

2022 CHEVROLET CORVETTE SERVICE MANUAL

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Wheel Drive Shafts Description and Operation

Wheel drive shaft assemblies are flexible assemblies consisting of an inner and outer constant velocity joint connected by an axle shaft. The inner joint is completely flexible and can move in and out. The outer joint is also flexible, but cannot move in and out.

Boot and Clamp

Wheel drive shaft assemblies use inboard and outboard joint boots made of thermoplastic material, and clamps made of stainless steel. The thermoplastic material performs well against normal handling and operational wear and conditions. However, it is not strong enough to withstand abusive handling or damage due to objects such as sharp tools or the sharp edge of any other surrounding component in the vehicle.

The boots should be protected from sharp tools and from the sharp edges of surrounding components. Any damage to the boots or clamps will result in leakage. Leakage will allow grease to leak out of the inboard and outboard joints. Leakage will allow water to leak into the inboard and outboard joints. This leads to noisy wheel drive shaft operation, and eventually, failure of the internal components.

The functions of the boot are as follows:

- To protect the internal parts of the inboard and outboard joint by protecting the grease from surrounding detrimental atmospheric conditions such as extreme temperatures, ozone gas, etc.
- To protect the internal parts of the inboard and outboard joint by protecting the grease from foreign materials such as stones, dirt, water, salt, etc.
- Facilitate angular and axial movement of the inboard joint.
- Facilitate angular movement of the outboard joint.

The function of the clamps is to provide a leak proof connection at the housing and the axle shaft for the inboard and outboard joints.

Inner Joint

The inner joints use the cross-groove joint design with an adapter for the inboard seal. The inner joint design allows the wheel drive shafts to bolt to flanges on the transmission.

Outer Joint

The outer joints use the constant velocity (CV) joint design. The shaft end mating with the bearing hub, incorporates a helical spline to assure a tight, press type fit. The design provides a no end play condition between the bearing hub and the wheel drive shaft.