



MOOG®  
STUD DESIGN

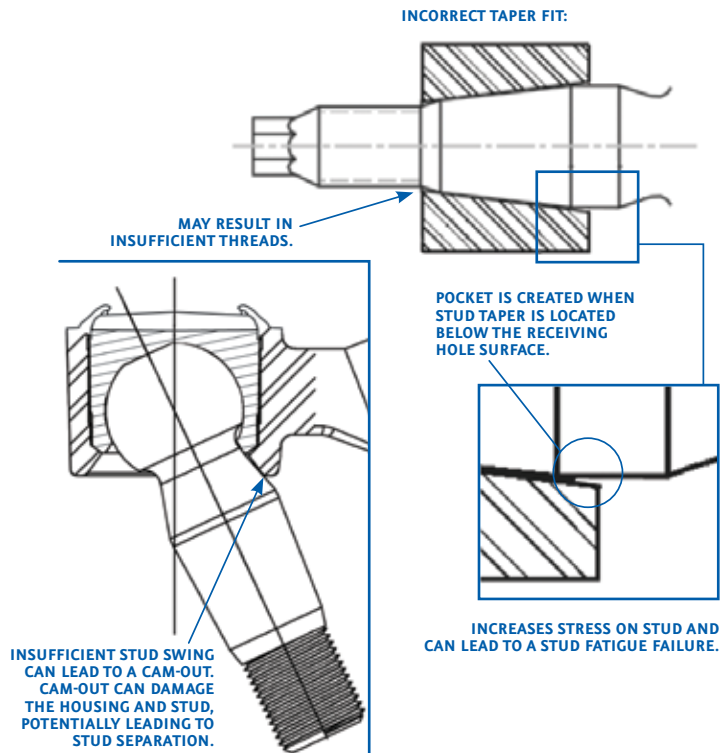
**THE PROBLEM SOLVER®**

**PROBLEM:**

**Universal Design Approach**

Correct fit of the stud's taper to the mating hole is necessary to ensure the fatigue life of the stud. A stud undersized at the large diameter of the taper will increase the stress on the stud (due to an increased lever length). This can lead to a stud fatigue failure. Also, the gap formed with an undersized taper can accumulate moisture and debris, promoting corrosion of the stud and control arm (see below). This corrosion and debris wears the sealing surface of the dust boot, eventually exposing the socket to the elements and shortening the service life.

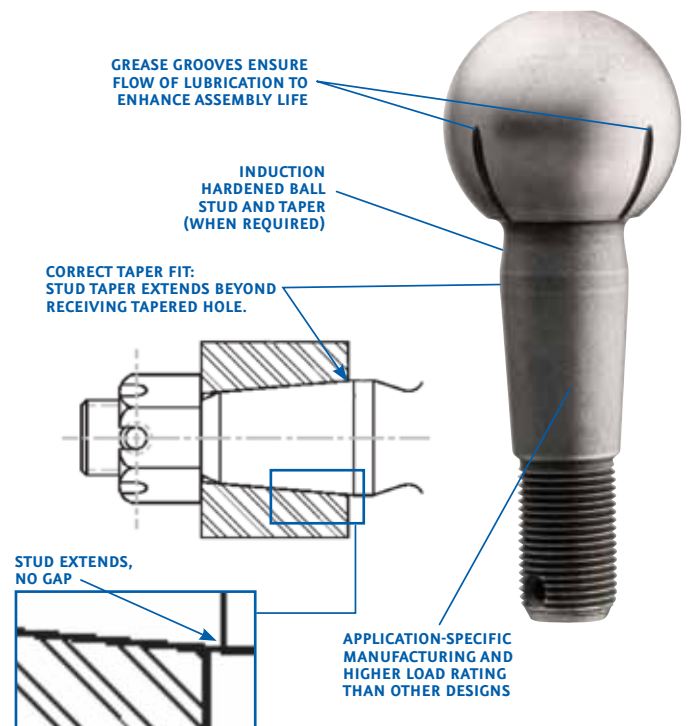
In addition, insufficient stud swing will cause the stud to impact the housing. This will deform the stud or housing, causing alignment issues. In severe cases it can lead to loss of steering due to stud separation caused by stud pullout or stud fatigue. Some suppliers undercut the stud to increase stud swing, removing too much material from the stud, thus weakening it.



**SOLUTION:**

**Application-Specific Design**

- MOOG® stud tapers are designed to ensure that the large diameter of the taper always exceeds the large diameter of the mating hole.
- The MOOG taper is designed to force contact at the large end of the taper to ensure that the stud does not rock in the tapered hole during service.
- MOOG exceeds OEM stud swing by as much as 5 degrees in some applications, with no compromise to pullout strength or stud fatigue life.
- MOOG's additional stud swing helps compensate for slightly worn or bent chassis components in higher mileage vehicles.
- Grease grooves help to ensure lubrication flow and enhance component life.



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