GROUP 7

CHASSIS SUSPENSION

SECTIONS IN GROUP 7

SECTION 7-A

SPECIFICATIONS AND DESCRIPTION OF CHASSIS SUSPENSION

CONTENTS OF SECTION 7-A

7-1 CHASSIS SUSPENSION SPECIFICATIONS

a. Tightening Specifications

Use a reliable torque wrench to tighten the parts listed, to insure proper tightness without straining or distorting parts. These specifications are for clean and lightly lubricated threads only, dry or dirty threads produce increased friction which prevents accurate measurement of tightness.

FRONT SUSPENSION

Part	Location	Thread Size	Torque Ft. Lbs.
Link & Nut	Stabilizer Link and Nut	Special	5-10
Bolt	Front Shock Absorber to Upper Control Arm	Special	5-10
Screw	Front Shock Absorber to Lower Control Arm	5/16-18 x 7/8"	12-24
Screw	Stabilizer Shaft Bracket to Frame	5/16-18 x 1 1/8"	10-15
Nut	Upper Ball Joint to Knuckle	1/2-20	40-60
Nut	Lower Ball Joint to Knuckle	9/16-18	60-95
Bolt & Nut	Upper Control Arm Shaft to Frame	7/16-14 x 2 1/4"	45-60
Bolt & Nut	Lower Control Arm to Frame	1/2-13 x 3 3/4"	65-90
Nut	Robber Bumper to Lower Control Arm	3/8-16	15-25

REAR SUSPENSION

Bolt & Nut	Coil Spring to Axle	1/2-13 x 1 3/4"	20-30
Nut	Rear Shock Absorber Mounting (Sportwagon only)	3/8 x 24	5-10
Bolt & Nut	Rear Shock Absorber Upper Mounting	5/16-18 x 7/8"	12-24
Nut	Rear Shock Absorber Lower Mounting	1/2-20	30-60
Bolt & Nut	Upper Control Arm (Either End)	1/2-13 x 3 3/4"	65-90
Bolt & Nut	Lower Control Arm (Either End)	1/2-13 x 3 3/4"	65-90
Bolt & Nut	Rubber Bumper Spacer Attaching	7/16-14 x 1"	35-60

b. Wheels

Type	Demountable Steel Disc With Drop Center Rim
Size	14 x 5.00 All Models 14 x 6.00 - Standard on Sportwagon and Option Other Models Where 7.77 x 15 Tires Are Used
Attachment	5 Studs

c. Tires

Size

Series	Models	Standard Tire	Optional Tire
Special V-6 Special DeLuxe V-6 Skylark V-6	Sedans, Coupes, & Convertibles Less A.C.	6.95 x 14	7.35 x 14
Special V-6 Special DeLuxe V-6 Skylark V-6	Sedans, Coupes, & Convertibles With A.C.	7.35 x 14	7.75 x 14
Special V-6 Special DeLuxe V-6	Station Wagons	7.35 x 14	7.75 x 14
Special V-8 Special DeLuxe V-8 Skylark V-8	Sedans, Coupes, & Convertibles	7.35 x 14	7.75 x 14
Special V-8 Special DeLuxe V-8	Station Wagons	7.35 x 14	7.75 x 14
Skylark V-8	Sportwagons	7.75 x 14	7.75 x 14 (4-ply. 8-ply. rating)

Inflation Pressures

Type of Car	Average Load Front - Rear	Full Rated Load Front - Rear
All Models (Except Station Wagons)	24 Cold 30 Hot	28 - 30 Cold 34 - 36 Hot
Station Wagons	22 - 28 Cold 28 - 34 Hot	24 - 30 Cold 30 - 36 Hot

d. Shock Absorbers, Springs, and Stabilizers

Shock Absorbers . . . . . Delco Double Direct-Acting - Front and Rear
Springs . . . . . Coil - Front and Rear
Stabilizer Bar Diameter . . . . . 3/4" - Std. on All Coupes and Convertibles (Less Heavy Duty)
13/16" - Std. on All Special Wagons, Sedans, Coupes and Convertibles With Heavy Duty Suspension
7/8" - Std. on All Skylark Wagons
15/16" - Std. on All Special Wagons With Heavy Duty Suspension

7-2 DESCRIPTION OF SUSPENSION

a. Front Suspension

The front wheel suspension is designed to allow each front wheel to rise and fall, due to change in road surface level, without appreciably affecting the opposite wheel.

Each wheel is independently connected to the frame front cross member by a steering knuckle, ball and socket assemblies, and upper and lower control arm assemblies. See Figure 7-1. The upper and lower arms are so placed and proportioned in length that they allow each knuckle, and wheel to move through a vertical arc only. The front wheels are held in proper relation to each other for steering by means of two tie rods which connect to steering arms on the steering knuckles and to an intermediate rod.

Coil chassis springs are mounted between the spring housings on the frame and the lower control arms. Ride control is provided by double direct acting shock absorbers mounted inside the coil springs and attached to the lower control arms by bolts. The upper portion of each shock absorber extends through the spring housing and is secured with two grommets, two grommet retainers, and a nut.

Side roll of the front suspension is controlled by a spring steel stabilizer shaft. It is mounted in rubber bushings which are held to

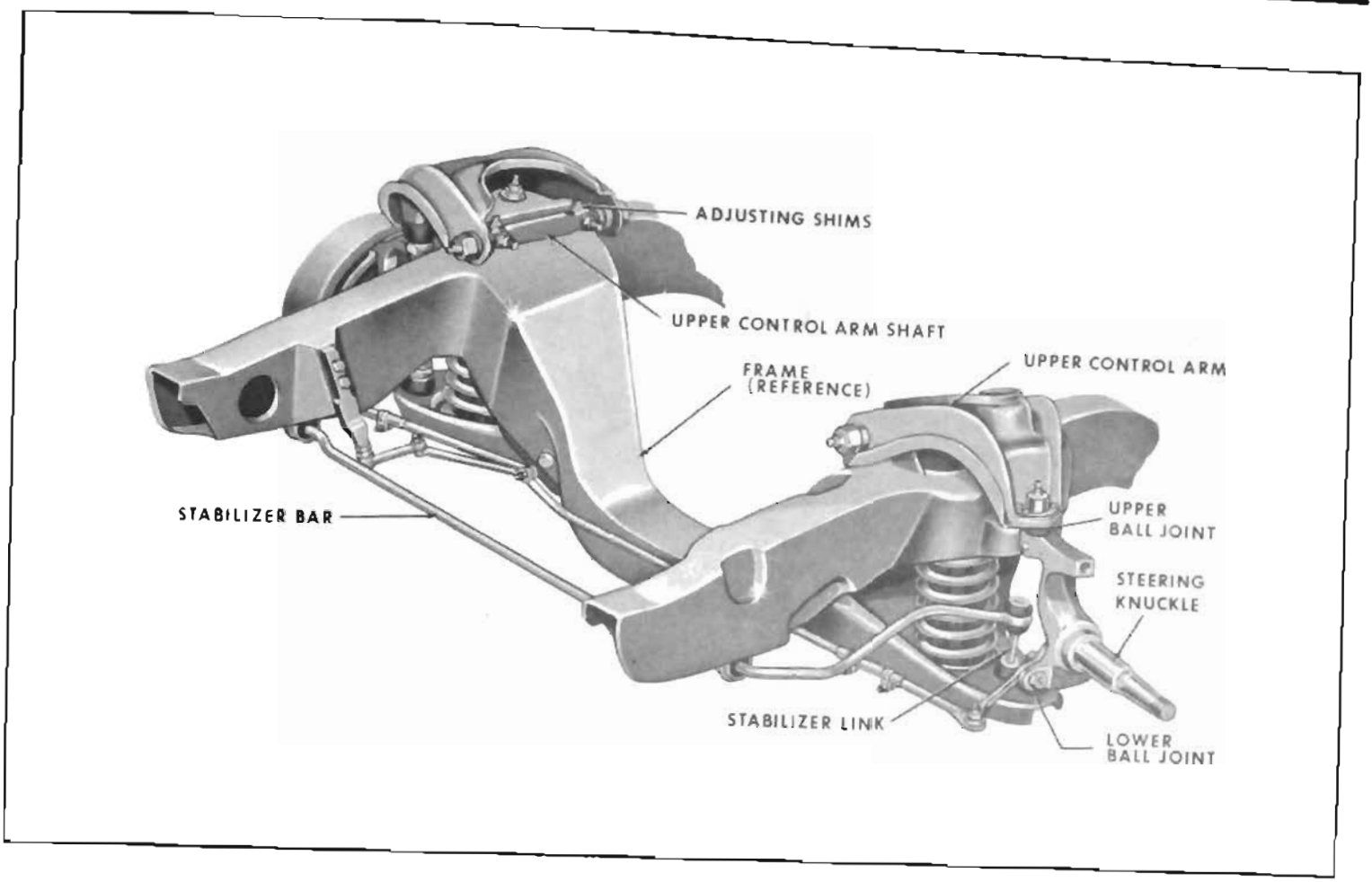

Figure 7-1—Front Suspension

the frame side rails by brackets. The ends of the stabilizer are connected to the front side of the lower control arms. Rubber grommets at these connections provide flexibility and prevent rattles.

The upper control arms are provided with hardened, replaceable, threaded steel bushings that are screwed securely into the inner ends of the arms. The upper control arm shaft is screwed into the inner portion of the bushing, thus providing a thread type bearing. A ball joint is riveted to the outer end of the upper arm. It is spring loaded to insure proper alignment of the ball in the socket. See Figure 7-3.

The inner end of the lower control arm has pressed-in bushings. Two bolts, passing through the bushings, attach the arm to the frame. See Figure 7-3. The lower ball joint is a press fit in the arm and attaches to the steering knuckle with a castellated nut that is retained with a cotter pin.

Rubber seals are provided on upper and lower arm shafts and at ball socket assemblies to exclude dirt and moisture from bearing surfaces. Lubrication fittings are provided at all bearing locations.

b. Rear Suspension

The rear wheels are not independently sprung, being incorporated into the rear axle assembly. Alignment is maintained by the rigid rear axle housing. See Figure 7-4.

The rear axle is attached to the frame through a link type suspension system. Two rubber bushed lower control arms mounted between the axle housing and the frame maintain fore and aft relationship of the axle housing to the chassis. Two rubber bushed upper control arms, angularly mounted with respect to the center line of the car, control sideways movement of the axle assembly.

The upper control arms are shorter than the lower arms, causing the axle housing to "rock" or tilt forward on compression. This rocking or tilting lowers the rear propeller shaft to make possible the use of a much lower tunnel through the rear floor pan than would be possible with a conventional rear suspension. See Figure 7-5.

Coil chassis springs are located between the spring housings on the frame and brackets on the rear axle housing. A clamp secures the spring to the axle bracket and is attached with a bolt. A rubber bumper attached to the rear axle housing just outboard of the coil spring, limits

axle travel during spring compression.

Ride control is provided by two double direct acting shock absorbers angularly mounted between axle housing brackets and the frame. Rubber bushings at both ends of the shock absorbers prevent vibration and aid in reducing noise transference to the frame.

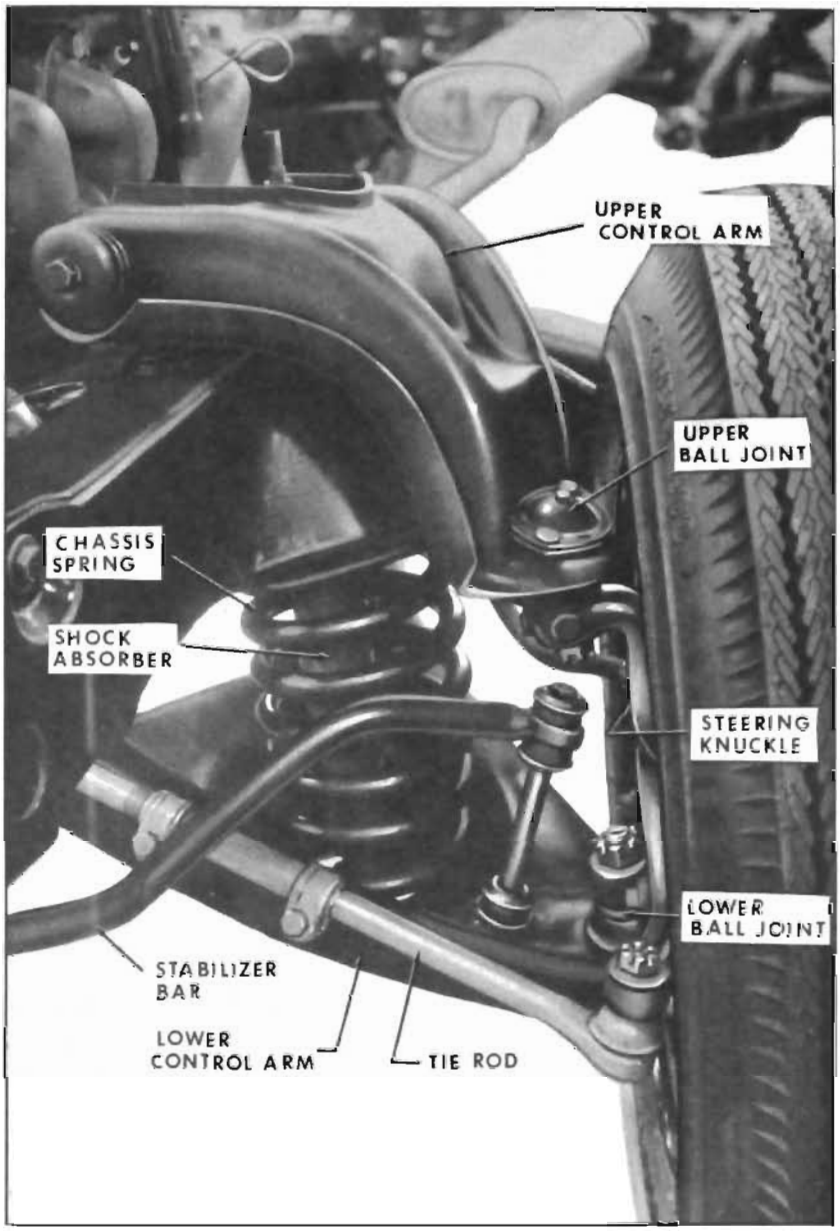

Figure 7-2—Steering Knuckle and Ball Joints

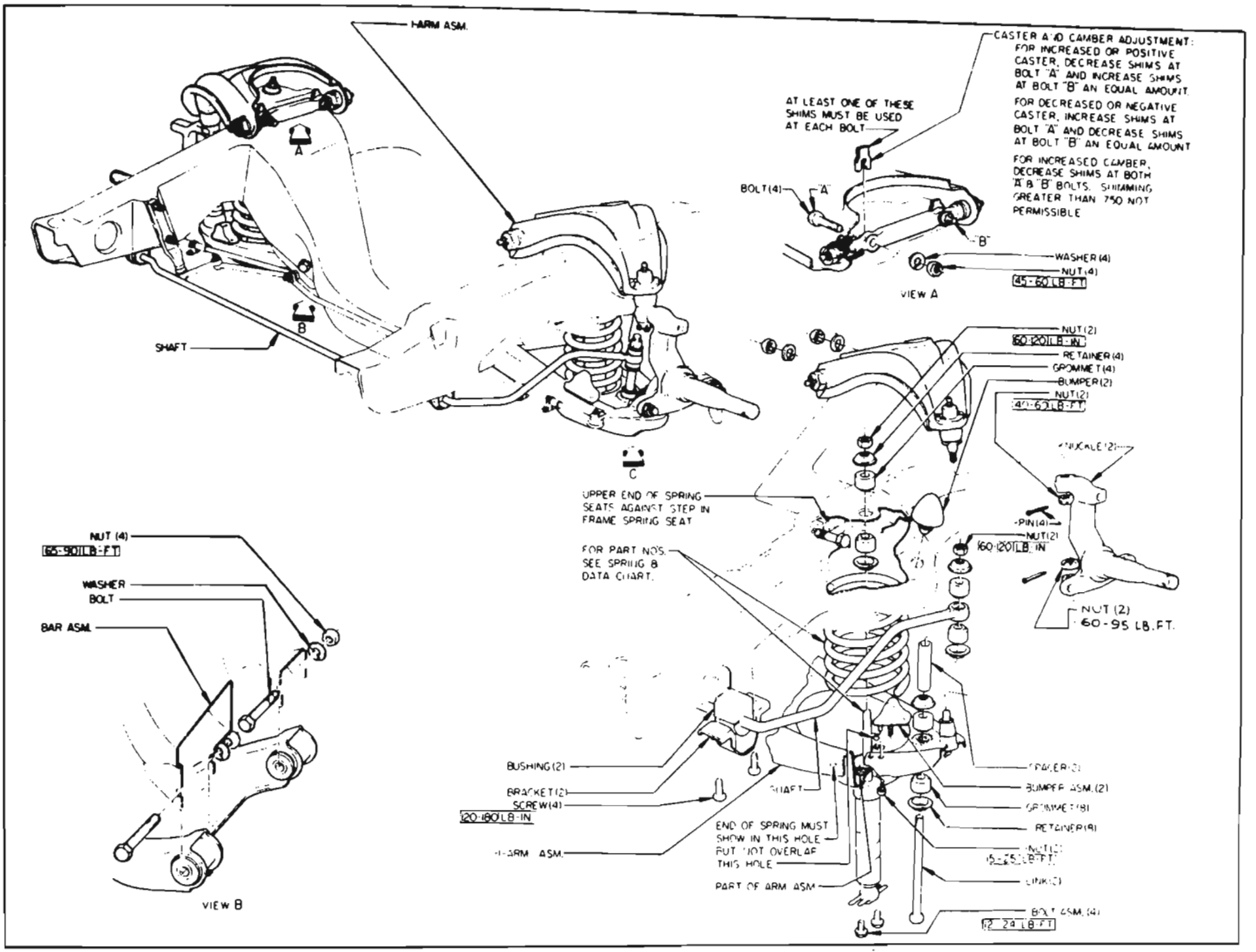

Figure 7-3—Front Suspension Details

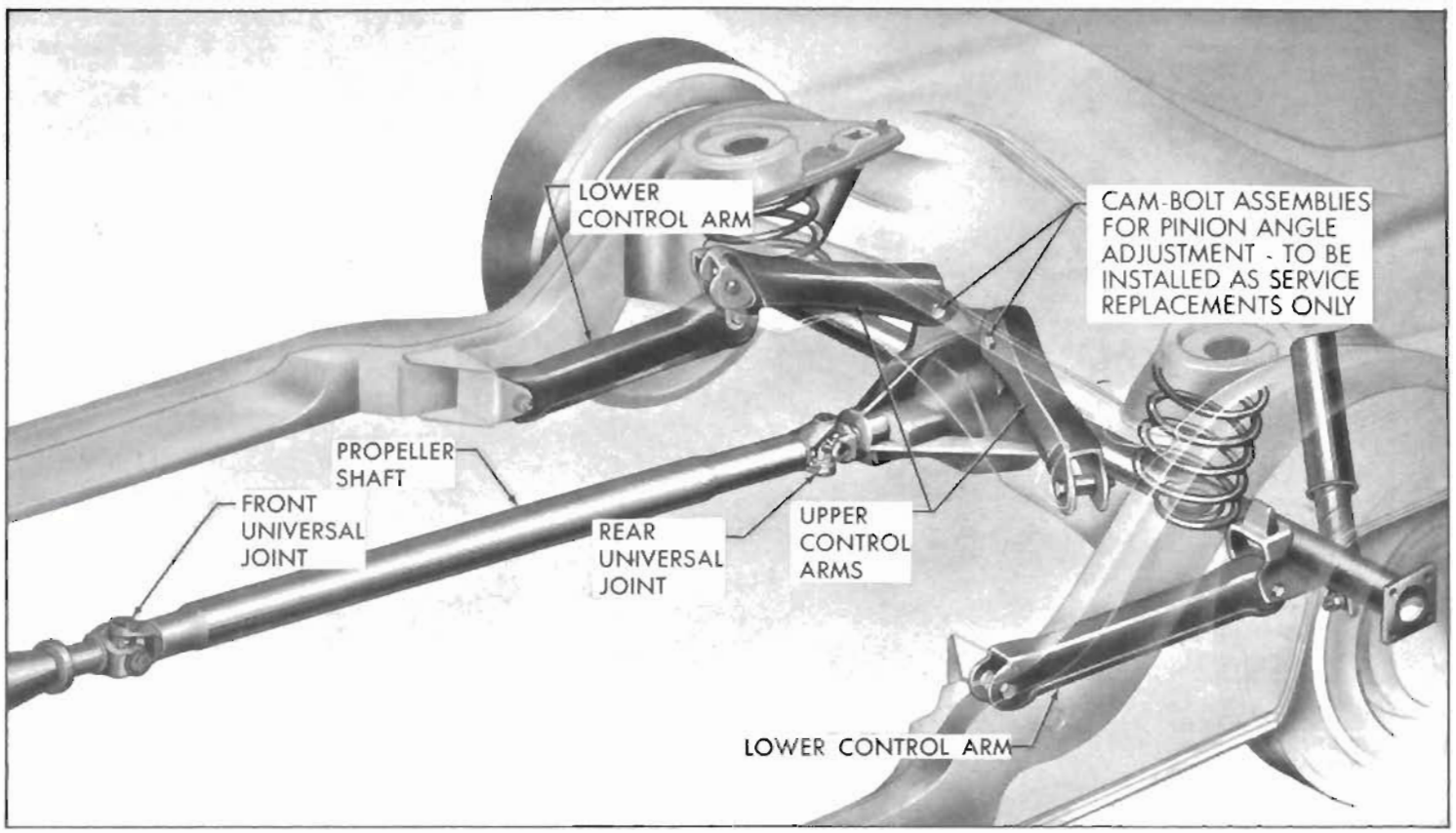

Figure 7-4—Rear Suspension

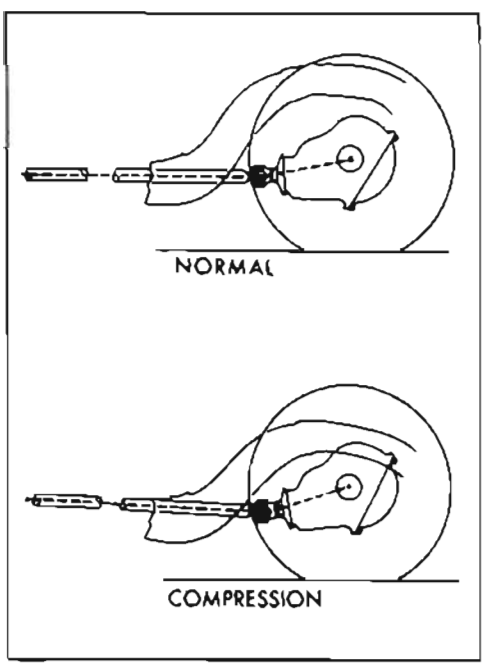

Figure 7-5—Rear Axle Tilting Action