

SECTION 04-02 Suspension, Rear

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VEHICLE APPLICATION

F-Series and Bronco

DESCRIPTION AND OPERATION

Suspension

Semi-elliptic, leaf-type rear springs (5560) are used for the rear axle suspension. The forward end of each rear spring is attached to a bracket on the frame (5005). The rear end of each rear spring is shackled to a rear spring shackle bracket (5775) on the frame.

Optional auxiliary rear springs are mounted on top of the main rear spring with free ends. These provide load carrying capacity and stability. Auxiliary springs are standard on all F-350 and all F-Super Duty vehicles (except F-Super Duty Motorhome Chassis).

Components

Inspection

Start diagnosis of possible suspension problems with a thorough inspection of the vehicle. Include all suspension components and mounting points to identify any that are worn, damaged, or not securely installed.

Rear Spring

Controls suspension travel and provides ride height control.

Rear Axle Assembly

Supports the differential, axles, wheels (1007) and brake assemblies.

Shock Absorber

The hydraulic shock absorbers are of the direct, double-acting type. They provide a continuous dampening effect both on compression and rebound. These shock absorbers are of telescopic design with rubber grommets at the mounting points for quiet operation. The shock absorbers are sealed, non-adjustable units and must be replaced as complete assemblies.

Stabilizer Bar

Transmits force to control vehicle roll during cornering. Resists lateral movement.

DESCRIPTION AND OPERATION (Continued)**Component Replacement**

- The rear axle bumper (4730) may be replaced individually.
- The rear shock absorber (18080) must be replaced as an assembly. Shock absorbers do not need to be replaced in pairs.
- Rear spring (5560) may be replaced individually.
- Rear stabilizer bar (5A772) and stabilizer bar link (5K484) may be replaced individually.

DIAGNOSIS AND TESTING**Suspension, Rear**

Refer to Section 04-00.

Inspection and Verification

Verify vehicle owner's original concern by road testing.

Symptom Chart**REAR SUSPENSION**

| Condition | Possible Source | Action |
|--|---|--|
| ● Squeak | <ul style="list-style-type: none"> ● Loose mounting bolts. ● Loose shackle bushing. ● Loose rear spring. | <ul style="list-style-type: none"> ● TIGHTEN. ● REPLACE. ● INSTALL rear spring anti-squeak inserts (if none currently installed). |
| ● Rear Spring Clamp Damaged | <ul style="list-style-type: none"> ● Service worn or damaged rear spring clamp. | <ul style="list-style-type: none"> ● INSTALL new rear spring clamp. |
| ● Metal Burrs Rubbing Between the Leaves | <ul style="list-style-type: none"> ● Clip rivet. | <ul style="list-style-type: none"> ● REMOVE burrs. |
| ● Body Rolls | <ul style="list-style-type: none"> ● Weak stabilizer bar. ● Worn or deteriorated stabilizer bar bushing(s). ● Worn or deteriorated shock / strut. | <ul style="list-style-type: none"> ● REPLACE stabilizer bar. ● REPLACE stabilizer bar bushing(s). ● REPLACE shock / strut assembly. |
| ● Poor Riding Comfort | <ul style="list-style-type: none"> ● Worn or deteriorated shock / strut. | <ul style="list-style-type: none"> ● REPLACE shock / strut assembly. |
| ● Body Leans | <ul style="list-style-type: none"> ● Weak rear spring. ● Worn or deteriorated stabilizer bar bushing(s). | <ul style="list-style-type: none"> ● REPLACE rear spring. ● REPLACE stabilizer bar bushing(s). |
| ● Abnormal Noise from Suspension System | <ul style="list-style-type: none"> ● Looseness of peripheral connections. ● Worn or deteriorated shock. ● Worn or deteriorated stabilizer bar bushing(s). | <ul style="list-style-type: none"> ● TIGHTEN the peripheral connections. ● REPLACE shock. ● REPLACE stabilizer bar bushing(s). |
| ● General Driving Instability | <ul style="list-style-type: none"> ● Worn or deteriorated shock. ● Worn or deteriorated stabilizer bar bushing(s). ● Improperly adjusted wheel alignment. ● Damaged or unbalanced wheel(s). | <ul style="list-style-type: none"> ● REPLACE shock assembly. ● REPLACE stabilizer bar bushing(s). ● ADJUST wheel alignment. REFER to Section 04-00. ● CHECK wheel balance. BALANCE if necessary. REFER to Section 04-04. |

REMOVAL AND INSTALLATION

Spring

Removal

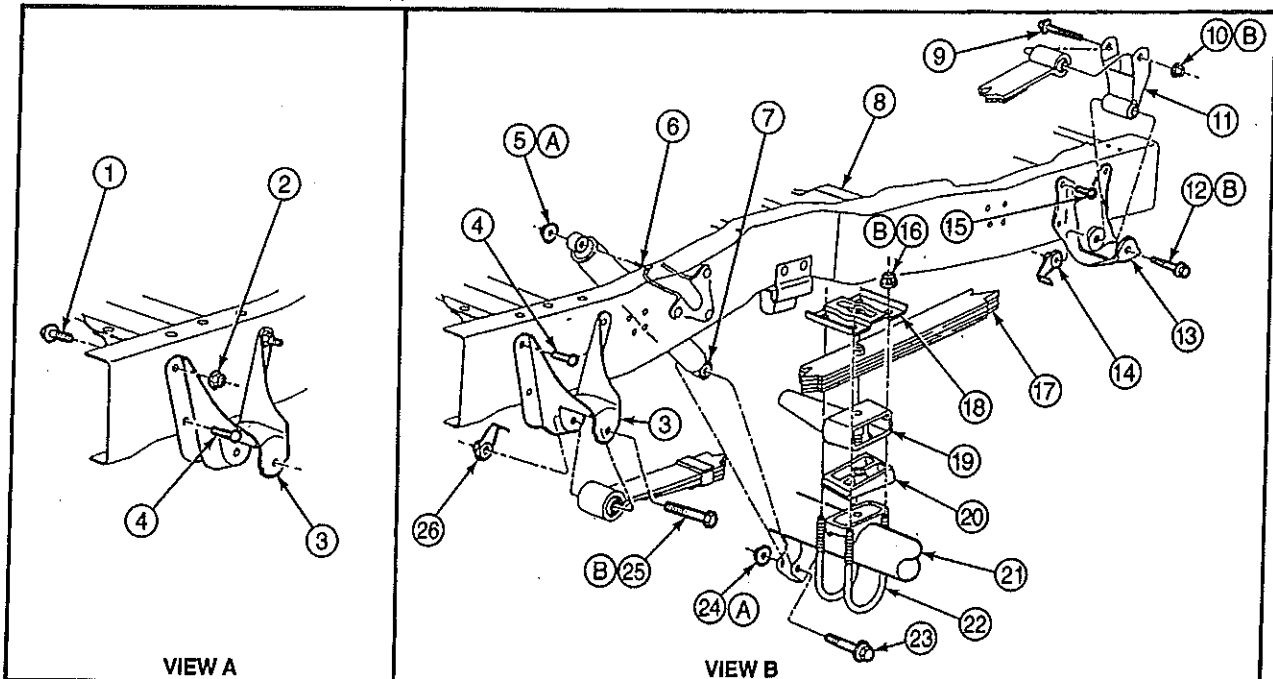
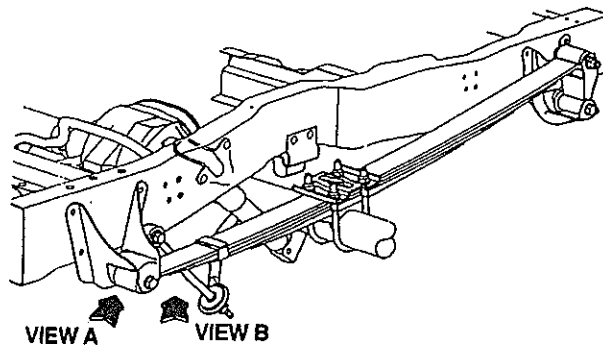
1. Raise the vehicle frame (5005) until the weight is off the rear springs (5560), with the tires still touching the floor.
2. Remove the nuts from the spring U-bolts and drive the U-bolts from the U-bolt rear spring cap and plate (5796).
3. If equipped, remove the auxiliary spring and spacer.
4. Remove the spring-to-bracket nut and bolt at the front of the rear spring.
5. Remove the shackle lower nuts and bolts at the rear of the rear spring.

6. Remove the rear spring and rear spring shackle (5776) from the rear spring shackle bracket (5775).
7. Remove the bolt and nut that secures the rear spring shackle to the rear spring.

Installation

1. Follow removal procedures in reverse order.
2. Tighten the spring U-bolt nuts to specifications as listed at the end of this section. Tighten the front spring bolt and nut and the rear shackle bolts and nuts to specifications listed at the end of this section.

Rear Spring Installation, F-150 and Bronco



F9185-A

| Item | Part Number | Description |
|------|-------------|-------------|
| 1 | N802114-S2 | Bolt |
| 2 | N620483-S56 | Nut |

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| Item | Part Number | Description |
|------|-------------|-----------------------------|
| 3 | 5775 | Rear Spring Shackle Bracket |

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REMOVAL AND INSTALLATION (Continued)

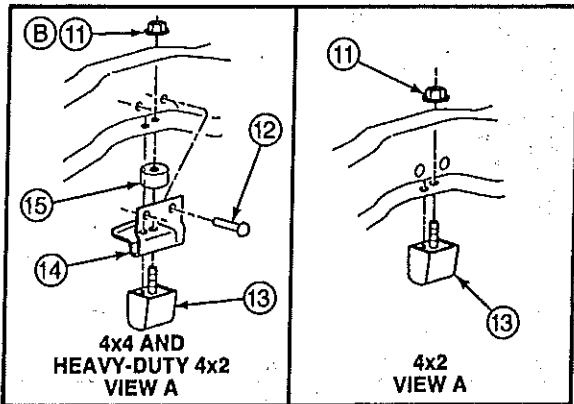
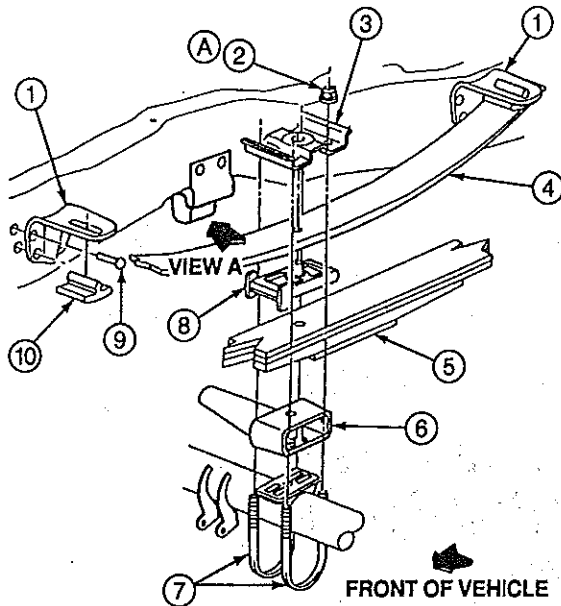
| Item | Part Number | Description |
|------|-------------|-----------------------------|
| 4 | 65092 | Rivet |
| 5 | N806085-S8 | Nut and Washer Assembly |
| 6 | 18192 | Rear Shock Absorber Bracket |
| 7 | 18080 | Shock Absorber |
| 8 | 5005 | Frame |
| 9 | N804028-S2 | Bolt |
| 10 | N620484-S56 | Nut |
| 11 | 5776 | Rear Spring Shackle |
| 12 | N804028-S2 | Bolt |
| 13 | 5775 | Rear Spring Shackle Bracket |
| 14 | N806368-S56 | Nut and Retainer |
| 15 | N647096-S | Rivet |
| 16 | N620484-S56 | Nut |

(Continued)

| Item | Part Number | Description |
|------|--------------|---------------------------------------|
| 17 | 5560 | Rear Spring |
| 18 | 5796 | Rear Spring Cap and Plate |
| 19 | 5729 | Spacer, Rear Spring (F-150 4x4 Only) |
| 20 | 5729 | Spacer, Rear Spring (Bronco Only) |
| 21 | 4001 | Rear Axle |
| 22 | N800751-S101 | Bolt |
| 23 | N605705-S2 | Bolt |
| 24 | N806496-S100 | Nut and Washer |
| 25 | N804028-S2 | Bolt |
| 26 | N806368-S56 | Nut and Retainer |
| A | — | Tighten to 53-73 N·m (39-53 Lb·Ft) |
| B | — | Tighten to 113-153 N·m (83-113 Lb·Ft) |

REMOVAL AND INSTALLATION (Continued)

Rear Spring Installation, F-150 4x2 and 4x4 with Auxiliary Spring



F9187-B

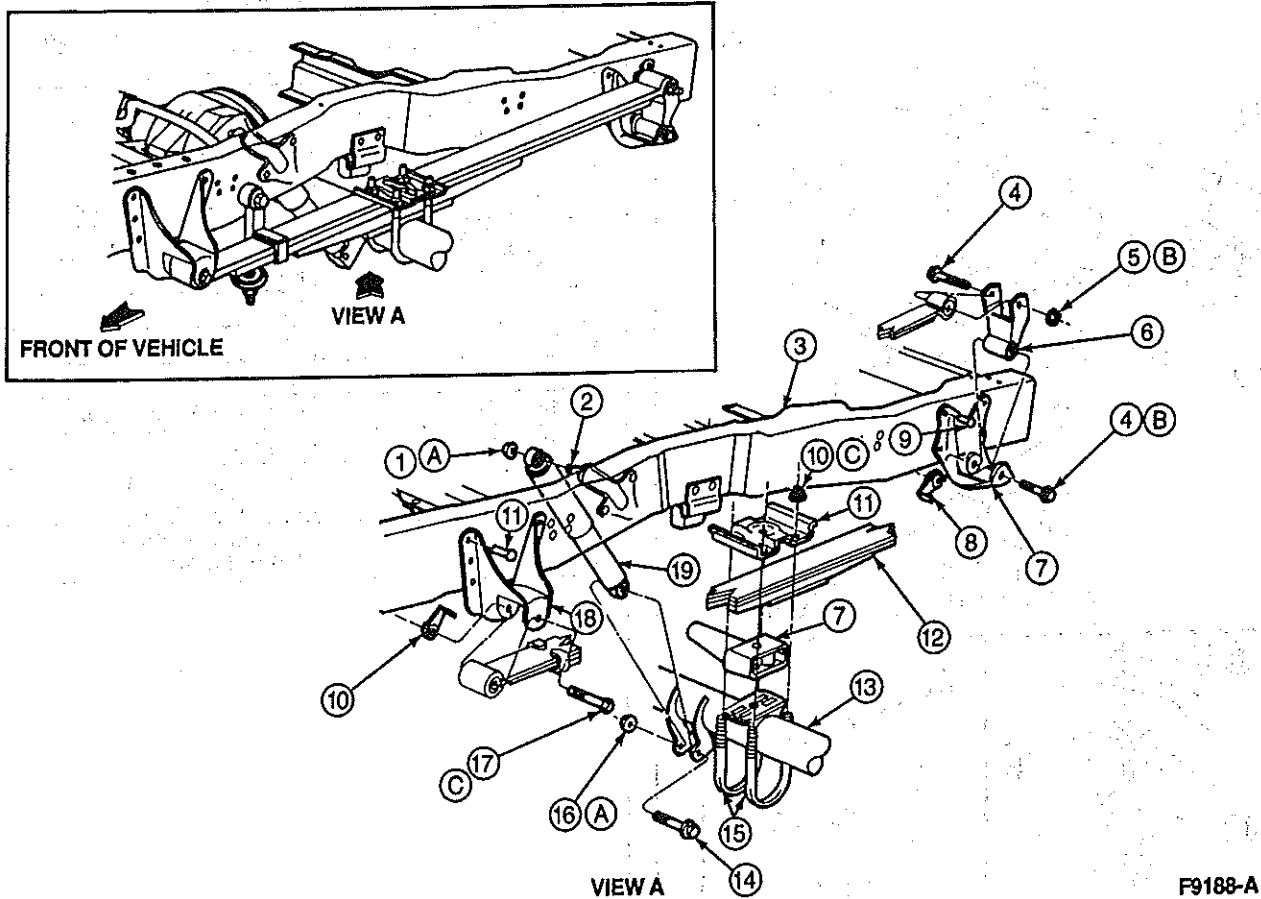
| Item | Part Number | Description |
|------|-------------|--------------------------|
| 1 | 5700 | Auxiliary Spring Bracket |
| 2 | N620485-S56 | Nut |

(Continued)

| Item | Part Number | Description |
|------|--------------|--|
| 3 | 5796 | Rear Spring Cap and Plate |
| 4 | 5588 | Auxiliary Spring |
| 5 | 5560 | Rear Spring |
| 6 | 5A799 | Spacer, Rear Spring |
| 7 | N804419-S101 | Bolt |
| 8 | 5594 | Spacer, Auxiliary Spring |
| 9 | N647098-S | Rivet |
| 10 | 5A636 | Bumper |
| 11 | N620482-S56 | Nut |
| 12 | N647096-S | Rivet |
| 13 | 4730 | Rear Axle Bumper |
| 14 | 4731 | Rear Axle Bumper Bracket |
| 15 | N800878-S | Spacer |
| A | — | Tighten to 191-259 N·m (141-191 Lb·Ft) |
| B | — | Tighten to 21-29 N·m (15-21 Lb·Ft) |

REMOVAL AND INSTALLATION (Continued)

Rear Spring Installation, F-250 and F-350, 4x2 and 4x4, Regular Cab and SuperCab



F9188-A

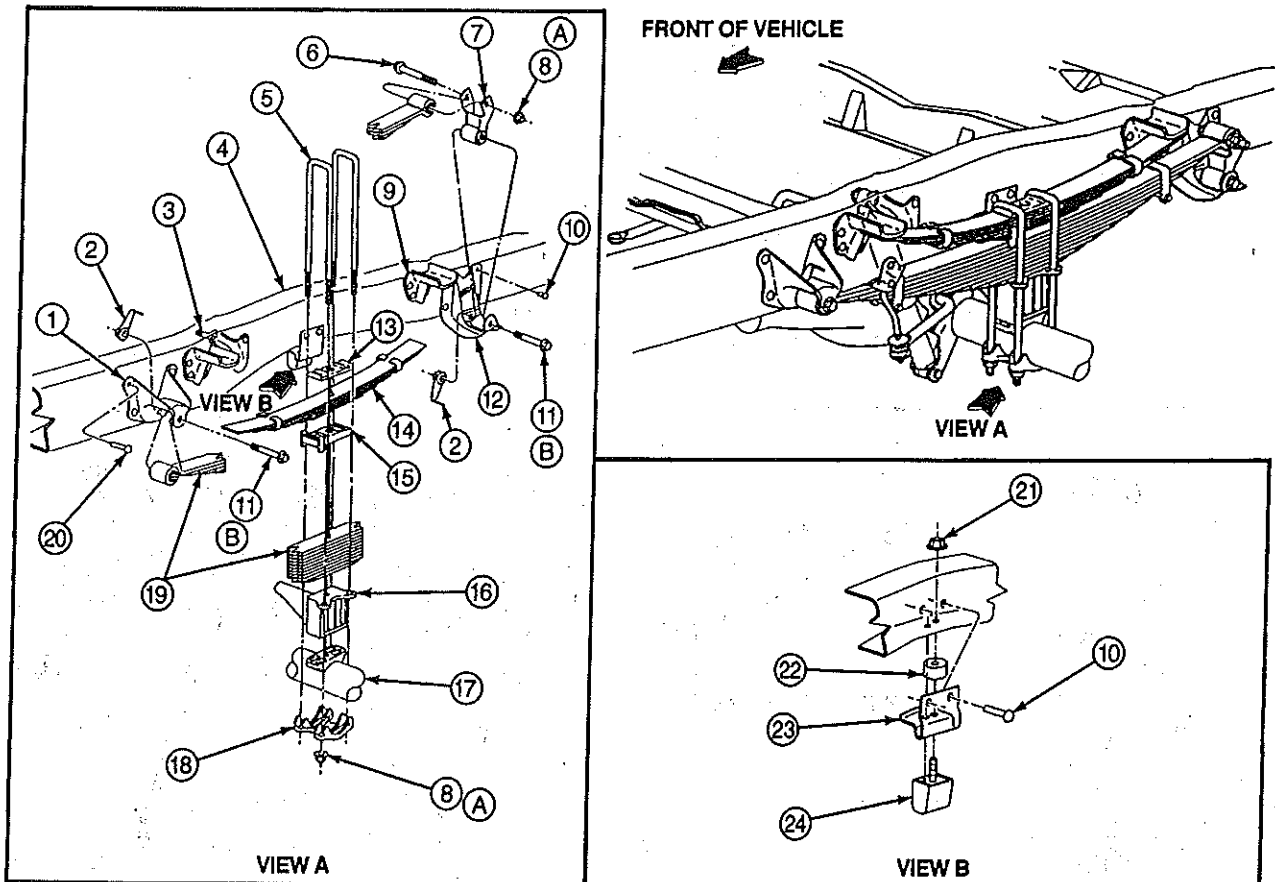
| Item | Part Number | Description |
|------|-------------|-----------------------------|
| 1 | N806085 | Nut and Washer Assembly |
| 2 | 18192 | Rear Shock Absorber Bracket |
| 3 | 5005 | Frame |
| 4 | N803805 | Bolt |
| 5 | N620484 | Nut |
| 6 | 5776 | Rear Spring Shackle |
| 7 | 5775 | Rear Spring Shackle Bracket |
| 8 | N620484 | Nut |
| 9 | N647096 | Rivet |
| 10 | N620485 | Nut |
| 11 | 5796 | Rear Spring Cap and Plate |
| 12 | 5560 | Rear Spring |

(Continued)

| Item | Part Number | Description |
|------|-------------|---|
| 13 | 4001 | Rear Axle |
| 14 | N605705 | Bolt |
| 15 | N804419 | Bolt |
| 16 | N806496 | Nut and Washer Assembly |
| 17 | N601526 | Bolt |
| 18 | 5775 | Rear Spring Shackle Bracket |
| 19 | 18080 | Shock Absorber |
| A | — | Tighten to 53-72 N·m (39-53 Lb·Ft) |
| B | — | Tighten to 113-153 N·m (83-113 Lb·Ft) |
| C | — | Tighten to 191-259 N·m (141-191 Lb·Ft) |

REMOVAL AND INSTALLATION (Continued)

Rear Spring Installation with Auxiliary Spring, F-350 4x2 and 4x4, Chassis Cab



F9189-A

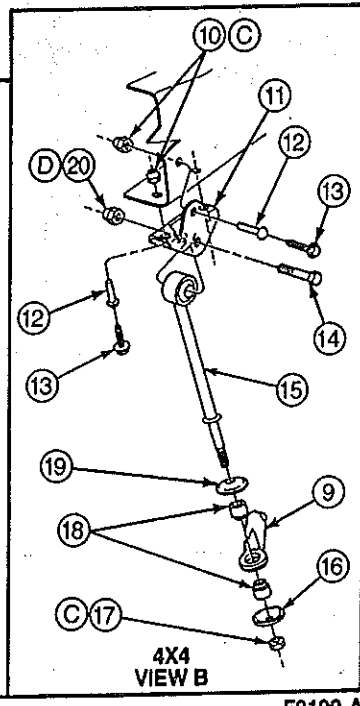
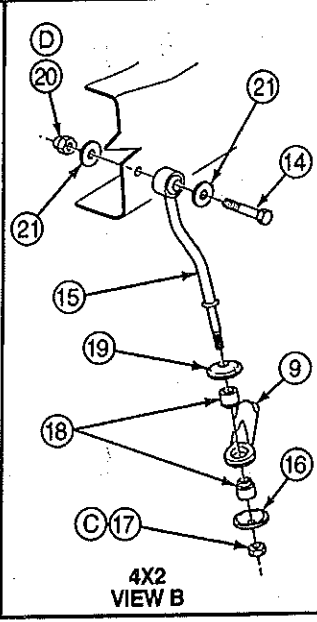
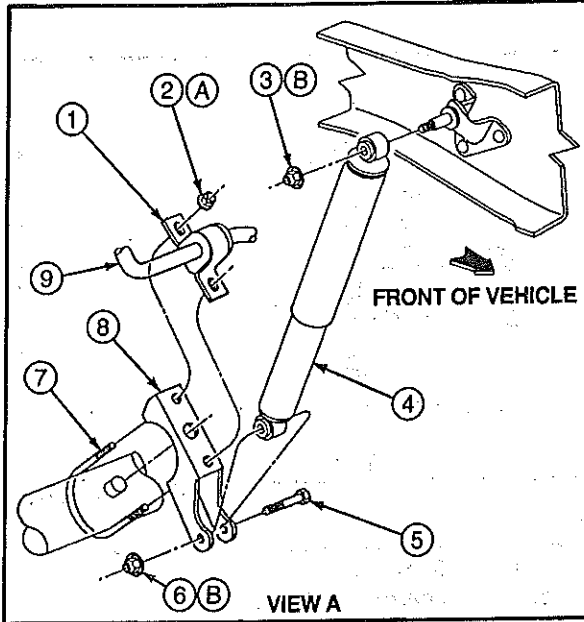
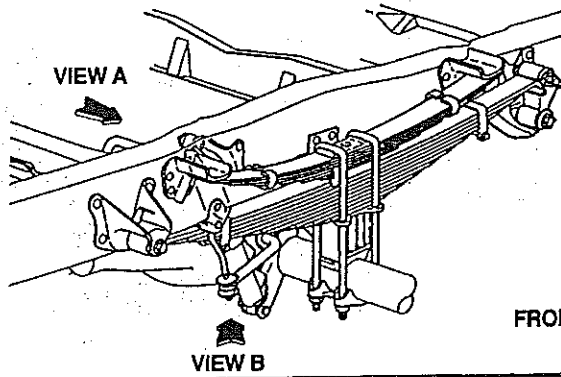
| Item | Part Number | Description |
|------|--------------|-----------------------------|
| 1 | 5775 | Rear Spring Shackle Bracket |
| 2 | N620485-S56 | Nut and Retainer |
| 3 | 18192 | Rear Shock Absorber Bracket |
| 4 | 5005 | Frame |
| 5 | N804662-S101 | U-Bolt |
| 6 | N800950-S2 | Bolt |
| 7 | 5776 | Rear Spring Shackle |
| 8 | N620485-S56 | Nut |
| 9 | 5700 | Auxiliary Spring Bracket |
| 10 | N647096-S | Rivet |
| 11 | N800950-S | Bolt |
| 12 | 5775 | Rear Spring Shackle Bracket |
| 13 | 5796 | Rear Spring Cap and Plate |

| Item | Part Number | Description |
|------|-------------|--|
| 14 | 5588 | Auxiliary Spring |
| 15 | 5594 | Spacer, Auxiliary Spring |
| 16 | 5598 | Spacer, Rear Spring |
| 17 | 4001 | Rear Axle |
| 18 | 5796 | Rear Spring Cap and Plate |
| 19 | 5580 | Rear Spring |
| 20 | 85095-S | Rivet |
| 21 | N620482-S56 | Nut |
| 22 | N802860-S | Spacer |
| 23 | 4731 | Rear Axle Bumper Bracket |
| 24 | 4730 | Rear Axle Bumper |
| A | — | Tighten to 213-288 N·m (157-212 Lb·Ft) |
| B | — | Tighten to 191-259 N·m (141-191 Lb·Ft) |

(Continued)

REMOVAL AND INSTALLATION (Continued)

Rear Spring Installation with Auxiliary Spring, F-350 4x2 and 4x4, Chassis Cab (Continued)



F9190-A

| Item | Part Number | Description |
|------|--------------|-------------------------|
| 1 | 5486 | Stabilizer Bar Bracket |
| 2 | N620482-S56 | Nut |
| 3 | N806085-S8 | Nut and Washer Assembly |
| 4 | 18080 | Shock Absorber |
| 5 | N605705-S2 | Bolt |
| 6 | N806496-S100 | Nut and Washer Assembly |
| 7 | N803771-S56 | Bolt |
| 8 | 5486 | Stabilizer Bar Bracket |
| 9 | 5A772 | Rear Stabilizer Bar |
| 10 | N620468-S2 | Nut |
| 11 | 5L499 | Bracket, Link Assembly |
| 12 | N647097-S | Rivet |
| 13 | N605920-S2 | Bolt |
| 14 | N605704-S2 | Bolt |

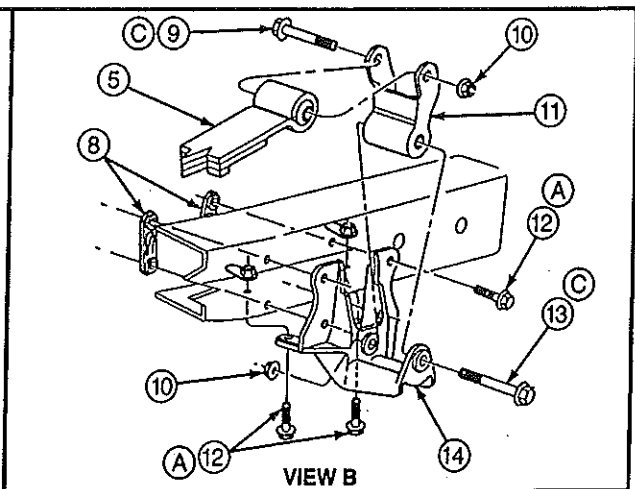
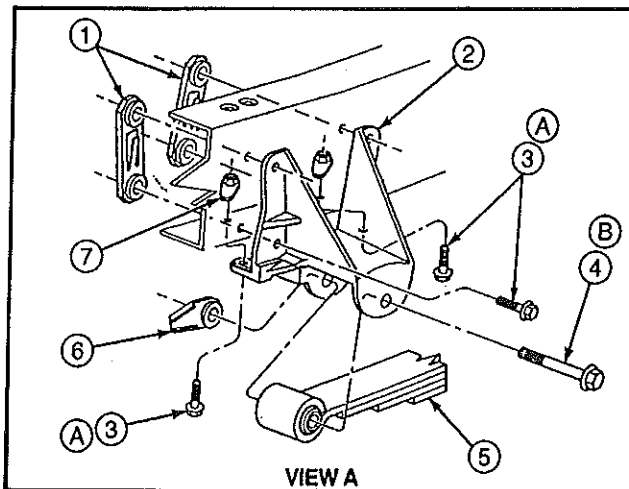
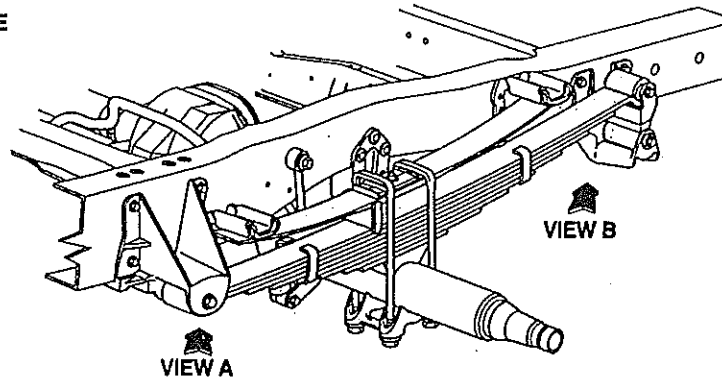
| Item | Part Number | Description |
|------|-------------|---|
| 15 | 5K484 | Stabilizer Bar Link |
| 16 | 18041 | Washer |
| 17 | 384485-S56 | Nut |
| 18 | 5493 | Lower Suspension Arm Stabilizer Bar Insulator |
| 19 | 18171 | Washer |
| 20 | N620469-S2 | Nut |
| 21 | N801527-S2 | Washer |
| A | — | Tighten to 40-54 N·m (30-40 Lb·Ft) |
| B | — | Tighten to 53-73 N·m (39-54 Lb·Ft) |
| C | — | Tighten to 23-31 N·m (17-23 Lb·Ft) |
| D | — | Tighten to 55-85 N·m (40-62 Lb·Ft) |

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REMOVAL AND INSTALLATION (Continued)

Rear Spring Installation, F-Super Duty Chassis Cab

FRONT OF VEHICLE



F9191-A

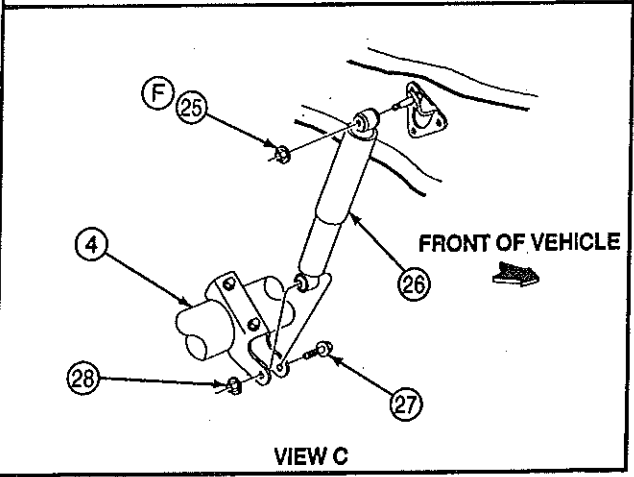
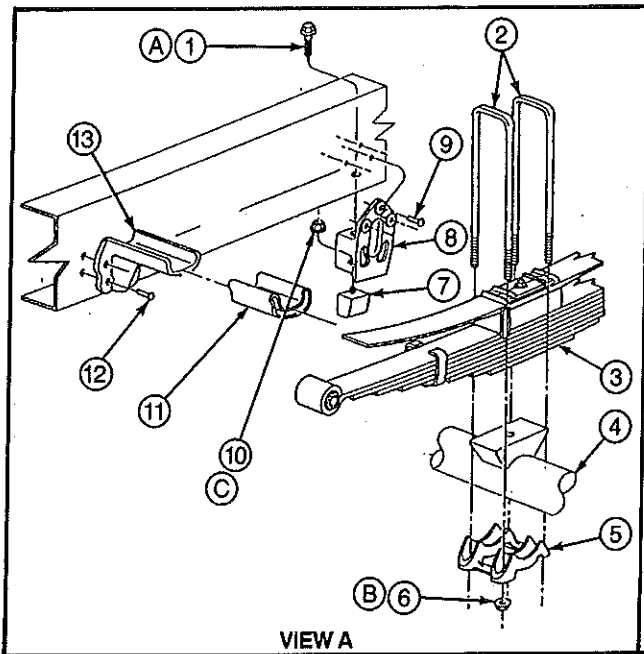
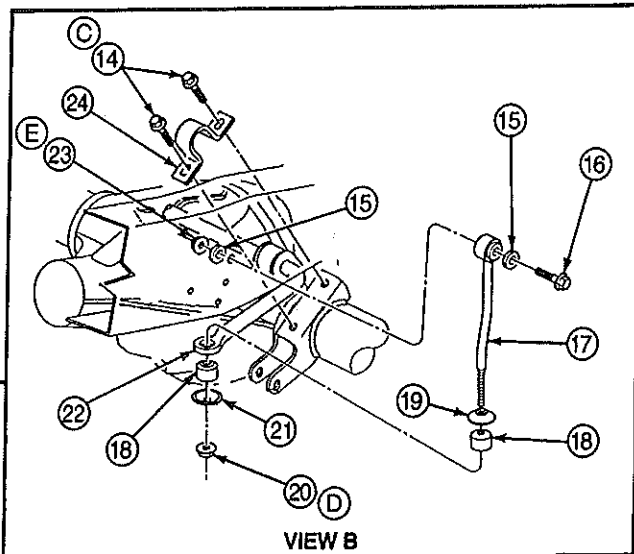
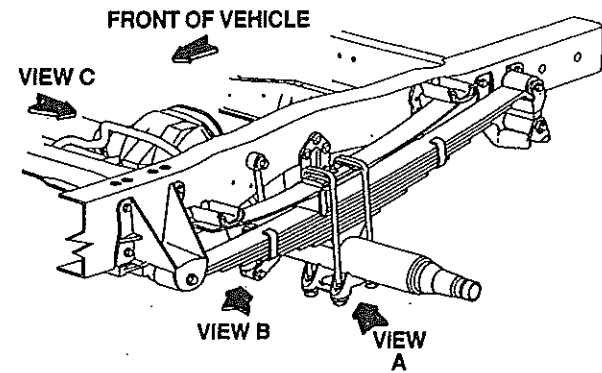
| Item | Part Number | Description |
|------|--------------|-----------------------------|
| 1 | N805135-S56 | Nut and Retainer |
| 2 | 5775 | Rear Spring Shackle Bracket |
| 3 | N802115-S2 | Bolt |
| 4 | N805444-S100 | Bolt |
| 5 | 5A975 | Spring Assembly, Rear Axle |
| 6 | N805161-S56 | Nut and Retainer |
| 7 | N805007-S100 | Nut and Retainer |
| 8 | N805136-S56 | Nut and Retainer |
| 9 | N805041-S2 | Bolt |

(Continued)

| Item | Part Number | Description |
|------|-------------|--|
| 10 | N620485-S56 | Nut |
| 11 | 5776 | Rear Spring Shackle |
| 12 | N802115-S2 | Bolt |
| 13 | N805041-S2 | Bolt |
| 14 | 5775 | Rear Spring Shackle Bracket |
| A | — | Tighten to 78-103 N·m (57-76 Lb·Ft) |
| B | — | Tighten to 340-460 N·m (250-339 Lb·Ft) |
| C | — | Tighten to 213-287 N·m (157-211 Lb·Ft) |

REMOVAL AND INSTALLATION (Continued)

Rear Spring Installation, F-Super Duty Chassis Cab (Continued)



F9192-B

| Item | Part Number | Description |
|------|-------------|----------------------------|
| 1 | N605918-S2 | Bolt |
| 2 | N805056-S56 | Bolt |
| 3 | 5A975 | Spring Assembly, Rear Axle |
| 4 | 4001 | Rear Axle |
| 5 | 5796 | Rear Spring Cap and Plate |
| 6 | N620484 | Nut |
| 7 | 4730 | Rear Axle Bumper |
| 8 | 4731 | Rear Axle Bumper Bracket |
| 9 | N647100-S | Rivet |
| 10 | N602482-S56 | Nut |
| 11 | 5A978 | Liner, Rear Spring Bracket |
| 12 | N647100-S | Rivet |
| 13 | 5700 | Auxiliary Spring Bracket |
| 14 | N605546-S2 | Bolt |

(Continued)

| Item | Part Number | Description |
|------|-------------|---|
| 15 | N801527-S2 | Washer |
| 16 | N605704-S2 | Bolt |
| 17 | 5K484 | Stabilizer Bar Link |
| 18 | 5493 | Lower Suspension Arm Stabilizer Bar Insulator |
| 19 | 18171 | Washer |
| 20 | 384485-S56 | Nut |
| 21 | 18041 | Washer |
| 22 | 5A772 | Rear Stabilizer Bar |
| 23 | N620469-S2 | Nut |
| 24 | 5486 | Stabilizer Bar Bracket |
| 25 | N806085-S8 | Nut and Washer Assembly |
| 26 | 18080 | Shock Absorber |
| 27 | N605705-S2 | Bolt |

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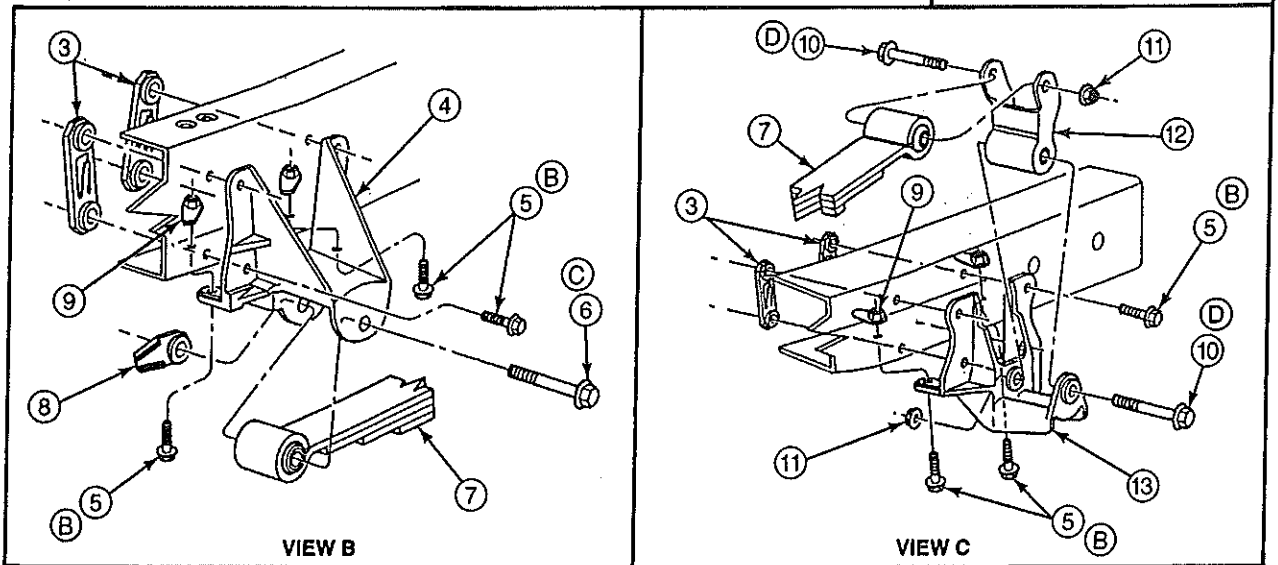
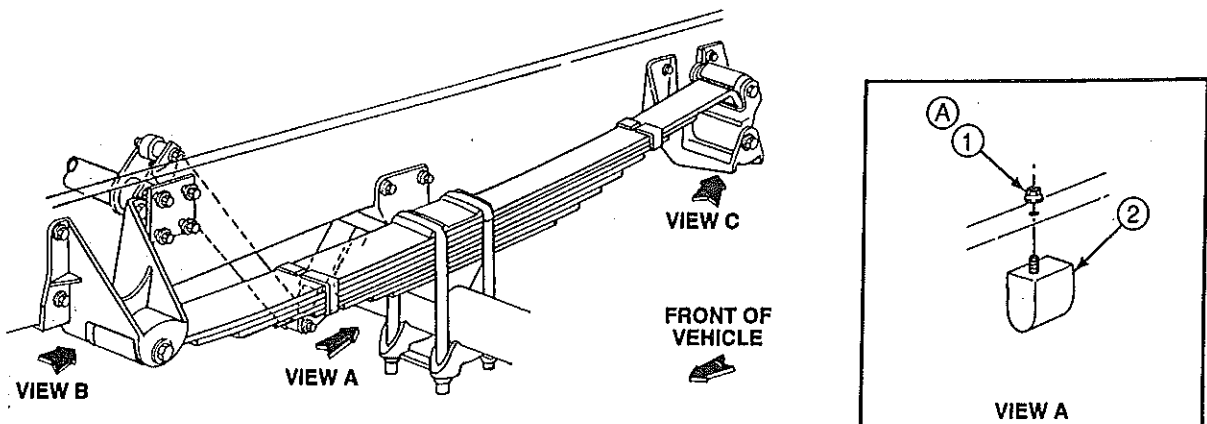
REMOVAL AND INSTALLATION (Continued)

| Item | Part Number | Description |
|------|--------------|--|
| 28 | N806496-S100 | Nut and Washer Assembly |
| A | — | Tighten to 30-40 N·m (22-29 Lb·Ft) |
| B | — | Tighten to 255-345 N·m (188-254 Lb·Ft) |
| C | — | Tighten to 34-46 N·m (25-34 Lb·Ft) |

| Item | Part Number | Description |
|------|-------------|------------------------------------|
| D | — | Tighten to 23-31 N·m (17-23 Lb·Ft) |
| E | — | Tighten to 55-85 N·m (40-62 Lb·Ft) |
| F | — | Tighten to 53-73 N·m (39-53 Lb·Ft) |

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Rear Spring Installation, F-Super Duty Motorhome Chassis



F6458-F

| Item | Part Number | Description |
|------|-------------|------------------|
| 1 | N620482-S56 | Nut |
| 2 | 4002 | Bumper |
| 3 | N805135-S56 | Nut and Retainer |

(Continued)

| Item | Part Number | Description |
|------|--------------|----------------------|
| 4 | 5785 | Front Hanger Bracket |
| 5 | N802115-S2 | Bolt |
| 6 | N805444-S100 | Bolt |

(Continued)

REMOVAL AND INSTALLATION (Continued)

| Item | Part Number | Description |
|------|--------------|------------------|
| 7 | 5A975 | Spring Assembly |
| 8 | N805161-S56 | Nut and Retainer |
| 9 | N805007-S100 | Nut and Retainer |
| 10 | N805041-S2 | Bolt |
| 11 | N620485-S56 | Nut |
| 12 | 5776 | Bracket |
| 13 | 5775 | Bracket |

(Continued)

| Item | Part Number | Description |
|------|-------------|---|
| A | — | Tighten to 34-46 N·m (25-30 Lb·Ft) |
| B | — | Tighten to 78-103 N·m (57-75 Lb·Ft) |
| C | — | Tighten to 340-460 N·m (250-339 Lb·Ft) |
| D | — | Tighten to 213-287 N·m (157-211 Lb·Ft) |

Shock Absorber, F-150, F-250, F-350, F-Super Duty Chassis Cab and Bronco

Removal

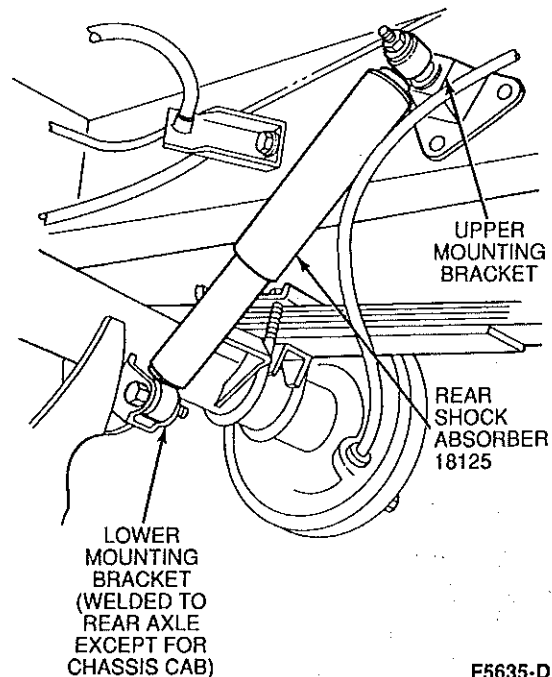
- CAUTION:** The low pressure gas shock absorbers are charged with nitrogen gas to 931 kPa (135 psi). Do not attempt to open, puncture or apply heat to the shock absorbers.

Raise the vehicle on a hoist and support rear axle (4001) with Rotunda Hi-Lift Jack 164-R3508 or 164-R3513 or equivalent.

- Remove the shock absorber lower attaching nut and bolt, and swing the lower end free of the mounting bracket on the rear axle.
- Remove the nut from the upper shock absorber mount.

Installation

- Follow removal procedures in reverse order.
- Tighten upper attaching nut to 53-73 N·m (39-53 lb-ft) and lower axle nut to 53-73 N·m (39-53 lb-ft).



F5635-D

Shock Absorber, F-Super Duty Motorhome Chassis Vehicles

Removal

- CAUTION:** The low pressure gas shock absorbers are charged with nitrogen gas to 931 kPa (135 psi). Do not attempt to open, puncture or apply heat to shock absorbers. Raise vehicle on a hoist and support rear axle (4001) with Rotunda Hi-Lift Jack 164-R3508 or 164-R3513 or equivalent.
- Remove shock absorber lower nut, bolt, and washers.
- Swing lower end of rear shock absorber (18125) out of axle bracket.

REMOVAL AND INSTALLATION (Continued)

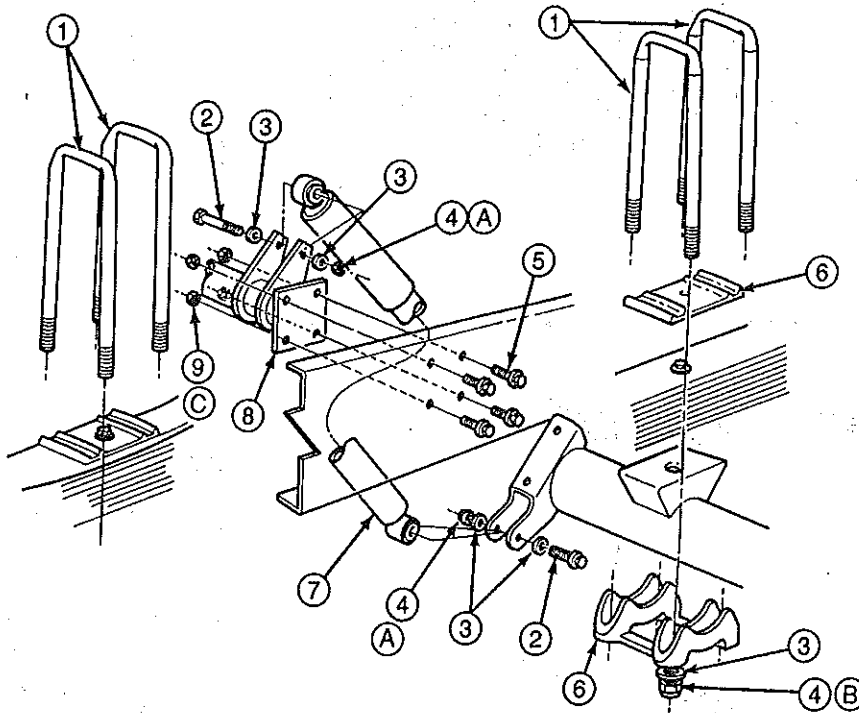
4. Remove nut, bolt, and washer securing top end of rear shock absorber and remove.

2. Tighten fasteners to 300-405 N·m (222-298 lb-ft).

Installation

1. Follow removal procedures in reverse order.

Rear Shock Absorber, F-Super Duty Motorhome Chassis



F6457-G

| Item | Part Number | Description |
|------|-------------|---------------------------|
| 1 | 5705 | U-Bolts |
| 2 | 58749 | Bolt |
| 3 | 44882 | Washer |
| 4 | 34992 | Nut |
| 5 | 605843 | Bolt |
| 6 | 5796 | Rear Spring Cap and Plate |
| 7 | 18125 | Shock Absorber |

(Continued)

| Item | Part Number | Description |
|------|-------------|--|
| 8 | 18192 | Rear Shock Absorber Bracket |
| 9 | N620485 | Nut |
| A | — | Tighten to 53-73 N·m (39-53 Lb-Ft) |
| B | — | Tighten to 255-345 N·m (189-254 Lb-Ft) |
| C | — | Tighten to 155-230 N·m (114-170 Lb-Ft) |

Stabilizer Bar

Removal

1. Remove nut from lower end of stabilizer bar link (5K484).
2. Remove outer washer and insulator. Disconnect rear stabilizer bar (5A772) from stabilizer bar link.
3. Remove inner insulators and washers. Disconnect stabilizer bar link from frame (5005) by removing nuts and bolts.

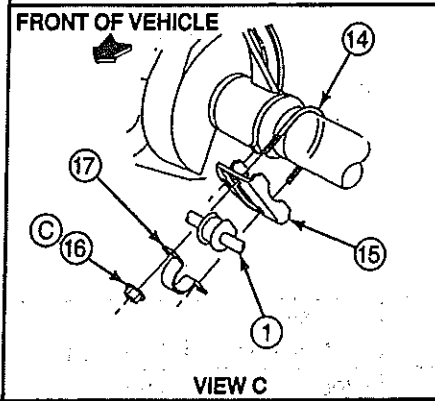
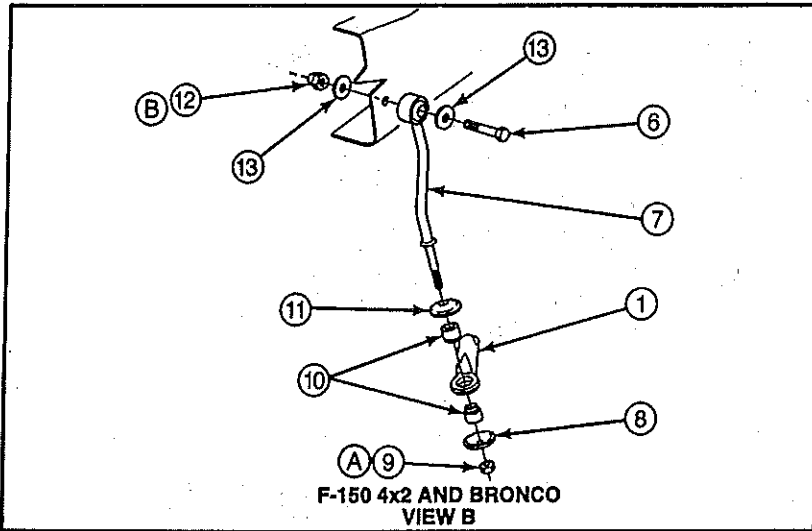
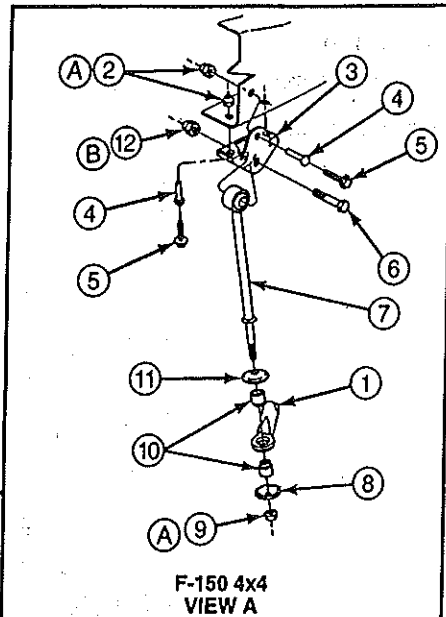
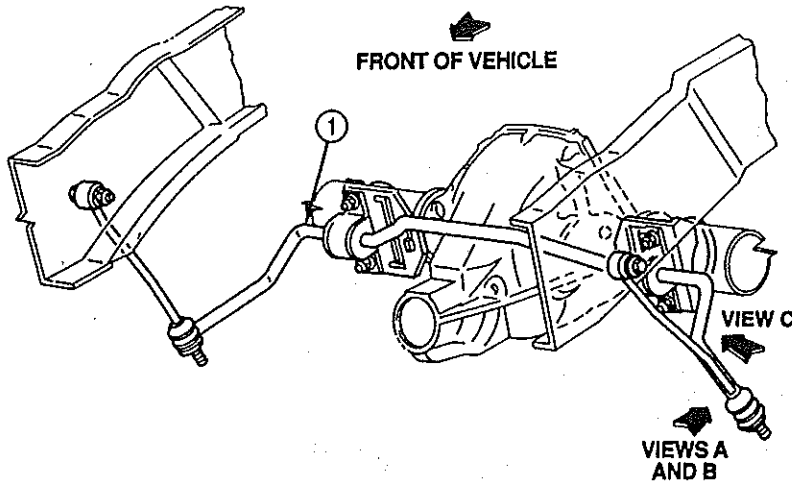
4. Remove nuts or bolts which fasten U-bolts and rear spring caps and plates (5796) to rear axle (4001).

Installation

1. Follow removal procedures in reverse order.
2. Tighten fasteners to specifications.

REMOVAL AND INSTALLATION (Continued)

Rear Stabilizer Bar Installation, Bronco, F-150 4x2 and 4x4



F9354-A

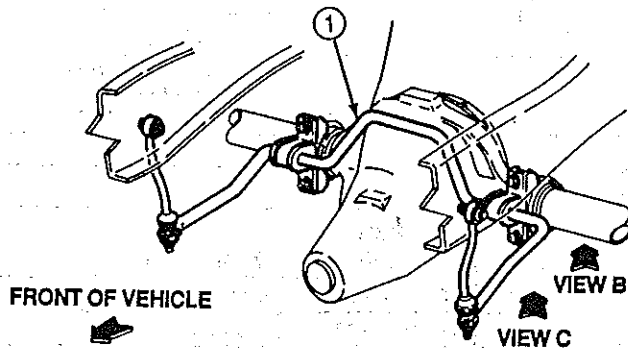
| Item | Part Number | Description |
|------|-------------|---|
| 1 | 5A772 | Rear Stabilizer Bar |
| 2 | N620468-S2 | Nut |
| 3 | 5L499 | Bracket |
| 4 | N647097-S | Rivet |
| 5 | N605920-S2 | Bolt |
| 6 | N605704-S2 | Bolt |
| 7 | 5K484 | Stabilizer Bar Link |
| 8 | 18041 | Washer |
| 9 | 384485-S56 | Nut |
| 10 | 5493 | Lower Suspension Arm Stabilizer Bar Insulator |
| 11 | 18171 | Washer |

| Item | Part Number | Description |
|------|-------------|------------------------------------|
| 12 | N620469-S2 | Bolt |
| 13 | N801527-S2 | Washer |
| 14 | N803771-S56 | U-Bolt |
| 15 | 5486 | Stabilizer Bar Bracket |
| 16 | N620482-S56 | Nut |
| 17 | 5486 | Stabilizer Bar Bracket |
| A | — | Tighten to 24-31 N·m (18-23 Lb·Ft) |
| B | — | Tighten to 55-85 N·m (41-62 Lb·Ft) |
| C | — | Tighten to 41-54 N·m (30-40 Lb·Ft) |

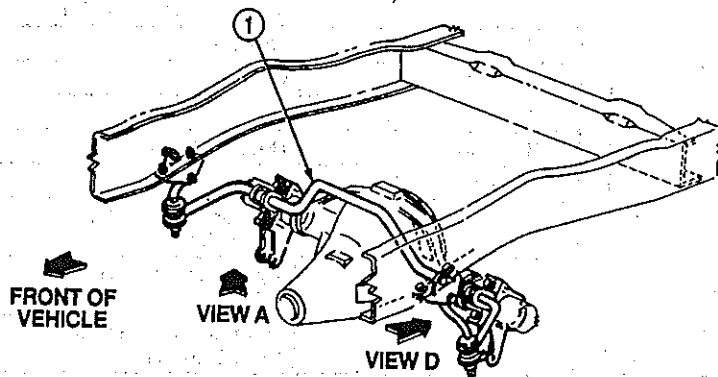
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REMOVAL AND INSTALLATION (Continued)

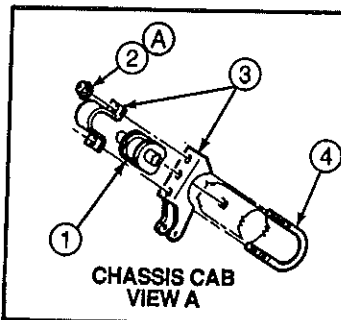
Rear Stabilizer Bar Installation, F-250 and F-350



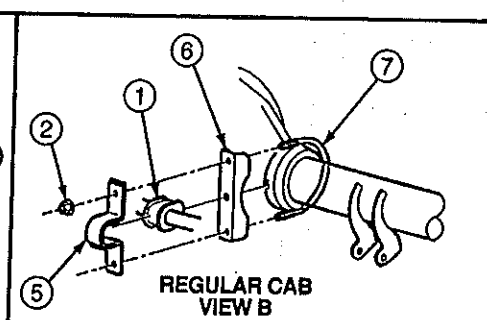
REGULAR AND SUPER CAB 4x2



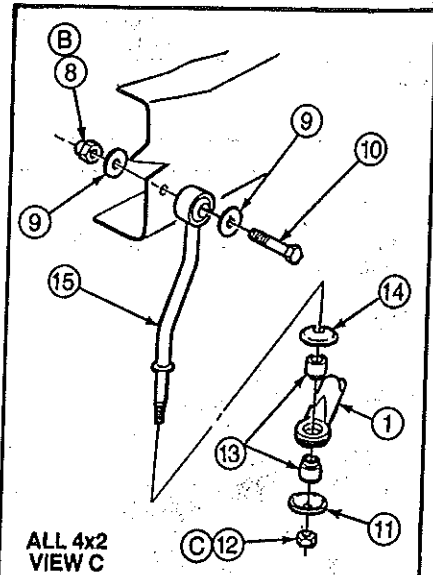
CHASSIS CAB 4x4



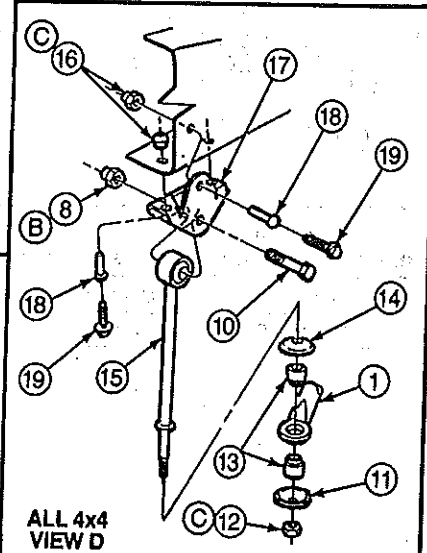
CHASSIS CAB VIEW A



REGULAR CAB VIEW B



ALL 4x2 VIEW C



ALL 4x4 VIEW D

F3714-J

| Item | Part Number | Description |
|------|-------------|------------------------|
| 1 | 5A772 | Rear Stabilizer Bar |
| 2 | N620482-S56 | Nut |
| 3 | 5486 | Stabilizer Bar Bracket |
| 4 | N803771-S56 | U-Bolt |
| 5 | 5486 | Stabilizer Bar Bracket |
| 6 | 5486 | Stabilizer Bar Bracket |
| 7 | N803758-S56 | Bolt |
| 8 | N620469-S2 | Nut |
| 9 | N801527-S2 | Washer |
| 10 | N605704-S2 | Bolt |

(Continued)

| Item | Part Number | Description |
|------|-------------|---|
| 11 | 18041 | Washer |
| 12 | N384485-S56 | Nut |
| 13 | 5493 | Lower Suspension Arm Stabilizer Bar Insulator |
| 14 | 18171 | Washer |
| 15 | 5K484 | Stabilizer Bar Link |
| 16 | N620468-S2 | Nut |
| 17 | 5L499 | Bracket, Link Assembly |
| 18 | N647097-S | Rivet |
| 19 | N605920-S2 | Bolt |

(Continued)

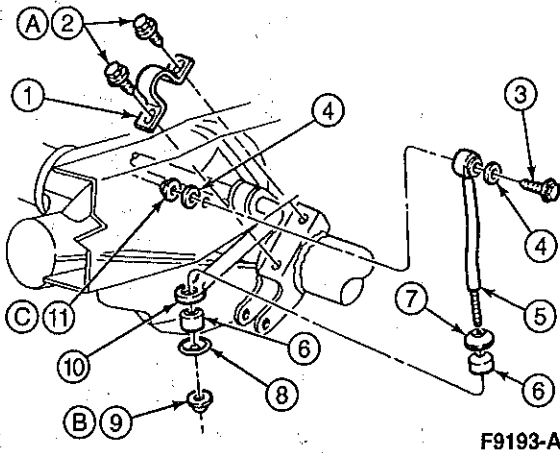
REMOVAL AND INSTALLATION (Continued)

| Item | Part Number | Description |
|------|-------------|------------------------------------|
| A | — | Tighten to 41-54 N·m (30-40 Lb·Ft) |

(Continued)

| Item | Part Number | Description |
|------|-------------|------------------------------------|
| B | — | Tighten to 55-85 N·m (41-62 Lb·Ft) |
| C | — | Tighten to 24-31 N·m (18-23 Lb·Ft) |

Rear Stabilizer Bar Installation, F-Super Duty Chassis Cab



F9193-A

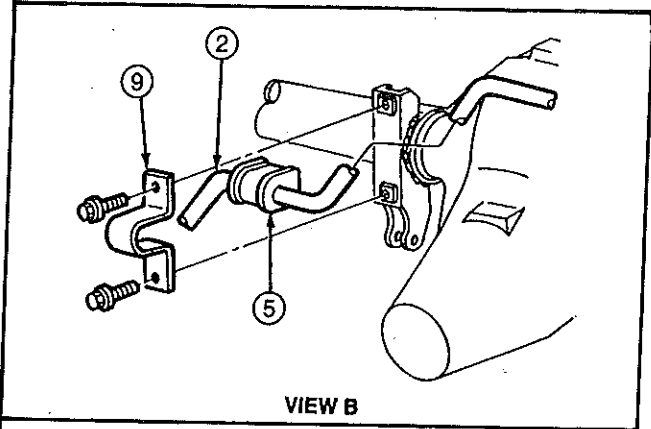
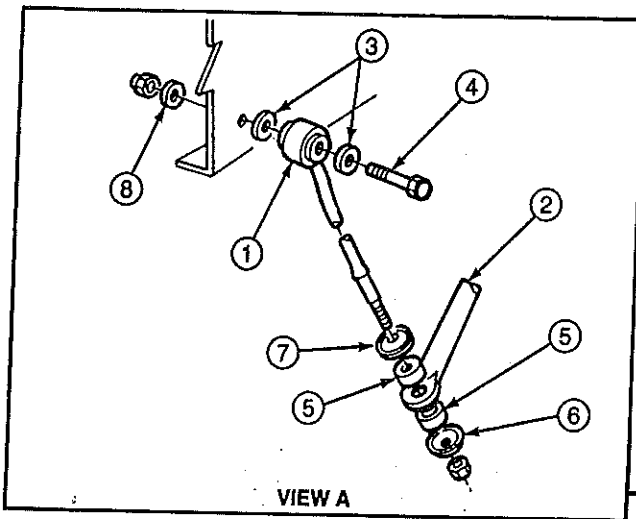
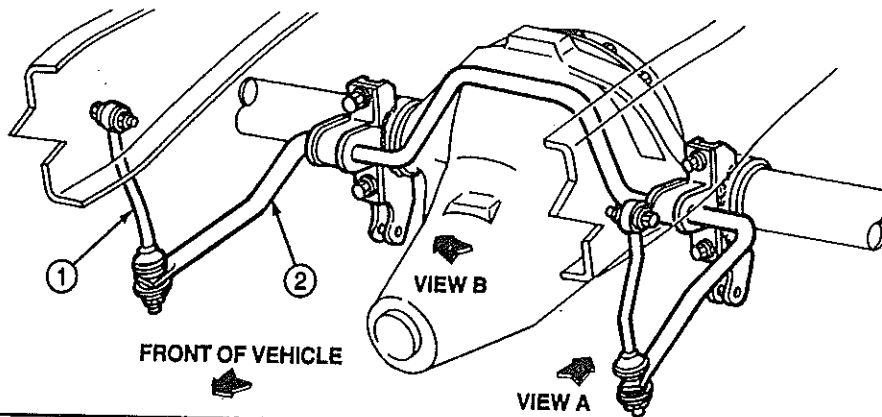
| Item | Part Number | Description |
|------|-------------|------------------------|
| 1 | 5486 | Stabilizer Bar Bracket |
| 2 | N605546-S2 | Bolt |

(Continued)

| Item | Part Number | Description |
|------|-------------|---|
| 3 | N605704-S2 | Bolt |
| 4 | N801527-S2 | Washer |
| 5 | 5K484 | Stabilizer Bar Link |
| 6 | 5493 | Lower Suspension Arm Stabilizer Bar Insulator |
| 7 | 18171 | Washer |
| 8 | 18041 | Washer |
| 9 | 384485-S56 | Nut |
| 10 | 5A772 | Rear Stabilizer Bar |
| 11 | N620469-S2 | Nut |
| A | — | Tighten to 34-46 N·m (24-34 Lb·Ft) |
| B | — | Tighten to 24-31 N·m (18-23 Lb·Ft) |
| C | — | Tighten to 55-85 N·m (41-62 Lb·Ft) |

REMOVAL AND INSTALLATION (Continued)

Rear Stabilizer Bar Installation, F-Super Duty Motorhome Chassis



F6459-F

| Item | Part Number | Description |
|------|-------------|---|
| 1 | 5K484 | Stabilizer Bar Link |
| 2 | 5A772 | Rear Stabilizer Bar |
| 3 | 80344 | Washer |
| 4 | 605704 | Bolt |
| 5 | 5493 | Lower Suspension Arm Stabilizer Bar Insulator |

| Item | Part Number | Description |
|------|-------------|------------------------|
| 6 | 18041 | Washer |
| 7 | 18171 | Washer |
| 8 | 803447 | Washer |
| 9 | 5486 | Stabilizer Bar Bracket |

(Continued)

Wheel Hub Bolt, Rear

SPECIAL SERVICE TOOL(S) REQUIRED

| Description | Tool Number |
|---------------------------------|--------------|
| C-Frame and Clamp Assembly Tool | T74P-3044-A1 |

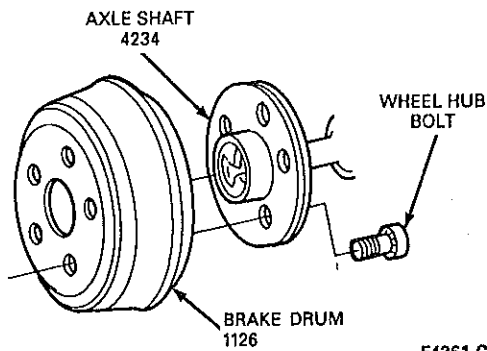
CAUTION: Never use a hammer to remove the wheel hub bolt nut. Damage to the axle shaft flange or rear wheel bearing may result.

Removal

1. Raise the vehicle and install safety stands.

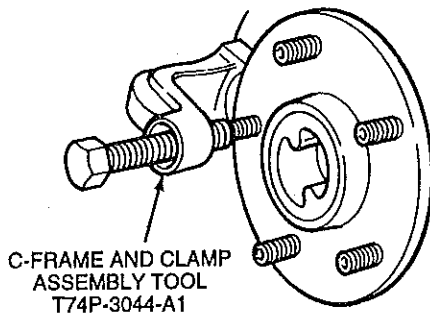
2. Remove the wheel and tire assembly. Refer to Section 04-04.
3. Remove the brake drum (1126) from the studs.

REMOVAL AND INSTALLATION (Continued)



F4261-C

4. Using C-Frame and Clamp Assembly Tool T74P-3044-A1, press the lug bolt (1107) from its seat in the axle flange. The lug bolt may also be removed by pressing it out using an appropriate sized socket and C-clamp. Discard the lug bolt.

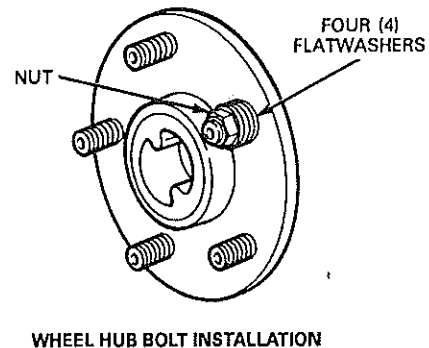


WHEEL HUB BOLT REMOVAL

F5630-D

Installation

1. Insert new lug bolt in hole in flange. Rotate lug bolt slowly. Make sure serrations are aligned with those made by the original bolt.
2. Place four flatwashers over the outside end of the stud and thread the lug nut (1012) with the flat side against the washers.
3. **CAUTION: DO NOT use air tools. The serrations may be stripped from the stud.**
Tighten the lug nut until the bolt head seats against the back side of the flange.
4. Remove lug nut and washers.
5. Install brake drum and wheel (1007).
6. Lower the vehicle.



WHEEL HUB BOLT INSTALLATION

F5631-C

ADJUSTMENTS

Alignment

For front end alignment, refer to Section 04-00. For rear axle alignment, refer to Section 05-00 in the Powertrain, Drivetrain Manual.

Pinion Angle, Rear Axle

Refer to Section 05-00 in the Powertrain, Drivetrain Manual.

Vehicle Lean, F-150, F-250, F-350 4x2 and 4x4, F-Super Duty Chassis Cab and Bronco

A side-to-side lean at the rear of the vehicle can be adjusted by approximately 9.52mm (3/8 inch) by installing a shim between the rear spring (5560) and rear axle (4001) on the low side of the vehicle.

A low at the rear vehicle can be raised approximately 9.52mm (3/8 inch) by installation of one shim on each side.

If side-to-side lean at rear is greater than 12.70mm (1/2 inch), switch the rear springs side to side. Use the following procedure to install the shim.

1. Raise the vehicle frame (5005) until the weight is off the rear springs with the tires still touching the floor.
2. Loosen the spring U-bolts to allow the rear axle to separate from the rear spring approximately 12.70mm (1/2 inch).
3. Position the shim (D7TA-5742-AA) between the rear spring and rear axle with the long edge of the shim parallel to the side of the rear spring and the spring tie bolt head through the hole in the shim. On 4x4 vehicles, position the shim between the rear spring and axle space. Tape may be used to hold the shim in position.
4. Make sure spring leaves are properly aligned and the spring U-bolts contact the edges of the rear spring or axle seat.

ADJUSTMENTS (Continued)

5. Tighten the spring U-bolt sufficiently so the spring tie bolt head that extends through the shim enters the hold in the axle seat.

For additional vehicle lean information, refer to Section 04-00.

Vehicle Lean, F-Super Duty Motorhome

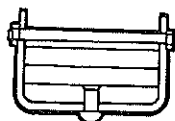
Front — Obtain Vehicle Attitude Kit F1TD-5K648-AA and follow installation instructions in kit.

Rear — Obtain Rear Spring (Raise) Kit F1TD-5A581-AA and follow installation instructions in kit.

Rear Spring Anti-Squeak Insert

1. Raise the vehicle by the frame (5005) so the rear axle (4001) hangs freely.
2. Provide clearance between the leaves of the spring to allow insertion of the rear spring anti-squeak inserts (5586). This will require either the removal of the restraining bolt on the rear spring clamp (5724), or the bending of the wrap-around clip ends, depending upon the type of clip. A prybar may be used at time of tip liner insertion to gain additional clearance.

REAR SPRING
CLAMP-5724



F7738-B

3. **NOTE:** Do not attempt to install a rear spring anti-squeak insert between the lowest primary leaf and the short, 12.70mm (0.50-inch) thick secondary leaf found at the bottom of the leaf stack on some assemblies.
Slide the rear spring anti-squeak insert between the leaves until the liner extends approximately 6.35mm (0.25 inch) beyond the tip of the lower leaf.
4. Position a jack, such as Rotunda Hi-Lift Jack 164-R3508 or 164-R3513 or equivalent and raise the rear axle to load the rear springs (5560) placing the leaves in contact with one another at the clip locations.
5. **NOTE:** On some of the rear spring anti-squeak inserts, sections of the edge used to center the rear spring anti-squeak inserts on the spring leaves may need to be trimmed off to accommodate the rear spring clamp.
Install rear spring clamps or install the replacement service clip.

SPECIFICATIONS

**TORQUE SPECIFICATIONS, F-SUPER DUTY
MOTORHOME CHASSIS**

| Description | N-m | Lb-Ft |
|--|---------|---------|
| Jounce Bumper-to-Frame Nut | 37-50 | 27-37 |
| Leaf Spring-to-Axle U-Bolt Nut | 255-345 | 198-254 |
| Leaf Spring-to-Front Bracket Nut and Bolt | 346-468 | 255-345 |
| Leaf Spring-to-Rear Shackle Bracket Nut and Bolt | 200-280 | 148-206 |
| Rear Shackle-to-Frame Mounted Bracket Nut and Bolt | 200-280 | 150-210 |
| Shock Absorber (Lower Mount)-to-Axle Nut and Bolt | 300-405 | 220-300 |
| Shock Absorber (Upper Mount)-to-Bracket Nut and Bolt | 300-405 | 220-300 |
| Shock Absorber Upper Bracket-to-Frame Nuts and Bolts | 300-405 | 220-300 |
| Stabilizer Bar-to-Axle Nut | 41-54 | 30-40 |
| Stabilizer Link-to-Frame Nut and Bolt | 54-82 | 40-60 |
| Stabilizer Link-to-Stabilizer Bar Nut | 20-34 | 15-25 |

**TORQUE SPECIFICATIONS, F-150, F-250, F-350,
F-SUPER DUTY CHASSIS CAB AND BRONCO**

| Description | N-m | Lb-Ft |
|---|---------|---------|
| Jounce Bumper-to-Frame Nut | 21-29 | 15-21 |
| Jounce Bumper-to-Frame Nut, F-150, F-250, F-350 and F-Super Duty | 34-46 | 25-34 |
| Leaf Spring-to-Axle U-Bolt Nut, F-150, F-250 (Under 8500 GVW), Lightning | 113-153 | 83-113 |
| Leaf Spring-to-Axle U-Bolt Nut, F-250, F-350 4x2 Chassis Cab (Over 8500 GVW) | 191-259 | 141-191 |
| Leaf Spring-to-Axle U-Bolt Nut, F-Super Duty | 255-345 | 188-254 |
| Leaf Spring-to-Front Bracket Nut and Bolt, F-250, F-350 and Bronco | 191-259 | 141-191 |
| Leaf Spring-to-Front Bracket Nut and Bolt, F-150 | 113-153 | 83-113 |
| Leaf Spring-to-Front Bracket and Nut, F-350 Chassis Cab | 213-288 | 157-212 |
| Leaf Spring-to-Front Bracket Nut and Bolt, F-Super Duty | 340-460 | 250-339 |
| Leaf Spring-to-Rear Shackle Nut and Bolt, F-150 and F-250, F-350 4x2 Chassis Cab | 113-153 | 83-113 |
| Leaf Spring-to-Rear Shackle Nut and Bolt, F-350 and F-Super Duty | 213-287 | 157-211 |
| Rear Shackle-to-Frame Nut and Bolt, F-150 and F-250, F-350 4x2 Chassis Cab | 78-103 | 56-75 |
| Rear Shackle-to-Frame Nut and Bolt, F-350 Chassis Cab and F-Super Duty | 213-287 | 157-211 |
| Shock Absorber (Lower Mount) to Axle Nut and Bolt, All Except F-150 Performance Truck | 53-73 | 39-53 |
| Shock Absorber (Upper Mount)-to-Frame Nut, All | 53-73 | 39-53 |

(Continued)


SPECIFICATIONS (Continued)

TORQUE SPECIFICATIONS, F-150, F-250, F-350,
F-SUPER DUTY CHASSIS CAB AND BRONCO (Cont'd)

| Description | N·m | Lb·Ft |
|--|-------|-------|
| Shock Absorber/Stabilizer Bar Bracket-to-Axle Nut, F-350 Chassis Cab | 40-54 | 30-40 |
| Shock Absorber/Stabilizer Bar-to-Axle Nut, F-Super Duty | 34-46 | 24-34 |
| Stabilizer Bar-to-Axle Nut | 41-54 | 30-40 |
| Stabilizer Bar-to-Axle Bolt, F-Super Duty | 34-46 | 24-34 |
| Stabilizer Link Bracket-to-Frame Nut and Bolt, All 4x4 Vehicles | 24-31 | 18-23 |
| Stabilizer Link-to-Bracket Nut and Bolt, All 4x4 Vehicles | 55-85 | 41-62 |
| Stabilizer Link-to-Frame Nut and Bolt, All 4x2 Vehicles | 55-85 | 41-62 |
| Stabilizer Link-to-Stabilizer Bar Nut | 24-31 | 18-23 |

SPECIAL SERVICE TOOLS/EQUIPMENT

SPECIAL SERVICE TOOLS REQUIRED

| Tool Number/ Description | Illustration |
|--|---|
| T74P-3044-A1 C-Frame and Clamp Assembly Tool |  T74P-3044-A1 |

ROTUNDA EQUIPMENT

| Model | Description |
|-----------|--------------|
| 164-R3508 | Hi-Lift Jack |
| 164-R3513 | Hi-Lift Jack |