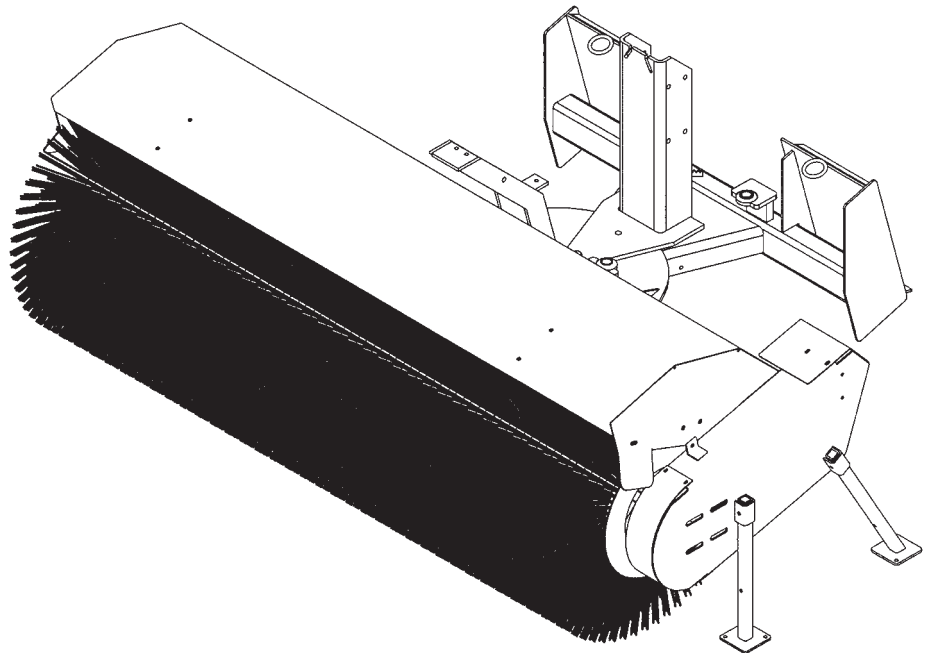




# OPERATOR AND PARTS MANUAL

**Skid Steer Mounted  
Hydraulic Driven Rotary Sweep**  
Model No.'s W6032S, W7232S, W8432S





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# SKID STEER MOUNTED HYDRAULIC DRIVEN ROTARY SWEEP

## TO THE OWNER

Thank you for purchasing a Allied by Farm King Skid Steer Mounted Rotary Sweep.

Allied by Farm King Skid Steer Mounted Rotary Sweeps have been designed to provide many years of profitable and dependable service. To assure maximum performance of your Skid Steer Mounted Rotary Sweep, it is mandatory that you thoroughly study the operator's manual and follow its recommendations. Proper operation and maintenance are essential for safety, to maintain performance, and to maximize the life of the Skid Steer Mounted Rotary Sweep.

It is the owner's responsibility to:

- Operate and maintain this Skid Steer Mounted Rotary Sweep in a safe manner and in accordance with all applicable local, state, and federal codes and/or laws; and in compliance with labeling instructions furnished by the supplier of the chemical being used.
- Make sure each and every operator has read the operator's manual and thoroughly understands safe and correct operating procedures.
- Make sure unauthorized people do not operate or are not in the vicinity of the Skid Steer Mounted Rotary Sweep while it is in operation.
- Maintain the Skid Steer Mounted Rotary Sweep in accordance with the maintenance schedule in this manual. Furthermore, as additional technology becomes available, the owner is responsible for improving the safety and reliability of the system.
- Fulfill all warranty obligations so as not to void the warranties. Verify the unit is warranty registered prior to making any warranty claims. The warranty section at the back of this manual outlines the warranty policy of Allied by Farm King.

Abuse or modifications to the Skid Steer Mounted Rotary Sweep that change the performance other than original factory specifications void the warranty.

Allied by Farm King reserves the right to make product improvements to the equipment at any time. It shall not be obligated to make such changes to machines already in service.

\*The owner, manager and/or operator is responsible for safe, accurate operation and maintenance of the Allied by Farm King Skid Steer Mounted Rotary Sweep.

## Safety First

Accidents can be prevented by recognizing the causes or hazards before an accident occurs . . . and doing something about them.

Regardless of the care used in the design and construction of this equipment, there are some areas that cannot be completely safeguarded without interfering with the accessibility and efficiency of operation.



THIS MESSAGE ALERT SYMBOL IDENTIFIES IMPORTANT MESSAGES IN THIS MANUAL. WHEN YOU SEE THIS SYMBOL, BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY AND CAREFULLY READ THE MESSAGE THAT FOLLOWS.

In this manual and on labels used on the machine the words "DANGER", "WARNING", and "CAUTION", are used to indicate the following:

**DANGER:** Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

**WARNING:** Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

**CAUTION:** Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.



THIS MESSAGE ALERT SYMBOL IDENTIFIES INFORMATION THAT MUST BE HEDED FOR PROPER OPERATION OF EQUIPMENT AND TO PREVENT DAMAGE OR DETERIORATION OF THE EQUIPMENT.

In this manual the words "IMPORTANT" and "NOTE" are used to indicate the following:

**IMPORTANT:** Highlights information that must be heeded.

**NOTE:** A reminder of other related information that needs to be considered.

## Safety Instructions for Operation

DO NOT ALLOW ANYONE TO OPERATE THIS Allied by Farm King SKID STEER MOUNTED ROTARY SWEEP UNTIL HE OR SHE HAS READ THIS MANUAL AND IS COMPLETELY FAMILIAR WITH ALL SAFETY AND OPERATION PROCEDURES.



### WARNING

Observe the IMPORTANT SAFETY INSTRUCTIONS listed below at all times! THE BEST KIND OF SAFETY IS A CAREFUL OPERATOR.



### CAUTION

#### **THE FOLLOWING SAFETY PRECAUTIONS SHOULD BE THOROUGHLY UNDERSTOOD BEFORE ATTEMPTING TO BEGIN ASSEMBLING THIS MACHINE**

1. Select an area for assembly that is clean and free of any debris which might cause persons working on the assembly to trip.
2. Do not lift heavy parts or assemblies. Use crane, jack, tackle, fork trucks or other mechanical devices.
3. Preview the assembly instructions in your operator's manual before proceeding further.
4. If the assembly instructions call for parts or assemblies to be blocked up, use only blocking material that is in good condition and is capable of handling the weight of the assembly to be blocked. Also insure that the blocking material is on a clean, dry surface.
5. Never put hands, or any part of body, under blocked up assemblies if at all possible.
6. After completing assembly, thoroughly inspect the machine to be sure that all nuts, bolts, hydraulic fittings or any other fastened assemblies have been thoroughly tightened.
7. Before operating the machine, thoroughly read the operation section of your operator's manual.
8. Before operating, read the maintenance section of your operator's manual to be sure that any parts requiring lubrication, such as gearboxes, are full, to avoid any possible damage.
9. Before operating equipment – If you have any questions regarding the proper assembly or operation, contact your dealer or representative.

1. If any safety device on the Skid Steer Mounted Rotary Sweep itself is not functioning properly, DO NOT use the Skid Steer Mounted Rotary Sweep. Remove it from service until it has been properly repaired by a qualified service technician.
2. Do not allow the following people to operate or repair this equipment.
  - Children
  - Irresponsible persons
  - People under the influence of alcohol, medications or other drugs that can cause drowsiness or impaired judgement.
  - Persons unfamiliar with equipment or people who are careless or unfamiliar with safe operating procedures.
3. Always park the Skid Steer Mounted Rotary Sweep on a level surface, and lock the tractor brakes, or block the tires, before making adjustments or repairs.
4. Before operating this equipment, thoroughly inspect the unit to ensure it is in good working order.
5. Do not operate this unit if any defect or malfunction exists. Pay particular attention to safety features.
6. Verify that the Skid Steer Mounted Rotary Sweep is securely hitched to the tractor.
7. Do not replace components or parts with those other than genuine Allied by Farm King Factory Service Parts. To do so may reduce the effectiveness of safety features or decrease the accuracy of the unit.
8. Read the Operation Instructions section of this manual for further necessary information relating to the safe operation of the applicator.

## Equipment Safety Guidelines

- Safety of the operator is one of the main concerns in designing and developing a new piece of equipment.
- Designers and manufacturers build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist those working with you, or for you, follow them.
- In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.
- Replace any CAUTION, WARNING, DANGER or instruction safety decal that is not readable or is missing.
- Location of such safety decals is indicated in this booklet.
- Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment. Consult your doctor about operating this machine while taking prescription medications.
- Review the safety instructions with all users annually.



- This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.
- To prevent injury or death, use a tractor or skid steer equipped with a roll-over protective system (ROPS). Do not paint over, remove or deface any safety decals or warning signs on your equipment. Observe all safety decals and practice the instruction on them.
- Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question – DON'T TRY IT.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- In addition to the design and configuration of this implement, including Safety decals and safety equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to safety messages and operation instructions in each of the appropriate sections of the power unit and sweep unit manuals. Pay close attention to the safety decals affixed to the power unit and the sweep unit.

## Preparation

- Sweep's operating power is supplied from the prime mover hydraulic system. Refer to your prime mover manual for hydraulic engagement and disengagement instructions. Know how to stop prime mover and sweep quickly in case of an emergency. When engaging hydraulic system, the engine RPM should always be low
- Personal protection equipment including hard hat, safety glasses, sturdy rough-soled safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal, or moving the implement. Do not allow long hair, loose fitting clothing or jewelry to be around moving parts.
- **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!** Power units with or without implements attached can often be noisy enough to cause permanent, partial hearing loss. We recommend that you wear hearing protection on a full-time basis if the noise in the operator's position exceeds 80 db. Noise over 85 db on a long-term basis can cause severe hearing loss. Noise over 90 db adjacent to the operator over a long-term basis may cause permanent, total hearing loss. **NOTE:** Hearing loss from loud noise (from tractors, chain saws, radios, and other such sources close to the ear) is cumulative over a lifetime without hope of natural recovery.
- Operate the sweep only with a power unit equipped with an approved roll-over protective system (ROPS). Always wear your seat belt on tractors equipped with a ROPS. Serious injury or even death could result from falling off the tractor – particularly during a turnover when the operator could be pinned under the ROPS or the tractor. Keep foldable ROPS systems in "locked up" position at all times.
- Check prime mover tire pressure before sweeping. Check tire ratings to be sure they match the prime mover load. Weigh the sweep end of the prime mover, if necessary, to insure proper tire rating.
- Operate only in daylight or good artificial light.

- Ensure that the sweep is properly mounted, adjusted and in good operating condition.
- Never sweep toward people, buildings, vehicles or other objects that can be damaged by flying debris.
- Ensure that all safety shielding and safety decals are properly installed and in good condition.

## Operation Safety

- The use of this equipment is subject to certain hazards which cannot be protected against by mechanical means or product design. All operators of this equipment must read and understand this entire manual, paying particular attention to safety and operating instructions, prior to using. If there is something in this manual you do not understand, ask your supervisor, or your dealer, to explain it to you.
- Most accidents occur because of neglect or carelessness. Keep all helpers and bystanders fifty feet (50') from an operating power unit and attached equipment. Only properly trained people should operate this machine. It is recommended the tractor be equipped with a Rollover Protection System (ROPS) and a seat belt that is used. Always stop the power unit, set brake, shut off the engine, remove the ignition key, and lower attachment to the ground before dismounting. Never leave equipment unattended with the engine running.
- Please remember it is important that you read and heed the safety decals on the attachment and power unit, and the safety rules set forth. Clean or replace all safety decals if they cannot be clearly read and understood. They are there for your safety as well as the safety of others. The safe use of this machine is strictly up to you, the operator.
- Be sure power unit is in good condition. Read all the safety precautions and make sure all operators are familiar with the safety rules of operation. Working with unfamiliar equipment can lead to careless injuries. It is the equipment owner's responsibility, if this machine is used by any person other than yourself, is loaned or rented, to make certain that the operator, prior to operating:
  - ◊ Reads and understands the operator's manuals.
  - ◊ Is instructed in safe and proper use.
- Train all new personnel and review instructions frequently with existing workers. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not allow children to operate this machine.
- Remove from the sweeping area all property that could be damaged by flying debris.
- Know your controls and how to stop the power unit and engine quickly in an emergency. **READ THIS MANUAL AND THE ONE PROVIDED WITH YOUR POWER UNIT.**
- When the use of hand tools is required to perform any part of assembly, installation, adjustment, maintaining, repairing, removal, or moving the implement, be sure the tools used are designed and recommended by the tool manufacturer for that specific task.
- Personal protection equipment including safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal, or moving the attachment.
- Always use two people to handle heavy, unwieldy components during assembly, installation, removal, or moving the attachment.

- Always stop the power unit, set brake, shut off the engine, remove the ignition key, lower implement to the ground and allow rotating brush to come to a complete stop before dismounting. Never leave equipment unattended with the power unit running.
- Never place hands or feet under sweep with power unit engine running or before you are sure all motion has stopped. Stay clear of all moving parts. Keep hands, feet, hair, and clothing away from moving parts.
- Do not reach or place yourself under equipment until it is blocked securely.
- Only operate the sweeper while you are in the operating position. The seat belt must be fastened while you operate the prime mover. Only operate the controls while engine is running. Protective glasses must be worn while you operate the prime mover and while you operate the sweep.
- Do not allow riders on the sweep or power unit at any time. There is no safe place for any riders.
- Disengage hydraulic power and place transmission into neutral before attempting to start engine.
- Do not operate unless all personnel, livestock, and pets are fifty feet (50') away to prevent injury by thrown objects. Never direct discharge toward anyone.
- Install and secure all guards and shields before starting or operating.
- While you operate the sweep slowly in an open area, check for proper operation of all controls and all protective devices. Note any needed repairs during operation of the sweeper. Report any needed repairs.
- Many varied objects, such as wire, cable, rope, or chains, can become entangled in the rotating brush core. These items could then swing outside the housing at great velocities. Such a situation is extremely hazardous. Inspect the area for such objects before sweeping. Removing any like object from the site. Never allow the rotating brush to contact such items.
- Use extreme care and maintain minimum ground speed when transporting on hillside, over rough ground and when operating close to ditches or fences. Be careful when turning sharp corners.
- Reduce speed on slopes and sharp turns to minimize tipping or loss of control. Be careful when changing directions on slopes. Do not start or stop suddenly on slopes. Avoid operation on steep slopes.
- Before leaving the operator's area for any reason – lower the sweeper to the ground, stop the power unit engine, set the brakes and remove the key from the ignition.
- Minimize flying debris – use the slowest brush speed that will do the job.
- When sweeping on rough terrain, reduce speed to avoid "bouncing" the sweeper. Loss of steering can result.
- Leave the brush hood (shield) and all other shields and safety equipment in place when operating the sweeper and prime mover.
- When sweeping, adhere to all government rules, local laws and other professional guidelines for your sweeping application.
- The guards, flaps, driveline shields, and gearbox shields should be used and maintained in good working condition. They should be inspected carefully, at least daily, for missing or broken shields, or guards. Missing broken, or worn items must be replaced at once to reduce the possibility of injury from thrown objects or entanglement.

- 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.
- When maneuvering close to buildings or passing through narrow areas, be sure to allow sufficient clearance for the power unit and sweep attachment. Drive slowly.
- Operate sweep from operator's seat only. Remain at controls until operating cycle is complete.
- Only use a power unit equipped with a ROPS cab or rollover protective structure. Keep foldable ROPS systems in "locked up" position at all times. Keep seat belt fastened.
- Do NOT exceed 12 MPH when operating.
- Keep hands and feet away from sweep pivot points and from under brush core.
- Keep alert and watch the rear as well as the front when working with the sweep.

### Transport Safety

- Comply with state and local laws governing highway safety and movement of machinery on public roads.
- The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.
- When driving the tractor and equipment on the road or highway under 20 mph (32 kph) at night or during the day, use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem.
- Always be sure the implement is in the proper raised position for transport.
- Reduce speed when transporting mounted implements to avoid bouncing and momentary loss of steering control.
- Plan your route to avoid heavy traffic.
- Do not drink and drive!
- Watch for traffic when operating near or crossing roadways.
- Use extreme care and maintain minimum ground speed when transporting on hillside, over rough ground and when operating close to ditches or fences. Be careful when turning sharp corners.
- Never allow riders on either power unit or sweep. Falling off can kill.
- Turn curves or go up or down hills only at a low speed and at a gradual steering angle. Make certain that at least 20% of the prime mover's weight is on the front wheels to maintain safe steering. Slow down on rough or uneven surfaces, and loose gravel.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.
- Do not exceed 20 mph (32 kph). Reduce speed on rough roads and surfaces.

### Maintenance Safety

- Before adjusting or servicing the sweep – lower the sweep to the ground, stop the prime mover engine, set the brakes and remove the key from the ignition.
- Repair or adjust the sweep in a safe area, away from road traffic and other hazards.

- Make sure there is plenty of ventilation. Never operate the engine of the vehicle in a closed building. The exhaust fumes may cause asphyxiation.
- Before working on this machine, drive to a level area, disengage the hydraulic power, lower implement (or if working underneath, raise and block securely), shut off the engine, set the brakes, and remove the ignition keys.
- Be certain all moving parts on attachments have come to a complete stop before attempting to perform maintenance.
- Never work under equipment unless it is blocked securely. Never depend on hydraulic system to keep implement in raised position.
- Keep all persons away from operator control area while performing adjustments, service, or maintenance.
- Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance.
- When working on or around the sweep, lower it to the ground or secure it with transport chains.
- Periodically tighten all bolts, nuts and screws and check that all cotter pins are properly installed to ensure unit is in a safe condition.
- When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.
- Remove hydraulic pressure prior to doing any maintenance. Place the sweep on the ground or securely blocked up, and turn off the engine. Push and pull the remote cylinder lever in and out several times to relieve hydraulic pressure.
- Never use your hands to locate a hydraulic leak on attachments. Use a small piece of cardboard or wood. Hydraulic fluid escaping under pressure can penetrate the skin.
- Openings in the skin and minor cuts are susceptible to infection from hydraulic fluid. If injured by escaping hydraulic fluid, see a doctor at once. Gangrene and death can result. Without immediate medical treatment, serious infection and reactions can occur.
- After servicing, be sure all tools, parts and service equipment are removed.
- Keep polypropylene brush material away from intense heat or flame.
- Check to ensure all safety decals are installed and in good condition. (See safety decal section for location drawing.)
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
- Never replace hex bolts with less than grade five bolts unless otherwise specified, i.e. shear bolts. Refer to bolt torque chart for head identification marking.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use.
- If equipment has been altered in any way from original design, personal injury could result. The manufacturer does not accept any liability for injury or warranty.

## Storage Safety

- NOTE: Do not store the sweeper with weight on the brush. Weight will deform the bristles, destroying the sweeping effectiveness.
- Disconnect sweep from prime mover and carefully drive away from sweep.
- Storage location should be level and on a solid surface to make hitching and unhitching easy.
- Make sure storage location is away from children, animals, or a traffic area.
- 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.

## Safety Decals

### BE CAREFUL!

Use a clean, damp cloth to clean safety decals. Avoid spraying to close to decals when using a pressure washer; high-pressure water can enter through very small scratches or under edges of decals causing them to peel or come off.

**REMEMBER:** If safety decals have been damaged, removed, become illegible or parts replaced without decals, new safety decals must be applied. New safety decals are available from your authorized distributor or factory.

**WARNING**

**Stand clear**

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**CAUTION**

When getting on and off unit:

- Always face unit.
- Use hand holds on skid steer and steps with at least three points of support.
- Always mount and dismount from this side.

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**WARNING**

**HIGH-PRESSURE FLUID HAZARD**


To prevent serious injury or death:

- Relieve pressure on system before repairing or adjusting or disconnecting.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.

700

700

**WARNING**



**CRUSHING AND PINCHING HAZARD**

- Be extremely careful with various parts of the machine. Pivoting blade can crush or pinch body parts.
- Operate controls from operator's seat only.
- Make sure parking brake is engaged before leaving operator's seat.
- Stand clear of machine while in operation or when it is being raised or lowered.

FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.

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**WARNING**

TO AVOID SERIOUS INJURY OR DEATH:

- Read Operator's Manual before operating, servicing or repairing equipment. Follow all safety rules and instructions. (Manuals are available from your selling dealer.)
- Never allow riders.
- Keep bystanders away from equipment during operation.
- Operate from operator's seat only.
- Keep all shields in place and in good condition.
- Lower equipment to ground, stop engine, remove key and set brake before dismounting power unit.
- Never allow children or untrained persons to operate equipment.

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.

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**CAUTION**

- Do not operate sweeper without reading the owner's manual and operating instructions completely and being familiar with the operation of the sweeper. If operating instructions are missing, contact Worksaver, Inc.
- Keep bystanders away from equipment before operating.
- Never operate broom toward people, buildings, cars, etc.
- Lower equipment, stop engine and brush, allow all moving parts to stop, remove key and set brake before adjusting or servicing broom.
- Eye protection must be worn at all times by operator and anyone near the discharge area of the brush.
- Do not operate broom or power unit unless all shields are in place.
- Keep polypropylene material away from intense heat and flames.
- Do not operate this product on any roof area, unless roof area complies with Federal OSHA Law Section 1826.500 on perimeter guarding.

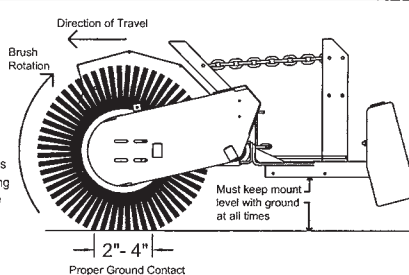
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**HYDRAULIC BROOM - OPERATING INSTRUCTIONS**

1. Follow and observe all safety, operational, and service instructions in operating manual supplied with this machine. NOTE: ALWAYS BE ALERT TO THROWN OBJECTS WITH FAST ROTATING BROOMS, ESPECIALLY WHEN BYSTANDERS ARE PRESENT. REDUCE SPEED OR DISCONTINUE OPERATION TO PREVENT PERSONAL INJURY OR PROPERTY DAMAGE.
2. Make sure this machine is securely attached to skid steer - lock levers locked.
3. Brush rotates in one direction only - brushes forward with ground travel forward. Broom mount should be level with the sweeping surface during operation so that brush contact will be maintained when broom is angled left and right. Proper brush contact is a 2" - 4" flat with sweeping surface.
4. This machine utilizes up to 16 GPM hydraulic flow at maximum brush speed. Excess flow is bypassed back to skid steer remote. Brush speed can be reduced by reducing engine RPM or by rotating handle on control valve. Excess engine RPM may cause excessive hydraulic oil temperature. NOTE: ALWAYS REDUCE ENGINE RPM WHEN POSSIBLE, TO REDUCE OIL TEMPERATURE AND NOISE.
5. Always use parking stands when broom is not in use. Never let broom rest on the brush when not in use, as this will result in a permanent set to bristles.

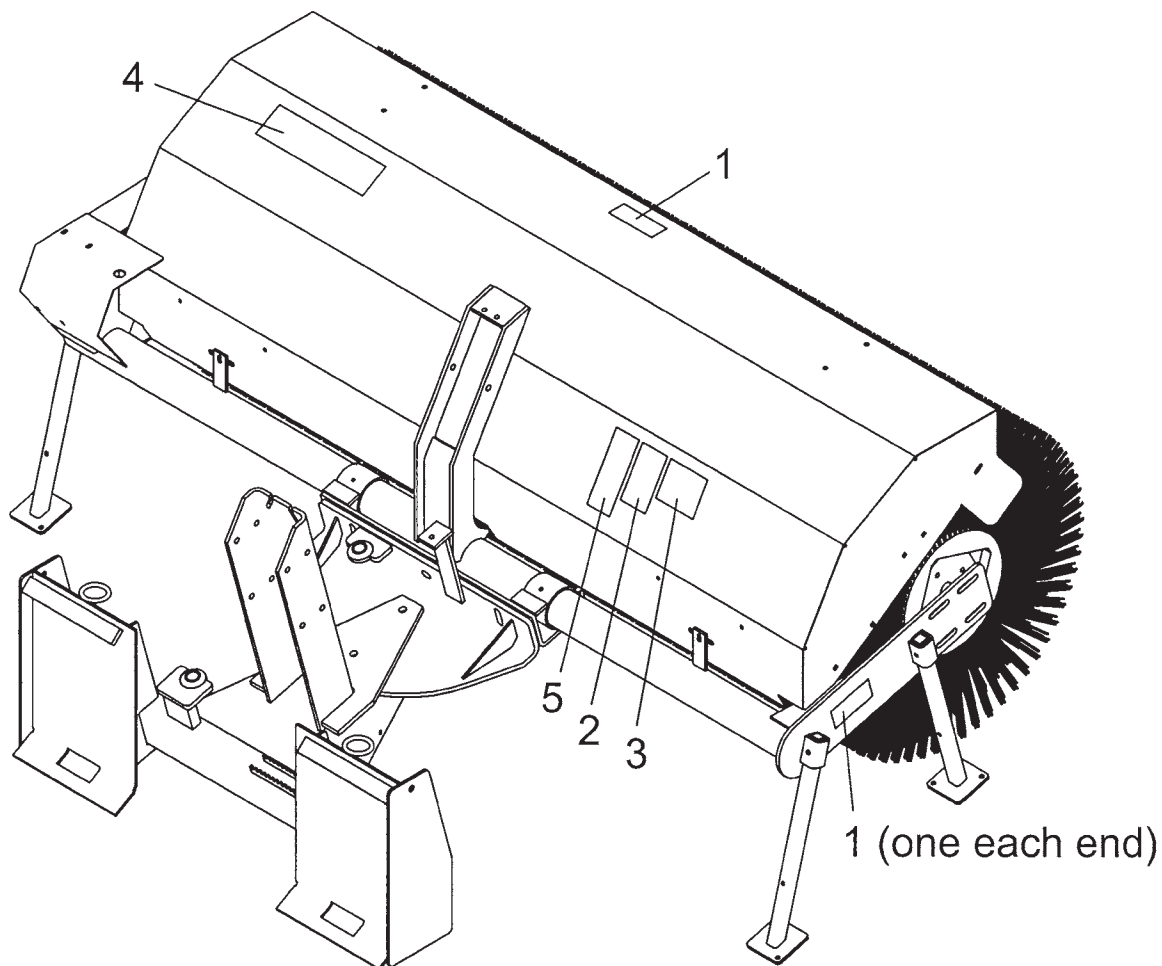


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## Safety Decal Placement



The types of safety decals and locations on the equipment are shown in the illustration below. Good safety requires that you familiarize yourself with various safety decals, the type of warning and the area, or particular function related to that area, that requires your SAFETY AWARENESS.

Ref. #	Part. #	Description	Qty
1	101027	Safety Decal - WARNING (Stand clear)	3
2	101288	Safety Decal - WARNING (Crushing and pinching)	1
3	101289	Safety Decal - WARNING (Avoid serious injury)	1
4	101305	Safety Decal - Operating instructions.	1
5	101391	Safety Decal - CAUTION (Owner's manual)	1

The model and serial number plate is located on the right side of the vertical part of the main frame.  
The serial number is also stamped into the top cross tube of the mounting frame.



MODEL:	W6032S	W7232S	W8432S
Width	60"	72"	84"
Path at 30° Angle	52"	64"	76"
Brush Diameter	32 inches		
Brush Material	Convuluted Polypropylene or Crimped Wire or 50/50		
Brush Speed	Up to 130 rpm		
Lift	Skid Steer Loader		
Power	Skid Steer Auxiliary Hydraulic System		
Oil Flow Requirements	12 gpm Minimum 30 gpm Maximum NOTE: A maximum of 16 gpm is utilized – excess is bypassed back to power unit.		
Oil Pressure	3000 psi Maximum		
Chain Drive	#60 Roller Chain		
Brush Bearings	1-1/4" H.D. Flange (Greaseable)		
Floation	Sweep Floats on Adjustable Spring/Chain Assembly		
Mechanical Angle	Straight, 15° Right/Left or 30° Right/Left		
Brush Hood	16 Gauge Steel with formed 10 Gauge ends		
Parking Stands	Standard		
Weight	720 Poly 714 Poly/Wire	780 Poly 774 Poly/Wire	840 Poly 833 Poly/Wire
Sweep INCLUDES:	Welded Steel Frame, Steel Hood, Chain Shield, Height Adjustment Chains, Parking Stands		
OPTIONS:	Mechanical Swing Lock, Hydraulic Swing Kit, Dirt Deflector - Main Frame, Springler System, Sight Indicators (Flags)		

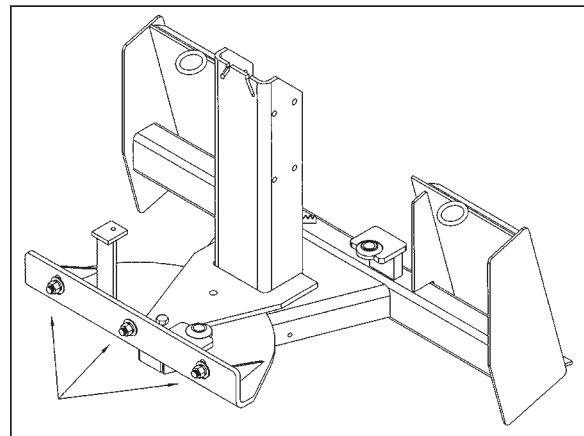
## Assembly / Installation

This unit is shipped partially assembled. Carefully follow instructions for final assembly.

Refer to the “exploded view” of the skid steer mounted sweep on pages 43 & 44 of this manual. Become familiar with the relationship of the various components and parts shown.

Before attempting assembly check the following items. Having all the needed parts and equipment readily at hand will speed up your assembly task and will make the job as safe as possible.

- Find a location that is solid and level to assemble and install the sweep on your power unit.
  - Check for fasteners and pins that were shipped with the W Sweep. All hardware coming from the factory has been installed in the location where it will be used. If a part or fastener is temporarily removed for assembly reasons, remember where it goes. Keep the parts separated.
  - Have a minimum of 2 people at hand during assembly.
  - Have a fork lift or loader along with chains and safety stands that are sized for the job ready for the assembly task.
1. Remove the bucket from your skid steer unit. Check the loader arms and cylinders to make sure they are in good working order. Lubricate all loader pivot points. Check all bolts to make sure they are in place and tight.
  2. All reference to left, right, front, or rear are given from the operator’s position, facing the direction of forward travel.
  3. The skid steer mounting frame with the half-moon plate is banded on the shipping skid partially under the right hand rear corner of the sweep.
  4. Using a forklift or hoist, lift the skid steer mount away from the shipping skid.
  5. Remove the three (3) 5/8” carriage bolts, flatwashers, lockwashers, and nuts from the formed lip on the half-moon plate.



**Figure 1**

6. Move the skid steer mount to the center rear of the main brush head frame. Align the slots in the half-moon plate and the brush head's pivot angle. Secure with the three (3) 5/8" carriage bolts, flatwashers, lockwashers, and nuts. Install all hardware before tightening. (Fig. 1 & 2)
7. An open-end 15/16" wrench is required.

**NOTE:** The top edge of the half-moon plate and the brush head pivot should be parallel with each other. This is important when adjusting the sweep after installation.

8. Install the transport chain. Bolt one end of the (33 link) 5/16" chain to the brush frame upright. Use the hole on the right hand side of the upright. Fasten with a 1/2" X 1-1/2" hex bolt with a 1/2" flat washer (next to the chain link) lockwasher and hex nut. Tighten securely.
9. With the forklift or hoist supporting the skid steer mounting frame, position the frame so it is about level.
10. Place the transport chain in the right hand slot of the upright mast on the skid steer mount. Have the chain as tight as you can between the mast and the brush head upright. (Figure 3).
11. Now install the spring-chain assembly as shown (Figure 4). Bolt one end of the chain as described with the transport chain using the left hole in the brush frame upright.
12. Attach the spring to this chain about 8" from the brush head upright. Then fasten the other end of the spring to the chain leaving several slack links of chain in the middle of the spring.
13. Connect the remaining end of the chain to the skid steer mount upright mast using the left hand slot.
14. You should now be able to remove the forklift or hoist from the skid steer mount. The transport chain should hold the skid steer mount in position.



Figure 2

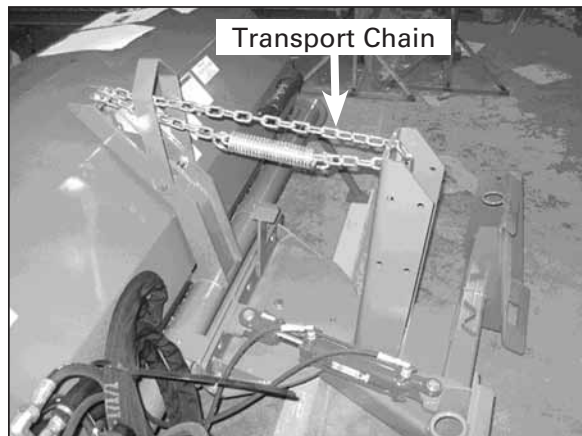


Figure 3

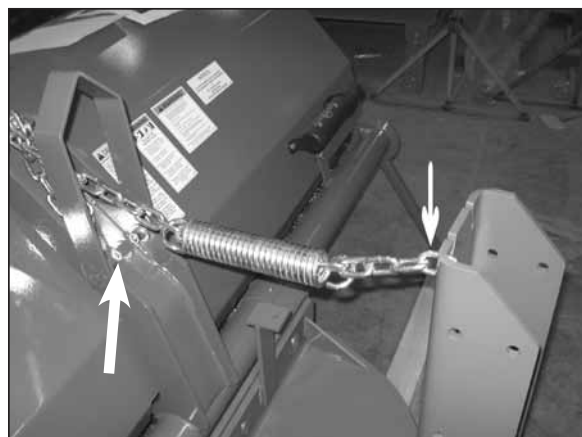


Figure 4

## Install the Manual or Hydraulic Angle Option

### **A. For the manual kit:**

- a. Slide the two tubes together so the holes will align.
- b. Pin the tubes on the swivel ball mounts. The tube with five holes goes on the half-moon plate. (Figure 5).
- c. Secure the pins with cotter pins.
- d. Align the set of holes that will keep the skid steer mount parallel with the sweep frame.
- e. Insert the 5/16" lock pin into the aligned holes (Figure 6).

### **B. For the hydraulic angle kit:**

- a. Attach the elbow fittings on the hydraulic cylinder. The orifice fitting goes on the barrel-end port.
- b. Install the hydraulic cylinder on the swivel ball mounts. The rod end of the cylinder goes on the half-moon plate. (Figure 7). Secure the pins with cotter pins.
- c. Connect a hose to each fitting on the cylinder
- d. If your skid steer has two pair of remote hydraulic outlets, attach your quick-coupler fittings to the hose ends. These will connect to your skid steer when it is attached to the sweep.
- e. If your skid steer has only one pair of remote hydraulic outlets, you will have to install the hydraulic solenoid valve on your sweep.

See separate instructions for installing this option on page 21.

These hoses will connect to the hydraulic solenoid valve.

Remove the bolts that fasten each of the four (4) parking stands to the sweep shipping skid.

**NOTE:** Storage stands are designed to keep the brush off the ground when the sweep is dismantled. When the sweep is mounted, slide stands up in the tubes to keep them out of the way.

Follow instructions on page 22 to connect skid steer unit to the sweep.



**Figure 5**



**Figure 6**



**Figure 7**

## Attaching Hydraulic Angle Kit (Optional)

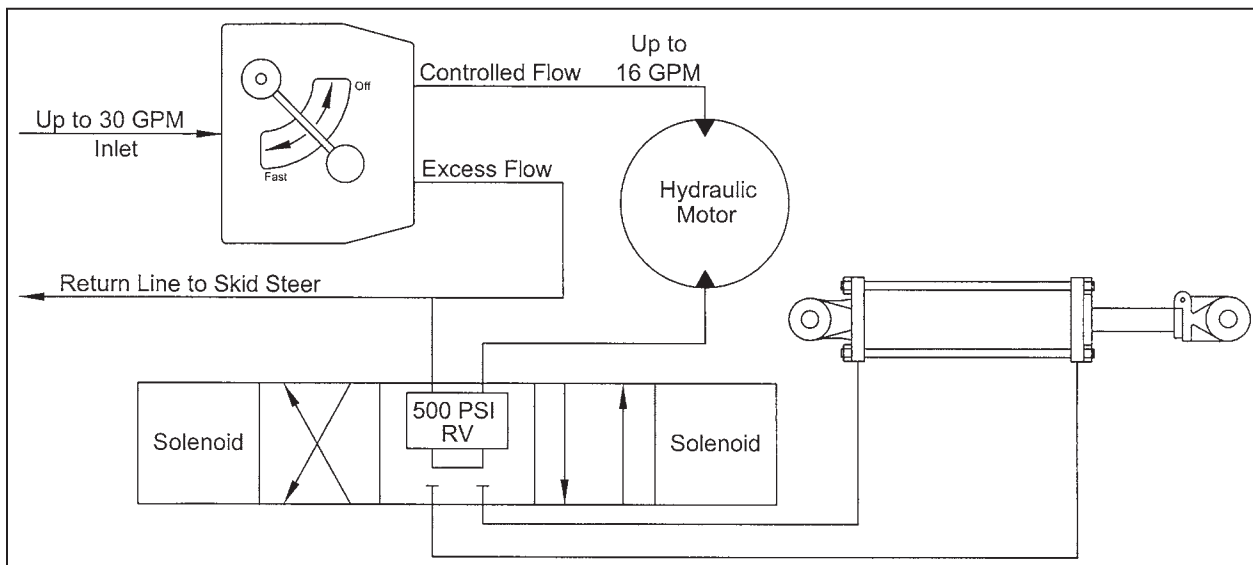
1. Preview the assembly instructions and exploded views of the hydraulic angle kit and solenoid kit in this operator's manual (pages 47 & 48) and become familiar as to how the parts or assemblies go together.
2. Bolt the solenoid valve on the left side of the sweep behind the flow control valve. Make sure the side of the valve with the hydraulic ports stamped "T" and "P" are toward the skid steer.
3. Use the 3/8" X 2" bolts to secure the solenoid valve.
4. Install the hydraulic fittings into the ports of the valve as shown on page 47.
5. Connect the hose from the hydraulic motor to port "P" on the solenoid valve. Then connect the hose from port "T" to the tee fitting on the flow control valve.
6. Then connect the hoses from ports "A" and "B" on the solenoid valve to the hydraulic cylinder.
7. Make sure all hoses are routed where they will not be pinched or put into a situation where they can become damaged.



**Figure 8**

## Wiring the Solenoid Valve

Refer to page 48 and follow the schematic drawing and written instructions to properly wire the solenoid valve.

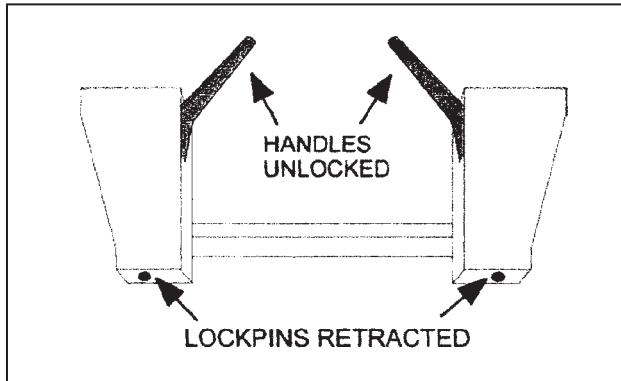


**Figure 9**  
Schematic of Solenoid Valve Hydraulic Connections

## Skid Steer Sweep Installation / Removal

### To install:

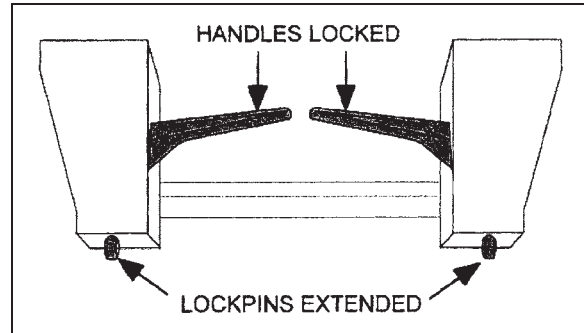
1. Read and understand skid steer manufacturer's instructions for installing attachments.
2. The quick attach coupler handles should be in the unlocked position with lock pins retracted, Figure 10.
3. Enter the prime mover. Fasten seatbelt, start engine. Disengage the parking brake.



**Figure 10**  
Quick Attach Coupler Handles – Unlocked

4. Follow the attaching procedure in the prime mover owner's manual. Align the attachment mechanism with the mounting on the sweep, attach to the prime mover or loader.
5. Engage the parking brake and shut down the prime mover. Be sure to relieve pressure to the auxiliary hydraulic lines.
6. Unfasten safety restraints and exit the prime mover.
7. Make sure the hydraulic couplers are clean. Connect the hydraulic lines to the prime mover. Twist the collar of the quick couplers one-quarter turn to secure hydraulic connections.

8. Engage the latching mechanism to secure attachment to loader. The lock pins must be completely extended and secured into the retaining slots provided on the attachment. Figure 11.



**Figure 11**  
Attachment Coupler Handles – Locked

9. Re-enter the prime mover. Fasten seatbelt and re-start engine.
10. Carefully raise the loader and cycle the rollback/tilt cylinders to check clearances and to ensure that the attachment is securely mounted.
11. With the skid steer engine at a fast idle, engage the hydraulic lever to allow hydraulic oil to flow to the sweep. Allow the sweep to operate for a few minutes to work the air out of the lines.
12. If using the electric/hydraulic solenoid valve for angle control, engage the switch and angle the sweep several times to work the air out of the cylinders and system.



### **WARNING**

Attachment coupler handles must always be rotated to LOCK POSITION to prevent coupler latch from disengaging and attachment from falling off.

## Removing the Sweep from the Skid Steer:



### WARNING

- Serious injury or death may result from disengaging the attachment when the attachment is in an unstable position. Place the attachment in a stable position before disengaging.
- Hoses for the attachment must be disconnected before the quick attach is disengaged. Pulling the attachment with the hoses could result in damage to the prime mover or the attachment.

1. If possible, find a level solid location to place the attachment. This makes it easier to disconnect and to re-connect.
2. Lower the attachment to the ground.
3. Engage the parking brake and shut down the prime mover. Be sure to relieve pressure to the hydraulic lines.
4. Exit prime mover.
5. Disconnect the attachment hydraulic lines from the prime mover. Connect quick couplers together to keep clean.
6. Disengage attachment-locking mechanism (mechanical type).
7. Enter and start the prime mover.
8. Disengage attachment-locking mechanism (hydraulic type).
9. Disengage the parking brake, and back away from the attachment.

## Adjusting for Work

### LEVELING THE SWEEP

For best performance, level the sweep immediately after installation and as a part of regular maintenance. This will provide for even brush wear and effective use.



### CAUTION

Avoid injury. Before adjusting the sweep, always turn off the sweep and the prime mover engine and remove the key.

1. Move the unit to a level dusty, paved surface.
2. Lower the brush head assembly so bristle tips are about 2" (51 mm) off the ground. (Figure 12)
3. Engage the parking brake and shut down the prime mover. Be sure to relieve pressure to the auxiliary hydraulic lines.
4. Unfasten safety restraints and exit prime mover.
5. Check if the skid steer mount and half-moon plate assembly is level by using a bubble level. To make corrections: Adjust tilt cylinders. If the front of the swing assembly is high, extend tilt cylinders. If low, retract cylinders.
6. Position the brush head assembly straight ahead. On each side, measure from the brush frame to the ground. If measurements are not equal: Loosen hardware that attaches the half-moon plate (Figure 13) to the brush head assembly; lower the high side of the brush head until both sides are an equal distance above the ground. Tighten the hardware.
7. Measure to see if the brush head assembly is level when angled. First, angle the brush head to the right. Measure as in step 6. Then, angle the brush head to the left. Measure again. If measurements are equal, the sweep is level. If not, then proceed with this step.



Figure 12

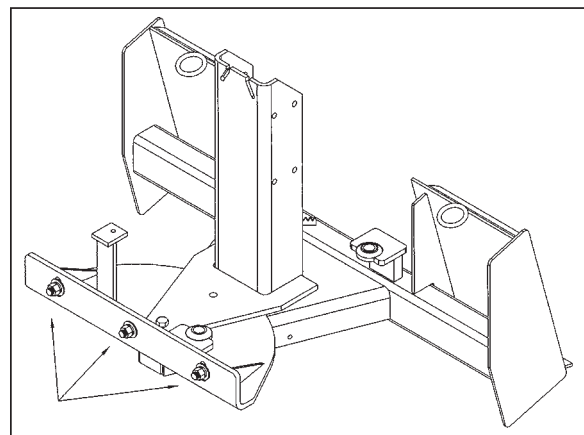
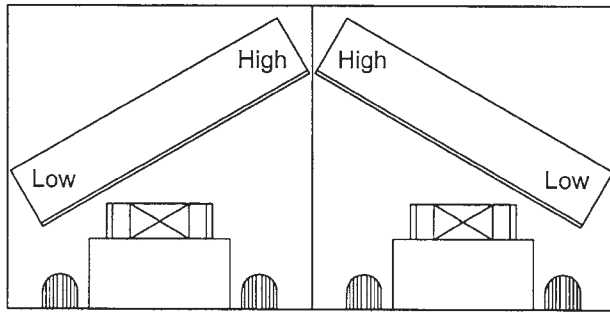
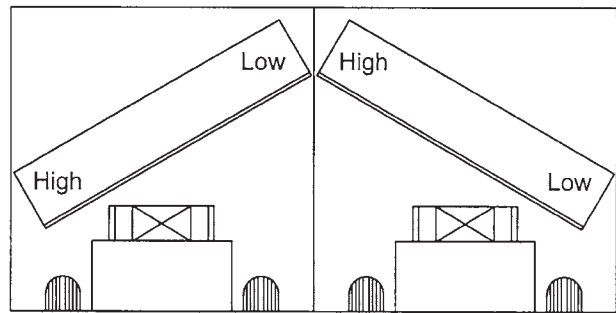


Figure 13

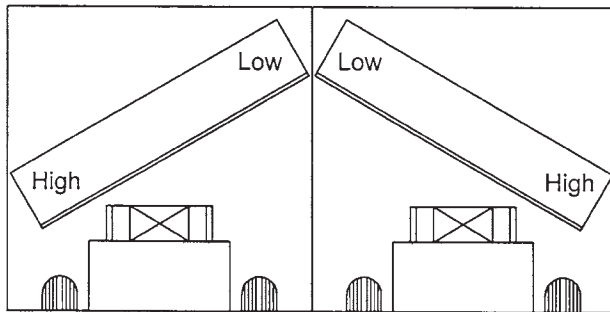




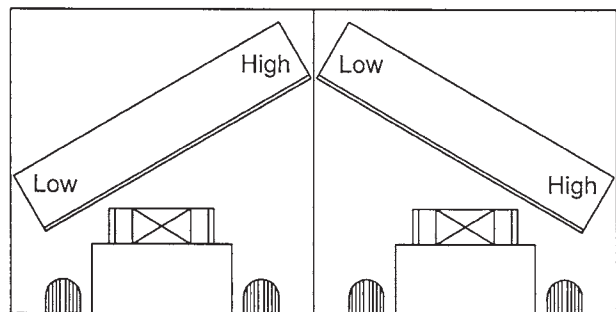
**Figure 14**



**Figure 16**



**Figure 15**



**Figure 17**

**To correct leveling problems shown in:**

- Figure 14, extend tilt cylinders.
- Figure 15, retract tilt cylinders.
- Figure 16, loosen hardware that attaches the swing assembly to the brush head assembly; lower the left-hand side of the brush head until both sides are an equal distance above the ground. Tighten the hardware.
- Figure 17, loosen hardware that attaches the half-moon plate assembly to the brush head assembly; lower the right-hand side of the brush head until both sides are an equal distance above the ground. Tighten the hardware.

### ADJUSTING BRUSH PATTERN

A properly adjusted brush offers the best sweeper performance.

To check the brush pattern:

1. Move the sweep to a dusty, flat surface.
2. Set the prime mover's parking brake and leave the engine running.
3. Start the sweep at a slow speed; then, lower it completely to the surface so bristle tips touch the ground. Run the sweep in a stationary position for 30 seconds.
4. Raise the sweep and back away; switch off the engine and remove the key. The brush pattern left in the dust should be 2-3" wide, running the entire length of the brush. (Compare the swept area with Figure 18.)
5. Adjust the brush pattern as necessary according to instructions found in Adjusting Spring-Chain Assembly.

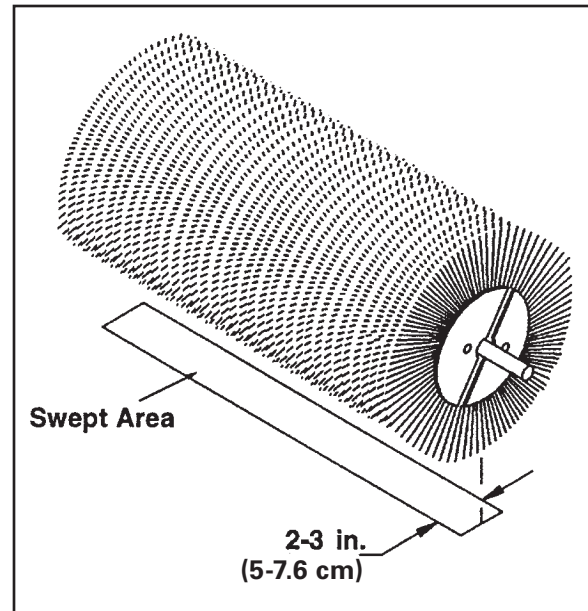


Figure 18

### 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. Lower the sweep.
2. Increase or decrease the number of links in the spring-chain assembly between the mounting assembly chain holder and the brush head frame upright.
  - Increase the number of links to lower the brush head frame upright; or
  - Decrease the number of links to raise the brush head frame upright.
3. Adjust the transport chain.

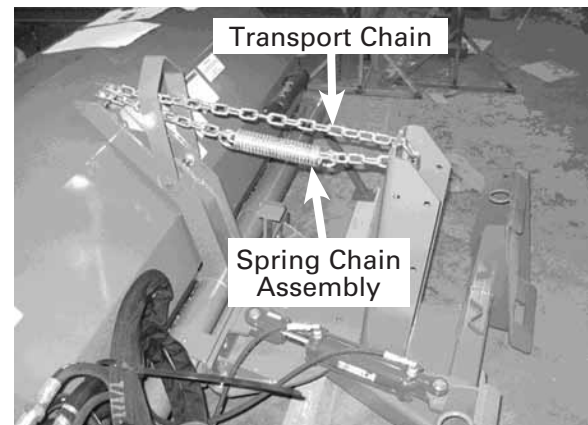


Figure 19

### ADJUSTING TRANSPORT CHAIN

The transport chain (Figure 19) 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 sweep to the ground.
2. Pull the transport chain tight and secure it in the mounting assembly chain holder.
3. Raise the sweep 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.

## After Assembly Checklist

Inspect the sweep thoroughly after assembly to be certain it is set up properly. The following checklist is a reminder of points to inspect. Check off each item as it is found satisfactory or after proper adjustment is made.

- Check operator's manual and familiarize the operator with all sections of it.
- Check that brush hood and all safety shielding is in place.
- Check all bolts to be sure they are tight or adjusted properly at hinged locations.
- Make sure all hydraulic hardware and hydraulic fittings are tight.
- 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.
- Check that all lubrication points with grease fittings have been lubricated.
- Check sweep attitude, after mounting on tractor.
- Check that gearbox is properly serviced and seals are not leaking.
- All safety signs (decals) in place and readable.
- When the sweep is transported on a road or highway at night or during the day, safety devices should be used for adequate warning to operators of other vehicles.

## Skid Steer Requirements and Preparation

The skid steer mounted, hydraulic driven sweeps are designed for use in road and parking lot maintenance, construction cleanup, snow removal, grounds maintenance and similar operations.

- The Model W Sweeps are designed to fit skid steer units with the “Universal” style quick-attach loaders.
- Depending on the size of sweep being used, the skid steer should have at least 30 horsepower or up to 65 horsepower and be equipped with auxiliary hydraulic system in good working condition.
- The skid steer loader should have a lifting capacity of 1,000 lbs. or more.
- The operator is responsible for the safe operation of this sweep. The operator must be properly trained. Operators should be familiar with the sweep and skid steer and all safety practices before starting operation. Read the safety rules and safety signs on pages 5-15.
- Check the skid steer tires. Adjust tire pressure to 50 psi (346 KN/m<sup>2</sup>). Keep tire valves capped.
- Be sure the skid steer hydraulic oil and filter have been serviced according to the skid steer manufacturer’s recommendations.



### WARNING

Power unit must be equipped with ROPS or ROPS cab and seat belt. Keep seat belt securely fastened. Falling off power unit can result in death from being run over or crushed. Keep foldable ROPS systems in “locked up” position at all times.

- Hoses and flat face couplers from the sweep to the skid steer unit are included (skid steer applications).
- Optional hydraulic angle control kits are offered for the Skid Steer Sweeps. For skid steer units with two pair of remote hydraulic outlets, order #610950. For field installation on units with only one pair of remote outlets, order #610703. For a factory installed hydraulic solenoid valve and kit, order #610940.



### CAUTION

Be sure your prime mover is in good condition. Read all the safety precautions and make sure all prime mover operators are familiar with the safety rules of operation.

## General Safety

Only qualified people familiar with this manual should operate this machine. Operator should wear hard hat, safety glasses, and safety shoes. Prime mover must be equipped with a Roll-Over Protective System (ROPS) and a seat belt that is used. Before beginning operation, clear work area of objects that may be picked up, thrown, or entangled. Check for ditches, holes, or other obstacles that could upset tractor or damage sweep. Always turn off prime mover engine, set parking brake, lower cutter to ground and allow brush core to come to a complete stop before dismounting prime mover.

## Pre-Operation Checklist

(OWNER/OPERATOR RESPONSIBILITY)

- Review and follow safety rules and safety signs on pages 6 through 16.
- Check that sweep is properly and securely attached and that all hardware is properly installed.
- Lubricate all grease fitting locations.
- Check gear lube level. Check sight glass on side of gearbox.
- Keep polypropylene brushes away from intense heat and flames.
- Check that all shields and guards are properly installed and in good condition.
- Check brush height, front to rear attitude and side to side brush height.
- Place prime mover transmission in neutral before starting engine.
- Inspect area to be swept and remove wire, twine, branches or other objects that might be wrapped or thrown, causing injury or damage.
- Check that no one enters the area of machine operation. Always work at a safe distance from people.
- Know your controls and how to stop prime mover, engine and sweep quickly in an emergency. READ THIS MANUAL AND THE ONE PROVIDED WITH YOUR PRIME MOVER.
- When operating sweep on any roof area, make sure guarding of roof area complies with Federal OSHA law section 1926.500 on perimeter guarding.
- Before sweeping, make sure storage stands are fully raised. They are designed to keep the brush off the ground when sweep is dismounted or parked.

**NOTE:** Improper storage of sweep (allowing the brushes to rest against the ground or another object) will damage the sweep and is not covered under manufacturer's warranty.

- 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.
- Minimize flying debris — use the slowest rotating speed that will do the job. See Operation Section: Operating Tips.



### WARNING

Never raise the sweep 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.

## Daily Checklist

- Check that 3 pt. mounted sweep is properly and securely attached to tractor.
- During inspection, check that all nuts and bolts are secure and that all safety shields are in place.
- Check condition of brush core assembly and security of attachment.
- Do not put sweep into service unless brush wafers are intact and in good condition.
- Do not put sweep into service unless all shields and guards are in place and in good condition. Replace if damaged.
- Check prime mover tire pressure before sweeping.
- Remove from the sweeping area all property that could be damaged by flying debris.
- Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, hearing, and head.

## Operation

### SWEEPING

The model W sweeps are powered with the auxiliary hydraulic system on the skid steer power unit.

The model W sweep can utilize up to 16 GPM hydraulic flow at maximum brush speed. Excess flow is bypassed back to the skid steer.

Brush speed can be reduced by reducing engine rpm or by the handle on the sweep's control valve. Start with the valve control handle in the middle of its operating range (Figure 20).

The model W sweep mounted on a smaller sized skid steer may require more engine rpm than a larger skid steer. Excess engine rpm may cause excessive hydraulic oil temperature.

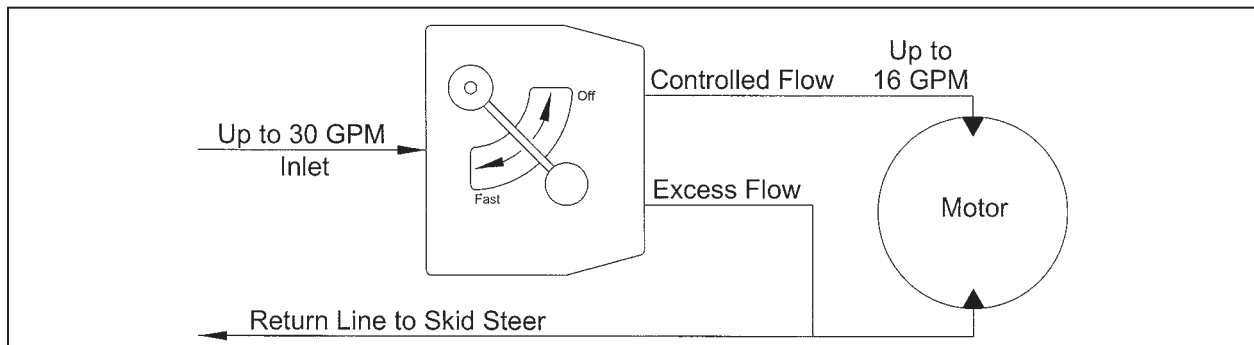


Figure 20

**NOTE:** Always reduce engine rpm when possible, to reduce hydraulic oil temperature and noise.

When beginning to use the sweep, start with the sweep's control valve lever in the middle of its operating range. You can adjust the valve or engine rpm later, depending on your sweeping requirement.

Lower the sweep until the brush is near the ground. With the skid steer engine at a low speed, engage the auxiliary hydraulic system. Slowly increase the engine speed until the desired brush speed is reached. To stop, slow the skid steer engine speed to idle and then disengage the auxiliary hydraulic system.

Slowly lower the sweep until ground contact is made. Engage the skid steer drive and start sweeping.

**NOTE:** Do not allow the sweep to drop violently on to the ground. Lower it slowly to allow the brush bristles to gradually start the sweeping process.

At first, begin sweeping at a slow forward speed and then speed up until the desired result and forward speed is achieved.

Optimum working speeds will usually be between 1 and 4 mph. The type of material being removed will determine the best brush rotation speed and best forward speed to use.

Remember to adjust the control valve lever on the sweep and the skid steer engine speed to obtain the best brush speed and forward speed for the sweeping operation at hand.

**NOTICE:** Avoid sweep damage. Reduce travel speed to avoid hitting immovable objects.

Before sweeping, make sure the parking stands are raised. It is required to keep the brush off the ground when the sweep is not attached to the prime mover or if the prime mover will be parked for some time.

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

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

Direct debris by angling the brush head in that direction.

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

### **RAISING & LOWERING**

To raise or lower the sweep, use the skid steer loader. **DO NOT** use the bucket tilt cylinders. Maintain the sweep in a level position. Try to keep the sweep operating height the same.

### **ANGLING**

Angling the sweep will control the direction debris will leave the sweep. Angling the brush head the same direction as the wind will also help reduce the amount of material that blows onto the operator and the area just swept.

To swing the brush head using a manual angle kit: Remove the lock pin, swing the brush head by hand to the desired angle and replace the lock pin in the nearest hole. The manual angle kit has holes for straight sweeping and 30° or 15° angle sweeping right or left.

The optional hydraulic angle kit allows use of the prime mover's remote hydraulic valves to angle the sweep.

Position the brush head at the desired angle by using the valve control for the swing function.

## Operating Tips

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

### **LARGE AREAS**

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

### **SNOW**

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 speed. 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 minimize dust, try to sweep on humid/overcast days or after it has rained. The addition of an optional sprinkler system will help considerably. Sweep so the wind blows the dust away from you or in the direction the brush head is angled.

If the amount of dirt is too much for the sweep, use a blade to scrape the large amount of dirt away first and use the sweep for final clean up. Keep forward speed low (4 mph or less).

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**

Travel slowly – 2-3 mph (3-5 kph). Sweep a path less than the full width of the sweeper. Increase engine speed if debris becomes very heavy.

### **WHILE OPERATING SWEEP**

Never sweep toward people, buildings, vehicles or other objects that can be damaged by flying debris.

Only operate the sweep while you are in the operating position. The safety restraint must be fastened while you operate the prime mover. Only operate the controls while the engine is running. Protective glasses must be worn while you operate the prime mover and while you operate the sweep.



## Transporting

1. Transport Position: When the sweep is in the lowered position, hook the chain in the chain link so the chain is as short as possible. This will put all the weight of the sweep on the transport chain and relieve all the weight from the spring.



### CAUTION

When traveling on public roads, whether at night or during the day, use accessory light and devices for adequate warnings to operators of other vehicles. Comply with all federal, provincial, state and local laws.

2. Be sure to reduce ground speed when turning; and, leave enough clearance so the sweep does not contact obstacles such as buildings, trees or fences.
3. Select a safe ground travel speed when transporting from one area to another. When traveling on roadways, transport in such a way that faster moving vehicles may pass you safely.
4. When traveling over rough or hilly terrain, slow down and use extra care.
5. Read all the safety warnings in the front of the manual.

## Parking Stands

Parking stands are included as standard equipment to stabilize the sweep when it is being disconnected from the tractor and is not in use. They also help protect the brushes when the sweep is not in use, by taking the pressure off the brushes.

**NOTE:** Improper storage of sweep (allowing the brushes to rest against the ground or another object) will damage the sweep and is not covered under manufacturer's warranty.

**NOTE:** Be sure parking stand is fully raised and fastened with a locking pin before using the sweep.

## Storage

- Lower the parking stands and pin in place. Lower the sweep to the ground.

**NOTE:** Do not store the sweeper with weight on the brush. Weight will deform the bristles, destroying the sweeping effectiveness.

- Disconnect sweep from the power unit and carefully drive tractor away from sweep.
- Storage location should be level and on a solid surface to make hitching and unhitching easy.
- Make sure storage location is away from children, animals, or a traffic area.
- 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.

## Maintenance

The information in this section is written for operators who possess basic mechanical skills. Should you need help, your dealer has trained service technicians available. For your protection, read and follow all safety information in this manual.



### WARNING

- Before servicing the machine, disengage the auxiliary hydraulic system, engage the parking brake or place the transmission in “Park,” shut off the power unit and remove the key.
- Before working underneath, lower the parking stands and pin in place. Place blocks under the four parking stands if extra work height is needed. Hydraulic system leakdown and failure of mechanical or hydraulic system can cause equipment to drop.
- Keep all persons away from operator control area while performing adjustments, service or maintenance.

## Routine Maintenance

### **DAILY CHECKS:**

1. Check that all bolts, nuts, and screws are tight.
2. Check the hydraulic oil reservoir on the skid steer unit. If needed, add oil to the correct level.
3. Grease the splined coupling between the hydraulic motor and chain drive jackshaft daily.
4. Check the wear on the brush and that no material has wrapped on the brush core.
5. If sweep is equipped with the optional hydraulic angle kit, check hydraulic hoses and fittings for leaks. Repair any leaks immediately. Never use your hand to check for a hydraulic leak when system is under pressure.
6. Replace any worn or damaged parts immediately. Do not use attachment with any damaged parts.

## Lubrication Information

The chart gives the frequency of lubrication in operating hours, based on normal conditions. Severe or unusual conditions may require more frequent lubrication.

Do not let excess grease collect on or around parts, particularly when operating in sandy areas.

Use a lithium grease of NO. 2 consistency with a MOLY (molybdenum disulfide) additive for all locations. Be sure to clean fittings thoroughly before attaching grease gun. When applied according to the lubrication chart, one good pump of most guns is sufficient. Do not over grease.

Thoroughly clean the grease zerks before servicing. Dirt mixed with lubricant will rapidly wear parts and destroy bearings. Keep it clean.

## Lubrication Chart

DESCRIPTION	FREQUENCY
Splined coupling by hydraulic motor	8 Hrs.
Main Brush Head Pivot	20 Hrs.
Main Brush Bearings	20 Hrs.
Drive Chain	40 Hrs.
(Remove and soak in motor oil)	

Daily lubrication of the splined coupling is necessary. Failure to maintain proper lubrication can result in damage and premature wear to the sweep components.



### CAUTION

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

## Adjusting for Work

### LEVELING THE SWEEP

For best performance, level the sweep immediately after installation and as a part of regular maintenance. This will provide for even brush wear and effective use.



### CAUTION

Avoid injury. Before adjusting the sweep, always turn off the sweep and the prime mover engine and remove the key.

1. Move the unit to a level dusty, paved surface.
2. Lower the brush head assembly so bristle tips are about 2" (51 mm) off the ground. (Figure 12A)
3. Engage the parking brake and shut down the prime mover. Be sure to relieve pressure to the auxiliary hydraulic lines.
4. Unfasten safety restraints and exit prime mover.
5. Check if the skid steer mount and half-moon plate assembly is level by using a bubble level. To make corrections: Adjust tilt cylinders. If the front of the swing assembly is high, extend tilt cylinders. If low, retract cylinders.
6. Position the brush head assembly straight ahead. On each side, measure from the brush frame to the ground. If measurements are not equal: Loosen hardware that attaches the half-moon plate (Figure 13A) to the brush head assembly; lower the high side of the brush head until both sides are an equal distance above the ground. Tighten the hardware.
7. Measure to see if the brush head assembly is level when angled. First, angle the brush head to the right. Measure as in step 6. Then, angle the brush head to the left. Measure again. If measurements are equal, the sweeper is level. If not, then proceed with this step.



Figure 12A

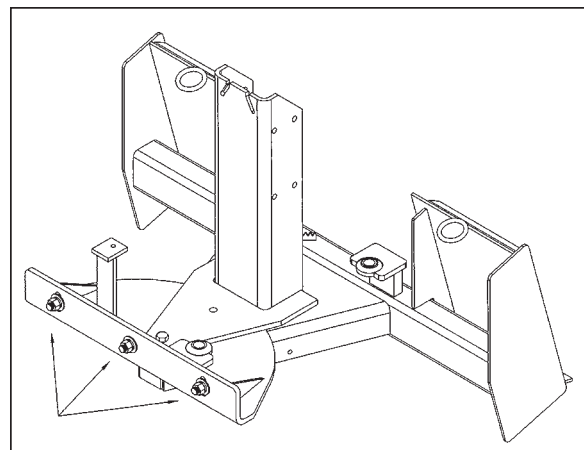


Figure 13A

## Adjusting Drive Chain

1. Remove the rear chain shield (Figure 21).
2. Loosen, but do not remove the four (4) bolts securing the 4 bolt bearings on both ends of the brush head assembly (Figures 21 and 22).
3. Slide the brush core away from the tractor until there is about 3/8" (10mm) of play in the chain.

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

4. Tighten the four (4) bolts on the chain end of the brush head. (Right hand end, Figure 21).
5. Check the left hand end of the brush head and make sure the 4 bolt bearing is positioned the same as the right hand end (chain end). When positioned correctly, tighten the four bolts. (Figure 23)
6. Reinstall the rear chain shield.

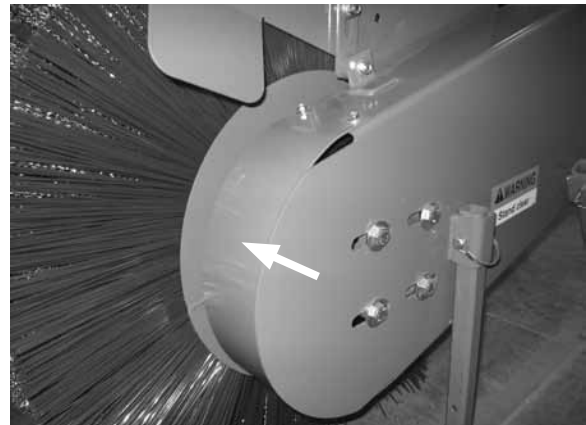


Figure 21

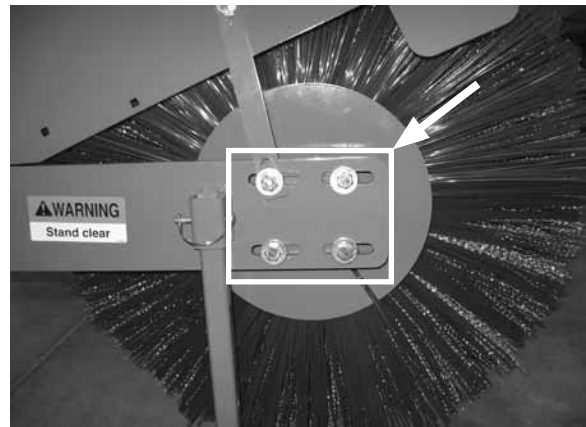


Figure 22



Figure 23



### CAUTION

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

## Drive Chain Maintenance

1. Check chain adjustment – (See above instructions.)
2. Remove chain from sprockets and soak in motor oil every 40 hours of operation.
3. If chain becomes rusty or stiff, remove chain from sprockets and soak in penetrating oil; bend back and forth to restore chain flexibility. If this does not work, replace entire chain assembly.

## Aligning Sprockets

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

1. Remove front (Figure 24) and rear (Figure 25) 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 26).
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 one. Tighten the set screw.
4. Reinstall chain shields.

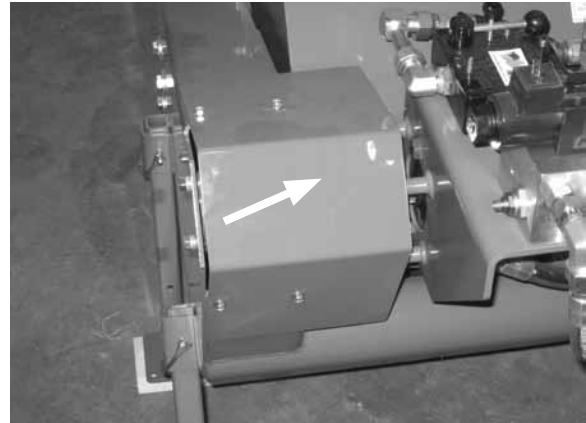


Figure 24



Figure 25



### CAUTION

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

## Brush Section Replacement

1. Loosen 4 carriage bolts holding each bearing assembly (Figures 27 and 28).
2. Remove front (Figure 25) and rear (Figure 24) chain shields.
3. Rotate the brush to locate the master link. Remove the master link and chain.
4. Pull the brush out from under the hood.
5. Stand the brush securely on blocks.
6. Remove retainer plate halves (Figure 29) from one end of the brush.
7. Slide old sections off the core.

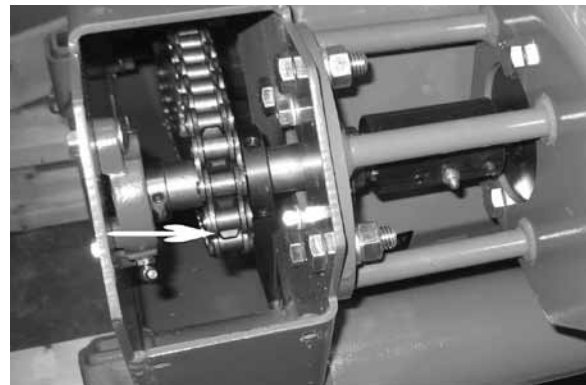


Figure 26

- Slide the first polypropylene section onto the core (Figure 30). Be sure drive pins on brush wafer (Figures 30 and 31) straddle a tube.

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

**NOTE:** Drive pins must all angle up or angle down.

- Install a second section with drive pins rotated 180° from those on the first section (Figure 32).

- 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" (13 mm) remains, nest the last section on the previous one. Do this by placing both sections' drive pins on one tube.

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

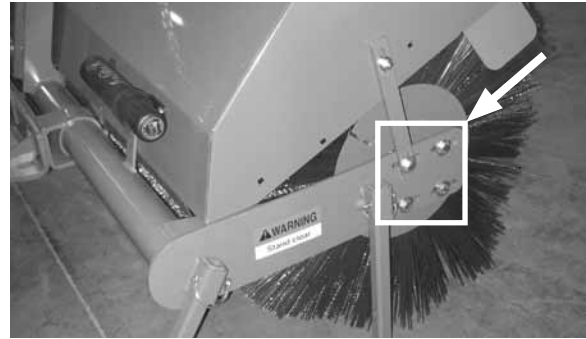


Figure 27

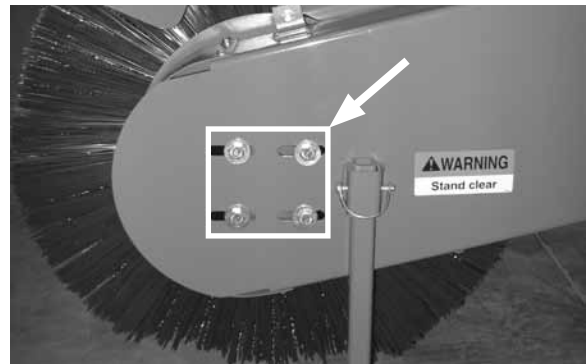


Figure 28

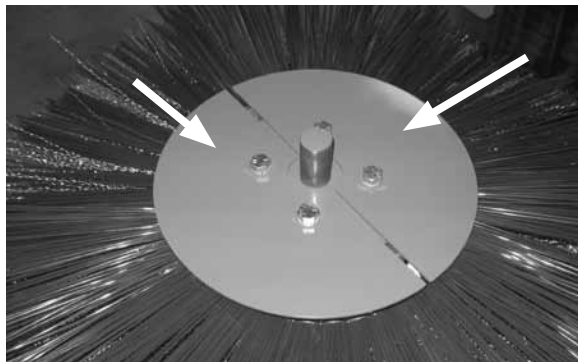


Figure 29

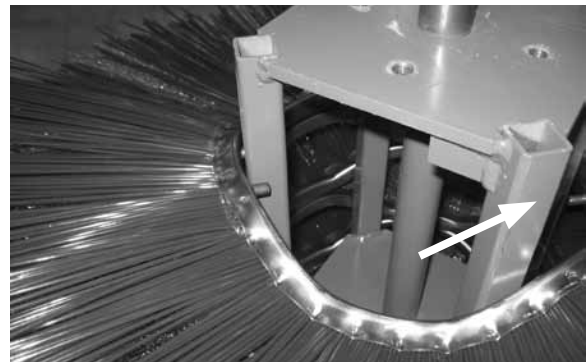


Figure 30

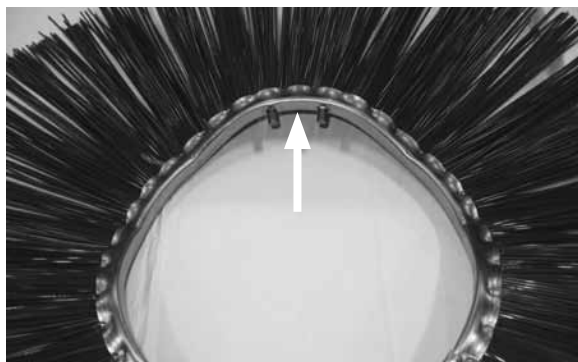


Figure 31

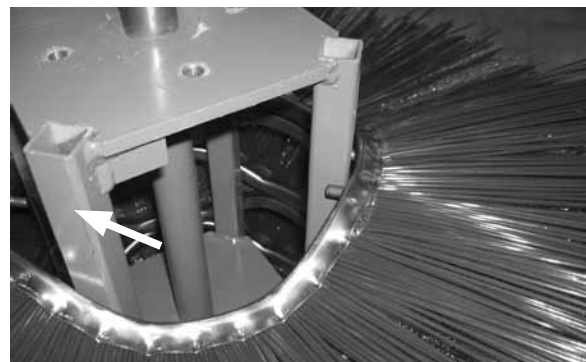


Figure 32

## Troubleshooting

PROBLEM	POSSIBLE CAUSE	POSSIBLE REMEDY
Sweep does not sit properly on skid steer attachment plate.	1. Obstruction between sweep attachment plate and skid steer.	Check to see that the attachment plate is free of foreign obstacles. Make sure attachment plate pins are fully retracted.
Sweep inoperative.	1. Auxiliary hydraulic hoses not connected.	Connect hoses. (See Sweep Installation/Removal.)
	2. Auxiliary hydraulics not engaged.	Turn on auxiliary hydraulics.
	3. Skid steer auxiliary hydraulic control lever or pedal is operated in wrong direction (check valve only allows correct flow direction).	Change direction of auxiliary hydraulic control (refer to skid steer operation manual).
	4. Broken drive chain.	Repair/replace chain.
	5. Flow control valve is in "off" position.	Adjust valve handle.
Brush wears into cone shape.	1. Sweeper is not level.	Level sweeper before each use – see Maintenance: Leveling
	2. Tires on prime mover at different pressures or are different sizes.	Check tire sizes and rating – make corrections as necessary.
Brush wears very quickly.	1. Brush pattern too wide.	Adjust brush pattern to 2-3 inches (51-76 mm) wide – see Maintenance: Setting Brush Pattern.
	2. Spring-chain assembly not adjusted correctly.	Adjust spring-chain assembly (see Maintenance: Adjusting Spring-Chain Assembly).
	3. Brush speeds too high	Use slower brush speeds.
Brush wears unevenly.	1. Brush head not level.	Level brush head (see Adjustments: Leveling).
Drive chain falls off repeatedly.	1. Sprockets not aligned.	Align sprockets (see Maintenance: Aligning Sprockets).
	2. Too little tension on drive chain.	Tighten drive chain (see Maintenance: Adjusting Drive Chain).
Drive chain breaks.	1. Drive chain not properly tightened.	Tighten drive chain (see Maintenance: Adjusting Drive Chain).
	2. Drive chain is rusted and has been setting outside.	Replace chain and lubricate regularly.



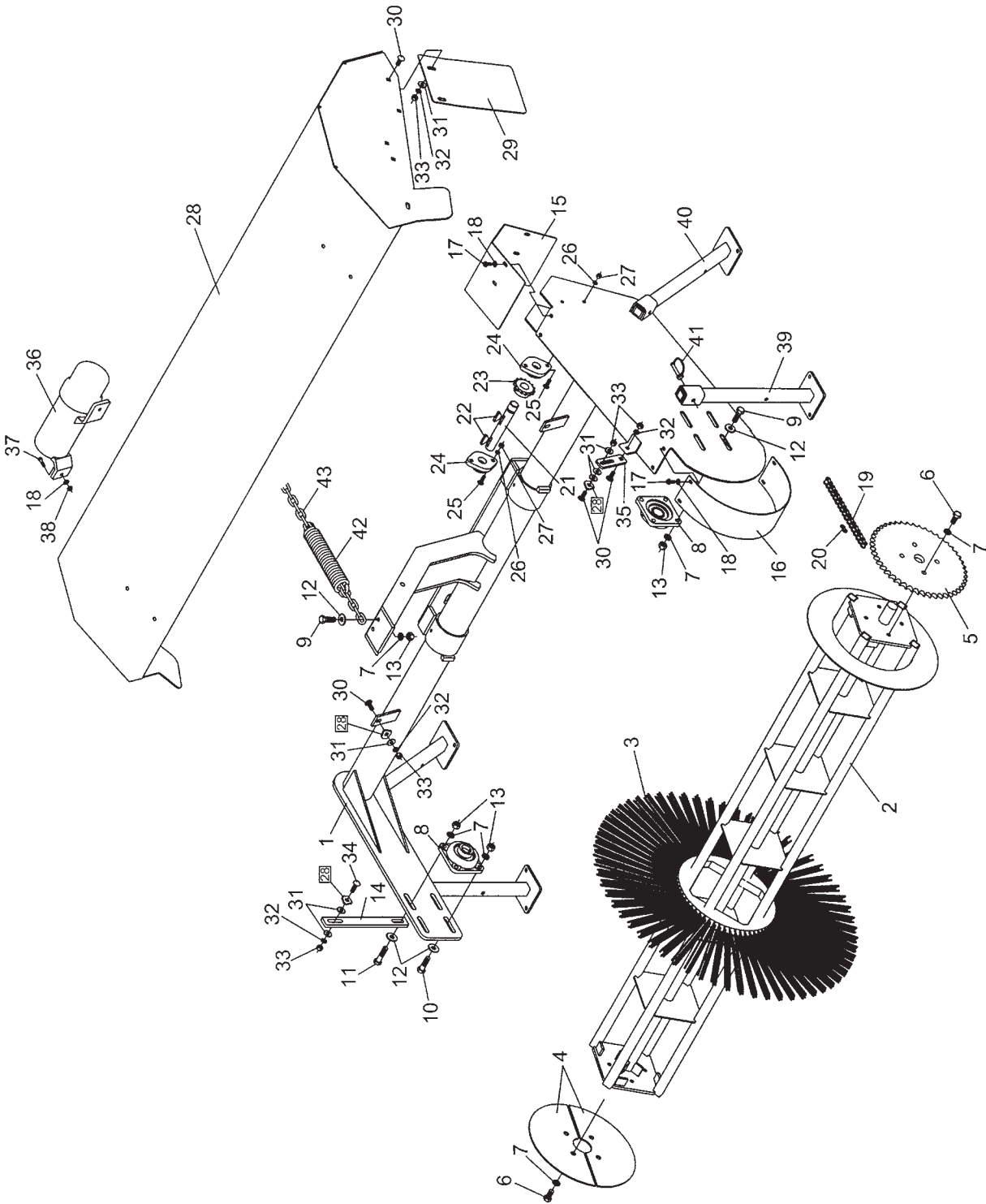
## Troubleshooting (continued)

PROBLEM	POSSIBLE CAUSE	POSSIBLE REMEDY
Brush rotates wrong direction.	1. Hoses installed incorrectly.	Switch hoses at motor.
Brush head assembly “bounces” during sweeping.	1. Spring-chain assembly needs adjustment.	Adjust spring-chain assembly (see Maintenance: Adjusting Spring-Chain Assembly.)
	2. Ground speed too fast and/or brush speed too slow.	Find correct combination of ground and brush speeds.
	3. Core is bent.	Replace core.
Brush slows or seems to be under heavy load when sweeping.	1. Brush pattern too wide.	Adjust brush pattern to 2-3 inches (51-76 mm) wide – see Maintenance: Adjusting Brush Pattern.
	2. Travel speed too fast.	Travel no more than 5 mph (8 kph) while sweeping (2-3 mph recommended).
	3. Trying to sweep too much material at once.	Make several passes with sweeper.
	4. Relief pressure set too low.	Set relief pressure to 2000 psi (138.0 bars).
	5. Filter plugging.	Change or clean filter.
	6. Pump has failed.	Contact dealer to repair or replace.
	7. Hydraulic motor is failing.	Test hydraulic system: see Trouble-shooting: Hydraulic Problems.
Machine makes intermittent clicking noise.	1. Loose parts.	Check that all nuts and bolts are properly tightened.
	2. Chain damaged.	Replace damaged chain link.
Excessive vibration and/or machine jumps over ground.	1. Excessive trash wrapped on rotor.	Remove trash.
	2. Damaged or bent main brush core.	Replace brush core.
Springs on spring-chain assemblies stretching.	1. Transport chain too loose when traveling between job sites.	Adjust according to Adjustment: Transport Chain.
	2. Travel speeds too fast when sweeping.	Do not travel at speeds over 5 mph (8 kph).
Hydraulic hose failure.	1. Hose being pinched.	Reroute hose and fasten out of harms way.
	2. Hoses worn or frayed.	Replace hose.
	3. Hydraulic relief pressure on power unit too high.	Adjust relief pressure (if possible) or change power unit.

## Troubleshooting (continued)

PROBLEM	POSSIBLE CAUSE	POSSIBLE REMEDY
Hydraulic oil overheats.	1. Oil level low.	Check oil level in power unit reservoir.
	2. Dirty filters.	Change oil and filters in power unit per manufacturer's recommendations.
	3. Reservoir of power unit too small.	Allow time for oil to cool down.
	4. Restriction in hoses.	Remove bends in hoses; remove obstructions inside hoses.
	5. Skid steer pump flow rate exceeds maximum rate of sweep.	Contact manufacturer for proper flow control method. Operate with engine at lower rpm.
Angle hydraulic cylinder neither extends nor retracts.	1. Electric valve – No power from controls because wires are broken or disconnected.	Reconnect wires if disconnected; replace wires if broken.
	2. Electric valve – No power from controls because switch is broken.	Replace switch.
	3. Manual valve – Control rods not connected or are binding.	Check control rod linkage; make sure all parts are connected and are not binding; fix if necessary.
	4. Both types of valves – Hoses or fittings loose or disconnected.	Tighten hoses and fittings.
Brush rotates too slow.	1. Flow control valve needs adjusting	Adjust valve.
	2. Hydraulic system may not be delivering its rated volume of oil due to wear.	Hydraulic pump may need to be repaired.

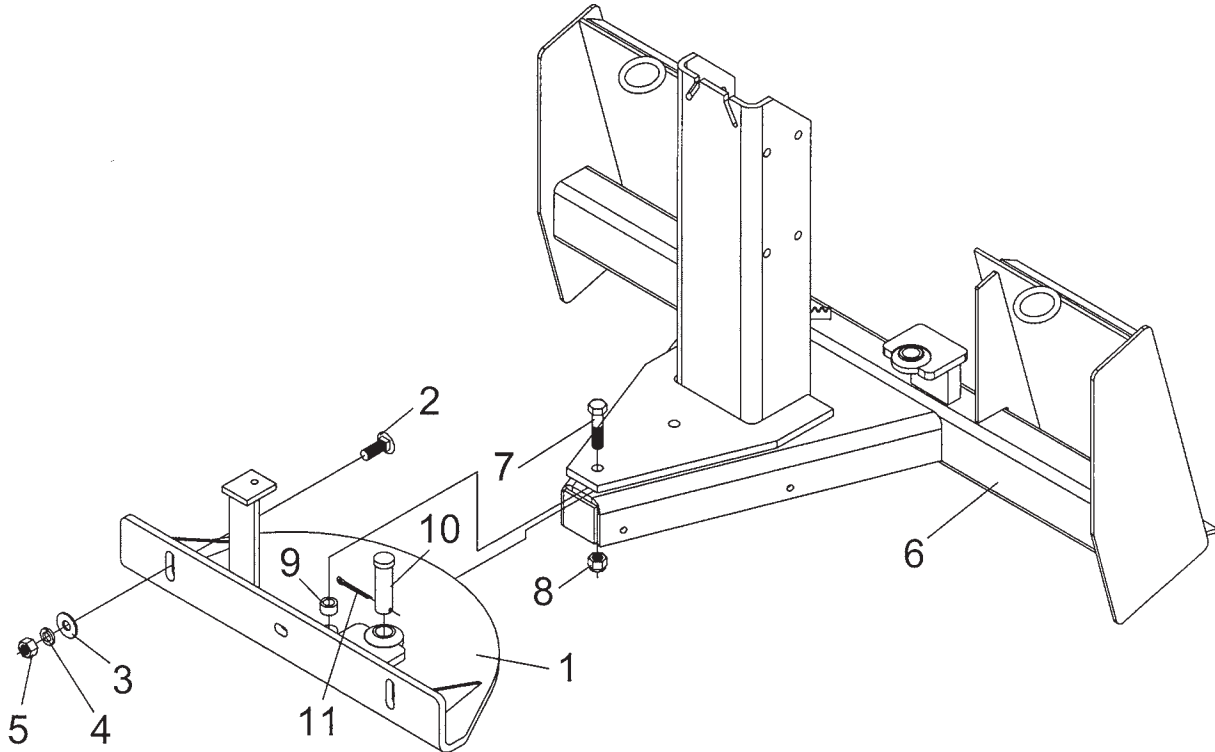
Description: Brush Head Assembly Parts Drawing



## Description: Brush Head Assembly Parts List

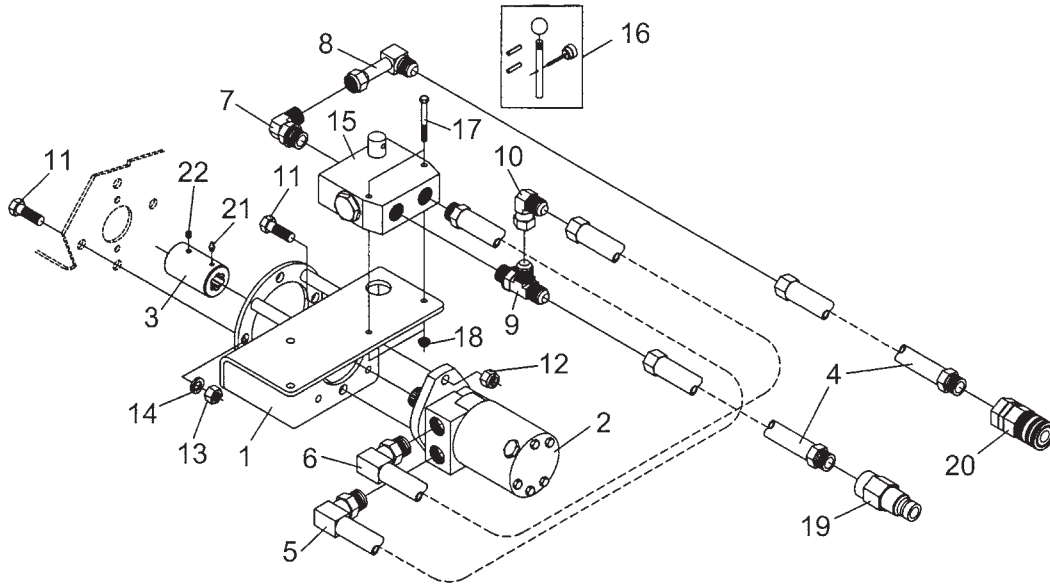
Ref. No.	Part No.	Description	No. Req'd.
1	610810	Frame Weldment (5 Ft.)	1
	610866	Frame Weldment (6 Ft.)	1
	610715	Frame Weldment (7 Ft.)	1
2	610895	Brush Core Weldment (5 Ft.)	1
	610735	Brush Core Weldment (6 Ft.)	1
	610740	Brush Core Weldment (7 Ft.)	1
3	610860	Wafer, 10 x 32 Poly	Var.
	610865	Wafer, 10 x 32 Wire (PW Models only)	Var.
4	610721	Retainer Plate, Wafer Lock	2
5	2506021	Sprocket, Large 60A48	1
6	2503332	Bolt 1/2"-13NC x 1" Hex Head Gr. 5	8
7	2502002	Washer 1/2" Springlock	18
8	2505043	Bearing, 4-Bolt Flange	2
9	2503145	Bolt 1/2"-13NC x 1 1/2" Hex Head Gr. 5	6
10	2503265	Bolt 1/2"-13NC x 1 3/4" Hex Head Gr. 5	3
11	2503118	Bolt 1/2"-13NC x 2" Hex Head Gr. 5	1
12	2501003	Washer 1/2" Flat	10
13	2500003	Nut 1/2"-13NC Full Hex	10
14	610799	Strap, Shield Adjustment	1
15	610722	Shield, Upper Chain	1
16	610723	Shield, Lower Chain	1
17	2503326	Bolt 1/4"-20NC x 3/4" Flange Hex	8
18	2501006	Washer 1/4" Flat	10
19	610846	Chain, #60 Roller	1
20	2506022	Master Link, #60	1
21	610773	Jack Shaft, Ø1.00" x 7.00"	1
22	2505701	Key, Woodruff #22	2
23	2506019	Sprocket, Small 60B11	1
24	2505041	Bearing, 2-Bolt Flange	2
25	2503110	Bolt 5/16"-18NC x 1" Carriage Head	4
26	2502011	Washer 5/16" Springlock	4
27	2500011	Nut 5/16"-18NC Full Hex	4
28	610901	Brush Guard Weldment (5 Ft.)	1
	610861	Brush Guard Weldment (6 Ft.)	1
	610781	Brush Guard Weldment (7 Ft.)	1
29	610749	Shield, Bristle	1
30	2503055	Bolt 3/8"-16NC x 1" Carriage Head	6
31	2501004	Washer 3/8" Flat	9
32	2502008	Washer 3/8" Springlock	7
33	2500004	Nut 3/8"-16NC Full Hex	7
34	2503178	Bolt 3/8"-16NC x 1 1/4" Carriage Head	1
35	610837	Hood Support Bracket	1
36	2504225	Manual Holder, Plastic	1
37	2503116	Bolt 1/4"-20NC x 1" Hex Head Gr. 2	2
38	2500008	Nut 1/4"-20NC Full Hex	2
39	610726	Stand Tube (Rear)	2
40	610731	Stand Tube (Front)	2
41	590194	Lock Pin 5/16" (AK-2907)	4
42	610849	Spring, Extension	1
43	610851	Chain, Boom Pivot Limit (33 Links)	2

Description: Skid Steer Mount Assembly Parts Drawing & List



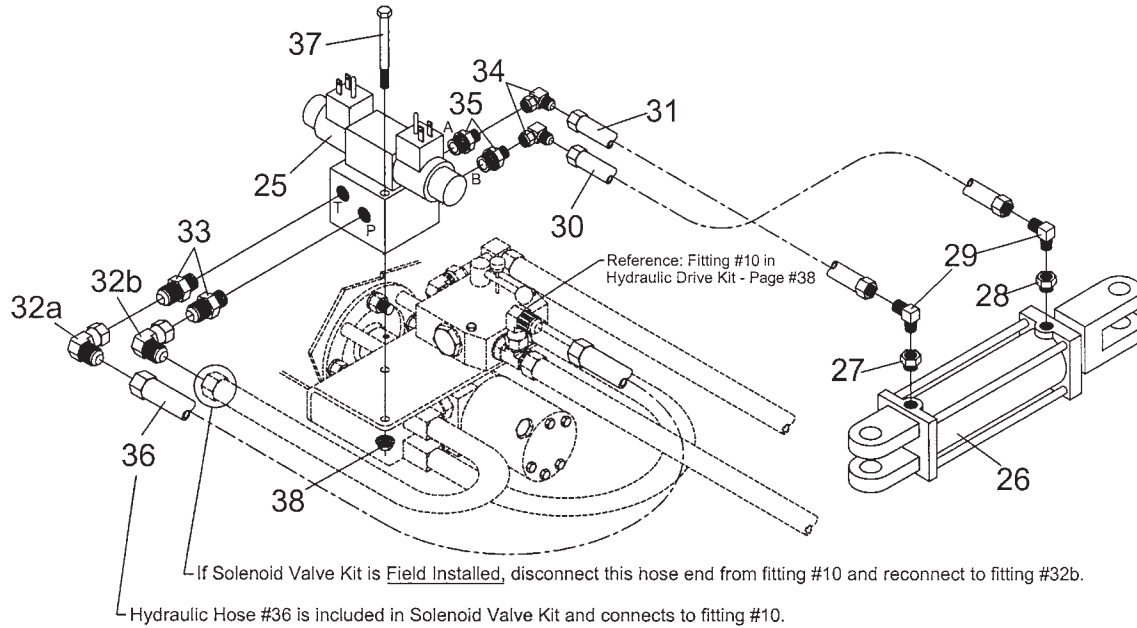
Ref. No.	Part No.	Description	No. Req'd.
1	610841	Main Pivot Weldment	1
2	2503330	Bolt 5/8"-11NC x 1 3/4" Carriage Head	3
3	2501005	Washer 5/8" Flat	3
4	2502007	Washer 5/8" Springlock	3
5	2500071	Nut 5/8"-11NC Full Hex Gr. 5	3
6	610933	Skid Steer Frame Weldment	1
7	2503088	Bolt 5/8"-11NC x 2 1/2" Hex Head Gr. 5	1
8	2500041	Nut 5/8"-11NC Hex Nylock	1
9	610848	Bushing, Main Pivot	1
10	863070	Pin, Hydraulic Cylinder	2
11	2504121	Pin, Cotter 3/16" x 1 1/2"	2

## Description: Hydraulic Drive Sweep Parts Drawing &amp; List



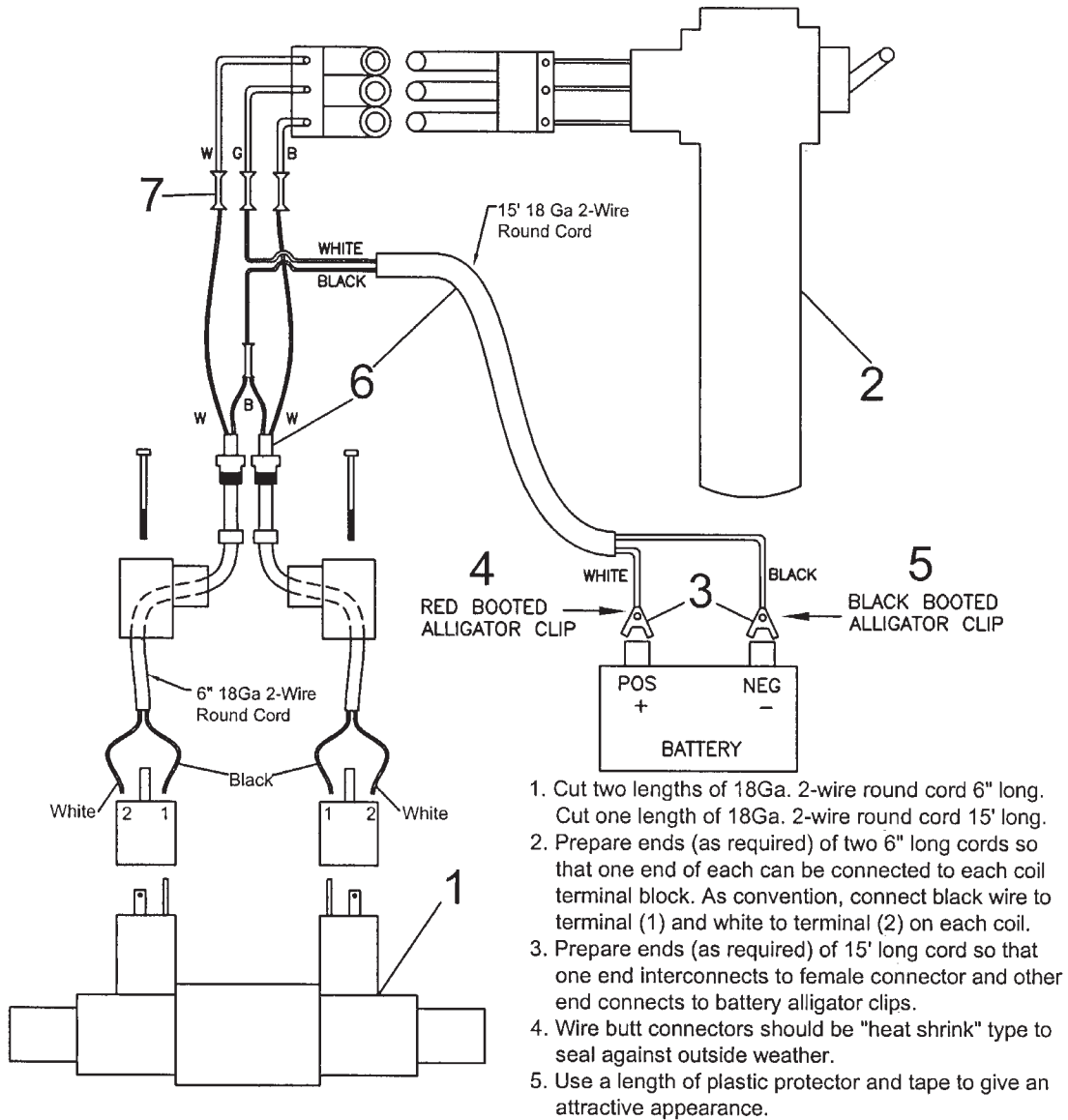
Ref. No.	Part No.	Description	No. Req'd.
1	610946	Motor Mount Weldment	1
2	2505716	Hydraulic Motor	1
3	2506023	Shaft Coupling	1
4	2505721	Hose, Hydraulic 1/2" ID x 96"	2
5	2505722	Hose, Hydraulic 1/2" ID x 24"	1
6	2505723	Hose, Hydraulic 1/2" ID x 20"	1
7	2505727	Elbow, 90° Adjustable 7/8"-14 O-Ring	1
8	2505725	Elbow, 90° Swivel 7/8"-14 (Long)	1
9	2505726	Tee, Adjustable 7/8"-14 O-Ring	1
10	2505724	Elbow, 90° Swivel 7/8"-14	1
11	2503004	Bolt 1/2"-13NC x 1 1/2" Hex Head Gr. 2	6
12	2500039	Nut 1/2"-13NC Nylock Hex	2
13	2500003	Nut 1/2"-13NC Full Hex	4
14	2502002	Washer 1/2" Springlock	4
15	2505719	Valve, Flow Control	1
16	2505590	Handle Hardware Kit for Flow Control Valve	1
17	2503117	Bolt 1/4"-20NC x 2 1/2" Hex Head Gr. 2	2
18	2500008	Nut 1/4"-20NC Whiz Flange Hex	2
19	2505688	Coupling, SAE 1/2" Male	1
20	2505689	Coupling, SAE 1/2" Female	1
21	2504178	Grease Zerk 1/4"-28NF	1
22	2503042	Set Screw, Socket 5/16"-18NC x 5/16"	1

Description: Optional Hydraulic Swing Solenoid Valve Kit Parts Drawing & List



Ref. No.	Part No.	Description	No. Req'd.
25	2505720	Solenoid Valve w/Harness	1
26	2504256	Hydraulic Cylinder 2 x 6	1
27	2505626	Reducer Bushing 3/8"-1/4" w/.040 Orifice	1
28	2505517	Reducer Bushing 3/8"-1/4"	1
29	2505715	Elbow, 90° Male 9/16"-18 (JIC) to 1/4" NPTF	2
30	2505732	Hose, Hydraulic 1/4" ID x 42"	1
31	2505733	Hose, Hydraulic 1/4" ID x 48"	1
32	2505724	Elbow, 90° Swivel 7/8"-14	2
33	2505728	Straight Connector 7/8"-14 (JIC) to 3/4"-16 O-Ring	2
34	2505682	Elbow, 90° Swivel 9/16"-18	2
35	2505684	Straight Connector 9/16"-18 (JIC) to 3/4"-16 O-Ring	2
36	2505729	Hose, Hydraulic 1/2" ID x 30"	1
37	2503208	Bolt 3/8"-16NC x 4" Hex Head Gr. 2	2
38	2500081	Nut 3/8"-16NC Whiz Flange Hex	2

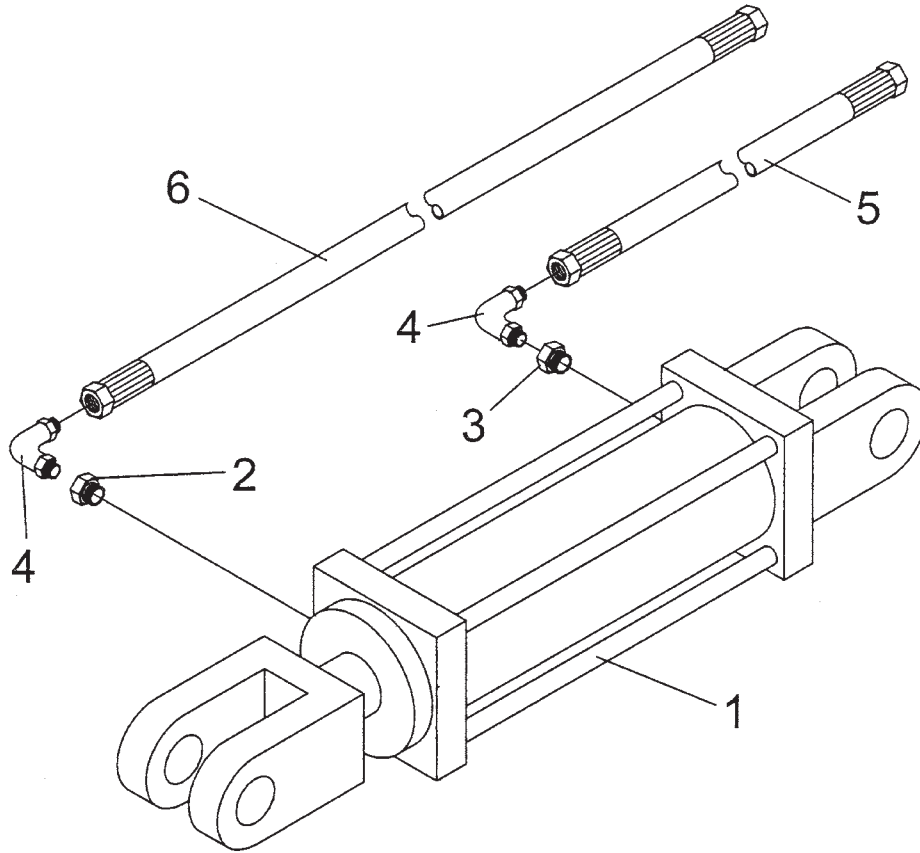
Description: Optional Hydraulic Angle Solenoid Valve Wiring Schematic & Instructions



Ref. No.	Part No.	Description	No. Req'd.
1	2505720	Solenoid Valve	1
2	2507006	Pendant Switch	1
3	2505653	Test Clip, Gen. Purpose (#48)	2
4	2505654	Insulator Boot, Red (#49R)	1
5	2505655	Insulator Boot, Black (#49B)	1
6	9227	Cable, 18 Ga. 2 Conductor	16ft
7		Butt Connector	4
8		Plastic Protectant	n/a

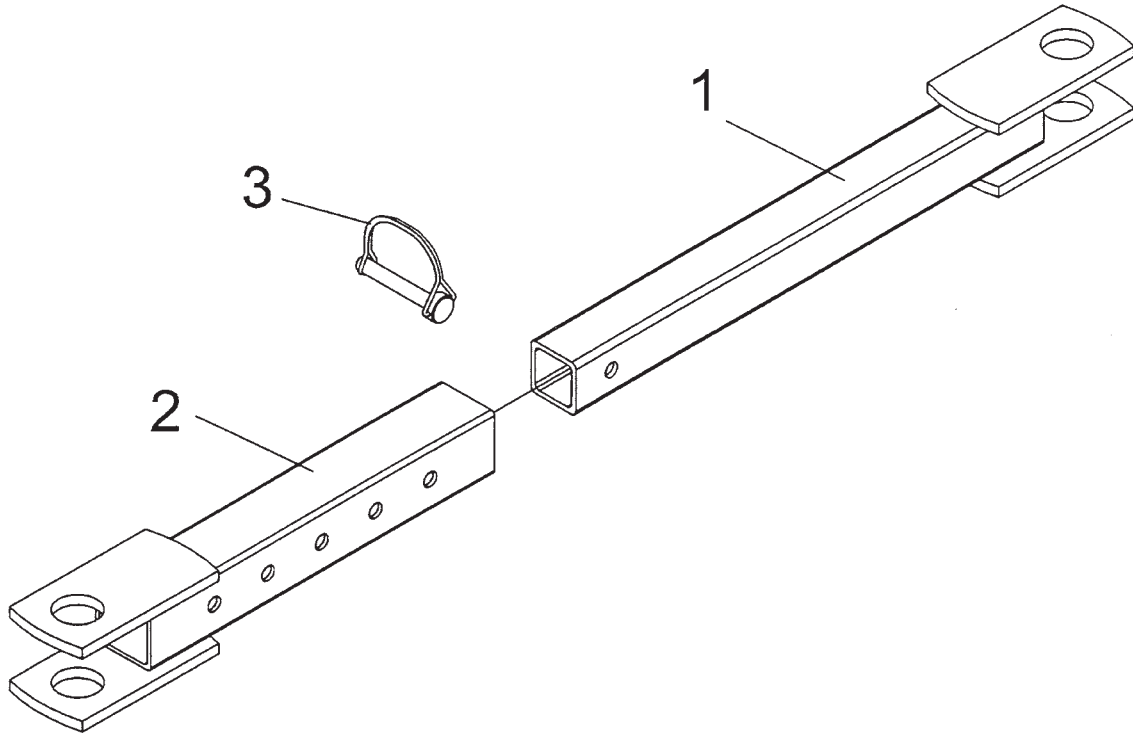


Description: Optional Hydraulic Angle Adjustment Kit Parts Drawing & List  
(For Skid Steer Units with Two Pair Remote Hydraulic Outlets)



Ref. No.	Part No.	Description	No. Req'd.
	610703	Hydraulic Angle Adjustment Kit	1
1	2504256	Hydraulic Cylinder 2 x 6	1
2	2505517	Reducer Bushing 3/8"-1/4"	1
3	2505626	Reducer Bushing 3/8"-1/4" w/.040 Orifice	1
4	2505715	90° Elbow 9/16"-18 (JIC) to 1/4" NPTF	2
5	2505676	Hydraulic Hose 1/4" x 60"	1
6	2505678	Hydraulic Hose 1/4" X 72"	1

Description: Optional Manual Angle Kit Parts Drawing & List



Ref. No.	Part No.	Description	No. Req'd.
	610702	Complete Manual Angle Kit	1
1	610826	Link, Manual Angle Male	1
2	610831	Link, Manual Angle Female	1
3	590194	Lock Pin 5/16" (AK-2907)	1

**WHEN ORDERING REPAIR PARTS,  
ALWAYS GIVE THE FOLLOWING INFORMATION:**

1. PART NUMBER
2. PART DESCRIPTION
3. MODEL NUMBER
4. NAME OF ITEM

Serial and Model Number Location

The model and serial number plate is located on the right side of the vertical part of the main frame.

The serial number is also stamped into the top cross tube of the mounting frame.

The following page contains a space for you to record the information about your Skid Steer Mounted Rotary Sweep found on this plate. Please record this information here for future reference.

SERIAL NUMBER INFORMATION

Allied by Farm King Model Number: \_\_\_\_\_

Allied by Farm King Serial Number: \_\_\_\_\_

Component Serial Numbers:

Manufacturer	Part Number	Serial No.	Notes:



**IMPORTANT**

The binder containing this manual is sub-component of the Skid Steer Mounted Rotary Sweep and should go with the Skid Steer Mounted Rotary Sweep in the event of a future sale. This information contained within this binder is specific to this specific Skid Steer Mounted Rotary Sweep and cannot easily be replaced.

## Warranty Policy

# Allied by Farm King Limited Warranty

This document limits your warranty rights.

### **Base Limited Warranty**

Buhler Industries Inc. provides this warranty only to original retail purchasers of its product. Buhler Industries Inc. warrants to such purchasers that all Buhler Industries Inc. manufactured parts and components used and serviced as provided for in the Operator's Manual shall be free from defects in materials and workmanship for a period following delivery to the original retail purchaser of 12 months (80 days for commercial applications). This limited warranty applies only to those parts and components manufactured by Buhler Industries Inc.. Parts and components manufactured by others are subject to their manufacturer's warranties, if any.

Buhler Industries Inc. will fulfill this limited warranty by, at its option, repairing or replacing any covered part that is defective or is the result of improper workmanship, provided that the part is returned to Buhler Industries Inc. within thirty (30) days of the date that such defect or improper workmanship is, or should have been, discovered. Buhler Industries Inc. reserves the right to either inspect the product at the buyer's location or have it returned to the factory for inspection. Parts must be returned through the selling representative and the buyer must prepay transportation charges.

Buhler Industries Inc. will not be responsible for repairs or replacements that are necessitated, in whole or part, by the use of parts not manufactured by or obtained from Buhler Industries Inc.. Under no circumstances are component parts warranted against normal wear and tear. There is no warranty on product pump seals, product pump bearings, rubber product hoses, pressure gauges, or other components that require replacement as part of normal maintenance. Also: Buckets and Bucket Tines carry no warranty, Bent Spears carry no warranty, Snowblower Fan Shafts carry no warranty, Mower Blades carry no warranty, Portable Auger Parts Have Two (2) Year Warranty, Loader Parts Have Two (2) Year Warranty. The purchaser is solely responsible for determining suitability of goods sold. This warranty is expressly in lieu of all other warranties expressed or implied. Buhler Industries Inc. will in no event be liable for any incidental or consequential damages whatsoever. Nor for any sum in excess of the price received for the goods for which liability is claimed.

### **Repair Parts Limited Warranty**

Buhler Industries Inc. warrants Allied by Farm King replacement parts purchased after the expiration of the Buhler Industries Inc. Limited Warranty, and used and serviced as provided for in the Operator's Manual, to be free from defects in materials or workmanship for a period of thirty (30) days from the invoice date for the parts. Buhler Industries Inc. will fulfill this limited warranty by, at its option, repairing or replacing any covered part that is defective or is the result of improper workmanship, provided that the part is returned to Buhler Industries Inc. within thirty (30) days of the date that such defect or improper workmanship is, or should have been, discovered. Such parts must be shipped to Buhler Industries Inc. at the purchaser's expense.

**What is Not Covered**

Under no circumstances does this limited warranty cover any components or parts that have been subject to the following: negligence; alteration or modification not approved by Buhler Industries Inc.; misuse; improper storage; lack of reasonable and proper maintenance, service, or repair; normal wear; damage from failure to follow operating instructions; accident; and/or repairs that have been made with parts other than those manufactured, supplied, and or authorized by Buhler Industries Inc..

**Authorized Dealer and Labor Costs**

Repairs eligible for labor under this limited warranty must be made by Buhler Industries Inc. or an authorized Allied by Farm King dealer. Buhler Industries Inc. retains the exclusive discretion to determine whether it will pay labor costs for warranty repairs or replacements, and the amount of such costs that it will pay and the time in which the repairs will be made. If Buhler Industries Inc. determines that it will pay labor costs for warranty work, it will do so by issuing a credit to the dealer's or distributor's account. Buhler Industries Inc. will not approve or pay invoices sent for repairs that Buhler Industries Inc. has not previously approved. Warranty service does not extend the original term of this limited warranty.

**Warranty Requirements**

To be covered by warranty, each Allied by Farm King new product must be registered with Buhler Industries Inc. within thirty (30) days of delivery to original retail purchaser. If the customer decides to purchase replacement components before the warranty disposition of such components is determined, Buhler Industries Inc. will bill the customer for such components and then credit the replacement invoice for those components later determined to be covered by this limited warranty. Any such replacement components that are determined not be covered by this limited warranty will be subject to the terms of the invoice and shall be paid for by the purchaser.

**Warranty Claims:**

Warranty requests must be prepared on Buhler Industries Inc. Warranty Claim Forms with all requested information properly completed. Warranty Claims must be submitted within a thirty (30) day period from date of failure repair.

**Warranty Labor:**

Any labor subject to warranty must be authorized by Buhler Industries Inc.. The labor rate for replacing defective parts, where applicable, will be credited at 100% of the dealer's posted shop rate.

**Exclusive Effect of Warranty and Limitation of Liability**

TO THE EXTENT PERMITTED BY LAW, BUHLER INDUSTRIES INC. DISCLAIMS ANY WARRANTIES, REPRESENTATIONS, OR PROMISES, EXPRESS OR IMPLIED, AS TO THE QUALITY, PERFORMANCE, OR FREEDOM FROM DEFECT OF THE COMPONENTS AND PARTS COVERED BY THIS WARRANTY AND NOT SPECIFICALLY PROVIDED FOR HERE"

TO THE EXTENT PERMITTED BY LAW, BUHLER INDUSTRIES INC. DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ON ITS PRODUCTS COVERED HEREIN, AND DISCLAIMS ANY RELIANCE BY THE PURCHASER ON BUHLER INDUSTRIES INC.'S SKILL OR JUDGMENT TO SELECT OR FURNISH GOODS FOR ANY PARTICULAR PURPOSE. THE PURCHASER'S ONLY AND EXCLUSIVE REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ON PRODUCTS MANUFACTURED BY BUHLER INDUSTRIES INC. ARE THOSE SET FORTH HERE" IN NO EVENT SHALL BUHLER

INDUSTRIES INC. BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BY WAY OF EXAMPLE ONLY AND NOT LIMITATION, LOSS OF CROPS, LOSS OF PROFITS OR REVENUE, OTHER COMMERCIAL LOSSES, INCONVENIENCE, OR COST OF REPLACEMENT OF RENTAL EQUIPMENT). IN NO EVENT SHALL Allied by Farm King'S CONTRACT OR WARRANTY LIABILITY EXCEED THE PURCHASE PRICE OF THE PRODUCT.

(Note that some provinces or states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusion may not apply to you.) This warranty gives you specific legal rights and you may also have other rights, which vary from province to province or state to state.

Buhler Industries Inc. neither assumes nor authorizes any person or entity, including its selling representatives, to assume any other obligations or liability in connections with the sale of covered equipment, or to make any other warranties, representations, or promises, express or implied, as to the quality, performance, or freedom from defect of the components and parts covered here" No one is authorized to alter, modify, or enlarge this limited warranty, or its exclusions, limitations and reservations.

Corrections of defects and improper workmanship in the manner, and for the applicable time periods, provided for herein shall constitute fulfillment of all responsibilities of Buhler Industries Inc. to the purchaser, and Buhler Industries Inc. shall not be liable in negligence, contract, or on any other basis with respect to the subject equipment.

This limited warranty is subject to any existing conditions of supply which may directly affect Buhler Industries Inc.'s ability to obtain materials or manufacturer replacement parts.

Buhler Industries Inc. reserves the right to make improvements in design or changes in specifications to its products at anytime, without incurring any obligation to owners of units previously sold.

**Government Legislation:** Warranty terms and conditions are subject to provincial or state legislation.

**Important Note:** This warranty does not apply to rentals.

NOTES:





[www.farm-king.com](http://www.farm-king.com)



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