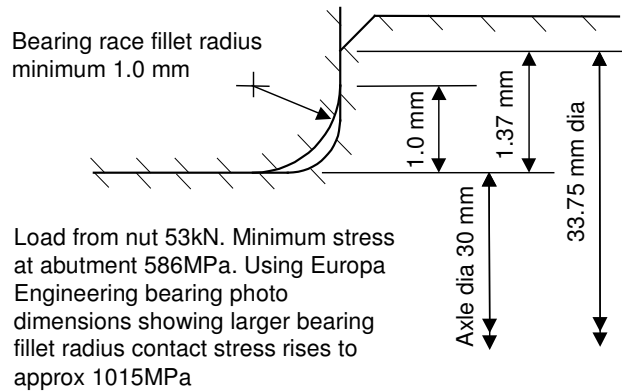


7) TC/TCS analysis



TC inner bearing abutment with axle



Frustratingly, the failure mode of the TC/TCS models is very similar to that of the S1/S2. The opportunity of using a purpose designed axle that has 30mm bearing location diameters at both outer and inner positions should have resulted in an increase in axle to inner bearing inner race abutment area. But no, the designer seems to have plucked defeat from the jaws of victory by greatly reducing the inside diameter of the inner seal, thus also reducing the diameter of the bearing abutment. This reduces the inner race contact area to below that which is required to prevent yield of the axle material.

The contact stresses are actually much higher than for the S1/S2 models, how Lotus could allow this to happen is beyond me quite honestly.

7.1) TC data



Shaft abutment OD 33.75mm [source Europa Engineering photograph]

Radius of bearing fillet 1.0 minimum, DIN standard for 6006-2RS

6006-2RS bearing abutment ID 32.75mm [source Europa Engineering photograph]

Contact area of bearing with shaft 52.22mm²
Contact stress from 150 ft-lbs [53kN] 1015MPa

7.2) TCS data



Shaft abutment OD 33.75mm [source Europa Engineering photograph]

Radius of bearing fillet 1.0 minimum, source SKF web site

6006-2RS bearing abutment ID 32.5mm [source Europa Engineering photograph]

Contact area of bearing with shaft 65.04mm²

Contact stress from 150 ft-lbs [53kN] 815Mpa