

# Super Precision Bearings

Spindle bearings

Super precision cylindrical roller bearings

Axial angular contact ball bearings

All data have been prepared with a great deal of care and checked for their accuracy. However, no liability can be assumed for any incorrect or incomplete data. We reserve the right to make technical modifications.

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Preface

## Market and technology leadership

With its forward-looking bearing solutions for main spindles, feed spindles, rotary tables and linear axes in machine tools, Schaeffler with its brands INA and FAG has been at the forefront of the world market for decades.

## Precision and operational security

FAG super precision bearings for main spindles stand for very high precision and absolute operational security. Innovative FAG spindle bearing solutions are continually raising standards in relation to speeds, accuracy and rating life. For the main spindle system and the overall machine tool system to be successful, however, bearing components alone are no longer sufficient as a guarantee. Significant increases in performance and the creation of unique selling propositions for the customer are now achieved when the bearing manufacturer offers advice and carries out development work on the basis of wide-ranging system knowledge as well as being able to provide support through a range of service functions. It is through close partnership with the manufacturers of spindles and machine tools and through shared knowledge, founded on experience, of the requirements of end users and their customers that the potential exists for achieving a leading role in the market.



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Preface Solutions for the main spindle The starting point and objective of all activities in the company is proximity to and benefit for the customer. Precise knowledge of specific application requirements and processes is the decisive factor in selection of the technically optimum product that also incurs the lowest system costs. This may be sourced from the fully developed standard range of spindle bearings, which is unsurpassed in its scope worldwide. Equally, it may lie in an individual, application-specific solution that is provided rapidly and reliably by the Schaeffler Group. FAG super precision bearings set standards in machine tools, in the textile industry, in woodworking machinery and wherever extreme demands are placed on reliability, running accuracy and high speeds, individually or in combination. Due to the comprehensive product range, it is possible to achieve optimum designs for all bearing positions and applications. Technical and economic leadership Building on principles developed in the research facilities of the Schaeffler Group and close contact with customers, further development is carried out continually on existing products and the product range is steadily expanded. FAG super precision bearings are always a combination of the technical solution to a bearing application with the economic solution. This is clear from the complete consideration of the bearing arrangement system in calculation, simulation and design as well as in distribution, mounting and service. Schaeffler Technologies also offers proven calculation and simulation tools, for in-house use or as a service, as well as comprehensive training and advice events. FAG accuracy P4S The accuracy of bearings initially appears to be sufficiently well described in the DIN, ISO and ABEC accuracy classes. For FAG super precision bearings, however, this is not enough. Where it is necessary to achieve tolerances to P4 or better, the performance characteristics involved are not described in the reference works. FAG super precision angular contact ball bearings fulfil the standard P4S. Super precision cylindrical roller bearings and axial angular contact ball bearings (2344) are manufactured in accordance with the accuracy standards SP or UP that are matched to machine tool requirements. About this catalogue Catalogue SP1 gives an overview of the FAG product range of super precision bearing arrangements as well as the most important rules covering bearing selection, bearing arrangement design and mounting. One function of the catalogue is to present the product range of FAG super precision bearings for main spindles. In addition, it is also intended as a technical compendium for the selection and design of bearing arrangements using super precision bearings. This catalogue brings together the most important technical principles for the designer. It thus gives a transparent representation of the FAG portfolio covering all components, competences and services. [www.noksbearings.com](http://www.noksbearings.com)