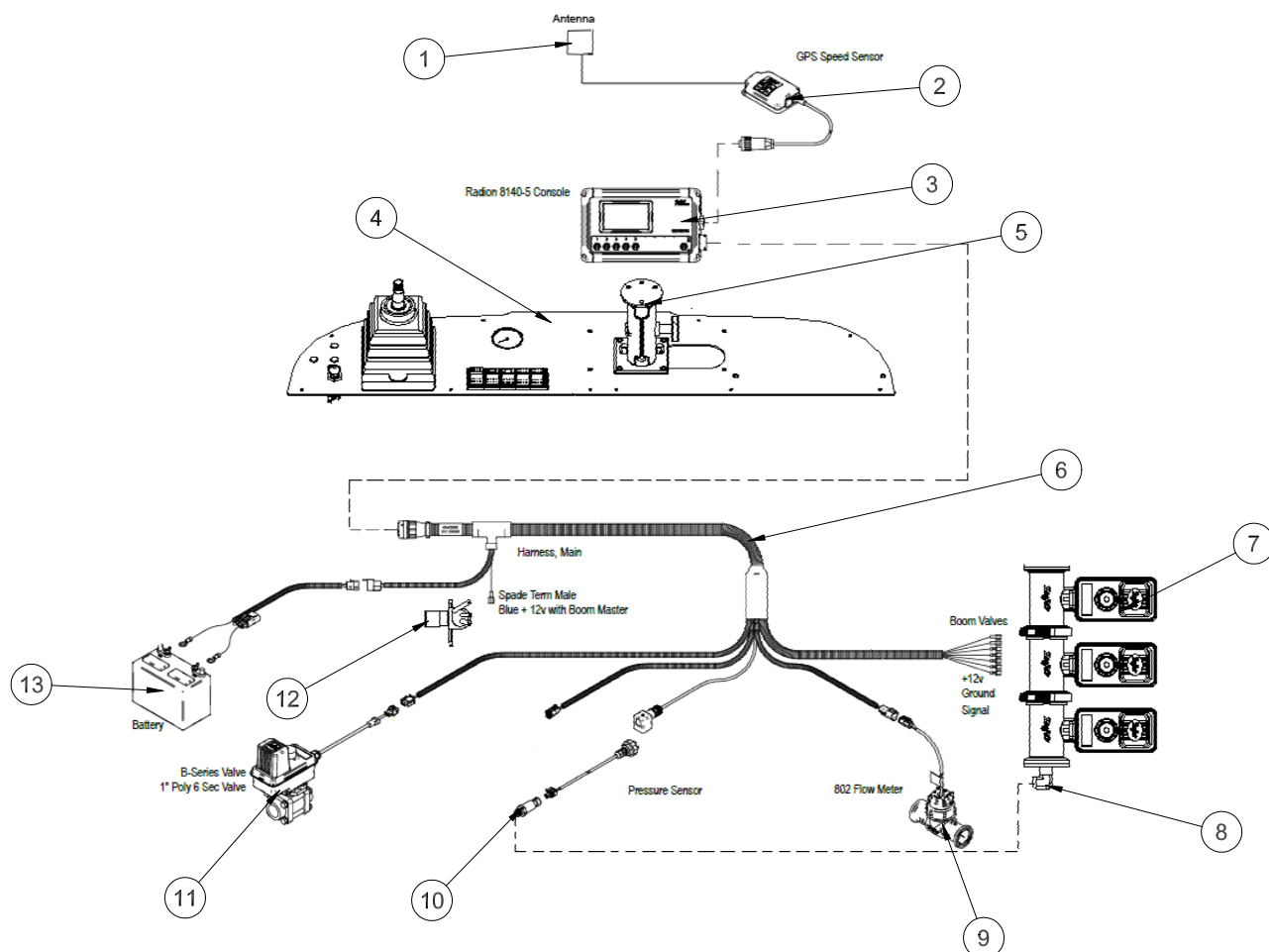
REF#	PART#	DESCRIPTION	QUANTITY
1*	20-688-02	744A Console	1
	20-688-08	Gauge Elbow	1
2	20-727	Mount Bracket	1
	20-540	Ram Mount	1
3*		Console harness	1
4*		Fused Power Cable	1
5	33-271	Fuse Block	1
6*		Ball Valve Wire Harness	1
7	15-743	Manifold Ball Valve	1
8*		Regulator Valve Adapter	1
9	20-817	Regulating Valve	1
10	18-042	Reducer Bushing	1
11	15-776	Tee, 50 Series	1
	15-777	Gauge Port Flange	1
12*	20-688-05	Tube Coupling	1
13*		Tube Nut Kit	1
14*	20-688-06	Tube Nut	1
15*	20-688-01	100PSI Liquid Gauge	1
16*	20-688-04	Tubing	1

*

20-688

744A Kit Complete (includes * items)

WIRING 2002D SYSTEM (RADION® 8140)



⚠ IMPORTANT

If using Simulated Speed with a Radion 8140, one needs to change back to Ground Speed for proper rate control when spraying.

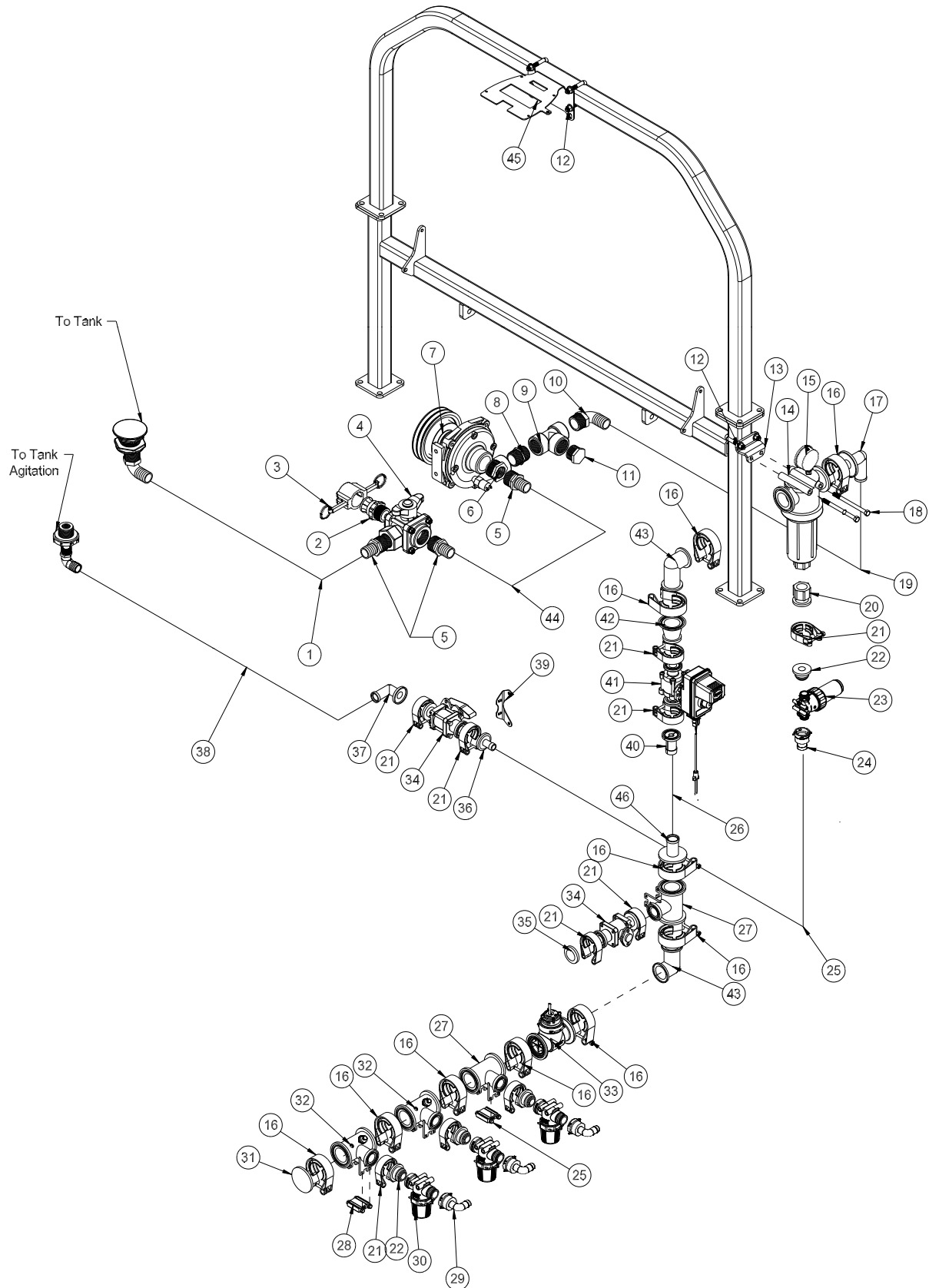
REF#	PART#	DESCRIPTION	QUANTITY
1*		Antenna	1
2*	20-687-02	GPS Speed Sensor	1
3*	20-697-01	Radion 8140 Console	1
	20-781	Radion Plastic Cover	1
4	20-734	Dashboard	1
5	20-540	Ram Mount	1
6*		Wire Harness	1
7	15-743	Manifold Valve	1
8	18-007	Elbow	1
	20-684	Flow Meter	1
9			1
10*	20-670-04	Pressure Sensor	1
11	20-785	Regulator Valve	1
12	33-509	Master Boom Control	1
13	33-216	Battery	1
*	20-697	TeeJet® Radion Kit (includes * items)	1

Use Dielectric Grease On All Electrical Connections

2005D/2006D/2007D/2008D PLUMBING

15-818 #75 Fitting O-ring

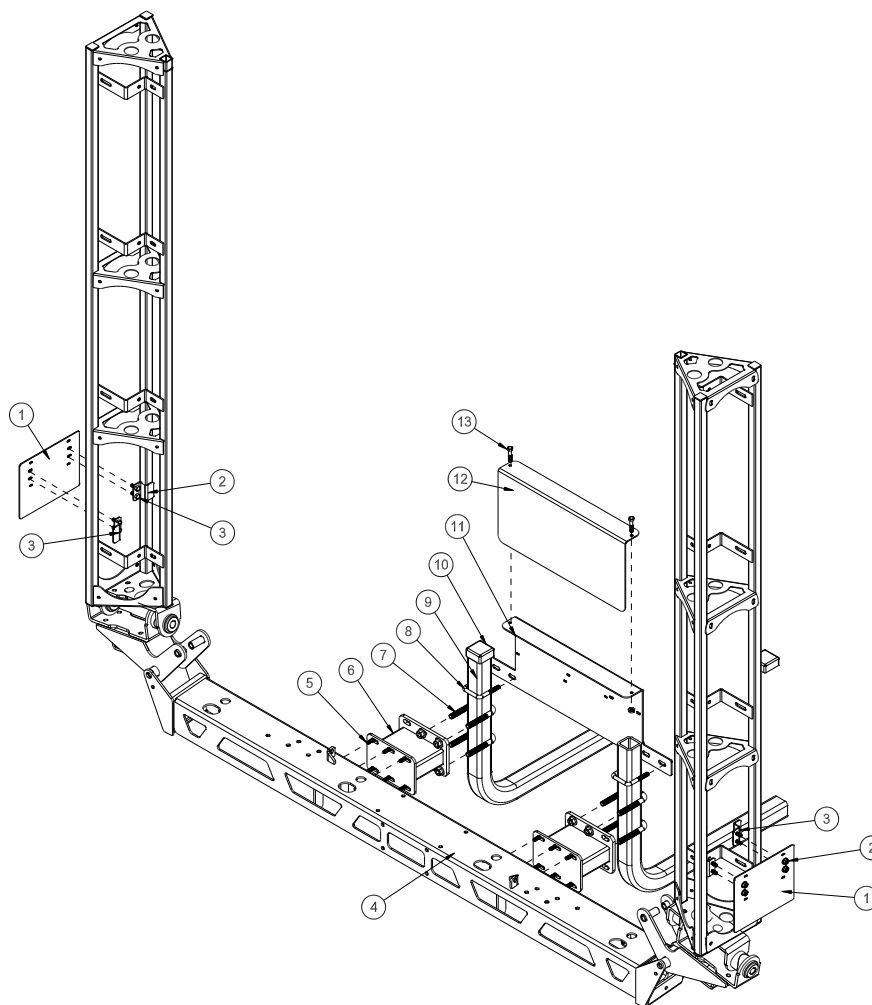
15-817 #50 Fitting O-ring



2005D/2006D/2007D/2008D PARTS LIST

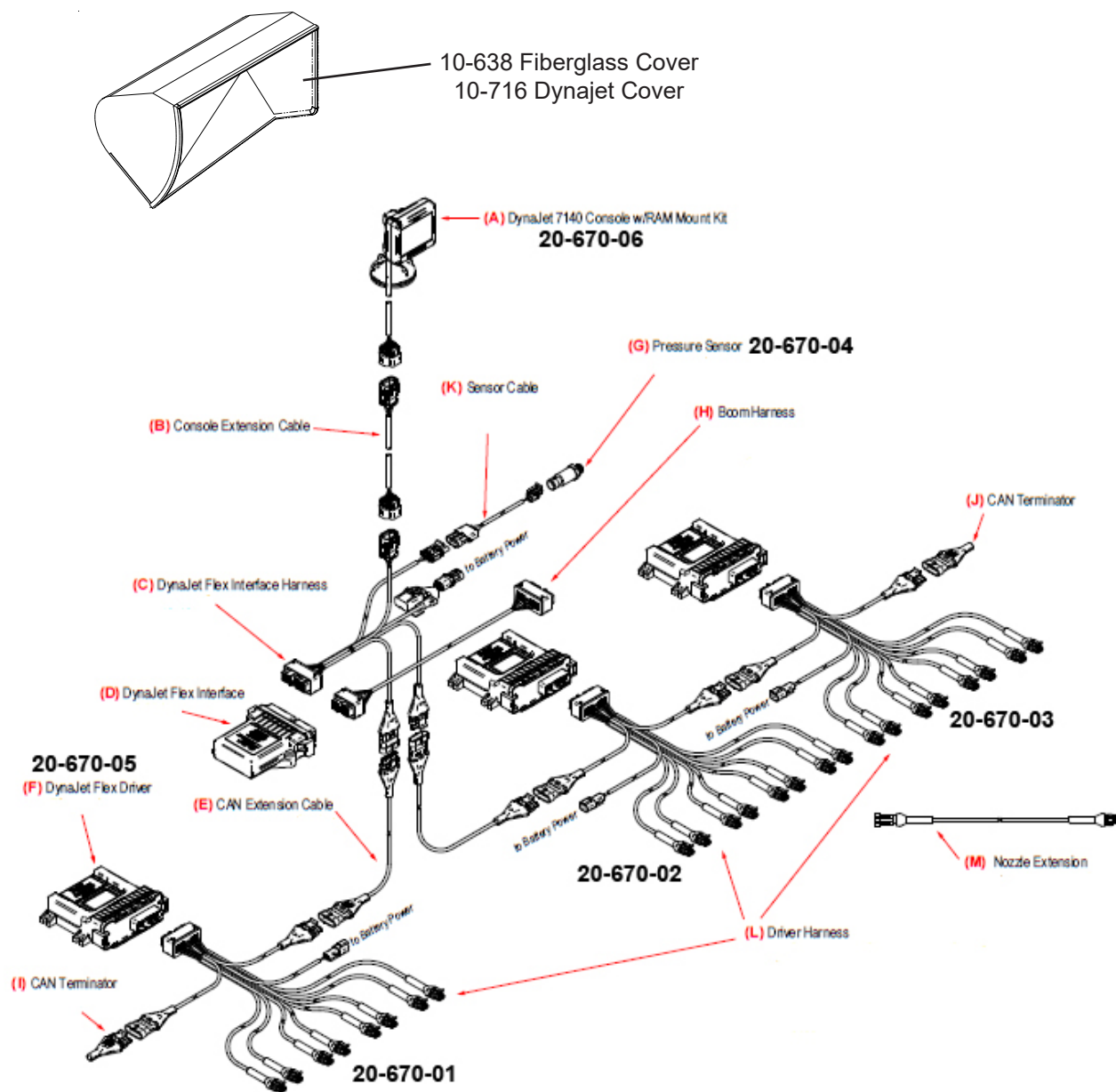
REF#	PART#	DESCRIPTION	QUANTITY
1	8897-28	1 1/4" Discharge Hose x 28"	1
	18-116	Hose Clamp	2
2	16-180	Quick Coupler	1
3	16-935	Quick Coupler Cap	1
4	18-372	3-Way Valve	1
5	16-161	Fitting	3
6	16-973	Reducer	1
7	16-998	Hypro® Pump	1
8	16-880	Close Nipple	1
9	18-390	Pipe Tee	1
10	16-156	Elbow	1
11	10-389	Plug	1
12	17-537	Square U-Bolt	3
13	20-543	Strainer Mount	1
14	15-737	Flanged Strainer	1
	16-968-05	Screen (80 mesh)	1
15	16-281	Liquid Filled Gauge	1
16	15-741	#75 Series Clamp	10
17	15-739	#75 90° Hose Barb	1
18	HB-38-16-550	Bolt, 3/8 - 16 x 5 1/2	2
	HNFL-38-16	Flange Lock Nut, 3/8 - 16	2
19	8897-58	1 1/4" Discharge Hose x 58"	1
	18-116	Hose Clamp	2
20	15-735	#50 x 1 FTP Fitting	1
21	15-740	#50 Series Clamp	10
22	15-825	#50 Male Quick Coupler	4
23	14-801	Agitator Line Strainer, 50 Mesh	1
	14-802	Replacement 50 Mesh Screen	
24	15-869	1" Hose Barb Outlet	1
	15-553-01	Clip	1
	15-553-02	O-ring	1
25	8896-72	1" Discharge Hose x 72"	1
	18-222	Hose Clamp	2
26	8897-11	1 1/4" Discharge Hose x 11"	1
	18-116	Hose Clamp	2
27	15-775	Reducer Tee	2
28	15-743-03	Mounting Rail	2
	15-743-06	SS Screw	8
29	15-553	3/4 - 90° Hose Barb	3
	9032-121	3/4 Black Hose x 121" (Left Boom)	1
	9032-90	3/4 Black Hose x 90" (Center Boom)	1
	9032-116	3/4 Black Hose x 116" (Right Boom)	1
	18-040	Hose Clamp	6
30	14-607	QC Strainer 100 Mesh	3
	14-609	Replacement 100 Mesh Screen	
31	15-742	#75 Inlet Cover	1
32	30-164	Tapped Reducer Tee	2
33	20-684	#802 Flow Meter	1
34	15-738	Flanged Ball Valve	2
35	15-778	Blank Gauge Port Flange	1
36	15-808	#50 Straight Hose Barb	1
37	15-746	#50 90° Elbow	1
38	8896-80	1" Discharge Hose x 80"	1
	18-222	Hose Clamp	2
39	20-689	Valve Bracket	1
	HB-14-20-125	Bolt, 1/4 - 20 x 1 1/4	2
	HNFL-14-20	Flange Lock Nut, 1/4 - 20	2
40	15-870	#50 1 1/4" Hose Barb	1
41	20-675	Regulator Valve	1
42	15-748	Reducer Coupling (#75 to #50)	1
43	15-734	#75 Elbow Coupling	2
44	8897-44	Discharge Hose	1
	18-116	Hose Clamp	2
45	20-770	Smart7 Antenna Mount (Star Commnad II Only)	1
46	15-744	#75 1 1/4" Hose Barb	1

2007D/2008D MODULE MOUNTS (RADION + DYNAJET)

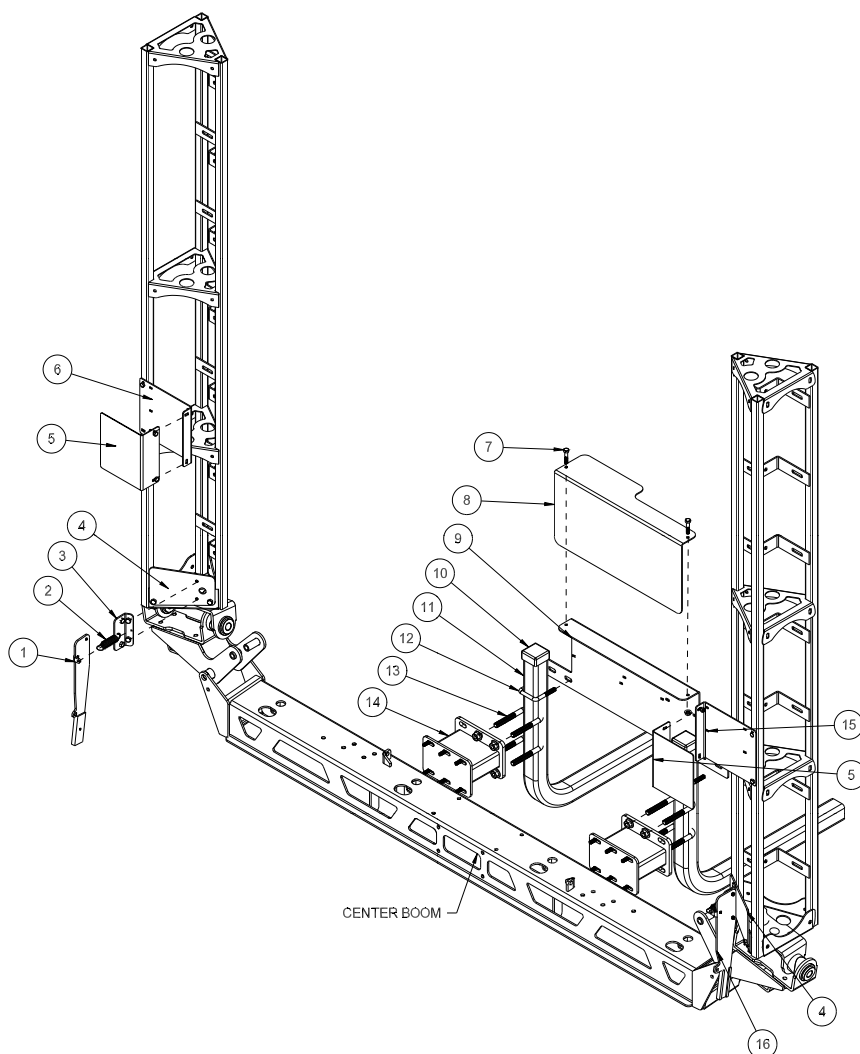


REF#	PART#	DESCRIPTION	QUANTITY
1	20-665	Drive Module Bracket	2
2	20-664	Z Bracket	4
3	HSTP-14-20-075	Machine Screw, $\frac{1}{4}$ - 20 x $\frac{3}{4}$	10
	HNFL-14-20	Flange Whiz-loc Nut, $\frac{1}{4}$ - 2	10
4		Center Boom Mount	1
5	HB-516-18-100	Hex Bolt, $\frac{5}{16}$ - 18 x 1	12
	HNTL-516-18	Nylon Lock Nut, $\frac{5}{16}$ - 18	12
6	17-614	Boom Spacer	2
7	20-555	U-Hex Bolt	4
	HNFL-12-13	Flange Whiz-loc Nut, $\frac{1}{2}$ - 13	8
8	17-537	Square U-Hex Bolt	2
9	17-615	Boom Carrier	2
10	16-557	Square Cap	2
11	20-667	Module Mount Bracket	1
12	20-666	Module Cover Bracket	1
13	HB-516-18-150	Hex Bolt, $\frac{5}{16}$ - 18 x $1 \frac{1}{2}$	2
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ - 18	2

2007D/2008D DYNAJET WIRING

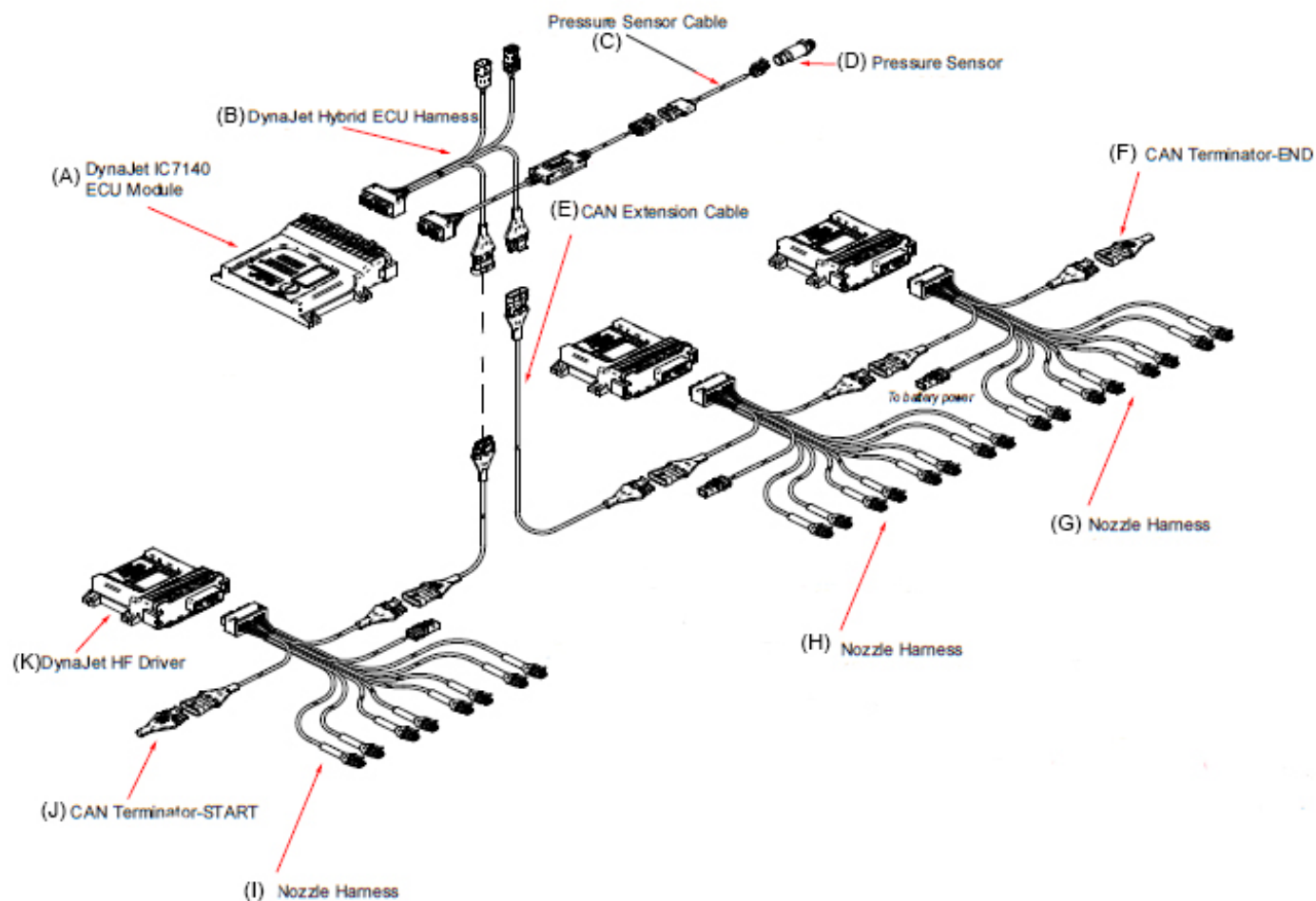


2005D/2006D MODULE MOUNTS (AEROS + DYNAJET)



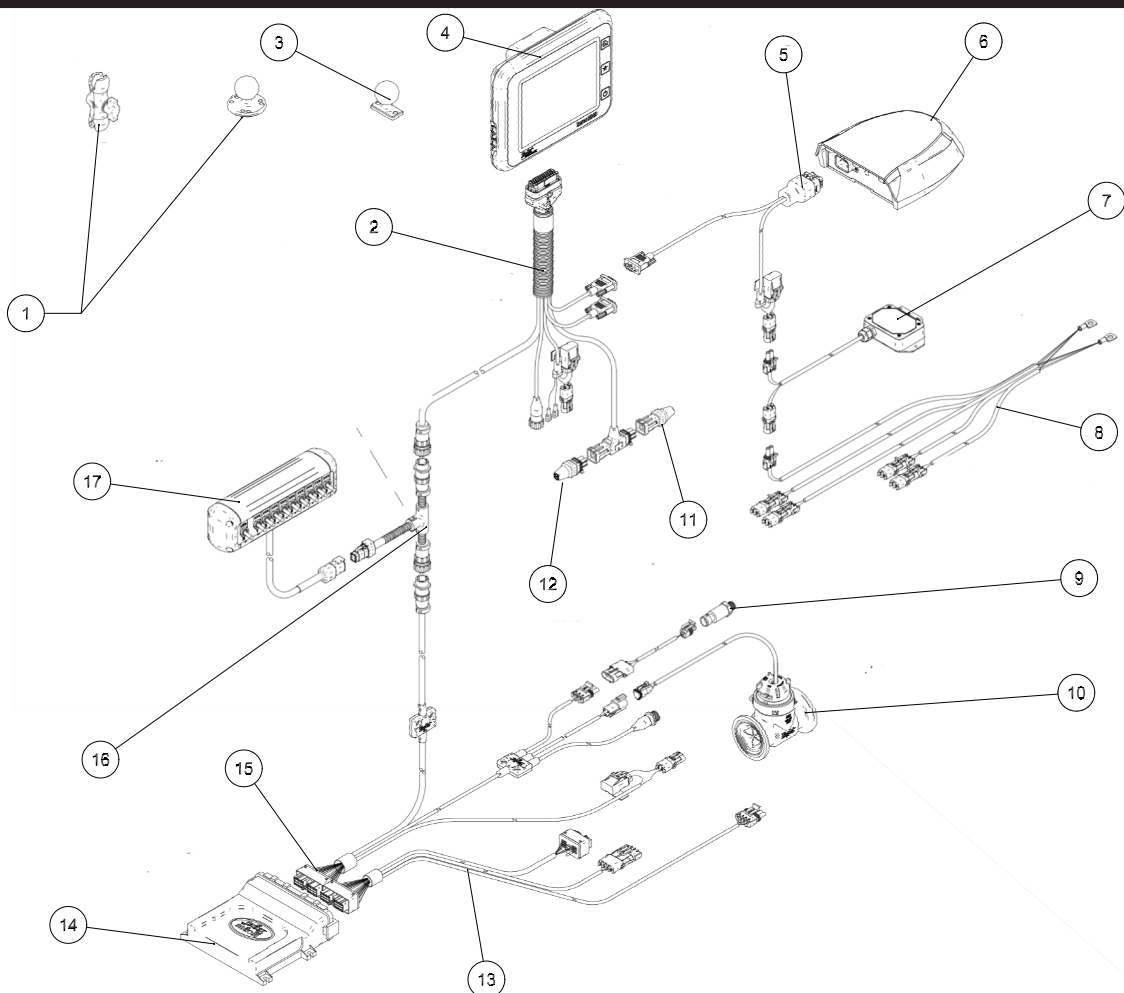
REF#	PART#	DESCRIPTION	QUANTITY
1	17-562	LH Break-Away Arm	1
2	11-050	Spring	2
3	17-560	Hinge Mount	2
4	17-559	Break-Away Mount	2
5	20-796	Bracket Cover	2
6	20-795	LH Driver Module Bracket	1
7	HB-516-18-150	Hex Bolt, $\frac{5}{16}$ -18 x $1\frac{1}{2}$	2
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ -18	2
8	20-794	Module Cover Bracket	1
9	10-625	Module Mount Bracket	1
10	16-557	Square Cap	2
11	17-615	Boom Carrier	2
12	17-537	Square U-bolt	1
13	20-555	U-Bolt	4
	HNFL-12-13	Flange Whiz-loc Nut, $\frac{1}{2}$ -13	8
14	17-614	Boom Spacer	2
15	20-793	RH Driver Module Bracket	1
16	17-561	RH Break-Away Arm	1

20-806 DYNAJET WIRING FOR 2005/2006



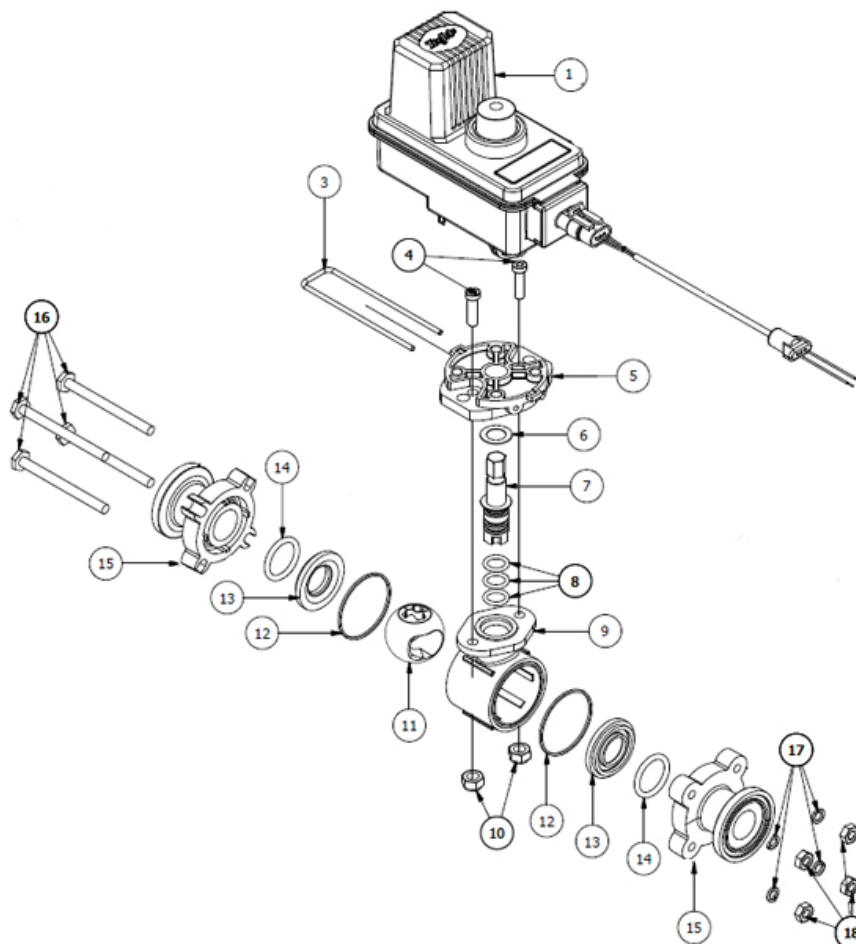
REF#	PART#	DESCRIPTION	QUANTITY
A		DynaJet IUC7140 Module	1
B		Harness, IC7140 to IC35	1
C		Cable, Pressure Sensor	1
D	20-670-04	Pressure Sensor	1
E		CAN Extension Cable	1
F	20-670-08	CAN Terminator End	1
G		Right Harness, DJ Driver	1
H		Center Harness, DJ Driver	1
I		Left Harness, DJ Driver	1
J		CAN Terminator Start	1
K	20-670-05	DynaJet Driver	3

20-805 AEROS WIRING FOR 2005/2006



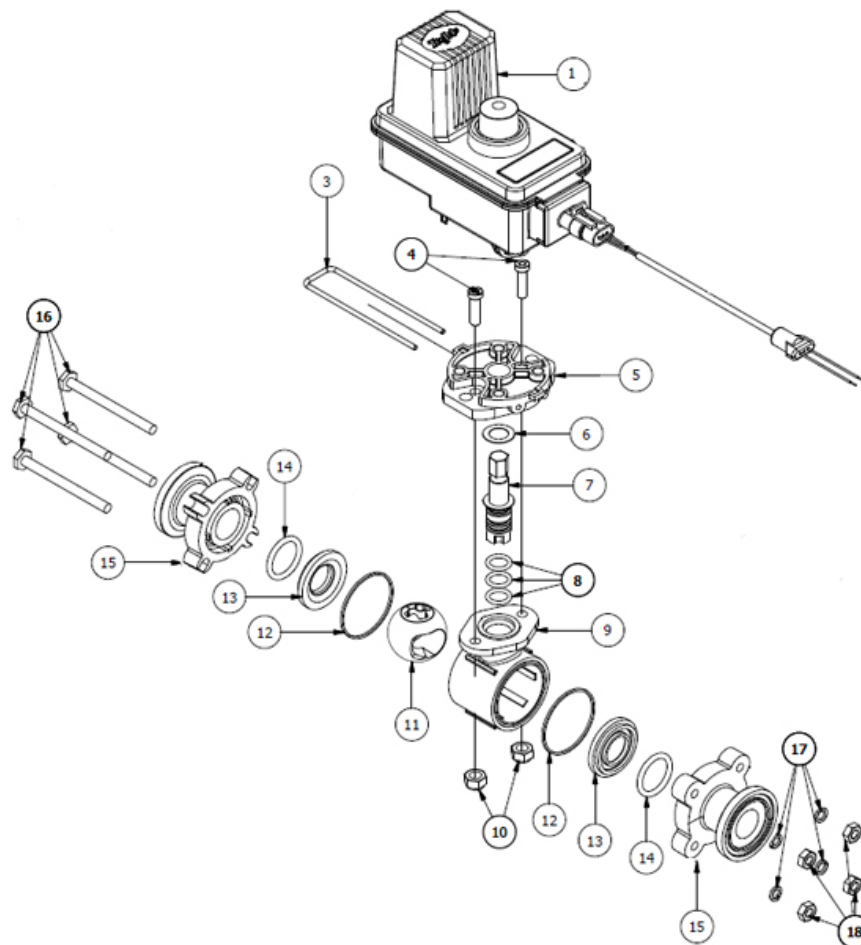
REF#	PART#	DESCRIPTION	QUANTITY
1		RAM Mount	1
2		Aeros Harness w/ ISO CAN	1
3	32-709	RAM Base	1
4	20-868-03	Aeros Console	1
5	20-736-01	Antenna Cable	1
6	20-767	RX720 Receiver	1
7	20-686-02	Switch Box	1
8		Power Cable	1
9	20-670-04	Pressure Sensor	1
10	20-684	Flow Meter	1
11		Terminator, Male	1
12		Terminator, Female	1
13		DynaJet Interface Boom Harness	1
14	20-806	IC18 Sprayer Module	1
15		IC18 Harness	1
16		TeeJet In-Cab Cable	1
17	20-686-01	Switch Box	1
1			
NS	17-647	Chmsaver extension cable for 15" boom	

20-817 REGULATOR VALVE



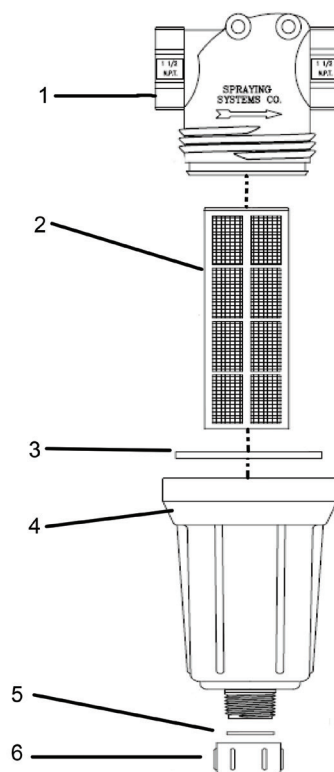
REF#	PART#	DESCRIPTION	QUANTITY
1		Motor, 6RPM	
3	15-552-24	Retaining Clip	1
4	15-552-25	Socket Head Cap Screw, Stainless Steel	2
5	15-552-26	Motor Adapter, Polypropylene	1
6*	15-517-11	Thrust Washer, Teflon	1
7	15-552-27	Stem, Stainless Steel	1
8	15-552-05	O-ring, Viton	3
9	15-517-16	Body, Nylon	1
10		Lock Nut, Stainless Steel	2
11		Ball, Polypropylene	1
12*	15-552-13	Gasket, Viton	2
13*	15-517-19	Seal, Teflon	2
14*	15-517-20	O-ring, Viton	2
15	15-743-01	End Cap	1
16		SSHex Bolt, $\frac{1}{4}$ - 20 x 3	4
17		SS Lock Washer, $\frac{1}{4}$	4
18	15-517-23	SS Nut, $\frac{1}{4}$ - 20	4
*	15-552-10	Spare Parts Kit (includes * items)	
	20-817	Complete Regulator Valve	

20-785 REGULATOR VALVE



REF#	PART#	DESCRIPTION	QUANTITY
1	20-785-01	Motor, 6RPM	
3	15-552-24	Retaining Clip	1
4	15-552-25	Socket Head Cap Screw, Stainless Steel	2
5	15-552-26	Motor Adapter, Polypropylene	1
6*	15-517-11	Thrust Washer, Teflon	1
7	15-552-27	Stem, Stainless Steel	1
8	15-552-05	O-ring, Viton	3
9	15-517-16	Body, Nylon	1
10		Nylon Lock Nut, Stainless Steel	2
11		Ball, Polypropylene	1
12*	15-552-13	Gasket, Viton	2
13*	15-517-19	Seal, Teflon	2
14*	15-517-20	O-ring, Viton	2
15	15-743-01	End Cap	1
16		SSHex Bolt, $\frac{1}{4}$ - 20 x 3	4
17		SS Lock Washer, $\frac{1}{4}$	4
18	15-517-23	SS Nut, $\frac{1}{4}$ - 20	4
*	15-552-10	Spare Parts Kit (includes * items)	
	20-685	Complete Regulator Valve	

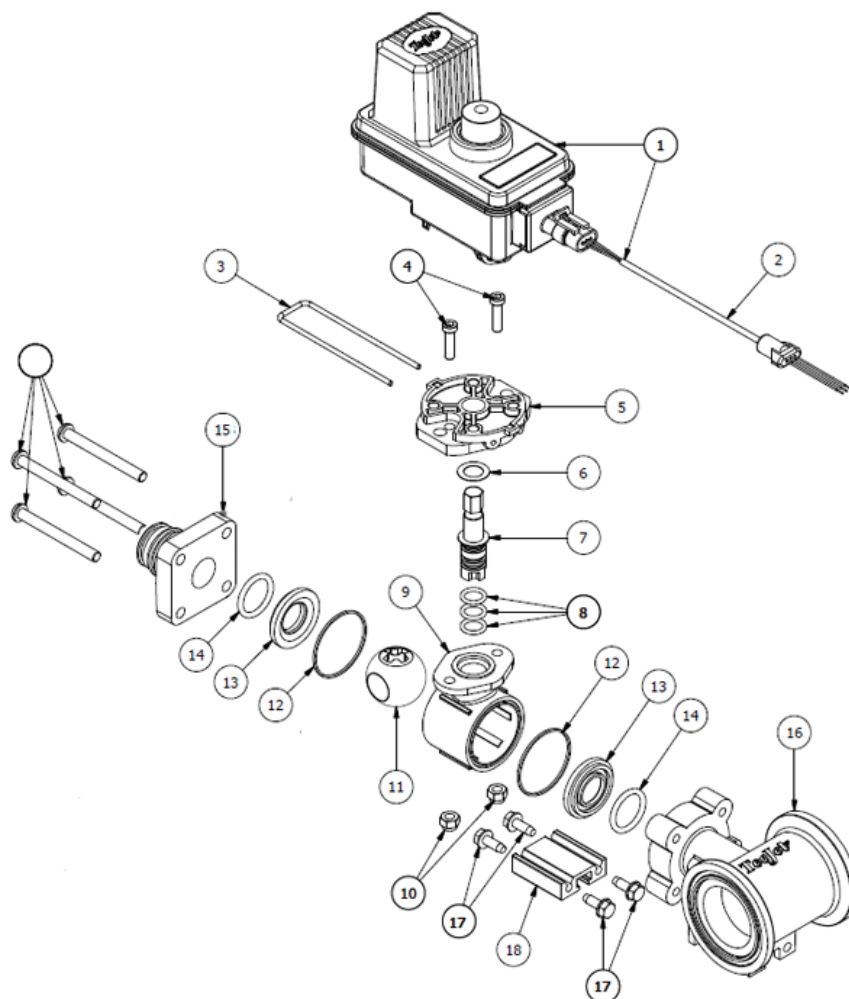
15-737/ 14-628 FLANGED STRAINER DRAWING



REF#	PART#	DESCRIPTION	QUANTITY
1	15-737-01	Strainer Head 75 Series	1
2*	16-968-03	50 Mesh Strainer	1
**	16-968-05	80 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

*	15-737	Flanged Strainer Assembly with 50 Mesh Screen
**	14-628	Flanged Strainer Assembly with 80 Mesh Screen

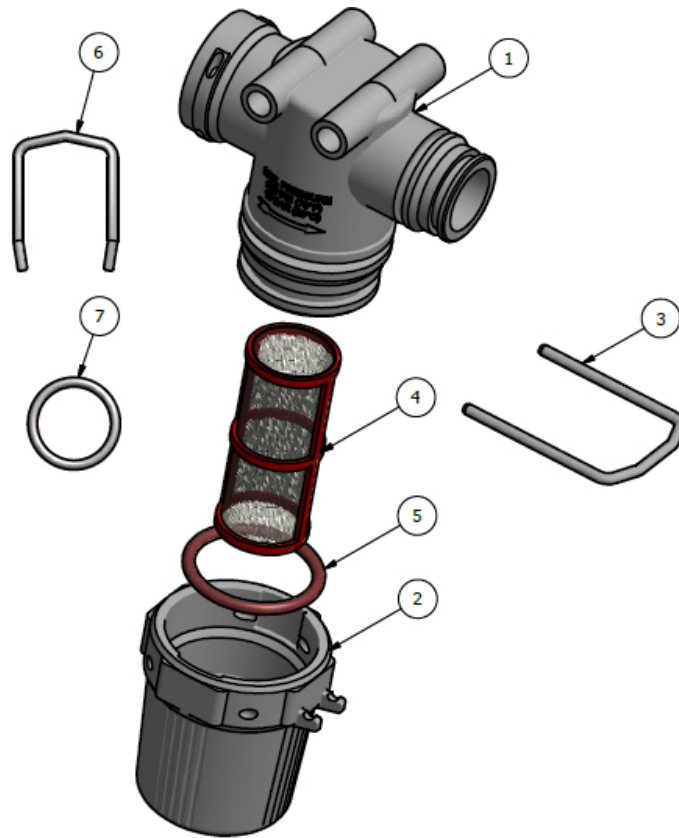
15-743 MANIFOLD VALVE DRAWING



REF#	PART#	DESCRIPTION	QUANTITY
1	15-552-23	Motor	
2	15-878	Metri-Pack Cable (comes with motor)	1
3	15-552-24	Retaining Clip	1
4	15-552-25	Socket Head Cap Screw, Stainless Steel	2
5	15-552-26	Motor Adapter, Polypropylene	1
6*	15-517-11	Thrust Washer, Teflon	1
7	15-552-27	Stem, Stainless Steel	1
8*	15-552-05	O-ring, Viton	3
9	15-517-16	Body, Nylon	1
10		Nylon Lock Nut, Stainless Steel	2
11	15-743-04	Ball, Polypropylene	1
12*	15-552-13	Gasket, Viton	2
13*	15-517-19	Seal, Teflon	2
14*	15-517-20	O-ring, Viton	2
15	15-743-01	End Cap	1
16	15-743-02	#75 Tee Body	1
17	15-743-06	Screw, SS	4
18	15-743-03	Mounting Rail Aluminum	1

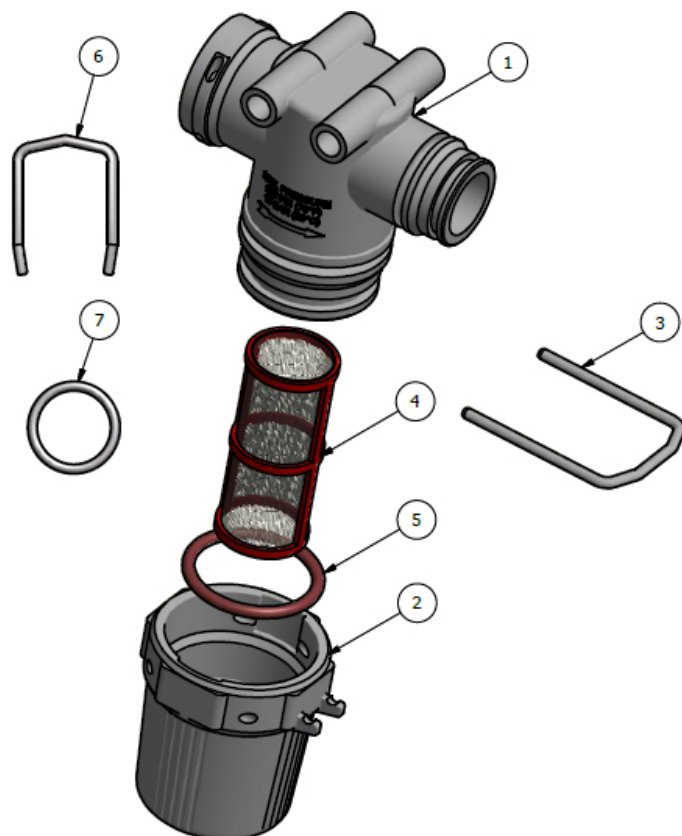
* 15-552-10 Spare Parts Kit (includes all * items)
 15-743-05 Single Valve (shown)

14-607 QC STRAINER



REF#	PART#	DESCRIPTION	QUANTITY
1		QC Strainer Head	1
2	14-801-01	Bowl	1
3		Strainer QC Retaining Clip	1
4	14-609	100 Mesh Screen	1
5		Viton O-ring	1
6	15-553-01	Retaining Clip	1
7	15-553-02	Viton O-ring	1

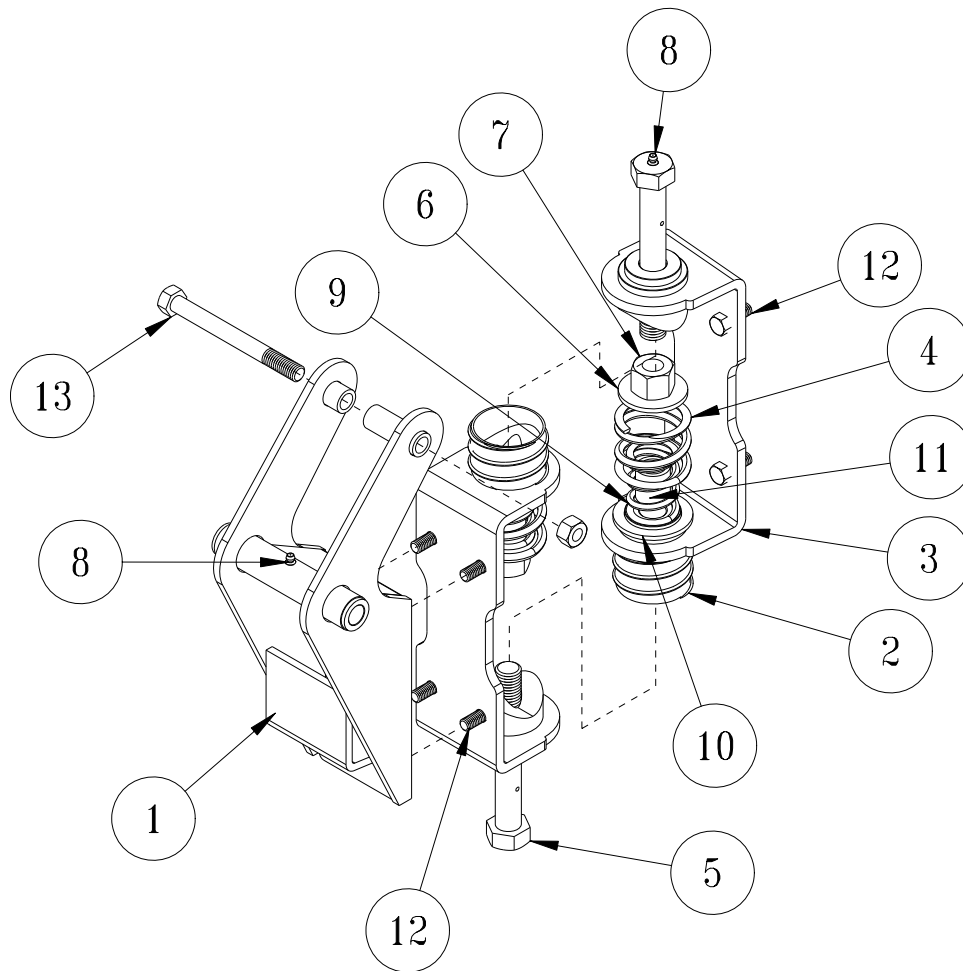
14-801 AGITATION STRAINER



REF#	PART#	DESCRIPTION	QUANTITY
1		QC Strainer Head	1
2	14-801-01	Bowl	1
3		Strainer QC Retaining Clip	1
4	14-802	50 Mesh Strainer	1
5		Viton O-ring	1
6	15-553-01	Retaining Clip	1
7	15-553-02	Viton O-ring	1

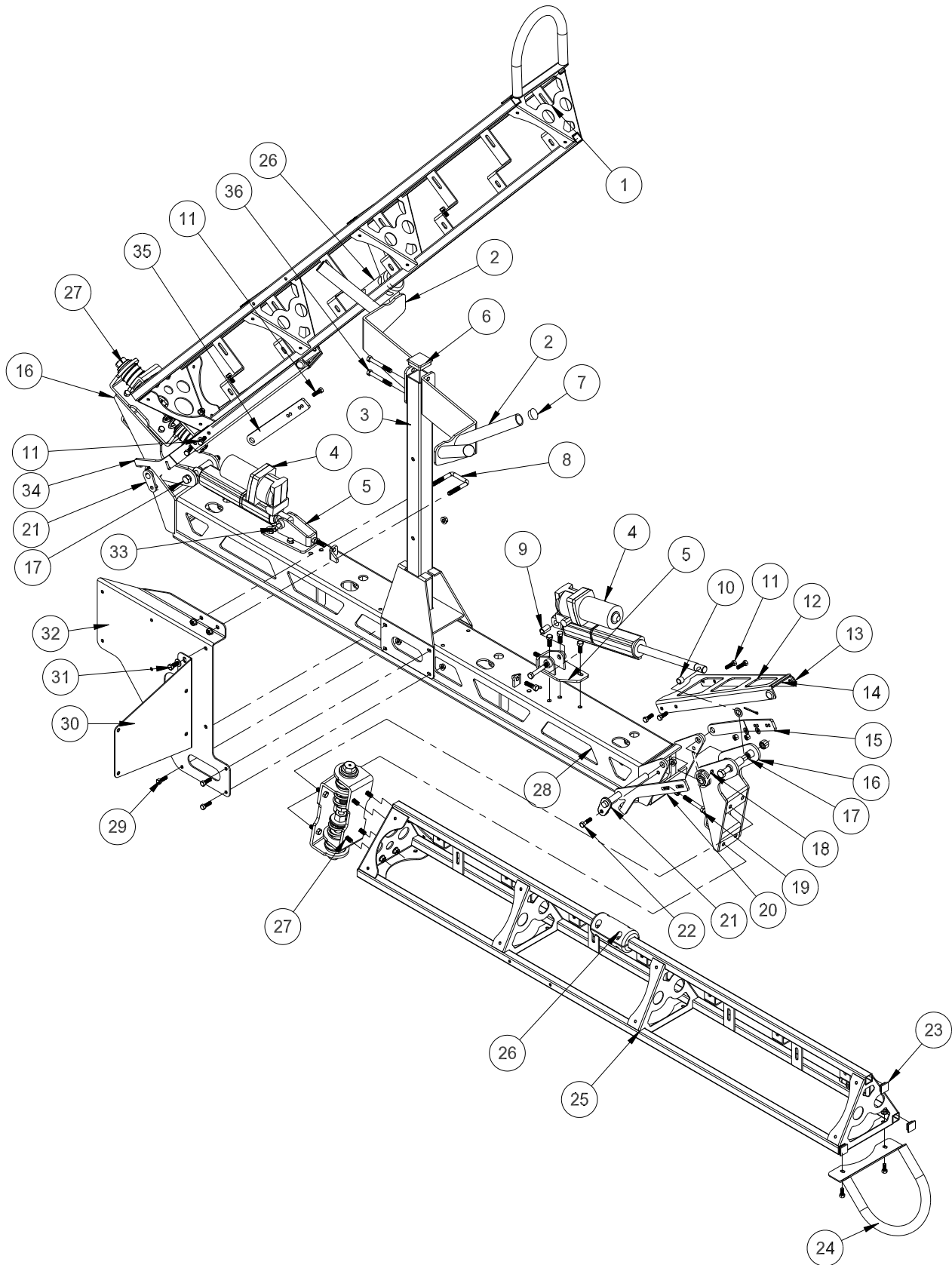
2 HINGE ASSEMBLIES PER BOOM

*17-632-K Boom Hinge Complete



REF#	PART#	DESCRIPTION	QUANTITY
1	30-185	Arm Pivot Hinge (part of boom)	1
	HG-14-28-180	Grease Zerk (part of boom)	1
2*	9026-2	Rubber Duct Hose, 2"	2
3*	17-527	Boom Hinge	1
4*	17-539	Compression Spring	2
5*	17-540	Tapped Bolt	2
6*	HW-34	Flat Washer, $\frac{3}{4}$	2
7*	HNCL-34-10	Center Lock Nut, $\frac{3}{4}$ - 10	2
8*	HG-14-28-180	Grease Zerk	2
9*	17-591	Compression Spring	2
10*	17-599	Spring Shim	2
11*	17-594	Spring Sleeve	2
12*	HB-38-16-100	Hex Bolt, $\frac{3}{8}$ - 16 x 1	8
	HNFL-38-16	Flange Lock Nut, $\frac{3}{8}$ - 16	8
13	HB-12-13-500	Hex Bolt, $\frac{1}{2}$ - 13 x 5	1
	HNTL-12-13	Lock Nut, $\frac{1}{2}$ - 13	1

17-580 20' HEAVY BOOM



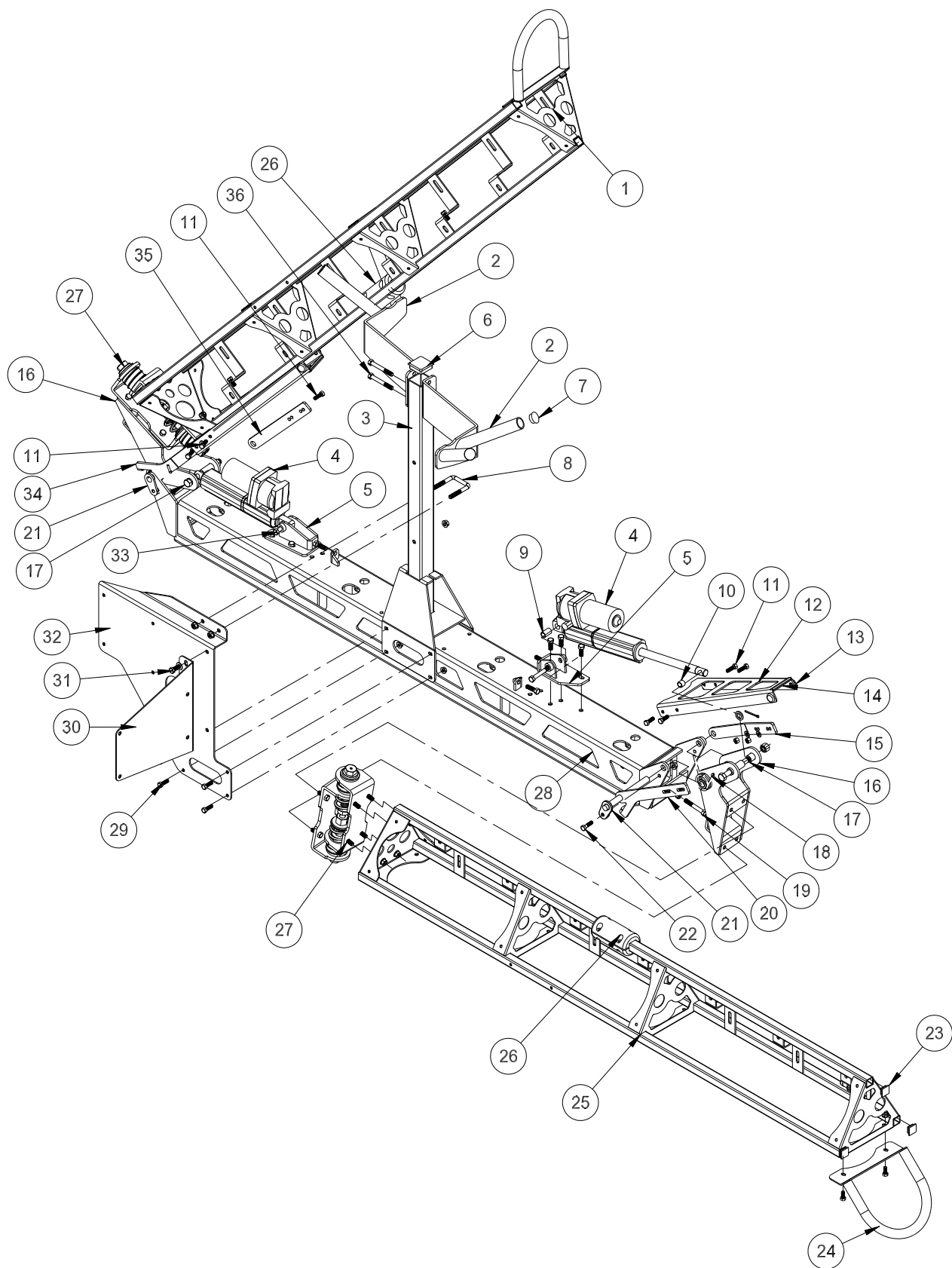
Accessories

17-580 20' HEAVY BOOM

REF#	PART#	DESCRIPTION	QUANTITY
1	17-652	Left Boom Arm	1
2	17-631	V-Boom Nest	2
3	17-578	Boom Nest Post	1
4	30-214	10" Electric Hydraulic Actuator	2
5	30-184	Actuator Mount	2
	HN-38-16	Hex Nut, $\frac{3}{8}$ - 16 (adjustment Hex Bolt)	4
	HB-38-16-100	Hex Bolt, $\frac{3}{8}$ - 16 x 1	6
	HW-38	Flat Washer, $\frac{3}{8}$	6
	HNFL-38-16	Flange Whiz-loc Nut, $\frac{3}{8}$ -16	6
6	18-297	Cap Plug	1
7	17-619	Push in Plug	4
8	17-537	Square U-Hex Bolt	1
9	18-036	1" Bushing (part of 30-214)	2
10	18-234	$\frac{1}{2}$ " Bushing (part of 30-214)	2
11	HB-516-18-100	Hex Bolt, $\frac{5}{16}$ -16 x 1	8
	HW-516	Flat Washer, $\frac{5}{16}$	4
	HNTL-516-18	Nylon Lock Nut, $\frac{5}{16}$ - 18	8
12	17-587	Boom Lock	2
13	8803-2.75	Trim Lace, $2\frac{3}{4}$	2
14	42-116	Rubber Insert	4
15	17-588	Lock Hinge, RH	1
16	30-185	Arm Pivot Hinge	2
	HG-14-28-180	Grease Fitting, $\frac{1}{4}$ - 28 x 180°	2
	76-128	Bushing	4
17	HB-12-13-500	Hex Bolt, $\frac{1}{2}$ - 13 x 5	2
	HNTL-12-13	Nylon Lock Nut, $\frac{1}{2}$ - 13	2
18	17-597	Torsion Spring, RH	1
19	HB-38-16-175	Hex Bolt, $\frac{3}{8}$ - 16 x $1\frac{3}{4}$	2
	HNFL-38-16	Flange Whiz-loc Nut, $\frac{3}{8}$ -16	4
20	17-589	Limit Hinge, RH	1
21	17-596	Hinge Pin w/Spacer	2
	HP-18-100	Cotter Pin, $\frac{1}{8}$ x 1	2
22	HB-516-18-100	Hex Bolt, $\frac{5}{16}$ -16 x 1	2
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ - 18	2
23	30-258	1" 10-14ga Ribbed Plug	10
24	17-541	Boom End Guard	2
	HBFL-516-18-075	Flange Whiz-loc Bolt, $\frac{5}{16}$ - 18 x $\frac{3}{4}$	4
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ - 18	4
25	17-653	Right Boom Arm	1
26	17-573	Guide Block Set	2
	HB-14-20-125	Hex Bolt, $\frac{1}{4}$ -20 x $1\frac{1}{4}$	8
	HNTL-14-20	Nylon Lock Nut, $\frac{1}{4}$ - 20	8
27	17-632	Boom Hinge Complete	2
	HB-38-16-100	Hex Bolt, $\frac{3}{8}$ - 16 x 1	16
	HNFL-38-16	Flange Whiz-loc Nut, $\frac{3}{8}$ - 16	16
28	17-651	Boom Center	1
29	HB-516-18-075	Hex Bolt, $\frac{5}{16}$ - 18 x $\frac{3}{4}$	8
	HW-516	Flat Washer, $\frac{5}{16}$	8
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ - 18	8

(Continue on next page)

17-580 20' BOOM DRAWING



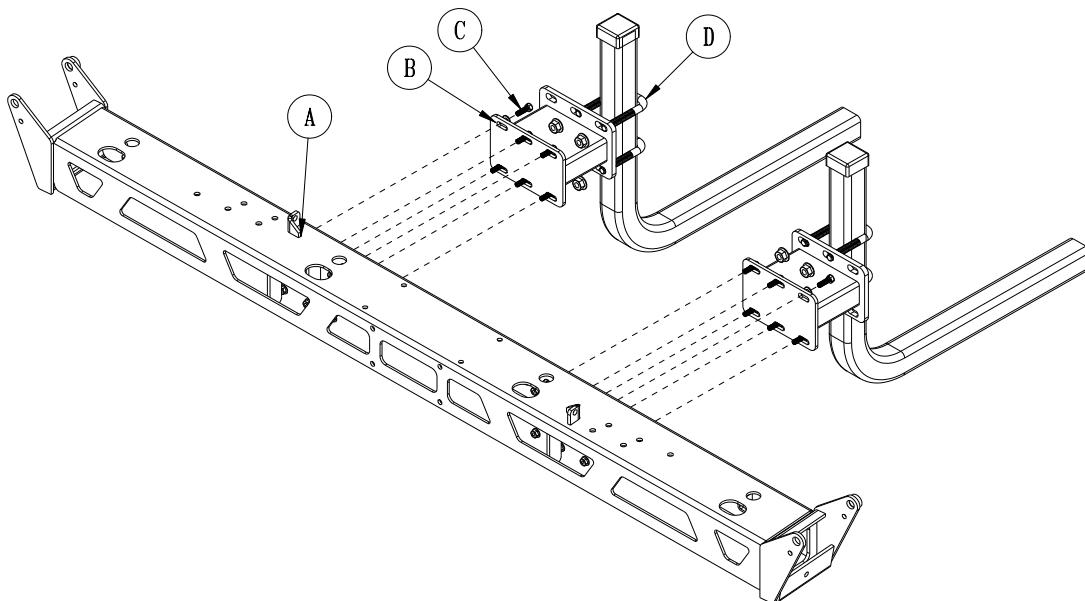
Accessories

17-580 20' BOOM PARTS LIST

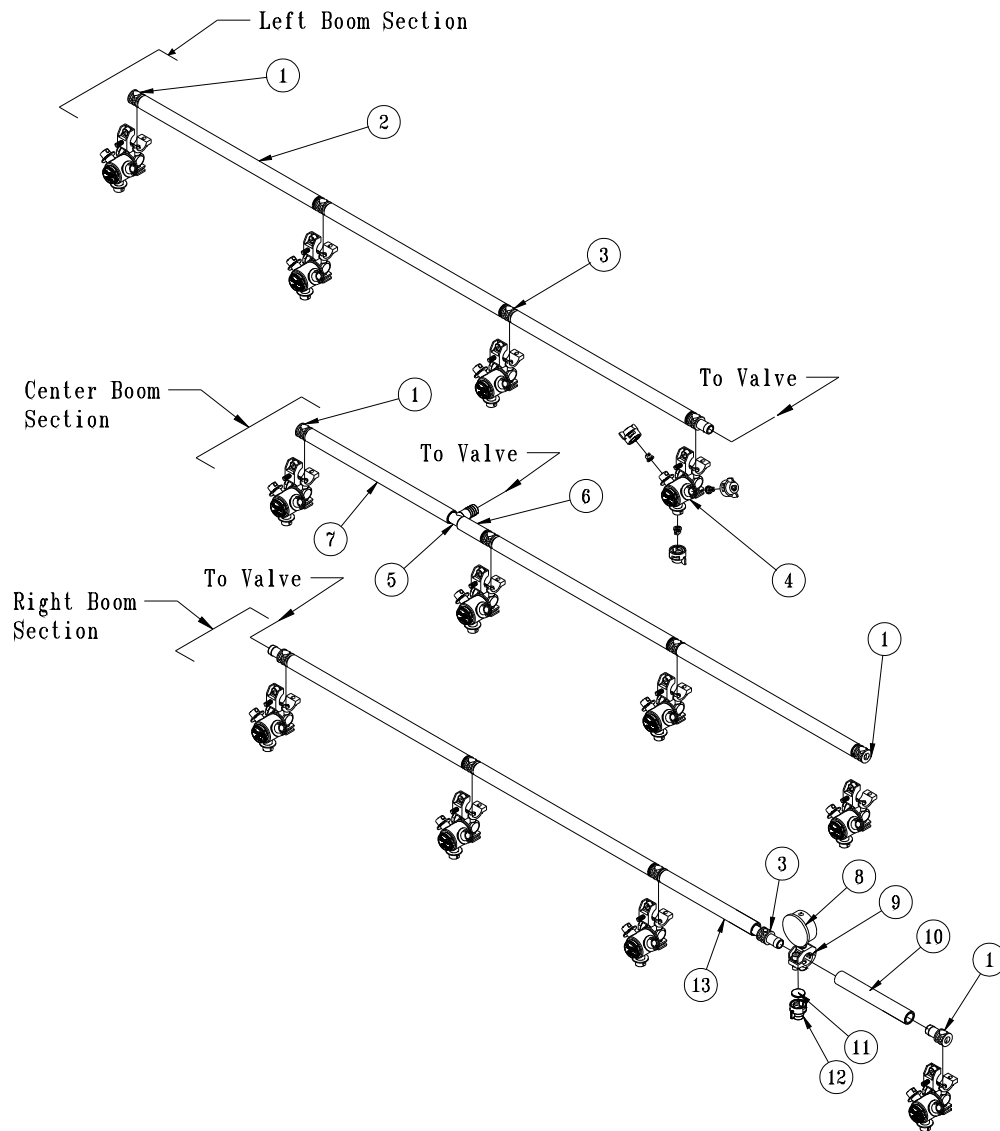
REF#	PART#	DESCRIPTION	QUANTITY
30	17-636	Fresh Water Tank Mount	1
31	HB-38-16-100	Hex Bolt, $\frac{3}{8}$ - 16 x 1	2
	HNFL-38-16	Flange Whiz-loc Nut, $\frac{3}{8}$ - 16	2
	HW-38	Flat Washer, $\frac{3}{8}$	2
32	17-635	Clean Load Mount	1
	8803-13	Black Trim, 13"	1
33	HB-12-13-300	Hex Bolt, $\frac{1}{2}$ - 13 x 3	2
	HNTL-12-13	Nylon Lock Nut, $\frac{1}{2}$ - 13	2
34	17-593	Limit Hinge, LH	1
	17-598	Torsion Spring, LH	1
35	17-592	Lock Hinge, LH	1
36	HB-38-16-300	Hex Bolt, $\frac{3}{8}$ - 16 x 3	2
	HNTL-38-16	Nylon Lock Nut, $\frac{3}{8}$ - 16	2

BOOM MOUNT TO TRUCK

REF#	PART#	DESCRIPTION	QUANTITY
A		Center Boom Mount	1
B	17-614	Boom Spacer	2
C	HB-516-18-100	Hex Bolt, $\frac{5}{16}$ -18 x 1	12
	HNTL-516-18	Nylon Lock Nut, $\frac{5}{16}$ -18	12
D	20-555	U-Hex Bolt	4
	HNFL-12-13	Flange Whiz-loc Nut, $\frac{1}{2}$ - 13	8

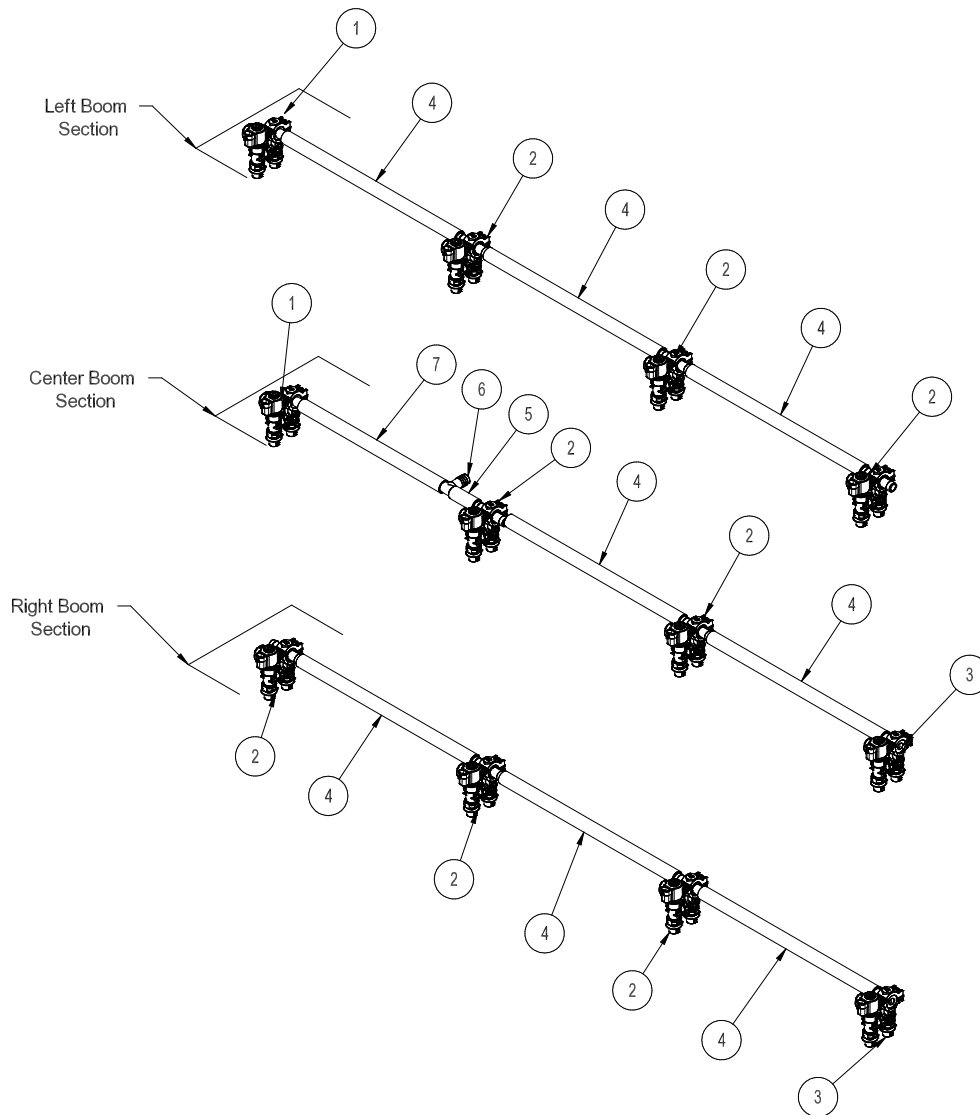


17-580 20' HD BOOM 2002D/2004D PLUMBING



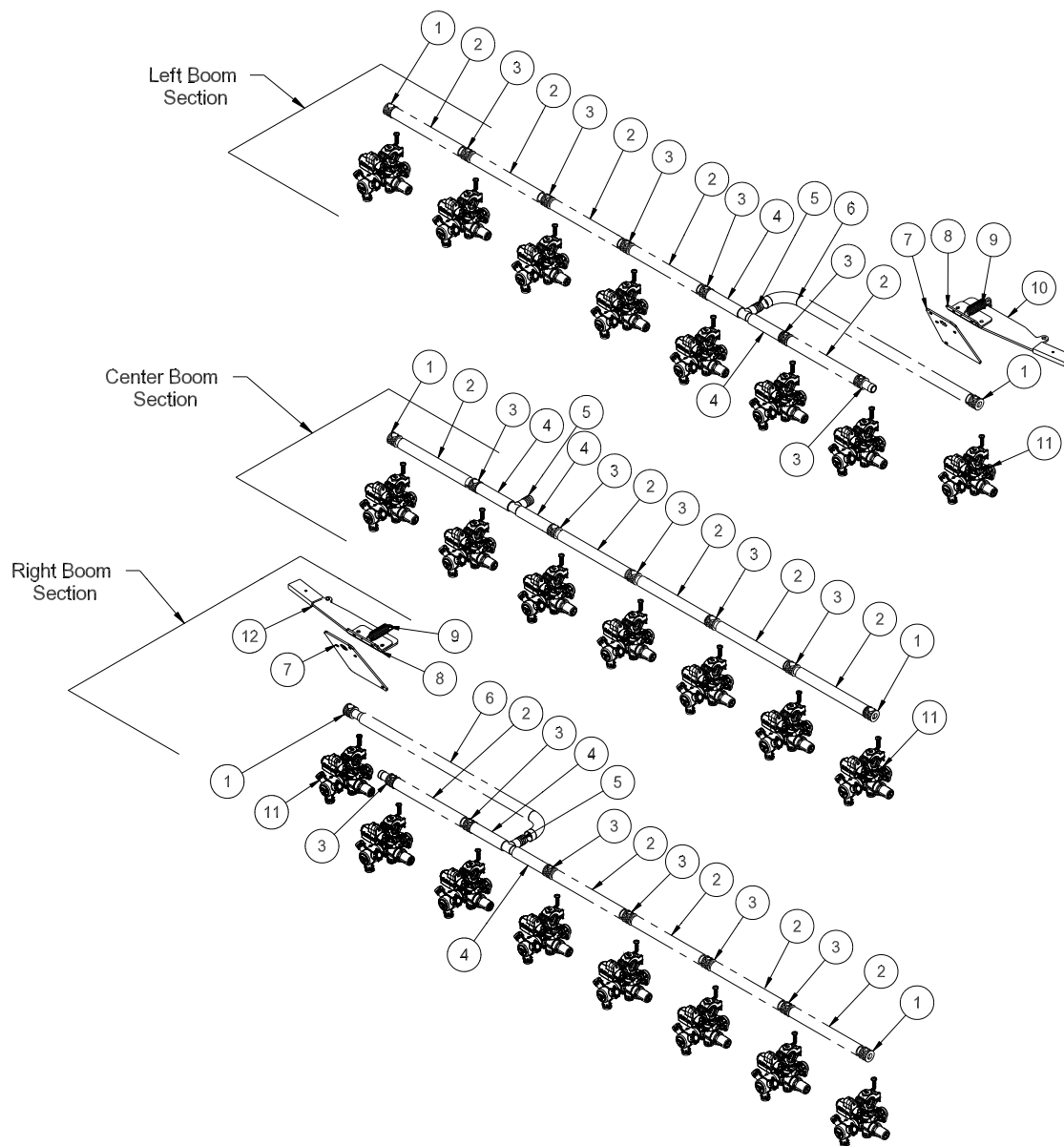
REF#	PART#	DESCRIPTION	QUANTITY
1	18-417	Single Barb	4
2	9032-19	Black Hose, 3/4" x 19"	7
	18-040	Hose Clamp	14
3	18-416	Double Barb	9
4	33-506	Nozzle body (see nozzle drawing)	12
5	18-415	3/4" Hose Barb	1
6	9032-2.5	Black Hose 3/4" x 2 1/2"	1
	18-040	Hose Clamp	2
7	9032-15.5	Black Hose 3/4" x 15 1/2"	1
	18-040	Hose Clamp	2
8	16-281	Gauge	1
9	17-602	Nozzle Body	1
10	9032-5	Black Hose 3/4" x 5"	1
	18-040	Hose Clamp	2
11	16-800	Strainer	1
12	16-921	Nozzle	1
13	9032-13	Black Hose 3/4" x 13"	1
	18-040	Hose Clamp	2

17-580 20' HD BOOM 2007D PLUMBING



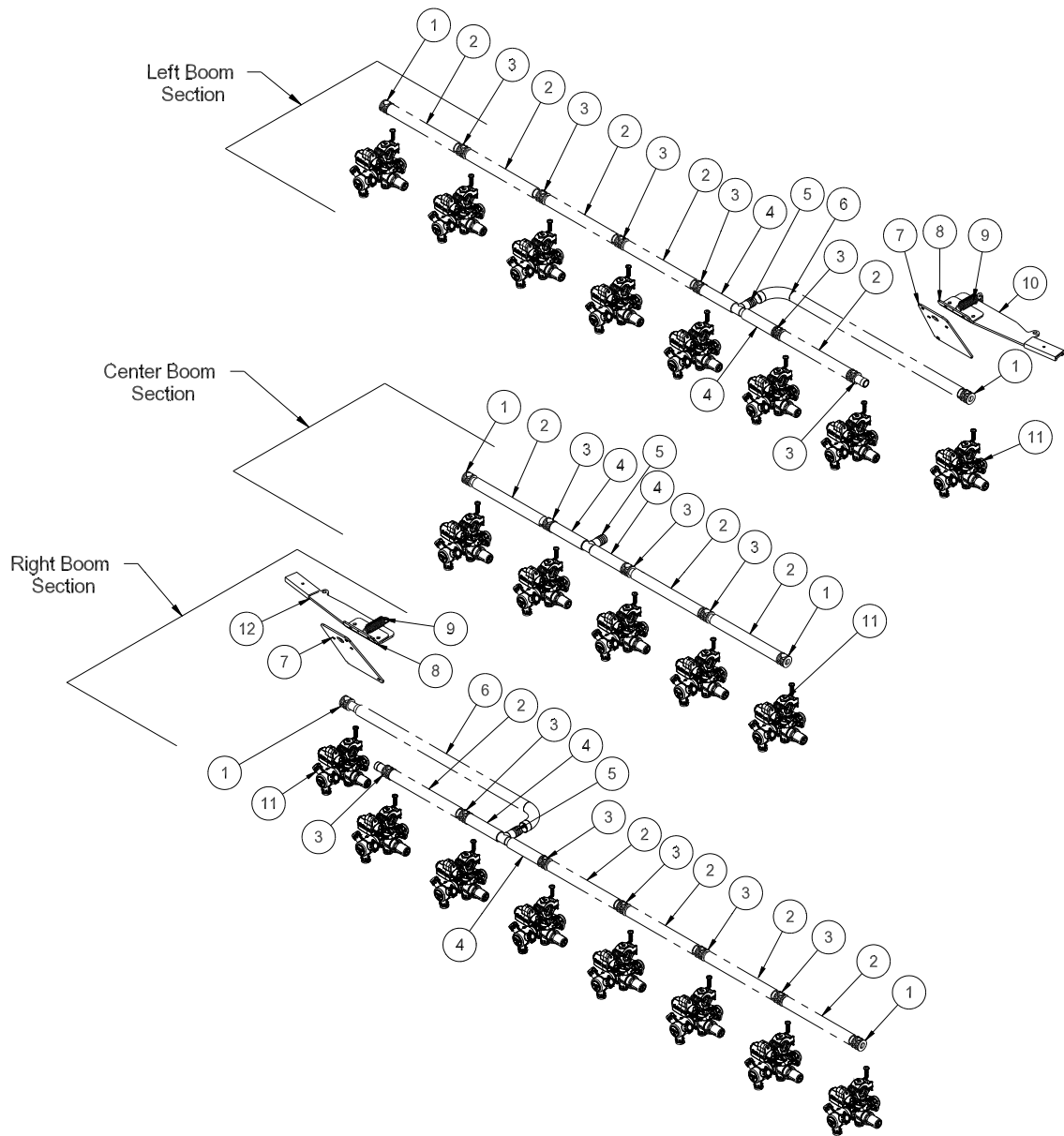
REF#	PART#	DESCRIPTION	QUANTITY
1	20-675	Single Hose Barb - Right Orientation	2
2	20-673	Single Hose Barb	8
3	20-674	Single Hose Barb - Left Orientation	2
4	9032-19	Black Hose, $\frac{3}{4}$ " x 19"	8
	18-040	Hose Clamp	16
5	9032-2.5	Black Hose, $\frac{3}{4}$ " x 2 $\frac{1}{2}$ "	1
	18-040	Hose Clamp	2
6	18-415	$\frac{3}{4}$ " Hose Barb	1
7	9032-15.5	Black Hose, $\frac{3}{4}$ " x 15 $\frac{1}{2}$ "	1
	18-040	Hose Clamp	2

17-580 20' HD BOOM 2006D PLUMBING



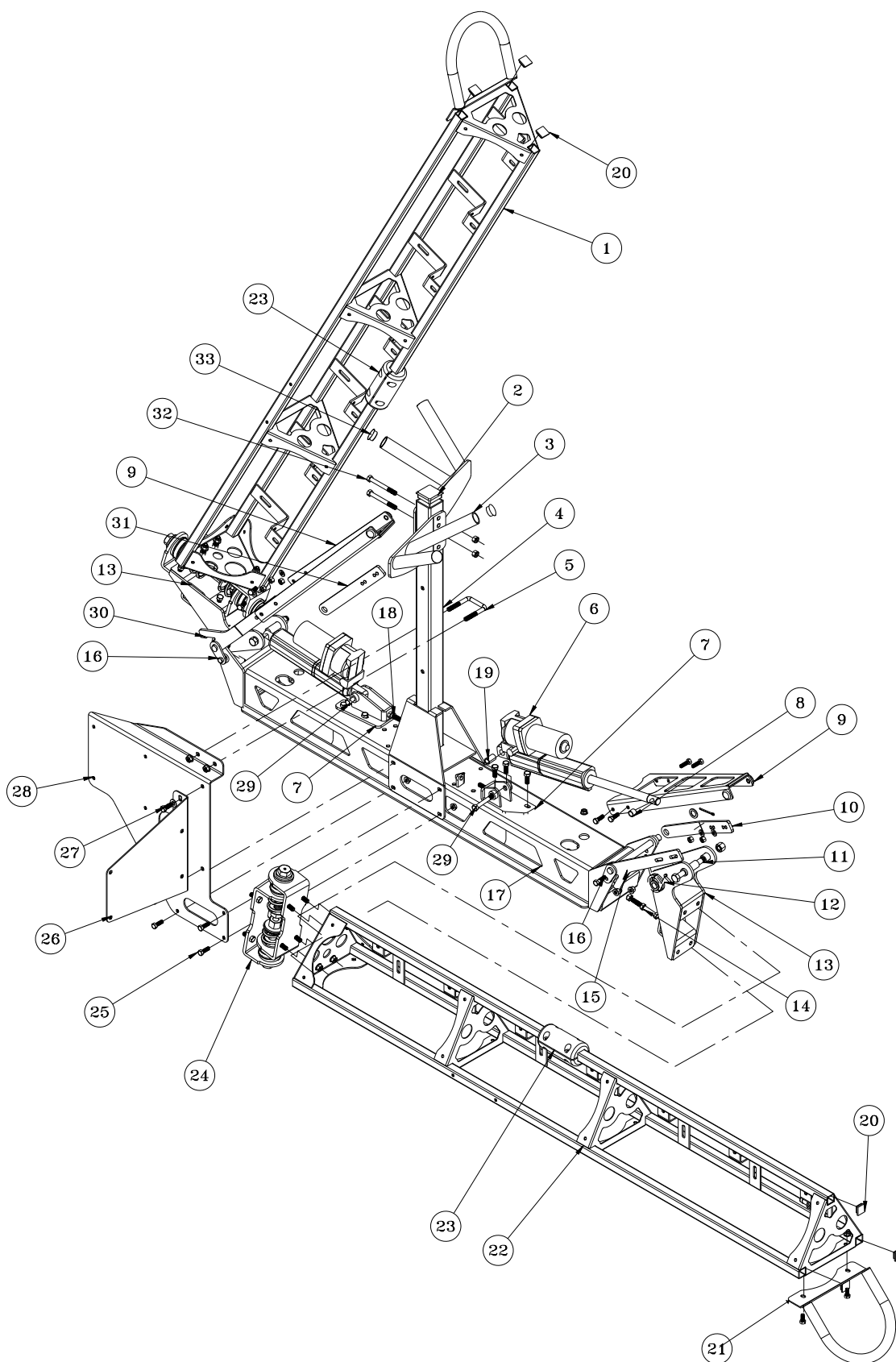
REF#	PART#	DESCRIPTION	QUANTITY
1	18-417	Single Barb	6
2	9032-8.5	Black Hose, $\frac{3}{4}$ " x 8.5"	15
	18-040	Hose Clamp	30
3	18-416	Double Barb	17
4	9032-4	Black Hose $\frac{3}{4}$ " x 4"	6
	18-040	Hose Clamp	12
5	18-415	$\frac{3}{4}$ " Hose Barb	3
6	9032-28	Black Hose $\frac{3}{4}$ " x 15 $\frac{1}{2}$ "	2
	18-040	Hose Clamp	4
7	17-559	Break-Away Mount	2
8	17-560	Hinge Mount	2
9	11-050	Spring	2
10	17-562	LH Break-Away Arm	1
11	20-807	Nozzle Body	23
12	17-561	RH Break-Away Arm	1

17-585 18' HD BOOM 2005D PLUMBING



REF#	PART#	DESCRIPTION	QUANTITY
1	18-417	Single Barb	6
2	9032-8.5	Black Hose, $\frac{3}{4}$ " x 8.5"	13
	18-040	Hose Clamp	26
3	18-416	Double Barb	15
4	9032-4	Black Hose $\frac{3}{4}$ " x 4"	6
	18-040	Hose Clamp	12
5	18-415	$\frac{3}{4}$ " Hose Barb	3
6	9032-28	Black Hose $\frac{3}{4}$ " x 15 $\frac{1}{2}$ "	2
	18-040	Hose Clamp	4
7	17-559	Break-Away Mount	2
8	17-560	Hinge Mount	2
9	11-050	Spring	2
10	17-562	LH Break-Away Arm	1
11	20-807	Nozzle Body	21
12	17-561	RH Break-Away Arm	1

17-585 18' HD BOOM DRAWING



Accessories

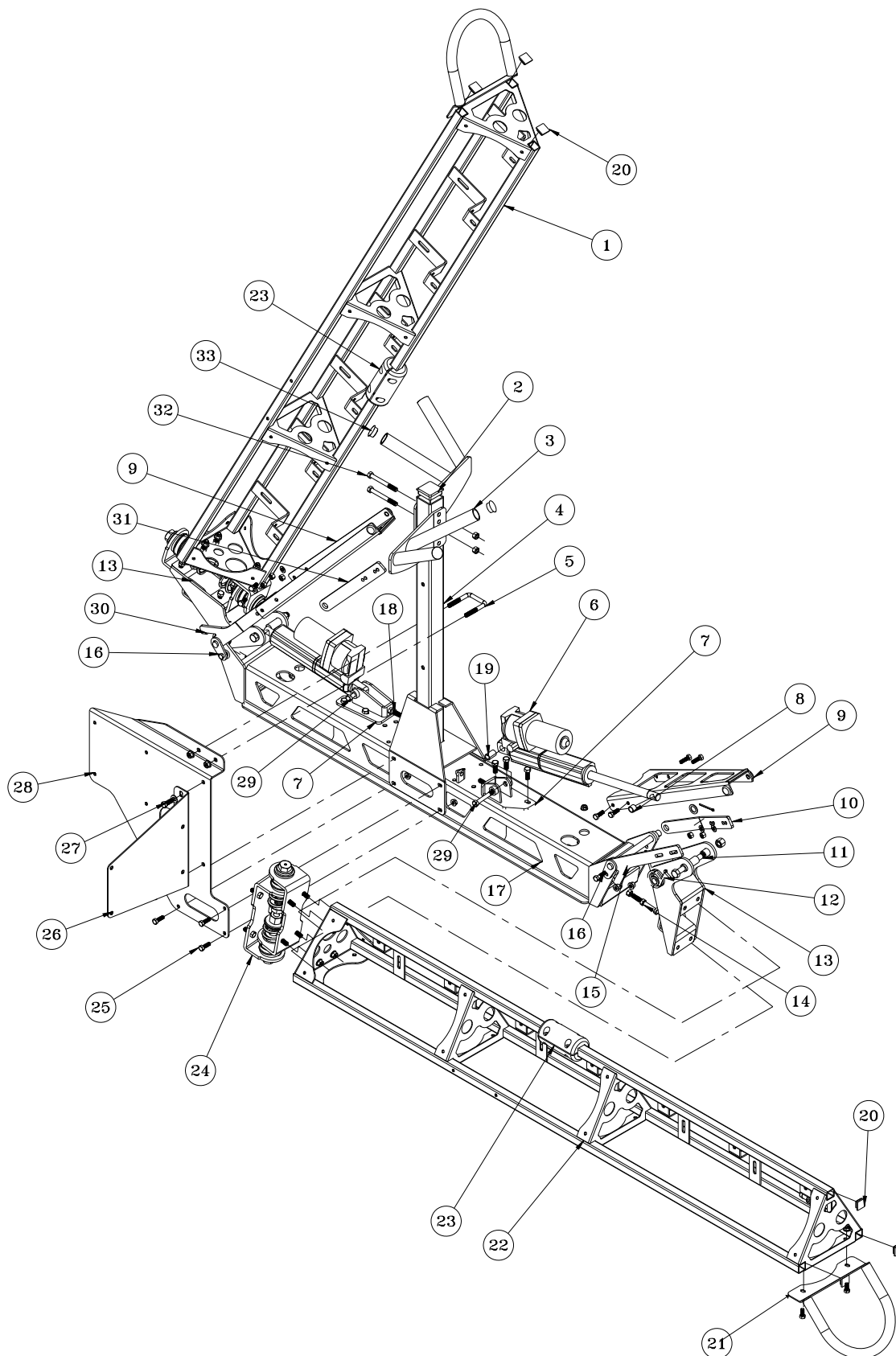
17-585 18' HD BOOM PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	17-652	Left Boom Arm	1
2	18-297	Cap Plug	1
3	17-617	Boom Nest	2
4	17-578	Boom Nest Post	1
5	17-537	Square U-Hex Bolt	1
6	30-214	KYB Electric/ Hydraulic Actuator (includes * items)	2
7	30-184	Ram Mount	2
	HN-38-16	Hex Nut, $\frac{3}{8}$ - 16 (for adjustment Hex Bolts)	4
	HB-38-16-100	Hex Bolt, $\frac{3}{8}$ - 16 x 1	6
	HW-38	Flat Washer, $\frac{3}{8}$	6
	HNFL-38-16	Flange Whiz-loc Nut, $\frac{3}{8}$ -16	6
8*	18-036	$\frac{1}{2}$ " Bushing (part of 30-214)	2
9	17-587	Boom Lock	2
	HB-516-18-100	Hex Bolt, $\frac{5}{16}$ - 18 x 1	8
	HW-516	Flat Washer, $\frac{5}{16}$	4
	HNTL-516-18	Nylon Lock Nut, $\frac{5}{16}$ -18	8
	42-116	Rubber Insert	4
	8803-2.75	Trim Lace, 2.75"	2
10	17-588	Lock Hinge, RH	1
11	HB-12-13-500	Hex Bolt, $\frac{1}{2}$ - 13 x 5	2
	HNTL-12-13	Nylon Lock Nut, $\frac{1}{2}$ - 13	2
12	17-597	Torsion Spring, RH	1
13	30-185	Arm Pivot Hinge	2
	HG-14-28-180	Grease Fitting, $\frac{1}{4}$ - 28 x 180°	2
	76-128	Bushing (part of 30-185)	4
14	HB-38-16-175	Hex Bolt, $\frac{3}{8}$ - 16 x $1\frac{3}{4}$	2
	HNFL-38-16	Flange Whiz-loc Nut, $\frac{3}{8}$ - 16	4
15	17-589	Limit Hinge, RH	1
16	17-596	Hinge Pin w/ Spacer	2
	HP-18-100	Cotter Pin $\frac{1}{8}$ x 1	2
	HB-516-18-100	Hex Bolt, $\frac{5}{16}$ - 18 x 1	2
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ -18	2
17	17-650	Boom Center	1
18	HB-38-16-100	Hex Bolt, $\frac{3}{8}$ - 16 x 1	2
	HNFL-38-16	Hex Nut, $\frac{3}{8}$ - 16	4
19*	18-234	1" Bushing (part of 30-214)	2
20	30-258	Ribbed 1" Plug	10
21	17-541	Boom End Guard	2
	HBFL-516-18-075	Hex Bolt, $\frac{5}{16}$ - 18 x $\frac{3}{4}$	4
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ - 18	4
22	17-653	Right Boom Arm	1
23	17-573	Guide Block Set	2
	HB-14-20-125	Hex Bolt, $\frac{1}{4}$ - 20 x $1\frac{1}{4}$	8
	HNTL-14-20	Nylon Lock Nut, $\frac{1}{4}$ - 20	8
24	17-632	Boom Hinge Complete	2
	HB-38-16-100	Hex Bolt, $\frac{3}{8}$ - 16 x 1	16
	HNFL-38-16	Flange Whiz-loc Nut, $\frac{3}{8}$ - 16	16
25	HB-516-18-100	Hex Bolt, $\frac{5}{16}$ - 18 x 1	8
	HW-516	Flat Washer, $\frac{5}{16}$	8
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ - 18	8

(Continue on next page)



17-585 18' HD BOOM DRAWING



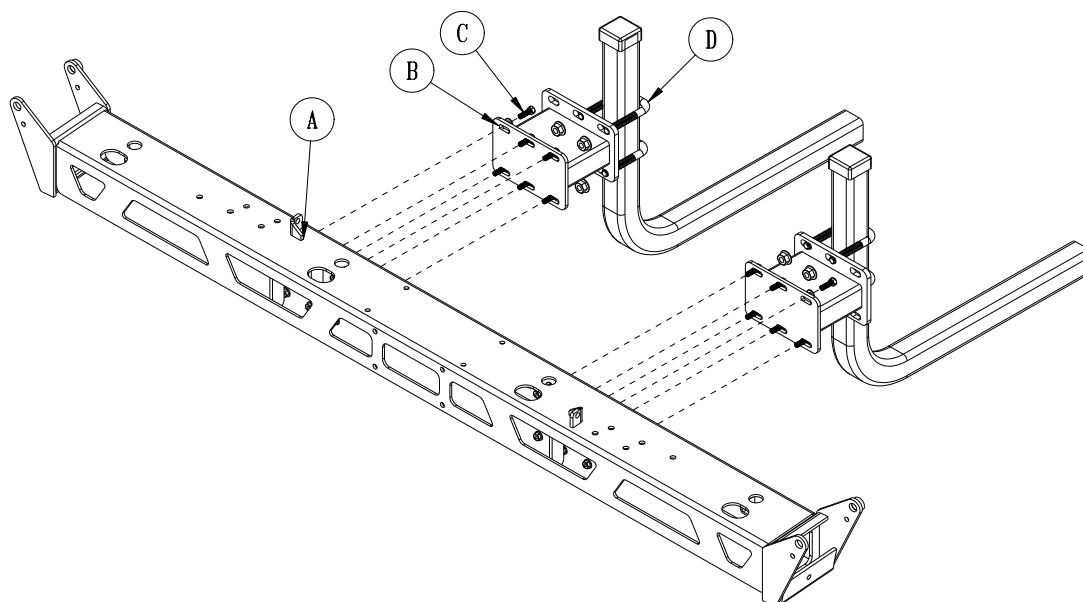
Accessories

17-585 18' HD BOOM PARTS LIST

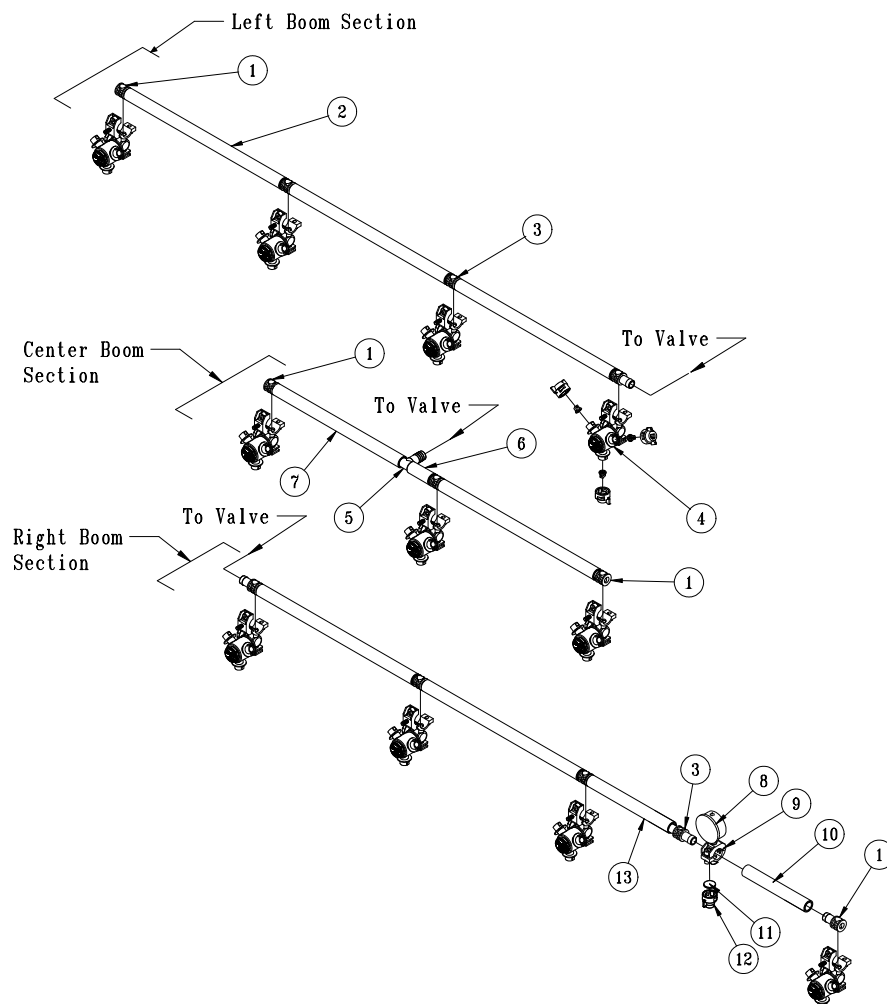
REF#	PART#	DESCRIPTION	QUANTITY
26	17-636	Fresh Water Tank Mount	1
27	HB-38-16-100	Hex Bolt, $\frac{3}{8}$ - 16 x 1	2
	HNFL-38-16	Flange Whiz-loc Nut, $\frac{3}{8}$ - 16	2
	HW-38	Flat Washer, $\frac{3}{8}$	2
28	17-635	Clean Load Mount	1
	8803-13	Black Trim x 13"	1
29	HB-12-13-300	Hex Bolt, $\frac{1}{2}$ - 13 x 3	2
	HNTL-12-13	Nylon Lock Nut, $\frac{1}{2}$ - 13	2
30	17-593	Limit Hinge, LH	1
	17-598	Torsion Spring, LH	1
31	17-592	Lock Hinge, LH	1
32	HB-38-16-300	Hex Bolt, $\frac{3}{8}$ - 16 x 3	2
	HNTL-38-16	Nylon Lock Nut, $\frac{3}{8}$ - 16	2
33	17-619	Tube Cap	4

BOOM MOUNT TO TRUCK

REF#	PART#	DESCRIPTION	QUANTITY
A		Center Boom Mount	1
B	17-614	Boom Spacer	2
C	HB-516-18-100	Hex Bolt, $\frac{5}{16}$ -18 x 1	12
	HNTL-516-18	Nylon Lock Nut, $\frac{5}{16}$ -18	12
D	20-555	U-Hex Bolt	4
	HNFL-12-13	Flange Whiz-loc Nut, $\frac{1}{2}$ - 13	8

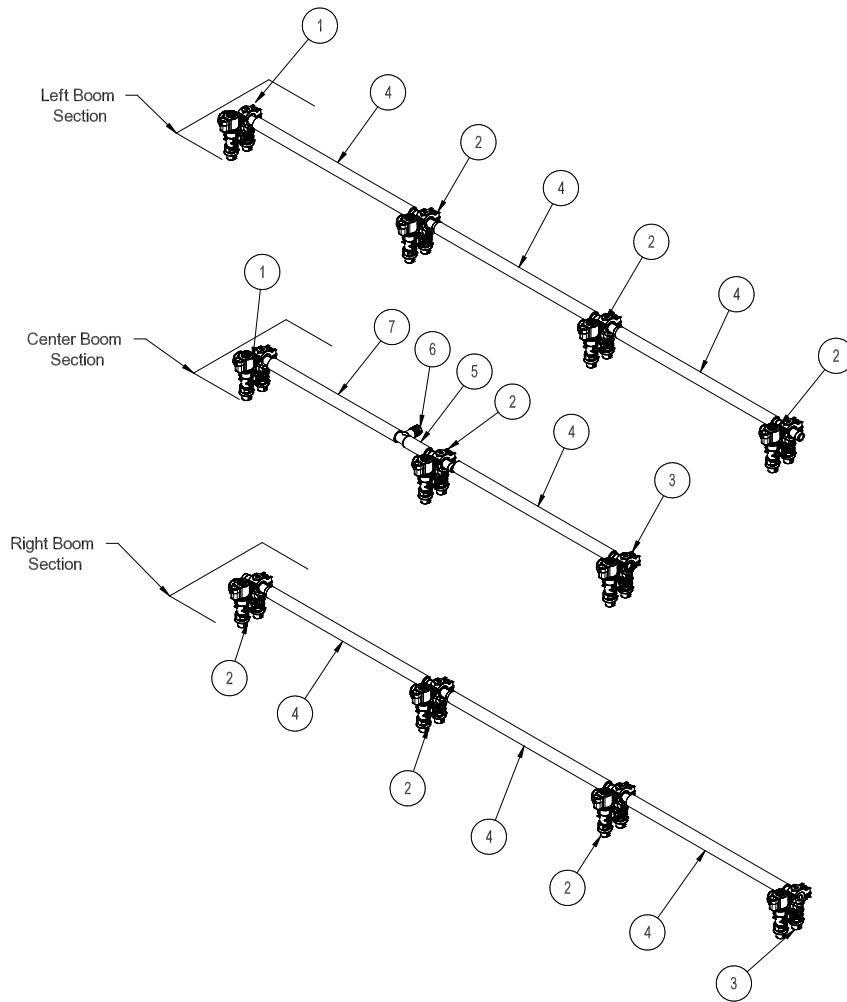


17-585 18' HD BOOM 2002D/2004D PLUMBING



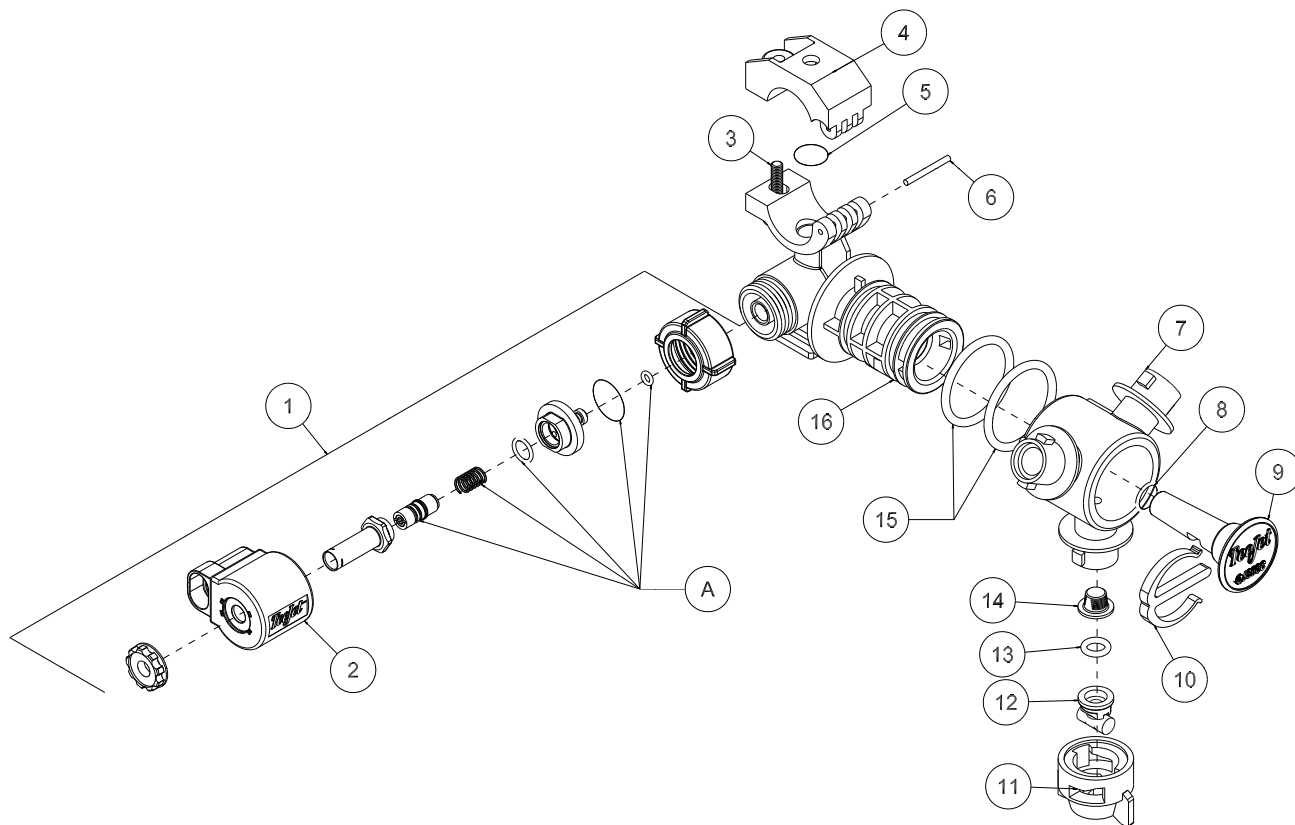
REF#	PART#	DESCRIPTION	QUANTITY
1	18-417	Single Barb	4
2	9032-19	Black Hose, 3/4" x 19"	6
	18-040	Hose Clamp	12
3	18-416	Double Barb	8
4	33-506	Nozzle body (see nozzle drawing)	11
5	18-415	3/4" Hose Barb	1
6	9032-2.5	Black Hose, 3/4" x 2 1/2"	1
	18-040	Hose Clamp	2
7	9032-15.5	Black Hose, 3/4" x 15 1/2"	1
	18-040	Hose Clamp	2
8	16-281	Gauge	1
9	17-602	Nozzle Body	1
10	9032-5	Black Hose, 3/4" x 5"	1
	18-040	Hose Clamp	2
11	16-800	Strainer	1
12	16-921	Nozzle	1
13	9032-13	Black Hose, 3/4" x 13"	1
	18-040	Hose Clamp	2

17-585 18' HD BOOM 2008D PLUMBING



REF#	PART#	DESCRIPTION	QUANTITY
1	20-675	Single Hose Barb - Right Orientation	2
2	20-673	Single Hose Barb	8
3	20-674	Single Hose Barb - Left Orientation	2
4	9032-19	Black Hose, $\frac{3}{4}$ " x 19"	7
	18-040	Hose Clamp	14
5	9032-2.5	Black Hose, $\frac{3}{4}$ " x $2\frac{1}{2}$ "	1
	18-040	Hose Clamp	2
6	18-415	$\frac{3}{4}$ " Hose Barb	1
7	9032-15.5	Black Hose, $\frac{3}{4}$ " x $15\frac{1}{2}$ "	1
	18-040	Hose Clamp	2
10			
18	17-632	Boom Hinge Complete	2
	HB-38-16-100	Bolt, $\frac{3}{8}$ - 16 x 1	16
	HNFL-38-16	Lock Nut, $\frac{3}{8}$ - 16	16
19	30-185	Arm Pivot Hinge	2
	HG-14-28-180	Grease Fitting, $\frac{1}{4}$ - 28 x 180°	2
	76-128	Bushing (part of 30-185)	4
20	17-597	Torsion Spring, RH	1
21	HB-38-16-175	Bolt, $\frac{3}{8}$ - 16 x $1\frac{3}{4}$	2
	HNFL-38-16	Flange Lock Nut, $\frac{3}{8}$ - 16	4

20-807 NOZZLE 2005D/2006D



REF#	PART#	DESCRIPTION	QUANTITY
1	20-807-01	e-Chemsaver	1
2	20-673-09	12V Coil	1
3		Stainless Steel Screw	1
4		Upper Clamp	1
5	16-920-03	O-ring	1
6		Pivot Pin, Stainless Steel	1
7		Turret, 3-Outlet, Nylon	1
8		O-ring, EPDM	1
9		Plug	1
10		E-clip	1
11	20-838	Cap - Gray	1
12	20-837	Turbo Twinjet Nozzle Tip, Cap & Gasket - Gray	1
13	16-800	Viton Gasket	1
14	16-802	Strainer	1
15		O-ring, Teflon	2
16	33-506	Body Assembly	1
A	20-807-02	Spare Parts Kit	

Quantity is per nozzle body. For 20' booms multiply quantity by 23.

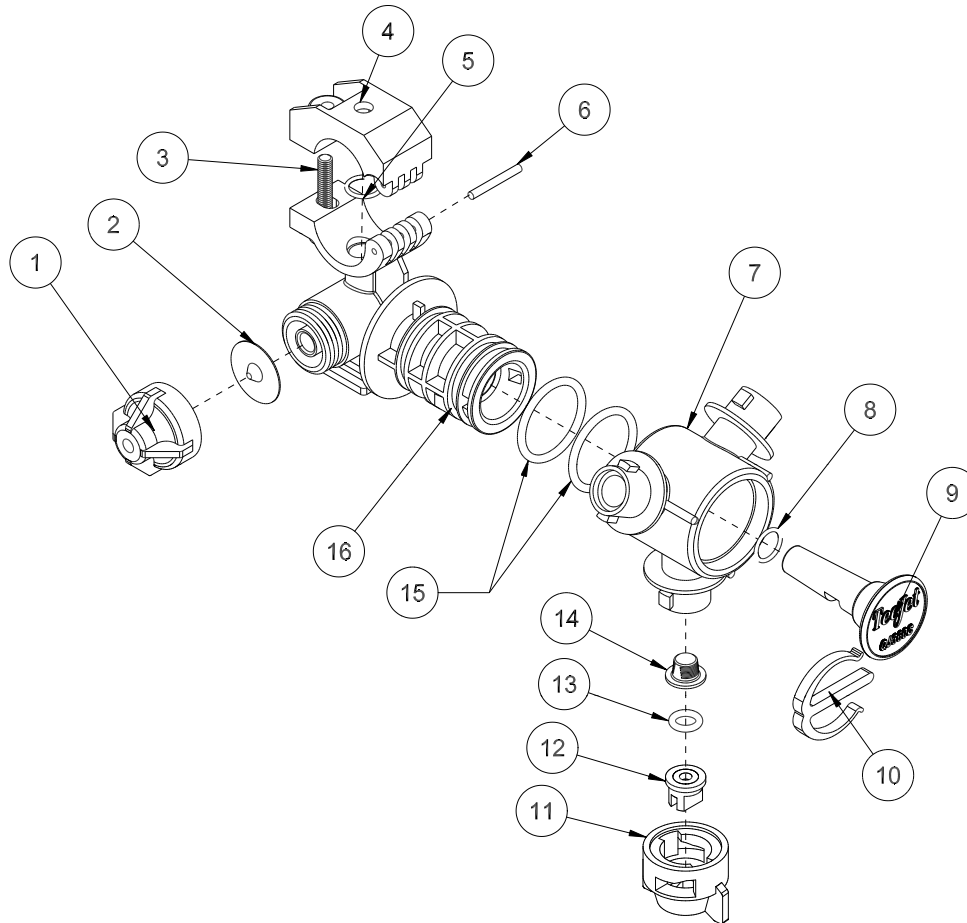
Quantity is per nozzle body. For 18' booms multiply quantity by 21.

Quantity is per nozzle body. For 15' booms multiply quantity by 17.

Nozzles are located 10" (25 cm) apart on the right, left, and center tubes.

Nozzles are 20" high off ground.

33-506 STANDARD NOZZLE ASSEMBLY



REF#	PART#	DESCRIPTION	QUANTITY
1*	16-988	Cap Assembly	1
2*	16-920-06	Diaphragm, EPDM	1
3*		Stainless Steel Screw	1
4*		Upper Clamp	1
5*	16-920-03	O-ring	1
6*		Pivot Pin, Stainless Steel	1
7		Turret, 3-Outlet, Nylon	1
8		O-ring, EPDM	1
9*		Plug	1
10*		E-clip	1
11	33-538	Cap - White	1
12	33-554	Nozzle Tip - White (XR11008-VS)	1
13	16-800	Viton Gasket	1
14	16-802	Strainer	1
15*		O-ring, Teflon	2
16*	33-506	Body Assembly (includes all * items)	1

Quantity is per nozzle body. For 20' booms multiply quantity by 12.

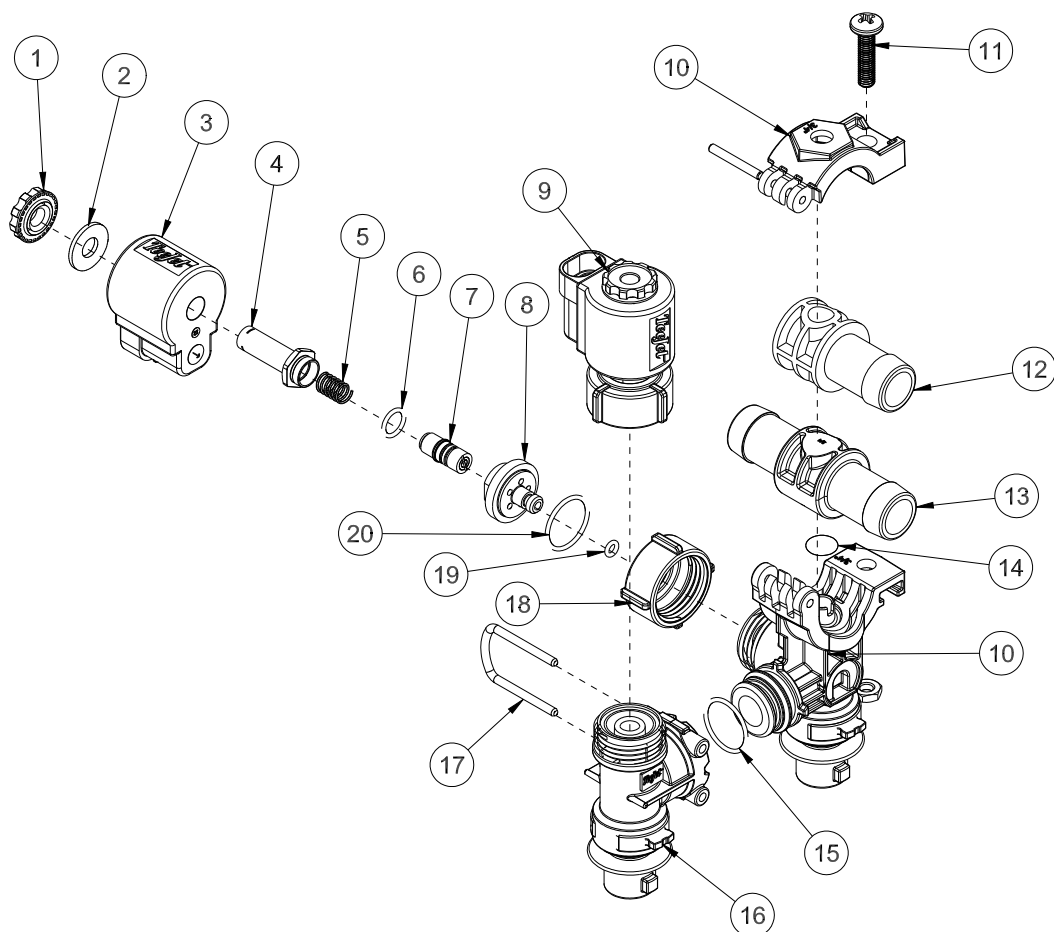
Quantity is per nozzle body. For 18' booms multiply quantity by 11.

Quantity is per nozzle body. For 18' booms multiply quantity by 9.

Nozzles are located 20" (51 cm) apart on the right, left, and center tubes.

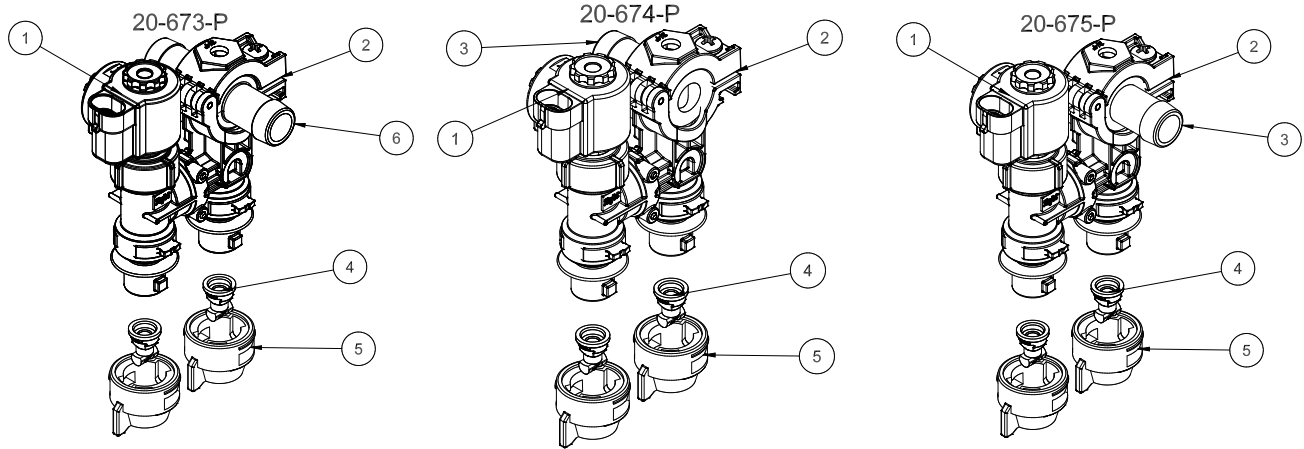
Nozzles are 20" high off ground.

2007D/2008D NOZZLE DRAWING



REF#	PART#	DESCRIPTION	QUANTITY
1		Nylon Black Nut	1
2		303 Stainless Steel Washer	1
3	20-673-09	12V Coil Assembly	1
4		Tube Sub Assembly	1
5*		302 Stainless Steel Spring	1
6*		Viton O-ring	1
7*		Plunger	1
8		303 Stainless Steel Cap	1
9	20-673-02	E-Chemsaver Solenoid	1
10	20-673-04	3/4" Mount Assembly	1
11		Pan Head Screw	1
12	18-417	Single Barb (part of 20-674-P and 20-675-P)	1
13	18-416	Double Barb (part of 20-673-P)	1
14	16-920-03	O-ring	1
15	20-673-11	O-ring	1
16	20-673-05	End Body Sub-assembly	1
17	20-673-08	Retaining Clip	1
18		Locking Ring	1
19*	20-673-07	Viton O-ring	1
20*	20-673-06	Viton Gasket	1
*	20-673-01	Spare Parts Kit	

2007D/2008D NOZZLE ASSEMBLY



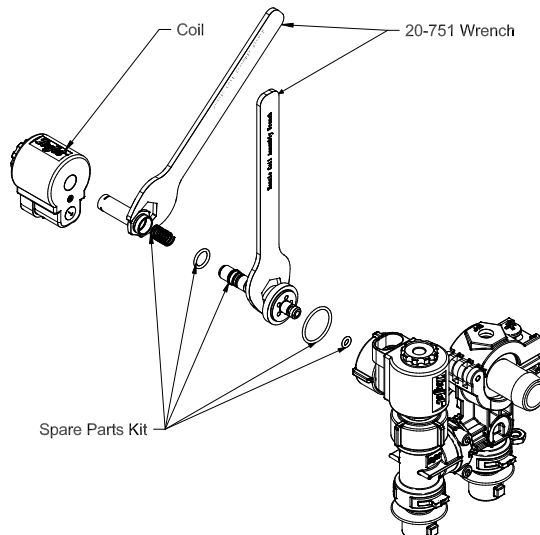
REF#	PART#	DESCRIPTION	QUANTITY
1*	20-673-02	E-Chemsaver®	1
2*	20-673-04	$\frac{3}{4}$ " Bottom Mount Nozzle Body	1
3†	18-417	Single Barb	1
4	20-676	Turbo TeeJet Tip	2
5	20-677	QT White Cap and Washer	2
6‡	18-416	Double Hose Barb	1

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

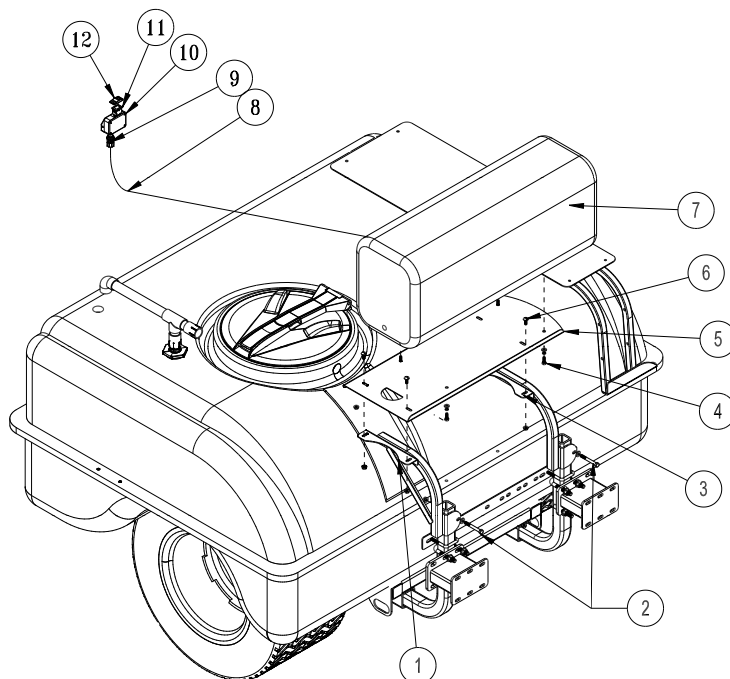
Quantity is per nozzle body. For 20' booms multiply quantity by 12.

20-673	Double Hose Barb Nozzle (includes * and ‡ item)	8 or 9
20-674	Single Hose Barb Left Orientation (includes * and † item)	2
20-675	Single Hose Barb - Right Orientation (includes * and † item)	2

Nozzles are located 20" (51 cm) apart on the right, left, and center tubes. Nozzles are 20" high off ground.



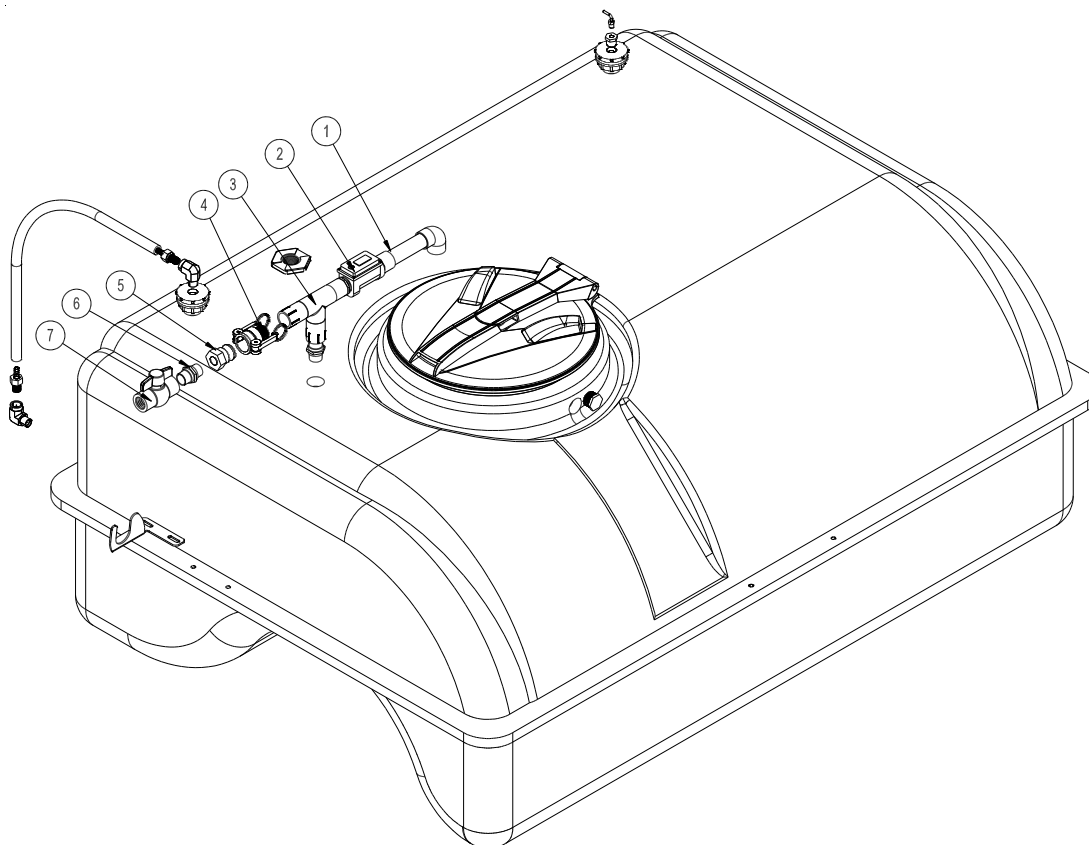
20-760 26 GALLON WASH TANK



REF#	PART#	DESCRIPTION	QUANTITY
1	20-726	LH Tank Mount	1
2	HB-38-16-300	Hex Bolt, $\frac{3}{8}$ - 16 x 3	2
	HW-38	Flat Washer $\frac{3}{8}$	2
	HNFL-38-16	Flange Whiz-Loc Nut, $\frac{3}{8}$ - 16	2
3	20-723	RH Tank Mount	1
4	HB-516-18-075	Hex Bolt, $\frac{5}{16}$ - 18 x $\frac{3}{4}$	4
	HW-516	Flat Washer, $\frac{5}{16}$	4
	HWL-516	Lockwasher, $\frac{5}{16}$	4
5	20-759	Tank Base	1
6	HSTP-516-18-075	Phillips Machine Screw, $\frac{5}{16}$ - 18 x $\frac{3}{4}$	4
	HNFL-516-18	Flange Whiz-Loc Nut, $\frac{5}{16}$ - 18	4
7	30-349	26 Gallon Wash Tank w/ Electric Motor	1
8	30-389	Wire Harness	1
9	18-445	Cord Connector	1
10	30-391	Switch Box	1
11	15-726	Lighted Switch	1
12	15-731	Amber Rocker	1

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
6	16-851	1" Nipple (already on machine)	1
7	18-448	1" Ball Valve (already on machine)	1

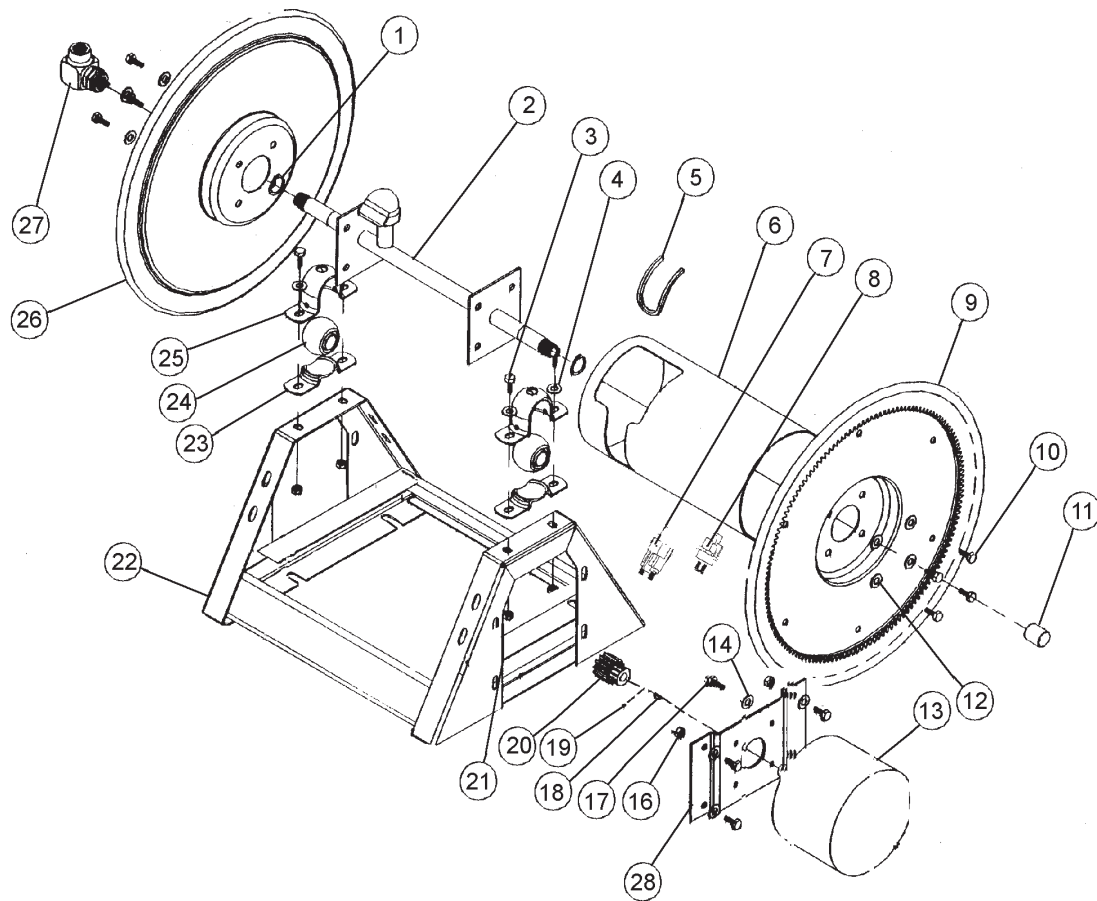
1. Thoroughly flush the service line upstream of the meter to remove dirt and debris.
2. The DLJ Meter is for use **only** with **COLD WATER** up to 122°F (50°C)
3. Slowly open any upstream valves to prevent damage to the meter.

Gallons to Cubic feet Conversion :

Multiply gallons reading by 0.1337 to get cubic feet.

There are 7.48052 gallon per cubic foot.

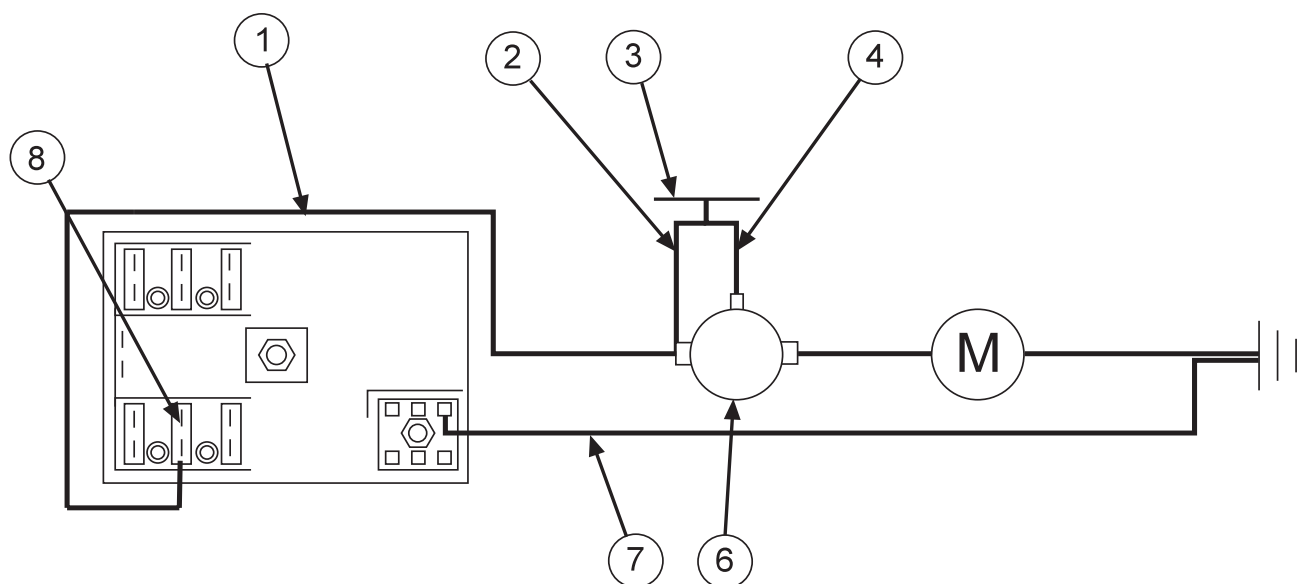
30-010 ELECTRIC HOSE REEL DRAWING



30-010 ELECTRIC 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	Hex Bolt, $\frac{3}{8}$ - 16 x 1	4
4	HW-38	Flat 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	Hex Bolt, $\frac{1}{4}$ - 20 x $\frac{3}{4}$	2
	HWL-14	Lock Washer, $\frac{1}{4}$	2
	HN-14-20	Hex 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	Hex Bolt, $\frac{5}{16}$ - 18 x $\frac{3}{4}$	8
11	16-906-26	Pipe Cap, $\frac{3}{4}$	1
12	HWL-516	Lock Washer, $\frac{5}{16}$	8
13	16-906-15	Motor 12VDC	1
14	HW-516	Flat Washer, $\frac{5}{16}$	4
16	HNTL-516-18	Nylon Lock Nut, $\frac{5}{16}$ - 18	4
17	HB-516-18-100	Hex 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	Nylon 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
	16-982	Electric Hose Reel (only)	1

ELECTRIC HOSE REEL WIRING DIAGRAM



REF#	PART#	DESCRIPTION	QUANTITY
1	8843-132	Flexguard $\frac{3}{8}$ 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	$\frac{5}{16}$ - 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

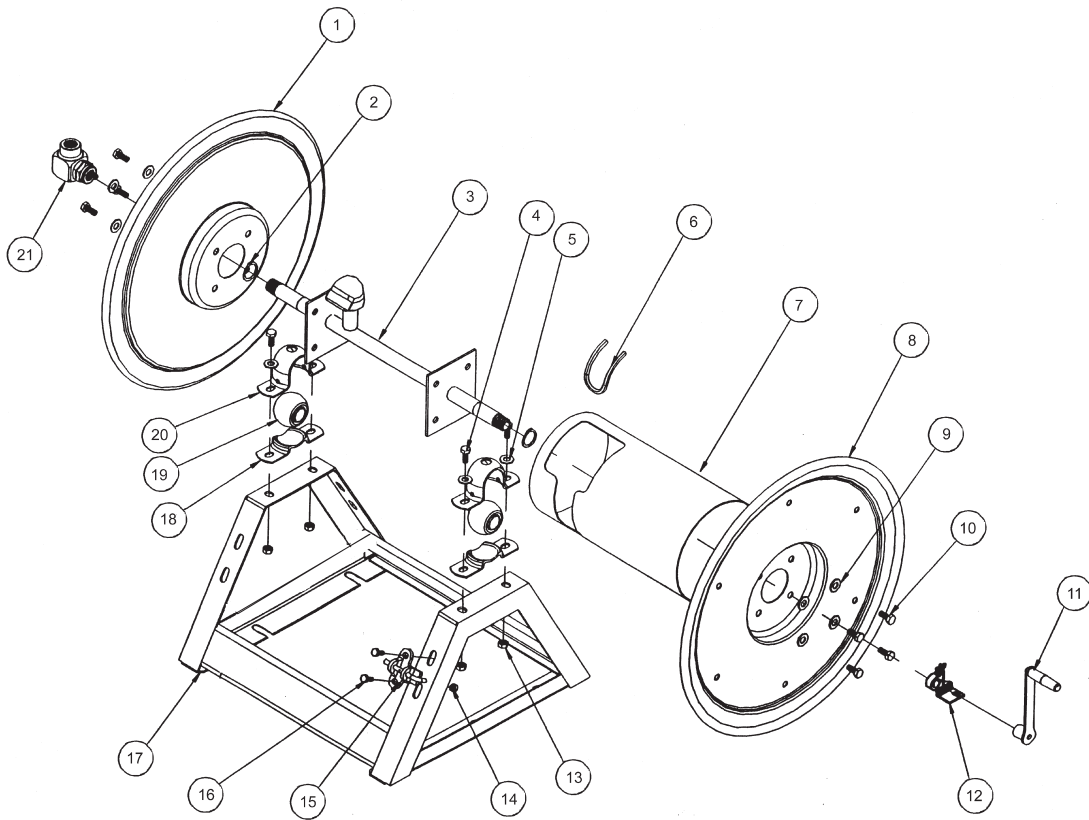
CONNECTION INSTRUCTIONS

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 $\frac{3}{8}$ ". Place one 8963 heat shrink ($\frac{1}{4} \times 1\frac{1}{4}$ ") 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.

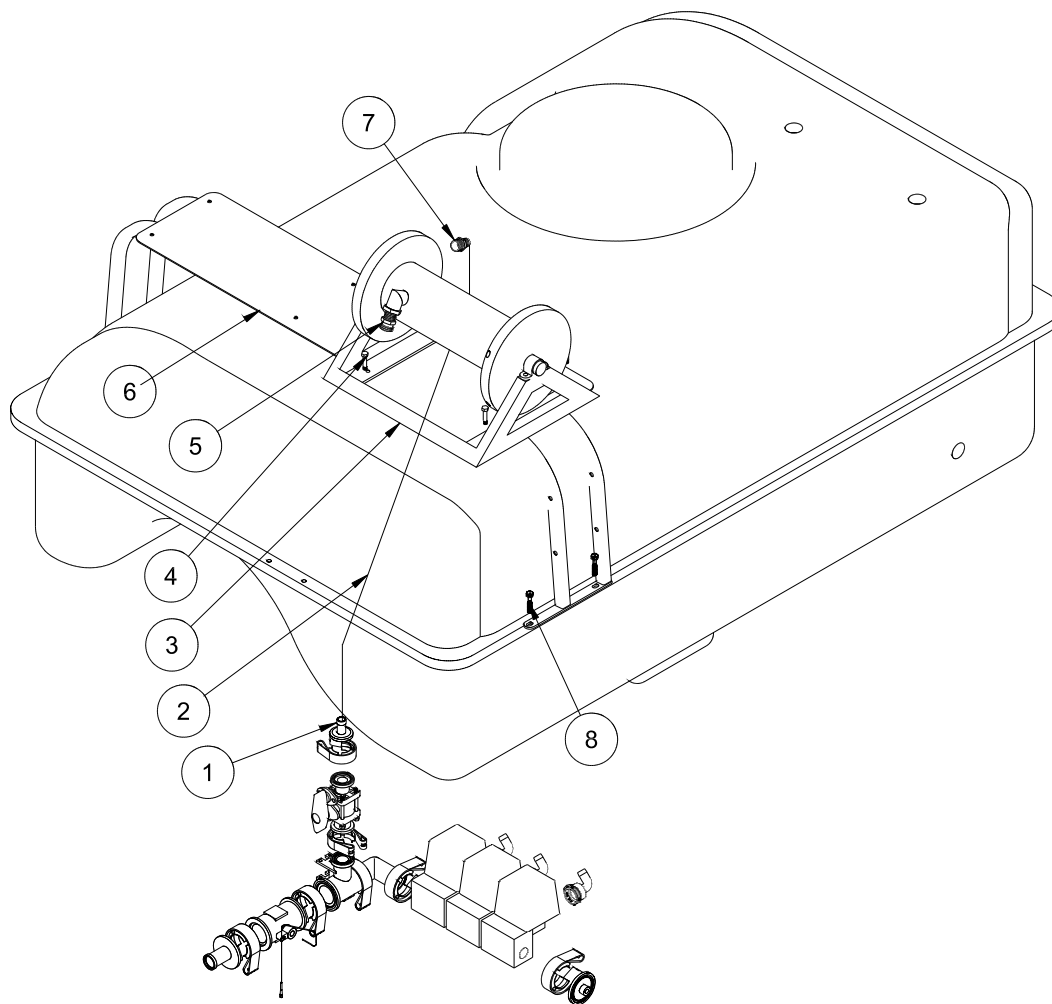
Use Dielectric Grease On All Electrical Connections

30-009 MANUAL HOSE REEL DRAWING



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	Hex Bolt, 3/8 - 16 x 1	4
5	HW-38	Flat 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	Lock Washer, 5/16	8
10	HB-516-18-075	Hex 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	Nylon Lock Nut, 3/8 - 16	4
14	HNTL-516-18	Nylon Lock Nut, 5/16 - 18	2
15	16-129-03	Lock Pin Assembly	1
16	HB-516-18-075	Hex Bolt, 5/16 - 18 x 3/4	2
	HW-516	Flat 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

HOSE REEL MOUNT DRAWING



HOSE REEL MOUNT PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	15-749	Hose Barb, $\frac{3}{4}$ "	1
2	9032-110	$\frac{3}{4}$ " Black Hose 110"	1
	18-040	Hose Clamp	2
3	16-129	Manual Rewind Hose Reel	1
4	HB-516-18-150	Hex Bolt, $\frac{5}{16}$ - 18 x $1\frac{1}{2}$	4
	HW-516	Flat Washer, $\frac{5}{16}$	4
	HNTL-516-18	Nylon Lock Nut, $\frac{5}{16}$ - 18	4
5	16-295	Hose Fitting, $\frac{3}{4}$ "	1
6		Hose Reel Mount bracket (part of machine)	1
7	18-249	Barb Fitting	1
8	HB-516-18-175	Hex Bolt, $\frac{5}{16}$ - 18 x $1\frac{3}{4}$	4
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ - 18	4

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. Put hose reel on hose reel bracket with fitting to the rear of machine. Use four Hex Bolts $\frac{5}{16}$ - 18 x $1\frac{1}{2}$ and four $\frac{5}{16}$ - 18 Nylon Lock Nuts to hold in place. Tighten Hex Bolts.
5. Put 18-249 barb fitting into hose reel side.
6. Place the 16-295 Hose Fitting into the Hose reel center.
7. Remove the blank cover from the ball valve by the manifold valve and place the 15-749 Hose Barb. Tighten clamp.
8. Route hose from the hose barb on the ball valve to the barb fitting on the side of the hose reel. Hold in place with the two 18-040 clamps.
9. Be sure all clamps and hardware are tight before using.

HOSE REEL ADJUSTMENTS

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.

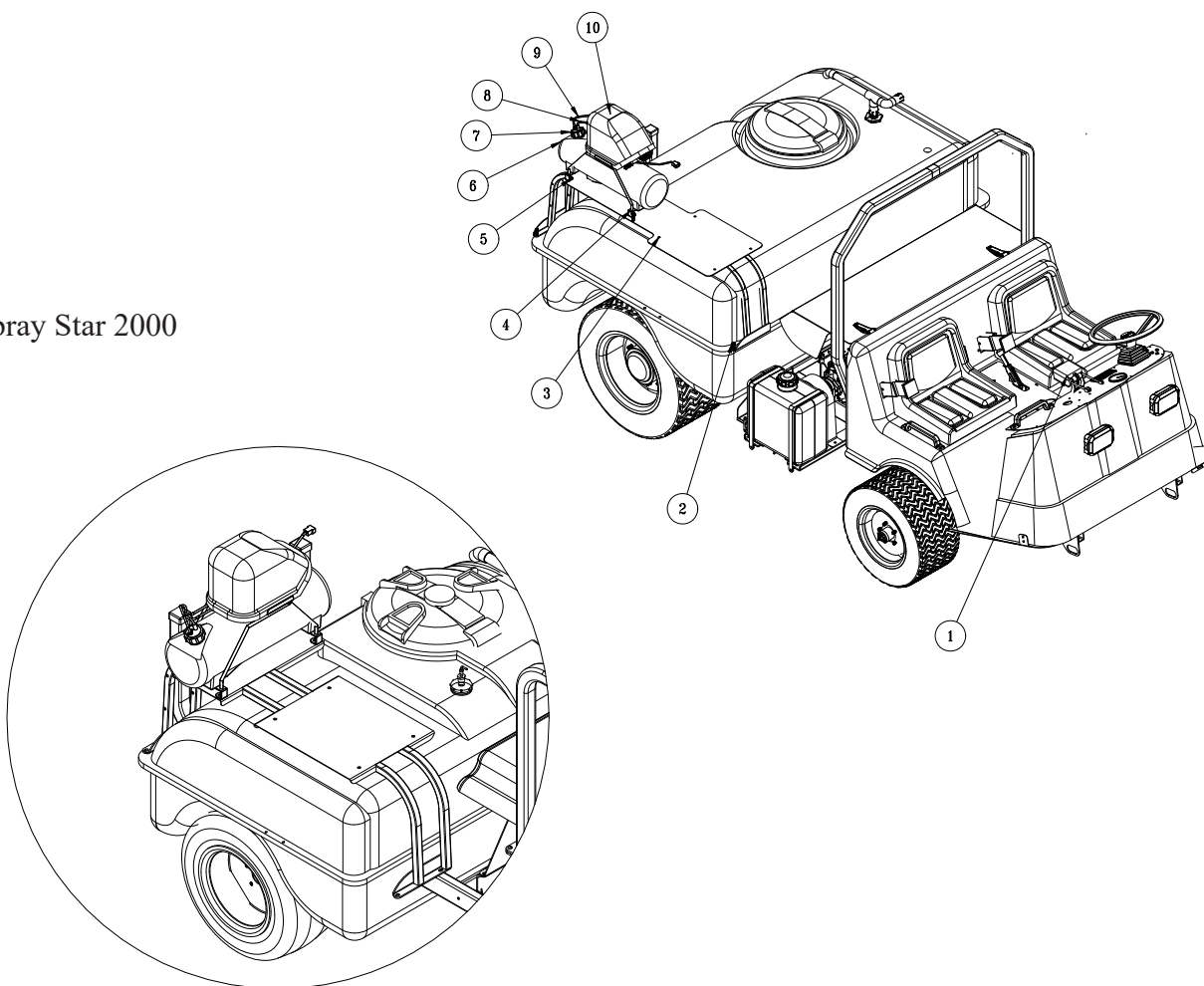
HOSE REPLACEMENT PROCEDURE:

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.

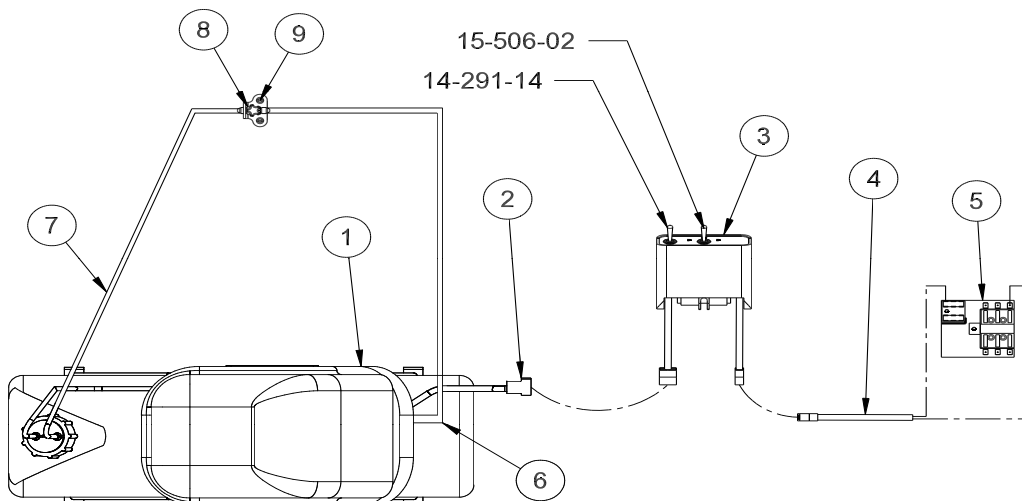
30-004 FOAM MARKER DRAWING

Spray Star 3180

Spray Star 2000



WIRING DRAWING



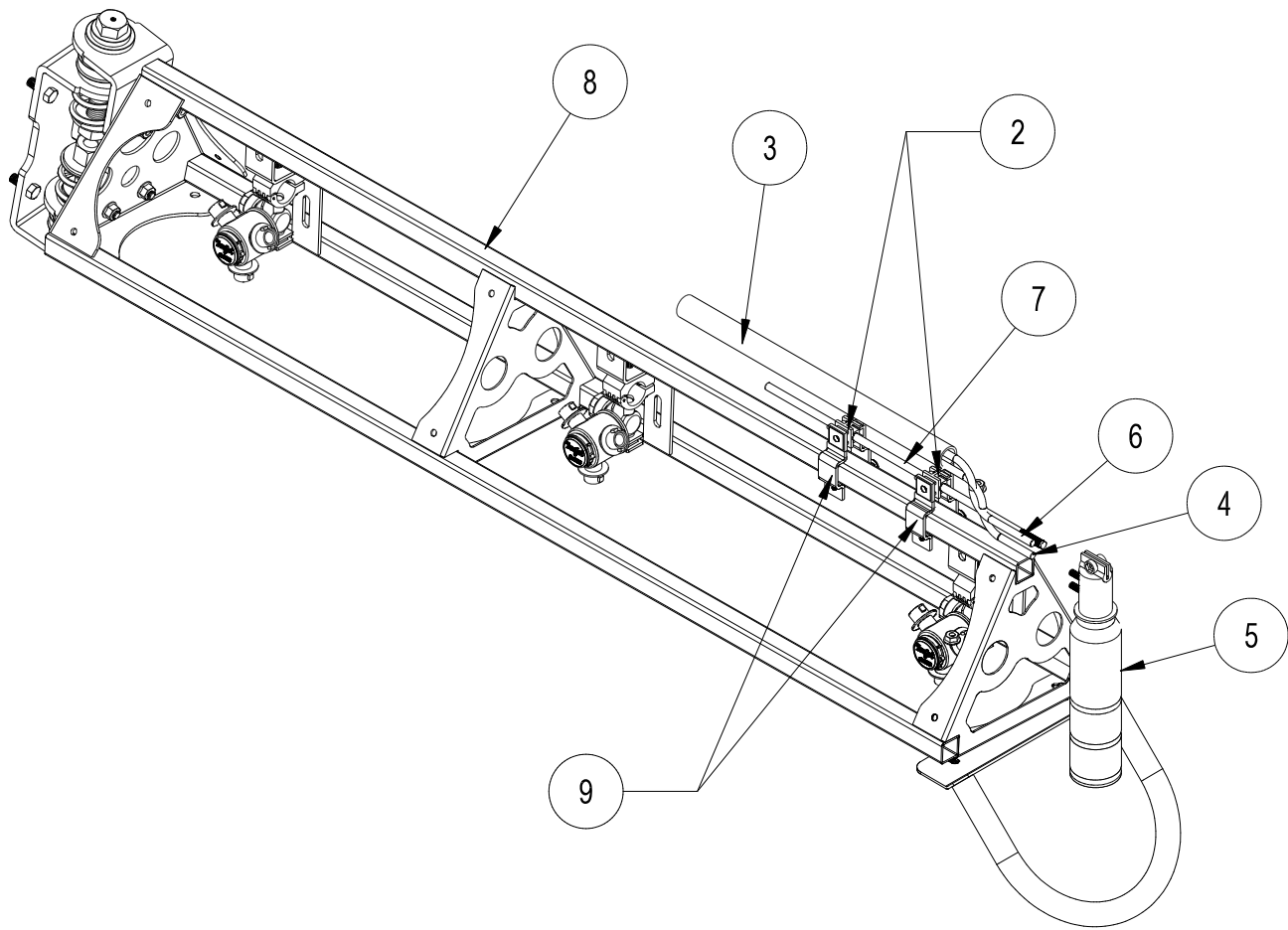
30-004 FOAM MARKER PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1*	14-291-05	Double Switch Box	1
	33-508	Fuse	1
	15-506-02	Center Switch	1
	14-291-14	Outside Switch	1
	15-472	Boot	2
2	HB-516-18-175	Hex Bolt, $\frac{5}{16}$ - 18 x $1\frac{3}{4}$ (part of machine)	4
	HNFL-516-18	Flange Whiz-loc Nut, $\frac{5}{16}$ - 18 (part of machine)	4
3		Mount Bracket (part of machine)	1
4*	14-291-04	Tank Bracket	2
5	HN-14-20-075	Hex Bolt, $\frac{1}{4}$ - 20 x $\frac{3}{4}$	2
	HBFL-14-20	Flange Whiz-loc Nut, $\frac{1}{4}$ - 20	2
6*	14-291-02	Foamer Tank	1
7*	14-284-02	Cap Assembly	1
8*		Blue Tube	1
9*		Clear Tube	1
10*	14-291-03	Compressor Only	1
	14-291-01	Black Cover	1
*	14-291	Foamer (includes * parts)	1

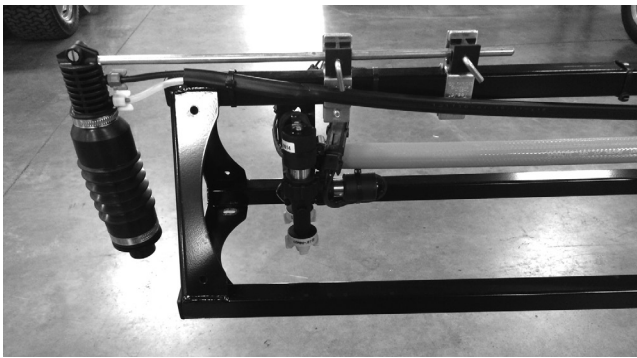
WIRING PARTS LIST

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	Auto Blade Type Fuse 15 amp	1
	15-506-02	Switch - middle	1
	14-291-14	Switch - outside	1
	15-472	Boot	2
4	15-509	Power Cable	1
5	33-271	Fuse Block (part of machine)	1
	33-508	Auto Blade Type Fuse 15 amp	1
6	15-507	Tubing -Blue	
7	15-507	Tubing - White	
8	14-699	Male Coupler	1
	14-291-09	Blue Wing Nut	1
	14-702	Red Nylon Washer	1
9	20-769	Mount Bracket	10

FOAMER NOZZLE MOUNT & HOSE GUARD MOUNT DRAWING



Accessories

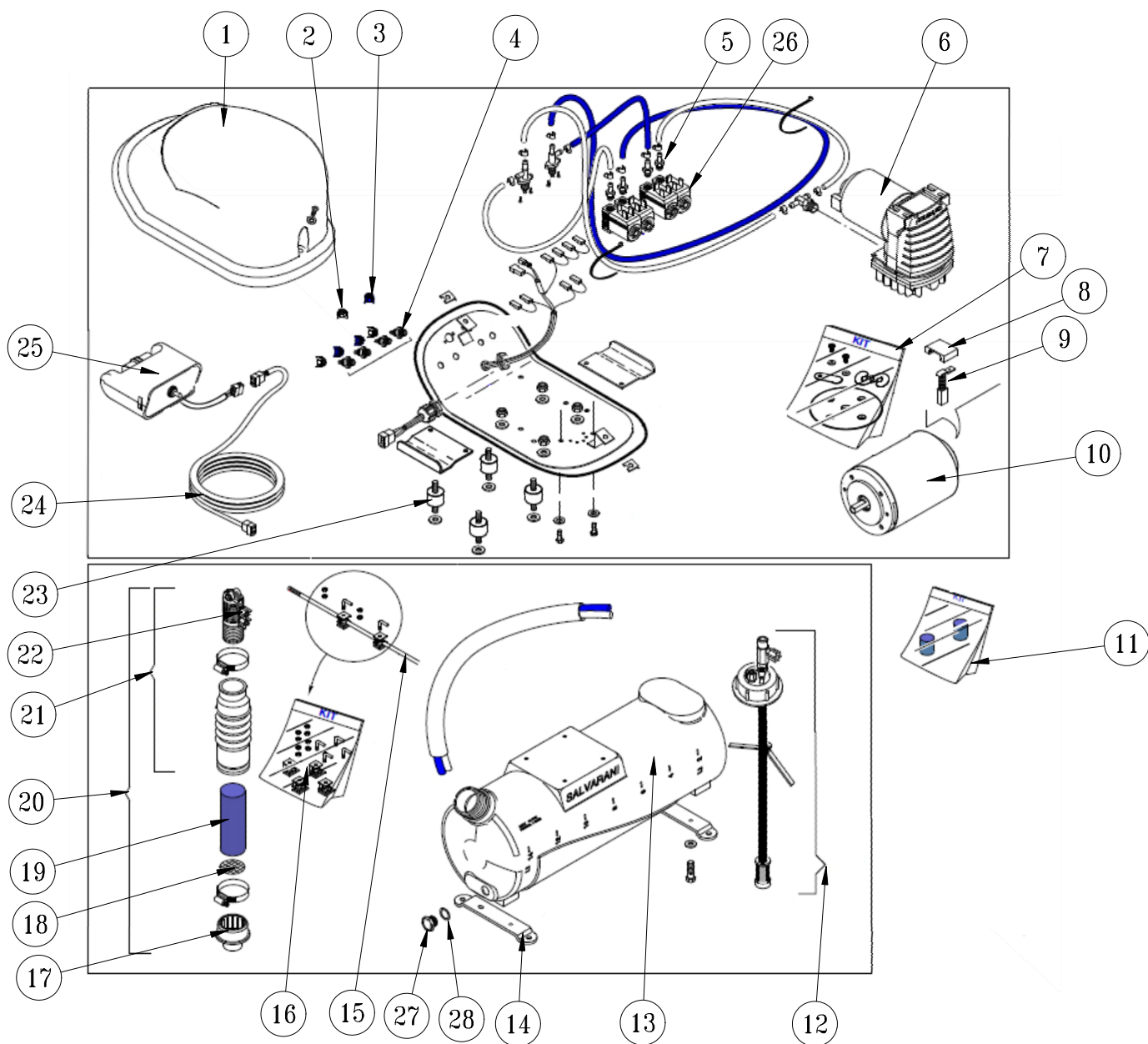


30-004 FOAM MARKER PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
2	16-987	Foam Nozzle Mounting Kit	1 per boom
3	15-507	Foamer Tubing	1
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 dRoll Over Bar 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 over-sleeve 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 over-sleeve 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.
- 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.

14-291 FOAMER REPLACEMENT PARTS



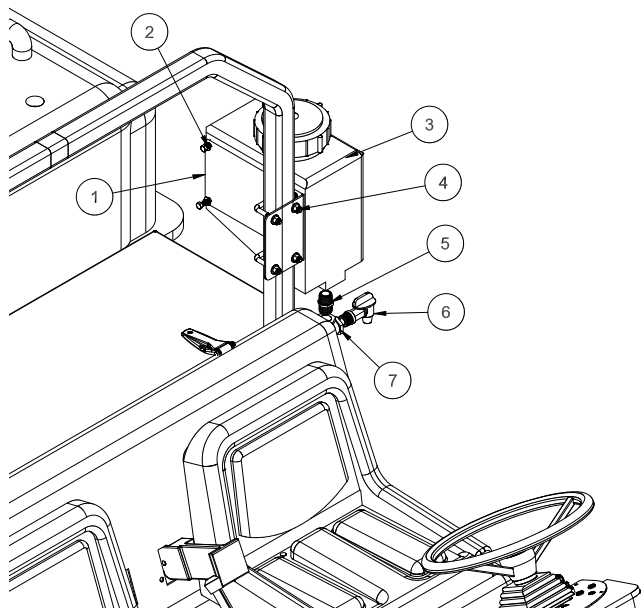
Accessories

14-291 FOAMER REPLACEMENT PARTS

REF#	PART#	DESCRIPTION	QUANTITY
1	14-291-01	Black Cover	1
2	14-291-08	White Fly Nut	1
3	14-291-09	Blue Fly Nut	1
4	14-284-10	Tubing Connector	1
5	14-291-17	M6 Tubing Connector	1
6	14-536	Compressor Complete	1
7	14-291-11	Diaphragm Replacement Kit	1
8	15-505-08	Brush Retainer	1
9	15-505-06	Brush	1
10	15-505-07	12V Electric Motor	1
11	15-511-02	Foam Sponge	1
12	14-284-02	Cap Assembly	1
13	14-291-02	Foamer Tank	1
14	14-291-04	Tank Brackets	2
15	15-510-01	Nozzle Mounting Rod	2
16	16-987	Foam Nozzle Mounting Kit	1
17	14-284-09	Foam Nozzle Reducer	2
18	15-511-09	Stainless Steel Screen	2
19	15-511-08	Long Foam Sponge	2
20	15-511	Foam Nozzle	2
21	15-511-07	Foam Nozzle Assembly	1
22	15-511-01	Foam Nozzle Sub Assembly	1
23	14-291-15	Shock Absorber	4
24	14-284-05	Extension Wire	1
25	14-291-05	Switch Box	1
	15-506-02	Switch	1
26	14-284-11	Solenoid Valve	4
27	14-291-19	Drain Plug	1
28	14-291-18	Drain Plug Seal	1



20-758 FRESH WATER WASH TANK - FRONT MOUNT



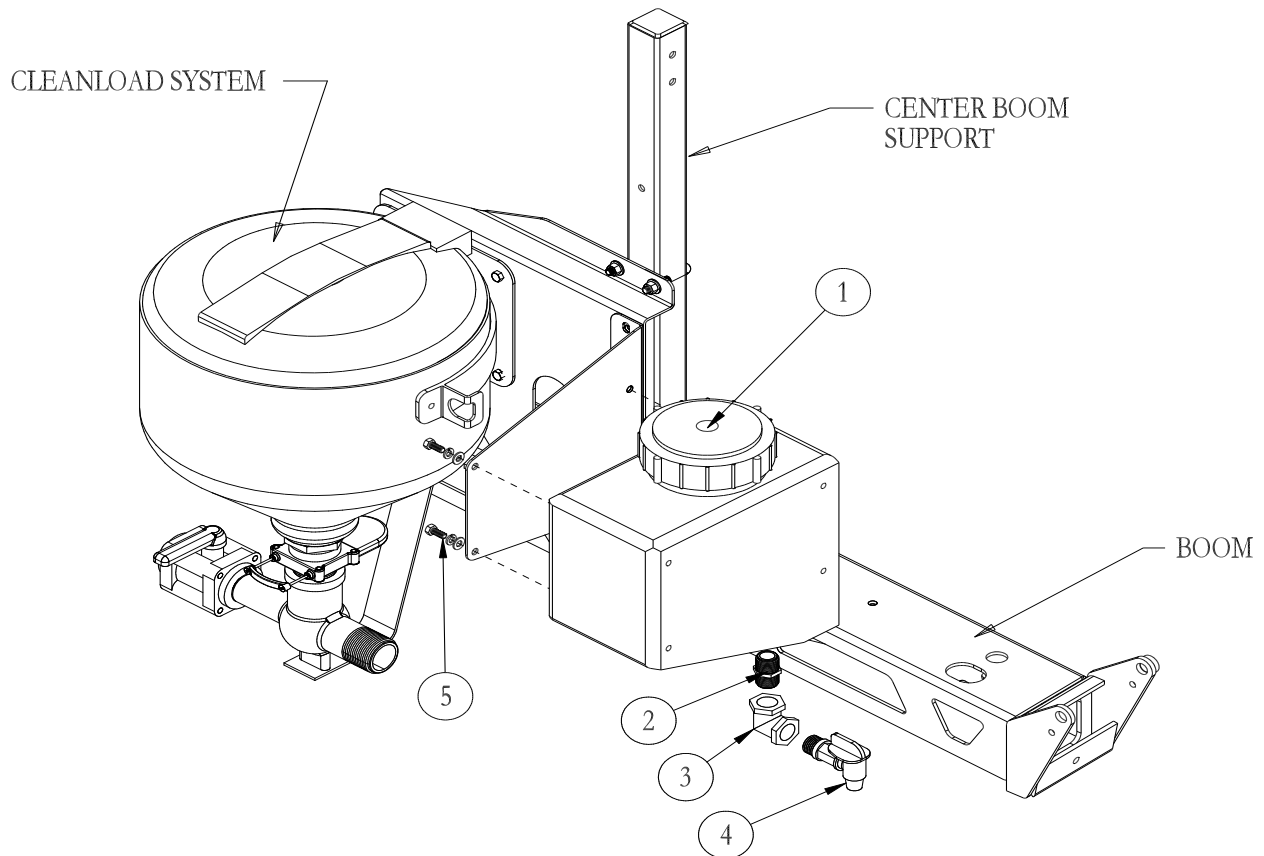
REF#	PART#	DESCRIPTION	QUANTITY
1	20-757	Mount Plate	1
2	HB-516-18-075	Hex Bolt, $\frac{5}{16}$ - 18 x $\frac{3}{4}$	4
	HWL-516	Lock Washer, $\frac{5}{16}$	4
	HW-516	Flat Washer, $\frac{5}{16}$	4
3	10-234	Wash Tank	1
4	17-537	Square U-Bolt	2
5	16-158	Close Nipple	1
6	16-151	Elbow	1
7	16-960	Spigot	1

1. Fresh Water Wash Tank mounts on the left side Roll Bar.
2. Mount the wash tank (Ref 3) onto the mount bracket (Ref 1) using four $\frac{5}{16}$ x $\frac{3}{4}$ bolts, washers and lock-washers (Ref 2). Tighten.
3. Install the nipple (Ref 5), elbow (Ref 6) and spigot (Ref 7) into the bottom of wash tank (Ref 1). Use thread tape on all threads.
4. Mount the tank assembly to the left side Roll Over Bar with u-bolts (Ref 4). Tighten.
5. Rinse tank with clear water and check for leaks around fittings.

WARNING

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

30-006 FRESH WATER TANK - REAR MOUNT



REF#	PART#	DESCRIPTION	QUANTITY
1	10-234	Wash Tank	1
2	16-158	Close Nipple	1
3	16-151	Elbow	1
4	16-960	Spigot	1
5	HB-516-18-075	Hex Bolt, $\frac{5}{16}$ - 18 x $\frac{3}{4}$	4
	HWL-516	Lock Washer, $\frac{5}{16}$	4
	HW-516	Flat Washer, $\frac{5}{16}$	4

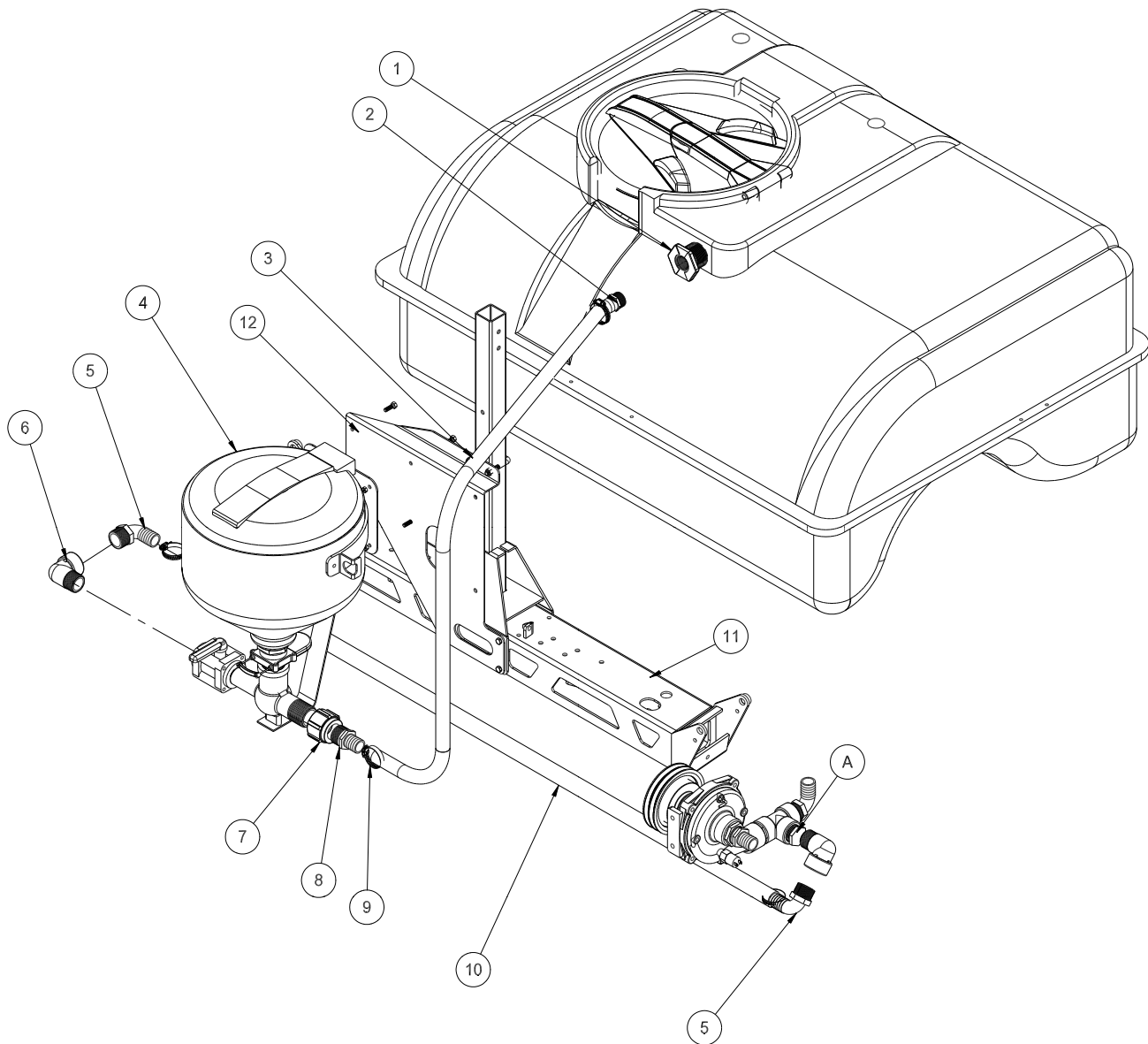
INSTALLATION INSTRUCTIONS

1. Fresh Water Wash Tank mounts on the rear of all the machines.
2. The Bracket is already attached to the Super Boom center boom post.
3. Install the nipple (Ref 2), elbow (Ref 3) and spigot (Ref 4) into the bottom of wash tank (Ref 1). Use thread tape on all threads.
4. Mount the tank onto the mount bracket using four $\frac{5}{16}$ x $\frac{3}{4}$ Hex Bolts, washers and Lock Washers. Tighten.
5. Rinse tank with clear water and check for leaks around fittings.

WARNING

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

20-503 CHEMICAL CLEAN-LOAD DRAWING



REF#	PART #	DESCRIPTION	QUANTITY
1	16-945	Fitting (part of tank)	1
2	16-159	Fitting	1
3	8897-43	1 1/4" Discharge Hose 43"	1
4	15-620	Clean-load Assembly	1
5	16-156	Elbow	2
6	16-972	90° Elbow	1
7	18-391	Coupling	1
8	16-161	Fitting	1
9	18-116	Hose Clamp	4
10	8897-116	1 1/4" Discharge Hose 116"	1
11		Center Boom	
12	17-635	Clean Load Mount (Part of boom)	1

OPERATING INSTRUCTION

START-UP

1. All Clean-load 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 Clean-load 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 Clean-load 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.

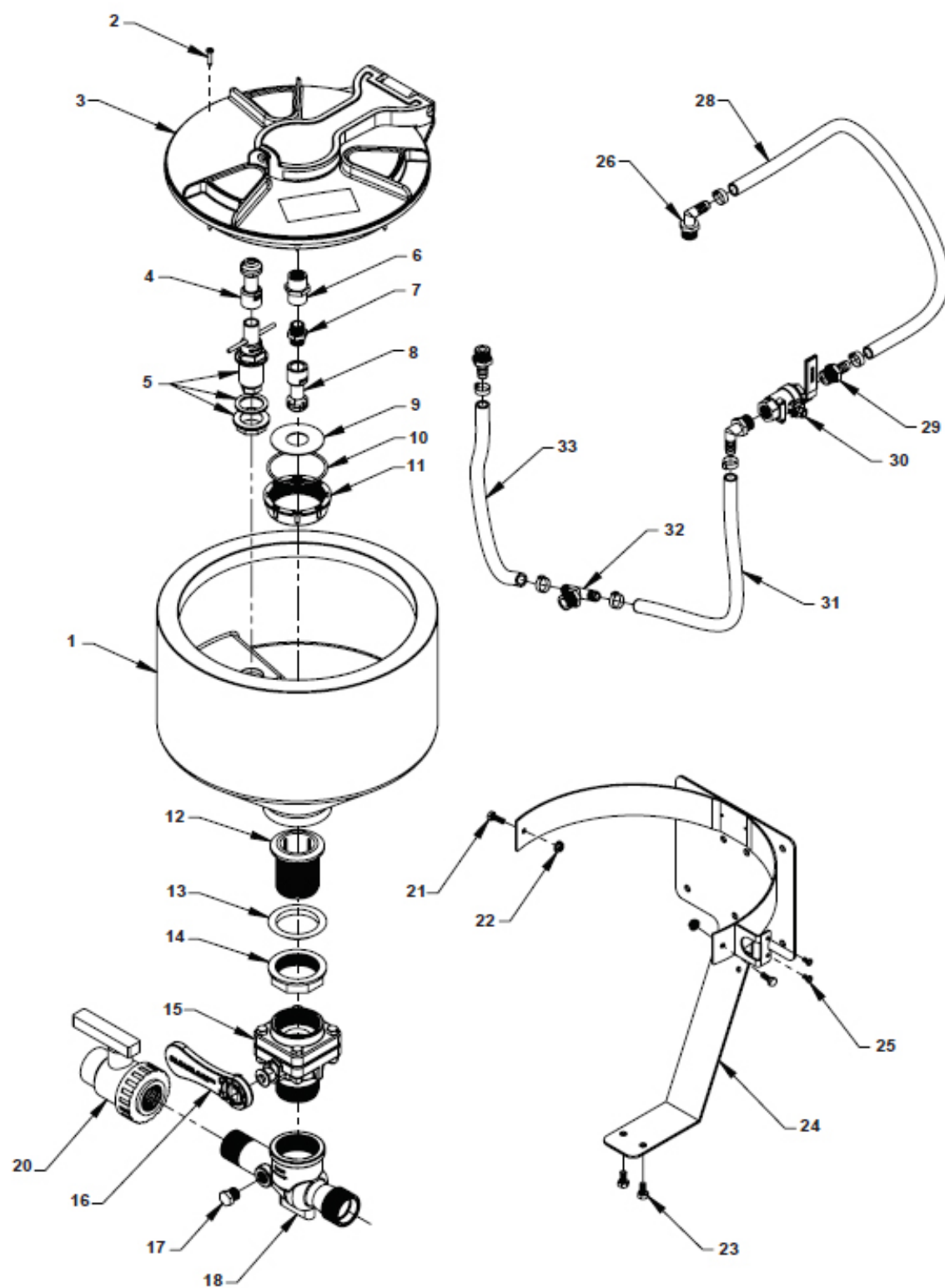
8. Insert lance body with o-ring into eductor until the o-ring is sealed.
9. Use the free end of the lance to pierce bag or container to vacuum powdered or liquid chemical.
10. Rinse lance. Place lance end into a clean container of water to rinse lance assembly.
11. Remove lance body from eductor and 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.

Symptom	Corrective Action
Low eduction rate	Check pump pressure and flow. Cleanload Eductor performance is based on flow and pressure to the system. Note requirements for high eduction 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.

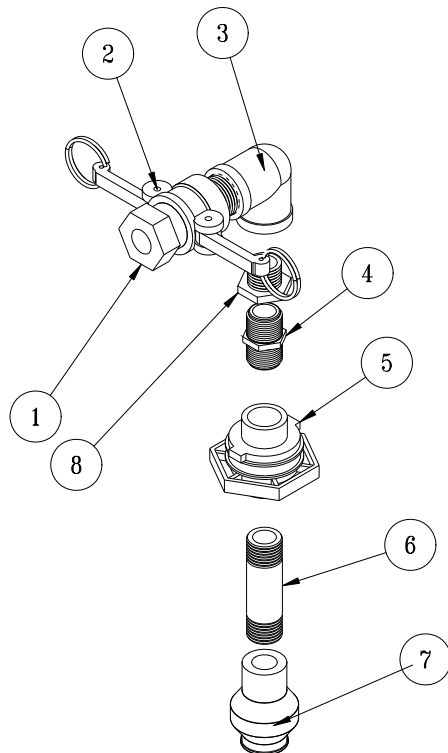
15-620 CHEMICAL CLEAN LOAD® PARTS DRAWING



15-620 CHEMICAL CLEAN LOAD® PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	15-620-21	Tank	1
2		Screw, #6 x 1"	8
3	15-620-02	Tank Lid	1
4	15-620-22	ProClean Container Nozzle	1
5	15-620-23	ProClean Push Valve Assembly	1
	15-620-19	Tank Rinse	1
	15-620-20	Gasket, 1"	1
6		1/2 x 1/2 FNPT Coupler	1
7		1/2 x 1/2 Thread Nipple	1
8		ProClean Tank Wash Nozzle	1
9		Splash Retainer	1
10		O-ring Breather	1
11		Nut, Breather	1
12	15-620-18	Drain Head, 2"	1
13	15-620-17	Gasket: 2", Tapered	1
14	15-620-16	Locking Ring, 2"	1
15	15-620-12	Ball Valve	1
	15-620-15	Gasket: 2" BSP	1
16	15-620-13	Handle, Clean-load	1
17		1/2 MNPT PP Hex Plug	1
18	15-620-04	Clean-load Eductor	1
20	15-620-14	Ball Valve, 1 1/4 Single Union	1
21		Screw	2
22		Flange Nut	2
23		Hex Head Screw	2
24	15-620-01	Frame, Back Mount	1
25		Phillips Head Screw	2
26	15-620-11	Elbow 1/2"	2
28	15-620-08	Hose, Tank Rinse, 1/2" EPDM	1
29	15-620-09	HB, 1/2 MNPT x 1/2 HB	2
30	15-620-10	Valve, SS Tank Rinse	1
31	15-620-06	Hose, Valve Feeder, 1/2" EPDM	1
32	15-620-05	HB Tee, 1/2 MNPT to 1/2 HB	1
33	15-620-07	Hose, Bottle Rinse, 1/2" EPDM	1

15-835 TANK RINSING SYSTEM

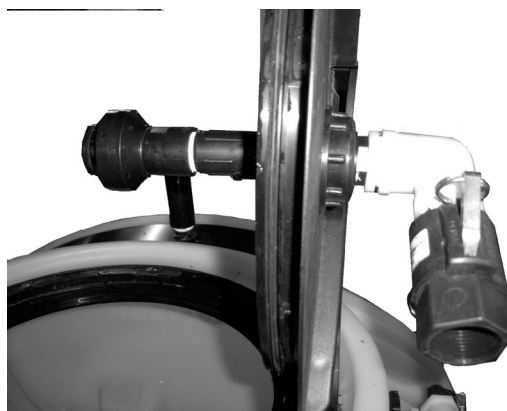


REF#	PART#	DESCRIPTION	QUANTITY
1	16-961	1" Adapter	1
2	16-962	1" Coupler	1
3	16-864	1" FTP Elbow	1
4	16-158	Close Nipple	1
5	16-150	Double Thread Fitting	1
6	16-172	4" Nipple	1
7	15-834	Tank Rinsing Nozzle	1
8	16-163	Reducer Bushing	1

Drill 1³/₄" hole 5" from outside edge of cover.

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

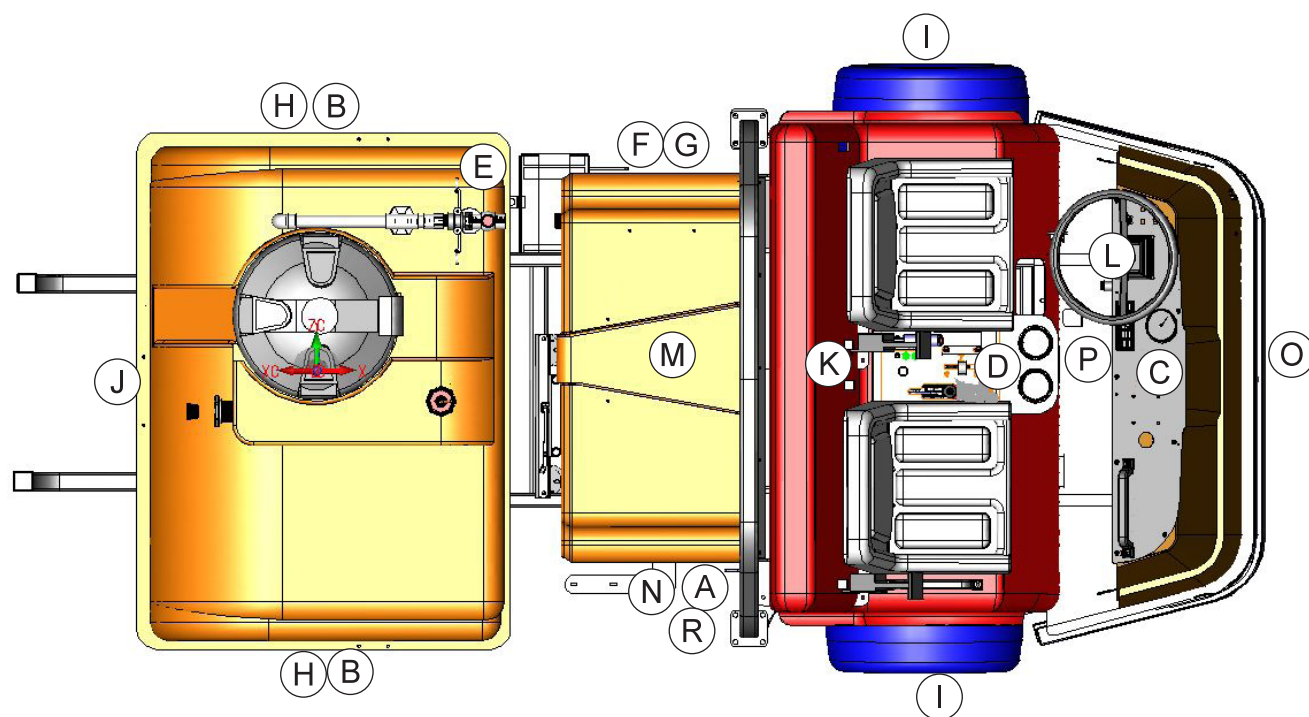
Basket Must be removed During Use.



DECAL LIST

This is a list of decals located on the Spray Star 2000D. Part number, description and location will help in reordering decals.

- A 15-463 Decal, Spray Pump
- B 20-529 Decal, Spray Star 2000
- C 20-545 Decal, Dashboard
- D 20-553 Decal, Center Console
- E 20-593 Decal, Site Gauge
- F 25-298 Decal, Warning Hot
- G 25-321 Decal, Refuel with Diesel
- H 25-355 Decal, Tire Pressure 18psi
- I 25-356 Decal, Tire Pressure 20psi
- J 25-372 Decal, 4" Star
- K 25-375 Decal, 94 dBA
- L 27-077 Decal Smithco
- M 27-093 Decal, Hydraulic Oil Level
- N 30-117 Decal, Diesel Fuel Only
- O 34-147 Decal, Smithco Logo
- P 25-387 Decal, Agitation
- Q 25-321 Decal, Refuel with Diesel
- R 14-803 Decal, Clean Agitation Strainer



Reference

QUICK REFERENCE REPLACEMENT PARTS

REPLACEMENT FILTERS

20-576	Hydraulic Oil Filter Assembly
20-576-01	Oil Filter Replacement Element
30-042-09	Engine Oil Filter
30-042-05	Air Cleaner Cartridge
30-042-08	Fuel Filter Element

REPLACEMENT BELTS

15-124	Spray Pump V-Belt L444
30-042-11	Fan Belt

SEAL KITS

15-301	Power Steering Orbital Motor
15-301-01	Seal Kit
15-839	Hydraulic Cylinder
14-531	Seal Kit
43-116	Wheel Motors
14-080	Seal Kit
76-238	Hydrostatic Pump
77-239-23	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

16-953	Hinged Cover On Tank with Gasket
16-953-01	Gasket For Cover
16-169	Strainer Basket
15-818	#75 Fitting O-ring
15-817	#50 Fitting O-ring
20-663	Tank Lid Gasket
13-488	Key Switch
76-310	Key Set
20-693	Circuit Breaker 50Amp

The Smithco Commercial Products Two-Year Limited Warranty

Smithco, Inc. (Smithco) warrants your 2016 or newer Smithco Commercial Product ("Product") purchased after October 1, 2016 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 Five 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 West Poplar Ave.
Cameron, Wisconsin 54822
Telephone: 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 outside 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.

