

# DID YOU KNOW ?

## WHY HARDEN BALL PINS ARE USED WITH CARBON FIBRE BEARINGS?

### ADVICE FOR THE PROFESSIONAL DYK21-06

#### OVERVIEW

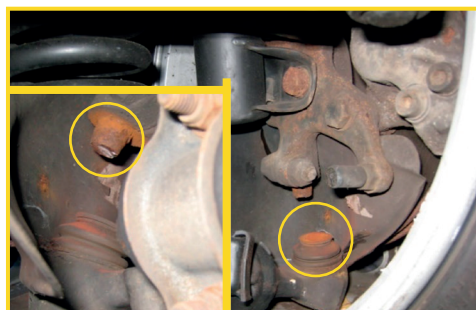
Vehicle manufacturers sometimes harden ball pins for applications where the ball pin neck can be subjected to very high forces e.g. high speed braking or where the vehicle can be heavily loaded. Hardening **increases fatigue resistance** and increases durability.

#### INDUCTION HARDENING

Induction hardening is one of the most efficient ways of hardening steels. A process of substantial heating (by passing a high current and voltage through the metal) followed by immediate cooling, makes the steel **significantly harder**. As MOOG matches or exceeds OE specifications, such hardening is applied wherever vehicle manufacturers deploy it. As a further step, MOOG's **Hybrid Core** innovation applies induction hardening to all ball pins used in conjunction with its patented **carbon fibre bearing**.



The carbon fibre technology of MOOG bearings dramatically increases the performance and durability of ball joints which now last much longer. It follows that the weakest area that is clearly with the bearing on competitor parts is now transferred to ball pin neck for MOOG ball joints. To accommodate this, **the ball pin has also been strengthened**.



A fatigue failure of a ball pin neck can cause a driver to lose control of the vehicle. The combination of an induction hardened ball pin neck and MOOG's patented carbon fibre bearing not only enhances both the performance and the service life of the ball joint but also improves driver safety.

This commitment to product quality and innovation is what separates MOOG from the competition.

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