

# HOW TO REPLACE LOWER BALL JOINT WITH INSERT OVER STUD

## MOOG® Ball Joints

### The Problem

When replacing the lower ball joint on some late model vehicles, you may find that an insert surrounds the ball joint stud where it passes through the control arm or knuckle. Often, this insert stays on the ball joint stud as it is removed. This insert must be carefully removed and reused during installation of the replacement ball joint.

### Inside the Design

The ball joint stud passes through a sleeve or spacer (insert) which is usually made of steel (Photo 1). When the ball joint is removed from the control arm or knuckle, the insert through which it passes is supposed to remain in place. Due to rust and/or corrosion, the insert may be seized to the ball joint stud (Photo 2), in which case it must be carefully removed and reused.



Photo 1



Photo 2

### The Solution

When separating the ball joint from the knuckle or control arm, it is important to follow the removal procedures outlined in the OE service manual. In some instances, an OE service tool (Photo 3 – Ford tool example) may be specified, especially when a sleeve or spacer (insert) may be present. Following the OE service guidelines and using the proper OE service tool will help keep the insert in place in the control arm or knuckle as the ball joint is removed (Photo 4).

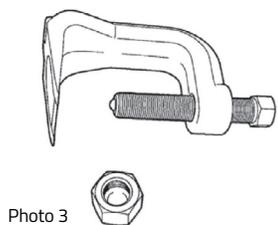


Photo 3

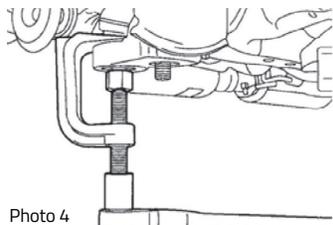


Photo 4

It is good practice to spray penetrating oil around the openings and let it soak, especially on rusty or corroded applications.

In some cases, however, the insert will be seized to the ball joint stud (due to excessive corrosion), and will come out along with the ball joint, even if the OE removal procedure and/or tool is used (Photo 5).



Photo 5

If this occurs, the insert **MUST** be removed from the old ball joint (without damaging it) and reused. A jaw-type puller such as a tie rod separator works well to apply even pulling pressure. In extreme cases, a bearing separator and hop press can be used. The bearing separator will clamp underneath the insert as the shop press applies pressure on the stud to separate the taper.

### Installation Procedure

If the insert needs to be placed back into the knuckle or control arm, follow this procedure: Clean all rust, scale and corrosion from the sleeve/spacer and ball joint mounting area. Position the metal sleeve or spacer back into the control arm or knuckle; it will seat properly when the ball joint fastener is torqued. If desired, apply a light coating of locking compound to the outside of the insert before reinstalling it on the vehicle. Follow all manufacturer instructions for reassembly, and torque all fasteners to manufacturer specifications.

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