The ball stud with the best in class material

About ball studs

Ball studs are used in just about all MOOG product families such as axial rods, tie rod ends, track control arms, stabiliser link bars and ball joints. They all have the same goal which is establishing a connection that allows rotational movement. Depending on its location the ball stud will be subject to severe axial and radial forces. In order to resist these forces, without the stud being pulled from its housing, an adequate pull out strength is required. The materials used will have a direct impact on the pull out value.

Ball stud / housing

- Stronger
- Safer
- Increased life time

High performance and durability through great design

- Ultimate tensile strength on ball studs is equal or higher than OE
- Ultimate tensile strength on housings is equal or higher than OE
- Increased safety factor

Possible symptoms of wear or failure

- Steering wheels pulls to the left or right
- Front end shimmy
- Steering wheel play / loose feeling
- Noise
- Uneven or premature tyre wear
- Ball pin detached from housing

Check the results on the back >>>

How good are the MOOG ball stud materials?

Based on the chemical composition MOOG meets or exceeds the manufacturer's material strengths. Some examples are listed in the comparative table below.

	RE-BJ- 4264 Ball Joint				
	OEM	MOOG	Competitor 1	Competitor 2	Competitor 3
Stud strength	100%	100%	100%	100%	100%
Housing strength	100%	**114%**	100%	100%	**111%**

	RE-BJ-0811 Ball Joint				
	OEM	MOOG	Competitor 1	Competitor 2	Competitor 3
Stud strength	100%	100%	100%	100%	100%
Housing strength	100%	**114%**	100%	100%	100%

	FD-WP-4149 Control Arm			
	OEM	MOOG	Competitor 1	Competitor 2
Stud strength	100%	100%	**88%**	**88%**
Housing strength	100%	**103%**	**83%**	**103%**

	RE-AX-2091 Inner Tie Rod End				
	OEM	MOOG	Competitor 1	Competitor 2	Competitor 3
Stud strength	100%	**114%**	100%	100%	**114%**
Housing strength	100%	**172%**	100%	100%	**60%**

	ME-AX-0979 Inner Tie Rod End				
	OEM	MOOG	Competitor 1	Competitor 2	Competitor 3
Stud strength	100%	100%	100%	100%	**109%**
Housing strength	100%	**108%**	**98%**	**98%**	**98%**

Better than OEM Equivalent to OEM Worse than OEM

The tests were performed in the Saint Louis Federal-Mogul Motorparts facilities.

Test results: summary

Several mechanical characteristics are critical for the safety of the car's driver and passengers.

- **Ball stud strength.** This is critical in the design as it protects against breakage which potentially could be catastrophic.
- **Durability.** The use of stronger material also leads to a longer life time.
- **Housing strength.** High levels of housing strength ensure long fatigue life and prevents the ball stud from being pulled out of its housing.