

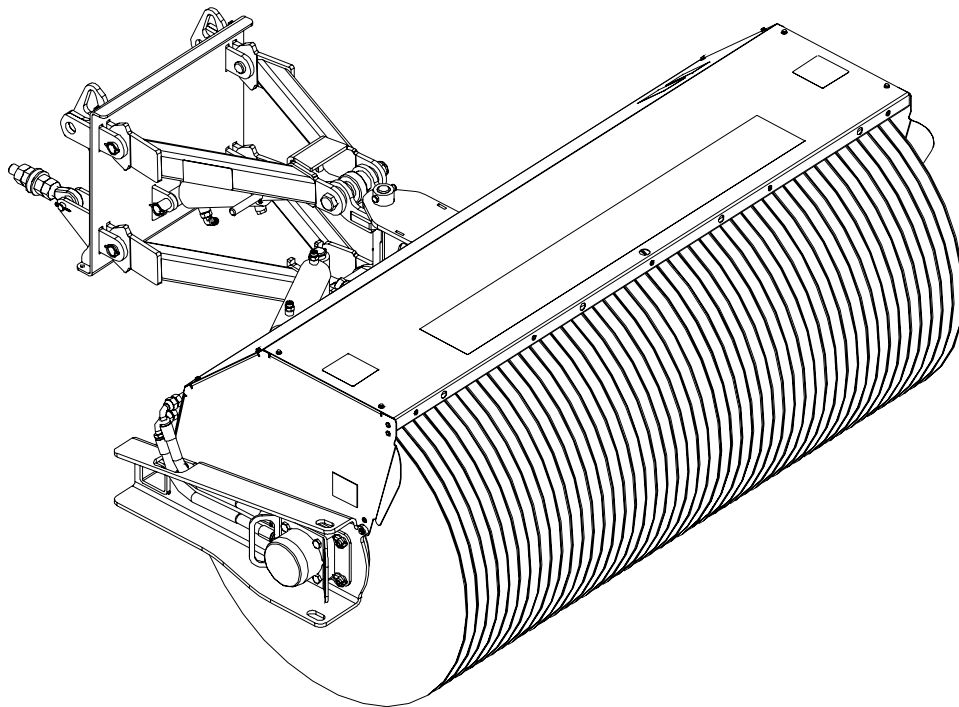


HR Series

Hydraulic Windrow Sweepers



PALADIN LIGHT CONSTRUCTION



Sweepster Serial Number _____


Manual Number: 51-3951
Release Date: Sept, 2005

Table of Contents

Installation & Safety	5-13
Introduction	5
Safety	6-9
Product Information	10-11
Operation and Maintenance	12-18
Service & Troubleshooting	19-21
Parts	22-39
Brush Head Frame	22
Core Assemblies	23
Shaft Assembly	24
Hydraulic Assemblies	25-26
Motor Bucket	27
Brush Head Labels	28
Linkage	29
Hydraulic Tank	30
Pump/Hose Assembly	31
Dirt Deflector	32
Hood Kits	33-34
Dust Suppression	36-37
Conversion Kit, Single to Dual Motor	38
Conversion Kit, Dual to Single Motor	39
Sight Indicator Kits	40
Appendix	41-47
Torque Specifications	41-43
Glossary	44-45
Warranty	46-47

Introduction

Importance of this Manual

 **Read this manual before attempting to operate the equipment.**

This operator's manual should be regarded as part of the sweeper. Suppliers of both new and secondhand sweepers are advised to keep documentation indicating that this manual was provided with the sweeper.

This manual contains information regarding installation, operation and maintenance required for this sweeper and optional equipment. It also includes detailed parts lists.

Purpose of Sweeper


This sweeper is designed solely for use in construction cleanup, road maintenance, grounds maintenance and similar operations. Use in any other way is considered contrary to the intended use. Compliance with and strict adherence to operation, service and repair conditions, as specified by the manufacturer, are also essential elements of the intended use.

This sweeper should be operated, serviced and repaired only by persons who are familiar with its characteristics and acquainted with relevant safety procedures.

Accident prevention regulations, all other generally recognized safety regulations and all road traffic regulations must be observed at all times.

Any modifications made to this sweeper may relieve the manufacturer of liability for any resulting damage or injury.

Safety Alert Symbol

 This safety alert symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of injury. Carefully read the message that follows and inform other operators

Contacting SWEEPSTER

If you have any questions about information in this manual or need to order parts, please call, write, fax or e-mail SWEEPSTER.

SWEEPSTER
2800 North Zeeb Road
Dexter, Michigan 48130
Phone: (734) 996-9116 - (800) 456-7100
FAX: (734) 996-9014
e-mail: sweepster@paladinbrands.com

For help with installation, operation or maintenance procedures, contact our Technical Service Department. Direct product questions and parts orders to our Sales Department.

When ordering parts or accessories, be prepared to give the following information:

- Sweeper model, serial number and date of purchase
- Prime mover, make and model
- Part number, description and quantity

Terms Used in Manual

Right-hand, left-hand, front and rear are determined from the operator's perspective (either the operator's seat or standing behind a walk-behind unit), facing forward in the normal operating position.

Prime mover refers to the tractor, truck, loader or tow vehicle that the sweeper is mounted on or towed by.

Optional Equipment

Installation instructions for optional equipment, if applicable, are included in the optional equipment package.

Specifications & Features

Due to continuous product improvement, specifications and features may change without notice.

Warranty

To validate the warranty for this unit, fill out the warranty card or warranty pages located at the back of this manual. Then, send this information to SWEEPSTER.

Safety Information

Read this manual

Read all safety information in this manual. All operators must read and understand the entire contents of this manual before sweeping. General safety practices are listed on Safety Information pages and specific safety information is located throughout this manual.

Hazard Definitions

Four hazard classifications are used in this manual. They are:



DANGER - Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING - Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION - Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

CAUTION - Used for instructions when machine damage may be involved.

Operation



CAUTION - A sweeper is a demanding machine. Only fully trained operators or trainee operators under supervision of a fully trained person should use this machine.

Before operating sweeper:

- Learn sweeper and prime mover controls in an off-road location.
- Be sure that you are in a safe area, away from traffic or other hazards.

- Check all hardware holding the sweeper to the prime mover, making sure it is tight.
- Replace any damaged or fatigued hardware with properly rated fasteners. See Maintenance Section.
- Make sure all hydraulic hardware and hydraulic fittings are tight.
- Replace any damaged or fatigued fittings or hoses.
- Check prime mover tire pressure before sweeping.
- Check tire ratings to be sure they match the prime mover load. Weigh the sweeper end of the prime mover, if necessary, to insure proper tire rating.
- Remove from the sweeping area all property that could be damaged by flying debris.
- Be sure all persons not operating the sweeper are clear of the sweeper discharge area.
- Always wear proper apparel such as a long-sleeved shirt buttoned at the cuffs; safety glasses, goggles or a face shield; ear protection; and a dust mask.

While operating sweeper:

- When operating sweeper, adhere to all government rules, local laws and other professional guidelines for your sweeping application.



WARNING - Never raise the sweeper more than a few feet off the ground. The sweeper can tip back or the prime mover can tip over causing death or serious injury.

- Before leaving the operator's area for any reason, lower the sweeper to the ground. Stop the prime mover engine, set the parking brake and remove the key from the ignition.
- Minimize flying debris - use the slowest rotating speed that will do the job. See Operation Section: Operating Tips.
- Keep hands, feet, hair and loose clothing away from all moving parts.

- Leave the brush hood (shield) and all other shields and safety equipment in place when operating the sweeper and prime mover.
- Be aware of the extra weight and width a sweeper adds. Reduce travel speed accordingly. See Product Information Section.
- When sweeping on rough terrain, reduce speed to avoid “bouncing” the sweeper. Loss of steering can result.
- Never sweep toward people, buildings, vehicles or other objects that can be damaged by flying debris.
- Only operate the sweeper while you are in the operating position. The safety restraint must be fastened while you operate the prime mover. Only operate the controls while the engine is running. Protective glasses must be worn while you operate the prime mover and while you operate the sweeper.
- While you operate the sweeper slowly in an open area, check for proper operation of all controls and all protective devices. Note any repairs needed during operation of the sweeper. Report any needed repairs.

Service & Repair - General



CAUTION - Do not modify the sweeper in any way. Personal injury could result. If you have questions, contact your dealer or SWEEPSTER.

Repair or adjust the sweeper in a safe area, away from traffic and other hazards.

Before adjusting or servicing - lower the sweeper to the ground, set parking brake, shut down the prime mover and remove the key from the ignition.

When working on or around the sweeper, safely secure it from falling or shifting.

Service & Repair - Hydraulic Safety

Stop the prime mover engine and release hydraulic pressure before servicing or adjusting sweeper hydraulic systems.



WARNING - Escaping hydraulic fluid can have enough pressure to penetrate the skin, causing serious personal injury.

Check lines, tubes and hoses carefully. Do not use your hand to check for leaks. Use a board or cardboard to check for leaks. Tighten all connections to the recommended torque. See Appendix.

Do not bend high pressure lines. Do not strike high pressure lines, Do not install bent lines, bent tubes, or kinked hoses. Do not install damaged lines, damaged tubes, or damaged hoses.

Repair loose lines, loose tubes, and loose hoses. Repair damaged lines, damaged tubes, and damaged hoses. Leaks can cause fires. See your SWEEPSTER dealer for repair or replacement parts.

Replace the parts if any of the following conditions are present:

- The end fittings are damaged or leaking.
- The outer covering is chafed or cut.
- The reinforcing wire layer is exposed.
- The outer covering is ballooning locally.
- The hose is kinked or crushed.
- The hoses have been pulled or stretched.

Make sure that all clamps, guards, and shields are installed correctly.

Safety Signs and Labels

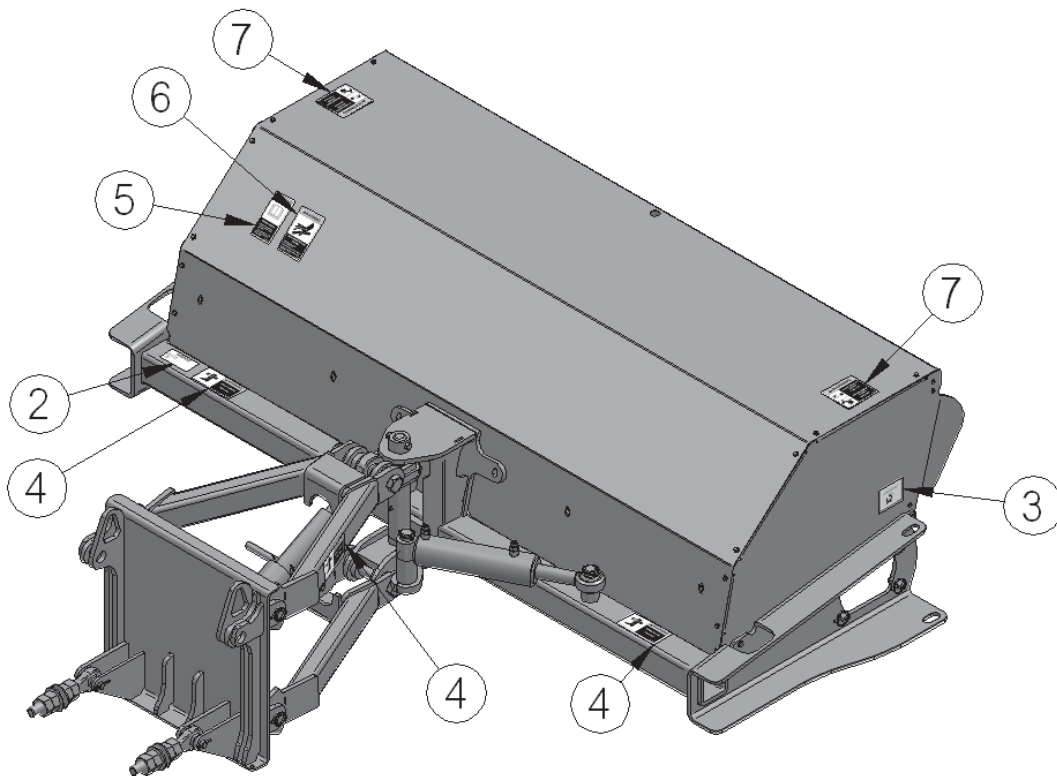
There are several specific safety signs on this sweeper. The exact location of the hazards and the description of the hazards are reviewed in this section.

Placement or Replacement of Safety Signs

1. Clean the area of application with nonflammable solvent, and then wash the same area with soap and water.
2. Allow the surface to fully dry.
3. Remove the backing from the safety sign, exposing the adhesive surface.
4. Apply the safety sign to the position shown in the diagram above and smooth out any bubbles.

Instructions

- Keep all safety signs clean and legible.
- Replace all missing, illegible, or damaged safety signs.
- Replacement parts, for parts with safety signs attached, must also have safety signs attached.
- Safety signs are available, free of charge, from your dealer or from SWEEPSTER.

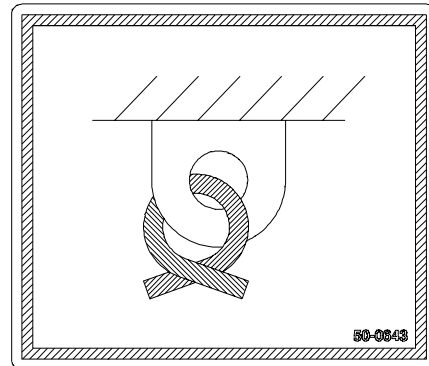


Item	Part	Qty	Description
2.	50-0634	1	Label, Serial Number
3.	50-0643	2	Label, Tie Down Point
4.	50-0721	4	Label, Warning, Crush Hazard
5.	50-0722	1	Label, Warning, Misuse Hazard
6.	50-0724	1	Label, Warning, High Pressure Fluid Hazard
7.	50-0726	2	Label, Warning, Flying Objects & Entanglement

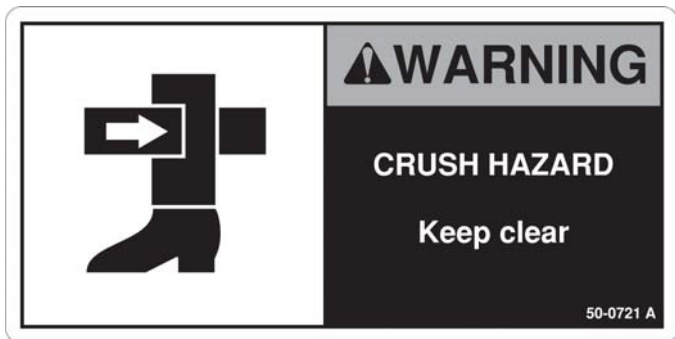
Safety Signs and Labels



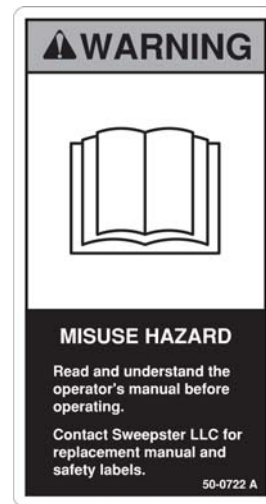
2. 50-0634



3. 50-0643



4. 50-0721



5. 50-0722



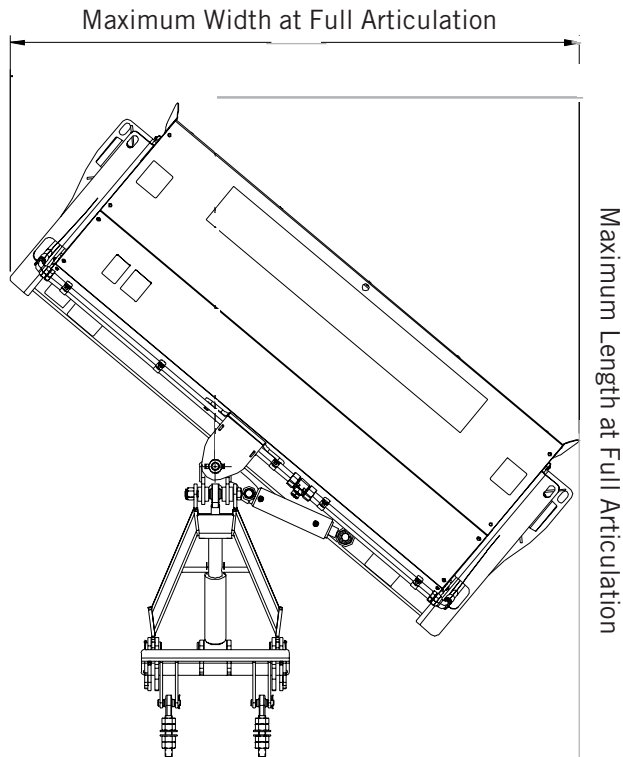
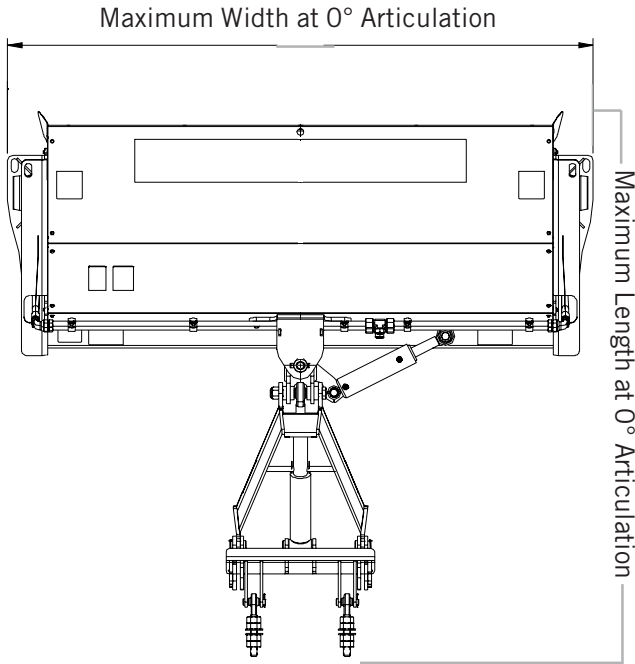
6. 50-0724



7. 50-0726

Product Information Section

Specifications and Model Views



HL Brush Head			
Approximate Weight	Single Motor	Dual Motor	
	677 lbs	720 lbs	6 Ft
	708 lbs	752 lbs	7 Ft
	739 lbs	783 lbs	8 Ft
Maximum Length at 0° Articulation	74 inches		
Maximum Width at 0° Articulation	84.8 inches	6 Ft	
	96.8 inches	7 Ft	
	108.8 inches	8 Ft	
Maximum Length at Full Articulation	86.7 inches	6 Ft	
	90.6 inches	7 Ft	
	94.5 inches	8 Ft	
Maximum Width at Full Articulation	84.5 inches	6 Ft	
	93.7 inches	7 Ft	
	103 inches	8 Ft	
Sweeping Width at 0° Articulation	72 inches	6 Ft	
	84 inches	7 Ft	
	96 inches	8 Ft	
Sweeping Width at Full Articulation	54.3 inches	6 Ft	
	63.5 inches	7 Ft	
	73 inches	8 Ft	
Range of Hydraulic Oil Flow	14-25 gpm Single Motor 22-36 gpm Dual Motor		
Maximum Hydraulic Oil Pressure	3000 psi	3500 psi	

Storage

CAUTION - Do not store the sweeper with weight on the brush. Weight will deform the bristles, destroying the sweeping effectiveness. To avoid this problem, place the sweeper on blocks or use storage stands.

Do not store polypropylene brushes in direct sunlight. The material can deteriorate and crumble before the bristles are worn out.

Keep polypropylene brush material away from intense heat or flame.

Before Each Use

Perform daily maintenance as indicated in Maintenance Schedule.

Run the prime mover and sweeper at a slow idle. Check for hydraulic leaks or other problems and make corrections, if necessary, before using the sweeper. See “Hydraulic Inspection Guideline” .



WARNING - Avoid serious injury. Check for large objects that could harm the operator or others if thrown by the sweeper. Remove these items before operating.

During Use

Directing Debris

Carry the sweeper low to the ground so that the operator has good visibility and stability. Avoid any sudden movements.

Avoid excessive downward pressure on the brush sections to prevent excessive wear. A two to four inch wide pattern is sufficient for most applications. Ensure that the adjustment bolts are equally adjusted in order to prevent an uneven wear pattern. To adjust brush pattern see “Adjusting Brush Pattern”.

Direct debris by angling the brush head in that direction.

Observe wind direction. Sweeping with the wind makes sweeping more effective and helps keep debris off the operator.

The terms *swing* and *angle* are used interchangeably.

Manual Angle

1. Remove the lock pin from links.
2. Position the brush head at the desired angle, aligning holes in the inner and outer link.
3. Insert and close the lock pin.

Hydraulic Angle

1. Start the prime mover.
2. Position the brush head at the desired angle by using the valve control for the swing function.

Sweeping

To sweep:

1. Manual angle only - Swing the brush head assembly the direction that you want to direct debris.
2. Start the prime mover at idle and raise the brush.
3. Hydraulic angle only - Swing the brush head assembly the direction that you want to direct debris.
4. Engage the brush and then lower it to the ground.
5. Increase prime mover engine rpm to sweeping speed.
6. Travel forward at 2-3 mph (3-5 kph) or less.

CAUTION - Avoid sweeper damage. Reduce travel speed to avoid hitting immovable objects.

Operating Tips

CAUTION - Avoid sweeper damage. Do not ram into piles. Use an appropriate attachment for this type of job.

Brush, Engine & Travel Speeds

Vary brush, engine and travel speeds to match sweeping conditions.

Large Areas

When sweeping a large area, such as a parking lot, make a path down the middle and sweep to both sides. This reduces the amount of debris that the sweeper must sweep to one side.

Snow

Fast brush speeds and slow travel speeds are needed to sweep snow effectively. Start at 3/4 throttle and the lowest gear of the prime mover. For wet and and/or deep snow, increase to almost full throttle. This helps keep snow from packing up inside the brush hood.

In deep snow you may need to make multiple passes to get down to a clean surface.

To keep snow from blowing back onto a swept area, always sweep so the wind is at your back.

Dirt & Gravel

To keep dust at a minimum, use the optional dust suppression kit or plan sweeping for days when it is overcast and humid or after it has rained. Also, sweep so the wind blows at your back.

Low brush speeds and moderate travel speeds work best for cleaning debris from hard surfaces. Brush speeds that are too fast tend to raise dust because of the aggressive sweeper action.

To sweep gravel, use just enough brush speed to “roll” the gravel, not throw it.

Heavy Debris

Travel slowly - 1-2 mph.

Sweep a path less than the full width of the sweeper.

Leveling

Level the sweeper for even brush wear and effective use.



CAUTION - Avoid Injury. Before adjusting the sweeper, always turn off the sweeper and the prime mover engine and remove the key.

1. Move the tractor to a flat, paved surface.
2. Verify that the pressure is correct in tractor tires. Refer to the tractor operator's manual.
3. Make sure that the tractor parking brake is on; start the tractor and sweeper. Lower the brush head so the brush is 2 inches (51mm) above the ground. Adjust sweeper to be level left and right. To check swing level use a bubble level and refer to figure 2.
4. Check to see if broom is level when angled. Swing the sweeper to the right; stop the tractor. Then, on both sides of the sweeper measure from the ground to the bottom of the brush frame (figure 1).
5. Start the tractor. Swing the sweeper to the left; stop the tractor. then, on both sides of the sweeper measure from the ground to the bottom of the brush frame.
6. If measurements in step 4 and 5 are all equal, the sweeper is level.

If not, make adjustments as shown in figures 3-5.

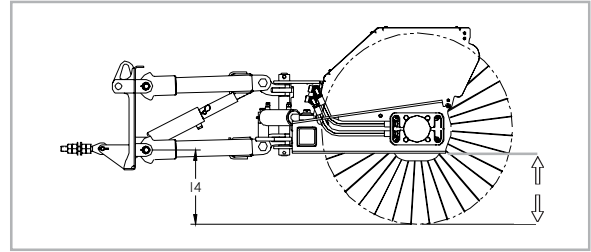


figure 1.

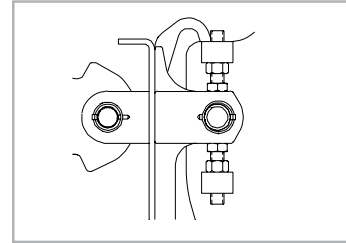


figure 2.

To correct this leveling problem, turn nuts on adjustment links away from the tractor

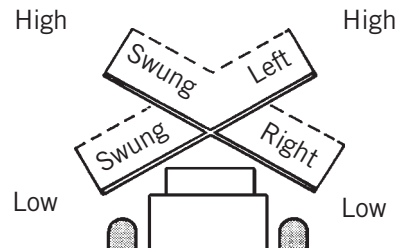


figure 3.

To correct this leveling problem, turn nuts on adjustment links toward from the tractor

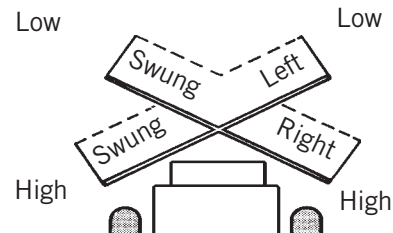


figure 4.

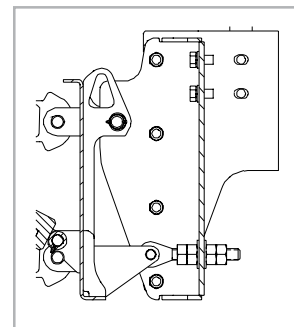


figure 5.

Setting Brush Pattern

A properly adjusted brush offers the best sweeper performance. To check the brush pattern:

1. Move the sweeper to a dusty, flat surface.
2. Set the prime mover's parking brake and leave the engine running.
3. Start the sweeper at a slow speed: lower it so the bristle tips touch the ground. Run the sweeper in a stationary position for 10 seconds.
4. Raise the sweeper and back away; switch off the engine and remove the key. The brush pattern left in the dust should be 2-4 inches (51-102 mm) wide, running the length of the brush. (Compare the swept area with (figure 1)

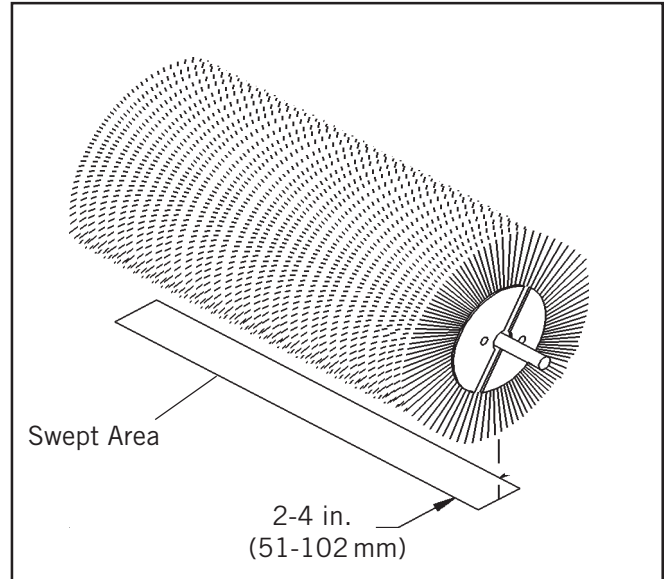


Figure 1

Adjusting the Brush Pattern

1. Lower the sweeper.
2. To adjust brush pattern rotate the cylinder rod on the lift rod assembly (figure 2). Turning the rod counter clockwise will lessen brush pressure and decrease the width of the brush pattern. Turning the rod clockwise will increase pressure on the brush and widen brush pattern. To relieve pressure from the rod assembly when adjusting lower the brush head completely.

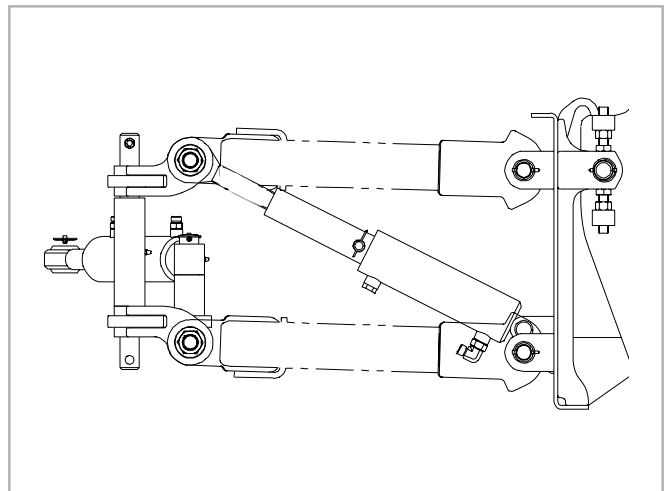


Figure 2

Maintenance Schedule

Procedure	Before Each Use	After Each Use	100 Hours	500 Hours	See Prime Mover Manual
Brush head assembly - Level	✓				
Brush pattern - Check (See Pattern Adj. Section)	✓				
Cylinders - Retract rods		✓			
Filter, air, prime mover - Clean		✓			✓
Fittings/hoses, hydraulic - Check for leaks/tighten Check for damage	✓				
Fittings, zerk - Grease. (See lubrication points)	✓				
Oil, hydraulic - Check level	✓				
Hardware - Check for tightness	✓				
Remove Hydraulic Oil Filter - Replace			✓		
Wash Unit - Remove grease and debris from all components, especially hoses, tank, motor, pump		✓			

Replacing Brush Sections

1. Remove motor and bearing mount hardware. Retain hardware for reinstallation.
2. Remove core from brush head assembly.
3. Remove retaining plate from core assembly.
4. Remove old sections.
5. Install new sections by doing the following:
 - a. Number the tubes on the core as 1, 2 and 3 (figure 1).
 - b. Slide the first section onto the core with the drive pins on either side of tube 1. Make sure that the drive pins angle up (figure 1).
 - c. Place the second section on the core with the drive pins on either side of tube 2. Be sure the drive pins angle down (figure 2).
 - d. Put the third section on with the drive pins around tube 3. Be sure the drive pins angle up.
 - e. Slide sections on until the core is full, making sure to alternate the tubes used and the direction of the drive pins.
6. Reattach the section retainer and bearing mounting plate with previously removed hardware.
7. Lay core on ground. Lower frame over core.
8. Reattach bearing mounting plate with previously removed hardware.
9. Reattach motor mount with hardware removed in first step.

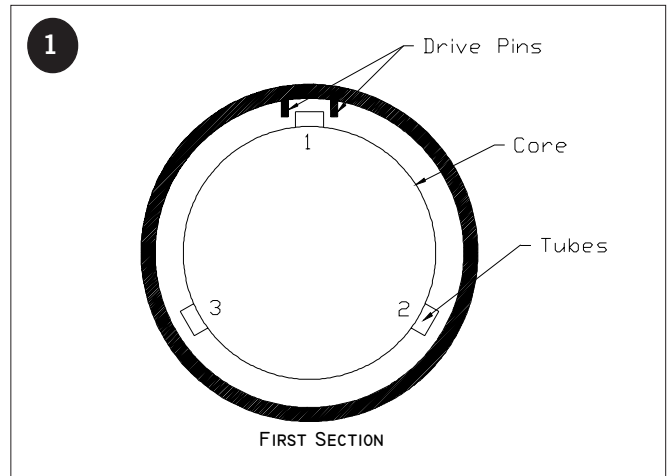


figure 1

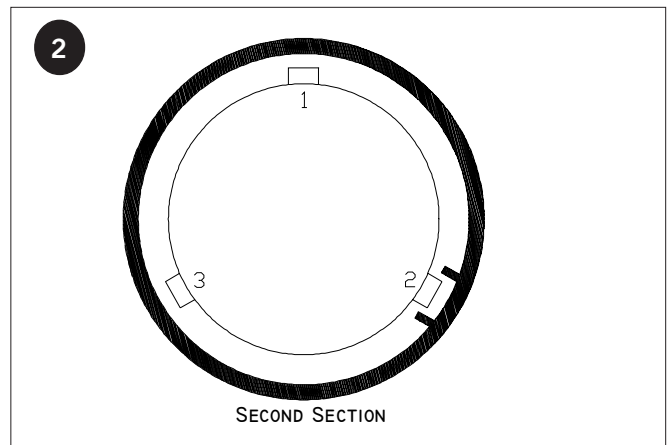
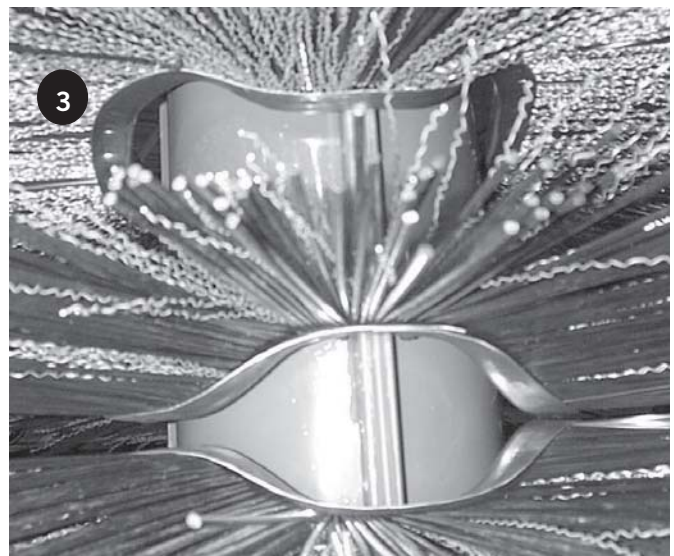


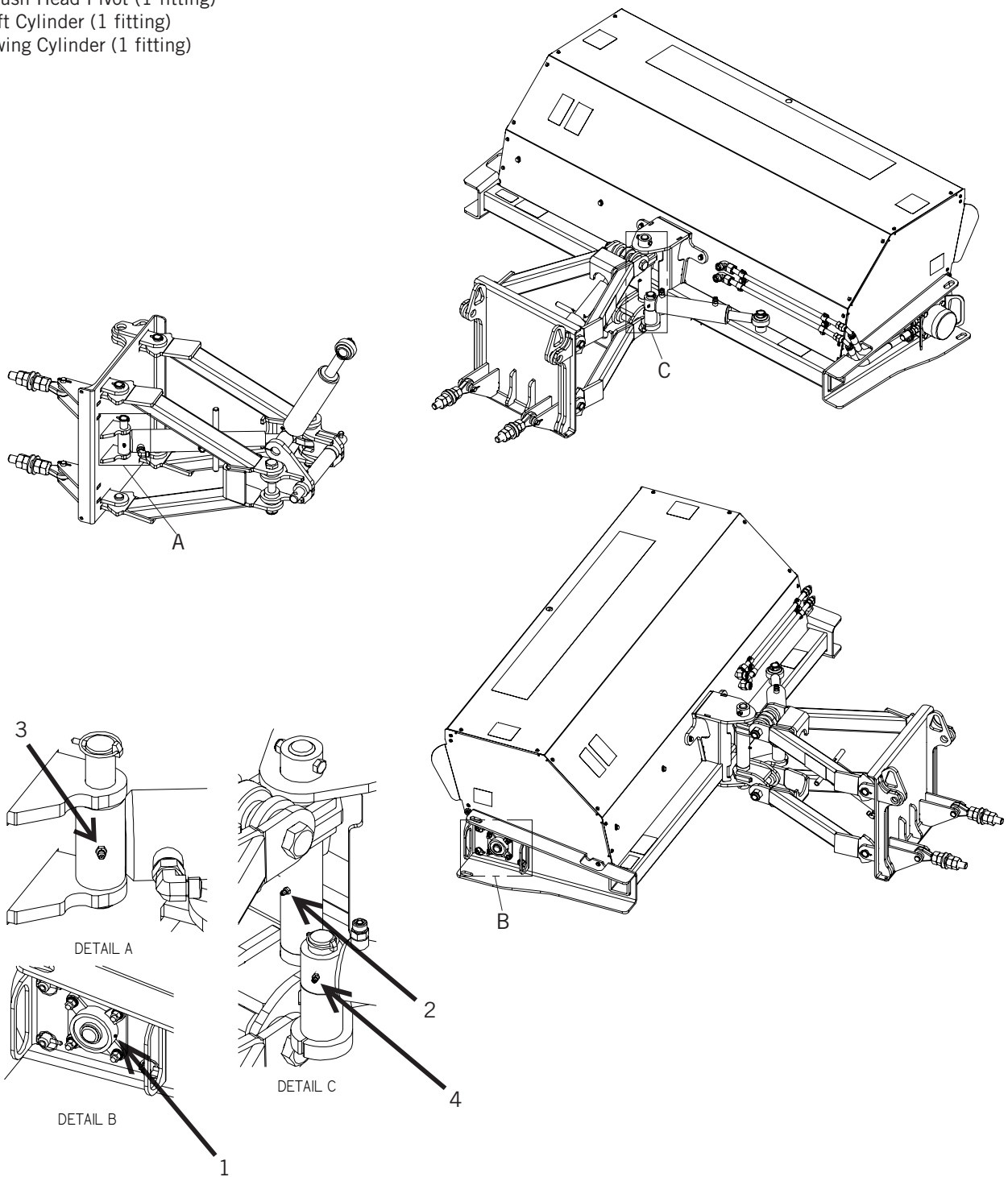
figure 2



Lubrication Points

The following grease fittings should be greased before each use. See figure for locations.

1. Core bearing (1 fitting)
2. Brush Head Pivot (1 fitting)
3. Lift Cylinder (1 fitting)
4. Swing Cylinder (1 fitting)



Brush Head Troubleshooting

Problem	Possible Cause	Possible Solution
Brush rotates wrong direction	Hoses installed incorrectly	Switch hoses at brush head tubes
Brush slows or stops when sweeping	Brush pattern too wide	Adjust brush pattern to 2-3 inches (51-76mm) wide: see Maintenance: Adjusting Brush Pattern
	Travel speed too fast	Travel no more than 5 mph (8 kph) while sweeping (2-3 mph recommended)
	Trying to sweep too much material at once	Make several passes with sweeper
	Relief pressure set too low	Set relief pressure to 2000 psi (138.0 bars)
	Filter plugging	Change or clean hydraulic oil filter
Brush head assembly "bounces" during sweeping	Travel speed too fast and/or brush speed too slow	Find correct combination of ground and brush speeds: do not travel at more than 5 mph (8 kph)
Brush wears into cone shape	Sweeper is not level	Level sweeper before each use: see Maintenance: Leveling
	Tires on prime mover at different pressures or are different sizes	Check tire sizes and rating: make corrections as necessary
Brush wears very quickly	Brush pattern too wide	Adjust brush pattern to 2-3 inches (51-76mm) wide: see Maintenance: Setting Brush Pattern

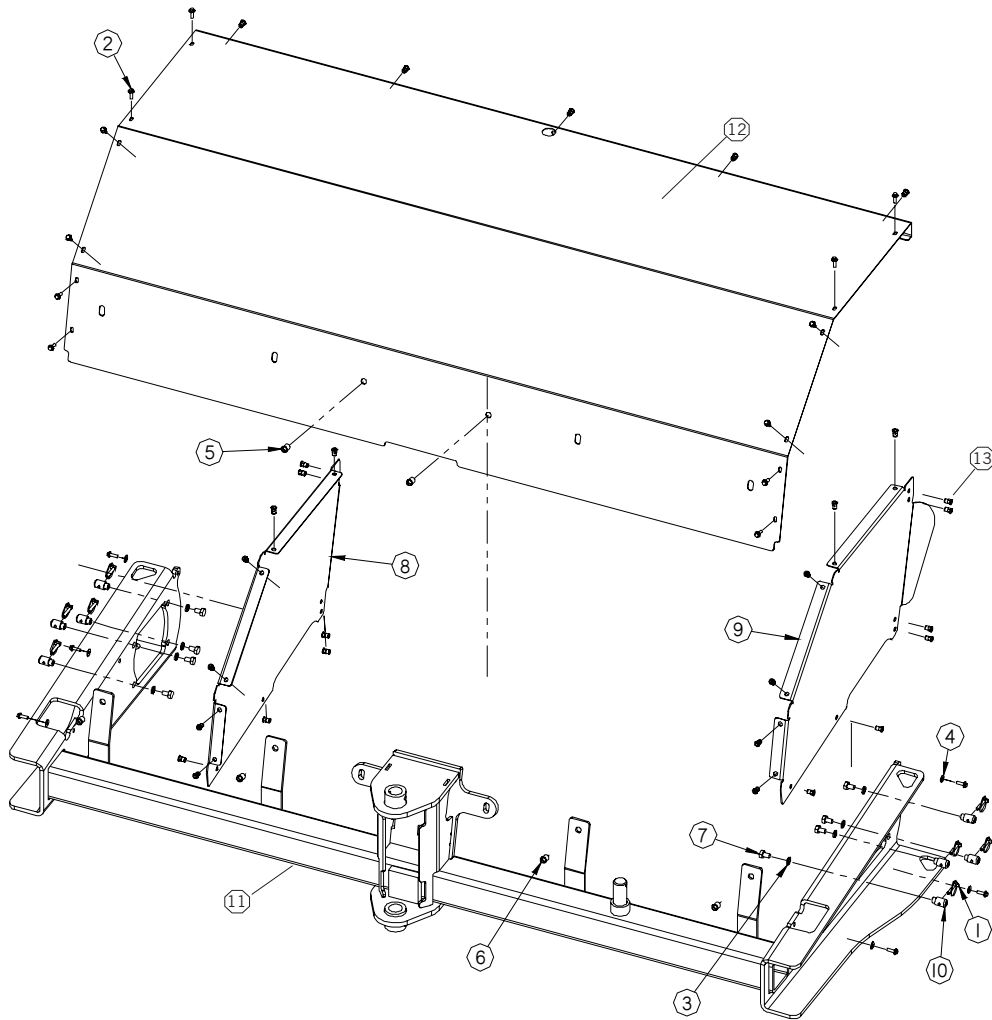
Hydraulic Cylinders - Lift & Swing Troubleshooting

Problem	Possible Cause	Possible Solution
Hydraulic cylinder neither extends nor retracts	<u>Manual valve</u> - Control rods not connected or are binding	Check control rod linkage; make sure all parts are connected and are not binding; fix if necessary
	<u>Electric valve</u> - Set screw in flow divider on manifold too tight	Loosen jam nut and then turn set screw in until it stops; turn set screw out 1 1/2 turns; tighten jam nut
	<u>Electric valve</u> - No power from controls because wires are broken or disconnected	Reconnect wires if disconnected; replace wires if broken
	<u>Electric valve</u> - No power from controls because switch is broken	Replace switch
	<u>Both types of valves</u> - Hydraulic oil level too low	Fill tank to 2-3 inches (51-76mm) from top of tank with ISO VG-46 oil
	<u>Both types of valves</u> - Hoses or fittings loose or disconnected	Tighten hoses and fittings
	<u>Both types of valves</u> - Restriction in hoses	Remove bends in hoses, remove obstructions inside hoses
Hydraulic cylinder only extends or only retracts	<u>Electric valve</u> - Set screw in flow divider on manifold out of adjustment	Loosen jam nut and then turn set screw in until it stops; turn set screw out 1 1/2 turns; tighten jam nut
	<u>Electric valve</u> - Dirt or debris in spools	Contact Sweepster Technical Service
Hydraulic cylinder extends or retracts too quickly	<u>Manual valve</u> - Flow too high because restrictor fitting missing from cylinder	Reinstall restrictor fitting on barrel end of cylinder
	<u>Manual valve</u> - Flow too high even though restrictor fitting is installed	Contact Sweepster for smaller orifice fitting
	<u>Electric valve</u> - Set screw in flow divider on manifold too loose	Loosen jam nut and then turn set screw in until it stops; turn set screw out 1 1/2 turns; tighten jam nut

Hydraulic System Troubleshooting

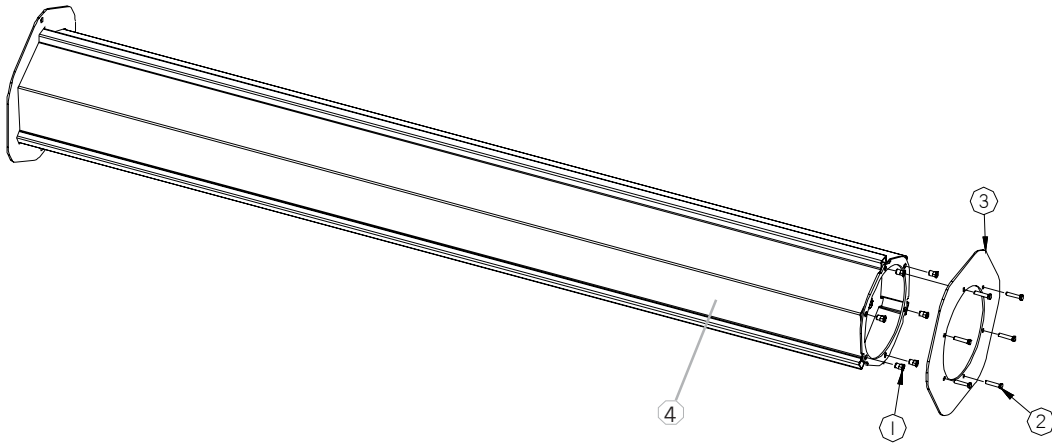
Problem	Possible Cause	Possible Solution
Hydraulic system overheats	Hydraulic oil level too low	Add hydraulic oil to tank until it comes to 2 inches (51 mm) from top
	Restriction in hoses	Remove bends in hoses; remove obstructions inside hoses
	Host pump flow rate exceeds maximum rate of broom.	Contact host manufacturer for proper flow control method
Hydraulic motor seals leak	Back pressure exceeds 1000 PSI	Contact Sweepster
	Motor is failing	High number of hours on motor; Contact dealer to rebuild or replace

Brush Head Frames



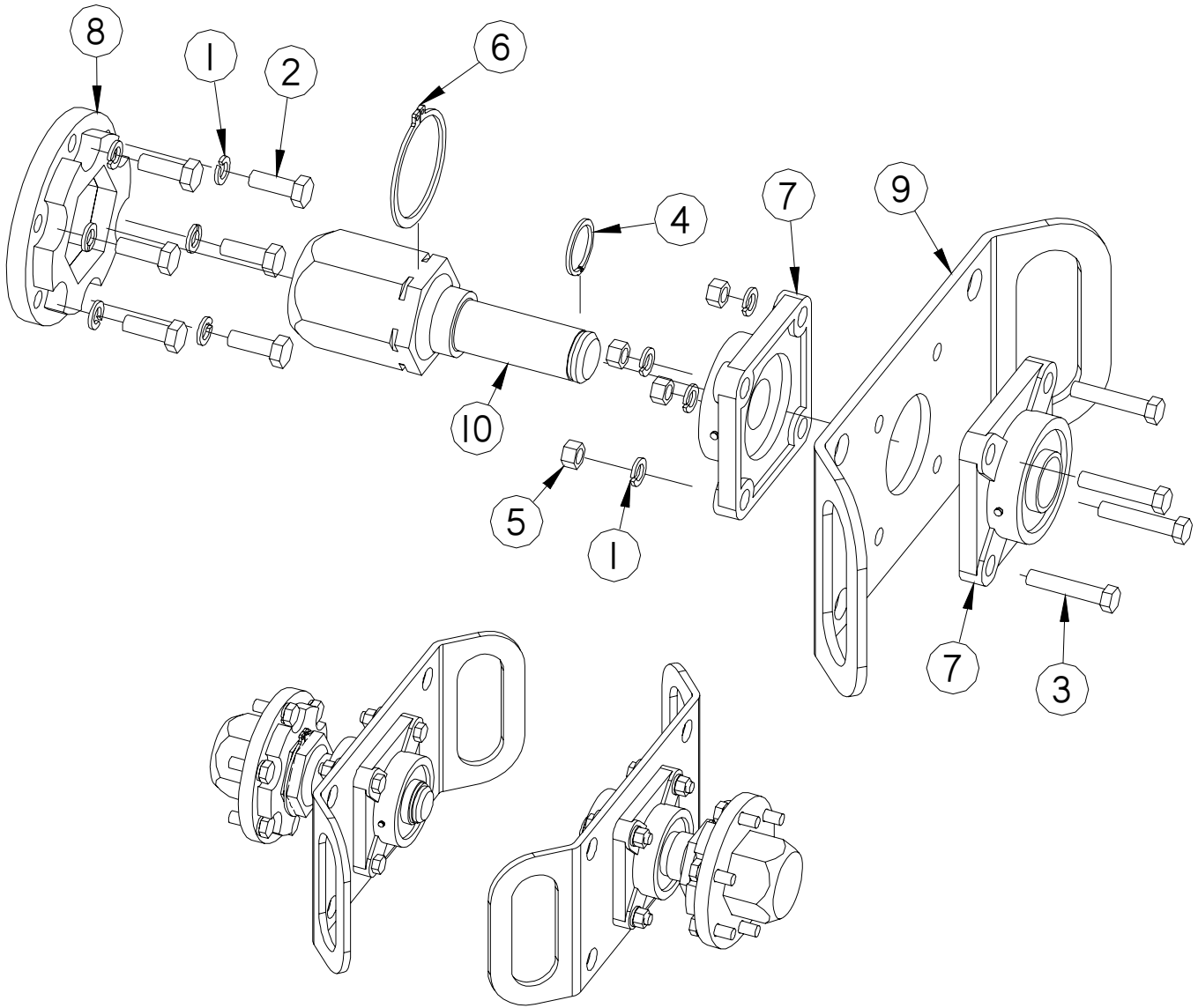
Item	Part	Qty	Description
1.	07-0244	8	Pin, Linch, 1/4
2.	07-2952	18	Screw, HFH, CL10.9, M6-1 x 20
3.	07-3747	8	Washer, Lock, Split, Medium, M10
4.	07-4927	6	Washer, Fender, CL8.8, M6
5.	07-6219	2	Nut, Insert, M10-1.5, .7-3.8mm Grip
6.	07-6682	4	Nut, Insert, M10-1.5, 3.8-7.9mm Grip
7.	07-6769	8	Screw, HHC, CL10.9, M10-1.5 x 16mm
8.	13-14077	1	Sheet, Hood, Side, Left
9.	13-14078	1	Sheet, Hood, Side, Right
10.	13-14083	8	Stud, Mounting, Motor
11.	13-14059-6	1	Weld, Brush Frame, 6 ft
	13-14059-7	1	Weld, Brush Frame, 7 ft
	13-14059-8	1	Weld, Brush Frame, 8 ft
12.	13-14079	1	Sheet, Hood, 6 ft
	13-14080	1	Sheet, Hood, 7 ft
	13-14081	1	Sheet, Hood, 8 ft
13.	07-3617	29	Nut, Insert, M6 x 1, 6 ft
	07-3617	30	Nut, Insert, M6 x 1, 7,8 ft

Core Assemblies



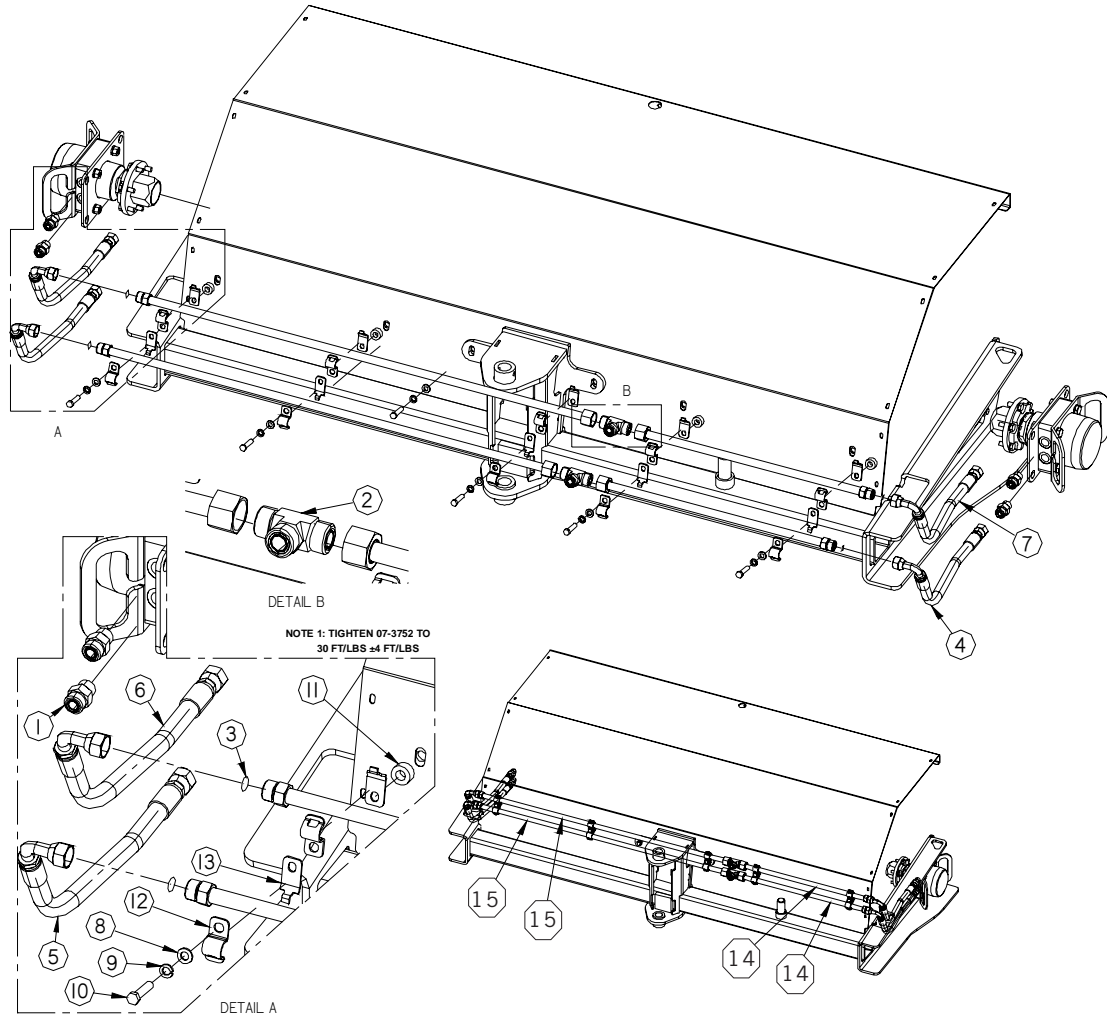
Item	Part	Qty	Description
1.	07-3617	6	Nut, Insert, M6 x 1
2.	07-3731	6	Screw, HHC, CL10.9, M6-1 x 30mm
3.	13-14098	1	Plate, Hat, Core, 10
4.	13-14093-6	1	Weld, Core, 6 ft
	13-14093-7	1	Weld, Core, 7 ft
	13-14393-8	1	Weld, Core, 8 ft
			01-0930 1 Section, Set, 32, 10, Mixed, Convoluted, 6 ft
			01-0931 1 Section, Set, 32, 10, Mixed, Convoluted, 7 ft
			01-0933 1 Section, Set, 32, 10, Mixed, Convoluted, 8 ft
			01-0020C 1 Section, Set, 32, Poly, Convoluted, 6 ft
			01-0079C 1 Section, Set, 32, Poly, Convoluted, 7 ft
			01-0080C 1 Section, Set, 32, Poly, Convoluted, 8 ft

Shaft Assembly



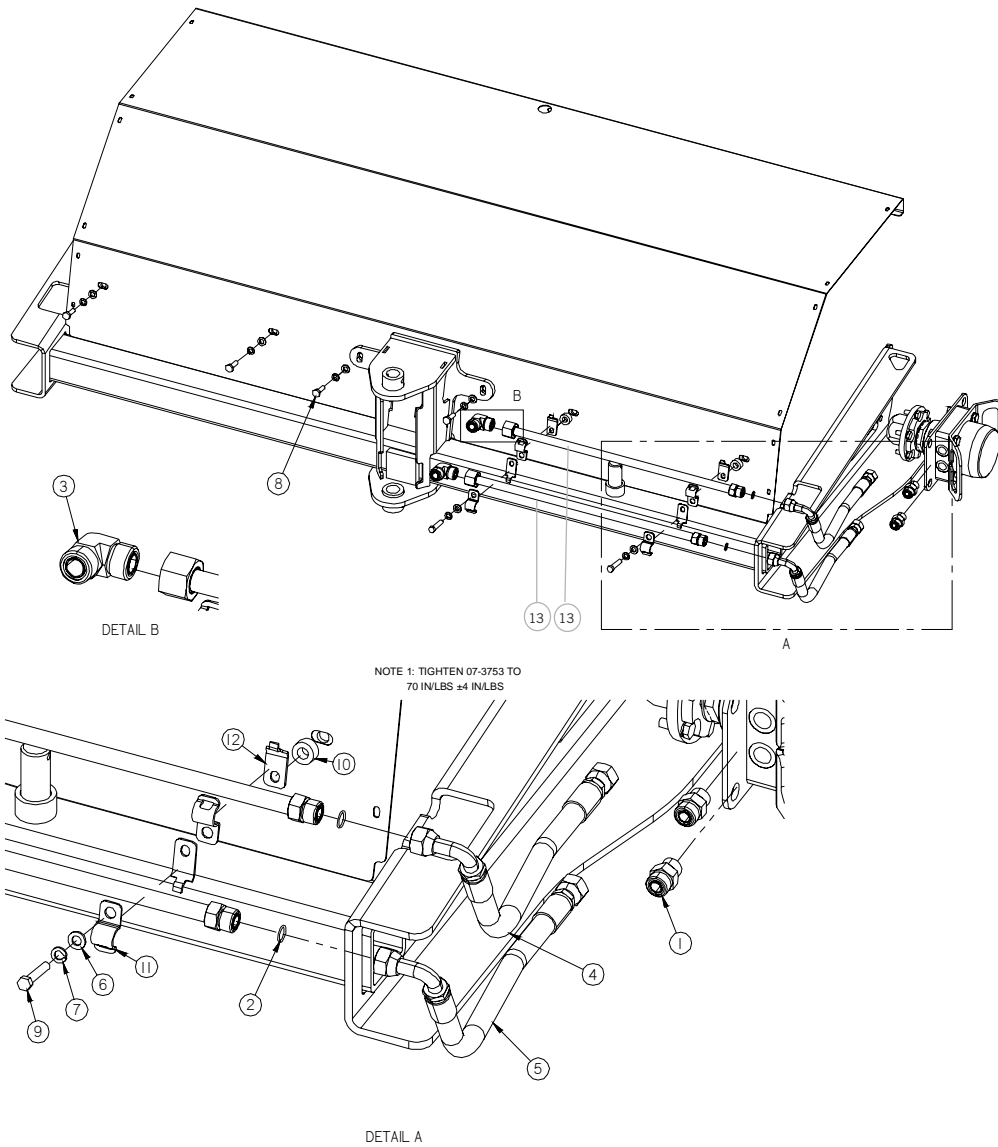
Item	Part	Qty	Description
1.	07-3747	10	Washer, Lock, Split, Medium, M10
2.	07-3749	6	Screw, HHC, CL10.9, M10-1.5 x 30mm
3.	07-3753	4	Screw, HHC, CL10.9, M10-1.5 x 50mm
4.	07-3842	1	Ring, Snap
5.	07-4514	4	Nut, Hex, CL10, M10-105
6.	07-6196	1	Ring, Retaining, 2.75
7.	08-0067	2	Bearing, 1 1/4, 4 Bolt
8.	13-12750	1	Weld, Hex, Plate, with Doubler
9.	13-14133	1	Plate, Mounting, Bearing
10.	13-14135	1	Hub, Hex, 2 1/2, Single Motor

Hydraulic Assemblies - Dual Motor



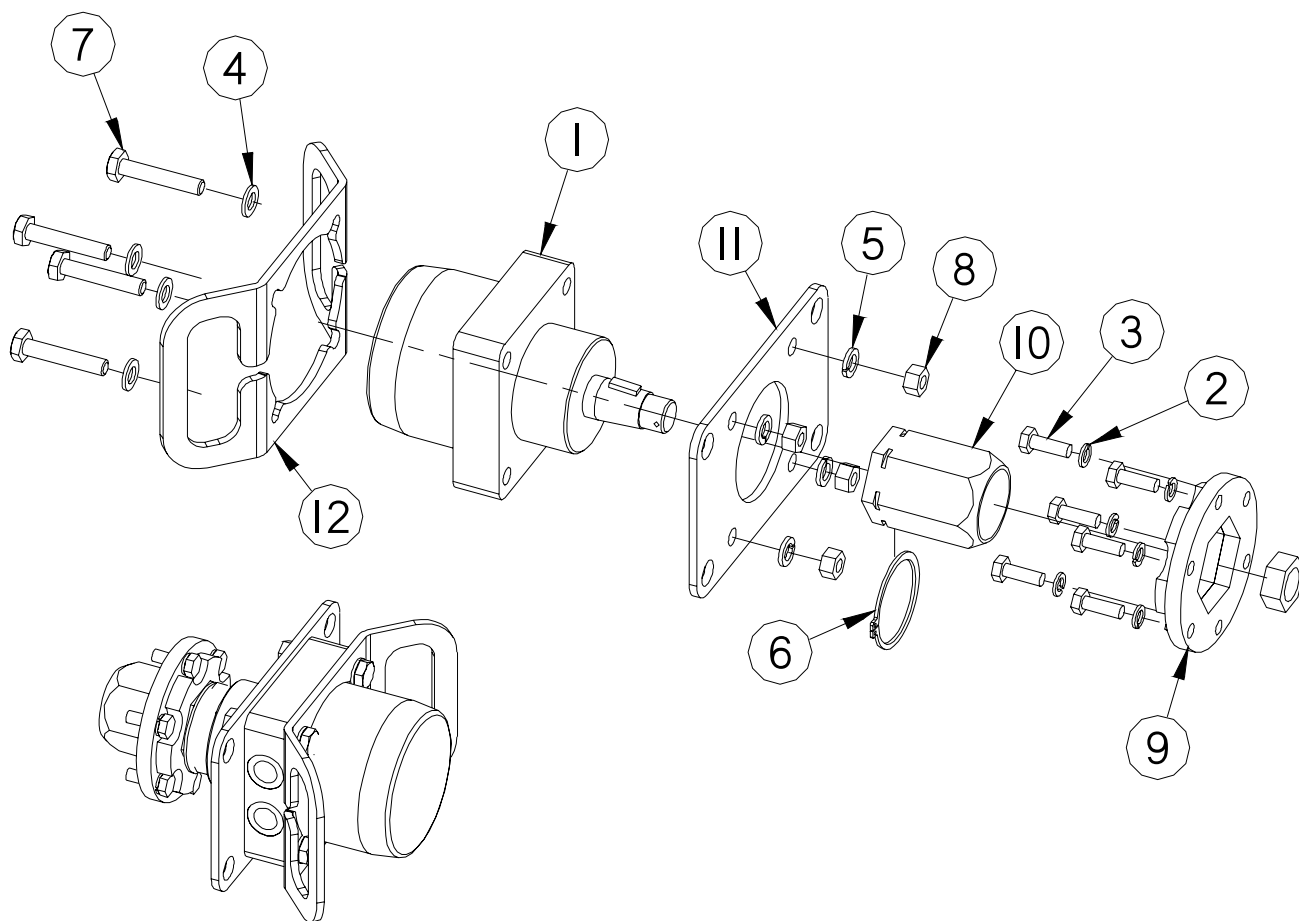
Item	Part	Qty	Description
1.	03-1939	4	Fitting, Adapter, HP, 7/8MOR, 5/8MFS
2.	03-1940	2	Fitting, Tee, HP, 3/4MFS, 3/4MFS
3.	03-2002	4	O-Ring, FS, 5/8
4.	03-5017	1	Hose, 5/8 x 20, 2W, 10FFS, 10FFS90, with Sleeve
5.	03-5017	1	Hose, 5/8 x 20, 2W, 10FFS, 10FFS90, with Sleeve
6.	03-5017	1	Hose, 5/8 x 20, 2W, 10FFS, 10FFS90, with Sleeve
7.	03-5017	1	Hose, 5/8 x 20, 2W, 10FFS, 10FFS90, with Sleeve
8.	07-3745	6	Washer, Flat, CL8.8, M10
9.	07-3747	6	Washer, Lock, Split, Medium, M10
10.	07-3753	6	Screw, HHC, CL10.9, M10-1.5 x 50mm
11.	07-6770	4	Spacer, Plastic, 1.0 x .510 x .50
12.	07-6771	10	Clip, #2, Hydraulic Line, #12 Tube
13.	07-6772	10	Clip, #1, Hydraulic Line, #12 Tube
14.	03-1967-4	2	Assembly, Tube, 23.25, 6 ft
	03-1967-5	2	Assembly, Tube, 29.25, 7 ft
	03-1967-6	2	Assembly, Tube, 34.75, 8 ft
15.	03-1967-8	2	Assembly, Tube, 47.25, 6 ft
	03-1967-9	2	Assembly, Tube, 52.75, 7 ft
	03-1967-10	2	Assembly, Tube, 58.75, 8 ft

Hydraulic Assemblies - Single Motor



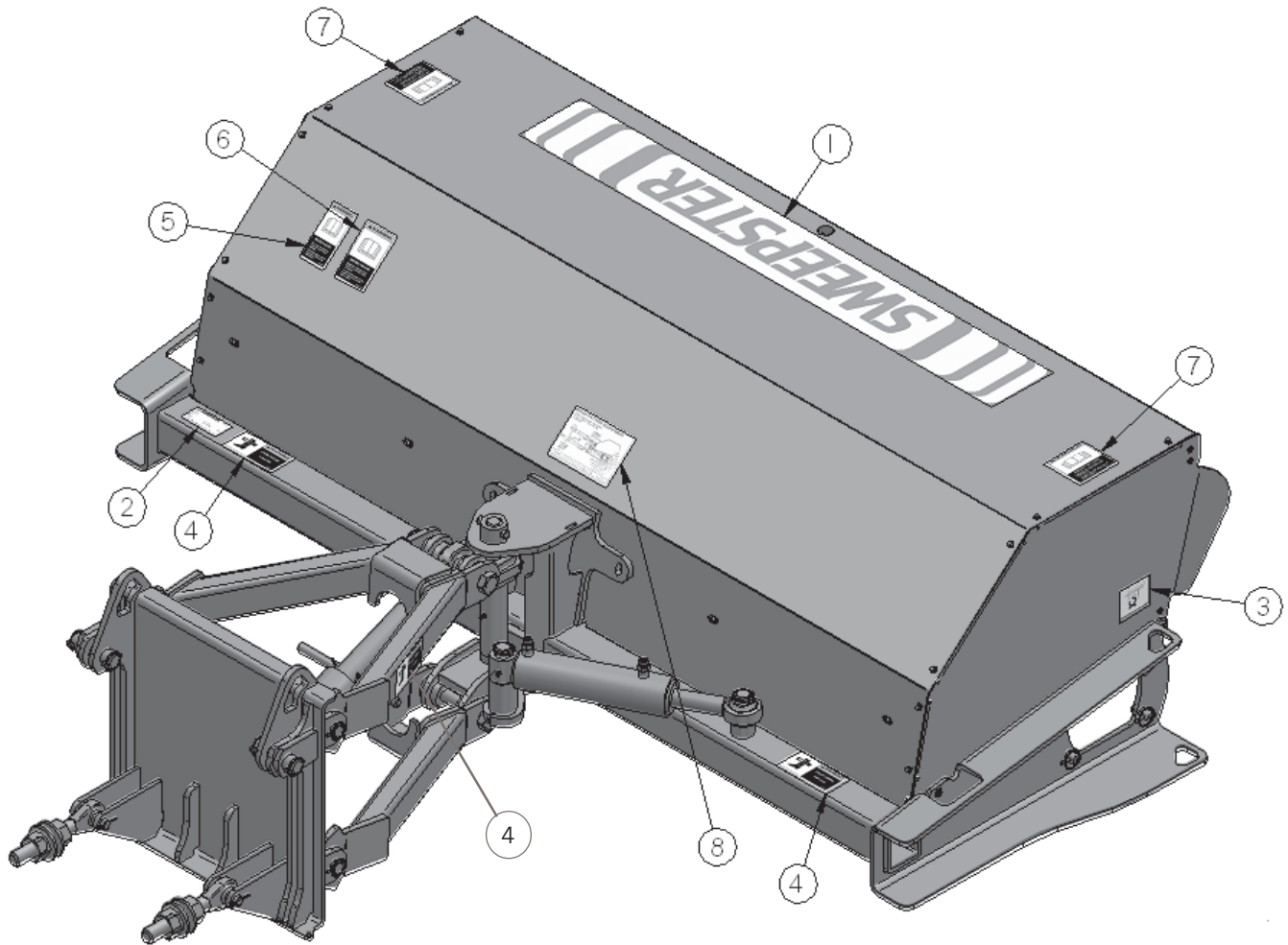
Item	Part	Qty	Description
1.	03-1939	2	Fitting, Adaptor, HP, 7/8MOR, 5/8MFS
2.	03-2002	2	O-Ring, FS, 5/8
3.	03-2216	2	Fitting, Elbow, HP, 90°, 3/4MFS, 3/4MFS
4.	03-5017	1	Hose, 5/8 x 20, 2W, 10FFS, 10FFS90, with Sleeve
5.	03-5017	1	Hose, 5/8 x 20, 2W, 10FFS, 10FFS90, with Sleeve
6.	07-3745	6	Washer, Flat, CL8.8, M10
7.	07-3747	6	Washer, Lock, Split, Medium, M10
8.	07-3750	4	Screw, HHC, CL10.9, M10-1.5 x 35mm
9.	07-3753	2	Screw, HHC, CL10.9, M10-1.5 x 50mm
10.	07-6770	2	Spacer, Plastic, 1.0 x .510 x .50
11.	07-6771	4	Clip, #2, Hydraulic Line, #12 Tube
12.	07-6772	4	Clip, #1, Hydraulic Line, #12 Tube
13.	03-1967-4	2	Assembly, Tube, 23.25, 6 ft
	03-1967-5	2	Assembly, Tube, 29.25, 7 ft
	03-1967-6	2	Assembly, Tube, 34.75, 8 ft

Motor Mount Assemblies



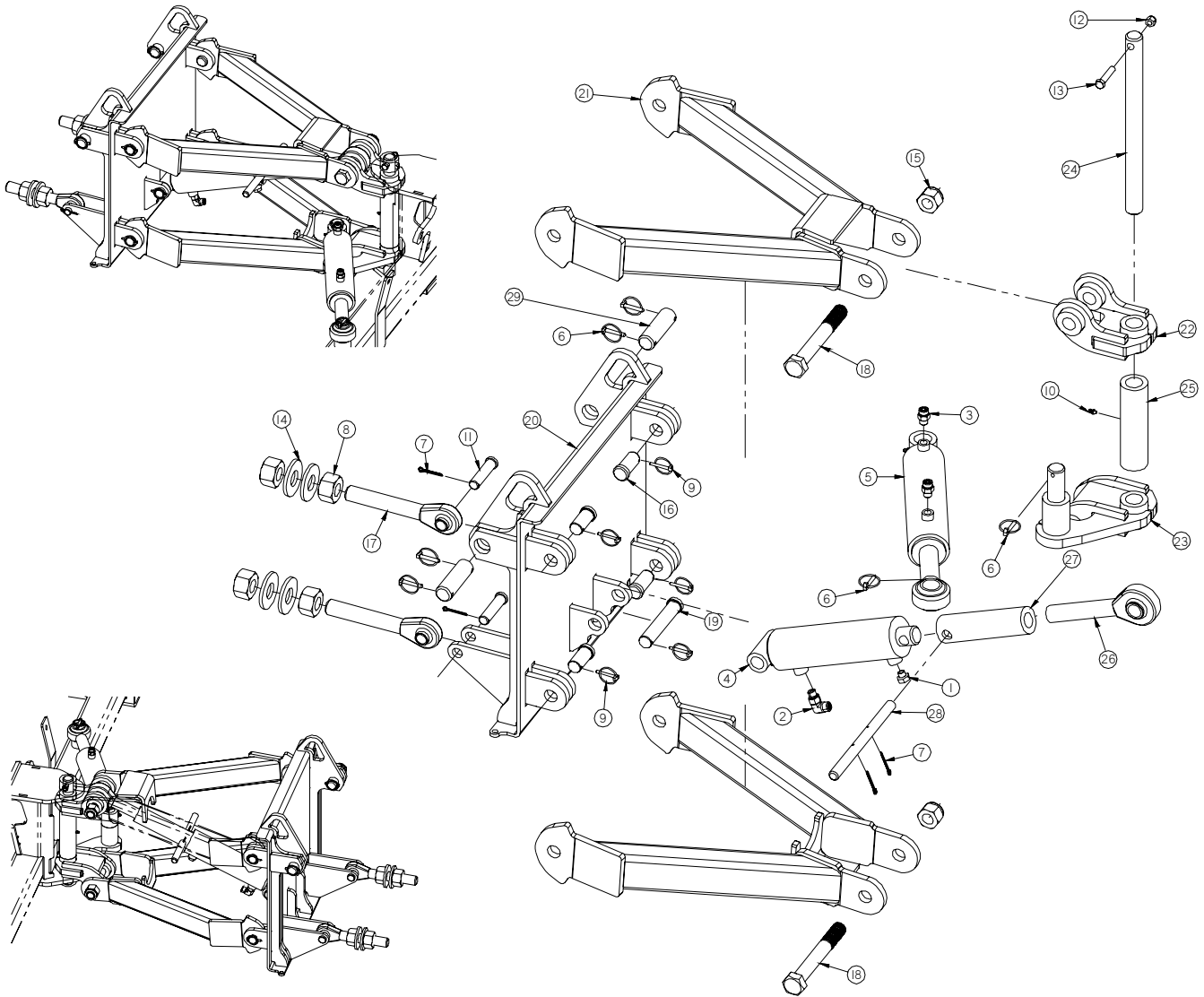
Item	Part	Qty	Description
1.	03-5016	1	Motor, Hydraulic, White, 18.3 cu in
	03-5087	1	Motor, Hydraulic, White, 28.3 cu in
2.	07-3747	6	Washer, Lock, Split, Medium, M10
3.	07-3749	6	Screw, HHC, CL10.9, M10-1.5 x 30mm
4.	07-3754	4	Washer, Flat, CL8.8, M12
5.	07-3756	4	Washer, Lock, Split, Medium, M12
6.	07-6196	1	Ring, Retaining, 2.75
7.	07-6683	4	Screw, HHC, CL10.9, M12-1.75 x 65mm
8.	07-6766	4	Nut, Hex, CL10.9, M12-1.75
9.	13-12750	1	Weld, Hex, Plate, with Doubler
10.	13-14058	1	Hub, Hex, 2 1/2 x 1 1/4, Tapered Bore x 3.56
11.	13-14085	1	Plate, Mounting, Motor
12.	13-14086	1	Plate, Handle, Motor

Brush Head Labels



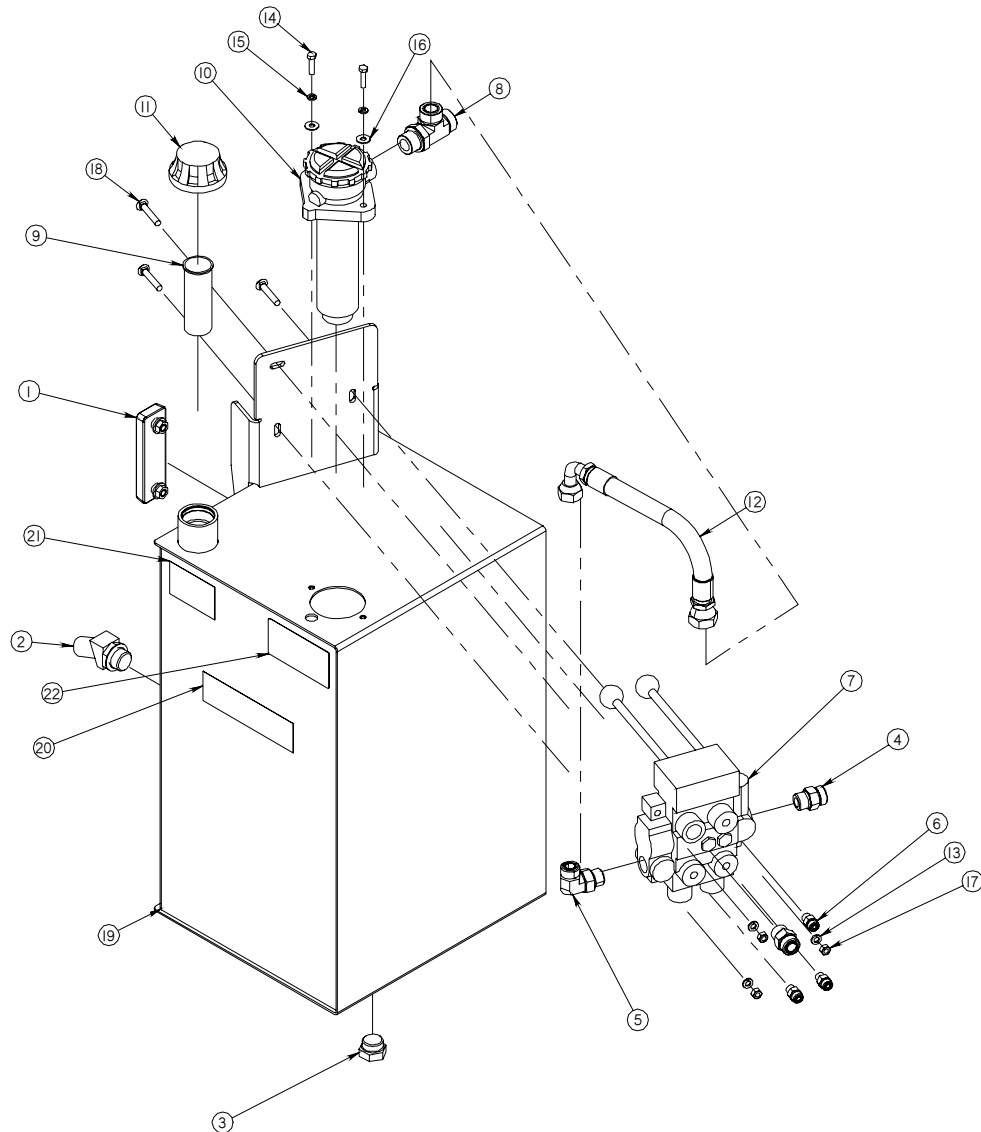
Item	Part	Qty	Description
1.	50-0252	1	Label, Logo, Large, White
2.	50-0634	1	Label, Serial Number
3.	50-0643	2	Label, Tie Down Point
4.	50-0721	4	Label, Warning, Crush Hazard
5.	50-0722	1	Label, Warning, Misuse Hazard
6.	50-0724	1	Label, Warning, High Pressure Fluid Hazard
7.	50-0726	2	Label, Warning, Flying Objects & Entanglement
8.	50-0752	1	Label, Brush Pattern Adjustment

Lift Linkage



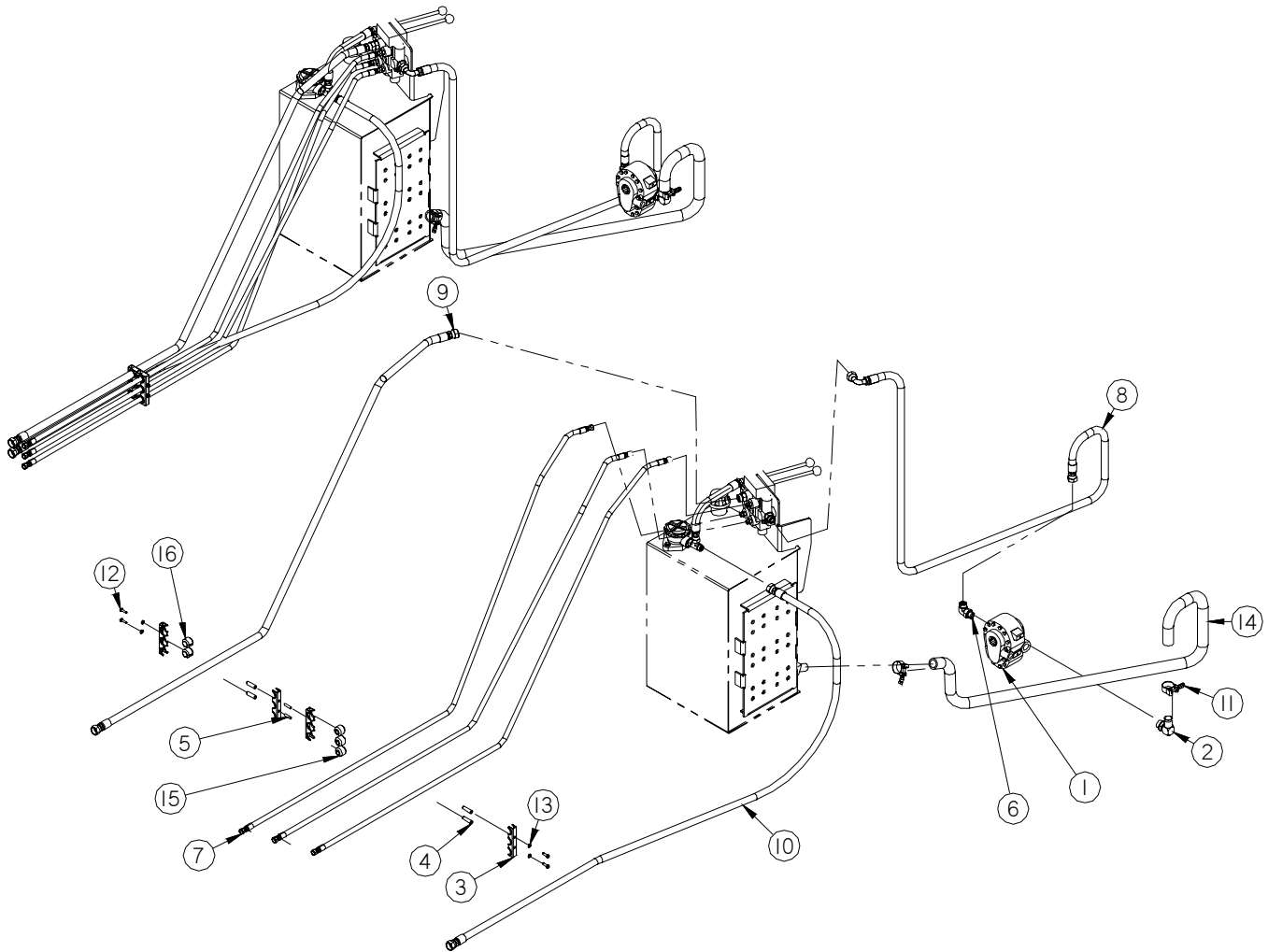
Item	Part	Qty	Description	Item	Part	Qty	Description
1.	03-1957	1	Fitting, Vent, 9/16-18MOR, Hex, with Screen	13.	07-3669	1	Screw, HHC, Gr8, 7/16-14 x 2 1/2
2.	03-2092	1	Fitting, Elbow, HP, 90°, 9/16MOR 3/8MFS	14.	07-4041	4	Washer, Flat, Gr8, 1 1/8
3.	03-2291	2	Fitting, Adapter, HP, 3/8MFS, 9/16MOR	15.	07-5938	2	Nut, Hex, Nylock, Gr8, 1-8
4.	03-5037	1	Cylinder, Hydraulic, 2 1/2 Bore, 6 3/4 Stroke, 1 3/8 Rod	16.	07-6691	4	Pin, Clevis, 1 x 2
5.	03-5061	1	Cylinder, Hydraulic, 2 1/2 Bore, 7 1/2 Stroke, 1 3/8 Rod	17.	07-6692	2	Toplink, 3/4, 1-8
6.	07-0244	6	Pin, Linch, 1/4	18.	07-6700	2	Screw, HHC, Gr8, 1-8 x 7 1/2
7.	07-1044	4	Pin, Cotter, Gr2, 5/32 x 1 1/2	19.	07-6889	1	Pin, Clevis, 1 x 5
8.	07-1284	4	Nut, Hex, Gr8, 1 1/8-7	20.	13-14018	1	Weld, Mounting
9.	07-2843	5	Pin, Klick, 3/16 x 1 5/8	21.	13-14024	2	Weld, Arm
10.	07-3112	1	Fitting, Zerk, 1/4-28, Self Tap	22.	13-14028	1	Weld, Pivot, Upper
11.	07-3473	2	Pin, Clevis, Gr2, 3/4 x 3	23.	13-14033	1	Weld, Pivot, Lower
12.	07-3664	1	Nut, Hex, Nylock, Gr8, 7/16-14	24.	13-14043	1	Pin, 1.25 x 15.53, with Holes
				25.	13-14048	1	Bushing, 2 x 1.26 x 7.22
				26.	13-14250	1	Toplink, 5.81
				27.	13-14252	1	Tube, Adjustment
				28.	13-14254	1	Rod, Adjustment
				29.	13-14787	2	Pin, 1 1/4 x 4, with Holes

Hydraulic Tank



Item	Part	Qty	Description	Item	Part	Qty	Description
1.	03-1074	1	Gauge, Sight, Hydraulic	12.	03-5171	1	Hose, 3/4 x 17, TC, 12FFS90, 12FFS
2.	03-1457	1	Fitting, HP, 45°, 1 1/4, 1 5/8MOR	13.	07-1718	3	Washer, Lock, Split, Medium, 3/8
3.	03-1520	1	Fitting, Plug, HP, Hex, 1 5/16	14.	07-1973	2	Screw, HHC, Gr8, 5/16-18 x 1 1/4
4.	03-1945	2	Fitting, Adapter, HP, 1 1/16MOR, 3/4MFS	15.	07-3273	2	Washer, Lock, Split, Medium, 5/16
5.	03-2177	1	Fitting, Elbow, HP, 90°, 3/4FFS, 1 1/16MOR	16.	07-3275	2	Washer, Flat, Gr8, 5/16
6.	03-2291	3	Fitting, Adapter, HP, 3/8MFS, 9/16MOR	17.	07-3654	3	Nut, Hex, Gr8, 3/8-16
7.	03-3138	1	Valve, Prince, 2 Spool	18.	07-3703	3	Bolt, Carriage, Gr5, 3/8-16 x 2 1/4
8.	03-5170	1	Fitting, Tee Run, 16MOR, 12MFS	19.	13-13975	1	Weld, Tank
9.	03-4642	1	Strainer, Filler Spout	20.	50-0184	1	Label, Logo, Sweepster
10.	03-5054	1	Filter, Hydraulic, Return Line	21.	50-0272	1	Label, oil, ISO VG 46
11.	03-5055	1	Cap, Breather	22.	50-0725	1	Label, Warning, High Pressure Fluid Hazard

Hydraulic Pump/Hose Assembly

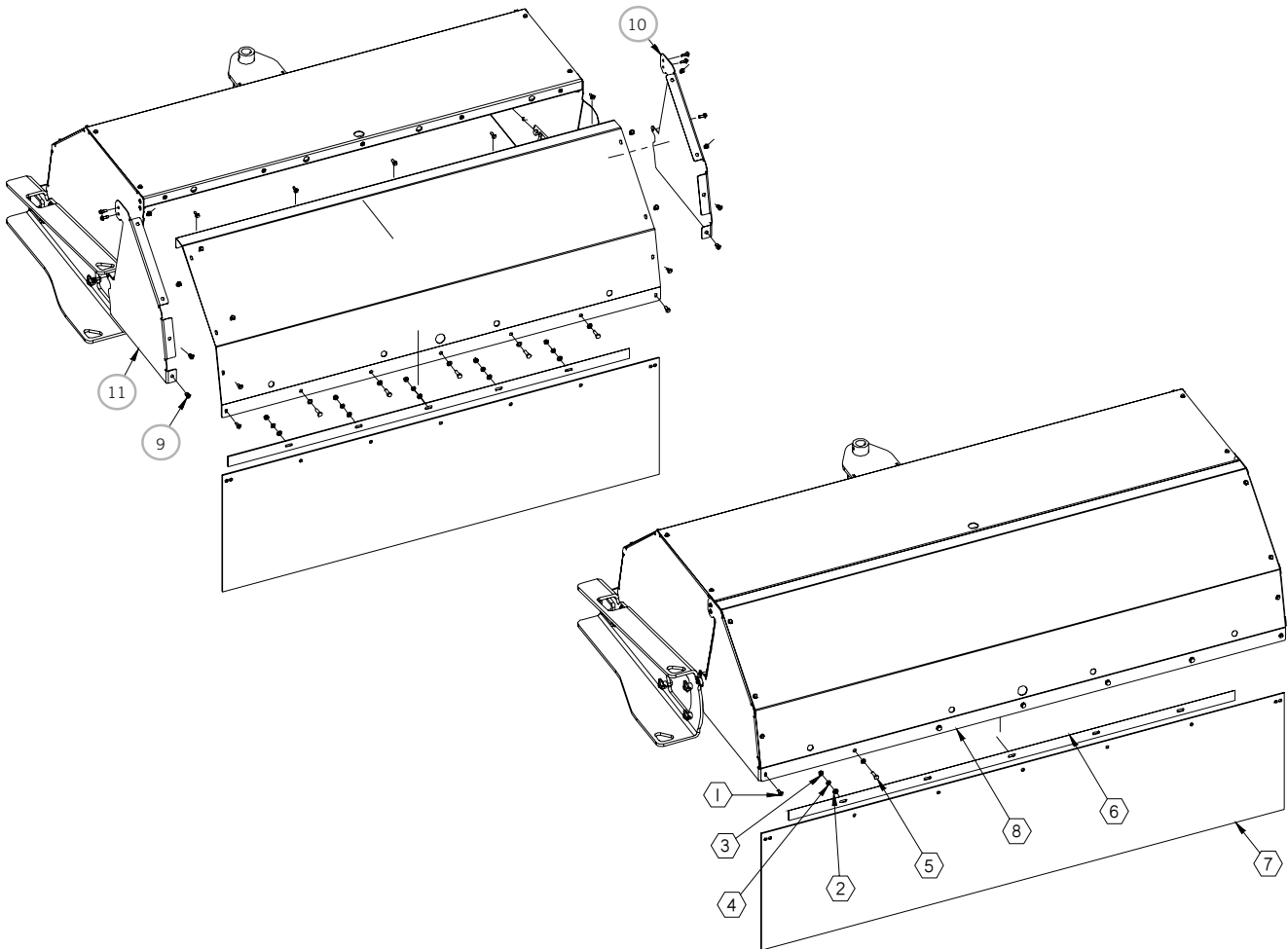


Item	Part	Qty	Description
1.	03-0597	1	Pump, PTO, 20gpm
2.	03-0710	1	Fitting, Barb, HP, 90°, 1 1/4, 1 5/16MOR
3.	03-0785	4	Clamp, Hydraulic, Metal, 3 Position
4.	03-0788	4	Nut, Stack, Socket Head
5.	03-1184	2	Stud, Self Tapping, 5/16, 5/16
6.	03-2177	1	Fitting, Elbow, HP, 90°, 3/4MFS, 1 1/16MOR
7.	03-3345	3	Hose, 3/8 x 120, TC, 3/8FFS, 3/8FFS
8.	03-3987	1	Hose, 3/4 x 126, TC, 3/4FFS90, 3/4FFS
9.	03-4101	1	Hose, 3/4 x 142, TC, 3/4FFS, 3/4FFS
10.	03-4101	1	Hose, 3/4 x 142, TC, 3/4FFS, 3/4FFS
11.	07-1192	2	Clamp, T-Bolt, 1 1/4
12.	07-1714	4	Screw, HHC, Gr8, 5/16-18 x 1
13.	07-3273	4	Washer, Lock, Split, Medium, 5/16
14.	09-0020	8ft	Hose, Suction, 1 1/4
15.	09-0223	3	Bushing, Rubber, Split, 3/8
16.	09-0224	2	Bushing, Rubber, Split, 3/4

180° Hood with Drape

Assemblies

28-9918-6
28-9918-7
28-9918-8



Item	Part	Qty	Description	Item	Part	Qty	Description
1.	07-2952	19	Screw, HFH, CL10.9, M6-1 x 20, 6 ft	6.	13-12298	1	Plate, Retainer, 6 ft
	07-2952	20	Screw, HFH, CL10.9, M6-1 x 20, 7,8 ft		13-12806	1	Plate, Retainer, 7 ft
2.	07-3736	10	Washer, Flat, CL8.8, M8, 6,7 ft		13-12509	1	Plate, Retainer, 8 ft
	07-3736	14	Washer, Flat, CL8.8, M8, 8 ft	7.	13-13302	1	Flap, Neoprene, 6 ft
3.	07-3737	5	Nut, Hex, CL10, M8-1.25, 6,7 ft		13-13272	1	Flap, Neoprene, 7 ft
	07-3737	7	Nut, Hex, CL10, M8-1.25, 8 ft		13-13301	1	Flap, Neoprene, 8 ft
4.	07-3738	5	Washer, Lock, Split, Medium, M8, 6,7 ft	8.	13-14536	1	Sheet, Hood, 6 ft
	07-3738	7	Washer, Lock, Split, Medium, M8, 8 ft		13-14537	1	Sheet, Hood, 7 ft
5.	07-3739	5	Screw, HHC, CL10.9, M8-1.25 x 25mm, 6,7 ft		13-14538	1	Sheet, Hood, 8 ft
	07-3739	7	Screw, HHC, CL10.9, M8-1.25 x 25mm, 8 ft	9.	07-3617	8	Nut, Hex, Insert, M6 x 1
				10.	13-14545	1	Sheet, Side, Left
				11.	13-14546	1	Sheet, Side, Right

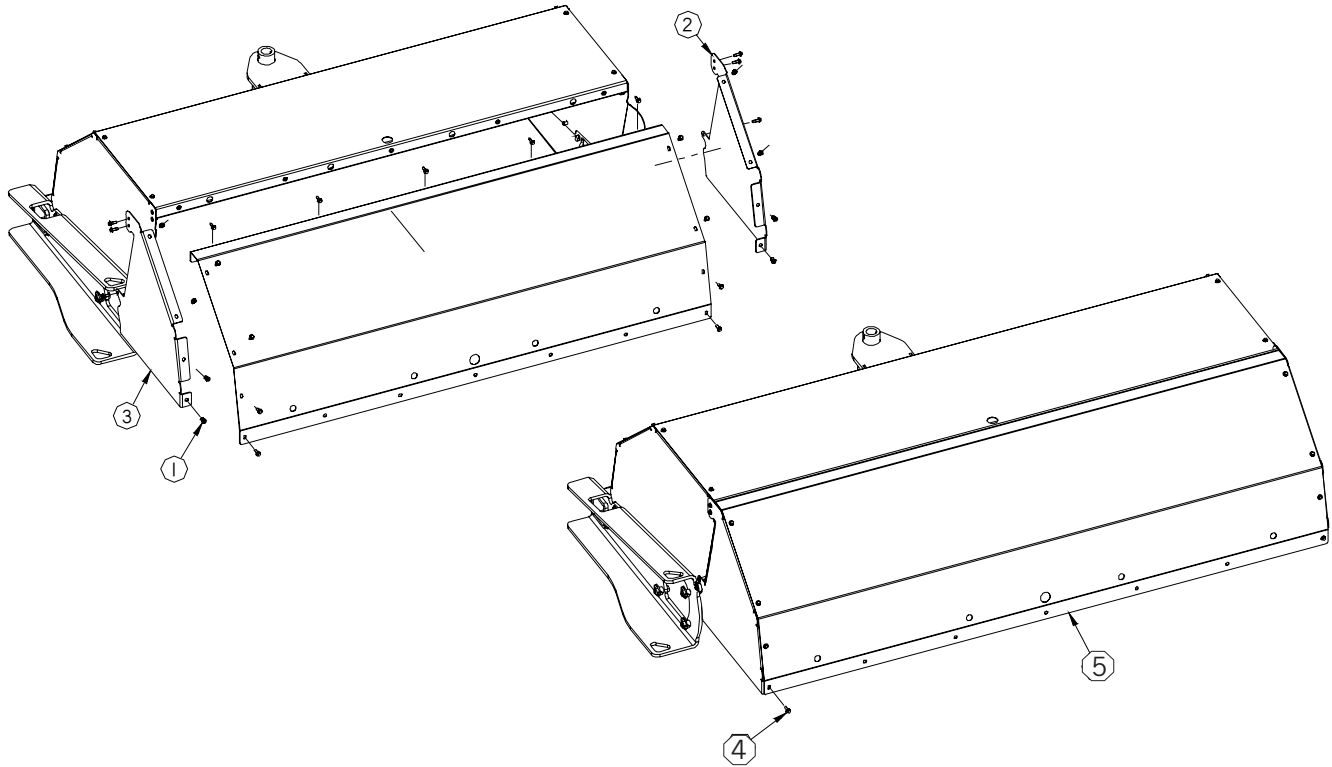
180° Hood Kits

Assemblies

28-9930-6

28-9930-7

28-9930-8

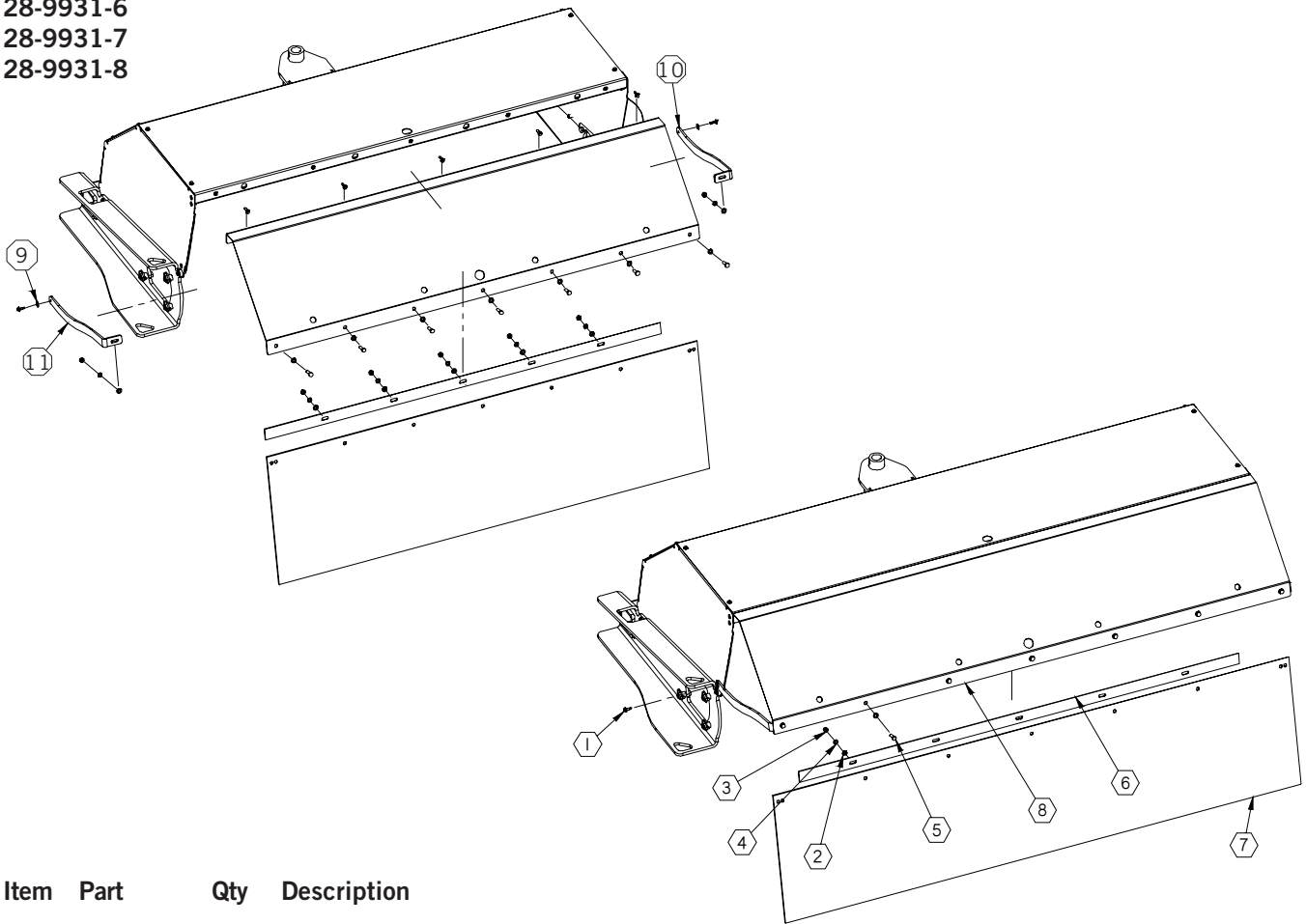


Item	Part	Qty	Description
1.	07-3617	8	Nut, Insert, Hex, M6 x 1
2.	13-14545	1	Sheet, Side, Left
3.	13-14546	1	Sheet, Side, Right
4.	07-2952	19	Screw, HFH, CL10.9, M6-1 x 20, 6 Ft
	07-2952	20	Screw, HFH, CL10.9, M6-1 x 20, 7/8 Ft
5.	13-14536	1	Sheet, Hood, 6 ft
	13-14537	1	Sheet, Hood, 7 ft
	13-14538	1	Sheet, Hood, 8 ft

Dirt Deflector with Drape

Assemblies

28-9931-6
28-9931-7
28-9931-8

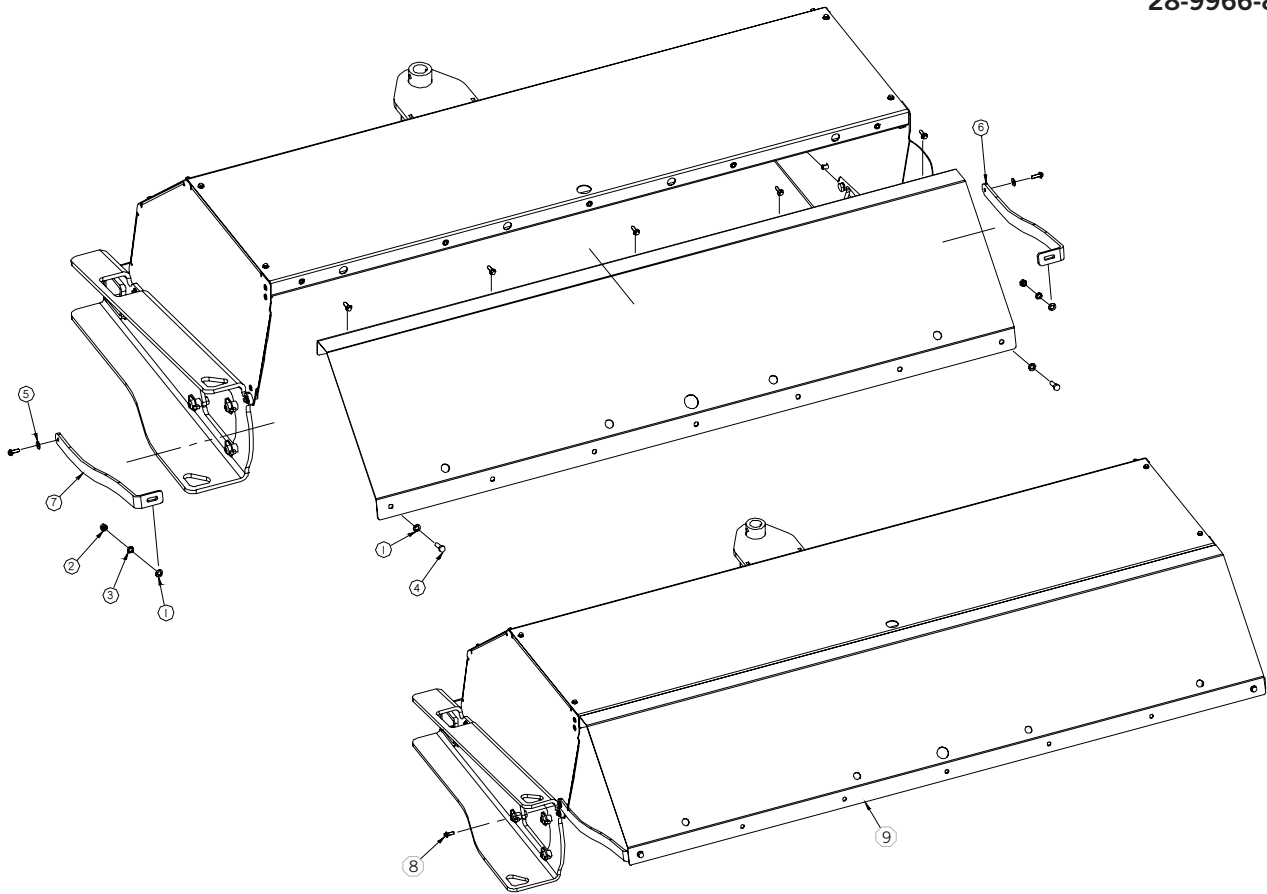


Item	Part	Qty	Description
1.	07-2952	7	Screw, HFH, CL10.9, M6-1 x 20, 6 ft
	07-2952	8	Screw, HFH, CL10.9, M6-1 x 20, 7,8 ft
2.	07-3736	14	Washer, Flat, CL8.8, M8, 6,7 ft
	07-3736	18	Washer, Flat, CL8.8, M8, 8 ft
3.	07-3737	7	Nut, Hex, CL10, M8-1.25, 6,7 ft
	07-3737	9	Nut, Hex, CL10, M8-1.25, 8 ft
4.	07-3738	7	Washer, Lock, Split, Medium, M8, 6,7 ft
	07-3738	9	Washer, Lock, Split, Medium, M8, 8 ft
5.	07-3739	7	Screw, HHC, CL10.9, M8-1.25 x 25mm, 6,7 ft
	07-3739	9	Screw, HHC, CL10.9, M8-1.25 x 25mm, 8 ft
6.	13-12298	1	Plate, Retainer, 6 ft
	13-12806	1	Plate, Retainer, 7 ft
	13-12509	1	Plate, Retainer, 8 ft
7.	13-13302	1	Flap, Neoprene, 6 ft
	13-13272	1	Flap, Neoprene, 7 ft
	13-13301	1	Flap, Neoprene, 8 ft
8.	13-14620	1	Sheet, Dirt Deflector, 6 ft
	13-14621	1	Sheet, Dirt Deflector, 7 ft
	13-14622	1	Sheet, Dirt Deflector, 8 ft
9.	07-4927	2	Washer, Fender, CL8.8, M6
10.	13-14618	1	Plate, Bracket, Left
11.	13-14619	1	Plate, Bracket, Right

Dirt Deflector

Assemblies

28-9966-6
28-9966-7
28-9966-8



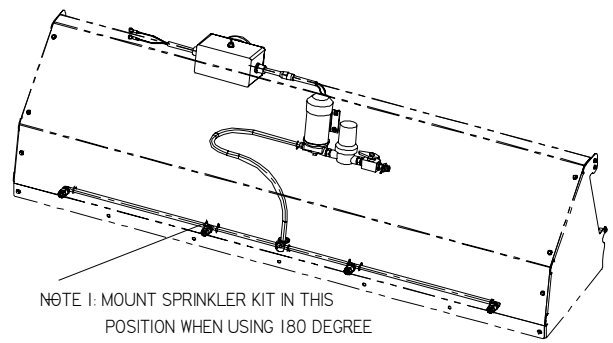
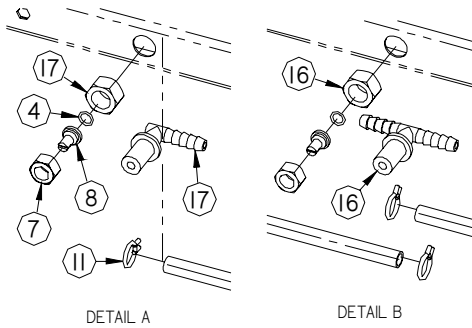
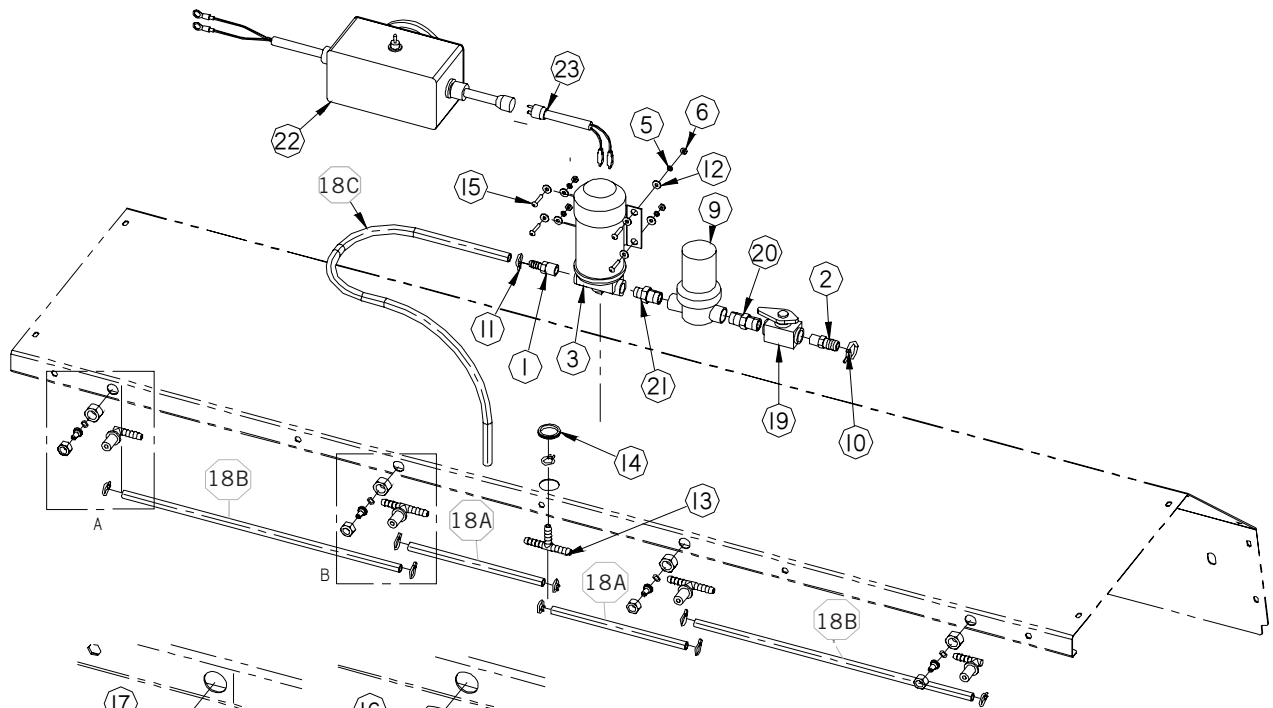
Item	Part	Qty	Description
1.	07-3736	4	Washer, Flat, CL8.8, M8
2.	07-3737	2	Nut, Hex, CL10, M8-1.25
3.	07-3738	2	Washer, Lock, Split, Medium, M8
4.	07-3739	2	Screw, HHC, CL10.9, M8-1.25 x 25mm
5.	07-4927	2	Washer, Fender, CL8.8, M6,
6.	13-14618	1	Plate, Bracket, Left
7.	13-14619	1	Plate, Bracket, Right
8.	07-2952	7	Screw, HFH, CL10.9, M6-1 x 20mm, 6 ft
	07-2952	8	Screw, HFH, CL10.9, M6-1 x 20mm, 7,8 ft
9.	13-14620	1	Sheet, Dirt Deflector, 6 ft
	13-14621	1	Sheet, Dirt Deflector, 7 ft
	13-14622	1	Sheet, Dirt Deflector, 8 ft

Dust Suppression System

Item	Part	Qty	Description
1.	03-0457	1	Fitting, Barb, Nylon, 3/8-3/8MP
2.	03-1226	1	Fitting, Barb, HP, 5/8, 1/2MP
3.	03-1326	1	Pump, Flojet, Water, 2.9 gpm, 12 volt
4.	03-3537	4	O-Ring, #8 Face Seal
5.	07-0140	4	Washer, Lock, Gr2, #10
6.	07-0141	4	Nut, Hex, Gr2, 10-24
7.	07-0413	4	Nozzle, Cap, Nylon
8.	07-0414	4	Nozzle, Tip, Brass
9.	07-0532	1	Strainer, Hypro, Water
10.	07-0547	1	Clamp, Spring, 7/8 Hose
11.	07-0549	10	Clamp, Spring, 5/8 Hose
12.	07-1430	8	Washer, Flat, #10
13.	07-3869	1	Fitting, Barb, Tee, Nylon, 3/8
14.	07-4804	1	Grommet, Rubber
15.	07-4831	4	Screw, BHC, 10-24UNC, 2B x 3/4
16.	07-4861	2	Nozzle, Tee, without Clamp
17.	07-4862	2	Nozzle, Elbow, without Clamp
18A.	07-5127	9.8ft	Hose, Clear, Vinyl, 3/8, 6 ft
	07-5127	11.8ft	Hose, Clear, Vinyl, 3/8, 7 ft
	07-5127	13.8ft	Hose, Clear, Vinyl, 3/8, 8 ft
18B.	07-5127	19.5ft	Hose, Clear, Vinyl, 3/8, 6 ft
	07-5127	23.5ft	Hose, Clear, Vinyl, 3/8, 7 ft
	07-5127	27.5ft	Hose, Clear, Vinyl, 3/8, 8 ft
18C.	07-5127	20.1ft	Hose, Clear, Vinyl, 3/8, 6 ft
	07-5127	19.1ft	Hose, Clear, Vinyl, 3/8, 7 ft
	07-5127	18.1ft	Hose, Clear, Vinyl, 3/8, 8 ft
19.	07-6862	1	Valve, Shut-off, 1/2, Nylon
20.	07-6863	1	Fitting, Nipple, 1/2, Nylon
21.	07-6864	1	Fitting, Nipple, 1/2 x 3/8, Nylon
22.	LAF8316	1	Wire, Harness, with Box, for Water Pump
23.	LAF8320	1	Wire, Assembly x 11 inches

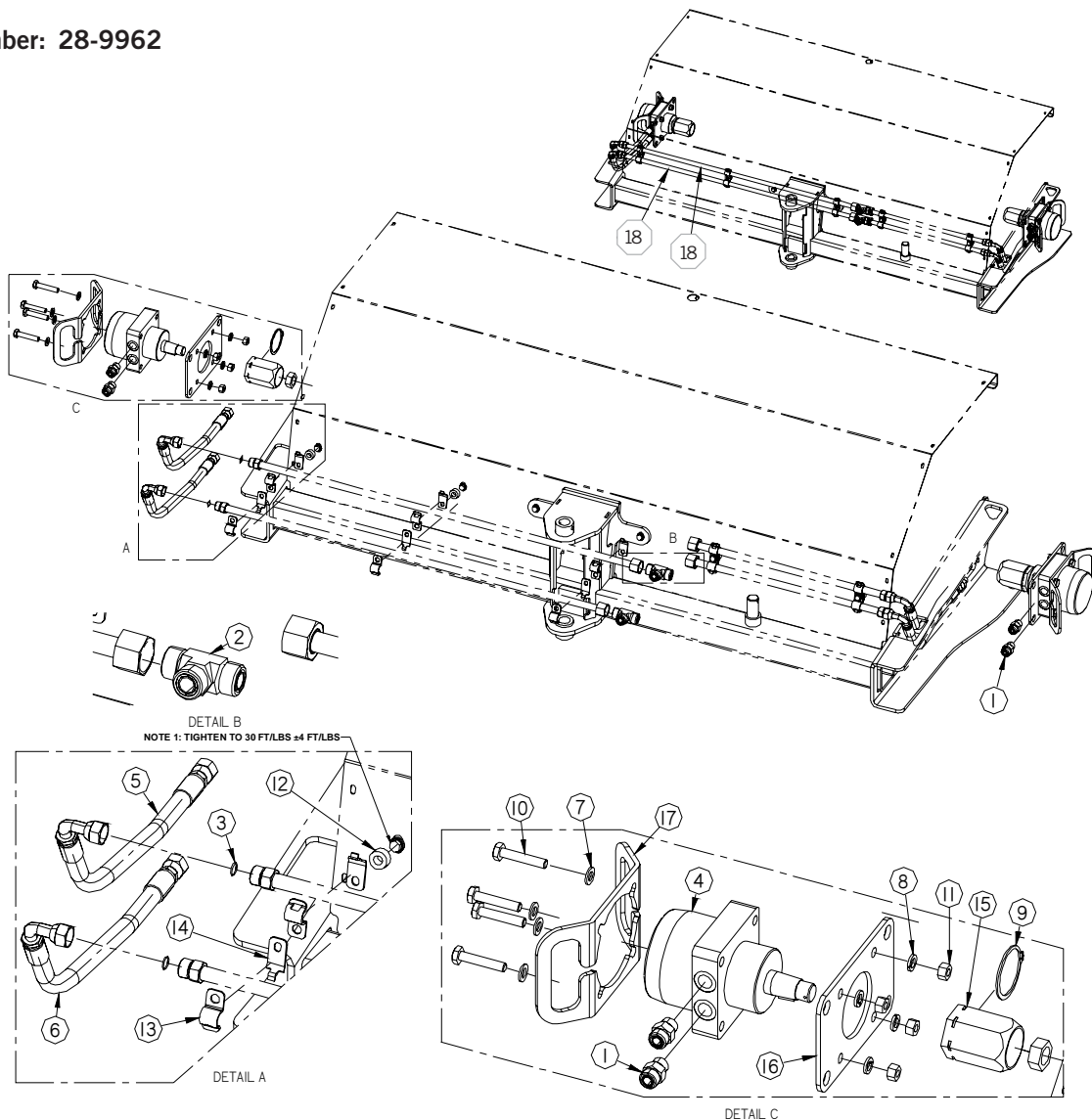
Dust Suppression System

Assembly 28-9919



Conversion Kit Single to Dual Motor

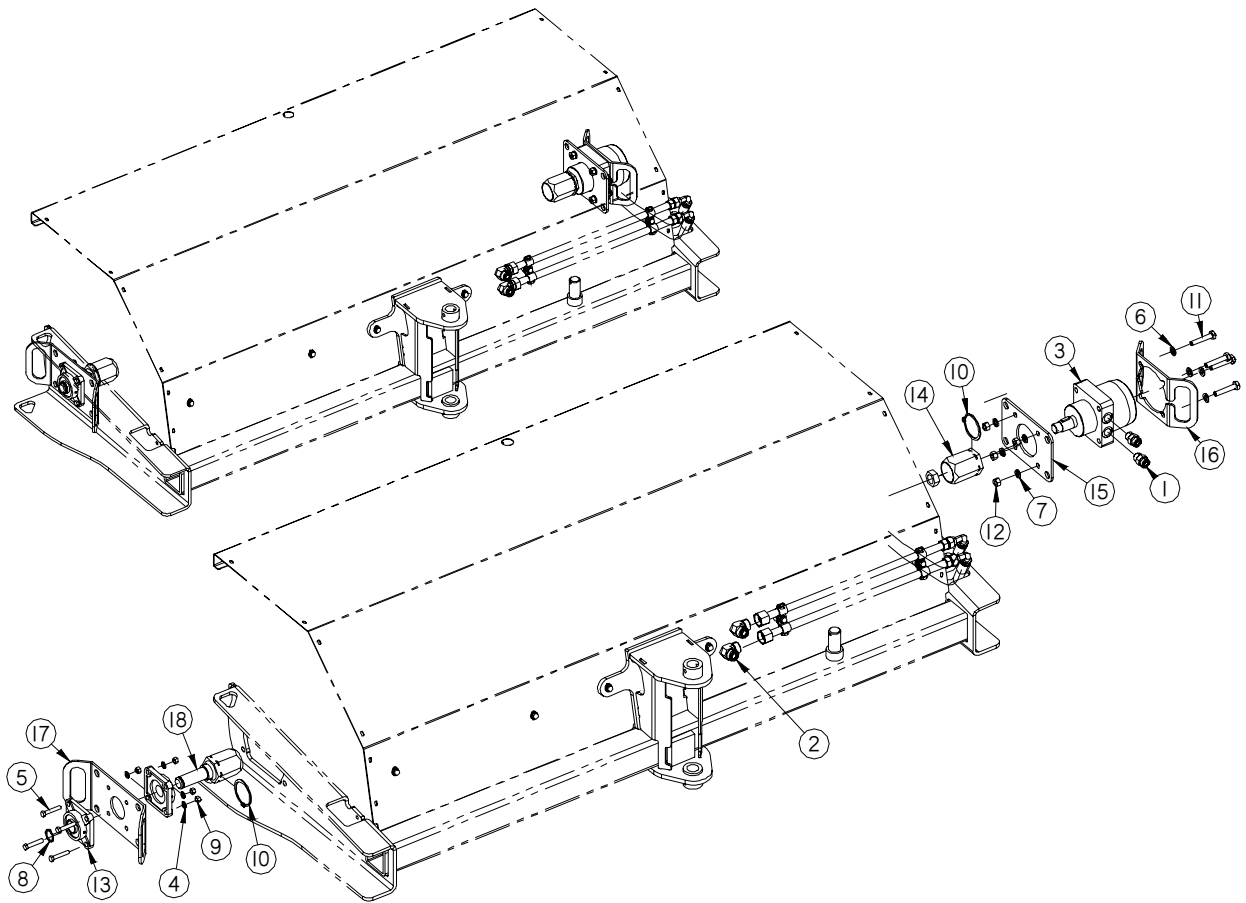
Kit Number: 28-9962



Item	Part	Qty	Description	Item	Part	Qty	Description
1.	03-1939	4	Fitting, Adapter, HP, 7/8MOR, 5/8MFS	10.	07-6683	8	Screw, HHC, CL10.9, M12-1.75 x 65mm
2.	03-1940	2	Fitting, Tee, HP, 3/4MFS, 3/4MFS	11.	07-6766	8	Nut, Hex, CL10.9, M12-1.75
3.	03-2002	2	O-Ring, FS, 5/8	12.	07-6770	2	Spacer, Plastic, 1 x .510 x .5
4.	03-5016	2	Motor, Hydraulic, 18.3	13.	07-6771	6	Clip, #2, Hydraulic Line
5.	03-5017	1	Hose, 5/8 x 20, 2W, 10FFS, 10FFS90Med	14.	07-6772	6	Clip, #1, Hydraulic Line
6.	03-5017	1	Hose, 5/8 x 20, 2W, 10FFS, 10FFS90Med	15.	13-14058	2	Hub, Hex, 2 1/2 x 1 1/4 x 3.56
7.	07-3754	8	Washer, Flat, CL8.8, M12	16.	13-14085	2	Plate, Mounting, Motor
8.	07-3756	8	Washer, Lock, Split, Medium, M12	17.	13-14086	2	Plate, Handle, Motor
9.	07-6196	2	Ring, Retaining, 2.75	18.	03-1957-8	2	Assembly, Tube, 6 ft
					03-1957-9	2	Assembly, Tube, 7 ft
					03-1957-10	2	Assembly, Tube, 8 ft

Conversion Kit Dual to Single Motor

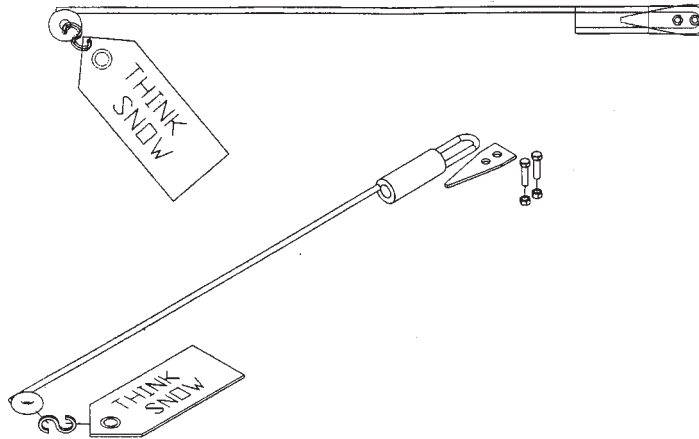
Kit Number 28-9963



Item	Part	Qty	Description
1.	03-1939	2	Fitting, Adapter, HP, 7/8MOR, 5/8MFS
2.	03-2216	2	Fitting, Elbow, HP, 90°, 3/4MFS, 3/4MFS
3.	03-5015	1	Motor, Hydraulic, 22.8
4.	07-3747	4	Washer, Lock, Split, M10
5.	07-3753	4	Screw, HHC, CL10.9, M10-1.5 x 50mm
6.	07-3754	4	Washer, Flat, CL8.8, M12
7.	07-3756	4	Washer, Lock, Split, Medium, M12
8.	07-3842	1	Ring, Snap
9.	07-4514	4	Nut, Hex, CL10, M10-1.5
10.	07-6196	2	Ring, Retaining, 2.75
11.	07-6683	4	Screw, HHC, CL10.9, M12-1.75 x 65mm
12.	07-6766	4	Nut, Hex, CL10.9, M12-1.75
13.	08-0067	2	Bearing, 1 1/4, 4 Bolt
14.	13-14058	1	Hub, Hex, 2 1/2 x 1 1/4 x 3.56
15.	13-14085	1	Plate, Mounting, Motor
16.	13-14086	1	Plate, Handle, Motor
17.	13-14133	1	Plate, Mounting, Bearing
18.	13-14135	1	Hub, Hex, 2 1/2 Single Motor

Sight Indicator Kits

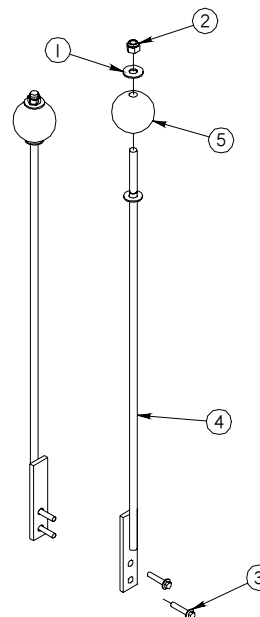
Kit Number: 11-5897



Kit Number: 28-9965

Item Part Qty Description

- 1. 07-3279 2 Washer, Flat, Gr8, 3/8
- 2. 07-4036 2 Nut, Hex, Nylock, 3/8-16
- 3. 07-6597 4 Screw, HFH, CL10.9, M6-1 x 30
- 4. 13-14857 2 Weld, Sight Indicator
- 5. 13-9567 2 Ball, 2 1/8, Red, with Hole



Bolt Torque Specifications

Body Size Grade 5	Ft-lbs		Body Size Class 8.8	Ft-lbs
1/4 - 20	6 ± 1		M6 - 1.0	5 ± 1
- 28	7 ± 1		n/a	-
5/16 - 18	13 ± 3		n/a	-
- 24	14 ± 3		n/a	-
3/8 - 16	23 ± 5		M8 - 1.25	14 ± 3
- 24	26 ± 5		- 1.0	-
7/16 - 14	37 ± 8		M10 - 1.5	29 ± 6
- 20	41 ± 9		- 0.75	-
1/2 - 13	56 ± 11		M12 - 1.75	50 ± 10
- 20	63 ± 12		- 1.0	-
9/16 - 12	82 ± 14		M14 - 2.0	80 ± 14
- 18	91 ± 16		- 1.5	-
5/8 - 11	113 ± 20		M16 - 2.0	125 ± 22
- 18	127 ± 23		- 1.5	-
3/4 - 10	201 ± 26		n/a	-
- 16	223 ± 29		n/a	-
7/8 - 9	321 ± 41		M20 - 2.5	244 ± 31
- 14	355 ± 46		- 1.5	-
1 - 8	483 ± 62		M24 - 3.0	422 ± 54
- 12	528 ± 68		- 2.0	-

Body Size Grade 8	Ft-lbs		Body Size Class 10.9	Ft-lbs
1/4 - 20	9 ± 2		M6 - 1.0	8 ± 1
- 28	10 ± 2		n/a	-
5/16 - 18	18 ± 4		n/a	-
- 24	20 ± 4		n/a	-
3/8 - 16	32 ± 7		M8 - 1.25	20 ± 4
- 24	37 ± 8		- 1.0	-
7/16 - 14	52 ± 11		M10 - 1.5	40 ± 8
- 20	58 ± 12		- 0.75	-
1/2 - 13	80 ± 16		M12 - 1.75	69 ± 14
- 20	90 ± 18		- 1.0	-
9/16 - 12	115 ± 20		M14 - 2.0	110 ± 20
- 18	128 ± 23		- 1.5	-
5/8 - 11	159 ± 28		M16 - 2.0	173 ± 31
- 18	180 ± 32		- 1.5	-
3/4 - 10	282 ± 36		n/a	-
- 16	315 ± 41		n/a	-
7/8 - 9	454 ± 59		M20 - 2.5	337 ± 44
- 14	500 ± 65		- 1.5	-
1 - 8	681 ± 88		M24 - 3.0	583 ± 75
- 12	746 ± 97		- 2.0	-

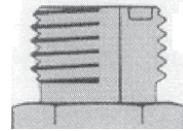
Foot-pounds may be converted to Newton Meters by multiplying by 1.35582
 Foot-pounds may be converted to Inch-pounds by multiplying by 12.
 If the nut and screw are not the same grade, the lower grade will always be used.

NOTE - Nylock nuts are utilized when greater resistance to vibrating loose is required, and greater operating temperatures are not a factor. In addition, like lock nuts, nylock nuts have a safety feature that if the bolt does vibrate loose, the nut will remain on the screw. Install nylock nuts to the standard torque shown above.

Hydraulic Torque Specifications

Face Seal: Assembly, Tube to Fitting

Note - Face seal fittings have the most reliable sealing method and therefore, should be used whenever possible



Installation

1. Make sure threads and sealing surfaces are free of burrs, nicks, scratches, or any foreign materials.
2. Install proper SAE o-ring to end of fitting if not already installed. Ensure o-ring is fully seated and retained properly.
3. Lubricate o-ring with a light coating of clean hydraulic oil.
4. Position tube and nut squarely on face seal of fitting and tighten nut finger tight.
5. Using appropriate torquing device, tighten to given torque rating from the table below.

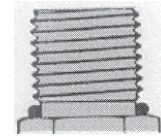
Torque Values:

SAE Dash Size	Tube side Thread Size	In-lbs	Ft-lbs
-4	9/16 - 18	220 ± 10	18 ± 1
-6	11/16 - 16	320 ± 25	27 ± 2
-8	13/16 - 16	480 ± 25	40 ± 2
-10	1 - 14	750 ± 35	63 ± 3
-12	1 3/16 - 12	1080 ± 45	90 ± 4
-16	1 7/16 - 12	1440 ± 90	120 ± 8
-20	1 11/16 - 12	1680 ± 90	140 ± 8
-24	2 - 12	1980 ± 100	165 ± 8

Hydraulic Torque Specifications

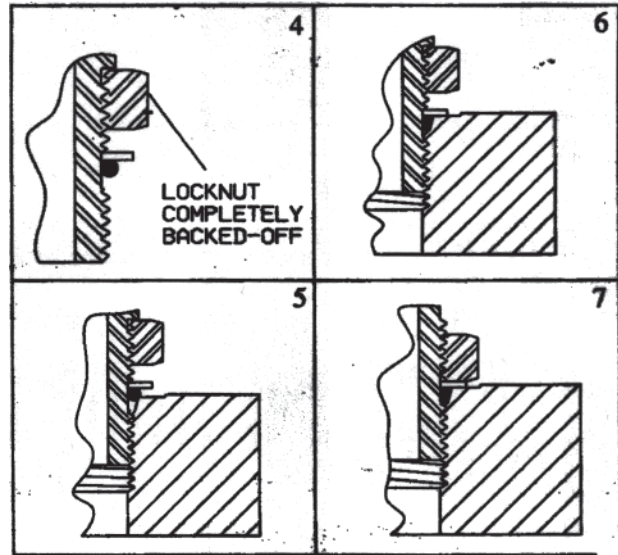
Straight Thread O-ring Fitting: Assembly, Fitting to Port

NOTE - Straight thread o-ring fittings are utilized to adapt hydraulic systems to motors, pumps, cylinders, and valves.



Installation (Adjustable Fitting)

1. Make sure threads and sealing surfaces are free of burrs, nicks, scratches, or any foreign materials.
2. Install proper SAE o-ring on port end of fitting if not already installed. Ensure o-ring is fully seated and retained properly.
3. Lubricate o-ring with a light coating of clean hydraulic oil.
4. Back off nut as far as possible and push washer up as far as possible. (Figure 4 & 5)
5. Screw fitting into port. Hand tighten fitting until backup washer contacts face of port. (Figure 6)
6. To position the fitting, unscrew to desired position, but not more than one full turn.
7. Hold fitting in position with wrench. Using appropriate torquing device, tighten nut to given torque rating from the table in section. (Figure 7)



Figures 4, 5, 6 and 7

Torque Values

Fitting Size	SAE Port Thread Size	In-lbs	Ft-lbs
-4	7/16 - 20	190 ± 10	16 ± 1
-6	9/16 - 18	420 ± 15	35 ± 1
-8	3/4 - 16	720 ± 25	60 ± 2
-10	7/8 - 14	1260 ± 50	105 ± 5
-12	1 1/16 - 12	1680 ± 75	140 ± 6
-16	1 5/16 - 12	2520 ± 100	210 ± 8
-20	1 5/8 - 12	3100 ± 150	360 ± 12
-24	1 7/8 - 12	3800 ± 150	315 ± 12

angle or angle assembly - portion of the sweeper that allows the brush head assembly to angle.

BP - black pipe.

brush head assembly - assembly that includes the core, hood, and brush frame.

brush pattern - area of dirt removed from sweeping surface; with a properly adjusted sweeper; the pattern is the same width for the entire length.

castellated - having battlements like a castle.

caution - indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

core - weldment that holds brush sections.

danger - indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

F - female.

FS - face seal.

front - side that is in front when facing the normal forward direction of travel of the machine.

gpm - gallons per minute.

HP - high pressure.

hood - brush shield.

hydraulic angle kit - means of swinging an assembly hydraulically.

important - used for instructions when machine damage may be involved.

in. - inches.

kph - kilometers per hour.

lb - pounds.

left-hand - side that is on the left when facing the normal forward direction of travel of the machine.

lift cylinder - means of raising the brush head assembly hydraulically.

lps - liters per second.

M - male.

mm - millimeters.

mph - miles per hour.

manual angle kit - means of swinging the brush head assembly mechanically.

mid pump unit - sweeper in which the pump is mounted on the mid PTO.

mounting assembly - portion of the sweeper that attaches to the prime mover; designed specifically for each prime mover.

NPT - national pipe thread.

note - indicates supplementary information.

OR - o-ring.

psi - pounds per square inch.

PTO - power take off; shaft on the prime mover used to drive attachments.

plate swing - swing assembly that includes a half-moon plate.

power pack - auxiliary hydraulic package used when prime mover hydraulics do not have enough flow available.

prime mover - refers to the tractor, truck, loader or other vehicle to which a sweeper is attached.

qty - quantity.

quick change core - core designed in a way that allows brush sections to be changed without removing hoses from motors.

rpm - revolutions per minute.

rear - side that is in rear when facing the normal forward direction of travel of the machine.

rear pump unit - sweeper in which the pump is mounted on a rear PTO.

retainer - removable plate or set of plates that keeps sections on the core.

right-handed - side that is on the right when facing the normal forward direction of travel of the machine.

section - single brush wafer.

section set - replacement brush wafers.

sprinkler system - system that sprays water ahead of the sweeper used to reduce dust.

sprinkler tank - assembly that includes the water reservoir and mounting used in a sprinkler system.

stands - devices designed to keep the components off the ground when the sweeper is dismounted.

swing or swing assembly - portion of the sweeper that allows the brush head assembly to angle.

swing cylinder - means of angling the brush head assembly hydraulically.

tank assembly, hydraulic - assembly that includes the hydraulic reservoir, filter and fittings; may also incorporate valves.

warning - indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

weld - weldment.

windrow - pile of debris.

zerk - grease fitting.

SWEEPSTER WARRANTY REGISTRATION

Thank you for purchasing a Sweepster product. Warranty protection on this equipment is valid only when completed and signed by customer and dealer and mailed to SWEEPSTER. If you have any questions, please give us a call at 1-800-456-7100 or (734) 996-9116.

PLEASE PRINT - PRESS HARD MULTIPLE COPIES

<i>Purchaser's Name</i>			
	<i>Address</i>	<i>City</i>	
<i>State</i>	<i>Zip</i>	<i>Phone</i>	
<i>Model Number</i>	<i>Serial Number</i>	<i>Engine Model</i>	
<i>Engine Make</i>	<i>Date Delivered to Dealer</i>	<i>Date Delivered to Customer</i>	
<i>Dealer's Name</i>			
	<i>Address</i>	<i>City</i>	
<i>State</i>	<i>Zip</i>	<i>Phone</i>	

While-Customer Yellow-Dealer Card-Return to Sweepster postage paid

Form: SWR Rev 4/97

1. MATERIAL YOU ARE SWEEPING?
 Snow Dirt General Debris Thatch
 Other _____
2. MAKE AND MODEL NUMBER OF PRIME MOVER.
 (For attachment sweepers only.) _____
3. DID YOU OR YOUR CUSTOMER RECEIVE AN OPERATION/PARTS MANUAL? Yes No
4. DID THE UNIT FIT CORRECTLY TO PRIME MOVER?
 Yes No Comments _____
5. WHY DID YOU PURCHASE A SWEEPSTER? (check one)
 Quality Price Reputation Simplicity Prior Use
 Dealer Referral Operation Features Availability
 Other _____
6. PLEASE RATE THE FOLLOWING (check one)
 Appearance: Excellent Good Poor
 Delivery Time: Excellent Good Poor
 Sales Service: Excellent Good Poor
 Performance: Excellent Good Poor
 Technical Support: Excellent Good Poor
7. SUGGESTIONS/COMMENTS?



SWEEPSTER ATTACHMENTS LLC

Limited 12 Month Warranty

Thank you for purchasing a Sweepster Attachments, LLC. product. Warranty protection is valid only when this Warranty Registration is completed and signed by the customer and dealer, and mailed to Sweepster Attachments, LLC. I hereby acknowledge that I have received a copy of the owners Limited Warranty and I accept the terms therein.

For a period of 12 months from the date of delivery of product to the original user, Sweepster Attachments, LLC. warrants each product to be free from manufacturing defects, subject to the limitations contained in this policy.

This warranty does not apply to defect caused, in whole or in part, by unreasonable use while in the possession of the user, including, but not limited to: failure to properly set up product; failure to provide reasonable and necessary maintenance; normal wear; routine tune ups or adjustments; improper handling or accidents; operation at speed or load conditions contrary to published specification; improper or insufficient lubrication; improper storage. This warranty is also not a guarantee that performance of each product will meet the expectations of the purchaser.

Sweepster Attachments, LLC. shall not be liable for consequential damages of any kind, including, but not limited to: consequential labor costs or transportation charges in connection with the replacement or repair of defective parts; lost time or expense which may have accrued because of said defects. In no event shall Sweepster Attachments, LLC.'s total liability hereunder exceed the product purchase price.

Sweepster Attachments, LLC. makes no warranty with respect to trade accessories or any component or accessory of the product which was not manufactured by Sweepster Attachments, LLC. including any purchased components of any kind. These are subject to the warranties of their respective manufacturers. The warranty will be considered void if the product or any part of the product is modified or repaired in any way not expressly authorized by Sweepster Attachments, LLC. or if closed components are disassembled prior to return. Closed components include, but are not limited to: gearboxes, hydraulic pumps, motors, cylinders, and actuators.

Our obligation under the warranty is expressly limited, at our option, to the replacement or repair at Sweepster Attachments, LLC or at a service facility designated by us, or such part or parts as inspection shall disclose to have been defective. We are not responsible for unauthorized repairs or replacements. Any implied or statutory warranties, including any warranty of merchantability or fitness for a particular purpose, are expressly limited to the duration of this written warranty. We make no other express or implied warranty, nor is anyone authorized to make any on our behalf. This warranty cannot be extended, broadened, or changed except in writing by an authorized officer of Sweepster Attachments, LLC.