

Item and Method of Inspection	Reject If
<b>1. Leaf Suspension</b>	
<p>Raise vehicle, use pry bar where applicable and using the frame as a pivot, attempt to pry spring attachments and check for movement. Manually inspect:</p> <ul style="list-style-type: none"> <li>a) springs</li> <li>b) composite springs (fuzzing is not cause for rejection)</li> <li>c) shackles</li> <li>d) hangers</li> <li>e) U-bolts</li> <li>f) centre bolts</li> <li>g) bushings or pivot</li> <li>h) stabilizer bar (front or rear) (if applicable)</li> <li>i) bump pad</li> <li>j) road clearance (applies to motor vehicles with a GVWR of less than 4,500 kg)</li> </ul>	<ul style="list-style-type: none"> <li>a) leaf missing, leaf broken or welded, cracked sagged so as to lower the vehicle more than 38 mm (1 1/2 in.) from manufacturer's specified height <ul style="list-style-type: none"> <li>– shifted so as to be less than 13 mm (1/2 in.) from any rotating part</li> <li>– do not operate as intended</li> </ul> </li> <li>b) broken, splintered, separating, delaminating, not same type on both sides of vehicle</li> <li>c) missing, loose, broken, cracked, worn in excess of 3 mm (1/8 in.) at the shackle bolt hole</li> <li>d) missing, loose, broken, cracked, worn in excess of 3 mm (1/8 in.) at the hanger bolt hole</li> <li>e) loose, welded, cracked, broken, missing, not OEM or equivalent</li> <li>f) missing, welded, broken, loose</li> <li>g) missing, loose, worn in excess of 3 mm (1/8 in.)</li> <li>h) missing, disconnected, broken, loose, welded, damaged, bushings worn excessively, bushing brackets missing or loose, bushing bracket bolts loose or missing</li> <li>i) missing, loose, split, badly deteriorated</li> <li>j) track bar or other suspension component extends down below the lowest part of the wheel rim</li> </ul>
	<p><b><u>OUT OF SERVICE</u></b></p> <ul style="list-style-type: none"> <li>i) <b>Any component allows the axle to shift from its normal position.</b></li> <li>ii) <b>Any attaching or tracking component is missing, loose, cracked and/or broken.</b></li> <li>iii) <b>Main leaf/safety leaf or one-quarter of the leaves in one assembly are broken and/or missing.</b></li> <li>iv) <b>Any leaf is shifted in a manner as to contact any rotating part.</b></li> </ul>

All inspection procedures are visual unless additional inspection procedures are indicated or where applied force is necessary to verify tightness and/or component security.

### 3-Wheeled Vehicle Inspection Manual • Section 2 – Suspension

Item and Method of Inspection	Reject If
<b>2. Coil Spring Suspension</b>	
a) springs	a) missing, broken, welded, improperly seated in the spring saddle, sagged so as to lower vehicle more than 38 mm (1 1/2 in.) from manufacturer's specified height. Does not operate as intended
b) control arms	b) bent, loose, cracked, welded, bushings loose
c) torque arms (rear)	c) missing, loose, bent, cracked, welded, bushings loose
d) axial strut (applicable units)	d) missing, loose, bent, cracked, welded, bushings loose
e) radius arm (applicable units)	e) missing, loose, bent, cracked, welded, bushings loose
f) stabilizer bar (front and rear)	f) missing, bent, loose, disconnected, broken, welded, damaged, bushing brackets and bolts missing or loose
g) bump pad	g) missing, loose, split, badly deteriorated
h) spacer	h) spacer used between coils
i) road clearance (applies to motor vehicles with a GVWR of less than 4,500 kg)	i) track bar or any other suspension component extends down below the lowest part of the wheel rim
<b>NOTE: Spacers are allowed under/on top of coil spring.</b>	<b><u>OUT OF SERVICE</u></b> <b>i) Any spring is broken.</b> <b>ii) Any attaching and/or tracking component is missing, loose, cracked and/or broken.</b>
<b>3. Torsion Bar Suspension</b>	
a) torsion bar	a) missing, broken, cracked, welded, sagged so as to lower the vehicle more than 38 mm (1 1/2 in.) from manufacturer's specified height
b) mounting brackets	b) missing, broken, loose, cracked, welded
c) control arms	c) bent, loose, cracked, broken, welded, bushings loose
d) torque arms (applicable units) (rear)	d) missing, bent, loose, broken, cracked, welded, bushings loose
e) stabilizer bar(s) (applicable units)	e) missing, bent, loose, disconnected, broken, welded, damaged, bushing brackets and bolts missing or loose

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Item and Method of Inspection	Reject If
f) axial strut (applicable units)	f) missing, loose, broken, bent, cracked, welded, bushings loose
g) bump pad	g) missing, loose, split, badly deteriorated
h) road clearance (applies to vehicles with a GVWR of less than 4,500 kg)	h) track bar or any other suspension component extends down below the lowest part of the wheel rim
	<b><u>OUT OF SERVICE</u></b> <b>i) Any torsion bar is cracked and/or broken.</b> <b>ii) Any attaching and/or tracking component is missing, loose, cracked and/or broken.</b>
<b>4. MacPherson Strut</b>	
a) coil spring	a) missing, welded, improperly seated in spring saddle, sagged so as to lower the vehicle more than 38 mm (1 1/2 in.) from manufacturer's specified height. Does not operate as intended.
b) control arm	b) bent, loose, cracked, welded, bushings loose
c) mounting tower	c) corrosion holes present, any area corroded to such a depth so as to show evidence of metal fatigue, section repairs other than metal and sections welded in other than by an approved method – attaching bolts are missing, loose, inferior type, bent and/or misaligned
d) stabilizer bar	d) missing, bent, disconnected, broken, loose, welded, damaged, bushings loose – bushings brackets and bolts missing or loose
e) upper strut bearing	e) loose, binding, worn, incorrectly positioned
f) bump pad	f) missing, loose, split, badly deteriorated
g) road clearance (applies to motor vehicles with a GVWR of less than 4,500 kg)	g) track bar or any other suspension component extends down below the lowest part of the wheel rim
	<b><u>OUT OF SERVICE</u></b> <b>i) Any spring is broken.</b> <b>ii) Any attaching or tracking component is missing, loose, cracked and/or broken.</b>

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Item and Method of Inspection	Reject If
<b>5. Multilink Independent Rear Suspension</b>	
a) springs	a) missing, welded, improperly seated in saddle, so sagged as to lower the vehicle more than 38 mm (1 1/2 in.) from manufacturer's specified height
b) ball joints	b) exceeds OEM tolerances, loose in knuckle or control arm
c) suspension members	c) missing, bent, disconnected, broken, loose, welded, damaged
d) stabilizer bar	d) missing, bent, broken, loose, disconnected, welded, damaged, bushing brackets and bolts missing or loose
e) bushings	e) loose, missing, deteriorated
	<b><u>OUT OF SERVICE</u></b>
	<b>i) Any spring is broken.</b>
	<b>ii) Any attaching or tracking component is missing, loose, cracked, and/or broken.</b>
<b>6. Independent Rear Suspension</b>	
Manually inspect:	
a) coil spring	a) missing, welded, improperly seated in spring saddle, sagged so as to lower the vehicle more than 38 mm (1 1/2 in.) from manufacturer's specified height
b) ball joints	b) exceeds OEM tolerances, loose in knuckle or control arm
c) control arm	c) bent, loose, cracked, welded, bushings loose
d) knuckles	d) bent, welded, distorted
e) pivot bolts	e) missing, bent, welded, nuts missing or loose, threads stripped
f) anchor bolts	f) missing, bent, welded, nuts missing or loose, threads stripped

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Item and Method of Inspection	Reject If
g) stabilizer bar/link	g) missing, bent, disconnected, loose, welded, damaged, bushings loose, bushing brackets and bolts missing or loose
h) rear axle carrier (if equipped)	h) any component is missing, bent, disconnected, loose, welded or damaged
	<b><u>OUT OF SERVICE</u></b> i) Any spring is broken. ii) Any attaching or tracking component is missing, loose, cracked and/or broken.
<b>7. Computer Controlled Air Suspension System</b>	
<p><b>WARNING: Control switch must be in “OFF” position if vehicle is being hoisted or raised.</b></p> <p>Manually inspect:</p> <p>a) air springs</p> <p>b) lines</p> <p>c) spring mounting</p> <p>d) compressor</p> <p>e) compressor relay (if OEM)</p> <p>f) control module</p> <p>g) height sensors</p> <p>h) switch</p> <p>i) warning lamp</p>	<p>a) missing, cut, loose, leaking, patched, spring rubber cracked to first braid, vehicle leans to one side</p> <p>b) missing, crushed, cracked, disabled, leaking, restricted, insecurely mounted</p> <p>c) brackets or bolts loose or missing, bolt threads stripped, spring loose in mount</p> <p>d) missing, insecurely mounted, inoperative</p> <p>e) missing, inoperative</p> <p>f) missing, inoperative</p> <p>g) missing, loose, inoperative, improperly located</p> <p>h) missing, inoperative, disconnected</p> <p>i) inoperable, inoperative during test cycle</p>
	<b><u>OUT OF SERVICE</u></b> i) Any air spring is deflated.

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### 3-Wheeled Vehicle Inspection Manual • Section 2 – Suspension

Item and Method of Inspection	Reject If
<b>8. Shock Absorbers/Strut Shock Absorber</b>	
By bouncing the vehicle manually and then raising vehicle, inspect:	
a) condition	a) vehicle oscillates more than 2 cycles, shaft bent or welded, shaft surface corroded, shaft attaching threads stripped – does not operate to OEM specifications as intended
b) mountings	b) missing, cracked, broken, loose
c) bushings	c) loose, missing, deteriorated
d) attachments	d) cracked, loose, broken, missing, bolts missing or stripped
e) oil leakage	e) leaking (seepage is not cause for rejection)
f) positioning	f) shock absorber not located at each wheel position
	<b><u>OUT OF SERVICE</u></b>
	<b>i) Any shock absorber is not attached on coil spring suspension.</b>
<b>9. 3-Wheeled Vehicle Stability</b>	
a) stability	a) does not meet CMVSS standard 505
<b>10. Body Vehicle Components</b>	
Refer to Light Vehicle – Section 8 – Body	

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