



33211

UNDERCARRIAGE KIT

Mitsubishi FG

2012 - __

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

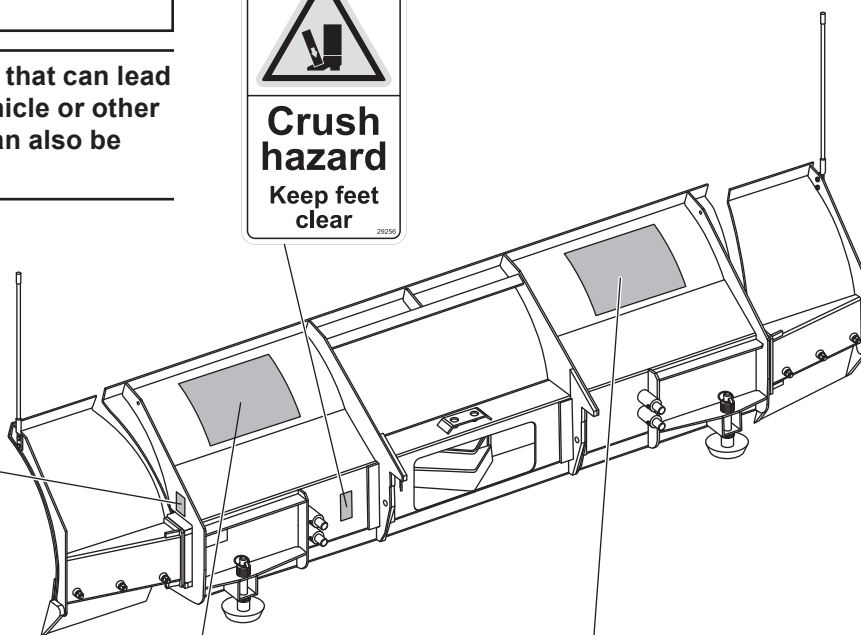
Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

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™ & SPEEDWING™ Blades Only (both sides)

ATTACH	⚠ WARNING	DETACH
<ol style="list-style-type: none"> Slowly drive vehicle forward to engage mount adapter into A-frame. Move power switch to center or "OFF" position. Plug in electrical harnesses. Push and hold power switch RIGHT and push UP and hold armblade operation switch. Arm will engage mount adapter and pull snowplow toward vehicle. Rotate and release hitch pin. Hitch pin is fully engaged when pin handle is against the pin guide plate. Repeat Step 5 on passenger's side. Rotate and release hitch pin. Hitch pin is fully engaged when pin handle is against the pin guide plate. While holding power switch RIGHT, push DOWN and hold armblade operation switch. Arm will disengage mount adapter to relieve tension on the stand. Pull stand handle up. Stand will lift off ground. Put stand pin out. Rotate stand up until stand pin seats into upper hole. Pin must lock into upper A-frame hole. Repeat Step 8 on passenger's side. Pull stand handle up. Stand will lift off ground. Put stand pin out. Rotate stand up until stand pin seats into upper hole. Pin must lock into upper A-frame hole. Move power switch to left or "Plowing" position. 	<p>Keep fingers away from snowplow and truck attachment points. POWER HITCH™ 2 arm raises behind undercarriage pushbeam.</p>	<ol style="list-style-type: none"> Lower snowplow onto ground with blade straight. Turn snowplow control in cab OFF. Move power switch to center or "OFF" position. While holding the power switch RIGHT, push DOWN and hold the armblade operation switch. Arm will disengage mount adapter to relieve tension on the stand. Pull stand pin out. Rotate stand down until stand pin seats into lower A-frame hole. Push down on top of shoe. Shoe will be on the ground. Repeat Step 4 on passenger's side. Pull stand pin out. Rotate stand down until stand pin seats into lower A-frame hole. Push down on top of shoe. Shoe will be on the ground. Push and hold power switch RIGHT and push UP the armblade operation switch. Arm will engage mount adapter and pull snowplow lightly to vehicle. Rotate and pull hitch pin. Rotate hitch pin into retracted position. Repeat Step 7 on passenger's side. Rotate and pull hitch pin. Rotate hitch pin into retracted position. While holding power switch RIGHT, push DOWN and hold armblade operation switch to fully lower arm. Unplug electrical harnesses.

Read Owner's Manual for complete instructions.

U.S. patents 5,420,450; 5,638,616; 5,999,007; 6,178,669; 6,253,470; 6,276,076; 6,393,737; 6,408,549; 6,442,877; 6,615,513; 7,134,227; 7,400,058; 7,430,921; 7,574,716; CAN patents 2,400,425; 2,184,922; 2,223,763; 2,250,548; 2,358,145; 2,369,554; 2,392,533; and other patents pending.

	<h3>⚠ WARNING</h3> <p>Lower blade when vehicle is parked.</p>
	<p>Do not exceed GVWR or GAWR including blade and ballast.</p>
	<h3>⚠ CAUTION</h3> <p>Read Owner's Manual before operating or servicing snowplow.</p>
	<p>Transport speed should not exceed 45 mph (72 km/h). Further reduce speed under adverse travel conditions.</p>
	<p>Plowing speed should not exceed 10 mph (16 km/h).</p>
	<p>See your sales outlet/Web site for specific vehicle application recommendations.</p>

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 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 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, 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.

SAFETY




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 (ft-lb)			
Size	Torque		
	 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

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

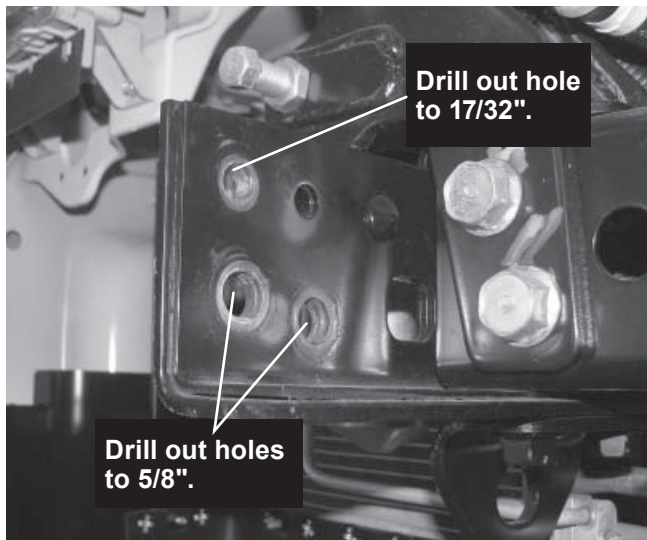
Main Mount

1. Remove the front bumper, then remove the tow hook and bumper bracket from the frame rails. Retain the bumper bolts, bumper bracket fasteners, bumper bracket and tow hook in case the snowplow mount is later removed from the vehicle.

⚠ CAUTION

Before drilling holes, check to be sure that no vehicle wiring or other components could be damaged.

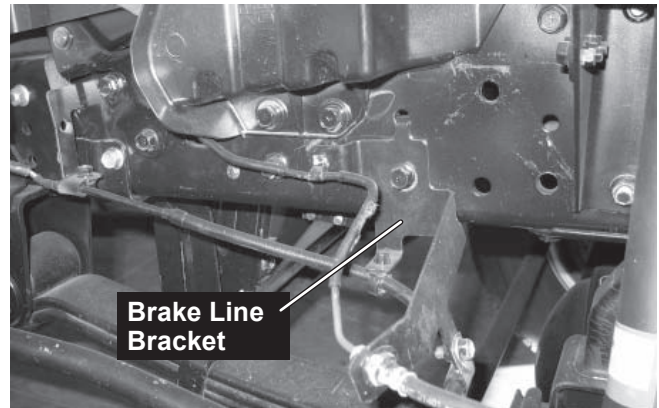
2. Drill out the upper frame hole to 17/32". Drill out the two lower frame holes to 5/8". Repeat on the other side.



3. Position the main mount on the frame rails, aligning the bumper bracket holes with the mount holes. Attach each end of the main mount with a supplied 1/2" x 1-1/2" cap screw in the upper drilled-out hole and supplied 5/8 x 2" cap screws in the two lower drilled-out holes. Hand tighten the fasteners.

Driver-Side Thrust Arm & Brackets

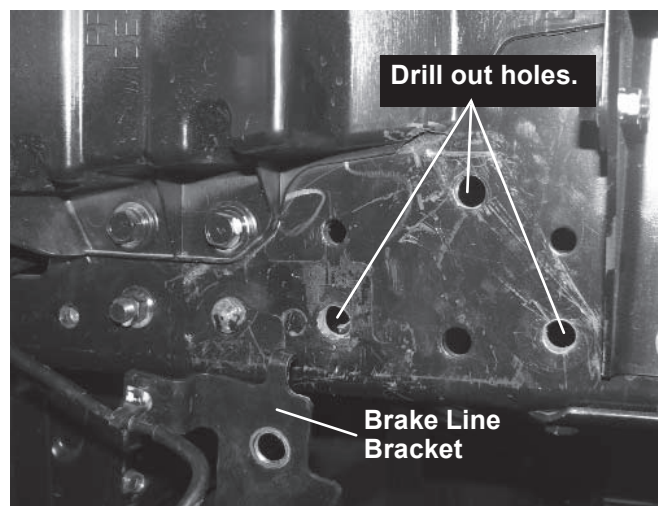
1. On the driver's side, remove the fastener attaching the brake line bracket. Move the brake line bracket down and out of the way, taking care not to crimp any lines or cables.



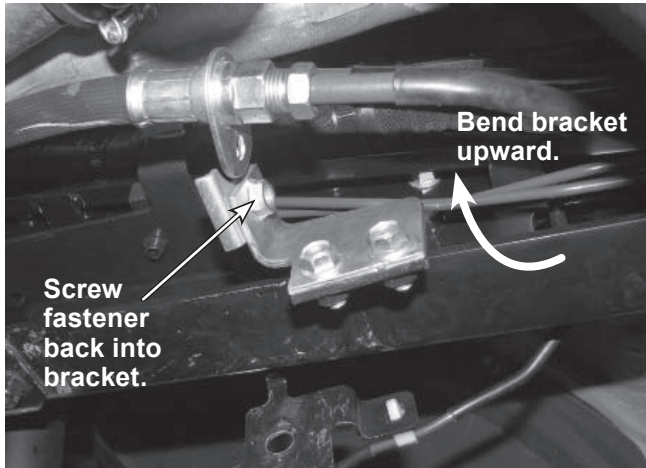
⚠ CAUTION

Before drilling holes, check to be sure that no vehicle wiring or other components could be damaged.

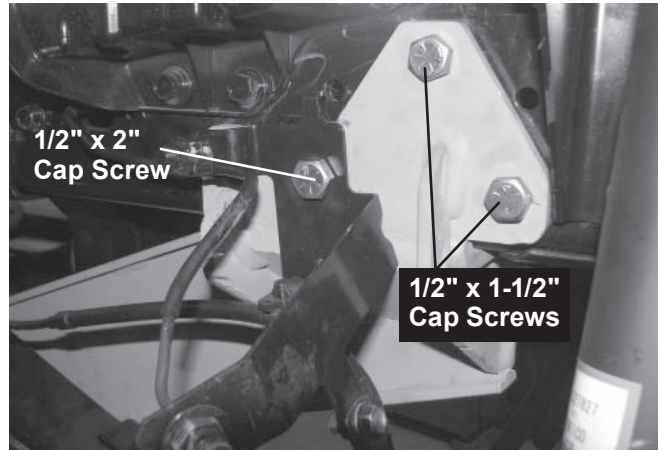
2. Drill out the brake line bracket fastener hole and the two other existing holes to 17/32\".



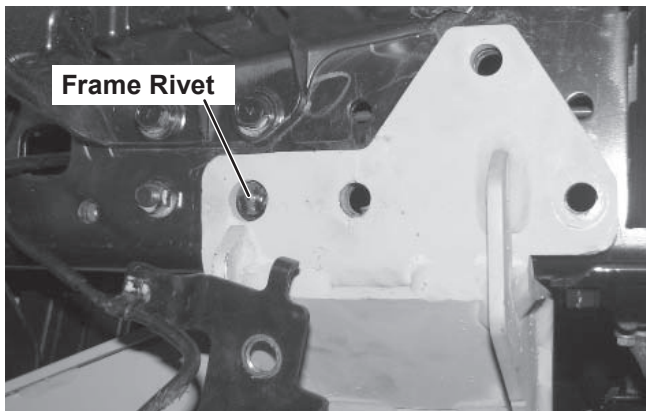
3. On the inside of the frame, remove the fastener connecting the hydraulic line to the hydraulic line bracket. Bend the bracket upward past the lower edge of the frame. Screw the fastener back into the repositioned bracket.



Attach the thrust arm to the frame using two 1/2" x 1-1/2" cap screws and locknuts in the rearmost holes. Reinstall the brake line bracket using a 1/2" x 2" cap screw and locknut in the forward hole. Hand tighten the fasteners.



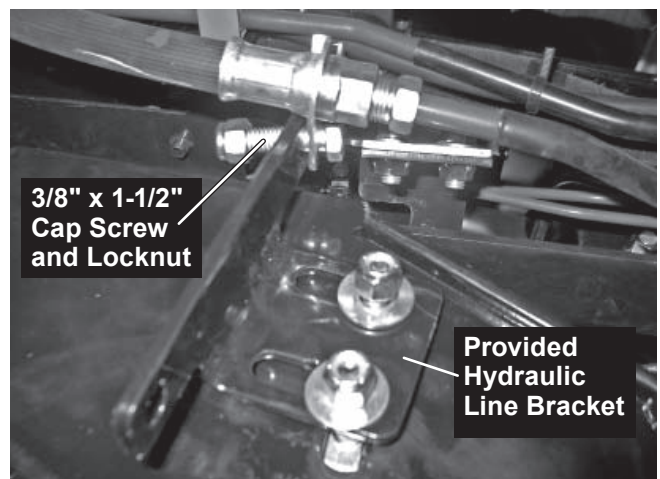
4. Position the thrust arm inside the leaf spring, between the leaf spring and the radiator bracket, aligning the forward hole over the frame rivet.



5. Align the pair of holes in the main mount with the holes in the thrust arm, and fasten with 5/8" x 2" cap screws and locknuts. Hand tighten.

NOTE: The thrust arms should be installed on the outside of the main mount.

6. Install the provided hydraulics line bracket to the inside of the driver-side thrust arm using two 3/8" x 1-1/2" cap screws, 4 flat washers and locknuts. Drill out the hydraulic line tab hole to 3/8". Attach the hydraulic line tab to the bracket using a 3/8" x 1-1/2" cap screw and locknut.



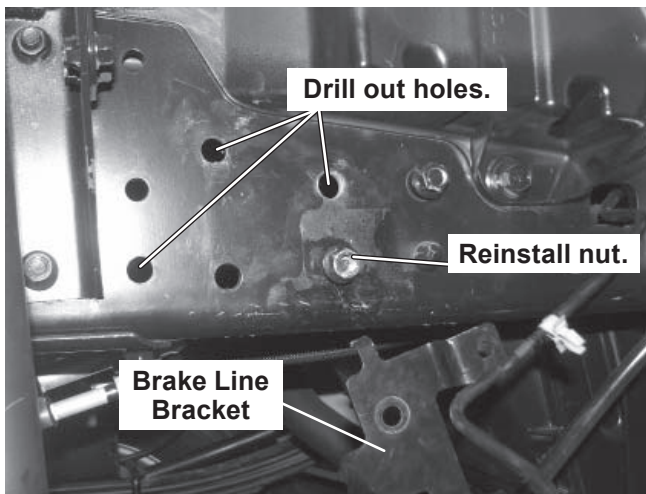
Passenger-Side Thrust Arm & Brackets

1. On the passenger's side, remove the brake line bracket and retain the nut. Carefully shift the brake line bracket aside and reinstall the nut.

⚠ CAUTION

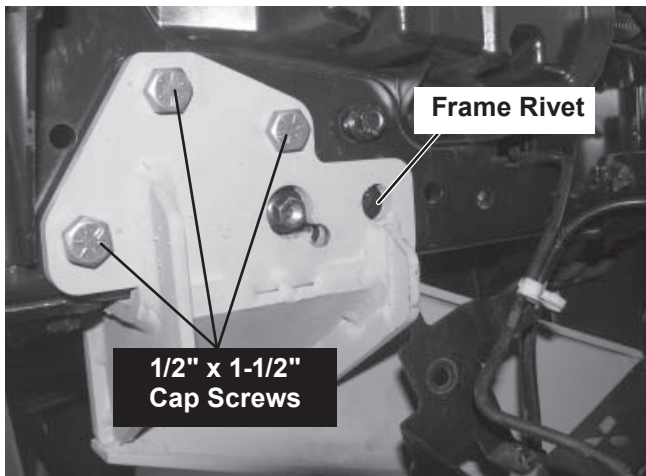
Before drilling holes, check to be sure that no vehicle wiring or other components could be damaged.

2. Drill out three frame holes to 17/32" as shown.



3. Position the thrust arm inside the leaf spring, between the leaf spring and the radiator bracket, aligning the forward hole over the frame rivet.

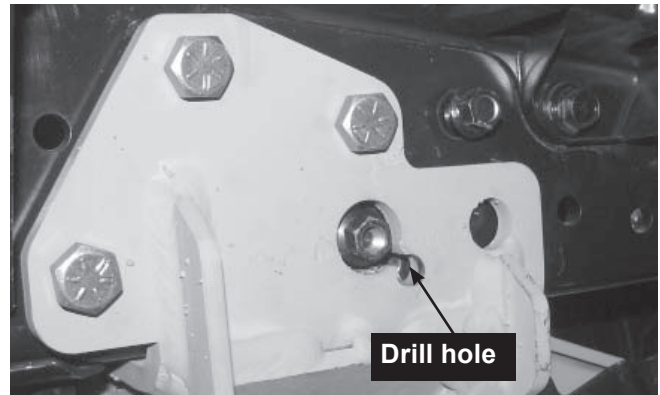
Attach the thrust arm to the frame using three 1/2" x 1-1/2" cap screws and locknuts. Hand tighten the fasteners.



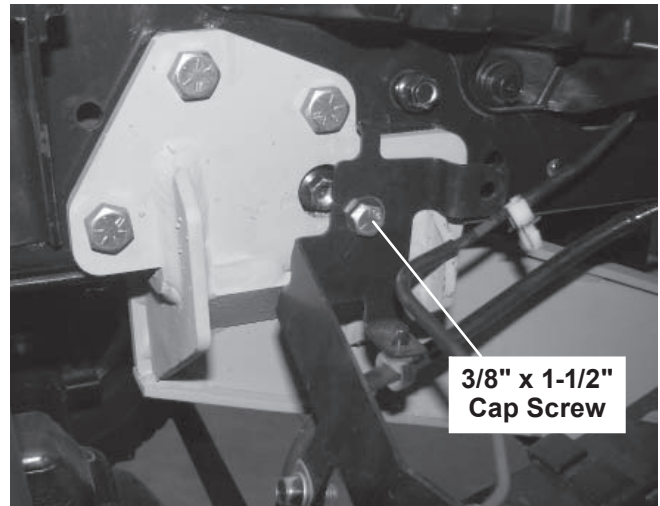
4. Align the pair of holes in the main mount with the holes in the thrust arm, and fasten with 5/8" x 2" cap screws and locknuts. Hand tighten.

NOTE: The thrust arms should be installed on the outside of the main mount.

5. Using the small hole in the thrust arm as a guide, drill a 13/32" hole through the vehicle frame.



Reinstall the brake line bracket using a 3/8" x 1-1/2" cap screw and locknut in the drilled hole.



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UNDERCARRIAGE INSTALLATION

Final Assembly

1. Push the main mount tight up against frame and fully tighten all fasteners according to the torque chart.
2. Drill out the bumper plate holes to 17/32", if necessary.
3. Reattach the bumper using the 4 provided 1/2" x 1-1/2" cap screws, washers and locknuts. Fully tighten according to the torque chart.

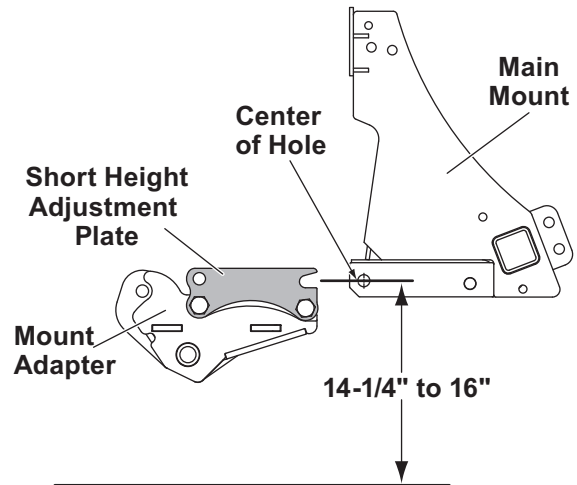
NOTE: After five to ten hours of snowplow usage, retorque all pushplate assembly fasteners.

MOUNT ADAPTER MEASUREMENT

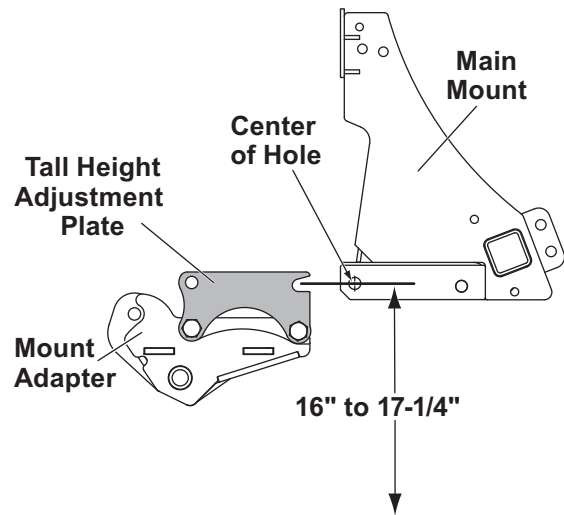
Before assembling the mount adapter to the undercarriage, determine whether height adjustment plates are needed. With the vehicle on level ground, measure from the ground to the center of the hole on the U-bracket side plate on the main mount.

The height of the main mount should be 14-1/4" or less from the center of the U-bracket hole to level ground. If the height is 14-1/4" or less, no height adjustment plates are needed. If the mount is higher than 14-1/4", the appropriate height adjustment plates need to be attached to the mount adapter. (The mount adapter comes packaged with the blade crate assembly.)

If the measured height is 14-1/4" to 16", install the short height adjustment plates as described.



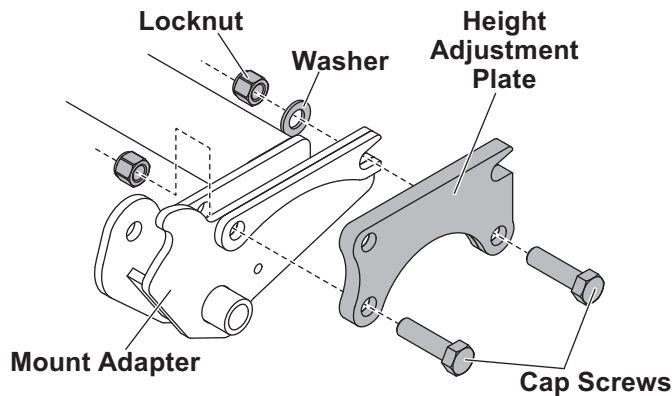
If the measured height is 16" to 17-1/4", install the tall height adjustment plates as described.



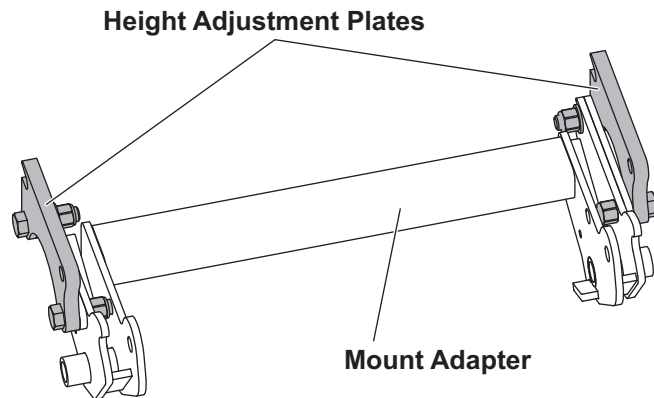
MOUNT ADAPTER INSTALLATION

1. If mount adapter height adjustment plates are required, position the height adjustment plate against the driver-side portion of the mount adapter as shown. Insert a 3/4" x 2-3/4" cap screw through the lower front height adjustment plate hole and through the appropriate hole on the mount adapter. Secure with a locknut.

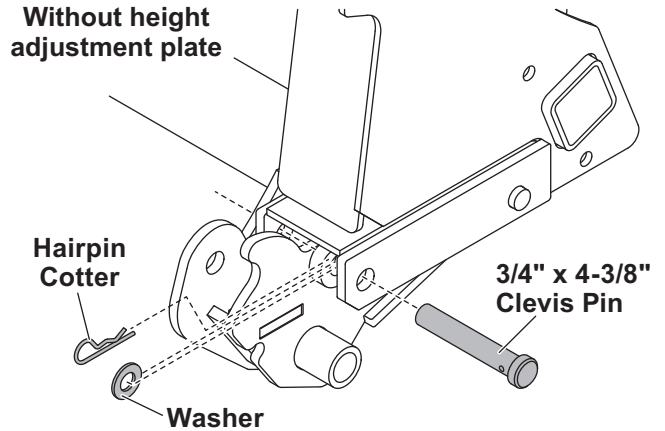
Insert a cap screw through the rear height adjustment plate hole, through the slot on the mount adapter and through a washer. Secure with a locknut.



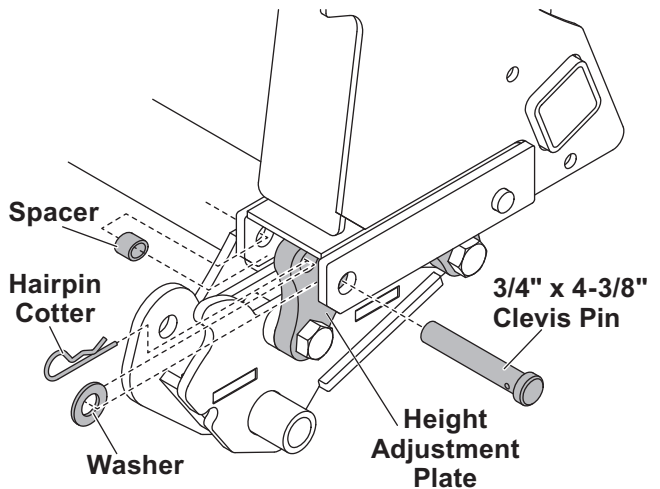
Repeat for the passenger's side. Tighten all four fasteners according to the torque chart.



2. Position the mount adapter between the undercarriage brackets on each side. Align the notches in rear of the mount adapter with pins in vehicle undercarriage. Insert a 3/4" x 4-3/8" clevis pin through the outer mount hole, then through a 3/4" washer. Rotate the mount adapter into place and insert clevis pin fully, securing with the hairpin cotter. Repeat for the opposite side.



3. If height adjustment plates are used, insert a spacer between the height adjustment plate and the inner side plate of the undercarriage when inserting the clevis pin.



NOTE: If the mount adapter does not rotate into position, loosen the mount hardware, secure the mount adapter into position and retighten the mount hardware.



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