



# HTS™ Snowplow

## 69500, 69525, 69525-1, 69525-3

### Installation Instructions

#### ⚠ CAUTION

Read this document before installing the snowplow.

#### ⚠ CAUTION

See your WESTERN® outlet/website for specific vehicle application recommendations before installation. The Quick Match selection system has specific vehicle and snowplow requirements.



# 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.

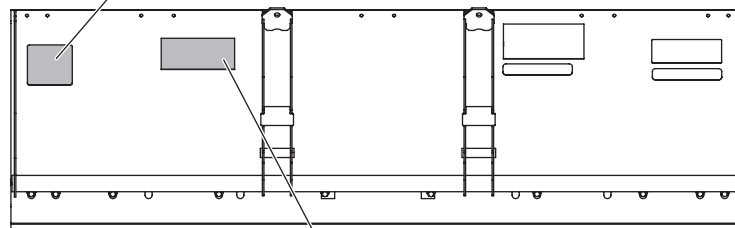
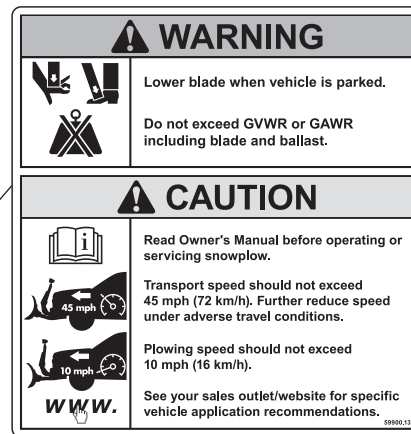
**NOTE:** Indicates a situation or action that can lead to damage to your snowplow and vehicle or other property. Other useful information can also be described.

## WARNING/CAUTION AND INSTRUCTION LABELS

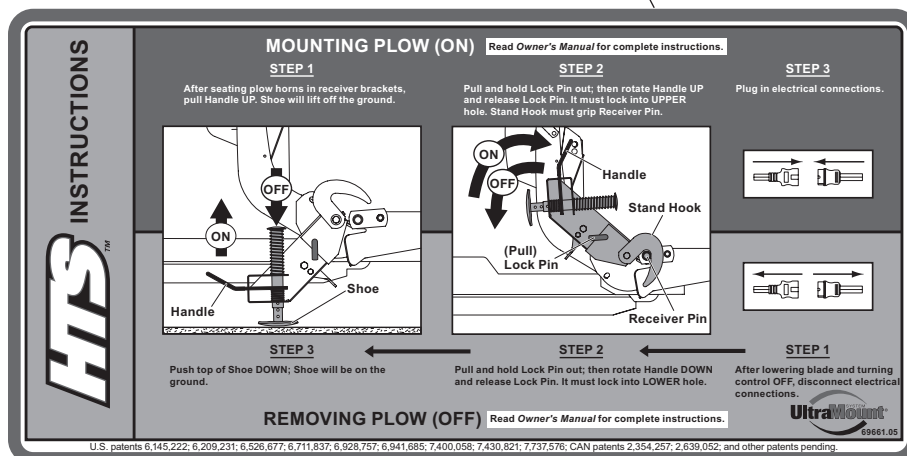
Become familiar with and inform users about the warning/caution and instruction labels on the back of the blade.

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

### Warning and Caution Label



### Instruction Label



# 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

**Lower blade when vehicle is parked. Temperature changes could change hydraulic pressure, causing the blade to drop unexpectedly or damaging hydraulic components. Failure to do this could result in serious personal injury.**

### WARNING

**The driver shall keep bystanders clear of the blade when it is being raised, lowered, or angled. Do not stand between the vehicle and the blade or within 8 feet of a moving blade. A moving or falling blade could cause personal injury.**

### WARNING

**Keep hands and feet clear of the blade and A-frame when mounting or removing the snowplow. Moving or falling assemblies could cause personal injury.**

### WARNING

**Do not exceed GVWR or GAWR including blade and ballast. The rating label is found on driver-side vehicle door cornerpost.**

### WARNING

**To prevent accidental movement of the blade, always turn the control OFF whenever the snowplow is not in use. The power indicator light will turn OFF.**

### WARNING

**Remove blade assembly before placing vehicle on hoist.**

### CAUTION

**Refer to the current Quick Match selection system for minimum vehicle recommendations and ballast requirements.**

## HYDRAULIC SAFETY

### WARNING

**Hydraulic fluid under pressure can cause skin injection injury. If you are injured by hydraulic fluid, get medical attention immediately.**

- Always inspect hydraulic components and hoses before using. Replace any damaged or worn parts immediately.
- If you suspect a hose leak, DO NOT use your hand to locate it. Use a piece of cardboard or wood.

## FUSES

The electrical and hydraulic systems contain several automotive-style fuses. 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 ratings and locations, is located in the Maintenance Section of the Owner's Manual.

## PERSONAL SAFETY

- Remove the 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 snowplow.
- 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 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.





## 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 snowplow 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.

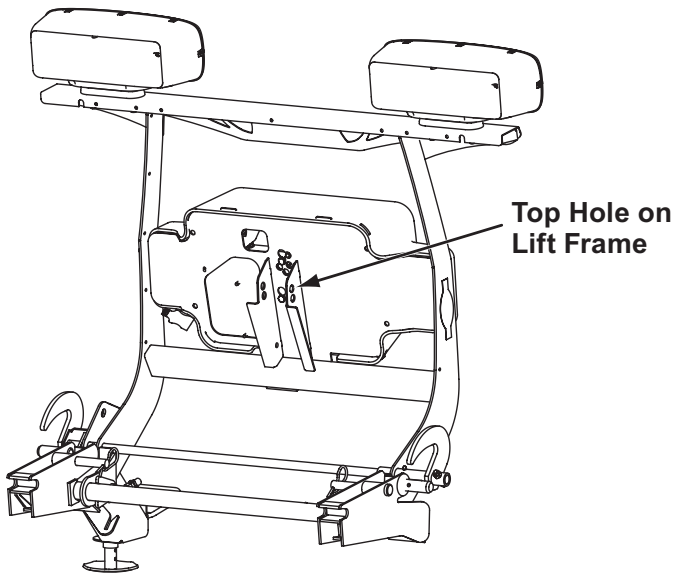
# INSTALLATION INSTRUCTIONS

## BLADE TO A-FRAME

1. Remove the headlamp box and small parts box from carton. Remove carton wall sleeve by sliding it up and over the box contents. Remove and discard the four corner tubes and place the sleeve flat on the floor. Remove the two lag screws (located on either side of the lift ram) that secure the A-frame to the pallet.

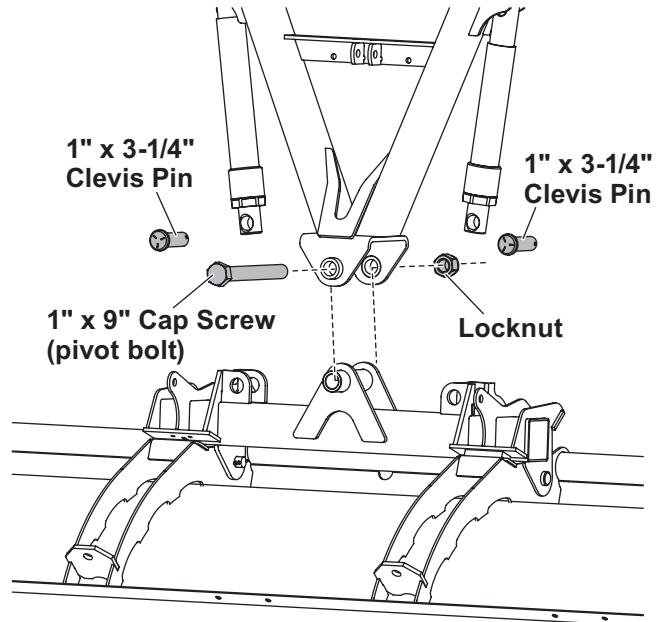
**NOTE:** When the lift ram is pinned, the lift frame can still rotate forward when loaded. A relief valve is built into the lift portion of the hydraulic circuit.

Insert the 5/8" x 3-1/2" clevis pin through the top hole on the lift frame to secure the base end of the lift ram to the lift frame. Remove the lift frame, A-frame, and power unit assembly from the box and place it on the carton sleeve.



2. Place some cardboard or wood on the floor where blade will be assembled. Remove the blade from the pallet and place it face down.

3. Place the A-frame nose plate over the quadrant pivot section. Secure with one 1" x 9" cap screw (pivot bolt) and a locknut. Tighten the locknut as much as possible while allowing the A-frame and quadrant to pivot.

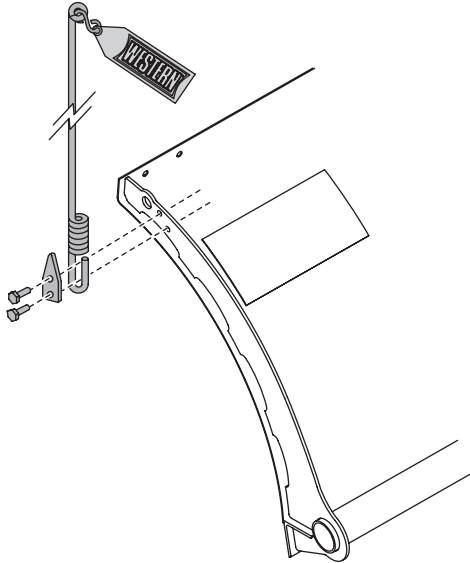


4. Position the rod ends of the two 8" rams in the brackets on the back of the quadrant with a 1" x 3-1/4" clevis pin (installed from the top down through bracket) and cotter pin.

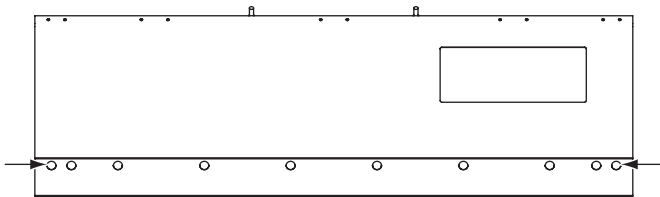
## INSTALLATION INSTRUCTIONS

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5. Stand the blade, A-frame, and lift frame assembly upright and support in a level position using blocking under the main A-frame tube. Install the blade guides.



6. Finish securing the cutting edge with two carriage bolts and locknuts (included in parts box).

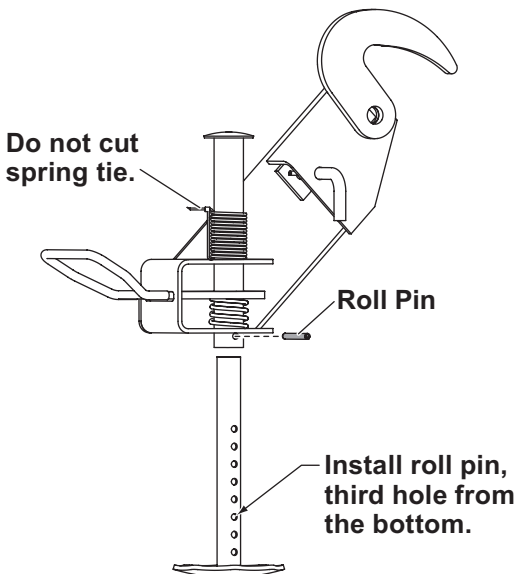


# INSTALLATION INSTRUCTIONS

## STAND SHOE

**NOTE: A final adjustment of the stand shoe will be made after attaching the snowplow to the vehicle (page 13).**

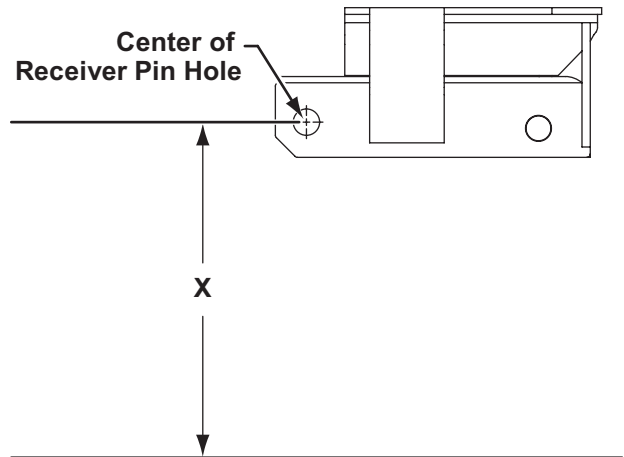
1. Do not cut the spring tie until instructed to do so, after the final stand shoe adjustment.
2. Slide the stand shoe into the stand tube and align the 1/4" hole in the stand tube with the 1/4" hole in the stand shoe, third hole from the bottom.
3. Insert 1/4" roll pin.



4. Pull and hold the lock pin out; then rotate the handle DOWN and release the lock pin. It must lock into the LOWER hole. Push down on top of the shoe. The shoe will be on the ground.
5. Remove the support block from under the main A-frame tube.

## RECEIVER INSTALLATION

1. Before assembling the receiver to the vehicle undercarriage, determine if the height adjustment plate kits are needed.
2. Prior to measuring the vehicle undercarriage height, the undercarriage must be installed, and ballast must be installed, if required. Park the vehicle on a level surface. Measure the distance from the ground to the center of the receiver pin hole on the undercarriage.



Refer to the table below to determine if height adjustment plates are required.

3. Use dimension "X" from Step 2 and follow the table below:

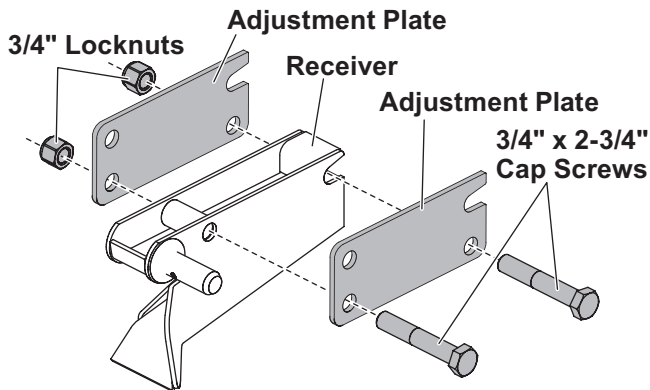
Height Adjustment Plate Selection	
Dimension "X"	Height Adjustment Plates Required
13.0"–15.5"	No
15.5"–17.5"	Yes



## INSTALLATION INSTRUCTIONS

4. If adjustment plates are required, install as follows:

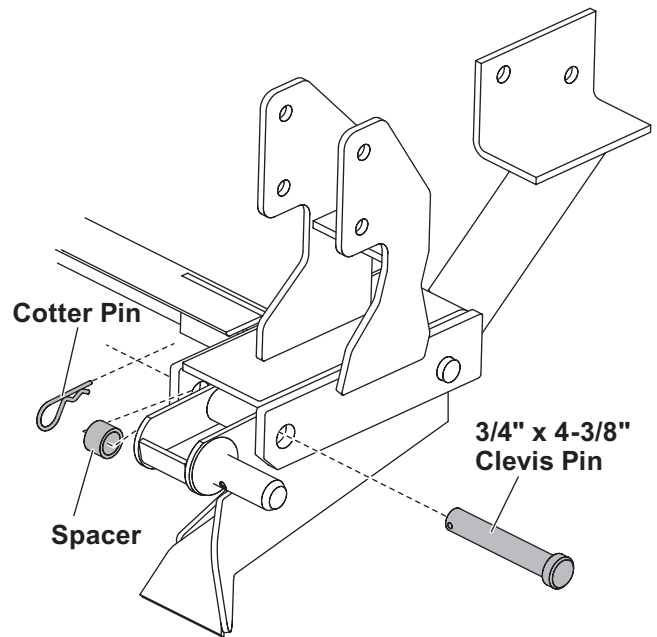
Position an adjustment plate on each side of the receiver as shown. Insert a 3/4" x 2-3/4" cap screw through the lower front adjustment plate hole and through the appropriate hole on the receiver. Secure with a locknut.



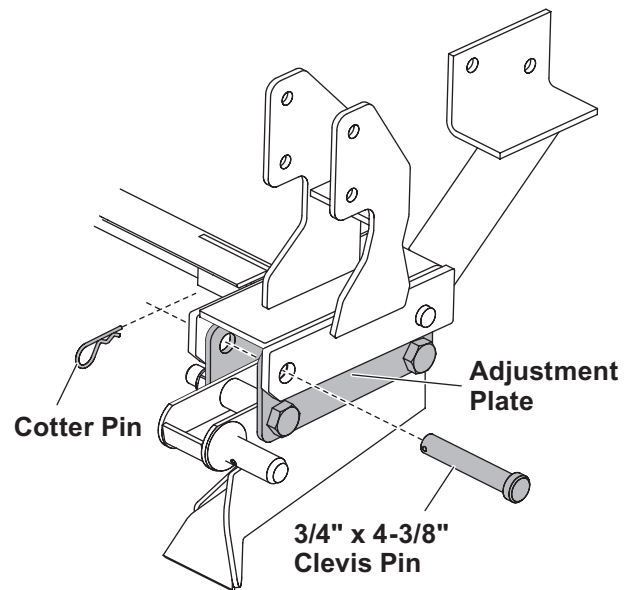
Insert a cap screw through the rear adjustment plate hole, through the slot on the receiver. Secure with a locknut.

Repeat for the passenger's side. Tighten all fasteners according to the torque chart.

5. Position the receiver between the mount brackets on each side. Align the notches in rear of the receiver with pins in vehicle undercarriage. Rotate up and secure with a 3/4" x 4-3/8" clevis pin and hairpin cotter on each side. If the height adjustment plates are not used, insert the spacer provided between the receiver and the inner-most mount bracket.



**Shown without adjustment plate.**



**Shown with adjustment plate installed.**

# INSTALLATION INSTRUCTIONS

## HEADLAMPS

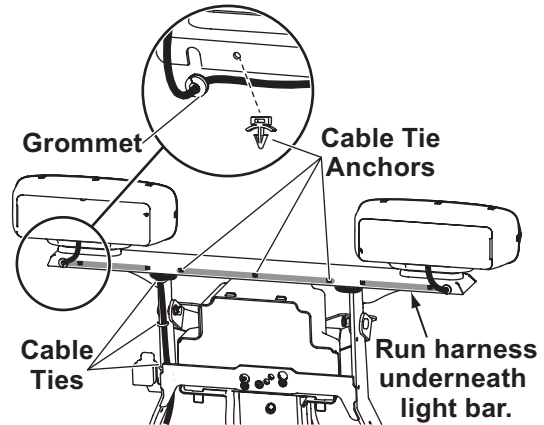
### **⚠ WARNING**

**Your vehicle must be equipped with snowplow headlamps and directional lights.**

Headlamps, hardware, and instructions are found in the headlamp box.

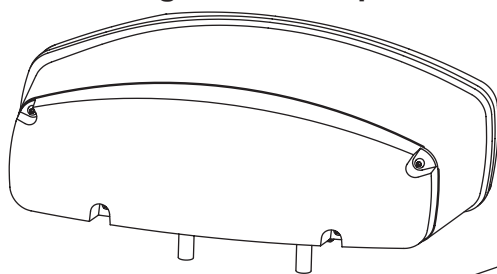
1. Install the vehicle wiring according to the instructions provided.
2. With the driver's and passenger's side headlamps on the correct sides, set each headlamp and swivel into place on the headgear light bar.
3. Secure the headlamps with the correct hardware for the application as shown below. Inner and outer posts require different hardware. On LED headlamps, a rubber washer must be installed under the slotted holes. Hand tighten fasteners.
4. Connect the headlamp wires to the headlamps.
5. Aim the headlamps according to the Snowplow Headlamp Beam Aiming Instructions (Lit. No. 27769). For LED headlamps, tighten the fasteners to 22 ft-lb (30 N·m). For halogen headlamps, tighten the fasteners to 50 ft-lb (68 N·m).

6. From inside the headgear light bar, insert the cable tie anchors into the holes as shown. The anchor locking tabs should be horizontal.

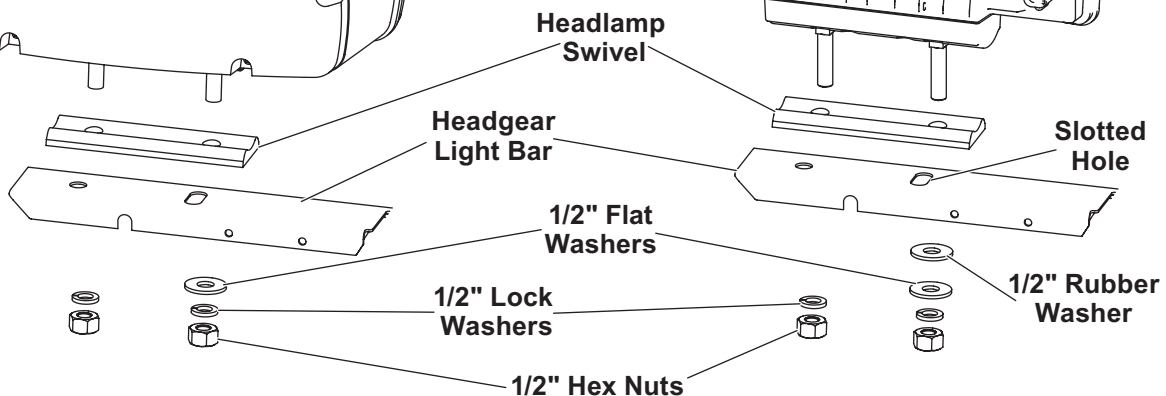
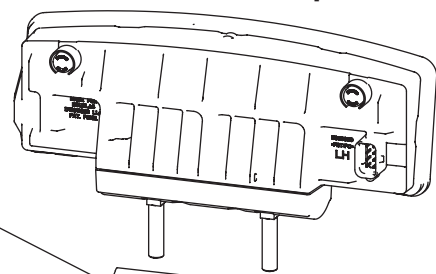


7. For halogen headlamps only, install a split rubber grommet on each headlamp wire 3" from the headlamp. Insert the grommet and wire into the slot on the rear of the headgear light bar.
8. Route the wires under the light bar and down the back of the driver-side vertical support. Secure the wires to the anchors and the vertical support with cable ties.

### Halogen Headlamps



### LED Headlamps



# INSTALLATION INSTRUCTIONS

## FILLING HYDRAULIC UNIT

### ⚠ WARNING

Keep 8' clear of the blade when it is being raised, lowered, or angled. Do not stand between the vehicle and blade or directly in front of the blade. If the blade hits or drops on you, you could be seriously injured.

1. Attach the snowplow to the vehicle according to the instructions on the back of the blade.  
The HTS™ snowplow hydraulic unit comes pre-assembled, filled, and fully tested from the factory.

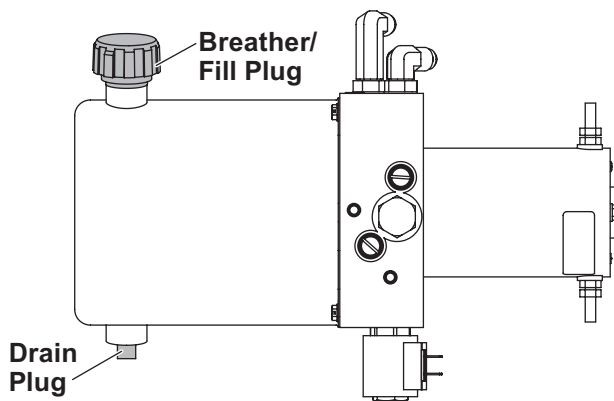
### ⚠ WARNING

To prevent accidental movement of the blade, always turn the control OFF whenever the snowplow is not in use. The power indicator light will turn OFF.

### ⚠ CAUTION

Do not mix different types of hydraulic fluid. Some fluids are not compatible and may cause performance problems and product damage.

2. Remove factory installed pipe plug. Reservoir fluid level should be within 2-1/2" from the top of the fill hole. If additional fluid is needed, fill the reservoir with WESTERN® High Performance Hydraulic Fluid or other fluid conforming to Military Specification MIL-H-5606 A, such as Mobil Aero HFA or Shell AeroShell® Fluid 4.
3. Replace with breather/fill plug (included in parts box).



## FLUID CAPACITY

- FloStat® Unit Reservoir 1-3/4 quarts
- FloStat System Total 2-3/8 to 2-3/4 quarts

## BLADE DROP SPEED ADJUSTMENT

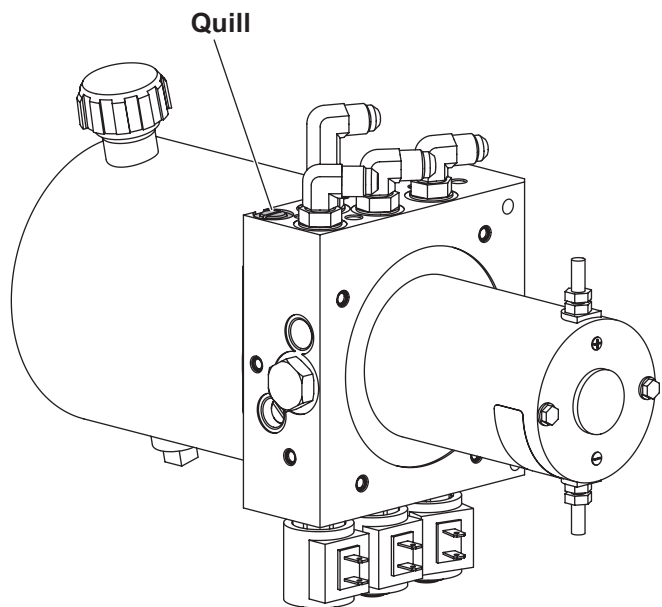
### ⚠ WARNING

Keep 8' clear of the blade when it is being raised, lowered, or angled. Do not stand between the vehicle and blade or directly in front of blade. If the blade hits or drops on you, you could be seriously injured.

1. The plow drop speed may be adjusted by turning the quill.

**NOTE:** The blade will not drop when quill is fully tightened (clockwise). Turn OFF the plow control, turn the quill 1/8 turn outward (counterclockwise), then proceed with blade drop speed adjustment.

2. Lower the blade to the ground before making adjustment.
3. Turn the quill inward (clockwise) to decrease the drop speed. Turn the quill outward (counterclockwise) to increase the drop speed.
4. Stand 8' clear of the blade when checking adjustment.

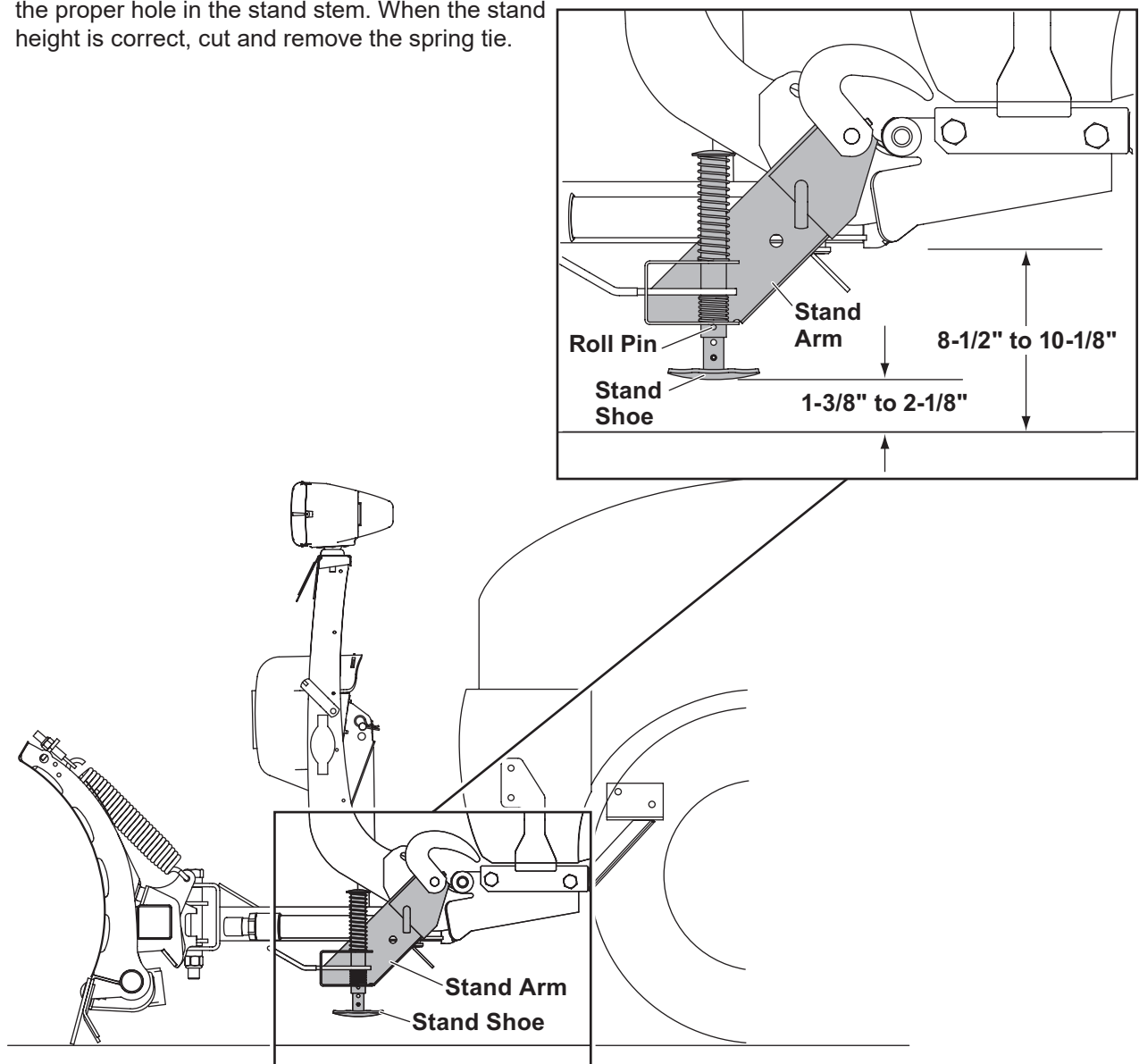


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## OPERATIONAL TEST AND FINAL ADJUSTMENTS

### FINAL INSPECTION AND ADJUSTMENT

1. Attach snowplow to the vehicle mount. With snowplow lowered to the ground and on level pavement, measure the dimension from the ground to the bottom of the A-frame side tube. This dimension must be 8-1/2"–10-1/8".
2. With the snowplow attached and on the ground, place the stand arm in the lower position with the lock pin engaged and with the stand shoe fully retracted in the "UP" position. Measure the distance from the ground to the bottom of the stand shoe. This distance should be 1-3/8"–2-1/8". The stand can be adjusted to achieve this dimension by removing the roll pin and selecting the proper hole in the stand stem. When the stand height is correct, cut and remove the spring tie.
3. Fully angle the blade in both directions in raised and lowered positions. Adjust hose fittings, wraps, and clamps so that the hoses do not contact the vehicle bumper, have no sharp bends, and are wrapped at contact points with the lift and A-frames.



# OPERATIONAL TEST AND FINAL ADJUSTMENTS

## VEHICLE LIGHTING CHECK

1. Verify the operation of all vehicle front lighting prior to connecting the snowplow harness.
2. Check the operation of the snowplow lights with snowplow mounted to vehicle and all harnesses connected.

### Turn signals and parking lamps

Parking lamps ON:

- Both vehicle and snowplow parking lamps should be ON at the same time.

Driver-side turn signal ON:

- Both vehicle and snowplow driver-side turn signal lamps should flash at the same time.

Passenger-side turn signal ON:

- Both vehicle and snowplow passenger-side turn signal lamps should flash at the same time.

### Headlamps

Move vehicle headlamp switch to the "ON" position. Connecting and disconnecting the snowplow lighting harness plug should switch the lights between vehicle and snowplow as follows:

Snowplow lighting harness DISCONNECTED:

- Vehicle headlamps should be ON.
- Snowplow headlamps should be OFF.

Snowplow lighting harness CONNECTED:

- Snowplow headlamps should be ON.
- Vehicle headlamps should be OFF.

Dimmer switch should toggle headlamps between high and low beams. The high beam indicator on the dash should light when headlamps are placed in high beam.

### Daytime Running Lamps (DRLs)

An operational check of the vehicle and snowplow DRLs will depend on the vehicle model, vehicle DRL system, and type of Isolation Module installed. Due to the variations in the OEM DRL systems and the different Isolation Module

options available, checking the functionality of the snowplow DRLs will depend on the type of module installed on the vehicle.

With headlamp switch OFF, activate the vehicle DRLs.

Snowplow lighting harness DISCONNECTED:

- Vehicle DRLs should be ON.
- Snowplow headlamps should be OFF.

Snowplow lighting harness CONNECTED and vehicle in DRL mode:

- Check snowplow DRL function per the type of Isolation Module installed.

Refer to the Electrical Schematics Guide for information on the Isolation Module DRL functions.

### Hand-Held Control

The snowplow plugs **do** need to be connected to the vehicle harness connectors. The control power indicator light should light whenever the control ON/OFF switch and the ignition (key) switches are both in the "ON" position.

3. Connect all snowplow and vehicle harnesses. Raise the snowplow and aim snowplow headlamps according to the Snowplow Headlamp Beam Aiming Instructions included with the headlamps and any state or local regulations.
4. Check aim of vehicle headlamps with snowplow removed.

### CAUTION

**On 2-plug electrical systems, plug covers shall be used whenever snowplow is disconnected. Vehicle battery cable is 12V unfused source.**

5. When the snowplow is removed from the vehicle, install plug covers on the vehicle battery cable and lighting harness. Insert the snowplow battery cable and lighting harness into the cable boot on the snowplow.

## OPERATIONAL TEST AND FINAL ADJUSTMENTS

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### OWNER'S MANUAL PACKET

If the completed snowplow will be delivered immediately, the Owner's Manual should be reviewed with and given to the purchaser according to the snowplow checklist.

If the snowplow is completed prior to delivery to the purchaser, attach the Owner's Manual packet to the electrical cable of the cab control for safekeeping.

## OPERATIONAL TEST AND FINAL ADJUSTMENTS

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