



2010 The BOSS Way
Iron Mountain, MI 49801
United States

Owner's Manual

48in Snowthrower Kit Snowrator MAG

Part No. STX24410—Serial No. 400000000 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 snowthrower attaches to the Snowrator MAG.

The snowthrower is intended to be used on a BOSS stand-on, multi-purpose machine. This attachment is used to remove snow from paved or gravel surfaces, such as driveways and sidewalks, and other surfaces for traffic on residential or commercial properties. 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.

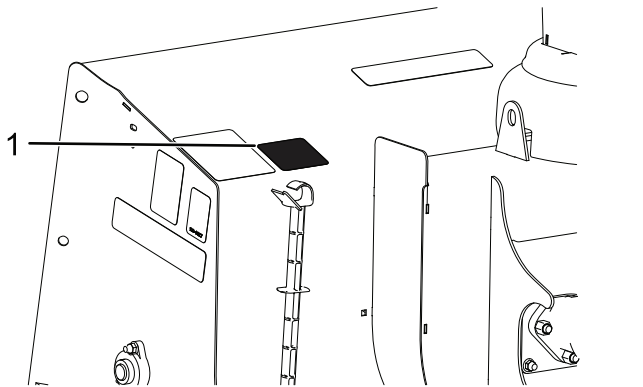


Figure 1

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.



g000502

Figure 2

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 **▲**, 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 attachment.
- 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 attachment.

Operation

- Use a 500 kg (1/2 ton) minimum lifting device to move heavy components.
- Do not exceed 8 km/h (5 mph) while operating.
- Never put any part of your body between the attachment 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 machine, ensure that it is properly secured. Instructions are available at www.bossplov.com.
- When transporting the vehicle, position the attachment so that it does not block your vision or headlights.
- Always lower the attachment 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 attachment off before filling, servicing, or cleaning it.
- Do not climb into or ride on the attachment.
- 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 attachment near 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.



139-8895

decal139-8895

1. Warning—read the *Operator's Manual*.
2. Cutting/dismemberment hazard of foot, auger—stay away from moving parts.
3. Thrown object hazard—keep bystanders away.
4. Warning—remove the key from the ignition before servicing the machine.



144-1299

decal144-1299

1. Cutting/dismemberment hazard of hand; impeller
2. Do not place your hand in the chute.



139-8896

decal139-8896

1. Cutting/dismemberment hazard of foot, auger—keep bystanders away.



MSC27245

decalmsc27245

1. Warning—stay away from moving parts; keep all guards and shields in place

Setup

Mounting the Attachment

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

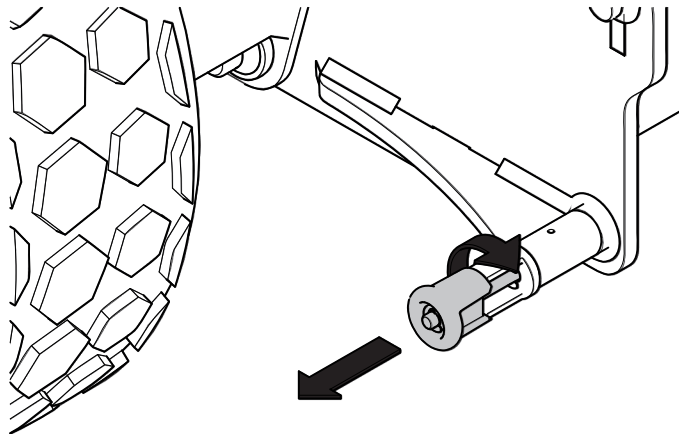


Figure 3

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

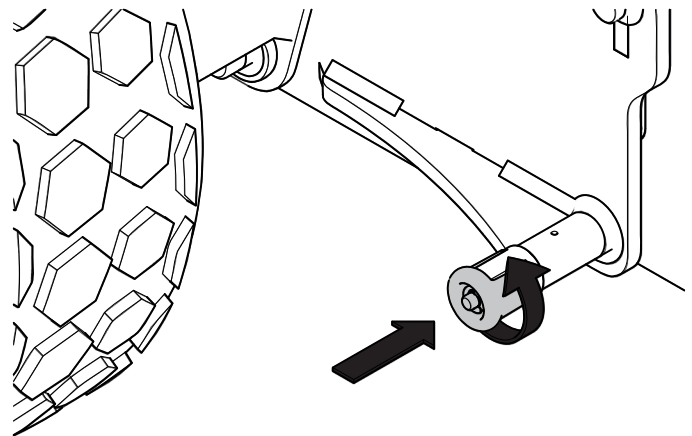


Figure 5

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

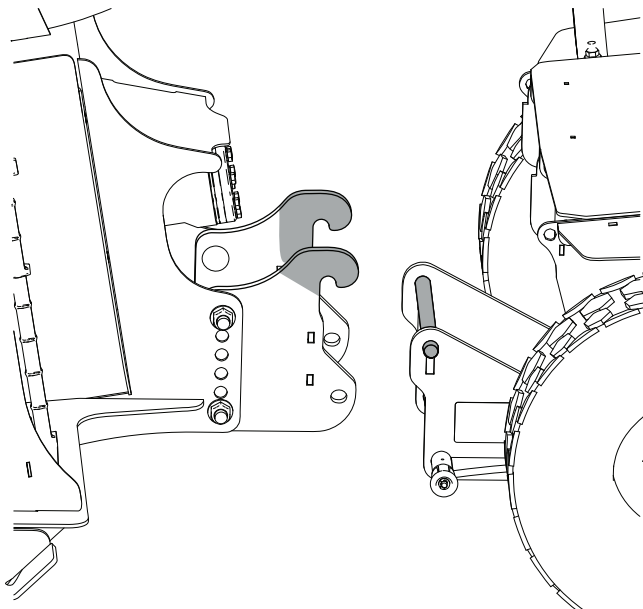


Figure 4

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

Routing the Hydraulic Hoses

1. Shut off the machine engine, wait for all moving parts to stop, ensure that the parking brake is engaged, and remove the key.
2. Route the hydraulic hoses.

Note: When changing attachments on the machine you may need to relieve stored hydraulic pressure by slightly loosening hydraulic lines on the snow thrower or wiggle the joysticks on machine.

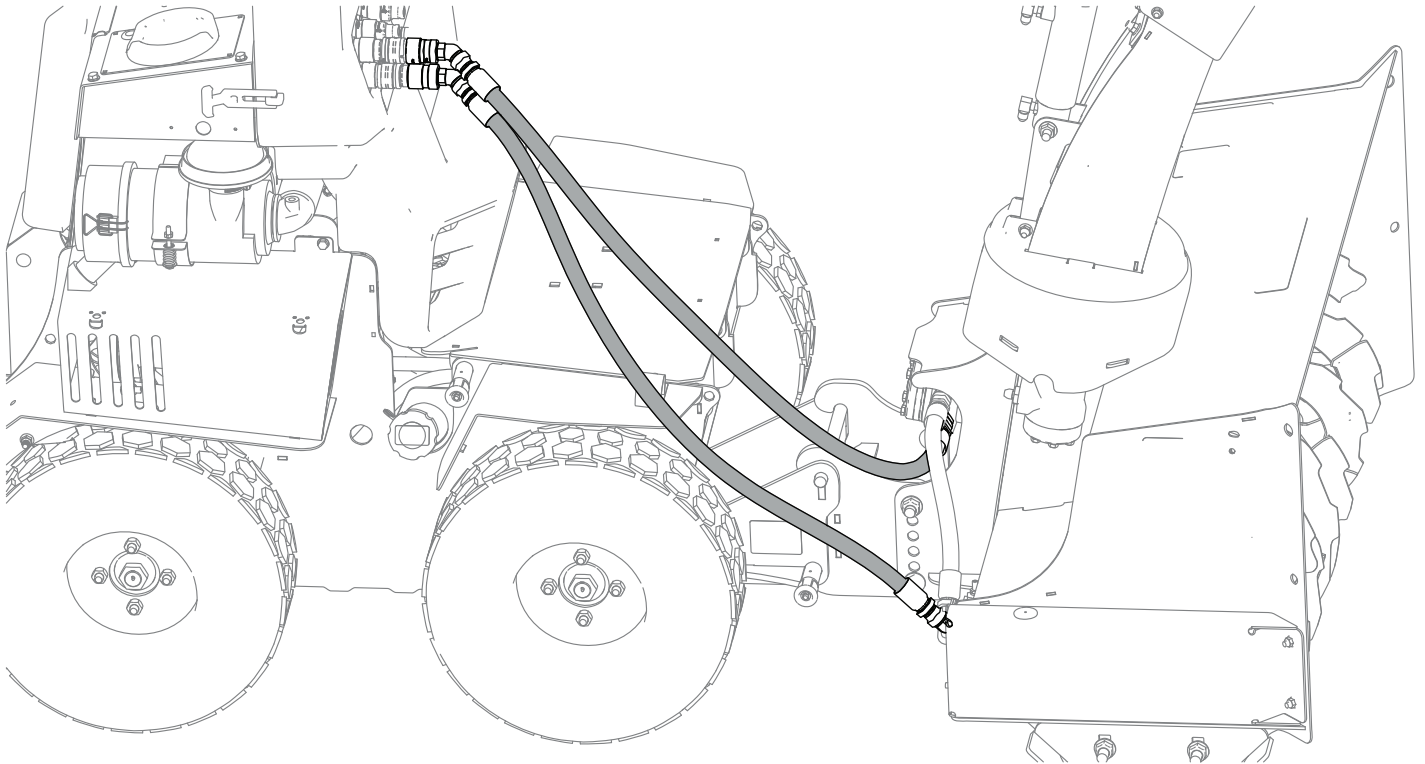


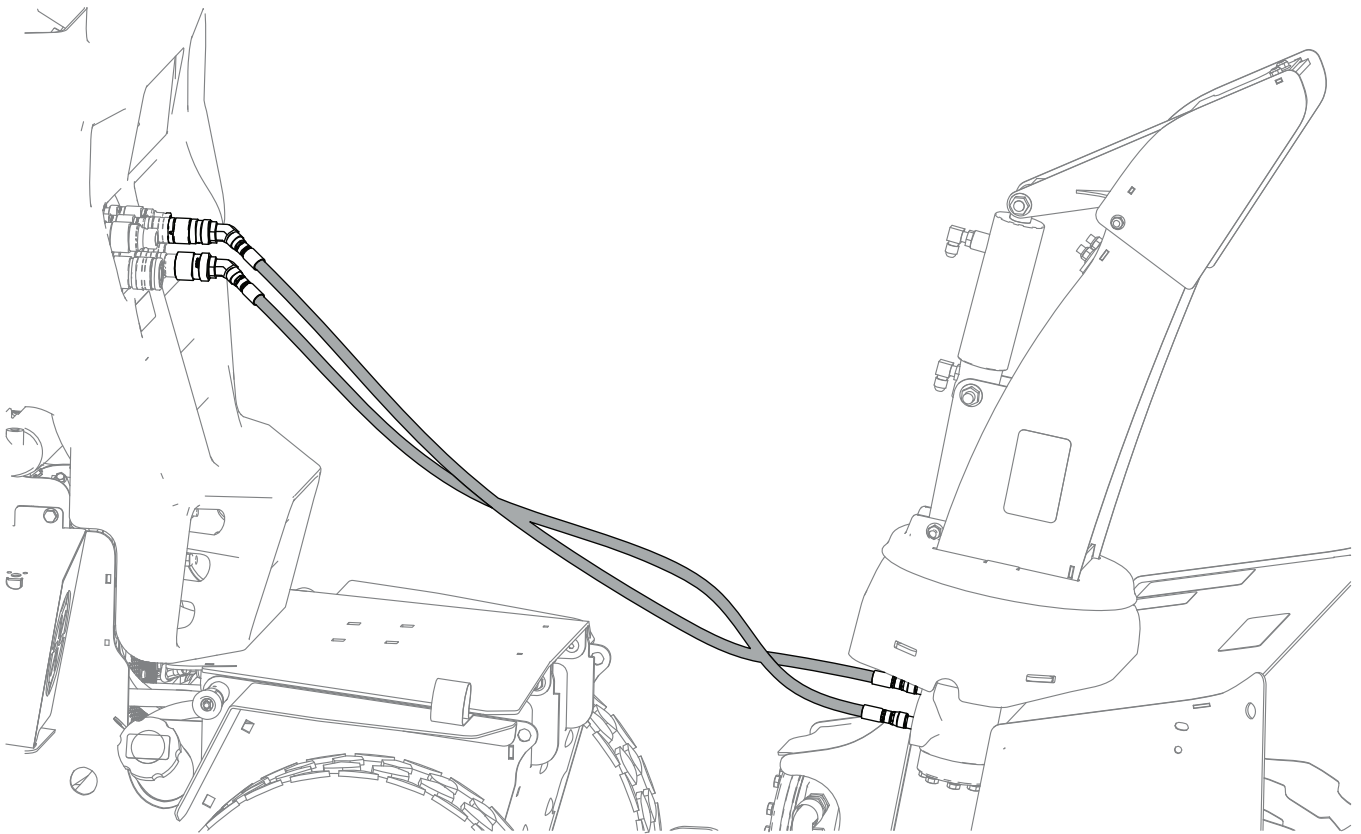
Figure 6

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g383237

Figure 7



g383238

Figure 8

3. Gather the hoses and secure them in the hose strap on the machine.

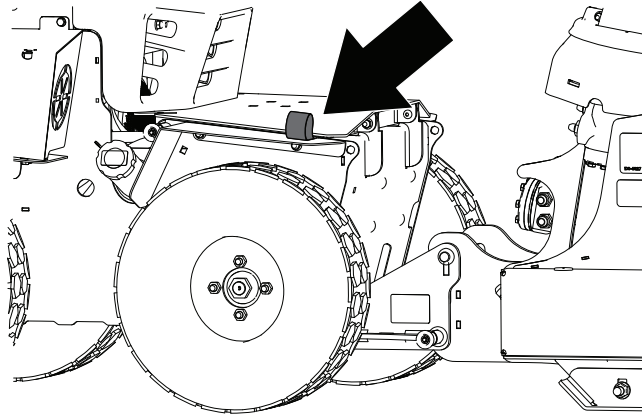


Figure 9

g385655

-
4. Start the machine.
 5. Use the controls to move the attachment in all directions to cycle the hydraulic fluid.
 6. Lower the attachment and shut off the machine.
 7. 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

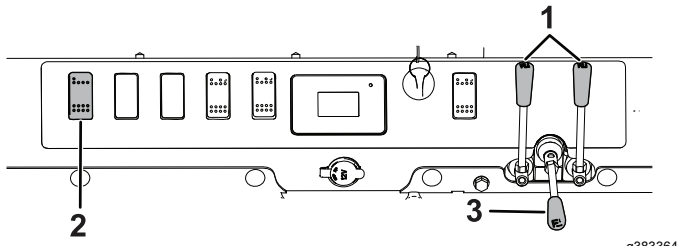


Figure 10

g383364

- 1. Angle levers
- 2. Engage the attachment
- 3. Attachment coupler lever

- Use the right angle lever to rotate the chute.

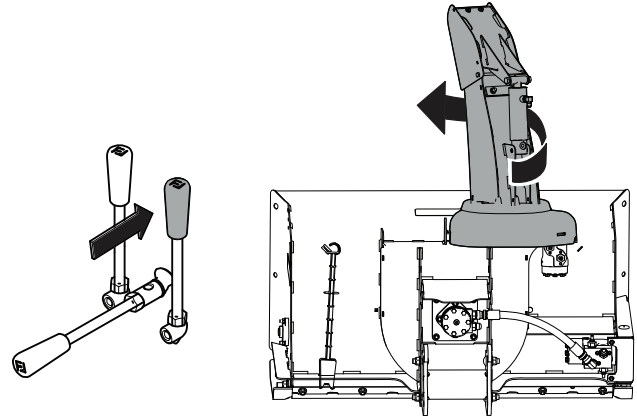


Figure 13

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- Use the attachment coupler lever to raise or lower the attachment.

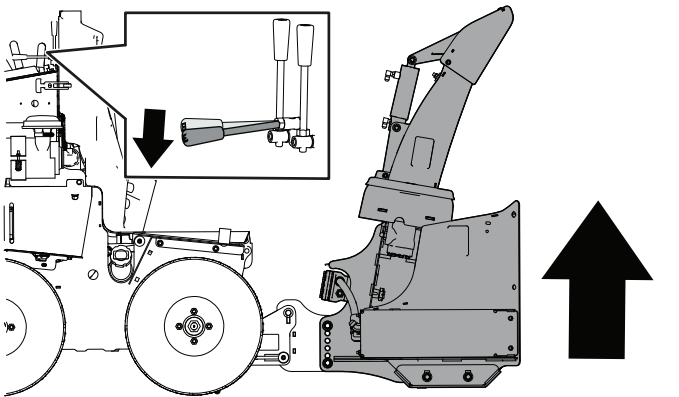


Figure 11

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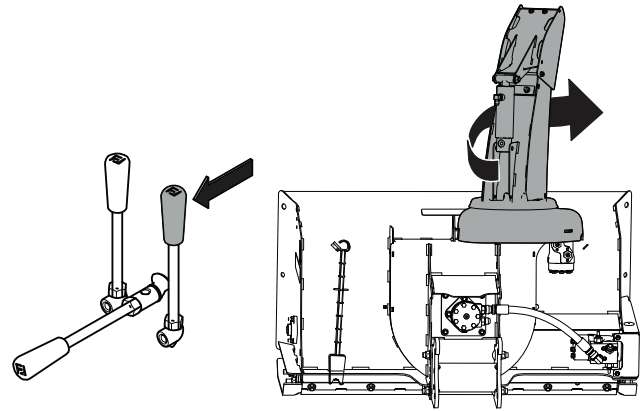


Figure 14

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- Use the left angle lever to move the chute deflector.

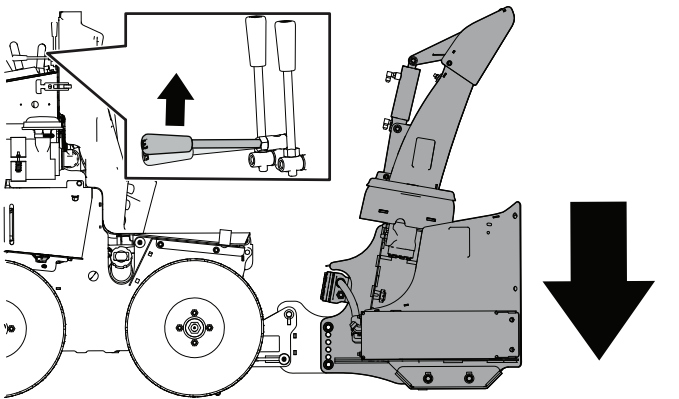


Figure 12

g383342

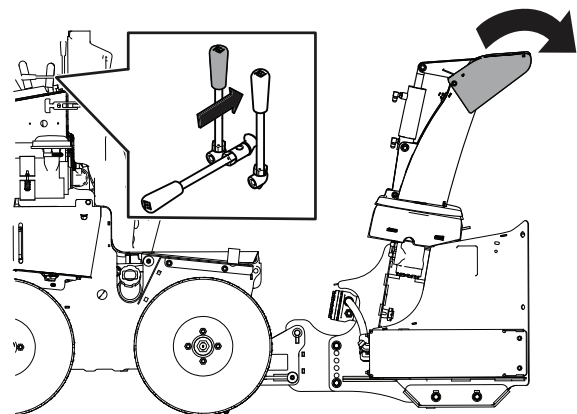


Figure 15

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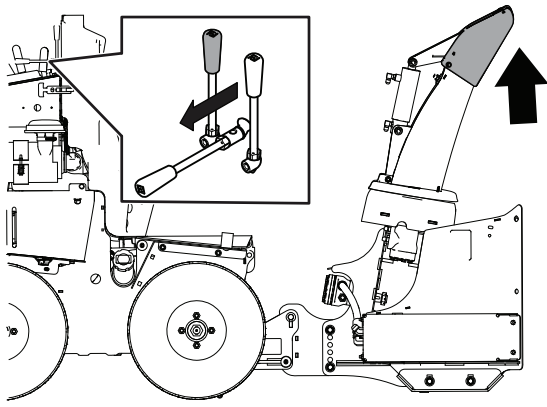


Figure 16

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Operation

Operating the Snowthrower

Important: Raise the snowthrower when transporting it.

1. Start the machine.
2. Push the top of the high flow engage switch to spin the blades in the forward position.

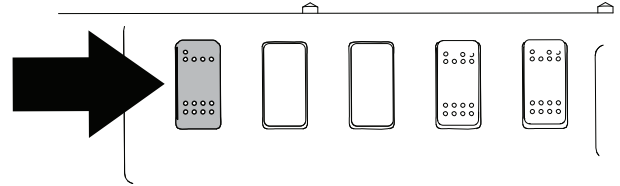


Figure 17

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Note: The blades should spin counterclockwise when viewed from the left side from the operating position. If the blades spin in the wrong direction, switch the couplers on the hydraulic hoses connected to the high flow hydraulic ports.

Note: To assist in removing a clog, push the bottom of the high flow engage switch to spin the blades in reverse.

Removing the Attachment

1. Stop machine on a level surface.
2. Lower the attachment until the edge is 1-2 inches from the ground.
3. Shut off the engine, wait for all moving parts to stop, engage the parking brake, and remove the key.

Note: If you are removing the attachment for storage, allow the machine to warm to the indoor temperature before shutting off the engine.

4. Disconnect the hydraulics.
5. Pull the coupler pins and turn it 90° until the attachment is disconnected from the machine.

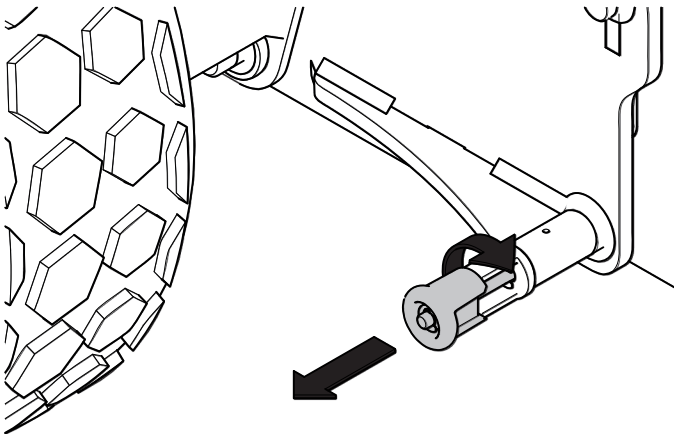


Figure 18

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Operating Tips

- Become familiar with the area you are operating the attachment; hidden obstructions such as curbs and pipes can damage your attachment or machine.
- Lower the attachment when not in use to prevent possible injury.
- Always operate the machine at a safe speed in case you hit hidden obstructions.
- When transporting the machine, do not block your vision with the attachment.
- The snowthrower will clean better when the lift valve is in the float position.
- Machine traction is improved when the attachment is lifted slightly or if it is not in the float position.
- Loosen the skids, put the machine in float, then tighten the skids to get the maximum scraping performance.
- For more tips, visit www.bossplow.com.

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

Note: Wrap the hoses together and stick them down the chute for storage.

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. Oil the chain.
Every 50 hours	<ul style="list-style-type: none"> Grease the attachment.
Every 100 hours	<ul style="list-style-type: none"> Check the chain tension.
Before storage	<ul style="list-style-type: none"> Lightly sand and use touch-up paint on painted areas that are scratched, chipped, or rusted. Oil the chain. 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.

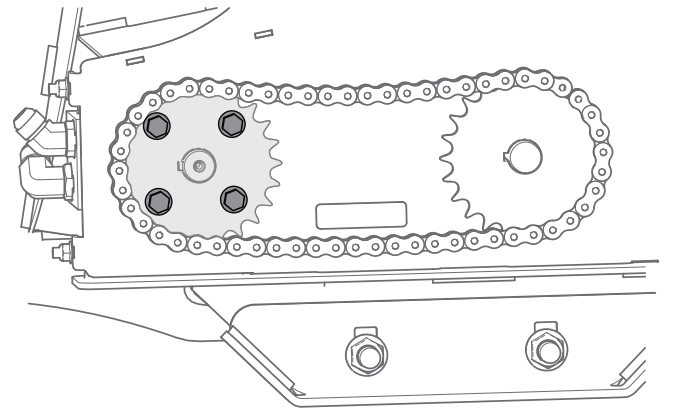


Figure 19

Checking the Chain Tension

Service Interval: Every 100 hours

- Remove the chain guard.
- Loosen the 4 motor bolts.

- Pull back the motor and hold in place.
- Tighten the 4 bolts.
- Install the guard.

Oiling the Chain

Service Interval: Before each use or daily

Before storage

Use Boss Snowrator Hydraulic Fluid or SAE 20 oil.

- Raise the attachment all the way up using the hydraulic controls.
- Remove the rubber plug on the chain housing and insert it into the housing with the cup side up.

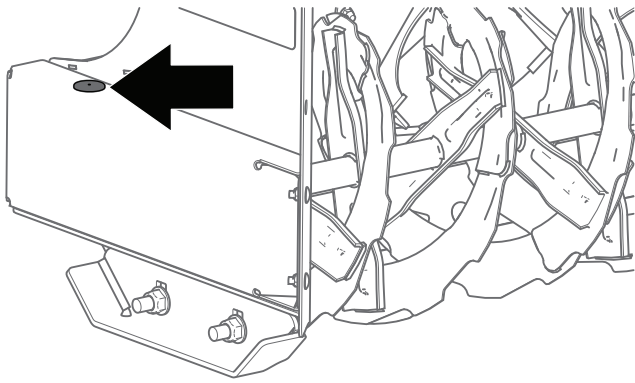


Figure 20

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3. Fill the rubber plug with oil.
4. Start the machine and run it at low idle.
5. Operate the snowblower at low idle until the plug is out of oil.
6. Remove the plug and install it with the flat face up to prevent it from filling with debris during operation.

Replacing the Cutting Edge

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

1. Remove the hardware holding the cutting edge to the blade.

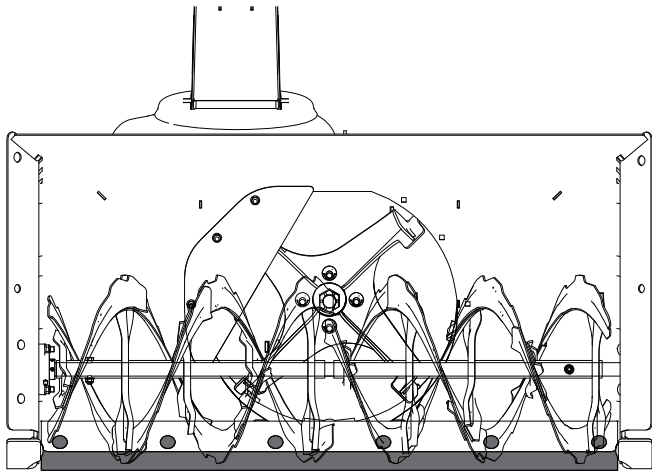


Figure 21

g385776

2. Flip the cutting edge over.

Note: If the cutting edge has already been flipped, discard it and use a new edge.
3. Install new cutting edge with existing hardware. Torque to 101 N·m (75 ft-lbs).

Greasing the Attachment

Service Interval: Every 50 hours

1. Park the machine on a level surface and shut off the engine.
2. Clean the grease fitting with a rag.
3. Connect a grease gun to each fitting.
4. Pump grease into the fittings until grease begins to ooze out of the bearings (approximately 3 pumps).
5. Wipe up any excess grease.

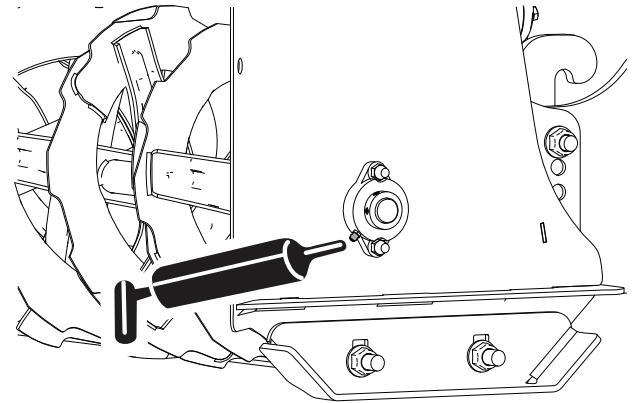


Figure 22

g383365

Adjusting the Skids

Check the skids to ensure that the auger does not contact the paved or gravel surface. Adjust the skids as needed to compensate for wear.

If the pavement is cracked, rough, or uneven, adjust the skids to raise the poly edge. For gravel surfaces, adjust the skids further down to prevent the machine from picking up rocks.

Lowering the Skids

1. Park the machine on a level surface.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Loosen the nuts that secure both skids to the auger sides until the skids slide up and down easily.

Important: Support the auger blades above the ground using the skids.
4. Move the skids down until they are even with the ground.
5. Firmly tighten the nuts that secure both skids to the auger sides.

Note: To quickly adjust the skids if they loosen, rest the poly edge on the pavement, then adjust the skids down.

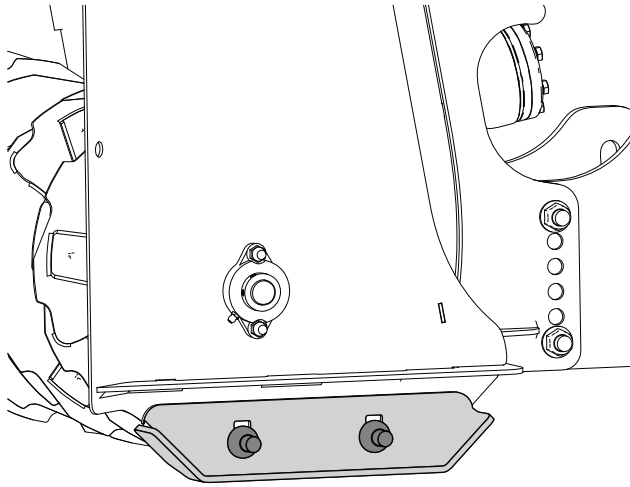


Figure 23

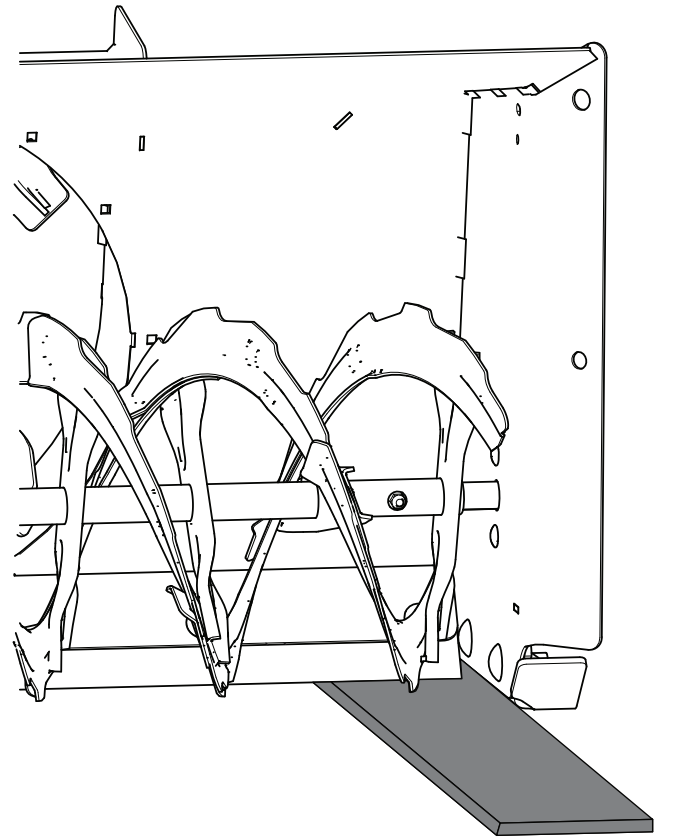


Figure 24

Raising the Skids

1. Park the machine on a level surface and raise the attachment.
2. Shut off the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
3. Loosen the nuts that secure both skids to the auger sides until the skids slide up and down easily.

Important: Support the auger blades above the ground using the skids.

4. Place a board, of your desired thickness, under the poly edge of the snowthrower.

5. Start the machine, put it in the float position, and tighten the skids.

Storage

Storing the Attachment

1. Before long term storage, wash the attachment with mild detergent and water to remove dirt and grime.
2. Place the chute in the upwards position.
3. Check the condition of the scraper blade.
4. Check and tighten all bolts, nuts, and screws. Repair or replace any damaged or worn parts.
5. Grease any exposed metal on the hydraulic cylinder rods.
6. Grease the chute angle gear.
7. Lightly sand and use touch-up paint on painted areas that are scratched, chipped, or rusted.

Note: You do not need to reapply paint on the impeller housing, inside of the chute, and impeller. Apply penetrating oil to these surfaces.

8. Store the attachment in a clean, dry garage or storage area. Cover it to protect it and keep it clean.

Removing the Attachment 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 attachment to the machine; refer to your machine *Operator's Manual*.
6. Move the attachment through its range of motion to check the hydraulic cylinder rods.

Troubleshooting

Problem	Possible Cause	Corrective Action
The auger is not moving but the impeller still rotates.	<ol style="list-style-type: none"> 1. The chain broke. 2. The auger could be jammed. 3. The auger bolts are bad. 4. A sprocket key could be missing or bad. 	<ol style="list-style-type: none"> 1. Check the chain for break. Replace any damaged components. 2. Check the auger for debris. 3. Inspect the auger bolts. Replace any damaged components. 4. Inspect the sprocket keys. Replace any damaged components.
The impeller is not moving but the auger still rotates.	<ol style="list-style-type: none"> 1. Debris is caught in the blades. 	<ol style="list-style-type: none"> 1. Check the impeller for debris.
The attachment is not functioning or they move slowly.	<ol style="list-style-type: none"> 1. The hydraulic fluid level is low. 2. The hydraulic fluid level is low and the Snowrator MAG was stopped quickly. 3. The pressure relief valve is bad 4. A cylinder or hose is bad. 5. The hydraulic couplings are not attached to the vehicle. 	<ol style="list-style-type: none"> 1. Check the hydraulic fluid level; refer to your Snowrator MAG Owner's Manual. 2. Slow the Snowrator MAG gradually before coming to a stop when the hydraulic fluid is low. 3. Check the pressure relief valve, located on the Snowrator MAG traction unit. If the valve is contaminated, clear or replace it. 4. Check the cylinders, hoses, and all fittings for leaks. Tighten any loose connections. Replace any damaged components. 5. Connect the attachment hydraulics to the vehicle hydraulics.
The hydraulic connections does not connect or they are hard to connect.	<ol style="list-style-type: none"> 1. There is pressure build up in the snowthrower circuits. 2. There is pressure build up in the Snowrator MAG valves. 	<ol style="list-style-type: none"> 1. Loosen the hydraulic lines on the snowthrower to relieve the pressure. 2. Wiggle the joysticks on the MAG to relieve the pressure.
Oil leaks from the hydraulic cylinders.	<ol style="list-style-type: none"> 1. A hose is bad. 2. A cylinder is bad. 3. The cylinder rod is pitted. 	<ol style="list-style-type: none"> 1. Check hoses for leaks. Tighten any loose connections. Replace any damaged components. 2. Replace the cylinder. 3. Polish the rod with steel wool. Replace the cylinder if the pitting is too bad.
The attachment does not follow the contour of the ground.	<ol style="list-style-type: none"> 1. The attachment coupler lever is not in the float position. 	<ol style="list-style-type: none"> 1. Ensure that the attachment coupler lever is in the float position.