



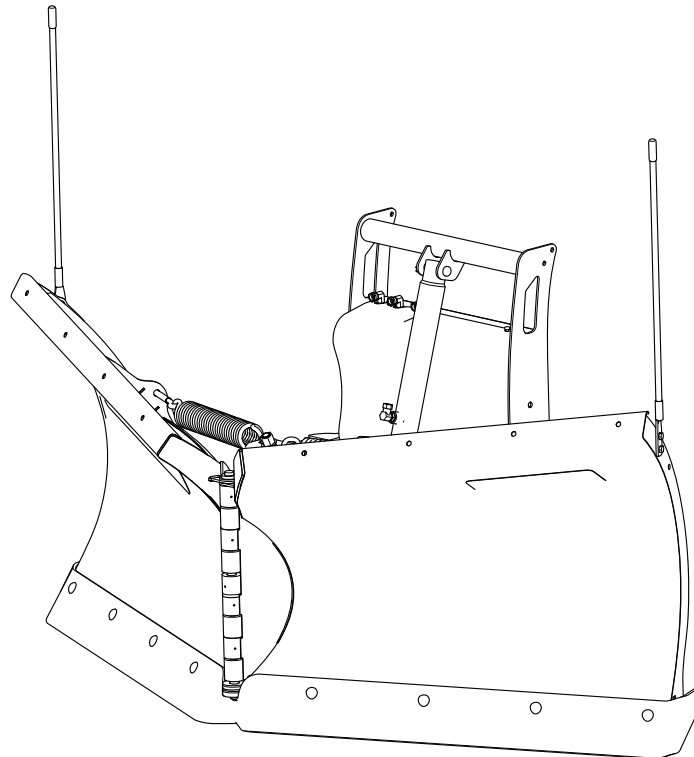
P.O. Box 787  
Iron Mountain, MI 49801  
United States

# Owner's Manual

## Plow Box

### 2010 and After UTV RT3 Power-V Plow Blade

Part No. MSC12060—Serial No. 40000000 and Up



This product complies with all relevant European directives; for details, please see the separate product specific Declaration of Conformity (DOC) sheet.

BOSS Products limited consumer warranty and BOSS Products commercial warranty policies are located at [www.BOSSPlow.com](http://www.BOSSPlow.com).

Patent [www.tcopats.com](http://www.tcopats.com).

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

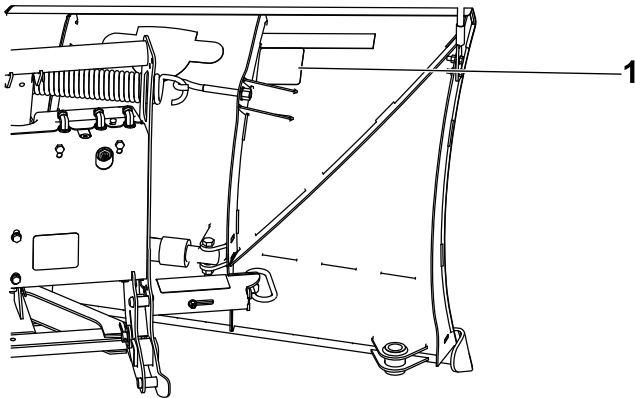
# Introduction

**Note:** This manual is used for the assembly of all BOSS UTV V-blade plows. Illustrations may vary.

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.

You may contact BOSS directly at [www.BOSSPlow.com](http://www.BOSSPlow.com) for product and 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 ( ) 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.



g321885

**Figure 1**

1. Serial number decal

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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 plow.
- Always follow the vehicle manufacturer's recommendations relating to snowplow installation. For recommended vehicle models, refer to the BOSS product selector tool at [www.BOSSPlow.com](http://www.BOSSPlow.com).
- Follow all operator safety instructions and age restrictions found in your *ATV/UTV Owner's Manual*.
- Ensure that only trained personnel install and perform maintenance on the equipment and hydraulic components.
- Keep your hands, feet, and clothing away from moving parts and mounting points.
- Ensure that the plow is properly attached to the vehicle before moving it.
- To comply with federal regulations, do not exceed the front gross-axle-weight rating (FGAWR), rear gross-axle-weight rating (RGAWR), and the gross-vehicle-weight rating (GVWR) at any time.
- Always wear appropriate personal protective equipment when operating and servicing the machine. Wear substantial, slip-resistant footwear, and cold-weather clothing.
- Use a 500 kg (1/2 ton) minimum lifting device to move heavy plow components.
- Material safety data sheets (MSDS) are available at [www.BOSSPlow.com](http://www.BOSSPlow.com).

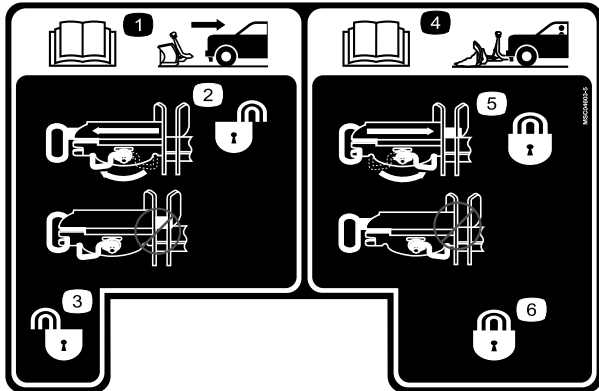
## Operation

- When transporting the vehicle, position the plow so as not to block your vision.
- Do not change the blade position when traveling.
- When operating a UTV mounted plow:
  - Do not exceed 38 km/h (24 mph) when transporting the plow.
  - Do not exceed 22 km/h (14 mph) when plowing.
- When operating an ATV mounted plow:
  - Do not exceed 8 km/h (5 mph) when transporting the plow.
  - Do not exceed 8 km/h (5 mph) when plowing.
- Always lower the blade when the vehicle is not in use.
- Never put any part of your body between the plow and the vehicle.
- Do not climb or ride on the plow.
- Do not operate on steep inclines.
- Do not operate the machine while ill, tired, or under the influence of alcohol or drugs.
- Always wear your seat belt (if equipped) while operating a motor vehicle.
- Due to the variety of equipment that you can install on the vehicle, do not exceed the front gross-axle-weight rating (FGAWR), rear gross-axle-weight rating (RGAWR), and the gross-vehicle-weight rating (GVWR) at any time. This may require weighing the vehicle and adding ballast as necessary. It may also limit the payload capacity of the vehicle.
- This machine has an operating sound level below 70 dBA.
- When transporting the machine, ensure that it is properly secured. Instructions are available at [www.BOSSPlow.com](http://www.BOSSPlow.com).
- The ATV/UTV V-blade plow is for personal use only. Using the plow in a commercial setting voids the plow warranty.

# Safety and Instructional Decals



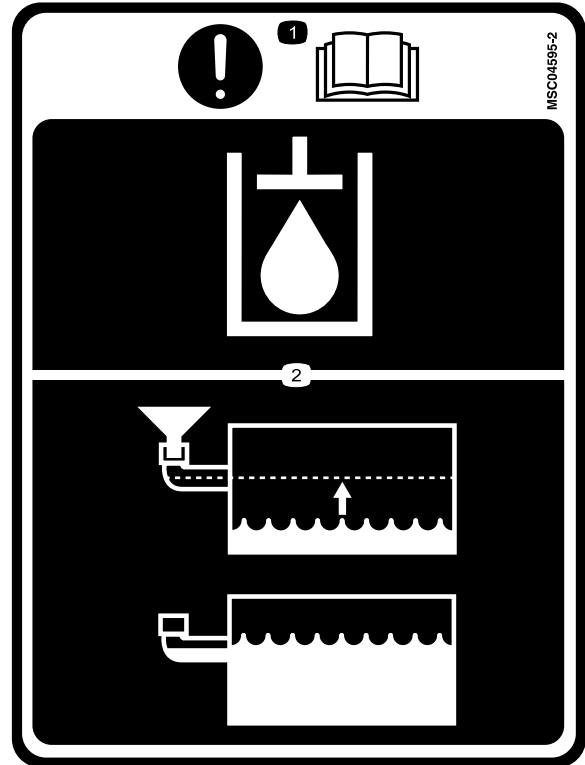
Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or missing.



decalsc04603-5

**MSC04603-5**

1. Read the *Owner's Manual* for information on removing the plow.
2. Rotate the release lever clockwise and pull out the spring pin handle to unlock the coupler; do not leave the spring pin pushed in.
3. Coupler spring pin unlock
4. Read the *Owner's Manual* for information on attaching the plow.
5. Rotate the release lever counterclockwise and push in the spring pin handle to lock the coupler; do not leave the spring pin pulled out.
6. Coupler spring pin lock

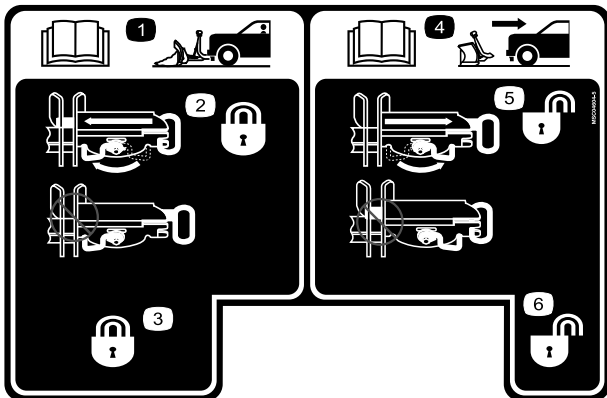


MSC04595-2

decalsc04595

**MSC04595**

1. Important—read the *Owner's Manual*.
2. Fill the hydraulic fluid to the bottom of the fill elbow.



decalsc04604-5

**MSC04604-5**

1. Read the *Owner's Manual* for information on attaching the plow.
2. Rotate the release lever clockwise and push in the spring pin handle to lock the coupler; do not leave the spring pin pulled out.
3. Coupler spring pin lock
4. Read the *Owner's Manual* for information on removing the plow.
5. Rotate the release lever counterclockwise and pull out the spring pin handle to unlock the coupler; do not leave the spring pin pushed in.
6. Coupler spring pin unlock



decalmsc12453

**MSC12453**

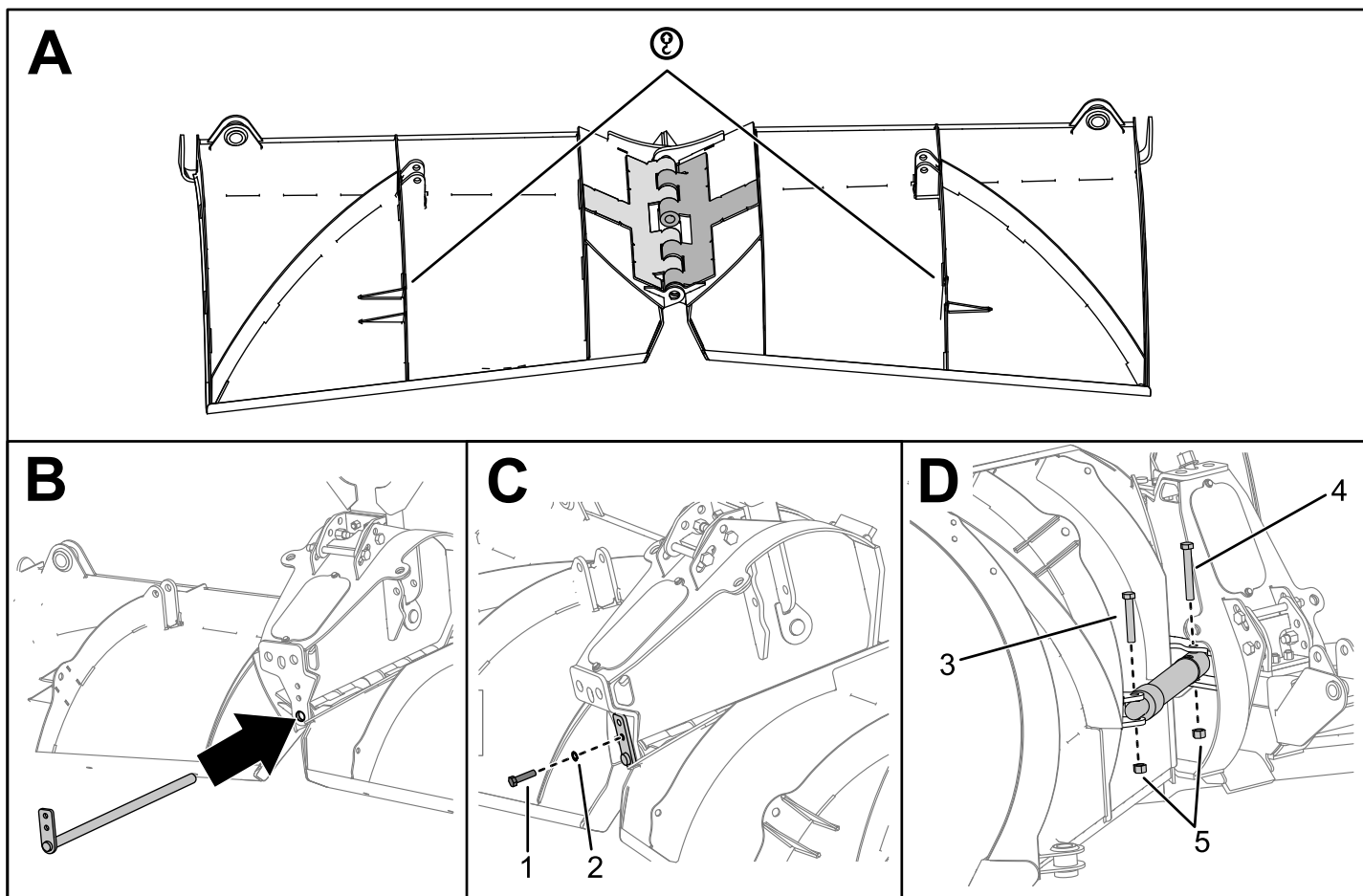
- |                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. Warning—read the <i>Owner's Manual</i>.</li> <li>2. Warning—all operators should be trained before operating the machine.</li> <li>3. Warning—wear your seatbelt and helmet while operating the plow.</li> <li>4. Warning—coupler spring pins must be locked before plowing.</li> <li>5. Warning—coupler spring pins must be unlocked to remove the plow.</li> </ol> | <ol style="list-style-type: none"> <li>6. Warning—do not block driver visibility with the plow.</li> <li>7. Crushing hazard—do not stand between the plow and vehicle during maintenance.</li> <li>8. Warning—do not exceed 40 km/h (25 mph) when transporting the plow.</li> <li>9. Warning—do not exceed 23 km/h (14 mph) when plowing; keep the vehicle in low when plowing.</li> <li>10. Warning—lower the plow when the vehicle is not in use.</li> </ol> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# Setup

**Note:** Determine the left and right sides of the machine from the normal operating position.

## Installing the Coupler Assembly

1. Lay the left and right blades face down so that the hinge bushings align and the blade edges are even.
2. Position the coupler assembly on top of both blades so that all the bushings align and the center section hinge bushing is inserted between the blade hinge bushings.
3. Insert the center hinge pin through the bushings.
4. Secure the center using 1 bolt (3/8-16 x 1-1/4 inches) and 1 split lock washer.
5. Secure the body side of the cylinders to the cylinder mounts using 2 bolts (1/2 x 3-1/2 inches) and 2 locknuts.
6. Secure the rod end of the cylinders to the cylinder mounts using 2 bolts (1/2-13 x 3 inches) and 2 locknuts.



**Figure 2**

1. Bolt (3/8-16 x 1-1/4 inches)
2. Split lock washer
3. Bolt (1/2 x 3 inches)
4. Bolt (1/2 x 3-1/2 inches)
5. Locknut

7. Install the springs.

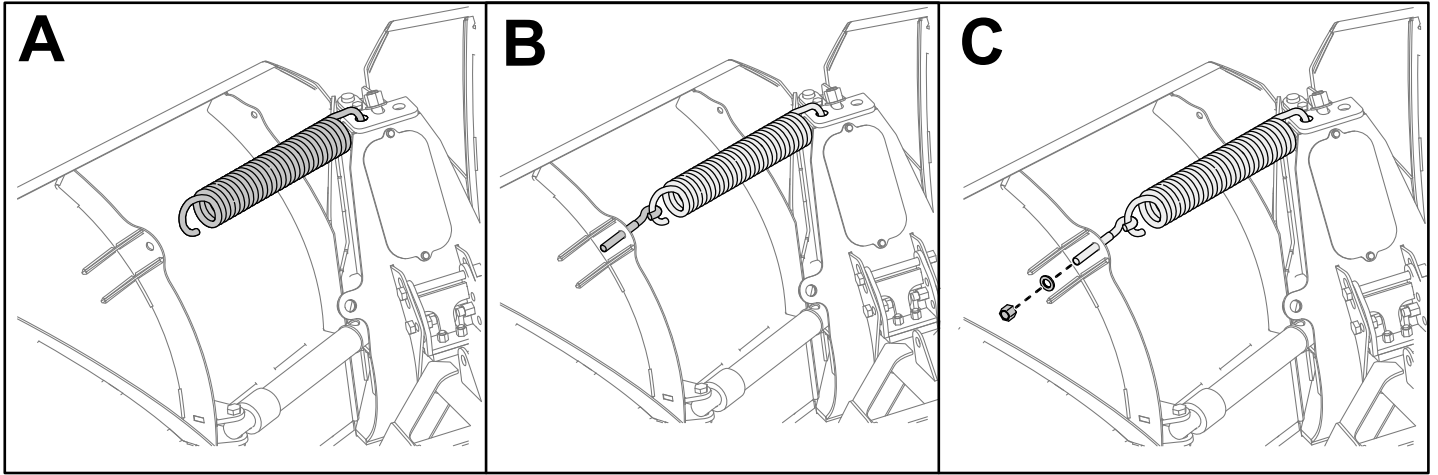


Figure 3

g321727

8. Secure the coupler assembly to the push frame.

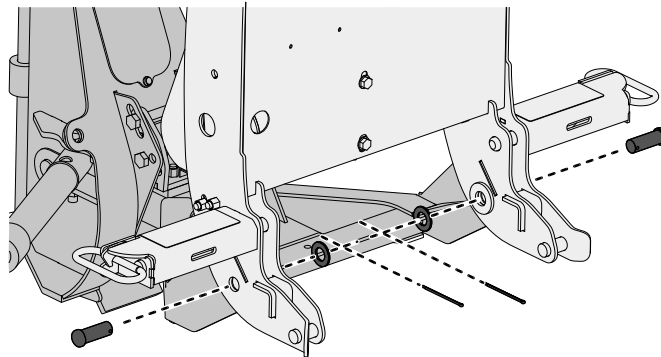


Figure 4

g321729

9. Secure the rod end of the lift cylinder to the push-frame assembly using a clevis pin, washer, and hairpin cotter.

# Installing the Hydraulic Hoses

1. Secure the rod end of the lift cylinder to the push-frame assembly using a clevis pin, washer, and hairpin cotter.

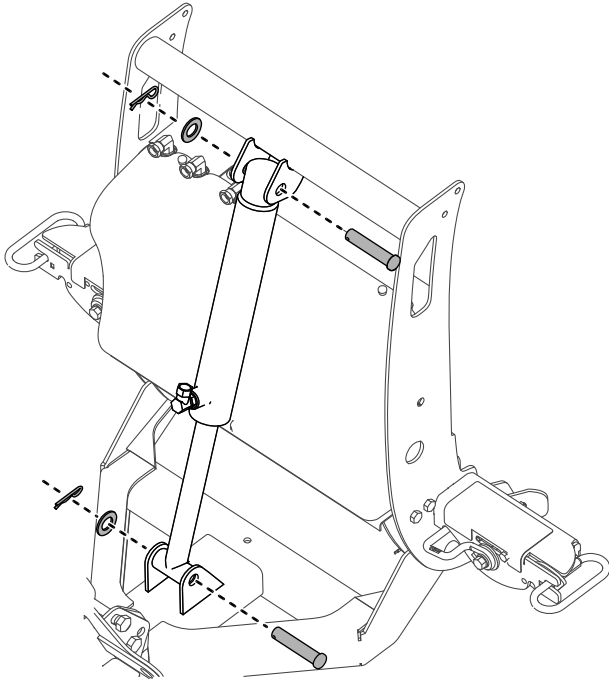


Figure 5

g321850

2. Remove the plug from the lower port on the lift cylinder.
3. Using thread compound, install a 90° fitting to the lower port on the lift cylinder.

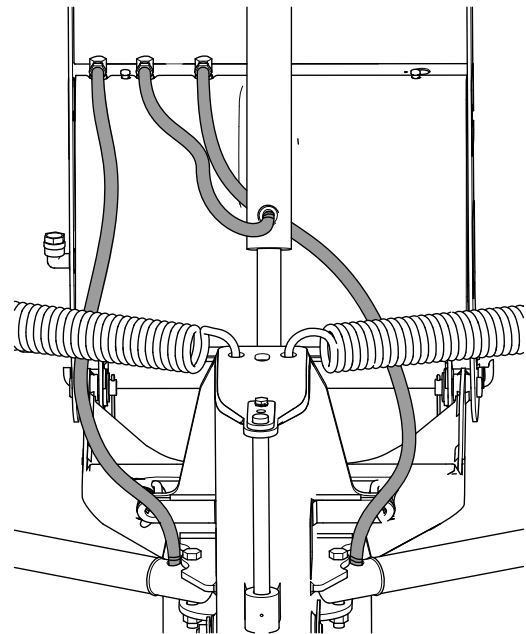


Figure 6

g321731

4. Install the short hydraulic hose to the middle fitting on the hydraulic shelf and the previously installed 90° fitting. Turn the fitting until it is finger tight, then turn it 2 to 3 more times.

**Important: Do not overtighten.**

5. Install the long hoses to the outer fittings on the hydraulic shelf and route them to the corresponding angle cylinder.
6. Remove the plug on the upper fitting on the lift cylinder, and install the breather vent.

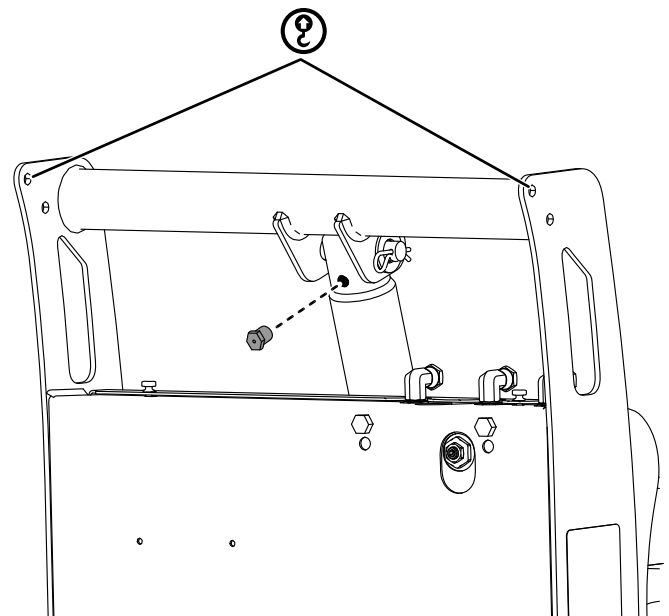


Figure 7

g321730



# Installing the Blade Guides and Filling the Hydraulic Reservoir

1. Attach the blade guides to the plow blade using 2 bolts (5/16 inch) and 2 self-locking nuts (Figure 8).

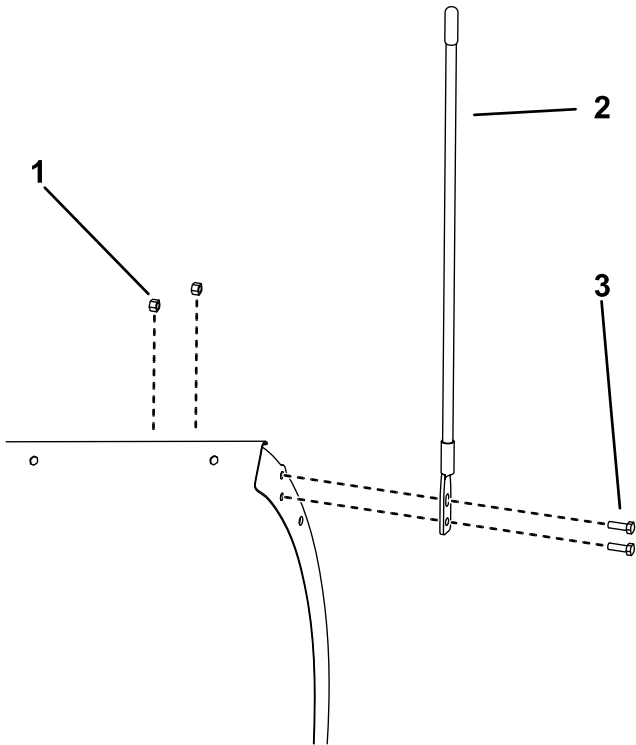


Figure 8

g321728

1. Self-locking nut
2. Blade guide
3. Bolt (5/16 inch)

2. Ensure that the lift cylinder is completely collapsed.
3. Remove the fill cap from the hydraulic reservoir elbow (Figure 9).

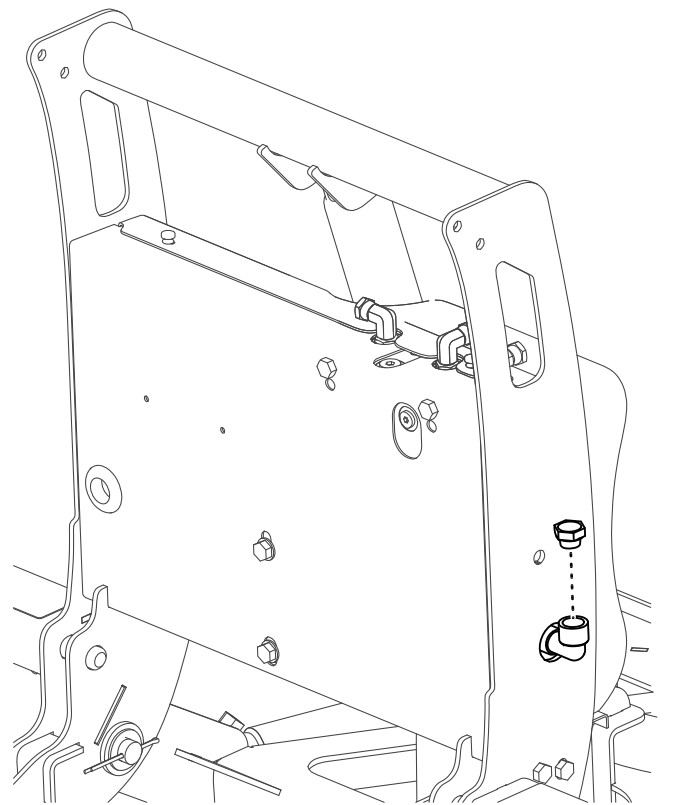


Figure 9

g320664

4. Slowly fill the reservoir with BOSS high-performance hydraulic-fluid until it accepts no more.

**Note:** The reservoir holds approximately 1.9 L (2 US qt) of hydraulic fluid.

5. Install the previously removed fill cap.

## Installing the Wire Harness

### **⚠ DANGER**

Vehicle engines contain moving parts and can become extremely hot, capable of causing severe burns and serious bodily harm.

Shut off the engine and allow it sufficient time to cool down before installing this kit.

### **⚠ DANGER**

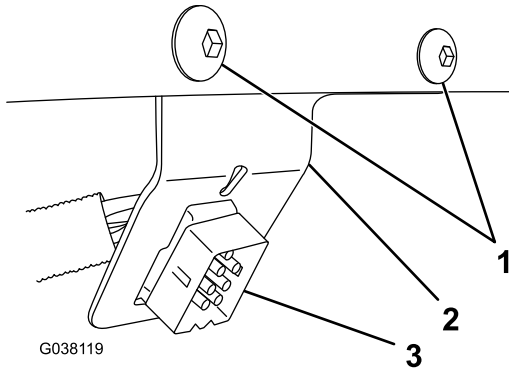
Vehicle batteries can cause dangerous electrical shocks that could lead to severe burns or death.

Disconnect your battery before installing this kit.

**Note:** Apply dielectric grease to all electrical connections.

**Note:** Some vehicles require a battery cable extension kit. Contact your Authorized BOSS Dealer for more information.

1. Park the machine on a level surface, shut off the engine, wait for all moving parts to stop, engage the parking brake, and remove the key from the ignition switch.
2. Pull the plow controller connector and black/red wire under the hood and into the vehicle cab (Figure 10).



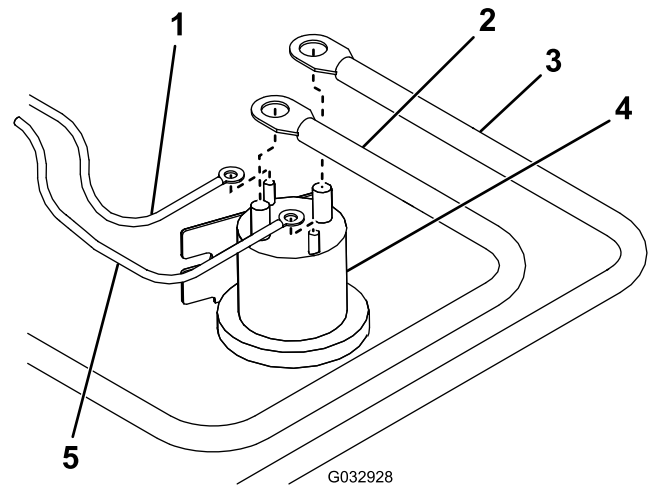
**Figure 10**

1. Self-tapping bolts
2. Dash bracket
3. Plow controller connector

3. Mount the plow controller connector to the dash bracket, and secure the bracket to the left of the steering wheel using 2 self-tapping bolts (Figure 10).
4. Plug the plow controller into the plow controller connector.
5. Mount the plow controller; refer to [Mounting the Plow Controller \(page 11\)](#).
6. Connect the black/red wire to a keyed 12 V+ ignition source.

**Note:** Connecting the wire to a source that is not keyed can cause the battery to drain.

7. Connect the white/black wire from the wire harness to the small post on the pump solenoid (Figure 11).



**Figure 11**

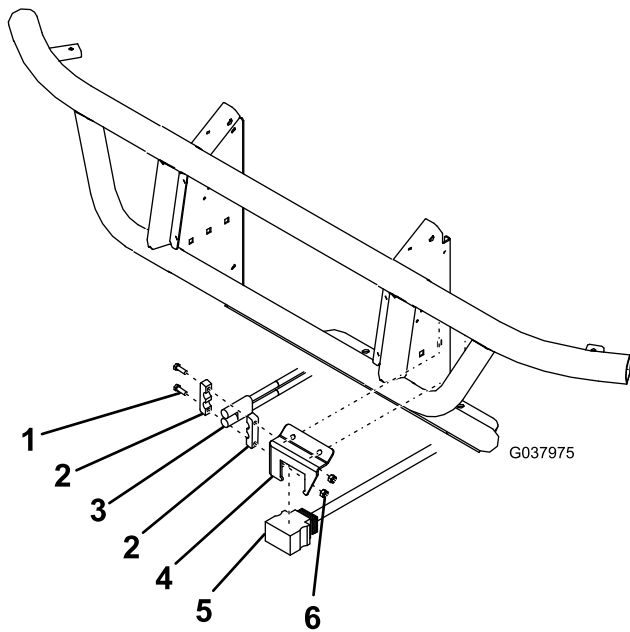
1. White/black wire
2. Battery cable
3. Red power/ground cable
4. Pump solenoid
5. Brown wire

8. Connect the brown wire from the wire harness to the other small post on the pump solenoid (Figure 11).
9. Mount the pump solenoid under the hood of the vehicle, ensuring that it stays in an upright position and does not contact the body, hood, or other conductive material on the vehicle.
10. Connect the red power/ground cable to the large post on the pump solenoid (Figure 11).
11. Connect the battery cable to the other large post on the pump solenoid (Figure 11).

**Note:** The wires may go on either large post, but should not share a post.

12. Mount the UTV-side, wire-harness plow connector to the left side of the top tube of the bumper using the control-harness mounting-bracket and 2 self-tapping bolts (Figure 12).

**Note:** Drill 2 holes in the bumper tube to mount the bracket.

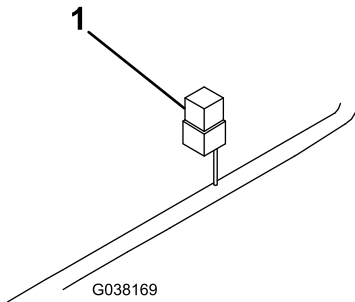


**Figure 12**

- |                                   |                                     |
|-----------------------------------|-------------------------------------|
| 1. Bolt                           | 4. Control harness mounting bracket |
| 2. Power/Ground connector bracket | 5. Plow connector                   |
| 3. Power/ground connector         | 6. Nut                              |

13. Mount the black and red power/ground connector to the control harness mounting bracket (Figure 12).
14. Mount the relay pack under the hood using 1 sheet-metal screw (Figure 13).

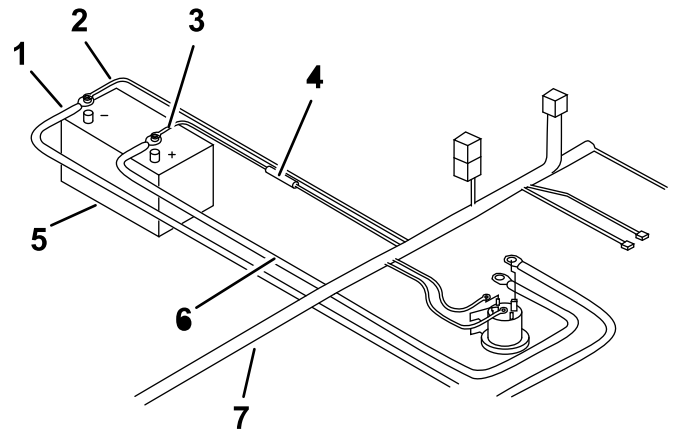
**Note:** Ensure that the relay pack is mounted in the upright position.



**Figure 13**

1. Relay pack

15. Connect the black power/ground cable to the negative (-) battery terminal (Figure 14).



**Figure 14**

- |                             |                      |
|-----------------------------|----------------------|
| 1. Black power/ground cable | 5. Vehicle battery   |
| 2. Brown wire               | 6. Battery cable     |
| 3. Red fused wire           | 7. Plow wire harness |
| 4. In-line fuse             |                      |

16. Connect the brown wire to the negative (-) battery terminal (Figure 14).
17. Connect the free end of the battery cable to the positive (+) battery terminal (Figure 14).
18. Connect the red, fused wire to the positive (+) battery terminal (Figure 14).
19. Secure all wiring in a position that avoids hot or moving parts using cable ties.

## Mounting the Plow Controller

### **⚠ DANGER**

The controller could cause serious injury if contacted during a crash.

Mount the controller in a location that vehicle occupants will not contact during a crash.

## Mounting the UTV Controller

**Note:** Mount the controller in the cab in a dry area where it does not interfere with vehicle operation or visibility.

**Important:** Do not install the swivel mount when temperatures are below 16°C (60°F).

1. Park the machine on a level surface, shut off the engine, wait for all moving parts to stop, engage the parking brake, and remove the key from the ignition switch.
2. Determine the mounting location for the controller.

- Clean the location with the provided alcohol wipe and dry it with a cloth or paper towel.
- Clean the back of the swivel mount (Figure 15) with the alcohol wipe and then dry it.

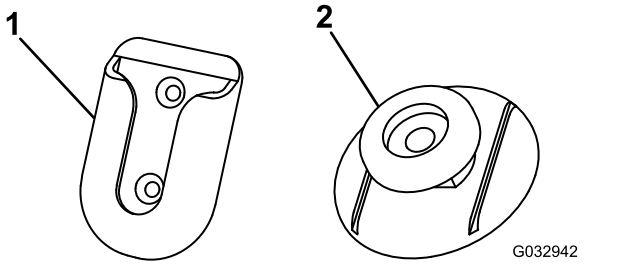


Figure 15

- Swivel mount
- Mounting tab

- Remove the backing from 1 side of the adhesive and apply it to the back of the swivel mount.
- Remove the remaining backing from the swivel-mount adhesive and press the swivel mount to the clean area of the dashboard for 30 seconds.

**Important:** Once the mount is placed, you cannot remove it without destroying the adhesive.

- Clean the back of the controller with the alcohol wipe and then dry it.
- Remove the backing from 1 side of the adhesive and apply it to the back of the mounting tab (Figure 15).
- Remove the remaining backing from the controller adhesive and press the mounting tab to the controller for 30 seconds.
- Let the swivel mount rest unused for 72 hours before sliding the controller into the mounting bracket.

**Important:** Mounting the controller immediately may cause the adhesive to fail.

## Installing the Wire Harness

### **⚠ DANGER**

Vehicle engines contain moving parts and can become extremely hot, capable of causing severe burns and serious bodily harm.

Shut off the engine and allow it sufficient time to cool down before installing this kit.

### **⚠ DANGER**

Vehicle batteries can cause dangerous electrical shocks that could lead to severe burns or death.

Disconnect your battery before installing this kit.

**Note:** Apply dielectric grease to all electrical connections.

- Park the machine on a level surface, shut off the engine, wait for all moving parts to stop, engage the parking brake, and remove the key from the ignition switch.
- Mount the vehicle-side, wire-harness plow connector to the left side of the front bumper using the control-harness mounting-bracket and 2 cap screws and self-locking nuts.

**Note:** Drill 2 holes in the front bumper to mount the bracket.

- Mount the power/ground connector to the control harness mounting bracket.

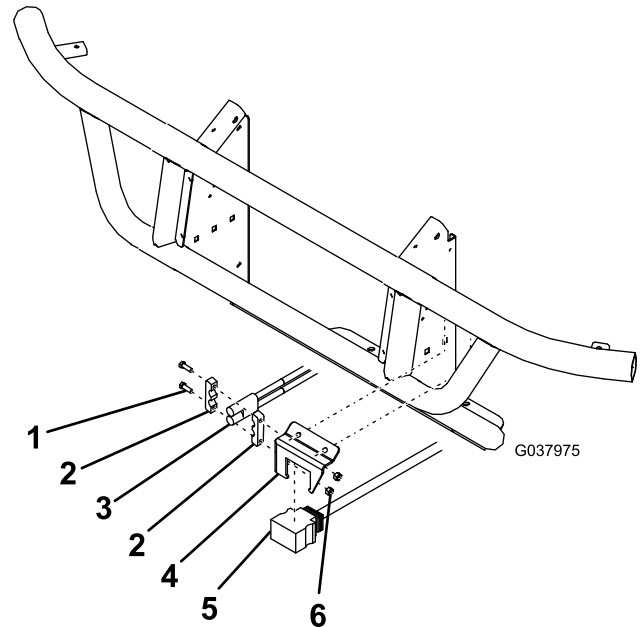
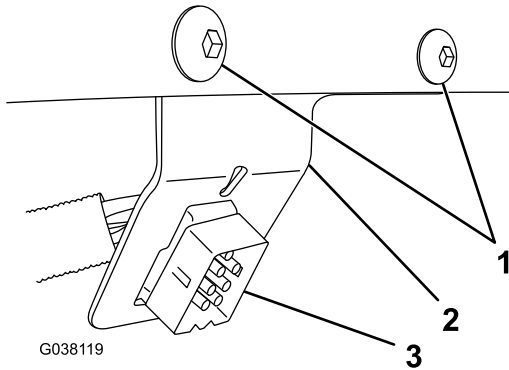


Figure 16

- Self-locking nut
- Power/Ground connector
- Long bolt
- Power/Ground dust cap
- Power/Ground connector
- Control harness mounting bracket
- Plow connector
- Short bolt
- Control harness dust cap

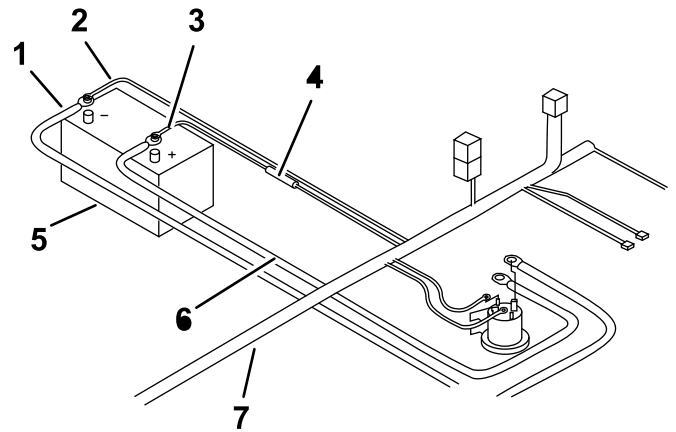
- Secure the dust caps to the wire harness plugs and mounting bracket.

5. Route the cables along the vehicle frame toward the battery and controller connector and secure them with cable ties.
6. Pull the plow controller connector into the vehicle cab.



**Figure 17**

1. Self-tapping bolts
2. Dash bracket
3. Plow controller connector



**Figure 18**

1. Black power/ground cable
2. Red power/ground cable

13. Connect the red power/ground cable to the positive (+) battery terminal.
14. Secure all wiring in a position that avoids hot or moving parts using cable ties.

7. Mount the plow controller connector to the dash bracket, and secure the bracket to the left of the steering wheel using 2 self-tapping bolts.
8. Plug the plow controller into the plow controller connector.
9. Locate a keyed 12 V+ ignition source on the vehicle wire harness and identify the corresponding connector in your loose parts.
10. Slide the appropriate connector onto the end of the black/red wire and crimp the connector to secure it.
11. Connect the black/red wire to a keyed 12 V+ ignition source.

**Note:** Connecting the wire to a source that is not keyed can cause the battery to drain.

12. Connect the black power/ground cable to the negative (-) battery terminal.

## Mounting the Snowplow

Refer to [Mounting the Snowplow \(page 15\)](#) to mount the plow.

# Product Overview

## Controls

Become familiar with all the controls before you operate the plow.

## Couplers

The couplers secure the plow to the vehicle push beam. Turn the levers toward the coupler tower to turn on the spring pins. Turn the levers away from the coupler tower to turn off the spring pins.

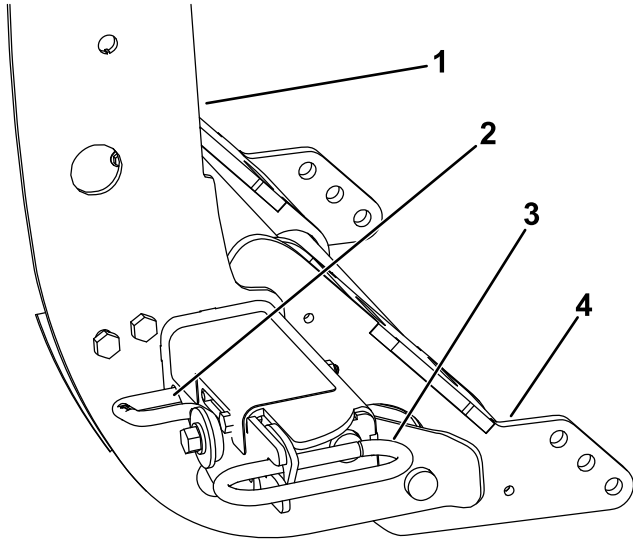
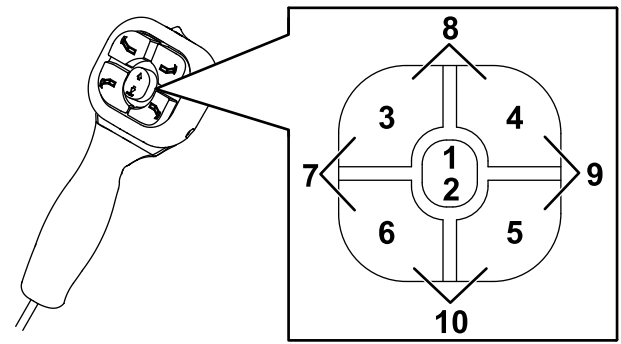


Figure 19

g320661

- |                  |                       |
|------------------|-----------------------|
| 1. Coupler tower | 3. Coupler spring-pin |
| 2. Coupler lever | 4. Pushbeam assembly  |



G033007  
g033007

Figure 20

- |                          |                        |
|--------------------------|------------------------|
| 1. Raise button          | 6. Left Wing In button |
| 2. Lower button          | 7. Angle left          |
| 3. Left Wing Out button  | 8. Scoop               |
| 4. Right Wing Out button | 9. Angle right         |
| 5. Right Wing In button  | 10. V                  |

- On/Off switch—turns the plow controller on and off. A green light illuminates when the controller is on.

**Note:** Turn off the controller when not in use to prevent accidental activation of the plow.

- Raise button—raises the plow blade. Pressing the button quickly twice automatically raises the blade when Express Raise mode is enabled.
- Lower button—lowers the plow blade and activates the FLOAT .

FLOAT—double tapping the button or holding it for 2 seconds automatically lowers the blade and activates the FLOAT feature, allowing the plow blade to follow the contour of the ground. A red light illuminates when the FLOAT feature is active.

- Left Wing Out button—moves the left wing out
- Right Wing Out button—moves the right wing out
- Left Wing In button—moves the left wing in
- Right Wing In button—moves the right wing in
- Sleep mode—If you do not use the controller for 20 minutes, it enters sleep mode and the controller lights flash green and red. Turn the controller off and on again to deactivate the sleep mode.

To perform different tasks, you can configure the plow wings as follows:

- To angle the entire plow blade right, press the Right Wing In and Right Wing Out buttons simultaneously until the blades are fully angled.
- To angle the entire plow blade left, press the Left Wing In and Left Wing Out buttons simultaneously until the blades are fully angled.

## SmartTouch2 Controller

The SmartTouch2 controller operates the movement of the snowplow.

- To make the scoop shape with the plow, press the Left Wing Out and Right Wing Out buttons simultaneously until the blades are fully extended.
- To make the “V” shape with the plow, press the Left Wing In and Right Wing In buttons simultaneously until the blades are fully retracted.

## Specifications

**Note:** Specifications and design are subject to change without notice.

Blade width	198 cm (6 ft 6 inch)
Blade height	77 cm (30-1/2 inches)
Weight	181 kg (400 lbs)

## Attachments/Accessories

A selection of BOSS approved attachments and accessories is available for use with the machine to enhance and expand its capabilities. Contact your Authorized Service Dealer or authorized BOSS distributor or go to [www.BOSSPlow.com](http://www.BOSSPlow.com) for a list of all approved attachments and accessories.

To ensure optimum performance and continued safety certification of the machine, use only genuine BOSS replacement parts and accessories. Replacement parts and accessories made by other manufacturers could be dangerous, and such use could void the product warranty.

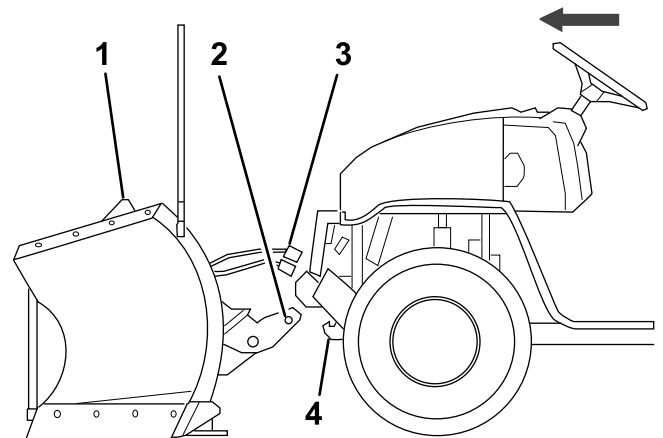
## Operation

**Note:** Determine the left and right sides of the machine from the normal operating position.

## Mounting the Snowplow

**Note:** The vehicle must be running before starting this procedure.

1. Activate the FLOAT feature on your plow controller.
2. Line up the vehicle with the snowplow and drive forward until the lower pin contacts the pin receiver.



**Figure 21**

1. Coupler tower
2. Lower pin
3. Wire harness
4. Pin receiver

3. Set the parking brake.

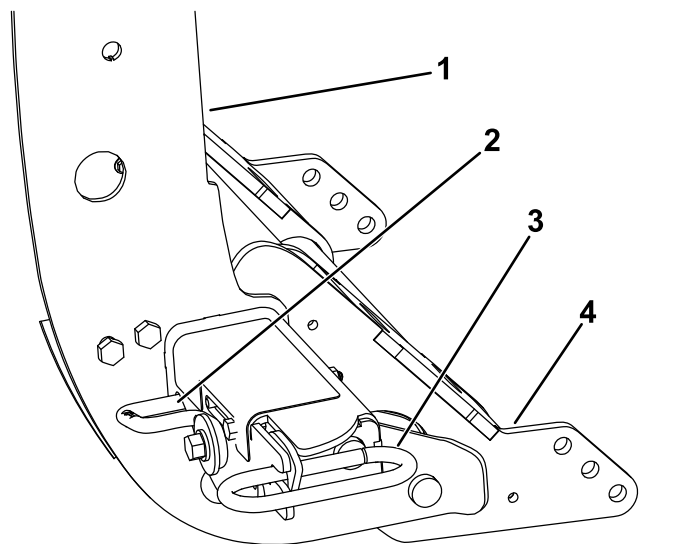
**Note:** If your vehicle does not have a parking brake, chock the wheels.

4. Turn the levers on the couplers to the ATTACH position.

# Removing the Snowplow

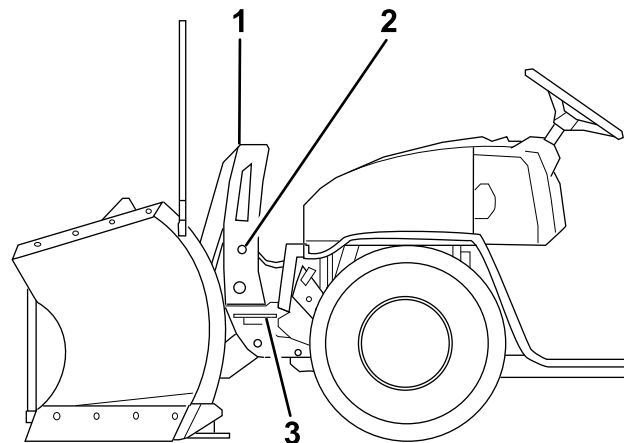
**Note:** The vehicle must be running before starting this procedure. Set the parking brake. If your vehicle does not have a parking brake, chock the wheels.

1. Activate the FLOAT feature on the plow controller.



**Figure 22**

- |                  |                       |
|------------------|-----------------------|
| 1. Coupler tower | 3. Coupler spring pin |
| 2. Coupler lever | 4. Pushbeam assembly  |

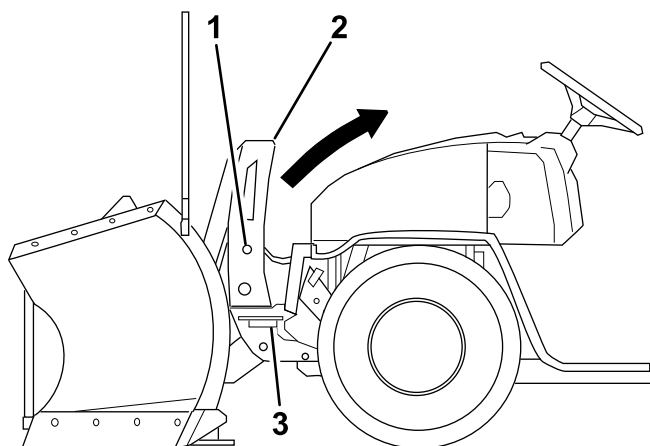


**Figure 24**

- |                       |                       |
|-----------------------|-----------------------|
| 1. Coupler tower      | 3. Coupler spring pin |
| 2. Smart hitch switch |                       |

5. Remove the electrical-plug dust-covers and connect the plow wire harness to the vehicle wire harness.
6. Push the SmartHitch2 switch on the side of the coupler tower upward and raise the tower until the coupler spring pins snap in.

**Note:** For plows without the SmartHitch2, manually push the coupler tower toward the vehicle until the spring pins snap in.



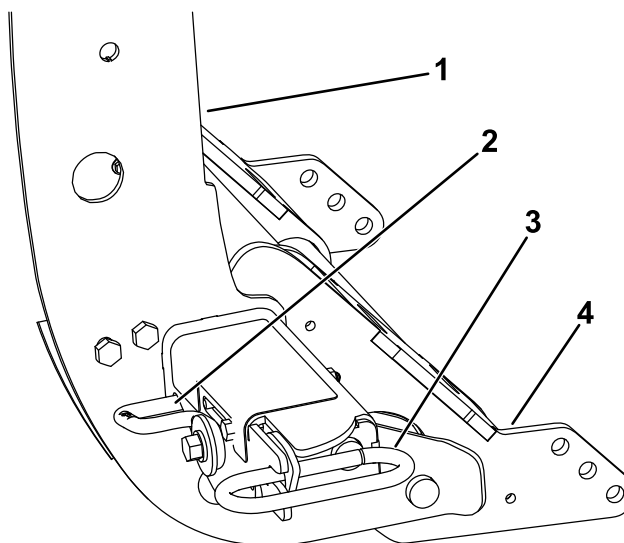
**Figure 23**

- |                       |                       |
|-----------------------|-----------------------|
| 1. SmartHitch2 switch | 3. Coupler spring pin |
| 2. Coupler tower      |                       |

7. Ensure that both coupler spring pins have fully engaged the coupler.

**Note:** Move the coupler tower until the spring pins engage completely.

2. While putting upward pressure on the coupler handle, turn the levers on the couplers to the UNLOCK position.



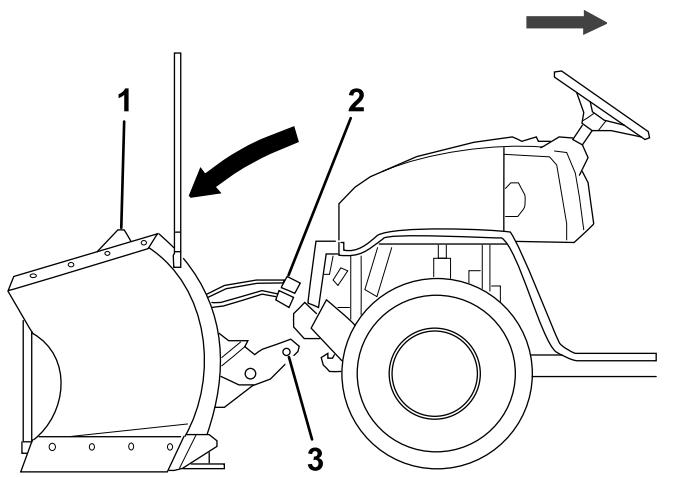
**Figure 25**

- |                  |                       |
|------------------|-----------------------|
| 1. Coupler tower | 3. Coupler spring pin |
| 2. Coupler lever | 4. Pushbeam assembly  |

3. Push the SmartHitch2 switch on the side of the coupler tower downward and lower the tower completely.

**Note:** For plows without the SmartHitch2, manually push the coupler tower away from the vehicle until the spring pins release.





**Figure 26**

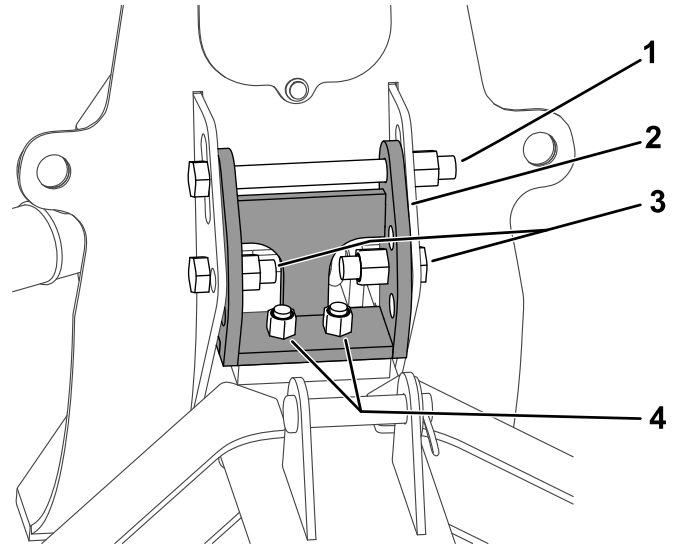
g321677

1. Coupler tower
2. Wire harness
3. Lower pin

4. Disconnect the plow wire harness from the vehicle wire harness and secure the electrical-plug dust-covers.
5. Slowly back the vehicle away from the snowplow.

## Adjusting the Plow

Use this procedure to adjust the blades to sit level with the ground.



**Figure 27**

g321722

1. Long bolt
2. Bumper stop bracket
3. Short bolt
4. Center adjustment bolts

Raise and lower the plow in the V position. If the blades dig into the ground, the center adjustment is too low.

Place the plow in the scoop position. If the blades do not sit level, the center adjustment is too high.

1. Lower the blades, stop the machine, set the parking brake (if equipped) or chock the wheels, and remove the key.
2. Loosen the long bolt and nut.
3. Remove the short bolts and nuts.
4. Raise or lower the bumper stop bracket using the center adjustment bolts.

If the plow does not sit level with the ground after adjustment, change the pushbeam height on the vehicle.

# Checking the Hydraulic Fluid Level

1. With the plow mounted to the vehicle, lower the plow to the ground and ensure that it is in the straight position.
2. Clean the area around the fill cap (Figure 28).

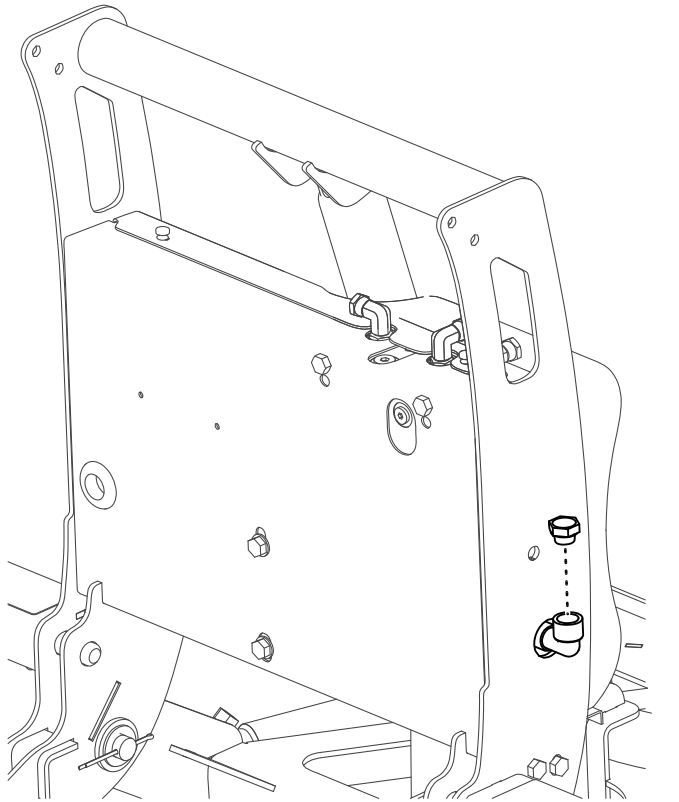


Figure 28

3. Remove the fill cap from the hydraulic reservoir (Figure 28).
4. Ensure that the fluid comes up to the bottom of the fill elbow. If it does not, add more hydraulic fluid; refer to [Adding Hydraulic Fluid \(page 18\)](#).
5. Install the previously removed fill cap.

## Adding Hydraulic Fluid

1. Ensure that the lift cylinder is completely collapsed.

**Important:** Do not manually pull the tower down. This can cause an air pocket to form in the hydraulic system and fluid to spill out of the internal filler cap.

2. Clean the area around the fill cap (Figure 28).
3. Remove the fill cap from the hydraulic reservoir (Figure 29).

4. Slowly fill the reservoir with BOSS high-performance hydraulic fluid to the bottom of the fill elbow (Figure 29).

**Note:** The reservoir holds approximately 1.9 L (2 US qt) of hydraulic fluid.

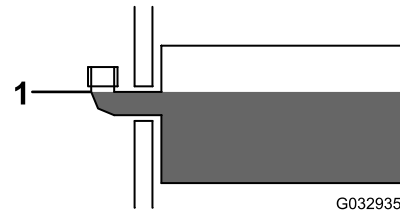


Figure 29

1. Hydraulic fill line

5. Install the previously removed fill cap.
6. Start the vehicle and operate the plow in its full range of movement.
7. Stop the vehicle, check the hydraulic-fluid level, and replenish the fluid if necessary; refer to [Checking the Hydraulic Fluid Level \(page 18\)](#).

## 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](http://www.BOSSPlow.com).

# Maintenance

Determine the left and right sides of the machine from the normal operating position.

## Draining the Hydraulic Fluid

Before each use or daily

Yearly

If the oil becomes contaminated, contact your authorized BOSS dealer to have the system flushed.

1. Park the vehicle on a level surface, lower the plow, and fully collapse the hydraulic lift-cylinder. Turn off the vehicle and remove the keys.
2. Remove the hairpin cotter and clevis pin from the top of the lift cylinder and lean it forward (Figure 30).

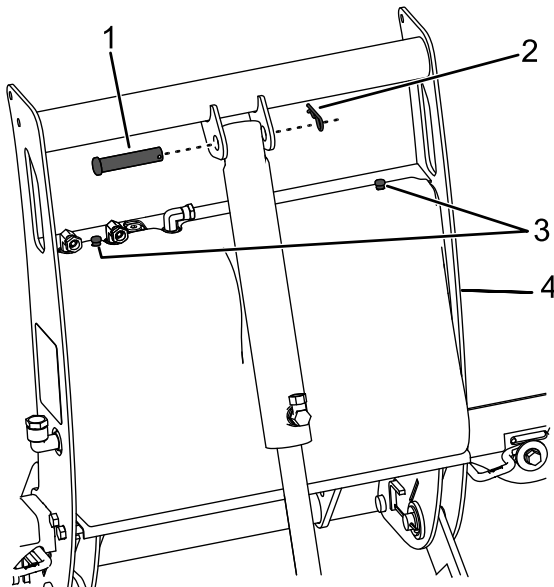


Figure 30

g320662

1. Clevis pin
2. Hairpin cotter
3. Thumb screws
4. Coupler-tower cover

3. Remove the 2 thumb screws securing the coupler-tower cover to the coupler tower (Figure 30).
4. Remove the coupler-tower cover, pulling it toward the passenger side of the plow.  
**Note:** You may need to tug the cover back and forth several times to get it free.
5. Clean the area around the drain plug (Figure 31).

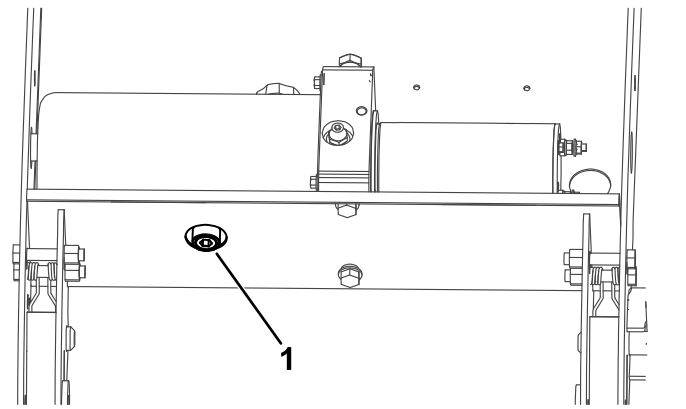


Figure 31

g322755

1. Drain plug
6. Place a drain pan under the plug and remove the plug.
7. Clean the drain plug.
8. Allow the fluid to fully drain, then replace the plug. Torque the plug to 17 to 28 N·m (150 to 250 in-lb).
9. Attach the previously removed coupler-tower cover.
10. Attach the previously removed lift cylinder.

## Checking the Hydraulic Lines and Hoses

Service Interval: Before each use or daily

### ⚠ WARNING

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

- Ensure that all hydraulic fluid hoses and lines are in good condition and all hydraulic connections and fittings are tight before applying pressure to the hydraulic system.
- Keep your body and hands away from pin-hole 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.
- Get immediate medical help if fluid is injected into skin.

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.

# Storage

## Storing the Plow

1. Grease any exposed chrome or nitro bar on the lift cylinders.
2. Drive the snowplow to your storage location and remove the plow; refer to [Removing the Snowplow \(page 16\)](#).
3. Pull the coupler tower forward until the lift cylinder is completely compressed.
4. Apply dielectric grease to all of the wire harness connectors and install the dust caps.
5. Lightly sand and use touch-up paint on painted areas that are scratched, chipped, or rusted.
6. Loosen the trip-return springs.
7. Grease the coupler spring pins.

## Removing the Plow from Storage

1. Check the plow for cracked welds.
2. Check the torque of all fasteners, pins, retainers, nuts, and bolts; tighten as necessary.
3. Check the hydraulic lines and hoses for cracks or leaks.
4. Check the cutting edge for wear.
5. Tighten the trip-return springs.
6. Lightly sand and use touch-up paint on painted areas that are scratched, chipped, or rusted.
7. Grease the coupler spring pins.
8. Apply dielectric grease to all of the wire harness connectors.
9. Attach the plow to the vehicle; refer to [Mounting the Snowplow \(page 13\)](#).
10. Move the plow through its range of motion to check the hydraulic cylinder rods.

# Troubleshooting

Problem	Possible Cause	Corrective Action
The pump motor does not run.	<ol style="list-style-type: none"> <li>1. Check that the power/ground cables and control cables are connected properly.</li> <li>2. Check for voltage at the pump motor while the ignition switch is on and the RAISE button is pressed on the controller.</li> <li>3. Check for power to the solenoid by testing for voltage between both large terminals and ground.</li> <li>4. Check for voltage between the other large terminal of the solenoid and ground while jumping power to the small terminal with the white/black wire.</li> <li>5. Test the power to the controller by checking the voltage between the black wire and ground at the white 9-pin connector.</li> </ol>	<ol style="list-style-type: none"> <li>1. Connect the cables if they are not connected.</li> <li>2. If voltage is present, the pump motor has failed or the pump has seized. Motor brushes may be replaced, otherwise replace the pump/motor assembly.</li> <li>3. If voltage is not present between one large terminal and ground, the cable between the battery and the solenoid is disconnected or broken.</li> <li>4. If no voltage is present, the solenoid has failed and must be replaced. If voltage is present, the wire from the small terminal of the solenoid to ground may be disconnected or broken.</li> <li>5. If no voltage is present, power from the relay has become disconnected. If voltage is present, check the wiring and controller switches.</li> </ol>
The hydraulic pump continues to run while the switch is in neutral.	<ol style="list-style-type: none"> <li>1. The solenoid has failed in the closed position.</li> </ol>	<ol style="list-style-type: none"> <li>1. Disconnect the controller while the ignition is on. If the hydraulic pump continues to run, the pump motor start solenoid has failed in the closed position. Quickly remove the power to the plow by disconnecting the power/ground cables to the plow. Replace the solenoid. If the hydraulic pump stops running, check the control wiring for a short between the black and white/black wire, or a failed control switch. Connect, repair, or replace the wiring or switch.</li> </ol>
The plow does not lower.	<ol style="list-style-type: none"> <li>1. Check that the power/ground cables and control cables are connected properly.</li> <li>2. Check the flow-control valve.</li> <li>3. Check the wiring on the valve block for proper connections.</li> <li>4. Check for voltage between the solenoid valve terminal and ground while the ignition switch is on and the controller is in the FLOAT position.</li> <li>5. Test the power to the control box by checking the voltage between the black wire and ground at the white 9-pin connector.</li> </ol>	<ol style="list-style-type: none"> <li>1. Connect the cables if they are not connected.</li> <li>2. If the flow-control valve is completely closed, place the controller in neutral, then open the flow-control valve.</li> <li>3. Refer to the wiring diagram included with your <i>Owner's Manual</i>.</li> <li>4. If voltage is present, the solenoid valve or valve coil has failed. Replace the valve or valve coil.</li> <li>5. If no voltage is present, power from the relays has become disconnected. If voltage is present, check the wiring and switch off the controller.</li> </ol>

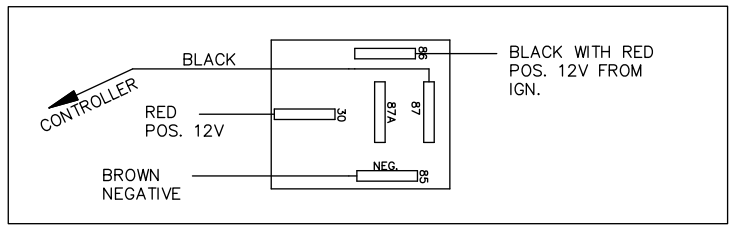
Problem	Possible Cause	Corrective Action
The plow does not raise or raises slowly.	<ol style="list-style-type: none"> <li>1. The hydraulic-fluid level is low.</li> <li>2. The power/ground cables or the control cable are not connected.</li> <li>3. The wiring on the valve block is not connected.</li> <li>4. The battery is weak or needs replacing.</li> <li>5. The pump pressure relief valve is less than 2500 psi, contaminated, or damaged.</li> <li>6. There is a leak in the hydraulic system.</li> <li>7. The Lift control solenoid valve is not operating completely.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the hydraulic-fluid level; refer to the Checking the Hydraulic Fluid section.</li> <li>2. Connect the cables.</li> <li>3. Refer to the wiring schematic.</li> <li>4. Load a test battery and replace it if necessary.</li> <li>5. Check the pressure at the hydraulic lift cylinder port of the hydraulic power unit. If the pressure is less than 2500 psi (at the end of the lift), the hydraulic pump motor may be defective, the main pump pressure relief valve may be contaminated, damaged, set lower than 2500 psi, or the pump may be worn. See an authorized BOSS dealer for an adjustment or to replace the hydraulic power unit assembly.</li> <li>6. If a hydraulic fluid leak is present at the hydraulic hose end or fitting, tighten the fitting. If the fluid leak is present at the hydraulic power unit or cylinder, a component replacement may be necessary.</li> <li>7. Check for voltage between the raise solenoid valve terminal on the white wire and the ground with the vehicle ignition switch in the on position and the control switch in the Raise position. If voltage is present, the raise solenoid valve or the valve coil has failed. Replace the solenoid valve.</li> </ol>
The plow blade wing(s) extend prior to raising the plow and do not retract.	<ol style="list-style-type: none"> <li>1. The pressure line are not connected properly.</li> <li>2. The return line are not connected properly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the pressure line routing. Connect the pressure line from the P valve on the pump to the P valve on the valve manifold.</li> <li>2. Connect the return line from the R valve on the pump to the R valve on the valve manifold.</li> </ol>
The plow blade wing(s) drift back when extended or retract too quickly when plowing.	<ol style="list-style-type: none"> <li>1. The wing-return solenoid valve is contaminated.</li> <li>2. The pressure relief valve is contaminated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean or replace the solenoid valve.</li> <li>2. Clean or replace the pressure relief valve. Refer to an authorized BOSS Dealer.</li> </ol>
The plow lowers too fast.	<ol style="list-style-type: none"> <li>1. Check the flow-control valve.</li> </ol>	<ol style="list-style-type: none"> <li>1. Close the flow-control valve to the desired drop speed.</li> </ol>

Problem	Possible Cause	Corrective Action
The plow wing(s) do not extend, or they extend slowly.	<ol style="list-style-type: none"> <li>1. The hydraulic-fluid level is incorrect.</li> <li>2. The power/ground cables and/or the control cables are not connected properly.</li> <li>3. The wiring connections on the hydraulic valve manifold are not connected properly.</li> <li>4. The battery is damaged or depleted.</li> <li>5. The pump pressure relief valve is less than 2500 psi, contaminated, or damaged.</li> <li>6. The extend solenoid valve or valve coil has failed.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the hydraulic fluid level and fill if required; refer to Checking the Hydraulic Fluid.</li> <li>2. Connect the cables.</li> <li>3. Refer to the wiring schematic and connect the wiring properly.</li> <li>4. Load a test battery and replace it if necessary.</li> <li>5. Check the pressure at the hydraulic lift cylinder port of the hydraulic power unit. If the pressure is less than 2500 psi (at the end of the lift), the hydraulic pump motor may be defective, the main pump pressure relief valve may be contaminated, damaged, set lower than 2500 psi, or the pump may be worn. See an authorized BOSS dealer for an adjustment or to replace the hydraulic power unit assembly.</li> <li>6. Replace the solenoid valve.</li> </ol>
The plow wing(s) do not retract, or they retract slowly.	<ol style="list-style-type: none"> <li>1. The power/ground cables and/or the control cables are not connected properly.</li> <li>2. The wiring connections on the hydraulic valve manifold are not connected properly.</li> <li>3. The retract solenoid valve or valve coil has failed.</li> </ol>	<ol style="list-style-type: none"> <li>1. Connect the cables.</li> <li>2. Refer to the wiring schematic and connect the wiring properly.</li> <li>3. Check for voltage between the solenoid valve terminal and ground with the ignition switch and the control switch is in the Wing In position. If voltage is present, the solenoid valve or valve coil has failed. Replace the solenoid valve. If voltage is not present, check the wiring and the switch box control.</li> </ol>
The plow wing(s) retract too quickly while plowing.	<ol style="list-style-type: none"> <li>1. The pressure relief valve is set too low.</li> </ol>	<ol style="list-style-type: none"> <li>1. See an authorized BOSS dealer for pressure relief valve adjustment.</li> </ol>
Hydraulic fluid leaks from the cylinders.	<ol style="list-style-type: none"> <li>1. The seals and fittings are loose or worn.</li> <li>2. The rods are pitted or rough.</li> <li>3. The breather vent on the lift cylinder is damaged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the seals and fitting connections. Tighten or replace as necessary.</li> <li>2. Polish them with a copus cloth or extra fine steel wool.</li> <li>3. Check for a leaking cylinder breather vent on the lift cylinder. If hydraulic fluid leaks from the breather vent, replace the lift cylinder.</li> </ol>

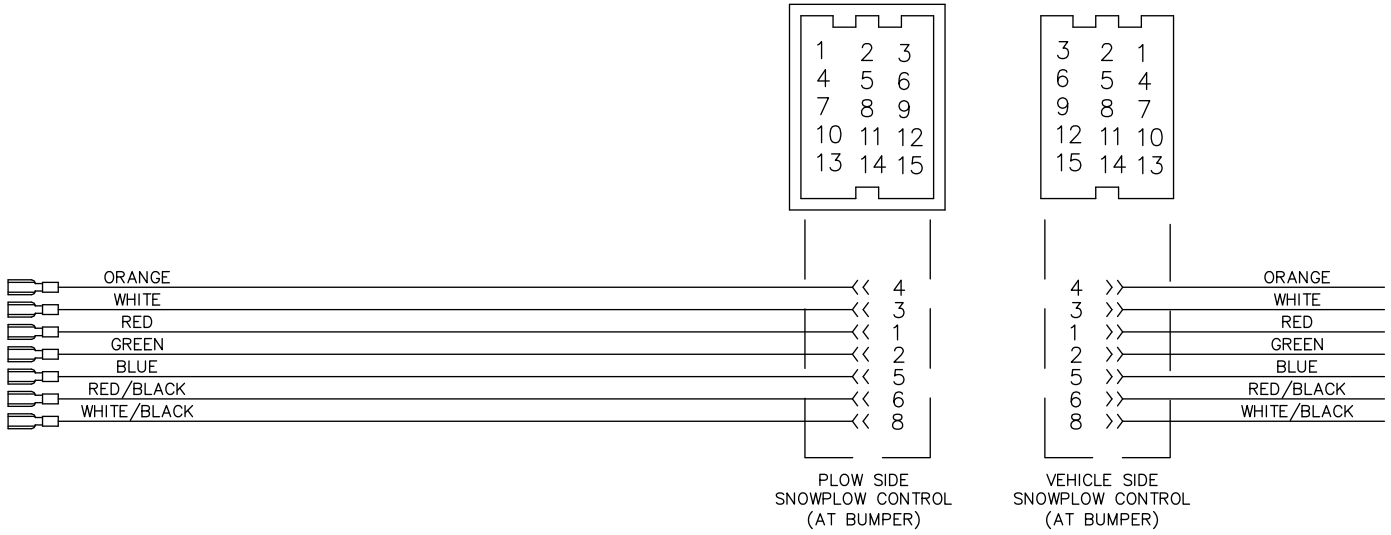
<b>Problem</b>	<b>Possible Cause</b>	<b>Corrective Action</b>
The vehicle battery dies when all of the switches are in the Neutral position.	<ol style="list-style-type: none"> <li>1. There is a short in the controller wiring.</li> <li>2. The wiring on the hydraulic valve manifold and hydraulic pump motor start solenoid are not connected properly.</li> <li>3. The 12V+ is not connected properly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Refer to the wiring diagram. Inspect and repair or replace any damaged wiring or the control switch.</li> <li>2. Refer to the wiring schematic and connect the wiring properly.</li> <li>3. Check for voltage to the control between the black wire and the ground at the white 9-pin control connector of the vehicle side harness with the vehicle ignition switch in the off position and with the plow electrically connected to the vehicle. If voltage is present, the power from the ignition-on 12V+source (from the vehicle) on the black/red has been improperly connected to the constant-on 12V+ battery power on the vehicle allowing the plow system to continuously draw power. Connect the black/red wire of the vehicle side harness to the ignition-on 12V+ source only.</li> </ol>
The plow blade digs into the ground in the V-position.	<ol style="list-style-type: none"> <li>1. The bumper stop bracket is adjusted too low.</li> <li>2. The pushbeam is installed too high.</li> </ol>	<ol style="list-style-type: none"> <li>1. Raise the bumper stop; refer to Adjusting the blades.</li> <li>2. Lower the pushbeam.</li> </ol>
The plow blades do not lay flat against the ground in the scoop position.	<ol style="list-style-type: none"> <li>1. The bumper stop bracket is adjusted too high.</li> <li>2. The pushbeam is installed too low.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lower the bumper stop; refer to Adjusting the blades.</li> <li>2. Raise the pushbeam.</li> </ol>
The blade trips too easily.	<ol style="list-style-type: none"> <li>1. The trip-spring(s) needs adjustment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten the springs and replace them if they are damaged.</li> </ol>
The plow does not clean up snow from low areas.	<ol style="list-style-type: none"> <li>1. The controller is not in the FLOAT position.</li> </ol>	<ol style="list-style-type: none"> <li>1. Activate the FLOAT feature on the controller.</li> </ol>
Fluid is running out of the fill cap of the hydraulic pump.	<ol style="list-style-type: none"> <li>1. The pump reservoir is overfilled.</li> <li>2. The plow is hitting snowbanks too hard.</li> </ol>	<ol style="list-style-type: none"> <li>1. The hydraulic fluid level should be within 2 cm (3/4 inch) of the top of the reservoir.</li> <li>2. Do not plow recklessly.</li> </ol>
The hydraulic power unit or the hydraulic pump motor start solenoid chatters when raising or extending/retracting the plow wings.	<ol style="list-style-type: none"> <li>1. The hydraulic-fluid level is low.</li> <li>2. The power/ground cables are not connected properly.</li> <li>3. The battery is weak or depleted.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the hydraulic-fluid level; refer to the Checking the Hydraulic Fluid section.</li> <li>2. Clean and re-connect the power/ground cable connection and the connections at the vehicle battery.</li> <li>3. Replace the battery.</li> </ol>
The SmartHitch2 does not attach the plow.	<ol style="list-style-type: none"> <li>1. The controller is not in the Float position.</li> <li>2. The controller does not stay in the Float position.</li> <li>3. The valve block and SmartHitch2 is not connected properly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Put the controller in the Float position.</li> <li>2. Switch or replace the controller.</li> <li>3. Refer to the wiring schematic and connect the wiring properly.</li> </ol>



# Schematics

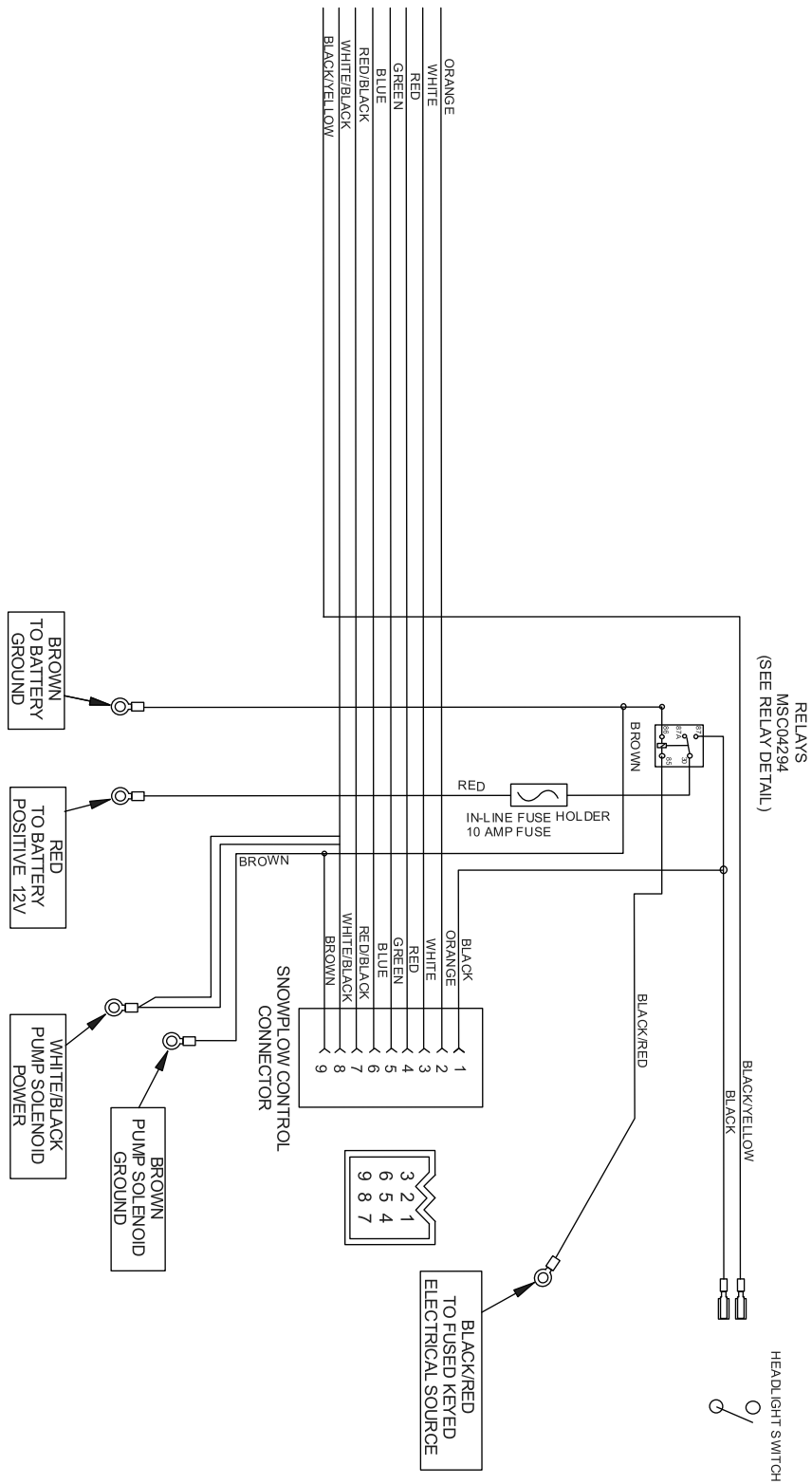


RELAY DETAIL

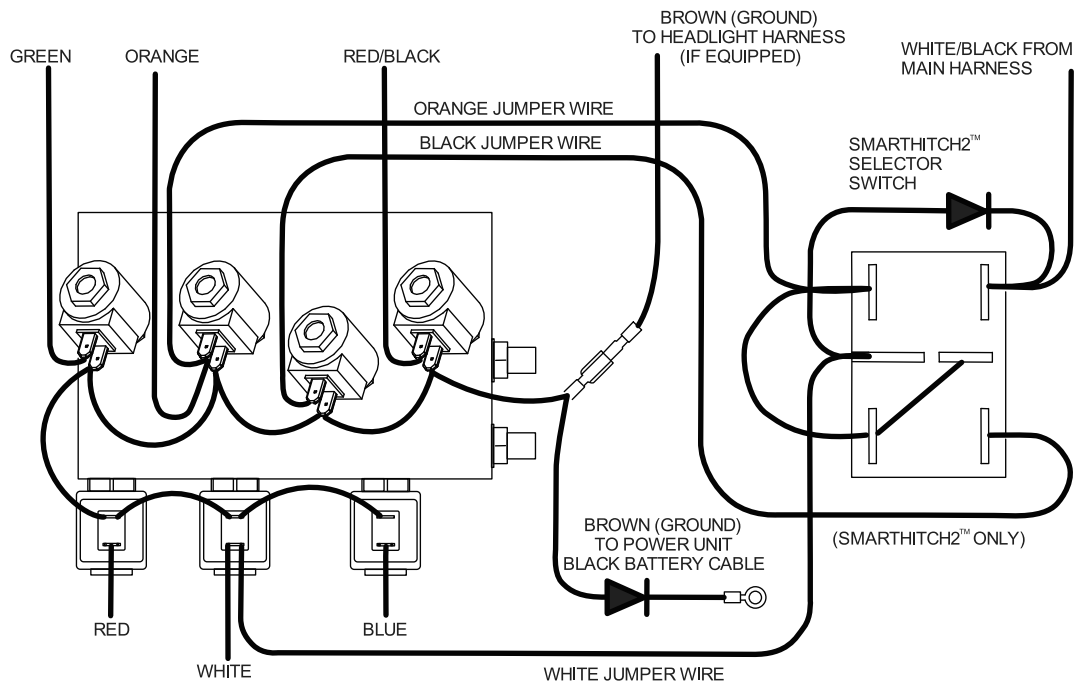


G038232  
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## Plow Side Electrical Schematic (Rev. 0)



Vehicle Side Electrical Schematic (Rev. 0)



g321884

Wire Color	Wire Function
Green	Right wing in
Red	Right wing out
White	Lift
Orange	Lower
Red/Black	Left wing in
Blue	Left wing out
Black	SmartHitch2™ (12V) (Optional)
White/Black	Pump solenoid
Brown	Ground
Black/Yellow	Headlight harness (if equipped)

**Hydraulic Manifold (Rev. 0)**

**BOSS**  
S N O W P L O W