



S26 Series

Hydraulic Windrow Sweeper
For Harley HPU



PALADIN
LIGHT CONSTRUCTION GROUP

 **BRADCO**

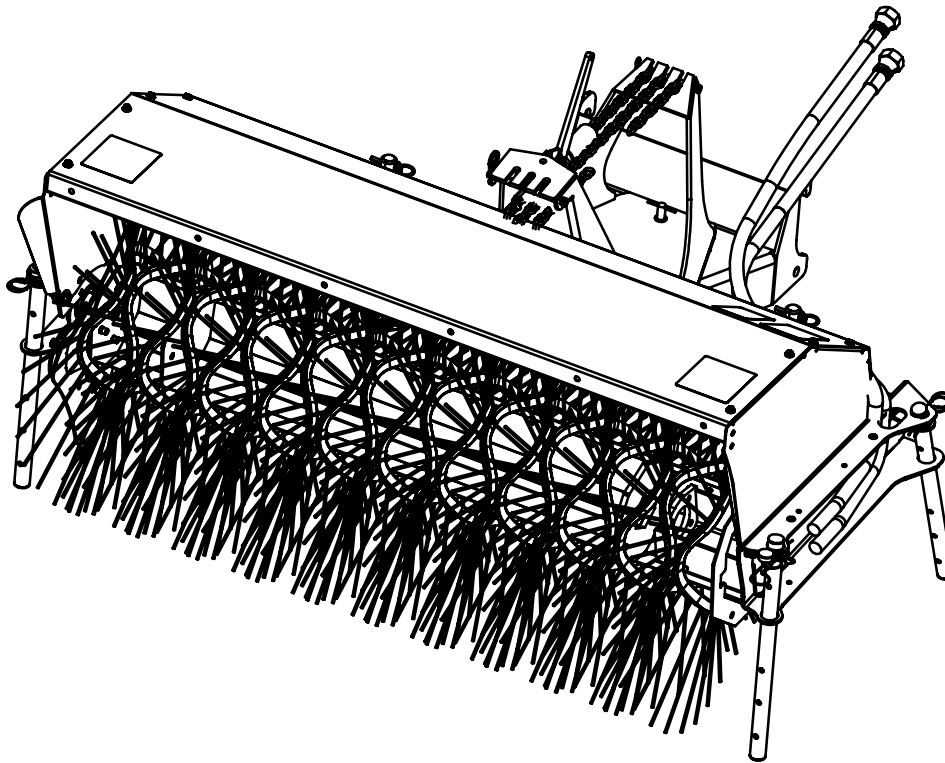
 **FFC**

 **HARLEY**

 **McMILLEN**

 **SWEEPSTER**

The Power of Combined Excellence



Sweepster Serial Number _____

Manual Number: 51-4124

Release Date: March 2008

Serial Number 0810001 and UP

NOTES

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INTRODUCTION

Purpose of Sweeper

This sweeper is designed solely for the use in construction cleanup, road 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.

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.

Warranty

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

SAFETY STATEMENTS

DANGER!



THIS STATEMENT IS USED WHERE SERIOUS INJURY OR DEATH WILL RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.

WARNING!



THIS STATEMENT IS USED WHERE SERIOUS INJURY OR DEATH COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.

CAUTION!



THIS STATEMENT IS USED WHERE MINOR INJURY COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.

NOTICE!

THIS STATEMENT IS USED WHERE EQUIPMENT OR PROPERTY DAMAGE COULD RESULT IF THE INSTRUCTIONS ARE NOT FOLLOWED PROPERLY.



THIS SYMBOL BY ITSELF OR USED WITH A SAFETY SIGNAL WORD THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY OR THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.

GENERAL SAFETY PRECAUTIONS

WARNING!



READ MANUAL PRIOR TO INSTALL

Improper installation, operation, or maintenance of this equipment could result in serious injury or death. Operators and maintenance personnel should read this manual as well as all manuals related to this equipment and the prime mover thoroughly before beginning installation, operation, or maintenance. **FOLLOW ALL SAFETY INSTRUCTIONS IN THIS MANUAL AND THE PRIME MOVERS MANUAL.**

WARNING!



READ AND UNDERSTAND ALL SAFETY STATEMENTS

Read all safety decals and safety statements in all manuals prior to operating or working on this equipment. Know and obey all OSHA regulations, local laws and other professional guidelines for your operation. Know and follow good work practices when assembling, maintaining, repairing, mounting, removing or operating this equipment.



KNOW YOUR EQUIPMENT

Know your equipment's capabilities, dimensions and operations before operating. Visually inspect your equipment before you start, and never operate equipment that is not in proper working order with all safety devices intact. Check all hardware to assure it is tight. Make certain that all locking pins, latches, and connection devices are properly installed and secured. Remove and replace any damaged, fatigued or excessively worn parts. Make certain all safety decals are in place and are legible. Keep decals clean, and replace them if they become worn and hard to read.

GENERAL SAFETY PRECAUTIONS

WARNING!



PROTECT AGAINST FLYING DEBRIS

Always wear proper safety glasses, goggles or a face shield when driving pins in or out or when operation causes dust, flying debris, or any other hazardous material.

WARNING!



LOWER OR SUPPORT RAISED EQUIPMENT

Do not work under raised booms without supporting them. Do not use support material made of concrete blocks, logs, buckets, barrels or any other material that could suddenly collapse or shift positions. Make sure support material is solid, not decayed, warped, twisted, or tapered. Lower booms to ground level or onto blocks. Lower booms and attachments to the ground before leaving the cab or operator's station.

WARNING!



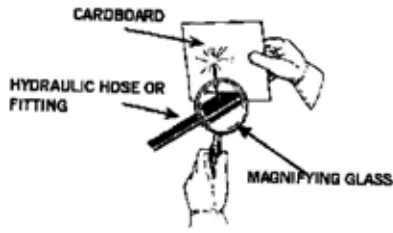
USE CARE WITH HYDRAULIC FLUID PRESSURE

Hydraulic fluid under pressure can penetrate the skin and cause serious injury or death. Hydraulic leaks under pressure may not be visible. Before connecting or disconnecting hydraulic hoses, read your prime movers operator's manual for detailed instructions on connecting and disconnecting hydraulic hoses or fittings.

- Keep unprotected body parts, such as face, eyes, and arms as far away as possible from a suspected leak. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.
- If injured by injected fluid, see a doctor at once. If your doctor is not familiar with this type of injury, ask him to research immediately to determine proper treatment.

GENERAL SAFETY PRECAUTIONS CONTINUED

- Wear safety glasses, protective clothing, and use a sound piece of cardboard or wood when searching for hydraulic leaks.
DO NOT USE YOUR HANDS!
SEE ILLUSTRATION.



WARNING!



DO NOT MODIFY MACHINE OR ATTACHMENTS

Modifications may weaken the integrity of the attachment and may impair the function, safety, life and performance of the attachment. When making repairs, use only the manufacturer's genuine parts, following authorized instructions. Other parts may be substandard in fit and quality. Never modify any ROPS (Roll Over Protection System) equipment or device. Any modifications must be authorized in writing by the manufacturer.

WARNING!



SAFELY MAINTAIN AND REPAIR EQUIPMENT

- Do not wear loose clothing, or any accessories that can catch in moving parts. If you have long hair, cover or secure it so that it does not become entangled in the equipment.
- Work on a level surface in a well-lit area.
- Use properly grounded electrical outlets and tools.
- Use the correct tool for the job at hand. Make sure they are in good condition for the task required.

GENERAL SAFETY PRECAUTIONS CONTINUED

- Wear the protective clothing equipment specified by the tool manufacturer.

WARNING!



SAFELY OPERATE EQUIPMENT

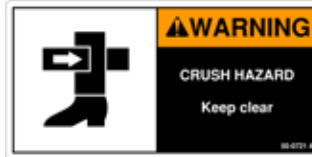
Do not operate equipment until you are completely trained by a qualified operator in how to use the controls, know its capabilities, dimensions, and all safety requirements. See your prime movers manual for these instructions.

- Keep all step plates, grab bars, pedals, and controls free of dirt, grease, debris, and oil.
- Never allow anyone to be around the equipment when it is operating.
- Do not allow riders on the attachment or the prime mover.
- Do not operate the equipment from anywhere other than the correct operators position.
- Never leave equipment unattended with the engine running or with this attachment in a raise position.
- Do not alter or remove any safety feature from the prime mover or this attachment.
- Know your work site safety rules as well as traffic rules and flow. When in doubt on any safety issue, contact your supervisor or safety coordinator for an explanation.

SAFETY SIGNS & LABELS



50-0634



50-0721



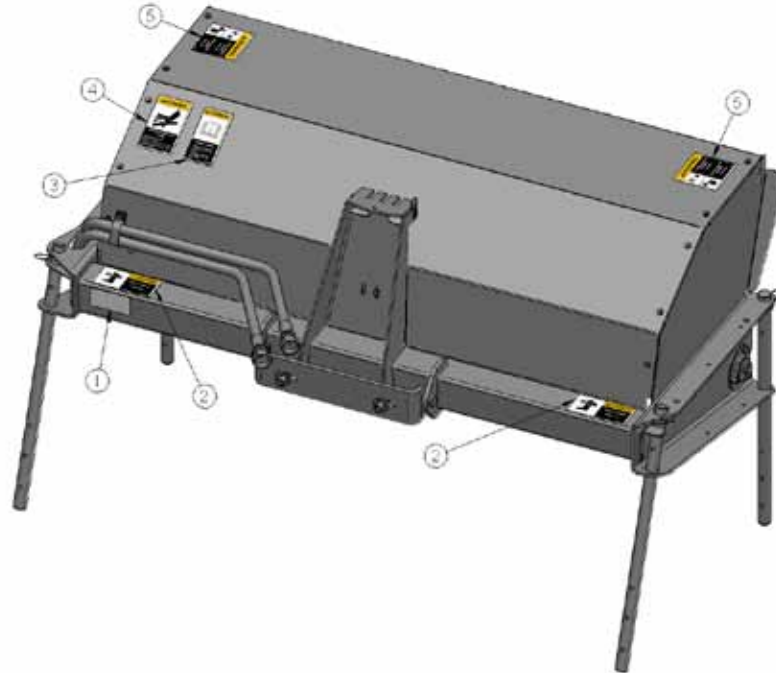
50-0726



50-0722



50-0724



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

SAFETY SIGNS & LABELS

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

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

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

SERVICE & REPAIR - SAFETY

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 the sweeper, lower the sweeper to the ground, stop the prime mover engine, set the brakes and remove the key from the ignition.

When working on or around the sweeper, lower it to the ground or secure it with transport chains or cylinder-stop locks.

Stop the prime mover engine and cycle control levers to 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.

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, tubes, or hoses.

Repair damaged or loose lines, tubes and 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 hose has been pulled or stretched.

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

OPERATION

CAUTION!



A SWEEPER IS A DEMANDING MACHINE. Only fully trained operators or trainee operators under supervision of a fully trained person should use this machine.

NOTICE - Motor break-in: To assure best motor life, run with a normal sweeping pattern in a stationary position for approximately one hour before application to a full load. Be sure motor is filled with fluid prior to any load applications.

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 host machine, making sure it is tight.
- Replace any damaged or fatigued hardware with properly rated fasteners.
- Make sure all hydraulic hardware and hydraulic fittings are tight.
- Replace any damaged or fatigued fittings or hoses.
- Check all tire pressures before sweeping.
- 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.

OPERATION

- Before leaving the operators area for any reason, lower the sweeper to the ground. Stop the prime mover engine, set the brakes and remove the key from the ignition.
- Minimize flying debris - use the slowest rotating speed that will do the job.
- Keep hands, feet, hair and other 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 primer mover.
- Be aware of extra weight and width a sweeper adds. Reduce travel speed accordingly.
- 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 controls while the engine is running. Protective glasses must be worn while you operate the prime mover and while you operate the sweeper.
- While you operate the sweeper slowly in an open area, check for proper operation of all controls and all protective devices. Note any repairs needed during operation of the sweeper. Report any needed repairs.

OPERATION

Before Each Use

Perform daily maintenance as indicated in Maintenance Schedule.

Run the prime mover and sweeper at a low idle. Check for hydraulic leaks or other problems and make corrections, if necessary, before using the sweeper.

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

Carry the sweeper low to the ground so that the operator has good visibility and stability. Avoid any sudden movements from one side to the other side when you carry a sweeper.

Avoid excessive downward pressure on the brush sections to prevent excessive wear. A two to four inch wide pattern is sufficient for most applications.

Directing Debris

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.

NOTICE!

AVOID SWEEPER DAMAGE.

Reduce travel speed to avoid hitting immovable objects.

OPERATION

Brush, Engine & Travel Speeds

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

Large Areas

When using an angle broom and 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 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, 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

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

Increase engine speed if debris becomes very heavy.

Transport Chain with Chain Binder

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

WARNING!



EXPOSURE TO RESPIRABLE CRYSTALLINE SILICA DUST ALONG WITH OTHER HAZARDOUS DUSTS MAY CAUSE SERIOUS OR FATAL RESPIRATORY DISEASE.

It is recommended to use dust suppression, dust collection and if necessary personal protective equipment during the operation of any attachment that may cause high levels of dust.

WARNING!



REMOVE PAINT BEFORE WELDING OR HEATING.

Hazardous fumes/dust can be generated when paint is heated by welding, soldering or using a torch. Do all work outside or in a well ventilated area and dispose of paint and solvent properly. Remove paint before welding or heating.

When sanding or grinding paint, avoid breathing the dust. Wear an approved respirator. If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

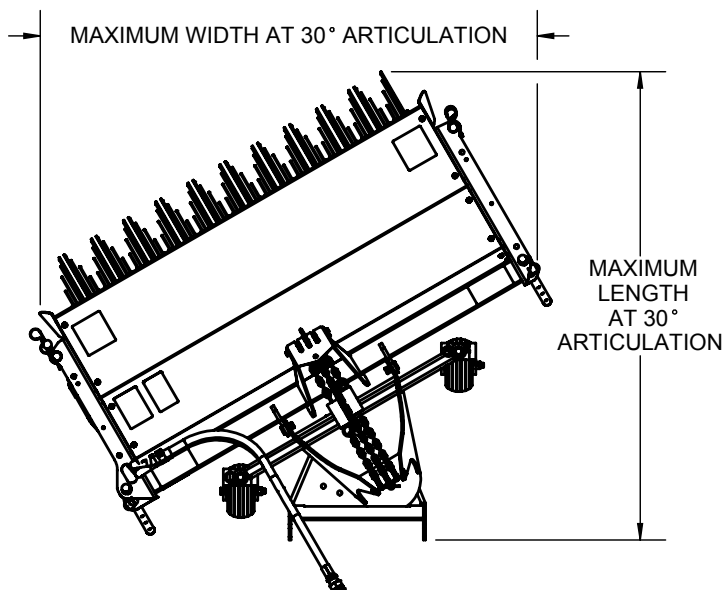
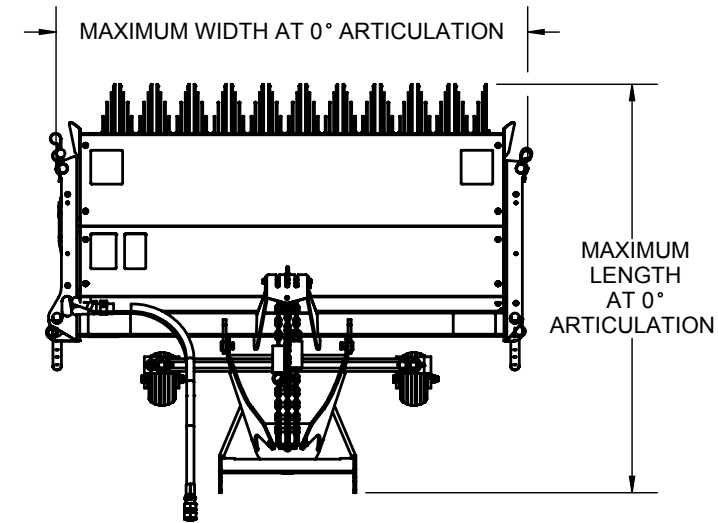
SWEEPING

1. Swing the brush head assembly the direction that you want to direct debris.
2. Start the prime mover and increase engine RPM to sweeping speed.
3. Engage the brush.
4. Adjust the brush height according to Setting Brush Pattern if required.

NOTICE! **AVOID SWEEPER DAMAGE.** Do not ram into piles. Use an appropriate attachment for this type of job.


PRODUCT INFORMATION

Specifications and Model Views




S26 Brush Head	
Approximate Weight with Mounting/Swing	225 lbs
Maximum Length at 0° Articulation	48.5 inches
Maximum Width at 0° Articulation	57.0 inches
Maximum Length at Full Articulation	55.5 inches
Maximum Width at Full Articulation	56.0 inches
Sweeping Width at 0° Articulation	48.0 inches
Sweeping Width at Full Articulation	42.0 inches

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. Start the engine.
3. Disengage the parking brake.
4. 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.
5. Engage the parking brake and shut down the prime mover. Be sure to relieve pressure to the auxiliary hydraulic lines.
6. Lock jack stands in stowed position.
7. 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.
8. 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.

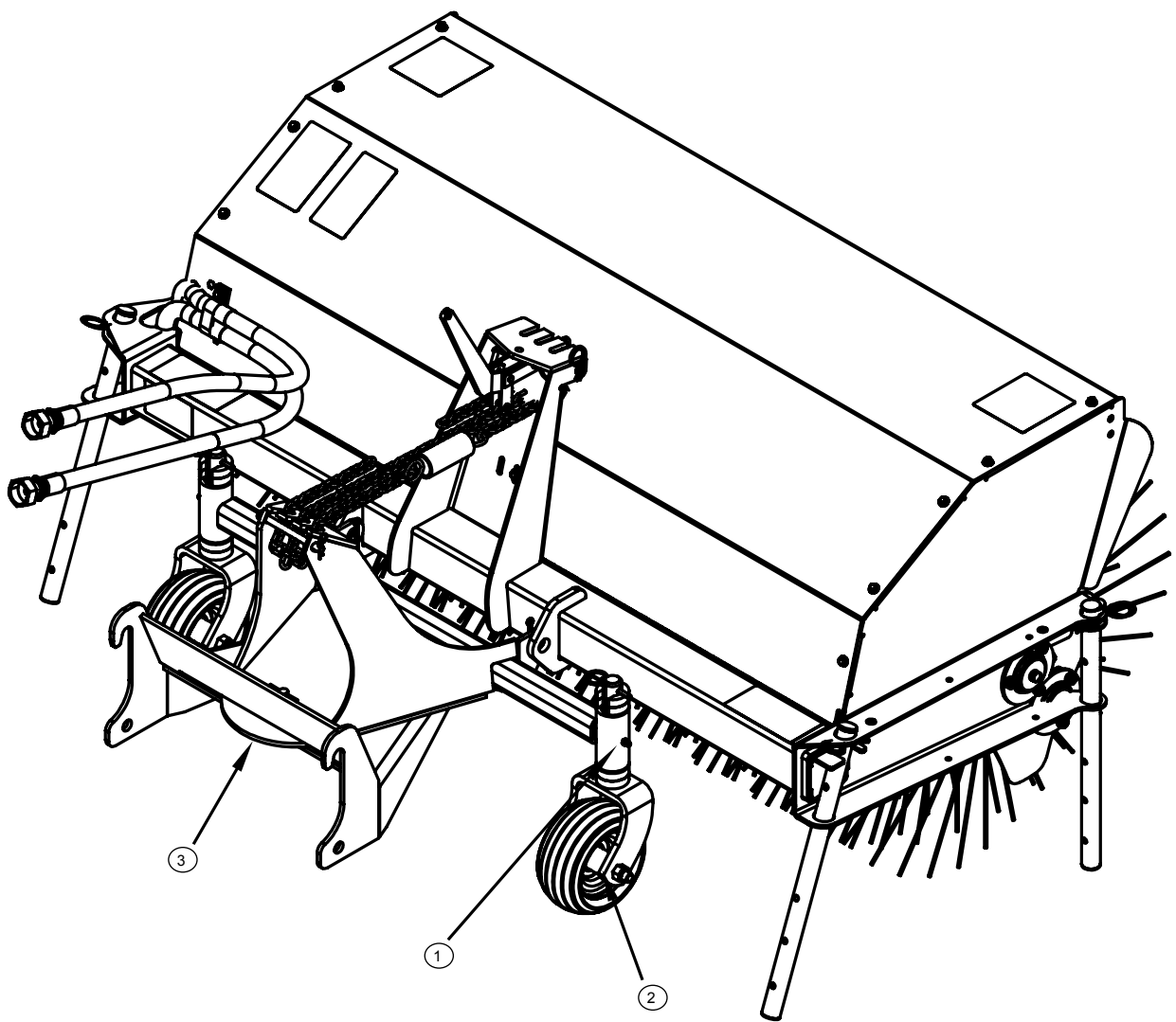
NOTICE! Hoses for the sweepers must be removed before the quick attach is disengaged. Pulling the sweeper with the hoses could result in damage to the prime mover or the sweeper.

1. Shut off engine, set brake.
2. Lock jack stands in lowered position.
3. Move attachment coupler latches to the unlocked position. (Lock pins must be disengaged)
4. Disconnect hydraulic hoses from quick couplers. Install dust plugs or couple hoses together for storage.
5. Release brake and roll attachment coupler until it is disengaged from the attachment. The attachment should rest in a stable position for storage.

LUBRICATION POINTS

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

1. King Pin Caster Tube (2 fittings each)
2. Wheel zerk
3. Pivot Plate (Optional)



MAINTENANCE

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 movers parking brake and leave the engine running.
3. Start the sweeper at a slow speed; then, lower it into sweeping position. Run the sweeper in a stationary position for 10 seconds.
4. Switch off the engine. The brush pattern left in the dust should be 2-4 inches wide, running the length of the brush. (figure 1)
5. Adjust the brush pattern as necessary by moving chain link position.
6. Repeat steps # 1 through #5 until the brush pattern is 2-4 inches wide.

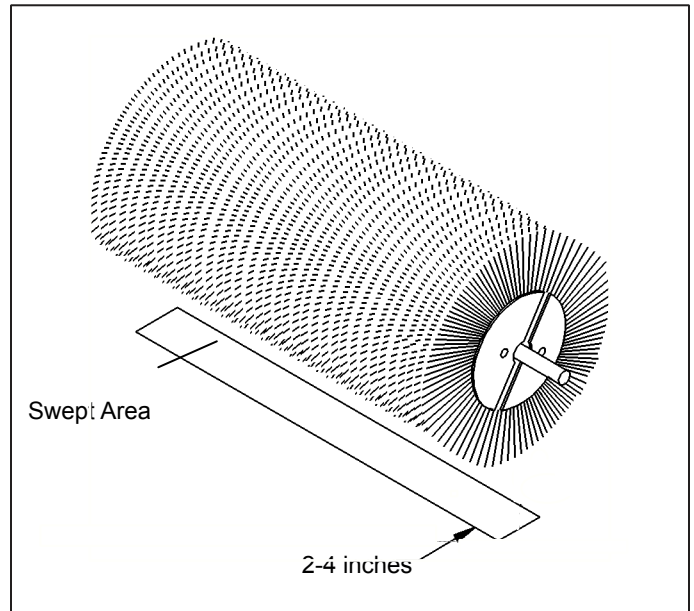


figure 1

NOTICE! Sections should be replaced when the exposed bristle length is 6 inches.

NOTICE! Do not store the sweeper with weight on the brush. Weight will deform the bristles, destroying the sweeping effectiveness.

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.

STORAGE

Worn Section Standard				Reference Information	
Section OD, New	Ring ID	Section OD, Worn	Exposed Bristle, Worn	Bristle Length	Exposed Bristle, New
24	6.38	17	3.8	8.50	7.5
26	8.00	18	4.0	9.00	8.0
32	10.00	22	5.0	11.00	10.0
36	10.00	24	6.0	13.00	12.0
36	10.63	25	6.0	12.69	11.4
46	19.38	34	6.0	13.31	12.1

BRUSH PATTERN

1. Remove screws that retain flange halves and bearing. Pull the brush head assembly out of the brush hood and stand it up on blocks.
2. Remove core from brush head.
3. Loosen the screws on the retainer plate and remove.
4. Remove old sections from the core.
5. Install new sections by doing the following:
 - a. Number the drive locations on the core as 1, 2, and 3. (figure 1)
 - b. Slide the first section onto the core with the drive pins on each side of the tube 1. Be sure the drive pins face up. (figure 1)
 - c. Place the second section on the core with the drive pins on each side of tube 2. Be sure the drive pins face down. (Figure 2)
 - d. Put the third section on with the drive pins on each side of tube 3. Be sure the drive pins face up.
 - e. Slide sections on until the core is full, making sure to alternate the tubes used and the direction of the drive pins.
6. Put the retainer on the core and reinstall the screws.
7. Place the brush core assembly over the hex drive in the brush frame.
8. Align bearing and flange halves on non-drive end.
9. Re-install the screws that retain the bearing and tighten.

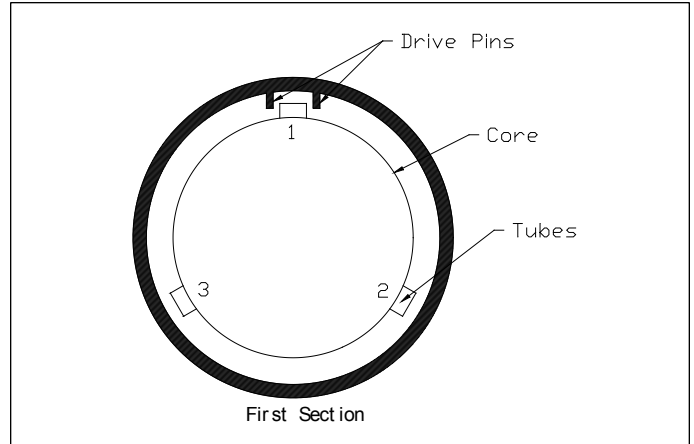


figure 1

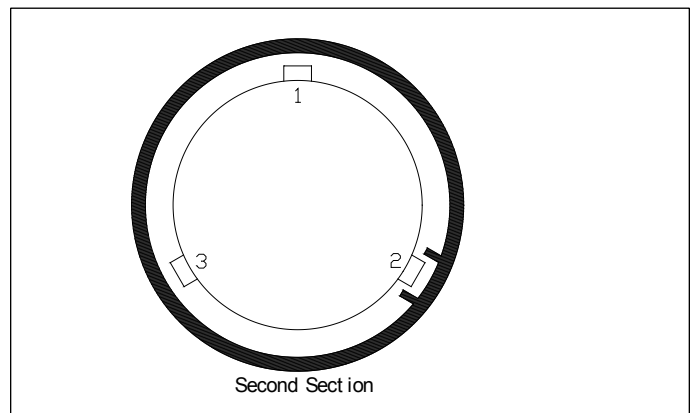


figure 2



MAINTENANCE SCHEDULE

Procedure	Before Each Use	After Each Use	100 Hours	500 Hours	See Prime Mover Manual
Brush pattern - Check (See Brush Pattern)	✓				
Fittings/hoses, hydraulic - Check for Leaks/Tighten - Check for damage	✓				
Quick Couplers, hydraulic - Wipe clean with a clean lint free cloth	✓				
Filter, air, prime mover - Clean	✓				
Fittings, zerk - Grease (See Lubrication Points)	✓				✓
Oil, hydraulic - Check Level	✓				
Hardware -Tighten	✓				

Oil Cleanliness Requirements

NOTICE! All hydraulic fluid shall be filtered before use in any Sweepster product. Sweepster recommends that the fluid used in its hydraulic components be maintained at 20/18/13 per ISO cleanliness code 4406.

TROUBLESHOOTING

Brush Head Assembly

Problem	Possible Cause	Possible Solution
Brush rotates in wrong direction	Hoses installed incorrectly	Switch hoses at brush head
Brush slows or stops when sweeping	Brush pattern too wide	Adjust brush pattern to 2-4 inches (50-100mm) wide: see Maintenance: Adjusting Brush Pattern
	Travel speed too fast	Travel no more than 1.7 mph while sweeping
	Trying to sweep too much material at once.	Make several passes with sweeper
	Filter plugging	Change filter
Brush wears very quickly	Brush pattern is too wide	Adjust brush pattern to 2-4 inches (50-100mm) wide: see Maintenance: Adjusting Brush Pattern

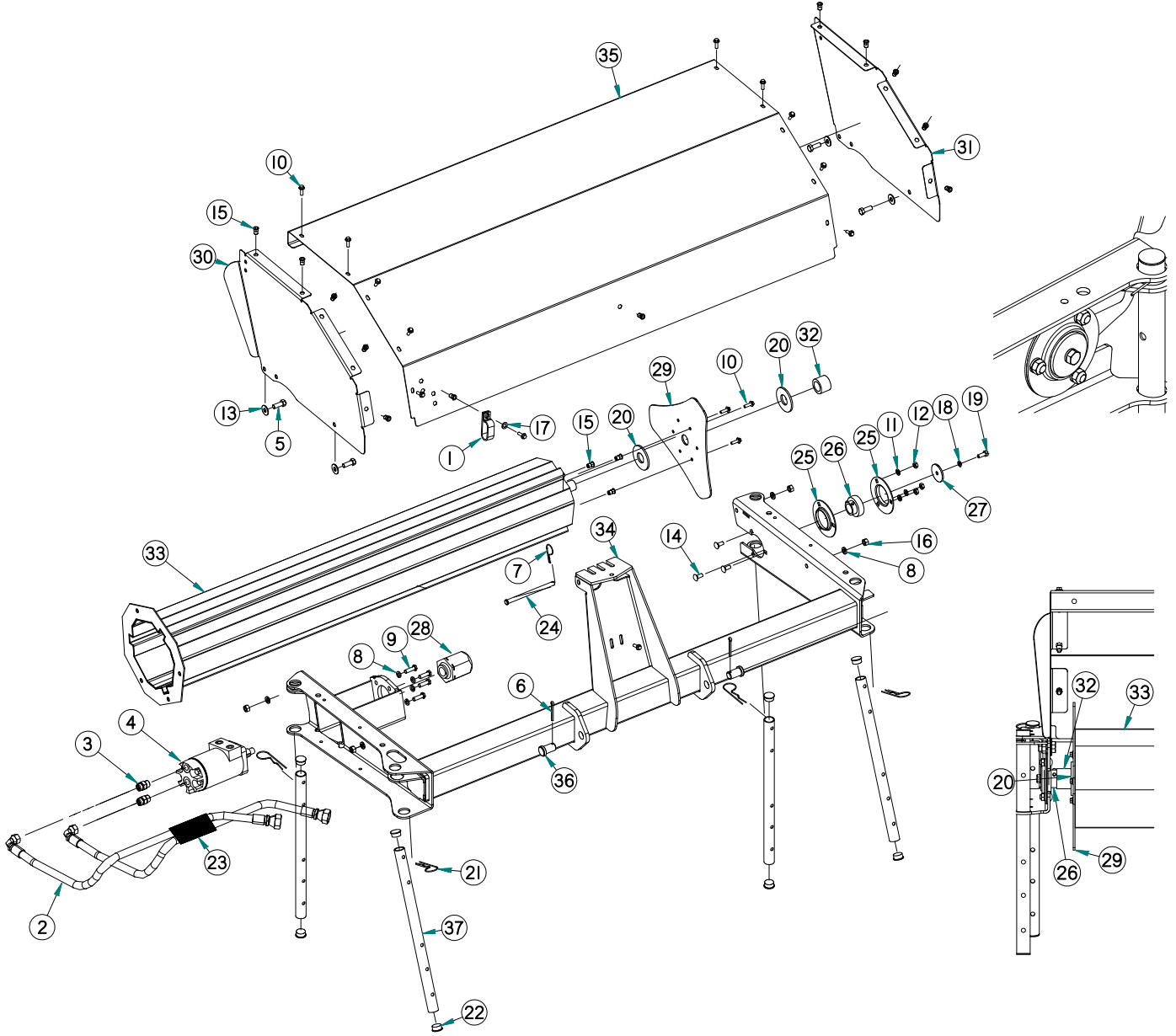
Hydraulic System

Problem	Possible Cause	Possible Solution
Hydraulic system overheats	Hydraulic oil level too low	Fill tank to OEM Specifications
	Brush pattern too wide	Adjust brush pattern to 2-4 inches (50-100mm) wide: see Maintenance: Adjusting Brush Pattern
	Trying to sweep too much material at once	Make several passes with sweeper
Hydraulic motor seals leak	Back pressure exceeds 750 psi	Replace filter
	Motor is failing	High number of hours on motor; Contact dealer to rebuild or replace

S26 BRUSH HEAD 4 FT

Item	Part	Qty	Description	Sections		
				Part	Qty	Width
1.	03-2490	1	Clamp, Hose, Double, Rubber Coat			
2.	03-5298	2	Hose, .5 x 60, 8FF-8FF90, 3K			
3.	03-3514	2	Fitting, Adapter, HP, 8MFS, 8MOR			
4.	03-5495	1	Motor, 7.9CID, 1.0 TPR, 4 Bolt			
5.	07-0018	4	Screw, HHC, Gr8, 3/8-16 x 1			
6.	07-0206	2	Pin, Cotter, Gr2, 3/16 x 2			
7.	07-0209	1	Clip, Hairpin, 16ga x 1 3/8	Mixed	01-5010	25 4 ft
8.	07-1718	8	Washer, Lock, Split, Medium, 3/8	Poly	01-5210	25 4 ft
9.	07-2116	4	Screw, HHC, Gr8, 3/8-16 x 1 1/4			
10.	07-2952	15	Screw, HFH, CL10.9, M6-1 x 20			
11.	07-3273	3	Washer, Lock, Split, Medium, 5/16			
12.	07-3278	3	Nut, Hex, Gr8, 5/16-18			
13.	07-3279	4	Washer, Flat, Gr8, 3/8			
14.	07-3280	3	Bolt, Carriage, Gr5, 5/16-18 x 3/4			
15.	07-3617	15	Nut, Hex, Insert, M6 x 1			
16.	07-3654	4	Nut, Hex, Gr8, 3/8-16			
17.	07-3736	1	Washer, Flat, CL8.8, M8			
18.	07-3738	1	Washer, Lock, Split, Medium, M8			
19.	07-3777	1	Screw, HHC, CL10.9, M8-1.25 x 20mm			
20.	07-4040	2	Washer, Flat, Gr8, 1			
21.	07-4522	4	Clip, Hairpin, .162 x 3.43			
22.	07-4523	8	Plug, Cap, Plastic, Black, 1 x .51			
23.	07-6488	1	Pin, Clevis, 3/8 x 5 1/2, 5 17/64			
24.	08-0008	2	Bearing, Flange, 3 Bolt			
25.	08-0148	1	Bearing, 1 Round, with Collar & Set Screws			
26.	13-11903	1	Washer, .34 x 1.8 x 10ga			
27.	13-15205	1	Hub, Hex, Drive			
28.	13-13453	1	Plate, Core, Hat			
29.	13-13457	1	Sheet, Side, Hood, Left			
30.	13-13458	1	Sheet, Side, Hood, Right			
31.	13-13637	1	Spacer, 1 1/2 x 1.01 x 1.1			
32.	13-16175-4	1	Weld, Core, 8, 4 ft, Hex Drive			
33.	13-16176-4	1	Weld, Brush Frame, 4 ft			
34.	13-16178-4	1	Sheet, Hood, 4 ft			
35.	13-8450	2	Pin, Clevis, .75 x .969, with Hole			
36.	13-9818	4	Tube, Round, Stand			

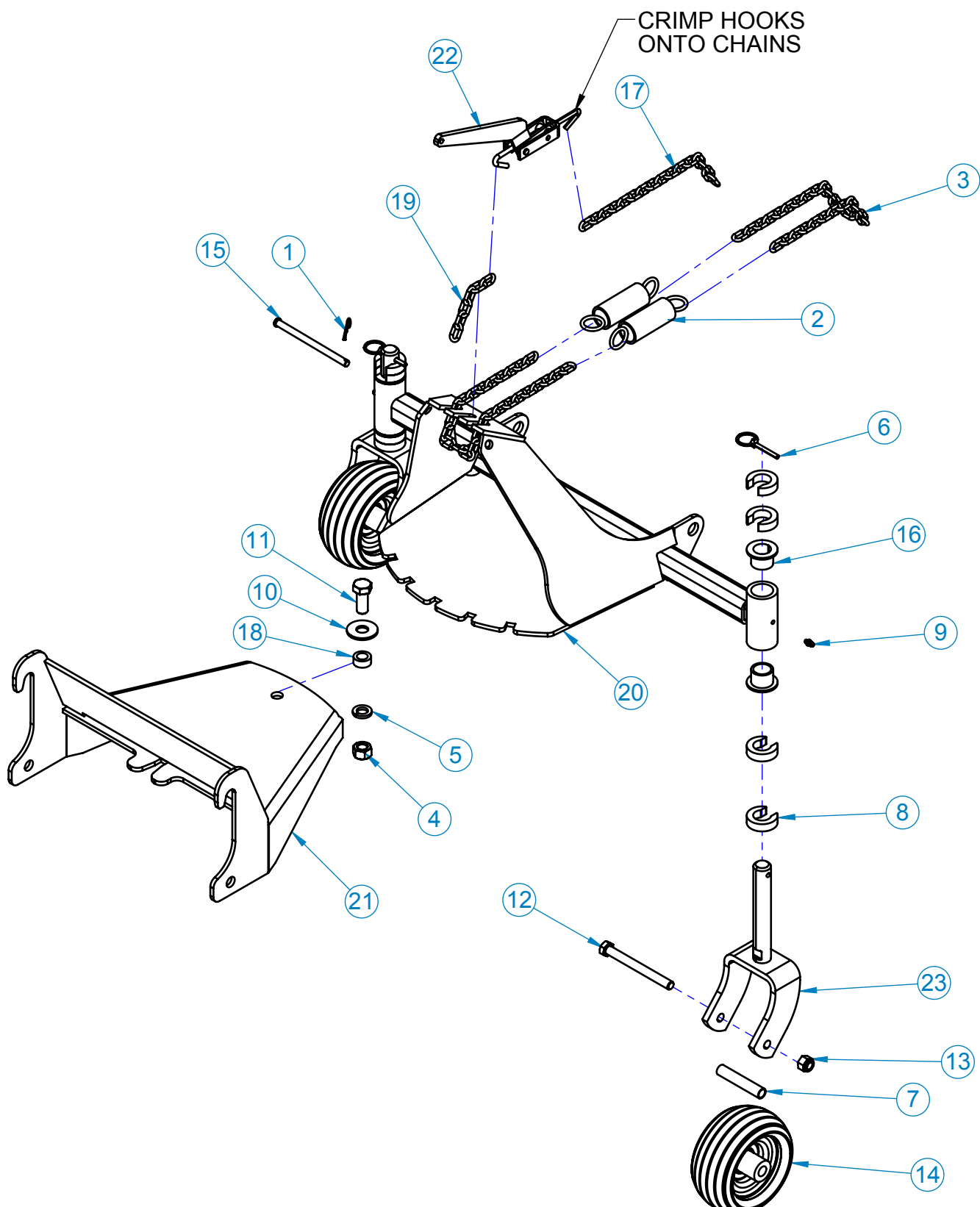
S26 BRUSH HEAD 4 FT



MOUNTING & SWING ASSEMBLY

Item	Part	Qty	Description
1.	07-0209	1	Clip, Hairpin, 16ga x 1 3/8
2.	07-0237	2	Spring, Tension, 1 13/32 x 6
3.	07-0387	2	Chain, 3/16, 26 Links
4.	07-1294	1	Nut, Hex, Gr8, 5/8-11
5.	07-1872	1	Washer, Lock, Split, Medium, 5/8
6.	07-2843	2	Pin, Klik, 3/16 x 1 5/8
7.	07-3013	2	Bushing, Caster
8.	07-3015	8	Spacer, Caster
9.	07-3112	2	Fitting, Zerk, 1/4-28, Self-Tap
10.	07-3120	1	Washer, Flat, Gr8, 5/8
11.	07-3433	1	Screw, HHC, Gr8, 5/8-11 x 1 1/2
12.	07-3676	2	Screw, HHC, Gr8, 1/2-13 x 5
13.	07-4037	2	Nut, Hex, Nylock, Gr8, 1/2-13
14.	07-4367	2	Wheel, Caster, 6.25 x 5/8, Black
15.	07-6488	1	Pin, Clevis, 3/8 x 5 1/2
16.	08-0131	4	Bearing, Caster
17.	11-7170	1	Chain, 3/16, 16 Links
18.	11-7479	1	Bushing, 1 x 5/8 x 7/16
19.	13-12500	1	Chain, 3/16, 6 Links
20.	13-16680	1	Weld, Swing, with Casters
21.	13-16681	1	Weld, Mounting, Swing, with Latch
22.	13-2003	1	Binder, Chain, Manual Lift
23.	13-4291	2	Weld, Caster, Fork

MOUNTING & SWING ASSEMBLY






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	<p style="text-align: center;">GRADE 2</p>  <p style="text-align: center;">GRADE 5</p>  <p style="text-align: center;">GRADE 8</p> 
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.		
		

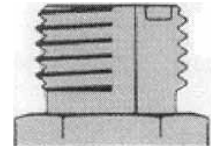
Size of Bolt	Grade No.	Pitch (mm)	Pounds Feet	Newton-Meters	Pitch (mm)	Pounds Feet	Newton-Meters
M6	5.6	1.0	3.6-5.8	4.9-7.9	-	-	-
	8.8		5.8-4	7.9-12.7		-	-
	10.9		7.2-10	9.8-13.6		-	-
M8	5.6	1.25	7.2-14	9.8-19	1.0	12-17	16.3-23
	8.8		17-22	23-29.8		19-27	25.7-36.6
	10.9		20-26	27.1-35.2		22-31	29.8-42
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

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

HYDRAULIC TORQUE SPECIFICATIONS

Face Seal: Assembly, Tube to Fitting

NOTICE! 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 foreign materials.
2. Install proper SAE O-ring to end of fitting if not already installed. Ensure O-ring is fully seated and retained properly.
3. Lubricate O-ring with a light coating of clean hydraulic oil.
4. Position tube and nut squarely on face seal of fitting and tighten nut finger tight.
5. Using appropriate torquing device, tighten to given torque rating from the table below.

Torque Values

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

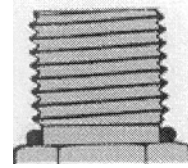
NOTE - ft-lb may be converted to Newton Meters by multiplying by 1.35582.

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

HYDRAULIC TORQUE SPECIFICATIONS

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

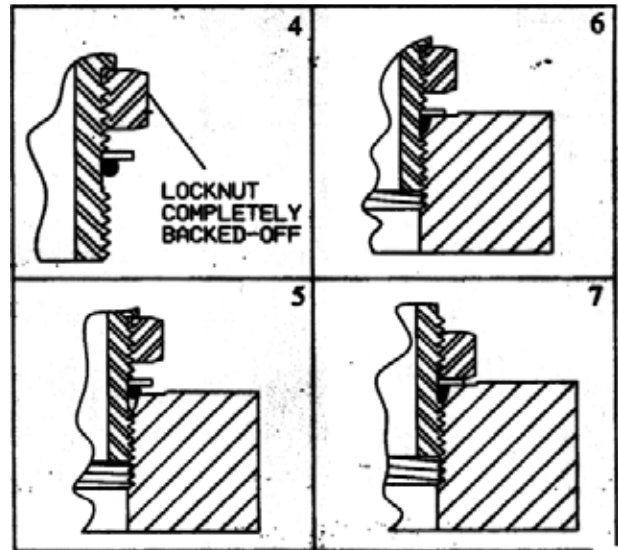
NOTE! Straight thread o-ring fittings are utilized to adapt hydraulic systems to motors, pumps, cylinders, and valves.



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 table. (figure 7)

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



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.

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

in. - inch.

kph - kilometers per hour.

lb - pounds.

left-hand - side that is on 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.

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

NPT - national pipe thread.

note - indicates supplementary information.

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

psi - pounds per square inch.

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

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 the rear when facing the normal forward direction of travel of the machine.

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

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

GLOSSARY

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 cylinder - means of angling the brush head assembly hydraulically.

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.

WARRANTY

Limited Warranty

Except for the Excluded Products as described below, all new products are warranted to be free from defects in material and/or workmanship during the Warranty Period, in accordance with and subject to the terms and conditions of this Limited Warranty.

1. Excluded Products. The following products are excluded from this Limited Warranty:

(a) Any cable, part that engages with the ground (i.e. sprockets), digging chain, bearing, teeth, tamping and/or demolition head, blade cutting edge, pilot bit, auger teeth and broom brush that either constitutes or is part of a product.

(b) Any product, merchandise or component that, in the opinion of Paladin Light Construction¹, has been (i) misused; (ii) modified in any unauthorized manner; (iii) altered; (iv) damaged; (v) involved in an accident; or (vi) repaired using parts not obtained through Paladin Light Construction.

2. Warranty Period. The Limited Warranty is provided only to those defects that occur during the Warranty Period, which is the period that begins on the first to occur of: (i) the date of initial purchase by an end-user, (ii) the date the product is first leased or rented, or (iii) the date that is six (6) months after the date of shipment by Paladin Light Construction as evidenced by the invoiced shipment date (the "Commencement Date") and ends on the date that is twelve (12) months after the Commencement Date.

3. Terms and Conditions of Limited Warranty. The following terms and conditions apply to the Limited Warranty hereby provided:

(a) Option to Repair or Replace. Paladin Light Construction shall have the option to repair or replace the product.

(b) Timely Repair and Notice. In order to obtain the Limited Warranty, (i) the product must be repaired within thirty (30) days from the date of failure, and (ii) a claim under the warranty must be submitted to Paladin Light Construction in writing within thirty (30) days from the date of repair.

(c) Return of Defective Part or Product. If requested by Paladin Light Construction, the alleged defective part or product shall be shipped to Paladin Light Construction at its manufacturing facility or other location specified by Paladin Light Construction, with freight PRE-PAID by the claimant, to allow Paladin Light Construction to inspect the part or product.

Claims that fail to comply with any of the above terms and conditions shall be denied.

LIMITATIONS AND EXCLUSIONS.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY BASED ON A COURSE OF DEALING OR USAGE OF TRADE.

IN NO EVENT SHALL PALADIN LIGHT CONSTRUCTION BE LIABLE FOR CONSEQUENTIAL OR SPECIAL DAMAGES.

IN NO EVENT SHALL PALADIN LIGHT CONSTRUCTION BE LIABLE FOR ANY LOSS OR CLAIM IN AN AMOUNT IN EXCESS OF THE PURCHASE PRICE, OR, AT THE OPTION OF PALADIN LIGHT CONSTRUCTION, THE REPAIR OR REPLACEMENT, OF THE PARTICULAR PRODUCT ON WHICH ANY CLAIM OF LOSS OR DAMAGE IS BASED. THIS LIMITATION OF LIABILITY APPLIES IRRESPECTIVE OF WHETHER THE CLAIM IS BASED ON BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE OR OTHER CAUSE AND WHETHER THE ALLEGED DEFECT IS DISCOVERABLE OR LATENT.

¹Attachment Technologies Inc., a subsidiary of Paladin Brands Holding, Inc. (PBHI) is referred to herein as Paladin Light Construction.