

# **Ball Studs**

Material: Alloy Steel, 0.4 % C, 1% Cr, hardened and tempered for core strength 880-1030 N/mm<sup>2</sup> (this level of strength needs to be maintained after treatment).

Ball studs are the pivot points in automobile steering mechanisms, and suffer from corrosion when the sealing mechanism fails, which allows the ingress of water. The ball has to maintain a high surface finish to allow it to operate within a lubricated plastic cap, to ensure smooth operation of the steering mechanism. This finish is 0.5-1.5 microns  $R_z$ , which is applied to incoming stock.

## **Ball Studs (cont)**

A controlled Nitrotec process allows us to maintain the strength and return the ball surface finish to its required standard with an innovative polishing technique, without removing any of the surface oxide.

Improvements in the fatigue strength also benefit the performance of the pin.

