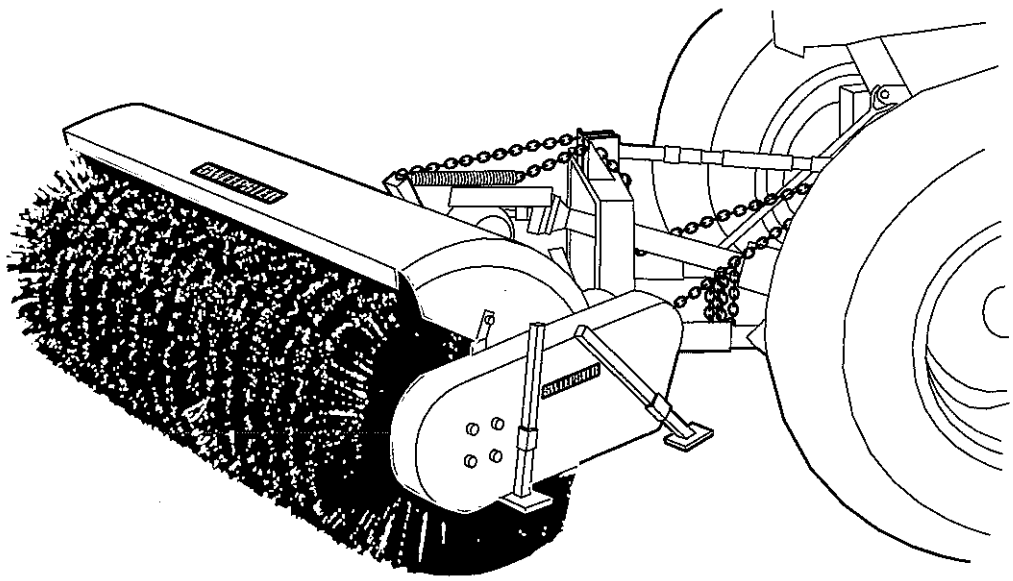
SWEEPSTER

RHFA

Rear-Mounted Mechanical Sweeper

BRADCO
FFC
HARLEY
THE MAJOR
McMILLEN
SWEEPSTER

PALADIN LIGHT CONSTRUCTION



Sweepster Serial Number_____

Manual Number: 51-2506-6
Release Date: June, 1998

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

Contents

Serial & Part Numbers

On your unit you will find a serial number plate and/or part number plate(s). The numbers on these plates are very important if you wish to order parts or accessories. For your convenience, record numbers in the appropriate spaces below.

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 model 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, snow removal 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, Inc.
2800 North Zeeb Road
Dexter, Michigan 48130
Phone: (734) 996-9116 • (800) 456-7100
FAX: (734) 996-9014
E–mail: sweep@sweepster.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

Optional Equipment

Installation instructions for optional equipment, if applicable, appear with parts lists in the back of the manual.

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.

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

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

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

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

IMPORTANT – 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 sweeping:

- 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.
- Make sure all hydraulic fittings and hardware are tight.
- Replace any damaged or fatigued hardware with properly rated fasteners.
- 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 debris flying from the sweeper.
- Be sure all persons not operating the sweeper are clear of the sweeper discharge area.
- Always wear proper apparel such as a long–sleeve shirt buttoned at the cuffs; safety glasses, goggles or a face shield; ear protection; and a dust mask.

When sweeping, 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 brakes and remove the key from the ignition.

Minimize flying debris – use the slowest brush speed that will do the job.

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.

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.

Service & Repair

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 road 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.

If this implement is attached to a tractor with a clevis hitch (hammer-strap) style drawbar, the hammer-strap must be removed to prevent damage to the IID guarding and the IID telescoping members. *[See Figure 1]*

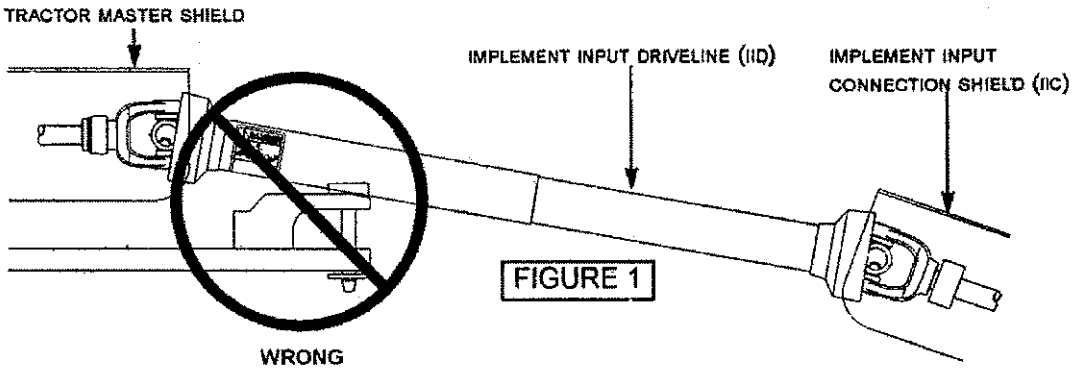


FIGURE 1

If this implement is attached to a tractor with an offset in the drawbar, be certain it is in the down position to prevent damage to the IID guarding and the IID telescoping members. *[See Figure 2]*

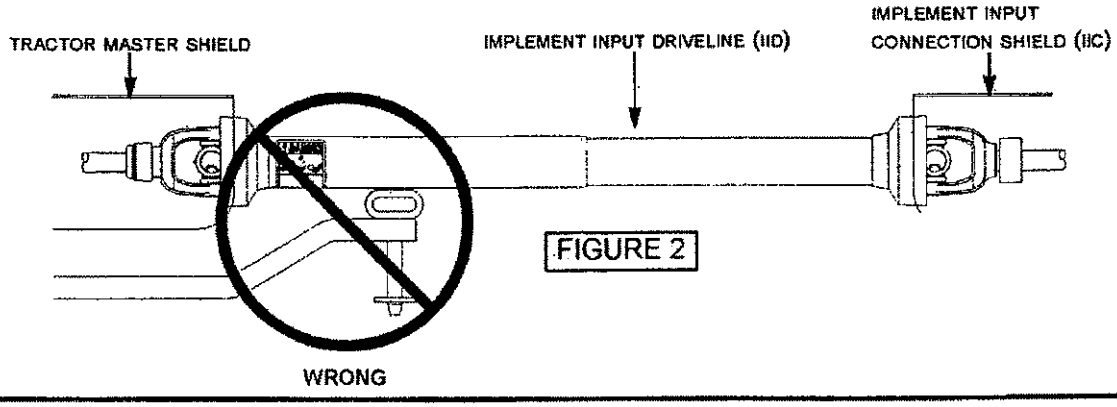


FIGURE 2

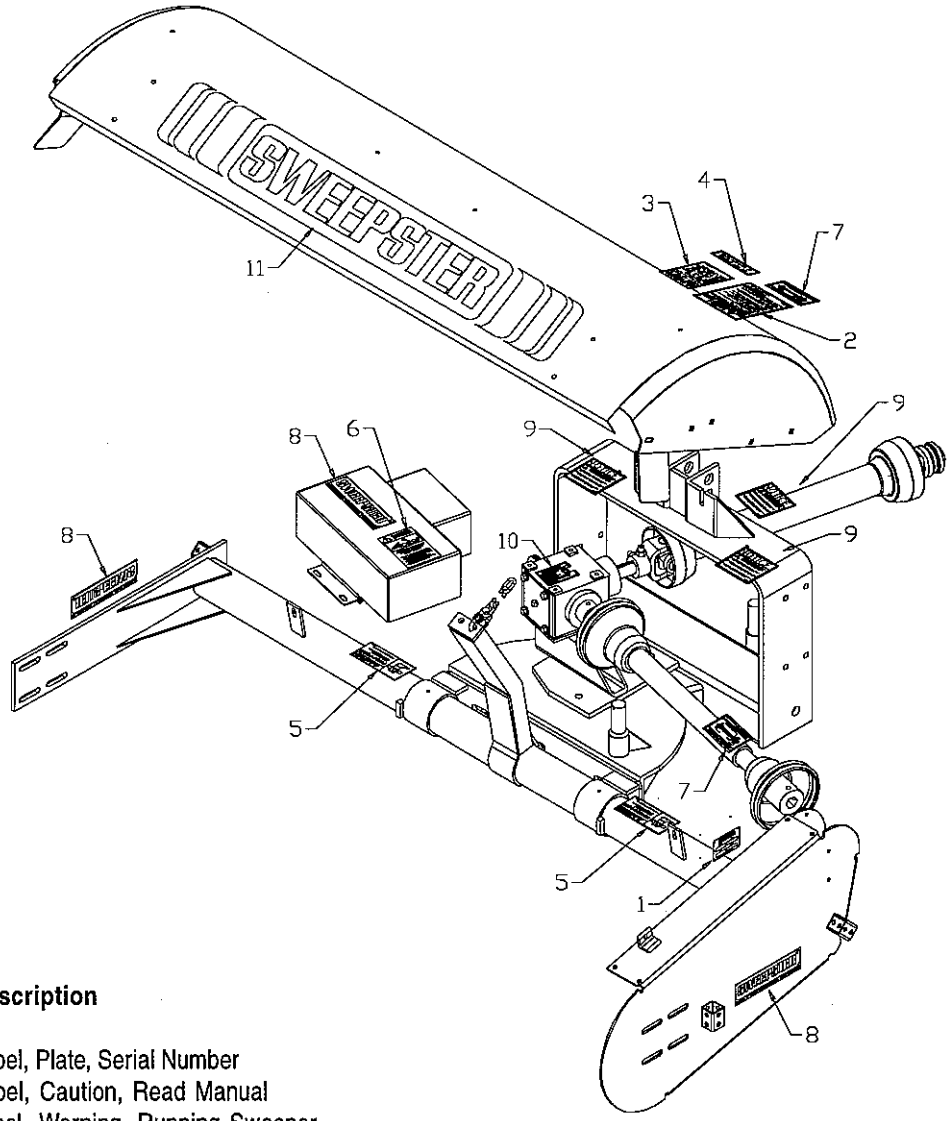
Safety Signs & Labels

Important

Always keep safety signs clean and readable, and always replace any damaged or missing safety signs with new ones from SWEEPSTER.

Safety signs and label locations are shown below. For representations of these safety signs and labels, refer to the next 2 pages.

Locations

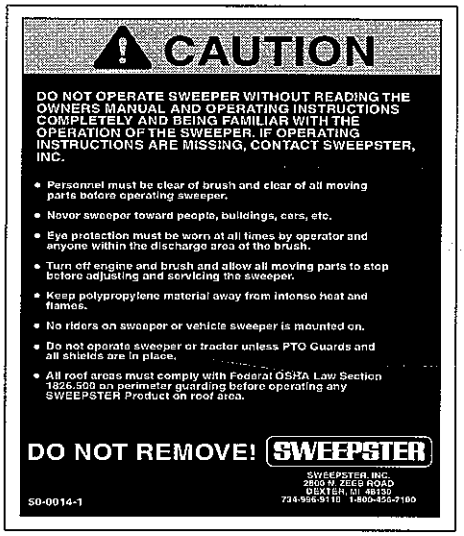


Item	Part	Qty	Description
1.	50-0004	1	Label, Plate, Serial Number
2.	50-0014-1	1	Label, Caution, Read Manual
3.	50-0014-2	1	Label, Warning, Running Sweeper
4.	50-0024	1	Label, Maximum Raise, RHFA
5.	50-0076-1	2	Label, Caution, Pinch Point
6.	50-0115	2	Label, Danger, Rotating Drive
7.	50-0147	1	Label, Frequency of Lubrication, CV Shafts
8.	50-0184	3	Label, Small, White, SWEEPSTER
9.	50-0206	3	Label, Notice, Cut Drive Shaft
10.	50-0236	1	Label, Gearbox, Check Oil, Warranty Void
11.	50-0252	1	Label, Logo, Large, White, Die Cut

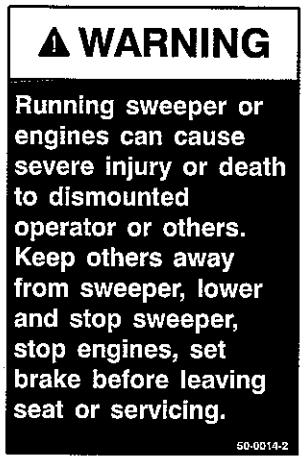
Representations

Locations shown on page 8.

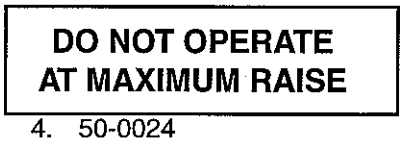
1. 50-0004



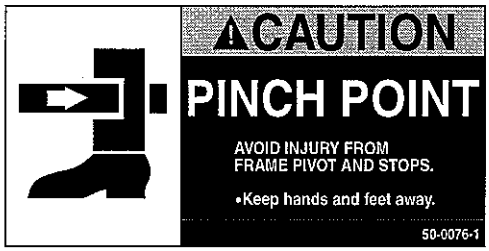
2. 50-0014-1



3. 50-0014-2



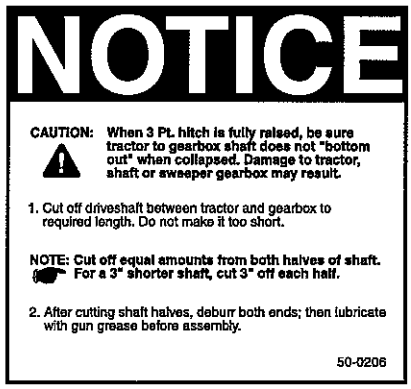
4. 50-0024



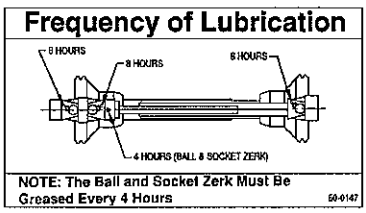
5. 50-0076-1

Safety Signs & Labels

6. 50-0115



9. 50-0206



7. 50-0147

SWEEPSTER®

8. 50-0184

10. 50-0236

SWEEPSTER®

11. 50-0252

Note

RHFA sweepers are designed to attach to SAE Category I or Category II 3–point hitches. To attach this sweeper to a Category II hitch, you must order Category II hitch pins.

This sweeper has been assembled so it sweeps while traveling forward. It can, however, sweep while moving in reverse. See Maintenance: Reversing Sweeping Direction to sweep while driving in reverse.

Installing Sweeper

1. Attach hitch pins to the mounting frame. Place stop plates inside the mounting frame with bends to the center. Tighten hardware.
2. Attach a 39–link chain to each stop plate using a double clevis pin.
3. Pin 2 keyhole plates to the tractor toplink with pins from the tractor (figure 1).
4. Position the mounting assembly behind the tractor with the half–moon swing plate toward the rear.
5. Lower 3–point hitch arms completely.
6. Place the mounting assembly's pins in the hitch arms. Secure with ring pins (figure 2).
7. Connect the tractor toplink arm to the top of the mounting assembly (figure 3). Secure with a pin.

NOTE – For a small–diameter toplink, use the pin provided with the sweeper and the top hole in the mounting frame ears. For a large–diameter toplink, use the bottom hole and a customer–supplied pin.

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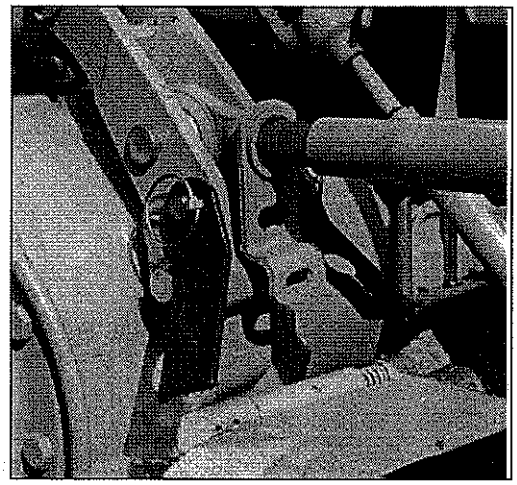

figure 1

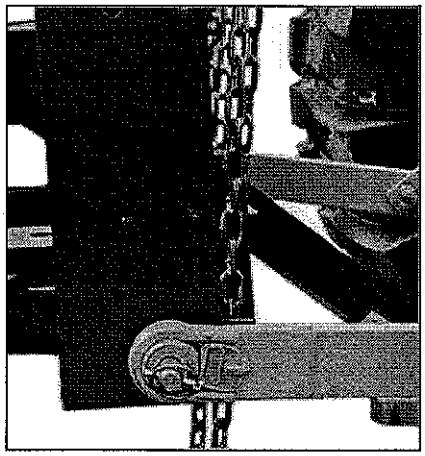

figure 2

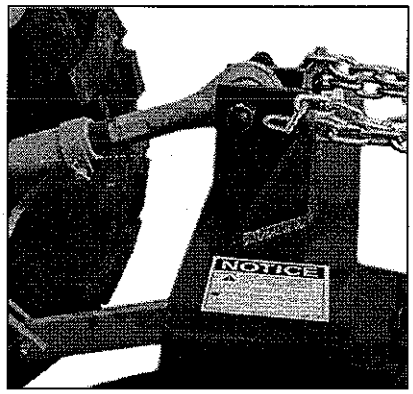

figure 3

8. Adjust support chains, which are attached to the mounting assembly and keyhole plates.

   a. Raise hitch arms until the center of the mounting assembly's rear plate is 16 in. (60. mm) above the ground (figure 4).

   b. Choose the link in each chain that will keep the mounting assembly at that measurement.

   c. Raise hitch arms slightly.

   d. Place links (chosen in step 6b) in keyhole slots.

   e. Lower the mounting assembly until the center of the rear plate is 16 in. (406 mm) above the ground.

NOTE – For wet, heavy and/or deep snow, adjust support chains so the mounting assembly remains 20-22 in. (508-559 mm) off the ground when the unit is lowered.

IMPORTANT – Avoid equipment damage. Positioning the sweeper too close to the ground – less than 16 in. (406 mm) – can result in damage to the sweeper hood and gearbox. Keep the proper distance.

9. Position the brush head assembly behind the mounting assembly (figure 5).

10. Align slots in the mounting assembly's rear plate and the brush head's frame plate. Secure with 3 carriage bolts, flat washers, lock washers and nuts. Figure 6 shows hardware fully installed.

NOTE – Make sure the top edges of the plates are parallel with each other. This becomes very important when adjusting the sweeper after installation.

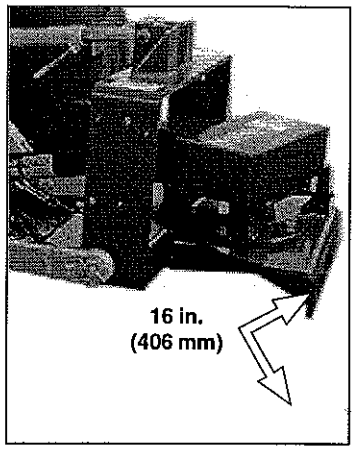

figure 4

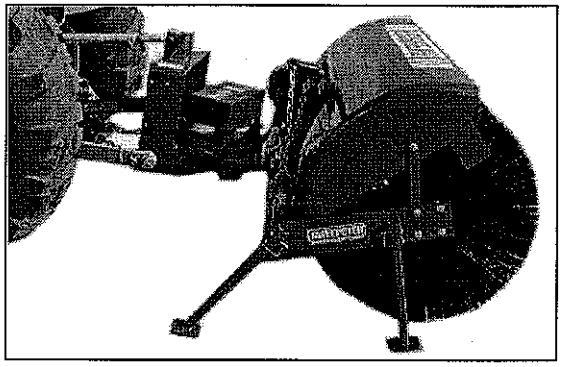

figure 5

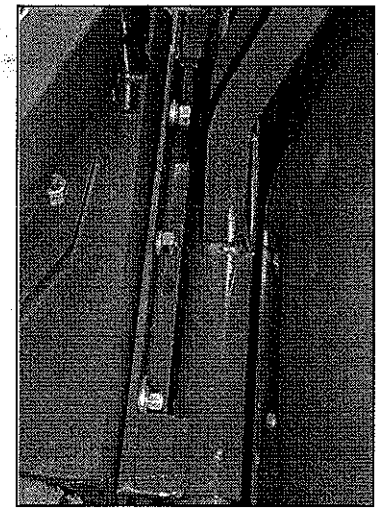

figure 6

11. Install the spring–chain assembly. Figure 7 shows the spring–chain assembly fully installed.

    a. Place a tension spring on 1 end of a 27–link chain.

    b. Attach the spring to the brush frame upright.

    c. Connect the chain to a slot in the chain holder on the mounting assembly.

12. Connect the transport chain, already attached to the brush frame upright, to the remaining slot in the chain holder on the mounting assembly. Figure 8 shows the transport chain fully installed.

13. Install the constant velocity (CV) shaft. Figure 9 shows the shaft fully installed.

    a. Connect the hex end of the CV shaft to the hex shaft on the brush head assembly.

    b. Attach the round end of CV shaft to the gearbox output shaft.

    c. Tighten set screws and jam nuts.

14. Install the telescoping shaft. Figure 9 shows the shaft fully installed.

    a. Connect the round end of the telescoping shaft to the gearbox input shaft.Tighten the set screw and jam nut.

    b. Connect the 6–spline end of the telescoping shaft to the tractor PTO.

NOTE – It may be necessary to shorten the telescoping shaft. The shaft must slip freely as the brush head assembly is raised and lowered. Raise and lower the sweeper **slowly** to check that the telescoping shaft is the proper length.

IMPORTANT – Avoid driveline damage. Check the length of the telescoping members to insure the driveline will not bottom out or separate when turning and/or going over rough terrain.

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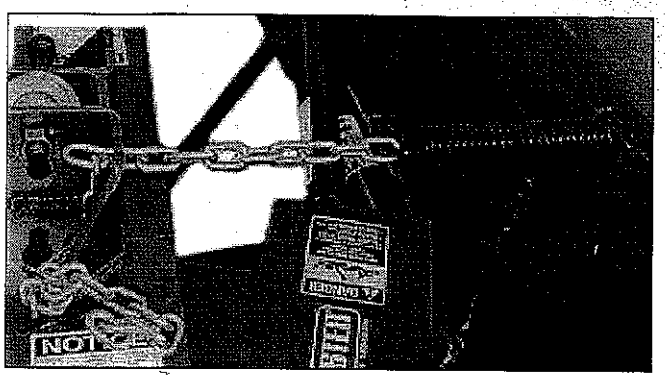


figure 7

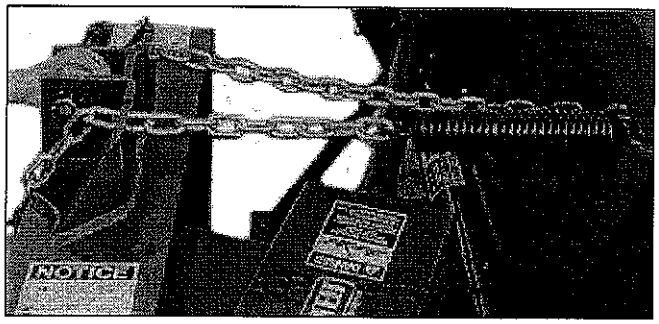


figure 8

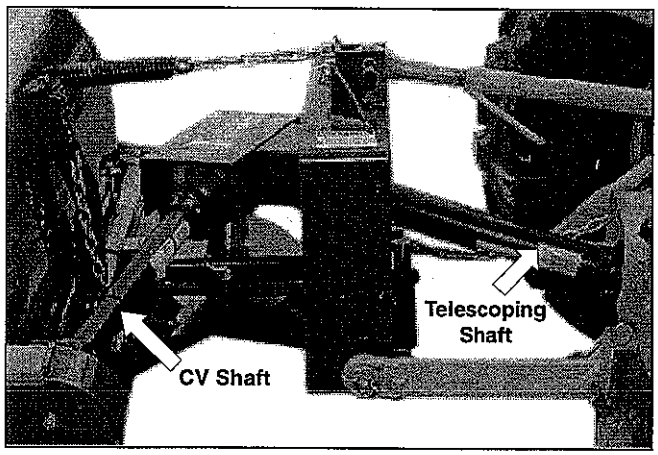


figure 9

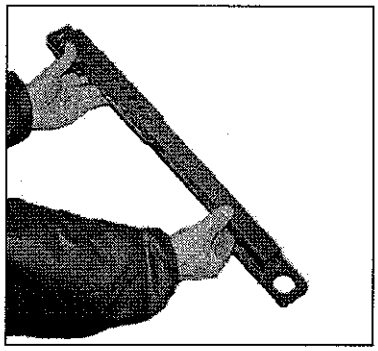


figure 10

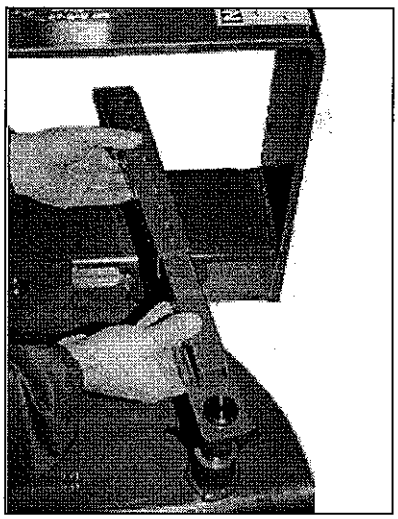


figure 11

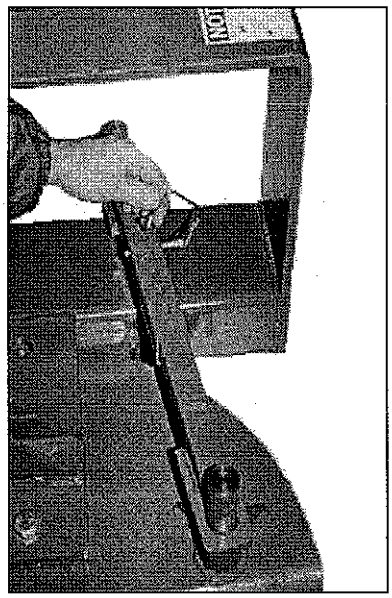


figure 12

15. Adjust the toplink so the swing frame is perpendicular to the ground.

16. Install the manual or hydraulic angle kit.

    • For manual angle, follow these instructions.

    a. Slide the tube with 1 hole into the other tube (figure 10).

    b. Place tubes on large pins welded to the mounting assembly (figure 11). The tube with 1 hole goes on the half–moon swing plate.

    c. Secure with 2 cotter pins (figure 12).

    d. Swing the sweeper to the desired angle. Make sure to align a set of holes in the tubes.

    e. Insert a lock pin in the aligned holes (figure 13).

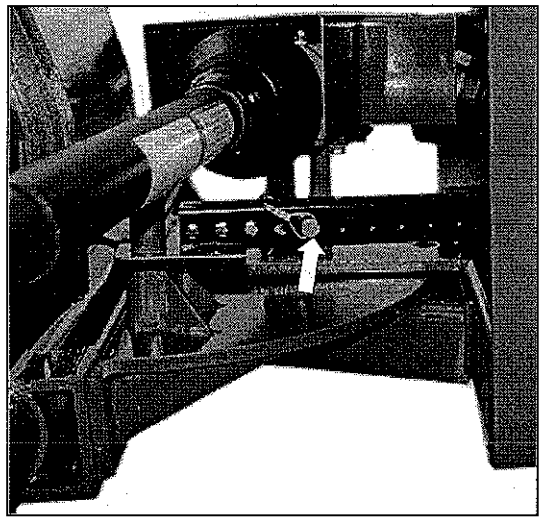


figure 13

• For hydraulic angle, follow these instructions.

a. Attach fittings to the cylinder with the elbow fitting on the rod–end port and the orifice fitting on the barrel–end port (figure 14).

b. Install the cylinder with the barrel end on the mounting frame pin and the rod end on the swing plate pin. Secure with cotter pins (figure 15).

c. Connect a hose to each fitting on the cylinder.

d. Attach adapter fittings to the hose ends.

e. Connect the adapter fittings to prime mover remote valves.

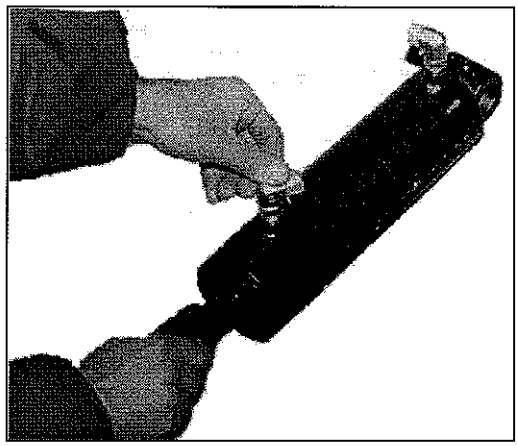


figure 14

NOTE – Additional hydraulic equipment, such as quick couplers and valves, that fits specific tractors is customer–supplied.

17. Install storage stands. Figure 16 shows stands fully installed.

a. On 1 side of the brush head assembly, slide a straight stand into the tube near the bearing assembly. Align a hole in the stand with 1 in the tube. Secure with a lock pin.

b. Slide an angled stand into the tube toward the front of the brush frame. Align holes and secure with a lock pin.

c. Repeat steps 14a and 14b on the other side of the brush head assembly.

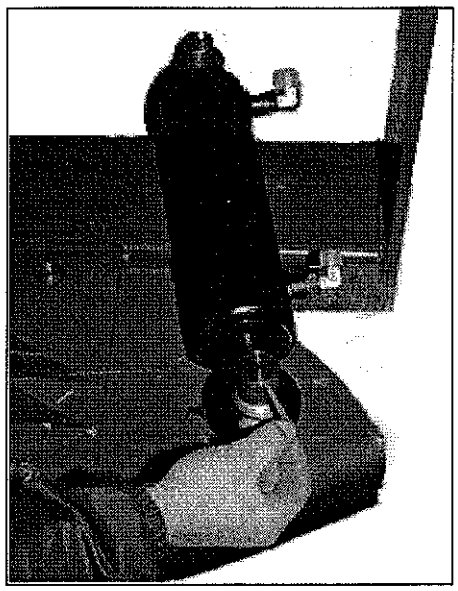


figure 15

NOTE – Storage stands are designed to keep the brush off the ground when the sweeper is dismounted. When the sweeper is mounted, slide stands up in the tubes to keep them out of the way.

18. Install any other options. See the back of this manual for installation instructions.

19. Go to the Adjustments section.

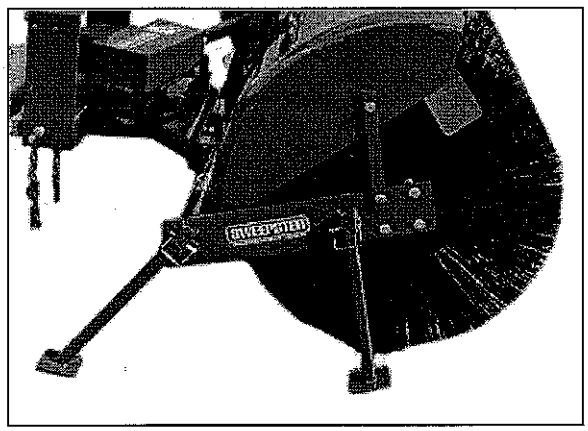


figure 16

Leveling

For best performance, level the sweeper immediately after installation and as a part of regular maintenance.

1. Move the unit to a dusty, paved surface.
2. Lower the brush head assembly so bristle tips are 2 in. (51 mm) off the ground.
3. Swing the brush head assembly straight ahead.
4. At each end of the brush head, measure from the center of the core shaft to the ground (figure 17).
   - If measurements are the same, go to step 5.
   - If measurements are not equal, make sure the top edges of the mounting assembly and brush head plates are parallel. Adjust, if necessary, and tighten the hardware. Then, lengthen or shorten the adjustable hitch arm to make measurements the same. Repeat step 4 until measurements are equal.
5. Swing the sweeper to the right. Take measurements as in step 4. Swing the sweeper to the left. measure again.
   - If all measurements are equal, the sweeper is level.
   - If measurements are not equal, level the mounting assembly with the toplink. Follow instructions shown in figure 18. Then, go back to the beginning of step 5; repeat until the sweeper is level.

NOTE – Make sure the telescoping shaft does not hit the mounting frame when the unit is raised. Reset lift limits if necessary.

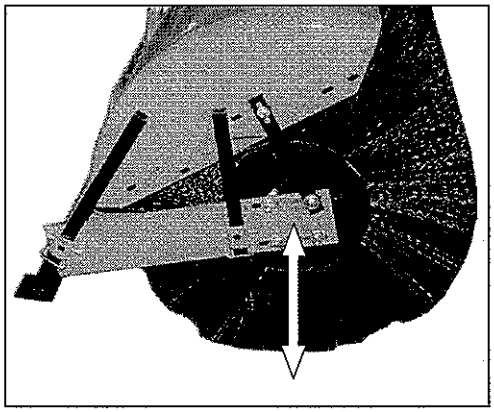


figure 17

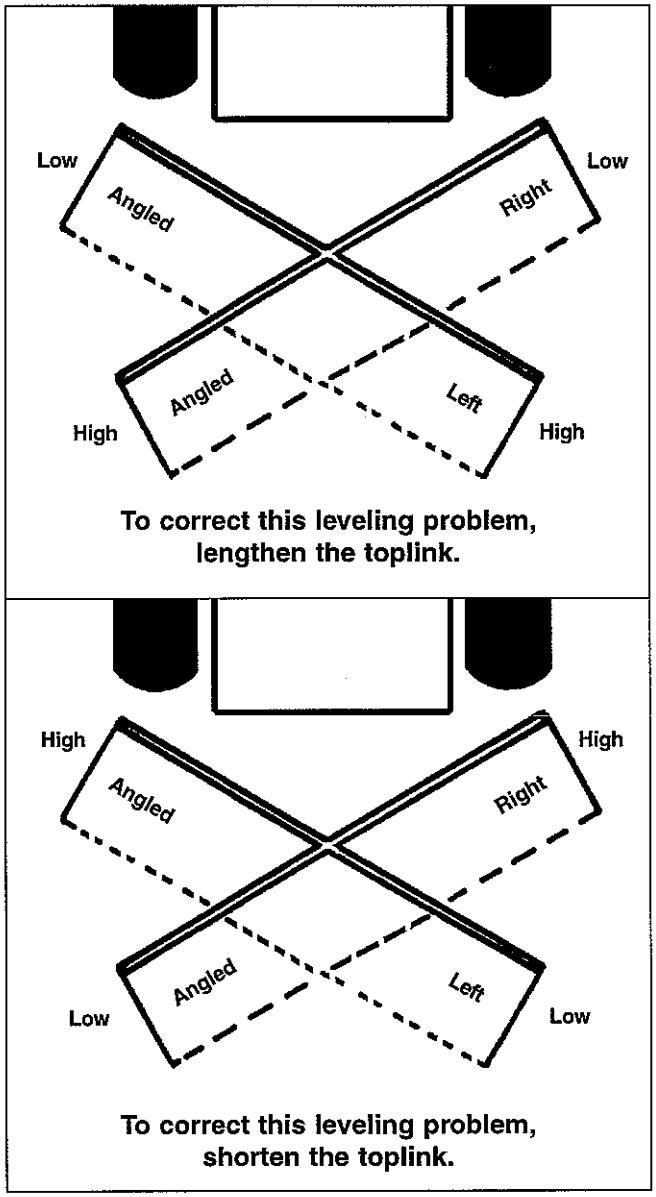


figure 18

Adjusting 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; then, lower it completely to the surface so bristle tips touch the ground. Run the sweeper in a stationary position for 30 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 2-3 in. wide, running the entire length of the brush. (Compare the swept area with figure 19.)
5. Adjust the brush pattern as necessary according to instructions found in Adjusting Spring–Chain Assembly.

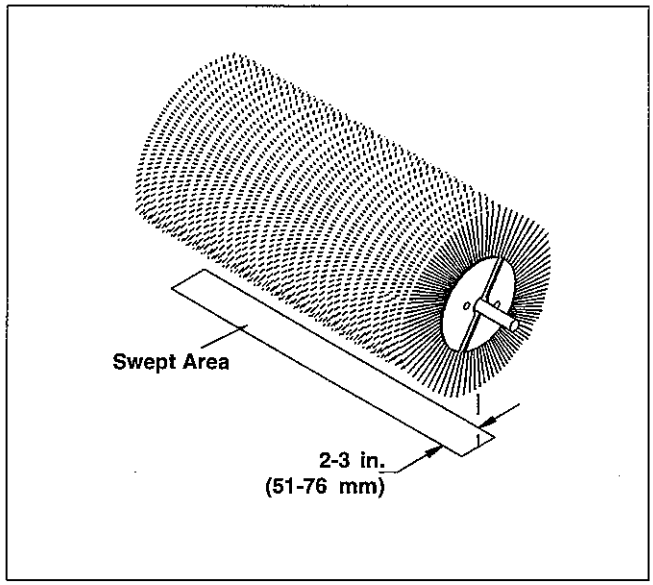


figure 19

Adjusting Spring–Chain Assembly

The spring–chain assembly sets the brush pattern by restricting up–and–down movement of the brush head assembly.

To adjust the brush pattern:

1. Raise the sweeper.
2. Increase or decrease the number of links in the spring–chain assembly between the mounting assembly chain holder and the brush head assembly chain holder.
   - Increase the number of links to lower the brush head assembly or
   - Decrease the number of links to raise the brush head assembly.
4. Adjust the transport chain.

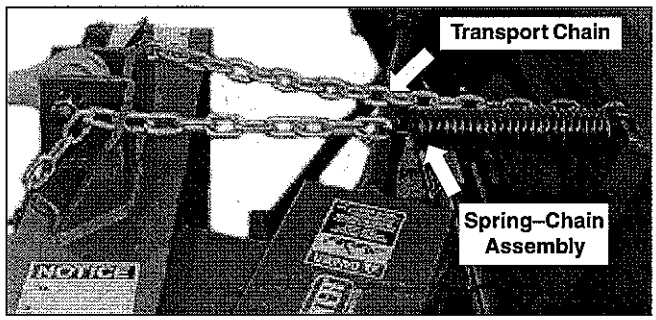


figure 20

Adjusting Transport Chain

The transport chain (figure 20) supports the weight of the brush head assembly during transport between work sites and during adjustment of the spring–chain assembly. When sweeping, the transport chain should have 1 or 2 links of slack.

To adjust the transport chain for moving between sites:

1. Lower the sweeper to the ground.
2. Pull the transport chain tight and secure it in the mounting assembly chain holder.
3. Raise the sweeper off the ground with the hitch lift. Most of the weight of the brush head assembly should be on the transport chain, not on the spring–chain assembly.

Sweeping

Model RHFA sweepers are powered from the rear PTO shaft at 540 rpm.

To start the sweeper, engage the PTO at idle. To stop, disengage the PTO at idle.

This sweeper has been assembled so it sweeps while moving forward. It can, however, sweep while moving in reverse. See Maintenance: Reversing Sweeping Direction to change sweeping direction.

Before sweeping, make sure storage stands are fully raised. They are designed to keep the brush off the ground when the sweeper is dismounted.

Raising & Lowering

To raise and lower the sweeper, use 3–point lift arms. Do not use a tip–and–tilt cylinder.

IMPORTANT – Avoid tip–and–tilt cylinder and sweeper damage. Raise and lower the sweeper only with 3–point lift arms. Do not use a tip–and–tilt cylinder.

IMPORTANT – Avoid driveline damage. Do not run brush in raised position. Only run brush with the sweeper lowered.

Angling

Use the angle feature to control the direction debris exits the sweeper. Angling the brush head the same direction as the wind also helps reduce the amount of material that blows onto the operator and the surface swept.

To swing the brush head assembly using a manual angle kit: remove the lock pin, swing the brush head to the desired angle by hand and then replace the lock pin.

With optional hydraulic angle kit, use the prime mover's remote valves to angle the sweeper.

OperatingTips

IMPORTANT – Avoid sweeper damage. Do not ram into piles of debris. Use a dozer blade for this type of job.

Snow

For wet, heavy or deep snow, adjust support chains so the mounting assembly is 20-22 in. (508-559 mm) off the ground with the unit lowered.

High brush speeds and low ground speeds work best. Start at 3/4 throttle and low gear. For wet/deep snow, increase to almost full throttle. This helps keep snow from packing inside the brush hood.

In deep snow make several passes to clean the surface.

Sweeping so the wind blows from behind the sweeper or with the brush angle keeps snow from blowing onto swept areas.

Dirt & Gravel

To keep dust at a minimum, try to sweep on overcast/ humid days or after it has rained or purchase the optional sprinkler system. Also, sweep so the wind blows at your back or in the direction the brush head is angled.

Low brush speeds and moderate ground speeds work best. Brush speeds that are too fast tend to raise dust without increasing efficiency.

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

Heavy Debris

For 2 in. (51 mm) or more of heavy debris, travel 5 mph (8 kph) or less.

Thatch

Low brush speeds and low prime mover speeds do the best thatching job.

To prevent the brush from pulling itself into the ground, adjust the spring–chain assembly so bristle tips barely touch the grass.

If the brush pulls into the grass and stalls while sweeping, use the lift to raise the brush. **Do not** increase throttle to override a stall out.

Use a combination of brush speeds and ground speeds that rolls up a neat windrow.

To keep thatch from blowing onto a swept area, sweep with the wind at your back or in the direction the brush is angled.

Storage

Brushes

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

Schedule

Procedure		Schedule				
		Before Each Use	After Every 40 Hours	Before Each Season	Refer to Tractor Manual	When Needed
Constant Velocity (CV) Drive Shaft – Lubricate with high–quality grease. (See Maintenance: Lubrication.)		✓				
Drive Chain –	Check for adjustment. (See Maintenance: Adjusting Drive Chain.)	✓				
	Remove chain from sprockets; soak in motor oil.		✓	✓		
	To loosen stiff links, soak in penetrating oil; bend back and forth. Replace chain if this does not work.					✓
Hardware – Tighten.		✓				
Lubrication Points – Lubricate with high–quality grease. (See Maintenance: Lubrication.)		✓				
Spring–Chain Assembly – Adjust. (See Adjustments: Adjusting Spring–Chain Assembly.)		✓				
Sprockets – Check alignment. (See Maintenance: Aligning Sprockets.)		✓				
Tractor Air Cleaner –	Check.	✓				
	Replace.				✓	
Universal Joints –	Check for wear. Tighten set screws and jam nuts.	✓				
	Lubricate with high–quality grease. (See Maintenance: Lubrication.)					✓

Maintenance Record

Use this log to record maintenance performed on your unit.

Date	Maintenance Performed	Performed By	Comments

Reversing Sweeping Direction

All RHFA sweepers are shipped with the gearbox set to sweep forward while driving forward. To reverse the gearbox rotation to sweep while backing up:

1. Remove drive shafts and the shield from the gearbox (figure 21).
2. Remove the gearbox from the mounting assembly (figure 22).
3. Remove the vent plug and drain plug (figures 23 and 24). Reinstall plugs in the opposite holes. Tighten both plugs securely.
4. Reinstall the gearbox (figure 25). The vent plug must be on top of the gearbox.
5. Reinstall the gearbox shield (figure 26).

WARNING –Avoid serious injury or death. Do not operate the sweeper without all shields installed.

6. Install drive shafts on gearbox shafts. Tighten set screws and jam nuts.
7. Check gearbox lubricant level. Fill if necessary. (See Maintenance: Lubrication).
8. Operate the unit at a low rpm while observing for excessive vibrations or other problems. Correct before using the unit.

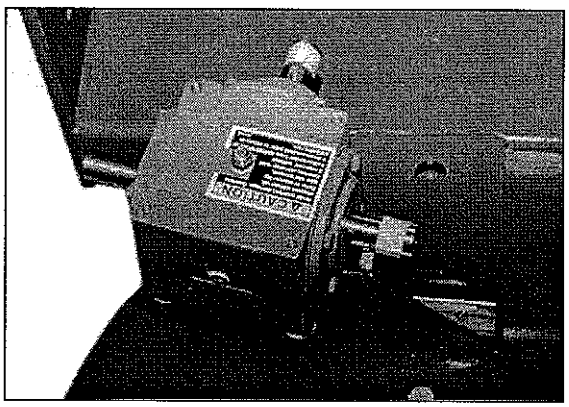


figure 21

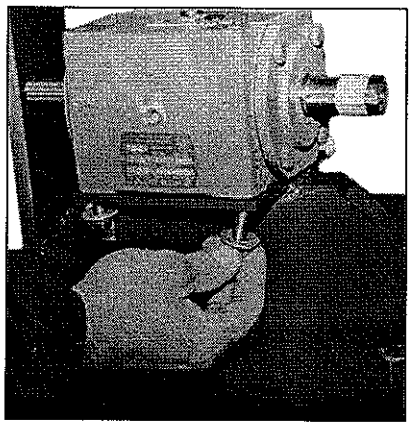


figure 22

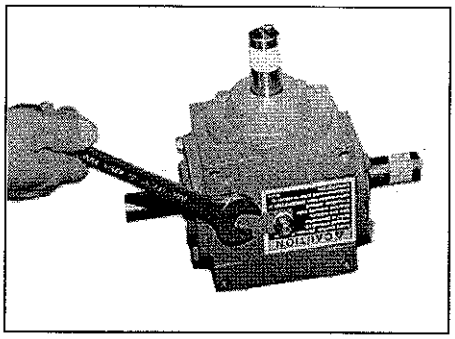


figure 23

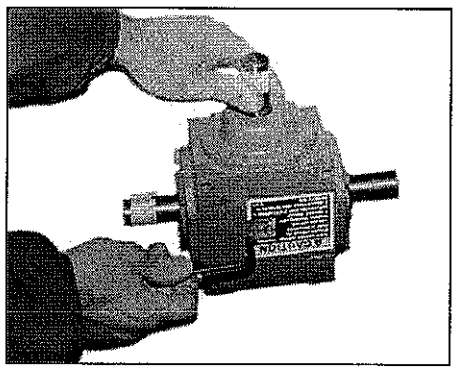


figure 24

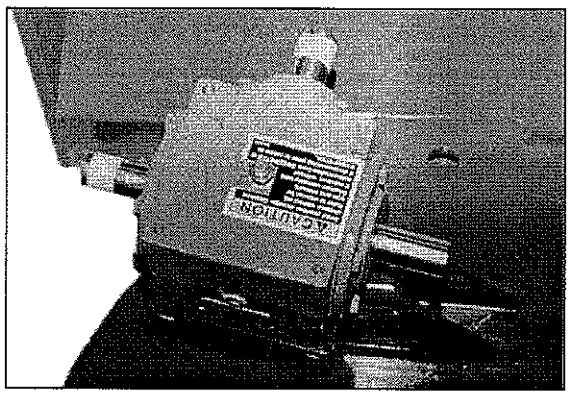


figure 25

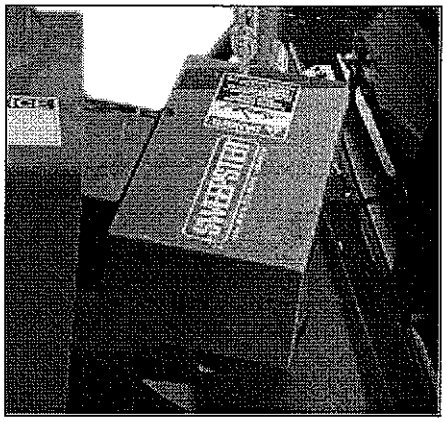


figure 26

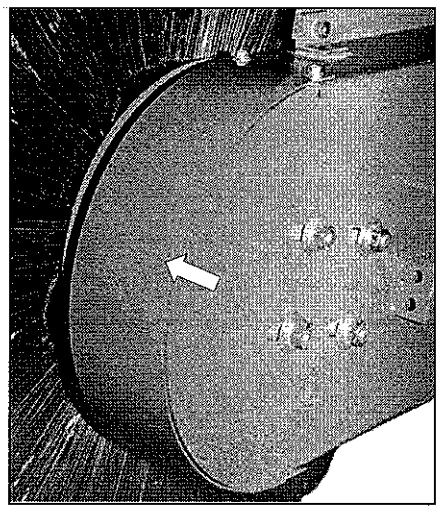


figure 27

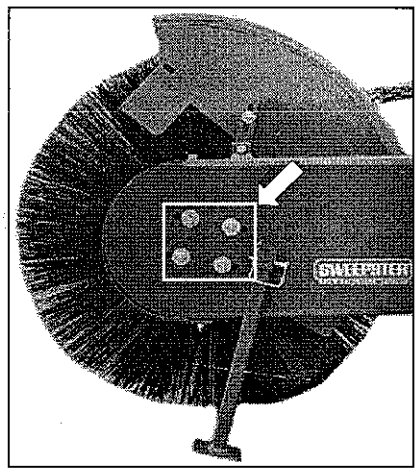


figure 28

Adjusting Drive Chain

1. Remove the rear chain shield (figure 27).
2. Loosen but do not remove 4 bolts securing bearing assemblies on both sides of the brush head assembly (figures 28 and 29).
3. Slide the brush forward until there is 3/8 to1/2 in. (10 to 13 mm) of play in the chain.

IMPORTANT – Avoid drive chain and sprocket damage. The drive chain must have 3/8 to 1/2 in. (10 to 13 mm) of play. Overtightening wears the chain and sprockets prematurely.

4. Tighten 4 bolts on each bearing assembly to hold the assemblies in place.
5. Reinstall the rear chain shield.

WARNING –Avoid serious injury or death. Do not operate the sweeper without all shields in place.

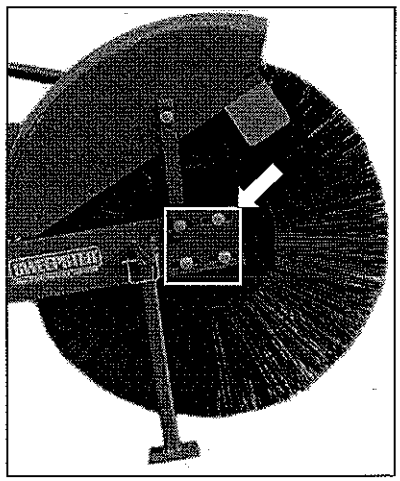


figure 29

Aligning Sprockets

Keep sprockets aligned to prevent chain derailment and reduce wear on the drive chain and sprockets.

1. Remove front (figure 30) and rear (figure 31) chain shields from the fixed chain shield.
2. For each sprocket, measure from inside the fixed chain shield to the center of the chain (figure 32).
3. Compare measurements.
   - If they are the same, sprockets are aligned.
   - If they are different, loosen the set screw on the small sprocket. Adjust it until it is the same distance as the large 1. Tighten the set screw.
4. Reinstall chain shields.

WARNING –Avoid serious injury or death. Do not operate the sweeper without all shields in place.

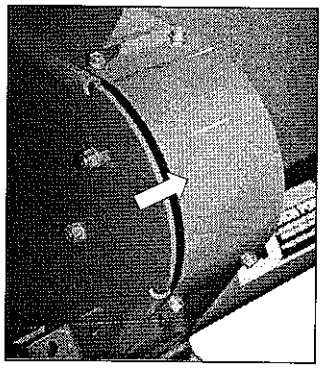


figure 30

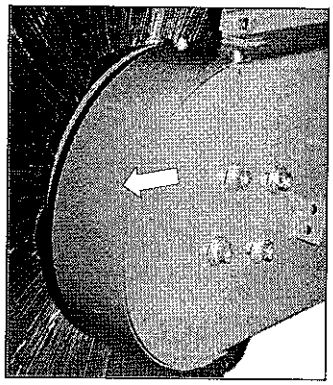


figure 31

Replacing Brush Sections

1. Loosen 4 carriage bolts holding each bearing assembly (figures 33 and 34).
2. Remove front (figure 30) and rear (figure 31) chain shields.
3. Rotate the brush to locate the master link. Remove the master link and chain.

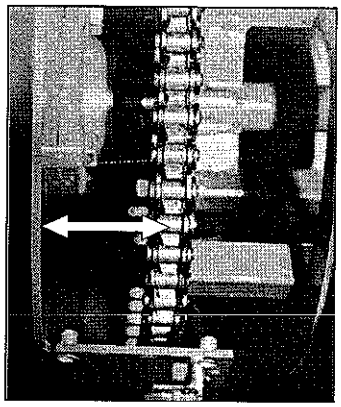


figure 32

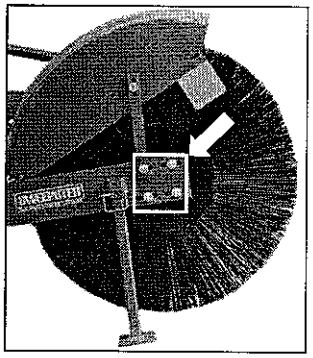


figure 33

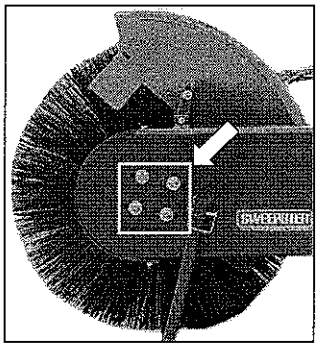


figure 34

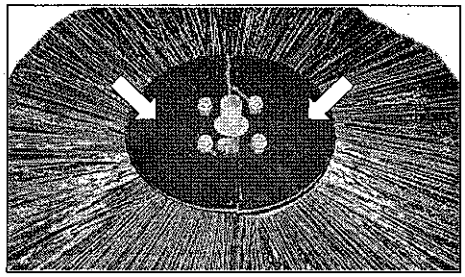


figure 35

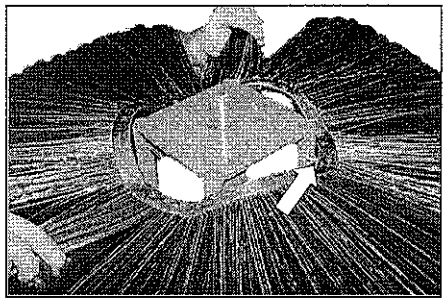


figure 36

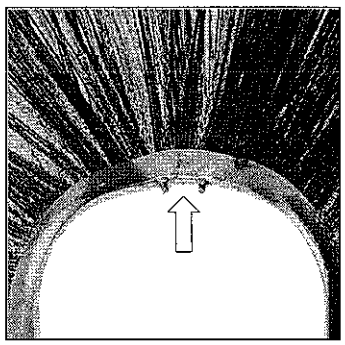


figure 37

4. Pull the brush out from under the hood.
5. Stand the brush securely on blocks.
6. Remove retainer plate halves (figure 35) from 1 end of the brush.
7. Slide old sections off the core.
8. Slide the first, polypropylene section onto the core (figure 36). Be sure drive pins (figures 36 and 37) straddle a tube.

NOTE – Always install a polypropylene section on each end of the core – 1 first and 1 last.

NOTE – Drive pins must all angle up or angle down.

10. Install a second section with drive pins rotated 180° from those on the first section (figure 38).
11. Continue installing sections, rotating each section 180° until the core is full.

NOTE – If the last section will take more space than is left, but more than 1/2 in. (13 mm) remains, nest the last section on the previous 1. Do this by placing both sections' drive pins on 1 tube.

NOTE – With new brushes, bristles may bend into the chain. Trim them to prevent chain derailment.

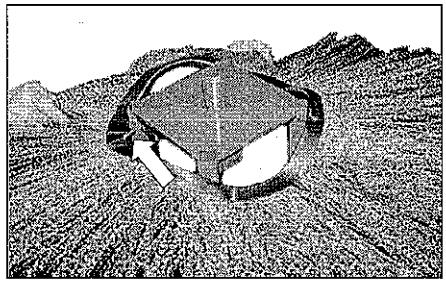
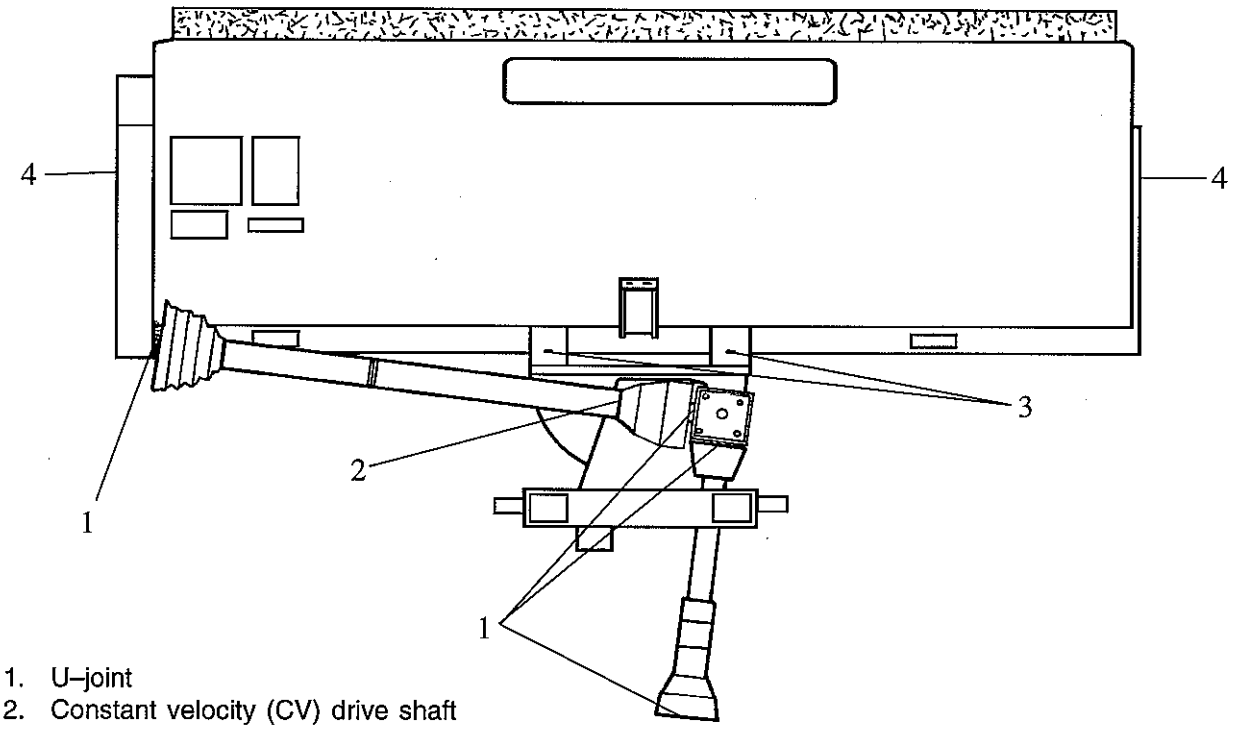


figure 39

Lubrication

Zerk Fittings

Grease zerk fittings before each startup. Figure 39 shows locations.



1. U–joint
2. Constant velocity (CV) drive shaft
3. Brush head pivot (center bearing)
4. Bearing

figure 39

Gearbox

To check gearbox lubricant level, remove the side plug located in the hinged area of gearbox shield.

- If lubricant seeps out the hole, the gearbox is full.
- If not, add multipurpose 90–weight gear lubricant.

To add lubricant:

1. Remove the top and side plugs.
2. Pour multipurpose 90–weight gear lubricant into the top hole until lubricant runs out the side hole.
3. Replace both plugs.

Constant Velocity (CV) Drive Shaft

Lubricate the constant velocity (CV) drive shaft with high–quality grease to extend the life of the driveline. See figure 40 for intervals and locations.

Clean and grease the input driveline before each prolonged period of non–use.

To grease telescoping members without zerk fittings, pull apart and grease manually.

Check and grease guard tubes in winter to prevent freezing.

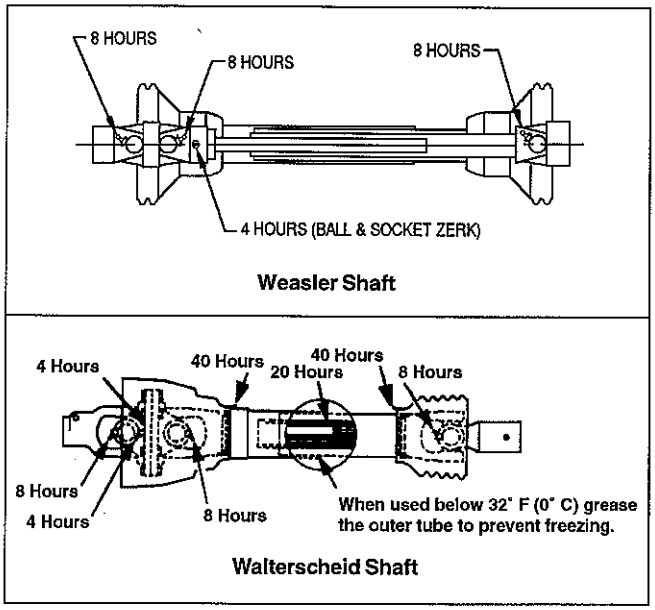


figure 40

Troubleshooting

Brush Head

Problem	Possible Causes	Possible Remedies
Brush rotates wrong direction	Gearbox is flipped	Remove gearbox, switch breather cap and plug; remount gearbox
Brush head assembly "bounces" during sweeping	Spring–chain assembly needs adjustment	Adjust spring–chain assembly (See Maintenance: Adjusting Spring–Chain Assembly.)
	Ground speed too fast and/or brush speed too slow	Find correct combination of ground and brush speeds
	Core is bent	Replace core
Brush wears unevenly	Brush head not level	Level brush head (See Adjustments: Leveling.)
Brush wears very quickly	Spring–chain assembly not adjusted correctly	Adjust spring–chain assembly (See Maintenance: Adjusting Spring–Chain Assembly.)
	Brush speeds too high	Use slower brush speeds
Drive chain falls off repeatedly	Sprockets not aligned	Align sprockets (See Maintenance: Aligning Sprockets.)
	Too little tension on drive chain	Tighten drive chain (See Maintenance: Adjusting Drive Chain.)

Gearbox

Problem	Possible Causes	Possible Remedies
Gearbox does not turn	Broken shaft or gear	Do no open a gearbox still under warranty; contact SWEEPSTER for replacement parts and service policy
Oil leaking from pinion housing, caps, cap screws or pipe plugs	Loose hardware	Retighten hardware or remove and coat with Loctite® before tightening; if necessary, replace gaskets
High internal operating temperature (above 200° F [93.33° C])	Damaged bearings	Replace bearings
	Too little oil	Add oil
Excessive end play of shafts (.005 in. [.13 mm] or more) when couplings are removed	Worn bearings	Remove gaskets between caps and gear case; replace if necessary
Excessive backlash	Worn gears	Adjust gears; replace, if necessary

Constant Velocity (CV) Drive Shaft

Problem	Possible Causes	Possible Remedies
End and/or inboard yoke ears spread	Drive shaft too long	Adjust drive shaft length; replace parts
	Axial forces too high – running above recommended rpm	Clean and grease profile tubes; replace parts; replace both tubes, if necessary
End yoke ears have pressure marks	Excessive bend angle when shaft rotates	Avoid running brush in raised position; switch off tractor PTO during cornering or when lifting the brush head; replace parts
End yoke bearing caps blued	Insufficient lubrication	Follow lubrication instructions (See Maintenance: Lubrication.); replace parts
Inboard yoke ears have pressure marks	Excessive bend angle when shaft rotates	Avoid running brush in raised position; switch off tractor PTO during cornering or when lifting the brush head; replace parts
	Drive shaft too long	Adjust drive shaft length
Inboard yoke bearing caps blued	Insufficient lubrication	Follow lubrication instructions; replace parts
Shield tube deformed and split on 1 side	Shield tube too short or no overlap at all when drive shaft is extended	Adjust shield tube length; replace parts
Shield tubes damaged	Shields contact components on tractor and/or sweeper	Allow more clearance; replace parts
Shield cone destroyed	Shield cone contacts components on tractor and/or sweeper	Allow more clearance; replace parts
Telescoping sections distorted	Overload caused by high starting and peak torques or blocking	Engage and disengage at idle; replace parts

Telescoping Shaft

Problem	Possible Causes	Possible Remedies
Shaft bent	Tractor toplink not adjusted correctly	Adjust tractor toplink so swing frame is perpendicular to ground

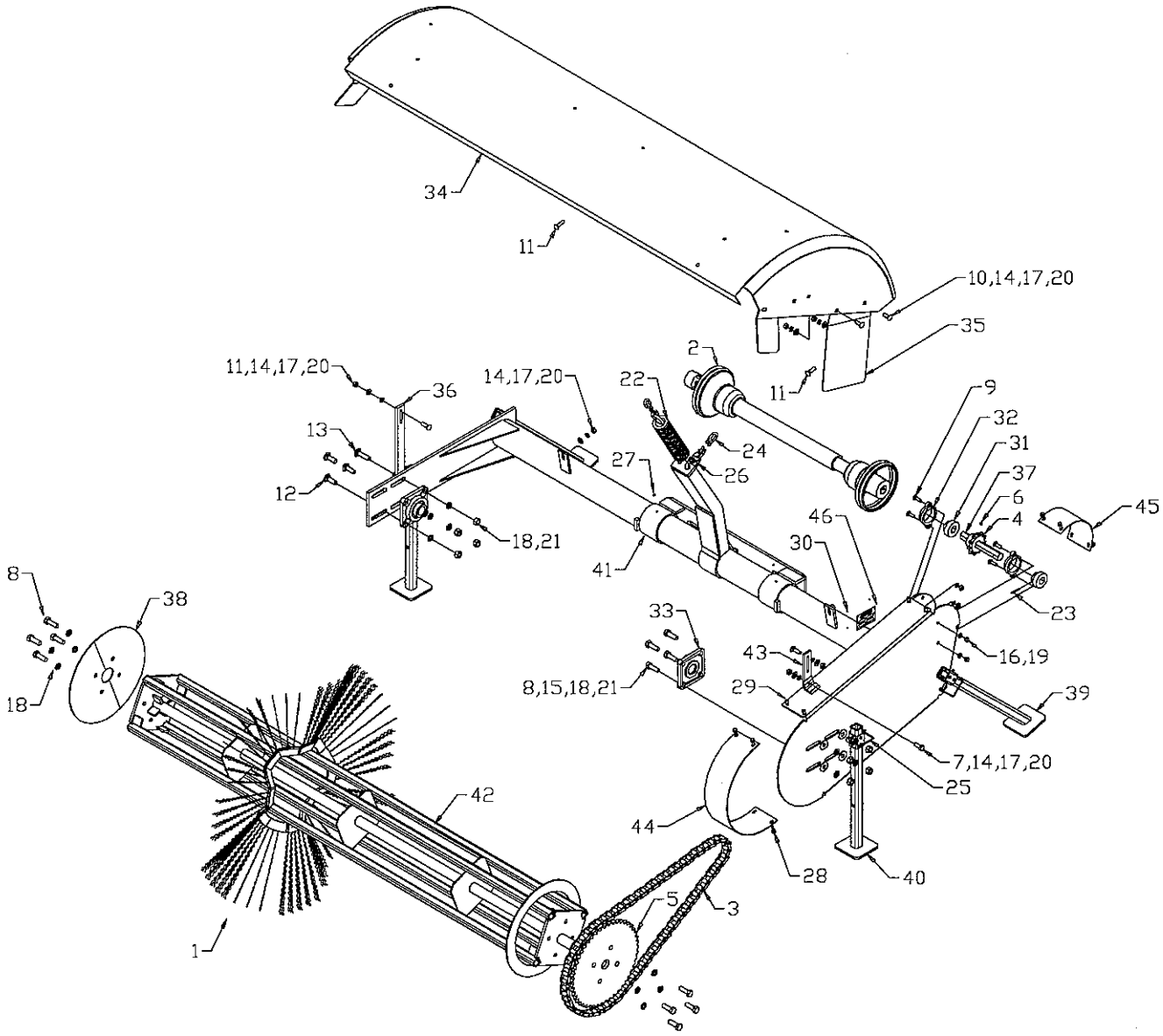
Brush Head

Item	Part	Qty	Description
1.	01-0272C	1	Section, Set, Poly, 5
	01-0020C	1	Section, Set, Poly, 6
	01-0079C	1	Section, Set, Poly, 7
	01-0080C	1	Section, Set, Poly, 8
	01-0273C	1	Section, Set, Wire, 5
	01-0021C	1	Section, Set, Wire, 6
	01-0083C	1	Section, Set, Wire, 7
	01-0084C	1	Section, Set, Wire, 8
	01-0274C	1	Section, Set, Combination, 5
	01-0022C	1	Section, Set, Combination, 6
	01-0081C	1	Section, Set, Combination, 7
	01-0082C	1	Section, Set, Combination, 8
2.	05-0983	1	Shaft, Telescoping, CV, 1 Round–7/8 Hex, 42-1 (5 and 6 ft)
	05-0859	1	Shaft, CV, 1 Round–7/8 Hex (7 and 8 ft)
3.	06-0086	1	Chain, #60 x 88, with Master
4.	06-0180	1	Sprocket, 60B11 x 7/8 Hex
5.	06-0208	1	Sprocket, 60A48 x 1-1/4 Rd, with Holes
6.	07-0002	1	Screw, Set, 5/16-18 x 5/16
7.	07-0024	9	Screw, Cap, 3/8 x 1
8.	07-0042	12	Screw, Cap, 1/2-13 x 1-1/2
9.	07-0105	4	Bolt, Carriage, 5/16 x 1
10.	07-0108	2	Bolt, Carriage, 3/8 x 3/4
11.	07-0114	4	Bolt, Carriage, 3/8-16 x 1-1/4
12.	07-0116	3	Bolt, Carriage, 1/2 x 1-1/2
13.	07-0117	1	Bolt, Carriage, 1/2 x 2
14.	07-0154	7	Washer, Flat, 3/8
15.	07-0156	4	Washer, Flat, 1/2
16.	07-0167	4	Washer, Lock, Split, 5/16
17.	07-0168	7	Washer, Lock, Split, 3/8
18.	07-0170	16	Washer, Lock, Split, 1/2
19.	07-0182	4	Nut, Hex, 5/16-18
20.	07-0183	7	Nut, Hex, 3/8-16
21.	07-0184	8	Nut, Hex, 1/2-13

Item	Part	Qty	Description
22.	07-0216	1	Spring, Tension, 1.87 x 10.31
23.	07-0239	1	Pin, Spring, Lock, 3/16 x 1-1/4
24.	07-1557	2	Chain, 1/4, 27 Links
25.	07-1607	4	Pin, Lock, 5/16, Square Bail, Leg Lock
26.	07-2032	1	Clevis, Double Link, 9/32
27.	07-2681	2	Fitting, Zerk, Drive-In, 1/4
28.	07-2952	8	Screw, M6 x 1 x 20
29.	07-3922	8	Nut, Insert, M6 x 1, Grip Length .165-.251
30.	07-3624	4	Tack, Metal
31.	08-0034	2	Bearing, 7/8 Hex, with Hole
32.	08-0029B	2	Flange, Bearing, 2 Hole
33.	08-0067	2	Bearing1-1/4, 4 Bolt
34.	11-1430	1	Hood, 5
	11-1608	1	Hood, 6
	11-1806	1	Hood, 7
	11-1664	1	Hood, 8
35.	11-1625	1	Shield, Bristle
36.	11-1626	1	Bracket, Hood, 11.50, RHFA
37.	11-3725-48	1	Shaft, Hex, 7/8, 6-1/2
38.	11-9220	1 set	Plate, Retainer, Section
39.	13-0798	2	Leg, Rear
40.	13-0799	2	Leg, Front
41.	13-0801-4	1	Frame, Brush, 5
	13-0801-1	1	Frame, Brush, 6
	13-0801-2	1	Frame, Brush, 7
	13-0801-3	1	Frame, Brush, 8
42.	13-0832	1	Core, 6
	13-0830	1	Core, 7
	13-0837	1	Core, 5
	13-0833	1	Core, 8
43.	13-0838	1	Bracket, Hood, 5
44.	13-8256	1	Plate, Chain, Guard, Front
45.	13-8257	1	Plate, Chain, Guard, Rear
46.	50-0004	1	Label, Plate, Serial Number

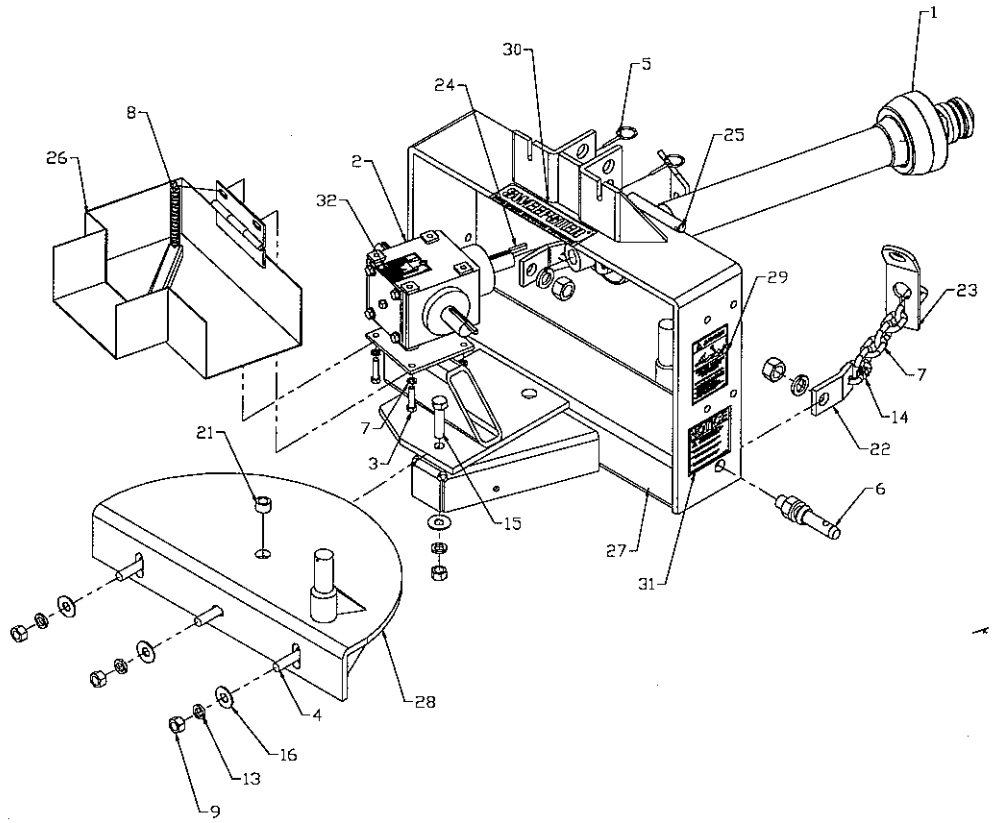
Brush Head

52-0421



Mounting Assembly

Assembly 11-4038



Item	Part	Qty	Description
1.	05-0857	1	Shaft, Telescoping, U-Joint, 1-3/8, 6 Spline, Quick Disconnect, 1 Round, 43-1/4 Extended
2.	05-1111	1	Gearbox, 1:1, T-Style, 3 Shafts
3.	07-0018	6	Screw, Cap, 3/8-16 x 1
4.	07-0119	3	Bolt, Carriage, 5/8 x 1-3/4
5.	07-0244	2	Pin, Lynch, 1/4
6.	07-0285	2	Pin, Link, Cat I
	07-0688	2	Pin, Link, Cat II (Must be special ordered)
7.	07-0290	2	Chain, 1/4, 39 Links
8.	07-0324	1	Spring, Tension, 1/2 x 3
9.	07-1294	4	Nut, Hex, 5/8-11
10.	07-1718	6	Washer, Lock, Split, 3/8
13.	07-1872	4	Washer, Lock, Split, 5/8
14.	07-2032	2	Clevis, Double Link, 9/32
15.	07-2855	1	Screw, Cap, 5/8-11 x 2 1/2
16.	07-3120	4	Washer, Flat, 5/8
21.	11-1854	1	Bushing, 1 x 5/8 x 5/8
22.	11-1888	2	Plate, Support, Chain, RHFA
23.	13-0440	2	Bracket, Chain, Top Link, 3 Point
24.	13-1430	2	Key, 1/4 x 1-1/4
25.	13-2002	1	Pin, Toplink, 3-Point
26.	13-3215	1	Shield, Gearbox, RHFA, 3-Shaft Gearbox
27.	13-4614	1	Frame, Swing, RHFA, CV, with Pins, for 3-Shaft Gearbox, SAE
28.	13-4823	1	Swing, Plate, CV
29.	50-0115	2	Label, Danger, Rotating, Driveline
30.	50-0184	1	Label, Logo, SWEEPSTER
31.	50-0206	2	Label, Notice, Cut, Drive Shaft
32.	50-0236	1	Label, Gearbox, Hubcity, Check Oil

NOTE – If a shaft becomes bent or damaged or will not telescope, the entire shaft must be replaced.

Drive Shaft 05-0983 (for 5 & 6 ft)

Part	Description
05-0984	Shaft, Half, 1 Rd End
05-0985	Shaft, Half, Hex End
05-0986	Shield, Half, 1 Rd End
05-0987	Shield, Half, Hex End
07-0573	Kit, U-Joint, Cross, Repair

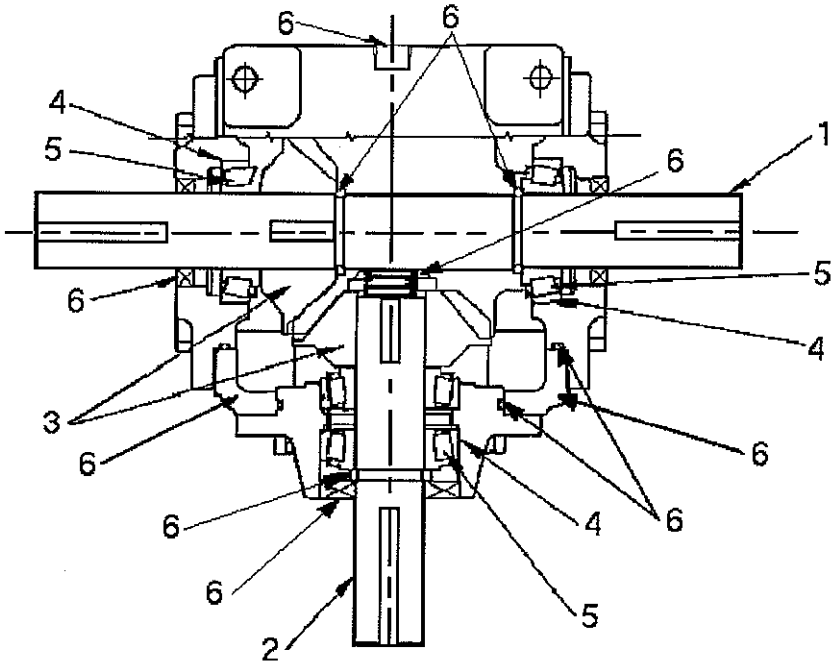
Drive Shaft 05-0859 (for 7 & 8 ft)

Part	Description
05-0914	Shield, Half, 1 Rd End
05-0915	Shield, Half, 7/8 Hex End
05-1251	Kit, U-Joint, Cross, Repair

Drive Shaft 05-0857

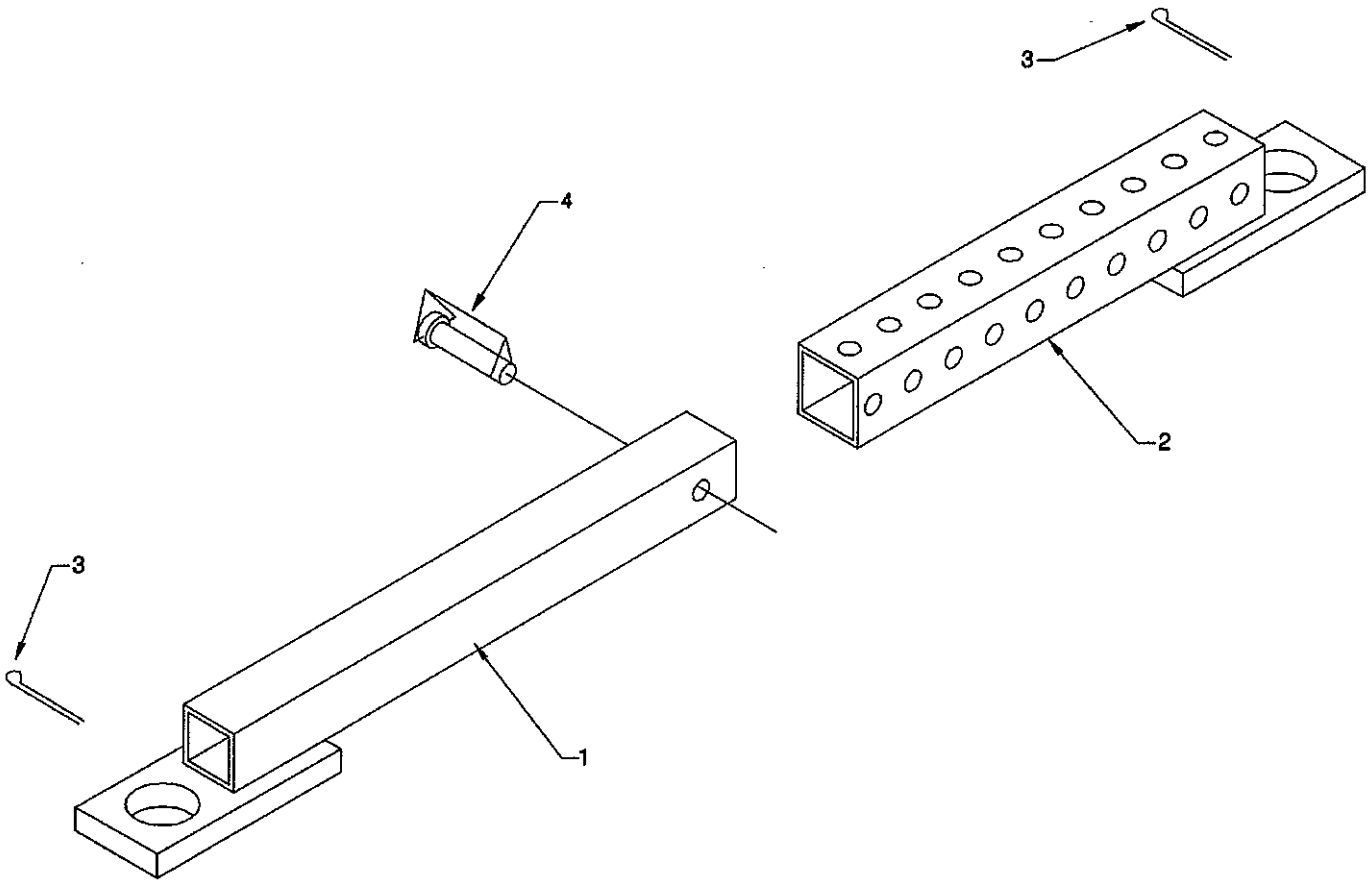
Part	Description
05-0924	Shield, Outer, Splined End
05-0925	Shield, Inner, 1 Rd End
05-0686	Bearing

05-1111 Left–Hand Rotation



Item	Part	Qty	Description
1.	05-1136	1	Shaft, Cross
2.	05-1137	1	Shaft, Pinion
3.	05-0503	2	Gear, Straight Bevel
4.	05-0506	4	Cup, Bearing
5.	05-0507	4	Cone, Bearing
6.	05-1138	1	Kit, Repair

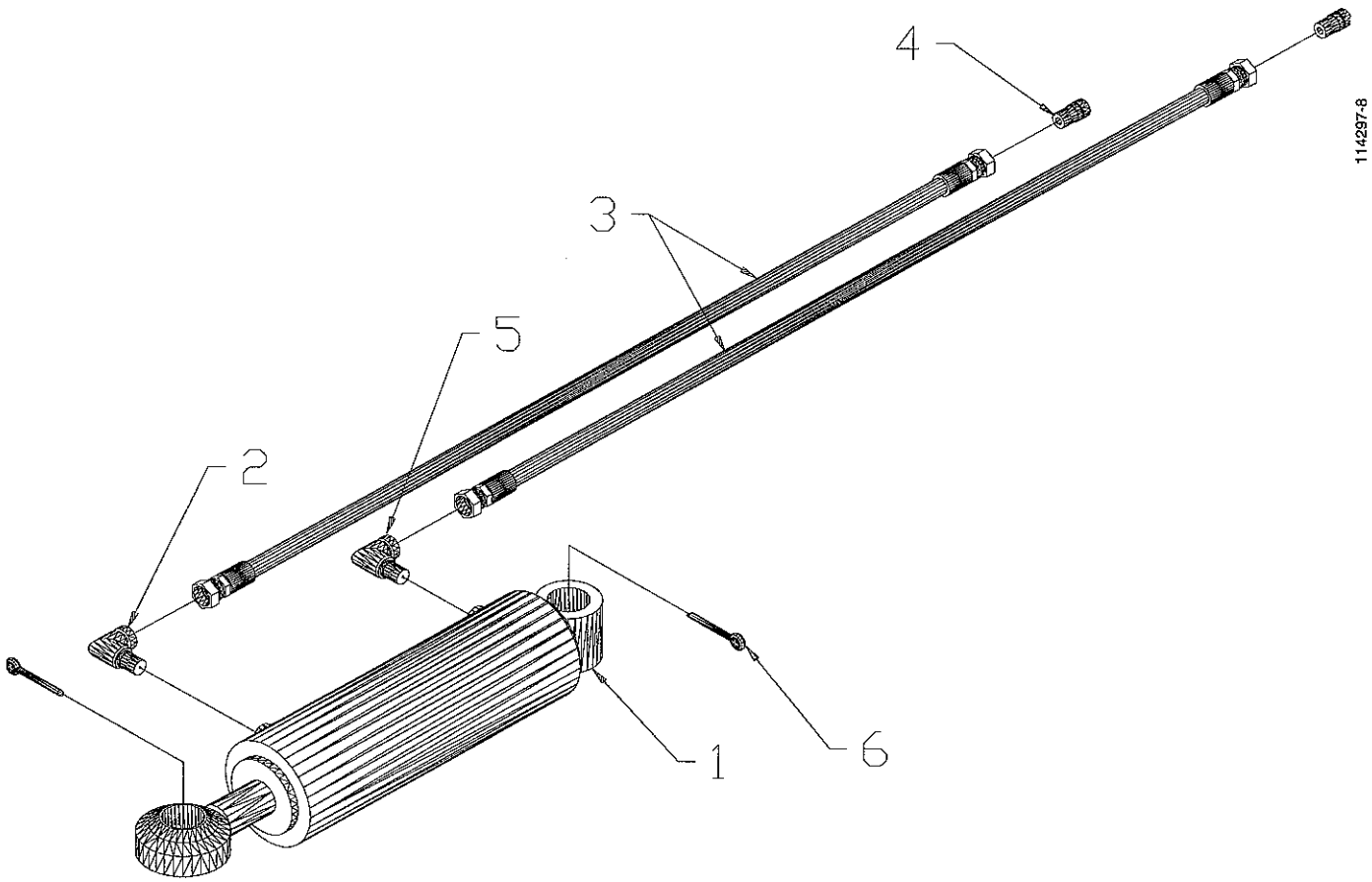
Manual Angle
To order, ask for kit 13-3406.



Item	Part	Qty	Description
1.	13-4199	1	Link, Inner
2.	13-4200	1	Link, Outer
3.	07-0206	2	Pin, Cotter, 3/16 x 2
4.	07-2105	1	Pin, Lock, 3/8 Square

Angle Kits

Hydraulic Angle
To order, ask for kit 11-4297 or 11-4298.



Item	Part	Qty	Description
1.	03-1929	1	Cyl, Hyd, 3–Bore, 7-1/2 Strk
2.	03-2092	1	Fitting, Elb, HP, 90, 9/16 MOR, 3/8 MFS
3.	03-2155	2	Hose, 1/4 x 72, 1 W, 3/8 FFS, 3/8 FFS (11-4298)
	03-2158	2	Hose, 1/4 x 144, 1 W, 3/8 FFS, 3/8 FFS (11-4297)
4.	03-2159	2	Fitting, Adapter, HP, 3/8 MFS, 1/4 MP
5.	03-2345	1	Fitting, Orifice, .078, Elb 90, HP, 9/16 MOR, 3/8 MFS
6.	07-0206	2	Pin, Cotter, 3/16 x 2

Option – Dirt Deflector

Installation

1. Attach each angle to the deflector shield with a bolt, flat washer, lock washer and hex nut. Do not tighten the hardware completely.

2. Position the deflector shield behind the mounting assembly (figure 41).

3. Fasten each of the 2 center angles to the frame with a bolt, lock washer and hex nut. Holes are predrilled in the frame for this step (figure 41).

4. Use a transfer punch to locate holes in the frame for outer angles.

5. Drill holes with a 13/32 in. bit.

6. Fasten each of the outer angles with a bolt, lock washer and hex nut. Holes are cut in the opposite (front) side of the frame to make it easier to attach the washers and nuts.

7. Tighten all hardware securely.

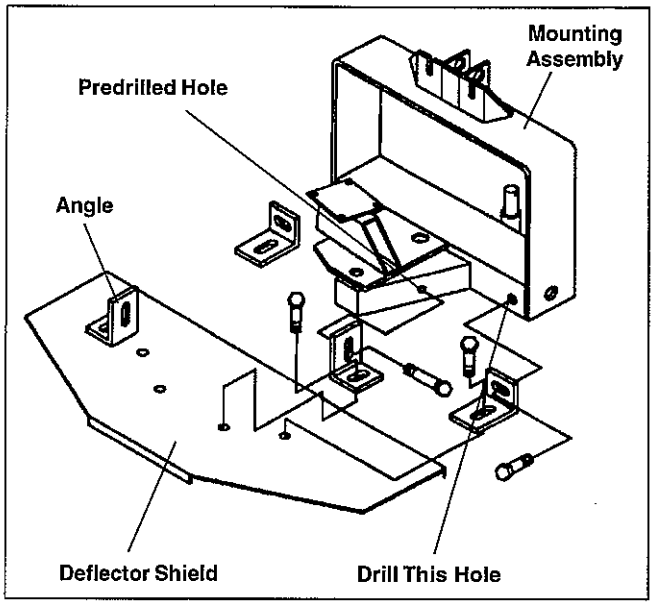
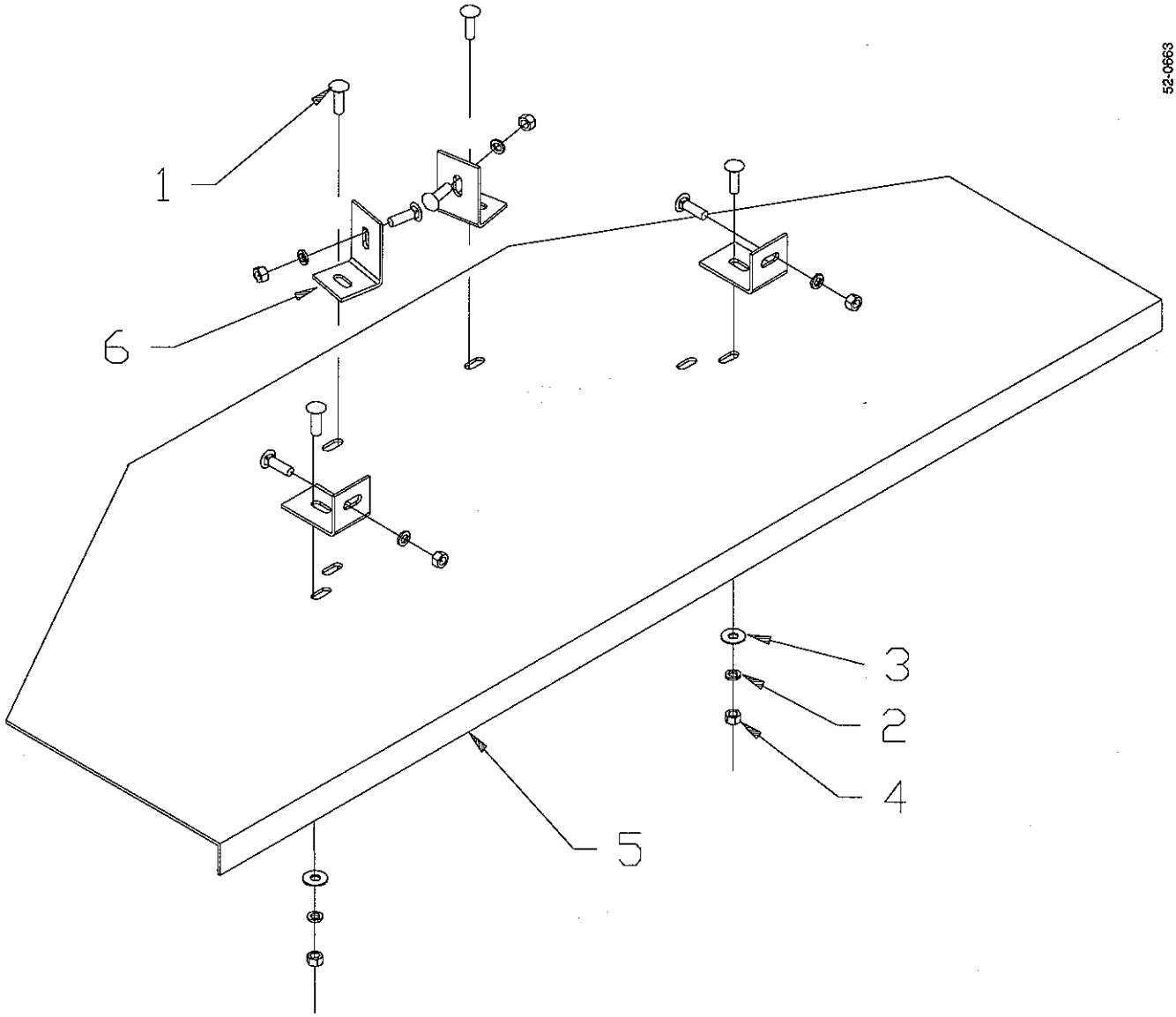


figure 41

Option – Dirt Deflector

To order, ask for RHFADD.



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

Installation

1. Install the tank, pump and strainer. Follow steps a through i to mount a tank purchased from SWEEPSTER.

   a. Clamp the tank mounting plate to the mounting assembly with a 10 in. (254 mm) distance between the top of the mounting frame and the underside of the tank mounting plate (figure 42). Be sure the front edge of the mounting frame and the front edge of the tank mounting plate are flush (figure 42).

   b. Transfer punch holes in the tank mounting plate onto the mounting frame.

   c. Remove the tank mounting plate.

   d. Drill holes with a 17/32 in. bit.

   e. Attach the tank mounting plate to the mounting frame using 8, 1/2 x 1 1/2 in. (13 x 38 mm) cap screws, lock washers and nuts provided with the water tank kit.

   f. Secure the water tank to the tank mounting plate with 4, 5/16 x 3/4 in. (8 x 19 mm) cap screws, lock washers and flat washers provided in the water tank kit.

   g. Attach the pump and strainer, provided with the sprinkler system kit, to the inside of the tank mounting plate with 4, 1/4 x 1 1/4 in. (6 x 32 mm) cap screws, flat washers, lock washers and nuts provided in the water tank kit (figure 43).

   h. Install fittings on the tank in the following order: elbow fitting, shut–off valve, reducer fitting and barb fitting.

   i. Connect the 7 ft (2.1 m) hose, provided with the sprinkler system kit, from the barb fitting to the strainer. Secure with 7/8 in. (22 mm) spring clamps.

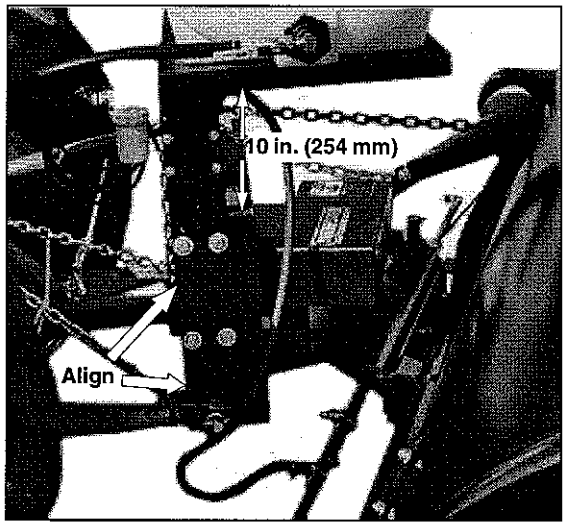


figure 42

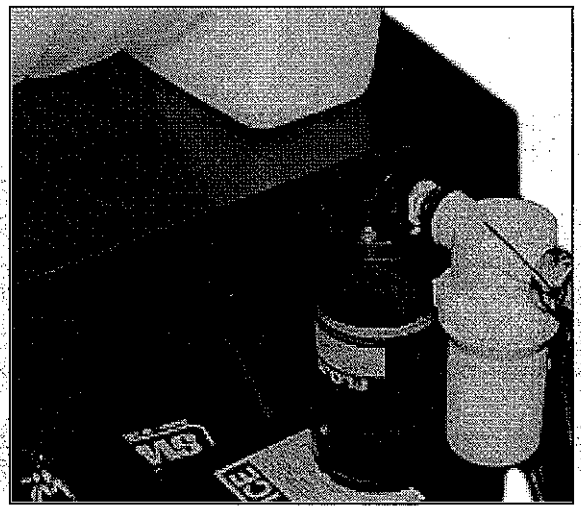


figure 43

2. Attach quick disconnect terminals to the water pump motor with the male to the red wire and the female to the black wire. Then, connect quick disconnect terminals to the wire cord with the female to the white wire and the male to the black wire.

Continued on the next page

CAUTION – Avoid equipment damage. Before drilling, check to make sure that you will not drill into any wires or other objects.

3. Install the control switch, provided in the sprinkler system kit.

   a. Install the control switch in a convenient location on the prime mover.

   b. Attach 1 wire from the control switch to Accessory and another wire a white wire.

   c. Run a black wire to a good ground on the prime mover.

4. Attach the spray bar to the brush hood.

   • To use this kit while driving forward:

   a. Install spray bar mounting plates on the spray bar assembly.

NOTE – When installing without the water tank kit, make mounting plates. See figure 44 for dimensions.

   b. Clamp mounting plates on the brush hood. Place top holes in the mounting plates 10 in. (254 mm) from the bottom of the hood (figure 45). Center the spray bar from left to right.

   c. Transfer punch holes from the mounting plates onto the brush hood.

   d. Remove the spray bar assembly.

   e. Drill holes with a 13/32 in. bit.

   f. Attach the spray bar assembly to the brush hood with 4, 3/8 x 1 in. (10 x 25 mm) cap screws, flat washers, lock washers and nuts provided in the water tank kit.

   • To use this kit while driving in reverse, attach the spray bar assembly with 4, 3/8 x 1 in. (10 x 25 mm) carriage bolts, flat washers, lock washers and nuts. Use holes predrilled in the top edge of the brush hood.

NOTE – Do not use the spray bar mounting plates provided in the water tank kit.

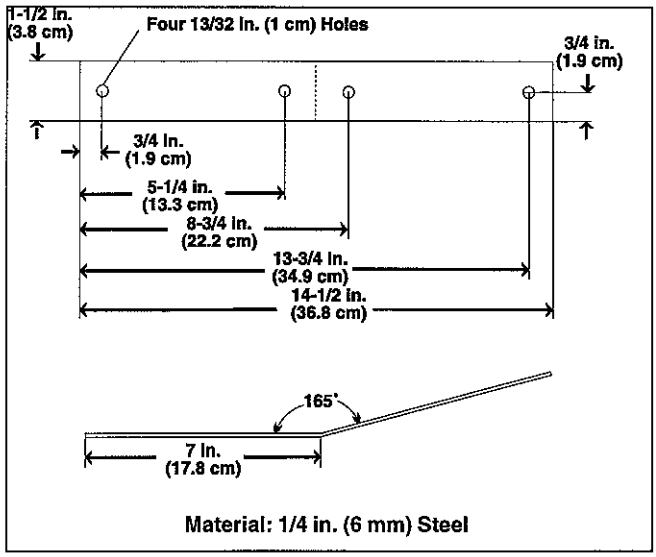


figure 44

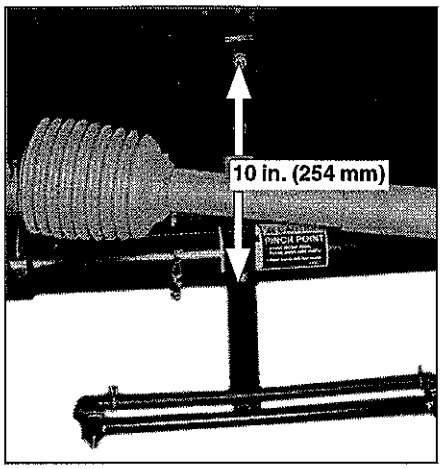


figure 45

5. Connect the 25 ft, 26 1/4 ft or 27 1/2 ft (7.6 m, 8 m or 8.3 m) hose from the spray bar assembly to the pump. Secure with 5/8 in. (16 mm) spring clamps.

6. For sprinkler systems using the water tank kit, install the lift safety feature.

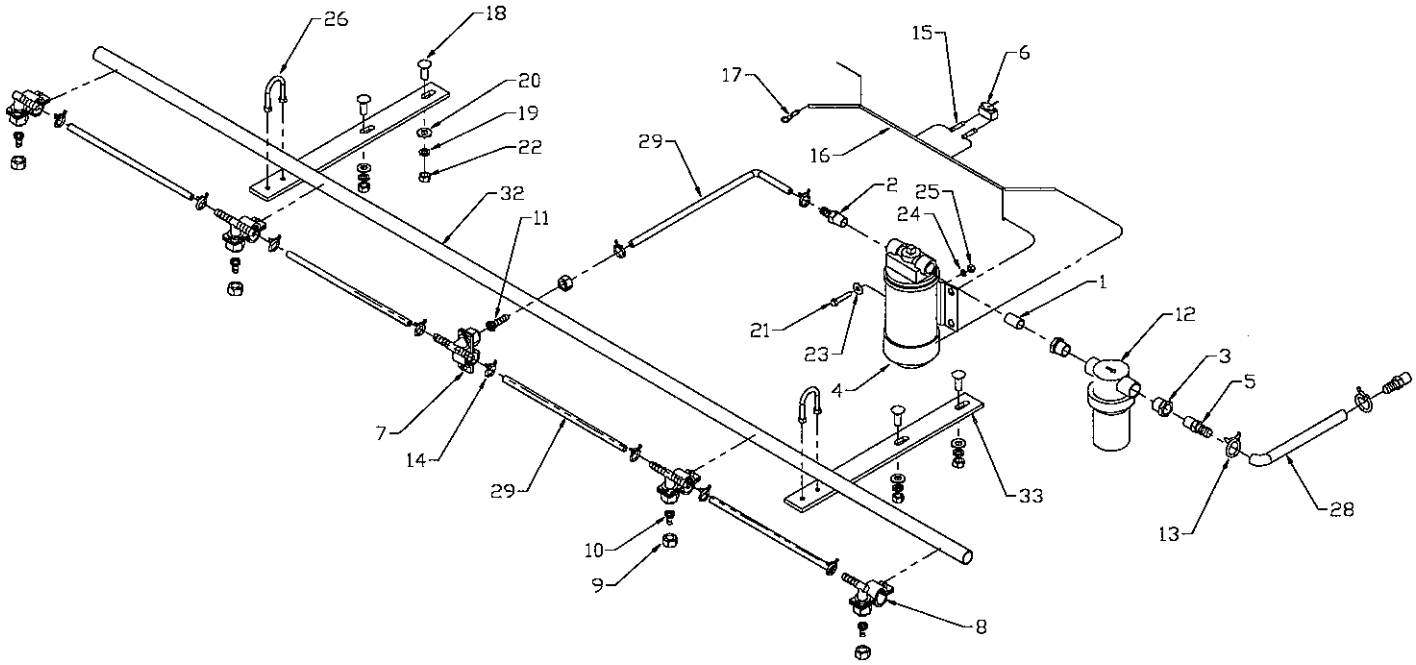
   a. Place the carriage bolt, washer and lock nut, provided in the water tank kit, in the 3–point lift lever bracket.

   b. Lift the unit so the brush is off the ground but the tank does not hit any part of the prime mover.

   c. Adjust the bolt so it does not allow the lever to lift the unit any further. Tighten the hardware.

Option – Sprinkler

Sprinkler System
To order, ask for kit 11-4045 (6 ft), 11-4171 (7 ft) or 11-4062 (8 ft).

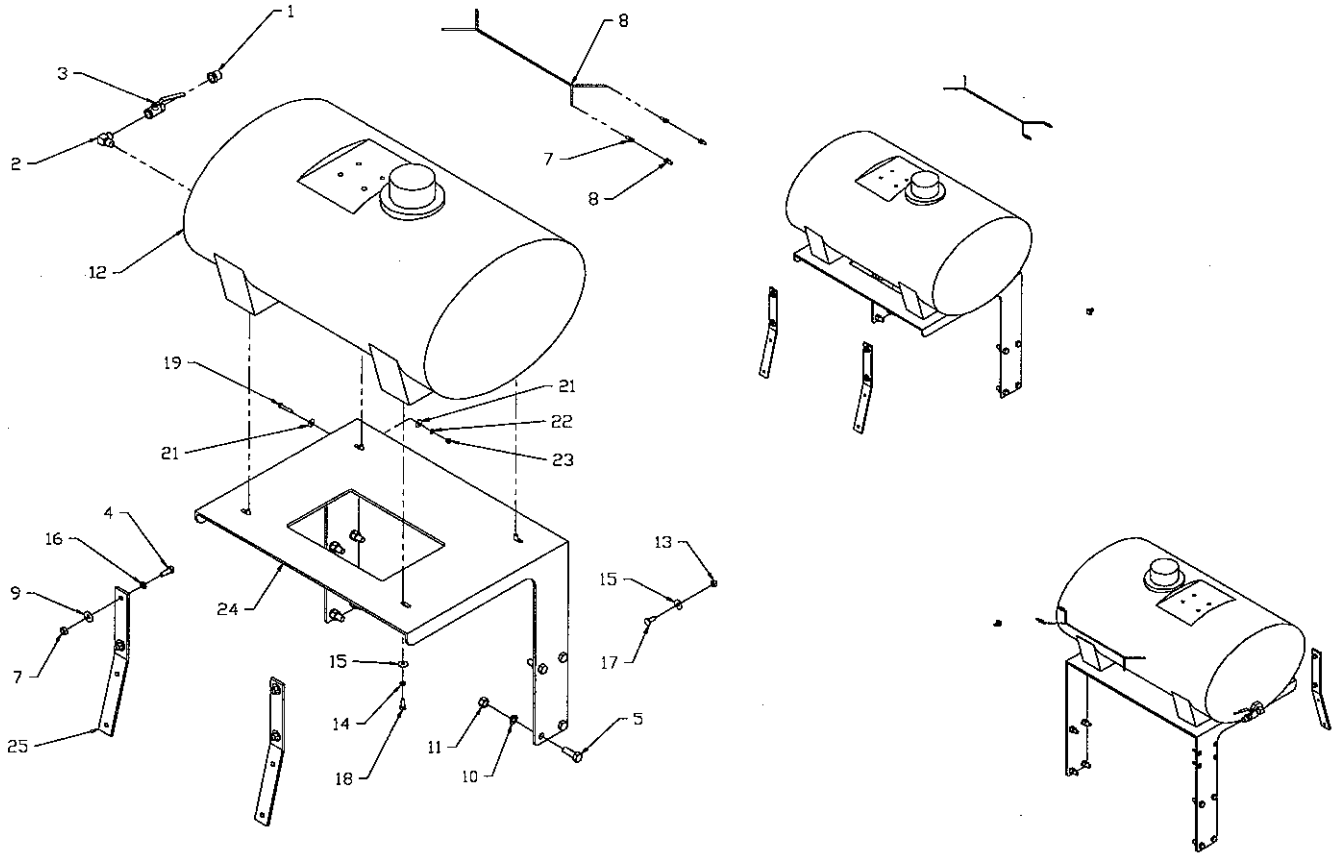


Item	Part	Qty	Description
1.	03-0076	1	Fitting, Nipple, BP, Close, 3/8
2.	03-0457	1	Fitting, Barb, Nylon, 3/8–3/8 MP
3.	03-0819	2	Fitting, Reducer Bushing, BP, 1/2–3/8
4.	03-1326	1	Pump, Flojet, Water, 2.9 gpm
5.	03-1709	2	Fitting, Barb, Nylon, 5/8–3/8 MP
6.	07-0343	1	Switch, Toggle, 2 Position
7.	07-0411	3	Nozzle, Tee, with Clamp (6/7)
	07-0411	5	Nozzle, Tee, with Clamp (8)
8.	07-0412	2	Nozzle, Elbow, with Clamp
9.	07-0413	5	Nozzle, Cap, Nylon (6/7)
	07-0413	7	Nozzle, Cap, Nylon (8)
10.	07-0414	4	Nozzle, Tip, Brass
	07-0414	6	Nozzle, Tip, Brass(8)
11.	07-0417	1	Fitting, Barb, Brass, 3/8
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 (6/7)
	07-0549	14	Clamp, Spring, 5/8 Hose (8)
15.	07-0867	4	Terminal, Butt

Item	Part	Qty	Description
16	07-0917	20 ft	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
24.	07-4038	4	Washer, Lock, Split, 1/4
25.	07-4039	4	Nut, Hex, 1/4-20
26.	07-4673	2	U-Bolt, 1/4-20 x 1
28.	09-0028	7 ft	Hose, Heater, 5/8 (6/7)
	09-0028	10 ft	Hose, Heater, 5/8 (8)
29.	09-0056	25 ft	Hose, Heater, 3/8 (6)
	09-0056	26.25 ft	Hose, Heater, 3/8 (7)
	09-0056	27.5 ft	Hose, Heater, 3/8 (8)
32.	11-6684	1	Tube, Round, 7/8 x 16 Gauge x 72(6/7)
	13-2812	1	Tube, Round, 7/8 x 16 Gauge x 92.37 (8)
33.	13-10076	2	Plate, Mounting, Sprinkler Bar, Adjustable

Option – Sprinkler

Water Tank Kit
To order, ask for kit 11-5739.



Item	Part	Qty	Description
1.	03-0819	1	Fitting, Reducer Bushing, BP, 1/2, 3/8
2.	03-1391	1	Fitting, Elbow, HP, 90, 1/2 MP, 1/2 MP
3.	03-1392	1	Valve, Shut Off, Ball, 1/2
4.	07-0018	4	Screw, Cap, 5/16 x 3/4
5.	07-0045	8	Screw, Cap, 1/2-13 x 1-1/2
6.	07-0812	2	Terminal, Q-Disc, FN1/4F, 16-14
7.	07-0813	2	Terminal, Q-Disc, FN1/4M, 16-14
8.	07-0917	10 ft	Wire, Bulk, Cord, 16 Ga, 2 Con, D SJO
9.	07-1718	4	Washer, Lock, Split, 3/8
10.	07-1762	8	Washer, Lock, 1/2
11.	07-1764	8	Nut, Hex, 1/2-13
12.	07-3150	1	Tank, Water, 25 gal, Ylw, Spec
13.	07-3270	1	Nut, Hex, 5/16-18, Nylock

Item	Part	Qty	Description
14.	07-3273	4	Washer, Lock, Split, 5/16
15.	07-3275	5	Washer, Flat, 5/16
16.	07-3279	4	Washer, Flat, 3/8
17.	07-3280	1	Bolt, Carriage, 5/16-18 x 3/4
18.	07-3436	4	Screw, Cap, 5/16 x 3/4
19.	07-3638	4	Screw, Cap, 1/4 x 1 1/4
20.	07-3654	4	Nut, Hex, 3/8-16
21.	07-4032	4	Washer, Flat, 1/4
22.	07-4038	4	Washer, Lock, Split, 1/4
23.	07-4039	4	Nut, Hex, 1/4-20
24.	13-7710	1	Plate, Mounting, Water Tank, RHFA
25.	13-7721	2	Plate, Mounting, Spraybar, RHFA

Torque Values

Bolt Torque Specifications

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

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

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

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

Warranty Registration

Return form to 1-734-996-9014

SWEEPSTER

PALADIN LIGHT CONSTRUCTION

Warranty Registration Form and Delivery Inspection Report

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

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

Warranty Registration

Customer's Name _____
Address _____
City _____ State _____ Zip _____
Phone _____
Loader / Tractor Model _____
Delivery Date _____
Model or Part # _____
Serial # _____

Dealer's Name _____
Address _____
City _____ State _____ Zip _____
CHECK ONE:
Construction Use _____
Agricultural Use _____
Landscape Use _____
Other: _____

Dealer Inspection (check items applicable)

_____ All Decals installed (see operator's manual)
_____ Hydraulic fittings tight and free of leaks
_____ Fasteners tight
_____ Review Operating and Safety Instructions
_____ Guards and covers in place and 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.

Date _____ Dealer's Rep. signature _____

This section to be completed and signed by the customer

	1 Excellent	2 Good	3 Average	4 Unsatisfactory	5 Poor
QUALITY ASSURANCE RATING					
Question:		Sweepster		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.

Date: _____ Owner's signature _____

NOTE! Make one copy each for the dealer's and owner's records. Mail original to Sweepster.

Comments: _____

Sweepster, Inc
2800 N. Zeeb Rd.
Dexter, MI 48130-9499
800-456-7100
fax 734-996-9014

SWEEPSTER

SWEEPSTER ATTACHMENTS LLC

Limited 12 Month Warranty

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

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

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

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

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

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

Glossary – Terms & Abbreviations

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.

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

CV – constant velocity; usually refers to a drive shaft.

core – weldment that holds brush sections.

dirt deflector – kit made of metal and/or rubber parts designed to direct debris away from the operator.

F – female.

gpm – gallons per minute.

HP – high pressure.

hood – brush shield.

hydraulic angle kit – means of swinging the brush head 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.

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 prime mover; designed specifically for each prime mover.

note – indicates supplementary information.

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.

rpm – revolutions per minute.

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

right–hand – 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.

spring–chain assembly – assembly that helps keep the sweeper in proper adjustment yet allows it to pivot up and down.

sprinkler system – system that sprays water; 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 brush off the ground when the sweeper is dismounted.

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

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

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

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

windrow – pile of debris.

zerk – grease fitting.

Index