



P.O. Box 787
Iron Mountain, MI 49801
United States

Owner's Manual

V-Blade Plow Kit Snowrator MAG

Part No. SNR24023—Serial No. 40000000 and Up



BOSS Products limited consumer warranty and BOSS Products commercial warranty policies are located at www.bossplow.com.

Patents www.ttcopats.com.

Introduction

Note: This plow attaches to the Snowrator MAG.

The V-blade plow is intended to be used on a Boss stand-on, multi-purpose machine. The blade is designed to hydraulically change its angle as needed for snow removal. Using this product for purposes other than its intended use could prove dangerous to you and bystanders.

Read this information carefully to learn how to operate and maintain your product properly and to avoid injury and product damage. You are responsible for operating the product properly and safely.

Visit www.bossplow.com for product safety and operation training materials, accessory information, help finding a dealer, or to register your product.

Whenever you need service, genuine BOSS parts, or additional information, contact an Authorized BOSS Dealer or BOSS Technical Service (1-800-286-4155) and have the model and serial numbers of your product ready. **Figure 1** identifies the location of the model and serial numbers on the product. Write the numbers in the space provided.

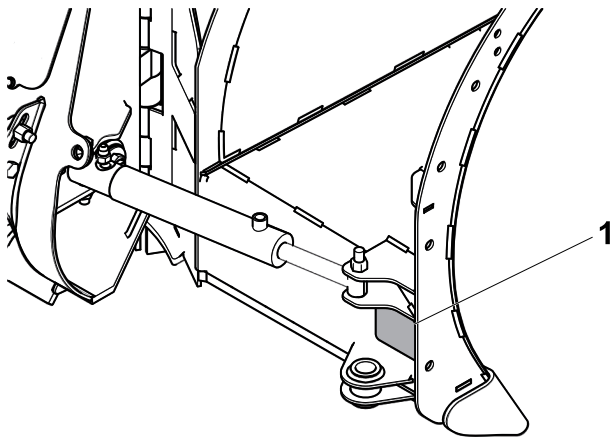


Figure 1

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1. Model and serial number location

Date Purchased	_____
Model No.	_____
Serial No.	_____
Blade Crate Serial No.	_____

This manual identifies potential hazards and has safety messages identified by the safety-alert symbol (**Figure 2**), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.



Figure 2

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1. Safety-alert symbol

This manual uses 2 words to highlight information. **Important** calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

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Safety

Improper use or maintenance by the operator or owner can result in injury. To reduce the potential for injury, comply with these safety instructions and always pay attention to the safety-alert symbol **A**, which means: **Caution, Warning, or Danger**—personal safety instruction. Failure to comply with the instruction may result in personal injury or death.

Preparation

- Read the *Owner's Manual* before operating or servicing the plow.
- Ensure that only trained personnel installs and performs maintenance on the equipment and hydraulic components.
- Always wear appropriate personal protective equipment when loading, unloading, and servicing the plow.

Operation

- Use a 500 kg (1/2 ton) minimum lifting device to move heavy plow components.
- Do not exceed 8 km/h (5 mph) while operating.
- Never put any part of your body between the plow and the vehicle.
- Wear appropriate clothing, including hearing and eye protection, protective gloves, and substantial, slip-resistant footwear. Tie back long hair, secure loose clothing, and do not wear loose jewelry.
- When transporting the plow, ensure that it is properly secured. Instructions are available at www.bosspow.com.
- When transporting the vehicle, position the plow so as not to block your vision or headlights.
- Do not change the blade position when traveling.
- Always lower the blade when the vehicle is not in use.
- Do not operate the machine while ill, tired, or under the influence of alcohol or drugs.
- Refer to the *Owner's Manual* for proper parking procedures.
- Turn the vehicle and plow off before filling, servicing, or cleaning it.
- Do not climb into or ride on the plow.
- Keep your hands, feet, and clothing away from moving parts and mounting points.
- Use your full attention while operating the machine. Do not engage in any activity that

causes distractions; otherwise, injury or property damage may occur.

- Do not operate the plow within 8 m (25 ft) of bystanders.

Safety and Instructional Decals



Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or missing.



MSC23037

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- | | |
|--|---|
| 1. Warning—read the <i>Owner's Manual</i> . | 5. Warning—shut off the engine, remove the key, and read the <i>Owner's Manual</i> before performing maintenance. |
| 2. Warning—all operators should be trained before operating the machine. | 6. Crushing hazard—do not stand between the plow and vehicle during maintenance. |
| 3. Warning—coupler must be locked before plowing. | 7. Warning—do not exceed 8 km/h (5 mph) when plowing. |
| 4. Warning—coupler must be unlocked to remove the plow. | 8. Warning—lower the plow when the vehicle is not in use. |

Setup

Mounting the Plow

1. Park the machine on a level surface.
2. Pull the coupler pins outward and rotate 90° to lock in the disengaged position.

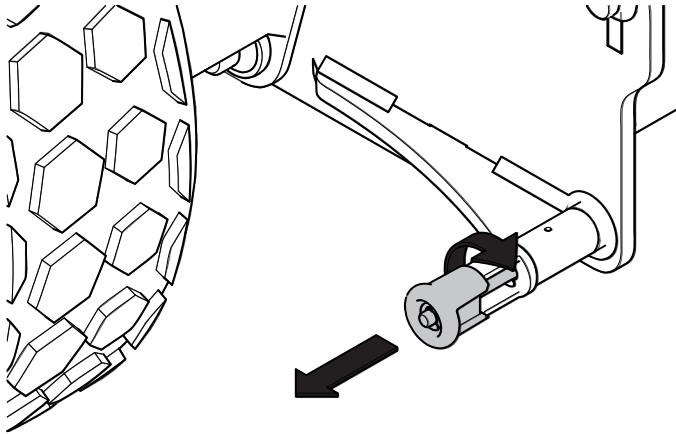


Figure 3

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3. Make sure that the hydraulic hoses do not block the plow attachment point.
4. Start the machine.
5. Slowly drive forward until the coupler meets the plow hooks. Raise the coupler to hook it onto the plow.

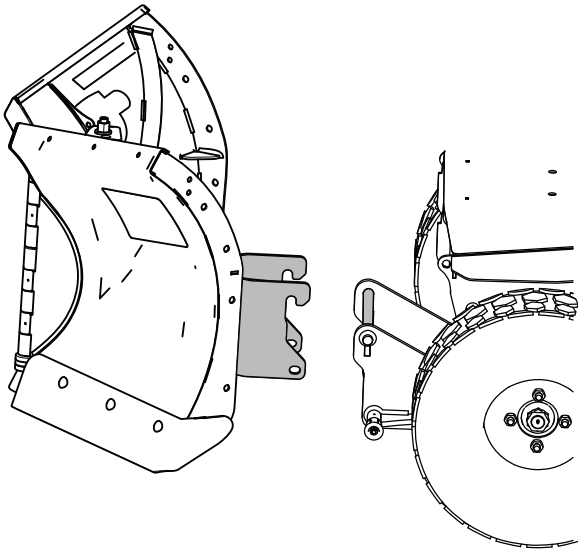


Figure 4

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6. Rotate the coupler pin 90° so that it engages with the plow assembly.

Note: Ensure that the coupler pin also inserts through the hole in the pin channel on the plow coupler.

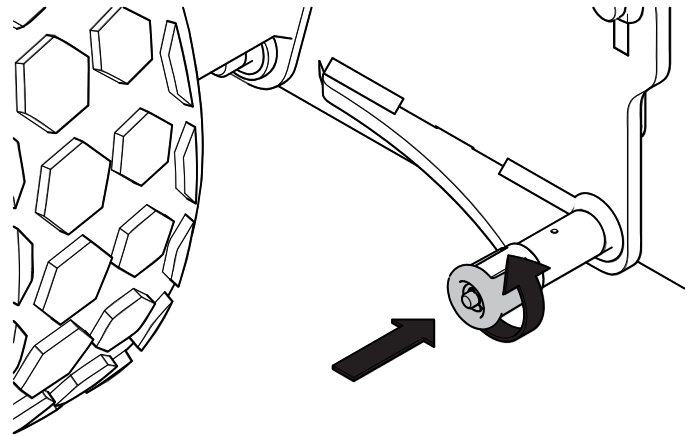


Figure 5

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7. Lower the attachment coupler until the plow rests on the ground.
8. Shut off the machine engine, wait for all moving parts to stop, ensure that the parking brake is engaged, and remove the key.
9. Route the hydraulic hoses from the plow, through the hose strap, to the connections on the machine

Note: The left low flow hoses are colored yellow and connect to the center ports.

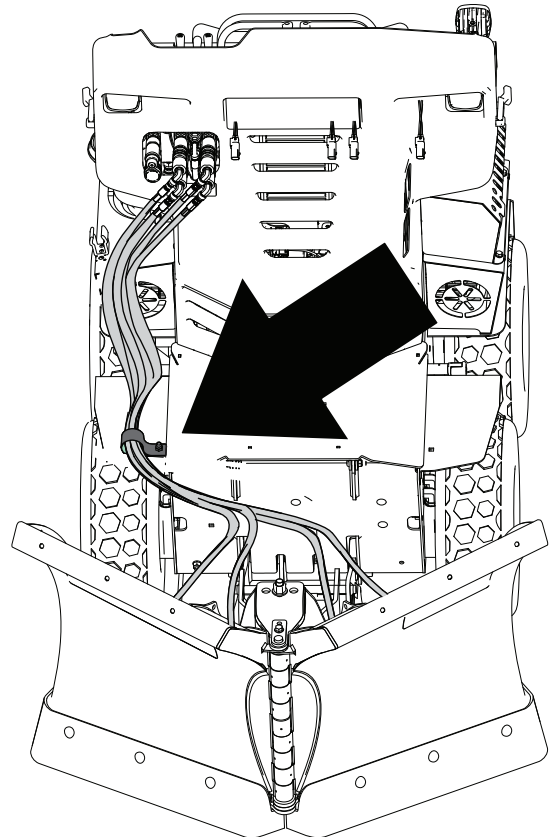


Figure 6

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10. Start the machine.

11. Use the controls to move the plow in all directions to cycle the hydraulic fluid.
12. Lower the plow and shut off the machine.
13. Check and fill the hydraulic fluid; refer to the machine *Owners Manual*.

⚠ WARNING

Hydraulic fluid escaping under pressure can penetrate skin and cause injury.

- If hydraulic fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type of injury. Gangrene may result if this is not done.
- Keep your body and hands away from pinhole leaks or nozzles that eject high-pressure hydraulic fluid.
- Use cardboard or paper to find hydraulic leaks.
- Safely relieve all pressure in the hydraulic system before performing any work on the hydraulic system.
- Make sure that all hydraulic-fluid hoses are in good condition, and all that the hydraulic connections and fittings are tight before applying pressure to the hydraulic system.

Product Overview

Controls

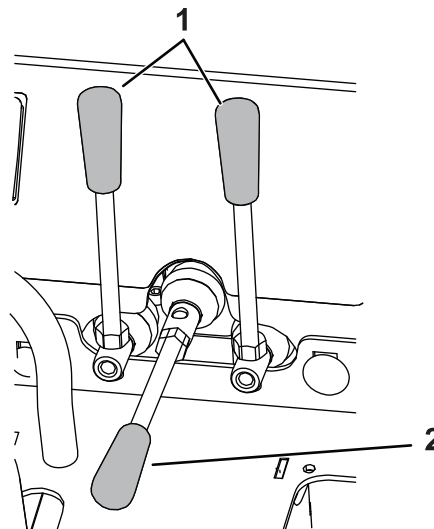


Figure 7

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1. Angle levers
2. Attachment coupler lever

- Use the attachment coupler lever to raise, lower, or float the plow.

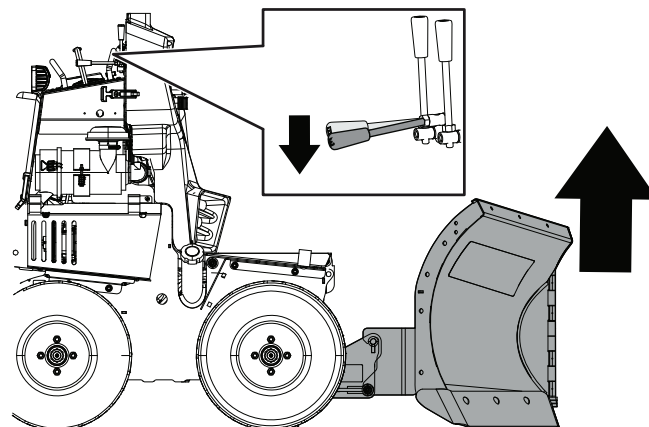


Figure 8

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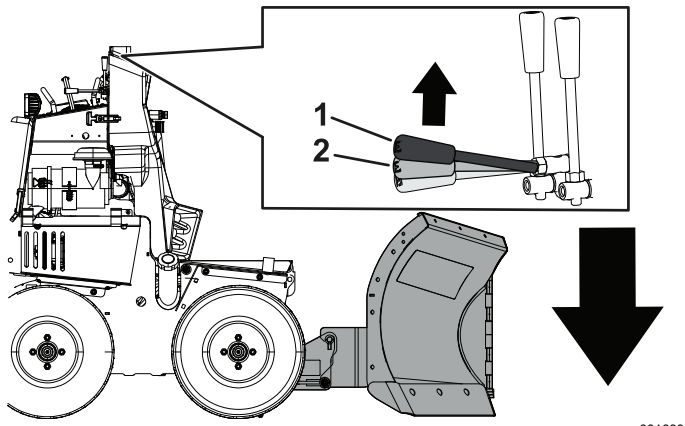


Figure 9

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1. Float

2. Lower

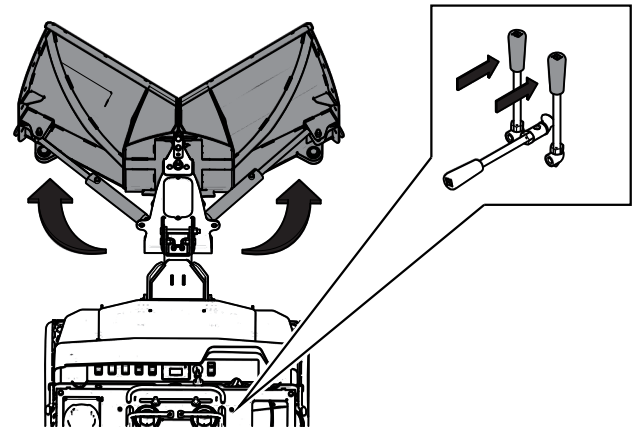


Figure 12
Scoop position

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Note: Do not plow forward in down force.

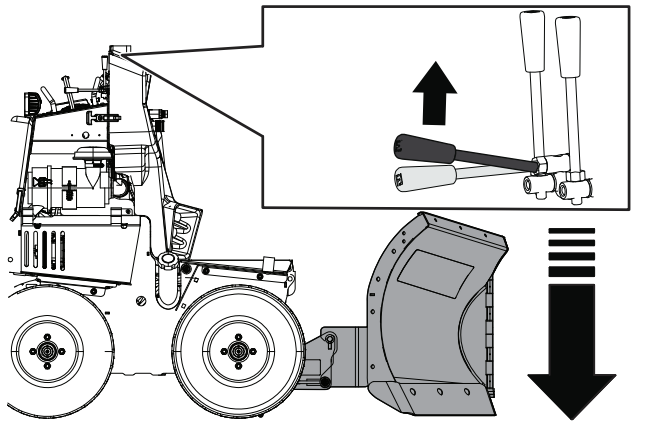


Figure 10
Down Force

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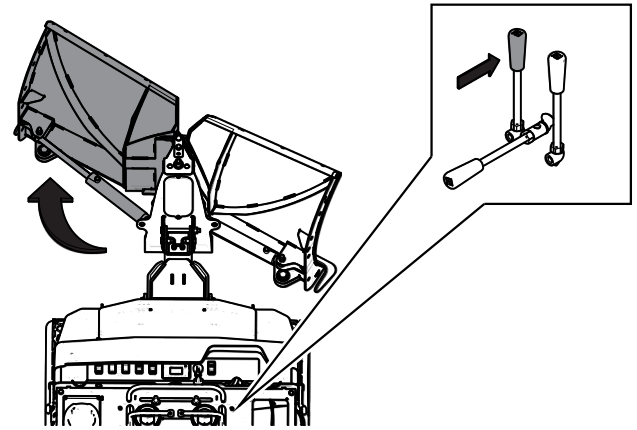


Figure 13
Right angle

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- Use the angle levers to angle the plow blades.

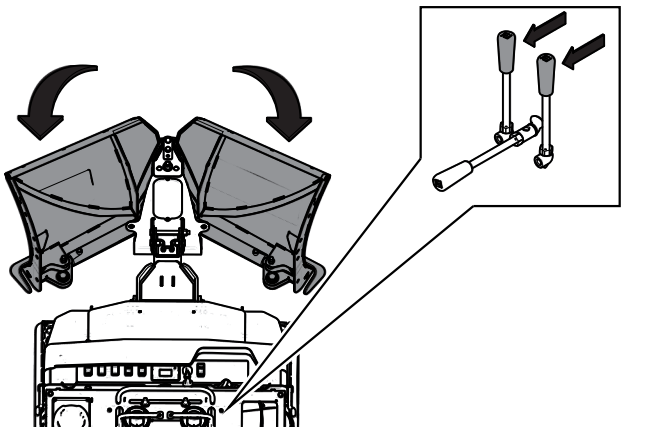


Figure 11
V position

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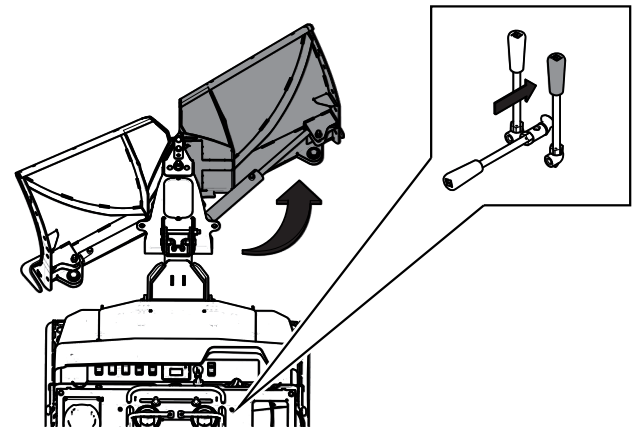


Figure 14
Left angle

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Operation

Mounting the Plow

Refer to the [Mounting the Plow \(page 5\)](#) section above.

Removing the Plow

1. Stop machine on a level surface.
2. Place the plow in the V position
3. Lower the plow until the cutting edge is 2.5 to 5 cm (1 to 2 inches) from the ground.
4. Shut off the engine, wait for all moving parts to stop, engage the parking brake, and remove the key.
5. Disconnect the hydraulics.
6. Pull the coupler pins and turn it 90° until the plow is disconnected from the machine.

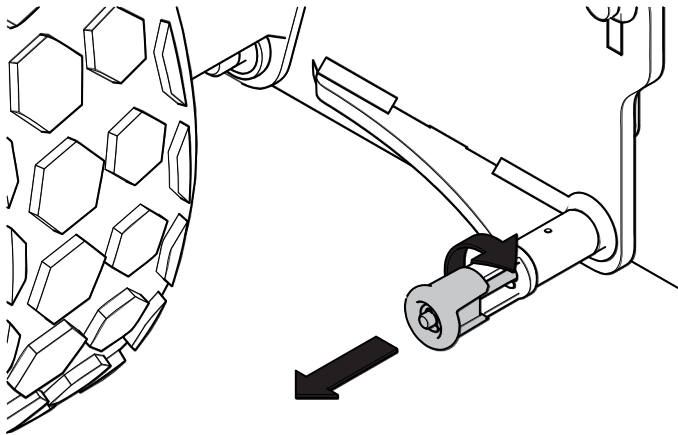


Figure 15

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7. Start machine, lower attachment coupler, and slowly back away from plow.
8. Arrange the hydraulic hoses and disconnects so that they are not resting on the ground.

Operating Tips

- Become familiar with the area you are plowing; hidden obstructions such as curbs and pipes can damage your plow or machine.
- Do not let snow accumulate; always plow with the storm.
- Lower the plow when not in use to prevent possible injury.
- Always plow at a safe speed in case you hit hidden obstructions.

- When transporting the machine, do not block your vision with the plow.
- Do not change the plow position while plowing.
- Ensure that the kickstand is raised before plowing to prevent damage to the plow or machine.
- For more plowing tips, visit www.bossplow.com.

Maintenance

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
After the first 2 hours	<ul style="list-style-type: none">• Tighten all hardware.
Before each use or daily	<ul style="list-style-type: none">• Check the hydraulic cylinders.• Check the hydraulic lines and hoses.• Check all fasteners, pins, retainers, nuts, and bolts.• Check the cutting edge for wear.
Before storage	<ul style="list-style-type: none">• Lightly sand and use touch-up paint on painted areas that are scratched, chipped, or rusted.• Grease the hydraulic cylinder rods.• Lightly sand and use touch-up paint on painted areas that are scratched, chipped, or rusted.

Maintenance

- Check the hydraulic lines and hoses daily for leaks, kinked lines, loose mounting supports, wear, loose fittings, weather deterioration, and chemical deterioration. Make all necessary repairs before operating.
- Check the hydraulic cylinders daily for leaks, rust, or pitting on the rods. Make all necessary repairs before operating.
- Check the cutting edge daily for wear. Replace the cutting edge if it is worn down.
- Check all fasteners, pins, retainers, nuts, and bolts daily to ensure that they are secure. Torque them to the appropriate value if they are loose.

Replacing the Cutting Edge

Note: Replacement hardware is available through an Authorized Boss Dealer or Boss Technical Service.

1. Remove and discard the 3 nuts and 3 washers holding the cutting edge to the blade.

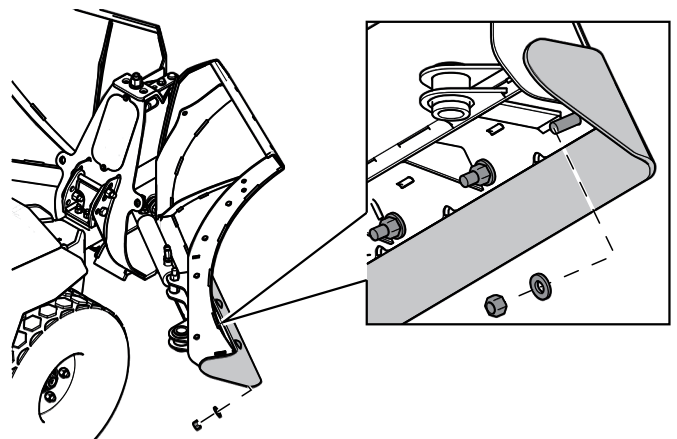


Figure 16

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2. Remove and discard the 3 carriage bolts and cutting edge.

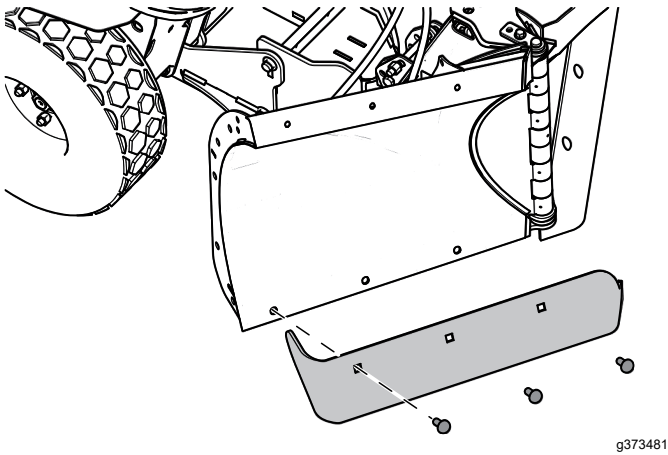


Figure 17

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3. Install new cutting edge with new hardware. Torque to 101 N·m (75 ft-lbs).

Storage

Storing the Plow

1. Drive the plow to your storage location and remove the plow; refer to your machine *Operator's Manual*.
2. Grease any exposed metal on the hydraulic cylinder rods.
3. Lightly sand and use touch-up paint on painted areas that are scratched, chipped, or rusted.

Removing the Plow from Storage

1. Check the torque of all fasteners; tighten as necessary.
2. Check the hydraulic lines and hoses for cracks or leaks.
3. Check the cutting edge for wear.
4. Lightly sand and use touch-up paint on painted areas that are scratched, chipped, or rusted.
5. Attach the plow to the machine; refer to your machine *Operator's Manual*.
6. Move the plow through its range of motion to check the hydraulic cylinder rods.

Troubleshooting

Problem	Possible Cause	Corrective Action
The plow wings retract while plowing.	<ol style="list-style-type: none"> <li data-bbox="581 216 894 243">1. A cylinder or hose is bad. <li data-bbox="581 338 963 365">2. The pressure relief valve is bad. 	<ol style="list-style-type: none"> <li data-bbox="1057 216 1510 323">1. Check the cylinders, hoses, and all fittings for leaks. Tighten any loose connections. Replace any damaged components. <li data-bbox="1057 338 1510 445">2. Check the pressure relief valve, located on the Snowrator MAG traction unit. If the valve is contaminated, clean or replace it.
The plow wing(s) do not extend, retract, or they move slowly.	<ol style="list-style-type: none"> <li data-bbox="581 462 943 489">1. The hydraulic fluid level is low. <li data-bbox="581 531 954 558">2. The pressure relief valve is bad <li data-bbox="581 642 894 669">3. A cylinder or hose is bad. <li data-bbox="581 753 967 806">4. The hydraulic couplings are not attached to the vehicle. 	<ol style="list-style-type: none"> <li data-bbox="1057 462 1510 514">1. Check the hydraulic fluid level; refer to your Snowrator MAG Owner's Manual. <li data-bbox="1057 531 1510 638">2. Check the pressure relief valve, located on the Snowrator MAG traction unit. If the valve is contaminated, clean or replace it. <li data-bbox="1057 642 1510 749">3. Check the cylinders, hoses, and all fittings for leaks. Tighten any loose connections. Replace any damaged components. <li data-bbox="1057 753 1510 806">4. Connect the plow hydraulics to the vehicle hydraulics.
The left wing extends/retracts when the right control lever is actuated, or vice versa.	<ol style="list-style-type: none"> <li data-bbox="581 825 1032 877">1. The hoses are connected to the wrong control valves. 	<ol style="list-style-type: none"> <li data-bbox="1057 825 1510 877">1. Disconnect the hoses and connect them to the correct control valves.
Oil leaks from the hydraulic cylinders.	<ol style="list-style-type: none"> <li data-bbox="581 930 776 957">1. A hose is bad. <li data-bbox="581 1020 808 1047">2. A cylinder is bad. <li data-bbox="581 1052 889 1079">3. The cylinder rod is pitted. 	<ol style="list-style-type: none"> <li data-bbox="1057 930 1510 1010">1. Check hoses for leaks. Tighten any loose connections. Replace any damaged components. <li data-bbox="1057 1020 1321 1047">2. Replace the cylinder. <li data-bbox="1057 1052 1510 1104">3. Polish the rod with steel wool. Replace the cylinder if the pitting is too bad.
The blade trips too easily.	<ol style="list-style-type: none"> <li data-bbox="581 1129 979 1157">1. The trip-springs need adjustment. 	<ol style="list-style-type: none"> <li data-bbox="1057 1129 1510 1182">1. Tighten the springs. Replace them if they are damaged.
The plow does not follow the contour of the ground.	<ol style="list-style-type: none"> <li data-bbox="581 1203 1024 1255">1. The attachment coupler lever is not in the float position. 	<ol style="list-style-type: none"> <li data-bbox="1057 1203 1510 1276">1. Ensure that the attachment coupler lever is in the float position while plowing.

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