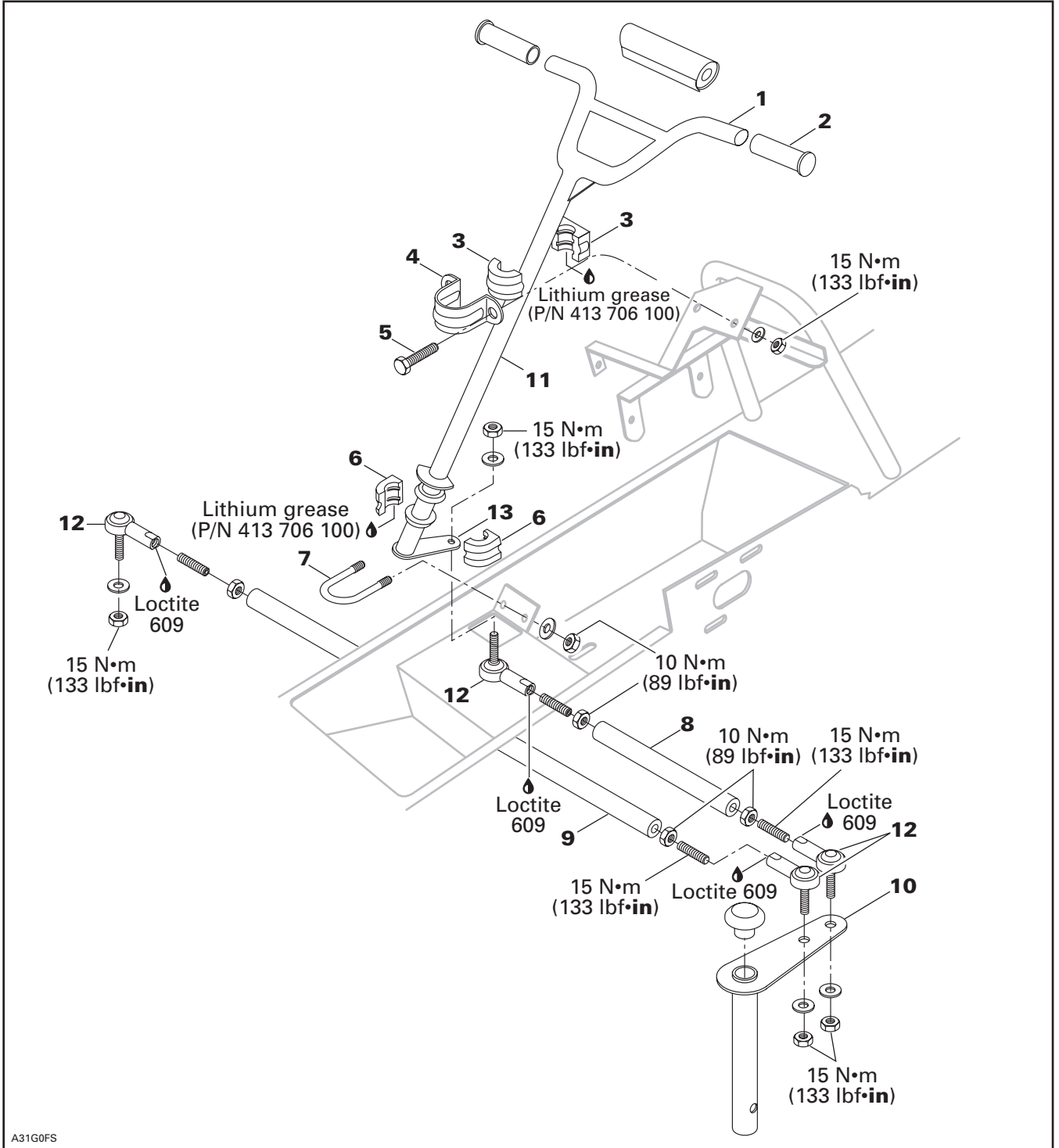


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STEERING SYSTEM



Section 08 STEERING/FRONT SUSPENSION

Subsection 02 (STEERING SYSTEM)

INSPECTION

Check skis and runner shoes for wear, replace as necessary. Refer to SUSPENSION AND SKI SYSTEM 08-03.

Steering System

Check general condition of steering system.

Check general condition of steering system components for wear and replace if necessary.

DISASSEMBLY AND ASSEMBLY

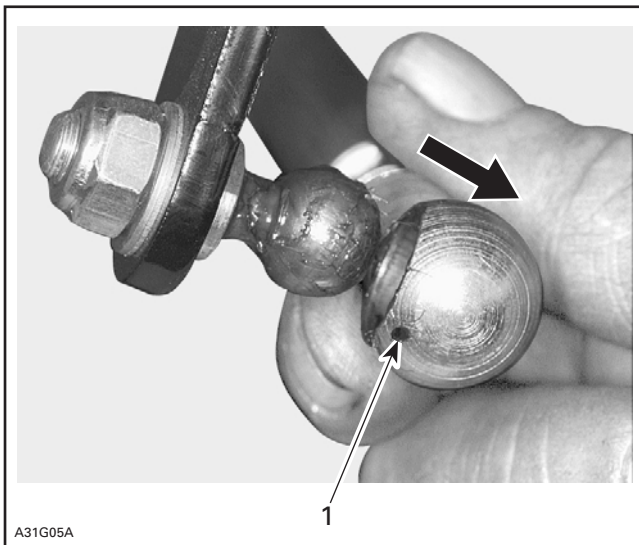
2, Grip

Grips can be removed and installed without any damage by injecting compressed air into the handlebar or by heating them with a heat gun.

11, Steering Column

From underneath bottom pan, remove tie rod clip. Refer to STEERING ADJUSTMENT (skis) for clip removal.

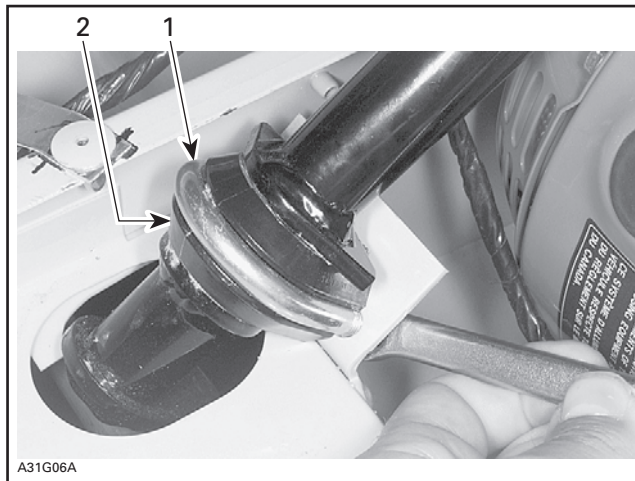
Detach short tie rod **no. 8** from steering column **no. 11**, as shown in the next photo.



DETACH TIE ROD

1. Clip removed

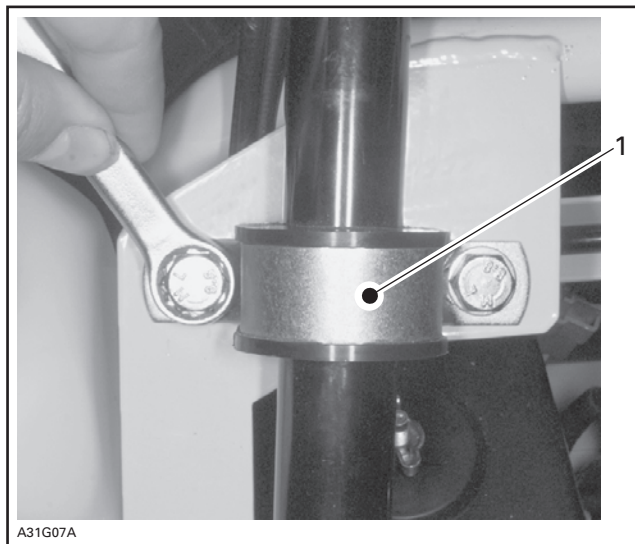
Remove U-clamp **no. 7** with both half bushings, **no. 6** as shown in the following photo.



REMOVE U-CLAMP

1. U-clamp
2. Bushing

Remove retaining support **no. 4** with both half bushings **no. 3**, as shown in the following photo.



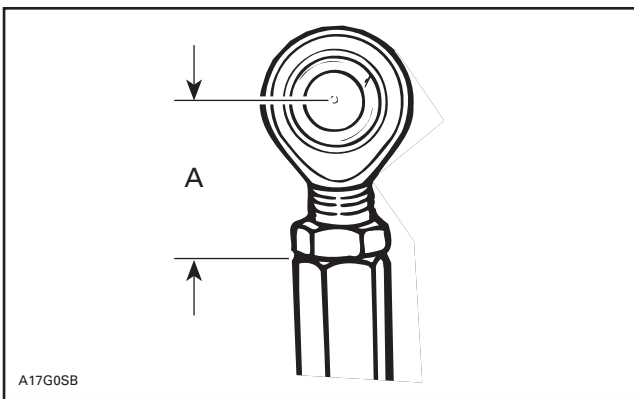
1. Retaining support

INSPECTION

12, Ball Joint

Inspect ball joint ends for wear or looseness, if excessive, replace.

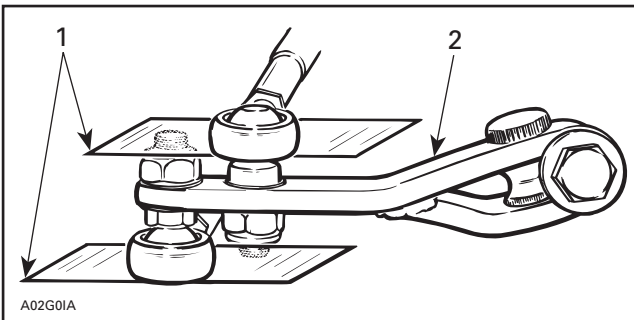
If stud loosened apply Loctite 609 in ball joint threaded hole and torque stud to 15 N•m (133 lbf•in). Mount lock nut on exposed portion of stud. Screw exposed portion of stud into tie rod. Torque lock nut to 10 N•m (89 lbf•in). The maximum length for ball joint center to tie rod end must not exceed the value A in the following chart:



TYPICAL

MODEL	A	
	MM	(IN)
Mini Z	47	(1-27/32)

The cut-off section of the tie rod end must run parallel with the horizontal line of the steering arm when assembled on vehicle. The ball joint should be restrained when tightening tie rod end lock nut. For torque specifications see specific exploded view.



TYPICAL

1. Parallel with steering arm
2. Steering arm

WARNING

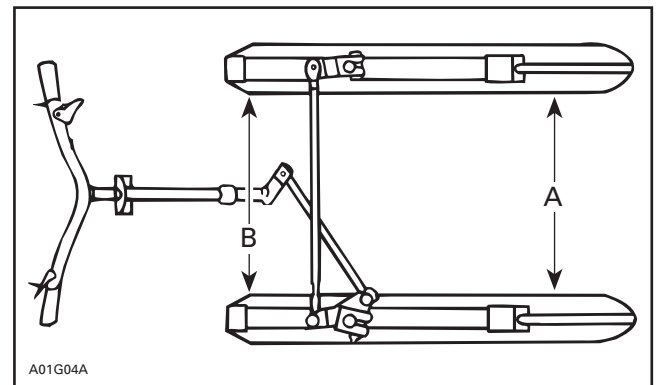
The cut off section of the ball joint must run parallel with the steering arm. When tightening lock nuts, restrain ball joint with appropriate size wrench. Ensure not too many threads are kept outside of the tie rod according to the thread length chart.

STEERING ADJUSTMENT (skis)

Definitions

TOE-OUT:

Difference in measurement between front edge A and rear edge B of skis as viewed from top side of suspension system. It is adjustable.



CAMBER:

A specific inward or outward tilt angle of ski leg compared to a vertical line when viewing vehicle from front. **This angle is not adjustable on Mini Z.**

Adjustments

Adjustments should be performed following this sequence:

- Pivot arm centering/horizontal handlebar.
- Set toe-out.

PIVOT ARM CENTERING/HORIZONTAL HANDLEBAR

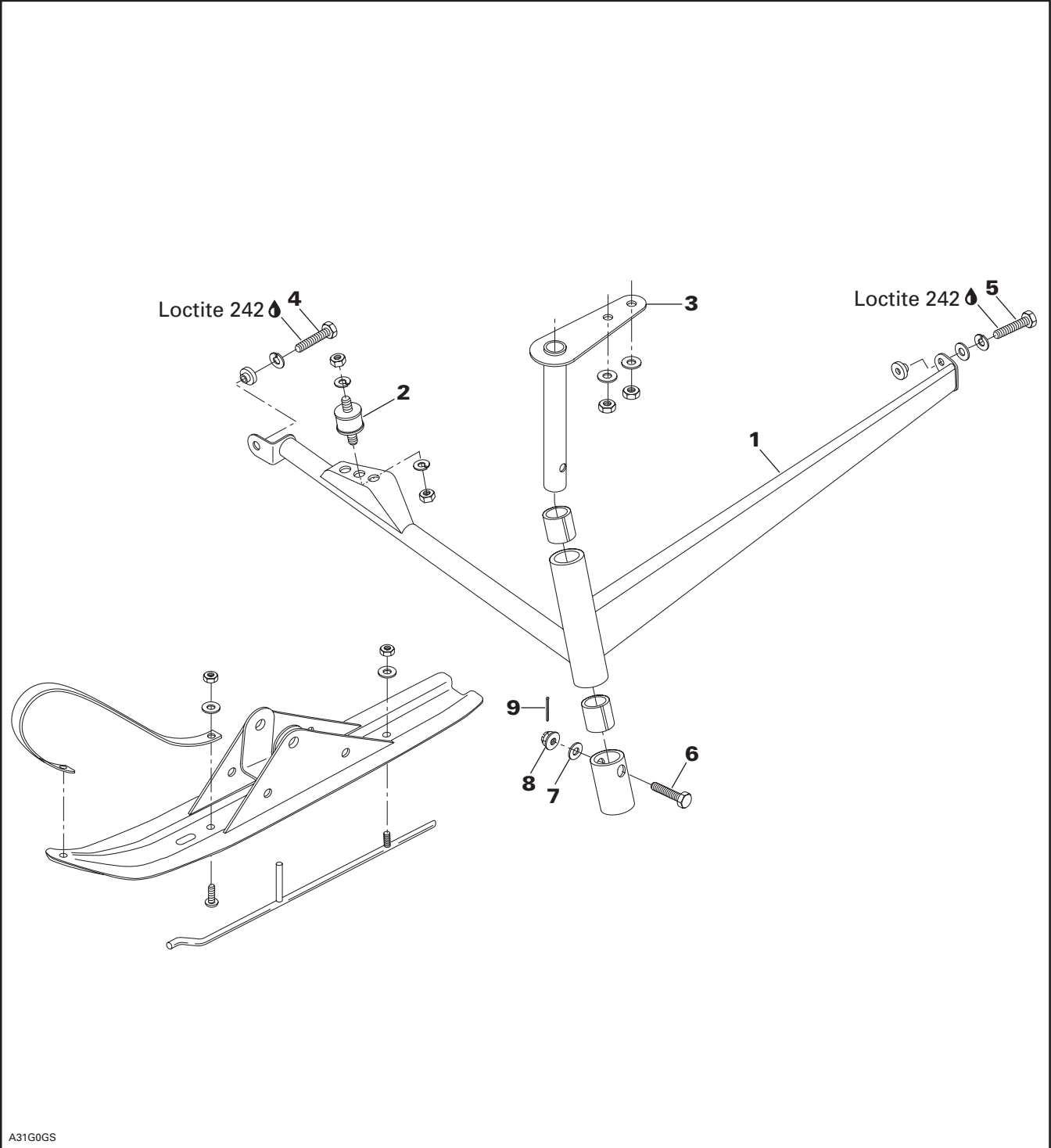
Turn handlebar no. 1 until pivot arm no. 13 is well centered.

Check if handlebar is horizontal and skis aligned with track. If not, adjust as per following procedure:

Loosen lock nut of short tie rod end.

Using a flat screwdriver, remove clip on short tie rod end, as shown in the next photo.

SUSPENSION AND SKI SYSTEM



Section 08 STEERING/FRONT SUSPENSION

Subsection 02 (STEERING SYSTEM)

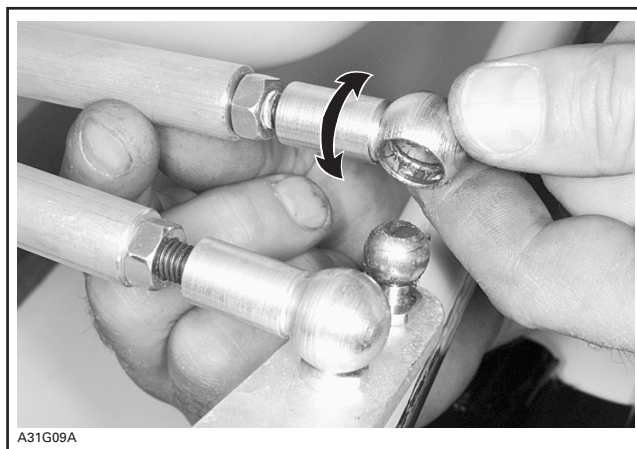


TO REMOVE CLIP — LIFT THEN PULL OUT

Detach short tie rod end from steering arm no. 10.

Check that handlebar is horizontal and that skis are aligned with track.

Rotate tie rod end CW or CCW until proper alignment with steering arm is attained. See next photo.

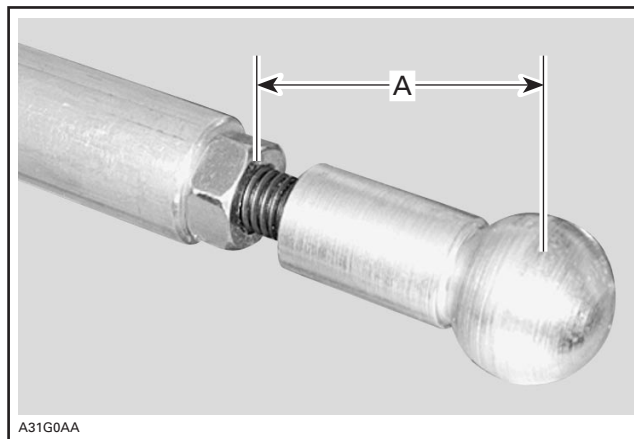


DETACH TIE ROD END AND ROTATE CW OR CCW TO ADJUST

Re-attach tie rod end to steering arm.

⚠ WARNING

Maximum length for ball joint center to tie rod end must not exceed 47 mm (1-27/32 in). Torque lock nut to 15 N•m (133 lbf•in).



A. 47 mm (1-27/32 in) maximum

Restrain tie rod while firmly retighten nuts so that ball joint sockets run parallel with steering arm and pivot arm.

⚠ WARNING

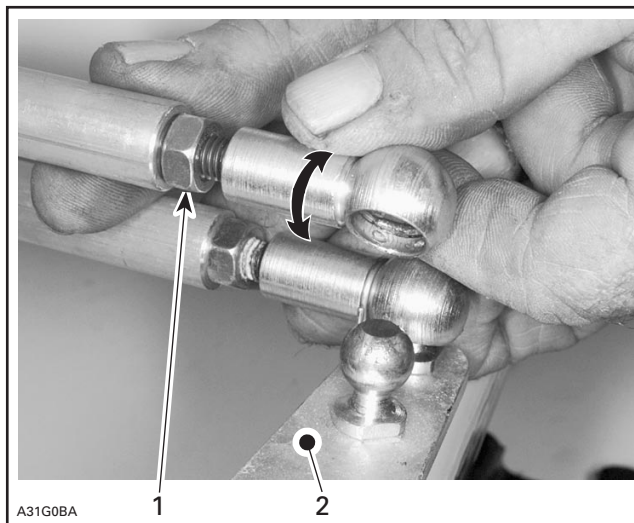
Ball joint sockets must run parallel with steering arm and pivot arm. Tie rod must be restrained when tightening lock nuts.

Ensure that pivot arm no. 13 is still centered and check ski toe-out.

TOE-OUT

Loosen lock nuts of long tie rod end no. 9 and detach tie rod end from steering arm no. 10.

Turn each tie rod end to adjust toe-out. See next photo.



TO ADJUST — ROTATE TIE ROD END

1. Loosen lock nut
2. Steering arm

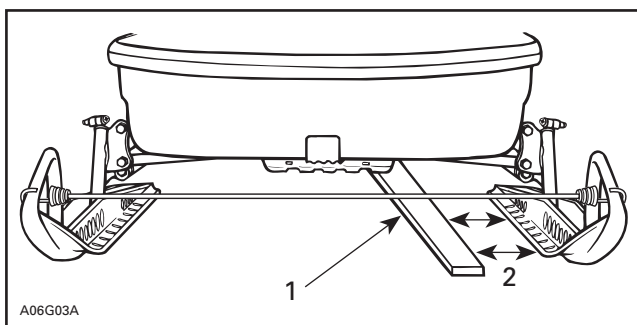
Section 08 STEERING/FRONT SUSPENSION

Subsection 02 (STEERING SYSTEM)

Re-attach tie rod end to steering arm then secure with clip.

NOTE: A rubber cord must be hooked in front of skis to keep them closed.

NOTE: To measure toe-out, place a straight edge against pre-adjusted track and measure distance between front and rear of skis and straight edge. Distances should be equal. After ski toe-out adjustment, distance at front of ski must be 0 to 3.0 mm (0 to 1/8 in) more than at rear on both sides for a total toe-out of 0 to 6 mm (0 to 1/4 in).



TYPICAL

1. Straight edge
2. 0 to 3.0 mm (0 to 1/8 in) more at front than at rear

Check external threaded length not engaged and firmly retighten lock nuts, as shown in the next photo.



HOLD TIE ROD THEN TIGHTEN LOCK NUT

LUBRICATION

WARNING

Do not lubricate throttle and/or brake cable, housing and spring coupler bolts.

Steering Column

Use lithium grease (P/N 413 706 100) at U-clamp and retaining support location on steering column.

Ball Joints

Lightly grease ball joints with bearing grease (P/N 413 706 100).

Section 08 STEERING/FRONT SUSPENSION

Subsection 03 (SUSPENSION AND SKI SYSTEM)

DISASSEMBLY

2, Rubber Mount

Lift front of vehicle and support it off the ground.

Note rubber mount position.

Remove lower nut then upper nut of rubber mount.

1, Swing Arm

Lift front of vehicle and support it off the ground.

Unbolt ski.

Unbolt lower end of rubber mount from swing arm **no. 1**.

Remove nuts and washers then detach tie rod end from steering arm **no. 3**.

Remove swing arm front screw **no. 4** from frame.

Remove swing arm rear screw **no. 5** from frame.

Pull swing arm off the vehicle.

INSPECTION

Check both rubber mounts for looseness and wear. If so, replace with new one.

Check all rubber cushions for crack and wear. Replace as required.

Check for straightness of swing arm. Replace as required.

Check skis and runners for wear, replace as necessary.

INSTALLATION

For assembly, reverse the disassembly procedure. However, pay attention to the following.

Tighten nuts and screws to proper torque and apply Loctite 242 where specified, as mentioned in exploded view.

Ski

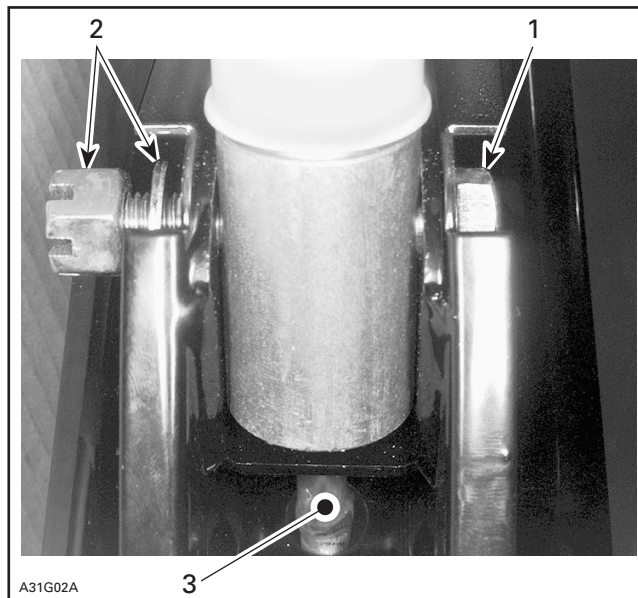
Slide ski on ski leg as shown in the next photo.



SLIDE SKI

1. Ski leg spacer

Secure ski with screw **no. 6**, washer **no. 7**, nut **no. 8** and cotter pin **no. 9**, then ensure that ski pin is properly centered into ski leg, as shown in the following photo.



1. Bolt head toward *OUTSIDE* of vehicle
2. Washer, nut and cotter pin (not shown) toward *inside* of vehicle
3. Ski pin centered into ski leg

⚠ WARNING

Always use new cotter pin when reinstalling skis.

Tie Rod

Position tie rods horizontally before tightening nuts.