Fastener Tightening Specifications

Application	Specification	
	Metric	English
Adjuster Plug Locknut	70 N·m	52 lb ft
Ball Joint Hex Nut	45 N·m	33 lb ft
Crossmember-to-Underbody Bolts	150 N·m	111 lb ft
Outer Tie Rod Hex Nuts	45 N·m	33 lb ft
Outer Tie Rod Lock Nuts	54 N·m	40 lb ft
Pinion Preload	0.9-1.7 N·m	8-15 lb in
Stabilizer Shaft-to-Knuckle Bolts	45 N·m	33 lb ft
Steering Gear Retaining Bracket Nuts	50 N·m	37 lb ft

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Manual Steering Specifications

Application	Specification	
	Metric	English
Gear Type	Rack and Pinion	
Manual Steering Gear Ratio	21.5:1	
Rack Bending Limit	0.1 mm	0.004 in
Rack Gain	32.17 mm/rev	1.267 in/rev
Rack Stroke	139 mm ± 1 mm	5.472 in ± 0.039 in

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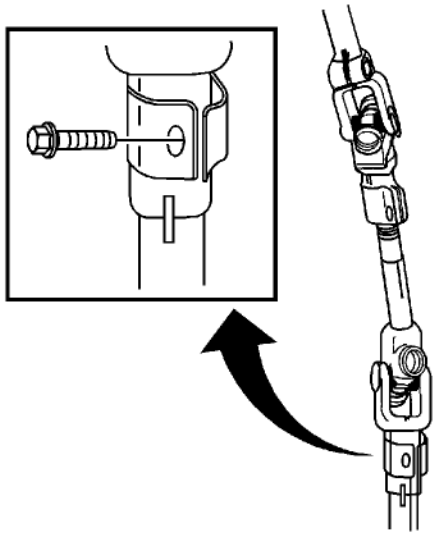
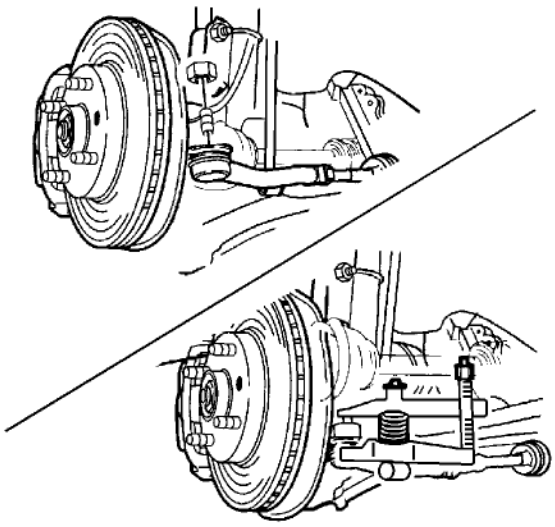
Rack and Pinion Replacement

Removal Procedure

Caution: Refer to Battery Disconnect Caution in the Preface section.



1. Disconnect the negative battery cable.
2. Position the tires straight ahead by turning the steering wheel.
3. Remove the intermediate shaft.
4. Remove the front tires.



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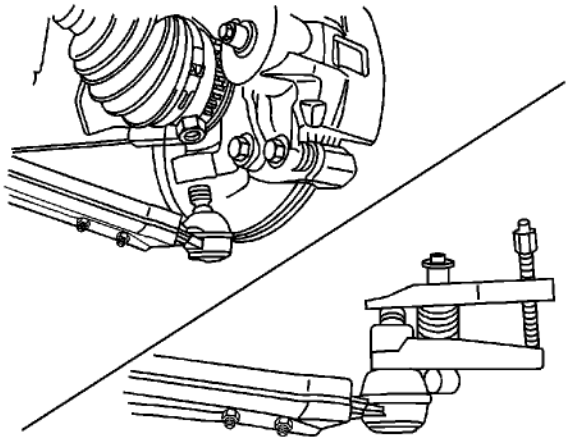
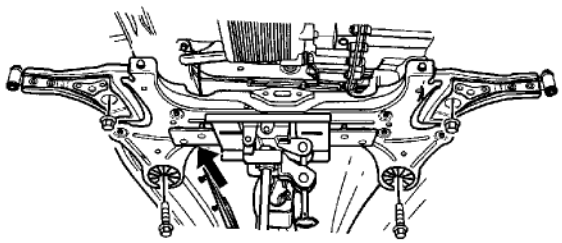
5. Remove the outer tie rod hex nuts. Refer to Rack and Pinion Outer Tie Rod End Replacement .



6. Remove the ball joint hex nuts and disconnect the stabilizer shaft from the knuckle by removing the stabilizer shaft link assembly. Refer to Stabilizer Shaft Replacement .



7. Remove the cross member by removing the nuts and bolts to the underbody.

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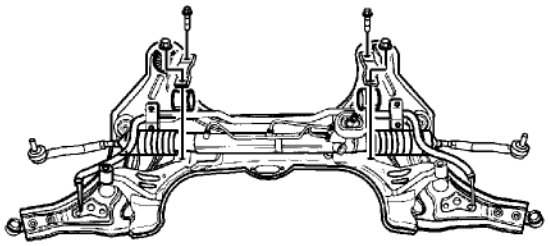
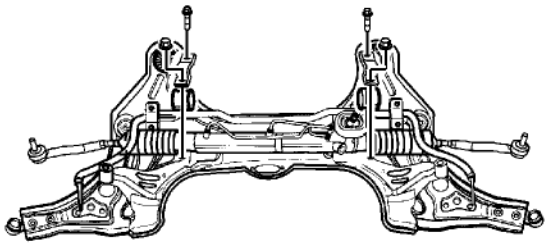


8. Remove the rack and pinion assembly by disconnecting the steering gear retaining bracket nuts.

Installation Procedure

Notice: Refer to Fastener Notice in the Preface section.



1. Install the rack and pinion assembly by connecting the steering gear retaining bracket nuts.

   Tighten
   Tighten the steering gear retaining bracket nuts to 50 N·m (37 lb ft).

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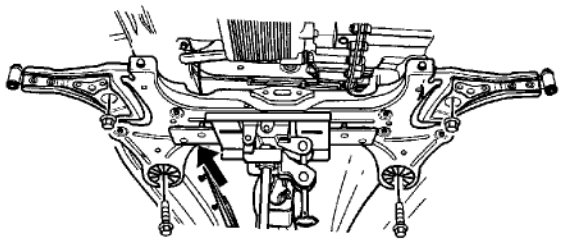
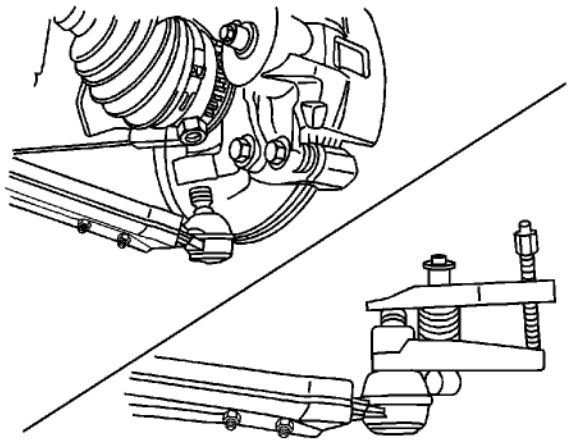


2. Install the cross member by tightening the nuts and bolts to the underbody.

Tighten
Tighten the cross member by tightening the nuts and bolts to the underbody to 150 N·m (111 lb ft).



3. Install the ball joint hex nuts and connect the stabilizer shaft to the knuckle by tightening the bolt with stabilizer shaft link assembly. Refer to Stabilizer Shaft Replacement .

Tighten
- Tighten the ball joint hex nuts to knuckle to 45 N·m (33 lb ft).

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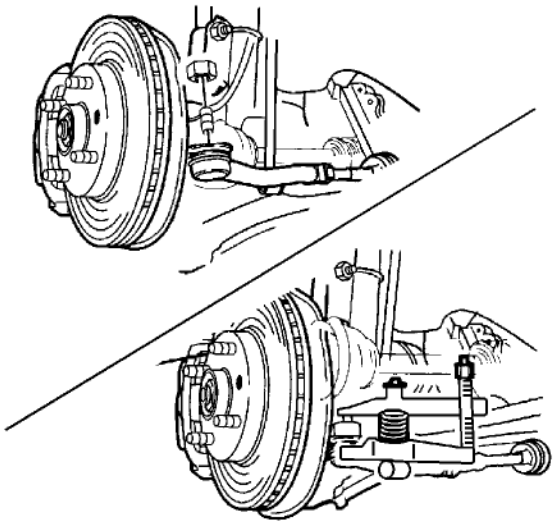
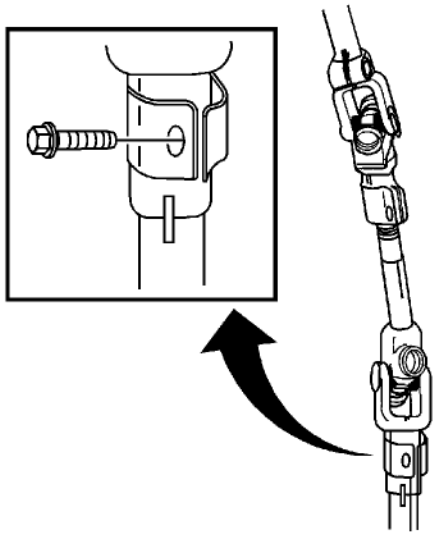
- Tighten the bolts of stabilizer shaft to the knuckle to 45 N·m (33 lb ft).



4. Install the outer tie rod hex nuts.

Tighten
Tighten the outer tie rod hex nuts to 45 N·m (33 lb ft).

5. Install the front tires. Refer to Tire and Wheel Removal and Installation .



6. Install the intermediate shaft.
7. Install the steering wheel and column.
8. Connect the negative battery cable.
9. Inspect the vehicle. Refer to Preliminary Alignment Inspection .
10. Measure the wheel alignment.

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11. If necessary, adjust the front toe. Refer to Front Toe Adjustment .

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