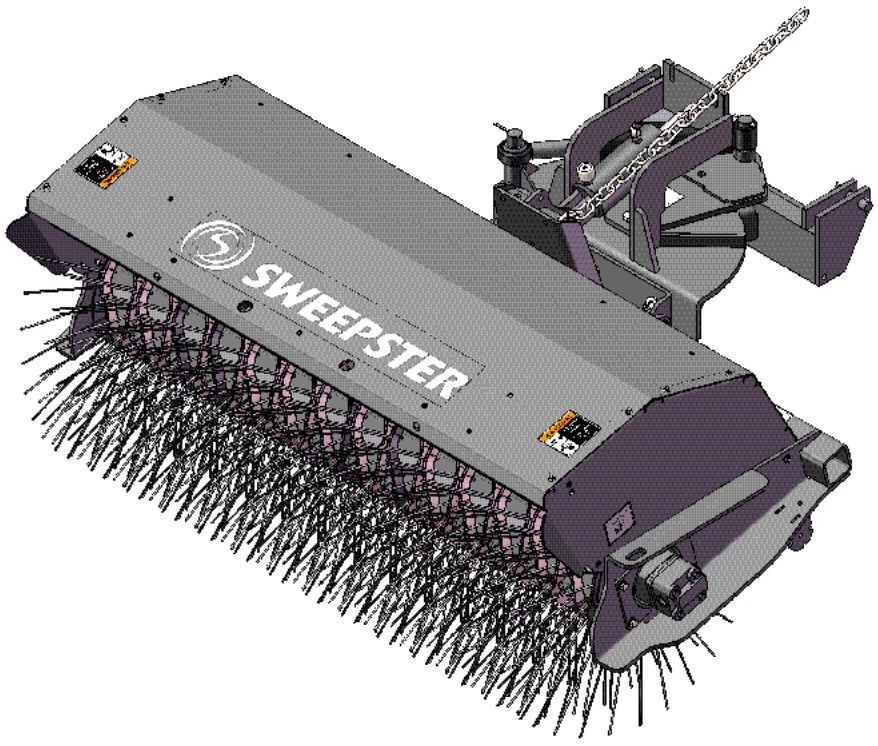
SWEEPSTER

QC Series

AH, CH, RLH , RLCH & Loader Hydraulic Windrow Sweepers

BRADCO
FFC
HARLEY
THE MAJOR
McMILLEN
SWEEPSTER

PALADIN LIGHT CONSTRUCTION



Sweepster Serial Number_____

Manual Number: 51-3849
Release Date: October 20, 2008
Serial Number 0733001 and Up

800-456-7100 www.paladinbrands.com Sweepster 2800 N. Zeeb Rd., Dexter, MI 48130 United States of America

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Installation Manual

QC Series Angle Brooms

Table of Contents

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.

The 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, appear in the Service Manual Section.

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 the close 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: Operating the Sweeper.
- 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 needed repairs 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 armoring embedded in the outer cover.

•The hoses have been pulled or stretched.

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

Notes

Safety Signs and Labels

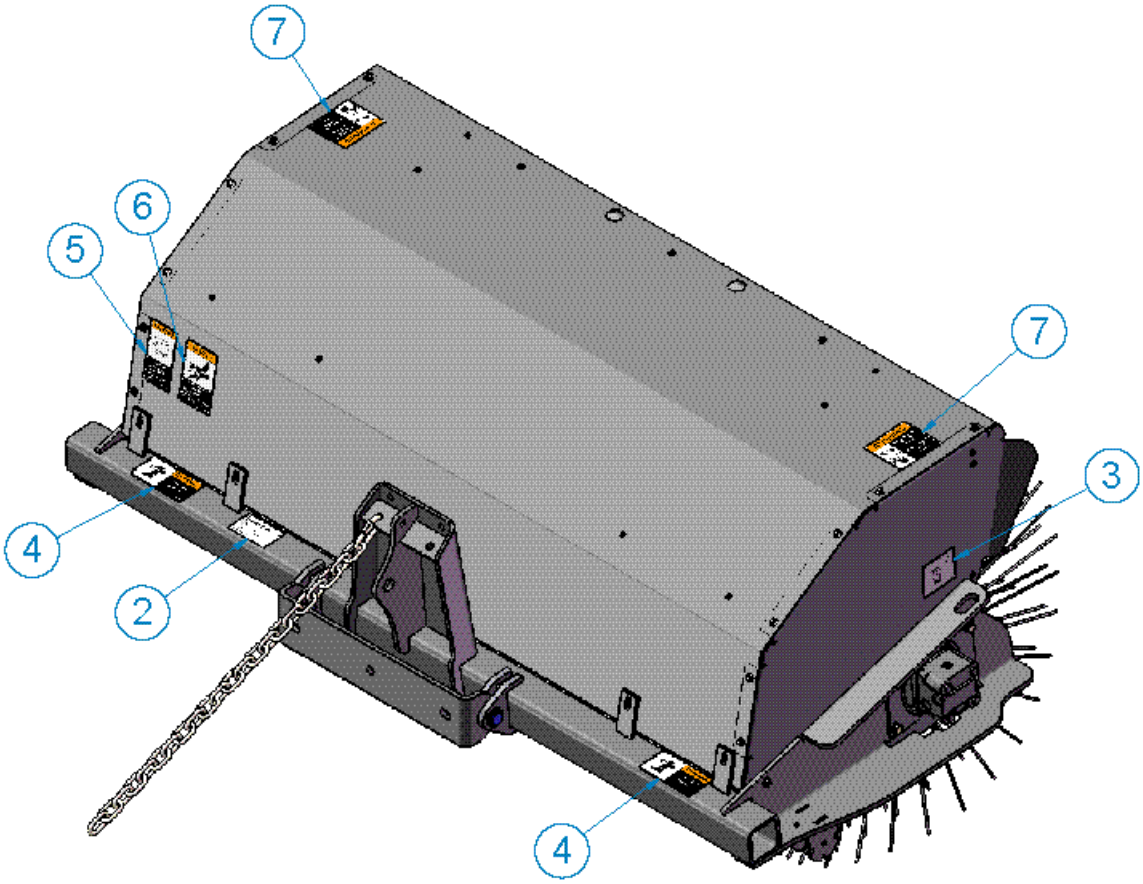
There are several specific safety signs on this sweeper. The exact location of the hazards and the description of the hazards are reviewed in this section.

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

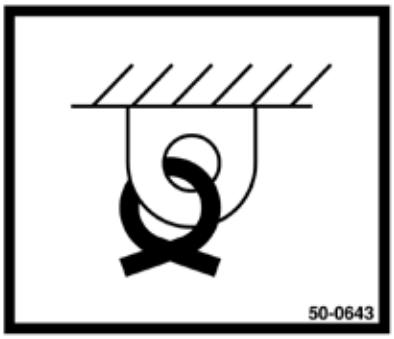
- Keep all safety signs clean and legible.
- Replace all missing, illegible, or damaged safety signs.
- Replacement parts, for parts with safety signs attached, must also have safety signs attached.
- Safety signs are available, free of charge, from your dealer or from SWEEPSTER.



Item	Part	Qty	Description
2.	50-0634	1	Label, Serial Number
3.	50-0643	2	Label, Tie Down Point
4.	50-0721	2	Label, Warning, Crush Hazard
5.	50-0722	1	Label, Warning, Misuse Hazard
6.	50-0725	1	Label, Warning, High Pressure Fluid Hazard
7.	50-0726	2	Label, Warning, Flying Objects & Entanglement

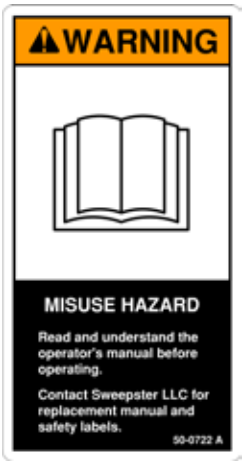
Safety Signs and Labels

2. 50-0634



3. 50-0643

4. 50-0721



5. 50-0722

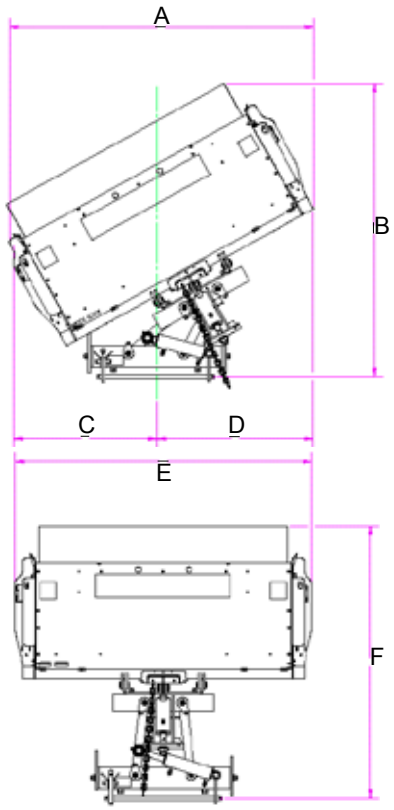
6. 50-0725

7. 50-0726

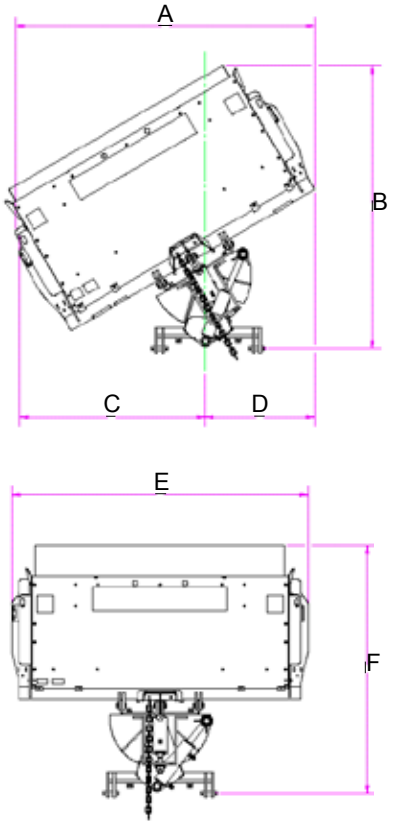
Product Information Section

Specifications and Model Views

AH



CH



	CH		AH		Width
	SGL	DUAL	SGL	DUAL	
Weight* (lbs)	606	634	635	663	5 Ft
	656	685	685	714	6 Ft
	706	735	735	764	7 Ft
	757	785	786	814	8 Ft
A Width @ 30°	72.50		72.50		5 Ft
	83.00		83.00		6 Ft
	93.62		93.62		7 Ft
	104.00		104.00		8 Ft
B Length @ 30°	67.25		69.25		5 Ft
	70.25		72.25		6 Ft
	73.62		75.50		7 Ft
	76.62		78.25		8 Ft
C Offset to Trail Edge @ 30°	47.50		34.75		5 Ft
	52.75		40.75		6 Ft
	58.00		46.00		7 Ft
	63.25		51.25		8 Ft
D Offset to Lead Edge @ 30°	25.00		37.75		5 Ft
	30.25		42.25		6 Ft
	35.62		47.50		7 Ft
	40.75		52.75		8 Ft
E Width @ 0°	70.50		70.50		5 Ft
	82.50		82.50		6 Ft
	94.50		94.50		7 Ft
	106.50		106.50		8 Ft
F Length @ 0°	59.00		64.25		5 Ft
					6 Ft
					7 Ft
					8 Ft

* Weight included brush head and swing .
Dimensions are in inches.

Range of Hydraulic Oil Flow		
Single Motor	18 cubic inch	10-18
Single Motor	25 cubic inch	12-25
Dual Motor	18 cubic inch	18-36
Maximum Hydraulic Oil Pressure		
Single Motor	18 cubic inch	3500 psi
Single Motor	25 cubic inch	3000 psi
Dual Motor	18 cubic inch	3500 psi

Mounting, Pump & Tank Assemblies

NOTE: The following give general instructions. Refer to instructions included with the mounting assembly for information specific to a particular prime mover make and model.

Front Pump Units

1. Remove any parts, such as a knockout, that block access to the tractor engine's crankshaft pulley.
2. Attach the mounting assembly to the tractor.
3. Secure the drive hub to the pulley. Some tractors require a crankshaft adapter.
4. Install the pump mounting bracket on the front of the tractor.
5. Assemble the coupling halves and fasten the chain around them.
6. Apply grease to the pump and drive shafts.
7. Slide the coupling assembly onto the pump shaft.
8. Place the keyed end of the drive shaft in the chain coupler.
9. Slide the drive shaft into the drive hub.
10. Fasten the pump to the bracket. Position the pump so the inlet faces the right hand side of the unit. Do not secure with hardware.
11. Center the chain coupler and tighten set screws.
12. Install the tank and valve assembly.
13. Install hydraulic fittings and hoses.
    a. Attach the barb fitting to the pump inlet and the adapter fitting to the pump outlet.
    b. Connect the suction hose to the tank outlet and to the barb fitting on the pump inlet. Secure with clamps.
    c. Attach the 36 inch hose to the valve and the pump's outlet port. Tighten the fittings.
14. Go to Swing Assembly.

Rear Pump Units

1. Install the mounting assembly on the tractor.
2. Attach the pump to the rear PTO shaft and secure it with the chain provided. This prevents the pump from spinning or sliding off the shaft.

CAUTION! Avoid damage to the pump and other hydraulic components. Do not use rear pump drive on PTOs faster than 540 RPM.

3. Install the tank and valve assembly.
4. Install hydraulic fittings and hoses.
    a. Attach the barb fitting to the pump inlet and the adapter fitting to the pump outlet.
    b. Connect the suction hose to the tank outlet and to the barb fitting on the pump inlet. Secure with clamps.
    c. Attach the pressure hose to the valve and the pump's outlet port. Tighten fittings.
5. Go to Swing Assembly.

Swing Assembly

Figure 1 shows the swing assembly attached to the mounting assembly.

1. Position the swing assembly in front of the mounting assembly. Remove the pin(s) from the swing assembly.

2. Align holes in the swing assembly with ears on the mounting assembly. Slide pin(s) through the holes and secure with cotter pin(s).

3. Go to Brush Head Assembly.

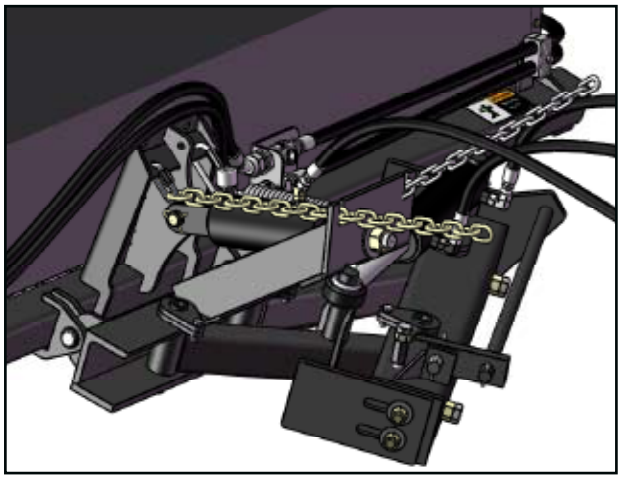


figure 1

Brush Head Assembly

1. Position the brush head assembly in front of the swing assembly.

2. Align holes in the brush frame and swing assembly. Install hardware, using the cap screw in the center hole and carriage bolts in the remaining holes.

3. Align the brush head plate with the swing assembly plate and tighten the hardware.

4. Assemble the spring-chain assembly/assemblies. Attach the spring end(s) to the brush head upright. Then place the chain in a slot on the swing plate upright. Figure 2 shows a spring-chain assembly installed on the unit.

5. Connect the transport chain, which is attached to brush head upright, to the remaining slot on the swing plate upright. Figure 3 shows a transport chain installed.

NOTE - Use the transport chain to take weight off the spring-chain assembly/assemblies while transporting the unit between job sites.

6. Attach 2, 3/4 inch hoses to brush head fittings. Then, connect the top hose to the filter base and the bottom hose to the run port on the valve.

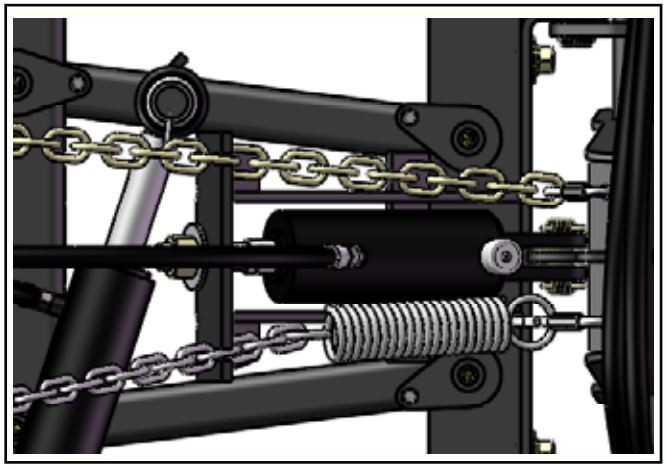


figure 2

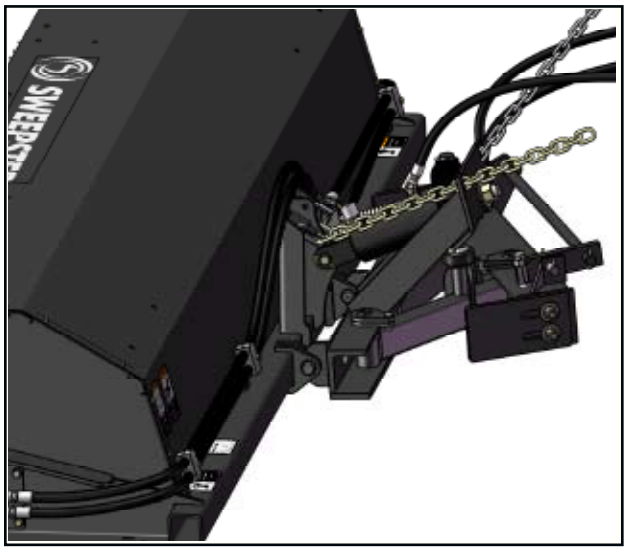


figure 3

Swing Cylinder

Figure 4 shows the swing cylinder fully installed.

1. Connect a hose to each fitting on the cylinder.
2. Attach adapter fittings to hose ends.
3. Connect adapter fittings to remote valves (manual valves) or the A/B ports (electric valves).

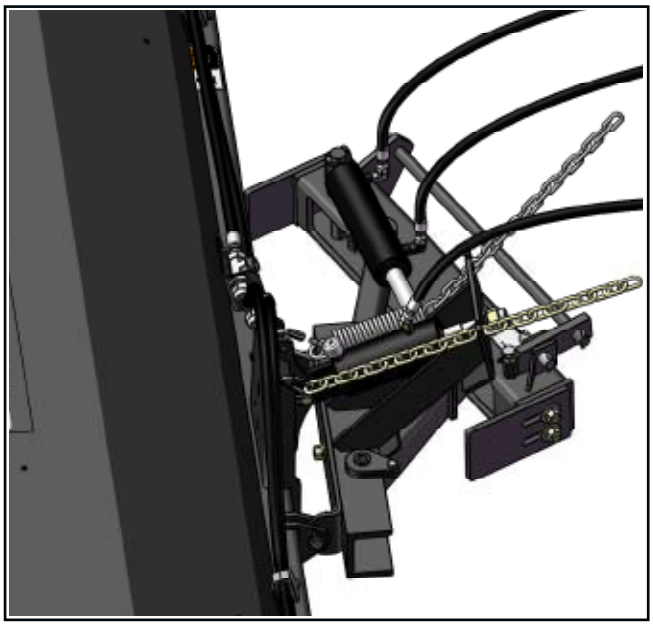


figure 4

Lift Cylinder

Figure 5 shows the lift cylinder fully installed.

1. Slide the rod end of the cylinder through the plate on the swing plate upright. Install flat washer and secure with a nut.

CAUTION - Avoid cylinder damage. Only place 1 nut on the rod.

2. Attach the barrel end to the center ear on the brush head upright. Use the clevis pin and hairpin clip provided.
3. Connect a hose to the elbow fitting on the cylinder.
4. Connect the hose to the first valve that has a single port (manual valves) or the L port (electric valves).

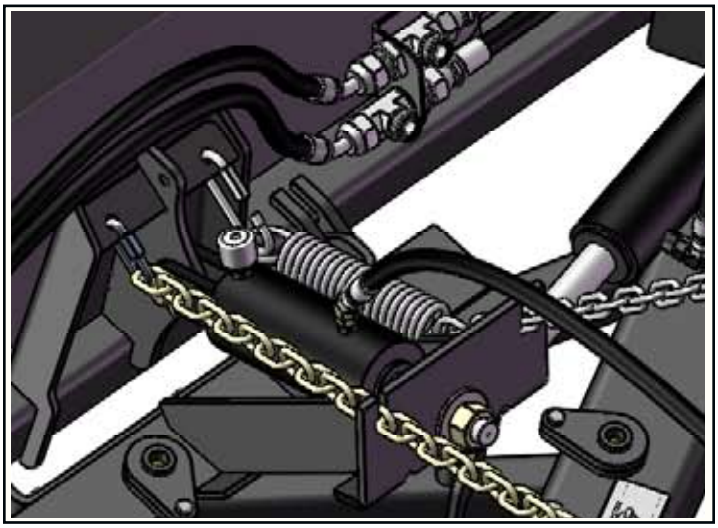


figure 5

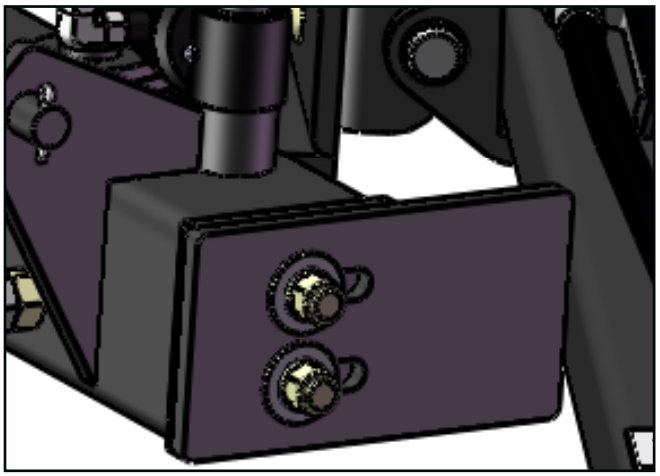


Figure 6

Before First Use

1. Fill the tank to 2 inches (51mm) from the top. Use ISO VG-46 hydraulic oil.

2. Make sure that the tractor parking brake is on and the tractor is in neutral. Then, prime the pump.

   Front pump units - Turn the engine on and off in short bursts without starting.

   Rear and mid pump units - Rapidly engage and disengage the PTO while the engine is running.

3. Check the amount of oil in the tank. Add oil as required to bring it to the proper level.

4. Run the engine at a slow idle. Stop the engine and then check for hydraulic leaks. Make corrections before proceeding.

5. Start the tractor again. Engage the brush and let it run while watching for excess vibration or other problems. Test swing and lift functions. Make corrections before proceeding.

6. Perform procedures described in Adjusting Scissor Swing (scissor swing only) and Leveling, Setting, Brush Pattern, Adjusting Spring-Chain Assemblies and Adjusting Transport Chain in the Maintenance Section.

Adjusting Scissor Swing

CAUTION! Support yokes must fit tightly to the brush frame, or damage to the swing cylinder will occur.

1. Loosen hardware holding support yokes.

2. Swing the brush head completely to the right.

3. Slide the right-hand support yoke toward the brush head until it is snug on the brush frame tube, tighten nuts.

4. Swing the brush head completely to the left.

5. Slide the left-hand support yoke until it is snug on the brush frame tube, tighten nuts.

6. Swing the brush head assembly both directions and check to make sure that the support yokes fit tightly to the brush frame. If not, repeat this procedure from step 1.

Sweeper Installation (Broom to Prime Mover)

WARNING! 

Improper attachment of sweeper could result in injury or death. Do not operate this machine until you have positive indication that the attachment is securely mounted.

1. Position the broom on a level surface.
2. Enter the prime mover.
3. Fasten the safety restraints.
4. Start the engine.
5. Disengage the parking brake.
6. Align the attachment mechanism with the mounting on the broom, attach to the prime mover. Follow the attaching procedure in the prime mover owners manual.
7. Engage the parking brake and shut down the prime mover. Be sure to relieve pressure to the auxiliary hydraulic lines.
8. Unfasten safety restraints and exit the prime mover.
9. Ensure that the hydraulic quick couplers are clean. Connect hydraulic lines for the broom to the prime mover. Twist the collar of the quick couplers one quarter of a turn in order to secure the hydraulic connections.
10. While the loader arms are lowered, visually inspect the attachment mechanism to ensure that it is securely mounted.

Removing the Sweeper

WARNING! 

Serious injury or death may result from disengaging the sweeper when the sweeper is in an unstable position or carrying a load. Place the sweeper in a stable position before disengaging.

CAUTION! **Hoses for the sweepers must be removed before the quick attach is disengaged. Pulling the sweeper with the hoses could result in damage to the prime mover or the sweeper.**

1. Lower the broom to the ground.
2. Engage the parking brake and shut down the prime mover. Be sure to relieve pressure to the auxiliary hydraulic lines.
3. Unfasten safety restraints and exit prime mover.
4. Disconnect the broom hydraulic lines from the prime mover. Connect quick couplers together to keep clean.
5. Disengage attachment mechanism. (mechanical type)
6. Enter prime mover, fasten safety restraints and start the prime mover.
7. Disengage attachment mechanism. (hydraulic type)
8. Disengage the parking brake, and back away from the broom.

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.**

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.

Swing Assembly

1. Slide the pump onto the rear PTO. Secure with a chain. Attach the barb to the pump inlet and the elbow and relief fittings on the pump outlet (figure 7.)

2. Attach bottom plates to the swing assembly using hitch pins supplied. Plates go inside the frame with bends to the center.

3. Connect 39-link chains to bottom plates with shackles.

4. Fasten keyhole plates to the tractor toplink using pins from the tractor (figure 8).

5. Position the swing assembly behind the 3-point hitch with the half-moon plate to the rear.

6. Lower hitch arms fully.

7. Slide hitch arms onto pins welded to the swing assembly. Secure with ring pins.

8. Secure the tractor toplink to the top of the swing assembly using a pin.

9. Raise the hitch until the dimension from the slot in the center of the swing plate to the ground measures 16 inches (406mm). See figure 9

10. Level the swing assembly from front to back using the toplink and side to side using the adjustable hitch arm.

11. Attach drop chains to keyhole plates. Adjust so chains keep the 16 inch (406mm) dimension.

NOTE: For best sweeping results, keep the swing assembly at least 16 inches (406mm) above the ground and 21 inches (533mm) high to sweep snow. Otherwise, material tends to carry over the brush and onto the area swept.

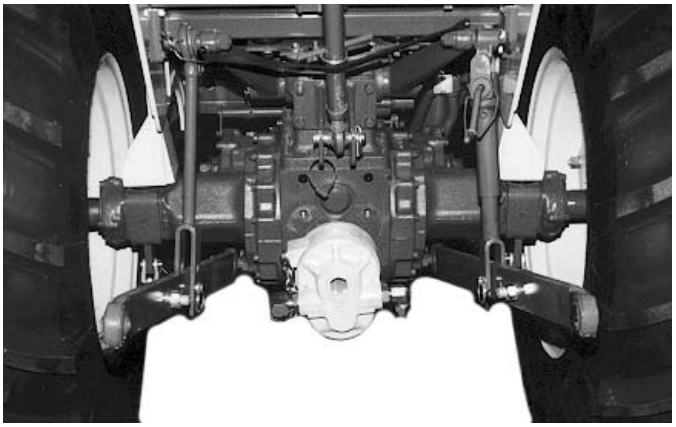


Figure 7

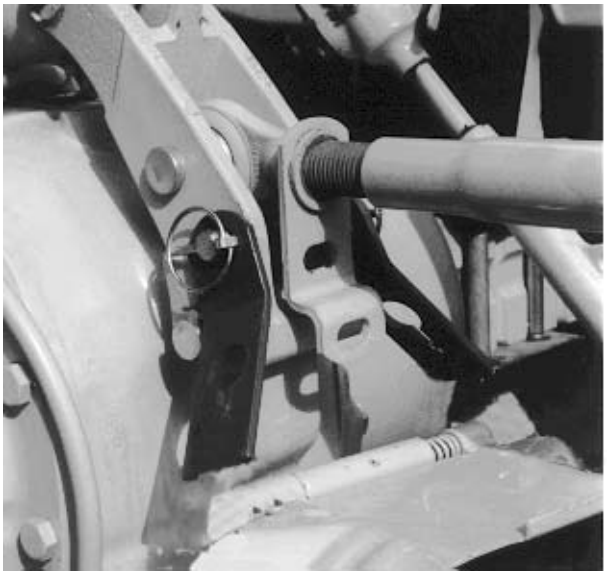
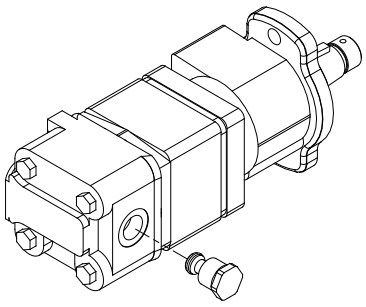


Figure 8

Check Disabler

For rear-mounted brooms the integral check valve cartridge, located in each motor, must be replaced with a blank cartridge, part number 03-4891.



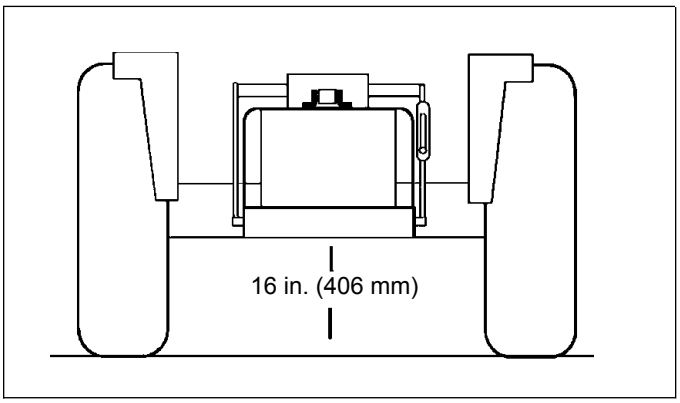


Figure 9

Brush Head Assembly

1. Position the brush head assembly behind the swing assembly.

2. Align holes in the brush frame and swing assembly. Install 3 carriage bolts, flat washers, lock washers and nuts. Do not tighten the hardware; it must remain loose to level the brush head assembly.

3. Assemble the spring-chain assembly/assemblies. Attach the spring end(s) to the brush head upright. Then place the chains in the slots on the swing assembly upright.

4. Connect the transport chain, which is attached to brush head upright, to the remaining slot on the swing assembly upright.

NOTE: Use the transport chain to take weight off the spring-chain assembly/assemblies while transporting unit between job sites.

5. Connect pressure and return hoses to prime mover remote.

NOTE: If 12 gpm (45.4 lpm) is not available from the prime mover, purchase a power pack from SWEEPSTER.

6. Attach the pressure hose to the bottom hose on the brush head and the return hose to the top hose.

Figure 10

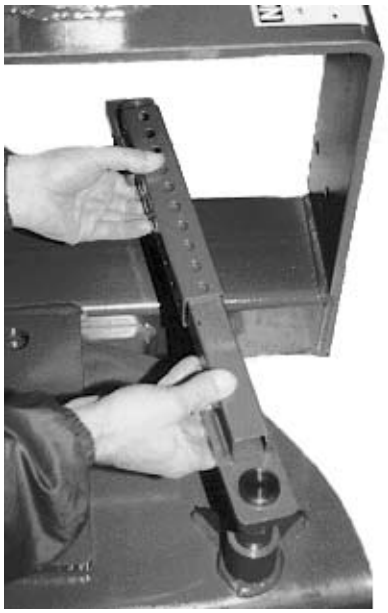


Figure 11

Angle Feature

Manual Angle Kit

NOTE: Some sweepers use hydraulic swing instead of manual angle kit. See Hydraulic Angle later in this section or Option - Hydraulic Swing/Electric Valve at the back of this manual.

1. Slide the inner link into the outer link (figure 10).

2. Place link ends on swing assembly pins (figure 11). Secure with cotter pins.

3. Position the brush head assembly at the desired angle. Align holes in both links and install lock pin to keep the brush head assembly in position (figure 12).

Figure 12

Hydraulic Angle Kit

NOTE: For hydraulic swing with electric valves, refer to Option - Hydraulic Swing/Electric Valve at the back of this manual.

1. Attach fittings to the cylinder. (figure 13).
2. Install the cylinder with the barrel end on the swing assembly and the rod end on the swing plate. Secure with cotter pins (figure 14).
3. Connect a hose to each fitting.
4. Attach adapter fittings to hose ends.
5. Connect adapter fittings to remote valves on the prime mover.

Figure 13

Before First Use

1. Run the prime mover engine at a slow idle. Stop the engine and then check for hydraulic leaks. Make corrections before proceeding.
2. Start the prime mover again. Engage the brush and let it run while watching for excess vibration or other problems. Test swing and lift functions. Lower the sweeper to the ground, set the parking brake, shut down the prime mover and remove the key from the ignition; make corrections before proceeding.
3. Perform procedures described in Leveling, Setting Brush Pattern, Adjusting Spring-Chain Assemblies and Adjusting Transport Chain in the Maintenance section.

Figure 14

Operation and Maintenance Manual

QC Series Angle Brooms

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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 Kit

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.

Manual Angle For Loader Mounted Brooms

1. Remove the quick release pin from the swing plate.
2. Position the brush head at the desired angle, aligning holes in the swing plate and mounting frame.
3. Re-insert the quick release pin.

Hydraulic Angle Kit

1. Start the prime mover.
2. Rear or mid pump units only - Engage the PTO.
3. Position the brush head at the desired angle by using the valve control for the swing function.

Engaging Functions - Tractor Mounts

Methods for engaging run, swing and lift functions differ according to how the unit is equipped.

Manual Valves with Control Rods

Control rod functions are marked with a label. Pull or push control rods according to instructions.

Brush Run	*Swing*	*Lift*
Push to stop Pull to run	Push to angle left Pull to angle right	Push to lower Pull to raise

Manual Valves without Control Rods

Engage functions with valve control handles.

• With SWEEPSTER hydraulic run, swing and lift:

The first handle (closest to the operator) controls lift. Push forward to lower and pull back to raise.

The second handle activates the swing function. Push forward to angle left and pull back to angle right.

The third handle controls brush rotation. Pull back to run and push forward to stop.

Electric Valves

Activate valves with switches on the control box. Functions are marked with a label.

Prime Mover Valves

Activate valves with prime mover controls.

Sweeping

To sweep:

1. Manual angle kit 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. Rear pump units only - Engage the PTO.
4. Hydraulic angle kit only - Swing the brush head assembly the direction that you want to direct debris.
5. Engage the brush and then lower it to the ground.
6. Increase prime mover engine rpm to sweeping speed.

CAUTION! **Avoid hydraulic pump damage on rear pump units. Do not run the engine at speeds above standard PTO RPM. This will destroy the pump.**

7. Travel forward at 5 mph (8 kph) or less.

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

Brush Head Storage

CAUTION! **Do not store 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 optional 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.

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/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 - 2-3 mph. (3-5 kph)

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

Increase engine speed if debris becomes very heavy.

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 sweeper to a flat, paved surface.
2. Lower the brush head assembly so the brush is 2 inches (51 mm) above the ground.
3. Engage the parking brake and shut down the prime mover. Be sure to relieve pressure to the auxiliary hydraulic lines.
4. Unfasten safety restraints and exit prime mover.
5. Check if the swing assembly is level by using a bubble level. To make corrections:

   Scissor swing/plate swing on tractor - Turn leveling bolts(A) (figure 15 and 16) in or out in equal amounts. If the front of the swing assembly is high, turn the leveling bolts in. If it is low, turn the leveling bolts out.

   Loader with quick attach mounting - Adjust tilt cylinders. If the front of the swing assembly is high, extend tilt cylinders. If low, retract cylinders.

   RLH/RLCH - Adjust the toplink. If the rear of the swing assembly is high, lengthen the toplink. If low, shorten the toplink.

6. Position the brush head assembly straight ahead. On each side, measure from the brush frame to the ground (figure 17). If measurements are not equal:

   Scissor swing - Turn adjustment screw (B) (figure 15) in to lower the right-hand side of the brush head assembly. Turn it out to lower the left-hand side.

   Plate swing on Tractor/Loader - Loosen hardware that attaches the swing assembly to the brush head assembly; lower the high side of the brush head until both sides are an equal distance above the ground. Tighten the hardware.

RLH/RLCH - Raise or lower the adjustable hitch arm.

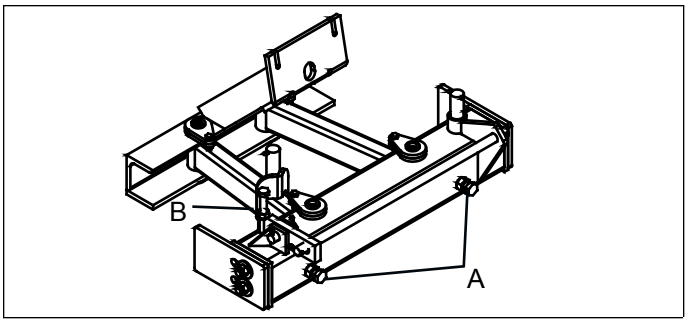


FIGURE 15

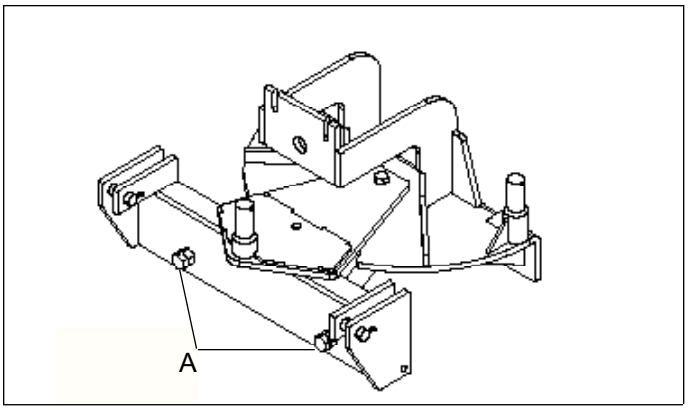


FIGURE 16

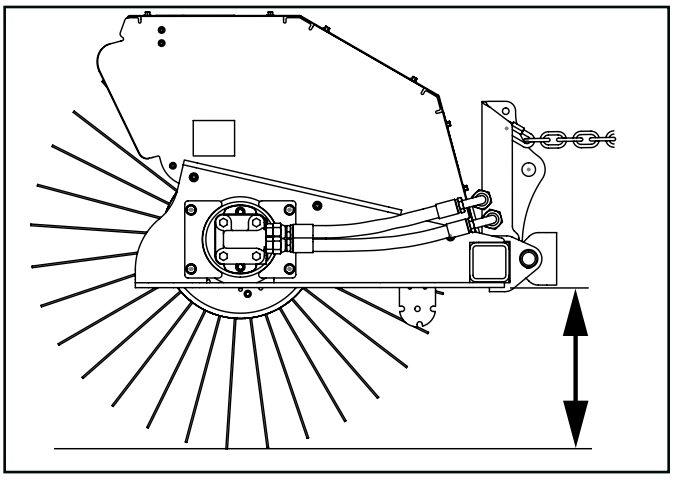


FIGURE 17

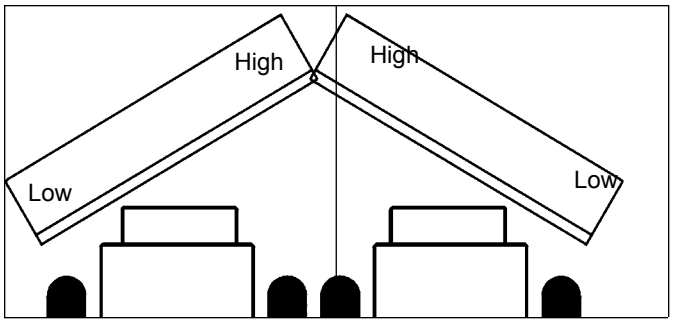


figure 18

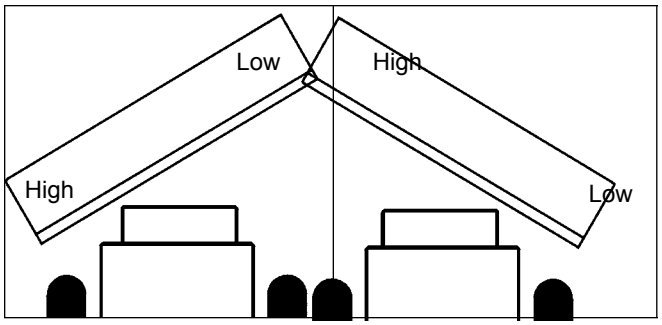


figure 20

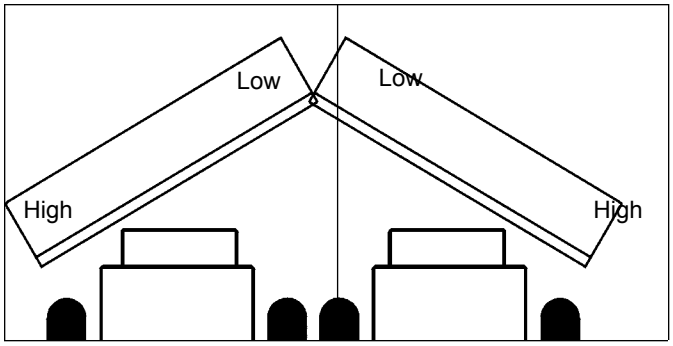


figure 19

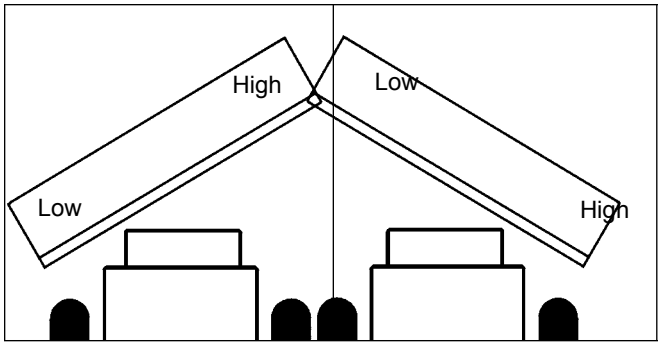


figure 21

7. Measure to see if the brush head assembly is level when angled. First, angle the brush head to the right. Measure as in step 4. Then, angle the brush head to the left. Measure again. If measurements are equal, the sweeper is level. If not, proceed with this step.

   Scissor swing - To correct leveling problems in:

   • figure 18, turn leveling screws out. (figure 20, A)

   • figure 19, turn leveling screws in. (figure 20, A)

   • figure 20, turn the adjustment screw in. (figure 20, B)

   • figure 21, turn the adjustment screw out. (figure 20, B)

   Plate swing on tractor - To correct leveling problems shown in:

   • figure 18, turn leveling screws out. (figure 21, A)

   • figure 19, turn leveling screws in. (figure 21, A)

   • figure 20, loosen hardware that attaches the swing assembly to the brush head assembly; lower the left-hand side of the brush head until both sides are an equal distance above the ground. Tighten the hardware.

   • figure 21, loosen hardware that attaches the swing assembly to the brush head assembly; lower the right-hand side of the brush head until both sides are an equal distance above the ground. Tighten the hardware.

   Loader - To correct leveling problems shown in:

   • figure 18, extend tilt cylinders.

   • figure 19, retract tilt cylinders.

   • figure 20, loosen hardware that attaches the swing assembly to the brush head assembly; lower the left-hand side of the brush head until both sides are an equal distance above the ground. Tighten the hardware.

   • figure 21, loosen hardware that attaches the swing assembly to the brush head assembly; lower the right-hand side of the brush head until both sides are an equal distance above the ground. Tighten the hardware.

   RLH/RLCH - To correct leveling problems in:

   • figure 18, lengthen the hitch toplink.

   • figure 19, shorten the hitch toplink.

   • figure 20, lower the adjustable 3-Point hitch arm.

   • figure 21, raise the adjustable 3- Point hitch arm.

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 Adjustment section)	✓				
Cylinders - Retract rods		✓			
- Grease threaded and ball ends to prevent rust		✓			
Drive shaft, pump - Check (AH/CH: Power Pack)	✓				
Filter, air, prime mover - Clean					✓
Filter, hydraulic - Replace (AH/CH)			✓		
Fittings/hoses, hydraulic - Check for leaks/tighten - Check for damage	✓				
Fittings, zerk - Grease (See lubrication points)	✓				
Oil, hydraulic - Check level (AH/CH)	✓				
- Replace (AH/CH); use ISO VG-46 hydraulic oil				✓	
Hardware - Check for tightness	✓				
Swing plate - Grease (CH/RLH/CH/Loader	✓				

Maintenance Record

Use this log to record maintenance performed on the sweeper.

Date	Maintenance Performed	Performed By	Comments

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 22.)
5. Adjust the brush pattern as necessary according to instructions found in adjusting the Spring-Chain Assembly.

Adjusting Spring-Chain Assembly

The spring-chain assembly allows the brush head to pivot up and down.

To adjust the brush pattern:

1. AH/CH - Raise the sweeper.
   RLH/RLCH/LOADER - Lower the sweeper.
2. Tighten the transport chain and lower the sweeper so the transport chain supports weight.
3. Move the spring chain forward in the swing assembly chain holder to lower the brush head or backward in the holder to raise it.

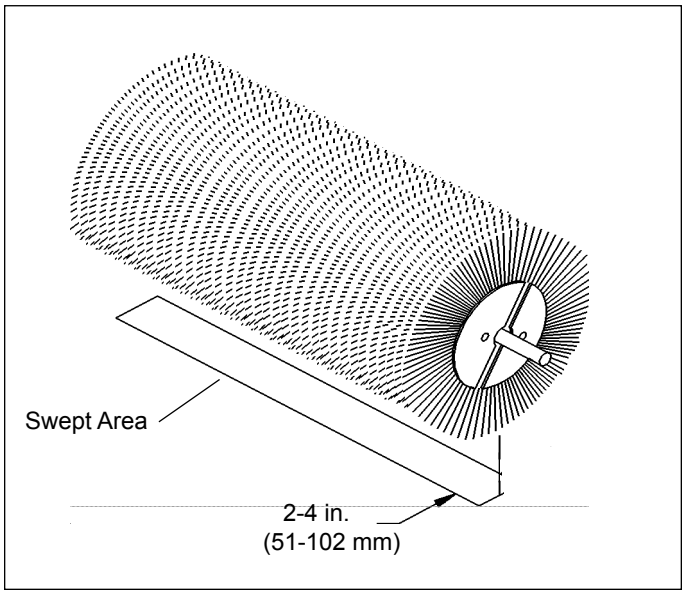


Figure 22

Tightening Transport Chain

The transport chain supports the weight of the brush head assembly during transport between work sites and during adjustment of the spring-chain assemblies.

To adjust the transport chain:

AH/CH/RLH/RLCH

1. Raise the sweeper.
2. Tighten the transport chain.
3. Lower the sweeper so the transport chain supports the weight of the sweeper.

Loader

1. Extend tilt cylinders.
2. Tighten the transport chain.
3. Retract tilt cylinders.

Replacing Brush Sections

1. Remove motor mount screws. Retain hardware for reinstallation. Remove motor mount.
2. Remove bearing mounting plate screws from side. Retain hardware for reinstallation.
3. Remove core from brush head assembly.
4. Remove one half of bearing mount plate from bearing.
5. Remove retaining plate from core assembly.
6. Remove old sections.
7. Install new sections by doing the following:
    a. Slide the first section onto the core with the drive pins on either side of a tube. Make sure that the drive pins angle up. (figure 1)
    b. Install a second section with drive pins rotated 180° from those on the first section. (figure 2)
    c. Continue installing sections, rotating each section 180° until the core is full.
8. Reattach the section retainer and bearing mounting plate with previously removed hardware.
9. Lay core on ground. Lower frame over core.
10. Reattach bearing mounting plate with previously removed hardware.
11. Reattach motor mount with hardware removed in first step.

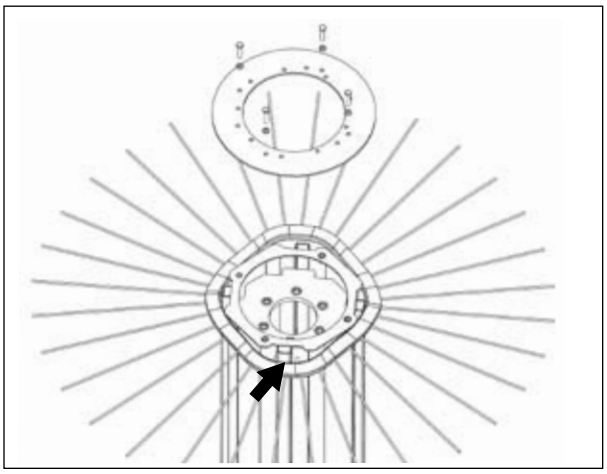


figure 1

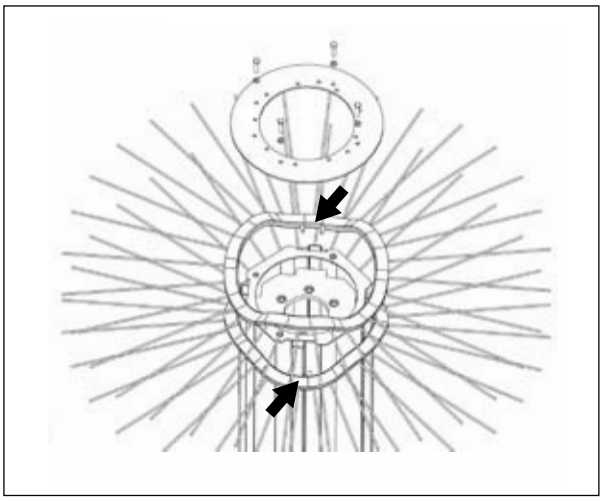
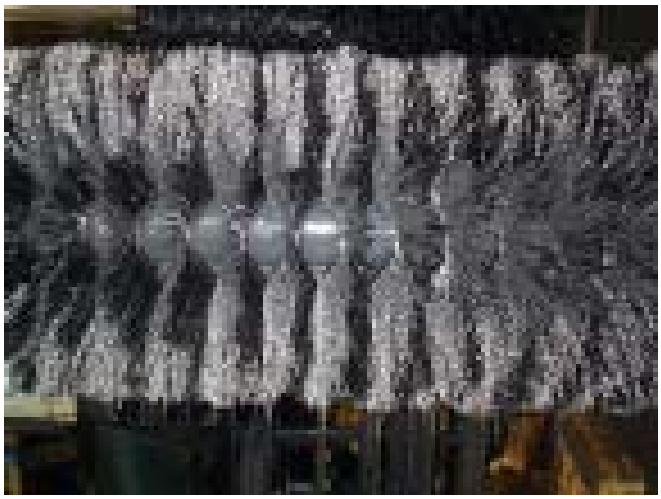


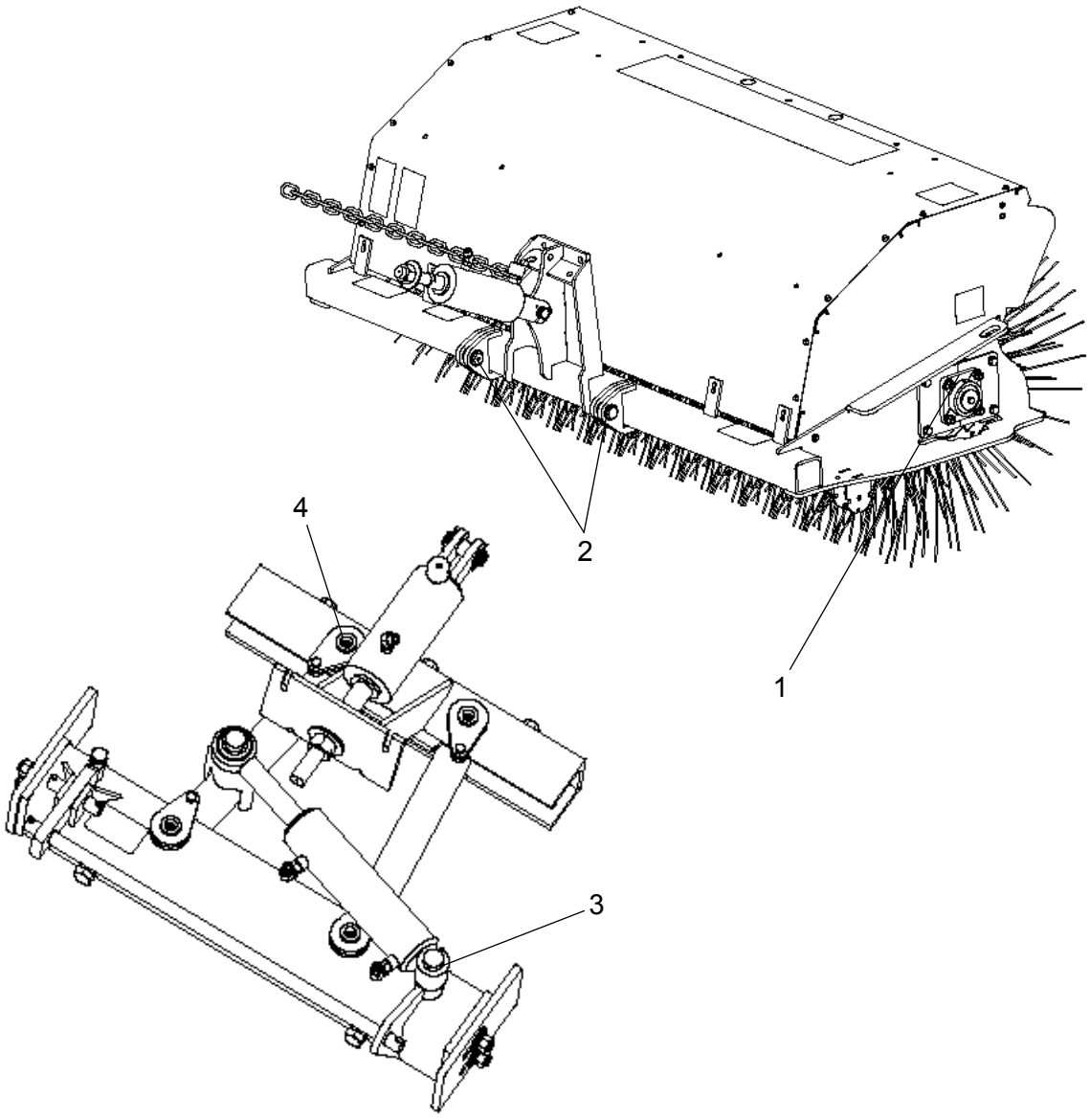
figure 2



Lubricating Zerk Fittings

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

1. Core bearing (1 fitting)
2. Brush Head Pivot (2 fitting)
3. Hydraulic Angle Cylinder (1 fitting)
4. Pivot Pins (4 fittings)



Service Manual

QC Series Angle Brooms

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Brush Head

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 2-4 inches (51-102 mm) wide: see Maintenance: Adjusting Brush Pattern
	Travel speed too fast	Travel no more than 5mph (8kph) while sweeping (2-3mph recommended)
	Trying to sweep too much material at once	Make several passes with sweeper
	Relief pressure set too low	Set relief pressure to 2000psi (138.0 bars)
	Pump has failed	Contact dealer to repair or replace
	Filter plugging	Change or clean filter
	Hydraulic motor is failing	Test hydraulic system: see Troubleshooting: Hydraulic Problems
Brush head assembly “bounces” during sweeping	Spring-chain assembly too loose	Adjust spring-chain assembly: see Maintenance: Adjusting Spring-Chain Assembly
	Travel speed too fast and/or brush speed too slow	Find correct combination of ground and brush speeds: do not travel at more than 5mph (8kph)
	Core is bent	Replace core
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 pattern to 2-4 inches (51-102mm) wide: see Maintenance: Setting Brush Pattern

Spring-Chain Assemblies

Problem	Possible Cause	Possible Solution
Springs on spring-chain assemblies stretching	Transport chain too loose when traveling between job sites	Adjust according to Adjustment: Transport Chain
	Travel speeds too fast when sweeping	Do not travel at speeds over 5mph (8kph)

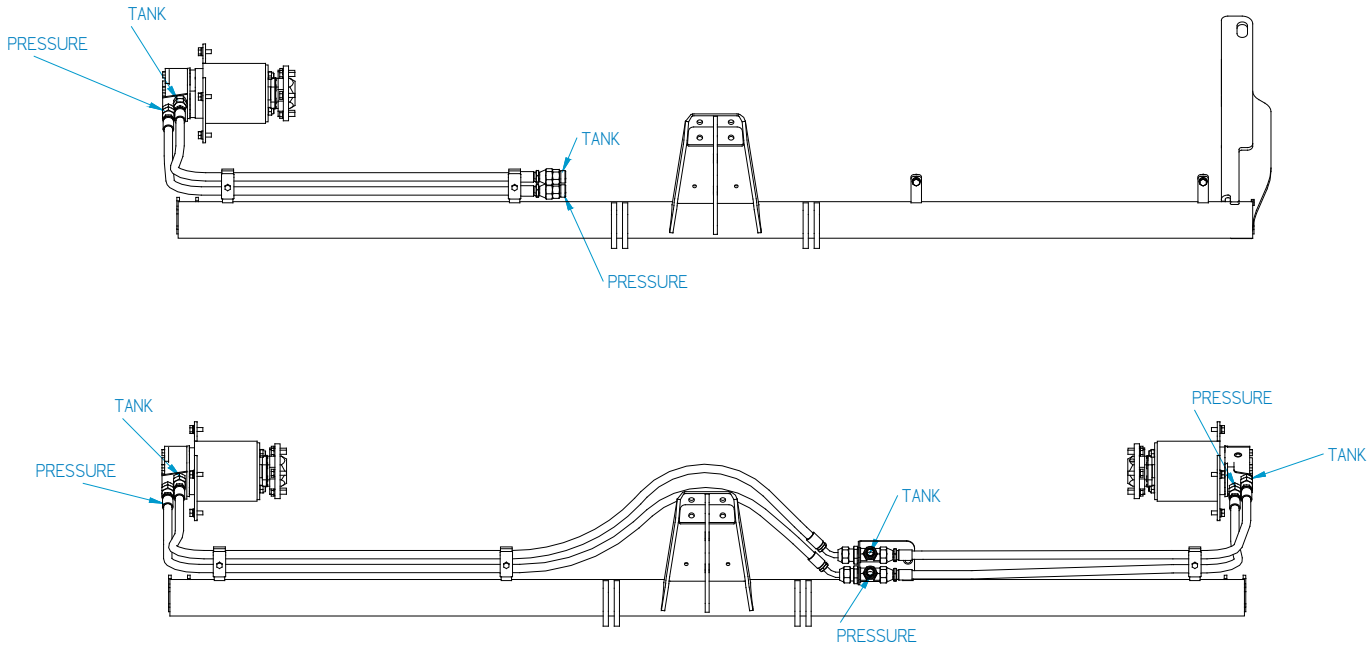
Hydraulic Cylinders - Lift & Swing

Problem	Possible Cause	Possible Solution
Hydraulic cylinder neither extends nor retracts	Manual valve - Control rods not connected or are binding	Check control rod linkage; make sure all parts are connected and are not binding; fix if necessary
	Electric valve - 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
	Electric valve - No power from controls because wires are broken or disconnected	Reconnect wires if disconnected; replace wires if broken
	Electric valve - No power from controls because switch is broken	Replace switch
	Both types of valves - Hydraulic oil level too low	Fill tank to 2-3 inches (51-76mm) from top of tank with ISO VG-46 oil
	Both types of valves - Hoses or fittings loose or disconnected	Tighten hoses and fittings
	Both types of valves - Restriction in hoses	Remove bends in hoses, remove obstructions inside hoses
Hydraulic cylinder only extends or only retracts	Electric valve - 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
	Electric valve - Dirt or debris in spools	Contact SWEEPSTER Technical Service
Hydraulic cylinder extends or retracts too quickly	Manual valve - Flow too high because restrictor fitting missing from cylinder	Reinstall restrictor fitting on barrel end of cylinder
	Manual valve - Flow too high even through restrictor fitting is installed	Contact SWEEPSTER for smaller orifice fitting
	Electric valve - 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

Problem	Possible Cause	Possible Solution
Hydraulic system overheats	Hydraulic oil level too low	Add hydraulic oil to tank until it comes to 2 inches (51mm) from top
	Restriction in hose	Remove bends in hoses; remove obstructions inside hoses
	Host pump flow rate exceeds 18-22gpm	Contact host manufacturer for proper flow control method
Hydraulic quick couplers leak	Quick coupler poppet is unseated	Reseat poppet; replace quick coupler if poppet is beyond repair
Hydraulic motor seals leak	Back pressure exceeds 1000psi	Contact SWEEPSTER
	Motor is failing	High number of hours on motor; Contact dealer to rebuild or replace
Hydraulic oil flows from breather cap on hydraulic tank	Hydraulic tank too full	Drain hydraulic tank until level is 2 inches (51mm) from top

Motor Port Identification



Flow Divider Adjustment Procedure - 03-2543 Manifold

1. Loosen jam nut on flow divider cartridge.
2. Screw threaded stem all the way in (clock wise).
3. Back threaded stem out 3/4 to 1 1/4 revolutions.
4. Tighten jam nut. Be sure threaded stem does not turn with jam nut.

Notes

Parts Manual

QC Series Angle Brooms

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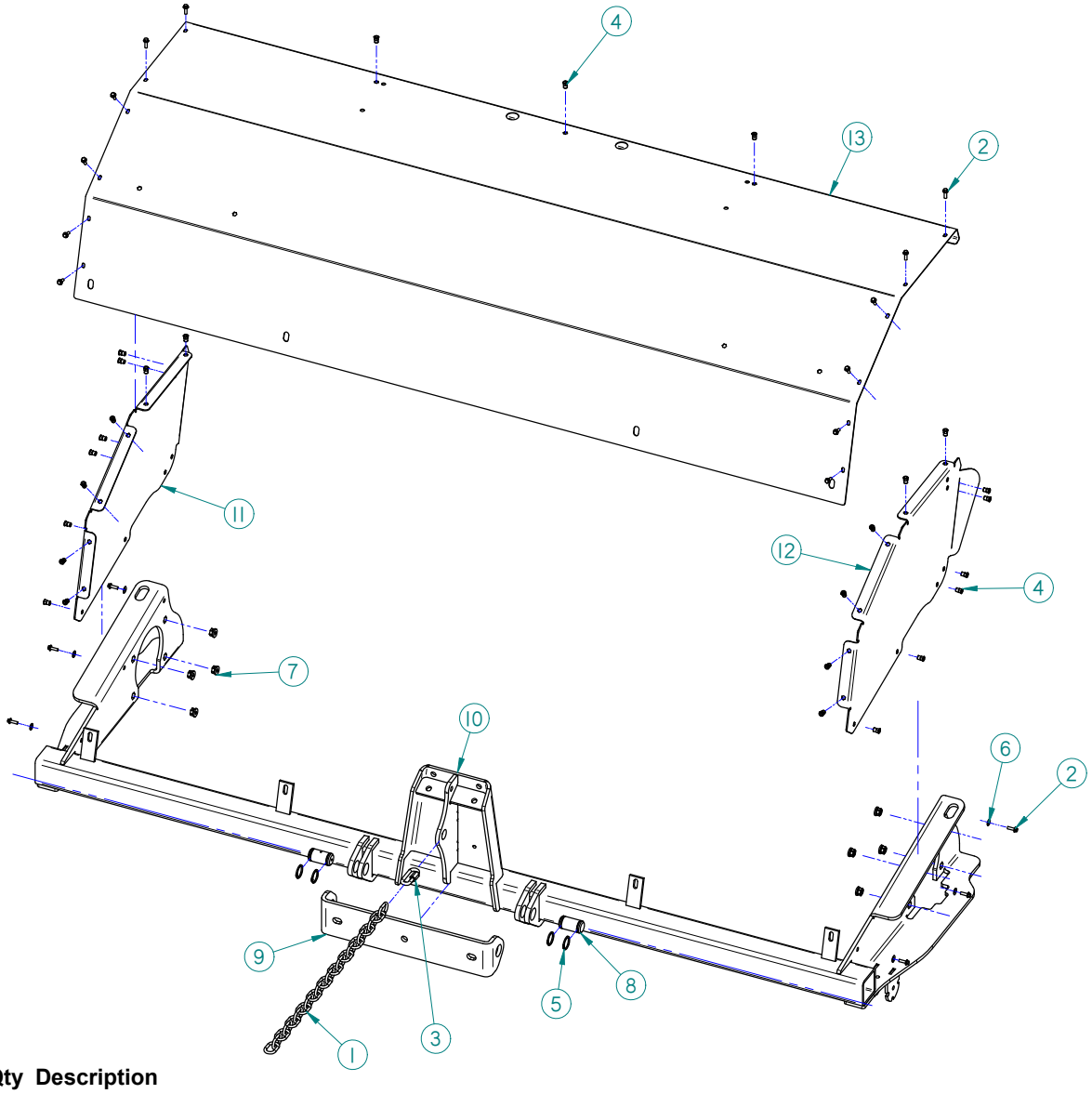
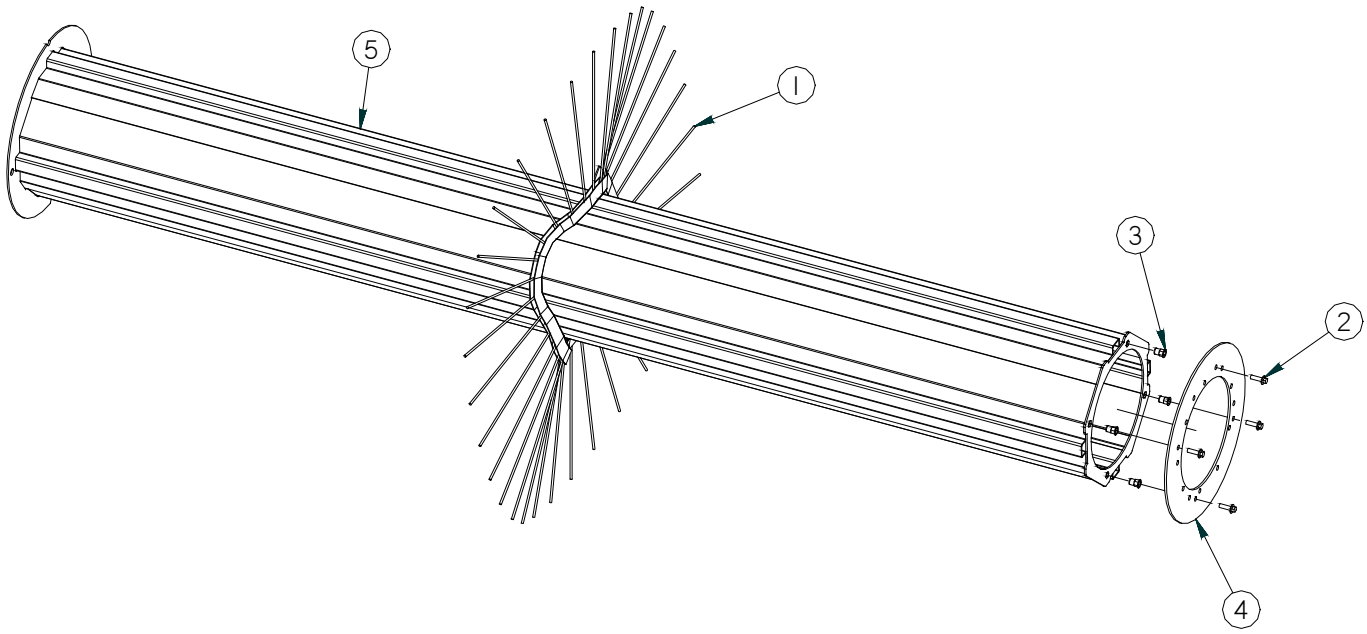
PARTS SECTION
BRUSH HEAD FRAME

Brush Head Frames



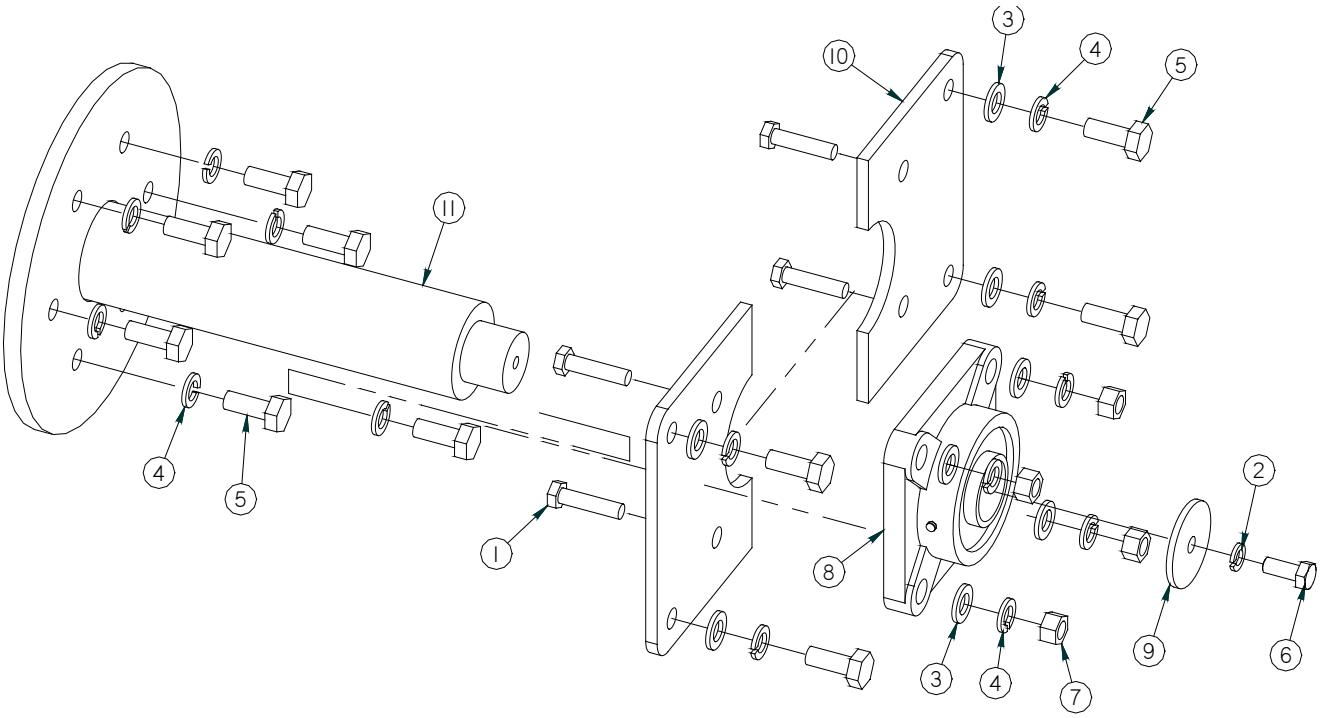
Item	Part	Qty	Description
1.	07-0249	1	Chain, 1/4 x 22 Links
2.	07-2952	18	Screw, HFH, CL10.9, M6-1 x 20
3.	07-3311	1	Link, Quick, 5/16
4.	07-3617	27	Nut, Insert, M6 x 1
5.	07-3842	4	Ring, Snap
6.	07-4927	6	Washer, Fender, CL8.8, M6
7.	07-6056	8	Nut, Flange, M10-1.5
8.	13-10004	2	Pin, Pivot, Left Arm, QA
9.	13-12617	1	Plate, Mounting, Brush Head, Pivot
10.	13-13278	1	Weld, Brush Frame, 5 Ft
	13-13279	1	Weld, Brush Frame, 6 Ft
	13-12857	1	Weld, Brush Frame, 7 Ft
	13-13280	1	Weld, Brush Frame, 8 Ft
	13-13594	1	Weld, Brush Frame, 9 Ft
11.	13-13047	1	Sheet, Hood, Side, Left
12.	13-13048	1	Sheet, Hood, Side, Right
13.	13-13281	1	Sheet, Hood, 5 Ft
	13-13282	1	Sheet, Hood, 6 Ft
	13-13049	1	Sheet, Hood, 7 Ft
	13-13283	1	Sheet, Hood, 8 Ft
	13-13595	1	Sheet, Hood, 9 Ft

Core Assemblies



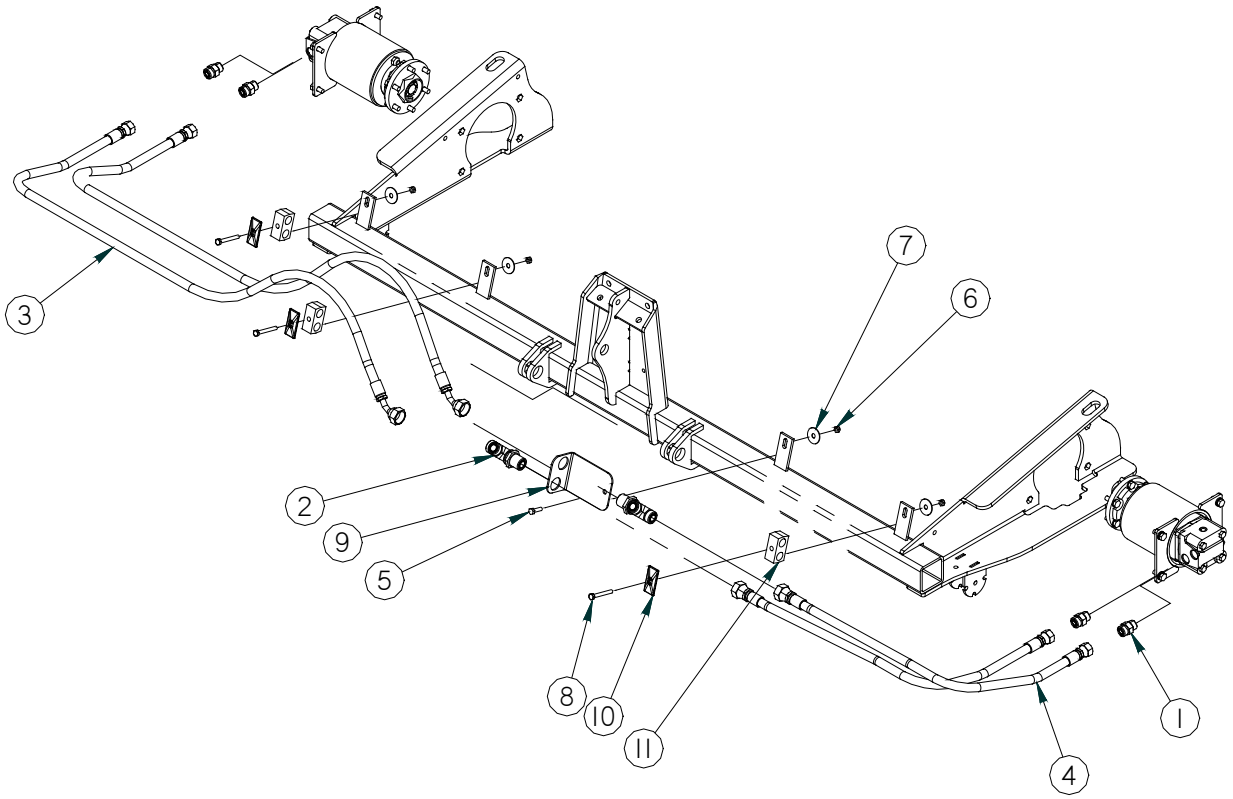
Item	Part	Qty	Description
1.	01-1085	1	Section, Set, 32, 10, Mixed, Convoluted (5 Ft)
	01-0930	1	Section, Set, 32, 10, Mixed, Convoluted (6 Ft)
	01-0931	1	Section, Set, 32, 10, Mixed, Convoluted (7 Ft)
	01-0933	1	Section, Set, 32, 10, Mixed, Convoluted (8 Ft)
	01-1148	1	Section, Set, 32, 10, Mixed, Convoluted (9 Ft)
	01-0272C	1	Section, Set, 32, Poly, Convoluted (5 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)
	01-0530C	1	Section, Set, 32, Poly, Convoluted (9 Ft)
2.	07-2952	4	Screw, HFH, CL10.9, M6-1 x 20
3.	07-3617	4	Nut, Insert, M6 x 1
4.	13-13166	1	Plate, Ring, Core, End, QC
5.	13-13284	1	Weld, Core, 5 Ft, Hex Drive
	13-13285	1	Weld, Core, 6 Ft, Hex Drive
	13-12899	1	Weld, Core, 7 Ft, Hex Drive
	13-13286	1	Weld, Core, 8 Ft, Hex Drive
	13-13596	1	Weld, Core, 9 Ft, Hex Drive

Shaft Assembly



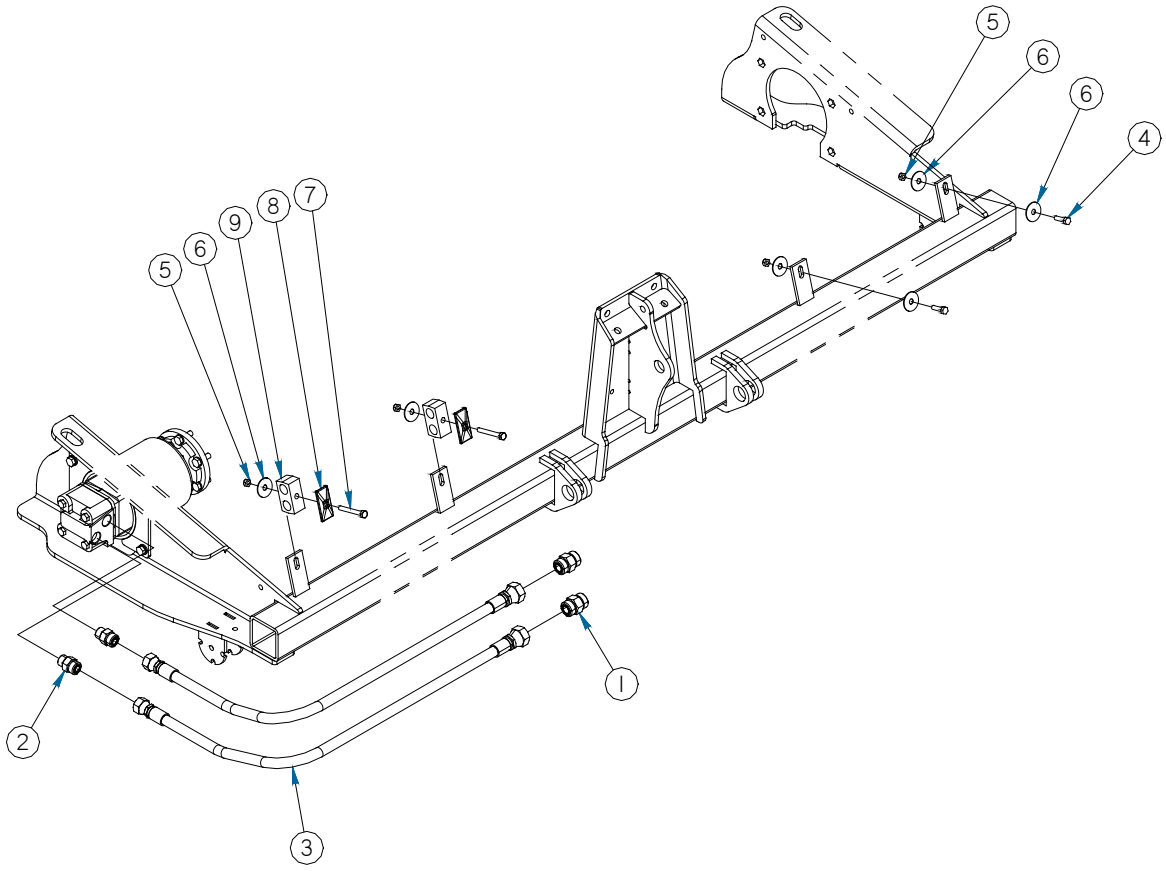
Item	Part	Qty	Description
1.	07-2495	4	Screw, HHC, CL8.8, M10-1.5 x 35mm
2.	07-3738	1	Washer, Lock, Split, Medium, M8
3.	07-3745	8	Washer, Flat, CL8.8, M10
4.	07-3747	14	Washer, Lock, Split, Medium, M10
5.	07-3748	10	Screw, HHC, CL10.9, M10-1.5 x 25mm
6.	07-3777	1	Screw, HHC, CL10.9, M8-1.25 x 20mm
7.	07-4514	4	Nut, Hex, CL10, M10-1.5
8.	08-0067	1	Bearing, 1 1/4, 4 Bolt
9.	13-11903	1	Washer, .34 x 1.8 x 10Ga
10.	13-12941	2	Plate, Shaft, Brush Frame, Mounting
11.	13-12974	1	Weld, Shaft, Hex Drive

Hydraulic Assemblies - Dual Motor



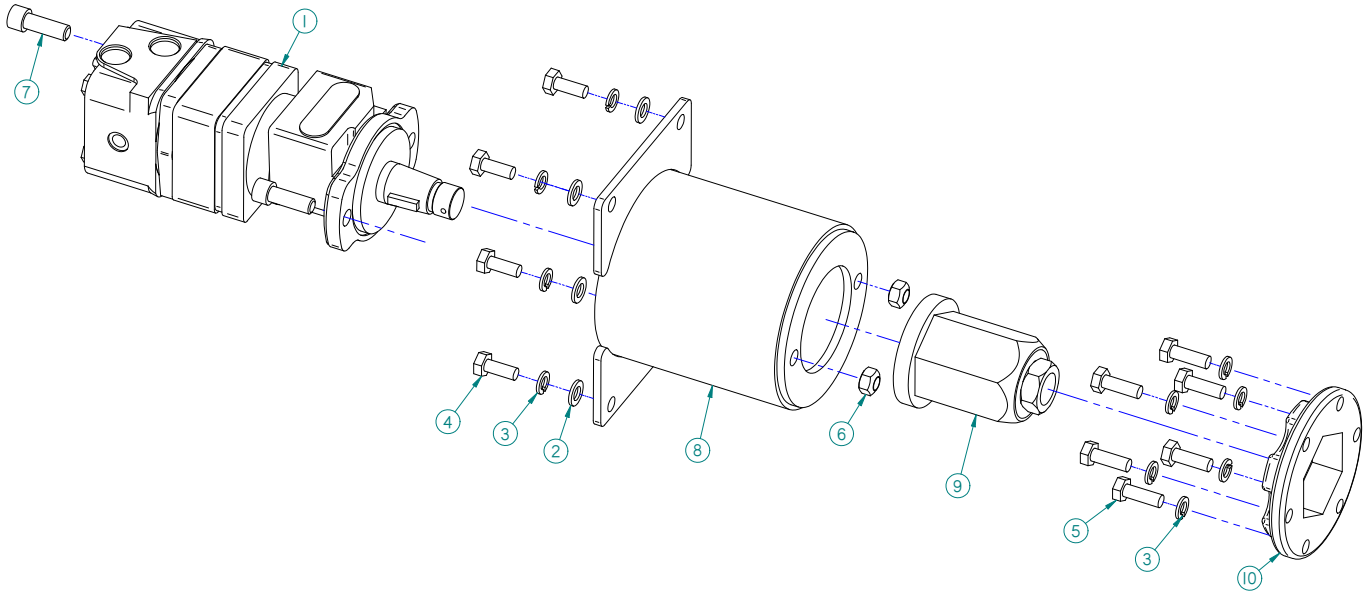
Item	Part	Qty	Description
1.	03-1939	4	Fitting, 10MB-10MF
2.	03-5160	2	Tee, 12MF-12MF-12MF, Bulkhead
3.	03-5161	2	Hose, .50 x 68, 10FF-12FF45, 3.5K, 5 Ft
	03-5162	2	Hose, .50 x 74, 10FF-12FF45, 3.5K, 6 Ft
	03-5163	2	Hose, .50 x 80, 10FF-12FF45, 3.5K, 7 Ft
	03-5164	2	Hose, .50 x 86, 10FF-12FF45, 3.5K, 8 Ft
	03-5178	2	Hose, .50 X 92, 10FF-12FF45, 3.5K, 9 Ft
4.	03-5165	2	Hose, .50 x 32, 10FF-12FF, 3.5K, 5 Ft
	03-5166	2	Hose .50 x 38, 10FF-12FF, 3.5K, 6 Ft
	03-5167	2	Hose, .50 x 44, 10FF-12FF, 3.5K, 7 Ft
	03-5168	2	Hose, .50 x 50, 10FF-12FF, 3.5K, 8 Ft
	03-5179	2	Hose, .50 x 56, 10FF-12FF, 3.5K, 9 Ft
5.	07-3740	1	Screw, HHC, CL10.9, M8-1.25 x 30mm
6.	07-4604	4	Nut, Hex, Lock, CL10.9, M8-1.25
7.	07-4942	4	Washer, Fender, 1 1/2 x 5/16
8.	07-5287	3	Screw, HHC, CL10.9, M8-1.25 x 65mm
9.	13-15094	1	Bracket, Mounting, Bulkhead Tees
10.	RHW8614	3	Cover, Plate
11.	RHW8616	3	Hose, Cradle

Hydraulic Assemblies - Single Motor



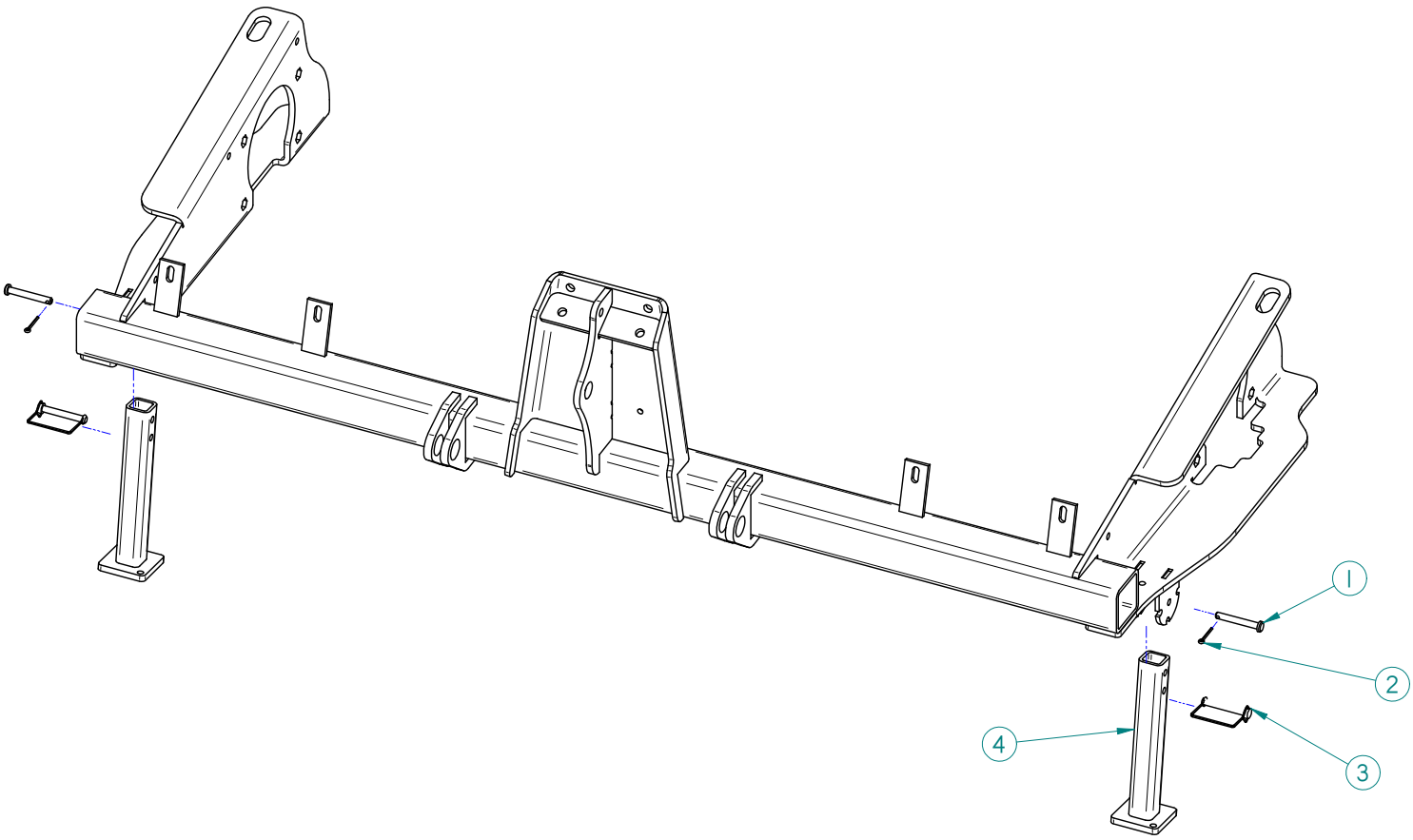
Item	Part	Qty	Description
1.	03-1920	2	Fitting, 12MF-12MF, Union
2.	03-1939	2	Fitting, 10MB-10MF
3.	03-5165	2	Hose, .50 x 32, 10FF-12FF, 3.5K, 5 Ft
	03-5166	2	Hose, .50 x 38, 10FF-12FF, 3.5K, 6 Ft
	03-5167	2	Hose, .50 x 44, 10FF-12FF, 3.5K, 7 Ft
	03-5168	2	Hose, .50 x 50, 10FF-12FF, 3.5K, 8 Ft
4.	07-3740	2	Screw, HHC, CL10.9, M8-1.25 x 30mm
5.	07-4604	4	Nut, Hex, Lock, CL10.9, M8-1.25
6.	07-4942	6	Washer, Fender, 1 1/2 x 5/16
7.	07-5287	2	Screw, HHC, CL10.9, M8-1.25 x 65mm
8.	RHW8614	2	Cover, Plate
9.	RHW8616	2	Hose, Cradle

Motor Bucket Assemblies



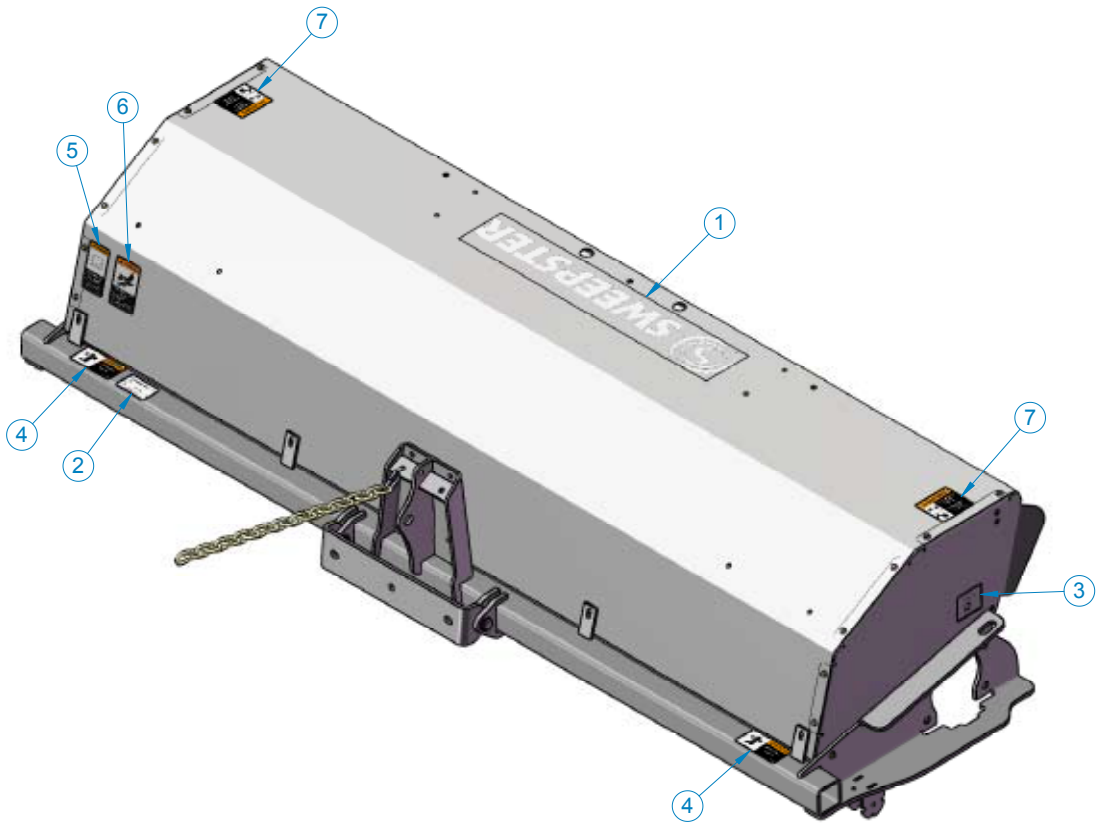
Item	Part	Qty	Description
1.	03-4682	1	Motor, 17.9 CID, 1.25 TPR, 2Bolt-A, White, Check Valve Right
	03-4634	1	Motor, 17.9 CID, 1.25 TPR, 2Bolt-A, White, Check Valve Left
	03-4425	1	Motor, 17.9 CID, 1.25 TPR, 4Bolt-A, White, Check Valve Left
2.	07-3745	4	Washer, Flat, CL8.8, M10
3.	07-3747	10	Washer, Lock, Split, Medium, M10
4.	07-3748	4	Screw, HHC, CL10.9, M10-1.5 x 25mm
5.	07-3749	6	Screw, HHC, CL10.9, M10-1.5 x 30mm
6.	07-4610	2	Nut, Hex, Lock, CL10.9, M12-1.75
7.	07-6178	2	Screw, Socket Head, M12-1.75 x 35mm
8.	13-12946	1	Weld, Motor Bucket
9.	13-15206	1	Hub, Hex, 2 1/2 x 1 1/4 Tapered Bore x 3.75
10.	13-12750	1	Plate, Receiver, Hex, 2.50 Inch

Brush Head Stands
28-9737



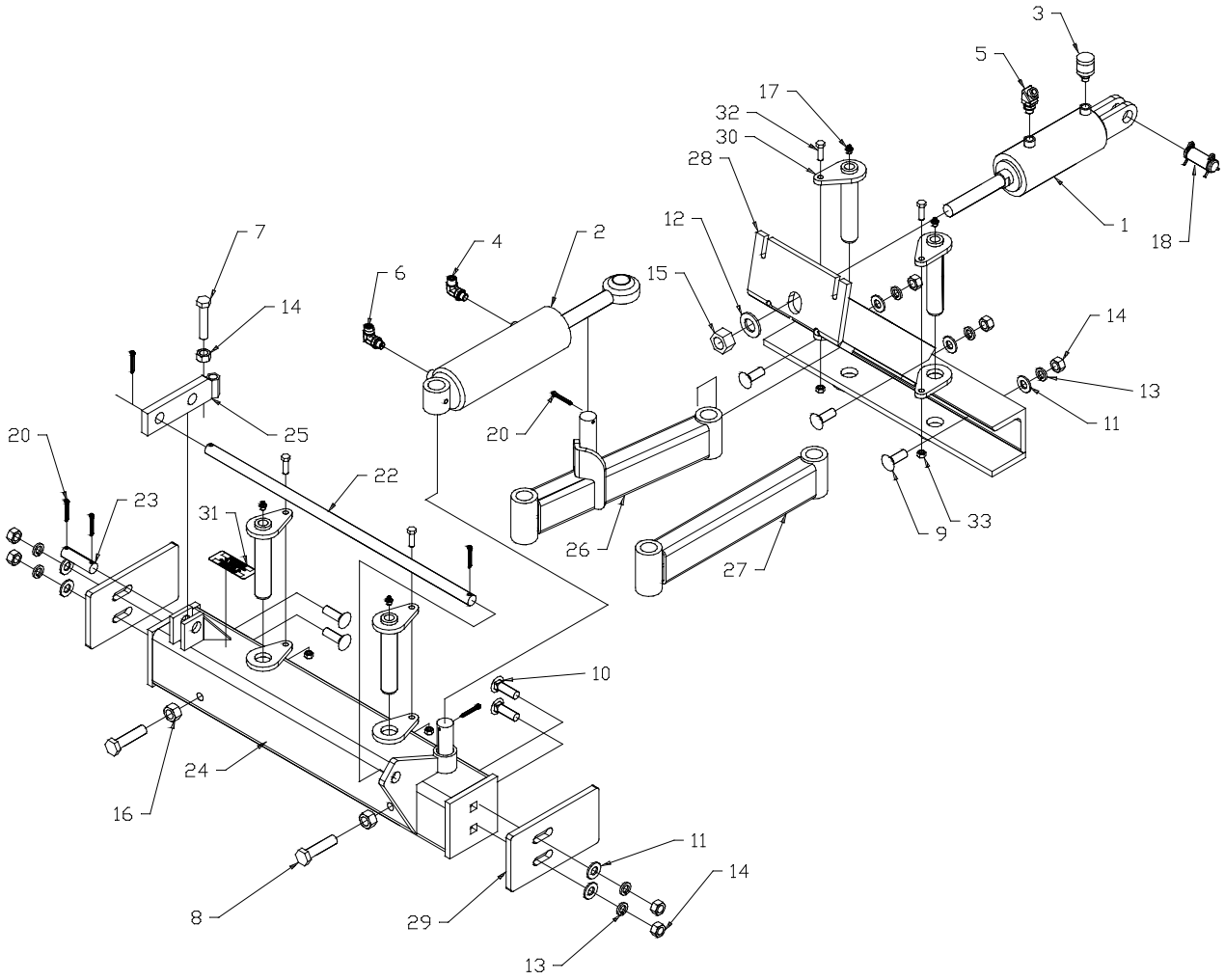
Item	Part	Qty	Description
1.	07-0260	2	Pin, Clevis, Gr2, 3/8 x 2 3/4
2.	07-0699	2	Pin, Cotter, Gr2, 1/8 x 1 1/4
3.	07-4748	2	Pin, Lock, 3/8 x 2, Grip, Square, 2.50AL
4.	13-13226	2	Weld, Stand, Brush Head

Brush Head Labels
28-9706



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	2	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

11-0790 Scissor Swing



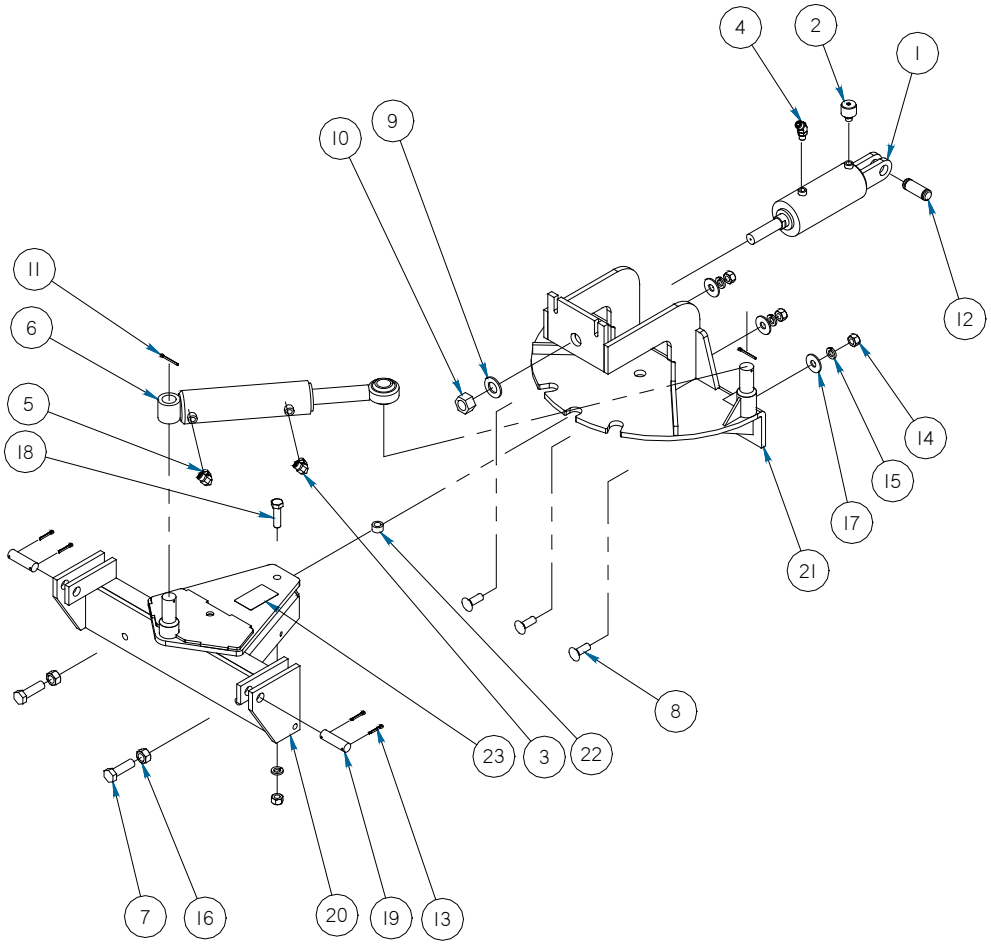
Item	Part	Qty	Description
1.	03-1928-1	1	Cylinder, 3.00 x 1.13 x 4.50
	03-2600	1	Cylinder, 2.00 x 1.13 x 4.50
2.	03-4887	1	Cylinder, 2.50 x 1.38 x 7.5, 3.5K
3.	03-1932	1	Fitting, Vent, 9/16MOR, W/Bell Cap
4.	03-2092	1	Elbow, 90, 6MF-6MB
5.	03-2115	1	Elbow, 45, 6MB-6MF
6.	03-2345	1	Fitting, Orifice, .078, Elbow, 90°, HP, 9/16MOR, 3/8MFS
7.	07-3934	1	Screw, Tap, Gr5, 5/8-11 x 4
8.	07-0080	2	Screw, Cap, Tap, 3/4-10 x 3
9.	07-0119	3	Bolt, Carriage, 5/8 x 1 3/4
10.	07-0120	4	Bolt, Carriage, 5/8-11 x 2
11.	07-3120	7	Washer, Flat, Gr8, 5/8
12.	07-4040	1	Washer, Flat, Gr8, 1
13.	07-1872	7	Washer, Lock, Split, Medium, 5/8
14.	07-1294	8	Nut, Hex, Gr8, 5/8-11
15.	07-0186	1	Nut, Hex, 1-14
16.	07-3066	2	Nut, Hex, 3/4-10
17.	07-0223	4	Fitting, Zerk, Straight, 1/8NPT
18.	07-0539	1	Pin, Clevis, 1, with Hairpin Clip, Both Ends
20.	07-0786	6	Pin, Cotter, 3/16 x 1 1/2
22.	11-0023	1	Pin, 7/8 x 27 5/8
23.	11-0459	1	Pin, 7/8 x 3, 2 Holes
24.	11-0789	1	Weld, Frame, Swing, AH, Rear
25.	11-0799	1	Weld, Bracket, Leveling
26.	11-0800	1	Weld, Arm, Swing, AH, with Pin
27.	11-0803	1	Weld, Arm, Swing, AH, No Pin
28.	11-1677	1	Weld, Frame, Swing, AH
29.	13-15678	2	Plate, Adjustment, Brush Head
30.	13-15600	4	Weld, Pin, Frame, Swing
31.	50-0635	1	Label, Plate, Part Number/Date
32.	07-2116	4	Screw, HHC, Gr8, 3/8-16 x 1 1/4
33.	07-5370	4	Nut, Hex, Lock, Gr8, 3/8-16

Replacement Parts for 03-1928-1 :
03-0928 Seal Kit
03-0001B-1 Rod
03-5106 Rod/Gland Kit

Replacement Parts for 03-4887 :
03-4888 Seal Kit
03-5035 Rod

Replacement Part for 03-2600 :
03-1472 Seal Kit

28-4612 Swing Plate for Tractors



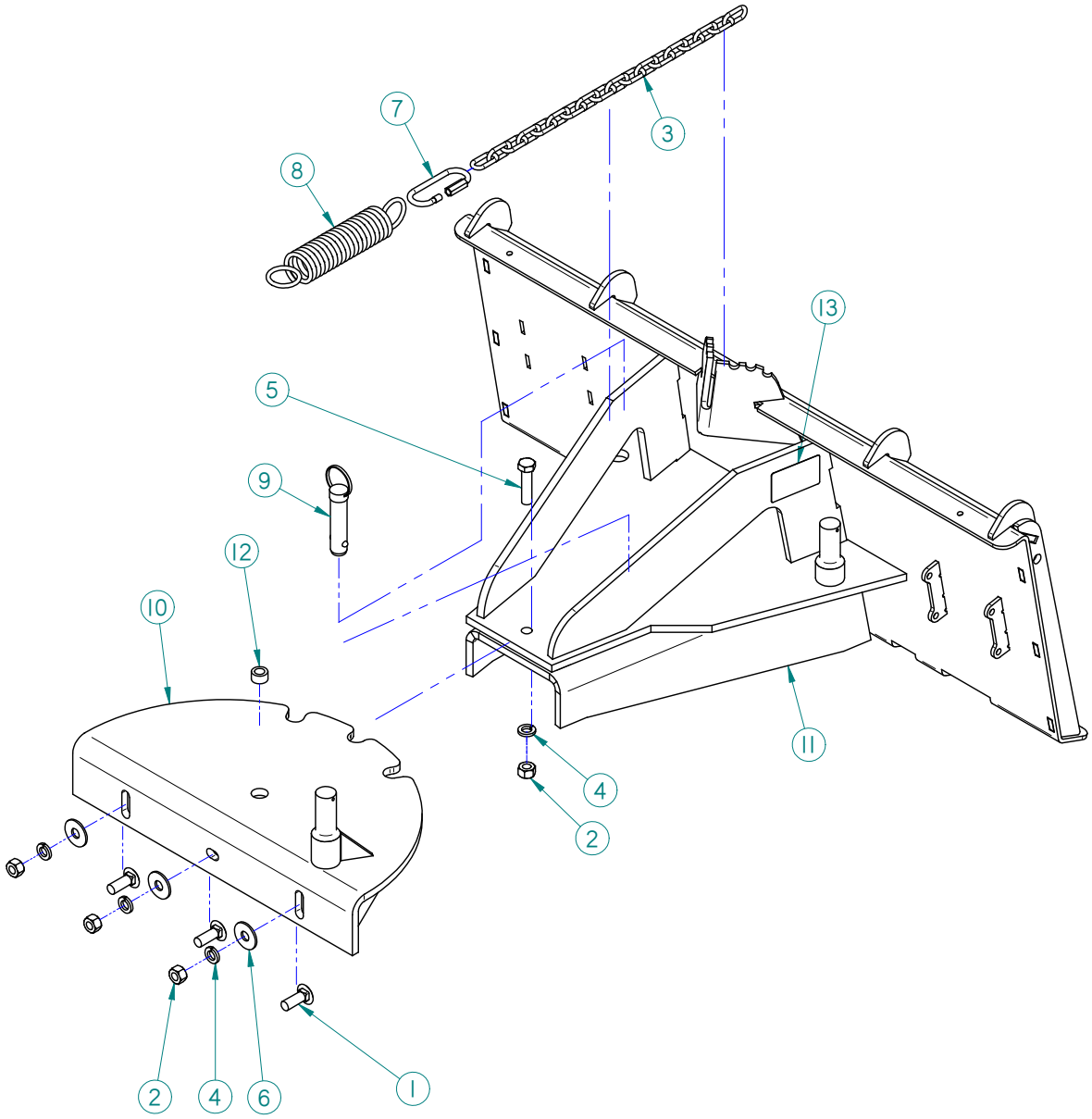
Item	Part	Qty	Description
1.	03-1928-1	1	Cylinder, 3.00 x 1.13 x 4.50, Thread Clevis
	03-2600	1	Cylinder, 2.00 x 1.13 x 4.50
2.	03-1932	1	Fitting, Vent, 9/16MOR, W/Bell Cap
3.	03-2092	1	Elbow, 90, 6MF-6MB
4.	03-2115	1	Elbow, 45, 6MB-6MF
5.	03-2345	1	Fitting, Orifice, .078, Elbow, 90°, HP, 9/16MOR, 3/8MFS
6.	03-4887	1	Cylinder, 2.50 x 1.38 x 7.50, 3.5K
7.	07-0079	2	Screw, Cap, Tap, 3/4-10 x 2 1/2
8.	07-0119	3	Bolt, Carriage, Gr5, 5/8-11 x 1 3/4
9.	07-0159	1	Washer, Flat, 1
10.	07-0186	1	Nut, Hex, 1-14
11.	07-0206	2	Pin, Cotter, Gr2, 3/16 x 2
12.	07-0539	1	Pin, Clevis, 1, with HairClip, Both Ends
13.	07-0786	4	Pin, Cotter, 3/16 x 1 1/2
14.	07-1294	4	Nut, Hex, 5/8-11
15.	07-1872	4	Washer, Lock, Split, 5/8
16.	07-3066	2	Nut, Hex, 3/4-10
17.	07-3120	3	Washer, Flat, 5/8
18.	07-3680	1	Screw, HHC, Gr8, 5/8-11 x 2 1/4
19.	11-0459	2	Pin, 7/8 x 3, 2 Holes
20.	13-10476	1	Weld, Swing, Frame, CH
21.	13-10477	1	Weld, Plate, Swing, CH
22.	13-4657	1	Bushing, 1 x 5/8 x .562
23.	50-0635	1	Label, Plate, Part Number/Date

Replacement Parts for 03-1928-1 :
03-0928 Seal Kit
03-0001B-1 Rod
03-5106 Rod/Gland Kit

Replacement Part for 03-2600 :
03-1472 Seal Kit

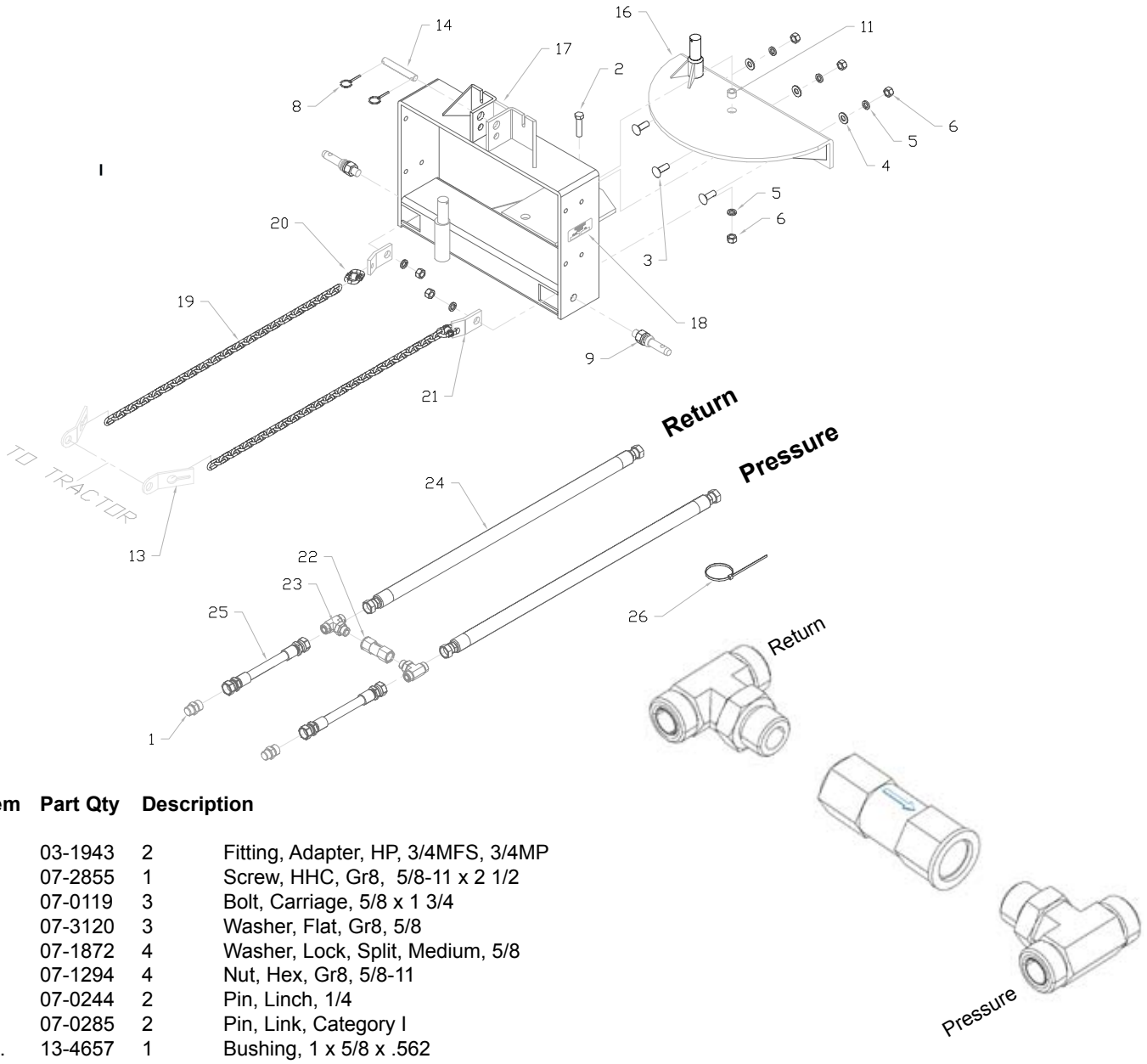
Replacement Parts for 03-4887 :
03-4888 Seal Kit
03-5035 Rod

Quick Attach
(SAE J2513)



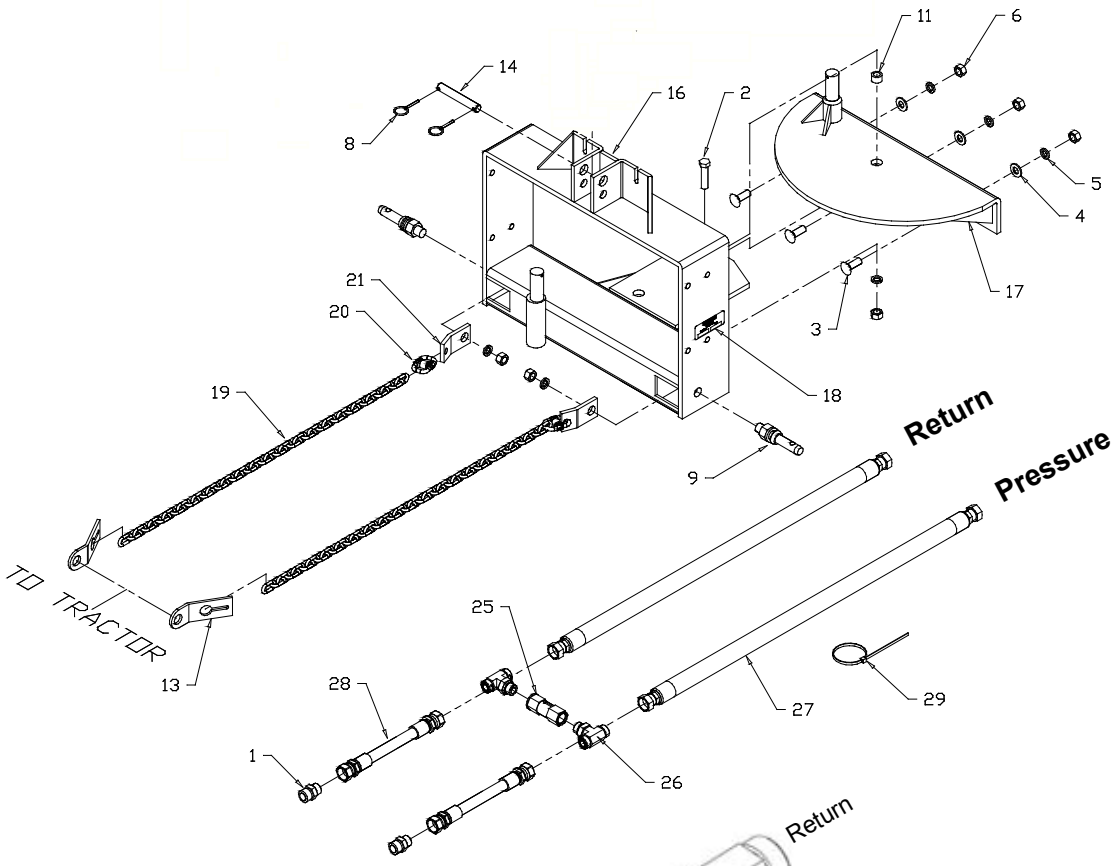
Item	Part	Qty	Description
1.	07-0119	3	Bolt, Carriage, Gr5, 5/8-11 x 1 3/4
2.	07-1294	4	Nut, Hex, Gr8, 5/8-11
3.	07-1558	1	Chain, 1/4, 18 Links
4.	07-1872	4	Washer, Lock, Split, Medium, 5/8
5.	07-2855	1	Screw, HHC, Gr8, 5/8-11 x 2 1/2
6.	07-3120	3	Washer, Flat, Gr8, 5/8
7.	07-5294	1	Link, Quick, 5/16 Wide Jaw
8.	07-6451	1	Spring, Tension, 325#/IN
9.	07-6903	1	Pin, Quick Release, 1 x 3
10.	11-9080	1	Weld, Swing, Plate
11.	13-14956	1	Weld, Frame, Mounting
12.	13-4657	1	Bushing, 1 x 5/8 x .562
13.	50-0635	1	Label, Plate, Part Number/Date

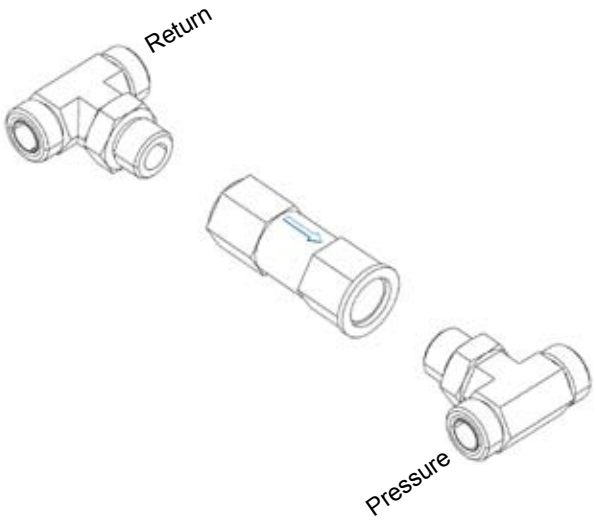
11-5031 RLCH, Cat I Hitch
11-4183 RLH, Cat I Hitch



Item	Part	Qty	Description
1.	03-1943	2	Fitting, Adapter, HP, 3/4MFS, 3/4MP
2.	07-2855	1	Screw, HHC, Gr8, 5/8-11 x 2 1/2
3.	07-0119	3	Bolt, Carriage, 5/8 x 1 3/4
4.	07-3120	3	Washer, Flat, Gr8, 5/8
5.	07-1872	4	Washer, Lock, Split, Medium, 5/8
6.	07-1294	4	Nut, Hex, Gr8, 5/8-11
8.	07-0244	2	Pin, Linch, 1/4
9.	07-0285	2	Pin, Link, Category I
11.	13-4657	1	Bushing, 1 x 5/8 x .562
13.	13-0440	2	Bracket, Chain, Toplink, 3-Point
14.	13-2002	1	Pin, Toplink, 3-Point
16.	13-4823	1	Weld, Swing, Plate, CV, RLCH
17.	13-7911	1	Weld, Frame, Swing, RLCH
	13-4676	1	Weld, Frame, Swing, RLH
18.	50-0635	1	Label, Plate, Part Number/Date
19.	07-0290	2	Chain, 1/4, 39 Links
20.	07-2032	2	Clevis, Double Link, 9/32, Gr8
21.	11-1888	2	Plate, Support, Chain
22.	03-1816	1	Valve, Check, In-line, 1 1/16, O-Ring
23.	03-1950	2	Fitting, Tee, HP, MB, 3/4MFS
24.	03-2268	2	Hose, 3/4 x 42, 2W, 3/4FFS, 3/4FFS
25.	03-3333	2	Hose, 3/4 x 37, TC, 3/4FFS, 3/4FFS
26.	07-1817	4	Tie, Plastic, 15, White, Reuse

11-4184 RLH, Category II Hitch





Item	Part	Qty	Description
1.	03-1945	2	Fitting, 12MB-12MF
2.	07-0066	1	Screw, HHC, Gr8, 5/8-11 x 2
3.	07-0119	3	Bolt, Carriage, Gr5, 5/8 x 1 3/4
4.	07-3120	3	Washer, Flat, Gr8, 5/8
5.	07-1872	4	Washer, Lock, Split, Medium, 5/8
6.	07-1294	4	Nut, Hex, Gr8, 5/8-11
8.	07-0244	2	Pin, Lynch, 1/4
9.	07-0688	2	Pin, Cat 2, Hitch, 7/8 Thread
11.	13-4657	1	Bushing, 1 x 5/8 x .562
13.	13-0440	2	Bracket, Chain, Top Link, 3-Point
14.	13-11997	1	Pin, .875 x 6.5, with 5.72 Grip Length
16.	13-4676	1	Weld, Frame, Swing
17.	13-4823	1	Weld, Swing, Plate
18.	50-0635	1	Label, Plate, Part Number/Date
19.	07-0290	2	Chain, 1/4, 39 Links
20.	07-2032	2	Clevis, Double Link, 9/32, Gr80
21.	11-1888	2	Plate, Support, Chain
25.	03-1816	1	Valve, CV, 12FB-12FB, 30gpm, 5K
26.	03-1950	2	Tee, 12MF-12MF-12MB
27.	03-2268	2	Hose, .75 x 42, 12FF-12FF, 3.1K
28.	03-3333	2	Hose, .75 X 37, 12FF-12FF, 3K, TC
29.	07-1817	4	Tie, Plastic, 15, White, Reuse

Notes

11-4200 (RLH) & 11-4202 (RLCH)
Category I Hitch, with Power Pack

Item	Part	Qty	Description
1.	03-1940	1	Tee, 12MF-12MF-12MF
2.	03-1958	2	Hose, .75 x 78, 12FF-12FF, 3.125K
3.	03-0129	1	Valve, RV, 12, 30gpm,3K
4.	03-3779	1	Fitting, 12FF-12MB
5.	03-0577	1	Elbow, 90, 12FP-12MB
6.	03-0597	1	Pump, 9.9 CID, FPTO, CW, 21gpm
	03-0691	1	Pump, 5.7 CID, FPTO, CW, 11.4gpm
7.	03-0710	1	Barb, 20, 16MB90
8.	03-3968	1	Hose, .75 x 60, 12FF-12FF90, 3.125K
9.	03-4709	1	Gauge, Sight, Window, 1 inch
10.	03-5056	1	Filter, Hydraulic, In tank, 39 GPM
11.	03-1022-10	1	Fitting, 12MP-12MP, 3/4FF-S
12.	03-3142	1	Fitting, 12FB-16MB
13.	03-5055	1	Cap, Breather, Hydraulic Tank, Pressurized, 5psi
14.	03-1943	2	Fitting, 12MF-12MP, 12FLO-S
15.	07-2116	2	Screw, HHC, Gr8, 3/8-16 x 1 1/4
16.	07-2855	1	Screw, HHC, 5/8-11 x 2 1/2
17.	07-1717	3	Bolt, Carriage, Gr5, 3/8-16 x 1 1/4
18.	07-0119	3	Bolt, Carriage, 5/8 x 1 3/4
19.	07-3279	10	Washer, Flat, Gr8, 3/8
20.	07-3120	3	Washer, Flat, Gr8, 5/8
21.	07-1718	5	Washer, Lock, Split, Medium, 3/8
22.	07-1872	4	Washer, Lock, Split, Medium, 5/8
23.	07-3654	4	Nut, Hex, Gr8, 3/8-16
24.	07-1294	4	Nut, Hex, Gr8, 5/8-11
26.	07-0244	2	Pin, Link, #1600
27.	07-4642	1	Strainer, Filler Spout, for 03-4939
28.	07-0246	1	Chain, 1/4, 13 Links
29.	07-0285	2	Pin, Linch, 1/4
31.	07-1192	2	Clamp, T-Bolt, 1 1/4
33.	09-0020	5ft	Hose, Suction, 1 1/4, Bulk
35.	13-4657	1	Bushing, 1 x 5/8 x .562
37.	13-13256	1	Weld, Tank, 3-Point
38.	11-9080	1	Weld, Plate, Swing
39.	13-0440	2	Bracket, Chain, Toplink, 3-Point
40.	13-7910	1	Weld, Frame, Mounting/Swing, RLCH for Hydraulic Tank
	13-0844	1	Weld, Frame, Swing, RLH for Hydraulic Tank
41.	13-2002	1	Pin, Toplink, 3-Point
43.	50-0185	1	Label, Logo, White, Medium, Sweepster
44.	50-0635	1	Label, Plate, Part Number/Date
45.	50-0272	1	Label, Oil, ISO VG 46
46.	07-0290	2	Chain, 1/4, 39 Links
47.	07-2032	2	Clevis, Double Link, 9/32, Gr80
48.	11-1888	2	Plate, Support, Chain
49.	07-3273	2	Washer, Lock, Split, Medium, 5/16
50.	07-3275	2	Washer, Flat, Gr8, 5/16
51.	07-3647	2	Screw, HHC, Gr8, 5/16-18 x 1 1/2
53.	07-1817	6	Tie, Plastic, 15, White, Reuse
57.	50-0725	1	Label, Warning, Inspect Hydraulic Components

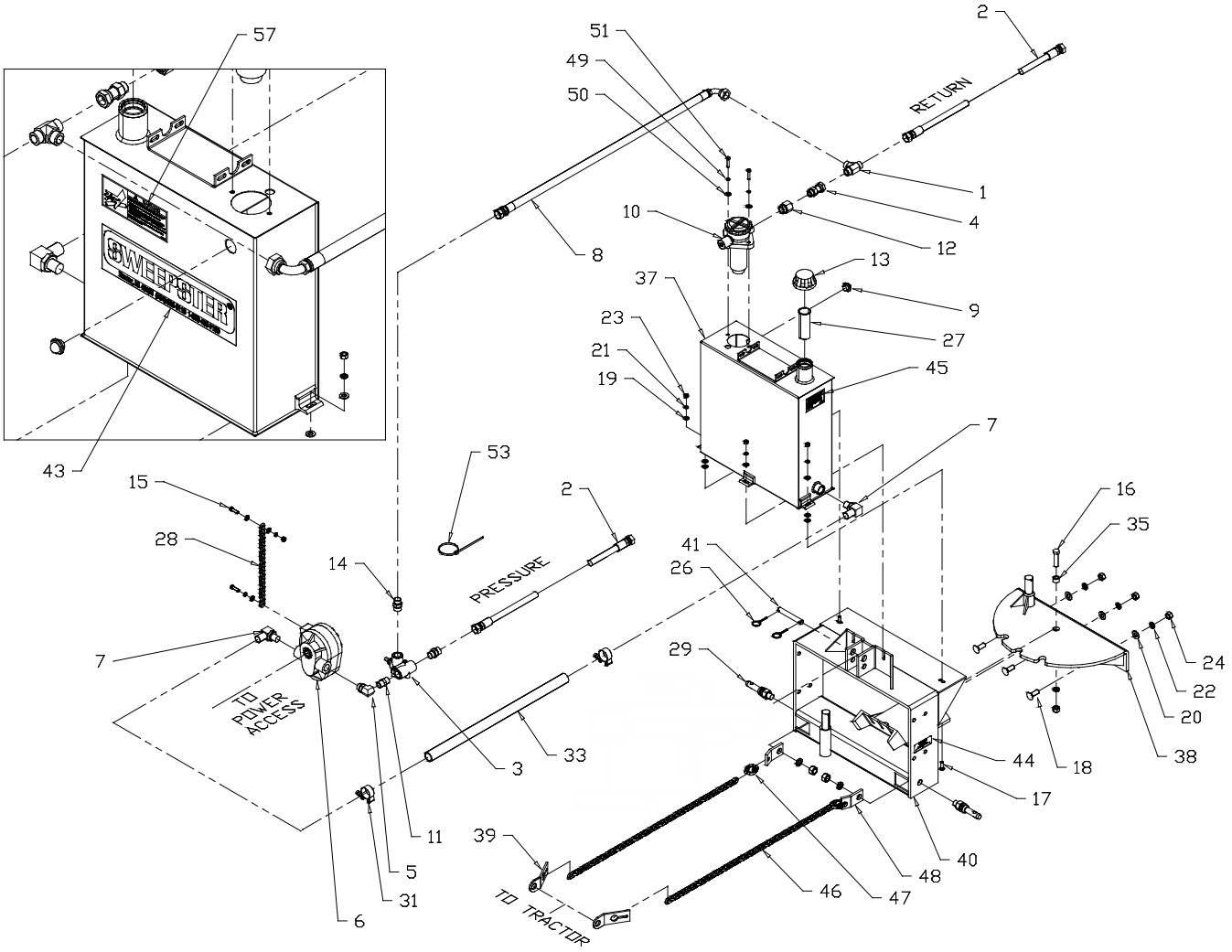
Replacement Parts for 03-5056 :

03-3965 Element
03-4741 Filter, Cap
07-6705 Gasket
07-6727 Vacuum Group

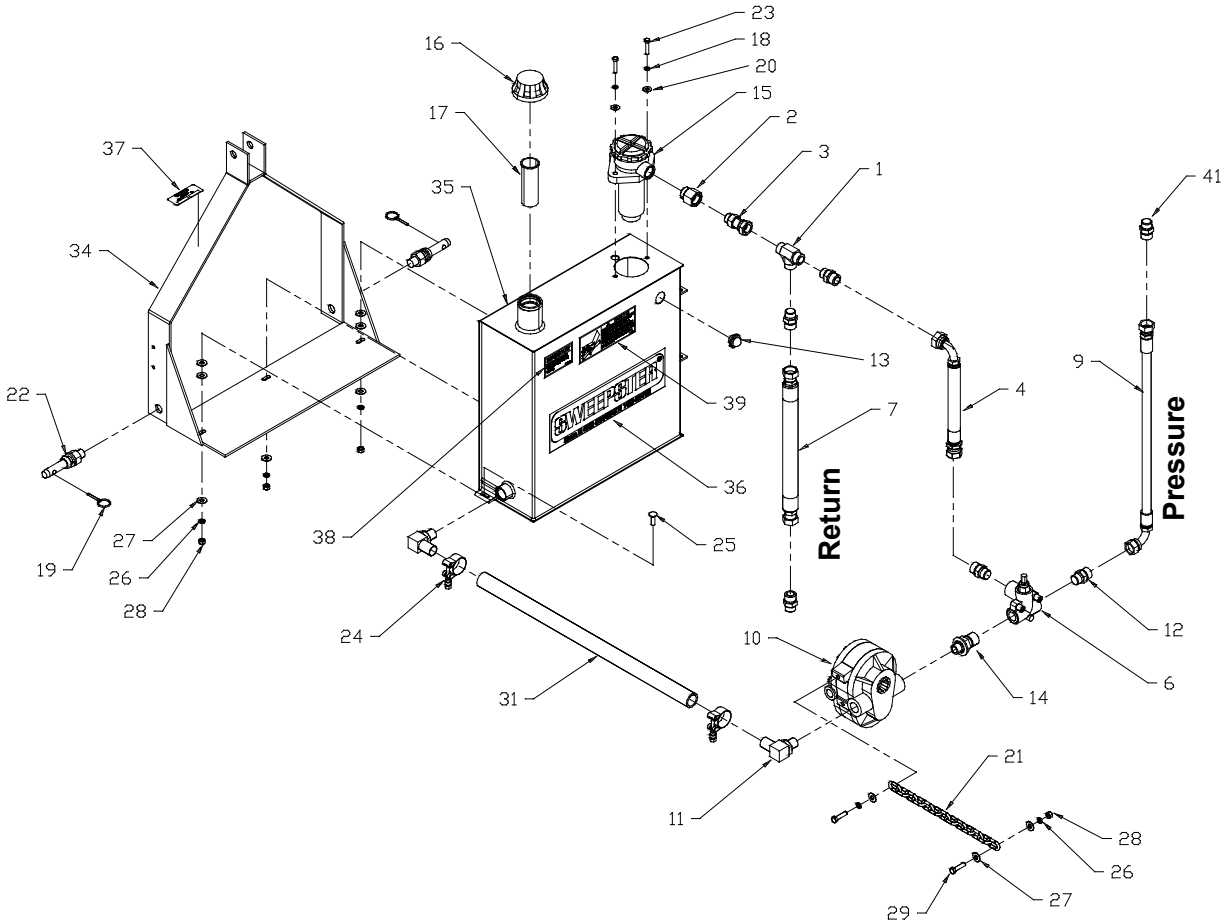
Replacement Part for 03-0597 and 03-0691 :

03-0597A Seal Kit

11-4200 (RLH) & 11-4202 (RLCH)
Category I Hitch, with Power Pack



Power Pack for 3-Point Hitch for AH/CH/Loader Mounting 11-7690 (12 gpm [.76 lps]) or 11-7691 (20 gpm [1.01 lps])



Item	Part	Qty	Description
1.	03-1940	1	Tee, 12MF-12MF-12MF
2.	03-3142	1	Fitting, 12FB-16MB
3.	03-3779	1	Fitting, 12FF-12MB
4.	03-1971	1	Hose, .75 x 56, 12FF-12FF90, 1.525K
6.	03-0129	1	Valve, RV, 12, 30gpm, 3K
7.	03-2473	1	Hose, .75 x 204, 12FF-12FF, 3.1K
9.	03-2443	1	Hose, .75 x 156, 12FF-12FF90, 3.1K
10.	03-0691	1	Pump, 5.7 CID, FPTO, CW, 11.4gpm
	03-0597	1	Pump, 9.9 CID, FPTO, CW, 21gpm
11.	03-0710	2	Barb, 20, 16MB90
12.	03-1943	4	Fitting, 12MF-12MP, 12FLO-S
13.	03-4709	1	Gauge, Sight, Window, 1 In
14.	03-0938	1	Fitting, 12MB-12MP
15.	03-5056	1	Filter, Hydraulic,In Tank, 39gpm
16.	03-5055	1	Cap, Breather, 5psi
17.	03-4642	1	Strainer, Filler Spout

Replacement Part for 03-0597 and 03-0691 :
03-0597A Seal Kit

Item	Part	Qty	Description
18.	07-3273	2	Washer, Lock, Split, Medium, 5/16
19.	07-0244	2	Pin, Lynch, 1/4
20.	07-3275	2	Washer, Flat, Gr8, 5/16
21.	07-0246	1	Chain, 1/4, 13 Links
22.	07-0285	2	Pin, Cat I, Hitch, Gr2
23.	07-3647	2	Screw, HHC, Gr8, 5/16-18 x 1 1/2
24.	07-1192	2	Clamp, T-Bolt, 1 1/4
25.	07-1717	3	Bolt, Carriage, 3/8-16 x 1 1/4
26.	07-1718	5	Washer, Lock, Split, Medium, 3/8
27.	07-3279	10	Washer, Flat, Gr8, 3/8
28.	07-3654	4	Nut, Hex, Gr8, 3/8-16
29.	07-3655	2	Screw, Cap, 3/8 x 1 1/2
31.	09-0020	5ft	Hose, Suction, 1 1/4
34.	11-7688	1	Weld, Mounting, Tank, 3-Point
35.	13-13256	1	Weld, Tank, AH/CH, 3 PT
36.	50-0185	1	Label, Logo, Sweepster, White
37.	50-0635	1	Label, Plate, Part Number, Date
38.	50-0272	1	Label, Oil, ISO VG 46
39.	50-0725	1	Label, Warning, Inspect Hydraulics
41.	03-1945	2	Fitting, 12MB-12MF

Replacement Parts for 03-5056 :
03-3965 Element
03-4741 Filter Cap
03-6705 Gasket
07-6727 Vacuum Gauge

Notes

11-5309 AH/CH with Manual Valve

Item	Part	Qty	Description
1.	03-0573	1	Fitting, 2MB-12MB, Union
2.	03-0601	1	Valve, 2 Spool, Run/Swing, with Handles
	03-0665		Handle, Valve, No Hole
	13-8603		Handle, Valve, with Hole
	03-0666		Kit, Pin/Clip, for Mounting Handle
	03-1272		Kit, Relief
3.	03-0602	1	Valve, 3 Way, 1 Spool, Lift, with Handles
	03-0665		Handle, Valve, No Hole
	13-8603		Handle, Valve, with Hole
	03-0666		Kit, Pin/Clip, for Mounting Handle
	03-1272		Kit, Relief
4.	03-0710	1	Barb, 20, 16MB90
5.	03-1945	2	Fitting, 12MB-12MF
6.	03-1946	1	Elbow, 90, 10MB-12MF
7.	03-1953	3	Elbow, 90, 6MF-10MB
8.	03-2181	1	Elbow, 45, 10MB-12MF
9.	03-3142	1	Fitting, 12FB-16MB
10.	03-3779	1	Fitting, 12FF-12MB
11.	03-4183	1	Cross, 12MF
12.	03-4642	1	Strainer, Filler Spout
13.	03-4649	1	Hose, .75 x 17, 12FF-12FF45, 3K, TC
14.	03-4650	1	Hose, .75 x 26, 12FF-12FF90, 1.525K, TC
15.	03-4709	1	Gauge, Sight Window
16.	03-5055	1	Cap, Breather, Hydraulic Tank
17.	03-5056	1	Filter, Hydraulic, In-Line
18.	07-1716	4	Bolt, Carriage, Gr5, 3/8-16 x 3/4
19.	07-1717	4	Bolt, Carriage, 3/8-16 x 1 1/4
20.	07-1718	14	Washer, Lock, Split, 3/8
21.	07-3273	2	Washer, Lock, Split, Medium, 5/16
22.	07-3275	2	Washer, Flat, Gr8, 5/16
23.	07-3279	8	Washer, Flat, 3/8
24.	07-3647	2	Screw, HHC, Gr8, 5/16-18 x 1 1/2
25.	07-3654	14	Nut, Hex, Gr8, 3/8-16
26.	07-3704	6	Bolt, Carriage, Gr5, 3/8-16 x 2 1/2
27.	13-12698	1	Weld, Tank, Front
28.	13-12970	1	Weld, Mounting, Manual Valve
29.	50-0185	1	Label, Logo, Sweepster, White, Medium
30.	50-0272	1	Label, Oil, ISO VG-46
31.	50-0725	1	Label, Warning, High Pressure Fluid Hazard

Replacement Part for 03-0601 :

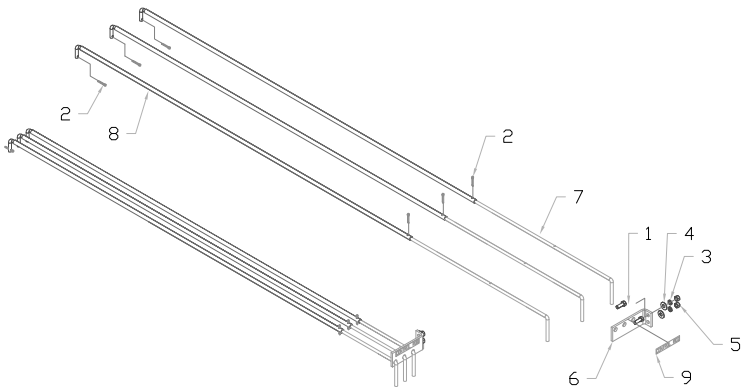
03-1332 Seal Kit

Replacement Parts for 03-5056 :

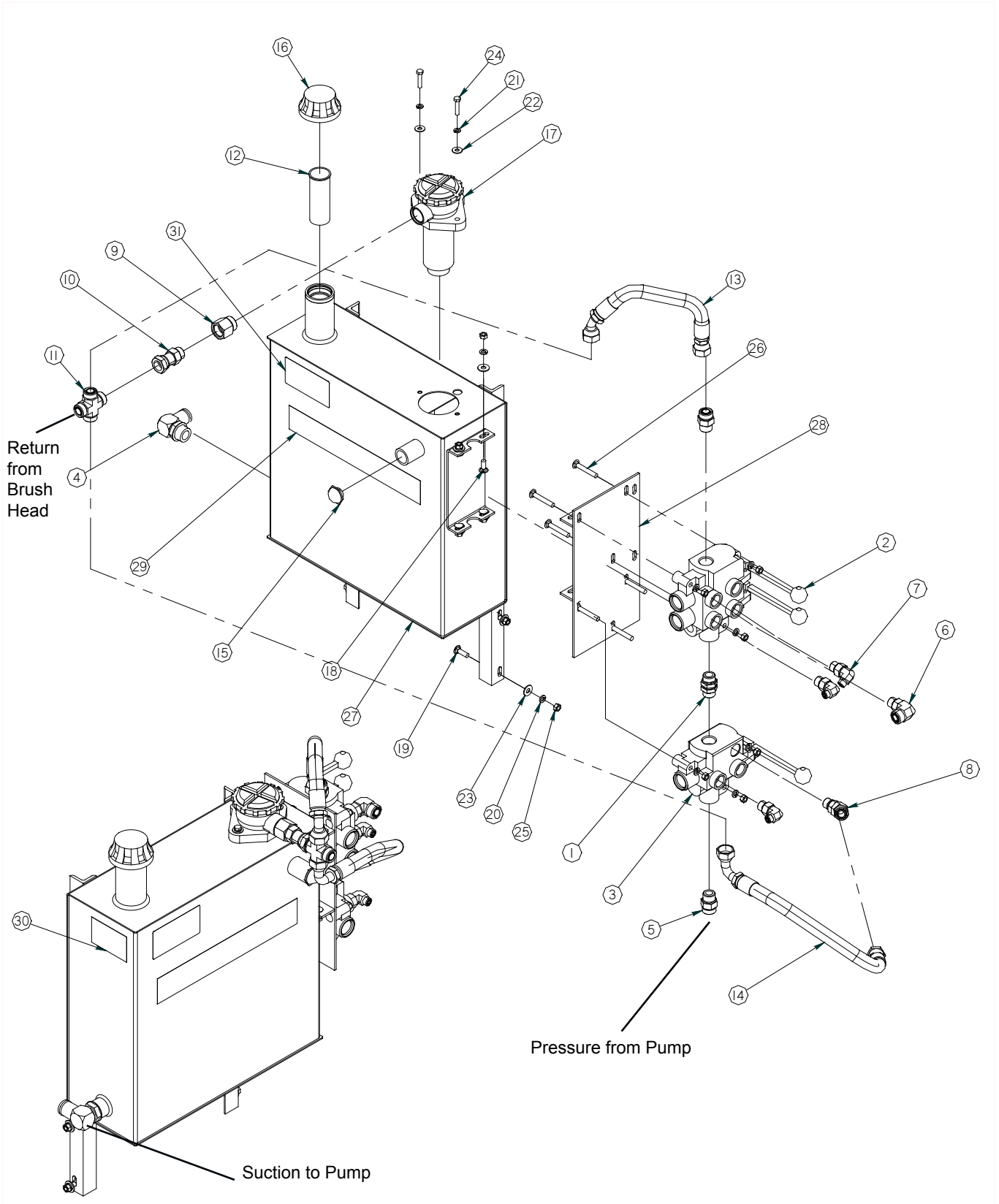
03-3965 Element
03-4741 Filter Cap
07-6705 Gasket
07-6727 Vacuum gauge

Control Rods for Manual Valve

1.	07-0018	2	Screw, HHC, Gr8, 3/8-16 x 1
2.	07-0205	6	Pin, Cotter, 1/8 x 1
3.	07-1718	2	Washer, Lock, Split, Medium, 3/8
4.	07-3279	2	Washer, Flat, Gr8, 3/8
5.	07-3654	2	Nut, Hex, Gr8, 3/8-16
6.	11-0890	1	Bracket, Control Rod
7.	13-4245	3	Rod, Bent, Control
8.	13-4246	3	Weld, Control Rod
9.	50-0162	1	Label, Control Rod



11-5309 AH/CH with Manual Valve



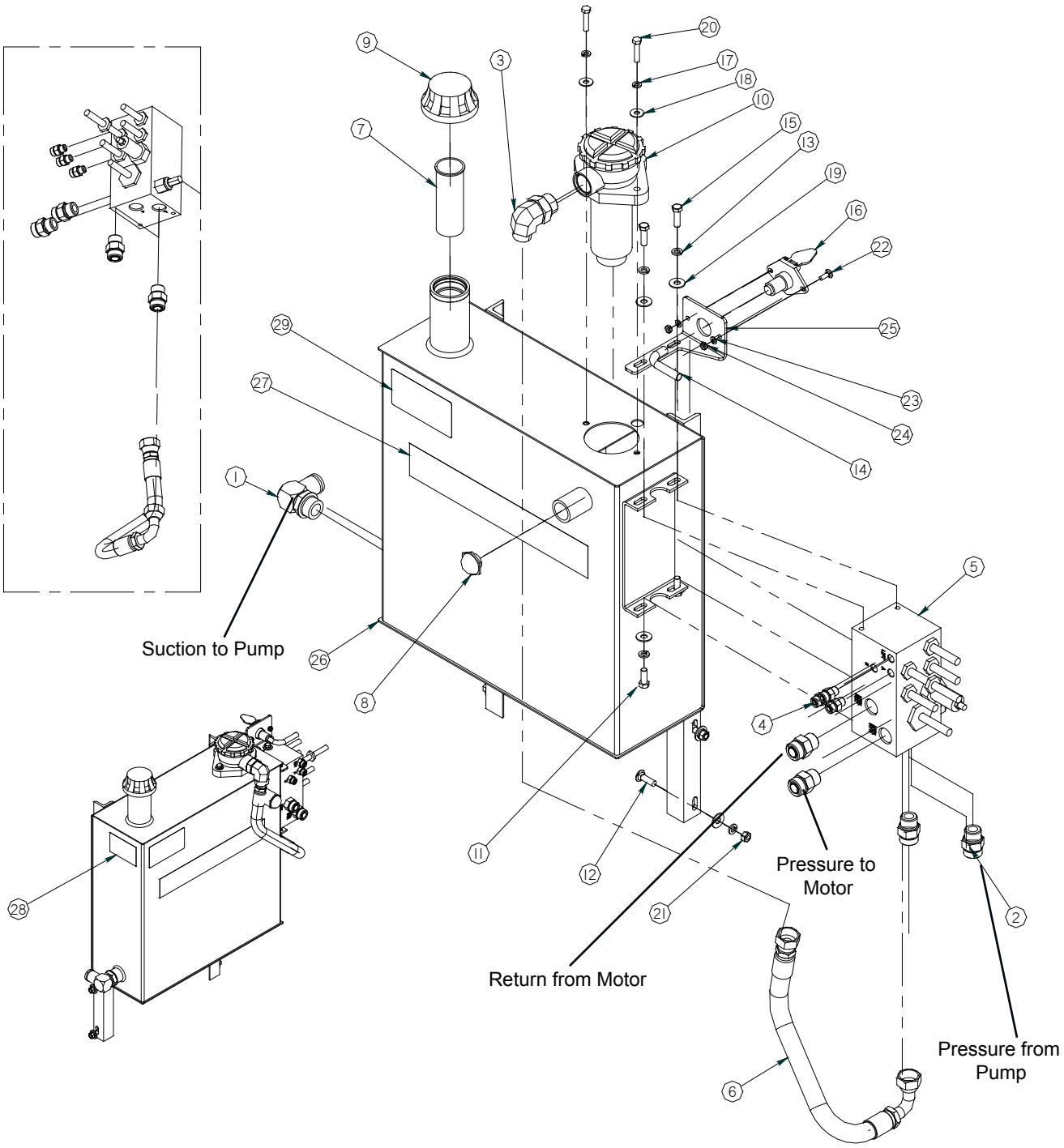
11-5363 AH/CH with Electric Valves

Item	Part	Qty	Description
1.	03-0710	1	Barb, 20, 16MB90
2.	03-1945	4	Fitting, 12MB-12MF
3.	03-1956	1	Elbow, 90, 12MF-16MB
4.	03-2291	3	Fitting, 6MF-6MB, 6F5OLO-S
5.	03-2364-1	1	Manifold, 12 Volt, Swing/Lift/Run, with Screen
6.	03-2556	1	Hose, .75 x 24, 12FF-12FF90, 3.1K
7.	03-4642	1	Strainer, Filler, Spout
8.	03-4709	1	Gauge, Sight Window
9.	03-5055	1	Cap, Filler, Breather, Hydraulic Tank
10.	03-5056	1	Filter, Hydraulic, In-Tank
11.	07-0018	2	Screw, HHC, Gr8, 3/8-16 x 1
12.	07-1717	4	Bolt, Carriage, Gr5, 3/8-16 x 1 1/4
13.	07-1718	8	Washer, Lock, Split, Medium, 3/8
14.	07-1834	1	Loom, Flex, Guard, .5
15.	07-2116	2	Screw, HHC, Gr8, 3/8-16 x 1 1/4
16.	07-2898	1	Connector, 6 Pole, Socket
17.	07-3273	2	Washer, Lock, Split, Medium, 5/16
18.	07-3275	2	Washer, Flat, Gr8, 5/16
19.	07-3279	8	Washer, Flat, Gr8, 3/8
20.	07-3647	2	Screw, HHC, Gr8, 5/16-18 x 1 1/2
21.	07-3654	4	Nut, Hex, Gr8, 3/8-16
22.	07-3690	2	Bolt, Carriage, Gr5, 1/4-20 x 3/4
23.	07-4038	2	Washer, Lock, Split, Medium, 1/4
24.	07-4039	2	Nut, Hex, Gr8, 1/4-20
25.	13-11013	1	Plate, Mounting, QC, Socket, Bolt-On
26.	13-12698	1	Weld, Tank, Front
27.	50-0185	1	Label, Logo, Sweepster, White, Medium
28.	50-0272	1	Label, Oil, ISO VG 46
29.	50-0725	1	Label, Warning, High Pressure Fluid Hazard

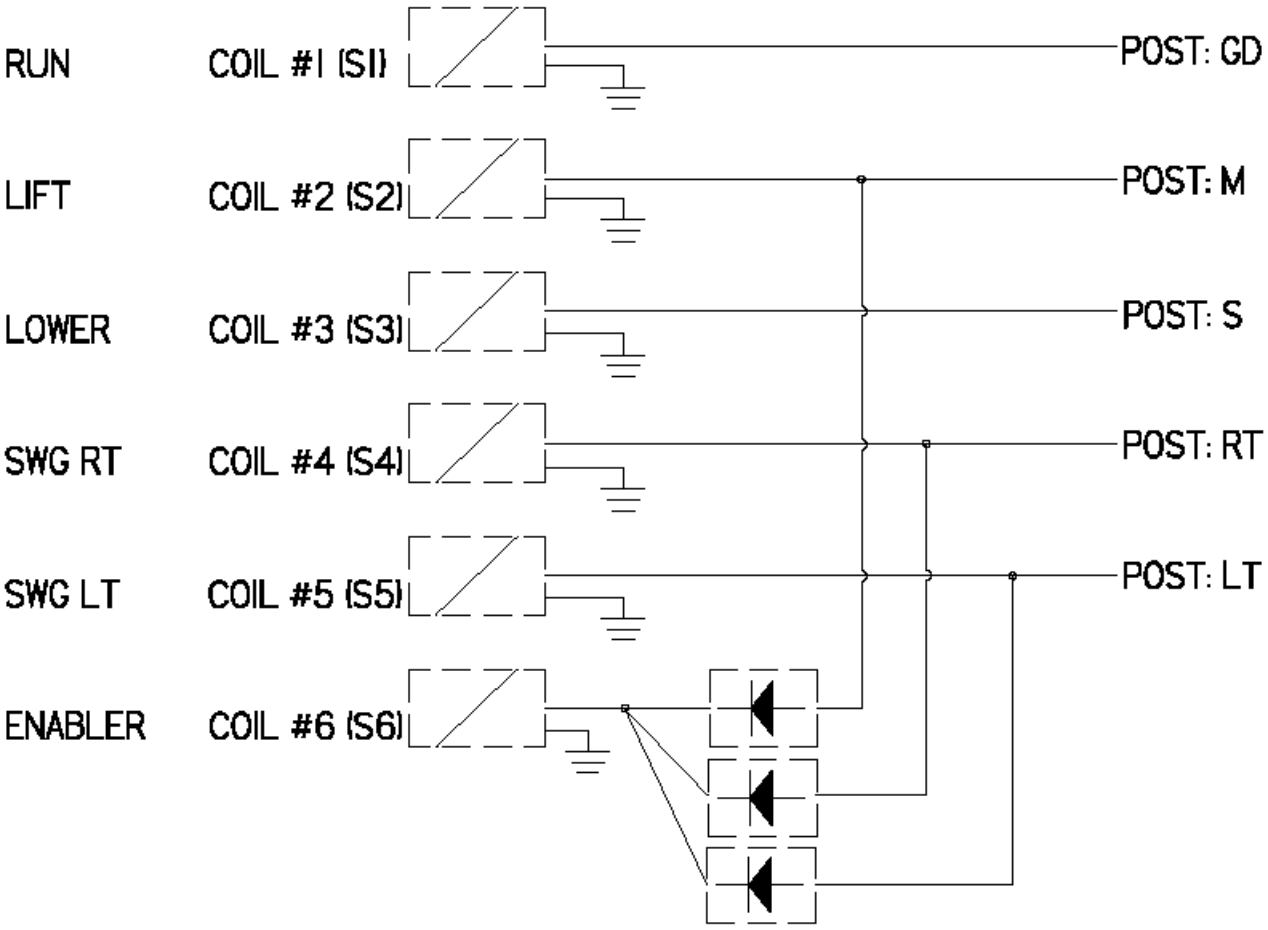
Replacement Parts for 03-5056 :

03-3965 Element
03-4741 Filter Cap
07-6705 Gasket
07-6727 Vacuum Gauge

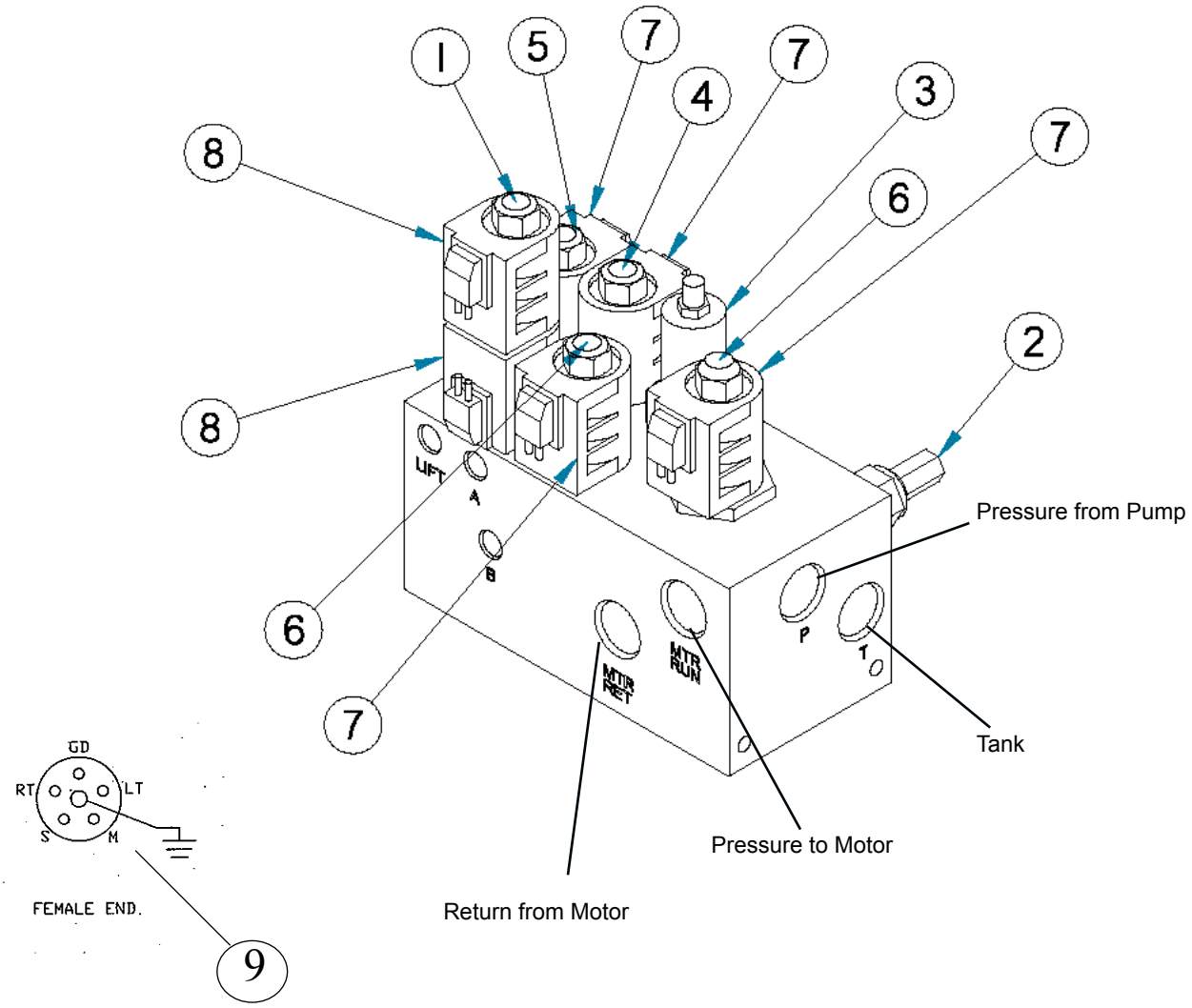
11-5363 AH/CH with Electric Valves



11-5363 Electric Valve, Wiring Schematic



03-2364-1 for 11-5363 Electric Valves - Manifold



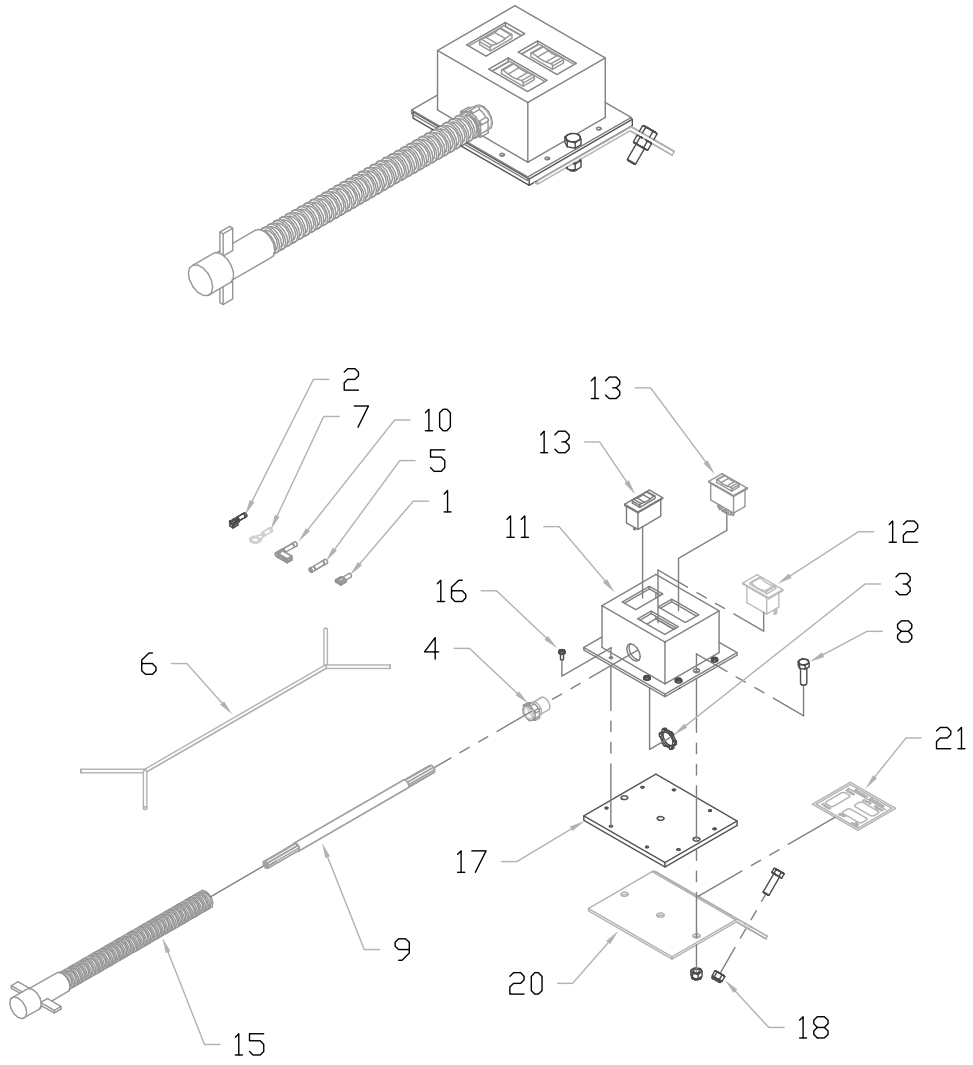
Item	Part	Qty	Description
1.	03-4390	1	Valve, Delta, 3 position, 4 Way, 6gpm
2.	07-3148	1	Valve, Cartridge, Relief, Manifold Block
	03-2927		Kit, Seal, for 07-3148
3.	03-5649	1	Valve, Cartridge, Relief, Pressure
4.	03-5571	1	Valve, Cartridge
5.	03-1396	1	Valve, Cartridge, Down, Manifold Block
	03-1509		Kit, Seal, for 07-3078/07-3079/07-3080
6.	07-3081	1	Valve, Cartridge, Brush Motor, Manifold, Block
	03-2926		Kit, Seal, for 07-3081/07-3082
7.	07-3077	4	Coil, 12 volt, Delta, Manifold Block
	07-3354	4	Coil, 24 volt, Delta, Manifold Block
8.	07-4239	2	Coil, 12 volt
9.	07-2898	1	Connector, 6 Pole, Female

Replacement Part for 07-3148 :
03-2927 Seal Kit

Replacement Part for 03-5649 :
03-5600 Seal Kit

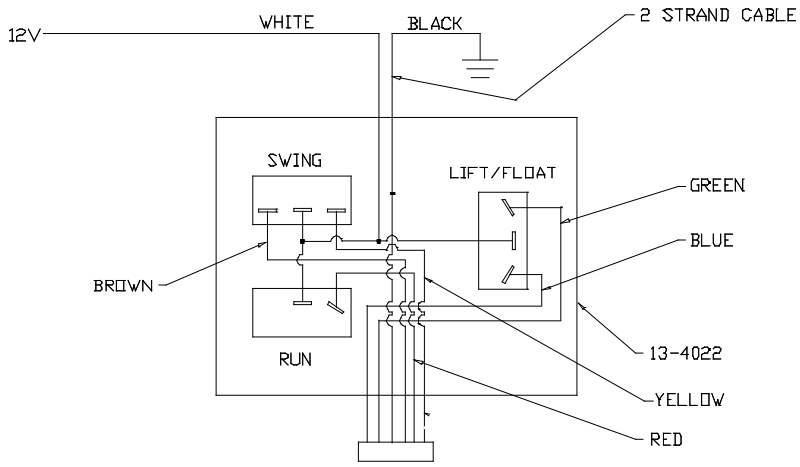
Replacement Part for 03-5571 :
03-5601 Seal Kit

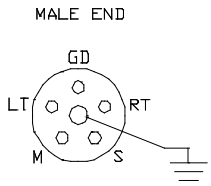
13-4022 Control Box



Item	Part	Qty	Description
1.	07-0812	3	Terminal, Connector, 1/4, Female, 16-14
2.	07-0815	2	Terminal, Connector, 1/4M-F, 16-14
3.	07-0856	1	Nut, Lock, 1/2, for Strain Relief
4.	07-0857	1	Strain, Relief, 1/2, 16-12
5.	07-0867	1	Terminal, Butt, Spline, 16-14
6.	07-0917	13ft	Wire, Cord, 16 Gauge, 2 Cond
7.	07-0929	1	Terminal, Ring, 3/8, 16-14
8.	07-1714	4	Screw, Cap, 5/16-18 x 1
9.	07-2133	16ft	Wire, Cord, 16 Gauge, 6 Cond, Trailer Cord
10.	07-2264	5	Terminal, 90°, Flag, 16-14
11.	07-2893	1	Box, 3 Switch, Monarch
12.	07-2894	1	Switch, Rocker, SPST, On-Off, Red, Broom
13.	07-2895	2	Switch, Rocker, SPDT, (On)-Off-(On), Swing Left/Right ( ) = Momentary Spring Centered
15.	07-2897	1	Connector, 6 Pole, Plug
16.	07-2908	8	Screw, Self-Tapping, 8-16 x 3/8
17.	07-2909	1	Plate, Plastic, Monarch
18.	07-3270	4	Nut, Hex, Nylock, 5/16-18
20.	13-4023	1	Plate, Mounting, Control Box
21.	50-0207	1	Label, Electric Control, Sweeper

13-4022 Control Box Wiring Schematic





COIL/POST	COLOR	FUNCTION
#1=GD	RED	RUN
#2=M	GREEN	RAISE
#3=S	BLUE	LOWER
#4=RT	YELLOW	SWG/RT
#5=LT	BROWN	SWG/LT

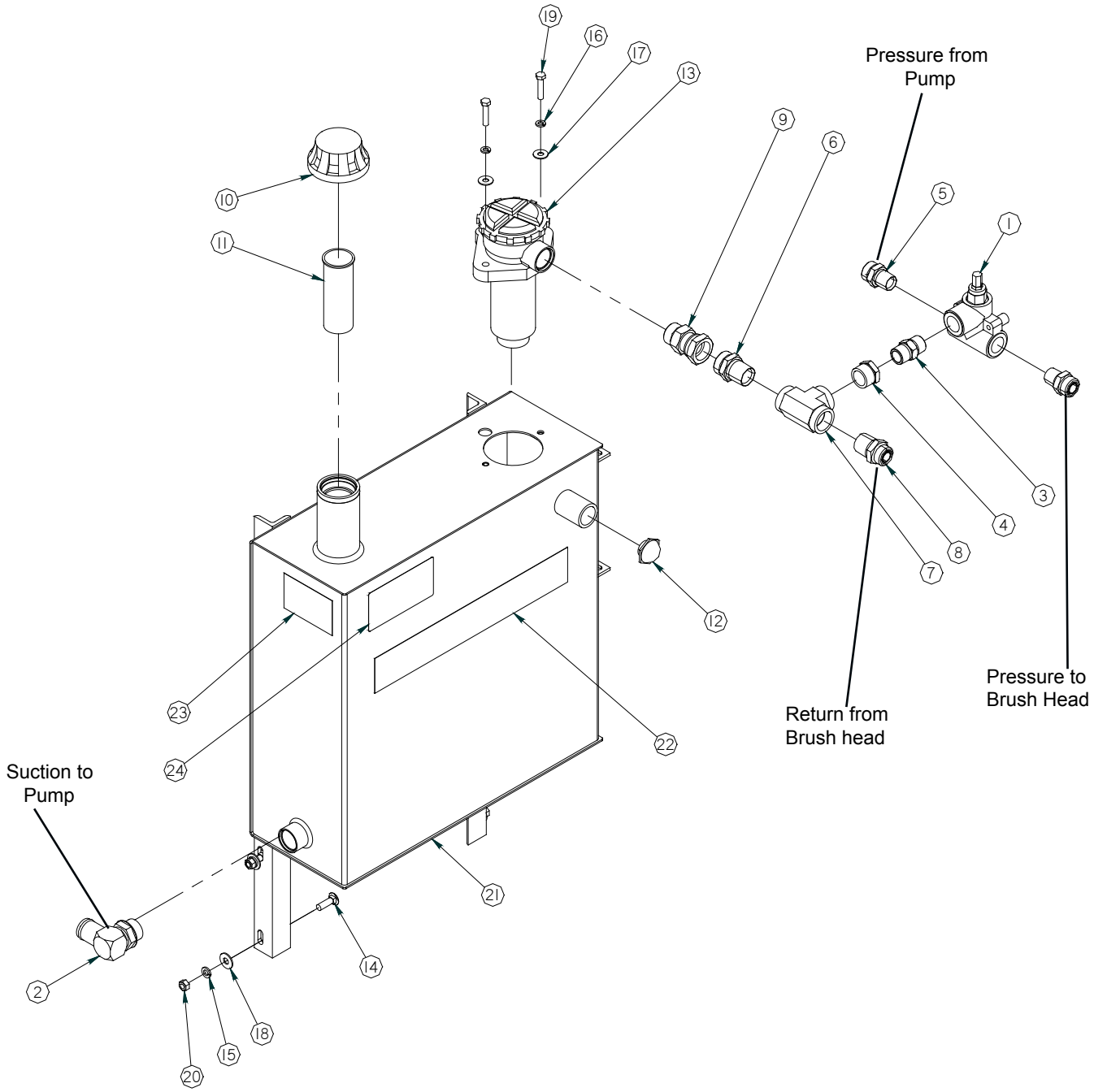
11-5364 AH/CH with No Valves

Item	Part	Qty	Description
1.	03-0129	1	Valve, RV, 12, 30gpm, 3K
2.	03-0710	1	Barb, 20, 16MB90
3.	03-1022-10	1	Fitting, 12MP-12MP, 3/4FF-S
4.	03-1068-13	1	Fitting, 12FP-16MP
5.	03-1943	2	Fitting, 12MF-12MP, 12FLO-S
6.	03-2729	1	Fitting, 16MF-16MB, 16FLO-S
7.	03-2910	1	Tee, 16FP-16FP-16FP
8.	03-2911	1	Fitting, 12MF-16MP
9.	03-3778	1	Fitting, 16FF-16MB
10.	03-4641	1	Cap, Breather, Hydraulic Tank
11.	03-4642	1	Strainer, Filler, Spout
12.	03-4709	1	Gauge, Sight Window
13.	03-5056	1	Filter, Hydraulic, In-Tank
14.	07-1717	4	Bolt, Carriage, 3/8-16 x 1 1/4
15.	07-1718	4	Washer, Lock, Split, Medium, 3/8
16.	07-3273	2	Washer, Lock, Split, Medium, 5/16
17.	07-3275	2	Washer, Flat, Gr8, 5/16
18.	07-3279	4	Washer, Flat, Gr8, 3/8
19.	07-3647	2	Screw, HHC, Gr8, 5/16-18 x 1 1/2
20.	07-3654	4	Nut, Hex, Gr8, 3/8-16
21.	13-12698	1	Weld, Tank, Front
22.	50-0185	1	Label, Logo, Sweepster, White, Medium
23.	50-0272	1	Label, Oil, ISO VG-46
24.	50-0725	1	Label, Warning, High Pressure Fluid Hazard

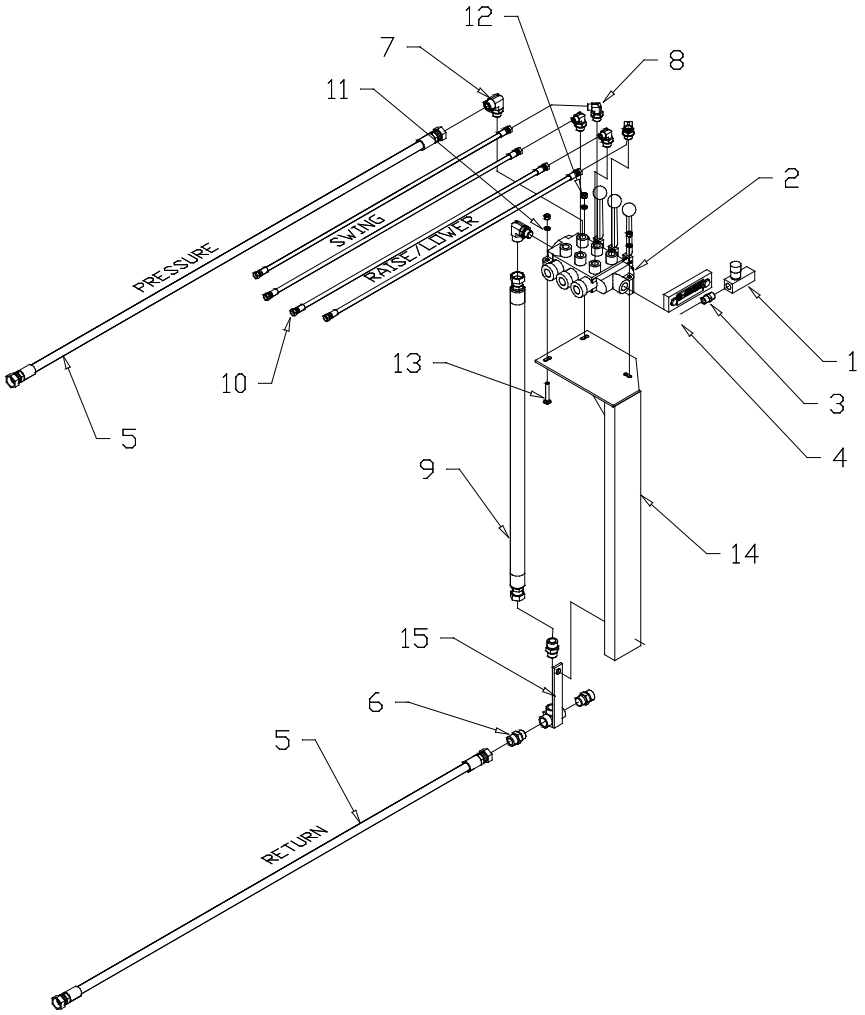
Replacement Parts for 03-5056 :

03-3965 Element
03-4741 Filter Cap
07-6705 Gasket
07-6727 Vacuum Gauge

11-5364 AH/CH with No Valves

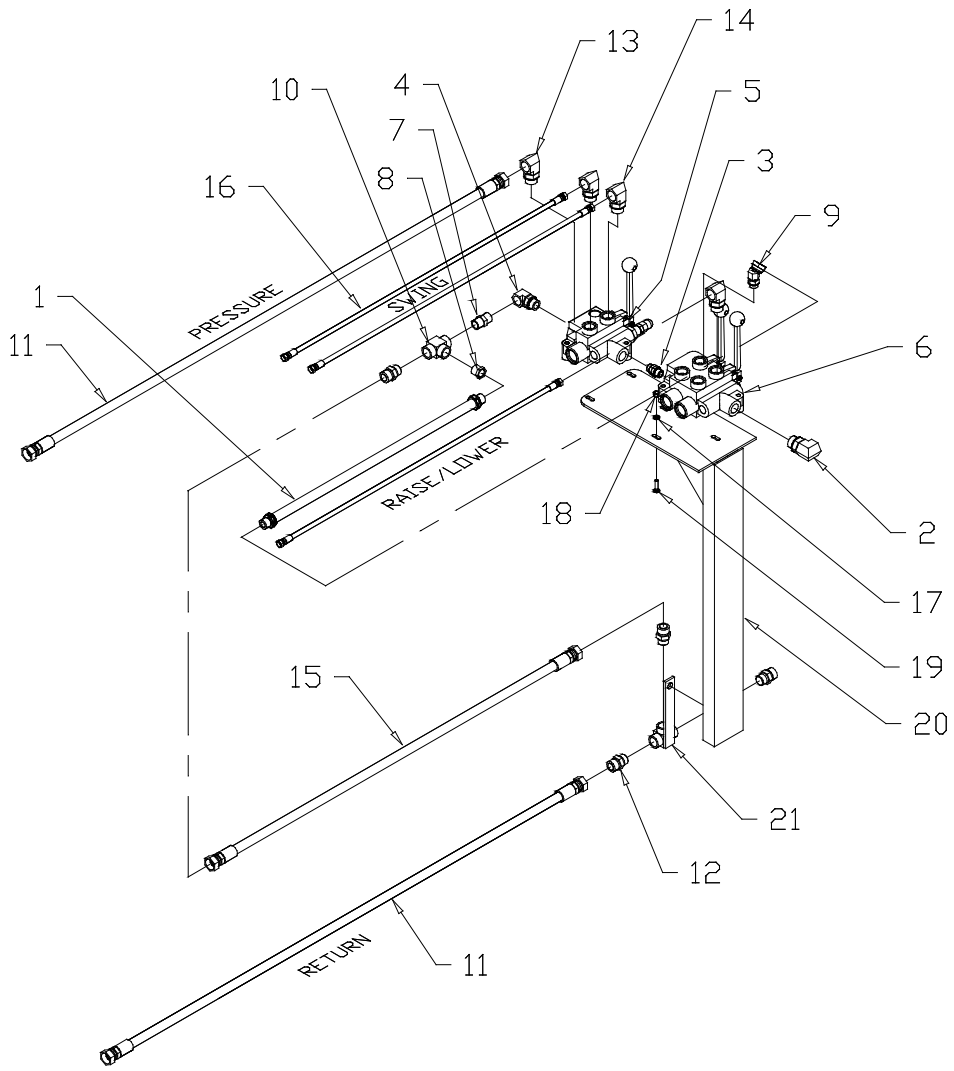


11-4773 Manual Valves, AHH/CHH with Closed Center Hydraulic Systems



Item	Part	Qty	Description
1.	03-0072	1	Valve, Crtg, DCV, 8, 15gpm, 2P-1W
2.	03-0605	1	Valve, Closed Center, O-Ring Ports
	03-0665		Handle, Valve, No Hole
	03-0666		Kit, Pin/Clip, for Mounting Handle
	03-1272		Kit, Relief
3.	03-1022-7	1	Fitting, 8MP-8MP, 1/2FF-S
4.	03-1076	1	Elbow, 90, 8FP-12MB
5.	03-1918	2	Hose, .75 x 156, 12FF-12FF, 2.25K
6.	03-1943	3	Fitting, 12MF-12MP,12FLO-S
7.	03-1946	2	Elbow, 90, 10MB-12MF
8.	03-1953	4	Elbow, 90, 6MF-10MB
9.	03-2268	1	Hose, .75 x 42, 12FF-12FF, 3.1K
10.	03-2340	4	Hose, .75 x 144, 6FF-6FF, 2.25K
11.	07-1718	3	Washer, Lock, Split, 3/8
12.	07-3654	3	Nut, Hex, 3/8-16
13.	07-3704	3	Bolt, Carriage, 3/8-16 x 1 1/2
14.	13-4209	1	Weld, Mounting, V, Pedestal, Closed Center
15.	13-4226	1	Weld, Mounting, Tee, Hydraulic

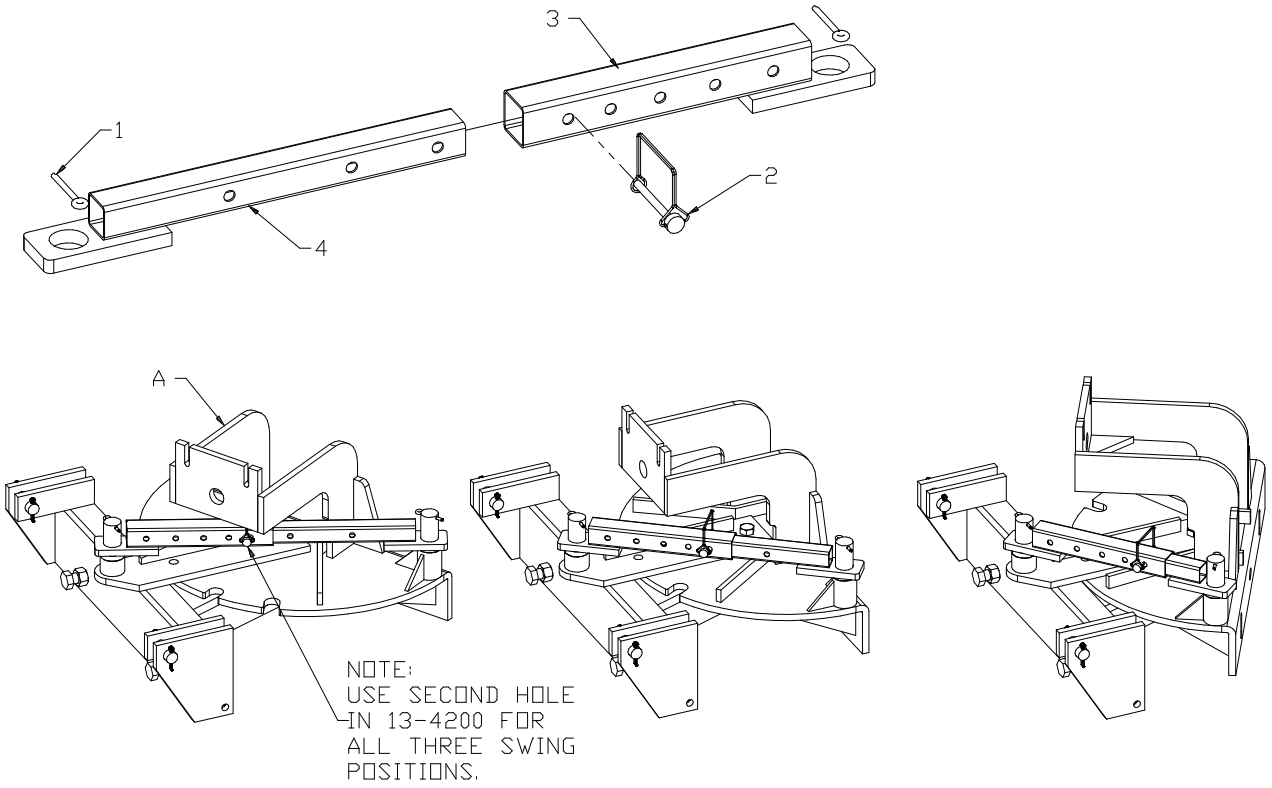
11-4772 Manual Valves AHH/CHH with Open Center Hydraulic Systems



Item	Part	Qty	Description
1.	03-0427	1	Hose, .50 x 18, 8MP-8MP, 2K
2.	03-0563	1	Elbow, 90, 12FP-12MB
3.	03-0573	1	Fitting, 12MB-12MB, Union
4.	03-0577	1	Elbow, 90, 12FP-12MB
5.	03-0601	1	Valve, 2 Spool, Run/Swing, with Handles
	03-0665		Handle, Valve, No Hole
	03-0666		Kit, Pin/Clip, for Mounting Handle
	03-1272		Kit, Relief
6.	03-0602	1	Valve, 3 Way, 1 Spline, Lift, with Handles
	03-0665		Handle, Valve, No Hole
	03-0666		Kit, Pin/Clip, for Mounting Handle
	03-1272		Kit, Relief
7.	03-1022-10	1	Fitting, 12MP-12MP, 3/4FF-S
8.	03-1068-9	1	Fitting, 8FP-12MP
9.	03-1204	1	Elbow, 45, 8FP-10MB
10.	03-1312	1	Tee, 12FP-12FP-12FP
11.	03-1918	2	Hose, .75 x 156, 12FF-12FF, 2.25K
12.	03-1943	4	Fitting, 12MF-12MF,12FLO-S
13.	03-1946	1	Elbow, 90, 10MB-12MF
14.	03-1953	3	Elbow, 90, 6MF-10MB
15.	03-1963	1	Hose, .75 x 56, 12FF-12FF, 2.5K
16.	03-2340	3	Hose, .38 x 144, 6FF-6FF, 2.25K
17.	07-1718	6	Washer, Lock, Split, 3/8
18.	07-3654	6	Nut, Hex, 3/8-16
19.	07-3704	6	Bolt, Carriage, 3/8-16 x 2 1/2
20.	13-3900	1	Weld, Mounting, Valve, Pedestal
21.	13-4226	1	Weld, Mounting, Tee, Hydraulic

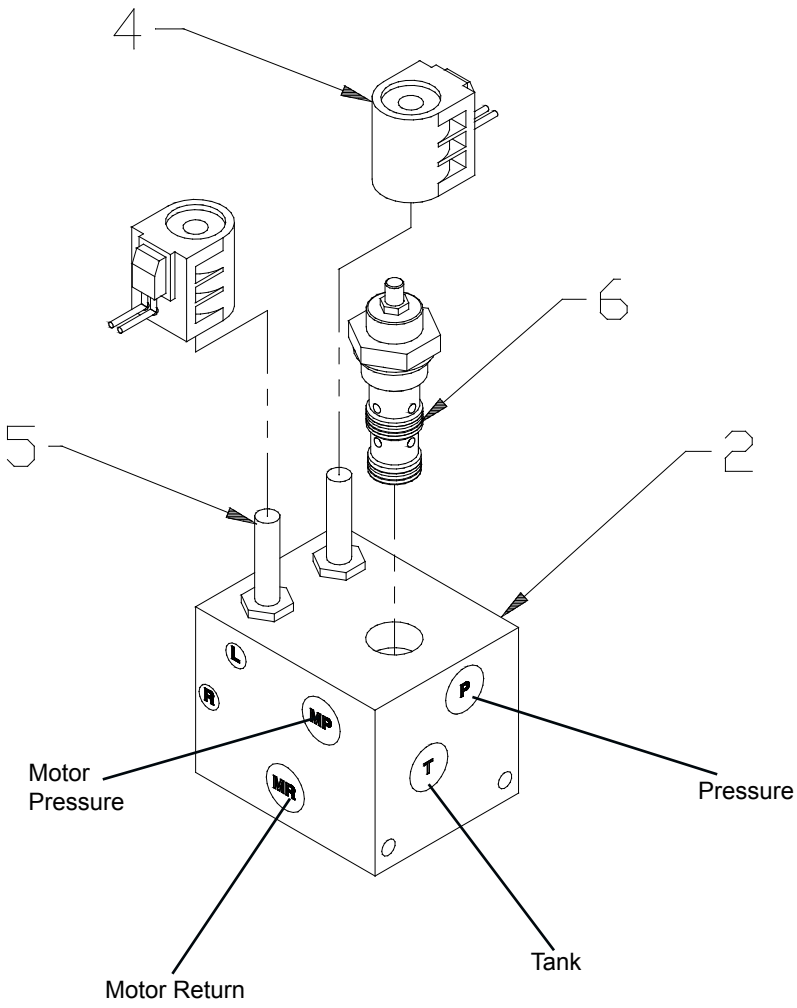
Replacement Part for 03-0601 :
03-1332 Seal Kit

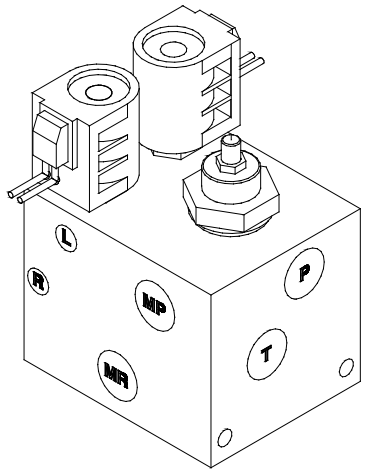
28-4626 Manual Angle Kit (CH Swing Only)



Item	Part	Qty	Description
1.	07-0206	2	Pin, Cotter, 3/16 x 2
2.	07-2105	1	Pin, Lock, 3/8 Square
3.	13-4200	1	Weld, Link, Outer, 15 1/4, 21 1/4
4.	13-10504	1	Weld, Link, Inner, Manual Angle, CH Swing
A.	28-4615	1	Assembly, Swing, TH, Tow

Swing Manifold





Item	Part	Qty	Description
2.	03-2543	1	Manifold, 12 volt, Swing, with Screen
	03-2742	1	Manifold, 24 volt, Swing, with Screen
4.	07-3077	2	Coil, 12 volt, Delta, Manifold Block
	07-3354	2	Coil, 24 volt, Delta, Manifold Block
5.	07-3080	2	Valve Cartridge, Swing, Left/Right
	03-1509		Kit, Seal, for 07-3080
6.	07-3082	1	Valve, Cartridge, Flow Divider
	03-2926		Kit Seal, for 07-3082

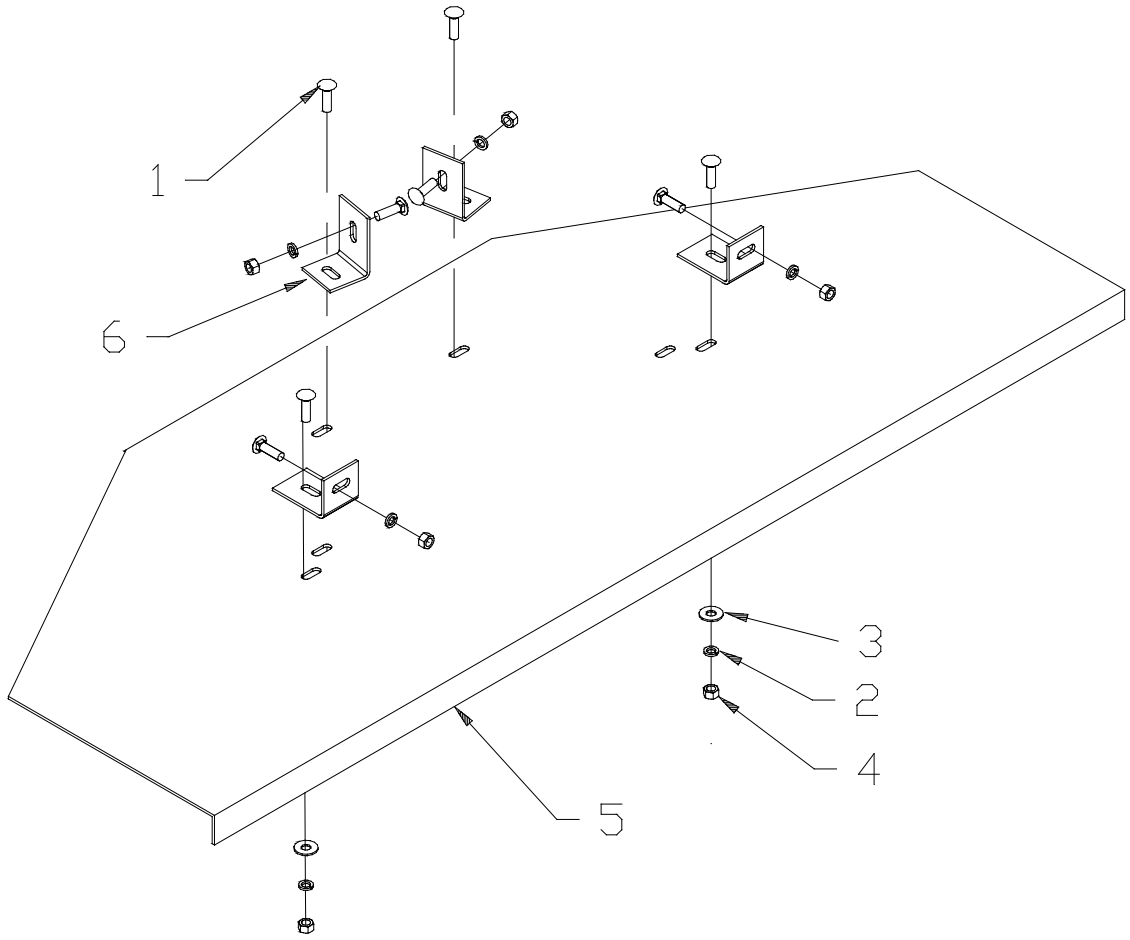
Notes

Options Section

QC Series Angle Brooms

Table of Contents

RHFADD for RLH/RLCH

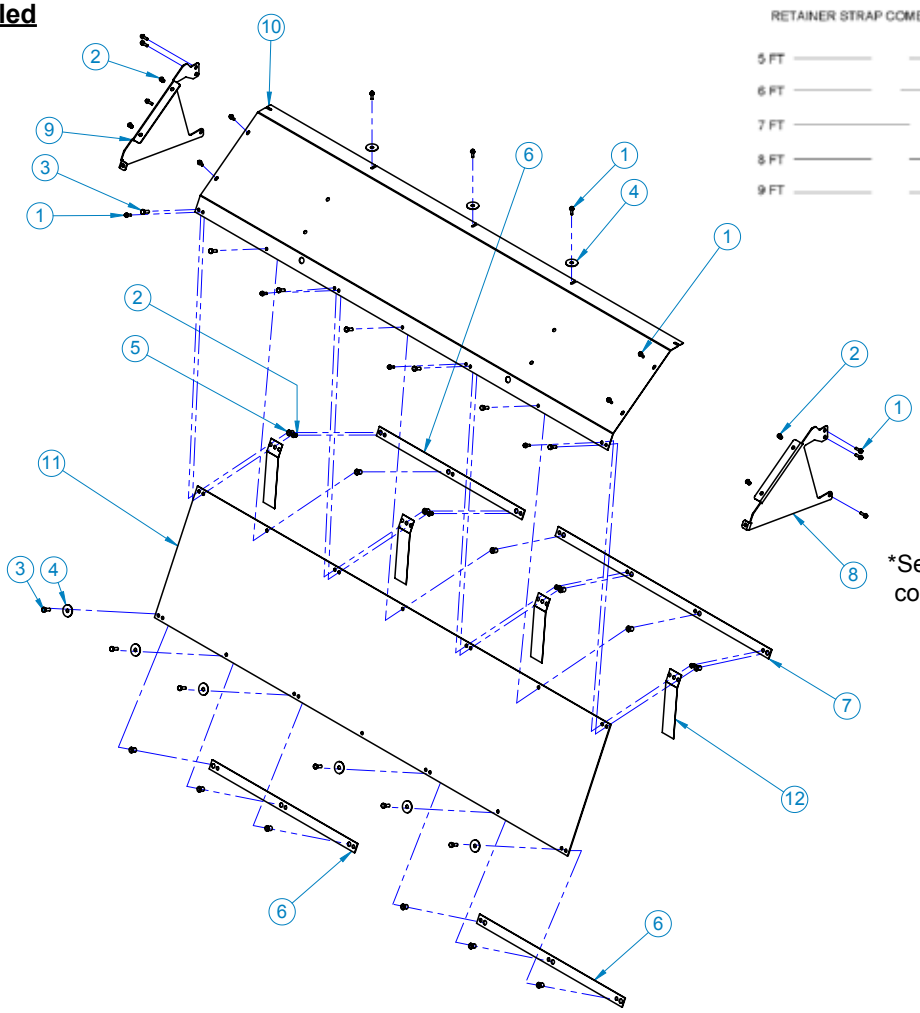


Item	Part	Qty	Description
1.	07-1717	8	Bolt, Carriage, 3/8-16 x 1 1/4
2.	07-1718	8	Washer, Lock, Split, 3/8
3.	07-3279	4	Washer, Flat, 3/8
4.	07-3654	8	Nut, Hex, 3/8-16
5.	11-9491	1	Deflector, Dirt
6.	13-0351	4	Angle, Mounting, Dirt Deflector

180° Hood Kits with Drape

Factory Installed

28-9787 5 Ft
28-9788 6 Ft
28-9789 7 Ft
28-9790 8 Ft
28-9797 9 Ft



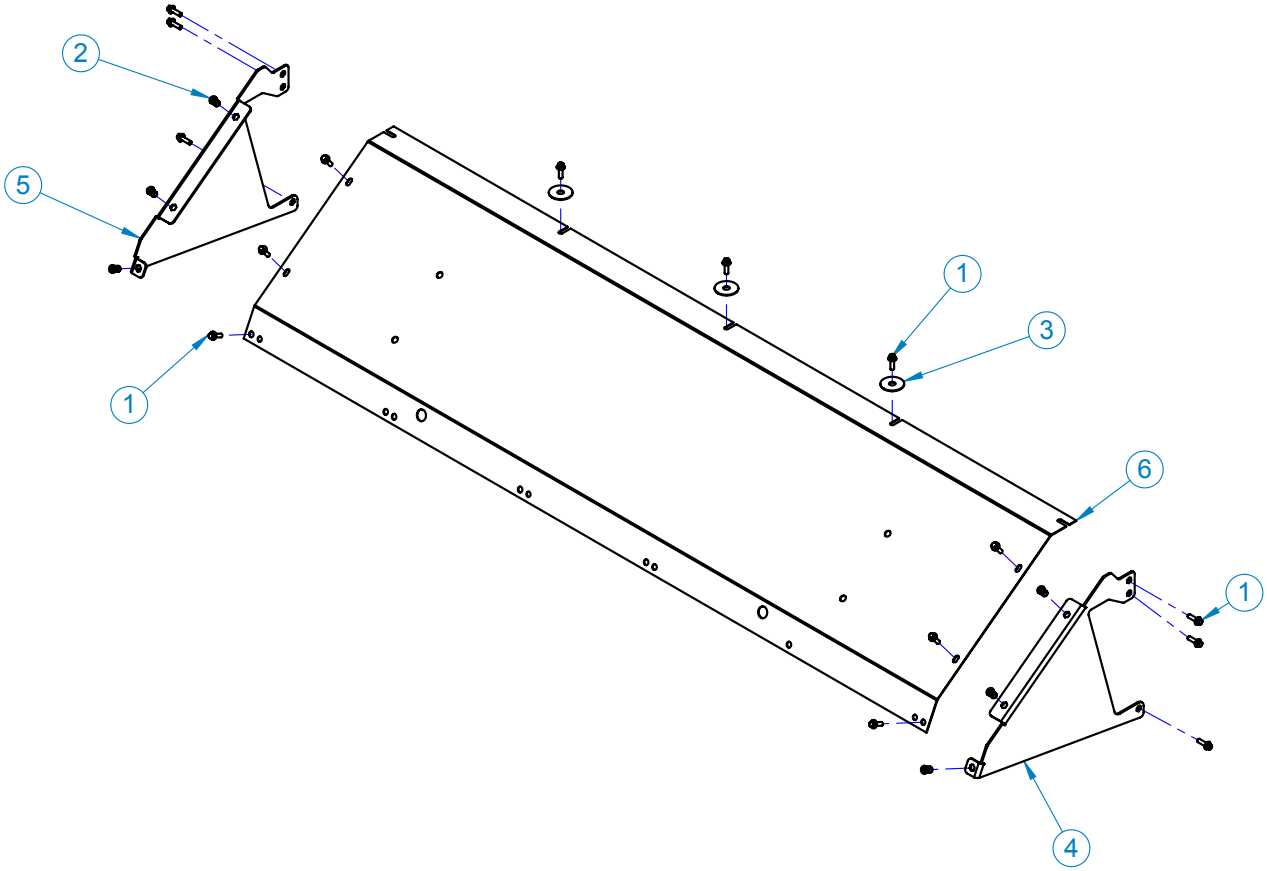
Item	Part	Qty	Description
1.	07-3522	17	Screw, HFH, CL10.9, M6-1 x 20
2.	07-3617	8	Nut, Insert, Hex, M6 x 1
3.	07-3739	12	Screw, HHC, CL10.9, M8-.25mm(5ft)
	07-3739	13	Screw, HHC, CL10.9, M8-.25mm(6ft)
	07-3739	14	Screw, HHC, CL10.9, M8-.25mm(7ft)
	07-3739	15	Screw, HHC, CL10.9, M8-.25mm(8ft)
	07-3739	16	Screw, HHC, CL10.9, M8-.25mm(9ft)
4.	07-4942	9	Washer, Fender, 5/16 x 1 1/2
5.	07-7115	12	Nut, Insert, M8-1.25 (5ft)
	07-7115	13	Nut, Insert, M8-1.25 (6ft)
	07-7115	14	Nut, Insert, M8-1.25 (7ft)
	07-7115	15	Nut, Insert, M8-1.25 (8ft)
	07-7115	16	Nut, Insert, M8-1.25 (9ft)
6.	13-15648-2	4	Plate, Retainer, Flap, 2 Ft (5ft)
	13-15648-2	3	Plate, Retainer, Flap, 2 Ft (6ft)
	13-15648-2	2	Plate, Retainer, Flap, 2 Ft (7ft)
	13-15648-2	5	Plate, Retainer, Flap, 2 Ft (8ft)

Item	Part	Qty	Description
	13-15648-2	4	Plate, Retainer, Flap, 2 Ft (9ft)
7.	13-15648-3	0	Plate, Retainer, Flap, 3 Ft (5ft)
	13-15648-3	1	Plate, Retainer, Flap, 3 Ft (6ft)
	13-15648-3	2	Plate, Retainer, Flap, 3 Ft (7ft)
	13-15648-3	0	Plate, Retainer, Flap, 3 Ft (8ft)
	13-15648-3	1	Plate, Retainer, Flap, 3 Ft (9ft)
8.	13-16045	1	Sheet, Hood, Extension, Side, Left
9.	13-16046	1	Sheet, Hood, Extension, Side,Right
10.	13-16047-5	1	Sheet, Hood, Extension, 5 Ft
	13-16047-6	1	Sheet, Hood, Extension, 6 Ft
	13-16047-7	1	Sheet, Hood, Extension, 7 Ft
	13-16047-8	1	Sheet, Hood, Extension, 8 Ft
	13-16047-9	1	Sheet, Hood, Extension, 9 FT
11.	13-16199-5	1	Flap, Deflector, 180° Hood 5 Ft
	13-16199-6	1	Flap, Deflector, 180° Hood 6 Ft
	13-16199 -7	1	Flap, Deflector, 180° Hood 7 Ft
	13-16199-8	1	Flap, Deflector, 180° Hood 8 Ft
	13-16199-9	1	Flap, Deflector, 180° Hood 9 Ft
12.	13-16200	4	Plate, Spring, 180º, Hood, Flap

OPTION SECTION
HOOD KITS

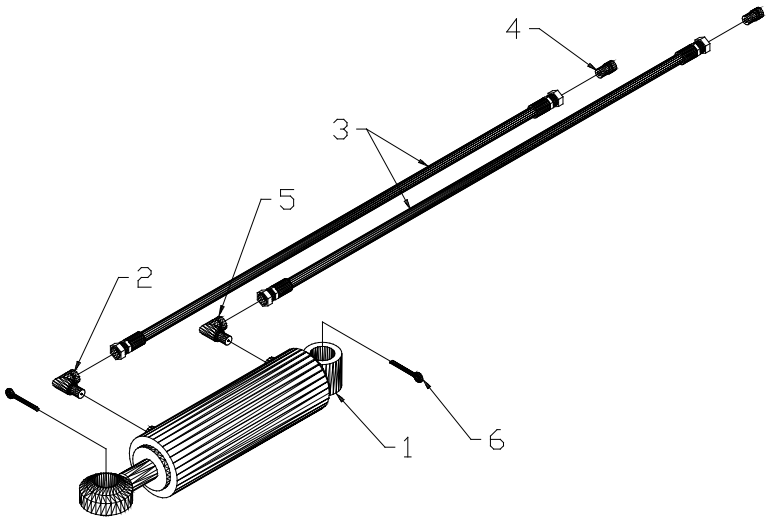
180° Hood Kits

Field Installed	Factory Installed
28-9722 5 Ft	28-9783 5 Ft
28-9723 6 Ft	28-9784 6 Ft
28-9724 7 Ft	28-9785 7 Ft
28-9725 8 Ft	28-9786 8 Ft
28-9748 9 Ft	28-9796 9 Ft



Item	Part	Qty	Description
1.	07-4942	3	Washer, Fender, 5/16 x 1 1/2
2.	07-3522	15	Screw, HFH, CL10.9, M6-1 x 20
3.	07-3617	6	Nut, Insert, Hex, M6 x 1
4.	13-16045	1	Sheet, Hood, Extension, Side, Left
5.	13-16046	1	Sheet, Hood, Extension, Side, Right
6.	13-16047-5	1	Sheet, Hood, Extension 5 Ft
	13-16047-6	1	Sheet, Hood, Extension 6 Ft
	13-16047-7	1	Sheet, Hood, Extension 7 Ft
	13-16047-8	1	Sheet, Hood, Extension 8 Ft
	13-16047-9	1	Sheet, Hood, Extension 9 Ft

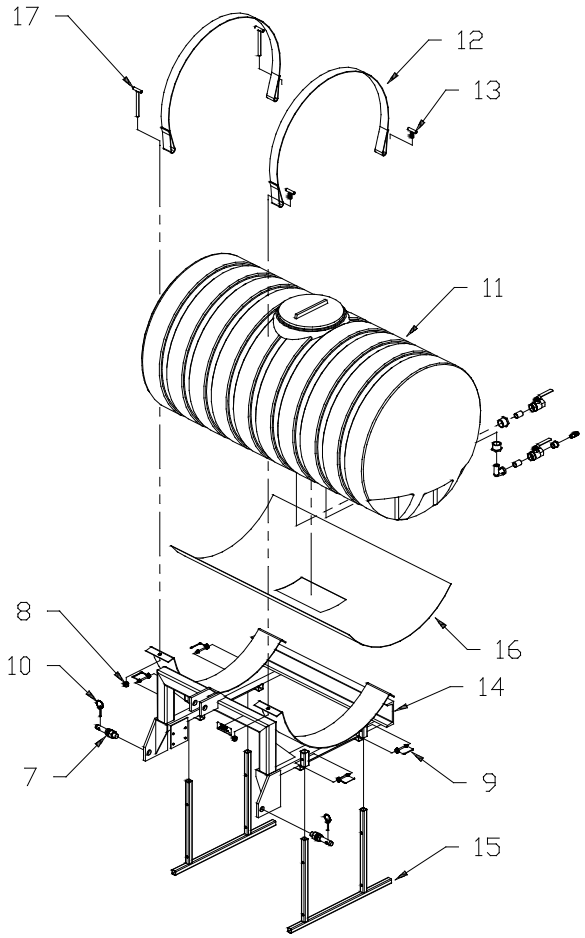
Hydraulic Angle - Field Installed
11-4297 & 11-4298

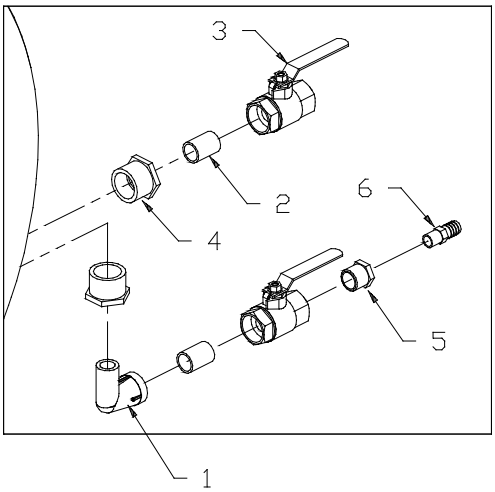


Item	Part	Qty	Description
1.	03-4887	1	Cylinder, 2.50 x 1.38 x 7.50, 3.5K
2.	03-2092	1	Elbow, 90°, 6MF-6MB, 6C50L0-S
3.	03-2155	2	Hose, .25 x 72, 6FF-6FF, 3.25K (11-4298)
	03-2158	2	Hose, .25 x 144, 6FF-6FF, 3.25K (11-4297)
4.	03-2159	2	Fitting, 6MF-4MP, 6FLO-S
5.	03-2345	1	Fitting, Orifice, .078, Elbow, 90°, HP, 9/16MOR, 3/8MFS
6.	07-0206	2	Pin, Cotter, 3/16 x 2

Replacement Parts for 03-4887 :
03-4888 Seal Kit
03-5035 Rod

3PT Water Tank and Mounting
11-5734



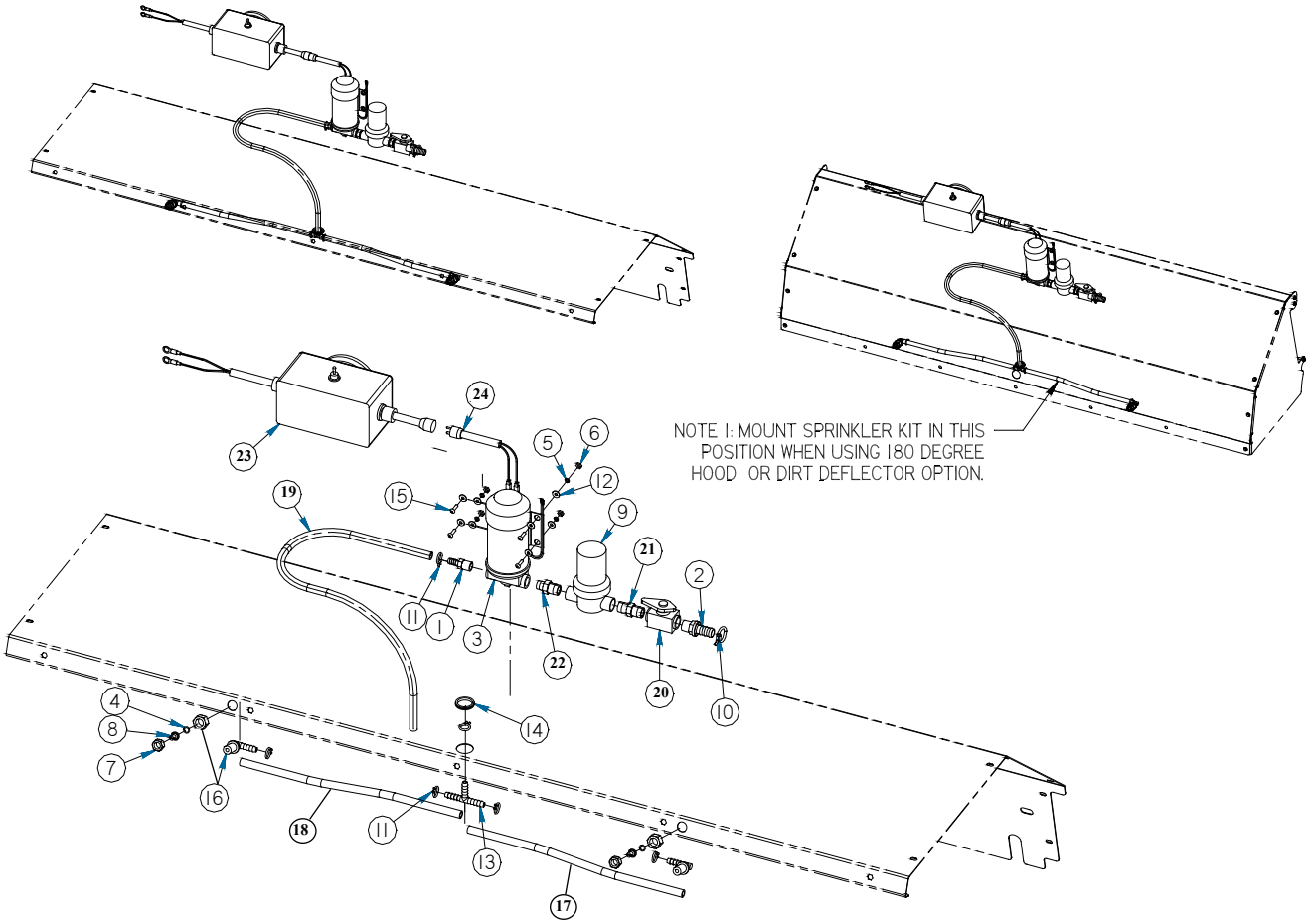


Item	Part	Qty	Description
1.	03-0029	1	Elbow, 90, 12FP-12MP, BP
2.	03-0054	2	Nipple, 12MP-12MP, BP
3.	03-0569	2	Valve, Ball, BR, 12FP-12FP
4.	03-0572	2	Fitting, 12FP-20MP, BP
5.	03-1068-9	1	Fitting, 8FP-12MP
6.	03-1226	1	Barb, 10, 8MP
7.	07-0285	2	Pin, Link, CAT1, Gr2
8.	07-4037	4	Nut, Hex, Gr2, 1/2-13, Nylock
9.	07-1607	4	Pin, Lock, 5/16Sq, Bail, Leg
10.	07-2843	2	Pin, Klik, 3/16 x 1 5/8
11.	07-3592	1	Assembly, Tank, Water, 200 Gallon
12.	09-0058	2	Strap, Nylon, Tank, Water
13.	11-7417	2	Weld, Bolt, Tee, 1 1/2
14.	13-2139	1	Weld, Mounting, Tank
15.	13-2152	2	Weld, Stand
16.	13-2155	1	Liner, Tank, 200 Gallon
17.	11-7051	2	Weld, Bolt, Tee, Sprinkler
18.	50-0635	1	Label, Plate, Part Number

Dust Suppression System

Direct Nozzle Mount

Field Installed		Factory Installed	
28-9919	12 Volt	28-10114	12 Volt
28-10116	24 Volt	28-10115	24 Volt



Item	Part	Qty	Description
1.	03-0457	1	Barb, 6, 6MP, Nylon
2.	03-1226	1	Barb, 10, 8MP
3.	03-1326	1	Pump, Flojet, Water, 2.9 gpm, 12 volt
	03-2558	1	Pump, Flojet, Water, 2.9 gpm, 24 volt
4.	03-3537	2	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	2	Nozzle, Cap, Nylon,
8.	07-0414	2	Nozzle, Tip, Brass
9.	07-0532	1	Strainer, Hypro, Water
10.	07-0547	1	Clamp, Spring, 7/8 Hose
11.	07-0549	6	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, 1-1/4 x 7/8 x 1/16
15.	07-4831	4	Screw, BHC, 10-24UNC, 2B x 3/4
16.	07-4862	2	Nozzle, Elbow, without Clamp

Item	Part	Qty	Description
17.	07-5127	1.25ft	Hose, Clear, Vinyl, 3/8, 5 ft
	07-5127	1.5ft	Hose, Clear, Vinyl, 3/8, 6 ft
	07-5127	1.75ft	Hose, Clear, Vinyl, 3/8, 7 ft
	07-5127	2ft	Hose, Clear, Vinyl, 3/8, 8 ft
18.	07-5127	1.25ft	Hose, Clear, Vinyl, 3/8, 5 ft
	07-5127	1.5ft	Hose, Clear, Vinyl, 3/8, 6 ft
	07-5127	1.75ft	Hose, Clear, Vinyl, 3/8, 7 ft
	07-5127	2ft	Hose, Clear, Vinyl, 3/8, 8 ft
19.	07-5127	20ft	Hose, Clear, Vinyl, 3/8
20.	07-6862	1	Valve, Shut-Off, 1/2, Nylon
21.	07-6863	1	Fitting, Nipple, 1/2, Nylon
22.	07-6864	1	Fitting, Nipple, 1/2 x 3/8, Nylon
23.	LAF8316	1	Wire, Harness, with Box
24.	LAF8320	1	Wire, Harness, Water Pump

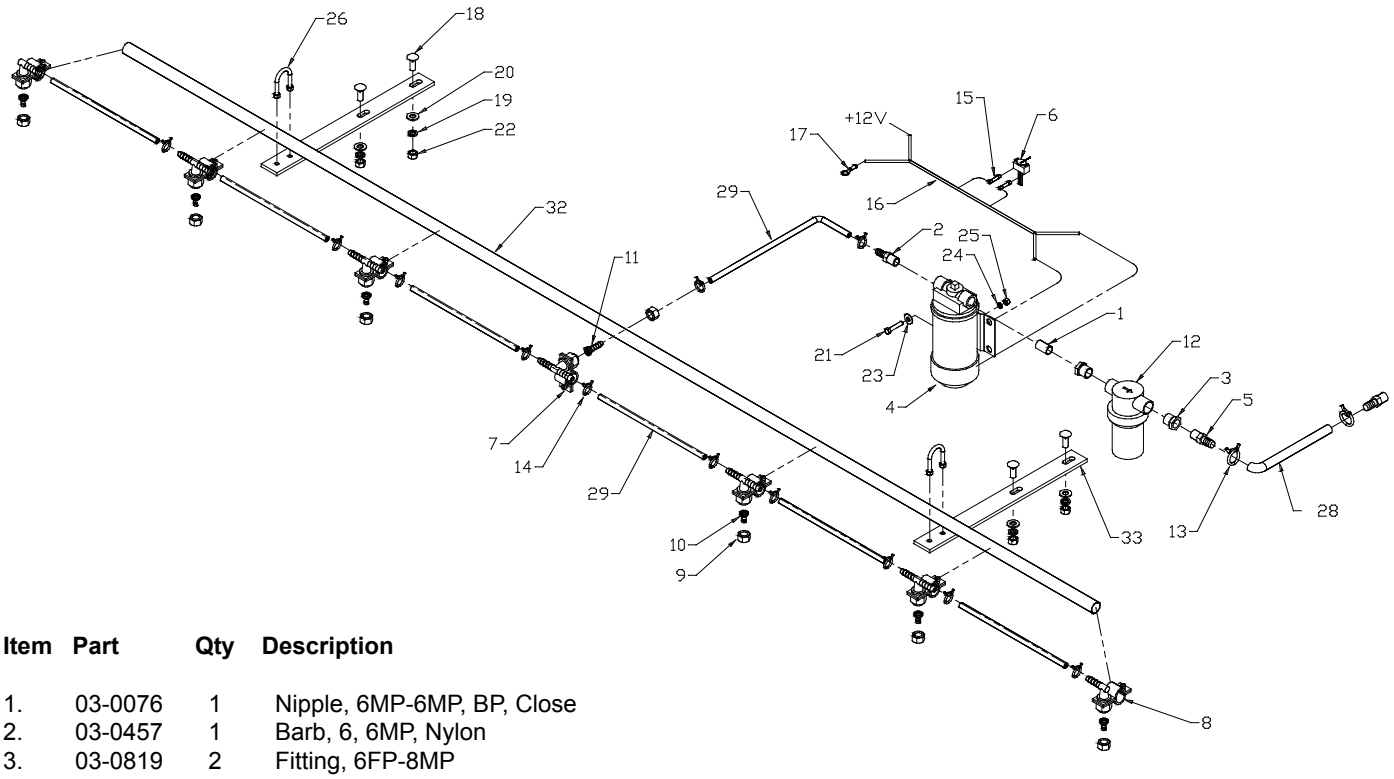
Replacement Parts for 03-1326 and 03-2558 :

07-6565 Fan Shroud
07-6566 Grommet Kit
07-6567 Mounting Plate

Dust Suppression System
Spray Bar Nozzle Mount

12 Volt
11-4190 (5 Ft [1.3m])
11-4045 (6 Ft [1.5m])
11-4171 (7 Ft [1.8m])
11-4062 (8 Ft [2.0m])

24 Volt
11-4379 (8 Ft)



Item	Part	Qty	Description
1.	03-0076	1	Nipple, 6MP-6MP, BP, Close
2.	03-0457	1	Barb, 6, 6MP, Nylon
3.	03-0819	2	Fitting, 6FP-8MP
4.	03-1326	1	Pump, Flojet, Water, 2.1 gpm, 12 volt
	03-2558	1	Pump, Flojet, Water, 2.9 gpm, 24 volt
5.	03-1709	2	Barb, 10, 6MP, Nylon
6.	07-0343	1	Switch, Toggle, 2 Position
7.	07-0411	3	Nozzle, Tee, with Clamp (5/6/7)
	07-0411	5	Nozzle, Tee, with Clamp (8/9/10)
8.	07-0412	2	Nozzle, Elbow, with Clamp
9.	07-0413	5	Nozzle, Cap, Nylon, (5/6/7)
	07-0413	7	Nozzle, Cap, Nylon, (8/9/10)
10.	07-0414	4	Nozzle, Tip, Brass (5/6/7)
	07-0414	6	Nozzle, Tip, Brass (8/9/10)
11.	07-0417	1	Fitting, Barb, Brass, 3/8 Tee Jet
12.	07-0532	1	Strainer, Hypro, Water
13.	07-0547	2	Clamp, Spring, 7/8 Hose
14.	07-0549	10	Clamp, Spring, 5/8 Hose (5/6/7)
	07-0549	14	Clamp, Spring, 5/8 Hose (8/9/10)
15.	07-0867	4	Terminal, Butt
16.	07-0917	20ft	Wire, Bulk, Cord, 16 Gauge
17.	07-0929	1	Terminal, Ring, 3/8, 16-14
18.	07-1716	4	Bolt, Carriage, 3/8-16 x 1
19.	07-1718	4	Washer, Lock, Split, 3/8
20.	07-3279	4	Washer, Flat, 3/8
21.	07-3638	4	Screw, Cap, 1/4-20 x 1 1/4
22.	07-3654	4	Nut, Hex, 3/8-16
23.	07-4032	4	Washer, Flat, 1/4

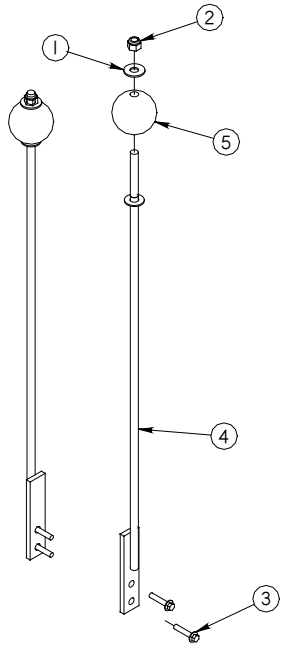
Item	Part	Qty	Description
24.	07-4038	4	Washer, Lock, Split, 1/4
25.	07-4039	4	Nut, Hex, 1/4-20
26.	07-4673	2	U-Bolt, Standard, 1/4-20 x 1
28.	09-0028	7ft	Hose, Heater, 5/8(5/6/7/9/10)
	09-0028	10ft	Hose, Heater, 5/8 (8)
29.	09-0056	23.75ft	Hose, Heater, 3/8 (5)
	09-0056	25ft	Hose, Heater, 3/8 (6)
	09-0056	26.25ft	Hose, Heater, 3/8 (7)
	09-0056	27.5ft	Hose, Heater, 3/8 (8)
	09-0056	28.75ft	Hose, Heater, 3/8 (9)
	09-0056	29ft	Hose, Heater, 3/8 (10)
32.	13-2164	1	Tube, RD, 7/8 x 16 Gauge x 60 (5)
	11-6684	1	Tube, RD, 7/8 x 16 Gauge x 72 (6/7)
	13-2812	1	Tube, RD, 7/8 x 16 Gauge x 92.37 (8)
	13-2802	1	Tube, RD, 7/8 x 16 Gauge x 104 (9/10)
33.	13-10076	2	Plate, Mounting, Sprinkler Bar

Replacement Parts for 03-1326 and 03-2558 :
07-6565 Fan Shroud
07-6566 Grommet Kit
07-6567 Mounting Plate

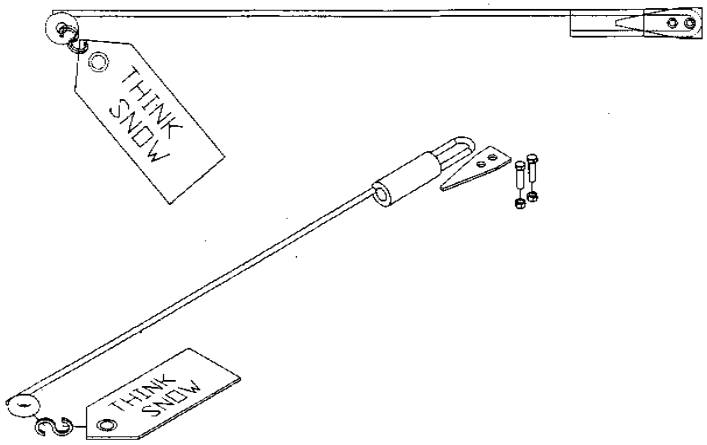
Sight Indicators

Kit: 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



Kit: 11-5897



Notes

Appendix

QC Series Angle Brooms

Table of Contents

BOLT TORQUE SPECIFICATIONS

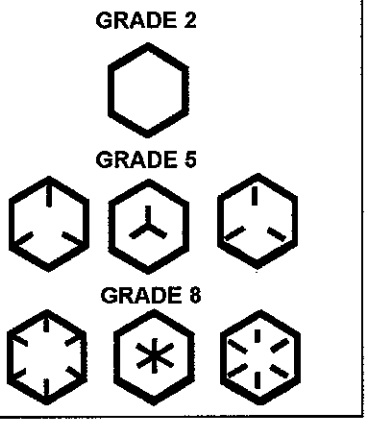
GENERAL TORQUE SPECIFICATION TABLES

Use the following charts when determining bolt torque specifications when special torques are not given. Always use grade 5 or better when replacing bolts.

SAE BOLT TORQUE SPECIFICATIONS

NOTE: The following torque values are for use with extreme pressure lubricants, plating or hard washer applications Increase torque 15% when using hardware that is unplated and either dry or lubricated with engine oil.

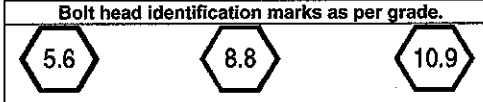
Bolt Size		SAE GRADE 5 TORQUE				SAE GRADE 8 TORQUE				Bolt head identification marks as per grade. NOTE: Manufacturing Marks Will Vary
		Pounds Feet		Newton-Meters		Pounds Feet		Newton-Meters		
Inches	Millimeters	UNC	UNF	UNC	UNF	UNC	UNF	UNC	UNF	
1/4	6.35	8	9	11	12	10	13	14	18	
5/16	7.94	14	17	19	23	20	25	27	34	
3/8	9.53	30	36	41	49	38	46	52	62	
7/16	11.11	46	54	62	73	60	71	81	96	
1/2	12.70	68	82	92	111	94	112	127	152	
9/16	14.29	94	112	127	152	136	163	184	221	
5/8	15.88	128	153	174	207	187	224	254	304	
3/4	19.05	230	275	312	373	323	395	438	536	
7/8	22.23	340	408	461	553	510	612	691	830	
1	25.40	493	592	668	803	765	918	1037	1245	
1-1/8	25.58	680	748	922	1014	1088	1224	1475	1660	
1-1/4	31.75	952	1054	1291	1429	1547	1700	2097	2305	
1-3/8	34.93	1241	1428	1683	1936	2023	2312	2743	3135	
1-1/2	38.10	1649	1870	2236	2535	2686	3026	3642	4103	



METRIC BOLT TORQUE SPECIFICATIONS

NOTE: The following torque values are for use with metric hardware that is unplated and either dry or lubricated with engine oil. Reduce torque 15% when using hardware that has extreme pressure lubricants, plating or hard washer applications.

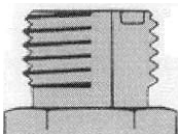
Bolt head identification marks as per grade.



Size of Bolt	Grade No.	Pitch (mm)	Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters
M6	5.6	1.0	3.6-5.8	4.9-7.9	-	-	-
	8.8		5.8-.4	7.9-12.7		-	-
	10.9		7.2-10	9.8-13.6		-	-
M8	5.6	1.25	7.2-14	9.8-19	1.0	12-17	16.3-23
	8.8		17-22	23-29.8		19-27	25.7-36.6
	10.9		20-26	27.1-35.2		22-31	29.8-42
M10	5.6	1.5	20-25	27.1-33.9	1.25	20-29	27.1-39.3
	8.8		34-40	46.1-54.2		35-47	47.4-63.7
	10.9		38-46	51.5-62.3		40-52	54.2-70.5
M12	5.6	1.75	28-34	37.9-46.1	1.25	31-41	42-55.6
	8.8		51-59	69.1-79.9		56-68	75.9-92.1
	10.9		57-66	77.2-89.4		62-75	84-101.6
M14	5.6	2.0	49-56	66.4-75.9	1.5	52-64	70.5-86.7
	8.8		81-93	109.8-126		90-106	122-143.6
	10.9		96-109	130.1-147.7		107-124	145-168
M16	5.6	2.0	67-77	90.8-104.3	1.5	69-83	93.5-112.5
	8.8		116-130	157.2-176.2		120-138	162.6-187
	10.9		129-145	174.8-196.5		140-158	189.7-214.1
M18	5.6	2.0	88-100	119.2-136	1.5	100-117	136-158.5
	8.8		150-168	203.3-227.6		177-199	239.8-269.6
	10.9		175-194	237.1-262.9		202-231	273.7-313
M20	5.6	2.5	108-130	146.3-176.2	1.5	132-150	178.9-203.3
	8.8		186-205	252-277.8		206-242	279.1-327.9
	10.9		213-249	288.6-337.4		246-289	333.3-391.6

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 11/6 - 12	1680 ± 90	140 ± 8
-24	2 - 12	1980 ± 100	165 ± 8

NOTE - ft-lb may be converted to Newton Meters by multiplying by 1.35582.
NOTE - in-lbs may be converted to Newton Meters by multiplying by 0.11298.

APPENDIX
TORQUE SPECS.

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.

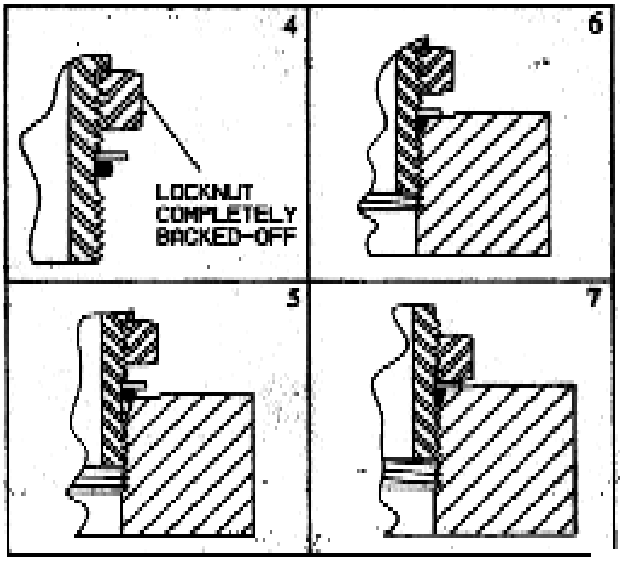
Installation (Adjustable Fitting)

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)

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 - 14	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	260 ± 12
-24	1 7/8 - 12	3800 ± 150	315 ± 12

Figures 4, 5, 6 and 7



NOTE - ft-lb may be converted to Newton Meters by multiplying by 1.35582.
NOTE - in-lbs may be converted to Newton Meters by multiplying by 0.11298.

APPENDIX
GLOSSARY

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.

PALADIN
LIGHT CONSTRUCTION

Warranty Registration Form & Delivery Inspection Report

IMPORTANT! Warranty **Void** if card is not returned within 10 days.
All Applicable sections **must** be filled in.

This section to be filled out and signed by Dealer at time of delivery.

Customer's Name _____
Address _____
City _____ State____ Zip_____
Phone _____

Dealer's Name _____
Address_____
City _____ State____ Zip_____

Loader / Tractor Model_____
Delivery Date_____
Brand & Model # _____
Serial # _____

CHECK ONE:

☐ Agricultural Use ☐ Construction Use
☐ Landscape Use ☐ Other _____

Dealer Inspection *(check items applicable)*

☐ All Decals Installed (see operator's manual)
☐ Hydraulic Fittings Tight & Free of Leaks
☐ Fastners Tight
☐ Review Operating & Safety Instructions
☐ Guards & Covers in Place & Secure
☐ Does Product Function Properly

I have thoroughly instructed the buyer on the above described equipment. This review included: The Operator's Manual content, equipment care, adjustments, safe operation and applicable warranty policy.

Dealer Rep. Signature:_____ Date: _____

This section to be completed and signed by the Owner

QUALITY ASSURANCE RATING **1=Excellent** **2=Good** **3=Average** **4=unsatisfactory** **5=poor**

Question	**Paladin Light Construction**	**Local Dealer**
Quality of Product: Appearance	____	
Construction	____	
Quality of Service	____	____
Value (Priced Fairly)	____	____
Does it perform as claimed	____	

The above described equipment and Operator's Manual have been received by me and I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Owner's Signature: _____ Date: _____

NOTE! Make one copy each for the dealer's and owner's records. Fax or mail to the appropriate Paladin Light Construction Division.

Bradco McMillen The Major
☐ PO Box 266 Delhi IA 52223
Fax 563.922.2700

FFC
☐ 100 East Lee Rd Lee IL 60530
Fax 815.824.2620

Sweepster Harley
☐ 2800 North Zeeb Rd Dexter MI 48130
Fax 734.996.9014

Warranty Form 0706-1

www.paladinbrands.com

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 hearby 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.