

SECTION 3D

REAR SUSPENSION

NOTICE: When fasteners are removed, always reinstall them at the same location from which they were removed. If a fastener needs to be replaced, use the correct part number fastener for that application. If the correct part number fastener is not available, a fastener of equal size and strength (or stronger) may be used. Fasteners that are not used, and those requiring thread locking compound will be called out. The correct torque value must be used when installing fasteners that require it. If the above conditions are not followed, parts or system damage could result.

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GENERAL DESCRIPTION

REAR AXLE SUSPENSION

Figure 1

The rear axle assembly (13) is attached to the vehicle with a link suspension system. The rear axle housing is connected to the floor panel assembly (7) by two lower control arm assemblies (6) and a tie rod assembly (11). A single torque arm (8) is used in place of an upper control arm assembly. It is rigidly mounted to the rear axle housing at the rear and through a torque arm bushing assembly to the transmission assembly at the front. On some vehicles, the torque arm (8) is also mounted to the propeller shaft assembly (9) with two bolts/screws. Rear springs (4) are used to support the weight of the vehicle, and ride control is provided by shock absorber assemblies (10) mounted to the rear of the rear axle housing. A stabilizer shaft (5) is also part of the suspension system.

The shock absorber assemblies (10) are mounted at the bottom with a nut to brackets welded to the rear of the rear axle housing, and at the top to the floor panel assembly with a nut. The only service the shock absorber assemblies require is replacement if they have lost their resistance, are damaged or are leaking fluid. For shock absorber assembly diagnosis, refer to SECTION 3.

ON-VEHICLE SERVICE

JOUNCE BUMPER ASSEMBLY

Figure 2

The jounce bumper assembly is located on top of the rear axle housing.



Remove or Disconnect

1. Raise and suitably support vehicle. Refer to SECTION OA.
2. Support rear axle assembly (13).
3. Bolts/screws (2).
4. Bumper assembly (1).



Install or Connect

NOTICE: See "Notice" on page 3D-1 of this section.

1. Bumper assembly (1) to bumper reinforcement.
2. Bolts/screws (2).



Tighten

- Bolts/screws (2) to 27 N•m (20 lb. ft.).
3. Remove rear axle assembly support.
 4. Lower vehicle.

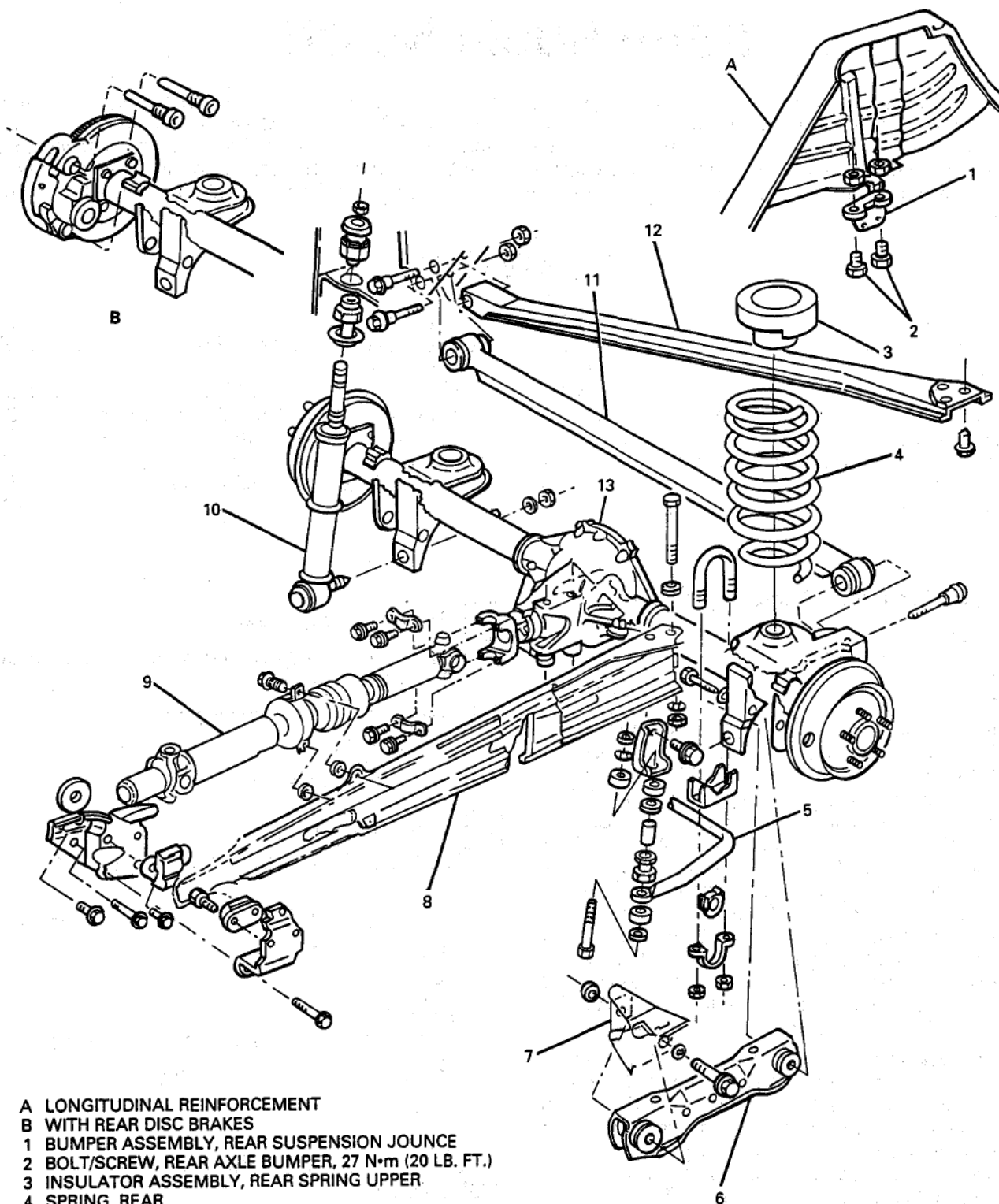
LOWER CONTROL ARM BUSHING ASSEMBLY

Figures 3 and 4



Important

- If both lower control arm assemblies are being replaced, remove and replace one control arm assembly at a time to prevent the rear axle assembly from rolling or slipping sideways, making replacement difficult.



- A LONGITUDINAL REINFORCEMENT
- B WITH REAR DISC BRAKES
- 1 BUMPER ASSEMBLY, REAR SUSPENSION JOUNCE
- 2 BOLT/SCREW, REAR AXLE BUMPER, 27 N·m (20 LB. FT.)
- 3 INSULATOR ASSEMBLY, REAR SPRING UPPER
- 4 SPRING, REAR
- 5 SHAFT, REAR STABILIZER
- 6 ARM ASSEMBLY, REAR AXLE LOWER CONTROL
- 7 PANEL ASSEMBLY, FLOOR
- 8 ARM, REAR AXLE TORQUE
- 9 SHAFT ASSEMBLY, PROPELLER
- 10 ABSORBER ASSEMBLY, REAR SHOCK
- 11 ROD ASSEMBLY, REAR AXLE TIE
- 12 BRACE ASSEMBLY, REAR AXLE TIE ROD BRACKET
- 13 AXLE ASSEMBLY, REAR

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Figure 1 – Rear Axle Suspension (Typical)

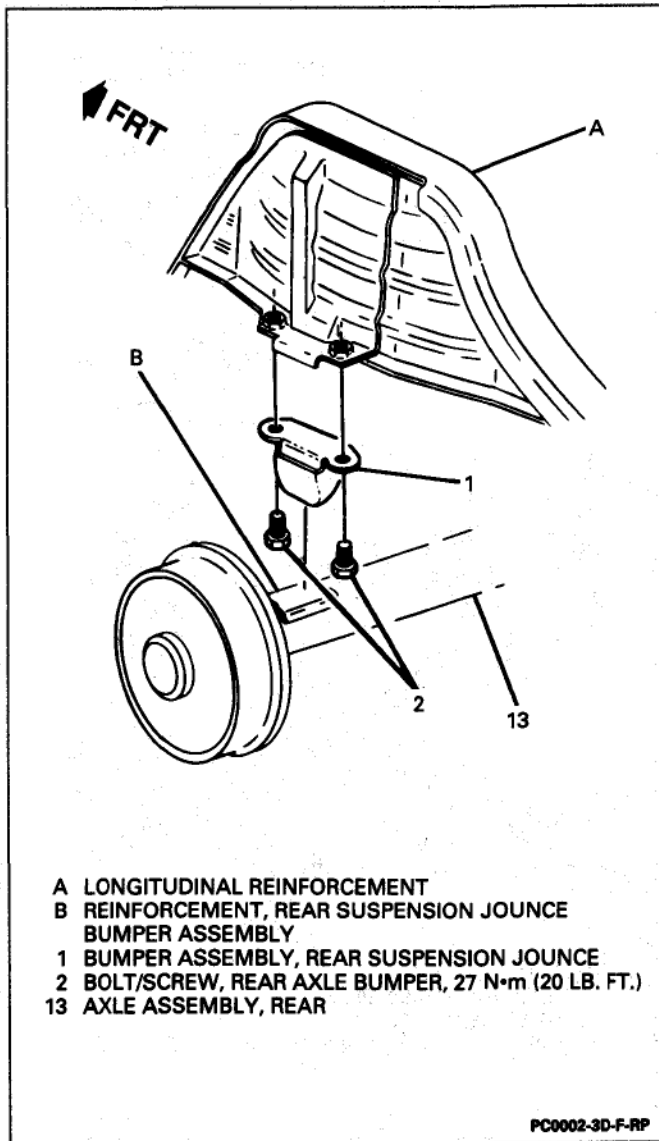


Figure 2 – Jounce Bumper Assembly

Remove or Disconnect

Tools Required:

J 21474-5 Receiver

J 21474-20 Installer

J 21474-23 Remover

1. Raise and suitably support vehicle. Refer to SECTION 0A.
2. Support rear axle assembly.
3. Lower control arm assembly. Refer to "Lower Control Arm Assembly" in this section.
4. Place J 21474-5 over flanged side of bushing assembly.
5. Use arbor press to force bushing assembly out of arm, using large OD of driver such as J 21474-23 contacting OD of outer sleeve.

Install or Connect

1. Reverse tool. See Figure 4.

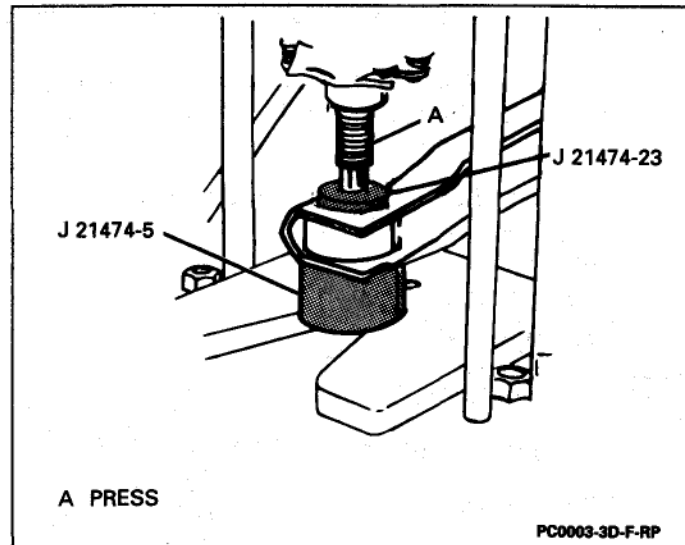


Figure 3 – Removing Lower Control Arm Bushing Assembly

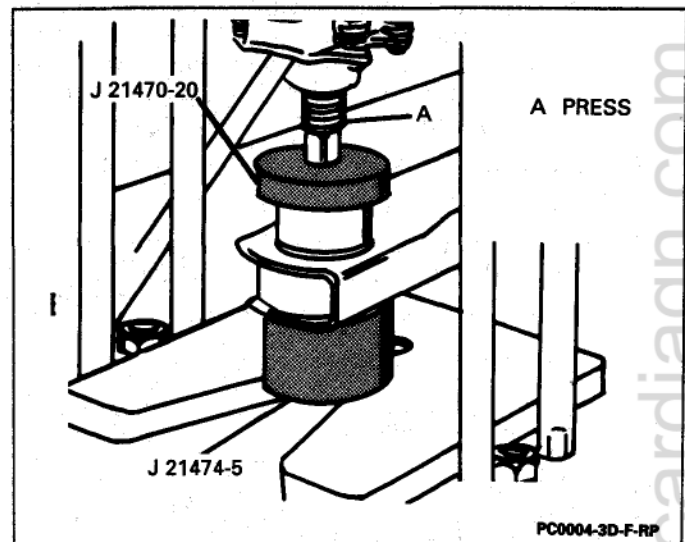


Figure 4 – Installing Lower Control Arm Bushing Assembly

2. Place J 21474-5 over flanged side of bushing assembly.
3. Bushing assembly into position with J 21474-20.
4. Lower control arm assembly. Refer to "Lower Control Arm Assembly" in this section.
5. Remove rear axle assembly support.
6. Lower vehicle.

REAR SPRINGS

Figure 5

Remove or Disconnect

1. Raise and suitably support vehicle. Refer to SECTION 0A.

Important

- When raising vehicle, do not use twin post type hoist.

- Support rear axle assembly (13) with adjustable lifting device.
- Shock absorber nuts from rear axle assembly. Refer to "Shock Absorber Assembly" in this section.
- Lower rear axle assembly (13).

NOTICE: Do not suspend rear axle assembly by brake hose assembly. Damage to hose assembly could result.

- Upper insulator assembly (15).
- Rear spring (4).

Install or Connect

- Rear spring (4) to rear axle assembly (13).

Important

- Lower end of rear spring should be facing forward.
 - It is important not to chip or damage the corrosion protection coating on the rear spring. Avoid contact with hard steel. If coating has been chipped or damaged, do not use rear spring until it has been replaced.
- Upper insulator assembly (15) to rear spring (4).
 - Raise rear axle assembly (13).
 - Shock absorber nuts to rear axle assembly. Refer to "Shock Absorber Assembly" in this section.
 - Remove rear axle assembly support.
 - Lower vehicle.

REAR SPRING SEAT

Figure 5

Remove or Disconnect

- Raise and suitably support vehicle. Refer to SECTION 0A.

Important

- When raising vehicle, do not use twin post type hoist.
- Support rear axle assembly (13) with an adjustable lifting device.
 - Shock absorber nuts from rear axle assembly Refer to "Shock Absorber Assembly" in this section.
 - Lower rear axle assembly (13).

NOTICE: Do not suspend rear axle assembly by brake hose assembly. Damage to hose assembly could result.

- Upper insulator assembly and rear spring. Refer to "Rear Spring" in this section.
- Spring seat (14).

Install or Connect

- Position spring seat (14).

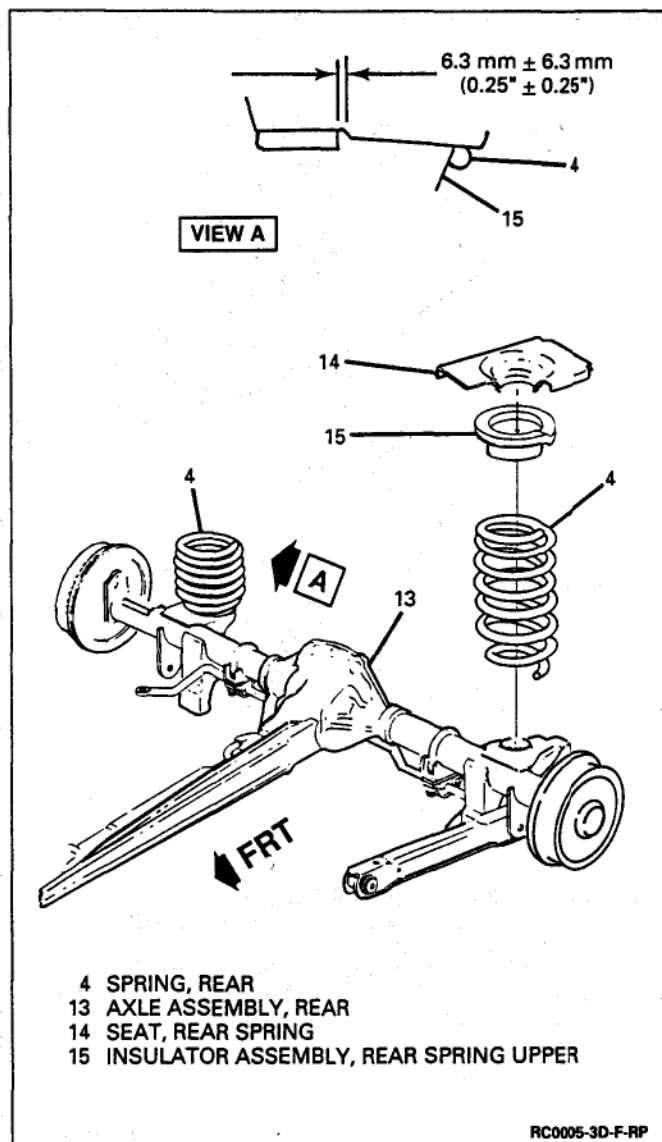


Figure 5 – Rear Spring and Upper Insulator Assembly

- Rear spring and upper insulator assembly. Refer to "Rear Spring" in this section.
- Raise rear axle assembly (13).
- Shock absorber nut to rear axle assembly. Refer to "Shock Absorber Assembly" in this section.
- Remove rear axle assembly support.
- Lower vehicle.

TIE ROD ASSEMBLY

Figure 6

Remove or Disconnect

- Raise and suitably support vehicle. Refer to SECTION 0A.
- Support rear axle assembly (13).
- Bolt/screw (17) and nut (49).
- Bolts/screws (16 and 18) and nuts (19).
- Tie rod assembly (11).

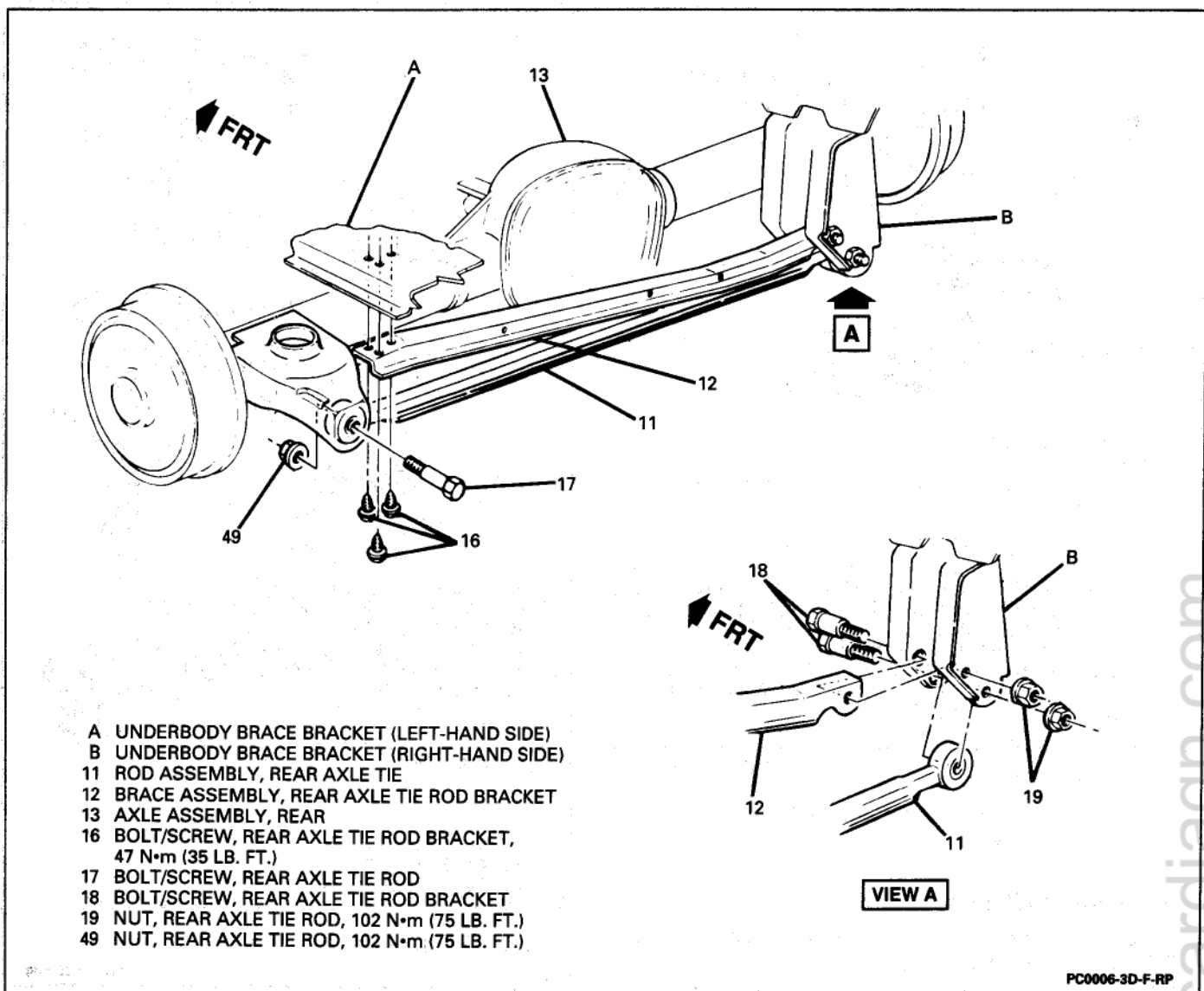


Figure 6 – Tie Rod Assembly

6. Brace assembly (12).

Install or Connect

NOTICE: See "Notice" on page 3D-1 of this section.

1. Position brace assembly (12) to right-hand underbody brace bracket.
2. Hand tighten one bolt/screw (18) and one nut (19).
3. Position tie rod assembly (11) to right-hand underbody brace bracket.
4. Hand tighten other bolt/screw (18) and other nut (19).
5. Bolts/screws (16 and 18) and nuts (19).

Tighten

- Bolts/screws (16) to 47 N•m (35 lb. ft.).
 - Nuts (19) to 102 N•m (75 lb. ft.).
6. Bolt/screw (17) and nut (49).

Tighten

- Nut (49) to 102 N•m (75 lb. ft.).

7. Rear axle assembly support.
8. Lower vehicle.

LOWER CONTROL ARM ASSEMBLY

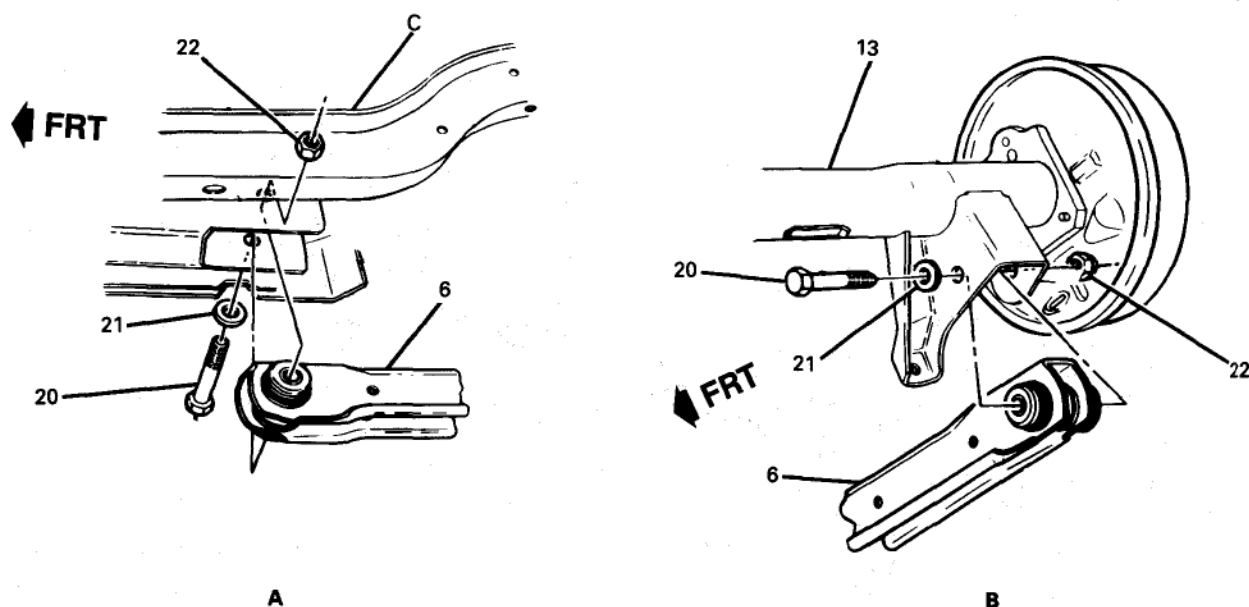
Figure 7

Important

- If both lower control arm assemblies are being replaced, remove and replace one arm at a time to prevent rear axle assembly from rolling or slipping sideways, making replacement difficult.

Remove or Disconnect

1. Raise and suitably support vehicle. Refer to SECTION 0A.



- A FRONT OF LOWER CONTROL ARM ASSEMBLY
(RIGHT-HAND SHOWN LEFT-HAND OPPOSITE)
B REAR OF LOWER CONTROL ARM ASSEMBLY
(RIGHT-HAND SHOWN LEFT-HAND OPPOSITE)
C PAN ASSEMBLY, UNDERBODY
6 ARM ASSEMBLY, REAR AXLE LOWER CONTROL

- 13 AXLE ASSEMBLY, REAR
20 BOLT/SCREW, REAR AXLE LOWER CONTROL ARM,
108 N•m (80 LB. FT.)
21 WASHER, REAR SUSPENSION CONTROL ARM
22 NUT, REAR AXLE LOWER CONTROL ARM,
82 N•m (60 LB. FT.)

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Figure 7 - Lower Control Arm Assembly

- Support rear axle assembly (13).
- Bolts/screws (20), nuts (22) and washers (21) from rear axle assembly (13).
- Bolts/screws (20), nuts (22) and washers (21) from underbody pan assembly.
- Lower control arm assembly (6).

Install or Connect

NOTICE: See "Notice" on page 3D-1 of this section.

- Position lower control arm assembly (6) to rear axle assembly (13) and underbody pan assembly.

Important

- Do not tighten bolts/screws (20) and nuts (22) unless the suspension is at curb height position.
- Bolts/screws (20), nuts (22) and washers (21) to rear axle assembly (13) from inboard side out.

Tighten

- Bolts/screws (20) to 108 N•m (74 lb. ft.).
 - Nuts (22) to 82 N•m (60 lb. ft.).
- Remove rear axle assembly support.
 - Lower vehicle.

TORQUE ARM

Figures 8 through 10

Remove or Disconnect

- Raise and suitably support vehicle. Refer to SECTION 0A.
- Support rear axle assembly (13) with an adjustable lifting device.

Important

- When raising vehicle, do not use twin post type hoist.
- Torque arm from propeller shaft assembly, if equipped with split propeller shaft assembly. Refer to SECTION 4A.
 - Bolts/screws (23), washers (24) and nuts (25) from rear axle assembly (13).
 - Bolts/screws (28, 29 and 30) and nuts (27) from automatic transmission assembly, if equipped.
 - Bolts/screws (29 and 30) and nuts (27) from manual transmission assembly, if equipped.
 - Outer bracket assembly (31).
 - Inner bracket assembly (32).
 - Torque arm (8).

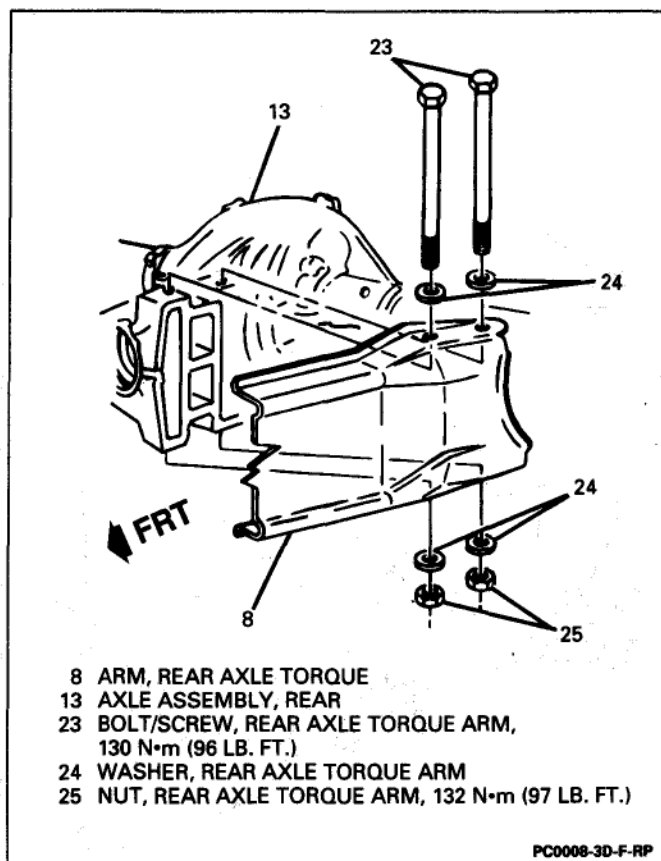


Figure 8 – Torque Arm to Rear Axle Assembly

Install or Connect

NOTICE: See “Notice” on page 3D-1 of this section.

1. Position inner bracket assembly (32) through transmission assembly.
2. Position outer bracket assembly (31) to inner bracket assembly (32) and loosely install nuts (27), and bolts/screws (28, 29 and 30).
3. Insert torque arm (8) into bracket assemblies (31 and 32).
4. Nuts (27) and bolts/screws (28, 29 and 30).

Tighten

- Nuts (27) to 41 N•m (30 lb. ft.).
 - Bolts/screws (28 and 30) to 50 N•m (37 lb. ft.).
 - Bolts/screws (29) to 27 N•m (20 lb. ft.).
5. Position torque arm (8) to rear axle assembly (13).
 6. Bolts/screws (23), washers (24) and nuts (25).

Tighten

- Bolts/screws (23) to 130 N•m (96 lb. ft.).
 - Nuts (25) to 132 N•m (97 lb. ft.).
7. Torque arm to propeller shaft assembly, if equipped with propeller shaft assembly. Refer to SECTION 4A.
 8. Rear axle assembly support.
 9. Lower vehicle.

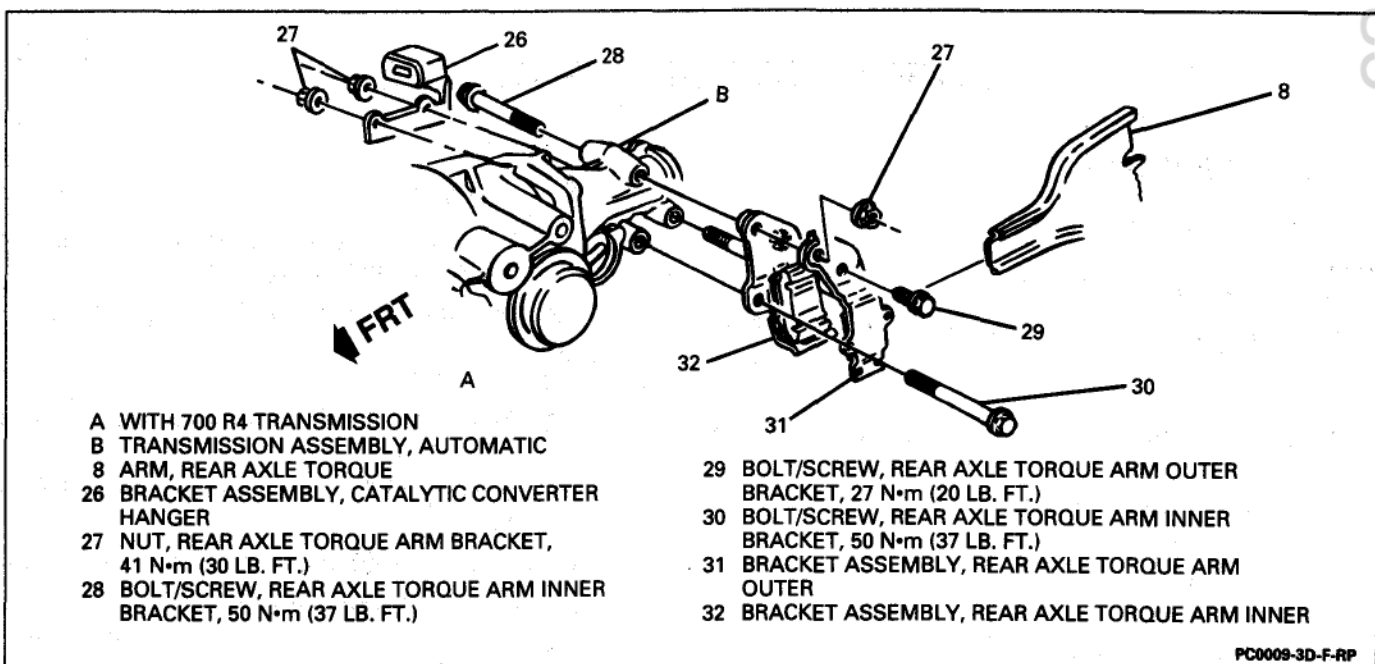


Figure 9 – Torque Arm to Automatic Transmission Assembly

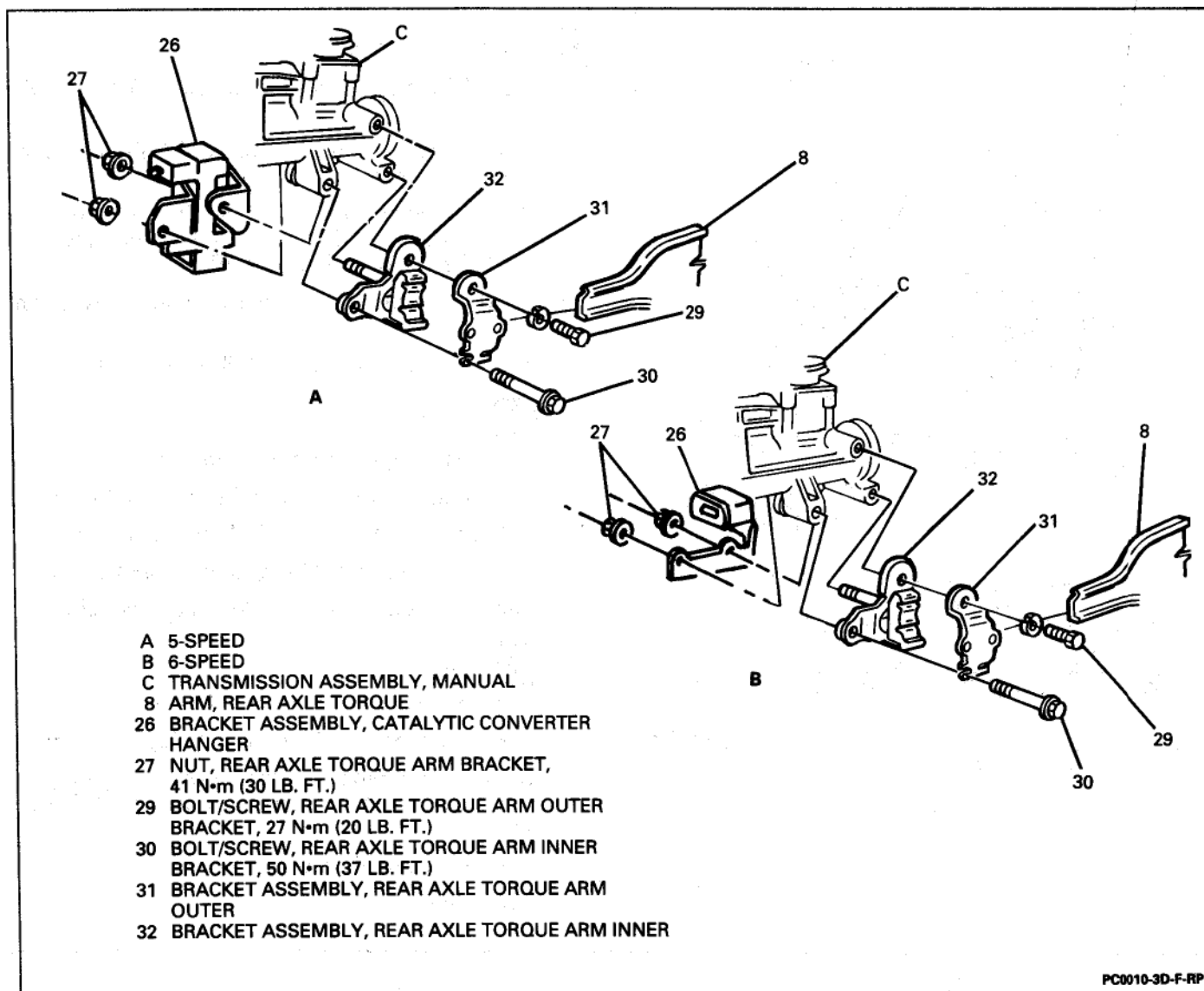


Figure 10 – Torque Arm to Manual Transmission Assembly

STABILIZER SHAFT

Figures 11 and 12

Remove or Disconnect

1. Raise and suitably support vehicle. Refer to SECTION 0A.
2. Nut (41).
3. Link assembly. Refer to "Stabilizer Shaft Bracket and Link Assembly" in this section.
4. Bolts/screws (33) and nuts (36).
5. Clamp (37).
6. Insulator (38).
7. Bracket (34).
8. Stabilizer shaft (35).

Install or Connect

NOTICE: See "Notice" on page 3D-1 of this section.

Important

- The stabilizer shaft must be installed with the bend of the shaft facing down.

1. Place insulator (38) over stabilizer shaft (35).

Important

- The slit of the shaft insulator must face the rear of the vehicle.

2. Position clamp (37) to insulator (38) and stabilizer shaft (35).
3. Position bracket (39) to rear axle assembly (13).
4. Bolts/screws (33) and nuts (36).

Tighten

- Nuts (36) to 24 N·m (18 lb. ft.).

5. Stabilizer shaft link nut. Refer to "Stabilizer Shaft Bracket and Link Assembly" in this section.

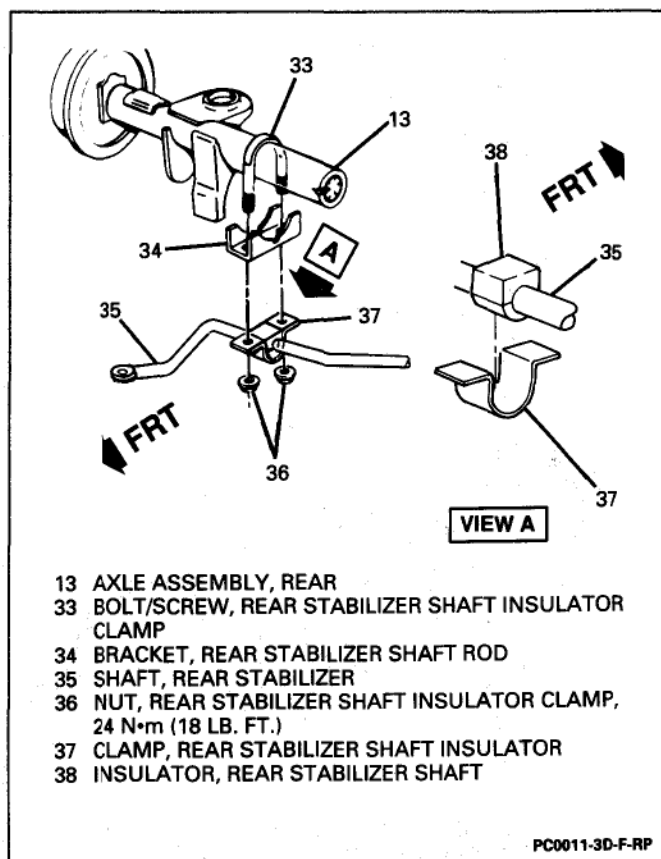


Figure 11 – Stabilizer Shaft

6. Link assembly. Refer to “Stabilizer Shaft Bracket and Link Assembly” in this section.
7. Lower vehicle.

STABILIZER SHAFT BRACKET AND LINK ASSEMBLY

Figure 12

Remove or Disconnect

1. Raise and suitably support vehicle. Refer to SECTION 0A.
2. Nut (41).
3. Link assembly (42).
4. Bolts/screws (40).
5. Bracket (39).

Install or Connect

NOTICE: See “Notice” on page 3D-1 of this section.

1. Position bracket (39) to underbody pan assembly.
2. Bolts/screws (40).

Tighten

- Bolts/screws (40) to 23 N•m (17 lb. ft.).
3. Position link assembly (42) to bracket (39).

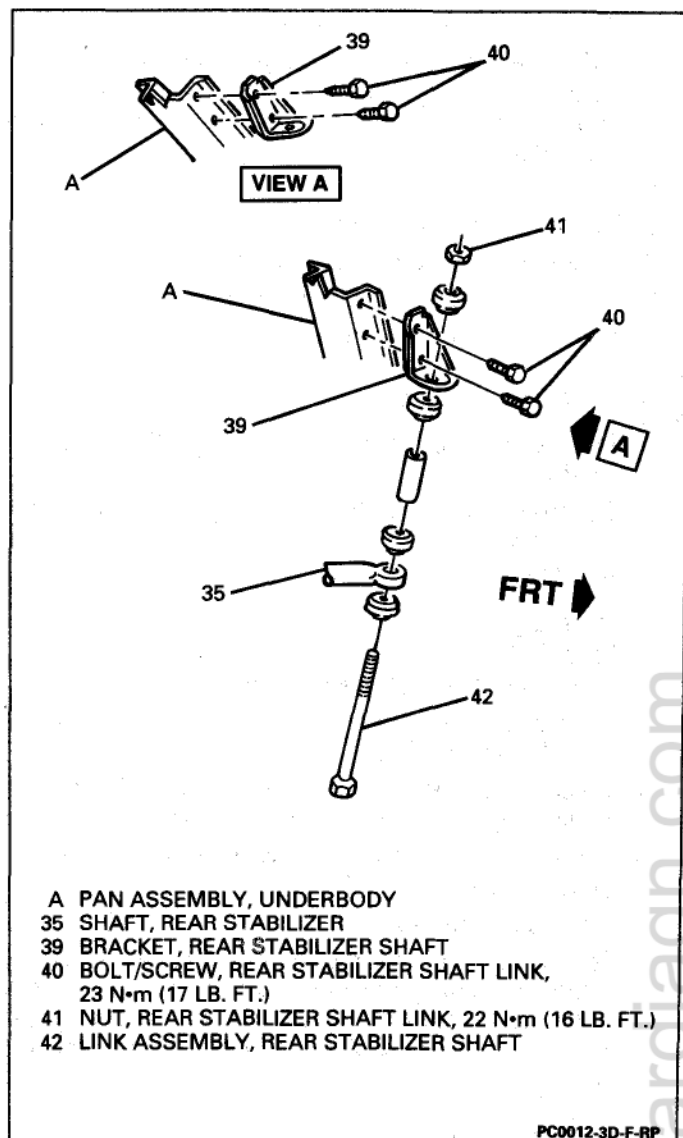


Figure 12 – Stabilizer Shaft Bracket and Link Assembly

4. Link assembly (42) and nut (41).

Tighten

- Link assembly (42) and nut (41) to 22 N•m (16 lb. ft.).
5. Lower vehicle.

SHOCK ABSORBER ASSEMBLY

Figure 13

Remove or Disconnect

1. Fold down seatback frame assembly.
2. Quarter trim panel assembly. Refer to SECTION 10-6.
3. Pull folding carpet assembly back.
4. Raise and suitably support vehicle. Refer to SECTION 0A.

5. Support rear axle assembly (13).

NOTICE: Rear axle assembly must be supported before removing nut to avoid possible damage to brake hose lines, tie rod assembly and propeller shaft assembly.

6. Nut (43).
7. Retainer (44) and upper insulator (45).
8. Retainer (44) and lower insulator (46).
9. Nut (48) from rear axle assembly (13).
10. Shock absorber assembly (47).

Install or Connect

NOTICE: See "Notice" on page 3D-1 of this section.

1. Position shock absorber assembly (47) to rear axle assembly (13).
2. Nut (48).



Tighten

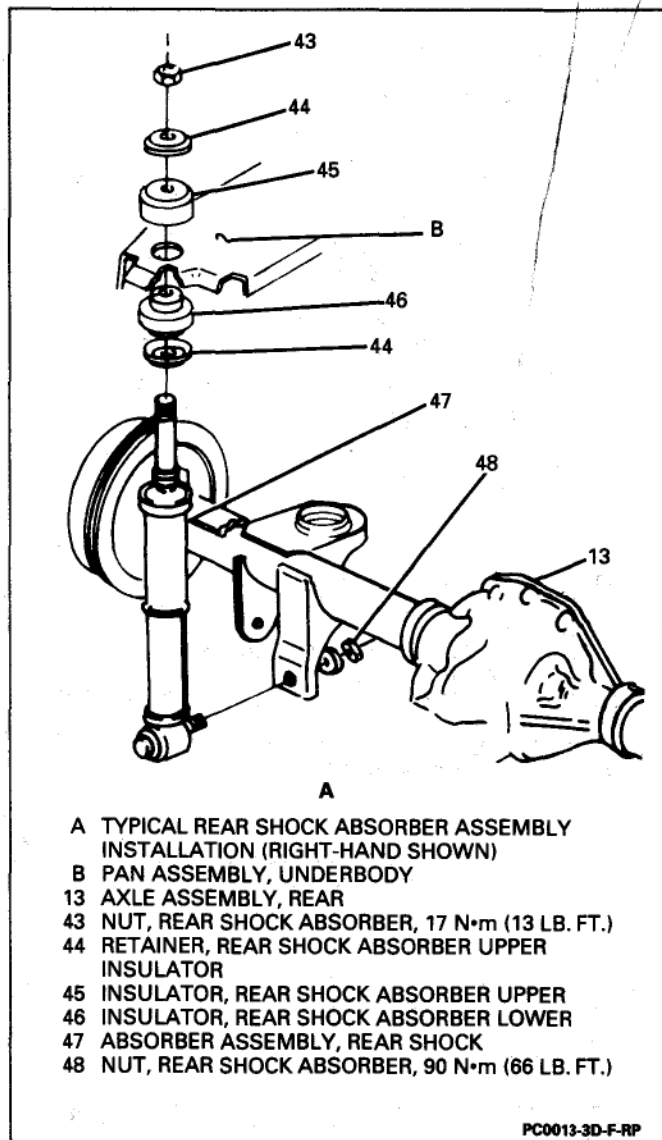
- Nut (48) to 90 N•m (66 lb. ft.).
3. Lower insulator (46) and retainer (44) to shock absorber assembly (47).
 4. Position shock absorber assembly (47) through underbody pan assembly and seat insulator.
 5. Upper insulator (45) and retainer (44) to shock absorber assembly (47).
 6. Hand start nut (43).

NOTICE: Turning the shock absorber assembly while tightening the nut could damage the shock absorber assembly. To prevent damage, keep the shock absorber assembly stationary when tightening the nut.



Tighten

- Nut (43) to 17 N•m (13 lb. ft.).
7. Remove rear axle assembly support.
 8. Lower vehicle.
 9. Pull folding carpet assembly down into position.



A
A TYPICAL REAR SHOCK ABSORBER ASSEMBLY
 INSTALLATION (RIGHT-HAND SHOWN)
B PAN ASSEMBLY, UNDERBODY
13 AXLE ASSEMBLY, REAR
43 NUT, REAR SHOCK ABSORBER, 17 N•m (13 LB. FT.)
44 RETAINER, REAR SHOCK ABSORBER UPPER
 INSULATOR
45 INSULATOR, REAR SHOCK ABSORBER UPPER
46 INSULATOR, REAR SHOCK ABSORBER LOWER
47 ABSORBER ASSEMBLY, REAR SHOCK
48 NUT, REAR SHOCK ABSORBER, 90 N•m (66 LB. FT.)

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Figure 13 – Shock Absorber Assembly

10. Quarter trim panel assembly. Refer to SECTION 10-6.
11. Fold seatback frame assembly upright.

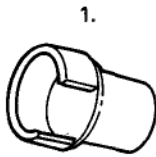
SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Rear Axle Bumper Bolt/Screw	27 N•m (20 lb. ft.)
Rear Axle Lower Control Arm Bolt/Screw	108 N•m (80 lb. ft.)
Rear Axle Lower Control Arm Nut	82 N•m (60 lb. ft.)
Rear Axle Tie Rod Bracket-to-Left-Hand Brace Bracket Bolt/Screw	47 N•m (35 lb. ft.)
Rear Axle Tie Rod-to-Left-Hand Brace Bracket Nut	102 N•m (75 lb. ft.)
Rear Axle Tie Rod-to-Right-Hand Brace Bracket Nut	102 N•m (75 lb. ft.)
Rear Axle Torque Arm Bolt/Screw	130 N•m (96 lb. ft.)
Rear Axle Torque Arm Bracket Nut	41 N•m (30 lb. ft.)
Rear Axle Torque Arm Inner Bracket Bolt/Screw (Automatic Transmission Assembly and Manual Transmission Assembly)	50 N•m (37 lb. ft.)
Rear Axle Torque Arm Inner Bracket Bolt/Screw (Upper) (Automatic Transmission Assembly Only)	50 N•m (37 lb. ft.)
Rear Axle Torque Arm Nut	132 N•m (97 lb. ft.)

Rear Axle Torque Arm Outer Bracket Bolt/Screw	27 N•m (20 lb. ft.)
Rear Shock Absorber Nut (Lower)	90 N•m (66 lb. ft.)
Rear Shock Absorber Nut (Upper)	17 N•m (13 lb. ft.)
Rear Stabilizer Shaft Insulator Clamp Nut	24 N•m (18 lb. ft.)
Rear Stabilizer Shaft Link Bolt/Screw	23 N•m (17 lb. ft.)
Rear Stabilizer Shaft Link Nut	22 N•m (16 lb. ft.)

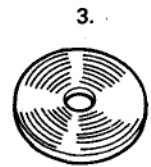
SPECIAL TOOLS



J 21474-5



J 21474-20



J 21474-23

1. BUSHING RECEIVER
2. BUSHING INSTALLER
3. BUSHING REMOVER

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