



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

Installation Instructions

Low Flow Hydraulic Kit

for Grandstand® Multi Force Snow Machine or Mower

Part No. MSC13950



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.

- Read the *Operator's Manual* before operating or servicing the equipment.
- Ensure that only trained personnel install and perform maintenance on the equipment.
- Keep your hands, feet, and clothing away from moving parts and mounting points.
- **Never** put any part of your body between the hydraulics and the machine.

Introduction

▲ WARNING

CALIFORNIA Proposition 65 Warning

This product contains a chemical or chemicals known to the State of California to cause cancer, birth defects, or reproductive harm.

Contents

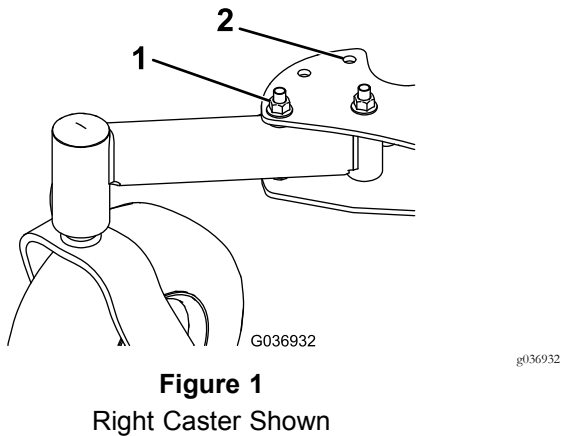
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Installation

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

Preparing the Machine

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.
 2. Release the cushion for rear access according to the instructions in your Grandstand Multi Force *Operator's Manual*.
- Note:** You can also remove the fuel tank at this time; refer to your Grandstand Multi Force *Operator's Manual*.
3. If a mower deck is attached to the machine, remove it according to the instructions in your Grandstand Multi Force *Operator's Manual*.
 4. Place the front frame cross-tube on a jack and raise the machine until the caster wheels clear the ground.
 5. Remove the outer bolts and nuts securing the caster wheels in place (Figure 1).



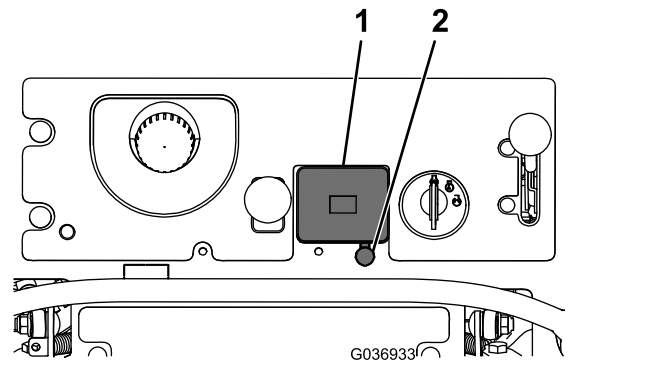
1. Outer bolt and nut
2. Rear wheel position

6. Rotate the caster wheels to the rear position and secure them with the previously removed bolts and nuts (Figure 1).

Note: Torque the bolts to 101 N·m (75 ft-lb).

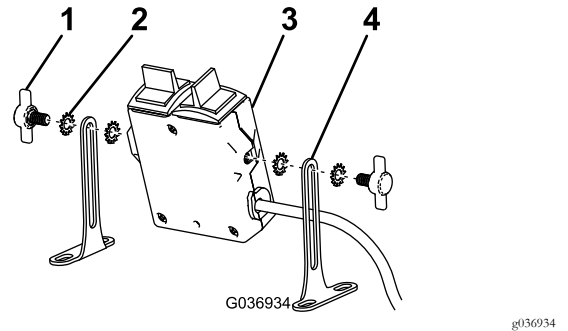
Installing the Controller

1. Remove the hour meter from the machine by squeezing the tabs underneath the control panel and pushing up (Figure 2).



1. Hour meter
2. Remove

2. Punch out the round tab next to the hour meter (Figure 2).
3. Attach the mounting brackets to the controller using 4 star washers and 2 thumbscrews (Figure 3).



1. Thumbscrew
2. Star washer
3. Controller
4. Mounting bracket

4. Secure the controller to the machine console using 4 hex-head bolts (1/4 inch) and 4 nylon locknuts (1/4 inch).
5. Attach the strain relief plug to the controller cable approximately 7 cm (3 inches) from the controller (Figure 4).

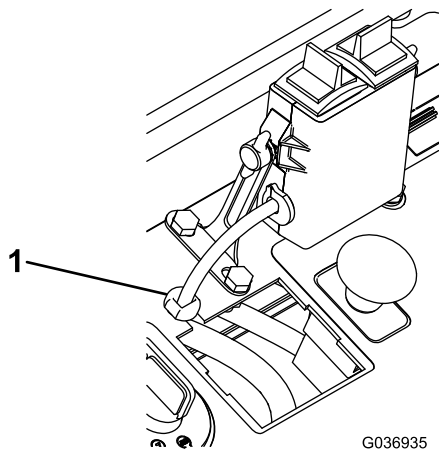


Figure 4

1. Strain relief

6. Route the controller cord through the opening for the hour meter and slide the strain relief plug into the opening made in step 2 (Figure 4).

Attaching the Hydraulic Manifold and BOSS Wire Harness

1. Use the hydraulic manifold assembly to determine which pilot holes on the left side of the machine need to be drilled larger (Figure 5).

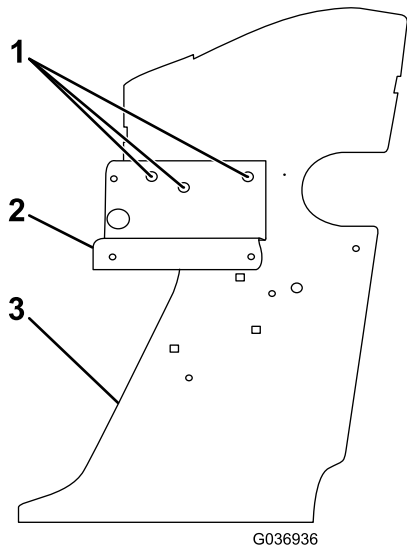


Figure 5

1. Pilot holes
2. Hydraulic manifold mounting bracket
3. Left side plate

2. Drill through the 3 pilot holes using a 7/16 inch drill bit.

Important: The fuel tank is located directly behind the side plate. Remove the fuel tank or

place a steel plate between the fuel tank and side plate to prevent damaging the tank.

3. Mount the hydraulic manifold assembly to the machine using 3 hex-head bolts (3/8 inch), 3 flat washers (3/8 inch), and 3 nylon locknuts (3/8 inch) as shown in Figure 6.

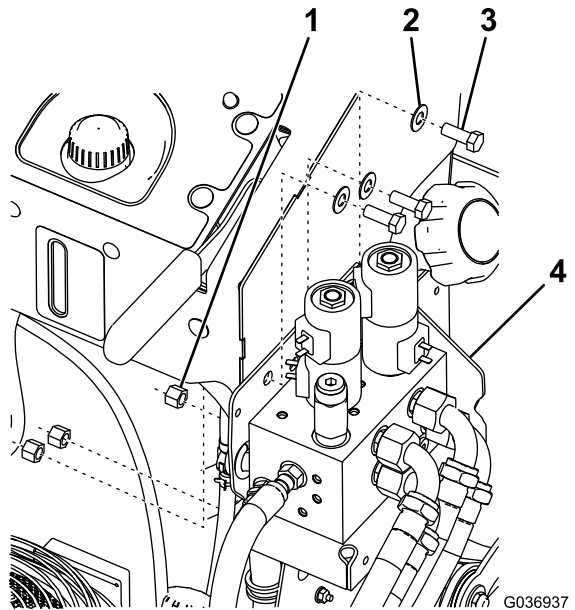


Figure 6

1. Nylon locknut (3/8 inch)
2. Flat washer (3/8 inch)
3. Hex-head bolt (3/8 inch)
4. Hydraulic manifold assembly

4. Route the BOSS hydraulic-manifold wire harness over the fuel tank and connect it to the auxiliary-power connector on the wire harness of the machine (Figure 7).

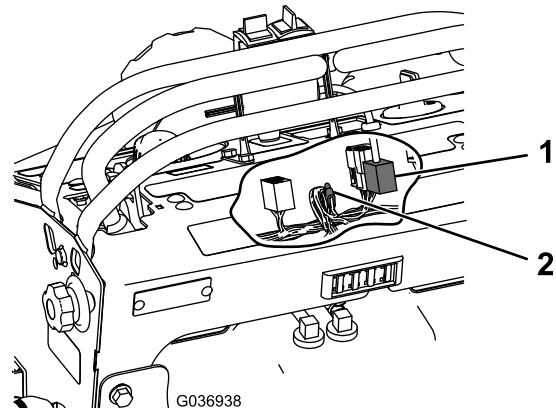


Figure 7

1. Controller connector
2. Auxiliary-power connector

5. Connect the BOSS hydraulic-manifold wire harness to the controller connector (Figure 7).
6. Secure the BOSS hydraulic-manifold wire harness to the wire harness of the machine with cable ties.

Installing the Hydraulics

1. Attach the hydraulic cylinder to the A-frame using 2 shoulder bolts (1/2 inch) and bushings (Figure 8), and torque the bolts to 77 N·m (57 ft-lb).

Note: The rod end of the cylinder may need to be rotated to slide the cylinder into the A-frame.

Note: Ensure that the hydraulic fittings are facing the rear of the machine.

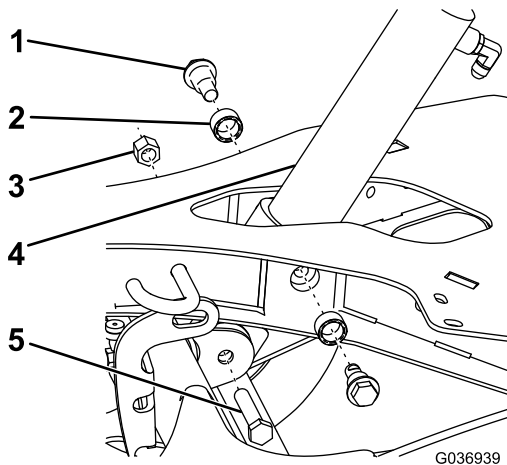


Figure 8

- | | |
|-----------------------------|-----------------------------|
| 1. Shoulder bolt (1/2 inch) | 4. Hydraulic cylinder |
| 2. Bushing | 5. Hex-head bolt (1/2 inch) |
| 3. Nylon locknut (1/2 inch) | |

2. Attach the hydraulic cylinder rod to the machine frame using a hex-head bolt (1/2 inch) and nylon locknut (1/2 inch) as shown in Figure 8.

Important: Do not overtighten the bolts and nuts; ensure that the cylinder can pivot freely.

3. Attach the bulkhead bracket to the A-frame using 2 hex-head bolts (3/8 inch) and 2 nylon locknuts (3/8 inch) as shown in Figure 9, and torque the bolts to 40 N·m (30 ft-lb).

Note: Ensure that the quick disconnects are facing the front of the machine.

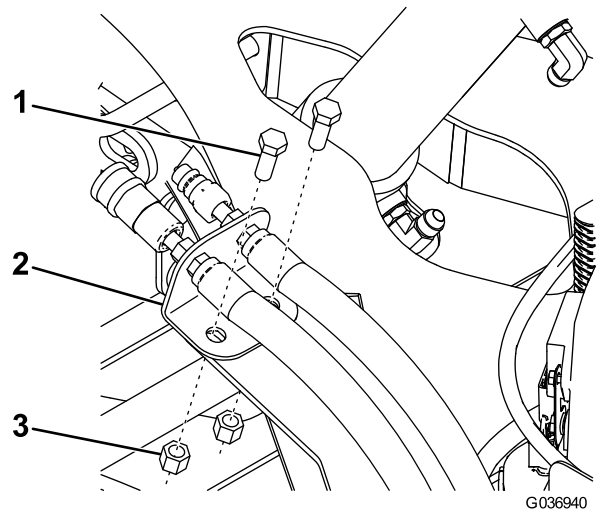


Figure 9

- | | |
|-----------------------------|-----------------------------|
| 1. Hex-head bolt (3/8 inch) | 3. Nylon locknut (3/8 inch) |
| 2. Bulkhead bracket | |

4. Tighten the fittings securing the quick disconnects to the mounting bracket (Figure 9).

Installing the Hoses

1. Connect the loose end of the hose in the C3 port of the manifold to the 90° fitting on the top of the hydraulic cylinder (Figure 10).

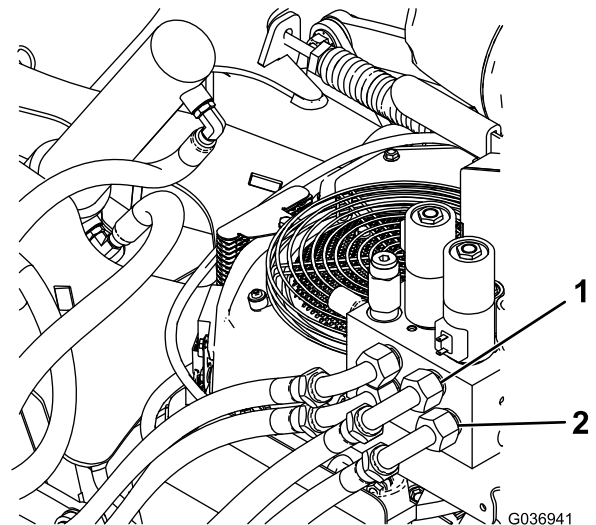


Figure 10

- | | |
|------------|------------|
| 1. C4 port | 2. C3 port |
|------------|------------|

2. Connect the loose end of the hose in the C4 port of the manifold to the 90° fitting on the bottom of the hydraulic cylinder (Figure 10).
3. Install the filter head, filter, and 45° hose fitting to the fitting in the T port on the manifold as shown in Figure 11.

Note: Ensure that the flow arrow on the filter head is pointing away from the manifold.

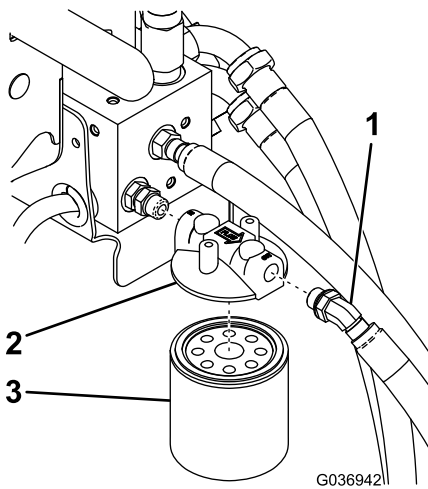


Figure 11

- | | |
|---------------------|-----------|
| 1. 45° hose fitting | 3. Filter |
| 2. Filter head | |

-
4. Place a drain pan under the manifold block of the left hydrostatic drive (Figure 12).

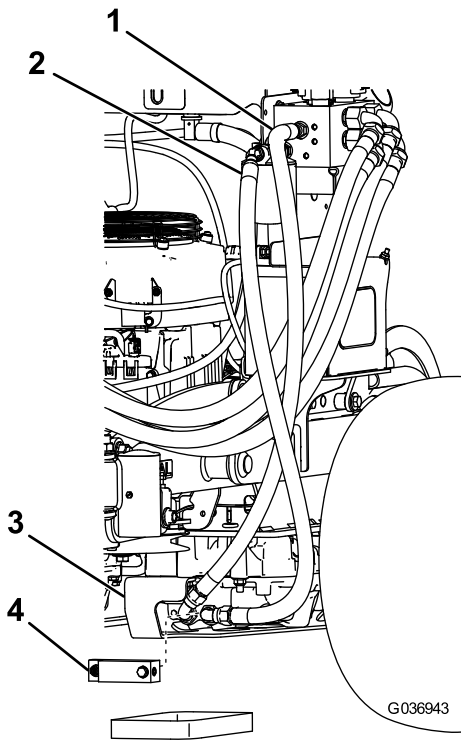


Figure 12

- | | |
|----------------|-------------------|
| 1. P-port hose | 3. Skid plate |
| 2. Filter hose | 4. Manifold block |

-
5. Remove the manifold block (Figure 12).

Note: You may need to remove the rear bolt from the transmission skid plate, loosen the front bolt, and rotate the skid plate in order to remove the manifold block.

6. Connect the filter hose to the outer port on the hydrostatic drive (Figure 12).
7. Connect the loose end of the hose in the P port of the manifold to the inner port on the hydrostatic drive (Figure 12).
8. Secure the hydraulic hoses away from moving components or sharp edges using cable ties.
9. Attach the manifold cover to the hydraulic manifold mounting bracket using 4 push fasteners (Figure 13).

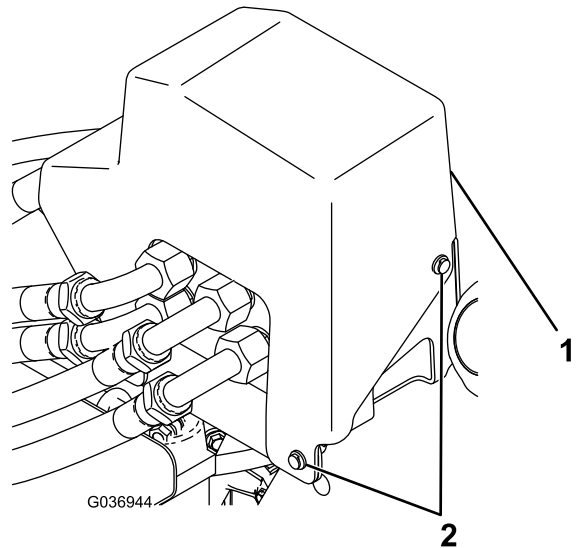
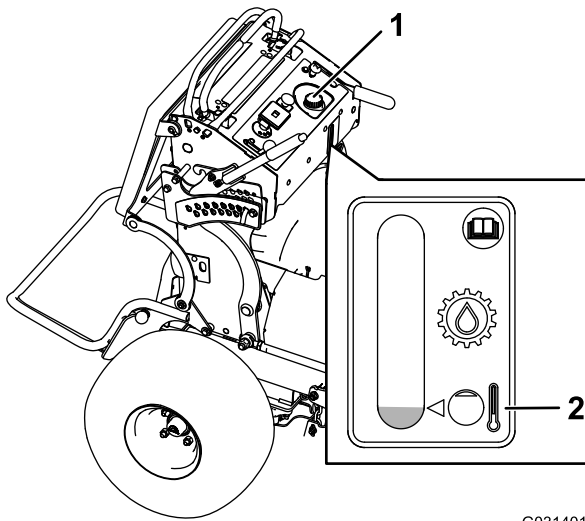


Figure 13

- | | |
|-------------------|-------------------|
| 1. Manifold cover | 2. Push fasteners |
|-------------------|-------------------|

Finishing the Installation

1. Install the previously removed hour meter.
2. Install the fuel tank if it was removed.
3. Start the machine; refer to your Grandstand Multi Force *Operator's Manual*.
4. Use the controls to move the hydraulics in all directions to cycle the hydraulic fluid.
5. With the hydraulic cylinder fully extended, shut off the engine and wait for all moving parts to stop.
6. Clean the area around the cap and the filler neck of the hydraulic tank (Figure 14).



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g031401

Figure 14

1. Hydraulic-tank cap 2. Fill mark

7. Remove the cap from the filler neck, and add fluid to the reservoir until it reaches the fill mark (Figure 14).

Important: Do not use standard BOSS hydraulic fluid in this system. Refer to your Grandstand Multi Force *Operator's Manual* for the appropriate hydraulic fluid.

8. Install the cap on the filler neck.
9. Repeat steps 4 through 8.

Note: The fluid level should be at the full mark with the lift cylinder fully extended.

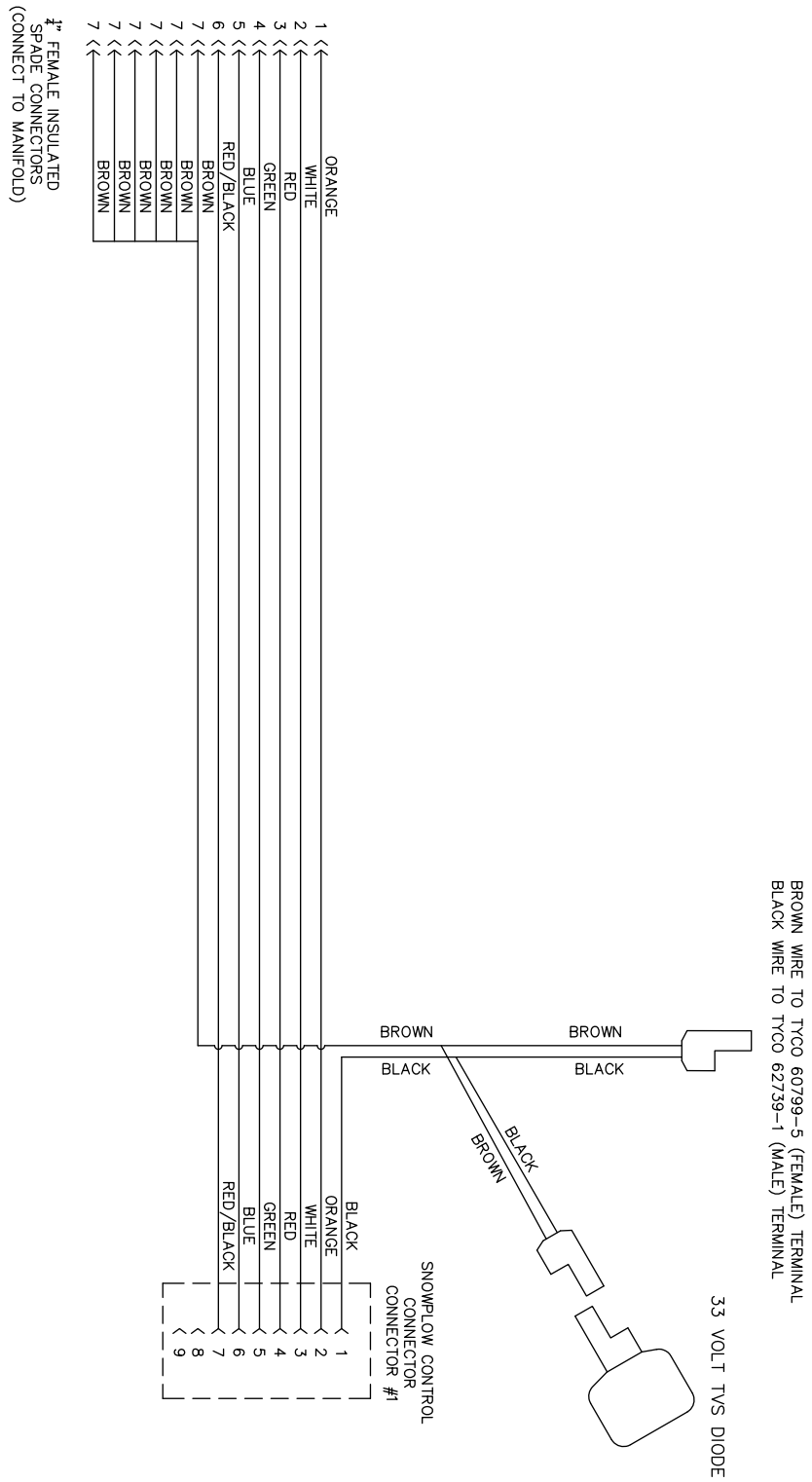
⚠ WARNING

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.

10. Raise the cushion and secure it according to the instructions in your Grandstand Multi Force *Operator's Manual*.

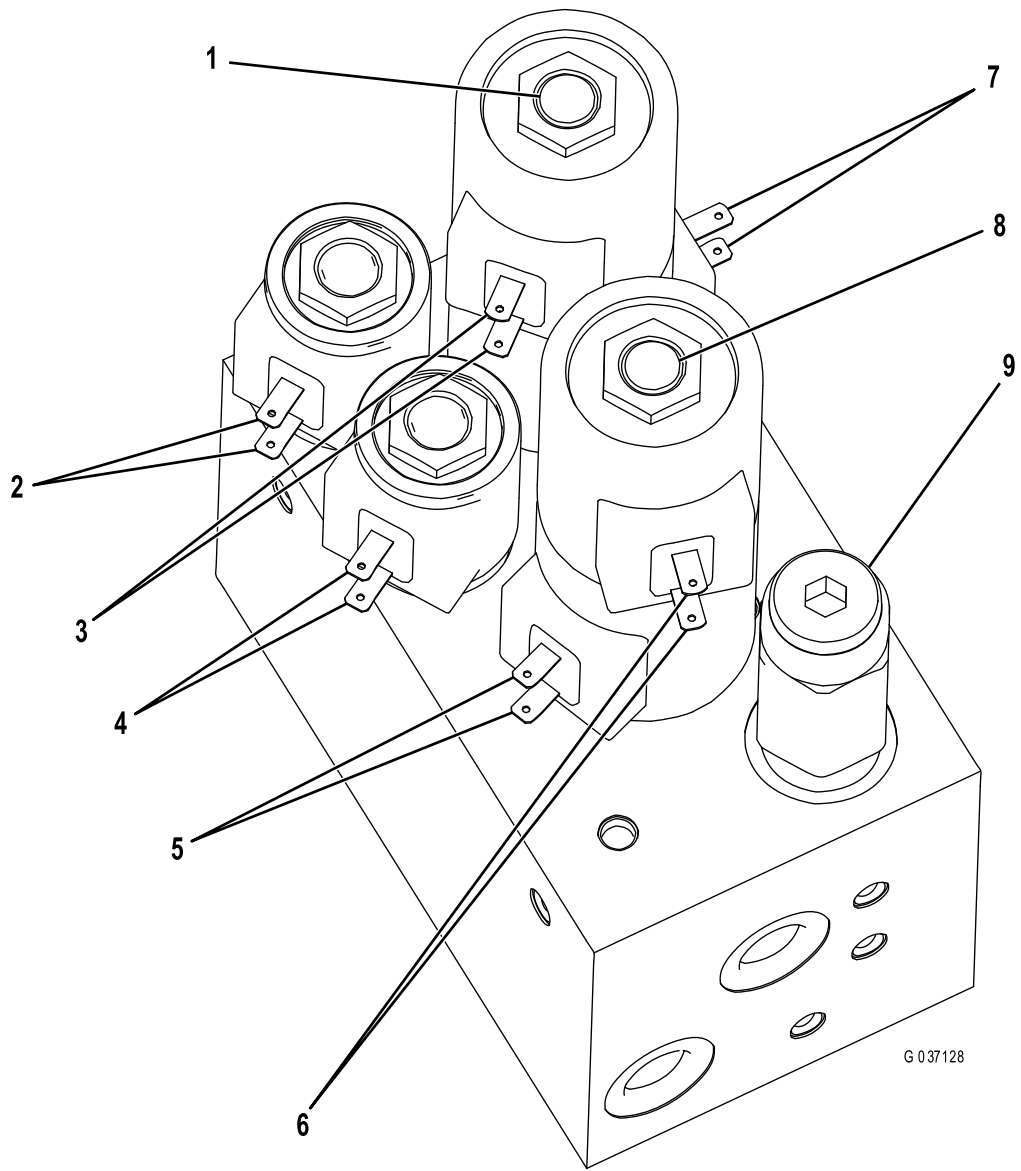
Schematics



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Electrical Schematic (Rev. 0)



G 037128

g037128

- 1. RAISE/LOWER valve
- 2. Float coil (blue)
- 3. Lower coil (white)
- 4. Float coil (red and black)
- 5. Angle left coil (green)

- 6. Angle right coil (red)
- 7. Raise coil (orange wire)
- 8. ANGLE RIGHT/LEFT valve
- 9. Pressure relief valve

Hydraulic Manifold (Rev. 0)

Notes:

BOSS Products Commercial Warranty

What this warranty covers:

This warranty covers defects in material and workmanship except as set forth below.

Who is covered:

The original purchaser from an authorized dealer.

For how long:

Complete Product: 2 years from the date of purchase.

Labor: 2 years from the date of purchase for complete product.

Parts: 1 year from the date of purchase. (no Labor)

What BOSS Products will do:

BOSS Products will, at its sole option, repair or replace defective parts at no charge.

What you must do for warranty service:

To obtain warranty service, purchaser must return the defective product to any authorized BOSS Products dealer (preferably the one from whom the product was purchased) within the warranty period. Purchaser must be able to verify the original purchase date. All transportation costs to and from the dealer will be the responsibility of the purchaser. To locate the authorized BOSS dealer nearest to you, call toll free: (800) 286-4155.

What is not covered:

1. Expendable parts such as hoses, plow shoes, cutting edges, pins, nuts, bolts, blade guides, etc.
2. Products repaired or altered by anyone other than an authorized BOSS Products dealer.
3. Products which have been subject to misuse, negligence, accident, improper installation, maintenance, care, or storage.
4. Products mounted on vehicles other than those listed in the *BOSS Snowplow Application Chart and Selection Guide*.
5. BOSS Products does not assume liability for damage to your motor vehicle resulting from the attachment or use of any BOSS products. Vehicle risk is the sole responsibility of the purchaser.

Limits of BOSS Products Liability are:

BOSS Products' liability is expressly limited to repair or replacement of defective parts. BOSS Products shall not be liable for consequential, incidental, or contingent damages whatsoever, even if damages are caused by the negligence or fault of BOSS Products. The foregoing warranties are exclusive and in lieu of all other express and implied warranties including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

This warranty does not apply if you purchased your product for personal, family, or household use. In this case, refer to the BOSS Products Limited Consumer Warranty.

BOSS Products is a division of
The Toro® Company
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Iron Mountain, MI 49801

(2016-2017)

BOSS Products Consumer Warranty

What this warranty covers:

This warranty covers defects in material and workmanship except as set forth below.

Who is covered:

The original retail purchaser of a BOSS product who purchases it for personal, family, or household use.

For how long:

Complete Product: 2 years from the date of purchase.

Labor: 2 years from the date of purchase for complete product.

Parts: 1 year from the date of purchase. (no Labor)

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Limits of BOSS Products Liability are:

BOSS Products' liability is expressly limited to repair or replacement of defective parts. BOSS Products shall not be liable for consequential, incidental, or contingent damages whatsoever, even if damages are caused by the negligence or fault of BOSS Products. The foregoing warranties are exclusive and in lieu of all other express and implied warranties including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

State laws:

Some states do not allow exclusion of incidental or consequential damages or the limitations on how long an implied warranty lasts, so these limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have the other rights which vary from state to state.

This warranty does not apply if you purchased your product for personal, family, or household use. In this case, refer to the BOSS Products Limited Consumer Warranty.

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