CHAPTER 26

Rear Suspension and Service

FIGURE 26.1 Solid axles are used on rear-wheel-drive vehicles as well as on front-wheel-drive vehicles.

FIGURE 26.2 A solid axle supports the springs, so the axle and suspension components are unsprung weight.
FIGURE 26.3 When the axle housing reacts against the force of axle shaft rotation, the front of the differential tilts upward, creating axle windup.

FIGURE 26.4 A typical rear-wheel-drive pickup truck rear suspension equipped with leaf springs.

FIGURE 26.5 An exploded view of a beam axle with multileaf springs.
FIGURE 26.6 A trailing arm rear suspension with a solid axle used on a front-wheel-drive vehicle.

FIGURE 26.7 The Camaro and Firebird rear suspension systems use a torque arm to control axle windup.

FIGURE 26.8 A typical beam axle rear suspension, which uses trailing arms and coil springs along with a track rod, also called a Panhard rod, to control side-to-side axle movement.
FIGURE 26.9 This Ford rear suspension uses upper and lower semi-trailing arms to mount the rear axle and a watts linkage to control side-to-side movement.

FIGURE 26.10 An independent rear suspension provides a better ride because less weight is unsprung and the suspension is able to react quickly to bumps in the road without affecting the opposite side.

FIGURE 26.11 A typical short/long-arm independent rear suspension.
FIGURE 26.12 This independent rear suspension uses a MacPherson strut, two parallel lower transverse control arms, and a trailing arm.

FIGURE 26.13 The toe-control rod provides an extra brace to keep the rear wheels straight ahead during braking and acceleration on this modified-strut-type independent rear suspension.

FIGURE 26.14 A transverse mono-type leaf spring used on the rear suspension of a Chevrolet Corvette.
FIGURE 26.15 The crossbeam is placed toward the front of the vehicle rather than the centerline of the rear wheels on a semi-independent-type rear suspension.

FIGURE 26.16 A semi-independent rear suspension with MacPherson struts.

FIGURE 26.17 Check all rubber bushings for excessive cracking.
FIGURE 26.18 Carefully inspect the bump stops for damage during a thorough visual inspection.

FIGURE 26.19 A broken spring was discovered during a routine under-vehicle visual inspection. Notice the witness marks that show that the spring coils have been hitting each other.

FIGURE 26.20 The shock absorber needs to be disconnected before removing the coil spring. Installation is the reverse of removal procedure.
FIGURE 26.21 The center bolt is used to hold the leaves of the leaf spring together. However, the hole for the center bolt also weakens the leaf spring.

FIGURE 26.22 Whatever was leaking appeared to be a clear liquid but it did not smell like gasoline. What could it be from the rear of the truck?

FIGURE 26.23 The source of the leak was discovered to be hydraulic shock fluid that had leaked from the bottom of the shock and not from around the shaft seal, which is the most likely location for shocks to leak.