



PRO PLUS[®] HD

PRO PLUS[®] HD Snowplow

76900, 76900-3, 76910, 76910-3 & 76920

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.

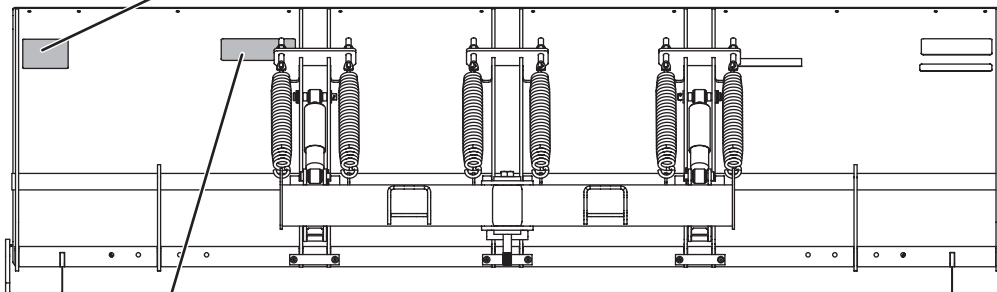
WARNING/CAUTION & INSTRUCTION LABELS

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/Caution Label

⚠ WARNING	
	Lower blade when vehicle is parked.
	Do not exceed GVWR or GAWR including blade and ballast.
⚠ CAUTION	
	Read Owner's Manual before operating or servicing snowplow.
	Transport speed should not exceed 45 mph (72 km/h). Further reduce speed under adverse travel conditions.
	Plowing speed should not exceed 10 mph (16 km/h).
See your sales outlet/website for specific vehicle application recommendations.	



Instruction Label

UltraMount 2 INSTRUCTIONS

MOUNTING PLOW (ON) Read Owner's Manual for complete instructions.

STEP 1

After seating plow horns in receiver brackets, pull Handle up; Shoe will lift off the ground.

STEP 2

Pull and hold Lock Pin out; then rotate Handle UP and release Lock Pin. It must lock into UPPER hole. Stand Hook must grip Receiver Pin.

STEP 3

Plug in electrical connections. Repeat Steps 1 and 2 on other side of snowplow.

STEP 3

Push top of Shoe DOWN; Shoe will be on the ground. Repeat Steps 2 and 3 on other side of snowplow. Back vehicle away.

STEP 2

Pull and hold Lock Pin out; then rotate Handle DOWN and release Lock Pin. It must lock into LOWER hole.

STEP 1

After lowering blade and turning control OFF, disconnect electrical connections.

REMOVING PLOW (OFF) Read Owner's Manual for complete instructions.

Lit. No. 79558, Rev. 03

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July 15, 2020

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 the 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 WESTERN® 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.

NOISE

Airborne noise emission during use is below 70 dB(A) for the snowplow 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 the 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

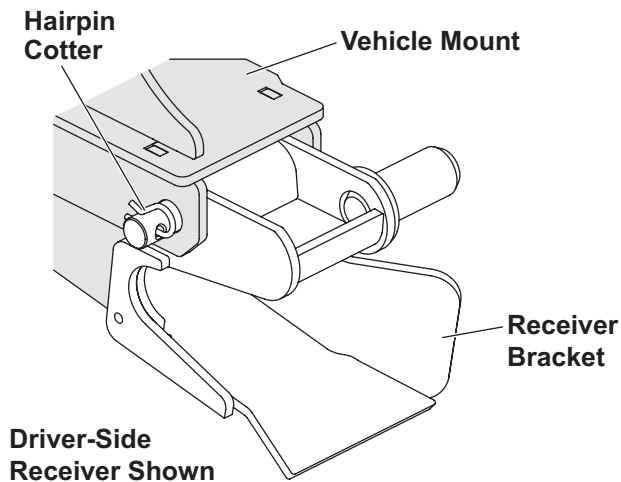
LIFT FRAME TO A-FRAME ASSEMBLY

1. Set aside the blade guides and parts bags. The vehicle electrical harnesses and Owner's Manual packet are in the bag with the headlamp box.
2. Remove the lag screws and wood blocks securing the headlamp channel to the lift frame and set the headlamp channel aside.
3. Remove the packaging hardware securing the lift frame to the A-frame, except for the steel hairpins and the shipping brackets.
4. Remove the fasteners and blocking securing the A-frame to the pallet.
5. While supporting the lift frame, remove and discard the tapping screws and shipping brackets.

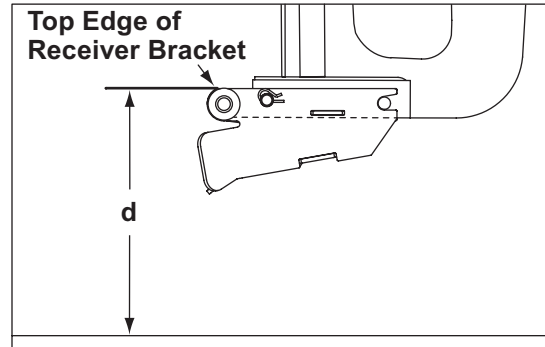
Pivot Plate Hole Position

IMPORTANT! Before assembling the lift frame to the A-frame, the pivot plate hole position must be determined using the following procedure. (If the truck is not available, use hole position 2. Adjustments can be made later.)

Before measuring the vehicle mount height, the vehicle mount and receiver brackets must be installed, ballast must be installed (if required), and the vehicle must be parked on a level surface.

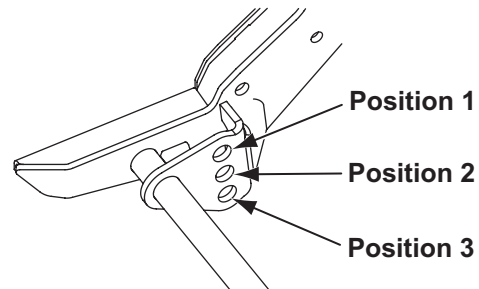


1. Measure the distance "d" from the ground to the top edge of the receiver bracket. Measure both sides and determine average value for "d."



2. Use distance "d" from Step 1 and the following table to determine the proper pivot plate hole position.

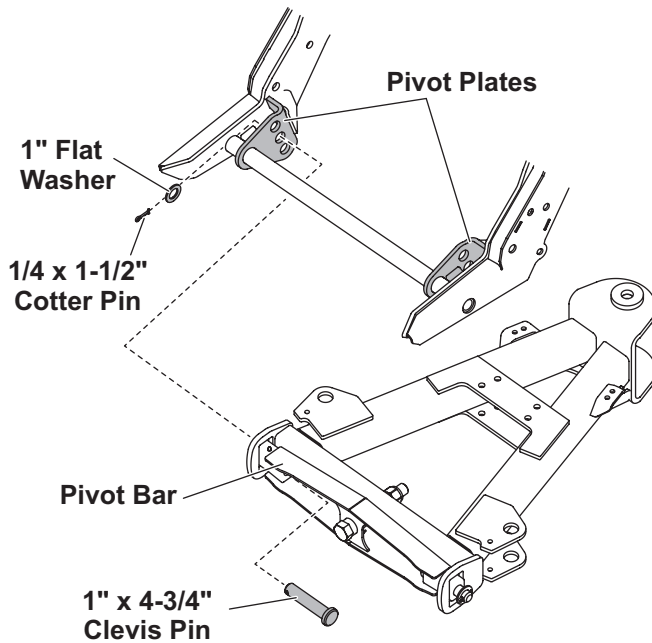
Pivot Plate Hole Position	
Distance "d"	Hole Position
13.0" – 14.5"	1
14.5" – 16.0"	2
16.0" – 19.0"	3



INSTALLATION INSTRUCTIONS

Pivot Bar to Pivot Plates

1. Position the A-frame and pivot bar between the pivot plates, aligning the hole at each end of the pivot bar with the appropriate hole in the pivot plate as determined by distance "d."
2. On each side, insert 1" x 4-3/4" clevis pins from the inside of the pivot bar through the correct pivot plate holes. Secure the clevis pins with 1" flat washers and 1/4" x 1-1/2" cotter pins.



STAND SHOE

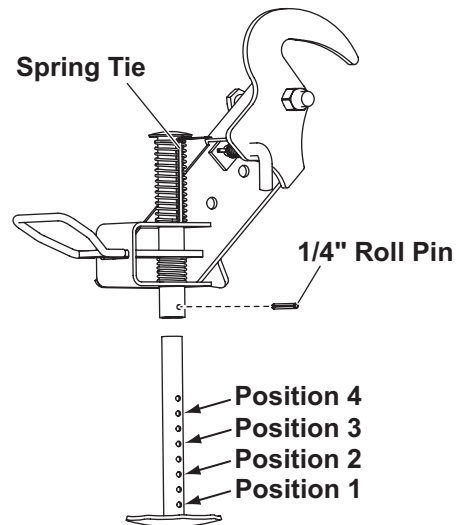
⚠ WARNING

The stand plunger spring is shipped compressed and tied. Do not cut the spring tie until final stand shoe adjustment is complete and the roll pin is installed.

Initial stand shoe height adjustment is based on the receiver height measurement (distance "d") determined in Step 1 under "Pivot Plate Hole Position." A final adjustment of the stand shoe will be made after attaching the snowplow to the vehicle.

1. 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 as determined from the table and illustration below.

Stand Shoe Position	
Distance "d"	Position
13.0" – 14.5"	1
14.5" – 16.0"	2
16.0" – 17.5"	3
17.5" – 19.0"	4

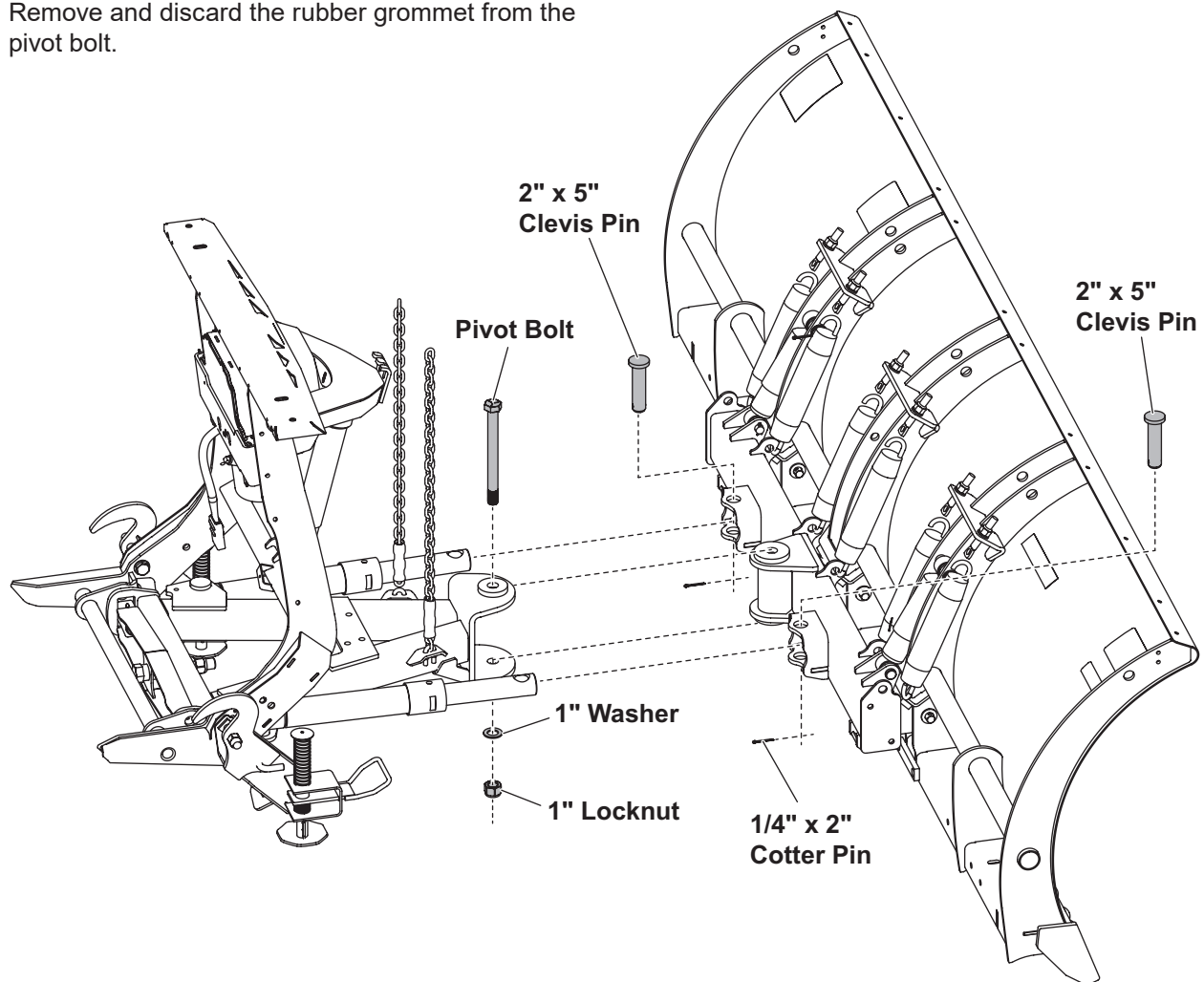


2. Insert a 1/4" roll pin.
3. Cut the spring tie.

INSTALLATION INSTRUCTIONS

A-FRAME TO BLADE ASSEMBLY

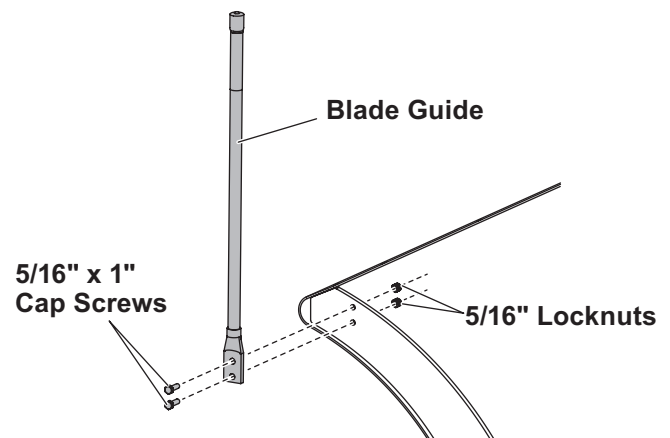
1. Remove and discard the rubber grommet from the pivot bolt.



2. Remove and discard the protective packaging from the angle rams.
3. Align the pivot bolt hole on the A-frame with the pivot bolt hole on the quadrant.
4. Install the pivot bolt from the top. Secure with one 1" flat washer and a 1" locknut, tightening the locknut as much as possible while allowing the A-frame and quadrant to pivot.
5. Align the holes in the angle rams with the angle ram holes on the quadrant. Attach using the two 2" x 5" clevis pins from the top. Secure with 1/4" x 2" cotter pins.
6. Move the snowplow into normal operating position.

BLADE GUIDE ASSEMBLY

Attach a blade guide to each outer rib using two 5/16" x 1" cap screws and 5/16" locknuts, as shown.



INSTALLATION INSTRUCTIONS

HEADLAMPS

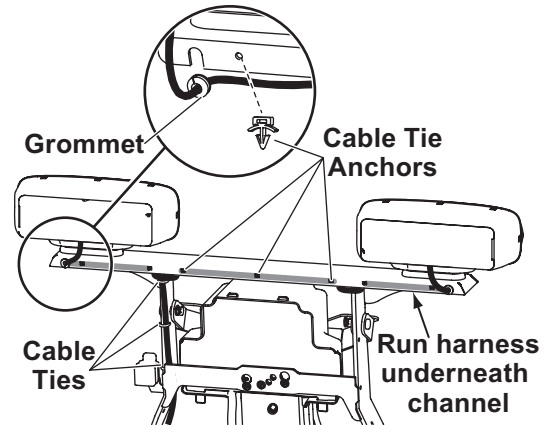
⚠ WARNING

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

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

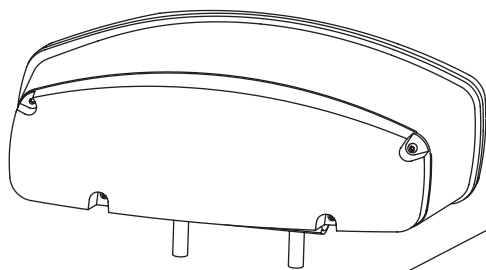
1. Install the vehicle wiring according to the instructions provided.
2. Set the headlamp channel on the lift frame, label to the front, with the holes aligned.
3. With the correct headlamp on the correct side, set each headlamp and swivel into place as shown.
4. Secure the headlamps with the correct 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.
5. Connect the headlamp wires to the headlamps.
6. Aim the headlamps according to the Snowplow Headlamp Beam Aiming Instructions (Lit. No. 27769). Tighten LED headlamp fasteners to 22 ft-lb (30 N·m). Tighten halogen headlamp fasteners to 50 ft-lb (68 N·m).

7. From inside the headlamp channel, insert the cable tie anchors into the holes as shown. The anchor locking tabs should be horizontal.

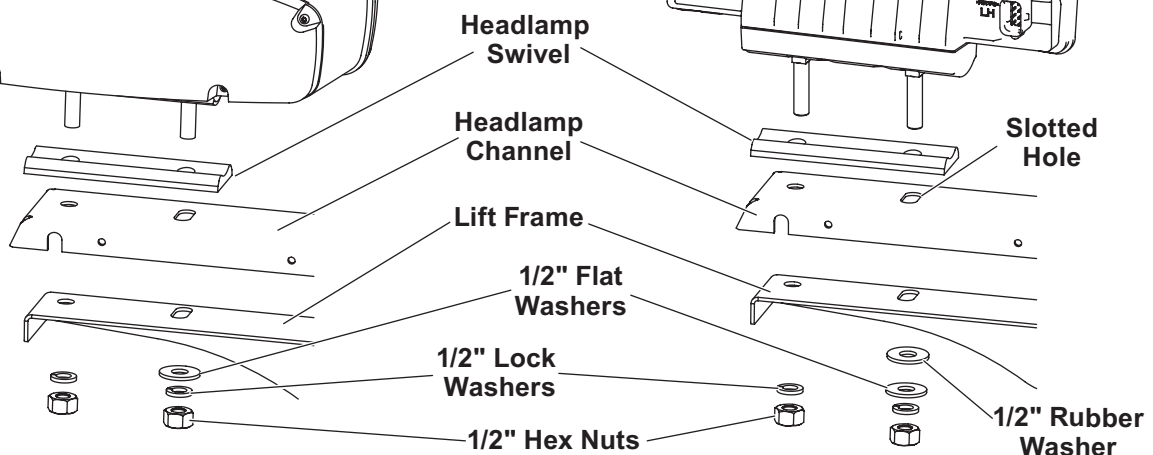
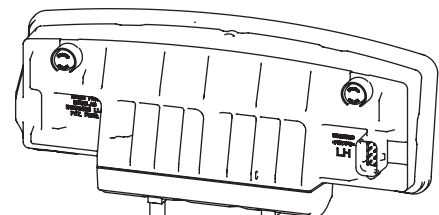


8. For halogen headlamps only, install a split rubber grommet on each headlamp wire 3" from the headlamp. Insert the grommet and wire into the slot on the rear of the channel.
9. Route the wires under the channel and down the back of the driver-side vertical support. Secure the wires to the anchors and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

Halogen Headlamps



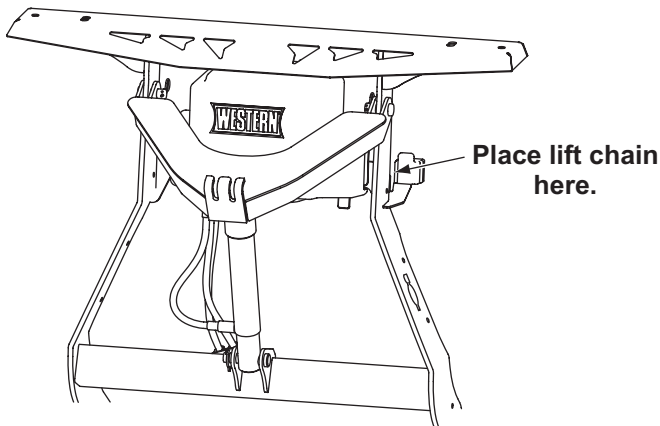
LED Headlamps



INSTALLATION INSTRUCTIONS

HYDRAULIC UNIT BREATHER INSTALLATION

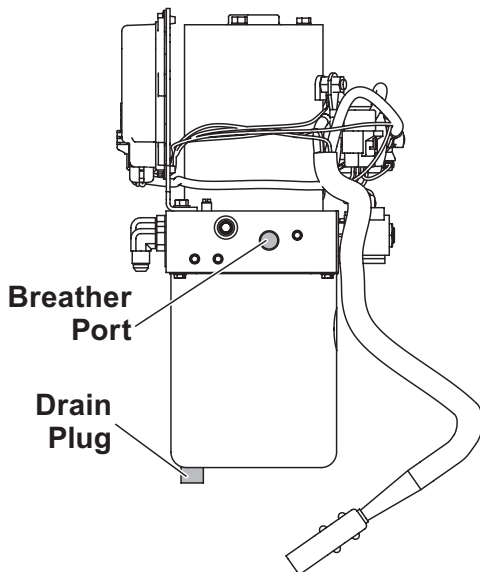
1. Position the lift frame in the upright position with the stands supporting the snowplow.
2. Place the driver-side lift chain over the cable boot bracket on the side of the upper lift frame.



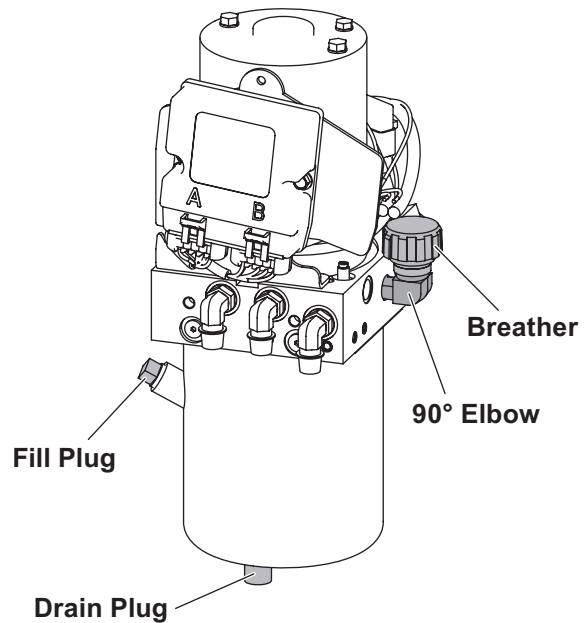
3. Remove and retain the two hairpin cotters, washers, and clevis pins attaching the lift arm to the lift frame.

NOTE: Support the lift arm after removing the clevis pins to prevent it from falling forward.

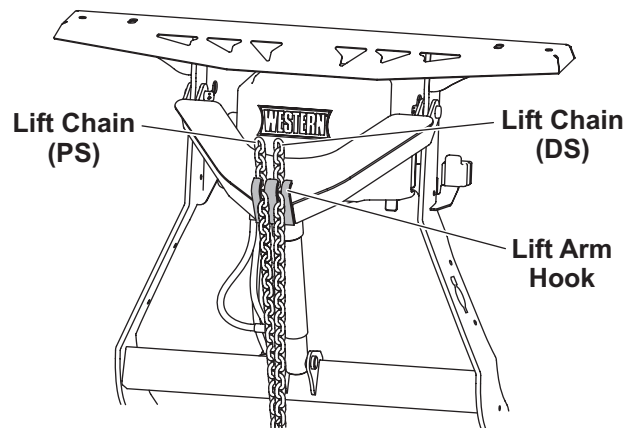
4. Pivot the lift arm and lift ram forward and remove the hydraulic unit cover.
5. Remove and discard the factory-installed pipe plug from the breather port.



6. Install the 90° elbow into the breather port, pointing up. Install the breather into the elbow.



7. Replace the hydraulic unit cover.
8. Pivot the lift arm and lift ram up. Replace the two clevis pins, washers, and hairpin cotters (retained in Step 3) to reattach the lift arm to the lift frame.
9. Move the driver-side lift chain to the lift arm hook.



10. Attach the passenger-side lift chain to the lift arm hook.

INSTALLATION INSTRUCTIONS

HYDRAULIC UNIT

⚠ WARNING

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

The PRO PLUS® HD snowplow hydraulic unit comes from the factory pre-assembled, partially filled, and fully tested.

1. Attach the snowplow to the vehicle according to the instructions on the back of the blade.

⚠ 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.

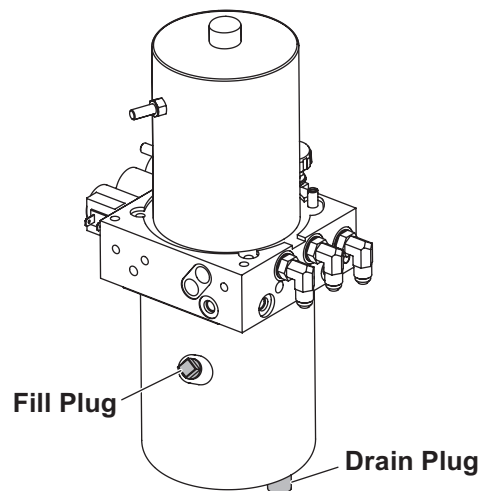
2. Turn the control ON and completely angle the blade to the left and right several times. Raise and lower the snowplow several times. Activate the control FLOAT function and manually collapse the lift ram all the way. Turn the control OFF.

⚠ CAUTION

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

3. Remove the fill plug and check the fluid level. With the blade in the lowered position, the fluid level should reach the fill hole. If additional fluid is needed, fill the reservoir with WESTERN® High Performance Hydraulic Fluid rated to -40°F (-40°C), or other fluid conforming to Military Specification MIL-H-5606 A, such as Mobil Aero HFA or Shell AeroShell® Fluid 4.

NOTE: Loosen the fill plug slowly to relieve any pressure in the reservoir.



4. Replace and tighten the fill plug.

FLUID CAPACITY

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

OPERATIONAL TESTS AND FINAL ADJUSTMENTS

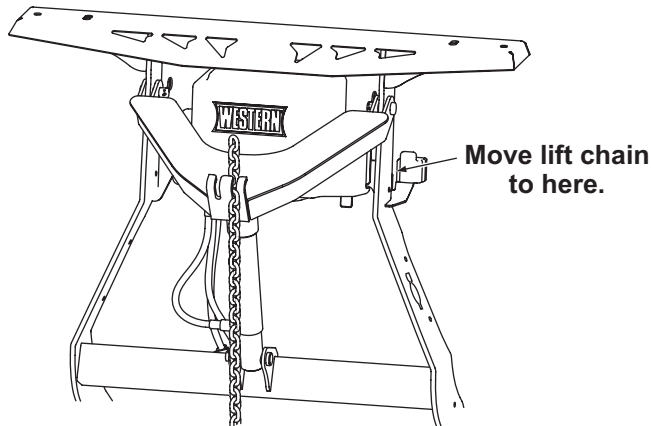
BLADE DROP SPEED ADJUSTMENT

⚠ WARNING

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

The quill in the top of the valve manifold on the passenger-side front corner of the hydraulic unit adjusts the blade drop speed.

1. Move the driver-side lift chain from the lift arm hook to the cable boot bracket on the side of the upper lift frame.



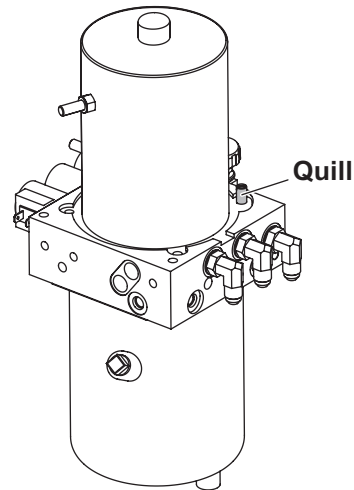
2. Remove and retain the two hairpin cotters, washers, and clevis pins attaching the lift arm to the lift frame.

NOTE: Support the lift arm after removing the pins to prevent it from falling forward.

3. Pivot the lift arm and lift ram forward and remove the hydraulic unit cover.

4. Replace the two clevis pins, washers, and hairpin cotters to reattach the lift arm to the lift frame.
5. Turn the quill IN (clockwise) to decrease drop speed.

Turn the quill OUT (counterclockwise) to increase drop speed.



6. Stand 8 feet clear of the blade when checking the adjustment.
7. Remove and retain the two hairpin cotters, washers, and clevis pins attaching the lift arm to the lift frame.
8. Replace the hydraulic unit cover. Pivot the lift arm and lift ram up.
9. Replace the two clevis pins, washers, and hairpin cotters to reattach the lift arm to the lift frame.
10. Move the driver-side lift chain back to the lift arm hook.

OPERATIONAL TESTS AND FINAL ADJUSTMENTS

FINAL INSPECTION AND ADJUSTMENT

⚠ WARNING

Keep 8' clear of the blade when it is being raised, lowered, or angled. Do not stand between 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 mount. With the snowplow lowered to the ground and on level pavement, measure the dimension from the ground to the center of the pivot bar cap screw. This dimension must be 9-3/4" to 11-1/4".
2. With the snowplow attached and on the ground, place the stand arm in the lower position with the lock pin engaged and 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" to 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. Final lift chain link adjustment must be made after the snowplow is assembled with the proper pivot plate configuration. On a level surface, with the snowplow on the ground and the lift ram fully collapsed, attach the chains to the lift arm hooks in the tightest possible link. This adjustment will provide for optimum transport height, blade float,

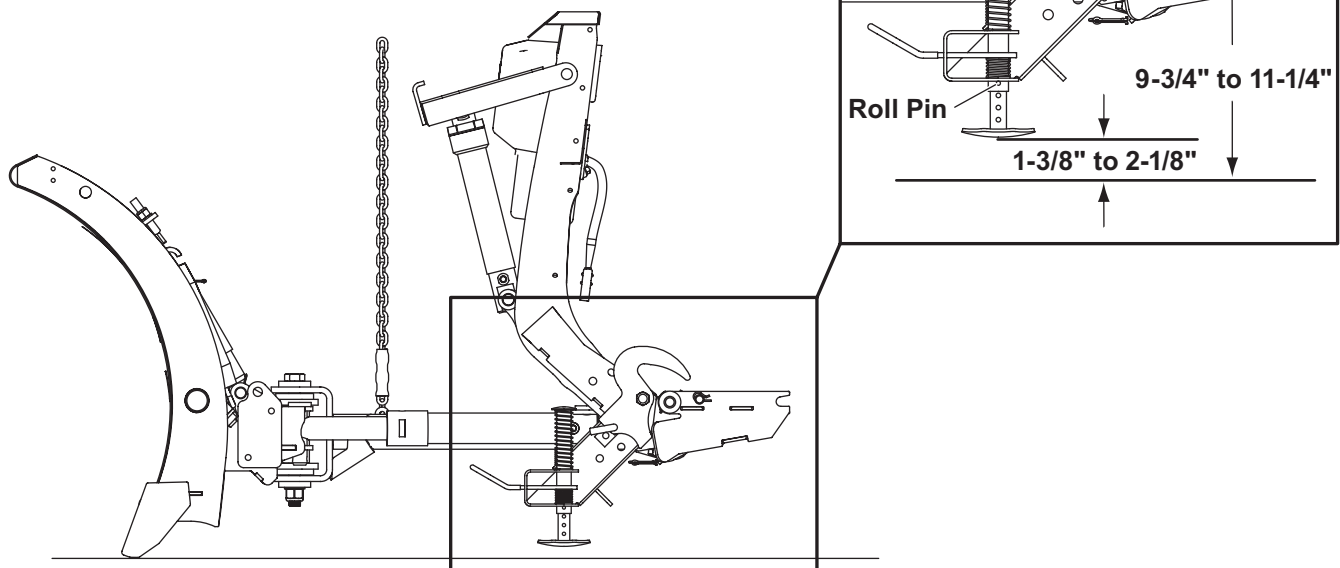
and stacking stop clearance. When the chain tension is correct, the A-frame will **not** contact the lift frame when the blade is fully raised.

4. Check that the trip springs are adjusted correctly by confirming that the coils of the springs are separated slightly.

⚠ CAUTION

Overtightening springs will not increase blade trip force and can damage the springs.

5. Adjust the trip springs by loosening the bottom nuts and then tightening the top nuts until the coils of the springs begin to separate (a piece of paper, such as this instruction sheet, should pass between the second and third coils). Tighten the bottom nut against the trip spring brackets to lock in place.
6. Fully raise the blade and verify that it does not block the headlamp beams. If the blade blocks the headlamp beams, lower the blade to the ground, collapse the lift ram, and lengthen each chain by one link. Repeat this process, lengthening the chains by one link each time, until the blade does not block the headlamp beams.



OPERATIONAL TESTS 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 the 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.

The 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 the 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 Mechanic's Guide for information on the Isolation Module DRL functions.

Joystick Control or CabCommand 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) switch are both in the "ON" position.

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

CAUTION

On 2-plug electrical systems, plug covers shall be used whenever the 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.

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 TESTS AND FINAL ADJUSTMENTS



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