

A Division of Northern Star Industries, Inc. P.O. Box 788 Iron Mountain MI 49801-0788 www.bossplow.com

TGS – 600

TAILGATE SPREADER

INSTALLATION & OWNER'S MANUAL

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BOSS Products / Northern Star Industries, Inc. reserves the right under its continuous product improvement policy to change construction or design details and furnish equipment when so altered without reference to illustrations or specifications used herein.

Patents Pending

TGS06075-0

DRIVEN TO BE THE BEST

WARNING

Many newer trucks are equipped with air bags. DO NOT under any circumstances disable or remove or relocate any sensors or other components related to the operation of the air bags.

WARNING

Overloading could result in an accident or damage. Never exceed the vehicle's Gross Vehicle Weight Rating or the Front or Rear Gross Axle Weight Ratings.

WARNING

This product MUST ONLY be used with a Class III or higher Receiver Hitch. DO NOT exceed the Vehicle Hitch Rating.

WARNING

This spreader is restricted to the use of only salt. Never run other materials through the spreader.

WARNING

Maximum weight of salt material that can be loaded into the spreader is 400 pounds. Never exceed this weight.

WARNING

DO NOT attempt to attach or detach the spreader with material in it.

WARNING

Turn spreader off before filling, attaching, detaching, servicing, or cleaning.

WARNING

Do not operate spreader within 25 feet of bystanders.

WARNING

Do not climb into or ride on spreader.

WARNING

Keep hands, feet, and clothing away from moving spinner and attachment points.

WARNING

Spreader must be attached to vehicle when loading salt material.

WARNING

The provided hitch assembly must be fully inserted and pinned in the vehicle's 2" Receiver Hitch when using the Standard and RT3 version. The Upper Pin on the spreader must fully engage the Receiver Hook on the RT3 Hitch when using the RT3 version.

CAUTION

Read owner's manual before operating or servicing spreader.

CAUTION

Be sure the Upper Pin and Lower Pin are free from debris prior to attaching spreader.



A REVOLUTION AGAINST SNOW

Congratulations on purchasing the finest tailgate spreader made. The BOSS sets the standard for quality, reliability, craftsmanship, and performance. Our products are designed, built, and proven in Michigan's rugged Upper Peninsula, where winter is a way of life. And we back it all up with exceptional customer service and satisfaction. We're not just setting the standard. We're leading the way.

The BOSS TAILGATE SPREADER has been carefully designed and built for years of carefree performance. With its simple attaching system, the BOSS can be attached or removed in seconds.

To keep your BOSS TAILGATE SPREADER in top shape, take a few minutes to study this manual. It will show you how to use and service the BOSS, familiarize you with all of its parts, and give you helpful tips on spreading salt.

If you have further questions, your local BOSS DEALER is the person to talk to. They know your spreader well and want your complete satisfaction.

Your BOSS Tailgate Spreader is pre-assembled except for the Standard Hitch Assembly (TGS06051) which will need to be bolted and pinned in place. If purchased, the RT3 Hitch Assembly (TGS06074) will need to be assembled in place of the Standard Hitch Assembly. The Control Kit (TGS05880) included with your BOSS Tailgate Spreader will also need to be installed.

Vehicle Side Wiring Harness Installation Procedure

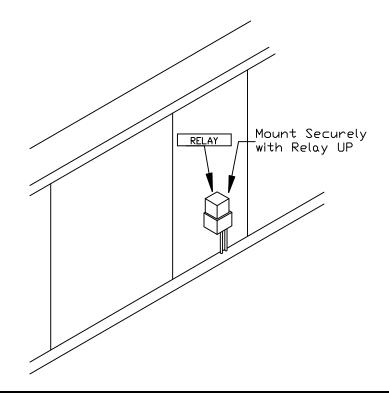
WARNING

Before starting any electrical wiring procedure, make sure that the engine is not running and has had sufficient time to cool down. Failure to do so may result in serious injury or death.

WARNING

Before starting any electrical wiring procedure, make sure to disconnect the battery. Failure to do so may result in serious injury or death.

- 1) Refer to Figure 2. Begin at the rear of the vehicle. Secure the 2-pin, sealed connector (Female Connector #2) near the center of the rear bumper using Cable Ties (MSC04088).
- 2) Route the harness along the driver side frame rail and into the engine compartment. Keep harness away from hot or moving parts. Secure using Cable Ties (MSC04088)
- 3) Feed the 4-pin connector (Male Connector #1) through the firewall, into the cab, and to a location near the spreader control.
- 4) Secure using Cable Ties (MSC04088).
- 5) Connect the ring connector on the BLACK WIRE to the NEGATIVE battery terminal.
- 6) Connect the ring connector on the ORANGE WIRE to the POSITIVE battery terminal.
- Connect the fuse tap connector on the RED/BLACK WIRE to a keyed 12V+ ignition source.
- 8) Attach the relay securely inside of the engine compartment using one Sheet Metal Screw (HDW01766). The relay must be positioned upright as shown in Figure 1.





- 9) Wrap all excess wire and secure in the engine compartment.
- 10) Secure all wiring to the frame and inside of the cab using 15 Cable Ties (MSC04088).

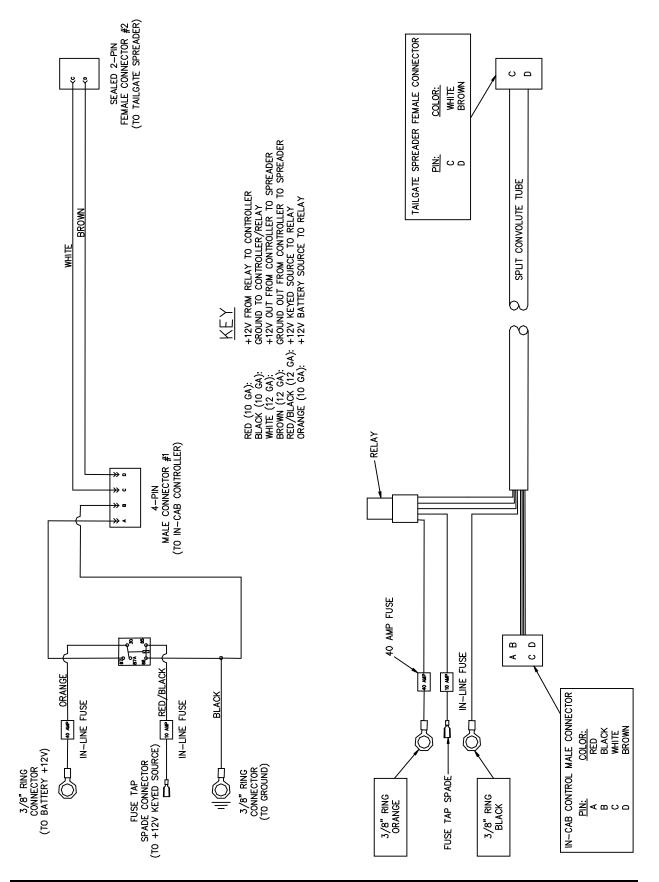


Figure 2. Vehicle Side Harness Diagram (TGS06085)

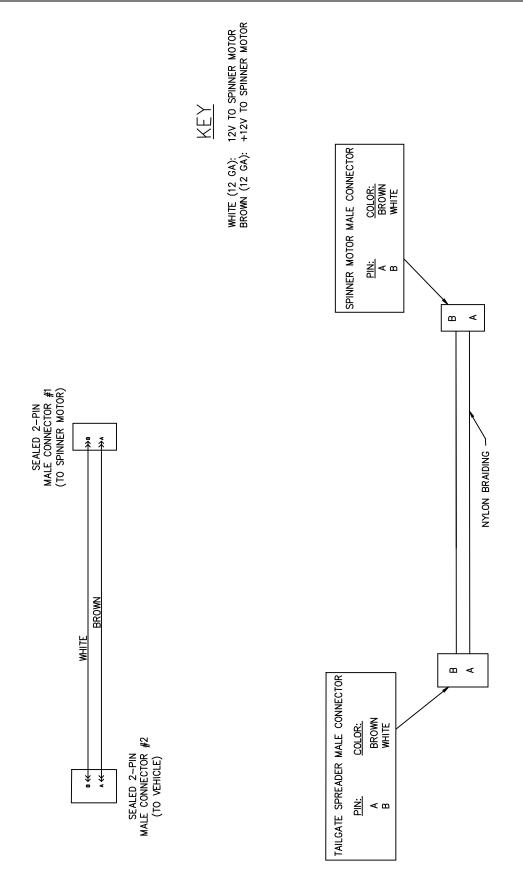


Figure 3. Spreader Side Harness (TGS06084)

In-Cab Controller Installation Procedure

- 1) Mount In-Cab Controller (TGS05811) to an easily accessible position in the cab. Begin by removing the pre-assembled bracket from the controller.
- 2) The controller can be mounted either above or below the mounting bracket. Refer to Figure 4. Choose the best position that will not interfere with operation of the vehicle or visibility. DO NOT mount in a location that an occupant could contact during a crash.
- 3) Mount the bracket using two supplied Sheet Metal Screws (HDW05953).
- 4) Re-assemble the controller into the mounting bracket with the supplied hardware.
- 5) Plug the controller into the 4-pin male connector on the wiring harness.

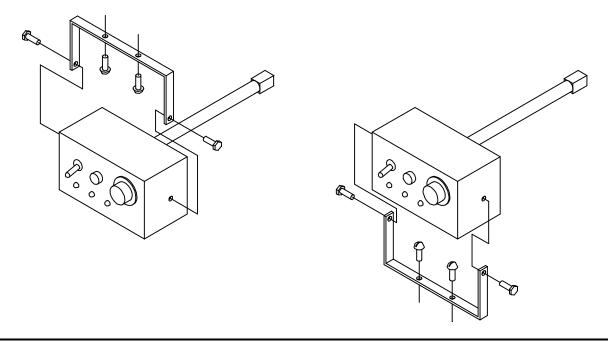
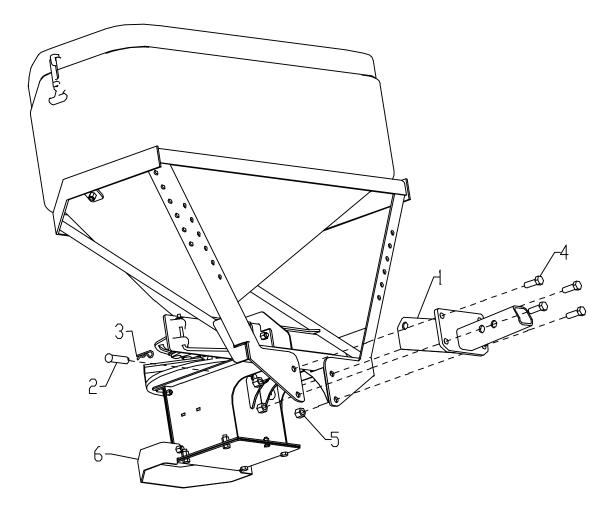


Figure 4. In-Cab Controller Mounting

Standard Hitch Assemb	ly Installation
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ITEM #	QTY.	PART #	DESCRIPTION
1	1	TGS06051	STANDARD HITCH ASSEMBLY
2	1	HDW06291	5/8" X 2-1/2" PIN
3	1	HDW05544	#16 COTTER HAIRPIN
4	4	HDW01728	1⁄2"-13 X 1-1/2" HHCS
5	4	HDW01748	1/2"-13 NYLON LOCK NUT
6	1	TGS06254	SPINNER PROTECTOR

Mount Standard Hitch Assembly (1) to Spreader using four ½"-13X1-1/2" HHCS (4), four ½"-13 Nylon Lock Nuts (5), one 5/8"X2-1/2" Pin (2), and one #16 Cotter Hairpin (3). See Figure 5.



RT3 Option Kit Installation (If Applicable)

ITEM #	QTY.	PART #	DESCRIPTION
1	1	TGS06051	STANDARD HITCH ASSEMBLY
2	1	HDW06291	5/8" X 2-1/2" PIN
3	1	HDW05544	#16 COTTER HAIRPIN
4	4	HDW01728	1⁄2"-13 X 1-1/2" HHCS
5	4	HDW01748	1/2"-13 NYLON LOCK NUT
6	1	TGS06254	SPINNER PROTECTOR
7	1	TGS06051	RT3 HITCH ASSEMBLY
8	1	TGS06098	LEG ASSEMBLY
9	1	TGS06264	DRIVER SIDE BUMPER BRACKET
10	1	TGS06265	PASSENGER SIDE BUMPER BRACKET
11	4	HDW05853	3/8"-16 X 1" ST-ST HHCS
12	4	HDW05854	3/8"-16 ST-ST NYLON LOCK NUT

- 1) Remove Spinner Protector (6), Figure 5, and reassemble nuts and bolts.
- Mount RT3 Hitch Assembly (7) to Spreader using four ½"-13 X 1-1/2" HHCS (4), four ½"-13 Nylon Lock Nuts (5), one 5/8" X 2-1/2" Pin (2), and one #16 Cotter Hairpin (3). See Figure 6.
- 3) Mount Leg Assembly (8) to bottom of Spreader using four existing 3/8"-16 X 1" HHCS and four existing 3/8"-16 Nylon Lock Nuts. See Figure 6.
- 4) Mount Driver Side Bumper Bracket (9) to Spreader using two 3/8"-16 X 1" HHCS (11) and two 3/8"-16 Nylon Lock Nuts (12). See Figure 6.
- 5) Mount Passenger Side Bumper Bracket (10) to Spreader using two 3/8"-16 X 1" HHCS (11) and two 3/8"-16 Nylon Lock Nuts (12). See Figure 6.

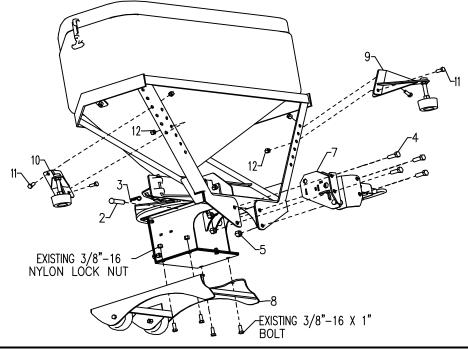


Figure 6. RT3 Hitch Assembly Installation

Standard Hitch Attachment Procedure

1) The In-Cab Controller must be turned OFF before proceeding. Back the truck into position.

WARNING

In order to prevent injury or damage to the product, the TGS-600 Tailgate Spreader must be completely empty when attaching or detaching it from the vehicle.

- 2) Insert the spreader's Standard Hitch into the 2" Receiver Hitch on the vehicle.
- 3) Line up second hole on Standard Hitch with 2" Receiver Hitch hole.
- 4) Pin Spreader using provided Hitch Pin and Hairpin Cotter.

CAUTION

Always check clearance between vehicle bumper and Spreader when attached. If Spreader contacts bumper, use first attachment hole to move Spreader away from vehicle.

5) Plug Spreader Side Harness into Vehicle Side Harness.

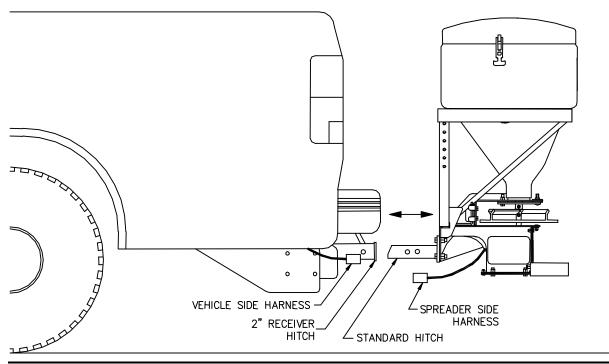


Figure 7. Standard Hitch Attachment Procedure

RT3 Hitch Attachment Procedure (If Applicable)

- 1) Insert RT3 Hitch into 2" Receiver Hitch. See Figure 8.
- 2) Line up first hole on RT3 Hitch with hole in 2" Receiver Hitch and pin using Hitch Pin provided with the Standard Hitch Assembly.

NOTE:

Some vehicles may require use of the second hole on the RT3 Hitch in order to have the Bumper Brackets sit properly on the vehicle bumper. (This provides 1-1/2" of adjustment)

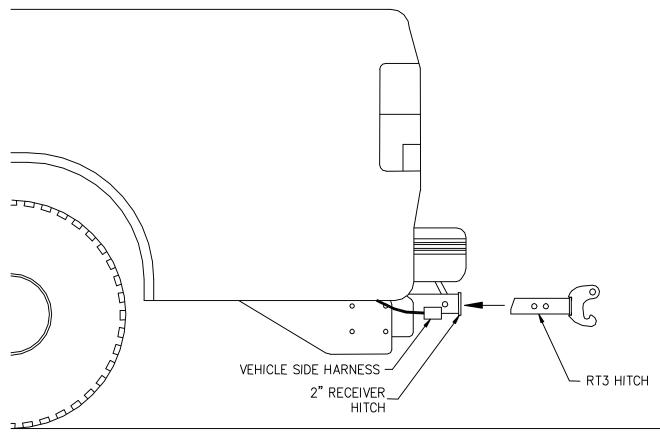


Figure 8. RT3 Hitch Attachment Procedure

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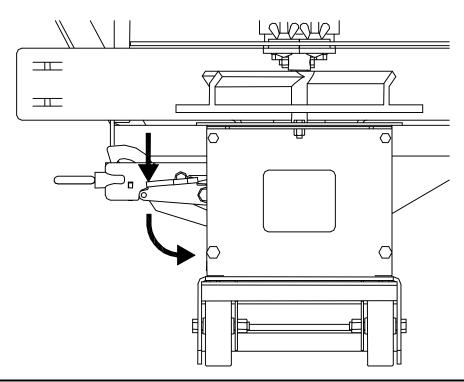
 The In-Cab Controller must be turned OFF before proceeding. Back the truck into position.

WARNING

In order to prevent injury or damage to the product, the TGS-600 Tailgate Spreader must be empty when attaching it or detaching it from the vehicle.

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4) Rotate attachment lever counter-clockwise to the "ON" position (See Figure 9).



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- 5) Grip Spreader firmly, step on Leg Assembly and rotate back until Bottom Pin is high enough to clear RT3 Hitch Jaw (See Figure 10).
- 6) Push Spreader forward and seat Lower Pin in Jaw of RT3 Hitch (See Figure 10).

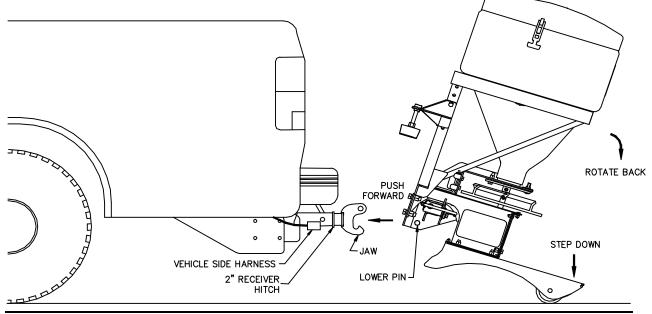


Figure 10. Spreader Attachment (RT3 Option Kit Installed)

7) Rotate Spreader upward until RT3 mechanism locks into place (See Figure 11).

WARNING

The Upper Pin must fully engage the top hole on the RT3 Hitch and the safety latch must be down. Failure to do so may result in injury or damage to the product.

8) Adjust Bumper Brackets to holes on spreader that allow them to contact the vehicle bumper. BUMPER BRACKETS

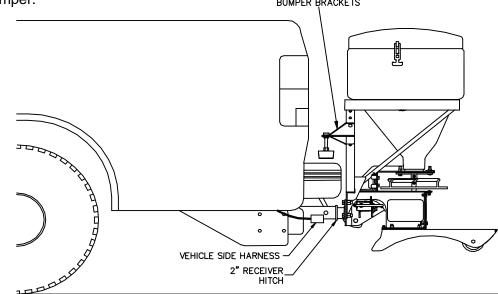


Figure 11. Spreader Attachment (RT3 Option Kit Installed)



 Adjust Bumper Brackets to Vehicle Bumper by rotating adjustment bolt (See Figure 12). When Spreader is level and secured firmly in place, tighten Jam Nuts.

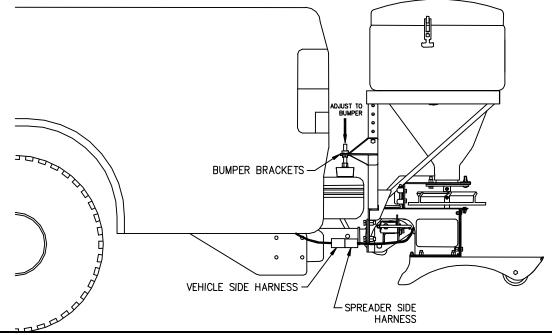


Figure 12. Bumper Bracket Adjustment

10) Plug Spreader Side Harness into Vehicle Side Harness (See Figure 12).

NOTE:

Steps 8 and 9 only need to be done during the initial installation or if the spreader is attached to a different vehicle.

Standard Hitch Detachment Procedure

- 1) The In-Cab Controller must be turned OFF before proceeding. Back the truck into position.
- 2) Unplug Spreader Side Harness from Vehicle Side Harness (See Figure 7) and install both the vehicle and spreader side weather caps.
- 3) Remove Hairpin Cotter and Hitch Pin from vehicle.
- 4) Slide spreader out of 2" Receiver Hitch (See Figure 7).
- 5) Move spreader to storage area.

RT3 Hitch Detachment Procedure (If Applicable)

- 1) The In-Cab Controller must be turned OFF before proceeding. Back the truck into position.
- 2) Unplug Spreader Side Harness from Vehicle Side Harness and install both the vehicle and spreader side weather caps.

WARNING

Keep hands, feet, and clothing away from attachment points.

3) Rotate the release lever clockwise to the "OFF" position (See Figure 13).

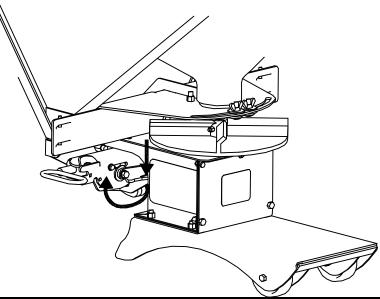


Figure 13. RT3 Attachment Lever Rotation

WARNING

In order to prevent injury or damage to the product, the TGS-600 Tailgate Spreader must be empty when attaching it or detaching it from the vehicle.

- 4) Push forward on the spreader to release the Upper Pin.
- 5) Rotate spreader to ground.
- 6) Grip spreader firmly, step on Leg Assembly and rotate spreader off Lower Pin (See Figure 14).

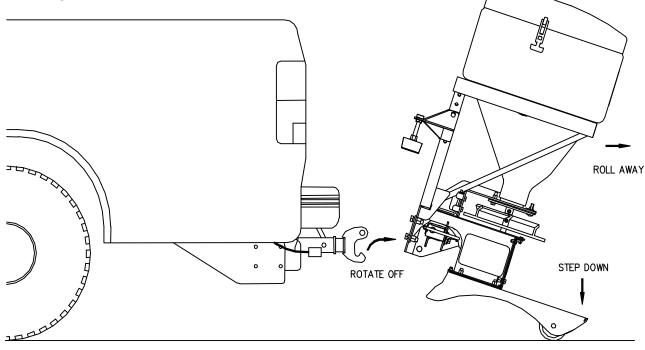


Figure 14. Spreader Detachment Procedure (RT3 Option Kit Installed)

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7) Roll spreader to storage area.

Loading Material

1) The spreader must be attached to the vehicle for loading. Follow the instructions "Attachment Procedure" on pages 11 - 15.

WARNING

This spreader is restricted to the use of only salt. Never run other materials through the spreader.

2) The approximate weight of the spreader is 100 pounds. The weight of the material in the hopper must never exceed 400 pounds.

WARNING

Maximum weight capacity of spreader plus salt material is 500 pounds. Never exceed this weight.

3) Avoid large chunks of material. They can clog the auger during operation.

In-Cab Controller Operation

Functions (refer to Figure 15):

ON/OFF switch: Turns the spinner motor on and off.

BLAST button: Sends full power to the spinner motor for as long as it is pressed.

Speed Dial: Increases the spinner motor speed when turned clockwise and decreases the speed when turned counterclockwise.

Indicator Lights (refer to Figure 15):

Green LED: The controller is on and the spinner motor is turning.

Yellow LED: The "BLAST" button is being activated.

Red LED: The motor is clogged and the controller is being overloaded.

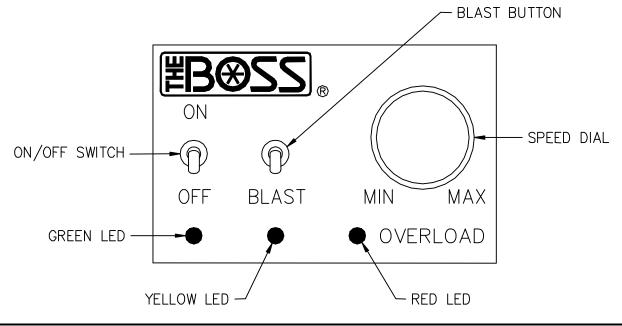


Figure 15. Spreader Control Layout

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Starting and Stopping the Motor:

WARNING

Keep hands, feet, and clothing away from moving spinner and attachment points.

WARNING

Bystanders to stay a minimum of 25 feet away from operating spreader.

- 1) The truck's ignition key must be in the "ON" position.
- 2) Flip the ON/OFF Switch up to the ON position.
- 3) Use the Speed Dial to adjust the speed of the spinner motor. This will dictate how quickly the material is pulled from the hopper and how far it is thrown.
- 4) Use the Blast Feature to momentarily increase the speed of the spinner motor. The motor will remain at full speed until the Blast button is released.
- 5) When finished using the spreader, always turn the controller ON/OFF Switch to the OFF position.

Freeing a clog:

- 1) When the Red LED comes on indicating that the controller is overloaded, the spinner motor is NOT turning. This is most likely due to a rock or other debris wedged in the auger.
- 2) You can use the Blast Feature to free a clog by repeatedly pressing the Blast button and quickly releasing it.

Deflector Adjustment

The adjustable plastic deflector can be used to adjust the spread pattern as shown in Figure 16. The spinner motor speed will also have an effect on the spread pattern.

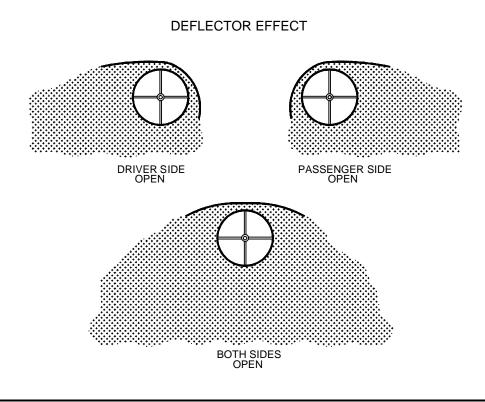


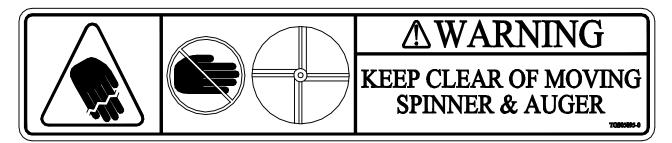
Figure 16. Deflector Adjustment

Feed Gate Adjustment

The Adjustable Feed Gate was designed to change the amount of material being dispensed from the spreader without changing the speed of the spinner. This will allow the operator greater control over the amount of material being spread over a given distance. Fully closing the Feed Gate will prevent salt from spilling out during transport. <u>DO NOT</u> operate motor when Feed Gate is closed.

WARNING

Never make adjustments to the Tailgate Spreader while any components are moving. Turn vehicle key to OFF position and In-Cab-Controller to OFF position prior to servicing or adjusting any part of the Tailgate Spreader or its options.



To REDUCE the amount of material flowing from the spreader spout, loosen 3/8" Wing Nuts and slide Choke Plates toward the center of the spout (See Figure 17). Retighten Wing Nuts but leave finger tight. It is recommended that both Choke Plates be adjusted to approximately the same relative position.

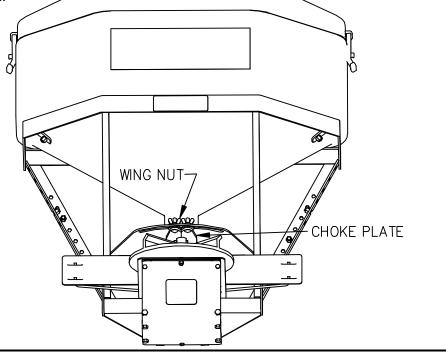


Figure 17. Feed Gate Adjustment

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To INCREASE the amount of material flowing from the spreader spout, loosen 3/8" Wing Nuts and slide Choke Plates away from the center of the spout (See Figure 17). Retighten Wing Nuts but leave finger tight. It is recommended that both Choke Plates be adjusted to approximately the same relative position.

Glossary of Problems

- 1.
- No power to controller (green LED not lit). Spinner motor does not run, power to controller (green LED lit). 2.
- 3. Red indicator light is lit on controller.
- 4. Spinner Motor runs but Spinner/Auger do not turn.

PROBLEM	DIAGNOSTIC CHECK	RESULT
1. No power to controller (green LED not lit).	Check that truck's ignition key is in the "ON" position.	Turn key on.
	Check the 40 amp in-line fuse in the vehicle side harness.	Replace fuse.
	Check relay for corrosion and function.	Relay should click when energized.
 Spinner motor does not run, power to controller (green LED lit). 	Check that spreader side and vehicle side harnesses are connected properly.	Connect.
	Check that controller is plugged into vehicle side harness.	Connect.
	Check that spinner motor is connected to vehicle side harness inside the motor enclosure. The enclosure cover must be removed to check this.	Connect.
3. Red indicator is lit on controller.	Check for an obstruction inside the hopper.	Clear by either using the Blast feature on the controller or by turning the controller OFF then back ON. See instructions for Freeing a Clog.
 Spinner motor runs but spinner and auger do no turn. 	The auger and spinner are mounted directly to the motor shaft. Check that the bolts connecting the auger and spinner to the motor shaft are not broken.	Replace.
	Check that the bolt connecting the motor shaft to the motor hub is not broken. The enclosure cover must be removed to check this.	Replace.

GUIDE TO RECOMMENDED ASSEMBLY TORQUE

All Torque Values Are In Foot-Pounds (Ft.-Lb.)

		\bigcirc	\bigotimes
DIA./PITCH	CLASS 10.9	GRADE 5	GRADE 8
1⁄4 - 20		6	9
5/16 – 18		14	19
3/8 – 16		23	33
7/16 – 14		38	53
1⁄2 - 13		56	80
M12 X 1.75	86		
M14 X 2.00		80	112
9/16 – 12		82	116
5/8 – 11		113	159
³ ⁄ ₄ - 10		201	283

* The torque values listed above are based on dry, coated bolts, variables such as oil, or other lubrications may appreciably alter these values and must be taken into consideration.

NOTE: IT IS IMPORTANT THAT ALL FASTENERS BE PROPERLY TORQUED TO ASSURE A SAFE OPERATING TAILGATE SPREADER.

Figure 18. Recommended Assembly Torque

BOSS TAILGATE SPREADER 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:

Parts: Two years from the date of purchase. **Labor:** Two years from the date of purchase.

What BOSS PRODUCTS will do:

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

What you must do to for warranty service:

To obtain warranty service, purchaser must return the defective tailgate spreader to any authorized BOSS PRODUCTS dealer (preferably the one from whom the tailgate spreader 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:

This warranty does not cover:

- 1. Expendable parts such as pins, nuts, bolts, etc.
- 2. Tailgate spreaders or parts repaired or altered by anyone other than an authorized BOSS PRODUCTS dealer.
- 3. Tailgate spreaders or parts which have been subject to misuse, negligence, accident, improper installation, maintenance, care or storage.
- 4. Tailgate spreaders mounted on vehicles other than those recommended by BOSS PRODUCTS.
- 5. BOSS PRODUCTS does not assume liability for damage to your motor vehicle resulting from the attachment or use of a BOSS PRODUCTS tailgate spreader. 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 tailgate spreader for personal, family, or household use. In this case, refer to the BOSS Tailgate Spreader Limited Consumer Warranty.

BOSS PRODUCTS is a division of

Northern Star Industries, Inc.
PO Box 788
North U.S. Hwy 2
Iron Mountain, MI 49801

a.

(2005-2006)

BOSS TAILGATE SPREADER LIMITED CONSUMER WARRANTY

What the warranty covers:

BOSS PRODUCTS warrants to the original retail purchaser of a BOSS tailgate spreader who purchases it for personal, family or household use, that the tailgate spreader will be free from defects in material and workmanship except as set forth below.

Warranty period:

Parts: Two years from the date of purchase. **Labor:** Two years from the date of purchase.

What BOSS PRODUCTS will do:

If, within the warranty period, the tailgate spreader is found to be defective, BOSS PRODUCTS will repair or replace, at its sole option, the defective parts at no charge to the original purchaser.

What you must do for warranty service:

To obtain service under this warranty, purchaser must return the defective tailgate spreader to an authorized BOSS PRODUCTS dealer (preferably the one from whom the tailgate spreader was purchased). The purchaser must establish the warranty period by verifying 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:

This limited warranty does not cover the following:

- 1. Expendable parts such as pins, nuts, bolts, etc.
- 2. Tailgate spreaders or parts repaired or altered by anyone other than an authorized BOSS PRODUCTS dealer.
- 3. Tailgate spreaders or parts which have been subject to misuse or service, negligence, accident, improper installation, maintenance, care or storage.
- 4. Tailgate spreaders mounted on vehicles other than those recommended by BOSS PRODUCTS.
- 5. BOSS PRODUCTS does not assume any liability for motor vehicle damage resulting from the attachment or use of a BOSS PRODUCTS tailgate spreader. Vehicle risk is the sole responsibility of the purchaser.

Warranty limitations:

THIS WARRANTY IS OFFERED IN LIEU OF ANY OTHER EXPRESS WARRANTY.

THE DURATION OF ALL IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THIS WARRANTY.

BOSS PRODUCTS' LIABILITY IS EXPRESSLY LIMITED TO THE REPAIR OF THE TAILGATE SPREADER, INCLUDING LABOR AND REPLACEMENT OF DEFECTIVE PARTS. BOSS PRODUCTS SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL OR CONTINGENT DAMAGES WHATSOEVER, EVEN IF DAMAGES ARE CAUSED BY BOSS PRODUCTS' NEGLIGENCE OR FAULT.

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 tailgate spreader for other than personal, family, or household use. If so, refer to the BOSS Tailgate Spreader Commercial Warranty.

BOSS PRODUCTS is a division of

Northern Star Industries, Inc. PO Box 788 North U.S. Hwy 2 Iron Mountain, MI 49801

(2005-2006)