



FAG

added
competence



Sealed FAG Spindle Bearings

with optimised greasing

SCHAEFFLER GROUP
INDUSTRIAL

Sealed FAG spindle bearings with optimised greasing



Figure 1: Sealed FAG spindle bearing

Advantages of sealed FAG spindle bearings

Spindle bearings are high precision functional units that show a sensitive reaction to harmful environmental influences such as ingress of contamination and air flows. Even the correct greasing is a criterion that can have direct influence on the machine operating life since the grease operating life in practical terms be equated with the bearing operating life. At an early stage,

the Schaeffler Group set the standards for sealed variants of HIGH SPEED spindle bearings with small balls (HSS, HCS and XCS), Figure 4. Almost all spindle bearings are now available with non-contact gap seals on both sides, since the particular advantages of this seal type have taken hold in the market.

Sealed FAG spindle bearings are filled with the high performance grease FAG ARCANOL L075 and combine many advantages:

- robust, compact unit
- ready-to-fit
- lubricated “for life”, maintenance-free
- supplied already filled with the correct quantity of the optimum grease
- protected against contamination and air flows.

In addition, the wide range of applications of sealed bearings reflects steady

transition from oil to grease lubrication. Sealed FAG spindle bearings of the HIGH SPEED version have the symbol S (Sealed) in the part designation. The bearings with large balls retain the designation 2RSD (Rubber Sealed Distance) in the designation.

Optimised greasing

A grease distribution process at initial operation of a grease lubricated spindle ensures that grease is optimally distributed in the bearing. This grease distribution process must be applied in all spindle bearings with grease lubrication; its duration can be significantly reduced by targeted prior distribution of the grease. For bearings supplied greased, Schaeffler Group Industrial has developed new automated greasing methods that make it possible to position the grease during filling specifically at the points where it should be located after grease distribution, Figure 2.

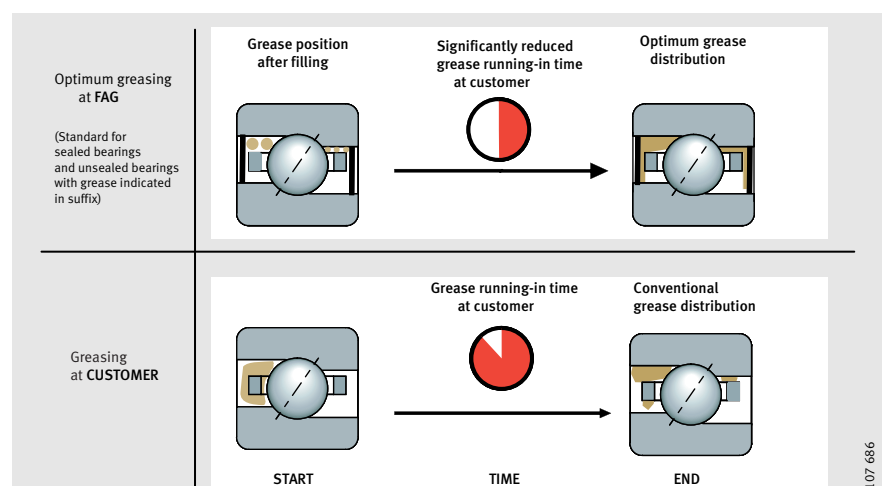


Figure 2: Grease running-in time

This has many advantages:

- higher reliability in the grease distribution process
- more rapid decrease in frictional torque
- more rapid decrease in temperature
- time savings in the grease distribution process.

Shortening the grease distribution process has the effect, through reduction in mounting time, of reducing costs. Optimum positioning of the grease increases the reliability of the grease distribution process especially where, due to the comparatively low maximum speeds of the subassembly, only small centrifugal forces occur and the grease would require more time to reach the outer ring. The reliability of spindle operation is dependent to a significant extent on optimum grease distribution in the bearing. In this way, factory optimisation of greasing improves the viability of the entire machine tool.



Figure 3: AC 41 130

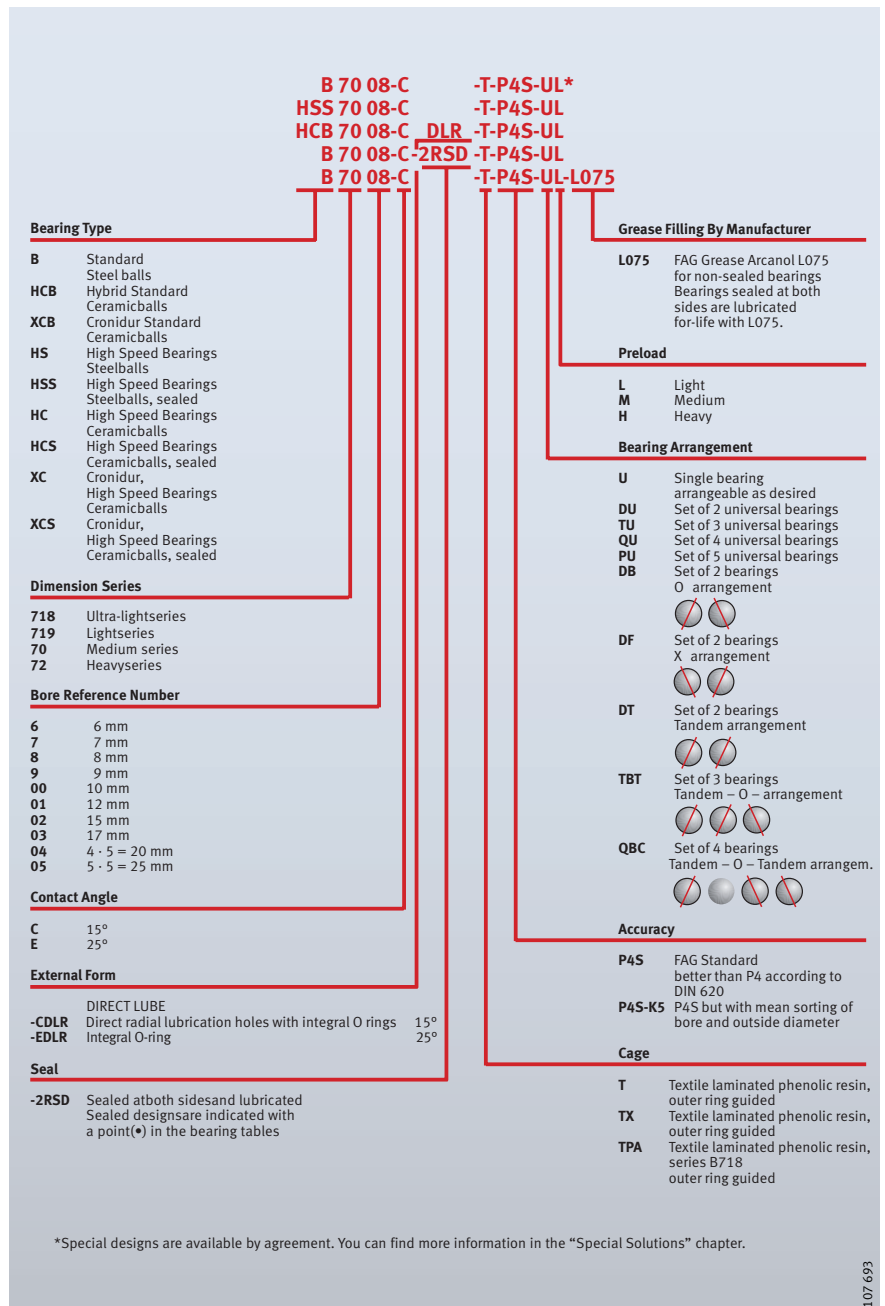


Figure 4: Bearing designation

Catalogue Super Precision Bearings

An overview of sealed FAG high precision bearings with tolerance data, requirements for the adjacent parts and comprehensive recommendations on

the use of spindle bearings can be found in the catalogue "Super Precision Bearings" (FAG AC 41 130), Figure 3.



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