

# 2022 CHEVROLET CORVETTE SERVICE MANUAL

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## **Rear Suspension Description and Operation**

The rear suspension has two primary purposes:

- Isolate the driver from irregularities in the road surface.
- Define the ride and handling characteristics of the vehicle.

The rear suspension absorbs the impact of the road while travelling over irregular road surfaces and dissipates this energy throughout the suspension system. This process isolates the vehicle occupants from the road surface. The suspension system must allow for the vertical movement of the tire and wheel assembly as the vehicle travels over irregular road surfaces while maintaining the tire's horizontal relationship to the road.

The rear suspension knuckle is connected to a rear suspension upper control arm and a rear suspension lower control arm through permanently sealed ball joints at the outermost points of the arms.

The up and down motion of the rear suspension knuckle, as the vehicle travels over bumps, is absorbed predominantly by the rear coil spring. A rear shock absorber is used in conjunction with the rear coil spring to dampen oscillations. The rear shock absorber is filled with oil and has a moveable shaft that connects to a piston inside the rear shock absorber. Valves inside the rear shock absorber offer resistance to oil flow and consequently inhibit rapid movement of the piston and shaft. The rear shock absorber assembly consists of a rear shock absorber, rear coil spring, rear shock absorber mount, and different combinations of insulators, dust boots, bumpers, and hardware. The rear shock absorber assembly is held together, under tension, by a rear shock absorber shock rod mount nut at the top of the assembly. The upper end of the rear shock absorber assembly attaches to the vehicle body and the lower end attaches to the rear suspension lower control arm.

Some vehicles are equipped with a magnetic selective ride control system. The magnetic selective ride control system individually controls the damping force of each of the vehicle shock absorbers to keep the vehicle body as calm as possible. Changes of the damping forces can be accomplished within milliseconds and suspension characteristics can be changed at any time by activating the different available modes. For more information, refer to Electronic Suspension Control Description and Operation.

The rear suspension lower control arm is connected to the rear suspension cradle through two rigid bushings which allows the rear suspension lower control arm to pivot up and down with respect to the vehicle body structure. The rear suspension lower control arm is attached to the rear suspension cradle through rear suspension lower control arm adjuster bolts equipped with rear suspension lower control arm adjuster cams. The rear suspension lower control arm attachment points at the rear suspension cradle are slotted permitting camber and caster adjustments by rotating the rear suspension lower control arm adjuster bolts and cams as necessary. A ball joint at the outermost end of the rear suspension lower control arm allows the rear suspension knuckle to maintain the perpendicular relationship to the road surface and to rotate as the steering wheel is turned.

A rear stabilizer shaft is used to help reduce body roll when the vehicle is driven around a turn. The rear stabilizer shaft is mounted to the rear suspension cradle by two rear stabilizer shaft clamps and insulators. Rear stabilizer shaft links are used to connect the ends of the rear stabilizer shaft to each rear suspension knuckle.