SUSPENSION

GENERAL

All vehicles have semi-eliptical leaf springs and double-action hydraulic shock absorbers. A front axle stabilizer is standard on the 8000 GVWR Model 46 Truck.

SPRINGS

Springs are mounted parallel to the frame side rails. The forward end of the front springs and the rear end of the rear springs are attached by pivoting shackles to the

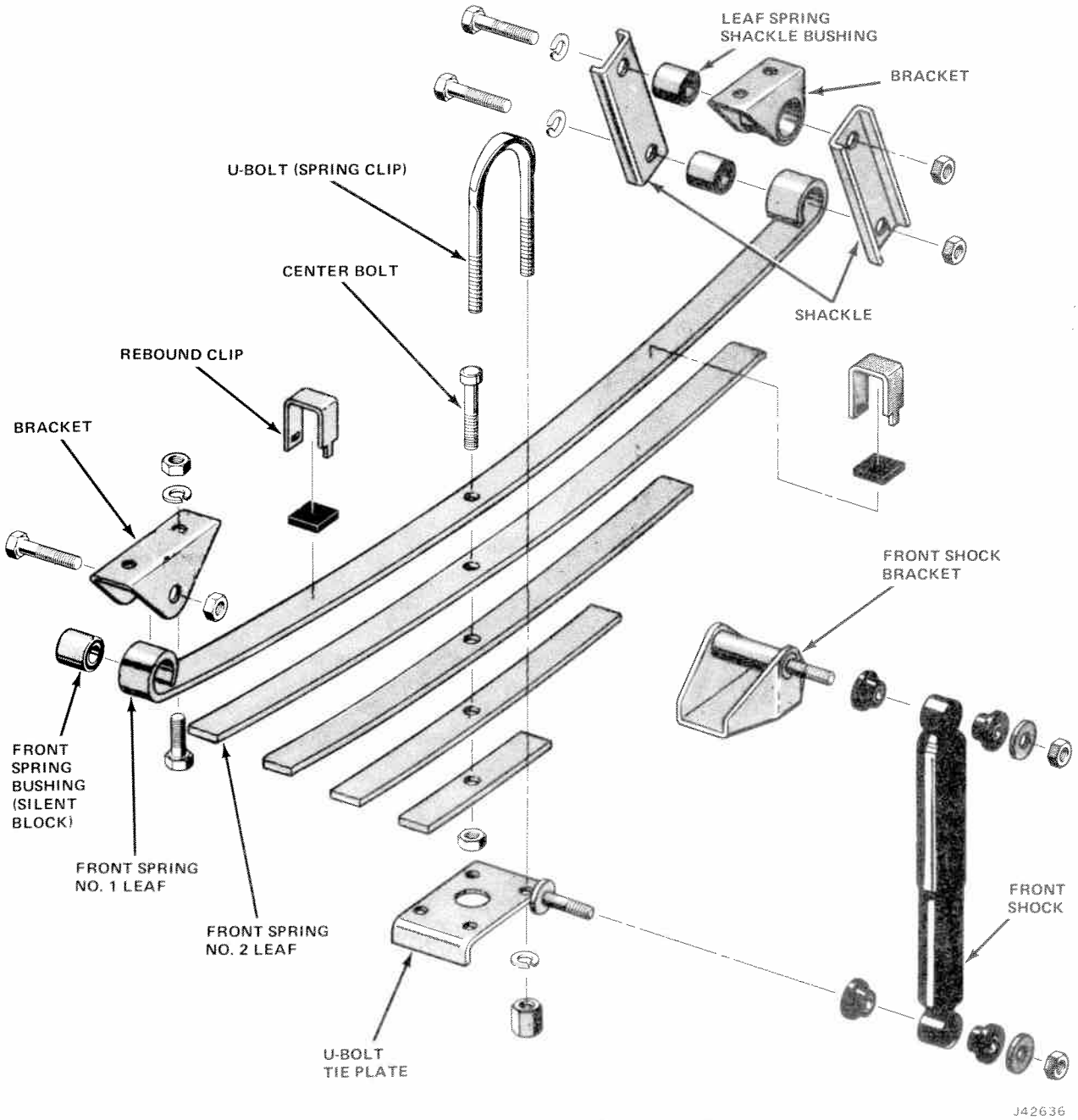

Fig. 12-1 Front Spring and Shock Absorber - CJ Models

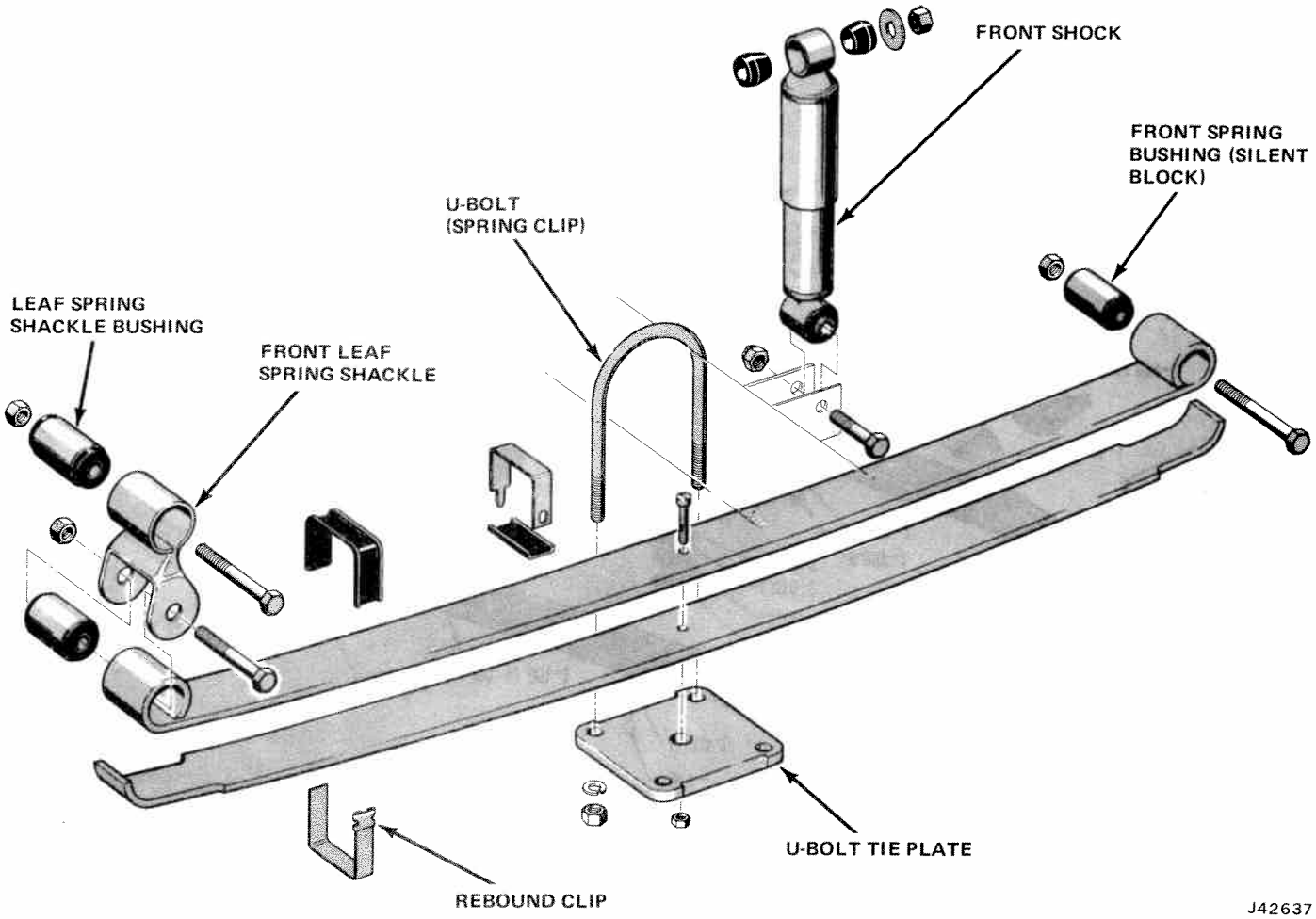

Fig. 12-2 Front Spring and Shock Absorber - Cherokee - Wagoneer-Truck

frame. The opposite ends are attached to fixed pivot points on the frame. All spring ends have silent block type tubber bushings. **These rubber bushings should never be lubricated,**

All front springs are mounted below the axle. Cherokee, Wagoneer, and Truck Models use tapered leaf springs. These leaves are made of varying thickness stock to provide a varied deflection rate as the spring operates (fig. 12-1, -2). The thinner spring sections deflect with less pressure than the thicker sections, so smooth ride and hauling capacity are possible without stacks of several leaves.

All rear springs, except those on CJ models are mounted above the axle. All CJ Model springs are stacked, multi-leaf springs (fig. 12-3). Some rear springs on Cherokee, Wagoneer, and Truck Models are stacked, multi-leaf springs, and some are tapered-leaf (fig. 12-4, -5).

These springs are attached to the axle by U-bolts (spring clips), spring saddles (welded to the axles), and U-bolt tie-plates. They should be checked at each vehicle inspection. Tighten the 7/16-inch nuts to 36 to 42 foot-pounds and the 1/2-inch nuts 45 to 65 foot-pounds torque.

Spring center-bolts are used to align and hold the leaves of the spring in position, as well as to prevent shifting on the axle. The springs should be examined periodically for broken or shifted leaves, and loose or missing rebound clips.

Springs with shifted leaves do not have their normal strength. Missing rebound clips permit the leaves to fan out and can cause leaf breakage. Broken spring leaves may make the vehicle hard to handle or permit the axles to shift out of line. Weakened springs break easily, causing difficulty in steering.

FRONT AXLE WINDUP CONTROL DEVICE

A front axle windup control device is used on Cherokee, Wagoneer, and Truck models. The control device consists of a stamped bracket with a square rubber pad affixed to it. The bracket is attached to the inner side of the right frame rail adjacent to and approximately seven inches above the front axle carrier housing. During severe operation, when extreme spring deflection and front axle travel occurs, the rubber pad on the control contacts the pad on the front axle housing and prevents excessive movement of the housing.

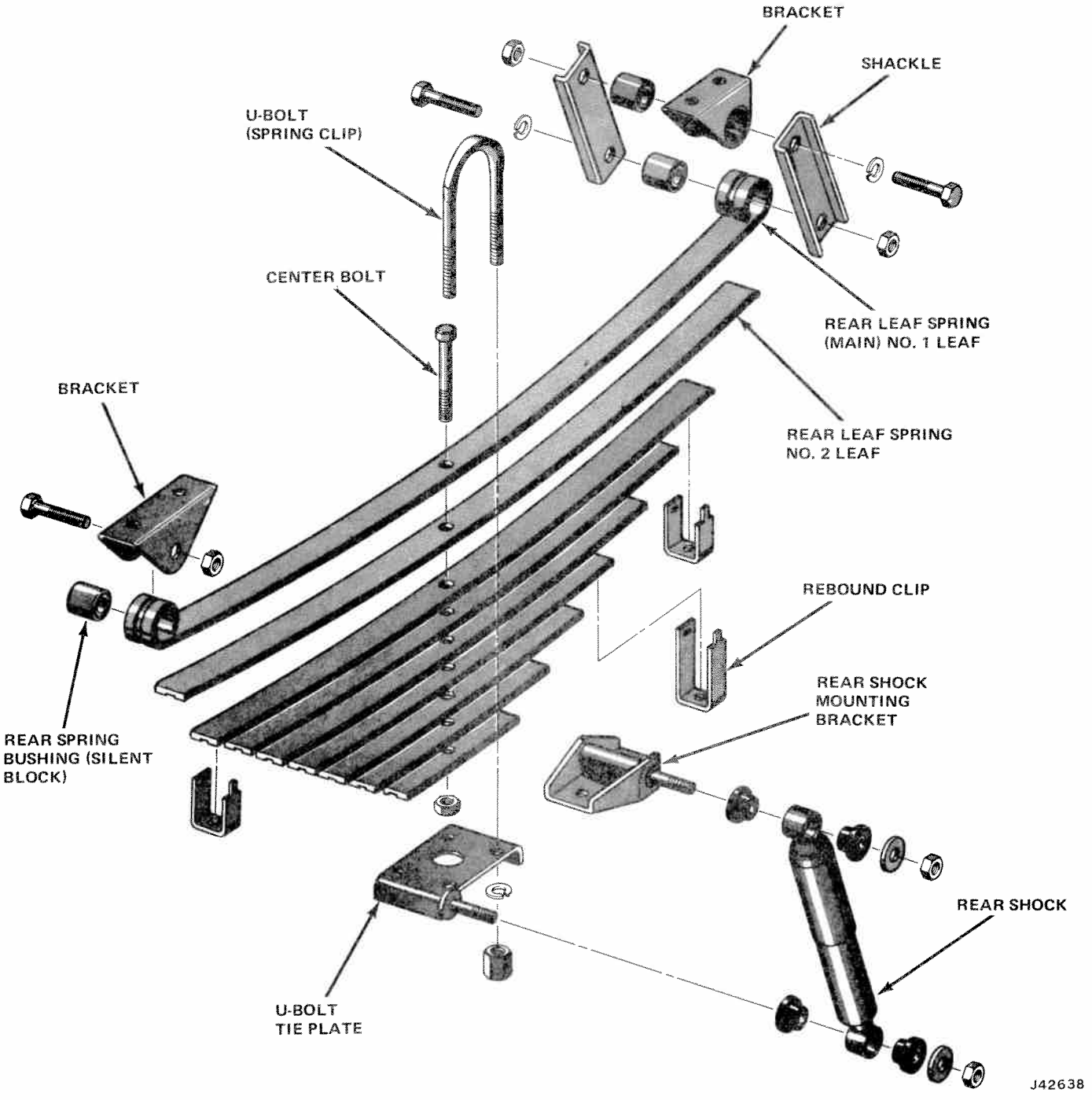

Fig. 12-3 Rear Spring and Shock Absorber - CJ Models

SHOCK ABSORBERS

The hydraulic, direct-action shock absorbers used on Jeep vehicles are designed to absorb both upward and downward motion. The upper ends of the shock are secured to the vehicle frame side rails with mounting brackets and pins. The lower ends are secured to the springs or axle. Rubber bushings are installed between the mounting pins and shock eyes. Movement at the bushings is absorbed by flexing of the rubber.

Squeaking usually occurs when movement takes place between the rubber bushings and the metal parts. The squeaking may be eliminated by placing the bushings under greater pressure. This is accomplished by tightening the locknuts. Do not use mineral lubricant to remove squeak as it will deteriorate the rubber.

The shock absorbers are not refillable and not adjustable. If trouble develops, the shock must be discarded and replaced with a new one. If a shock is removed from the vehicle and turned upside down it will lose its prime and become inoperative. To test a unit, hold it in an upright position and work the plunger up and down

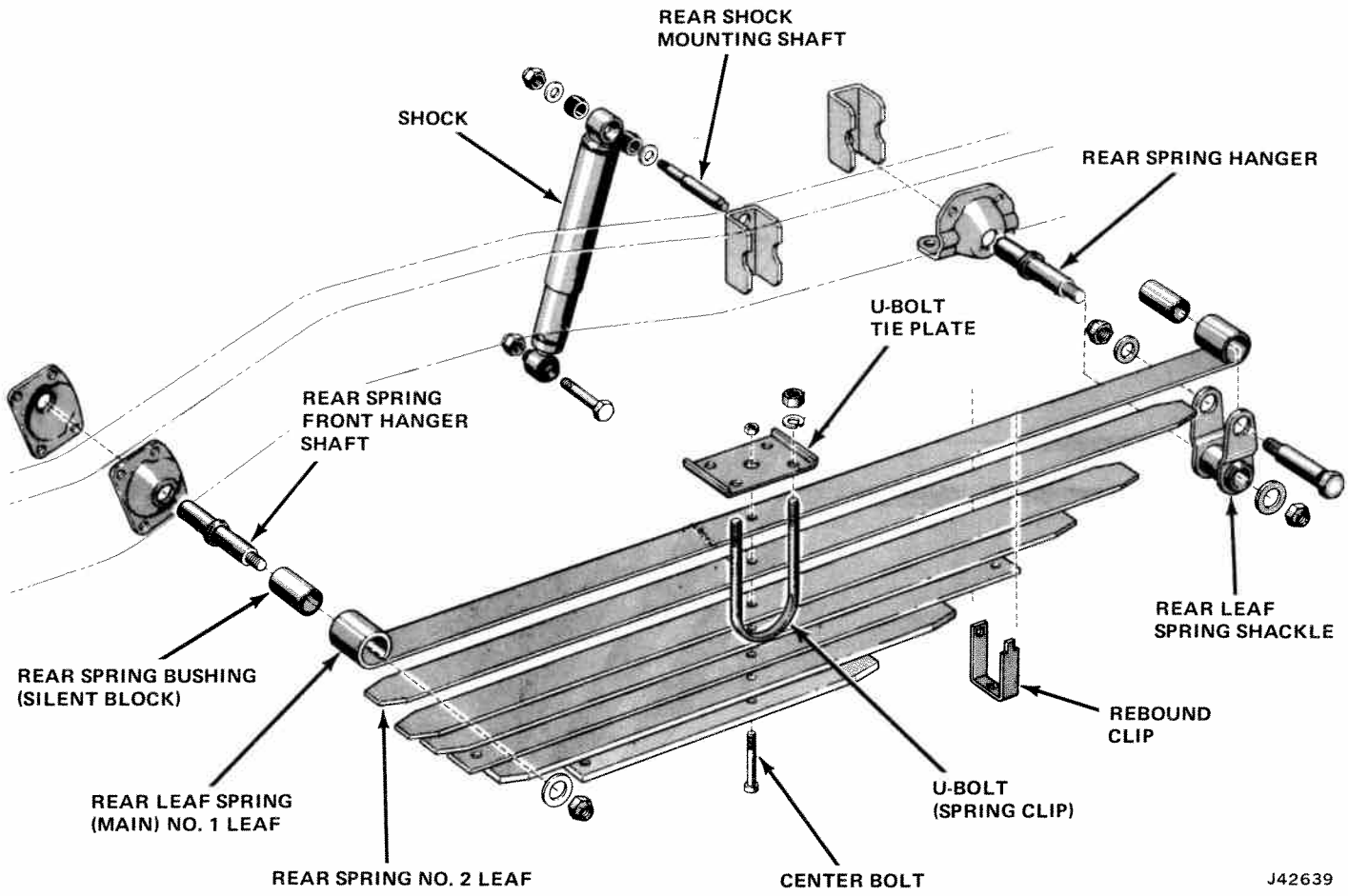

Fig. 12-4 Rear Spring and Shock Absorber - Cherokee-Wagoneer-Truck

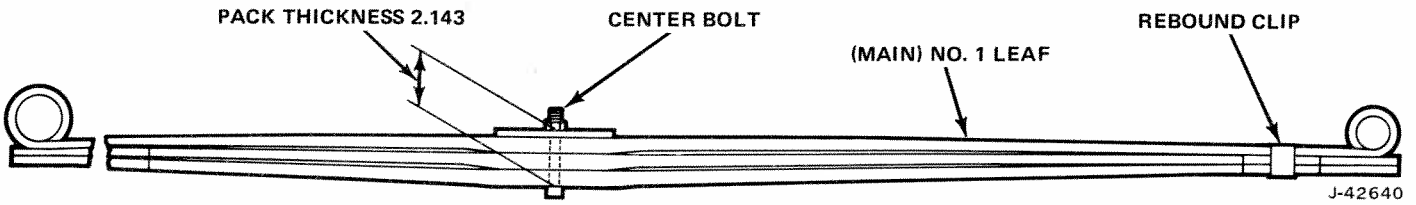

Fig. 12-5 Rear Tapered Leaf Spring Assembly-Typical

the full travel four or five times to determine whether action is positive or faulty.

NOTE: *The shock stem is smoothly machined to work through a tight seal in the upper end of the piston. Do not roughen the stem with pliers or similar tool during replacement as this will destroy the effectiveness of the seal.*

Replacement

The rubber bushings and shock eyes are held in place on the mounting pins by a flat washer and a locknut. To remove a shock, first remove the locknuts and washers. Then pull the shock eyes and rubber bushings from the mounting pins.

To install a shock, first install the rubber bushings and shock eyes on the mounting shafts. Then install the washers and locknuts. Tighten the locknuts securely.

STABILIZER BAR

The stabilizer (on the Model 46, 8000 GVWR Truck) extends across the front undersides of the frame, and is secured to the right and left frame rails by bolted clamps and rubber bushings (fig. 12-6). The ends of the bar extend rearward to a position above the front springs and are connected to the axle and springs by two rubber shock mounted connecting links (fig. 12-7).

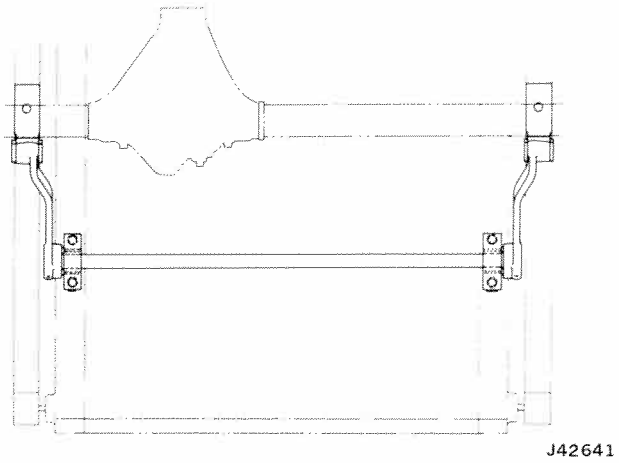

Fig. 12-6 Front Stabilizer Bar, Model 46 8000 GVWR

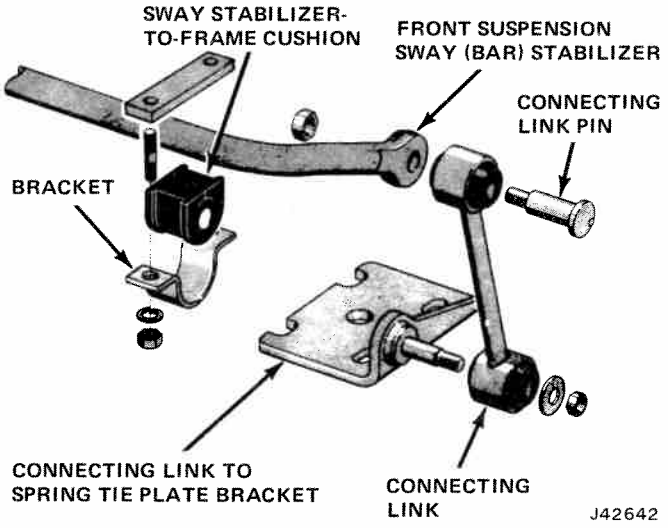

Fig. 12-7 Front Stabilizer Bar, Model 46, 8000 GVWR Exploded View

SPRING MOUNTED BELOW AXLE

Removal

(1) Raise vehicle, and support axle.
(2) Remove U-bolts (springs clips) and U-bolt tie-plate.
(3) Disconnect front and rear ends of spring.
(4) Remove spring.

NOTE: *Spring can be disassembled by removing spring rebound clips and center bolt. Bushings can be replaced by pressing out old bushings and installing new ones.*

Installation

(1) Position spring to vehicle and install but do not tighten bolts.
(2) Align spring with center bolt and install tie-plate and U-bolts. (See Specifications for torque requirements.)
(3) Remove axle support and lower vehicle.
(4) Tighten pivot bolts with weight on springs.

SPRING MOUNTED ABOVE AXLE

Removal

(1) Raise vehicle and support frame ahead of axle.
(2) Remove wheel.
(3) Support axle assembly with jack.
(4) Remove U-bolts (spring clips).
(5) Remove parking brake cable clip (rear only).
(6) Unclip axle vent hose from frame (left side), or remove brake T-fitting bolt from axle (right side).
(7) Remove lower shock bolt.
(8) Disconnect spring from pivot bolts.
(9) Lower axle enough for spring to clear backing plate, and remove spring.

NOTE: *Spring can be dissassembled by removing spring rebound clips and center-bolt. Bushing can be replaced by pressing out old bushings and installing new ones.*

Installation

(1) Position spring to frame and install bolts and nuts.
(2) Raise axle, align spring center bolt, install U-bolts.
(3) Reconnect shock.
(4) Install parking brake cable clip.
(5) Reconnect T-fitting (or axle vent hose).
(6) Install wheel.
(7) Lower vehicle
(8) Tighten pivot bolts.

LEAF SPRING APPLICATION CHART

FRONT									REAR								
NUMBER OF LEAVES	2	2	3	7	9	10			2	2	2	3	5	6	10		
PACK THICKNESS (INCHES) ①	0.916	0.962	1.374						1.324	1.370	1.500	2.143					
DEFLECTION RATE ②	220	260	330	190	210	270			260	300	340	510	155 230	230	276		
MODEL							WIDTH (INCHES)	LENGTH (INCHES)								WIDTH (INCHES)	LENGTH (INCHES)
CJ-5				STD		OPT	1-3/4	39-3/4					STD		OPT	1-3/4	46
CJ-6					STD	OPT	1-3/4	39-3/4					STD		OPT	1-3/4	46
CHER WAG	STD	OPT	OPT				2-1/2	47	STD	OPT				STD		2-1/2	52
J-10 TRUCK																	
25-5200 GVW	STD	OPT	OPT				2-1/2	47	STD	OPT				STD		2-1/2	52
25-5600 GVW	STD	OPT	OPT				2-1/2	47	STD					STD		2-1/2	52
45-5200 GVW	STD	OPT	OPT				2-1/2	47			STD					2-1/2	57
45-5600 GVW	STD	OPT	OPT				2-1/2	47			STD					2-1/2	57
J-20 TRUCK																	
46-6500 GVW	STD	OPT	OPT				2-1/2	47			STD	OPT				2-1/2	57
46-7200 GVW	STD	OPT	OPT				2-1/2	47			STD	OPT				2-1/2	57
46-8000 GVW	STD	OPT	OPT				2-1/2	47				STD				2-1/2	57

① TAPERED LEAF ONLY

② AMOUNT OF POUNDS PER INCH REQUIRED TO DEFLECT A LEAF SPRING ONE INCH.

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SHOCK ABSORBER APPLICATION CHART

PISTON DIAMETER (INCHES)	1	1	1-3/16	1-3/16	1-3/16	1-3/16	1-3/8	1-3/8	1-3/8
EXTENDED LENGTH (INCHES)	17	18-3/8	16-7/8	17-3/4	19-7/8	21-3/8	17-7/16	19-9/16	21
COMPRESSED LENGTH (INCHES)	10-9/16	11-1/4	10-9/16	11	12-1/16	12-13/16	11	12-1/16	12-13/16
MODEL	FRONT	REAR	FRONT	REAR	REAR	FRONT	REAR	REAR	FRONT
CJ	STD	STD	OPT		OPT				
CHEROKEE WAGONEER				STD		STD	OPT		OPT
J-10 TRUCK 25-45					STD	STD		OPT	OPT
J-20 TRUCK									
46-6500 GVW					STD	STD		OPT	OPT
46-7200 GVW					STD	STD		OPT	OPT
46-8000 GVW								STD	STD

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TORQUE SPECIFICATIONS

All torque values are given in foot-pounds with dry fits unless otherwise specified.

	Size	Torque
Shock - Lower Attachment	7/16 - 20	25-40
Shock - Upper Attachment	3/8 - 18	15-25
Spring Pivot Bolts (Silent Block)	5/8 - 18	45-65
Spring Shackle Bolts (Silent Block)	9/16 - 18	50-70
Spring Shackle Bolts - J-20 Truck	5/8 - 18	45-65
Spring Shackle and Pivot Bolt - Cherokee-Wagoneer-Truck	9/16 - 18	50-70
Spring Hanger Shaft Nut and Front Shackle Shaft	5/8 - 18	45-65
Stabilizer Bar Mounting Bracket to Side Rail	7/16 - 20	25-40
U-Bolt (Spring Clip)	9/16 - 18	85-105
U-Bolt (Spring Clip)	1/2 - 20	45-65
U-Bolt (Spring Clip)	7/16 - 20	36-42
Wheel to Hub Nuts - CJ Models	1/2 - 20	90-115
Wheel to Hub Nuts - Cherokee-Wagoneer-Truck	7/16 - 20	65-80