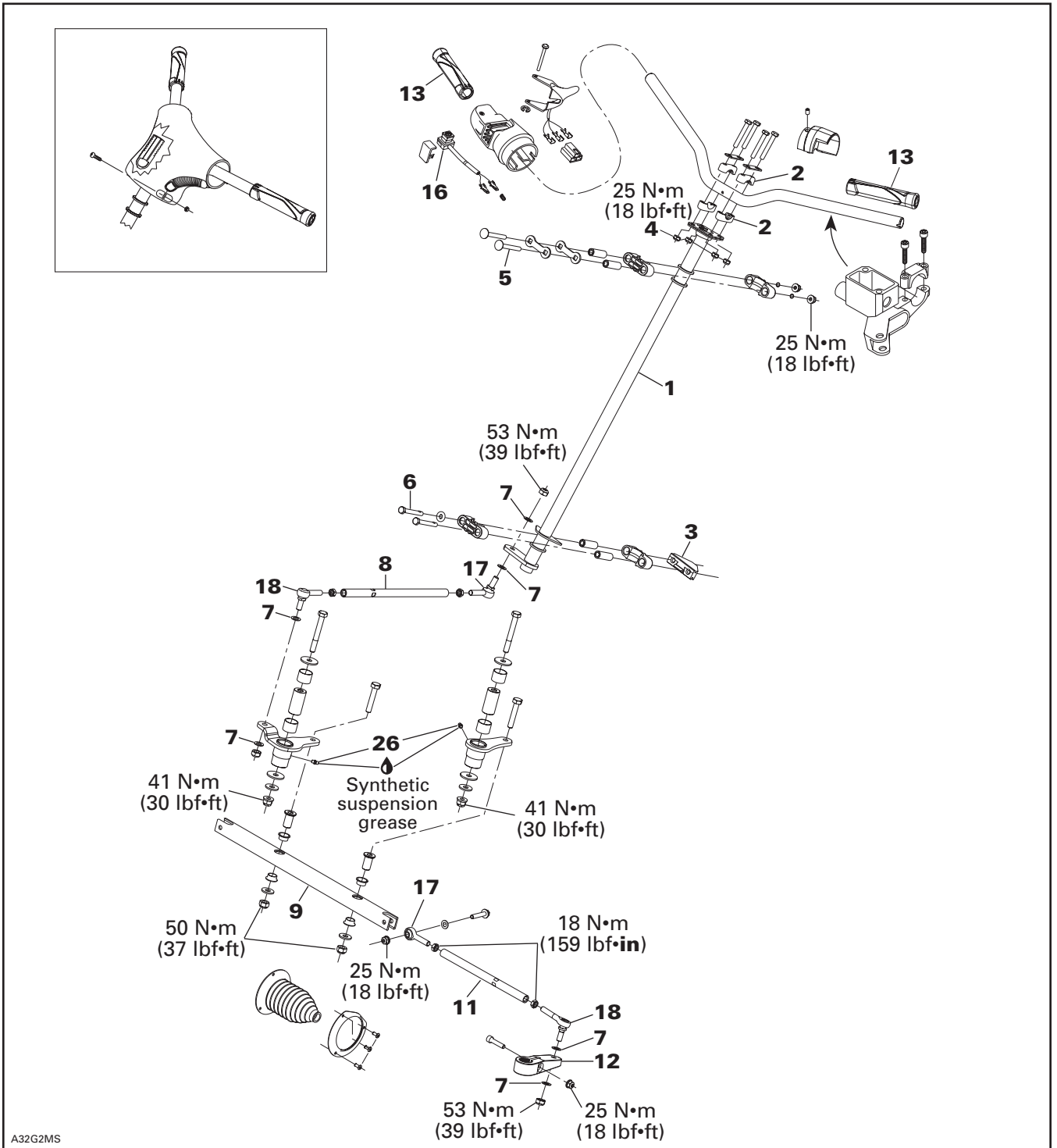


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STEERING SYSTEM



Section 07 STEERING/FRONT SUSPENSION

Subsection 02 (STEERING SYSTEM)

DISASSEMBLY AND ASSEMBLY

13, Grip

⚠ WARNING

Never use lubricants (e.g. oil, grease, soap etc.) to install the handlebar grip.

NOTE: These models feature an integrated heating element in the plastic sleeve of the grip.

CAUTION: Removing grip from handlebar might damage the heating element. Do not remove needlessly.

NOTE: If heating grip does not work and needs to be replaced, the grip can be cut with a knife for removal.

Remove steering padding.

Cut locking tie and unplug heating grip connector.

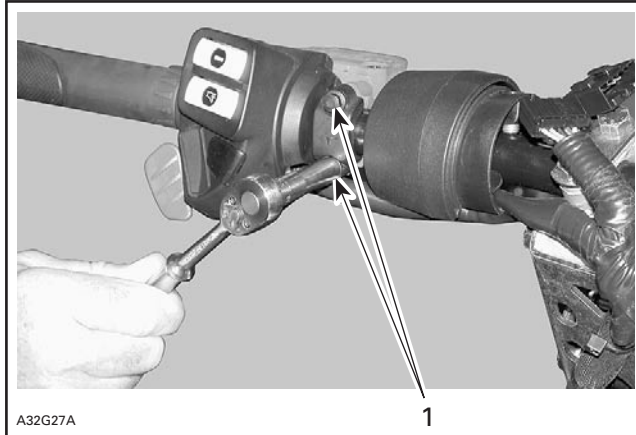
Using the multilock-terminal housing extraction tool AMP (P/N 755430-2), push the 3 wires out of the heating grip connector. Note the position of the wires for reinstallation.

Throttle Side:

Loosen set screw of throttle lever housing (underneath). Slide housing away of grip.

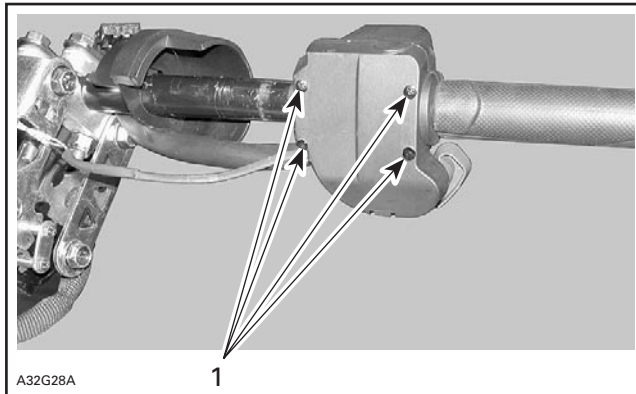
Brake Side:

Loosen set screw of electrical switch housing. Slide housing inward.



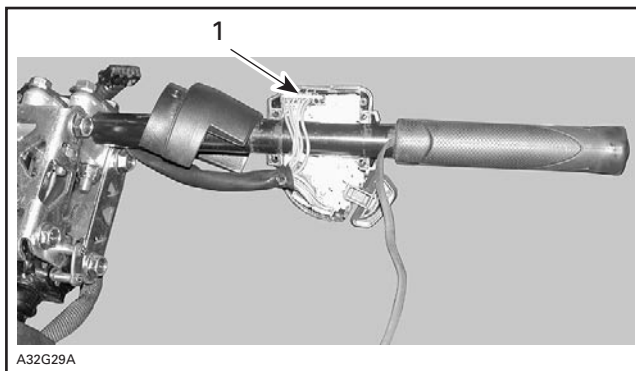
1. Retaining screws

Remove the 4 screws from the electrical control housing.

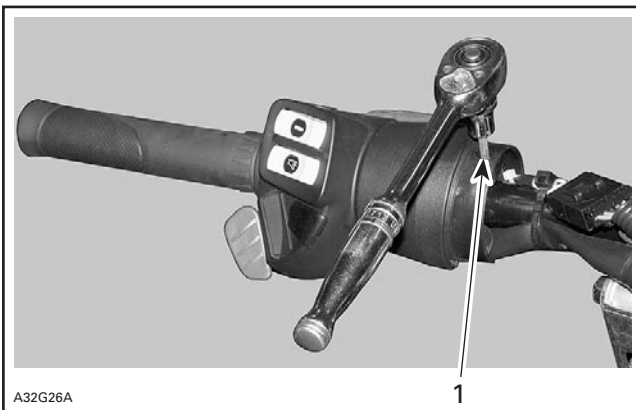


1. Screws

Disconnect the top connector (heating grip and dimmer switches) and move housing away to make room.



1. Unplug connector



1. Set screw

Remove retaining screws of brake housing. Slide housing away of grip.

Section 07 STEERING/FRONT SUSPENSION

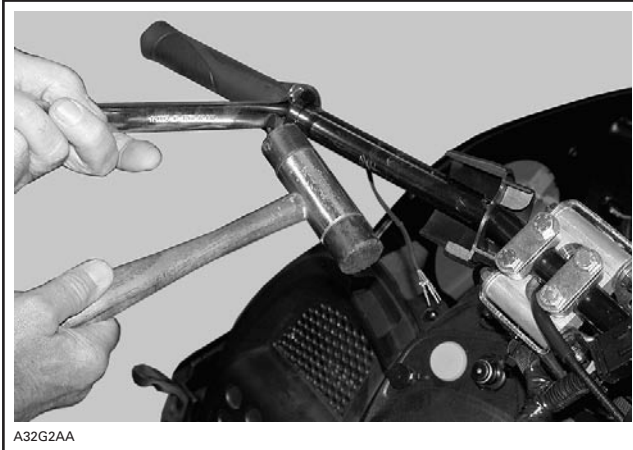
Subsection 02 (STEERING SYSTEM)

Both Sides:

Insert the open side of a 23 mm (7/8 in) wrench against the inner end of grip.

CAUTION: Pay attention not to damage wires with the wrench.

Using a plastic hammer, tap on the side of the wrench end to make the grip slide out.



A32G2AA

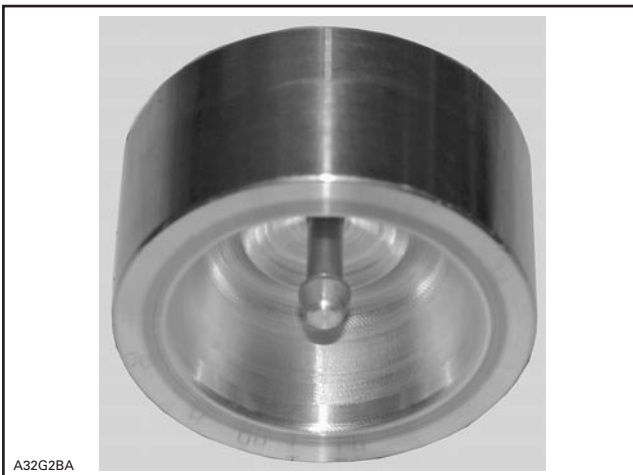
Installation is the opposite procedure of the removal but pay attention to the following.

Clean handlebar ends and inside of heating grip with isopropyl alcohol. Let dry before installation.

⚠ WARNING

Handlebar end and inside of heating grip must be clean and dry before installing heating grip to ensure proper adhesion.

Use the insertion tool (P/N 529 035 897) to properly install grip.

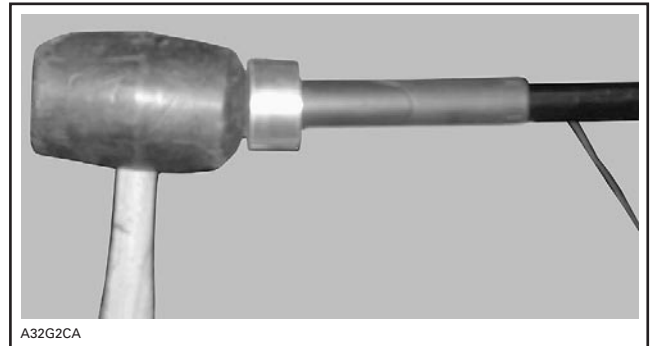


A32G2BA

CAUTION: Installing grip without the special tool is likely to damage its heating element.

Position the insertion tool at the outside end of grip.

Using a plastic hammer, tap on tool to push grip on. Continue to tap until grip bottoms.



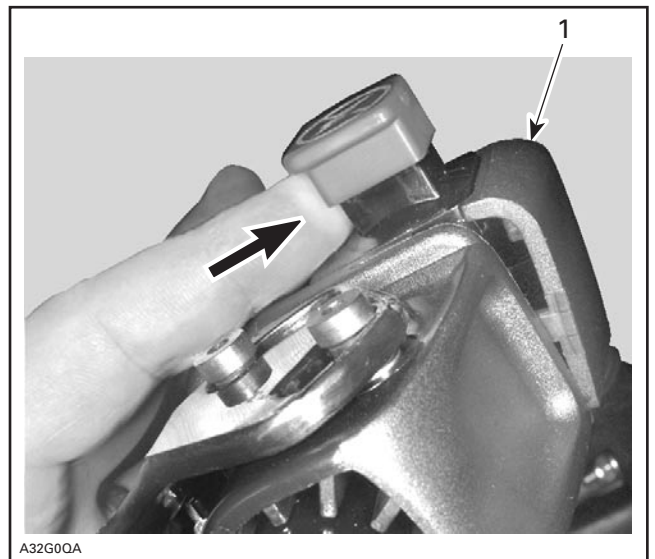
A32G2CA

Properly route wires then reposition and tighten throttle and brake housings.

Reinstall terminals and replug connectors. Test grips to ensure they heat properly.

16, Cut-Out Switch

Push on switch to remove plastic cover.



A32G0QA

1. Plastic cover

Section 07 STEERING/FRONT SUSPENSION

Subsection 02 (STEERING SYSTEM)

1, Steering Column

Remove steering pad, remove master cylinder from handlebar and put it aside. Remove circlip retaining throttle cable to throttle housing. Unplug all connector housings of handlebar switches. Remove handlebar ass'y.

Remove the engine (refer to REMOVAL AND INSTALLATION section).

Unbolt console.

Detach the tie rod no. 8 from the steering column. Note that a hardened flat washer no. 7 goes on each side of steering column lever.

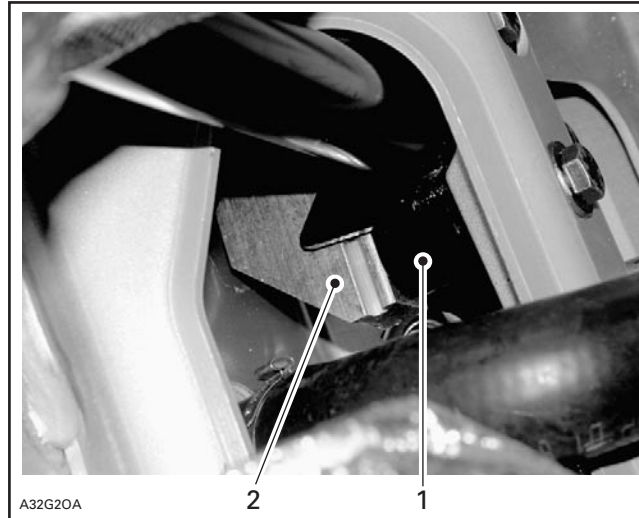
Unscrew bolts no. 6.

Disengage carriage bolts no. 5 from steering support then, pull steering column from top.

Plastic housing halves will come out along with steering column.

At assembly, make sure that tab of extrusion no. 3 fits in one of both slots of inner plastic housing half.

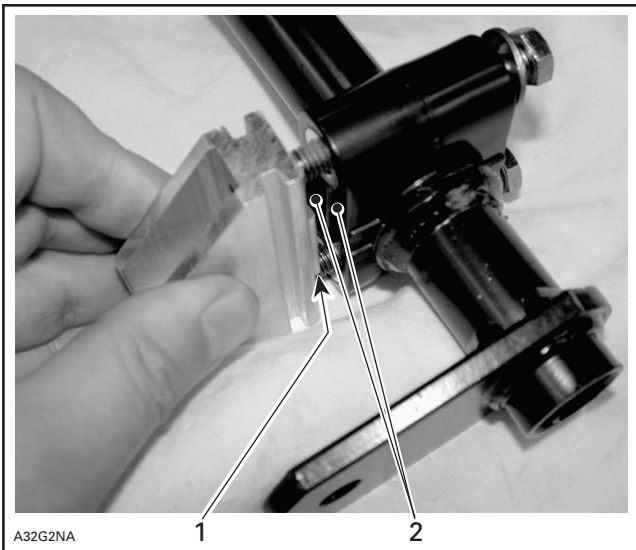
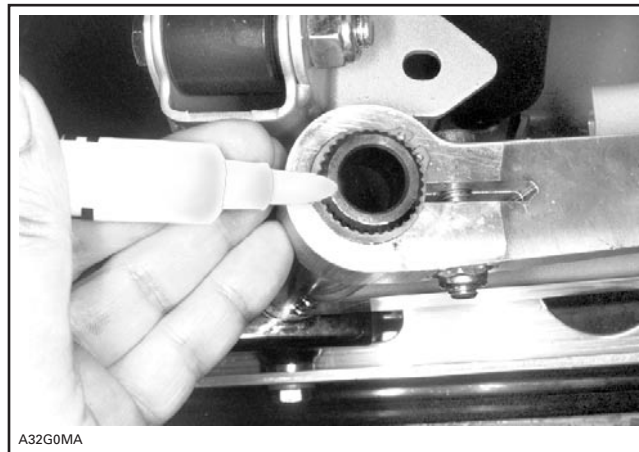
After bolts no. 6 torquing ensure inner plastic housing half sits perfectly on extrusion no. 3.



1. Inner plastic housing half
2. Extrusion

12, Steering Arm

To maintain correct steering geometry for reassembly, scribe a mark on the steering arm and ski leg before disassembly.



PARTS NOT INSTALLED FOR ILLUSTRATION CLARITY

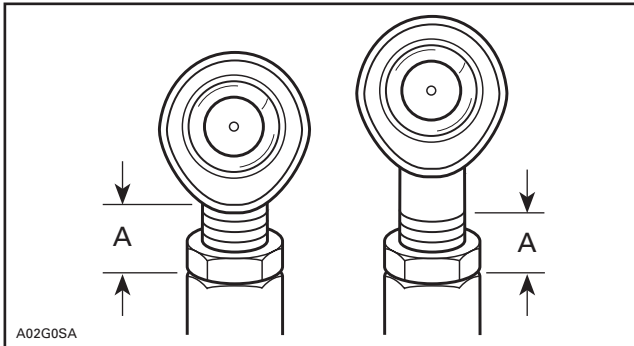
1. Tab
2. Slots

Section 07 STEERING/FRONT SUSPENSION

Subsection 02 (STEERING SYSTEM)

17,18, Ball Joint (left hand and right hand threads)

The external threaded length not engaged in the tie rod must not exceed 20 mm (25/32 in).

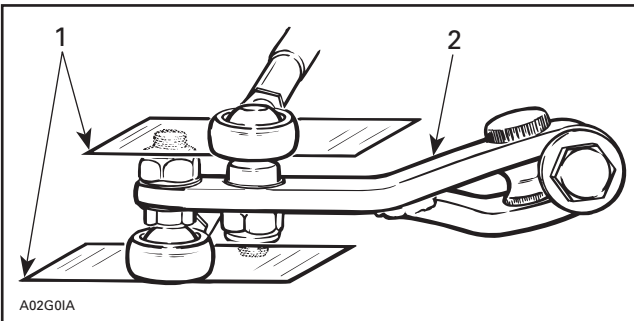


TYPICAL

A. 20 mm (25/32 in) max.

The ball joint should be restrained when tightening the tie rod end lock nut. Align it so the tie rod end is parallel to the steering arm when assembled on the vehicle, refer to the following illustration.

For proper torque specifications refer to the specific exploded view for the vehicle being serviced.



TYPICAL

1. Parallel with steering arm
2. Steering arm



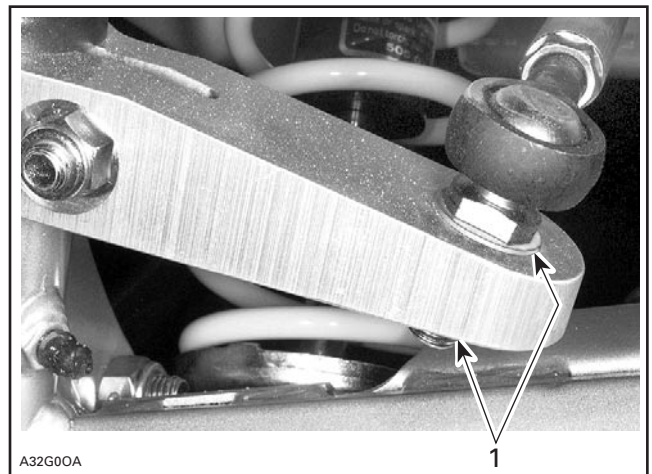
TIE ROD BALL JOINT PARALLEL TO SWIVEL BAR BEFORE TIGHTENING

⚠ WARNING

The cut off section of the ball joint must run parallel with the swivel bar **no. 9**. When tightening lock nuts, restrain ball joint with appropriate size wrench. The external threaded length not engaged in the tie rod must not exceed 20 mm (25/32 in).

7, Hardened Washer

Install a hardened washer on each side of the arm.



TYPICAL

1. Hardened washers

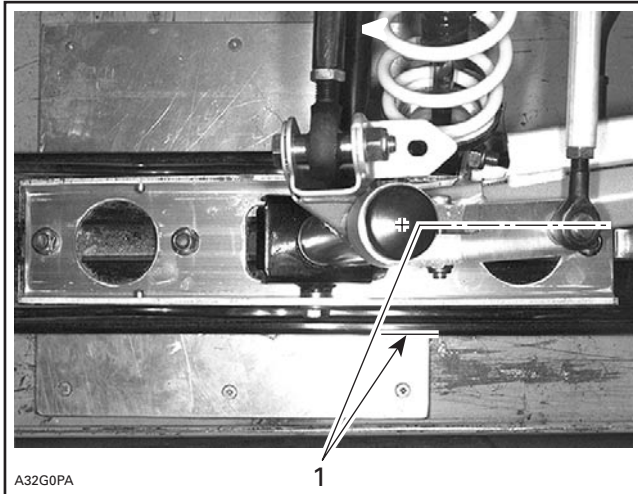
Section 07 STEERING/FRONT SUSPENSION

Subsection 02 (STEERING SYSTEM)

12, Steering Arm

The steering arm angles should be equal on both sides when skis are parallel with vehicle.

Steering arm axis (from plastic cap center to ball center of ball joint) must run parallel to ski.



TYPICAL

1. Parallel

Tighten the steering arm pinch bolt and nut to the torque specified in the exploded view.

INSPECTION

Check skis and runners for wear. Replace as necessary. Refer to FRONT SUSPENSION.

12, Steering Arm

Make sure steering arm and ski leg splines interlock.

⚠ WARNING

Any parts having worn splines have to be replaced with new ones.

Check the general condition of the steering system components for wear. Replace if necessary.

Heating Grip Element

Refer to TESTING PROCEDURE.

17,18, Ball Joint (left hand and right hand threads)

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

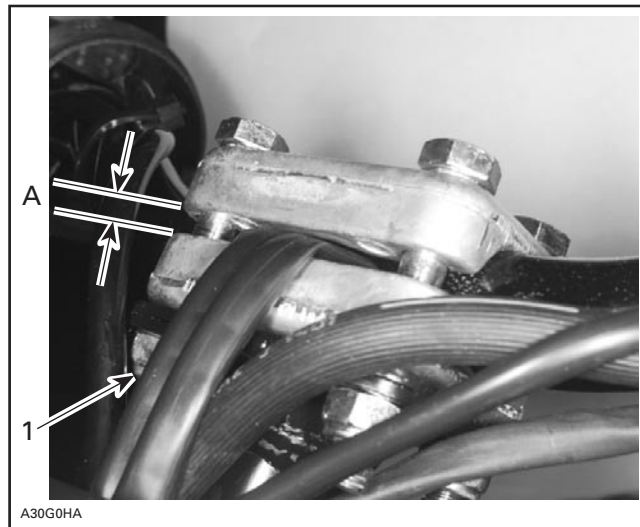
HANDLEBAR ADJUSTMENT

Loosen all 4 nuts no. 4 retaining steering clamps no. 2.

Adjust the steering handlebar to the desired position.

Lock the handlebar in place by tightening the 4 nuts as specified in the illustrations.

CAUTION: Tighten the nuts or bolts equally in a criss-cross sequence and ensure there is an equal gap on each side of the clamps.



TYPICAL

1. Torque to 25 N•m (18 lbf•ft)

A. Equal gap all around

⚠ WARNING

Avoid contact between the brake handle and the windshield by NOT adjusting the handlebar too high.

⚠ WARNING

Make sure that the steering pad and all controls are properly fastened to their normal location on the handlebar.

STEERING ADJUSTMENT (skis)

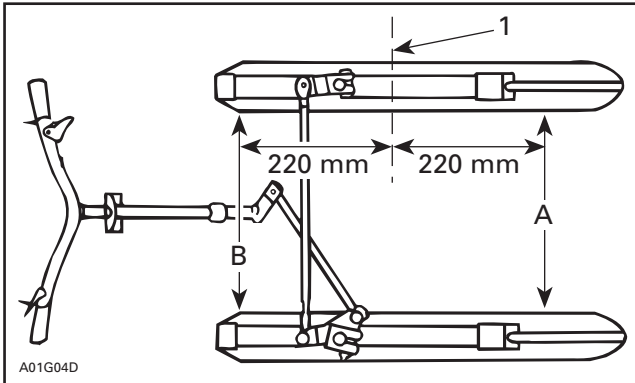
Definitions

TOE-OUT:

A difference measured between the front edge of the skis "A" and rear edge "B" as viewed from the top. It is adjustable. For all 4-TEC models, toe-out is measured at 220 mm (8-21/32 in) from ski pivot bolt axis.

Section 07 STEERING/FRONT SUSPENSION

Subsection 02 (STEERING SYSTEM)



TYPICAL

1. Ski pivot bolt axis

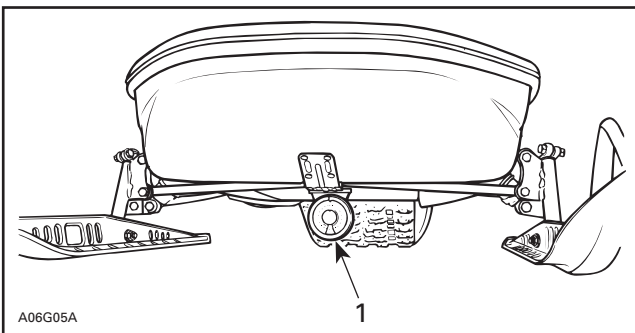
CAMBER:

A specific inward or outward tilt angle of ski leg compared to a vertical line when viewing the vehicle from front.

On 4-TEC models camber cannot be adjusted. If out of specifications, check for bent parts and replace them accordingly.

CAMBER CHECKING

- Make sure the vehicle is leveled by placing an angle finder under the main frame member as shown on the following illustration.
- Vehicle skis must be off the ground.

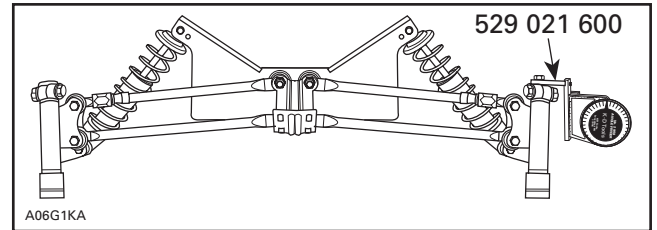


TYPICAL

1. Angle finder

Using special tool (P/N 529 021 600) mounted to the ski leg, position the angle finder on the tool as shown in the following illustration. An alternate location for the angle finder if the special tool is not available is the outside of the ski leg housing.

CAUTION: Angle finder must sit square against swing arm. Positioning angle finder against weld bead or decal may result in false reading.



TYPICAL — CAMBER CHECKING SET-UP

Adjustments

Adjustments should be performed following this sequence:

- pivot arm centering
- ski alignment.

PIVOT ARM CENTERING

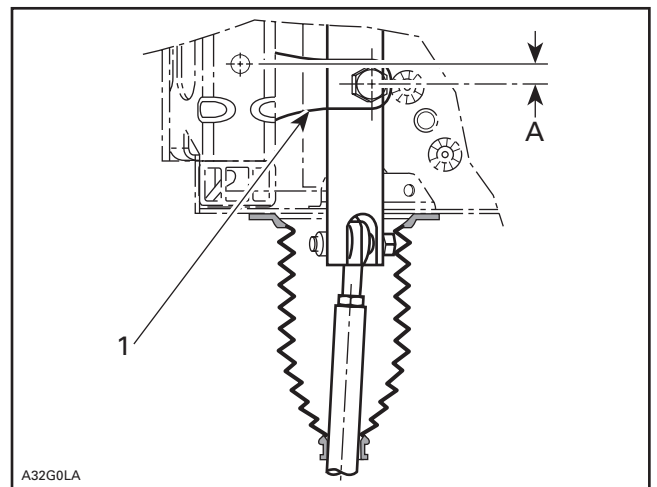
⚠ WARNING

Do not attempt to adjust straight ahead ski position by turning the ball joint on tie rod no. 8.

- Position handlebar in a straight ahead position as explained below.
- Verify pivot arm centering as explained below. If it is within 9 - 13 mm (23/64 - 33/64 in), proceed directly with ski alignment. Otherwise, proceed with adjustment as follows, then perform SKI ALIGNMENT.

8,17,18, Tie Rod and Ball Joint

Turn handlebar until bolt center of left side swivel arm is 11 mm (27/64 in) from chassis hole center.



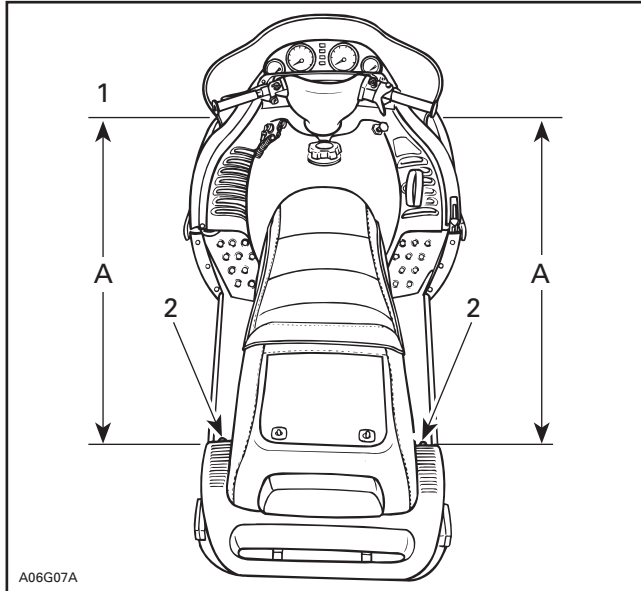
1. Left side swivel arm
A. 11 mm (27/64 in)

Section 07 STEERING/FRONT SUSPENSION

Subsection 02 (STEERING SYSTEM)

Check that handlebar is horizontal by measuring from the extremities of the grips to the rearmost edge of the tunnel, as shown.

NOTE: The reference point must be the same relative to each side.



TYPICAL

1. Equal distance "A" on each side
2. Same reference point

If it is NOT horizontal, remove engine (refer to REMOVAL AND INSTALLATION section) and adjust tie rod as explained below.

Loosen the jam nuts on tie rod no. 8 (LH threads on steering column end) and turn tie rod accordingly. Retighten the jam nuts to 18 N•m (159 lbf•in).

⚠ WARNING

Never lengthen this tie rod so that the external unengaged threaded portion of ball joint exceeds 20 mm (25/32 in).

SKI ALIGNMENT

NOTE: Make sure pivot arm centering is as specified. Refer to PIVOT ARM CENTERING.

Ski alignment is performed by adjusting length of left and right tie rods no. 11.

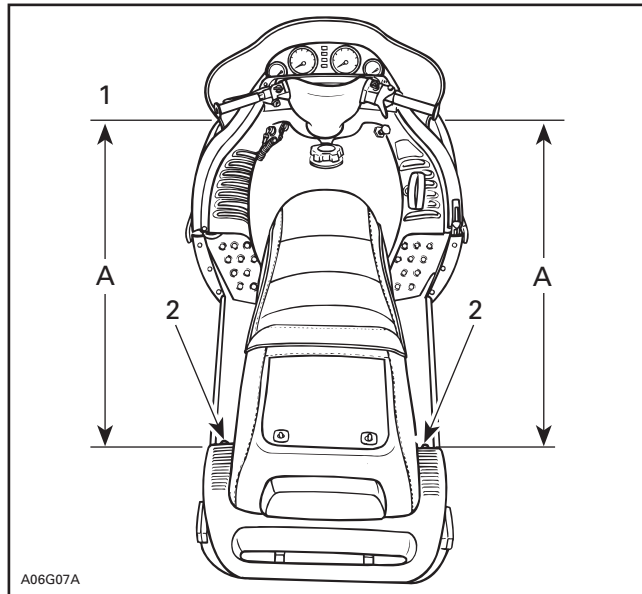
⚠ WARNING

Do not attempt to adjust skis in a straight ahead position by turning ball joint on tie rod no. 8.

Procedure:

Position handlebar so that it is horizontal by measuring from the extremities of the grips to the rearmost edge of the tunnel, as shown.

NOTE: The reference point must be the same relative to each side.



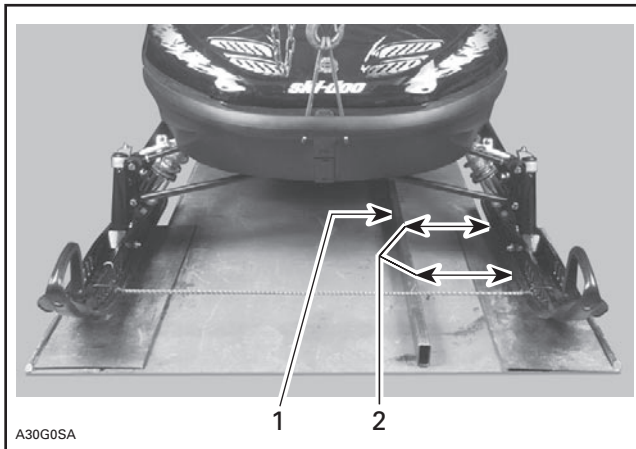
TYPICAL

1. Equal distance "A" on each side
2. Same reference point

- A rubber cord must be hooked in front of skis to keep them closed and to take all slack from steering mechanism.
- Lift the front of vehicle off the ground.
- Make sure skis are in a straight-ahead position by placing a straight edge against pre-adjusted track and measure the distance between front and rear of skis and straight edge. Measuring points are 220 mm (8-21/32 in) at front and rear of ski pivot axis.
- To reduce tolerance when measuring, set one ski to proper toe-out (half the total toe-out) then measure from that ski to the opposite ski.

Section 07 STEERING/FRONT SUSPENSION

Subsection 02 (STEERING SYSTEM)



TYPICAL

1. Straight edge
2. Measure at 220 mm (8-21/32 in) from ski pivot axis

If adjustment is needed:

- Loosen jam nuts of both tie rods **no. 11**.

Toe-out must be as specified in the following chart.

MODEL	TOTAL TOE-OUT + 3 mm (+ 1/8 in) - 0 mm (- 0 in)
4-TEC	3.0 (1/8)

- Turn the tie rod to change its length.

⚠ WARNING

Never lengthen tie rod so that the external un-engaged threaded portion of ball joint exceeds 20 mm (25/32 in).

LUBRICATION

⚠ WARNING

Do not lubricate throttle cable or housing.

26, Grease Fittings

Only use suspension synthetic grease (P/N 293 550 033).

- Grease ski legs.
- Grease LH and RH swivel arms.
- Grease stabilizer blocks in swing arm.

For all others lubrication points use BOMBARDIER LUBE (P/N 293 600 016).

Lubricate:

- steering column bushings
- tie rod ends.