

# HOW TO TEST BALL JOINTS FOR MOVEMENT

## Dodge Ram Trucks and Jeep SUVs

### The Issue

Certain Dodge Ram trucks and Jeep SUVs with solid four-wheel-drive front axles use a telescoping upper ball joint and a compression-loaded lower ball joint. The stud telescopes a small amount to compensate for manufacturing variances in the tolerance of the axle and knuckle ears.

This telescoping effect may result in the stud appearing:

- As if it is too long or too short
- As if it has excessive play

The stud is engineered to slide in and out of the housing. Technicians should be aware that these ball joints can exhibit a fair amount of radial play—**OE spec for replacement on this application is 0.06.”** This **DOES NOT** indicate excessive play or any other issue with the part; the part is within specifications and will perform reliably on the vehicle. This feature is necessary for correct part installation and function.

### The Solution

Performing a pre-alignment inspection is key to avoid condemning a good part as defective, including units that have just been replaced. Affected models and MOOG® part numbers include:

Years	Make/Model	MOOG Part Number
<b>Telescoping Upper Ball Joint</b>		
2000-2002	Dodge Ram 2500/3500 4WD	<a href="#">K7394</a>
2000-2002	Dodge Ram 3500 RWD	
2006-2008	Dodge Ram 1500 4WD	<a href="#">K7460</a>
2003-2018	Dodge Ram 2500/3500 4WD	
2010	Dodge Ram 2500 RWD	<a href="#">K3134T</a>
1994-2001	Dodge Ram 1500 4WD	
1994-1999	Dodge Ram 2500 4WD	
1984-2001	Jeep Cherokee	
1986-1992	Jeep Comanche	
1993-2004	Jeep Grand Cherokee	
1993	Jeep Grand Wagoneer	
1984-1990	Jeep Wagoneer	
1997-2006	Jeep Wrangler TJ	
2007-2018	Jeep Wrangler JK	

Years	Make/Model	MOOG Part Number
<b>Compression-Loaded Front Lower Ball Joint</b>		
2006-2008	Dodge Ram 1500 4WD	<a href="#">K7467</a>
2007-2010	Dodge Ram 2500	
2003-2006, 2011-2013	Dodge Ram 2500 4WD	<a href="#">K7411</a>
2003-2013	Dodge Ram 3500	
2002-2012	Dodge Ram 1500	<a href="#">K3161T</a>
1990-2001	Jeep Cherokee	
1990-1992	Jeep Comanche	
1993-1998	Jeep Grand Cherokee	
1993	Jeep Grand Wagoneer	
1990-2006	Jeep Wrangler	
1990	Jeep Wagoneer	
1999-2004	Jeep Grand Cherokee	
2007-2018	Jeep Wrangler JK	
1984-1989	Jeep Cherokee	
1986-1989	Jeep Comanche	
1984-1989	Jeep Wrangler	<a href="#">K3137T</a>
1994-1999	Dodge Ram 1500/2500 4WD	
1974-1983	Jeep Cherokee	<a href="#">K8195T</a>
1984-1991	Jeep Grand Wagoneer	

## Telescoping Upper Ball Joint Inspection Procedure

Follow these steps to determine if the upper ball joint is within manufacturer specifications for total ball joint movement.

**Step 1** – Safely raise and support the vehicle.

**Step 2** – Attach dial indicator.

- Rest dial on either the front or the back of the steering knuckle.
- Put dial as close to the upper ball joint as possible.



**Step 3** – Set dial indicator to zero.

**Step 4** – Get first reading.

- Push in the top of the tire and pull out on the bottom of the tire. Write down the reading on the dial indicator.



**Step 5** – Reset dial indicator by turning it back to zero.

**Step 6** – Get second reading.

- Pull out on the top of the tire and push in on the bottom of the tire. Write down the reading on the dial indicator.



**Step 7** – Add and analyze the readings.

- Get the total upper ball joint movement by adding the two readings together. If the total is above 1.52mm (0.060"), then replace the upper ball joint.

## Compression-Loaded Front Lower Ball Joint Inspection Procedure

Performing a similar examination of the lower ball joint can also be helpful. Follow these steps to determine if the lower ball joint is within manufacturer specifications for total ball joint movement.

**Step 1** – Safely raise and support the vehicle.

**Step 2** – Attach the dial indicator.

- Place the dial indicator on the flat part of the steering knuckle by the lower ball stud.



**Step 3** – Set the dial indicator to zero.

**Step 4** – Get first reading.

- Apply pressure using a pry bar between the knuckle and the axle tube yoke. Write down the reading on the dial indicator.
- *Helpful hint: Be careful not to damage the upper ball joint grease seal.*



**Step 5** – Reset dial indicator by turning it back to zero.

**Step 6** – Get second reading.

- Use a long pry bar (similar size to image at right), pry under the front tire near the ball joint. Write down the reading on the dial indicator.
- *Helpful hint: Only use enough force to overcome the weight of the rotor and knuckle. Excessive force could cause damage or false readings.*



**Step 7** – Add and analyze the readings.

- Get the total lower ball joint movement by adding the two readings together. If the total is above 2.29mm (0.090"), then replace the lower ball joint.

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