

Operator's Manual

Power V Plow Toro 7200/7210



M-B Companies, Inc.:
1615 Wisconsin Avenue, P.O. Box 200
New Holstein, WI 53061
Telephone: 800-558-5800
FAX: (920) 898-4588

Table of Contents

CONTENTS:

Safety	2
General Operation	2
Service and Maintenance	2
Decals	3
General Information	4
Specifications	4
Accessories	4
Identification Numbers	5
Installation	6
Controls	6
General	9
Setup and Adjustments	10
Setup	10
Skid Shoe Adjustment	10
General Operation	11
Pre-Startup Checks	11
Operation	11
Storage	11
Maintenance	12
Maintenance Schedule	12
Lubrication	12
Troubleshooting	13
Parts	14
Ordering Parts	14
Parts List	14



WARNING

You must read, understand and comply with all the safety and operating instructions in this manual before attempting to set-up and operate your v-plow.

Failure to comply with the safety and operating instructions can result in loss of machine control, severe personal injury or death to you and/or bystanders, and risk of equipment and property damage. The triangle  in the text signifies important cautions or warnings which must be followed.



Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of the unit, severe personal injury or death to you, or bystanders, or damage to property or equipment. The triangle  in the text signifies important cautions or warnings which must be followed.

GENERAL OPERATION

This blade is to be used only with the Toro 7200/7210 unit in the **winter configuration. Any use of the blade outside of this environment may void the warranty on your unit. The machine and this blade attachment are to be used only for snow removal and a brief period of spring cleanup (1 week max) per year. Please reference the Toro 7200/7210 operator's manual for suggested operating guidelines.*

- Read, understand and follow all instructions in the manual and on the unit before starting.
- Only allow responsible adults who are familiar with the instructions, to operate the unit (local regulations can restrict operator age).
- Be sure the area is clear of other people, bystanders or pets. Stop unit if anyone enters the area.
- Always look down and behind before and while traveling in reverse.
- Disengage all clutches and PTO's before starting engine.
- Never leave a running machine unattended. Always disengage the traction controls, lower the blade, set the park brake, stop the engine and remove the ignition key before leaving the machine.
- Operate only in daylight or good artificial light.
- Do not operate the unit while under the influence of drugs or alcohol.
- Watch for traffic when operating near or crossing roadways.
- Use extra care when loading or unloading the unit into a trailer or truck.
- Keep in mind the operator is responsible for accidents occurring to other people or property.
- Data indicates that operators, age 60 years and above, are involved in a large percentage of power equipment-related injuries. These operators should evaluate their ability to operate the unit safely enough to protect themselves and others from injury.
- All operators should seek and obtain professional and practical instruction.
- Always wear substantial footwear and appropriate clothing. Wear footwear that improves traction on slippery slopes. DO NOT wear long scarves or loose clothing that could become entangled in moving parts.
- Before using, always visually check that hardware is present, intact and secure. Replace worn or damaged parts.
- Never operate the machine with damaged guards, or without safety protective devices in place.
- Stop engine before: refueling, removing the blade assembly, or making adjustments.
- Follow the tractor manufacturer's recommendations for wheel weights or counter weights.
- Adjust skid shoes before operating.
- Do not touch parts which may be hot from operation. Allow such parts to cool before attempting to service the unit.

SERVICE AND MAINTENANCE

- Maintain and replace safety and instruction labels as necessary.
- Never run a unit in an enclosed area.
- Keep nuts and bolts tight and keep equipment in good condition
- Never tamper with safety devices. Check their proper operation regularly and make necessary repairs if they are not functioning properly.
- Keep unit free of debris and build-up. Clean up any oil spillage.
- Stop and inspect equipment if you strike an object. Repair, if necessary, before restarting.
- Never make adjustments or repairs with the engine running unless specified otherwise in the engine manufacture's manual.
- Components are subject to wear, damage, and deterioration. Frequently check components and replace with the manufacturer's recommended parts, when necessary.
- Check control operation frequently. Adjust and service as necessary.
- Use only factory authorized parts when making repairs.
- Always comply with factory specifications on all settings and adjustments.
- Only authorized service locations should be utilized for major service and repair requirements.
- Never attempt to make your own repairs on this unit unless you have been properly trained. Improper service procedures can result in hazardous operation, equipment damage and voiding the manufacturer' warranty.

DECALS

This unit has been designed and manufactured to protect you with the safety and reliability you would expect from an industry leader in pavement maintenance equipment.

Although reading this manual and safety instructions it contains will provide you with the necessary basic knowledge to operate this equipment safely and effectively, we have placed several safety labels on the unit to remind you of this important information while you are operating your unit.

All WARNING, CAUTION, DANGER and instructional messages on your unit should be carefully read and

obeyed. Personal bodily injury can result when these instructions are not followed. The information is for your safety and it is important.

The safety decals below are on your unit.

If any of these labels are lost or damaged, replace them at once. See your local dealer for replacements.

These labels act as a constant visual reminder to you and others who may use the equipment to follow the safety instructions necessary for safe, effective operation.

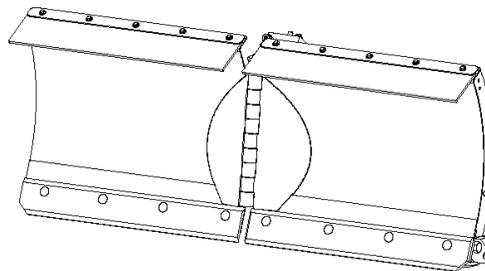
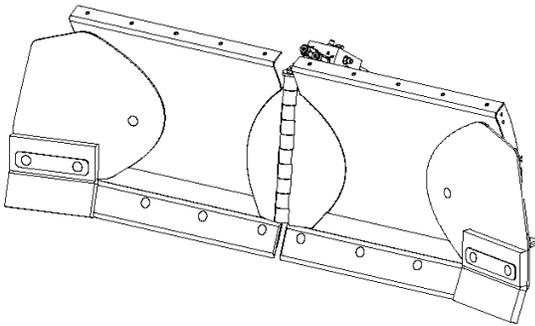


General Information

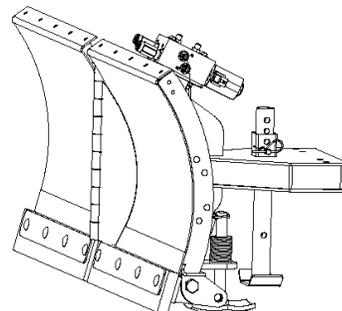
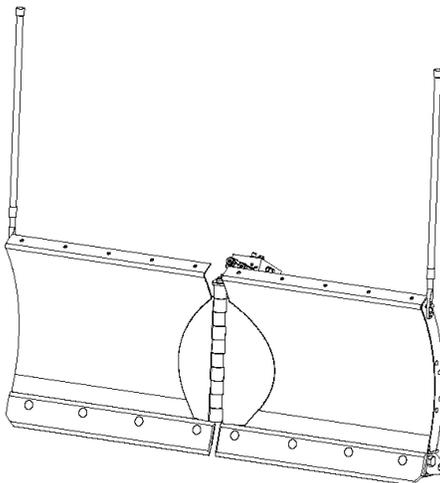
SPECIFICATIONS

Description:	Four way power-v snow plow for Toro 7200/7210
Trip:	Trip edges
Cylinders:	2 dual acting cylinders
Wing angle:	30 degrees forward, 30 degrees backward, each wing
Clearing Width	
Vee:	50.1"
Scoop:	49.7"
Angling:	53.0"
Straight:	57.5
Height:	23"

ACCESSORIES



- 1) Deflector Assembly:**
Part No. 430-97200 (includes both sides)
- 2) Extension Assembly:**
Part No. 430-97198 (includes both sides)
- 3) Side Marker Assembly:**
Part No. 430-97201 (includes two markers)
- 4) Poly Cutting Edge Assembly:**
Part No. 430-97199 (includes both sides)

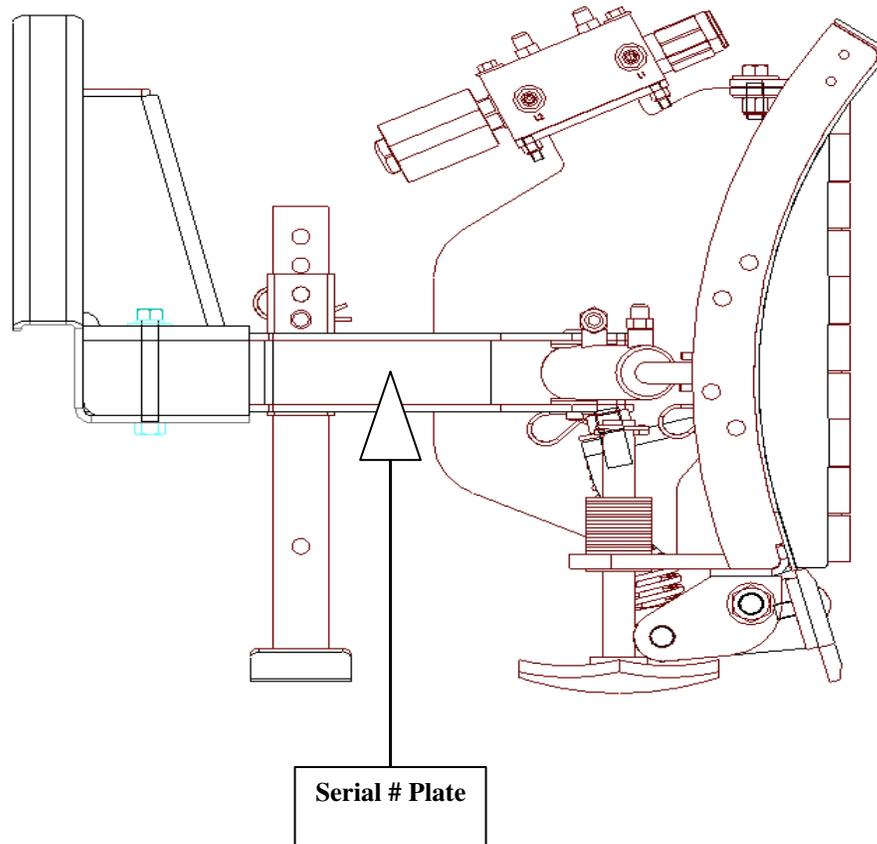


Identification Numbers

When contacting your authorized dealer for replacement parts, service or information you **MUST** have these numbers.

Record your model name/number, manufacturer's identification numbers in the space provided for easy access. These numbers can be found in the location shown.

Model Description Name/Number:	
Date Purchased :	Serial #:



Installation

Controls

1. Install "Grounds Master 7200 Electrical Accessory Kit" (Toro Part No. 30382).
 - If it is already installed move on to step 2 of these instructions.
 - If it is not installed already then install the "Auxiliary Power Unit" with the instructions included with the "Auxiliary Power Unit" and before reinstalling the control panel move onto step 7 of these instructions.
2. Position the machine on a level surface, lower the cutting unit/attachment, stop the engine, engage the parking brake and remove the key from the ignition.
3. Unlatch and raise the hood. Secure the hood in the raised position with the prop rod.
4. Disconnect the negative (-) battery cable from the battery.
5. Unlatch and raise the seat.
6. Unlatch the control panel assembly and lay it aside.
7. Unbolt the right hand traction lever.
8. Drill a .75" hole on the front of the traction lever centered .75" from the end and a .75" hole in panel located near the lever end (Figure 1).
9. Cut end of foam grip, using an X-Acto or equivalent knife, flush with end of traction lever (Figure 2).
10. Install push button harness (see "Parts List" section for harness drawing) through traction lever.
11. Install grommet in both the traction lever and panel holes. Then route push button harness through panel hole and up into control panel area (Figure 1).
12. Bolt traction lever back onto lever assembly, adding 3/8" washer(s) between the traction lever and lever assembly before assembling to give room for push button (Figure 1).
13. Zip tie one end of adapter harness to front of traction unit near hydraulic quick disconnects (Figure 3) and route wire through frame to right side of operator's seat and zip tie in place. Zip tie harness where appropriate to prevent harness from dislodging or moving during vehicle use.

Installation

14. Connect push button harness, ground harness and fuse block as follows:
 - Connect white wire on push button harness to white wire on ground harness.
 - Connect black wire from the push button harness to an open wire on the fuse block.
 - Add 10 amp fuse to fuse block corresponding to open wire from fuse block.
15. Connect ground harness and traction unit harness as follows:
 - Connect ring terminal from ground harness to ring terminal on black ground wire from traction unit harness. Secure with #10 bolt & nut.
16. Connect ground harness and adapter harness. Leave connection accessible next to operator's seat for quick detachment when removing Polar Trac system.
17. Install the control panel and secure the latches.
18. Connect the negative battery cable to the battery.
19. Connect attachment harness to valve on Power-V plow. Route harness down to hole in vertical plate and through hose holder. Zip tie in both places.

Notes:

- Connect attachment harness to adapter harness whenever using the Power-V plow and disconnect when not in use (Figure 3)
- Disconnect adapter harness from ground harness when removing Polar Trac system.

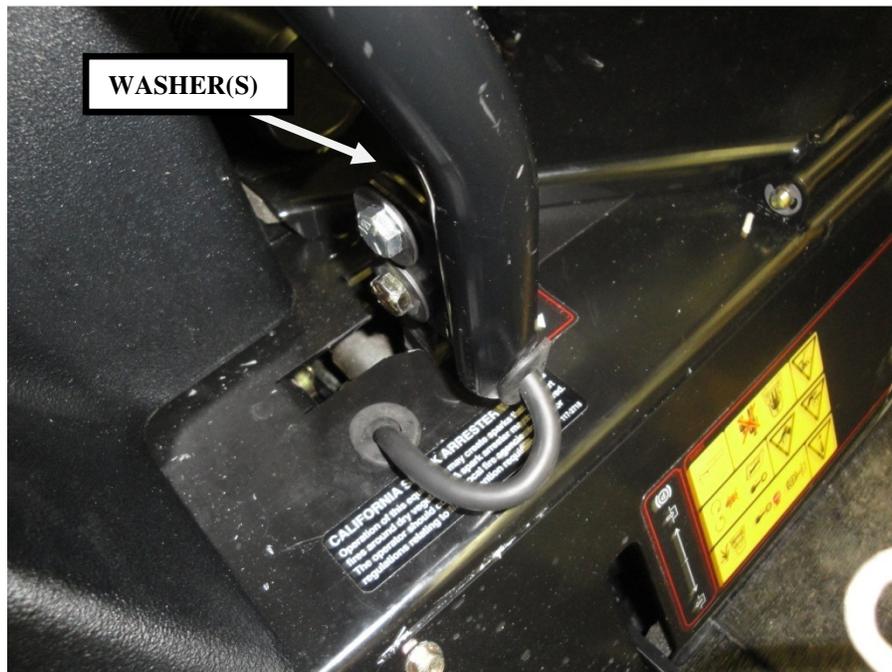


Figure 1 – Traction lever fully assembled



Figure 2 – Push button harness installed and foam grip cut



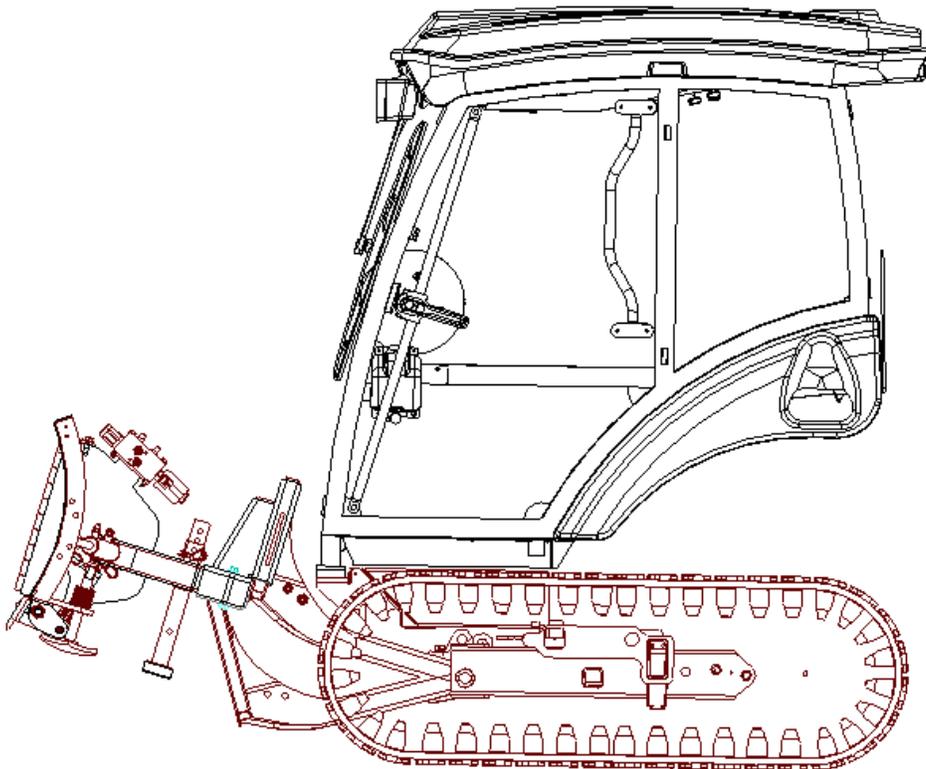
Figure 3 – Adapter Harness Connected to Attachment Harness

Installation

General

The Blade should be set up so that with the tractor in the winter configuration, it can be picked up immediately using the front hitch. Use drawing# 904-160060 to assemble the plow on Toro 7200/7210 GM. The remaining installation steps are below.

- 1) Remove any packaging or steel straps securing the blade in its crate. Take care when lifting the blade out of the crate.
- 2) Mate the tractor lifting hitch into the receiving end of the plow mounting frame. Install the hitch pin to secure the attachment into the quick attach hitch.
- 3) Hook up the hydraulic hoses provided with the blade into the quick couplers on the front of the tractor.
- 4) Connect attachment harness to adapter harness on front of tractor.
- 5) Adjust the skid shoes as mentioned in the 'Setup and Adjustments' section.
- 6) Be sure to raise and secure the center storage stand when plow is in use.
- 7) Make sure that the blade swings in the proper direction as indicated on the foot pedals of the tractor. When handle thumb button is pressed the foot pedal control switches from the right wing to the left wing.
- 8) Plow is now ready to use.



Setup and Adjustments

SETUP

Proper setup of your straight blade will increase the life of the cutting edge and produce more efficient movement of material. Visually inspect the adjustment on the skid shoes before each operating session and once every 10 hours thereafter.

Once the shoes have been properly adjusted, a short operation period is recommended for break-in; approximately 15 minutes. After this break-in period repeat the adjustment procedure to ensure that it is correct.

Mounting instructions can be found either in an installation pamphlet or in the back of this manual.

SKID SHOE ADJUSTMENT

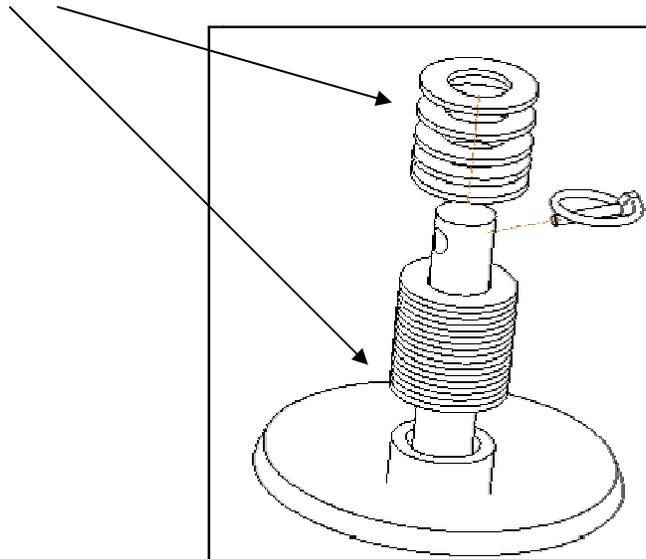
- This adjustment is located at the bottom of the blade. (Refer to Illustration A)
- With the unit set-up on a flat level surface adjust the skid shoe so that it has minimal contact with the ground when the blade is set into the down or work position.
- Once this adjustment is set, it can be confirmed by running the unit ahead for about 10 feet in the down position. Stop, lift the blade and back the unit away. The bladed area of the surface should show minimal

contact from the cutting edge and a trace amount of contact from the skid shoes.

TIP: When running the blade on a gravel or very rough surface, it may be necessary to re-adjust the skid shoes. This is done to achieve the best performance from the blade without forcing it into the trip position or allowing the cutting edge to dig in too often. Also, proper adjustment of the skid shoes will prolong the cutting edge life.

ILLUSTRATION A

Relocate washers above or below to achieve the correct skid shoe height. Match the number of washers from each side to maintain levelness.



General Operation

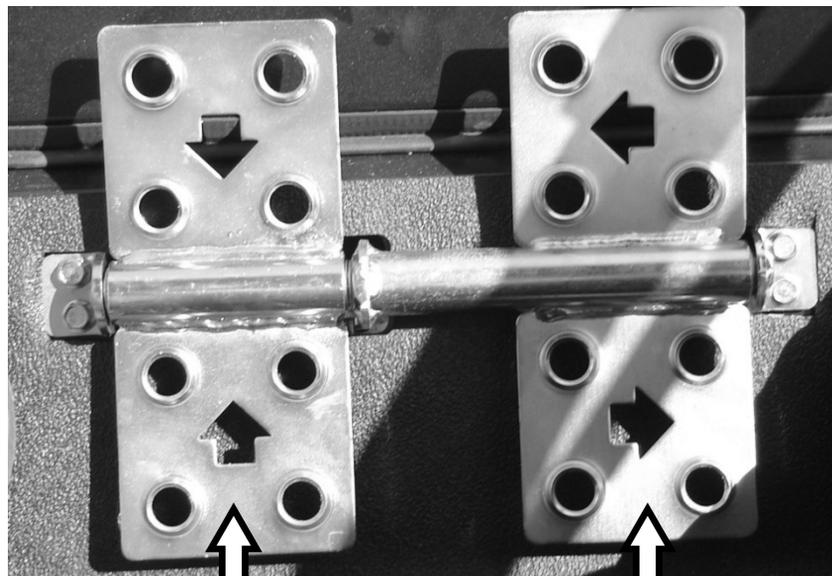
PRE-STARTUP CHECKS

- 1) Visually inspect equipment and hardware to ensure that all parts are secure and all hardware is tightened and secure.
- 2) Check for oil leaks and loose hose connections.
- 3) Inspect the cutting edge to ensure proper skid shoe adjustment.
- 4) Inspect the skid shoes to determine if replacement parts are needed.

OPERATION

- Operate at a speed that is appropriate for the conditions and location.
- For rougher surfaces such as gravel or stones, re-adjust the skid shoes for optimum performance.
- When moving heavier material, a slower machine speed will aid in vehicle control. When moving lighter material, a faster machine speed may aid in a casting effect when the blade is angled.
- To avoid damage, raise blade over obstacles higher than 2.5 inches. Once over the obstacle, resume normal operation.
- For Toro 7200/7210, use the pedals inside of cab of machine, as shown below.

Press and hold the thumb button on handle to activate left wing control. When button is not pressed, right wing control is active. See Diagram below for reference on V-Plow operation with the foot pedal controls.



Plow Up / Down

**Default: Right Wing Forward / Back
With Thumb Button Pressed: Left Wing Forward / Back**

STORAGE

- Always store the blade in a supported position with the cutting edge off the ground. If the cutting edge is stored on the ground for extended periods of time the edge may become severely rusted.
- Disconnect all electrical connections between the blade and tractor for extended storage to prevent battery drain.
- Properly clean the unit before storage and remove dirt, debris, salt, etc. to extend paint life.
- If the unit is power-washed, all lubrication points should be greased before storage.

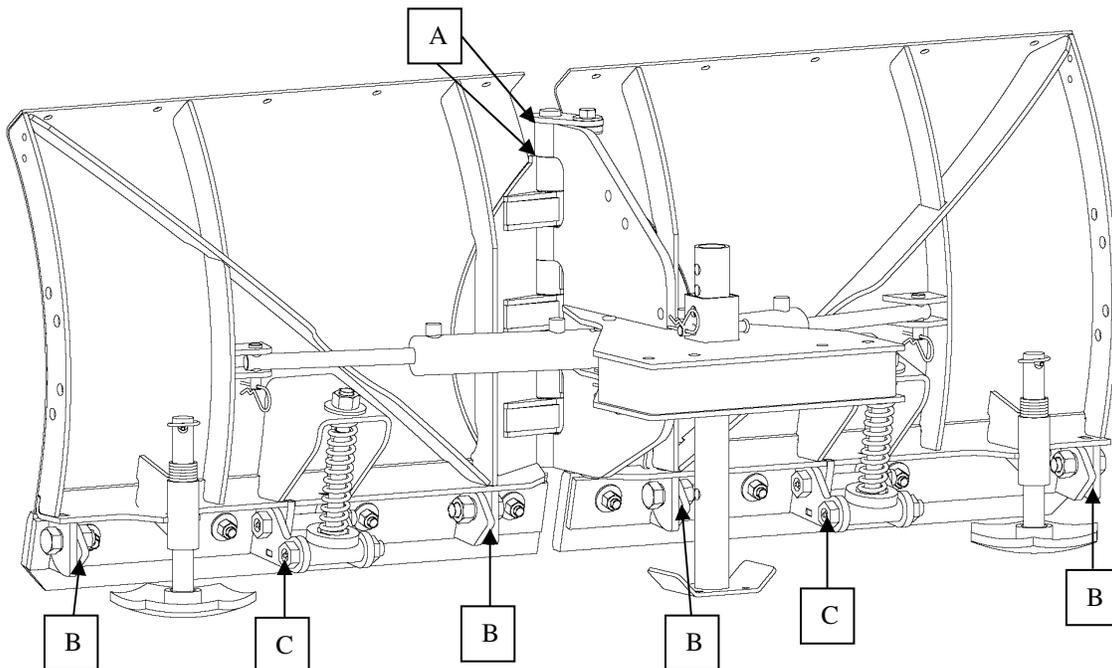
MAINTENANCE SCHEDULE

- Check adjustments – every 10 hours
- Grease pivot points – every 50 hours
- Check pivot bolt and pin tightness – daily
- Replace wear items as needed

LUBRICATION

Grease bearings and pivot points per the maintenance schedule using Chevron Ultra Duty II, Grade 2; or equivalent high-temp grease.

- There are minimum of (16) grease points on the unit:
(10) At the hinge pins between two wings--A
(4) At the trip bolt location and the corresponding sliding surface--B
(2) On the trip-pivot--C



Troubleshooting

Trouble	Possible Cause	Remedy
Cutting edge or skid shoes wearing unevenly	<ol style="list-style-type: none"> 1) Blade not level 2) Skid shoes not equal height 	<ol style="list-style-type: none"> a) Adjust appropriately b) Adjust to equal
Blade trips excessively	<ol style="list-style-type: none"> 1) Material is 'caked-on' or frozen 2) Uneven surface 3) Material is too heavy 4) Tractor moving too fast 5) Trip spring Assembly loose 	<ol style="list-style-type: none"> a) Slow down and scrape surface b) Adjust skid shoes to compensate c) Slow down tractor speed d) Slow down tractor speed e) Check spring assembly hardware
Blade does not lift or angle	<ol style="list-style-type: none"> 1) No hydraulic pressure/flow 2) Hoses not connected 3) Harness not connected 	<ol style="list-style-type: none"> a) Check tractor operation b) Connect hoses c) Connect harnesses as shown in "Installation-Controls" section



Warning

Fluid escaping under pressure can puncture the skin and cause serious injury. Do not touch any hydraulic components until the tractor engine has been turned off and hydraulics disconnected. Before startup, check for loose hydraulic connections.

- ◆ Fluid accidentally injected into the skin must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.
- ◆ Make sure all hydraulic fluid hoses and lines are in good condition and all hydraulic connections and fittings are tight before applying pressure to the system.
- ◆ Keep body and hands away from pinhole leaks or nozzles that eject high pressure hydraulic fluid.
- ◆ Use cardboard or paper, not your hands, to find hydraulic leaks.
- ◆ Safely relieve all pressure in the hydraulic system by placing the motion control pedals/levers in neutral and shutting off the engine before performing any work on the hydraulic system

ORDERING PARTS

When ordering parts, you must have the serial number and model number of your unit handy (See "Identification Numbers" section).

Call M-B Companies at 1-800-558-5800 and ask for "Attachment Parts Sales".

PARTS LIST

Harness Assembly – 702-160090

- Includes all harnesses needed for installation. See harness breakdown below.

