



PRO-PLOW® Series 2 and POLY PRO-PLOW® Series 2 Snowplows

Installation Instructions

⚠ CAUTION

Read this document before installing the snowplow.

⚠ CAUTION

See your WESTERN® outlet/Web site for specific vehicle application recommendations before installation. The Selection List 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 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

 **WARNING**

LOWER BLADE WHEN VEHICLE IS PARKED.

DO NOT EXCEED GVWR OR GAWR INCLUDING BLADE AND BALLAST.

REMOVE BLADE ASSEMBLY BEFORE PLACING VEHICLE ON HOIST.

 **CAUTION**

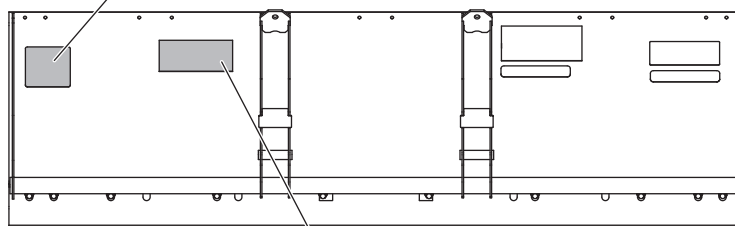
READ *OWNER'S MANUAL* BEFORE OPERATING OR SERVICING SNOWPLOW.

TRANSPORT SPEED SHOULD NOT EXCEED 45 MPH. FURTHER REDUCE SPEED UNDER ADVERSE TRAVEL CONDITIONS.


PLOWING SPEED SHOULD NOT EXCEED 10 MPH.

SEE YOUR SALES OUTLET/WEB SITE FOR SPECIFIC VEHICLE APPLICATION RECOMMENDATIONS.

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Instruction Label

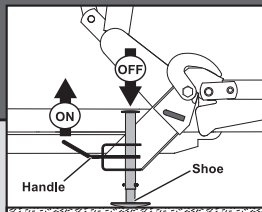
 **INSTRUCTIONS**

MOUNTING PLOW (ON)

Read Owner's Manual for complete instructions.

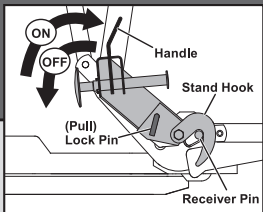
STEP 1

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



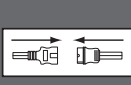
STEP 2

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.




REMOVING PLOW (OFF)

Read Owner's Manual for complete instructions.

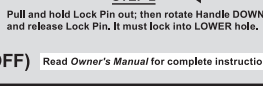
STEP 1

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




STEP 2

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



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.



US patents 5,420,480; 5,638,618; 5,899,007; 6,145,222; 6,209,231; 6,253,470; 6,408,549; 6,526,677; 6,928,757; 6,941,685; 7,400,058; 7,430,821; RE35,700; CAN patents 2,060,425; 2,184,922; 2,229,783; 2,354,257; and other patents pending.

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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 Selection List 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 blade-style automotive 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 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 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

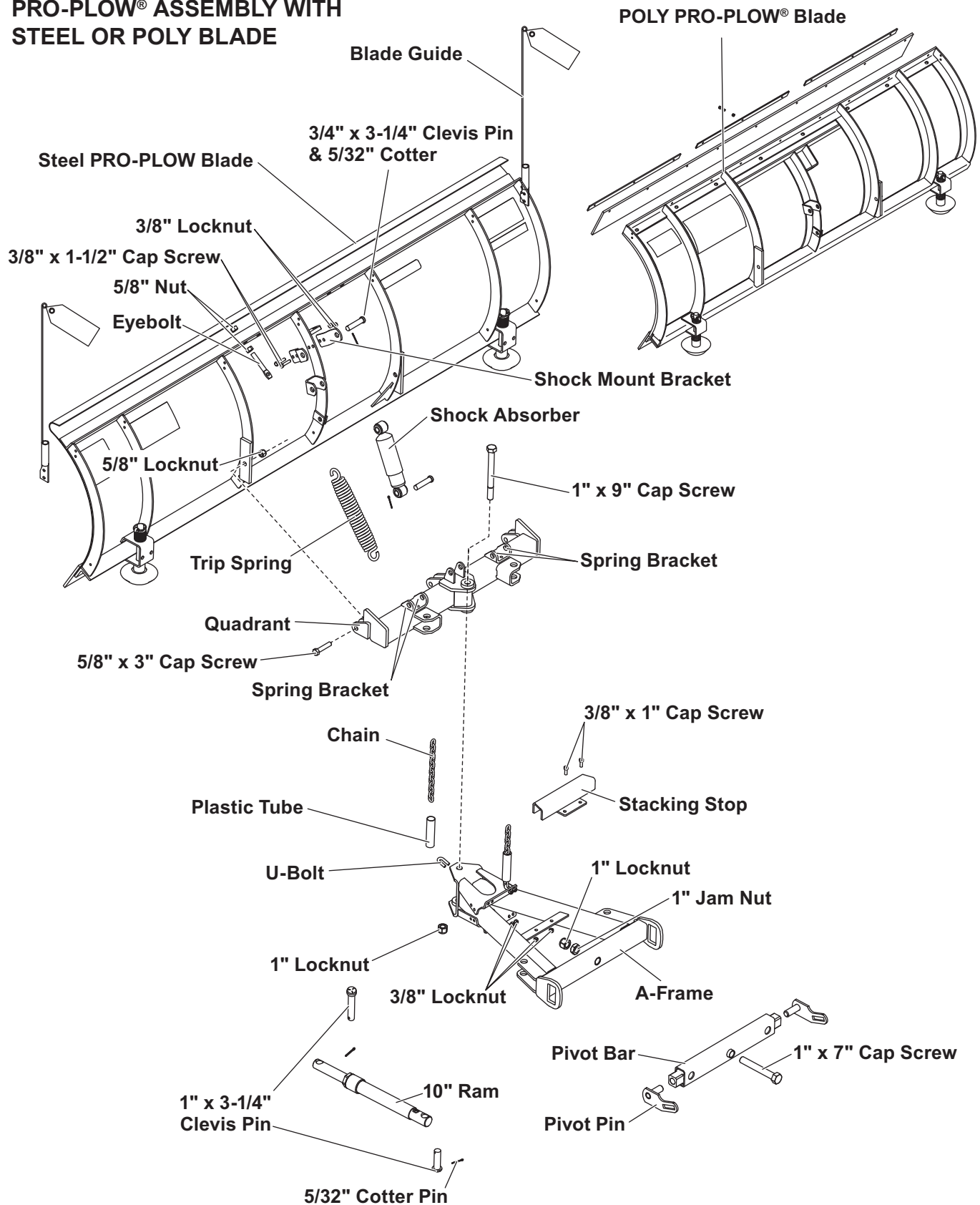
CAUTION

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.

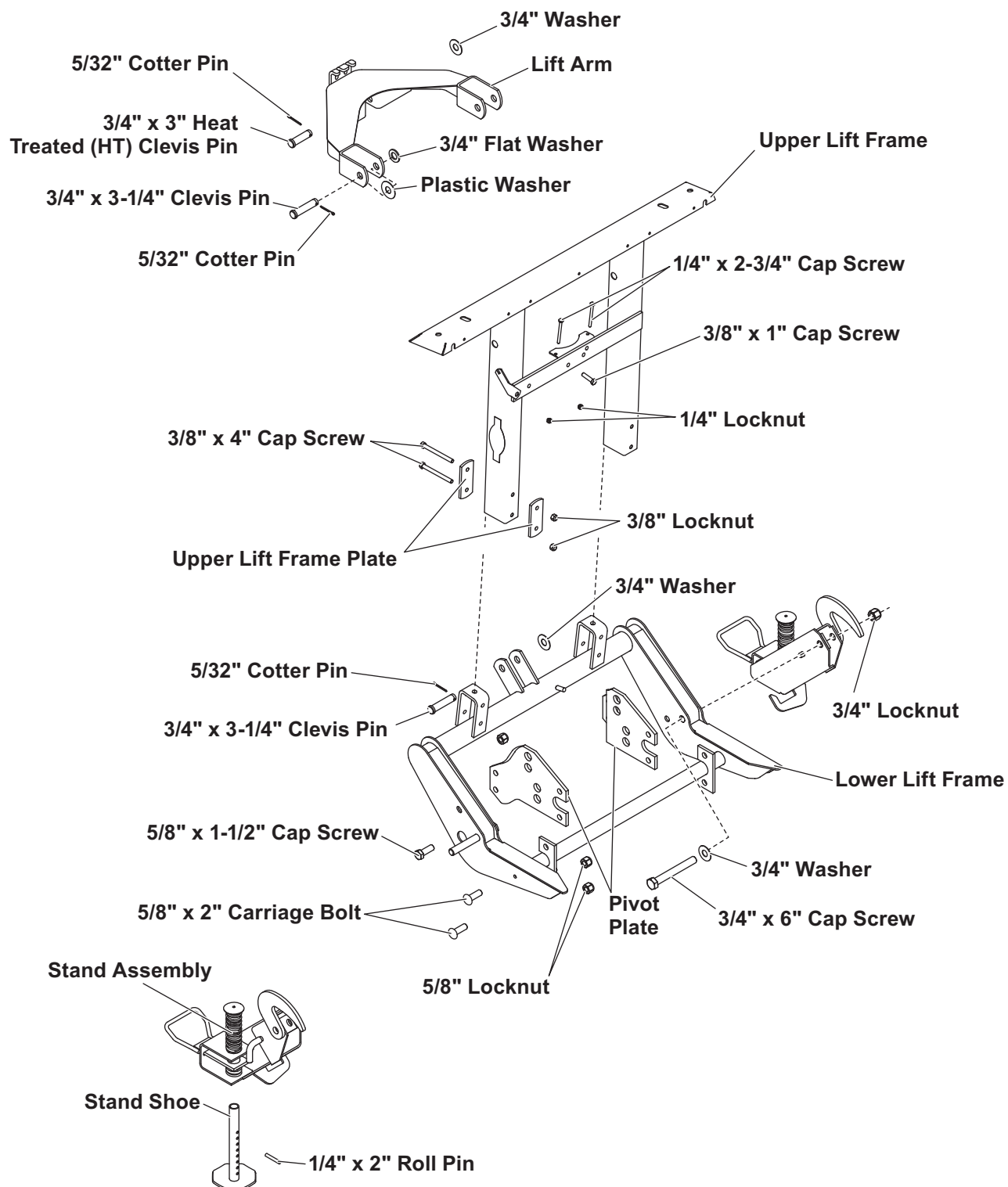
Recommended Fastener Torque Chart (ft-lb)			
Size	 SAE Grade 2	 SAE Grade 5	 SAE Grade 8
1/4-20	6	9	13
5/16-18	11	18	28
3/8-16	19	31	46
3/8-24	24	46	68
7/16-14	30	50	75
1/2-13	45	75	115
9/16-12	66	110	165
5/8-11	93	150	225
3/4-10	150	250	370
7/8-9	150	378	591
1-8	220	583	893
Metric Grade 8.8 (ft-lb)			
Size	Torque	Size	Torque
M 6	7	M 12	60
M 8	17	M 14	95
M 10	35	M 16	155
These torque values apply to fasteners except those noted in the instruction.			

INSTALLATION INSTRUCTIONS

PRO-PLOW® ASSEMBLY WITH STEEL OR POLY BLADE



INSTALLATION INSTRUCTIONS



INSTALLATION INSTRUCTIONS

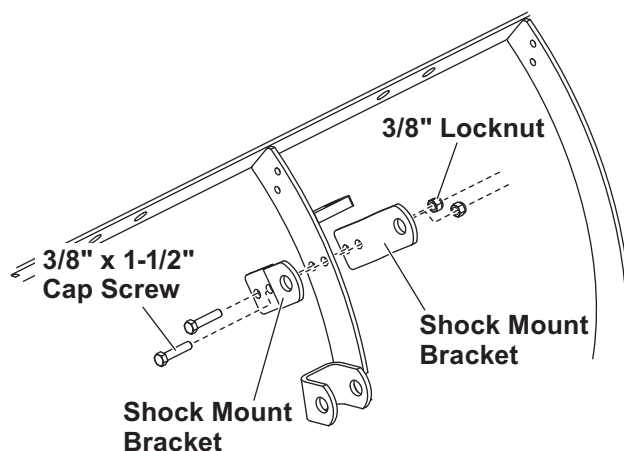
QUADRANT TO BLADE

1. Lay the blade face down on cardboard on the floor.
2. Check the blade center rib for the holes required to install the shock mount brackets (Step 7). If there are no holes, use the template in Lit. No. 69712 to locate and drill two 7/16" holes.
3. Assemble the quadrant to the blade with the center pair of quadrant lugs straddling the blade center rib. Secure with three 5/8" x 3" fasteners and locknuts. **DO NOT overtighten the nuts, as it may bend the lugs.**
4. Thread one 5/8" nut halfway down on each of four eyebolts. Hook a spring to each of the quadrant brackets (indicated in the preceding diagram). Hook an eyebolt to the other end of each trip spring.
5. Push the threaded ends of the eyebolts through the four holes in the top angle of the blade. Install a second nut on each eyebolt.

⚠ CAUTION

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

6. Tighten the top nuts until the coils of the trip 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 blade angle to lock in place.
7. Securely install both shock mount brackets onto the center rib of the blade using two 3/8" x 1-1/2" fasteners and locknuts.

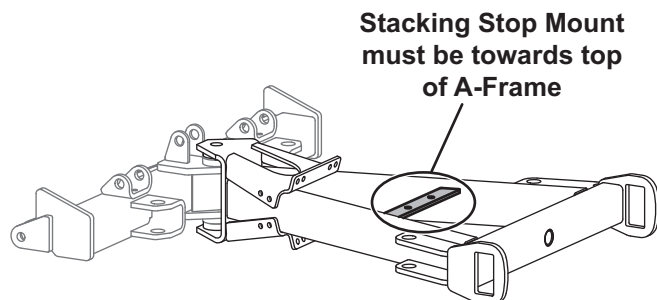


8. Position the large shield end of the shock absorber into the bolted-on shock mount brackets. Install a 3/4" x 3-1/4" clevis pin through the shock absorber and secure with a cotter pin. Place the other end of shock absorber between the lugs on the quadrant and secure with a 3/4" x 3-1/4" clevis pin and cotter pin.

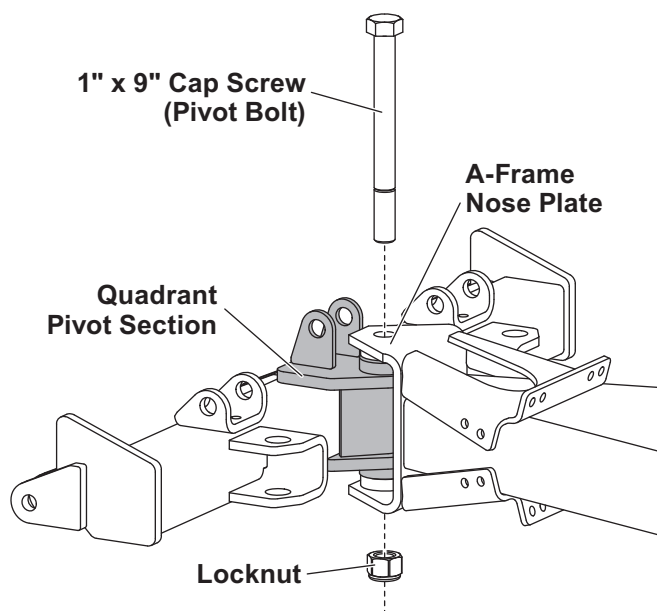
INSTALLATION INSTRUCTIONS

A-FRAME TO QUADRANT

1. Orient the A-frame so that the stacking stop mount is towards the top of the A-frame.



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

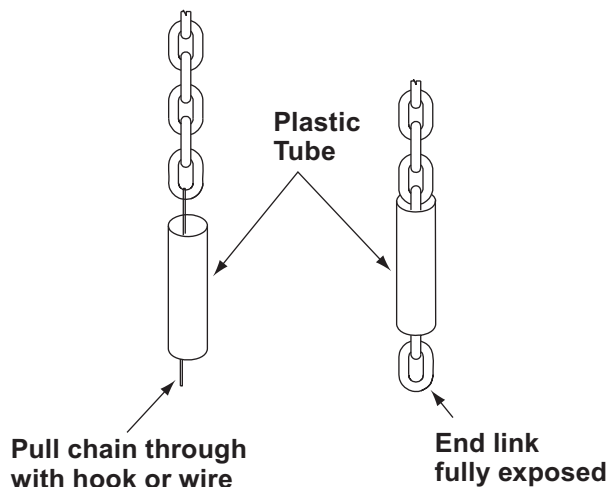


2. Position the rod ends of the two 10" rams (found in hydraulics box) in the brackets on the back of the quadrant. Install a 1" x 3-1/4" clevis pin from the top down and secure with a cotter pin.
3. Swing the A-frame to one side. Making sure the threaded port is facing up, position the base end of a ram into the bracket on the side of the A-frame. Insert a 1" x 3-1/4" clevis pin from the bottom up and secure with a cotter pin.
4. Swing the A-frame to the other side and repeat Step 3 to connect the other ram to the A-frame.

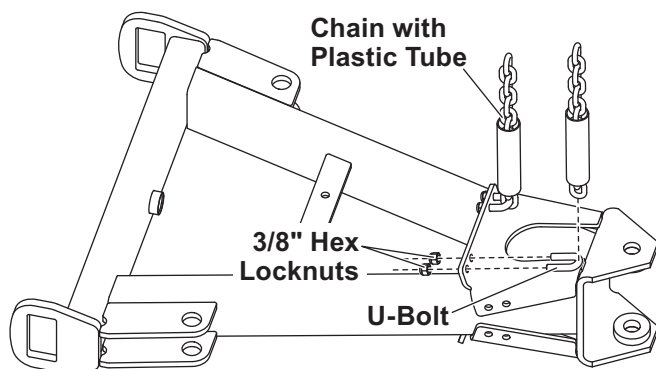
INSTALLATION INSTRUCTIONS

CHAIN ATTACHMENT TO A-FRAME

1. Use a hook or piece of wire to pull the end of the chain through the plastic tube. The end link of the chain must be fully exposed.



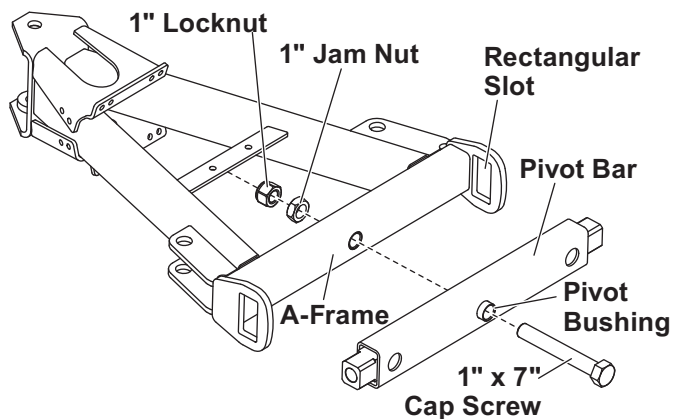
2. Insert ends of the 3/8" x 1-1/2" U-bolt through the chain and then the holes in the nose plate of the A-frame from the outside and secure with locknuts.



3. Repeat Steps 1 and 2 for the other side.

PIVOT BAR TO A-FRAME

1. Insert one end of pivot bar into the rectangular slot on one side of rear of A-frame as far as possible. Pivot bushing must face away from A-frame.



2. Rotate pivot bar until level with A-frame and slide other end into corresponding rectangular slot.
3. Align center holes and insert 1" x 7" cap screw as shown.
4. Install 1" jam nut and tighten to 25 ft-lb then loosen 1/16 turn.
5. Hold 1" cap screw and jam nut to prevent rotation and install 1" locknut. Tighten locknut securely against jam nut.

NOTE: When properly adjusted, the pivot bar should pivot freely without any looseness.

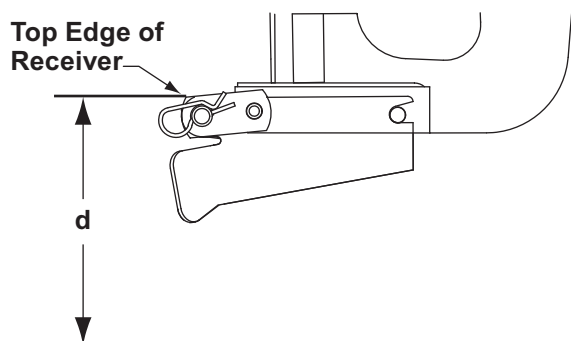
INSTALLATION INSTRUCTIONS

PIVOT PLATES TO PIVOT BAR ASSEMBLY

IMPORTANT! Before assembling pivot plates to the ends of the pivot bar, pivot plate orientation and pivot hole position must be determined using the following procedure.

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 "d".



2. Use dimension "d" from Step 1, and the following chart to determine the proper pivot plate mounting position and pivot hole selection.

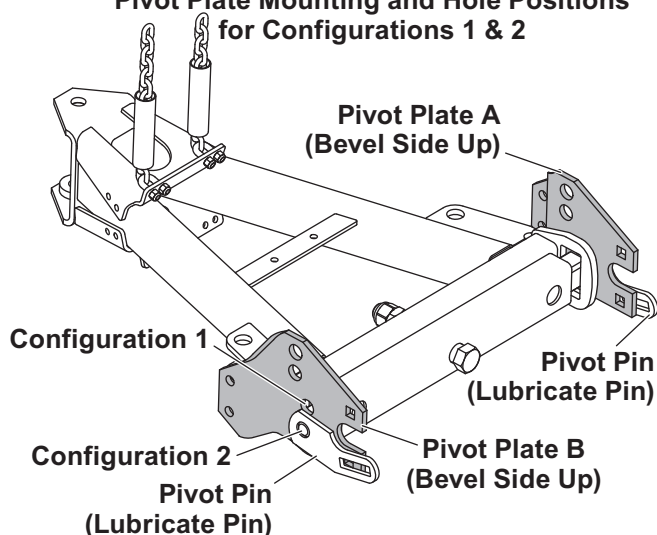
Pivot Plate Configuration Chart		
Dimension "d"	Configuration	Stacking Stop
13.0" – 14.5"	1	No
14.5" – 16.0"	2	No
16.0" – 17.5"	3	Yes
17.5" – 19.0"	4	Yes

3. Position the snowplow with the A-frame level (support the bottom of the pivot bar 9" above the floor).
4. Before assembly, apply grease to the pivot pin holes in each end of the pivot bar and to each pivot pin.
5. Assemble the pivot plates to the ends of the pivot bar, using the appropriate plate orientation and hole position for the configuration determined in Step 2.

There are two pivot plates (A and B) which are mirror images of each other. They can be turned upside down and switched from one side of the pivot bar to the other to provide two different mounting positions.

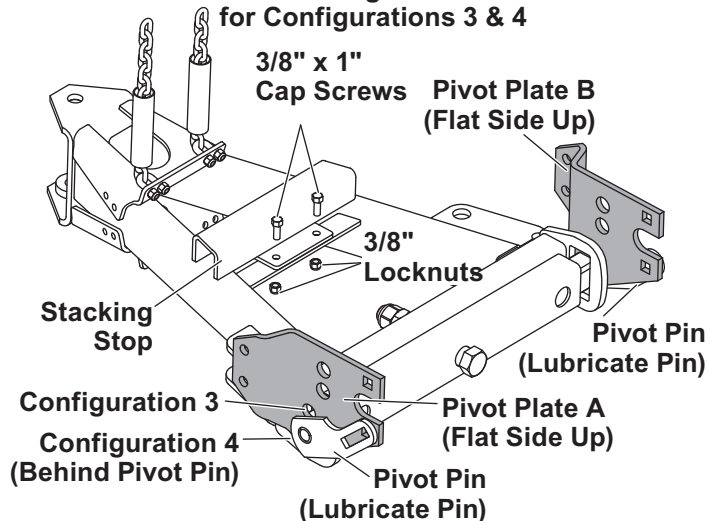
In each pivot plate mounting position, the pivot pins may be installed through one of the two lower holes in the pivot plates. This provides four different height adjustment positions. For all configurations, pivot pins must be positioned with the notches in the pivot pins facing up and the slots in the pivot pins aligned with the bottom holes at the rear of the pivot plates. Note that the pivot pins are never installed in either of the two upper holes in the pivot plates. A stacking stop is mounted to the top of the A-frame for configurations 3 and 4 only.

Pivot Plate Mounting and Hole Positions for Configurations 1 & 2



For configurations 3 and 4, install the stacking stop to the top of the A-frame. Align the holes in the stacking stop with the holes in the A-frame. Insert two 3/8" x 1" cap screws from above. Secure with 3/8" locknuts.

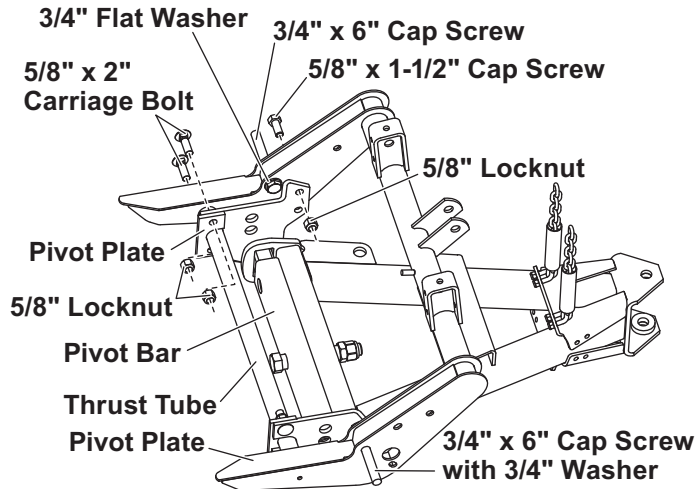
Pivot Plate Mounting and Hole Positions for Configurations 3 & 4



OPERATIONAL TEST AND FINAL ADJUSTMENTS

PIVOT PLATES TO LOWER LIFT FRAME

1. Install a 3/4" flat washer onto a 3/4" x 6" cap screw and insert through the 3/4" hole in the lower lift frame from the inside. Repeat on the other side.



2. Position the lower lift frame outside the pivot plates with the notch in the pivot plates around the thrust tube on the lower lift frame and align the 5/8" mounting holes (3 per side).
3. Insert two 5/8" x 2" carriage bolts from the outside into the rear holes of the pivot plate. The top bolt passes through the pivot plate and attaching lug. The bottom bolt passes first through the slot in the pivot pin, then through the pivot plate and attaching lug. Retain using locknuts (hand tighten only). Repeat on the other side.
4. Insert one 5/8" x 1-1/2" cap screw through the clearance hole in the lower lift frame and top hole in the front of the pivot plate. Retain with a locknut. Repeat on the other side.
5. Tighten all fasteners according to the torque chart.

STAND SHOE INSTALLATION

⚠ WARNING

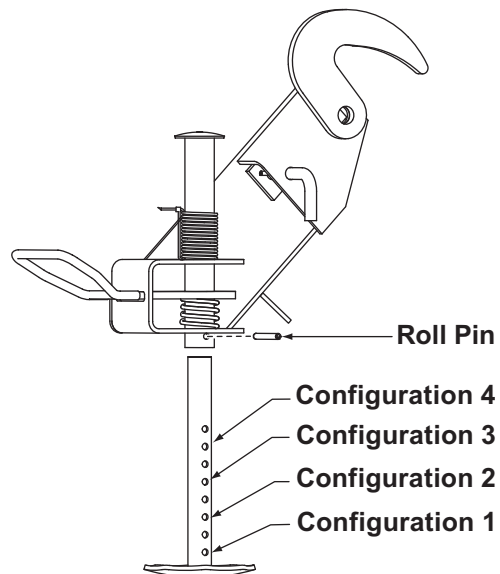
Stand plunger spring is shipped compressed and tied. Do not cut spring tie until final stand shoe adjustment is complete and roll pin is installed.

Initial stand shoe height adjustment is based on the height configuration chart. 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 determined from the height configuration chart and illustration below.
2. Insert 1/4" roll pin.
3. Do not cut the spring tie until after the final stand shoe adjustment.

Pivot Plate Configuration Chart

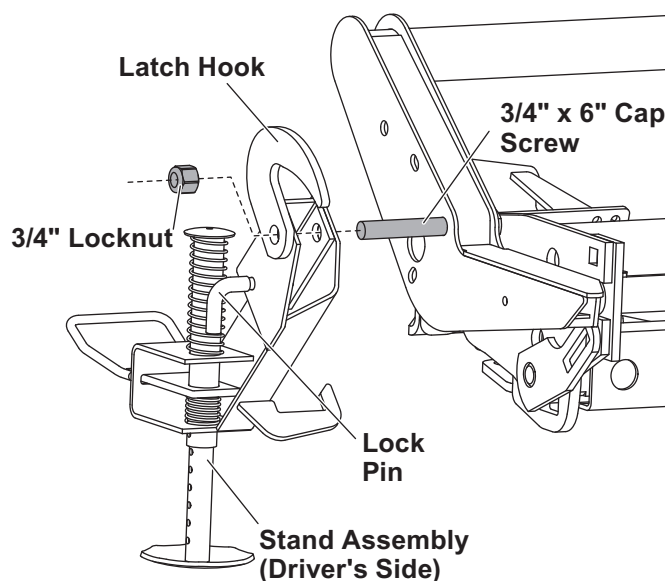
Dimension "d"	Configuration	Stacking Stop
13.0" – 14.5"	1	No
14.5" – 16.0"	2	No
16.0" – 17.5"	3	Yes
17.5" – 19.0"	4	Yes



INSTALLATION INSTRUCTIONS

STAND INSTALLATION

1. Position the stand with the latch hook facing the rear and align 3/4" hole in the stand to 3/4" x 6" cap screw installed previously. Slide the stand over the cap screw and engage the lock pin on the stand into the bottom slot in the lower lift frame.



2. Install a 3/4" locknut and tighten to 25 ft-lb. Then loosen the nut 1/4 turn. When adjusted correctly, after pulling the lock pin out, the stand should rotate with moderate effort and no looseness felt.
3. Repeat Steps 1 and 2 on the other side.

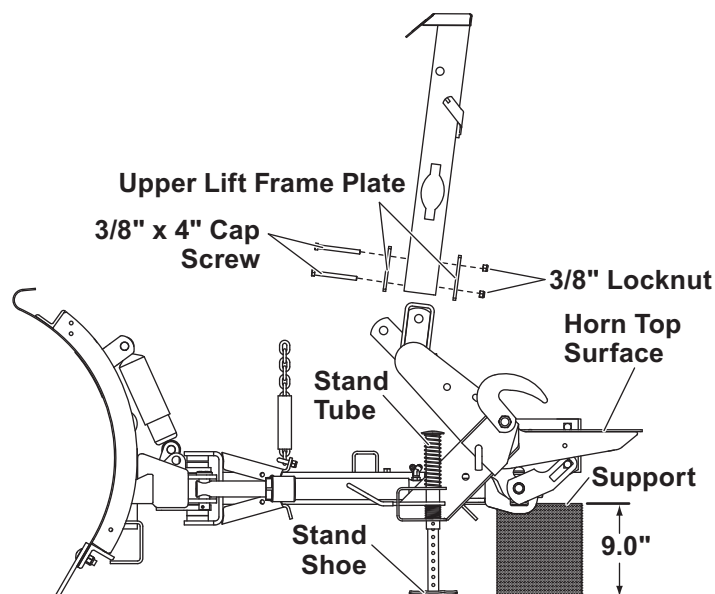
POSITION LOWER LIFT FRAME

1. Rotate the lower lift frame until the top surface of the horns are level.
2. Push down on the stand tube until the stand shoe contacts ground.

The lower lift frame is now positioned correctly for further assembly.

UPPER LIFT FRAME TO LOWER LIFT FRAME

1. Position the upper lift frame above the mounting brackets on the lower lift frame with the WESTERN® logo facing the blade.
2. Slide the upper lift frame down onto the mounting brackets and align the holes.
3. Position one upper lift frame plate on the front and back of the upper lift frame. Insert 3/8" x 4" cap screws through the holes at the bottom of the upper lift frame from the front towards the back. Install another plate over the ends of the cap screws.
4. Secure with 3/8" locknuts. Tighten the bottom nut first to 31 ft-lb. Then tighten the top nut to 31 ft-lb. Verify that the rectangular tubing of the upper lift frame has collapsed, as indicated by the 3" sides of the tubing bulging outward.

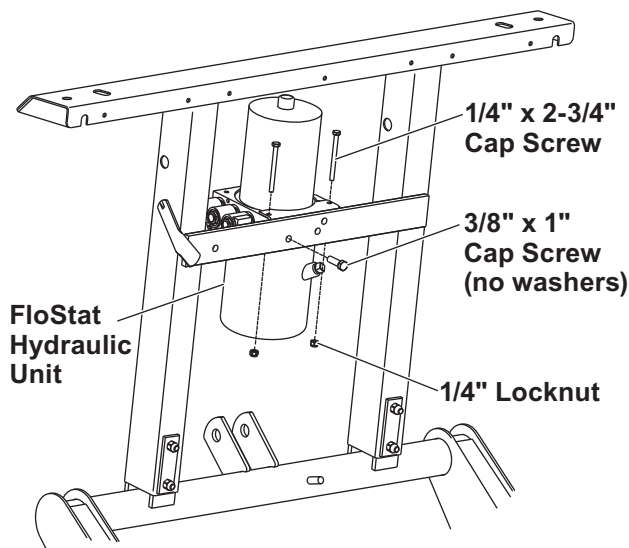


INSTALLATION INSTRUCTIONS

FloStat® HYDRAULIC UNIT

The FloStat hydraulic unit and mounting hardware are found in the hydraulics box.

1. Remove the valve cover from the hydraulic unit valve block and set aside. Discard the two #8 x 1/2" TORX® hex head cover screws.
2. Position the hydraulic unit in the bracket on the upper lift frame cross member with valves toward the driver's side. Install two 1/4" x 2-3/4" cap screws down through the bracket and valve block and retain with locknuts. Do not tighten the nuts at this time.
3. Install a 3/8" x 1" cap screw through hole in rear of the cross member into valve block. Do not use any washers on the cap screw. Tighten to 15–20 ft-lb. Valve block should be tight rearward against the bracket.
4. Tighten the two 1/4" locknuts from Step 2.

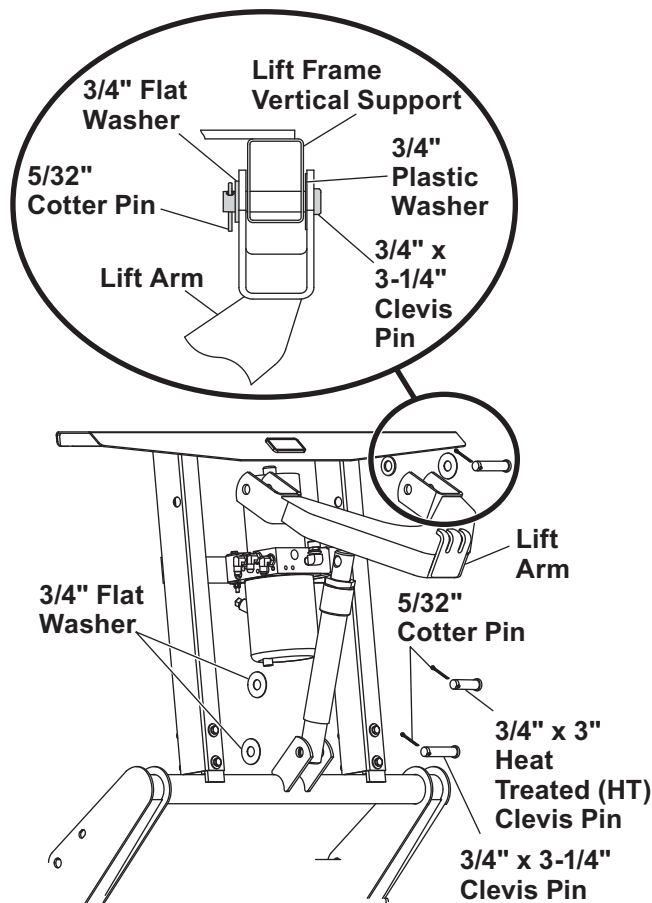


Lift Arm

The lift arm and hardware are found in the A,Q&L box.

1. With the chain hooks forward and up, position the lift arm ends around the upper lift frame vertical supports and align the holes.

2. On each side, install a 3/4" plastic washer between the outside leg of the lift arm and the lift frame vertical support. Install a 3/4" x 3-1/4" clevis pin from the outside. Secure with a 3/4" flat washer and cotter pin.



Lift Ram

The 8" lift ram is found in the hydraulics box. The mounting hardware is found in the A,Q&L box.

1. Position the base end of the lift ram between the lugs on the lower lift frame with the port toward the rear. Install a 3/4" x 3-1/4" clevis pin. Secure with a 3/4" flat washer and cotter pin.
2. Align the hole in the lift ram rod between the holes in the end of the lift arm. Install a 3/4" x 3" heat-treated (head marked "HT") clevis pin. Secure with a 3/4" flat washer and cotter pin.

INSTALLATION INSTRUCTIONS

3. With the lift ram fully collapsed, rotate the light bar until the lower lift frame horns are horizontal, pull chains tight and insert into the lift arm hooks. Final lift chain adjustment will be made after the snowplow is mounted to the vehicle.

Procedure for Installing Hydraulic Fittings and Hoses

Do not use thread sealant/tape on hoses or fittings. These materials could damage the product.

Use the following procedure to install SAE O-ring fittings in valve block and rams.

1. Turn the jam nut on the fitting as far back as possible.
2. Lubricate O-ring with clean hydraulic fluid.
3. Screw the fitting into the port by hand until the washer contacts the port face and the shoulder of the jam nut threads.
4. Unscrew the fitting to proper position, no more than one full turn.
5. Using two wrenches, hold the fitting body in position and tighten the jam nut until the washer again contacts port face, then tighten an additional 1/8–1/4 turn to lock fitting in place. Final torque on the jam nut should be approximately 20 ft-lb.

Use following procedure to install hydraulic hoses.

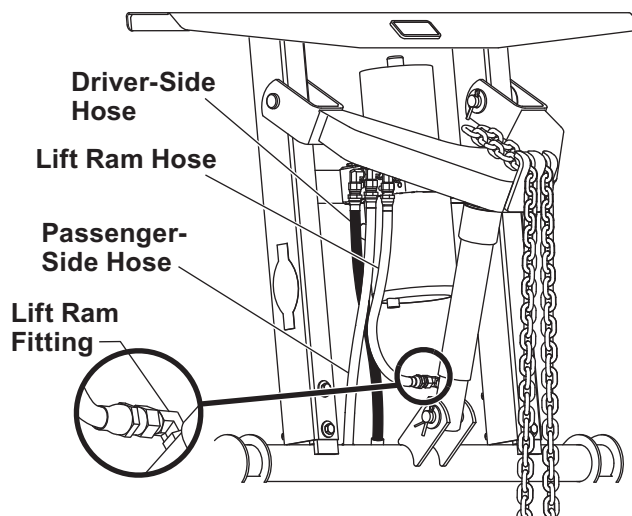
NOTE: Overtightening JIC hose fittings will result in a fractured fitting.

1. Screw the flare nut onto fitting flare and hand tighten.
2. Align the hose so there are no twists or sharp bends.
3. Using two wrenches, hold the hose in position and tighten the flare nut 1/8–1/4 turn beyond hand tight. Final torque on the flare nut should be approximately 20 ft-lb.

Fittings and Hoses

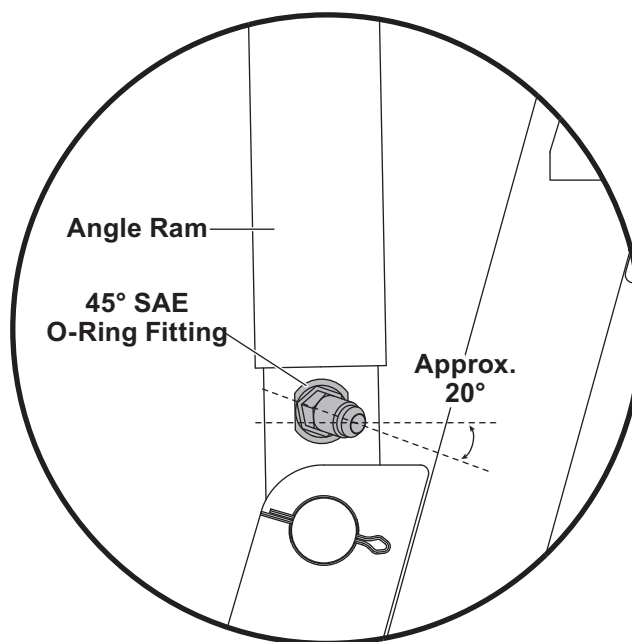
The hydraulic fittings and hoses are found in the hydraulics box.

1. Remove port plug from lift ram and install a 90° SAE O-ring fitting oriented toward the passenger's side.



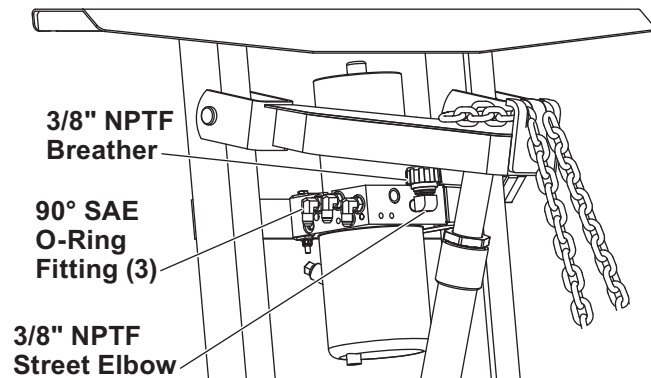
2. Install 45° SAE O-ring fittings oriented approximately 20° to the rear from inward straight facing position.

Top Driver's Side View



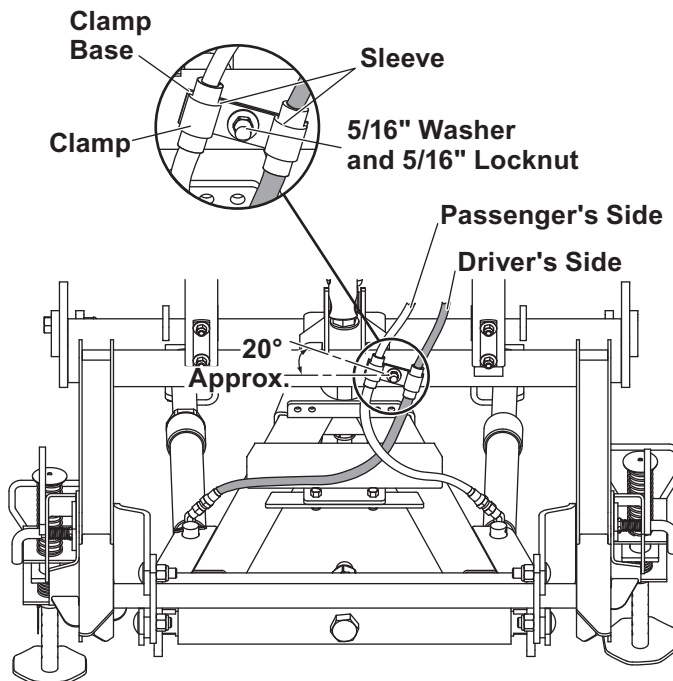
INSTALLATION INSTRUCTIONS

3. Remove three large port plugs from the passenger's side of the hydraulic unit valve block and install 90° SAE O-ring fittings oriented down, parallel with short edge of valve block.
4. Remove the 3/8" NPTF square head pipe plug from the front side of valve block and install 3/8" NPTF street elbow oriented up. Install 3/8" NPTF breather in elbow.



5. Attach 16" hydraulic hose to front fitting on valve block and lift ram.
6. With a marker or piece of tape, mark the center of each 36" hydraulic hose.
7. Attach a 36" hydraulic hose to center fitting on valve block. Route hose down over lower cross tube behind the lift frame and attach to the passenger-side angle ram.
8. Attach a 36" hydraulic hose to the rear fitting on the valve block. Route the hose down over the lower cross tube behind the lift frame and attach to the driver-side angle ram.

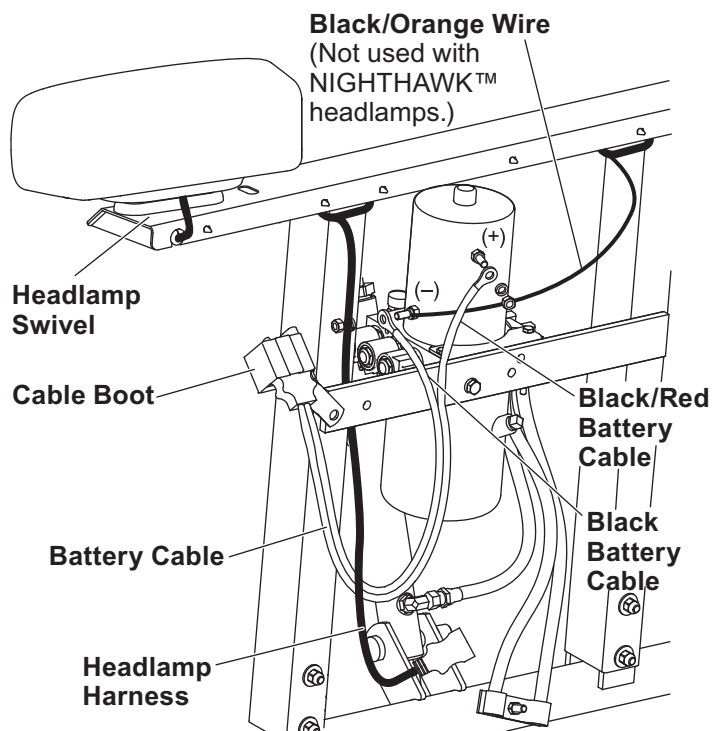
9. Install the clamp base, double hose clamp, 5/16" washer and 5/16" locknut loosely on the weld stud on lower lift frame cross tube near the lift ram.
10. Install a split rubber hose sleeve on each 36" hose just above the mark made in Step 6.
11. Orient the clamp and base as shown and install the hoses in their respective side of clamp with the sleeves centered in the clamp and sleeve openings to the inside of the clamp. Tighten the clamp. Final position of the clamp should be approximately 20° clockwise from horizontal. Proper positioning of the hoses in the clamp is necessary to allow complete movement of the blade without stressing the hoses.
12. If necessary, realign the clamp and fittings so hoses do not contact the snowplow frame, mount or vehicle.



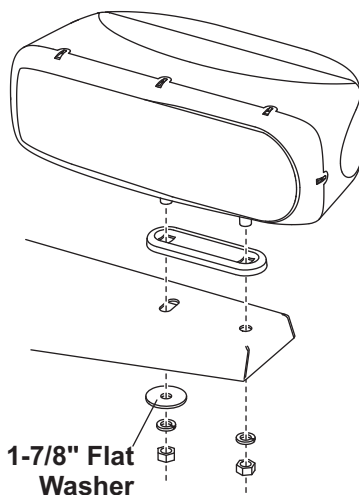
INSTALLATION INSTRUCTIONS

HEADLAMPS

The headlamps and hardware are found in the headlamp box. Additional hardware (1-7/8" OD flat washer) is found in the hydraulics box.

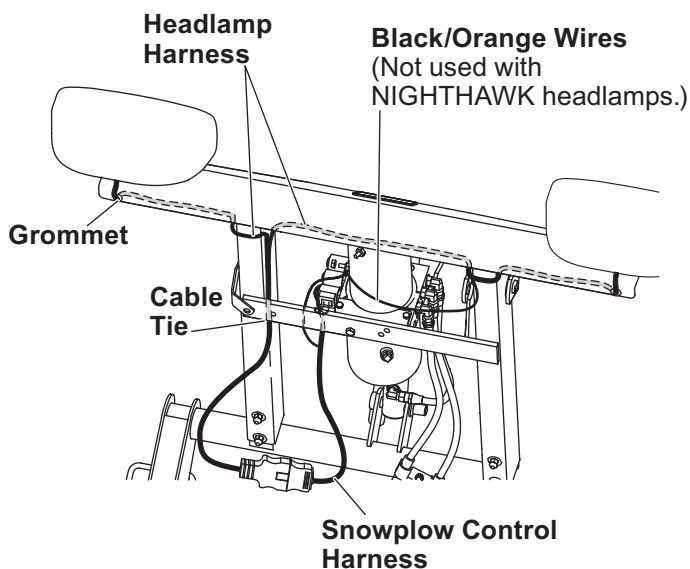


1. With the wire harness behind the lift frame, attach the headlamps to the hole and slot in the headlamp channel by following the instructions included with the headlamps. Install a 1-7/8" flat washer between the headlamp channel and the lock washer.



2. Install a split rubber grommet on each headlamp wire 3" from headlamp and insert grommet and wire into the slot on rear of the channel.
3. Route the wires underneath the channel, in back of the vertical supports, and down along inside of the driver-side vertical support, securing wires with cable ties.
4. Attach the harness to the front of the hydraulic unit cross member at the driver-side vertical support with a cable tie through the hole in the cross member.
5. Route the black/orange wire with the ring terminal to the motor ground stud. The black/orange wire is not used with NIGHTHAWK headlamps.

NOTE: Use dielectric grease to prevent corrosion on all connections. Fill receptacles and lightly coat ring terminals and blades before assembly.

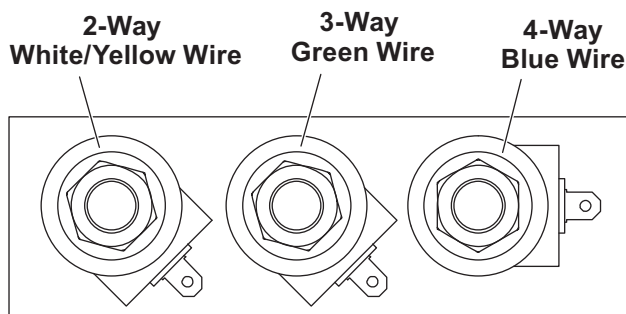


INSTALLATION INSTRUCTIONS

SNOWPLOW CONTROL HARNESS

NOTE: Dielectric grease has been applied to coil terminals. DO NOT wipe off terminals.

1. With the harness strain relief located at the lower rear corner of the valve block, attach a black/orange wire to each valve coil.
2. Attach the white/yellow wire to the front coil, green wire to the center coil, and blue wire to the rear coil, as shown.



Black/Orange Wire to Each Coil

3. Route the wires under the valve coils and reinstall the valve cover with the harness strain relief inside the cover harness slot. Avoid pinching the wires between the cover and coils or valve block. Attach the cover with two 2-1/2" standoff screws. Apply anti-seize to the screw threads.
4. Route the black/orange wire with the ring terminal to the motor ground stud.

NOTE: Snowplow lighting and control harnesses plug into one another for storage.

PLOW BATTERY CABLE

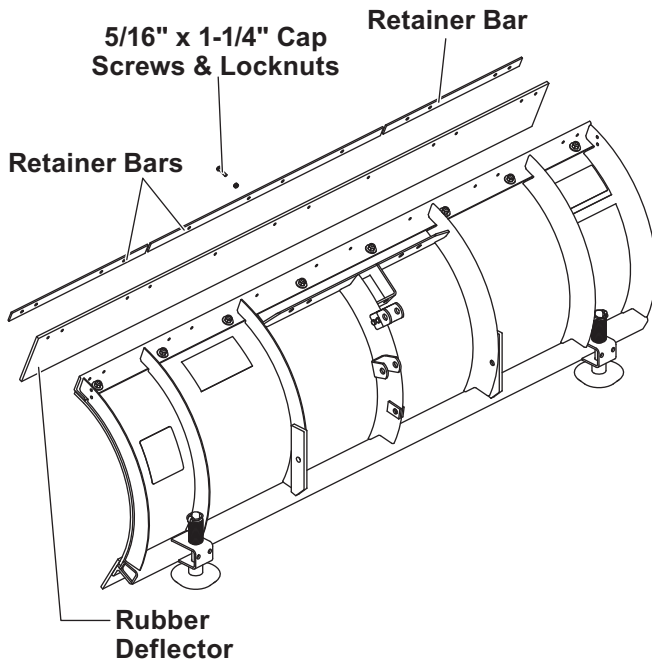
Parts installed in this section are found in the hydraulics box.

1. Attach the black/red battery cable to the POSITIVE (+) motor stud on the hydraulic unit.
2. Attach the black battery cable and the two black/orange wires from the headlamp and control harnesses to the motor NEGATIVE (-) ground stud.
3. Tighten both stud nuts to 50–60 in-lb. Do not allow the stud to rotate while tightening.
4. Install the cable boot over the bracket on the driver's side of the lift frame.
5. Insert the battery cable connector in the cable boot for storage.

INSTALLATION INSTRUCTIONS

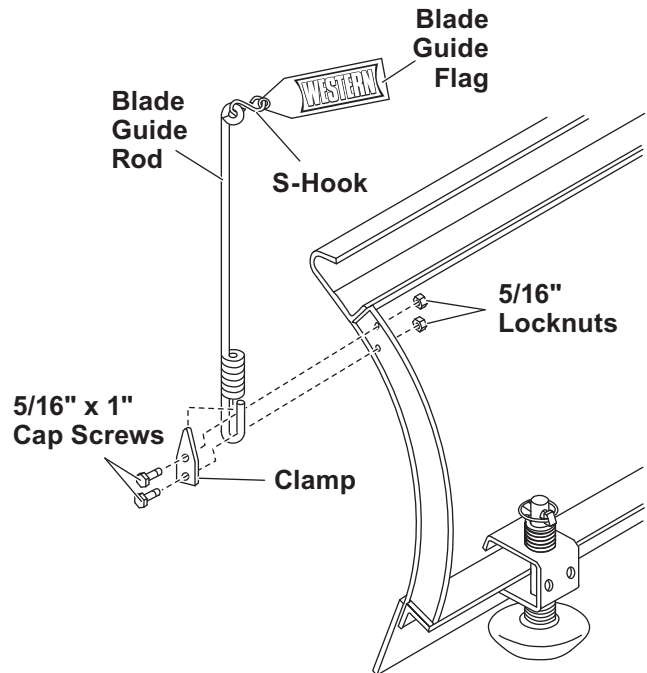
7-1/2' AND 8' POLY BLADE SNOW DEFLECTOR

Align the holes in the rubber deflector material with the holes in the poly blade frame top angle. Starting at one end, align end hole in retainer bar with end hole in deflector and blade frame top angle. Loosely install 5/16" x 1-1/4" cap screws and locknuts in retainer bar holes. Position remaining retainer bars and install fasteners. Tighten fasteners starting from the center of the blade towards each end.



BLADE GUIDE ASSEMBLY

Insert the pointed end of the clamp into the coil of the blade guide rod. Attach a blade guide rod to each outer rib using 5/16" x 1" cap screws and locknuts as shown below.



OPERATIONAL TESTS AND FINAL ADJUSTMENTS

FILLING HYDRAULIC UNIT

⚠ WARNING

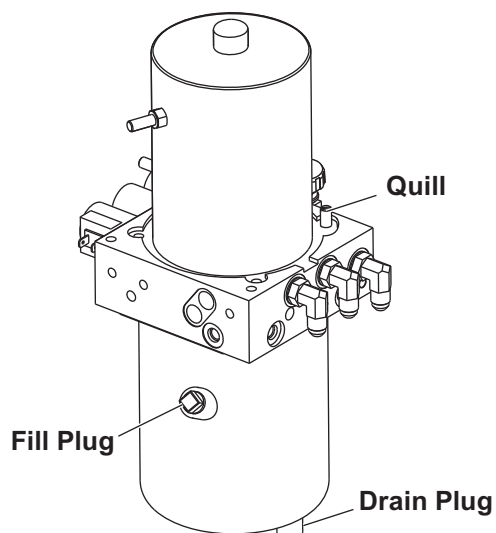
Keep 8' clear of the blade when it is being raised, lowered or angled. Do not stand between the vehicle and the blade or directly in front of the blade. If the blade hits or drops on you, you could be seriously injured.

1. Attach the snowplow to the vehicle according to the instructions on the back of the blade.
2. Fill the reservoir with WESTERN® High Performance Hydraulic Fluid to -40°F (-40°C), or other fluid conforming to Military Specification MIL-H-5606A, such as Mobil Aero HFA or Shell AeroShell® Fluid 4. Replace the fill plug.

⚠ WARNING

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

3. Turn the control ON and completely angle blade to the left and right several times. Turn the control OFF.



⚠ CAUTION

DO NOT raise blade during fill process as this may cause pump cavitation.

⚠ CAUTION

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

4. Fill the reservoir to the top of the fill hole and replace the fill plug.

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

5. Turn the control ON and raise and lower the snowplow several times. Activate the control FLOAT function and manually collapse the lift ram all the way after each lowering of the blade. Turn the control OFF.
6. Fill the reservoir to the top of the fill hole and replace 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

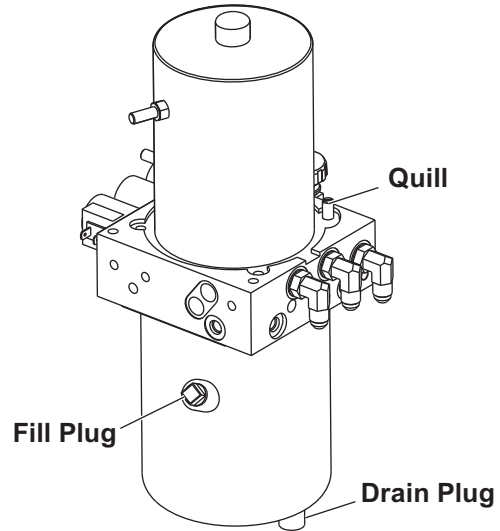
Keep 8' clear of the blade when it is being raised, lowered or angled. Do not stand between the vehicle and the blade or directly in front of the blade. If the blade hits or drops on you, you could be seriously injured.

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

1. Lower the blade to the ground before making adjustment. Turn the control OFF.
2. Turn the quill IN (clockwise) to decrease the drop speed.

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

3. Stand clear of the blade when checking adjustment.



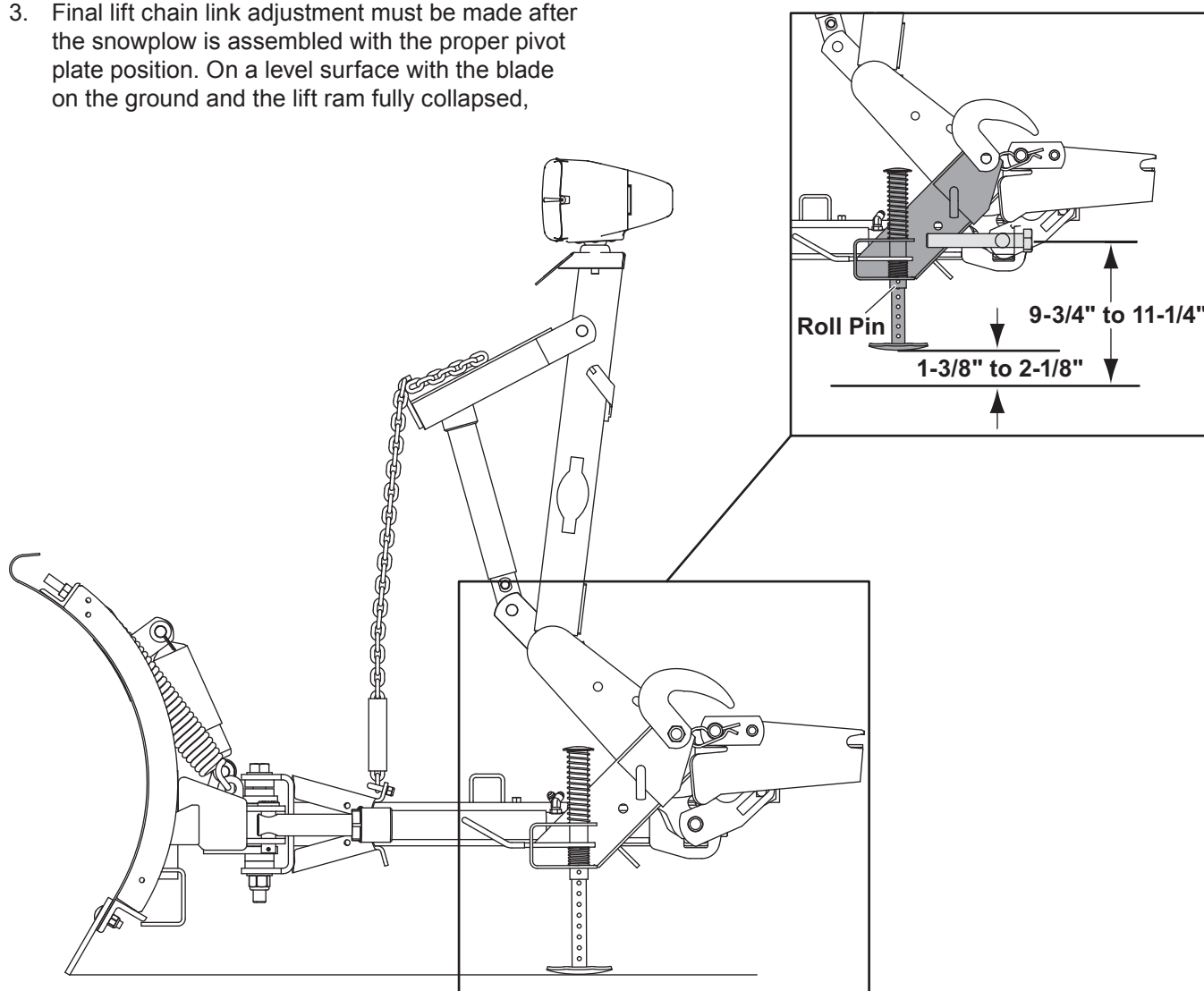
OPERATIONAL TESTS AND FINAL ADJUSTMENTS

FINAL INSPECTION AND ADJUSTMENT

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 $9\frac{3}{4}$ "– $11\frac{1}{4}$ ".
2. With the snowplow attached and on the ground, place the stand arm in the lower position with the lock pin engaged and 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 $1\frac{3}{8}$ "– $2\frac{1}{8}$ ". 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 position. On a level surface with the blade 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 chain tension is correct, the A-frame will not contact the lift frame when the blade is fully raised.

4. 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 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 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) 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 12-volt 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.



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