

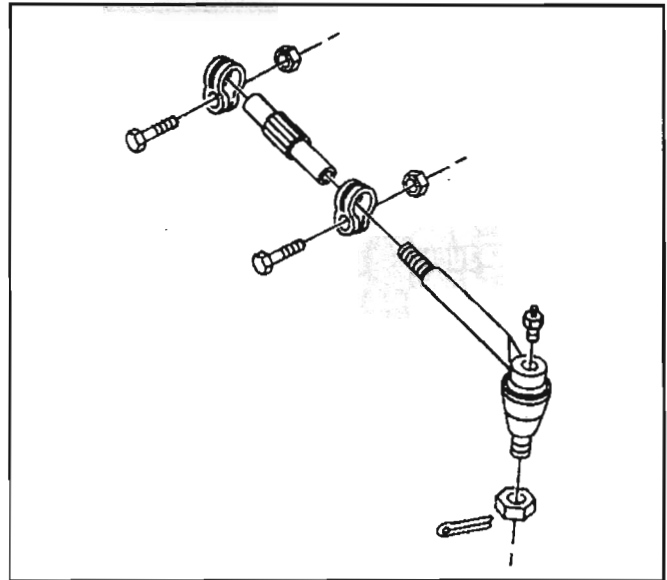
Tie Rod Replacement (4WD)

Removal Procedure

Tools Required

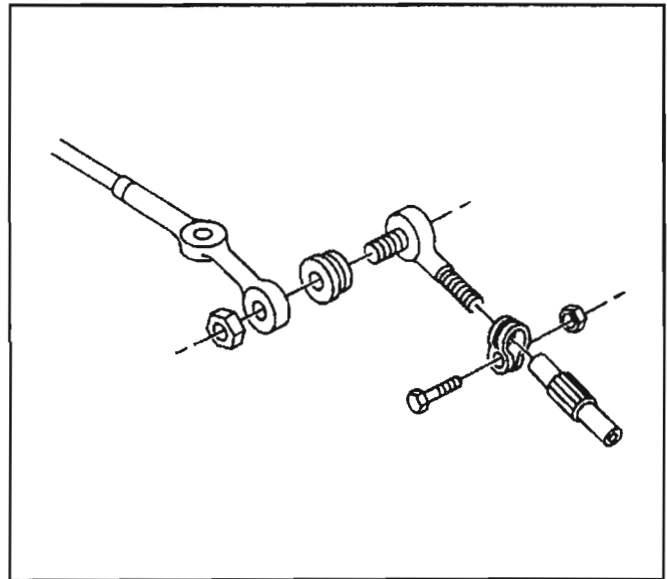
J 6627-A Wheel Stud and Tie Rod Remover

1. Raise and suitably support the vehicle with safety stands. Refer to *Lifting and Jacking the Vehicle* in General Information.
2. Remove the cotter pin from outer tie rod ball stud nut.
3. Remove the outer tie rod ball stud nut.



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4. Remove the inner tie rod ball stud nut.

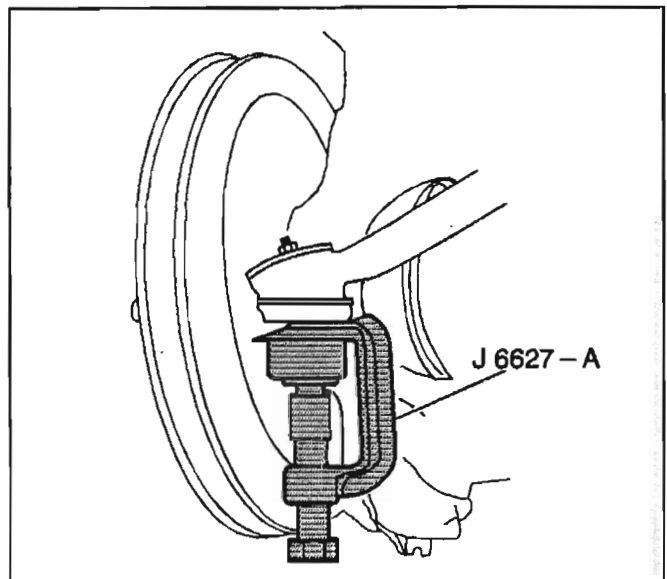


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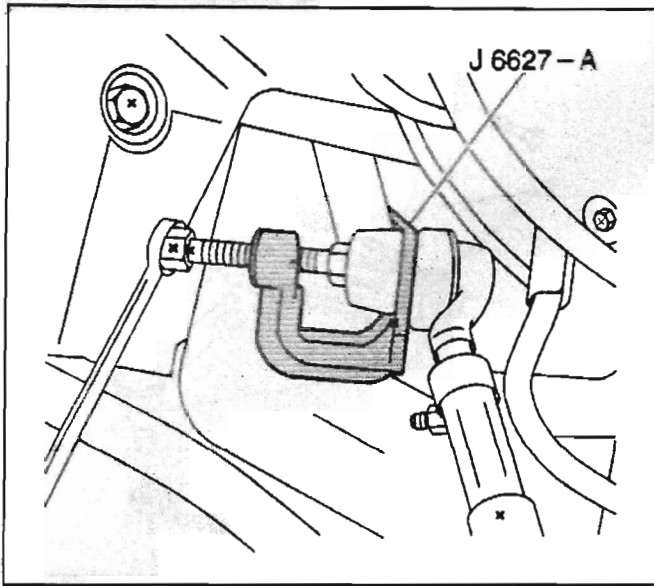
Notice: Do not attempt to disconnect a steering linkage joint by driving a wedge between the joint and the attached part. Seal damage may result which will cause premature failure of the joint.

Important: Use the proper tool in order to separate all tie rods and ball joints.

5. Remove the outer tie rod ball stud from the steering knuckle using J 6627-A.

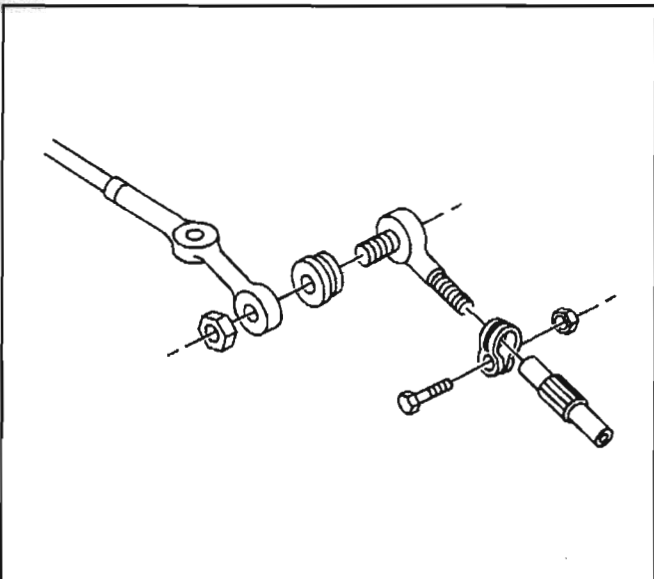


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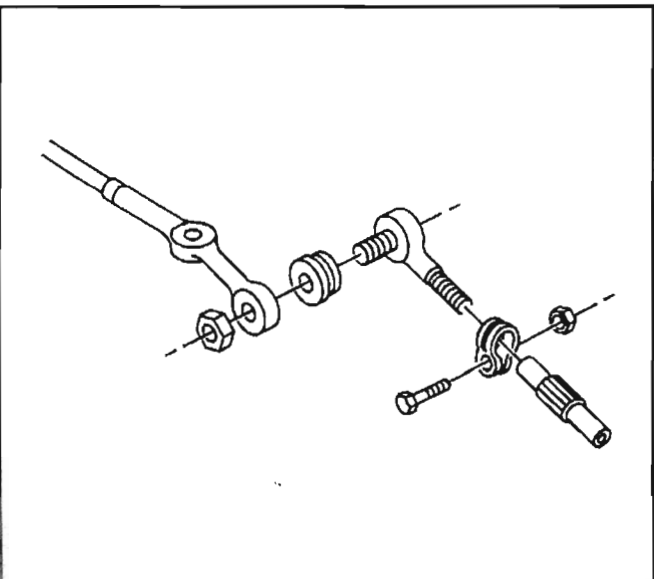
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6. Remove the inner tie rod ball stud from the relay rod using *J 6627-A*.



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7. Perform the following steps in order to remove the tie rod ends from the adjuster tube:
- 7.1. Loosen the clamp bolts.
 - 7.2. Unscrew the assemblies.
8. Inspect for the following possible conditions:
- The tie rod ends for damage
 - The tie rod end seals for excessive wear
 - The tie rod threads for damage
 - The tie rod end for damage
 - The ball stud threads for damage
 - The adjuster tube for bending
 - The adjuster tube for damaged threads
9. Clean the following components:
- The ball stud threads
 - The ball stud nut
 - The tapered surfaces



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Installation Procedure

Tools Required

- *J 29193* Steering Linkage Installer (12 mm)
- *J 29194* Steering Linkage Installer (14 mm)

Important:

- If the tie rod ends were removed, lubricate the tie rod ends with chassis lubricant.
- Ensure that the number of threads on both the inner and the outer tie rod ends are equal within three threads.

1. Connect the tie rod ends to the adjuster tube.
- Notice:** Refer to *Fastener Notice* in Cautions and Notices.
2. Install the inner tie rod ball stud to the relay rod. Ensure that the seal is on the stud.

3. Seat the taper using *J 29193* or *J 29194*.

Tighten

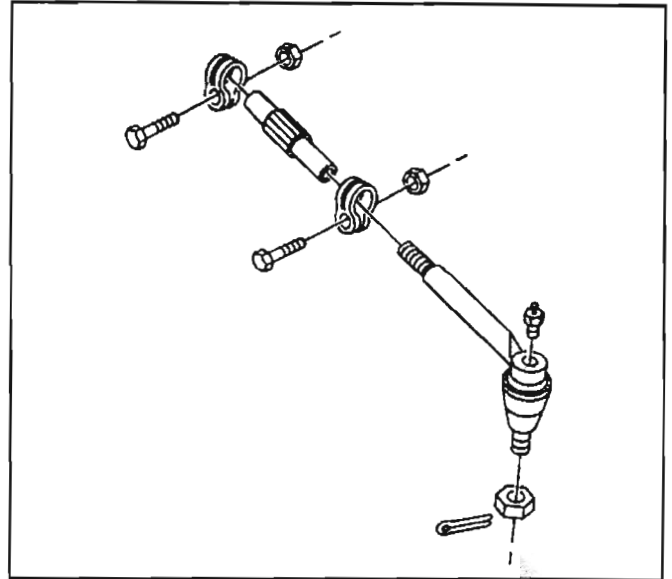
Tighten *J 29193* or *J 29194* to 54 N·m (40 lb ft).

4. Remove *J 29193* or *J 29194* from the inner tie rod ball stud.
5. Install the new nut to the inner tie rod ball stud.

Tighten

Tighten the inner tie rod ball stud nut to 47 N·m (35 lb ft).

6. Install the outer tie rod ball stud to the steering knuckle.
Ensure that the seal is on the stud.



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7. Seat the taper using *J 29193* or *J 29194*.

Tighten

Tighten *J 29193* or *J 29194* to 54 N·m (40 lb ft).

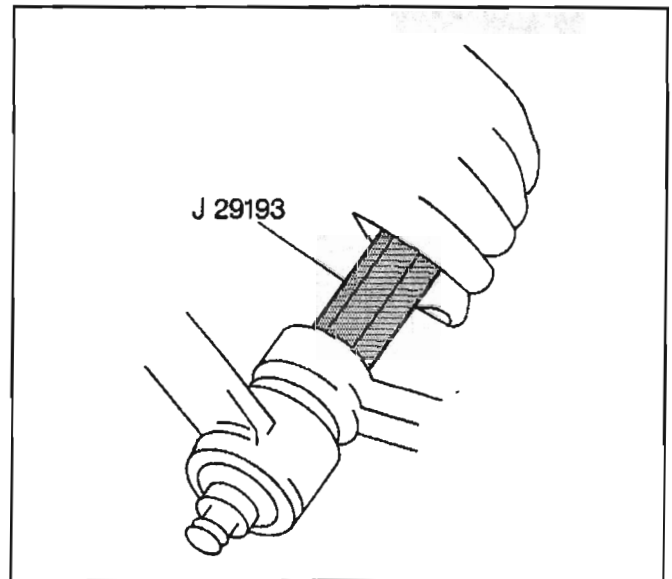
8. Remove *J 29193* or *J 29194* from the outer tie rod ball stud.
9. Install the nut to the outer tie rod ball stud.

Tighten:

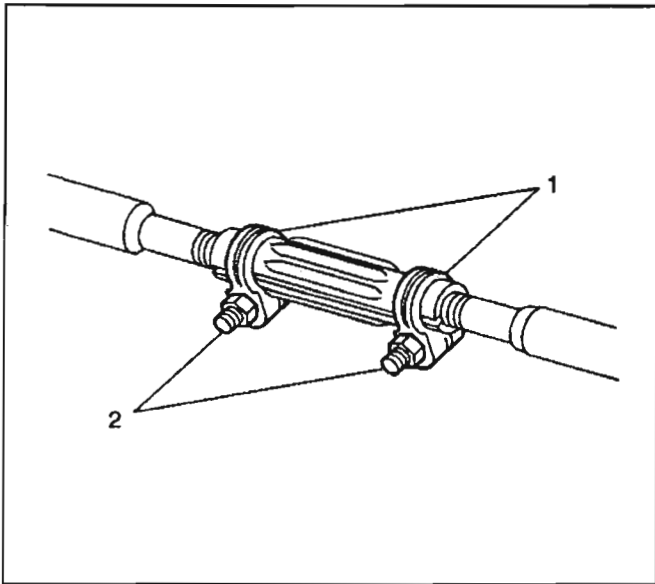
Tighten the outer tie rod ball stud nut to 53 N·m (39 lb ft).

Important: Do not back the nut off in order to align the cotter pin hole. Advance the nut in order to align the nut slot with the cotter pin hole.

10. Install the new cotter pin to outer tie rod nut.
11. Spread the cotter pin ends.
12. Lower the vehicle.
13. Adjust the front toe. Refer to *Front Toe Adjustment* in *Wheel Alignment*.

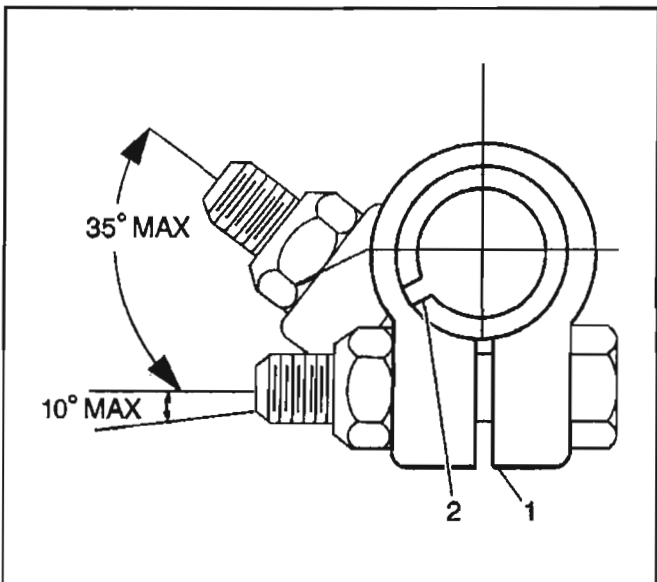


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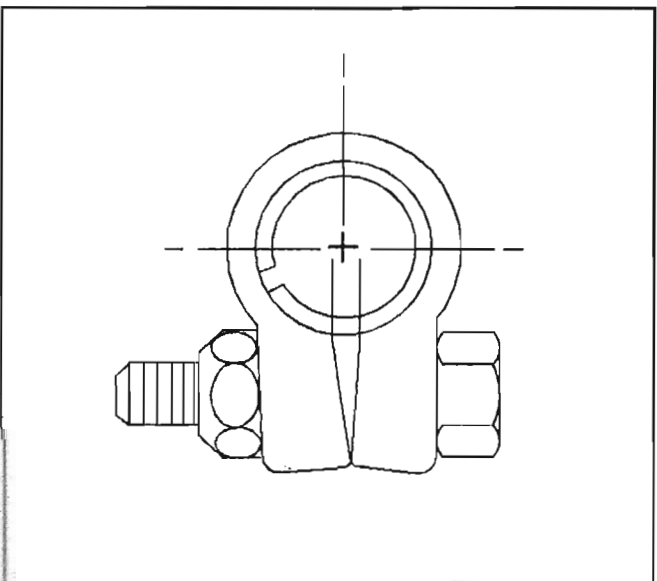
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14. Position the two clamps (2) between the locating dimples (1) at either end of the adjuster tube.



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15. The clamps must be positioned within the correct angular travel, as shown.
16. Ensure that the clamp slot (2) is not aligned with the adjuster tube slot (1).
17. Maintain the position of each tie rod end as the clamps are tightened in order to ensure free movement of each joint.



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18. When clamps are tightened to specifications, the ends may touch.
19. Install the adjuster tube clamp bolts.

Tighten

Tighten the adjuster tube clamp bolts to 21 N·m (16 lb ft).