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Service Tips and Best Practices

GM HiPer Strut Front Suspension System

Brand	Original Grade/Supreme/TTX	Product	Chassis and Control Arms	Date	September 2021
Part Number(s)	Various				

Beginning with MY2010 production, General Motors introduced the HiPer Strut system as a front suspension option for many FWD and later AWD luxury sedans, coupes and CUVs.

This system modifies the traditional Macpherson front suspension setup, by reducing the length of the front spindle through the addition of an upper ball joint at the top of the steering knuckle. **See Figure 1** for an illustration of differences.

A shorter spindle reduces negative camber. This creates more surface contact area between the wheel and the road, increasing overall grip and lessening the potential of torque steer. The second upper ball joint disassociates the steering knuckle from the strut assembly, reducing unwanted road feedback and improving ride feel, especially when travelling over imperfect roads. Additionally, only the spindle will rotate during a turn, improving steering response and reducing understeer when compared to the traditional Macpherson setup.

The HiPer Strut system is designed to accommodate both conventional and electronically controlled strut assemblies.

For the Professional Technician, it is important to note:

- Vehicles equipped with the HiPer Strut system utilize different front-end suspension components than vehicles equipped with the traditional Macpherson front suspension. These components are not interchangeable. When ordering replacement steering and suspension components, visit www.mevotech.com for the most current part and application information.
- The HiPer Strut system features a more complex suspension geometry and additional pivot/adjustment points. For instance, camber may be adjusted at the upper ball joint.
- Vehicles equipped with the HiPer Strut system require different alignment values and specifications than those equipped with the traditional Macpherson front suspension.

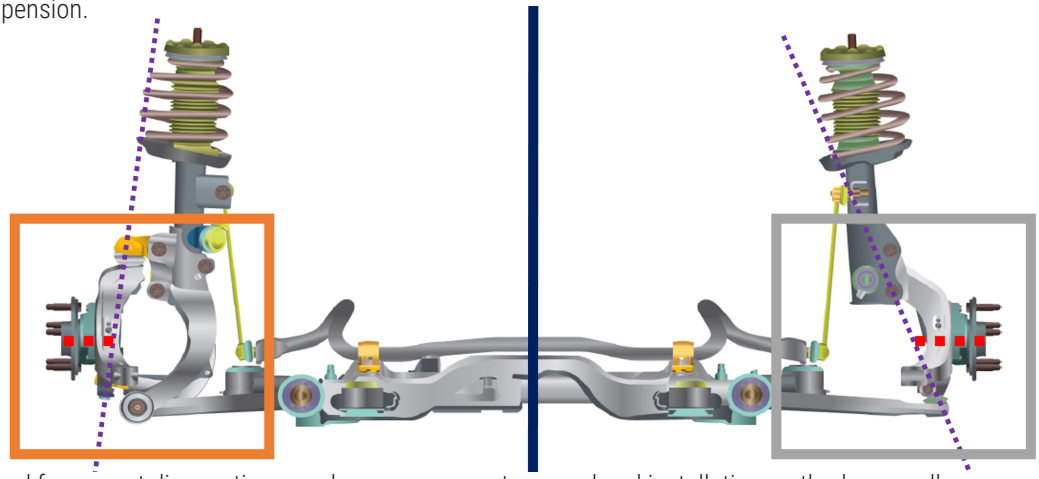


Figure 1. Figure 1. HiPer Strut (left, orange box) vs Macpherson (right, grey box). Note the differences in steering knuckle design and strut placement, kingpin axis (purple dashed line) and spindle length (red dashed line)

Always refer to the factory service manual for correct diagnostic procedures, component removal and installation methods, as well as fastening torque values and procedures where applicable. Only use a calibrated torque wrench for final fastening.

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