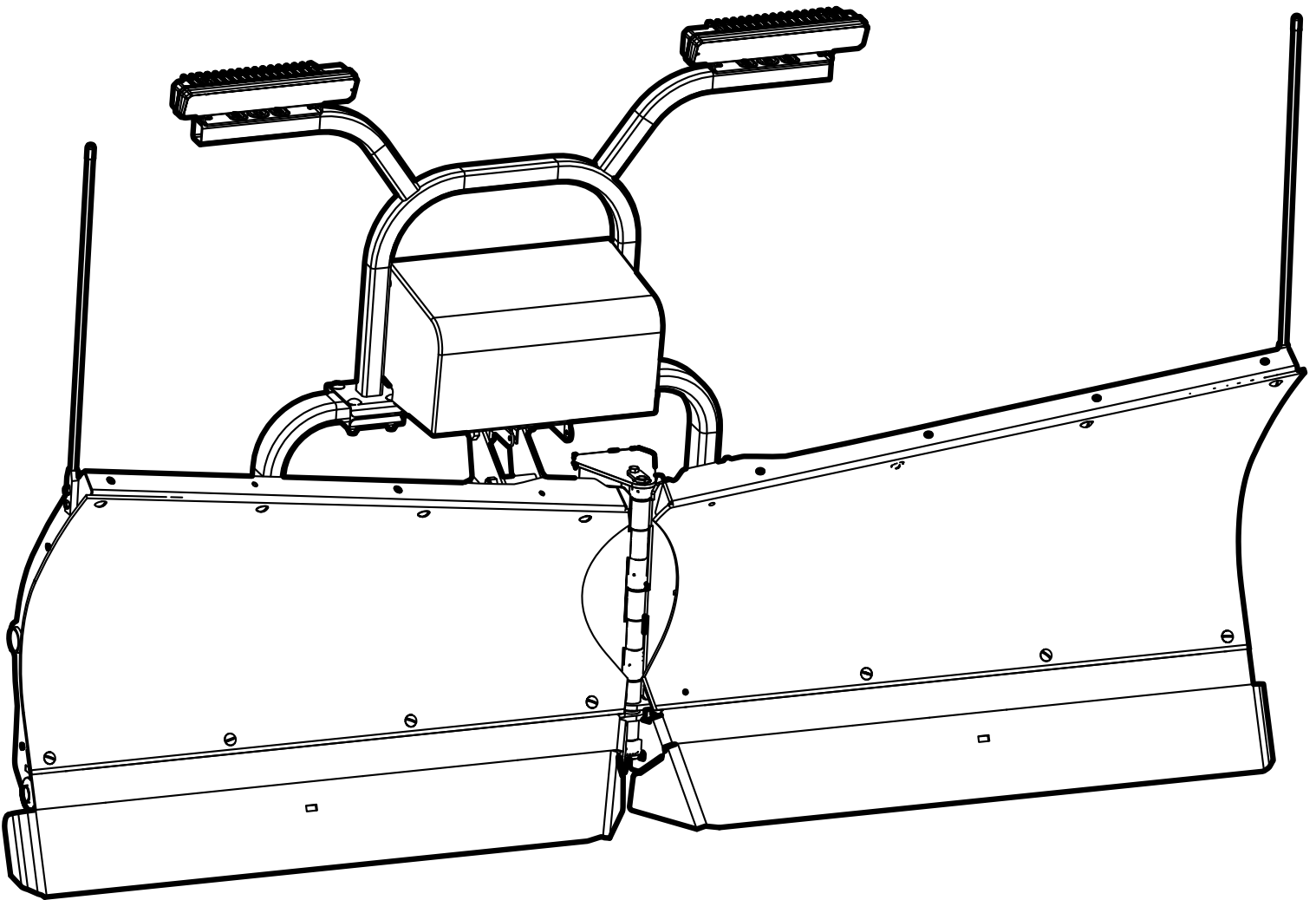




1/2 Ton V-Plow

Operator's Manual

25015476



Model: V-753

Hiniker Company
58766 240th Street
Mankato, MN 56001

(800) 433-5620
snowplows.hiniker.com

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TO THE PURCHASER

This product is designed to give years of dependable service when properly used and maintained.

Do not allow anyone to operate this equipment until they fully understand the contents of this manual.

It is the responsibility of owners who do not operate this equipment to ensure that the operator is properly instructed, understands the contents of this manual, and is mentally and physically capable of operating equipment. Contact your Hiniker dealer with questions about the manual or equipment.

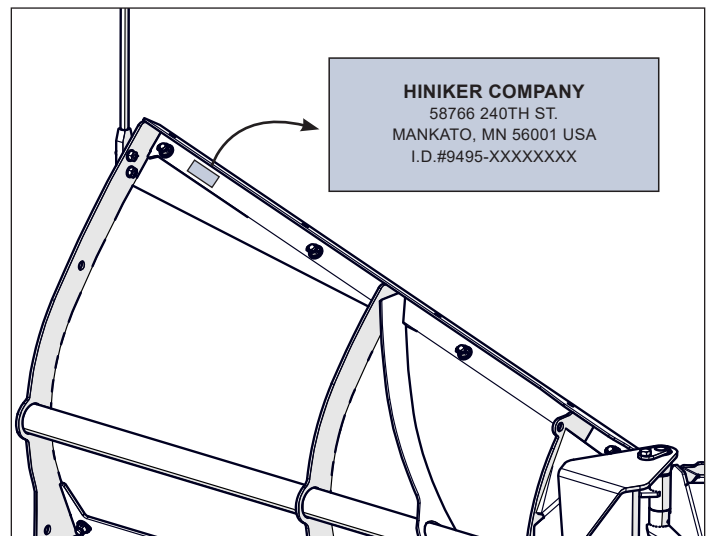
NOTICE



This manual has important information about safe and efficient operation. A manual is included with the equipment. For additional copies, contact your Hiniker dealer or visit www.snowplows.hiniker.com.

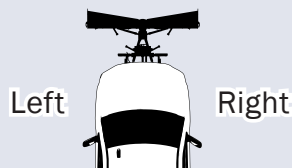
For maximum service and warranty benefits, check that your dealer has forwarded the Hiniker Delivery Report Form along with the plow identification number. This does not put you on any mailing list and the information is not available to others.

The plow identification number is located behind the left moldboard wing.



NOTICE

References to the left and right are as viewed from the cab of the truck.



Record the following information for reference when obtaining service parts. Always obtain original Hiniker service parts. Substitute parts may adversely affect equipment performance and warranty.

Purchase date: _____

Purchaser's name: _____

Dealer's name: _____

Machine ID # _____

SAFETY

Operator safety is a principle concern in equipment design and distribution. Many accidents occur because a few seconds of thought, and a more careful approach to handling, were ignored.



This is a safety alert symbol. It alerts an operator to information on personal safety. Always heed these safety symbols and instructions. Failure to observe safety guidelines may result in death or serious injury.

Throughout this manual, you will find the safety alert symbol, along with the signal word CAUTION, WARNING, or DANGER. These are defined as follows:



CAUTION: Indicates a hazard that may cause injury. Decals are yellow and black.



WARNING: Indicates a hazard that will cause serious injury and may result in death. Decals are orange and black.



DANGER: Indicates a hazard that will result in death. This is the most serious safety warning. Decals are red and white.



NOTICE: Contains information regarding installation, product operation, or relevant safety procedures. May indicate possible damage to property.

GENERAL SAFETY** WARNING**

This equipment can kill or injure an untrained or careless operator and bystanders. Read this manual thoroughly. Make sure the operator understands it and knows how to operate this equipment safely. If you sell this equipment, ensure the new owner acknowledges receipt of this manual.

 WARNING

Do not service or otherwise handle a plow in the raised position unless it is securely blocked against unexpectedly falling.

 WARNING

Moving parts can cut and crush. Keep hands, feet, hair, and clothing away from moving parts.

 WARNING

Falling parts may cause injury or death. Keep clear of any parts that may drop when removing bundling straps, wires or brackets. Support heavy sections with hoist or blocks before removing wires or straps.

 CAUTION

This plow is intended for plowing snow only. Plowing gravel, rocks, etc., or using the plow for any purpose other than plowing snow could result in harm to the operator or bystanders, or cause damage to the plow or vehicle, and will void the warranty.

 CAUTION

Do not attempt to handle or service this equipment, or direct others to, unless you know how to do it safely and have the proper tools for the job.

 CAUTION

Do not alter the equipment to the extent of compromising safety or performance.

 WARNING

Always wear a seat belt when plowing snow. Sudden contact with a hidden object can result in serious personal injury.

SAFETY

BEFORE OPERATION

CAUTION

Check for worn, damaged or cracked parts before starting use. Replace with genuine Hiniker parts.

CAUTION

Check all controls and operating functions of the machine in a safe area before starting to work.

WARNING

Skin injection hazard. Escaping hydraulic oil under pressure can penetrate the skin, causing serious injury. Do not use your hand to check for leaks. Use a piece of paper or cardboard to find suspected leaks. Tighten all connections before pressurizing hydraulic lines. If fluid is injected into the skin, seek medical attention immediately to prevent serious infection.

DURING OPERATION

CAUTION

Always wear seat belts when operating a motor vehicle.

CAUTION

Avoid hitting objects that will damage your plow or truck.

CAUTION

Ensure everyone is clear of the machine and away from blind spots before starting, actuating hydraulics or operating this equipment.

WARNING

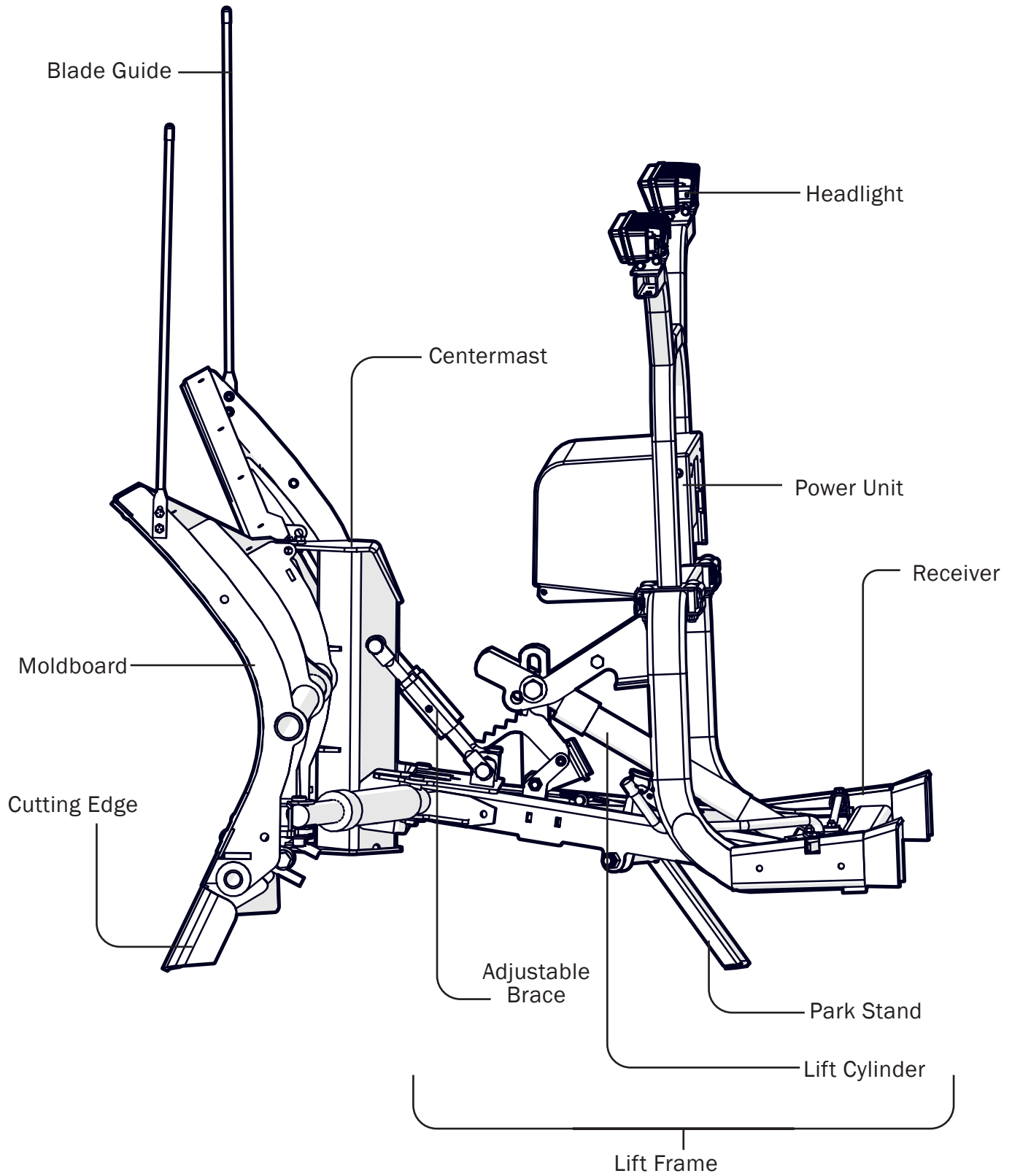
Do not exceed 10 mph while plowing. Hitting an obstruction while plowing at excessive speeds can cause serious personal injury and costly damage to equipment and property.

AFTER OPERATION

CAUTION

Set the brakes and stop the truck's engine before adjusting or servicing your plow.

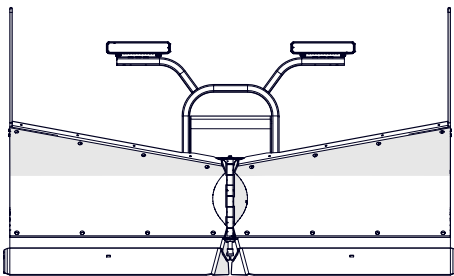
PARTS OF THE PLOW



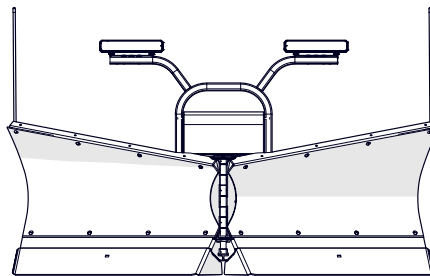
SPECIFICATIONS

MODEL		V-753
Blade width	7½'	
Blade height	23-31"	
Torison-trip springs	4	
Cutting width	Straight	92"
	Vee position	83"
	Scoop position	78"
Weight*	525 lb	
Recommended hydraulic fluid	Hiniker Cold Flow, MIL-H-5606 or equivalent	
Hydraulic fluid capacity	3 Quarts	
Motor solenoid	12 VDC Solenoid Continuous Duty, Sealed	
Wiring harness fuse	10 AMP	

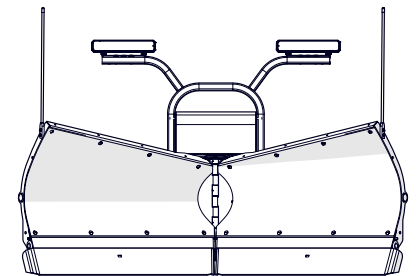
*Plow only
(does not include weight of mount kit or snow deflector)



Straight



Vee



Scoop

SETUP

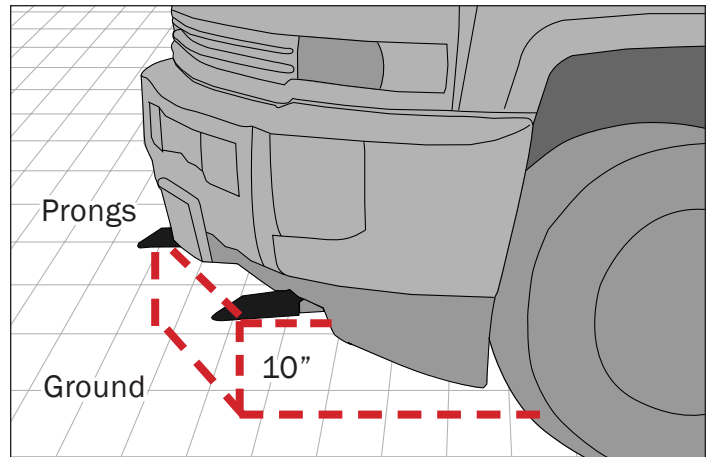
Attaching the Plow

- 1 Install the attachment prongs to the truck. The bottom edge of the prongs should be roughly 10 inches above the ground.

NOTICE

Use the instructions included with the mount kit to install the attachment prongs.

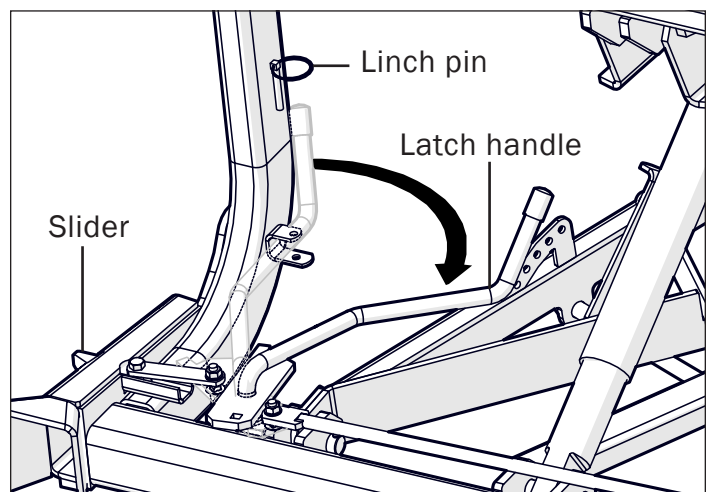
- 2 Engage the parking brake in the truck.
- 3 Position the plow in front of the truck so the attachment prongs are aligned and parallel with the receivers on the plow.



NOTICE

Receivers on the plow frame must be parallel to the ground before attaching the plow. Always follow the attaching and detaching instructions that are detailed on the rear side of the plow blade.

- 4 Remove the linch pin from the frame to release the latch handle.
- 5 Swing the latch handle open so the sliders fully disengage from the receivers.



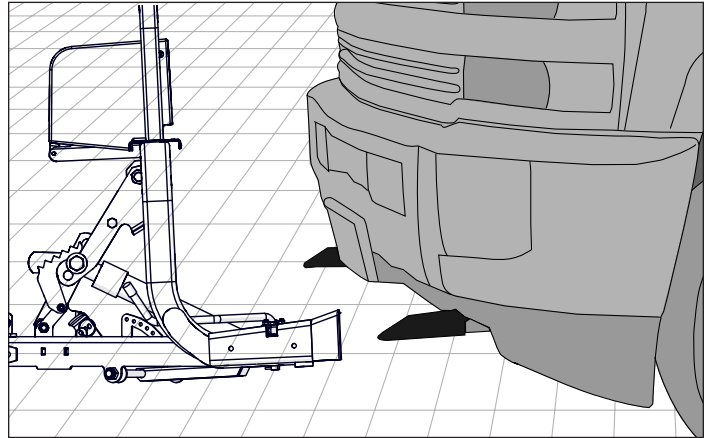
- 6 Slowly drive into the plow so the prongs enter the receivers.

⚠ CAUTION

Use the parking brake to prevent the truck from backing out.

NOTICE

(Optional) To help the plow slide on and off more easily, apply powdered graphite to the prongs.

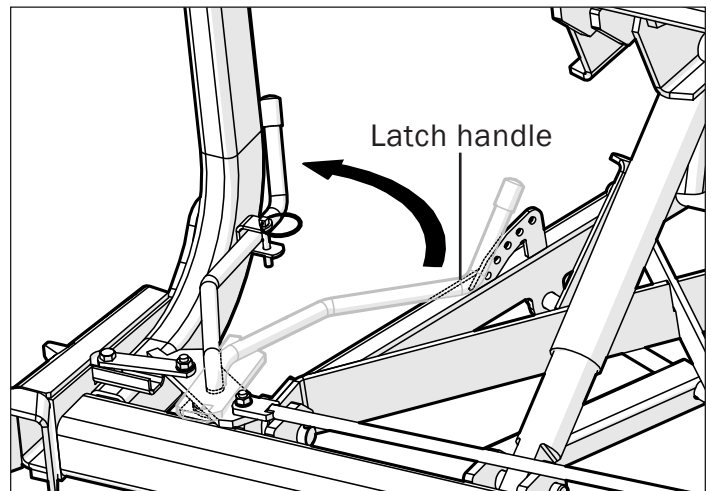


- 7 Pull the latch handle into the clevis on the lift frame to force the sliders through the notches in the receivers. Check that both the left and right sliders are fully engaged.

- 8 Pin the handle in the clevis with the linch pin.

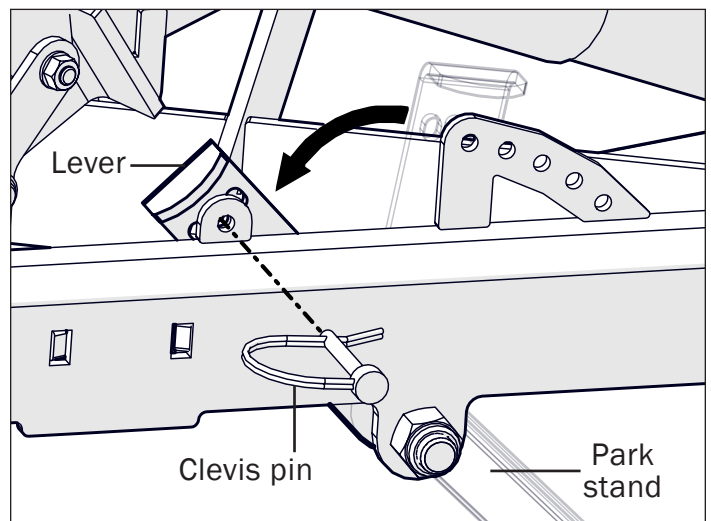
⚠ CAUTION

An unsecured plow may fall off the truck. Pin the latch handle to secure the plow.

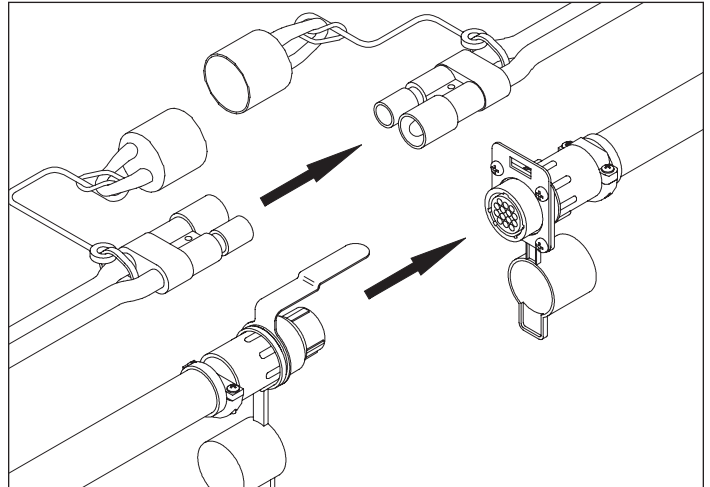


- 9 Raise the park stand to its highest position by removing the clevis pin from the lever and rotating the lever back.

- 10 Reinsert the clevis pin through the lever and frame to secure the park stand.



- 11** Plug in the two electrical connectors between the plow and the truck. The alignment tab on the 16-pin plug mates with the slot on the receptacle to ensure proper connection.
- 12** Check that the plow headlamps and turn signals are operational, and headlamps are aimed correctly.
- 13** Test the lift and angling cylinders in a safe area before using the plow.



NOTICE

To make alignment of the plow easier in the future, mark a point on the back of the LH headlamp, a point on the hood near the front of the truck and a point on the windshield that are in line when you are seated behind the steering wheel. Line up these three points when driving into the plow.

Leveling the Plow

After attaching a plow to a vehicle, the cutting edge should be adjusted so it's level with the ground. A leveled cutting edge allows for cleaner snow plowing.

TOOLS REQUIRED

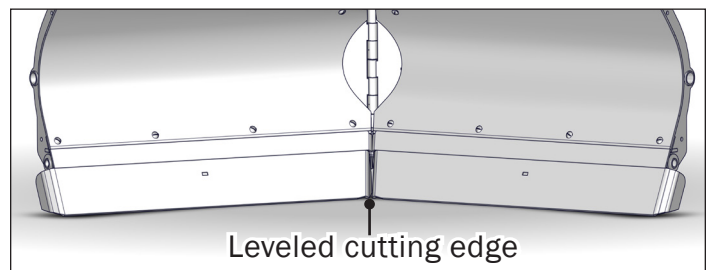
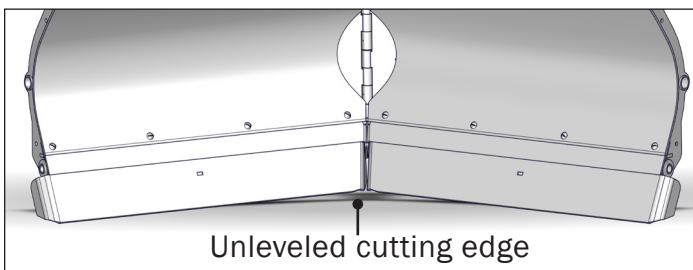
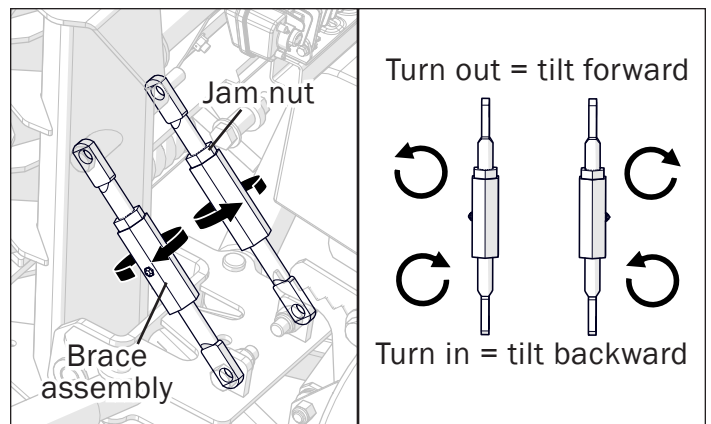
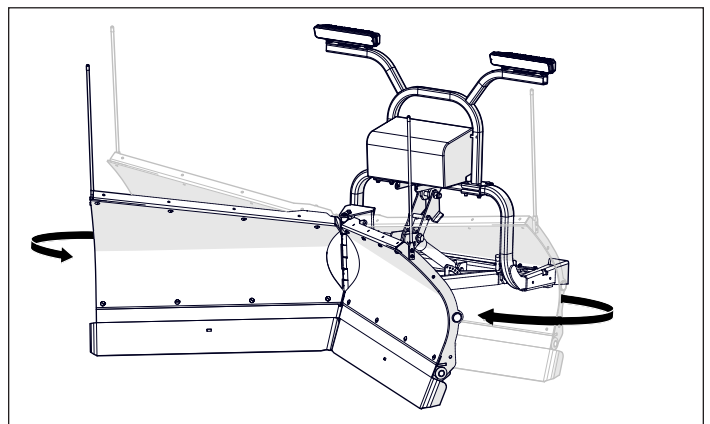
- 1-1/8" Open Wrench (x2)

PROCEDURE

NOTICE

See page 18 for instructions on using the joystick controller.

- 1 Power on the snowplow. Swing both wings forward into the scoop position.
- 2 Lower the plow to the ground to place the controller in Float Mode. The indicator light on the controller should turn orange.
- 3 Loosen the jam nuts on both adjustable brace assemblies with a 1-1/8" wrench.
- 4 Turn the bodies of the braces to tilt the centermast. Turning out will tilt the centermast forward; turning in will tilt the centermast back. Adjust until the plow cutting edge fully contacts the ground.
- 5 Secure the position of the cutting edge by tightening the jam nuts.



Headlamp Aiming Procedure

This procedure should be done with no load on the vehicle other than the driver, snowplow, and rear ballast weight.

PREPARATION

- Inspect the vehicle for proper tire inflation.
- Check for broken or sagging suspension components.
- Stabilize the suspension by rocking the vehicle sideways.
- Check the function of any automatic vehicle leveling systems.
- Review the vehicle manufacturer’s instructions about headlamp aiming preparation.

TOOLS REQUIRED

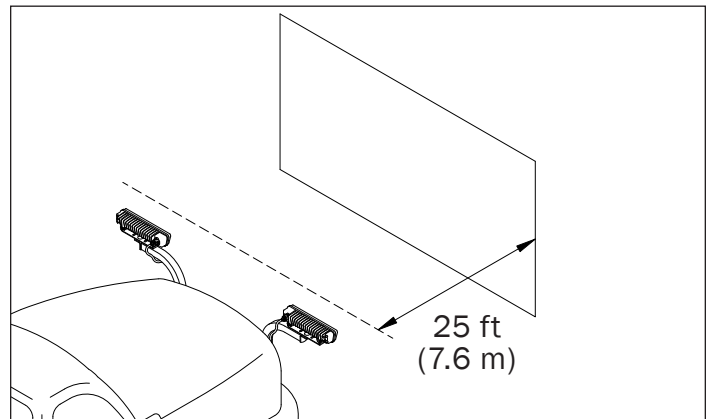
- Black tape
- Tool for torquing headlamp hardware

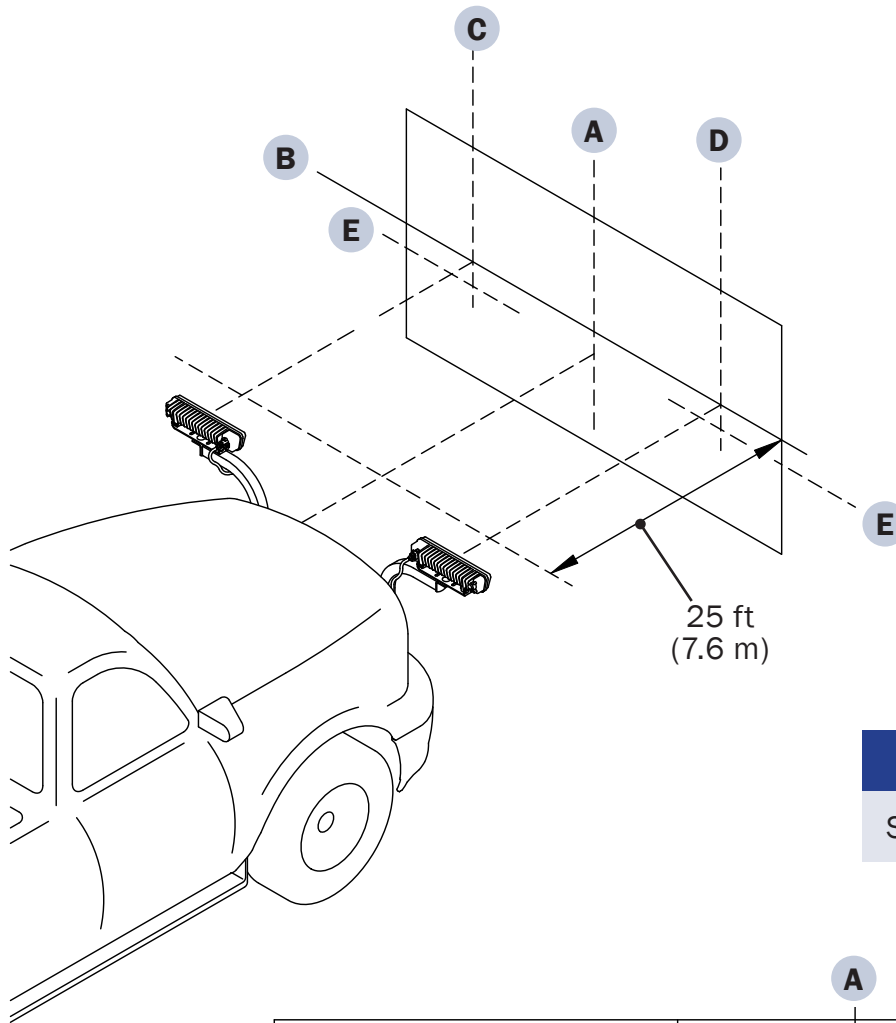
NOTICE

Headlamp aiming should be done while plow is in a raised position.

PROCEDURE

- 1** With the plow attached to the vehicle, park on a level surface that is 25 ft (7.6 m) from a flat, unobstructed, light-colored wall. Raise the plow to any height so it’s off the ground.
- 2** Wipe the plow lamp lenses clean and check for proper switching and function. Make sure the light switch on the joystick controller is in the PLOW position.



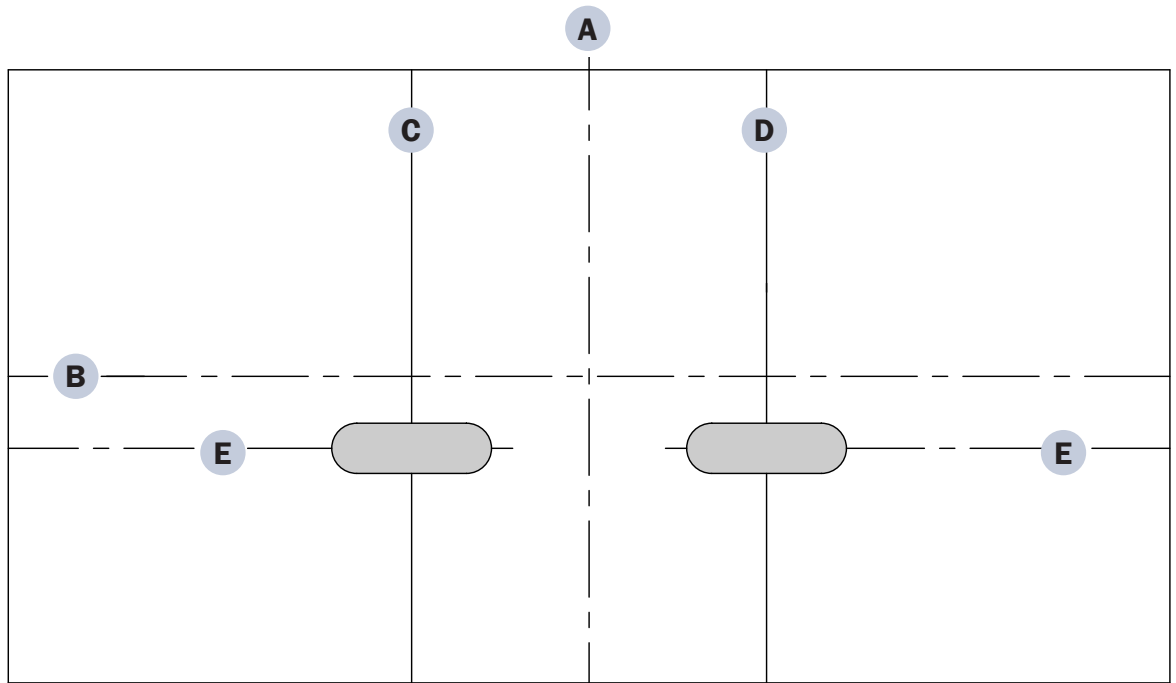


3 Using black tape, mark the following points on the wall:

- A** Centerline of vehicle.
- B** Height of Lamp Centers.
- C** LH Headlight Center (see Table 1 for dimensions).
- D** RH Headlight Center (see Table 1 for dimensions).
- E** Vertical Aim Down Height (see Table 2 for dimensions).

NOTICE

See page 15 for dimension tables.



Shaded areas represent the high-intensity zone of properly-aimed high beams.

TABLE 1: Headlight Center Dimensions

C	D	Type	Dimension
		LED	19 in (48 cm)
		Halogen	22 in (56 cm)

TABLE 2: Aim Down Dimensions

E	Height from Ground	Dimension
	22 to 36 in (56 to 90 cm)	0
	36 to 48 in (90 to 120 cm)	2 in (5 cm)
	48 to 54 in (120 to 140 cm)	4 in (6.4 cm)

- 4** Turn on the plow HIGH beams to light the wall.
- 5** Center the LH light beam on the intersection of lines **C** and **E**.
- 6** Center the RH light beam on the intersection of lines **D** and **E**.
- 7** Tighten the headlamp hardware according to Table 3:

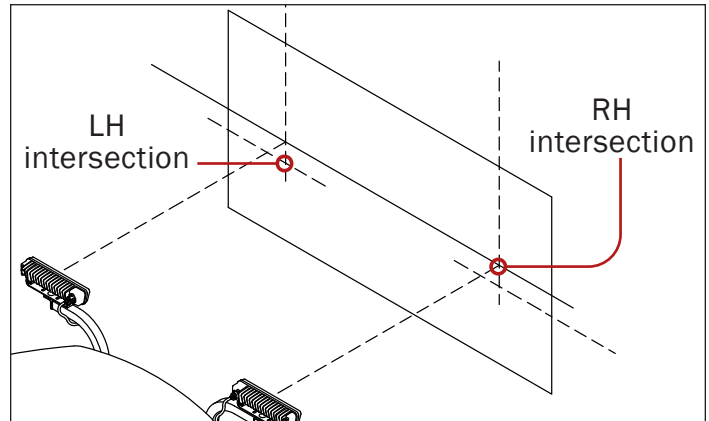
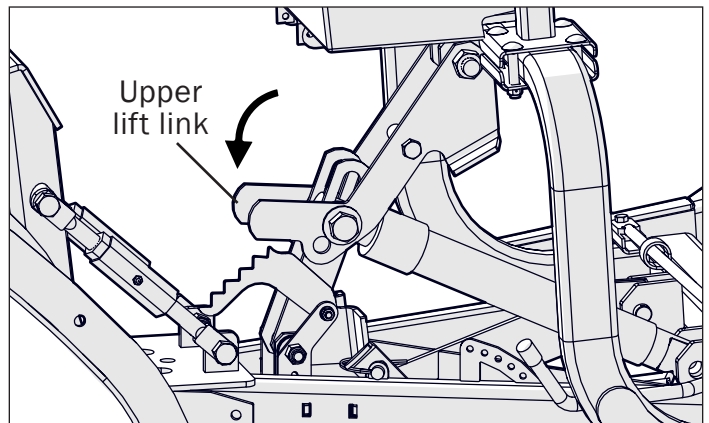
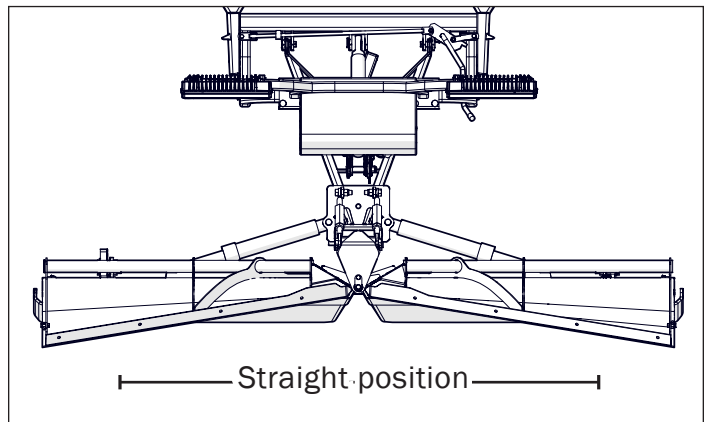


TABLE 3: HARDWARE TORQUE

Type	Size	Ft-lb	N-m
LED	1/2" (Bracket to bar)	58-82	79-112
	1/4" (Light to bracket)	6-7	8-10
Halogen	1/2" (Bracket to bar)	58-82	79-112
	3/8" (Light to bracket)	29-41	39-56

Removing the plow

- 1** Park on a level surface. Adjust the plow wings so the blade is straight across the truck.
- 2** Lower the plow to the ground to place the controller in Float Mode. The indicator light on the controller should turn orange.
- 3** Push down on the upper lift links to retract the lift cylinder. This positions the receivers correctly for reattaching the plow.



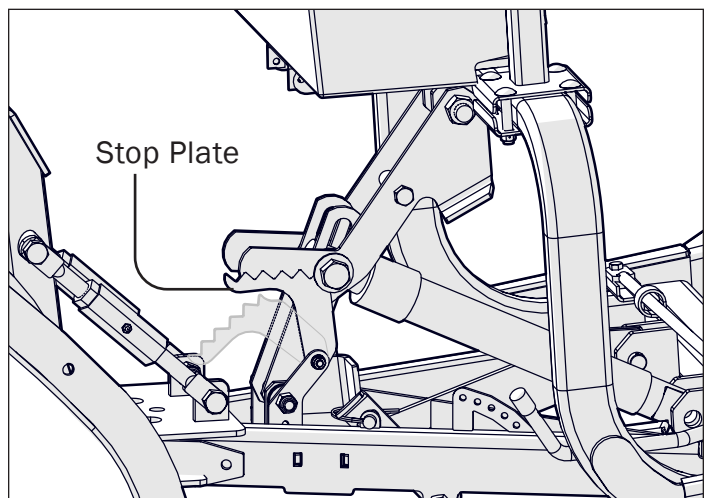
WARNING

Falling parts can cause personal injury or damage to plow components. Always retract the lift cylinder before removing the plow. Failure to retract the lift cylinder will allow the lift frame to fall forward.

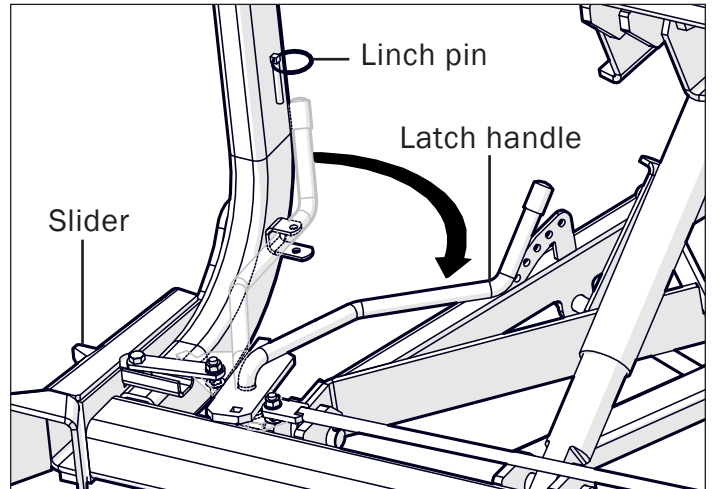
NOTICE

The plow must be in Float Mode to manually retract the lift cylinder. If the cylinder cannot be retracted with the plow in Float Mode, loosen the packing nut on the lift cylinder up to 1½ turns.

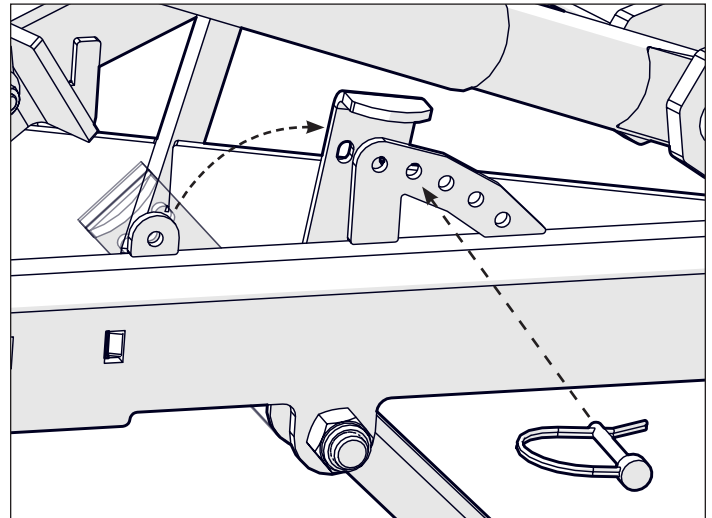
- 4** Gently push back on the lift frame to tilt the frame back.
- 5** Rotate the stop plate up until it contacts the spacer.
- 6** Release the lift frame so the weight of the lift frame locks the stop plate.



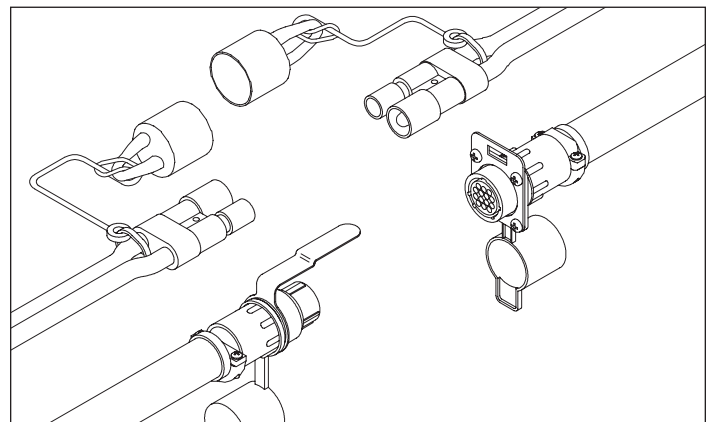
- 7** Remove the linch pin from the frame to release the latch handle.
- 8** Swing the latch handle open so the sliders fully disengage from the receivers.



- 9** Lower the parking stand to the ground by removing the clevis pin and swinging the lever down.
- 10** Reinstall the pin through the hole in the lever to hold the stand in place.



- 11** Place dust caps on connectors to prevent contamination.
- 12** Back inside the truck, set the headlight switch on the joystick controller to the truck position to return power to the truck headlights.
- 13** Slowly back out from the plow.
- 14** If the snowplow won't be used for an extended period, the prong weldment can be removed from the truck. To remove, unscrew the hex bolts that secure the prongs to the truck mount frame.

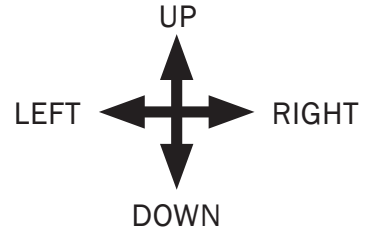


JOYSTICK CONTROLLER

The Joystick Controller controls the snowplow position, power, and headlights.

JOYSTICK

UP lowers the plow. DOWN raises the plow. Press and release the joystick when the plow reaches the desired height. Press LEFT or RIGHT to angle the wings.



Fully lower the plow to the ground to place the plow in FLOAT mode. In FLOAT mode, the blade will float along the contour of the ground while plowing snow and the indicator light turns orange. Raise the plow to disable FLOAT mode; the indicator light will turn green.

SCOOP

Press and hold to move both wings forward into the scoop position.

FACEPLATE

Describes joystick controls. The faceplate can be flipped for inverted controls.

LED INDICATOR

Green = Plow powered ON
Orange = FLOAT mode active

ON/OFF SWITCH

The snowplow power switch. Set the switch to ON to supply power to the plow.

VEE

Press and hold to retract both wings into the Vee position.

PLOW LIGHTS SWITCH

Headlight control switch. Move the switch to change between the truck headlights (TRUCK) to the snowplow headlights (PLOW).

To set the wings in a straight position, start with the wings in the Vee position. Push the Scoop button to move the wings forward and release when the wings are at the desired position.

NOTICE

When removing the plow, make sure to set the Plow Lights Switch to TRUCK and disconnect the controller from power.

NOTICE

The controls for UP/DOWN can be inverted so that UP raises the plow and DOWN lowers the plow. See page 22 for instructions.

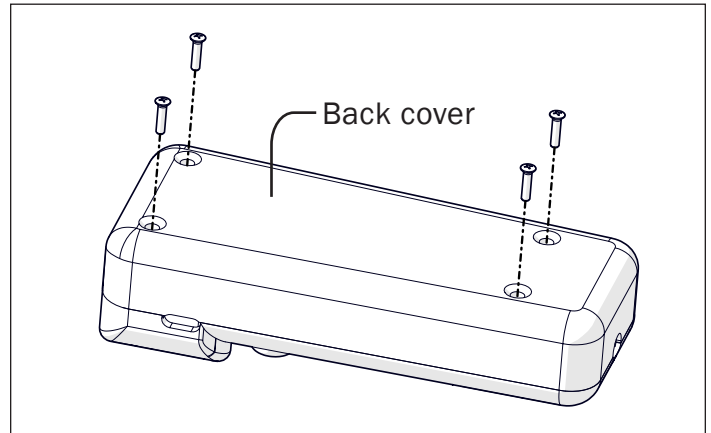
Controller Configuration

TOOLS REQUIRED

- #2 Phillips Screwdriver

REMOVING THE BACK COVER

- 1** Flip the controller so it's face down.
- 2** Remove the four screws from the back of the controller with a #2 Phillips screwdriver.
- 3** Lift away the cover and set aside.
- 4** To reinstall, realign the screw holes in the case and cover. Do not force the pieces together; check for proper alignment. Make sure that no cables are pinched between the cover. Reinstall the screws and hand-tighten with a screwdriver.

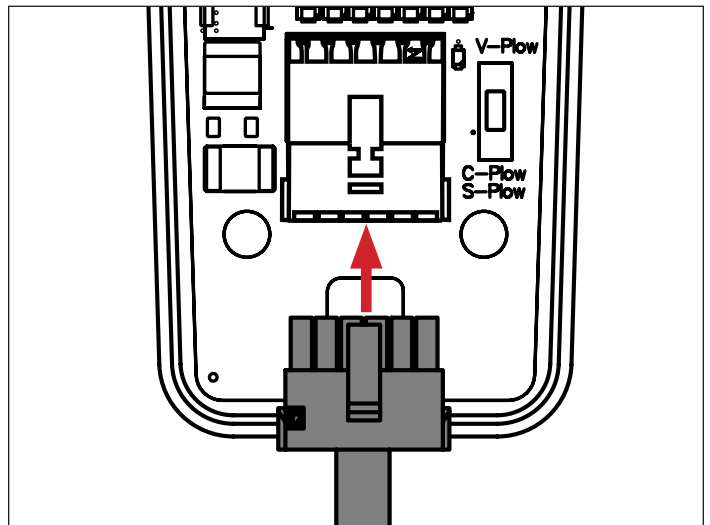


NOTICE

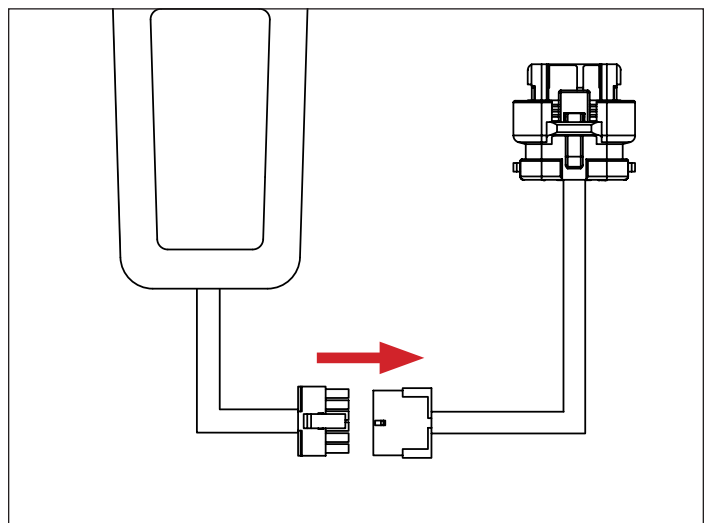
Hand-tighten only. Do not over-tighten. Too much force may damage the controller case.

ATTACHING THE CONTROLLER HARNESS

- 1** Remove the back cover.
- 2** Take the end of the harness that has a white retainer clip. Fully insert the plug into the receptacle on the end of the controller.

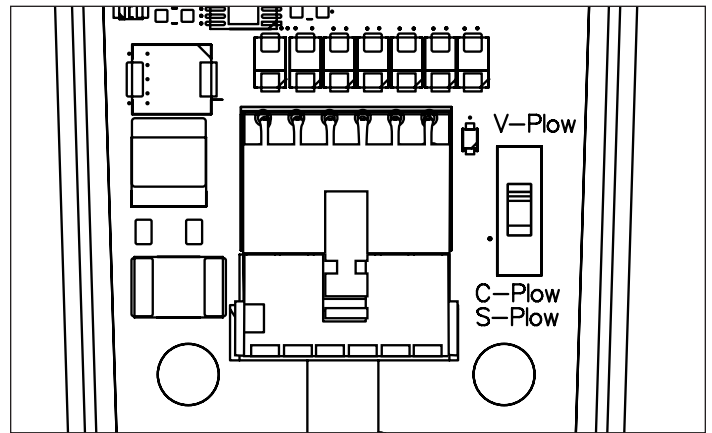


- 3** Reinstall the back cover and screws.
- 4** Plug the other end of the harness into the controller harness or adapter.



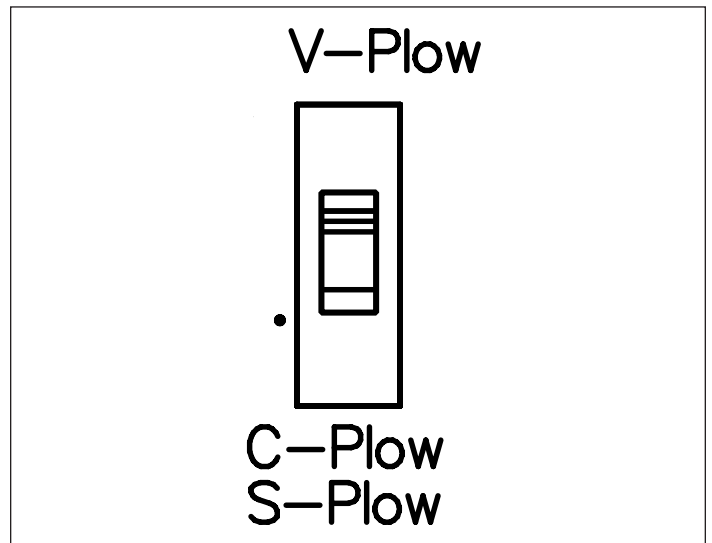
PLOW CONFIGURATION

- 1** Remove the back cover.
- 2** Locate the Plow Selection switch on the PCB board, next to the 12-pin connector. This switch toggles the operation mode of the controller to match the snowplow.



- 3** Slide the Plow Selection Switch toward the desired plow setting, either V-Plow or C-Plow/S-Plow.

Plow Type	Position
Torsion V	Up
Compression V	
Steel Straight	Down
C	
Scoop	
Poly Straight	
Mid-size Straight	



- 4** Test the controller to verify that the plow raises and lowers as desired. By default, pressing the joystick forward lowers the plow, and pressing back raises the plow. Read the next section for instructions on inverting these controls.

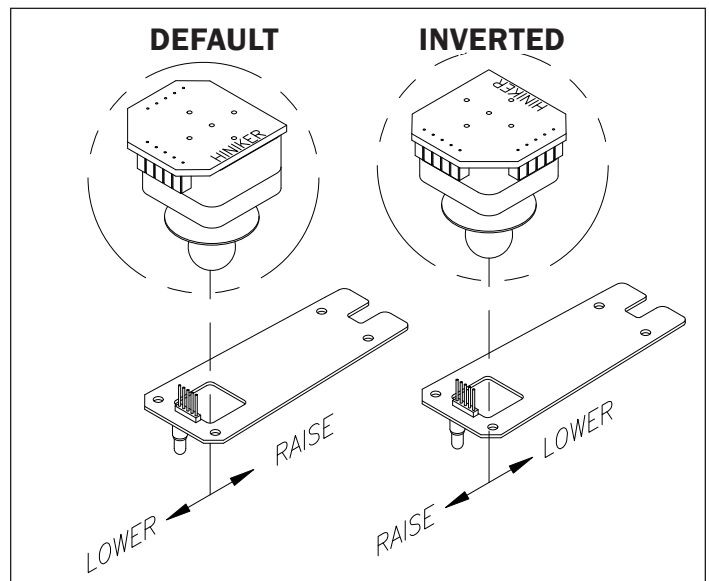
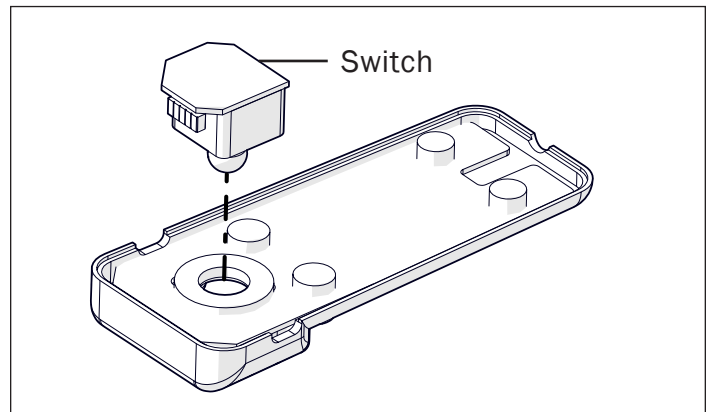
INVERTING CONTROLS

- 1 Remove the back cover.
- 2 Grip the side of the joystick switch and gently pull up on the switch until it comes loose.

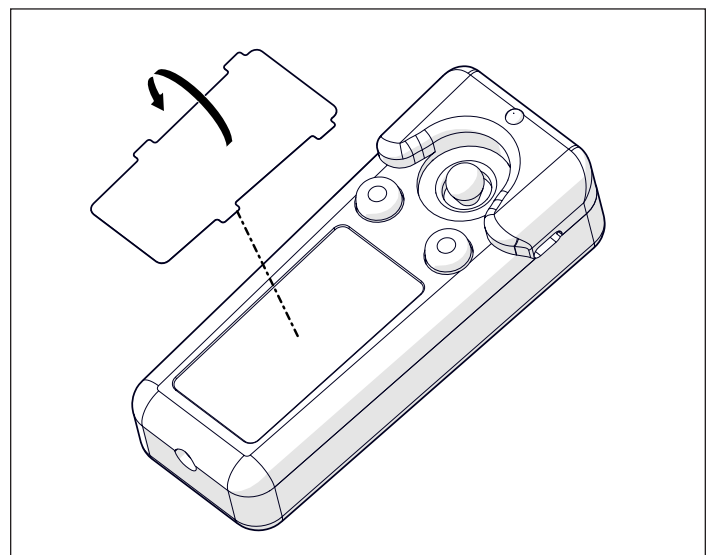
NOTICE

Handle with care. Excessive force may damage the switch or other components.

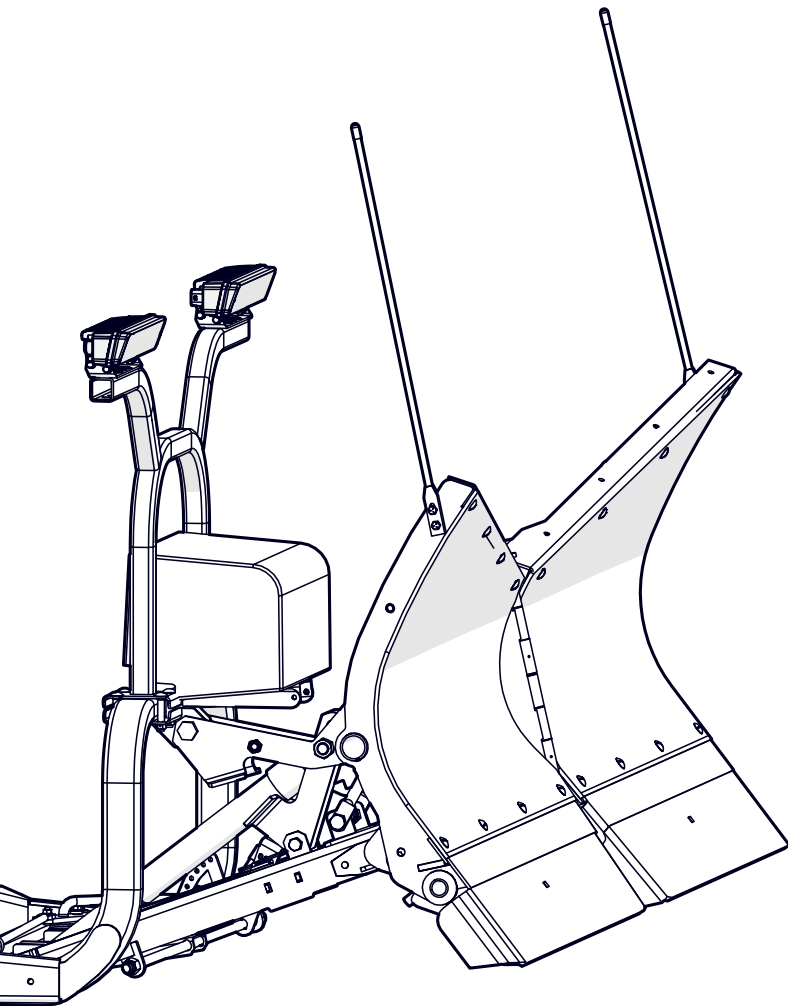
- 3 Rotate the switch 90° to change the position of the contacts. Reinsert the switch into the controller, ensuring that the pins are properly inserted into the contacts and the switch is fully seated.



- 4 Reinstall the cover and screws.
- 5 Flip to the front of the controller. Carefully pry up on the faceplate using a fingernail or screwdriver until the faceplate pops out. Flip the faceplate so the desired side faces up and matches raise/lower controls.
- 6 Reinsert one of the faceplate tabs. Curl the faceplate slightly, then snap the remaining tabs into place.



OPERATION



Transporting the Plow

Raise the blade to a position where it will not interfere with the headlights before driving. Transport the plow with power to the joystick control box switched off to prevent accidental lowering of the plow. Never adjust the wing height or angle while transporting the plow.

The extra weight of the snowplow on the truck will impair handling response and increase braking distance. The plow will also block some airflow to the vehicle's cooling system, possibly causing the vehicle to overheat.

Do not to exceed speeds above 45 mph with the plow attached. Remove the plow in warm temperature or when driving long distances.

WARNING

Always wear a seat belt when plowing snow. Sudden contact with a hidden object can result in serious personal injury.

Using the Plow

PREPARATION

- Before snowfall, inspect areas to be plowed for potential hazards.
- Mark obstructions with stakes that can be seen when snow covers the ground.
- Identify any emergency equipment and utility outlets that may need to be cleared in the event of a storm.
- Create a plan for clearing snow from tight or enclosed areas.
- Locate sites for stacking snow.
- Level the plow blade to ensure best cleanup of snow and to obtain even wear of the cutting edges.
- When using skid shoes on the back of the moldboard, adjust the skids according to the surface to be plowed. The bottom of the skids should be about 1/2" below the cutting edge when plowing gravel roads or lots. Skids should be even with the cutting edge on hard surfaces such as asphalt or concrete.



WARNING

Do not exceed 10 mph while plowing. Hitting an obstruction while plowing at excessive speeds can cause serious personal injury and costly damage to equipment and property.

BEST PRACTICES

Use the lowest truck gear when plowing snow to transfer maximum power to the cutting edge.

When plowing very deep snow, it may be necessary to raise the blade and shear off layers of snow until a working area is cleared. Work small areas in multiple passes to push snow to outer edges. Generally, 6" snow can be plowed with the entire blade width; 9" snow with 3/4 of the blade width; 12" snow with 1/2 of the blade width. Local conditions will determine how much work can be done before stalling or getting stuck.

PLOWING SNOW

Always plow snow as it is accumulating. Wet snow may weigh 12 lb per cubic foot. The weight of snow pushed by your plow may increase to several tons. Allowing snow depth to grow to unmanageable levels can make snow removal difficult and cause excessive wear on equipment.

Clear areas in front of buildings first.

Backdrag snow away from buildings by driving to the building with the plow raised, then dropping the blade to pull snow away.

Push snow to outer edges of the lot after snow is away from buildings. Begin clearing large lots by putting the plow in the V-position and creating a single path. Roll snow to the outer edges of the lot by taking successive passes with the blade angled, or put the plow in the scoop position and push snow to the end of the lot. Break up hard snowbanks with the plow in the V-position.

PARKING

When parking for extended periods with the plow attached to the truck: Lower the plow to the ground. Place the on/off switch in the “off” position to prevent the plow from drawing power from the truck battery.

NOTICE

The plow may draw electrical current from the truck battery if the plow control switch is left on; possibly resulting in insufficient charge to start the truck

MAINTENANCE

Dependable snowplow operation is the result of good maintenance practices. Develop a maintenance schedule and inspect your plow frequently to ensure all parts work smoothly.

⚠ WARNING

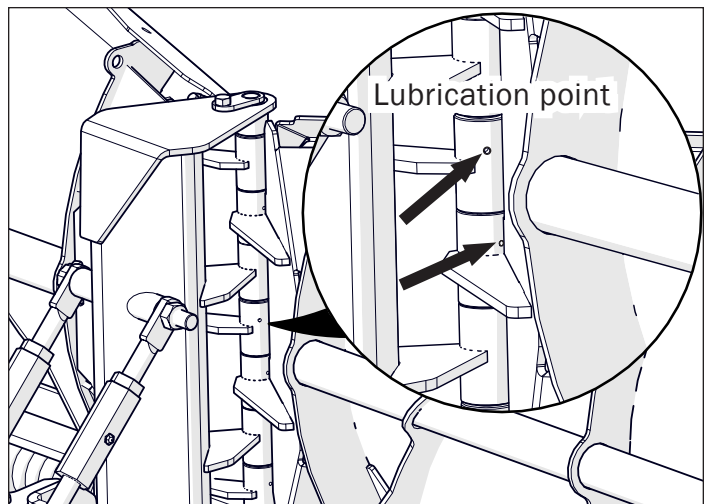
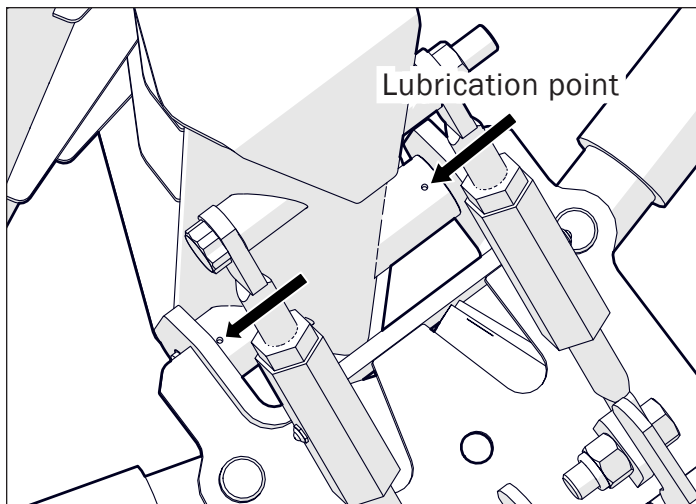
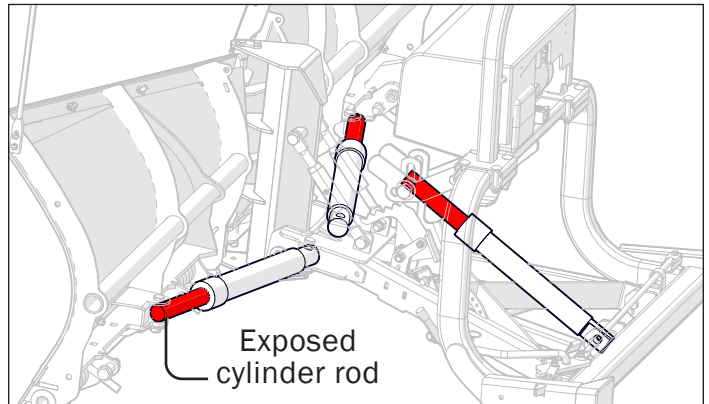
Do not service or otherwise handle a plow in the raised position unless it is securely blocked against unexpectedly falling.

⚠ WARNING

When servicing the plow with the wings extended, block the wings to prevent unexpected wing movement due to accidental loss of hydraulic pressure or cylinder removal.

General

- Wash salt and dirt off the plow before storage.
- Touch-up scratches or chips in the paint.
- **Do not power wash hydraulic cylinders.** High pressure can damage seals and cause cylinder failure.
- Apply a light coating of grease to extended cylinder rods to prevent corrosion.
- Grease the centermast before and after summer storage and at least once midseason. Using a rubber-nipple grease gun, grease the lubrication points on both sides of the centermast. Use a couple pumps per hole. Use any NLGI #2 rated grease (e.g. Mobil XHP 222 or equivalent).



Mechanical Components

Inspect all hardware before operating a new or stored snowplow. Verify the torque on all bolts and nuts match recommended specifications. Loose bolts can cause hole elongation and part failure, resulting in equipment breakdown and dangerous operating conditions.

Check all hardware periodically during the plowing season and keep tightened to specified torques.

When replacing hardware:

- Replace worn bolts with grade 5 bolts.
- Replace worn lock nuts with equivalent type B or F lock nuts.
 - Type B lock nuts are plain hex. Type F lock nuts are flanged hex.

Grade 5 Type B & F Lock Nut Torque Values

Size	Ft-lb	N-m
5/16"	13-18	17-25
3/8"	23-33	31-44
1/2"	58-82	79-112
5/8"	117-165	158-223

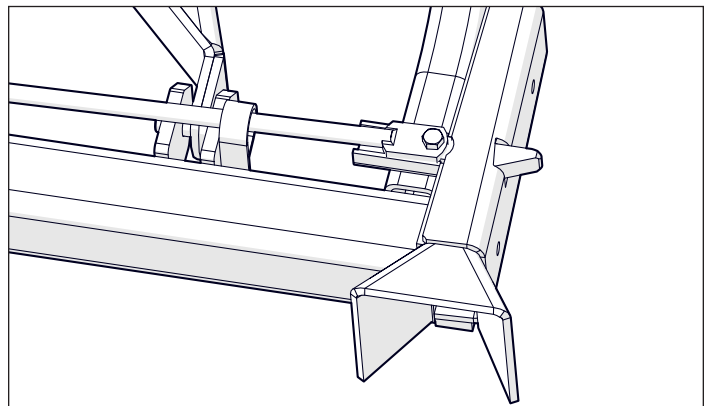
Grade 5 Bolt Torque Values*

Size	Ft-lb	N-m
1/4"	8-12	11-16
3/8"	29-41	39-56
1/2"	73-103	99-140
5/8"	146-206	158-223

*applications without lock nuts

Inspect the cutting edges for wear before every plowing season and frequently throughout the season. Replace the cutting edges before wear reaches the wing or mast sections to avoid damaging those components.

The 5/16" hex bolts in the latch sliders are retained with anaerobic lockthread. If necessary to change these bolts, purchase bolts with threadlocker from your Hiniker dealer or apply a commercially available threadlock (i.e. Loctite 242) to standard 5/16-18 x 3/4 grade 5 hex bolts.

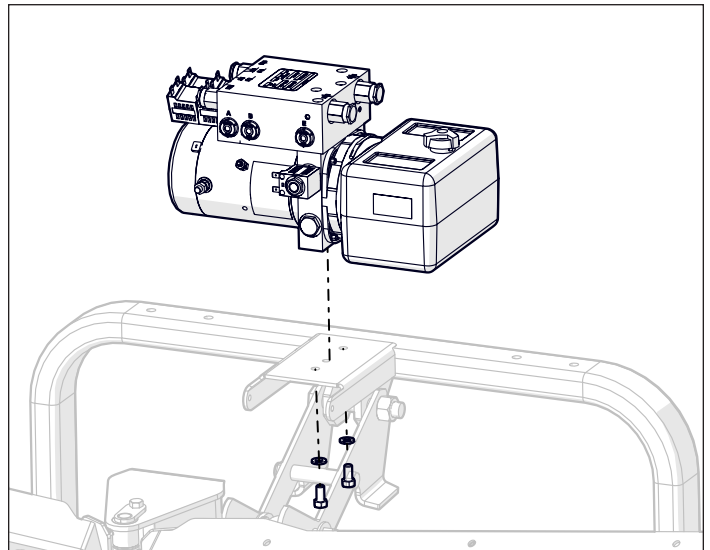


Hydraulic System

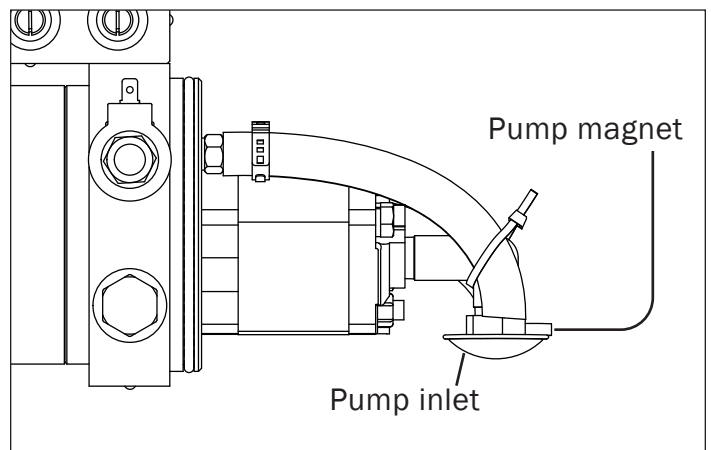
The majority of snowplow operational problems are caused by bad oil in the hydraulic system. Hydraulic oil should be changed every year for best performance. Use *Hiniker Cold Flow Hydraulic Oil* or equivalent that meets military specification 5606.

CHANGING HYDRAULIC OIL

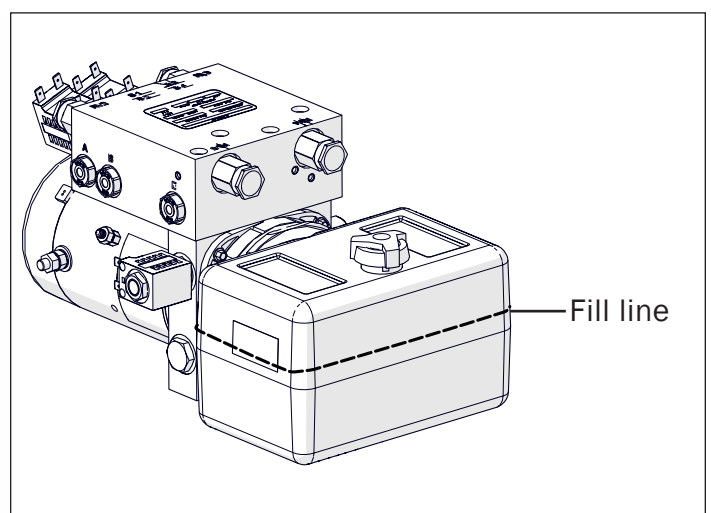
- 1** Change hydraulic oil with the plow fully lowered to the ground and with the wings in the Vee position.
- 2** Disconnect three electrical wiring harness from the power unit and uncouple five hydraulic lines.
- 3** Unbolt the power unit from the plow and remove it to a clean working area that can capture spilled oil. Carefully unbolt the oil reservoir from the power unit and discard old oil.



- 4** Clean the suction filter at the pump inlet.
- 5** Wipe any metal shavings off the magnet on the pump.
- 6** Reattach the reservoir to the power unit. Reinstall the power unit to the plow before adding new hydraulic oil.



- 7** Unscrew the cap on the top of the reservoir. Pour hydraulic oil into the reservoir up to the fill level mark. Replace the reservoir cap.
- 8** Raise and lower the plow, then cycle the wings to purge any air trapped in the system.
- 9** Retract the plow wings and lower the plow to the ground. Check the oil level and add oil if necessary. Do not overfill the reservoir.



Electrical Maintenance

Periodically check all electrical connections for proper fit. If present, remove any contamination.

Always place dust caps on connectors when not in use to prevent contamination. This is especially important when storing the plow for long periods. Use a light coat of dielectric grease to reduce corrosion of the contacts and make connection easier.

Before each season, check the vehicle battery and electrical system for proper function. A weak battery, dirty terminals, or faulty charging system may cause improper operation of the controller.

Before every plowing season and throughout the season, check the plow headlamps for proper function and aim.

TROUBLESHOOTING

General

1. Check to see that the motor is wired correctly with tight connections, for the proper voltage.
2. Check reservoir oil level.
3. Check that wiring harness relay connections are wired correctly
4. Check for external leakage at cylinders, hoses and power unit.

Problem	Possible Cause	Remedy
1. Plow does not attach to vehicle	a. Receivers are tipped forward	a. Fully collapse the lift cylinder and rotate stop plate up to brace the lift frame before removing plow from truck
	b. Prongs recoil out of receivers when attaching	b. Slowly drive into receivers and set parking brake
	c. Park stand pinned too low	c. Lower receivers by adjusting park stand.
2. Pump motor does not run	a. Defective solenoid	a. Replace solenoid
	b. Defective pump motor	b. Replace brushes or motor
	c. Weak or defective battery	c. Charge or replace battery
	d. Bad electrical connections	d. Clean and tighten connections
	e. Defective joystick control box	e. Replace control box
	f. Blown 10A fuse supplying power to control box	f. Replace fuse
3. Pump runs with joystick in neutral position	a. Defective solenoid	a. Replace solenoid
	b. Defective joystick control box	b. Replace control box
	c. Wiring short	c. Locate and repair
4. Plow will not lower	a. Reversed wiring on valve block	a. Correct wiring
	b. Defective joystick control box	b. Replace control box
	c. Defective lift return valve or coil	c. Replace valve or coil
5. Plow will not raise or raises slowly, motor runs	a. Weak or defective truck battery	a. Charge or replace battery
	b. Oil level low	b. Add oil (do not overfill)
	c. Hydraulic connection leak	c. Tighten or redo connection
	d. Lift valve not opening properly	d. Replace valve
6. Plow does not remain raised with joystick in "neutral" position	a. Leakage through pump check valve	a. Clean valve, or replace
	b. Leakage through solenoid lowering valve	b. Clean valve, or replace
	c. Internal leakage in cylinder	c. Repack or replace cylinder
	d. Defective joystick control box.	d. Replace control box

Problem	Possible Cause	Remedy
7. Angling cylinders relieve too easily or too difficultly while plowing	a. Relief pressure set too low or too high	a. Have relief pressure adjusted by Hiniker snowplow dealer
8. Oil leaks from lift cylinder.	a. Loose packing	a. Tighten packing 1/8 turn
	b. Defective cylinder	b. Repack or replace cylinder
9. Battery goes dead with power to the control box on and joystick in neutral position.	a. Short in wiring	a. Locate and repair
	b. Short in valve coil(s)	b. Replace coil(s)
	c. Defective joystick control box	c. Replace control box
10. Battery goes dead with power to the control box off.	a. Short in wiring	a. Locate and repair
11. Plow lights are dim	a. Bad connection(s)	a. Repair connection
	b. Lights not properly grounded	b. Properly ground
	c. Lights not properly powered	c. Wrong headlight adapter
12. Plow does not clean-up snow from low areas	a. Joystick controller in neutral	a. Controller should be in the down position (float)
13. In extremely cold temperatures, the oil in the hydraulic system is thickened, causing slow functioning of the plow	a. Cold temperatures	a. As the system warms, the oil will thin out and function normally.
		b. Select Hiniker Cold Flow Hydraulic Oil for plowing in extremely cold temperatures.
14. Pump chatters when raising plow	a. Hydraulic oil low	a. Add hydraulic oil until chattering stops. Do not overfill.
15. Oil running out of cap on hydraulic reservoir	a. Plowing on steeply inclined terrain	a. Avoid excessive inclines or change direction of plowing
	b. Too much oil	b. Remove excess oil
16. Vehicle overheats with the plow on	a. Vehicle coolant level is too low	a. Add coolant
	b. Ice and snow buildup in grill	b. Remove ice and snow
	c. Insufficient airflow to engine compartment	c. Transport plow at lower speeds
17. Plow lights do not operate with plow attached	a. The joystick controller's light switch is in the "truck" position	a. Move switch to "plow" position
	b. Defective relay	b. Replace relay
	c. Faulty light switch on joystick controller	c. Replace controller
	d. Blown 10A fuse on vehicle accessory feed	d. Replace 10A fuse
18. Truck headlights do not operate properly with plow removed	a. The joystick controller's light switch is in the "plow" position	a. Move switch to "truck" position
	b. Defective relay	b. Replace relay
	c. Defective vehicle harness	c. Replace vehicle harness

HINIKER WARRANTY

HINIKER SNOWPLOW LIMITED WARRANTY

The only warranty Hiniker Company (Hiniker) gives and the only warranty that any Hiniker dealer is authorized to give on behalf of Hiniker is as follows: **(NO EMPLOYEE OR REPRESENTATIVE IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY.)**

Hiniker warrants to the original purchaser of a Hiniker snowplow that Hiniker will repair or replace any defects in material and workmanship that occur within two years from date of retail delivery except the following items: Hiniker warrants that it will repair or replace any defects in materials or workmanship with respect to the paint finish, any accessories, and service parts and components for a period of one year from date of retail delivery.

Hiniker's obligation and liability under this warranty is expressly limited to repairing or replacing, at Hiniker's option, at an authorized Hiniker dealer location, the defective parts at no charge to the original purchaser. **HINIKER MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED AND MAKES NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE.**

HINIKER'S OBLIGATION UNDER THIS WARRANTY SHALL NOT INCLUDE ANY TRANSPORTATION CHARGES TO OR FROM THE AUTHORIZED HINIKER DEALER LOCATION OR ANY LIABILITY FOR INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGE OR DAMAGES OF ANY KIND FOR LOST PROFITS OR DELAY. If requested by Hiniker, products or parts for which a warranty claim is made are to be returned freight prepaid to our factory. Any improper use, operation beyond rated capacity, substitution of parts not approved by Hiniker Company, or any alteration or repair in such manner as in our judgment affects the product materially and adversely shall void this warranty.

Hiniker reserves the right to make improvements or changes to any of its products without notice. Such improvements or changes shall not trigger any obligation by Hiniker to update, modify or change any products previously sold by Hiniker.

HINIKER does not warrant the following:

1. Used products.
2. Any product that has been repaired, modified or altered in a way not approved by Hiniker Company.
3. Depreciation or damage caused by normal wear, lack of reasonable and proper maintenance, failure to follow Operators Manual Instructions, misuse, lack of proper protection during storage, or accident.
4. Parts replacement and service necessitated by normal wear or maintenance including, but not limited to, cutting edges, hoses, snowplow skid shoes, blade marker guides and hardware.
5. Paint finish damage caused by normal wear.

Hiniker does not assume any liability for any damage to a motor vehicle resulting from the attachment or use of a Hiniker snowplow. Compliance with applicable motor vehicle regulations is the responsibility of the installer. Attachment of a Hiniker snowplow to a motor vehicle is at the risk of the purchaser.

It is the responsibility of the original snowplow purchaser to verify the original date of purchase.

A DELIVERY REPORT FORM must be filled out and received by Hiniker with 30 days of retail delivery at the address below to initiate the warranty coverage.

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