



# 30982

## UNDERCARRIAGE KIT

**Ford Super Duty F-250/350/450/550 4X4 1999 - 04 Early**

### Installation Instructions

**⚠ CAUTION**

Read this document before installing the snowplow.

**⚠ CAUTION**

See your BLIZZARD® outlet/Web site for specific vehicle application recommendations before installation. The Undercarriage Selection Guide 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.

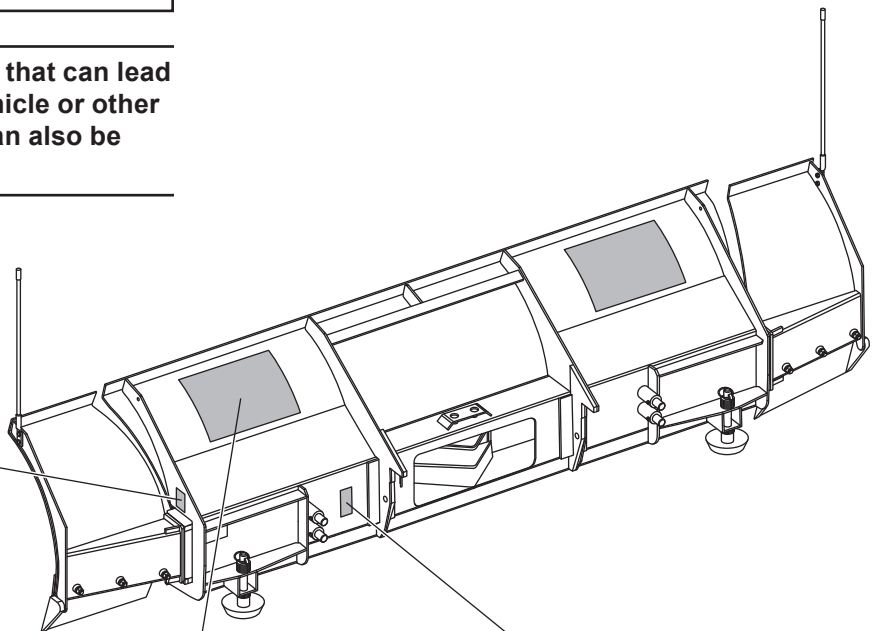
## WARNING/CAUTION & INSTRUCTION LABELS

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.



**POWER PLOW® and  
SPEEDWING™ Blades Only  
(both sides)**



ATTACH	⚠ WARNING: Keep fingers away from snowplow and truck attachment points. POWER HITCH™ arm raises behind undercarriage pushbeam.	DETACH
<ol style="list-style-type: none"> <li>1. Slowly drive vehicle forward to engage mount adapter into A-frame.</li> <li>2. Turn power switch to center or "OFF" position.</li> <li>3. Plug in electrical harnesses.</li> <li>4. Push and hold power switch RIGHT and push UP and hold arm/blade operation switch, Arm will engage mount adapter and pull snowplow towards vehicle.</li> <li>5. Install both hitch pins. Hitch pin is fully engaged when pin handle is against the pin guide plate.</li> <li>6. While holding power switch RIGHT, push DOWN and hold arm/blade operation switch, Arm will disengage mount adapter to relieve tension on the stand.</li> <li>7. Pull and raise the stand until the stand pin seats into upper hole on the A-frame.</li> <li>8. Turn power switch to left or "Flowing" position.</li> </ol>	<p><b>ATTACH - Steps 2, 4, 6 &amp; 8</b> <b>DETACH - Steps 2, 3, 5 &amp; 7</b></p> <p><b>ATTACH - Step 5</b> <b>DETACH - Step 6</b></p>	<ol style="list-style-type: none"> <li>1. Lower snowplow onto ground with blade straight. Turn plow control in cab to "OFF" position.</li> <li>2. Turn power switch to center or "OFF" position.</li> <li>3. While holding the power switch RIGHT, push DOWN and hold the arm/blade operation switch, Arm will disengage mount adapter to relieve tension on the stand.</li> <li>4. Pull and lower the stand until stand pin seats into lower hole on the A-frame and stand and light tower side plates contact.</li> <li>5. Push and hold power switch RIGHT and push UP the arm/blade operation switch. Arm will engage mount adapter and pull snowplow tightly to vehicle.</li> <li>6. Remove both hitch pins.</li> <li>7. While holding power switch RIGHT, push DOWN and hold arm/blade operation switch to fully lower arm.</li> <li>8. Unplug electrical harnesses.</li> </ol>

**POWER HITCH™**

Read Owner's Manual for Complete Instructions.

U.S. Patents 5,420,480; 5,638,615; 5,899,007; 6,178,669; 6,253,470; 6,276,076; 6,393,737; 6,408,549; 6,412,199; 6,442,877; 6,615,513; 7,134,227; RE 35,700; CAN Patents 2,060,425; 2,194,922; 2,220,763; 2,250,506; 2,355,145; 2,358,354; 2,460,190; and other patents pending.

**BLIZZARD**

# 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 the blade and ballast. The rating label is found on the driver-side vehicle door cornerpost.**

### WARNING

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

### WARNING

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

### CAUTION

**Refer to the Undercarriage Selection Guide for minimum vehicle recommendations and ballast requirements.**

## 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.

## 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.**

# TORQUE SPECIFICATIONS

## 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.



Grade Identification for J429–Grade 5 Bolt



Grade Identification for J429–Grade 8 Bolt

SAE J429 Grade 5 Torque Values				SAE J429 Grade 8 Torque Values			
Nominal Thread Size	Clamp Loads (lb)	Tightening Torque		Nominal Thread Size	Clamp Loads (lb)	Tightening Torque	
		"Lubricated"	"Dry"			"Lubricated"	"Dry"
1/4-20	2,000	6 ft-lb	8 ft-lb	1/4-20	2,850	9 ft-lb	12 ft-lb
5/16-18	3,350	13 ft-lb	18 ft-lb	5/16-18	4,700	18 ft-lb	25 ft-lb
3/8-16	4,950	23 ft-lb	31 ft-lb	3/8-16	6,950	32 ft-lb	44 ft-lb
7/16-14	6,800	37 ft-lb	50 ft-lb	7/16-14	9,600	53 ft-lb	70 ft-lb
1/2-13	9,050	57 ft-lb	75 ft-lb	1/2-13	12,800	80 ft-lb	107 ft-lb
9/16-12	11,600	82 ft-lb	109 ft-lb	9/16-12	16,400	115 ft-lb	154 ft-lb
5/8-11	14,500	113 ft-lb	151 ft-lb	5/8-11	20,300	159 ft-lb	211 ft-lb
3/4-10	21,300	200 ft-lb	266 ft-lb	3/4-10	30,100	282 ft-lb	376 ft-lb
7/8-9	29,435	321 ft-lb	430 ft-lb	7/8-9	41,550	454 ft-lb	606 ft-lb
1-8	38,600	482 ft-lb	640 ft-lb	1-8	54,540	680 ft-lb	900 ft-lb



Grade Identification for Metric–Grade 8.8 Bolt



Grade Identification for Metric–Grade 10.9 Bolt

Metric Class 8.8 Torque Values				Metric Class 10.9 Torque Values			
Diameter (mm)	Clamp Loads (lb)	Tightening Torque		Diameter (mm)	Clamp Loads (lb)	Tightening Torque	
		"Lubricated"	"Dry"			"Lubricated"	"Dry"
5	1,389	3 ft-lb	5 ft-lb	5	1,987	5 ft-lb	7 ft-lb
6	1,965	6 ft-lb	8 ft-lb	6	2,812	8 ft-lb	11 ft-lb
7	2,826	10 ft-lb	13 ft-lb	7	4,044	14 ft-lb	19 ft-lb
8	3,579	14 ft-lb	19 ft-lb	8	5,121	20 ft-lb	27 ft-lb
10	5,672	28 ft-lb	37 ft-lb	10	8,116	40 ft-lb	53 ft-lb
12	8,243	49 ft-lb	65 ft-lb	12	11,796	70 ft-lb	92 ft-lb
14	11,246	77 ft-lb	103 ft-lb	14	16,092	111 ft-lb	148 ft-lb
16	15,882	125 ft-lb	167 ft-lb	16	21,970	173 ft-lb	231 ft-lb
18	19,423	172 ft-lb	229 ft-lb	18	26,868	238 ft-lb	317 ft-lb
20	24,784	244 ft-lb	325 ft-lb	20	34,284	338 ft-lb	450 ft-lb

## UNDERCARRIAGE INSTALLATION

**NOTE:** For easier assembly and installation, vehicle and all snowplow components should be on a smooth, level, hard surface, such as concrete.

### **⚠ WARNING**

**BlockerBeam™ tag provided must be attached to BlockerBeam when removed from truck. BlockerBeam must be reinstalled if plow mount is ever removed.**

1. If vehicle is equipped with a BlockerBeam™ between the frame horns and behind the bumper, unbolt and remove it. Save for reinstallation if the plow mount is later removed from the vehicle. Attach the BlockerBeam tag to the BlockerBeam using nylon tie strap provided.
2. Remove the bumper by first detaching the rubber flap and any electrical cords attached to the bumper (vehicles with fog lamps and diesel). Remove the bumper fasteners and slide the bumper forward until it is clear of the tow hooks. Remove and discard the two thin plates hanging from the bumper mounts.
3. Beginning on the driver's side, position the rear of the mount by fitting it between the leaf springs and the frame. Truck frame may have to be raised to provide clearance for mount installation. Check for and eliminate any interference with Ford nut retainers on bottom of frame.

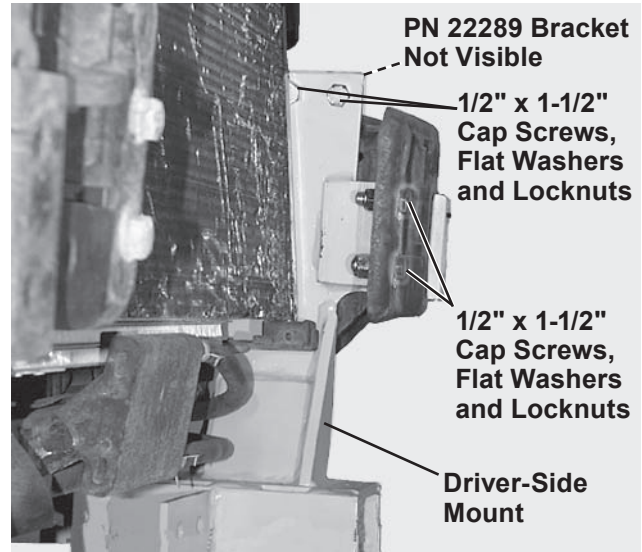
### **⚠ CAUTION**

**To avoid damaging A/C condensers, heads of fasteners should be on the inside, with nuts on the outside of (PN 22289) bracket; this will increase clearance with condenser.**

4. Once the rear of the mount is in position, rotate the front of the mount into place and loosely secure by attaching a bracket (PN 22289) with two 1/2" x 1-1/2" cap screws, flat washers and locknuts. Heads of fasteners should be on the inside. Slide mount rearward after attaching bracket and hardware.

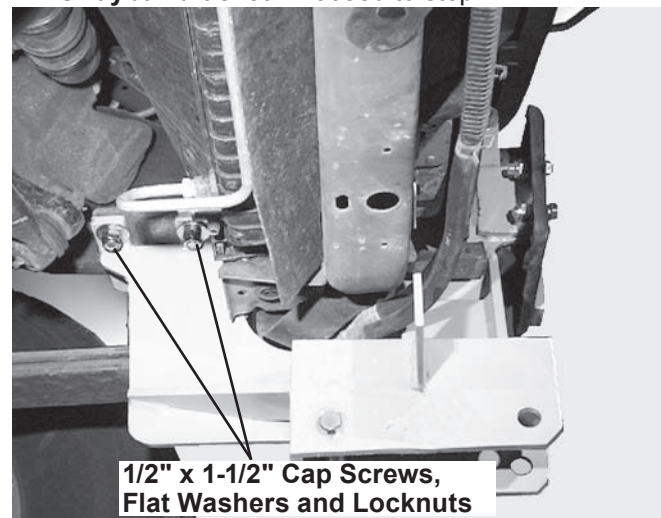
**NOTE:** Rear bolt in step 3 can also be assembled by lifting the A/C condenser up in its attaching pocket and pulling it forward from its lower pocket. Assemble the bolt and lift and replace A/C condenser to its attaching pockets.

5. Loosely attach the front of the mount to the bumper brackets on the frame using 1/2" x 1-1/2" cap screws, flat washers and locknuts.



6. **For F-250, F-350 and all other vehicles with swaybar bracket:** Loosely attach rear of mount to swaybar bracket using 1/2" x 1-1/2" cap screws, one flat washer on top of the swaybar bracket and one on the bottom of the mount slotted hole, and locknuts.

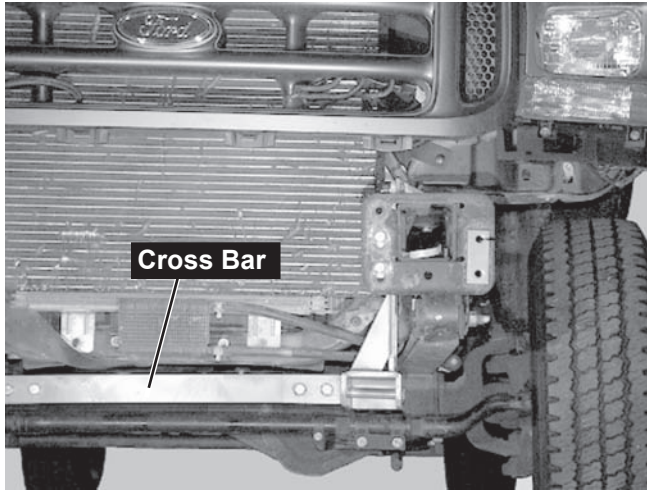
**For F-450, F-550, and all vehicles without swaybar bracket:** Proceed to step 7.



7. Repeat steps 2–5 on the passenger's side.

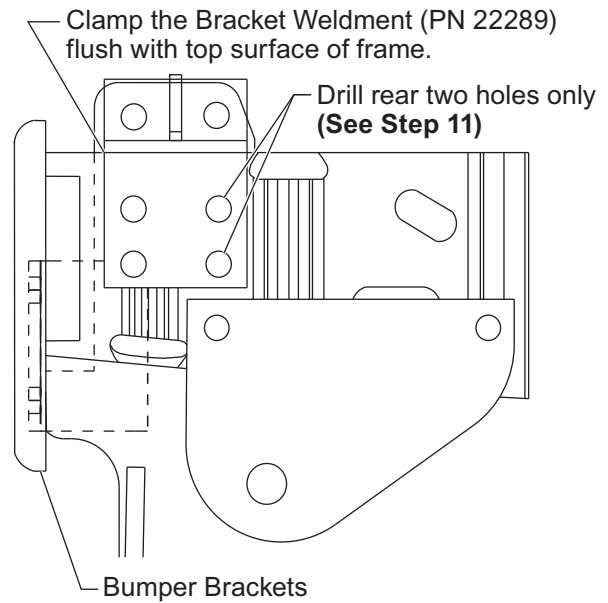
## UNDERCARRIAGE INSTALLATION

8. Loosely attach the cross bar between both mounts using 1/2" x 1-1/2" cap screws, flat washers and locknuts.



9. With the mount fitted snugly into position, clamp the brackets (PN 22289) to the top surface of the frame. Make sure the bracket is flush with the top frame surface and the shim welded to the bracket is flush with the smaller boxed frame section.

10. Tighten the fasteners at the front of the mount where it meets the bumper plate. These fasteners should now be toward the tops of the slotted holes in the bumper plate.





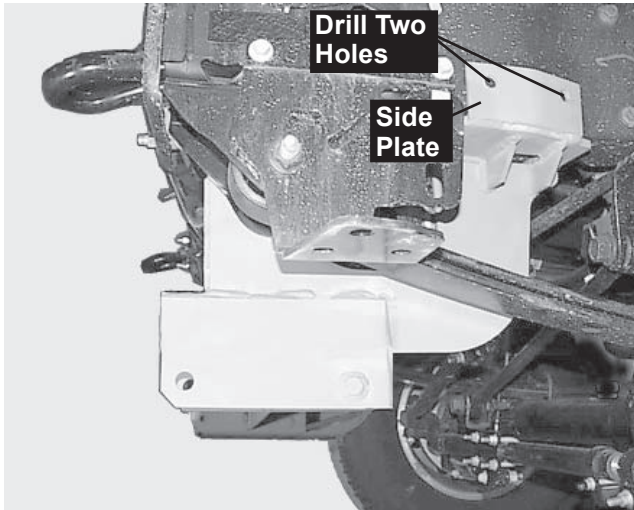
## UNDERCARRIAGE INSTALLATION

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### **⚠ CAUTION**

Use caution not to pinch, cut or drill through any wires or hoses running along the frame rails.

11. Attach rear of mount.



**For F-250, F-350 and all other vehicles with swaybar bracket:** With the rear of the mount tight against both the side and bottom of the frame, tighten fasteners running through swaybar bracket.

Mark and drill two  $\frac{17}{32}$ " holes through the side of the frame using the mount holes as guides. Fasten securely using two  $\frac{1}{2}$ " x  $1\frac{1}{2}$ " cap screws with handles, flat washers and locknuts.

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**NOTE:** To ensure a tight fit, loosen the swaybar bracket fasteners before tightening the cap screws with handles, then re-tighten the bracket fasteners.

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**For F-450, F-550 and all vehicles without swaybar bracket:** With the rear of each mount tight against both the side and the bottom of the frame, mark and drill two  $\frac{9}{16}$ " holes through bottom of frame using mount holes as guides. To facilitate drilling, remove mounts and drill smaller pilot holes to start.

Place a bushing between the mount and the frame, centered over the rear hole. Fasten securely using two  $\frac{1}{2}$ " x  $1\frac{1}{2}$ " cap screws with handles, flat washers and locknuts. Mark and drill two  $\frac{17}{32}$ " holes through the side of the frame using mount holes as guides. Fasten securely using two  $\frac{1}{2}$ " x  $1\frac{1}{2}$ " cap screws with handles, flat washers and locknuts.

## UNDERCARRIAGE INSTALLATION

### **⚠ CAUTION**

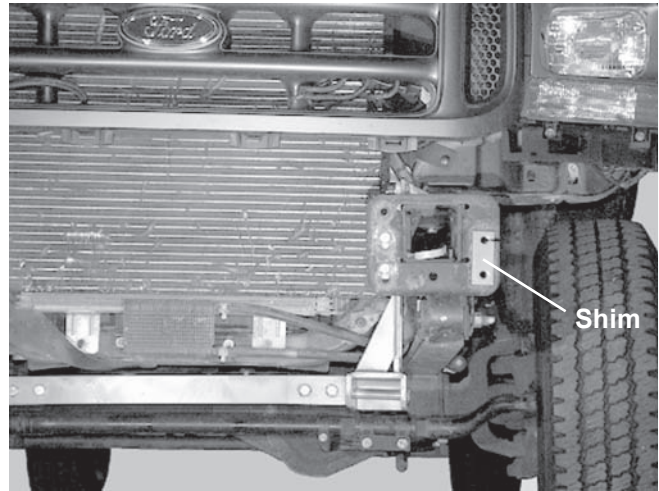
**Use caution not to pinch, cut or drill through any wires or hoses running along the frame rails.**

12. On the driver's and passenger's side, drill the two rear holes in the brackets (PN 22289) and fasten using 1/2" x 1-1/2" cap screws, flat washers to inside of frame and locknuts. Tighten all fasteners at this time according to the torque chart.

**NOTE: Front holes in PN 22289 bracket are not used at any time.**

13. Use the cable ties to tie up cooling lines on the driver's side forward of the front-most radiator. It is important to provide sufficient clearance between all portions of the cooling lines and the driver-side mount.

14. Place 1/2" shims in place to space the bumper forward of the frame. Use a cable tie to temporarily hold the shim in place. Reinstall the bumper and reattach any rubber flaps or electrical cords removed during bumper removal.



15. Repeat Step 14 on the passenger's side.



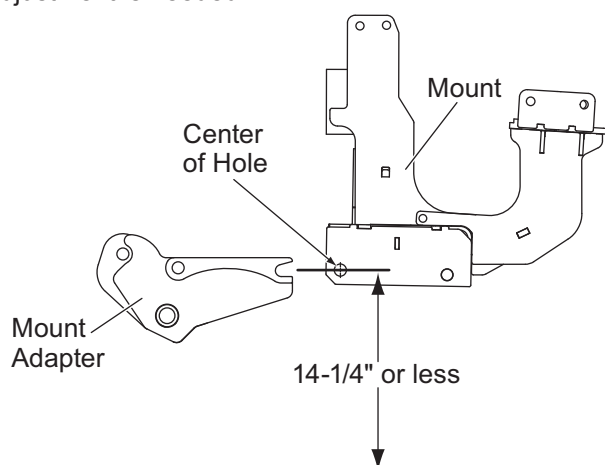
# MOUNT ADAPTER INSTALLATION

## MOUNT ADAPTER MEASUREMENT

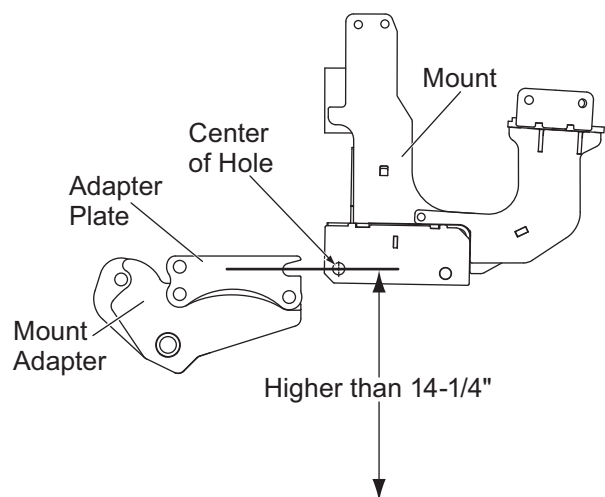
With vehicle on level ground, measure from ground to center of the hole on U-bracket sideplate on the mount.

The recommended height of the mount should be 14-1/4" or less from the center of the U-bracket hole to level ground. If the mount is higher than 14-1/4", the enclosed adapter plates need to be attached to the mount adapter. (The mount adapter comes packaged with the blade crate assembly.)

If measured height is 14-1/4" or less, no height adjustment is needed.

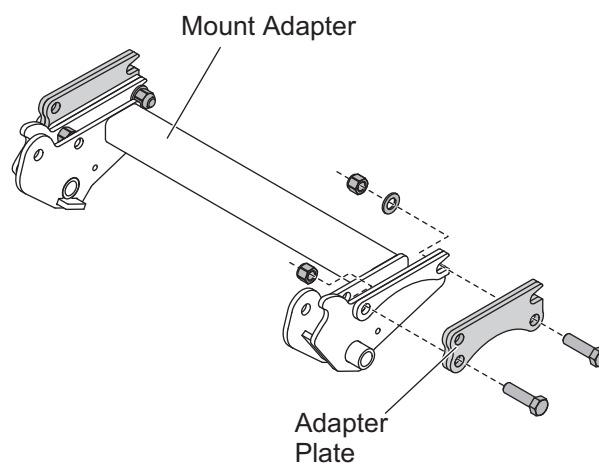


If measured height is higher than 14-1/4", install the short height adjustment adapter plates as described.



## MOUNT ADAPTER INSTALLATION

1. Position the adapter plate against the driver's side portion of the mount adapter as shown. Insert a 3/4" x 2-3/4" cap screw through the lower front adapter plate hole and through the appropriate hole on the mount adapter. Secure with a locknut.
2. Insert a cap screw through the rear adapter plate hole, through the slot on the mount adapter and through a washer. Secure with a locknut.



3. Repeat for the passenger's side. Torque all four fasteners according to torque chart on page 4.

**NOTE: After five to ten hours of snowplow usage, retorque all mount assembly fasteners.**



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