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Service Tips and Best Practices

Altered Ride Height and Modified Suspensions

Brand	All	Product	All	Date	SEPT 2020
Part Number(s)					

Modified suspensions are becoming more and more commonplace in North America.

An increase to the vehicle's ground clearance makes off-roading and tough terrains easier to navigate and clear. Common applications for lifting are; light duty pick up trucks, SUV's, and 4X4 vehicles.

A reduction to the vehicle's ground clearance may be done for aesthetic purposes or increasing performance characteristics. Common applications for lowering are: passenger coupes, hatchbacks and sedans.

Challenges

Altered ride heights and modified suspensions can result in increased ball joint swing angle. This may cause excessive ball joint loading, outside the original design specification. Ball joints, in modified suspensions, require more range of motion to accommodate the extra suspension travel. Over-traveling of the ball joint may lead to contact of the ball pin to the ball joint housing, this may lead to increased part wear and premature failure of the ball joint.

Understanding The Geometry

Changing the vehicle geometry will change the loading dynamics in the steering and suspension systems (ball joints, control arms, stabilizer bars and links, springs and shocks), which may result in accelerated wear and premature failure of these parts. It is important to ensure that the original steering angles (i.e. camber, caster and toe) are set to OEM specifications after the suspension alteration is complete to avoid putting undo stress on the steering and suspension systems. Additionally, changing vehicle geometry may significantly increase tire wear.

Do it Right

Vehicle lifts require proper planning with a complete kit of replacement parts, specialized tools and equipment, and a Professional Technician with a solid understanding of suspension geometry and vehicle safety. A Professional Technician will ensure that the steering and suspension has sufficient travel and clearance and that the vehicle is correctly aligned after installation. The Professional Technician's understanding of the impact of ride height changes to steering and suspension components will ensure optimal vehicle handling, component life and road safety before putting a lifted vehicle on the road.

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