

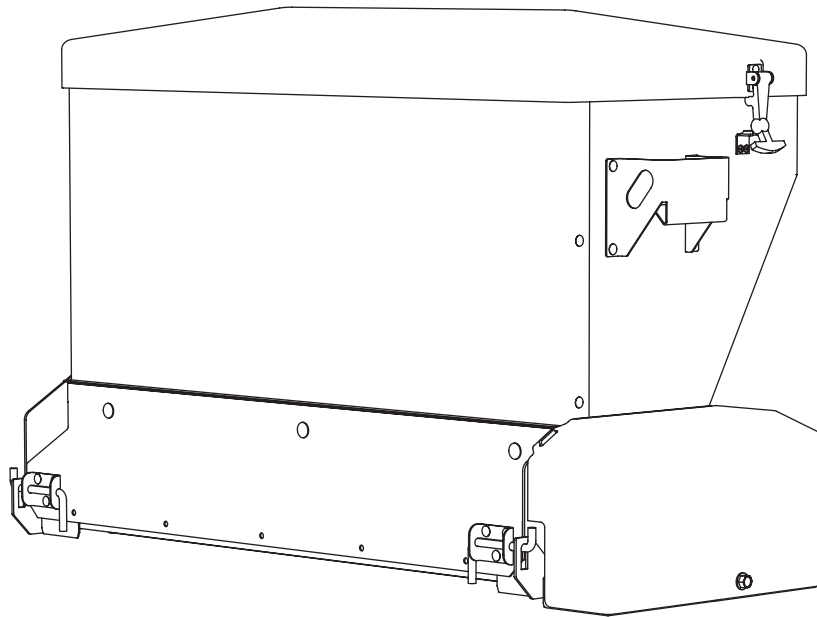


# Drop™ 250 & Drop™ 600

## Stainless Steel Drop Spreaders

87530, 87630

**Owner's Manual and Installation Instructions**  
*Original Instructions*



**⚠ CAUTION**

**Read this manual before installing or operating  
the spreader.**

This manual is for WESTERN® Drop 250 and 600 drop spreaders with  
serial numbers beginning with 210101 and higher.

**This document supersedes all editions with an earlier date.**



# TABLE OF CONTENTS

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<b>INTRODUCTION</b> .....	5	Powering the Control .....	16
Owner's Information Form .....	5	Starting and Stopping Spreader .....	16
<b>SAFETY</b> .....	6	Controlling Material Application .....	17
Safety Definitions .....	6	BLAST/Maximum Application.....	17
Warning/Caution Labels .....	6	Cab Control Modes .....	17
Serial Number Label .....	7	Standby Mode .....	17
Safety Precautions .....	8	Ready Mode .....	17
Fuses .....	8	ON Mode .....	17
Personal Safety .....	9	Error Mode .....	17
Fire and Explosion .....	9	Cab Control Codes .....	18
Cell Phones .....	9	Setup Codes .....	18
Ventilation .....	9	Information Codes .....	18
Battery Safety .....	9	Error Codes .....	18
Noise .....	9	Setup Procedures .....	20
Vibration .....	9	Calibrate Empty Hopper Setting .....	20
Spreader Weight .....	9	Clearing Empty Hopper Calibration Data .....	20
Torque Chart .....	10	Adjust LED Brightness Level .....	20
<b>LOADING</b> .....	11	Flap Agitator .....	21
Certification .....	11	Adjusting Spread Width .....	21
Approximate Material Weights .....	11	Spreading Tips .....	21
<b>MOUNTING THE SPREADER</b> .....	12	<b>MAINTENANCE</b> .....	22
3-Point Hitch .....	12	Lubrication .....	22
2" Receiver Trailer Hitch .....	12	After Each Use .....	22
Bed Mount .....	13	At the End of Each Season or After	
<b>OPERATING THE SPREADER</b> .....	15	Extended Storage .....	22
Driving and Spreading on Snow and Ice .....	15	Storage .....	22
		Fuse Replacement .....	22
		<b>HARNESS WIRING DIAGRAM</b> .....	23
		<b>TROUBLESHOOTING GUIDE</b> .....	24



## INTRODUCTION

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This manual has been prepared to acquaint you with the safety information, operation, and maintenance of your new drop spreader. Please read this manual carefully and follow all recommendations. This will help ensure profitable and trouble-free operation of your drop spreader. Keep this manual accessible. It is a handy reference in case minor service is required.

When service is necessary, bring your spreader to your distributor. They know the spreader best and are interested in your complete satisfaction.

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**NOTE: This spreader is designed to spread snow and ice control materials only. Do not use it for purposes other than those specified in this manual.**

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### Warranty Registration

Follow the directions on the WESTERN® Warranty Registration and Customer Survey form included in the spreader literature kit.

The registration form is also available online at [www.westernplows.com](http://www.westernplows.com). Under "Support" select "Warranty Registration."

### OWNER'S INFORMATION

Owner's Name: \_\_\_\_\_

Date Purchased: \_\_\_\_\_

Distributor Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Distributor Address: \_\_\_\_\_

Vehicle Model: \_\_\_\_\_ Year: \_\_\_\_\_

Spreader Model: \_\_\_\_\_ Serial #: \_\_\_\_\_

Spreader Weight: \_\_\_\_\_ lb/kg

# SAFETY

## SAFETY DEFINITIONS

### **WARNING**

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious personal injury.

### **CAUTION**

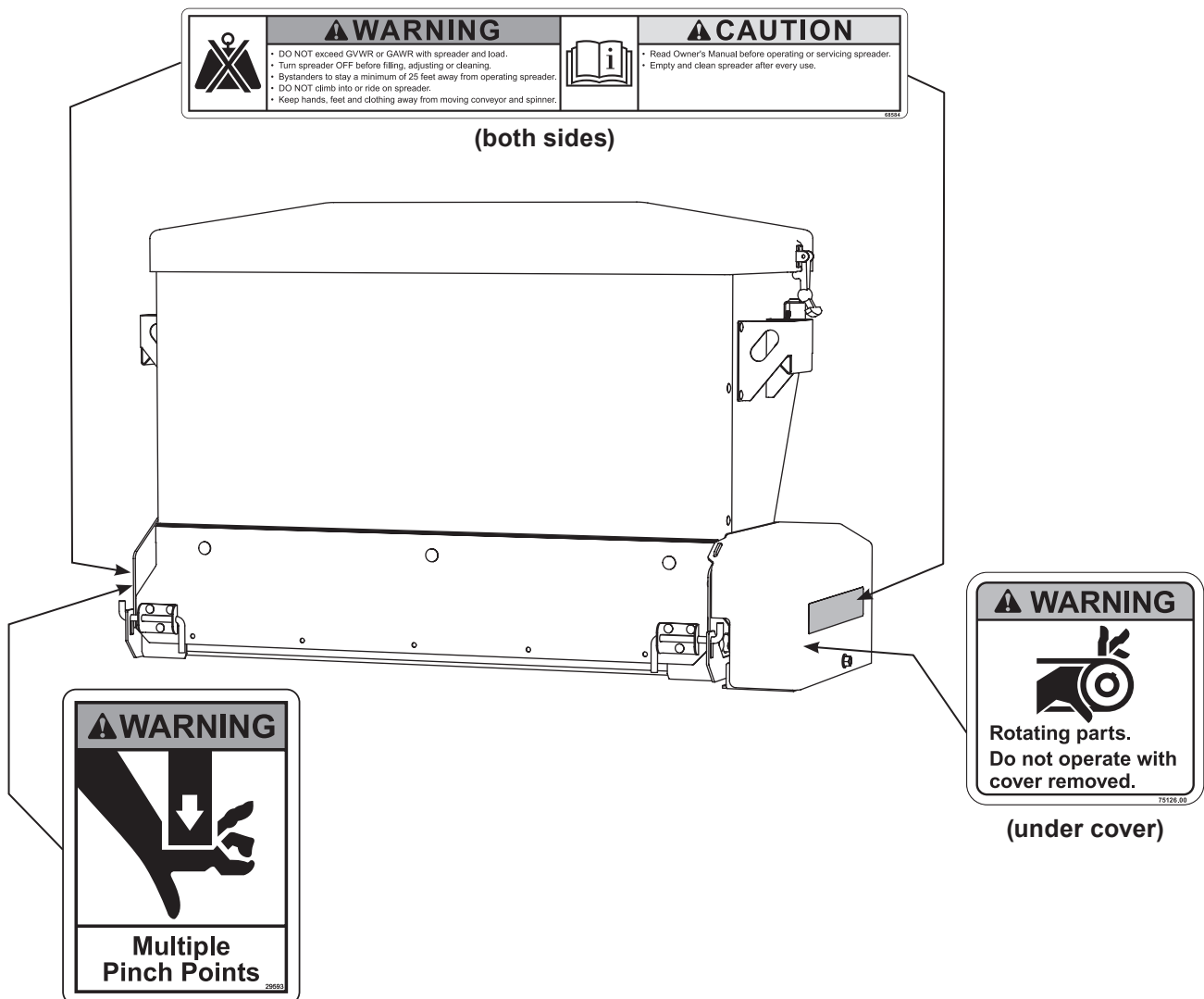
Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

**NOTE:** Indicates a situation or action that can lead to damage to your spreader and vehicle or other property. Other useful information can also be described.

## WARNING/CAUTION LABELS

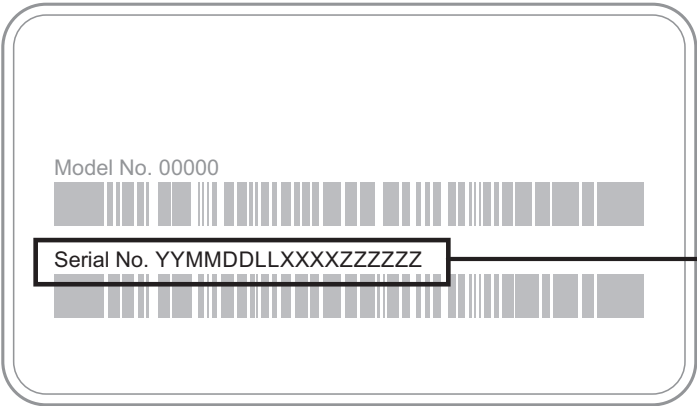
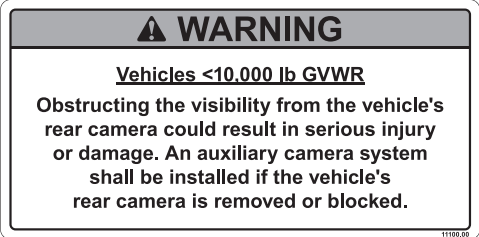
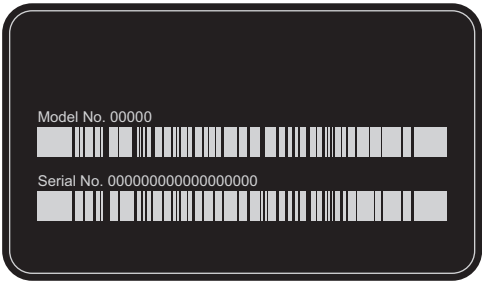
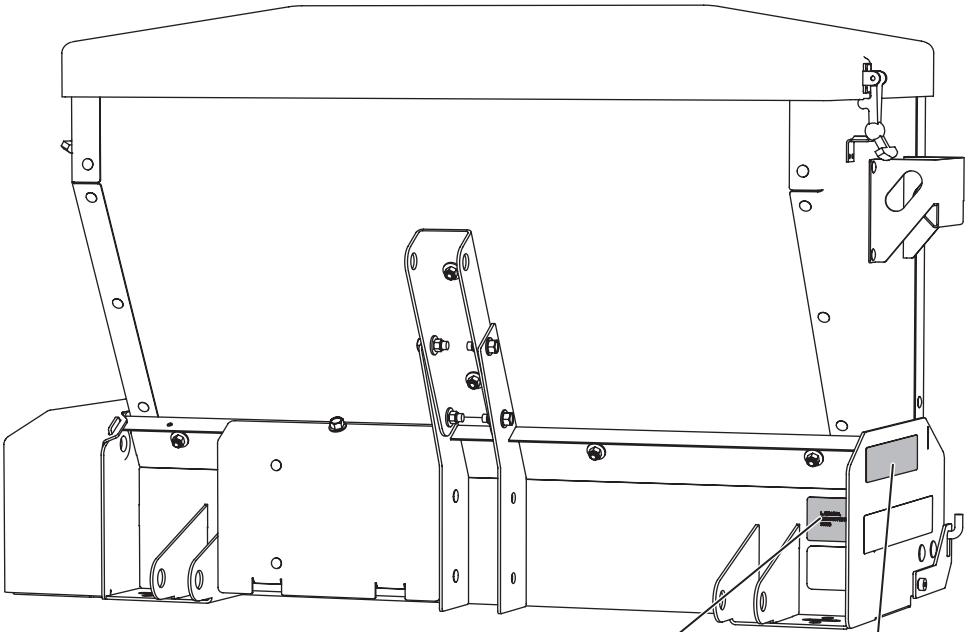
Please become familiar with the warning and caution labels on the spreader.

**NOTE:** If labels are missing or cannot be read, see your sales outlet.



SAFETY

WARNING AND SERIAL NUMBER LABELS



Code	Definition
YY	2-Digit Year
MM	2-Digit Month
DD	2-Digit Day
LL	2-Digit Location Code
XXXX	4-Digit Sequential Number
ZZZZZ	5-7-Digit Assembly Part Number

# SAFETY

## SAFETY PRECAUTIONS

Improper installation and operation could cause personal injury and/or equipment and property damage. Read and understand labels and the Owner's Manual before installing, operating, or making adjustments.

### ⚠ WARNING

- Driver to keep bystanders minimum of 25 feet away from operating spreader.
- Before working with the spreader, secure all loose-fitting clothing and unrestrained hair.
- Before operating the spreader, verify that all safety guards are in place.
- Before servicing the spreader, wait for the auger to stop.
- Do not climb into or ride on spreader.

### ⚠ WARNING



Overloading could result in an accident or damage. Do not exceed GVWR or GAWR ratings as found on the driver-side door cornerpost of the vehicle. See Loading section to determine maximum volumes of spreading material.

### ⚠ WARNING

Do not install the control for this product in the deployment path of an air bag. Refer to vehicle manufacturer's manual for air bag deployment area(s).

### ⚠ WARNING

Vehicles <10,000 lb GVWR: Obstructing the visibility from the vehicle's rear camera could result in serious injury or damage. An auxiliary camera system shall be installed if the vehicle's rear camera is removed or blocked.

### ⚠ CAUTION

During the hopper spreader installation we recommend the addition of an OSHA compliant backup alarm. This alarm is required for OSHA governed employers.

### ⚠ CAUTION

If rear directional, CHMSL light, or brake stoplights are obstructed by the spreader, the lights shall be relocated, or auxiliary directional or brake stoplights shall be installed.

### ⚠ CAUTION

- Do not operate a spreader in need of maintenance.
- Before operating the spreader, reassemble any parts or hardware removed for cleaning or adjusting.
- Before operating the spreader, remove materials such as cleaning rags, brushes, and hand tools from the spreader.
- Before operating the spreader, read the engine owner's manual, if so equipped.
- While operating the spreader, use auxiliary warning lights, except when prohibited by law.
- Tighten all fasteners according to the Torque Chart. Refer to Torque Chart for the recommended torque values.

### ⚠ CAUTION

Disconnect electric and/or hydraulic power and tag out if required before servicing or performing maintenance.

### ⚠ CAUTION



DO NOT leave unused material in hopper. Material can freeze or solidify, causing unit to not work properly. Empty and clean after each use.

**NOTE:** Lubricate grease fittings after each use. Use a good quality multipurpose grease.

## FUSES

The electrical system contains an automotive-style fuse. If a problem should occur and fuse replacement is necessary, the replacement fuse must be of the same type and amperage rating as the original. Installing a fuse with a higher rating can damage the system and could start a fire. Fuse Replacement, including fuse rating and location, is located in the Maintenance section of this Owner's Manual.



# SAFETY

## PERSONAL SAFETY

- Remove ignition key and put the vehicle in PARK or in gear to prevent others from starting the vehicle during installation or service.
- Wear only snug-fitting clothing while working on your vehicle or spreader.
- Do not wear jewelry or a necktie, and secure long hair.
- Wear safety goggles to protect your eyes from battery acid, gasoline, dirt, and dust.
- Avoid touching hot surfaces such as the engine, radiator, hoses, and exhaust pipes.
- Always have a fire extinguisher rated BC handy, for flammable liquids and electrical fires.

## FIRE AND EXPLOSION

### WARNING

**Gasoline is highly flammable and gasoline vapor is explosive. Never smoke while working on vehicle. Keep all open flames away from gasoline tank and lines. Wipe up any spilled gasoline immediately.**

Be careful when using gasoline. Do not use gasoline to clean parts. Store only in approved containers away from sources of heat or flame.

## CELL PHONES

A driver's first responsibility is the safe operation of the vehicle. The most important thing you can do to prevent a crash is to avoid distractions and pay attention to the road. Wait until it is safe to operate mobile communication equipment such as cell phones, text messaging devices, pagers, or two-way radios.

## VENTILATION

### WARNING

**Vehicle exhaust contains lethal fumes. Breathing these fumes, even in low concentrations, can cause death. Never operate a vehicle in an enclosed area without venting exhaust to the outside.**

## BATTERY SAFETY

### CAUTION

**Batteries normally produce explosive gases which can cause personal injury. Therefore, do not allow flames, sparks, or lit tobacco to come near the battery. When charging or working near a battery, always cover your face and protect your eyes, and also provide ventilation.**

- Batteries contain sulfuric acid, which burns skin, eyes, and clothing.
- Disconnect the battery before removing or replacing any electrical components.

## NOISE

Airborne noise emission during use is below 70 dB(A) for the spreader operator.

## VIBRATION

Operating spreader vibration does not exceed 2.5 m/s<sup>2</sup> to the hand-arm or 0.5 m/s<sup>2</sup> to the whole body.









## SPREADER WEIGHT

Drop Spreader Description	Wt (lb)	Wt (kg)
Drop™ 250 – Model 87530	185	84
Drop™ 600 – Model 87630	200	91

## TORQUE CHART

### ⚠ CAUTION

Read instructions before assembling.  
Fasteners should be finger tight until instructed to tighten according to the Torque Chart. Use standard methods and practices when attaching spreader, including proper personal protective safety equipment.

Recommended Fastener Torque Chart					
Inch Fasteners Grade 5 and Grade 8					
Size	Torque (ft-lb)		Size	Torque (ft-lb)	
	 Grade 5	 Grade 8		 Grade 5	 Grade 8
1/4-20	8.4	11.9	9/16-12	109	154
1/4-28	9.7	13.7	9/16-18	121	171
5/16-18	17.4	24.6	5/8-11	150	212
5/16-24	19.2	27.3	5/8-18	170	240
3/8-16	30.8	43.6	3/4-10	269	376
3/8-24	35.0	49.4	3/4-16	297	420
7/16-14	49.4	69.8	7/8-9	429	606
7/16-20	55.2	77.9	7/8-14	474	669
1/2-13	75.3	106.4	1-8	644	909
1/2-20	85.0	120.0	1-12	704	995
Metric Fasteners Class 8.8 and 10.9					
Size	Torque (ft-lb)		Size	Torque (ft-lb)	
	 Class 8.8	 Class 10.9		 Class 8.8	 Class 10.9
M6 x 1.00	7.7	11.1	M20 x 2.50	325	450
M8 x 1.25	19.5	26.9	M22 x 2.50	428	613
M10 x 1.50	38.5	53.3	M24 x 3.00	562	778
M12 x 1.75	67	93	M27 x 3.00	796	1139
M14 x 2.00	107	148	M30 x 3.50	1117	1545
M16 x 2.00	167	231	M33 x 3.50	1468	2101
M18 x 2.50	222	318	M36 x 4.00	1952	2701
These torque values apply to fasteners except those noted in the instructions.					

## LOADING

This manual covers vehicles which have been recommended for carrying the spreader. Please see your local dealer for proper vehicle applications.

### CERTIFICATION

#### WARNING

New untitled vehicle installation of a spreader requires National Highway Traffic Safety Administration altered vehicle certification labeling. Installer to verify that struck load of snow or ice control material does not exceed GVWR or GAWR rating label and complies with FMVSS.

### APPROXIMATE MATERIAL WEIGHTS

#### WARNING

Overloading could result in an accident or damage. Do not exceed GVWR or GAWR as found on the driver-side cornerpost of vehicle.

#### WARNING

Do not overload vehicle. Use chart below to calculate weight of material. Weights of material are an average for dry materials.

#### CAUTION

Never use wet materials or materials with foreign debris with any of these spreaders. These units are designed to handle dry, clean, free-flowing material.

#### CAUTION



Read and adhere to manufacturer's ice-control material package labeling including Safety Data Sheet requirements.

### MATERIAL WEIGHTS

Material	Density		
	(lb/ft <sup>3</sup> )	(lb/yd <sup>3</sup> )	(kg/m <sup>3</sup> )
Salt	80	2160	1282
Sand	100	2700	1602

*Material densities are approximate and are based on dry, loose material. It is the responsibility of the operator to know the weight of the material to be spread and the vehicle carrying capacity.*

**NOTE:** If spreader and ice control material loading is in doubt, weigh vehicle for compliance with vehicle ratings.

# MOUNTING THE SPREADER

## ⚠ CAUTION

During removal or mounting, securely grip spreader to avoid dropping.

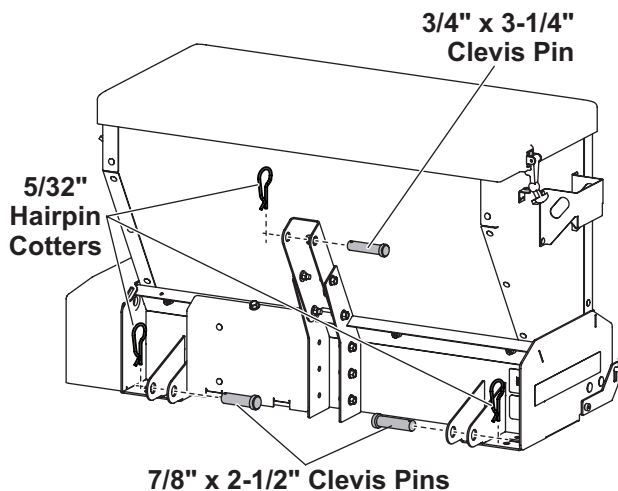
The spreader shall be installed according to instructions supplied. Your local outlet is trained to provide this service and service your spreader with factory original parts.

**NOTE:** Remove any existing trailer hitch and other after-market equipment that may interfere with the installation of this product according to these instructions.

## 3-POINT HITCH INSTALLATION

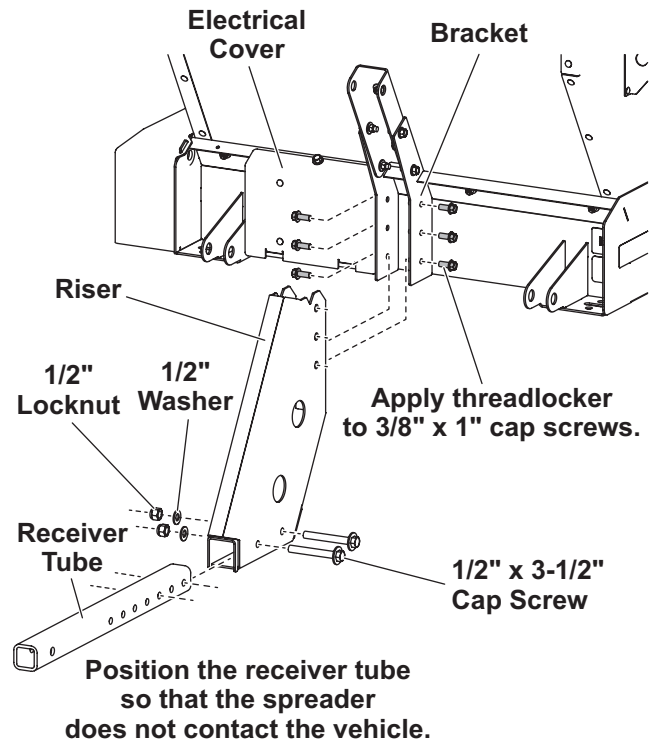
Connect the lower link arms to the two lower frame mounts on the spreader with the 7/8" x 2-1/2" clevis pins and 5/32" hairpin cotters.

Connect the tractor top link to the top hitch point of the spreader with the 3/4" x 3-1/4" clevis pin and 5/32" hairpin cotter.



## 2" RECEIVER TRAILER HITCH INSTALLATION

1. Remove the 3/8" cap screw and remove the electrical cover. Remove the three 3/8" plugs from the bracket holes.

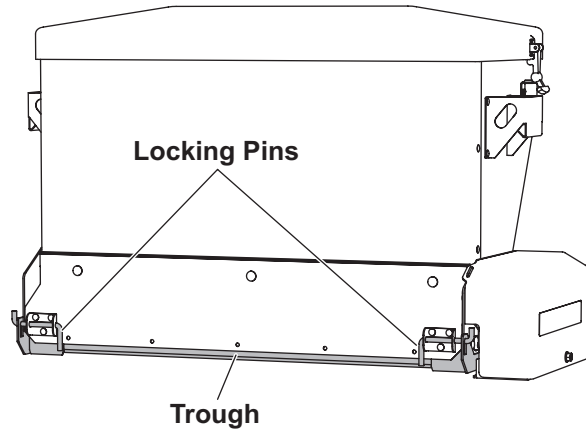


2. Apply the supplied threadlocker to the six 3/8" x 1" cap screws and install the riser to the bracket.
3. Install the receiver tube to the riser, aligning the mounting holes so that the spreader does not contact the vehicle. Secure with two supplied 1/2" x 3-1/2" cap screws, 1/2" washers, and 1/2" locknuts.
4. Replace the electrical cover and secure with the 3/8" cap screw.
5. Tighten all fasteners according to the torque chart.
6. Lift the spreader and insert the receiver tube into the vehicle receiver. Ensure that the receiver pin is secure.
7. Connect one ratchet strap between each handle and one of the vehicle's rear tie-down points.

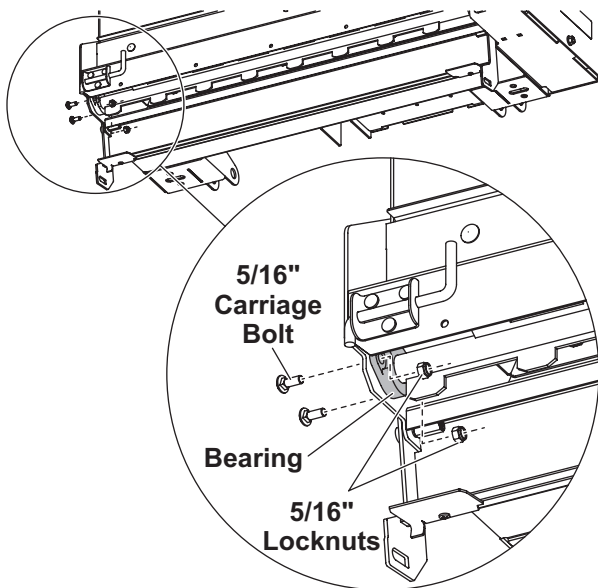
# MOUNTING THE SPREADER

## BED MOUNT INSTALLATION

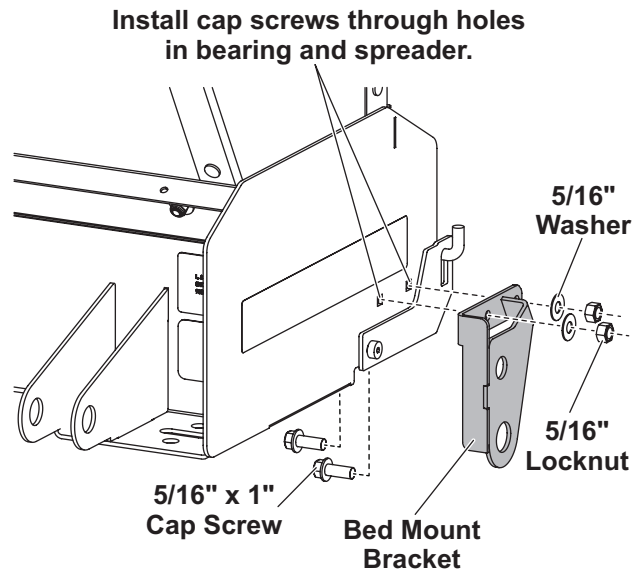
1. Pull the locking pins and lower the trough to access the auger bearing fasteners.



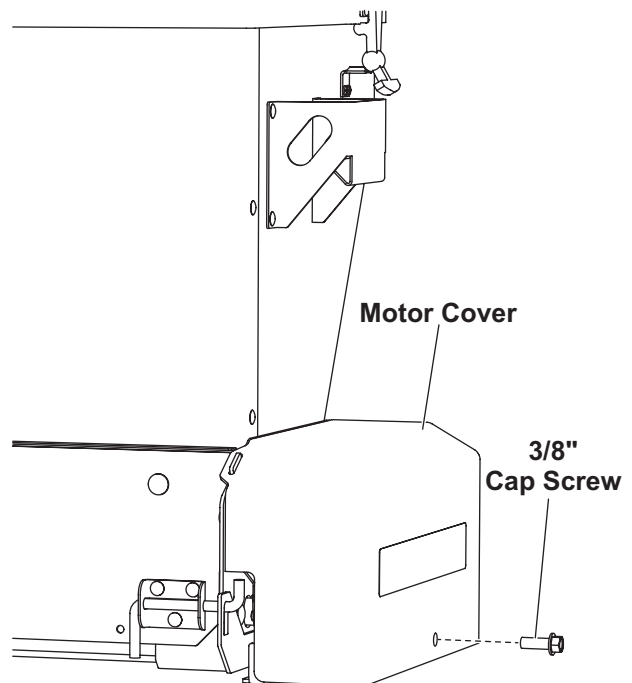
2. Remove the two 5/16" carriage bolts and 5/16" locknuts that secure the bearing to the driver's side of the spreader.



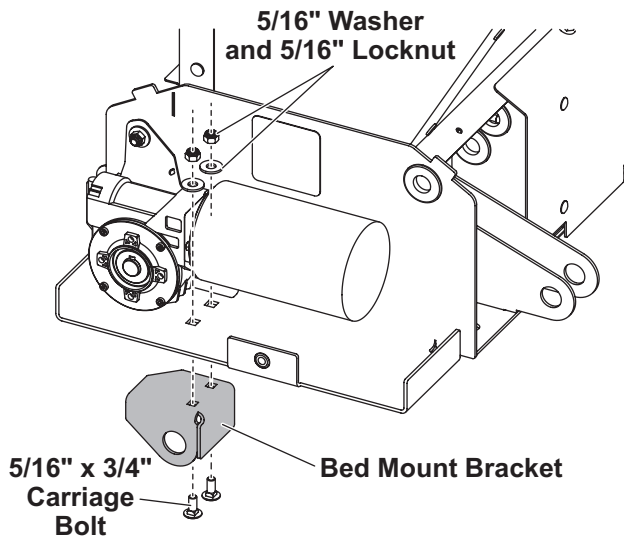
3. Replace the removed carriage bolts with two supplied 5/16" x 1" cap screws installed from the inside of the spreader.



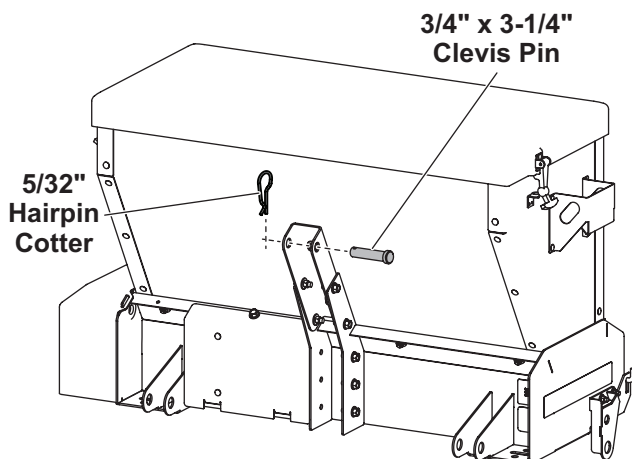
4. Install the bed mount bracket to the exterior of the spreader over the two cap screws. Secure each cap screw with a 5/16" washer and 5/16" locknut.
5. Lift the trough back into position and secure with the locking pins.
6. Remove the 3/8" cap screw and remove the motor cover from the passenger's side of the spreader.



7. Install the bed mount bracket as shown with the two supplied 5/16" x 3/4" carriage bolts, 5/16" washers, and 5/16" locknuts.

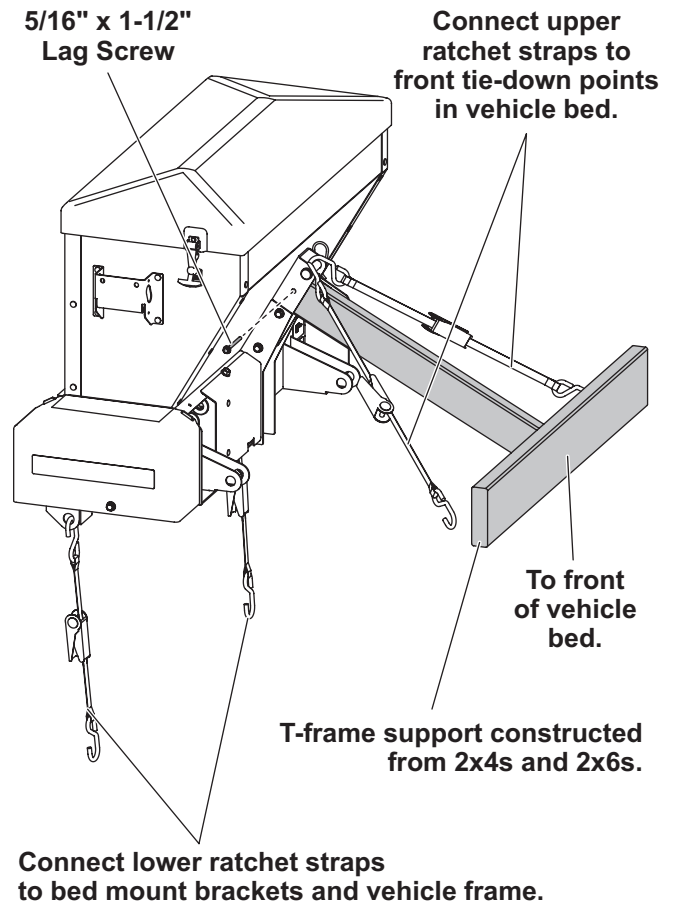


8. Install a 3/4" x 3-1/4" clevis pin through the top hitch point and secure with a 5/32" hairpin cotter.



9. Reinstall the motor cover and secure with the 3/8" cap screw.
10. Tighten all fasteners according to the torque chart.
11. Remove the vehicle's tailgate.
12. Slide the spreader forward into the bed until the bed mount brackets contact the vehicle.

13. Construct a T-frame support from 2x4s and 2x6s as shown. The front of the T-frame should be against the front of the vehicle bed. Secure the T-frame to the spreader with a 5/16" x 1-1/2" lag screw. A lag screw from the spreader packaging may be used.



14. Connect one of the supplied ratchet straps to each bed mount bracket. Connect two of the supplied ratchet straps to the clevis pin installed in Step 10.
15. Connect the two upper ratchet straps to the front tie-down points in the vehicle bed.
16. Connect the two lower ratchet straps to the vehicle frame or other suitable chassis hardpoint. Ensure that the ratchet straps are not connected to any suspension components.
17. Retighten each strap after driving a short distance, and again after the first use of the spreader.

## OPERATING THE SPREADER

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### DRIVING AND SPREADING ON SNOW AND ICE

#### WARNING

**Drinking and then driving or spreading is very dangerous. Your reflexes, perceptions, attentiveness, and judgment can be affected by even a small amount of alcohol. You can have a serious or even fatal collision if you drive after drinking. Please do not drink then drive or spread ice-control materials.**

Follow your vehicle owner's manual instructions for driving in snow and ice conditions. Remember, when you drive on snow or ice, your wheels will not get good traction. You cannot accelerate as quickly, turning is more difficult, and you will need longer braking distance. Wet and hard packed snow or ice offer the worst tire traction. It is very easy to lose control. You will have difficulty accelerating. If you do get moving, you may have poor steering and difficult braking, which can cause you to slide out of control.

Here are some tips for driving in these conditions:

- Drive defensively.
- Do not drink, then drive or spread ice-control materials.
- Spread or drive only when you have good visibility for operating a vehicle.
- If you cannot see well due to snow or icy conditions, you will need to slow down and keep more space between you and other vehicles.
- Slow down, especially on higher-speed roads. Your headlamps can light up only so much road ahead.
- If you are tired, pull off in a safe place and rest.
- The spreader's size and location reduce driver visibility to the rear of the vehicle. We recommend an OSHA compliant backup alarm for all governed employers.
- Keep your windshield and all glass on your vehicle clean to see around you.
- Dress properly for the weather. Wear layers of clothing; as you get warm, you can take off layers.

# OPERATING THE SPREADER – CAB CONTROL

## ⚠ WARNING

Never operate equipment when under the influence of alcohol, drugs, or medications that might alter your judgment and/or reaction time.

## ⚠ WARNING

Never exceed 45 mph (72 km/h) when loaded spreader is attached to vehicle. Braking distances may be increased and handling characteristics may be impaired at speeds above 45 mph (72 km/h).

## ⚠ WARNING

Never allow children to operate or climb on equipment.

## POWERING THE CONTROL

Power is not applied to the control until the vehicle ignition is turned to ACC or ON. Once the control has power it performs a light check and displays the software version on the status display. The control then checks for a connected spreader. If no spreader is detected, the control does the following:

- **nC** (no connection) appears on the red status display for five seconds;
- A single beep will sound;
- Control enters standby mode with no lights illuminated.

If any button is pressed on the control, it will wake and check again for spreader connection. If no spreader is detected, it will act as described above. If a spreader is detected, it will transition to Ready mode.

## STARTING AND STOPPING SPREADER

### ⚠ WARNING

Before starting the spreader, the driver shall verify that all bystanders are a minimum of 25 feet away from operating spreader.

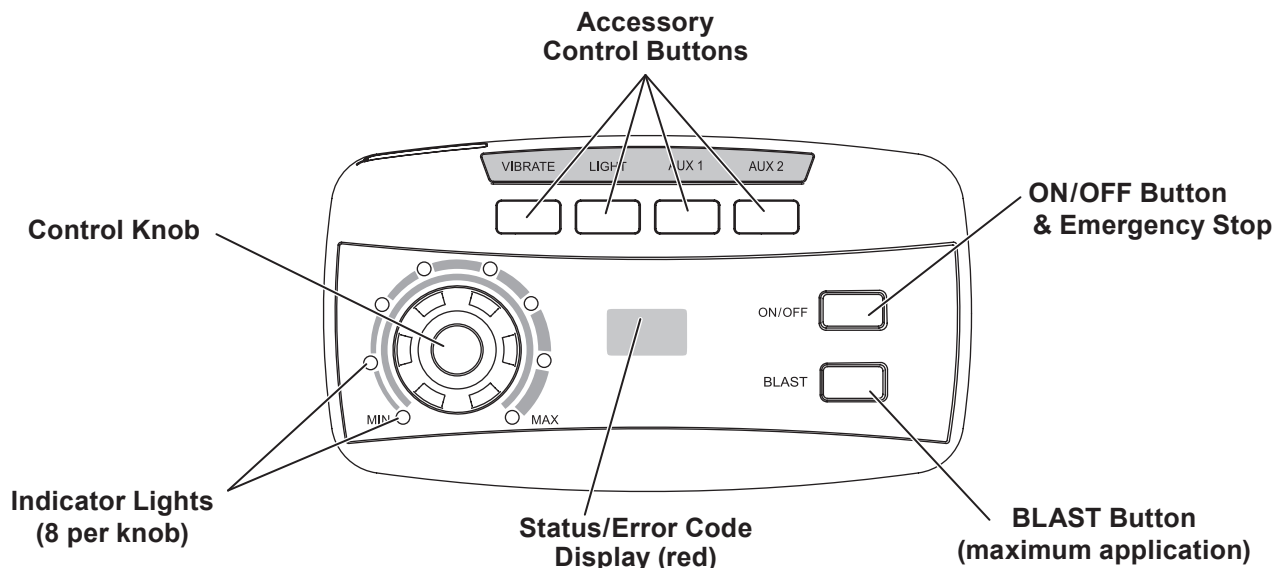
**To start the spreader**, press the ON/OFF button. The control backlights are illuminated when the vehicle ignition is ON and the spreader is connected. When the spreader is ON, the ON/OFF button and inner arc around the control knob will also illuminate.

**To stop the spreader**, press the ON/OFF button again.

The ON/OFF button also operates as an emergency stop when required.

**NOTE: The vehicle ignition must be ON to start the spreader.**

**NOTE: If vehicle ignition is turned OFF while spreader is running, the motors will stop.**





# OPERATING THE SPREADER – CAB CONTROL

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## CONTROLLING MATERIAL APPLICATION

The material application settings can be adjusted while spreader is ON or OFF. Settings are shown by the indicator lights around the control knob. When the spreader is OFF, a single LED will light to show the current setting. When the spreader is ON, the number of blue LEDs illuminated will increase/decrease as the knob is turned clockwise/counterclockwise.

The control knob adjusts the auger speed. Turning the knob clockwise will increase the amount of material applied.

Turning the control knob counterclockwise will decrease the amount of material applied.

## BLAST/Maximum Application

1. Press and hold the BLAST button when maximum application is needed temporarily. The BLAST button will illuminate while depressed.
2. Release the button when maximum application settings are no longer needed.

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**NOTE: Auger speed reverts to the previous settings once the BLAST button is released.**

---

## CAB CONTROL MODES

### Standby Mode

Vehicle ignition is set to ACC or ON; cab control is OFF. Control has power. No spreader was detected. No lights are illuminated on the control. Press any button to wake.

### Ready Mode

Vehicle ignition is set to ACC or ON; cab control is OFF. Control has power. Spreader is detected.

The control knob can be set to start-up conditions, but the auger will not operate until the cab control is turned ON.

(Accessory lights and vibrator are operational.) The BLAST function is not operational.

### ON Mode

Vehicle ignition is set to ACC or ON; cab control is ON.

Auger motor will start. All cab control functions are operational. (Accessory lights and vibrator are operational.)

During normal spreader operation no control codes are displayed. Information or setup codes will appear when relevant. These codes will not stop spreader operation.

### Error Mode

When an error condition occurs, spreader operation will shut down. A two-character error code will flash on the display and a beep will sound. If there are multiple error codes, the codes will flash in a repeating sequence.

Refer to the Error Codes portion of the following Cab Control Codes table. Also see the Troubleshooting Guide section of this manual.

Once the error condition has been resolved, press the ON/OFF button to clear the error code(s). Press the ON/OFF button again to resume spreader operation.

The error code will reappear if the error condition has not been rectified. If the error condition persists, contact your authorized dealer.

Multiple resets within a short time frame will cause the hopper module to time out if components are overheating. The control will display an **EF** error code.

Accessory work lights and AUX 1 can be used when an error code is in effect, and will remain in their current state. The vibrator and AUX 2 will not function.

# OPERATING THE SPREADER – CAB CONTROL

## CAB CONTROL CODES

Setup Codes		
Code	Definition	Procedure
<b>Cb</b>	Calibrate the Empty Hopper setting.	With control in ON mode, press and hold the left control knob until the <b>Cb</b> code displays. Calibration cycle is automatic.*
<b>Cc</b>	Clear calibration data for Empty Hopper setting; clear EH code.	Press the right control knob to clear all calibration data during the calibration cycle.
<b>LS</b>	Set LED brightness level.	With control in Ready mode, press and hold left control knob to get <b>LS</b> code. Release pressure and turn left control knob to desired brightness setting. Wait for confirming <b>SL</b> code to display.*
<b>SL</b>	Confirms that LED brightness level has been reset.	

\* For full instructions, see the Setup Procedures section.

Information Codes		
Code	Definition	Response
<b>dU</b>	Dump mode. Trough is lowered to empty material.	Raise the trough and secure with the locking pins.
<b>EH</b>	Empty hopper (beep will sound).	Check hopper for material. Recalibrate Empty Hopper setting as described above for <b>Cb</b> code.
<b>Lb</b>	Low battery. Hopper module is sensing <10V. ( <b>Lb</b> becomes an error code when module senses ≤6V.)	Refer to the <b>Lb</b> row under "Error Codes" (next page).

Error Codes – Spreader Operation Stopped			
Code	Definition	Possible Cause	Suggested Solution
<b>bb</b>	Bad button.	Button is stuck. Button was pressed while vehicle ignition was entering ACC or START mode. Possible harness issue.	Inspect control. Free up button. Do not press any spreader cab control buttons while the vehicle ignition is being engaged. Check connections and integrity of vehicle harness.
<b>bH</b>	Bad hopper.	Possible module or control mismatch.	Replace control or module. Use only genuine service parts. Contact authorized dealer.
<b>CE</b>	No communication with spreader module.	Loose connection. Module lost power.	Confirm that spreader and control harnesses are connected to the vehicle harness. Check power to spreader module, all connections, fuses, and power studs. Check that port B is plugged into the module.
<b>CF</b>	Control malfunction.	Control is overheating. May be a combination of faults.	Inspect connections at spreader module, hopper drive motor, and auger drive motor.

Table continues on next page.

## OPERATING THE SPREADER – CAB CONTROL

### CAB CONTROL CODES *continued*

Error Codes – Spreader Operation Stopped – <i>continued</i>			
Code	Definition	Possible Cause	Suggested Solution
<b>CP</b>	Not applicable to tailgate spreaders. See suggested solution.	Not applicable to tailgate spreaders.	Reset the control by pressing the ON/OFF button. If <b>CP</b> code continues to display, contact authorized dealer.
<b>Ct</b>	Control is hot.	Cab temperature is too high. Control overheated.	Turn spreader OFF and allow control to cool off.
<b>EF</b>	Excessive drive faults.	Too many HO and/or SO error codes; hopper module overheating.	Control times out for 60 seconds. Ensure that auger is not jammed.
<b>Lb</b>	Low battery. Hopper module is sensing $\leq 6V$ .	Bad connection or low battery. Snowplow or other vehicle power use may be driving down voltage.	Voltage is measured at the hopper module, so <b>Lb</b> code may indicate cable voltage loss. Check battery, alternator, and connections.
<b>nC</b>	No connection.	Spreader not connected to vehicle harness.	Connect vehicle and spreader harness. Check vehicle harness fuse. Inspect spreader and vehicle harnesses. Check module.
<b>OH</b>	Overheating.	Spreader module is too hot. Spreader module malfunction. Accessories wiring/function problem. Drive motor overload.	Allow a cool-off period – 60 seconds or longer. Check for loose harness connections. Check accessory connections. Check integrity of accessory wiring and harness. Clear jammed material. Contact authorized dealer.
<b>OH.</b>	Overheating module – microprocessor.		
<b>rS</b>	Reset of spreader module.	Power loss to module detected on startup.	Reset the control by pressing the ON/OFF button. Check vehicle harness and battery connection.
<b>SO</b>	Auger drive overload – software trip.	Material jammed in auger area.	Inspect auger and auger drive components for alignment and condition. Check for damage to bearings, shafts, and sprockets. Adjust and replace parts as required.
<b>SO.</b>	Auger drive overload – hardware trip.		
<b>SP</b>	Auger power issue. No motor present.	Auger drive motor is not connected. Possible motor defect.	Check connections to the motor (SPIN and GND posts on the module). Replace the motor.

# OPERATING THE SPREADER – CAB CONTROL

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## SETUP PROCEDURES

### Calibrate the Empty Hopper Setting (**Cb** and **EH** Codes)

Calibrating the empty hopper setting enables the cab control to alert the operator when the hopper is empty.

Recalibrate the empty hopper setting at the start of each ice-control season.

1. Ensure that the hopper is empty before beginning the calibration.
2. Turn the vehicle ignition to ACC or ON. Press the ON/OFF button on the cab control to turn the control ON.
3. Press and hold the control knob for approximately 10 seconds until the **Cb** code displays.
4. The calibration cycle will begin. The blue LEDs around the knob will illuminate in succession until all eight are lit.
5. When the automatic calibration cycle is complete, the control will automatically revert to the previous material application settings.

If the control is turned OFF or loses power during the calibration cycle, the calibration data will be lost. Make sure the control is ON and restart the calibration process at Step 3.

Once the empty hopper setting has been calibrated, the **EH** code will flash on the display and a beep will sound whenever the hopper is empty. The **EH** code is informational only and will not stop spreader operation.

### Clearing Empty Hopper Calibration Data (**Cc** Code)

The empty hopper calibration may be cleared, if desired. The control will no longer display the **EH** status code when the hopper is empty.

Start the calibration cycle as described above. At Step 4, press the control knob during the calibration cycle to clear *all* calibration data. The **Cc** (Clear Calibration) code will display and the control will exit **Cc** mode automatically.

### Adjust LED Brightness Level (**SL** and **LS** Codes)

The brightness setting of the cab control lights can be adjusted from 1 to 16. The factory default setting is 8.

1. Turn the vehicle ignition to ACC or ON. If necessary, press the cab control ON/OFF button to turn the control OFF.
2. Press and hold the control knob for approximately 3 seconds until the **LS** code is displayed.
3. Release the knob and turn it clockwise or counterclockwise to increase/decrease the brightness level. The light level number will show in the status display.
4. After selecting the desired brightness level, wait a few seconds for the **SL** confirmation code to display.

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**NOTE: A brightness level setting of 12 or higher is recommended for daylight conditions.**

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# OPERATING THE SPREADER

## FLAP AGITATOR

The flap agitator can improve material flow. The flap is adjusted to contact the auger paddles, creating a vibration that keeps material loose and moving freely. The flap position can be adjusted for different materials.

For coarse, dry materials:

- Set the flap agitator near the top.

For compacting materials that require agitation:

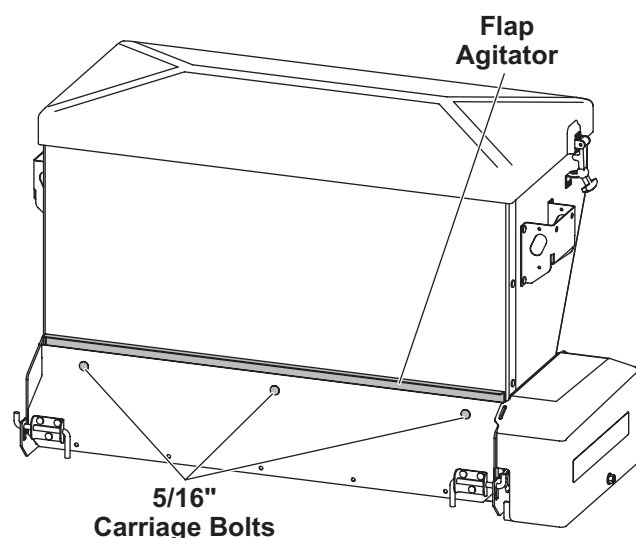
- Set the flap agitator at a middle position.

For fine, free-flowing materials:

- Set the flap agitator near the bottom.

To adjust the flap agitator:

1. Disconnect the spreader harness.
2. Empty the spreader.
3. Remove the lid and top screen.
4. From inside the spreader, loosen but do not remove the three 5/16" carriage bolts shown.



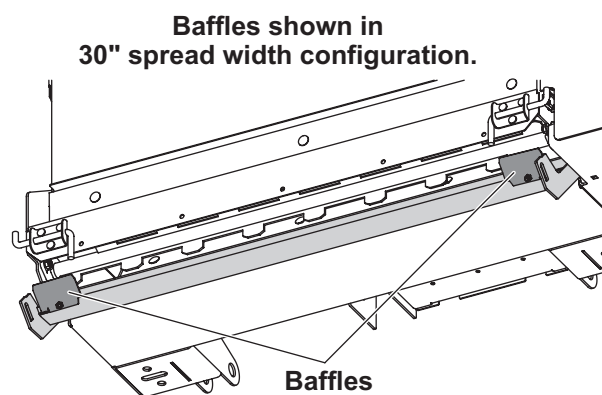
**NOTE:** If adjustments are made frequently, the carriage bolts may be reversed so that the nuts may be accessed from outside the spreader.

5. Adjust the flap agitator by moving it up or down. Moving the flap up will reduce vibration. Moving the flap down will increase vibration and limit flow into the auger.
6. Tighten the fasteners according to the torque chart and reconnect the spreader harness.

## ADJUSTING SPREAD WIDTH

Spread pattern width can be set to 30" or 36".

1. Disconnect the spreader harness.
2. Pull the locking pins and lower the trough.
3. For 30" spread width, the baffles should point upwards. For 36" spread width, the baffles should point down.



4. To change spread width, loosen the fasteners and rotate the baffles to the desired position.
5. Raise the trough and secure with the locking pins. Reconnect the harness.

## SPREADING TIPS

- Spread ice melters with the storm to prevent unmanageable levels of ice.
- Never exceed 10 mph (16 km/h) when spreading.
- For a heavier pass, drive slower.
- Never operate spreader near pedestrians.
- Calculate spread pattern when near vegetation.

## MAINTENANCE

### WARNING

Never remove the spreader with material in the hopper.

### CAUTION

Disconnect electric power at spreader electrical wiring harness connection and tag out if required before servicing or performing maintenance.

### CAUTION

- When replacing parts use only original manufacturer's parts. Failure to do so will void warranty.
- The control is a solid-state electronic unit and is not serviceable. Any attempt to service will void warranty.
- There are no serviceable parts in the motor/transmission assembly. Any attempt to service will void warranty.
- When pressure washing motor enclosure area, keep spray at least 36" away from motor enclosures.

## LUBRICATION

To keep your spreader running smoothly, observe the following recommendations:

- Apply a small amount of light oil to latches as needed.

## AFTER EACH USE

### CAUTION



**DO NOT** leave unused material in hopper. Material can freeze or solidify, causing unit to not work properly. Empty and clean after each use.

- Wash out the hopper and rinse off all external surfaces.
- Apply dielectric grease on all electrical connections to prevent corrosion.

## AT THE END OF EACH SEASON OR AFTER EXTENDED STORAGE

- Wash out the hopper and rinse off all external surfaces.
- Apply dielectric grease on all electrical connections to prevent corrosion.
- Oil or paint all bare metal surfaces.
- If motor cover is removed for any reason, use silicone sealant to ensure weatherproofing of enclosure.

## STORAGE

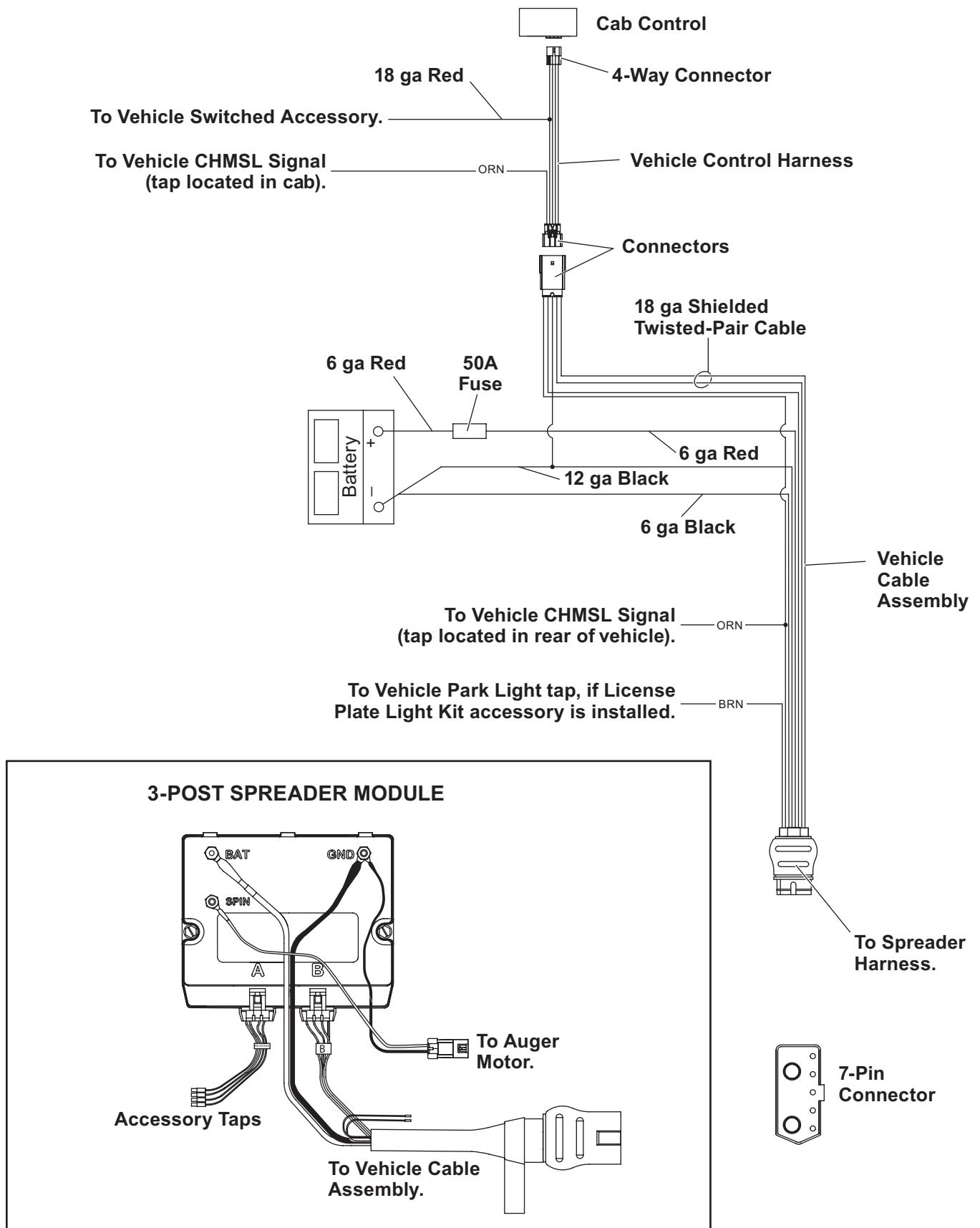
Unplug the cab control from the control harness at the end of the season, or when the spreader is removed from the vehicle. Store the spreader and cab control in a clean, dry location, away from direct sunlight.

## FUSE REPLACEMENT

See the Harness Wiring Diagram on the following page for fuse rating and location.

If a problem should occur and fuse replacement is necessary, the replacement fuse must be of the same type and amperage rating as the original. Installing a fuse with a higher rating can damage the system and could start a fire.

# HARNESS WIRING DIAGRAM



## TROUBLESHOOTING GUIDE

Please see your distributor for service. The troubleshooting reference table below may guide you in diagnosing the issue.

For a reference table of the cab control error codes, see the Operating the Spreader – Cab Control section of this manual.

Before servicing the spreader:

- Review all safety information.
- Confirm that all electrical connections are tight and clean.
- Confirm that nothing is jammed in the hopper.

Problem	Possible Cause	Suggested Solution
<b>No power to cab control.</b> Ignition and control switches ON; control knob indicator lights not illuminated.	1. Control is in standby mode. Spreader is not connected.	1. Press any button on control to wake.
	2. Control connector plug is loose.	2. Check plug connection at cab control.
	3. Switched accessory connection is poor, or faulty battery.	3a. Check for low battery. 3b. Check switched accessory connection.
	4. Blown fuse.	4. Replace spreader vehicle battery cable fuse.
	5. Vehicle control harness is damaged.	5. Repair or replace damaged wires or harness as required.
<b>Cab control shuts down.</b>	<b>Unplug the spreader harness and tag out, if required, before performing any of the following repairs.</b>	
	1. Cross-reference displayed error code with list on page 18–19.	1a. See suggested solution on page 18–19. 1b. Reset the control by pressing the ON/OFF button.
	2. Poor electrical conditions.	2a. Clean or replace connectors. 2b. Apply dielectric grease.
	3. Electrical short.	3. Check electrical connections.
<b>Turning control knob does not change motor speed.</b> Control is powered ON.	<b>Unplug the spreader harness and tag out, if required, before performing any of the following repairs.</b>	
	1. Malfunctioning cab control.	1. Replace cab control.
	2. Malfunctioning motor.	2. Replace motor.
	3. Malfunctioning spreader module.	3. Replace spreader module.
<b>Spreader does not operate.</b>	<b>Unplug the spreader harness and tag out, if required, before performing any of the following repairs.</b>	
	1. Wire harness is damaged or has an open circuit between cab control and spreader.	1a. Check plug connections at cab control and spreader. 1b. Check wire connections at vehicle battery and fuse. 1c. Check motor connections.
	2. Overloaded condition has triggered a time-out, or damaged motor or module.	2a. Wait 60 seconds for time-out to expire. 2b. Check motor. Repair or replace. 2c. Replace module.



## TROUBLESHOOTING GUIDE

Problem	Possible Cause	Suggested Solution
<b>Motor does not run.</b>	<b>Unplug the spreader harness and tag out, if required, before performing any of the following repairs.</b>	
	1. Electrical connections are loose.	1. Open access cover and check motor, harness, and module connections.
	2. Blown fuse.	2. Replace spreader vehicle battery cable fuse.
	3. Motor seizes.	3. Replace motor.
<b>Material does not flow.</b>	<b>Unplug the spreader harness and tag out, if required, before performing any of the following repairs.</b>	
	1. Obstruction in hopper.	1. Clear obstruction.
	2. Material bridged.	2. Clear the bridged material.
	3. Material is wet.	3. Replace with dry material.
	4. Material is coarse or frozen.	4. Replace material.
<b>Error code <i>dU</i> displayed with trough in raised position.</b>	<b>Unplug the spreader harness and tag out, if required, before performing any of the following repairs.</b>	
	1. Safety switch out of alignment.	1. Adjust safety switch position to ensure that it closes when trough is raised.
	2. Electrical connections are loose.	2. Check accessory tap harness and safety switch connections.
	3. Bad switch.	3. Replace safety switch.

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