

Low-Profile Tailgate Spreader

Model 110, 2000

Installation Instructions

⚠ CAUTION

Read Owner's Manual before operating or servicing spreader.

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 to 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.

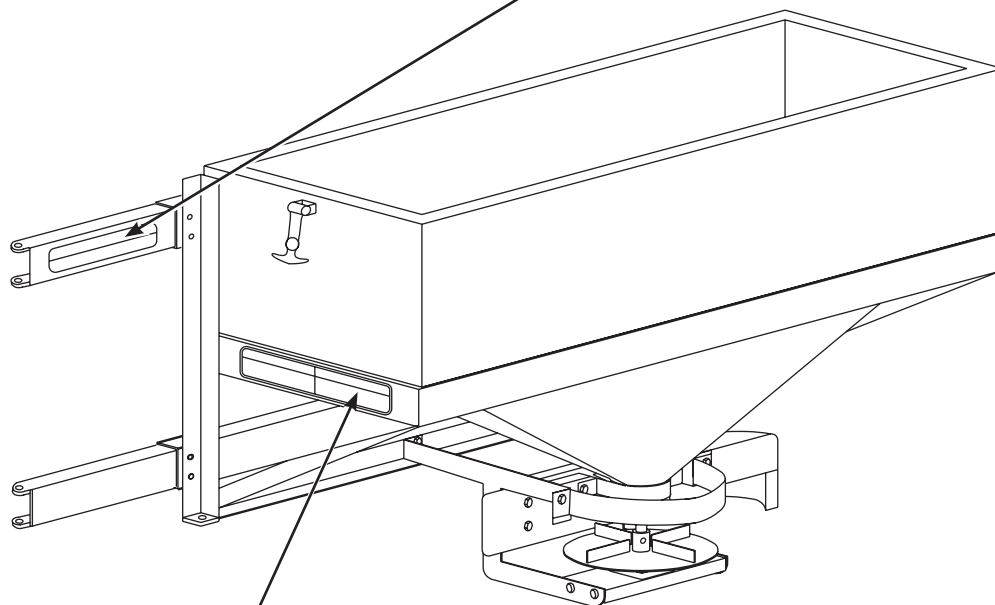
WARNING/CAUTION LABELS

Become familiar with and inform users about the warning and caution labels on the spreader.

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

Caution Label
(located on both sides,
SWING AWAY® mount only)

 **CAUTION**
Do not swing spreader
with material in the hopper.



Warning/Caution Label
(located on both sides)



WARNING

- DO NOT exceed GVWR or GAWR with spreader and load.
- Turn spreader OFF before filling, adjusting or cleaning.
- Bystanders to stay a minimum of 25 feet away from operating spreader.
- DO NOT climb into or ride on spreader.
- Keep hands, feet and clothing away from moving conveyor and spinner.



CAUTION

- Read Owner's Manual before operating or servicing spreader.
- Empty and clean spreader after every use.

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SAFETY

SAFETY PRECAUTIONS

Park the vehicle on a level surface, place shift lever in PARK or NEUTRAL and set the parking brake. Turn OFF the engine and remove keys.

⚠ 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 conveyor or spinner to stop, then lock out power.
- 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 vehicle door cornerpost. See Loading section to determine maximum volumes of spreading material.

⚠ 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

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

⚠ 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.
- 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.

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.

SAFETY

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 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 snowplow vibration does not exceed 2.5 m/s² to the hand-arm or 0.5 m/s² to the whole body.





TORQUE CHART

CAUTION





Read instructions before assembling. Fasteners should be finger tight until instructed to tighten according to 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

These instructions cover vehicles recommended for carrying the spreader. Please see your sales outlet for proper vehicle applications.

⚠ WARNING

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

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.

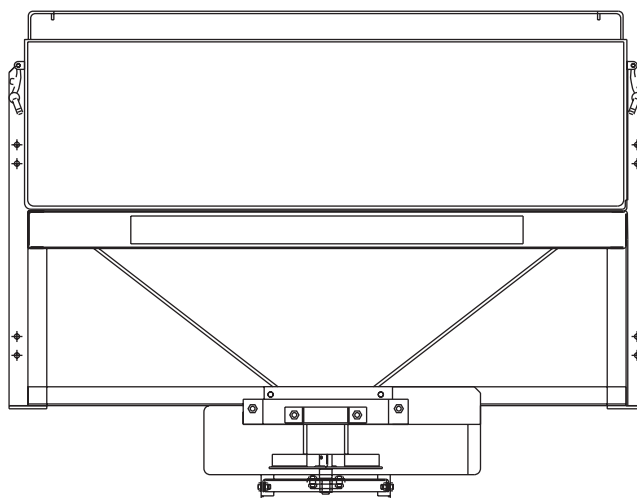
⚠ CAUTION

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

MATERIAL WEIGHTS

Material	Density		
	(lb/ft ³)	(lb/yd ³)	(kg/m ³)
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.



FIXED MOUNT INSTALLATION

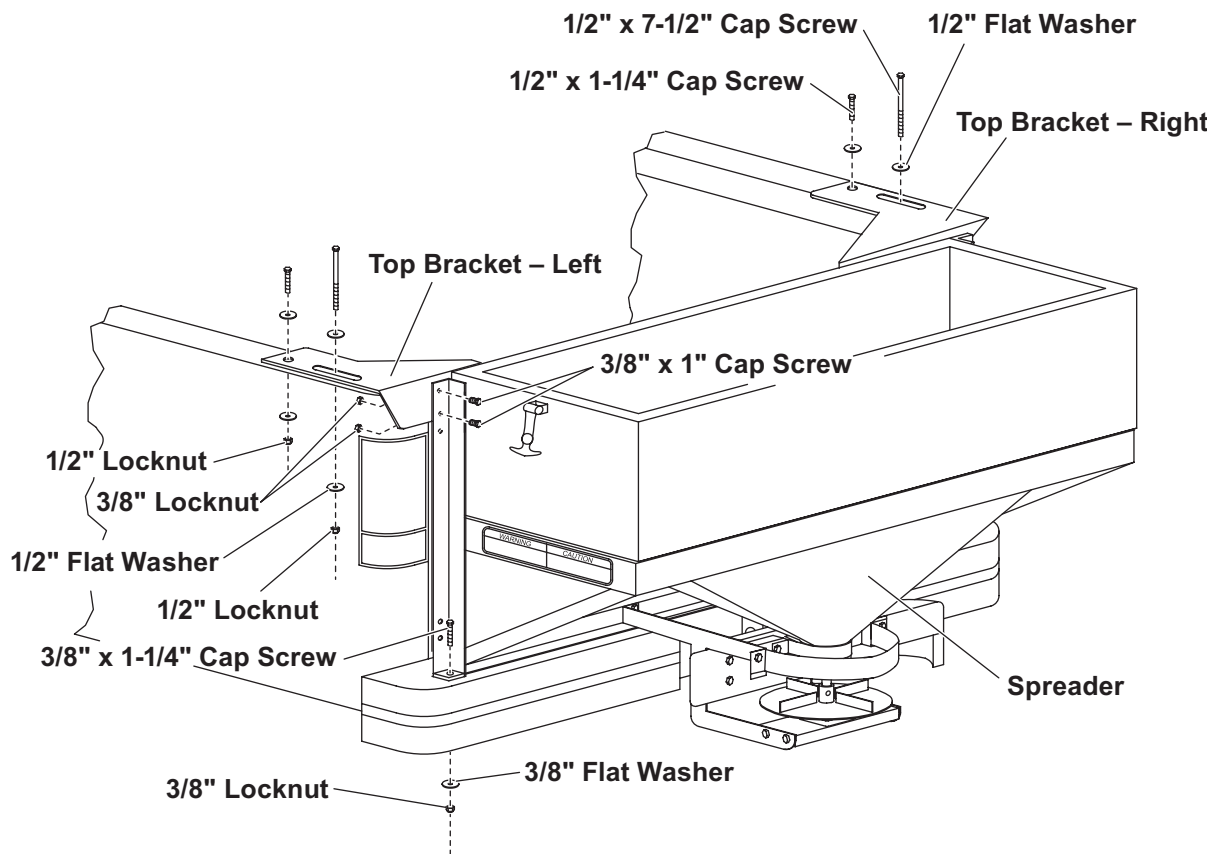
FIXED MOUNT INSTALLATION

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

1. Shut vehicle OFF and remove key from ignition.
2. Remove all mount assembly parts and hardware from the shipping carton.
3. Remove the tail light assemblies if necessary to gain access to the bottom of the stake pockets.

4. Install the left and right top brackets to the stake pocket of the truck bed rail with one 1/2" x 7-1/2" cap screw, two 1/2" flat washers, and one 1/2" locknut per side. Do not fully torque hardware until instructed to do so.

If the stake pocket does not have a suitable bottom plate, it will be necessary to fabricate one. A large washer may work for this application.



FIXED MOUNT INSTALLATION

CAUTION

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

5. Place the spreader on the bumper of the truck.

NOTE: If the spreader obstructs the view of the license plate or CHMSL, check for any local regulations that may apply.

6. Center the spreader between the bed rails and allow 1/2" of clearance between the spreader and the tailgate. Verify that the spreader is vertical.
7. Once the spreader is properly positioned, adjust or shim the top brackets as required to mate to the rear angles of the spreader. Clamp the angles to the top brackets and mark the position of the angles on the top brackets.
8. Mark the holes of the bottom feet onto the bumper.

CAUTION

Before drilling holes, check to be sure that no vehicle wiring or other components could be damaged.

9. Remove the spreader and drill two 13/32" holes in the bumper as marked.
10. Place the spreader back onto the bumper and re-clamp it in the marked position to the top brackets.
11. Attach the spreader feet to the bumper using one 3/8" x 1-1/4" cap screw, one 3/8" flat washer and one 3/8" locknut per side.

12. With clamps attached, drill one 13/32" hole through the vertical angle of the spreader and the top bracket on each side. The hole should be located about 3/4" down from the top surface of the bracket.

NOTE: Place a piece of wood behind the drilling area to protect the tailgate from the drill as it breaks through.

13. Drill a second 13/32" hole through the vertical angle of the spreader and the top bracket. Locate this hole near the bottom of the bracket. One of the existing holes in the spreader angle may be used if it is suitable.
14. Repeat the drilling procedure on the opposite side of the spreader.
15. Attach the spreader to the brackets using two 3/8" x 1" cap screws and 3/8" locknuts per side.
16. Use the remaining hole in the top brackets as a template to drill one 17/32" hole through the top rail of the truck bed on each side.

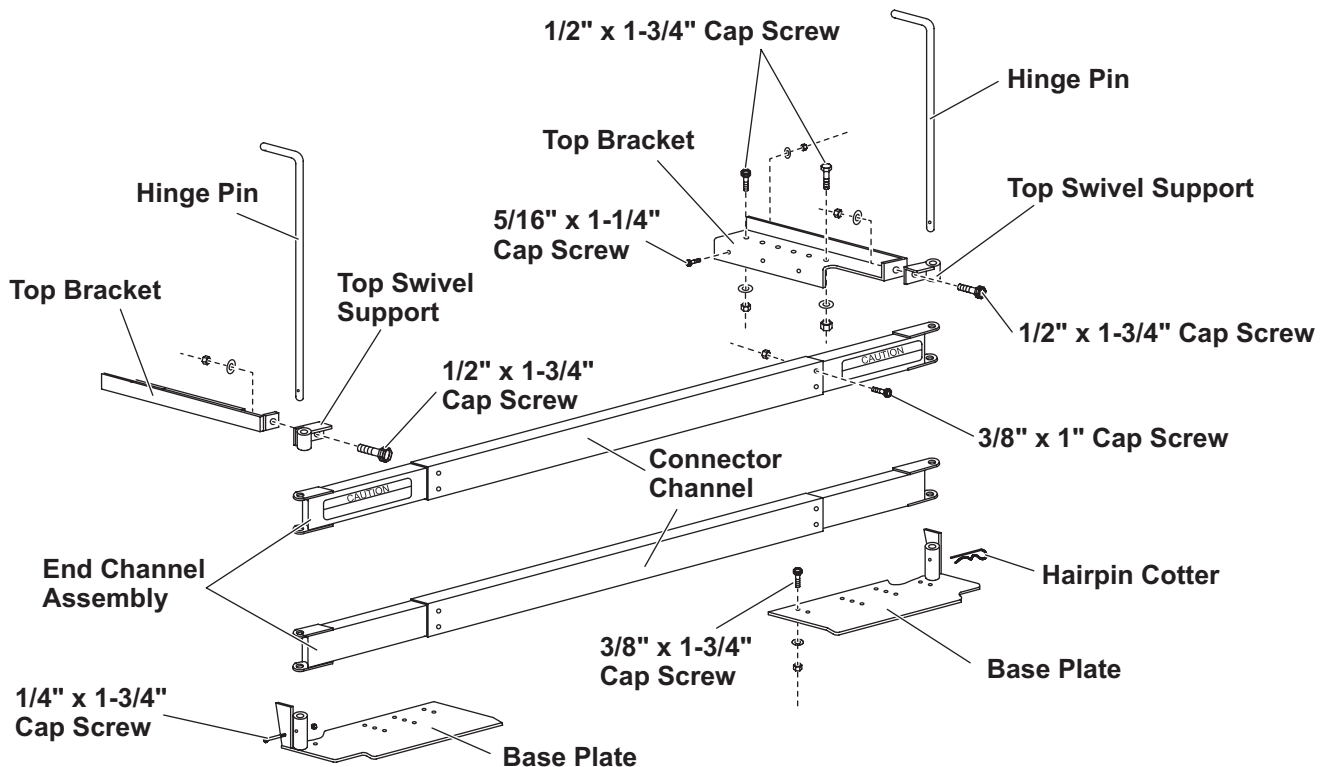
NOTE: Pay special attention when drilling or clamping dissimilar metals to aluminum bodies. Galvanic corrosion can occur if not handled properly. Contact vehicle manufacturer for recommended attachment practices.

17. Attach the brackets to the truck bed using one 1/2" x 1-1/4" cap screw and 1/2" locknut per side.

NOTE: Tighten all fasteners according to the torque chart.

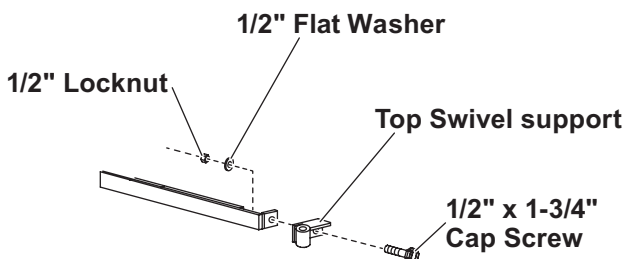
SWING AWAY® MOUNT INSTALLATION

SWING AWAY MOUNT INSTALLATION



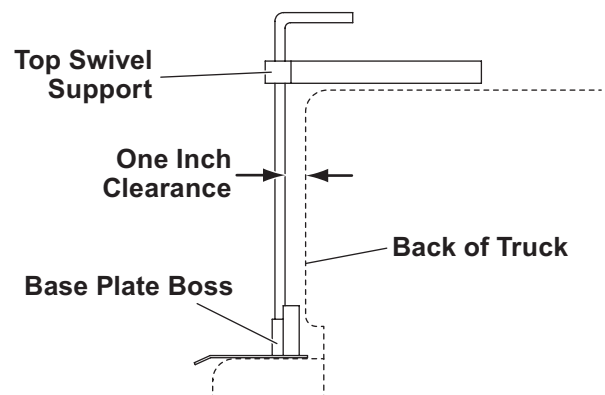
NOTE: Remove any existing trailer hitch and other after-market equipment that may interfere with the installation of this product according to these instructions.

1. Shut vehicle OFF and remove key from ignition.
2. Remove all mount assembly parts and hardware from the shipping carton.
3. Install both top swivel supports to the top brackets with one 1/2" x 1-3/4" cap screw, one 1/2" flat washer and one 1/2" locknut per side. Tighten snug but do not fully torque hardware at this time.



4. Set the driver-side base plate on the bumper in the approximate area that it will be installed.

5. Set the driver-side top bracket assembly on the truck bed rail and clamp in place.
6. Drop the hinge pin into place through the top swivel support and into the base plate. Adjust the base plate and top bracket assembly to provide at least one inch of clearance between the hinge pins and any point of the truck. The pin must also be positioned vertically.



NOTE: The pins must be vertical and the bracket bosses must be aligned with each other. Any misalignment will create difficulty in removal of pins. Use shims as required to align parts.

SWING AWAY® MOUNT INSTALLATION

7. Use the large pre-punched holes in the top of the bracket as a guide to locate and mark two holes.

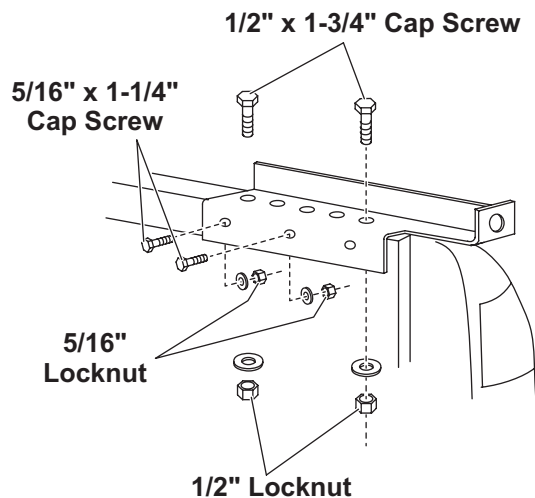
⚠ CAUTION

Before drilling holes, check to be sure that no vehicle wiring or other components could be damaged.

8. Remove the hinge pin and top bracket. Center punch and drill two 17/32" holes through the bed rail in the marked positions.

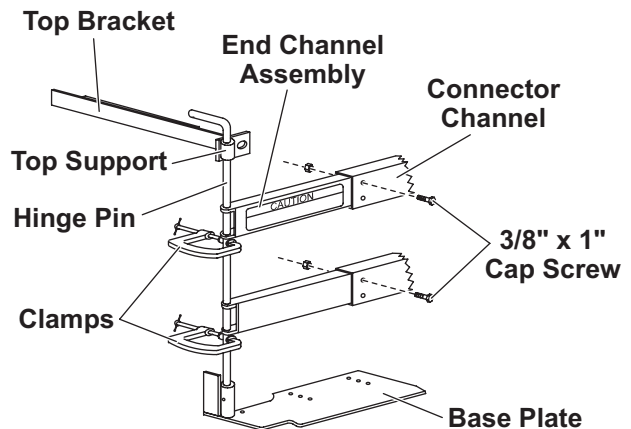
NOTE: Pay special attention when drilling or clamping dissimilar metals to aluminum bodies. Galvanic corrosion can occur if not handled properly. Contact vehicle manufacturer for recommended attachment practices.

9. Replace the top bracket and install bracket with two 1/2" x 1-3/4" cap screws, two flat washers and two locknuts. Tighten snug but do not torque at this time.



10. Repeat Steps 4 through 9 on the passenger side of the vehicle.
11. Replace the hinge pins through the top supports and into the base plates.
12. Re-adjust the baseplates if necessary to ensure vertical alignment with the top brackets and clearance to the vehicle. Verify that the hinge pins do not bind when inserted in the top bracket and base plate.

13. Use the 5/16" pre-punched holes in the top bracket as a template to center punch and drill two 11/32" holes in the inside flanges of each side of the truck bed. Check behind the bed rail for any obstruction before choosing holes.
14. Install two 5/16" x 1-1/4" cap screws, two 5/16" flat washers and two locknuts through the bracket and inside flanges of each side of the truck bed.
15. Slide one end channel assembly into each end of the connector channels.
16. Carefully remove the hinge pins from the truck.
17. Install the channel assemblies onto the hinge pins with the labels right side up.
18. Temporarily attach clamps to the hinge pins below the end channel assemblies to prevent the assemblies from sliding down the pins.



19. Center the connector channel between the end channels.
20. Use the pre-punched holes in the connector channel as a guide to drill two 13/32" holes through the end channels for a total of eight holes.

NOTE: Place a piece of wood behind the drilling area to protect the tailgate from the drill as it breaks through.

21. Install one 3/8" x 1" cap screw and 3/8" locknut in the end of each end channel to temporarily hold the arm assemblies together.

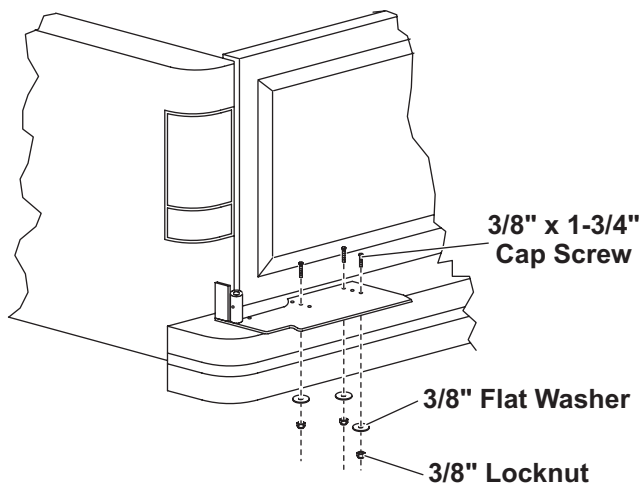
SWING AWAY® MOUNT INSTALLATION

22. Adjust the base plates to be aligned with the bumper and verify that the hinge pins are vertical and parallel with each other.
23. Use the pre-punched holes in the base plates to locate and mark three holes on the top of the bumper for each base plate. The holes should be chosen in a triangular pattern with two holes in one of the rows and one hole in another row.
24. Outline the position of the base plates on the bumper with a pencil.
25. Remove the clamps, hinge pins and swivel mount arm assemblies from the truck.

⚠ CAUTION

Before drilling holes, check to be sure that no vehicle wiring or other components could be damaged.

26. Center punch and drill three 13/32" holes in each side of the bumper as previously marked.
27. Loosely install the base plates to the bumper with three 3/8" x 1-3/4" cap screws, 3/8" flat washers and 3/8" locknuts. Shim the top brackets and base plates as required to prevent the hinge pin from binding.



28. Reinstall the connector channel assemblies and hinge pins on the truck. Verify that the caution labels located on the end channels are right side up and located on the top assembly.

29. Recheck all alignments of the connector channel assemblies and hinge pins and tighten the base plate hardware according to the torque chart.
30. Remove the 3/8" x 1" cap screws placed in the connector channel assemblies.

⚠ CAUTION

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

31. Place the spreader on the base plates.

NOTE: If the spreader obstructs the view of the license plate or CHMSL, check for any local regulations that may apply.

32. Slide the top and bottom connector channel assemblies up the hinge pins and align the holes in the spreader angle with the holes in the channel assemblies. Secure the spreader to the channel assemblies with four 3/8" x 1" cap screws and 3/8" locknuts per mount arm assembly.
33. Tighten all eight cap screws according to the torque chart.
34. Verify that all other fasteners are tightened according to the torque chart.

⚠ CAUTION

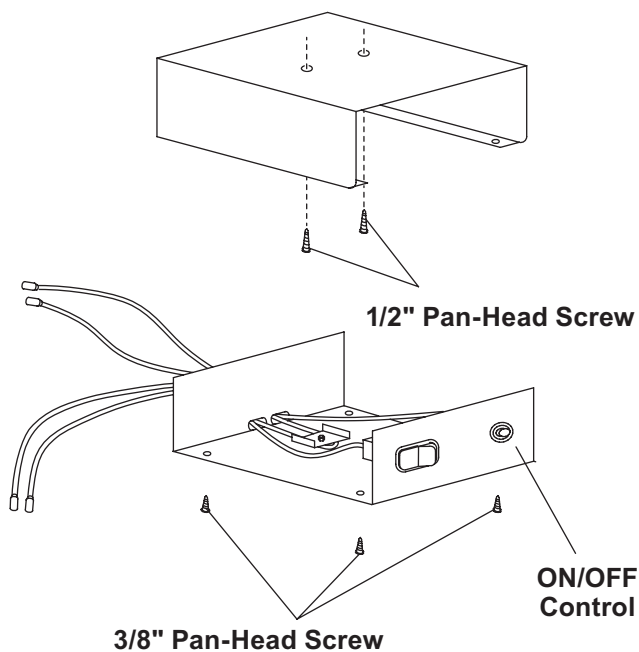
Do not operate the spreader or the vehicle without securing the hinge pin into the base plate.

35. Remove one hinge pin and swing the spreader assembly. When returning the spreader to the bumper, it is necessary to lift the spreader onto the base plate.
36. Choose which way the spreader will swing and fix the hinge side by installing one 1/4" x 1-3/4" cap screw and 1/4" locknut through the hole in the base plate boss and hinge pin.
37. Install the hitch pin clip through the latch side base plate boss and the removable hinge pin.

SPREADER CONTROL MOUNTING

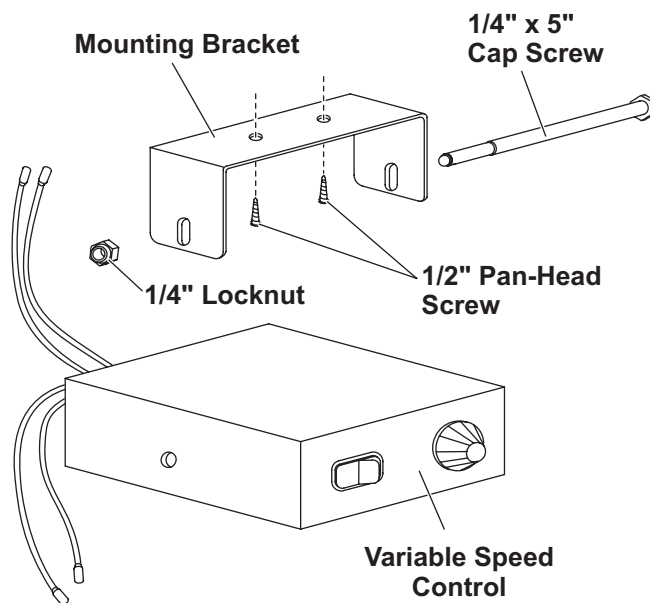
ON/OFF CONTROL

1. Locate a convenient position in the cab to mount the ON/OFF control that will not interfere with other equipment and will avoid unintentional starting of the spreader.
2. Mount the cover of the ON/OFF control to the vehicle with two 1/2" pan-head screws as shown.
3. Slide the body of the control into the cover and secure with four 3/8" pan-head screws.

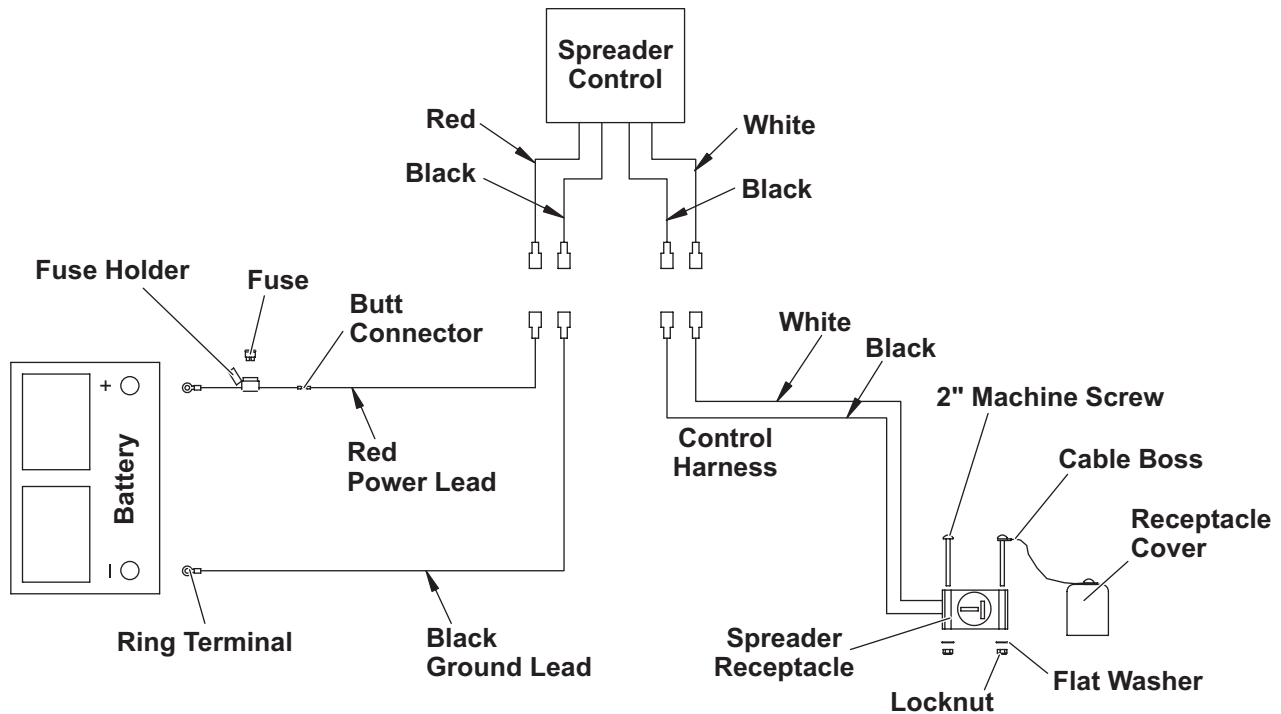


VARIABLE SPEED CONTROL

1. Locate a convenient position in the cab to mount the variable speed control that will not interfere with other equipment and will avoid unintentional starting of the spreader.
2. Attach the mounting bracket to the vehicle with two 1/2" pan-head screws as shown.
3. Place the variable speed control into the mounting bracket and secure with the 1/4" x 5" cap screw and 1/4" locknut. Tighten the locknut only tight enough to hold the position of the control. Use care when inserting the bolt through the control to avoid damaging any components or wires inside.



WIRING INSTRUCTIONS



CONTROL HARNESS INSTALLATION

1. Mount the control as shown in the Spreader Control Mounting Instruction section.

⚠ CAUTION

Before drilling any holes, check both sides of the material for any wires, fuel lines, fuel tanks, etc., that may be damaged by drilling.

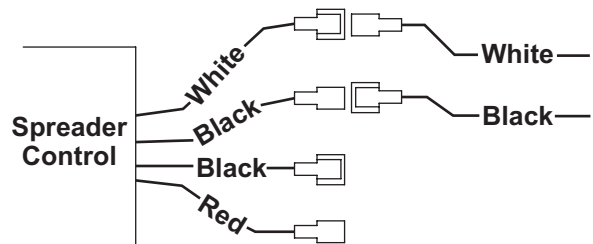
2. Drill a 5/8" hole on the driver-side fire wall in an area with clearance on both sides.

⚠ CAUTION

Rubber grommet shall be installed in fire wall to protect wires. Failure to do this could result in a short, causing damage to vehicle and equipment.

3. Install the rubber grommet into the hole.
4. Locate an area under the rear bumper and protected from the discharge of the spreader to mount the spreader receptacle. For SWING AWAY® spreader mounting, the receptacle must be located on the side that has been chosen as the hinge side.

5. Drill two 7/32" holes and mount the spreader receptacle using two #10 x 2" machine screws, flat washers and locknuts. Attach the cable boss of the receptacle cover to one of the screws.
6. Route the leads along the truck frame, working forward from the receptacle and avoiding any hot or moving parts. Secure the leads with wire ties.
7. Pass the terminal ends through the rubber grommet into the cab of the vehicle. Run the leads out of sight to the spreader control in a manner that does not interfere with other equipment. Insert the terminals of the harness into the corresponding terminals of the spreader control.



8. Roll up any excess wire under the vehicle and secure it to a safe location on the vehicle frame.

WIRING INSTRUCTIONS

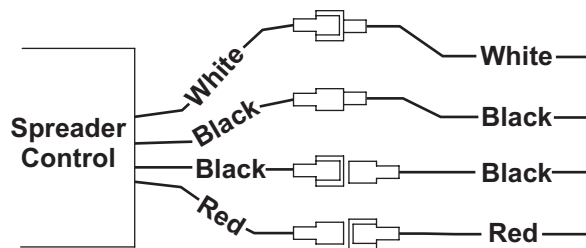
POWER AND GROUND LEAD INSTALLATION

1. Place the red power lead and the black ground lead on the floor of the vehicle cab. Pass the bare ends of the leads through the rubber grommet in the fire wall.

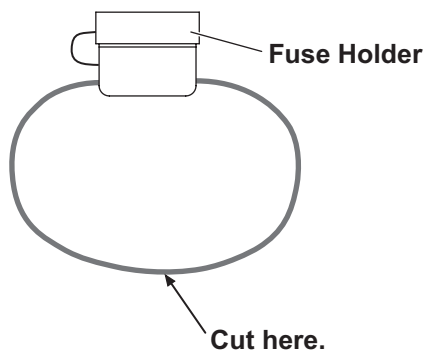
⚠ CAUTION

Do not connect the wires to the battery at this time.

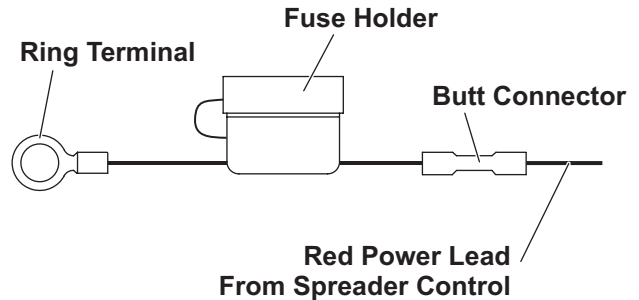
2. Insert the terminals of the leads into the corresponding terminals of the spreader control. Route the leads along the fire wall to the battery area. Use wire ties to secure the wiring away from any hot or moving parts.



3. Cut the looped wire of the fuse holder near the middle and strip 1/4" of insulation away from the wire on both ends.



4. Trim off any excess wire at the battery. Install and heat-seal a butt connector between the fuse holder and the red (+) power lead from the spreader control.



5. Using a heat gun or other heat source, heat the butt connector, starting from the center and moving outward until the tubing shrinks and the adhesive has melted.
6. Crimp a ring terminal to the bare end of the fuse holder lead (+) and attach to the POSITIVE (+) terminal of the battery.
7. Crimp a ring terminal to the black (-) ground lead from the spreader control and attach to the NEGATIVE (-) terminal of the battery.
8. Install the fuse into the fuse holder.

WIRING INSTRUCTIONS

CHMSL HARNESS INSTALLATION (IF EQUIPPED)

1. Plug the vehicle harness into the spreader CHMSL harness and route the vehicle harness along the driver-side frame rail, through the fire wall, and into the cab of the vehicle.

NOTE: Some trucks have leads specifically designed for connecting into the CHMSL circuit. These wires may be located in the engine compartment or near the rear of the truck. Check for these leads before routing wire into the cab.

2. Locate the wire that carries the signal to the vehicle CHMSL and connect the CHMSL vehicle harness white wire to it using the special butt splice provided.
3. Connect the black wire to a chassis ground.
4. Use a cable tie to secure the CHMSL harness to the spreader vehicle harness near the harness plugs.

NOTE: Use dielectric grease on all electrical connections to prevent corrosion.

OPERATIONAL TEST

1. Plug the spreader harness into the receptacle.
2. Turn the control ON.
3. Adjust the speed setting to the desired position (variable speed control only).
4. Observe the spinner disc rotation. It should be rotating in a counterclockwise direction. If the spinner rotates clockwise, check the wiring installation.

The company reserves the right under its product improvement policy to change construction or design details and furnish equipment when so altered without reference to illustrations or specifications used. This equipment manufacturer or the vehicle manufacturer may require or recommend optional equipment for spreaders. Do not exceed vehicle ratings with a spreader. The company offers a limited warranty for all spreaders and accessories. See separately printed page for this important information. The following is a registered (®) trademark of Douglas Dynamics, LLC: SWING AWAY®.

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