

# Suspension System

## Inspection and Verification



**WARNING:** Before carrying out a road test, make sure the vehicle is safe to do so. Failure to follow this instruction may result in personal injury.

- 1 . Gather as much information from the driver as possible and verify the customer concern by carrying out a road test, as closely as possible reproducing the conditions under which the fault occurs.
- 2 . Visually inspect for obvious signs of mechanical damage.

| Mechanical   |
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| <ul style="list-style-type: none"> <li>● Tire pressures</li> <li>● Damaged wheels or tires</li> <li>● Wheel bearing(s)</li> <li>● Loose or damaged front or rear suspension components</li> <li>● Loose, damaged or missing suspension fastener(s)</li> <li>● Damaged or leaking air suspension components</li> <li>● Worn or damaged suspension bushing(s)</li> <li>● Loose, worn or damaged steering system components</li> <li>● Damaged axle components</li> </ul> |

- 3 . If an obvious cause for an observed or reported condition is found, correct the cause (if possible) before proceeding to the symptom chart.

## Symptom chart

| Symptom           | Possible causes   | Action  |
|-------------------|---|---|
| Crabbing          | <ul style="list-style-type: none"> <li>● Incorrect rear thrust angle</li> <li>● Front or rear suspension components</li> </ul>  | Check the rear alignment.<br><a href="#">Four-Wheel Alignment (57.65.04)</a> Check the front and rear suspension for signs of damage or wear.   |
| Drift/Pull/Wander | <ul style="list-style-type: none"> <li>● Tire pressures</li> <li>● Uneven tire wear</li> <li>● Damaged steering components</li> <li>● Wheel alignment</li> <li>● Brake drag</li> <li>● Unevenly loaded or overloaded vehicle</li> </ul> | Check and adjust the tire pressures (see visual inspection). Check for uneven tire wear, investigate the cause and rectify as necessary. Check the steering for wear/damage. Check and adjust the wheel alignment as necessary. Check for binding brakes, rectify as necessary. Advise the driver of the load issues. |
|                   | <ul style="list-style-type: none"> <li>● Damaged suspension</li> </ul>  |   |

|   |   |  |
|---|---|--|
| Front bottoming or riding low                       | <ul style="list-style-type: none"> <li>• components</li> <li>• Air spring fault</li> </ul>  | <p>Check the suspension components for damage. Check the dynamic suspension. <a href="#">Vehicle Dynamic Suspension</a></p>  |
| Uneven tire wear                                    | <ul style="list-style-type: none"> <li>• Incorrect tire pressure (rapid center rib or inner and outer edge wear)</li> <li>• Incorrect front or rear toe (rapid inner or outer edge wear)</li> <li>• Incorrect camber (rapid inner or outer edge wear)</li> <li>• Tires out of balance (tires cupped or dished)</li> </ul>   | <p>Check and adjust the tire pressures (see visual inspection). Check and adjust the wheel alignment as necessary. <a href="#">Four-Wheel Alignment (57.65.04)</a> Balance the wheels and tires as necessary.</p>  |
| Harsh ride  | <ul style="list-style-type: none"> <li>• Damaged suspension components</li> <li>• Air spring fault</li> </ul>   | <p>Check the suspension components for damage. Check the dynamic suspension. <a href="#">Vehicle Dynamic Suspension</a></p>  |
| Shimmy or wheel tramp                               | <ul style="list-style-type: none"> <li>• Wheels/tires</li> <li>• Loose wheel nut(s)</li> <li>• Loose front suspension fasteners</li> <li>• Front wheel bearing(s) fault</li> <li>• Worn or damaged suspension component bushing</li> <li>• Loose, worn or damaged ball joint(s)</li> <li>• Loose, worn or damaged steering components</li> <li>• Front wheel alignment</li> </ul> | <p>Check the wheels and tires for condition and balance. Check and tighten the wheel nuts and suspension fasteners to specification. Check the front wheel bearings, suspension bushings, ball joints and steering components for wear or damage. Check and adjust the wheel alignment as necessary. <a href="#">Four-Wheel Alignment (57.65.04)</a></p> |
| Poor returnability of the steering (self-centering) | <ul style="list-style-type: none"> <li>• Steering column</li> <li>• Ball joints</li> <li>• Steering components</li> </ul>   | <p>Check the steering column universal joints, etc. Check the ball joints and other steering components.</p>   |

|                                  |   |  |
|----------------------------------|---|--|
| <p>Sway or roll</p>              | <ul style="list-style-type: none"> <li>● Loose front or rear stabilizer bar</li> <li>● Worn lower suspension arm stabilizer bar insulators</li> <li>● Air spring fault</li> </ul> | <p>Check the stabilizer bar security and condition. Rectify as necessary. Check the function of the active stabilization system (where fitted).<br/> <a href="#">Ride and Handling Optimization</a> Check the air springs.<br/> <a href="#">Vehicle Dynamic Suspension</a></p> |
| <p>Vehicle leans to one side</p> | <ul style="list-style-type: none"> <li>● Front or rear suspension components</li> <li>● Air spring fault</li> </ul>   | <p>Check the front and rear suspension. Check the air springs.<br/> <a href="#">Vehicle Dynamic Suspension</a></p>   |