SPINDEL- UND LAGERUNGSTECHNIK
FRAUREUTH GMBH

High-precision bearings

Notice regarding use of this catalogue:
The catalogue does not claim to be complete.

SLF specializes in the continuous development and production of customized roller bearings. Consequently, our product range is continually evolving. In this endeavor, our paramount goal is to provide optimal customer benefits. Don’t hesitate to contact us should your needs go beyond the scope of the materials referenced in this catalog.

The current product data can be found in the online catalog on our website:
www.slf-fraureuth.de/en/catalogue

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Table of contents

Preface: SLF in profile

SLF group

From its foundation in 1993, the spindle and bearing producer Spindel- und Lagerungstechnik Fraureuth GmbH has developed into a solid specialist enterprise with 350 employees. With our quality products MADE IN GERMANY, SLF will continue to grow and develop its international presence. We support our customers worldwide through subsidiaries in the USA and China.

Our main location in Fraureuth in the west of Saxony, Germany has over 80 years of tradition and history in roller bearing production. SLF offers extraordinary standards for international customers who rely on individualized innovative products and excellent service.

AT THE CENTER OF MOVEMENT

Production

We produce our sophisticated products at the traditional location in Fraureuth. Quality begins with the purchase of the raw materials and semi-finished products that are the basis for our roller bearings and spindle units highest precision. Long-term suppliers fulfill our stringent quality requirements. Perfectly aligned manufacturing processes and state-of-the-art technologies make possible a wide variety of products and flexibility in the implementation of individual customer requests.

In a total area of 60,000 m², we offer the value-added chain of roller bearing and spindle manufacturing. We can oversee every step of the manufacturing operation, from machining of the parts & components before hardening to heat treatment, followed by machining of parts & components after heat treatment and final assembly.

Our comprehensive machinery is constantly being enhanced and modernized to fulfill the ever-increasing requirements of our products. The key to success and guarantor of consistently high quality is our team of qualified employees.

SLF means perfection down to the last detail – MADE IN GERMANY.

Engineering service

SLF is a top-ranking engineering partner and supplier of the highest performance bearing solutions for customers with sophisticated requirements from machine tool main spindles and similar precision applications. With our comprehensive assortment of high precision bearings in a variety of designs, we offer a wide range of solutions that enable our customers' success.

At SLF, we will offer solutions for all your roller bearing applications with the most technically sophisticated, economical, and sustainable solutions offering high quality and precision.

From the design of individualized new solutions via optimization variants for existing bearing versions up to replacement solutions, our experienced employees are willing and able to help you.

Offering a comprehensive bearing concept, SLF helps you achieve the best performance possible for your applications in terms of precision, longetivity, and cost efficiency.

Quality standards

SLF products are characterized by high quality and maximum precision. SLF stands for perfection down to the last detail.

Our strength lies in realizing individual solutions tailored to the customer. To achieve this, we ensure stable product quality, starting with consultation and support of our customers and continuing with flexibility in meeting the customer's requirements, up to continuous quality assurance.

Our integrated quality assurance system guarantees the high-quality standards required for machine tools at every step of production. This comprehensive quality management is confirmed by the Spindel- und Lagerungstechnik Fraureuth GmbH audits performed according to DIN EN ISO 9001:2015.

Product range roller bearings

From standard deep groove ball bearings to highly precise spindle bearing solutions up to complex bearing units – each "µ" matters to us. We design and produce roller bearings in all standard designs, from 32 mm to 1,600 mm outer diameter.

We produce more than 2 million roller bearings annually. Our special strength is the flexibility of our production, which also enables the one-of-a-kind production of customized products. When the application options of a standard bearing are limited, we implement individualized solutions optimally customized to each application our customers require. Our products are used wherever the highest requirements in terms of speed, precision, and longevity must be met. Our roller bearings perform outstandingly not only in the production of machine tools, but also in other high-precision applications, such as the textile industry, and in robotics. We closely cooperate with our customers from a very wide variety of industries and work side by side with them to engineer individualized solutions.

Product range spindle units

The accuracy of machine tools is based on high-precision spindle units. SLF produces spindles as one-of-a-kind pieces and in small batches up to 1,800 mm long, from 32 mm to 525 mm diameter, with 1 µm running accuracy. Our strength is to engineer individual customized spindle solutions. In this process, our highly qualified team of specialists supports you in dimensioning and optimizing your spindle applications.

Moreover, our range of services also includes spindle unit repair and overhaul. We maintain and repair both SLF spindles and products made by other manufacturers. Our customers benefit from repairs twice, since spindle repair not only saves money, but also reduces the delivery time by up to 80 %. This is our contribution to making your machinery available as soon as possible.

1. Technical fundamentals

1.1 Designs

SLF provides a comprehensive roller bearing assortment for use in high-precision machine tool spindles and other cases of application that are individually or in combination especially demanding in terms of running accuracy, suitability for high speeds, and reliability.

The SLF sales program comprises designs whose dimensioning is tailored to a wide variety of use cases described in the chapters below. Detailed information about the respective designs and series are included in chapters 2, 3, and 4.

1.1.1 Spindle bearings

SLF spindle bearings are optimized, extremely precise single-row angular contact ball bearings, in the optionally designs with 15°, 17° or 25° contact angle. Depending on the requirements, they can be delivered in standard or hybrid design (rings made of roller bearing steel, combined with silicon nitride balls), as well as with / without seals.

In spindle bearings, in the inner and outer rings, the raceways are offset positions in the bearing axis direction and can carry high radial and – in one direction – axial loads simultaneously. The force generated on the bearing by the radial load whose impact is in the axial direction must be compensated by an outer opposite force. For this reason, as a rule, they are arranged next to a second bearing.

SLF standard spindle bearings are supplied in universal design. The inner and outer rings are matched to be arranged in any combination. As an alternative, you can also order matched bearing sets in pre-defined arrangements (X, O, tandem, etc.).

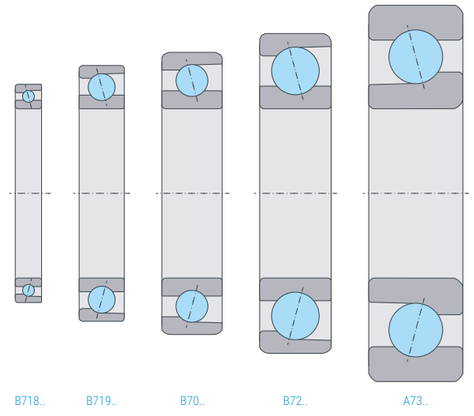


Figure: Spindle bearing design series

1.1.2 High-precision cylindrical roller bearings

We at SLF produce high-precision cylindrical roller bearings in single and double row designs; in the standard version, the bearings are produced with a tapered bore (1:12), alternatively, with a cylindrical bore, as well as in standard and hybrid versions.

Their design with a ring without a shoulder (depending on design – inner or outer ring) makes it possible to compensate axial displacements resulting from thermal and mechanical loads inside the bearing. This makes them ideal for use as floating bearings. The axial loads arising from the application are absorbed in the configuration by additional bearings (such as double-acting angular contact thrust ball bearings or spindle bearings).

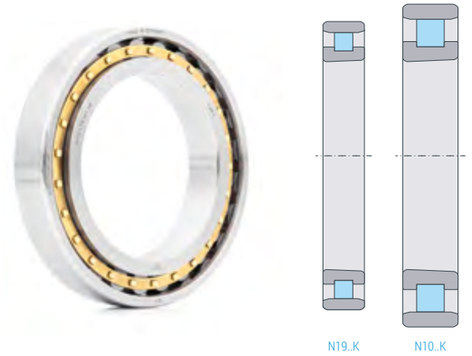


Figure: Single row high-precision cylindrical roller bearing design series

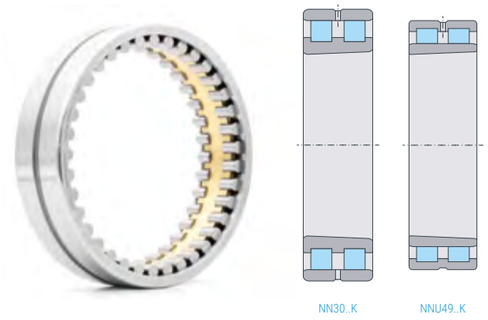


Figure: Double row high-precision cylindrical roller bearing design series

1.1.3 Double-acting angular contact thrust ball bearings

Double-acting angular contact thrust ball bearings are very stiff, axially preloaded high-precision bearings with limited tolerances. Their design and dimensioning with 60° contact angle enable them to absorb high axial loads in both directions. Due to their low radial load capability, in main spindles, they are mostly used in combination with high-speed cylindrical roller bearings.

Dimensioning of the outer diameter is adapted to the most often required diameters of the suitable high-precision cylindrical roller bearings. The outer diameter tolerance of the angular contact thrust ball bearing is modified to allow the outer ring to be realized, and the appearing radial load is only absorbed by the high-precision cylindrical roller bearing.

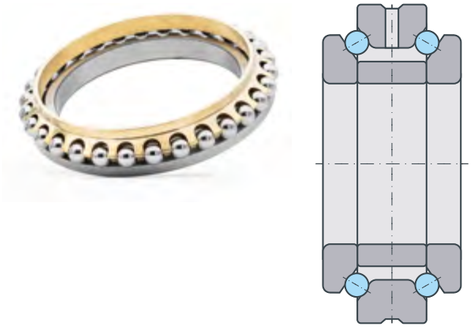


Figure: Double-acting angular contact thrust ball bearings design series

1.2 Tolerances and standards

1.2.1 Spindle bearings

Standard SLF-spindle bearings are produced in P4S according to DIN 620-2 (roller bearing tolerances – tolerances for radial bearings) and ISO 492 (radial bearings – dimensions and tolerances).

Products with other tolerance classes and special dimensions are available upon request.

Tolerance class P4

		inner ring (dimensions in mm)											
Nominal bearing bore diameter	greater than	10	18	30	50	80	120	180	250	315	400	500	630
	up to	18	30	50	80	120	180	250	315	400	500	630	800
		tolerance class P4 (tolerances in µm)											
Deviation	Δ_{dmp}	0	0	0	0	0	0	0	0	0	0	0	0
		-4	-5	-6	-7	-8	-10	-12	-15	-19	-23	-26	-32
Variation (roundness) V_{Dp}	Ø-Series 7, 8, 9	4	5	6	7	8	10	12	15	19	22	26	32
	0, 1, 2, 3, 4	3	4	5	5	6	8	9	12	14	17	20	24
Variation of mean diameter	V_{dmp}	2	2,5	3	3,5	4	5	6	8	10	12	13	16
Width deviation	Δ_{Bs}	0	0	0	0	0	0	0	0	0	0	0	0
		-80	-120	-120	-150	-200	-250	-300	-350	-400	-450	-500	-750
Width deviation, modified	Δ_{Bs}	0	0	0	0	0	0	0	0				
		-250	-250	-250	-250	-380	-380	-500					
Width variation	V_{Bs}	2,5	2,5	3	4	4	5	6	8	10	12	14	17
Concentricity (radial runout)	K_{ia}	2,5	3	4	4	5	6	8	8	10	12	13	16
Coaxiality (axial runout)	S_d	3	4	4	5	5	6	7	8	10	12	14	17
Coaxiality (axial runout)	S_{ia}	3	4	4	5	5	7	8	10	12	15	18	21

		outer ring (dimensions in mm)													
Nominal bearing outer diameter	greater than	18	30	50	80	120	150	180	250	315	400	500	630	800	1000	1250
	up to	30	50	80	120	150	180	250	315	400	500	630	800	1000	1250	1600
		tolerance class P4 (tolerances in µm)														
Deviation	Δ_{Dmp}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-5	-6	-7	-8	-9	-10	-11	-13	-15	-18	-22	-26	-33	-40	-50
Variation (roundness) V_{Dp}	Ø-Series 7, 8, 9	5	6	7	8	9	10	12	13	15	18	22	26	32	40	50
	0, 1, 2, 3, 4	4	5	5	6	7	8	9	10	11	14	17	20	26	30	38
Variation of mean diameter	V_{Dmp}	2,5	3	3,5	4	5	5	6	7	8	9	11	13	17	20	25
Width variation	V_{Cs}	2,5	2,5	3	4	5	5	7	7	8	9	11	13	15	18	21
Concentricity	K_{ea}	4	5	5	6	7	8	10	11	13	15	17	20	23	26	30
Inclination variation	S_D	4	4	4	5	5	5	7	8	10	11	13	15	17	20	23
Coaxiality (axial runout)	S_{ea}	5	5	5	6	7	8	10	10	13	15	18	22	26	30	35

Width tolerance Δ_{Cs} is identical with Δ_{Bs} for the associated inner ring.

Tolerance class K5

Nominal bearing bore diameter (mm)	greater than	10	18	30	50	80	120	180	250	315
	up to	18	30	50	80	120	180	250	315	400
		tolerance class P4S.K5 / P4.K5								
Deviation (µm) Δ_{dmp} and Δ_{Dmp}		-1	-1,5	-1,5	-2	-2	-3	-4	-5	-6
		-3	-3,5	-4	-5	-5,5	-7	-8	-11	-13

Permissible values of deviations for the mean bore diameter in a single plane Δ_{dmp} and mean outside diameter in a single plane Δ_{Dmp} are equal.

Tolerance class P4S

inner ring (dimensions in mm)

Nominal bearing bore diameter	greater than	0	10	18	30	50	80	120	150	180	250	315	400
	up to	10	18	30	50	80	120	150	180	250	315	400	500
tolerance class P4S (tolerances in µm)													
Deviation	Δ_{dmp}	0	0	0	0	0	0	0	0	0	0	0	0
		-4	-4	-5	-6	-7	-8	-10	-10	-12	-15	-19	-23
Variation (roundness) V_{Dp}	Ø-Series 8, 9	4	4	5	6	7	8	10	10	12	15	19	22
	0, 2, 3	3	3	4	5	5	6	8	8	9	12	14	17
Variation of mean diameter	V_{dmp}	2	2	2,5	3	3,5	4	5	5	6	8	10	12
Width deviation	Δ_{Bs}	0	0	0	0	0	0	0	0	0	0	0	0
		-40	-80	-120	-120	-150	-200	-250	-250	-300	-350	-400	-450
Width deviation, modified	Δ_{Bs}	0	0	0	0	0	0	0	0	0			
		-250	-250	-250	-250	-250	-380	-380	-380	-500			
Width variation	V_{Bs}	1,5	1,5	1,5	1,5	1,5	2,5	2,5	4	5	6	7	8
Concentricity	K_{ia}	1,5	1,5	2,5	2,5	2,5	2,5	2,5	5	5	6	7	8
Coaxiality (axial runout)	S_d	1,5	1,5	1,5	1,5	1,5	2,5	2,5	4	5	6	7	8
Coaxiality (axial runout)	S_{ia}	1,5	1,5	2,5	2,5	2,5	2,5	2,5	5	5	7	9	11

outer ring (dimensions in mm)

Nominal bearing outer diameter	greater than	10	18	30	50	80	120	150	180	250	315	400	500
	up to	18	30	50	80	120	150	180	250	315	400	500	630
tolerance class P4S (tolerances in µm)													
Deviation	Δ_{Dmp}	0	0	0	0	0	0	0	0	0	0	0	0
		-4	-5	-6	-7	-8	-9	-10	-11	-13	-15	-18	-22
Variation (roundness) V_{Dp}	Ø-Series 8, 9	4	5	6	7	8	9	10	11	13	15	18	22
	0, 2, 3	3	4	5	5	6	7	8	8	10	11	14	17
Variation of mean diameter	V_{Dmp}	2	2,5	3	3,5	4	5	5	6	7	8	9	11
Width deviation	V_{Cs}	1,5	1,5	1,5	1,5	2,5	2,5	2,5	4	5	7	7	8
Concentricity	K_{ea}	1,5	2,5	2,5	4	5	5	5	7	7	8	9	11
Inclination variation	S_D	1,5	1,5	1,5	1,5	2,5	2,5	2,5	4	5	7	8	9
Coaxiality (axial runout)	S_{ea}	1,5	2,5	2,5	4	5	5	5	7	7	8	10	12

Width tolerance Δ_{Cs} is identical with Δ_{Bs} for the associated inner ring.

Tolerance class K5

Nominal bearing bore diameter (mm)	greater than	10	18	30	50	80	120	180	250	315
	up to	18	30	50	80	120	180	250	315	400
tolerance class P4S.K5 / P4.K5										
Deviation (µm) Δ_{dmp} and Δ_{Dmp}		-1	-1,5	-1,5	-2	-2	-3	-4	-5	-6
		-3	-3,5	-4	-5	-5,5	-7	-8	-11	-13

Permissible values of deviations for the mean bore diameter in a single plane Δ_{dmp} and mean outside diameter in a single plane Δ_{Dmp} are equal.

Tolerance class P2

inner ring (dimensions in mm)

Nominal bearing bore diameter	greater than	10	18	30	50	80	120	150	180	250	315
	up to	18	30	50	80	120	150	180	250	315	400
tolerance class P2 (tolerances in µm)											
Deviation	Δ_{dmp}	0	0	0	0	0	0	0	0	0	0
		-2,5	-2,5	-2,5	-4	-5	-7	-7	-8	-10	-12
Variation (roundness)	V_{dp}	3	3	3	4	5	7	7	8	10	12
Variation of mean diameter	V_{dmp}	1,5	1,5	1,5	2	2,5	3,5	3,5	4	5	6
Width deviation	Δ_{Bs}	0	0	0	0	0	0	0	0	0	0
		-80	-120	-120	-150	-200	-250	-300	-350	-450	-600
Width deviation, modified	Δ_{Bs}	0	0	0	0	0	0	0	0		
		-250	-250	-250	-250	-380	-380	-380	-500		
Width variation	V_{Bs}	1,5	1,5	1,5	1,5	2,5	2,5	4	5	6	7
Concentricity	K_{ia}	1,5	2,5	2,5	2,5	2,5	2,5	5	5	6	7
Coaxiality (axial runout)	S_d	1,5	1,5	1,5	1,5	2,5	2,5	5	5	6	7
Coaxiality (axial runout)	S_{ia}	1,5	2,5	2,5	2,5	2,5	2,5	5	5	7	7

outer ring (dimensions in mm)

Nominal bearing outer diameter	greater than	18	30	50	80	120	150	180	250	315	400	500
	up to	30	50	80	120	150	180	250	315	400	500	630
tolerance class P2 (tolerances in µm)												
Deviation	Δ_{Dmp}	0	0	0	0	0	0	0	0	0	0	0
		-4	-4	-4	-5	-5	-7	-8	-8	-10	-12	-15
Variation (roundness)	V_{Dp}	4	4	4	5	5	7	8	8	10	12	16
Variation of mean diameter	V_{Dmp}	2	2	2	2,5	2,5	3,5	4	4	5	6	8
Width variation	V_{Cs}	1,5	1,5	1,5	2,5	2,5	2,5	4	5	7	7	8
Concentricity	K_{ea}	2,5	2,5	4	5	5	5	7	7	8	9	11
Inclination variation	S_D	1,5	1,5	1,5	2,5	2,5	2,5	4	5	7	8	9
Coaxiality (axial runout)	S_{ea}	2,5	2,5	4	5	5	5	7	7	8	10	12

Width tolerance Δ_{Cs} is identical with Δ_{Bs} for the associated inner ring.

K5-Toleranzen für Spindellager

Nominal bearing bore diameter (mm)	greater than	10	18	30	50	80	120	180	250	315
	up to	18	30	50	80	120	180	250	315	400
tolerance class P2S.K5 / P2.K5										
Deviation (µm) Δ_{dmp} and Δ_{Dmp}		0	0	0	-1	-1,5	-2	-2	-3	-4
		-2	-2	-2	-3	-3,5	-5	-6	-7	-8

Permissible values of deviations for the mean bore diameter in a single plane Δ_{dmp} and mean outside diameter in a single plane Δ_{Dmp} are equal.

Tolerance class P2S

inner ring (dimensions in mm)

Nominal bearing bore diameter	greater than	10	18	30	50	80	120
	up to	18	30	50	80	120	150
tolerance class P2S (tolerances in µm)							
Deviation	Δ_{Dmp}	0	0	0	0	0	0
		-2	-2	-2,5	-4	-5	-6
Variation (roundness) V_{dp}	Ø-Series 8, 9	2	2	3	4	4	5
	0, 2	2	3	3	3	4	5
Variation of mean diameter	V_{dmp}	2	2,5	3	3,5	4	5
Width variation	Δ_{Bs}	0	0	0	0	0	0
Concentricity		-25	-25	-25	-25	-50	-50
Inclination variation	V_{Bs}	1	1	1,3	1,3	2	2
Concentricity	K_{ia}	1,3	1,5	1,5	2	2	2,5
Coaxiality (axial runout)	S_d	1,3	1,3	1,3	1,3	2	2
Coaxiality (axial runout)	S_{ia}	1,3	2	2	2	2	2,5

outer ring (dimensions in mm)

Nominal bearing outer diameter	greater than	18	30	50	80	120	150
	up to	30	50	80	120	150	180
tolerance class P2S (tolerances in µm)							
Deviation	Δ_{Dmp}	0	0	0	0	0	0
		3,5	-3,5	-3,5	-4	-4	-6
Variation (roundness) V_{dp}	Ø-Series 8, 9	4	4	4	4	4	6
	0, 2	3	3	3	4	4	5
Width variation	V_{Cs}	1	1	1,3	2	2	2
Concentricity	K_{ea}	2	2	2,5	3	3	3,5
Inclination variation	S_D	1,3	1,3	1,3	2,5	2,5	2,5
Coaxiality (axial runout)	S_{ea}	2	2	3	4	4	6

Width tolerance Δ_{Cs} is identical with Δ_{Bs} for the associated inner ring.

Tolerance class K5

Nominal bearing bore diameter (mm)	greater than	10	18	30	50	80	120	180	250	315
	up to	18	30	50	80	120	180	250	315	400
tolerance class P2S.K5 / P2.K5										
Deviation (µm) Δ_{dmp} and Δ_{Dmp}		0	0	0	-1	-1,5	-2	-2	-3	-4
		-2	-2	-2	-3	-3,5	-5	-6	-7	-8

Permissible values of deviations for the mean bore diameter in a single plane Δ_{dmp} and mean outside diameter in a single plane Δ_{Dmp} are equal.

Technical fundamentals
Tolerances and standards

1.2.2 High-precision cylindrical roller bearings

Standard SLF high-precision cylindrical roller bearings are produced in tolerance class HP. This class conforms to tolerance class SP according to DIN 5412-4. This way they provide ideal preconditions for their use in a very wide variety of applications.

SLF high-precision cylindrical roller bearings are also available in the highest tolerance class UP, or with individual tolerances upon request.

Tolerance class HP for single row high-precision cylindrical roller bearings

inner ring (dimensions in mm)

Nominal bearing bore diameter	greater than	18	30	50	80	120	180	250	315	400
	up to	30	50	80	120	180	250	315	400	500
tolerance class HP (tolerances in µm)										
Bore, cylindrical	Δ_{dmp}	0	0	0	0	0	0	0	0	0
Deviation		-6	-8	-9	-10	-13	-15	-18	-23	-27
Variation (roundness)	V_{dp}	3	4	5	5	7	8	9	12	14
Bore, tapered	Δ_{ds}	10	12	15	20	25	30	35	40	45
Deviation		0	0	0	0	0	0	0	0	0
Variation (roundness)	V_{dp}	3	4	5	5	7	8	9	12	14
Intermediate diameter variation	V_{dmp}	3	4	5	5	7	8	9	12	14
Width deviation	Δ_{Bs}	0	0	0	0	0	0	0	0	0
		-100	-120	-150	-200	-250	-300	-350	-400	-450
Width variation	V_{Bs}	1,5	2	3	3	4	5	5	6	7
Concentricity	K_{ia}	3	4	4	5	6	8	9	12	14
Coaxiality (axial runout)	S_d	3	3	4	4	5	6	6	7	8
Coaxiality (axial runout)	S_{ia}	8	8	8	9	10	11	15	20	23

outer ring (dimensions in mm)

Nominal bearing outer diameter	greater than	30	50	80	120	150	180	250	315	400	500	630
	up to	50	80	120	150	180	250	315	400	500	630	800
tolerance class HP (tolerances in µm)												
Deviation	Δ_{Dmp}	0	0	0	0	0	0	0	0	0	0	0
		-7	-9	-10	-11	-13	-15	-18	-20	-23	-28	-35
Variation (roundness)	V_{Dp}	4	5	5	6	7	8	9	10	12	14	18
Intermediate diameter variation	V_{Dmp}	4	5	5	6	7	8	9	10	12	14	18
Width variation	V_{Cs}	5	5	6	7	7	8	10	13	15	17	20
Concentricity	K_{ea}	5	5	6	7	8	10	11	13	15	17	20
Inclination variation	S_D	8	8	9	10	10	11	13	13	15	18	20
Coaxiality (axial runout)	S_{ea}	8	10	11	13	14	15	18	20	23	25	30

Width tolerances Δ_{Cs} and V_{Cs} are identical with Δ_{Bs} and V_{Bs} for the associated inner ring.

Tolerance class HP for double row high-precision cylindrical roller bearings

inner ring (dimensions in mm)

Nominal bearing bore diameter	greater than	18	30	50	80	120	180	250	315	400	500
	up to	30	50	80	120	180	250	315	400	500	630
tolerance class HP (tolerances in µm)											
Bore, cylindrical	Δ_{dmp}	0	0	0	0	0	0	0	0	0	0
Deviation		-6	-8	-9	-10	-13	-15	-18	-23	-27	-30
Variation (roundness)	V_{dp}	3	4	5	5	7	8	9	12	14	15
Bore, tapered	Δ_{ds}	10	12	15	20	25	30	35	40	45	50
Deviation		0	0	0	0	0	0	0	0	0	0
Variation (roundness)	V_{dp}	3	4	5	5	7	8	9	12	14	15
Intermediate diameter variation	V_{dmp}	3	4	5	5	7	8	9	12	14	15
Width deviation	Δ_{Bs}	0	0	0	0	0	0	0	0	0	0
		-120	-120	-150	-200	-250	-300	-350	-400	-450	-500
Width variation	V_{Bs}	5	5	6	7	8	10	13	15	17	20
Concentricity	K_{ia}	3	4	4	5	6	8	8	10	10	12
Coaxiality (axial runout)	S_d	8	8	8	9	10	11	13	15	17	20
Coaxiality (axial runout)	S_{ia}	8	8	8	9	10	13	15	20	23	25

outer ring (dimensions in mm)

Nominal bearing outer diameter	greater than	30	50	80	120	150	180	250	315	400	500	630
	up to	50	80	120	150	180	250	315	400	500	630	800
tolerance class HP (tolerances in µm)												
Deviation	Δ_{Dmp}	0	0	0	0	0	0	0	0	0	0	0
		-7	-9	-10	-11	-13	-15	-18	-20	-23	-28	-35
Variation (roundness)	V_{Dp}	4	5	5	6	7	8	9	10	12	14	18
Intermediate diameter variation	V_{Dmp}	4	5	5	6	7	8	9	10	12	14	18
Width variation	V_{Cs}	5	6	8	8	8	10	11	13	15	18	20
Concentricity	K_{ea}	5	5	6	7	8	10	11	13	15	17	20
Inclination variation	S_D	8	8	9	10	10	11	13	13	15	18	20
Coaxiality (axial runout)	S_{ea}	8	10	11	13	14	15	18	20	23	25	30

Width tolerances Δ_{Cs} and V_{Cs} are identical with Δ_{Bs} and V_{Bs} for the associated inner ring.

Tolerance class UP for high-precision cylindrical roller bearings

inner ring (dimensions in mm)

Nominal bearing bore diameter	greater than	18	30	50	80	120	180	250	315	400	500
	up to	30	50	80	120	180	250	315	400	500	630
tolerance class UP (tolerances in µm)											
Bore, cylindrical	Δ_{dmp}	0	0	0	0	0	0	0	0	0	0
Deviation		-5	-6	-7	-8	-10	-12	-15	-19	-23	-26
Variation (roundness)	V_{dp}	3	3	4	4	5	6	8	10	12	14
Bore, tapered	Δ_{ds}	6	7	8	10	12	14	15	17	19	20
Deviation		0	0	0	0	0	0	0	0	0	0
Variation (roundness)	V_{dp}	3	4	5	5	7	8	9	12	14	16
Intermediate diameter variation	V_{dmp}	2,5	3	3,5	4	5	6	8	10	12	13
Width deviation	Δ_{Bs}	0	0	0	0	0	0	0	0	0	0
		-25	-30	-40	-50	-60	-75	-100	-100	-100	-125
Width variation	V_{Bs}	1,5	2	3	3	4	5	5	6	7	8
Concentricity	K_{ia}	1,5	2	2	3	3	4	4	5	5	6
Coaxiality (axial runout)	S_d	3	3	4	4	5	6	6	7	8	9
Coaxiality (axial runout)	S_{ia}	3	3	3	4	6	7	8	9	10	12

outer ring (dimensions in mm)

Nominal bearing outer diameter	greater than	30	50	80	120	150	180	250	315	400	500	630
	up to	50	80	120	150	180	250	315	400	500	630	800
tolerance class UP (tolerances in µm)												
Deviation	Δ_{Dmp}	0	0	0	0	0	0	0	0	0	0	0
		-5	-6	-7	-8	-9	-10	-12	-14	-17	-20	-25
Variation (roundness)	V_{Dp}	3	3	4	4	5	5	6	7	9	10	13
Intermediate diameter variation	V_{Dmp}	3	3	4	4	5	5	6	7	9	10	13
Width variation	V_{Cs}	1,5	2	3	4	4	5	5	6	7	8	11
Concentricity	K_{ea}	3	3	3	4	4	5	6	7	8	9	11
Inclination variation	S_D	2	2	3	3	3	4	4	5	5	6	7
Coaxiality (axial runout)	S_{ea}	4	4	5	6	7	9	9	12	12	14	17

Width tolerances Δ_{Cs} and V_{Cs} are identical with Δ_{Bs} and V_{Bs} for the associated inner ring.

High-precision cylindrical roller bearings are produced with a standard radial clearance C1. To achieve this radial clearance, the inner and outer rings are matched in our plant. For this reason, exchangeability of these rings from one bearing to another is not possible.

Other radial clearance designs are possible upon request.

Radial clearance of single and double row high-precision cylindrical roller bearings in C1

Bore diameter d in mm	greater than		40	50	65	80	100	120	140	160	180	200	225	250	280	315	355	400	450	500	560	630	710
	up to	40	50	65	80	100	120	140	160	180	200	225	250	280	315	355	400	450	500	560	630	710	800
Bearing with cylindrical bore																								
Radial clearance C1 in µm	min.	5	5	5	10	10	10	10	10	10	15	15	15	20	20	20	25	25	25	25	30	30	35	
	max.	15	18	20	25	30	30	35	35	40	45	50	50	55	60	65	75	85	95	100	110	130	140	
Bearing with taper bore																								
Radial clearance C1 in µm	min.	15	17	20	25	35	40	45	50	55	60	60	65	75	80	90	100	110	120	130	140	160	170	
	max.	25	30	35	40	55	60	70	75	85	90	95	100	110	120	135	150	170	190	210	230	260	290	

The main dimensions of high-precision cylindrical roller bearings are standardized according to ISO 15 (radial bearings / dimensional tables), or DIN 616 (roller bearings – dimensional tables).

1.2.3 Double-acting angular contact thrust ball bearings

Standard double-acting angular contact thrust ball bearings are produced in the tolerance class HP. Products with other tolerance classes and special allowances are available upon request.

The bore and outer diameters of double-acting angular contact thrust ball bearings are standardized according to ISO 15 (radial bearings – dimensional tables).

Tolerance class HP for double row angular contact thrust ball bearings

Shaft washer (dimensions in mm)

Nominale size bearing bore	greater than	18	30	50	80	120	150	180	250	315	400
	up to	30	50	80	120	150	180	250	315	400	500
tolerance class HP (tolerances in µm)											
Bore deviation	Δ_{dmp}	0	0	0	0	0	0	0	0	0	0
		-8	-10	-12	-15	-18	-18	-22	-25	-30	-35
Variation (roundness)	V_{dp}	6	8	9	11	14	14	17	19	22	26
Wall thickness variation	S_i	3	3	4	4	5	5	5	7	7	9
Height deviation	Δ_{Hs}	50	75	100	125	150	150	175	200	250	300
		-150	-200	-250	-300	-350	-350	-400	-450	-600	-750

Housing washer (dimensions in mm)

Nominal size outer diamenter	greater than	30	50	80	120	150	180	250	315	400	500	630
	up to	50	80	120	150	180	250	315	400	500	630	800
tolerance class HP (tolerances in µm)												
Outer diameter deviation	Δ_{Dmp}	-20	-24	-28	-33	-33	-37	-41	-46	-50	-55	-60
		-36	-43	-50	-58	-58	-66	-73	-82	-90	-99	-110
Variation (roundness)	Δ_{Dp}	5	6	8	9	9	10	12	13	15	16	18
Width deviation	Δ_{Cs}	-120	-120	-125	-125	-125	-125	-150	-150	-200	-200	-250
Wall thickness variation	S_e	3	4	4	5	5	5	7	7	9	11	13

Tolerance class UP for double row angular contact thrust ball bearings

Shaft washer (dimensions in mm)

Nominale size bearing bore	greater than	18	30	50	80	120	150	180	250	315	400
	up to	30	50	80	120	150	180	250	315	400	500
tolerance class UP (tolerances in µm)											
Bore deviation	Δ_{dmp}	0	0	0	0	0	0	0	0	0	0
		-6	-8	-9	-10	-13	-13	-15	-18	-23	-27
Variation (roundness)	V_{dp}	5	6	7	8	10	10	12	14	18	20
Wall thickness variation	S_i	1,5	1,5	2	2	3	3	3	4	4	5
Height deviation	Δ_{Hs}	50	75	100	125	150	150	175	200	250	300
		-150	-200	-250	-300	-350	-350	-400	-450	-600	-750

Housing washer (dimensions in mm)

Nominal size outer diamenter	greater than	30	50	80	120	150	180	250	315	400	500	630
	up to	50	80	120	150	180	250	315	400	500	630	800
tolerance class UP (tolerances in µm)												
Outer diameter deviation	Δ_{Dmp}	-20	-24	-28	-33	-33	-37	-41	-46	-50	-55	-60
		-36	-43	-50	-58	-58	-66	-73	-82	-90	-99	-110
Variation (roundness)	Δ_{Dp}	5	6	8	9	9	10	12	13	15	16	18
Width deviation	Δ_{Cs}	-120	-120	-125	-125	-125	-125	-150	-150	-200	-200	-250
Wall thickness variation	S_e	1,5	2	2	3	3	3	4	4	5	6	7

1.2.4 Main dimensions and symbols

Terms according to DIN ISO 1132-1, Measuring methods according to DIN 620-1

Bore diameter	
d	nominal bore diameter
d_s	single bore diameter
d_{sp}	single bore diameter in a single plane
Δ_{ds}	deviation of a single bore diameter, difference between a single bore and the nominal bore diameter, $\Delta_{ds} = d_s - d$
V_{ds}	bore diameter variation, difference between maximal and minimal bore diameter of a single ring, $V_{ds} = d_{smax} - d_{smin}$
d_m	mean bore diameter, arithmetic mean of the maximal and minimal single bore diameter of a single ring, $d_m = (d_{smax} + d_{smin})/2$
Δ_{dm}	deviation of mean bore diameter, difference between mean bore diameter and nominal bore diameter, $\Delta_{dm} = d_m - d$
d_{mp}	mean bore diameter in a single plane, arithmetic mean of the maximal and minimal single bore diameter detectable in a radial plane, $d_{mp} = (d_{spmax} + d_{spmin})/2$
d_{1mp}	mean theoretical large diameter at tapered bore, arithmetic mean of maximal and minimal measured bore diameter
Δ_{dmp}	deviation of the mean bore diameter in a single plane, difference between mean bore diameter and nominal diameter in a radial plane, $\Delta d_{mp} = d_{mp} - d$
V_{dp}	variation of a single bore diameter in a single plane, difference between the maximal and minimal bore diameter detectable in a radial plane, $V_{dp} = d_{pmax} - d_{pmin}$
V_{dmp}	variation of mean bore diameter, difference between maximal and minimal average detectable each in single radial plane bore diameter at a single ring, $V_{dmp} = d_{mpmax} - d_{mpmin}$
$V_{dp/2}$	roundness in a plane

Outside diameter	
D	nominal outside diameter
D_s	single outside diameter
D_{sp}	single outside diameter in a single plane
Δ_{Ds}	deviation of the single outside diameter, difference between a single outside diameter and the nominal outside diameter, $\Delta_{Ds} = D_s - D$
V_{Ds}	variation of outside diameter, difference between maximal and minimal single outside diameter of a single ring, $V_{Ds} = D_{smax} - D_{smin}$
D_m	mean outside diameter, arithmetic mean of the maximal and minimal single outside diameter of a single ring, $D_m = (D_{smax} + D_{smin})/2$
Δ_{Dm}	deviation of the mean outside diameter, difference between the mean outside diameter and the nominal outside diameter, $\Delta_{Dm} = D_m - D$
D_{mp}	mean outside diameter in a single plane, arithmetic mean of the maximal and minimal single outside diameter detectable in a radial plane, $D_{mp} = (D_{spmax} + D_{spmin})/2$
Δ_{Dmp}	deviation of the mean outside diameter in a single plane, difference between the mean outside diameter and the nominal outside diameter in a single radial plane, $\Delta_{Dmp} = D_{mp} - D$
V_{Dp}	variation of a single outside diameter in a single plane, difference between maximal and minimal single outside diameter detectable in a single radial plane, $V_{Dp} = D_{pmax} - D_{pmin}$
V_{Dmp}	variation of mean outside diameter, difference between the maximal and minimal mean outside diameter, each detectable in single radial planes, at a single ring, $V_{Dmp} = D_{mpmax} - D_{mpmin}$
$V_{Dp/2}$	roundness in one plane

Width	
B	nominal width of the inner ring
C	nominal width of the outer ring
B_s	single inner ring width
C_s	single outer ring width
Δ_{Bs}	deviation of the single inner ring width, difference between a single inner ring width and the nominal width of the inner ring, $\Delta_{Bs} = B_s - B$
Δ_{Cs}	deviation of the single outer ring width, difference between a single outer ring width and the nominal width of the outer ring, $\Delta_{Cs} = C_s - C$
V_{Bs}	variation of inner ring width, difference between the maximal and minimal real single ring width of a single inner ring, $V_{Bs} = B_{smax} - B_{smin}$
V_{Cs}	variation of outer ring width, difference between the maximal and minimal real single ring width of a single outer ring, $V_{Cs} = C_{smax} - C_{smin}$
B_m	mean inner ring width, arithmetic mean of the maximal and minimal single ring width detectable at an outer ring, $B_m = (B_{smax} + B_{smin})/2$
S_D	inclination variation of surface line to the reference of side surface
C_m	mean outer ring width, arithmetic mean of the maximal and minimal single ring width detectable at an outer ring, $C_m = (C_{smax} + C_{smin})/2$

Corner width	
r	nominal corner width
r_s	single corner width
r_{smin}	minimum single corner width, minimum permissible radial and axial single corner width of a ring
r_{smax}	maximum single corner width, maximum permissible radial and axial single corner width of a ring

Variation of wall thickness	
K_i	variation of wall thickness between inner ring raceway and bore, difference between maximal and minimal radial space between bore surface and raceway on the outer side of the inner ring, in raceway middle
K_e	variation of wall thickness between outer ring raceway and outer ring surface, difference between maximal and minimal radial space between outside surface and the raceway

Radial runout	
K_{ia}	radial runout of inner ring on assembled bearing, difference between maximal and minimal radial space between bore surface of inner ring, in different angular position of inner ring, and a fixed point related to the outer ring
K_{ea}	Radial runout of outer ring on assembled bearing, difference between maximal and minimal radial space from/ between the outside surface of the outer ring, in different angular position of the outer ring, and a fixed point related to the inner ring

Lateral runout	
S_d	thrust of inner ring side surface to bore
S_D	inclination variation of surface line to the reference of side surface

Axial runout	
S_{ia}	axial runout of the inner ring on the assembled bearing, difference between the maximal and minimal axial space between the reference side surface of the inner ring, in various angular locations of the inner ring, in radial space from/ to the inner ring axis being equal to the half raceway diameter of the inner ring and in a fixed point related to the outer ring
S_{ea}	axial runout of the outer ring on the mounted bearing, difference of the maximal and minimal axial space between the reference side surface of the outer ring in various angular locations of the outer ring, in radial space from / to the outer ring axis equal to the half raceway diameter of the outer ring and in a fixed point related to the inner ring

1.3 Components and materials

1.3.1 Outer and inner rings, rolling elements

SLF high-precision bearings can be delivered in various material combinations and designs.

Balls, outer and inner rings made of 100Cr6 chromium steel, or an equivalent material are used in **spindle bearings** as standard. High material purity guarantees the highest reliability. Heat treatment permits operating temperatures of maximum 150 °C in the factory standard, without diminishing dimensional stability and hardness.

Using ceramic balls made of silicon nitride, combined with bearing rings made of 100Cr6 chromium steel in the standard hybrid design, one can achieve significant improvements in tribological characteristics, at thermal loads, as well as in suitability for high speed.

For cases with extreme ranges of application (mixed friction, maximal speed, mechanical and thermal load, aggressive environmental impacts), SLF provides a wide range of spindle bearings with roller bearing inner rings made of Cronidur® 30 and ceramic balls. This material combination positively impacts heat build-up inside the bearing. The special structure of Cronidur® 30 also enables substantially higher permissible surface pressure in comparison with 100Cr6.

Bearing rings and cylindrical rollers of the **high-precision cylindrical roller bearings** are made of 100Cr6 chromium steel or, for greater dimensions, of 100CrMnSi6-4 as standard.

Hybrid high-precision cylindrical roller bearings in the HCN, HCNN, and HCNNU series are equipped with cylindrical rollers made of high-performance ceramic that are produced in-house. Their use significantly improves friction and wear characteristics. This, in turn, reduces the need for lubricants and results in lower temperatures, and thus allows for higher speeds.

In **angular contact thrust ball bearings**, shaft washers, distance sleeves, housing washers, and balls made of 100Cr6 chromium steel, or an equivalent material are applied. For demanding applications, they are also available in hybrid design upon request.

1.3.2 Cages

SLF **spindle bearings** are equipped with a one-piece solid window cage, guided on the outer shoulder, made of laminated fabric as standard. The cages made of this high-performance material withstand high centrifugal and acceleration forces, as well as 100 °C maximum operating temperatures. This material is characterized by excellent tribological properties; in the absence of sufficient lubricant, it has provided extraordinary emergency running properties.

For extreme operating temperatures, depending on the respective application or requirement, cages made of brass, PEEK, or other high-performance plastics are used. In this process, operating temperatures from -200 °C up to +250 °C are feasible.

SLF **high-precision cylindrical roller bearings** are equipped as standard with a solid brass cage guided by rolling elements. For single row high-precision cylindrical roller bearings, PEEK cages can be used upon request.

The **double-acting angular contact thrust ball bearings** are as standard equipped with ball-guided solid window cages made of brass. Brass cages can be used up to 250 °C operating temperature.

1.3.3 Seals

To seal SLF spindle bearings, in series, non-contacting RSD seals are used. They consist of an elastomer reinforced by a steel sheet (NBR). This material combination enables operating temperatures from -40 °C up to +100 °C, and even up to +120 °C for short-term use.

Thanks to the non-contacting design with minimal gap between the seal and the inner ring, the bearing is efficiently protected against contamination and additional friction does not occur. For this reason, their suitability for use at high speeds remains largely the same as for bearings without a seal.

For operating temperatures above +120 °C, special seals made of fluorinated rubber (VSD) are available upon request. They cover a temperature range from -20 °C up to +230 °C.

Additional special solutions can be made available upon request.

1.3.4 Operating temperature

SLF spindle bearings, as well as double-acting angular contact thrust ball bearings up to 240 mm outer diameter, and high-precision cylindrical roller bearings up to 120 mm outer diameter, are standard stabilized in dimensions by S0, meaning that they are heat treated to make them use up to a working temperature of 150 °C.

At greater than 240 mm or 120 mm outer diameter, the SLF high-precision bearings are standard stabilized in dimensions with S1, meaning that they are heat treated to make them usable up to a working temperature of 200 °C.

As a rule, the maximum operating temperature is not limited by the dimensional stability of the bearing rings and balls or rollers. Frequently, the cage, sealing or lubricant are the limiting factors.

An overview can be obtained from the following table:

Component	**upper range of operating temperature**
Bearing rings made of 100Cr6	150 °C
Bearing rings made of Cronidur® 30	> 250 °C
Cage made of laminated fabric (standard)	120 °C
Brass cage	250 °C
PEEK cage	about 250 °C, 150 °C without limitation in performance
Seals / washers made of (RSD)	100 °C
Seals / washers made of FKM (VSD)	230 °C

1.4 Dimensioning & bearing calculation

Fundamentals

The basic information for calculating bearing load ratings and lifetime is provided in the German standards DIN ISO 76 (static load ratings) and DIN ISO 281 (dynamic load ratings and nominal lifetime). Assuming the probability of failure (in industrial applications, as a rule L_{10}), the latter considers the bearing material's fatigue as a failure reason, and, by calculating the lifetime, provides a reliable and qualified estimation of the roller bearing's operational life. Under additional consideration of the lubricant, as well as contamination inside the bearing, one can consider application-relevant influences and more precisely predict longevity by means of an extended modified lifetime L_{nm} (according to ISO/TS 16281).

The goal of dimensioning machine tool bearing arrangements or similar highly precise applications is to achieve to the greatest extent possible a precise and stiff total system. As a result, the roller bearings in these applications are, as a rule, loaded much less and lubricated much more cleanly than in miscellaneous industrial applications. Consequently, the limit of material fatigue the classic nominal L10 calculation (according to DIN ISO 281) is based on (characterized by surface pressure) is not reached this way in the most cases; for this reason, it is frequently irrelevant or only slightly applicable as a criterion for dimensioning.

If SLF high-precision bearings are run with very clean hydrodynamic lubrication below the surface pressure values given in the following table, fatigue load limit of the bearing can be achieved. This way, it is not necessary to calculate the lifetime.

Limits for surface pressure (Hertz surface pressure) to maintain fatigue load limit:

Point contact	at 100Cr6	2000 MPa
	at Cronidur® 30	2500 MPa
Line contact	at 100Cr6	1500 MPa
	at Cronidur® 30	1900 MPa

In general, for all more complex multi-bearing systems, SLF recommends bearing dimensioning based on the reference lifetime according to ISO/TS 16281. The SLF engineering service and the spindle engineering experts are ready to support you.

Fatigue strength

As an alternative to the calculation of pressure in the rolling butt contact according to ISO/TS 16281, it is also possible to calculate the fatigue load limit of a bearing by means of the ratio of load S_0*.

Spindle bearings are intended to guide movable machine components with high precision, and, at the same time, reliably transmit forces even at very high speeds. For this reason, bearings are mainly selected according to precision, stiffness, and running characteristics. In a wide range of applications, bearings are fatigue-resistant if a load-carrying, hydrodynamic lubricant film is present in the contact positions of the rolling elements.

To verify fatigue load limit, the ratio of load S_0* is determined by means of the equation:

$$S_0^* = \frac{C_0}{P_0}$$

S_0*	Ratio of load for fatigue load limit (dynamic load safety factor)	[–]
C_0	Static load rating	[N]
P_0	Equivalent load P_0* is calculated by means of the forces of the dynamic load, according to the equation of the statically equivalent load.	[N]

The minimum value of the ratio of load S_0* depends on the bearing design and the components material.

The ratio of load S_0* should meet the following values (see table) to guarantee fatigue load limit:

Bearing design	Contact angle 15°		Contact angle 17°		Contact angle 25°	
	$\frac{F_{0a}}{F_{0r}} \leq 1{,}09$	$\frac{F_{0a}}{F_{0r}} > 1{,}09$	$\frac{F_{0a}}{F_{0r}} \leq 1{,}13$	$\frac{F_{0a}}{F_{0r}} > 1{,}13$	$\frac{F_{0a}}{F_{0r}} \leq 1{,}30$	$\frac{F_{0a}}{F_{0r}} > 1{,}30$
B/HCB	8	12	-	-	8	10
HS/HC	8	12	-	-	8	10
BS/ HCBS	-	-	8	11	8	10
XC	3	4	-	-	3	4

In high-precision cylindrical roller bearings, fatigue load limit is achieved if the ratio of load is S_0* ≥ 8.

In double-acting angular contact thrust ball bearings, fatigue load limit is achieved if the ratio of load is S_0* ≥ 6.

Required minimum load

As a rule, the loads resulting from the system setup (such as forces of gravity, preload, centrifugal forces, etc.) generate a sufficient minimum load. Nevertheless, this minimum load must be checked separately, in applications with high speeds or dynamic load cycles. This makes it possible to avoid harmful effects, such as sliding of the rolling elements on the raceways. The recommendation for the minimum load based on experimental facts is 1 % for ball bearings, 2 % for roller bearings with a dynamic load rating C.

Static load safety factor

To make use of the high bearing precision of spindle bearings, the static load safety factor must be S_0>2. To determine S_0 the load case identified in the bearing's load profile as the maximum according to the section "Statically equivalent load" must be used as the basis.

$$S_0 = \frac{C_0}{P_0}$$

S_0	static load safety factor	[-]
C_0	static load rating	[kN]
P_0	static equivalent load	[kN]

To avoid precision losses by plastic deformation in the rolling con tact, the following minimum values for the static load safety factor must be sufficient:

Spindle bearings:	$S_0 > 2$
High-precision cylindrical roller bearings:	$S_0 > 3$
Angular contact thrust ball bearing:	$S_0 > 2{,}5$

Static equivalent load

Spindle bearings

Static equivalent bearing load P_0 is calculated from the axial and radial loads acting on the bearing, following the formula below. The bearing in the spindle which is maximally loaded must be considered.

$$P_0 = F_{0r} \text{ for } \frac{F_{0a}}{F_{0r}} \leq \text{e}$$

$$P_0 = 0{,}5 * F_{0r} + \text{Y} * F_{0a} \text{ for } \frac{F_{0a}}{F_{0r}} > \text{e}$$

Contact angle	e	Y
15°	1,09	0,46
17°	1,13	0,44
25°	1,30	0,38

P_0	static equivalent load	[kN]
F_{0r}	radial static load	[kN]
F_{0a}	axial static load	[kN]
e, Y	factor	[-]

High-precision cylindrical roller bearings

High-precision cylindrical roller bearings only absorb radial forces. Consequently, for statically loaded bearings, the following equation is applied:

$$P_0 = F_{0r}$$

Double-acting angular contact thrust ball bearings

Angular contact thrust ball bearings only absorb axial loads. For statically loaded bearings, the following equation is applied:

$$P_0 = F_{0a}$$

P_0	static equivalent bearing load	[kN]
F_{0a}	axial static bearing load	[kN]

Load distribution on several bearings

If a combination of several bearings is intended for the bearing arrangement, then the external load must be distributed onto the individual bearings according to the scheme of the following table. For this purpose, all radial and axial loads affecting the respective bearing position must be recorded. They are calculated from the external loads, as well as the distances from the load application points to bearing positions. From this, in turn, one must check the load safety factor of the bearing subject to maximum load.

Arrangement	Load share of the spindle bearing subject to maximum load	
	F_a	F_r
	%	%
X and O arrangement	100	60
TO and TOT arrangement	50	60
multiple arrangement	33	60

If the preconditions to achieve fatigue load limit (exceeding the lower load limit, viscosity ratio of the lubricant used $\kappa \leq 2$ according to chapter 1.6.1.3, cleanliness class) are not met, then – to determine usable bearing life – it is possible to calculate extended lifetime Lnm according to ISO 281. SLF recommends not considering a lifetime correction value a_{ISO} of >3,5

Moreover, further detailed calculations of contact stresses, considering elastic stresses of a complete bearing geometry, as well as their influence on usable life, can be obtained from the SLF engineering service.

Speed limits and correction factors for spindle bearings

Bearing number, bearing arrangement, preload, external load, and lubrication, on the one hand, and the installation conditions, on the other hand, are the factors that determine suitability for high-speed use. The speeds given in the dimensional tables of the respective bearings are nominal limiting speeds and are valid for an elastically preloaded single bearing under ideal operating conditions. Depending on the variation of operating conditions, the limiting speed may vary upward or downward.

For the operation of the single bearings, bearing pairs, or bearing sets under rigid preload, one must adequately decrease / reduce the speed limits due to internal load and self-heating, but also consider the bearing arrangement, bearing distances, and the preload class. The correction factors to calculate the respective speed are listed in the table below.

Bearing arrangement		Bearing preload		
		L	M	S
		Faktor f_r		
for bearing distance > 2x bearing bore				
∅	◊	0,85	0,75	0,50
∅∅	◊◊	0,80	0,70	0,50
∅∅∅	◊◊	0,75	0,65	0,45
for bearing distance 0 - bearing bore				
∅◊		0,75	0,60	0,35
◊∅		0,65	0,50	0,30
∅∅	◊	0,65	0,50	0,30
∅∅	◊◊	0,72	0,57	0,37
∅∅∅	◊	0,54	0,40	0,37

Springing and stiffness

With zero-clearance bearings, one can achieve very high running accuracy even under changing loads. The required stiffness and the type of load are decisive for bearing arrangement and preload. Arrangement of bearings in sets significantly increases stiffness. The axial stiffness values specified in the bearing tables are valid for bearing pairs in O or X arrangement. For bearing sets with three or more bearings, higher values appear.

The resultant axial stiffness at centrically acting axial force is shown in the table following:

Axial stiffness of bearing sets

Bearing arrangement	Suffix	axial stiffness	Lifting off force
		S_a	K_{aE}
		N/µm	N
∅◊	DB	S_a	$3*F_V$
∅∅◊	TBT	$1,64*S_a$	$6*F_V$
∅∅◊◊	QBC	$2*S_a$	$6*F_V$
∅∅∅◊	QBT	$2,24*S_a$	$9*F_V$
∅∅∅◊◊	PBC	$2,64*S_a$	$9*F_V$

One can calculate radial stiffness by means of a factor from axial stiffness for a single bearing as follows:

$S_r \approx 6*S_a$ für α = 15°
$S_r \approx 5,2*S_a$ für α = 17°
$S_r \approx 2*S_a$ für α = 25°

For a bearing set with external radial force centrically applied to the bearing set, radial stiffness is calculated according to the following table.

Radial stiffness of bearing sets

Bearing arrangement	Suffix	radial stiffness
		S_r
		N/µm
∅◊	DB	S_r
∅∅◊	TBT	$1,36*S_r$
∅∅◊◊	QBC	$2*S_r$
∅∅∅◊	QBT	$1,6*S_r$
∅∅∅◊◊	PBC	$2,72*S_r$

Thanks to the use of advanced calculation software, in addition to the stiffness of a single bearing set, we can also determine the overall stiffness of the whole system. If necessary, the SLF engineering service can provide calculation services.

Load carrying capacity

Dynamic load rating for bearing sets with bearings that are matched in an arbitrary arrangement is obtained by multiplying load rating C of the single bearing by the following factors:

- 1,62 for bearing sets with 2 bearings
- 2,16 for bearing sets with 3 bearings
- 2,64 for bearing sets with 4 bearings
- 3,09 for bearing sets with 5 bearings

One obtains the static load rating by multiplying the C_0 value by 2 or 3, 4 or 5.

Preload

Preload is defined as permanent axial load impacting on the bearings. Preload is significant for

- achievable speeds,
- stiffness,
- permissible loads.

Preload should be set only as high as necessary. Too high a preload may result in bearing overload, which, in turn, can result in higher friction and shorter operating life. At the same time, it reduces the load absorption capacity of the bearing. Too low a preload, however, negatively affects suitability for use at high speeds, as well as running characteristics, and reinforces, for instance, harmful slippage.

Preload can be generated in a rigid (bearings tensioned against one another) or elastic setup (with spring elements).

Rigid preload

Factory-made spindle bearings are available in 3 defined preload classes – see also Chapter 2.3.

When combining spindle bearings in bearing pairs (X or O arrangement), preload is adjusted in them according to preload class. The respective values are listed in the dimensional tables of the spindle bearings. When combining more than two bearings, the preload values must be multiplied as follows:

Pairing	Factor
DB, DF	1
TBT, TFT	1,35
QBT, QFT	1,6
QBC, QFC	2,0

In rigidly preloaded spindle bearings, the preload value may strongly vary due to thermal effects, which, in turn, significantly impacts bearing preload, stiffness, friction build-up, and suitability for high speed. This influence can be quantified by means of advanced calculation methods. If needed, the SLF engineering service is available to support you.

In the case of unilateral axial load, the bearing or the bearing set that is aligned against the load direction is load-relieved by the displacement in the force-absorbing bearing or bearing set.

The load relief limit is defined by the lifting-off force. As a rule, the lifting-off force is three times the preload force. In dimensioning, ensure that the ratio of the appearing maximal axial load to preload is matched.

If this ratio is exceeded, the following negative consequences are:

- Balls and raceways are no longer always in contact
- Sliding friction increases
- Wear increases
- Lifetime is reduced.

Elastic preload

In the case of elastic preload, system stiffness is in direct proportion to spring stiffness.

Thermal effects on the preload that have impacts inside the bearing are largely compensated thanks to the springs. Thus, the maximally achievable speeds are only slightly affected. For high speeds, a minimum preload is needed. When dimensioning the spring element, the external load must also be considered.

For this reason, in dimensioning, ensure that the spring does not unload too much in the case of the maximum axial load because of the displacement in the force-absorbing bearing and, consequently, minimum preload is sufficient.

1.5 Installation tolerances

1.5.1 Installation tolerances for spindle bearings

Manufacturing tolerances of the parts surrounding the bearings

The top performance of spindle bearings is only guaranteed if the tolerances of the surrounding parts sufficiently conform to those of the bearing. This is necessary because the rings of the spindle bearings, particularly if the dimensional series have small cross-sections, adapt to the shape of the shaft or the housing bore. This can result in shape inaccuracies and misalignments, which affect the running characteristics and, in turn, raise operating temperatures. The higher the required speed values and accuracy values for the bearing, the more clearly these errors stand out.

The roughness profile height values Ra of the bearing seats must be strictly maintained to ensure only minor changes in fit in installation. If this is not considered, the fitting surfaces can be excessively smoothed, which negatively impacts the bearing's functionality, particularly at high operating speeds. Creeping of the bearing rings, losses in accuracy, or corrosion at the seat / fitting surfaces may result from this.

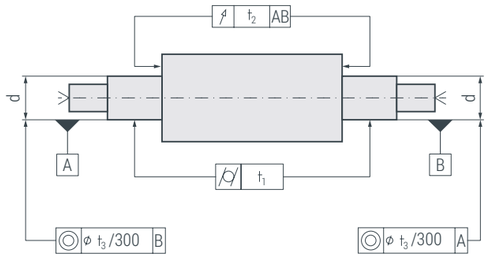


Figure: Shaft machining

Installation tolerances spindle bearings / recommended values for shaft machining

Nominal size shaft d (in mm)

Allowance for d	tolerance class of bearing	general recommendation acc. to ISO 286	greater than	6	10	18	30	50	80	120	180	250	315	400
			up to	10	18	30	50	80	120	180	250	315	400	500
Dimensions and tolerances (in µm)														
loose fit	P5/P4/P4S	h4		0	0	0	0	0	0	0	0	0	0	0
				-4	-4	-4	-6	-6	-8	-9	-11	-12	-14	-15
	P2/P2S	h3		0	0	0	0	0	0	0	0	0	0	0
				-3	-3	-3	-4	-4	-5	-6	-8	-10	-10	-12
tight fit	P5/P4/P4S	js4		2	2,5	3	3,5	4	5	6	7	8	9	10
				-2	-2,5	-3	-3,5	-4	-5	-6	-7	-8	-9	-10
	P2/P2S	js3		1,25	1,5	2	2	2,5	3	4	5	6	6,5	7,5
				-1,25	-1,5	-2	-2	-2,5	-3	-4	-5	-6	-6,5	-7,5
Cylinder shape t_1	P5/P4/P4S	IT0		1	1	1	1,5	1,5	1,5	2	3	4	5	6
	P2/P2S			0,5	0,5	0,8	1	1	1	1,2	2	2,5	3	4
Coaxiality t_2	P5/P4/P4S	IT1		1	1	1	1,5	1,5	2,5	3,5	4,5	6	7	8
	P2/P2S			0,5	0,5	0,8	1	1	1,5	2	3	4	5	6
Coaxiality t_3	P5/P4/P4S	IT3		2	2	2	3	3	4	5	7	8	9	10
	P2/P2S			1	1	1	2	2	2,5	3,5	4,5	6	7	8
Average roughness profile parameter Ra				0,2	0,2	0,2	0,2	0,4	0,4	0,4	0,4	0,8	0,8	0,8

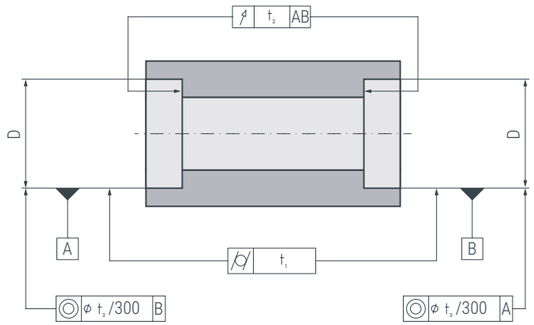


Figure: Machining of the housing bore

Installation tolerances spindle bearings / recommended values for machining of housing

Nominal size housing bore D (in mm)

Dimension for D	tolerance class of bearing	general recommendation acc. to ISO 286	greater than	10	18	30	50	80	120	180	250	315	400	500
			bis	18	30	50	80	120	180	250	315	400	500	630
Dimensions and tolerances (in µm)														
Floating bearing	P5/P4/P4S	H5		12	12	12	15	15	15	21	24	27	30	33
				2	2	2	5	5	5	7	8	9	10	11
	P2/P2S	H4		5	5	7	10	10	12	14	16	18	20	22
				0	0	2	2	4	4	4	5	5	6	7
Fixed bearing	P5/P4/P4S	JS5		10	10	10	12	12	12	12	14	15	16	19
				0	0	0	2	2	2	2	2	2	2	3
	P2/P2S	JS4		3	3	3	5	5	5	7	8	9	10	11
				-2	-2	-2	-3	-3	-3	-4	-4	-5	-5	-6
Cylinder shape t_1	P5/P4/P4S	IT1		1,5	1,5	1,5	2	2	3	4,5	6	7	8	9
	P2/P2S			1	1	1	1,5	1,5	2	3	4	5	6	7
Coaxiality t_2	P5/P4/P4S	IT2		1,5	1,5	1,5	2	2	3	4,5	6	7	8	9
	P2/P2S			1	1	1	1,5	1,5	2	3	4	5	6	7
Coaxiality t_3	P5/P4/P4S	IT3		5	5	6	6	8	8	10	12	13	15	16
	P2/P2S			4	4	5	5	6	6	8	9	10	11	12
Average roughness profile parameter Ra				0,4	0,4	0,4	0,4	0,8	0,8	0,8	1,6	1,6	1,6	1,6

1.5.2 Installation tolerances for high-precision cylindrical roller bearings

Manufacturing tolerances of the parts surrounding the bearing

The top performance of spindle bearings is only guaranteed if the tolerances of the surrounding parts sufficiently conform to those of the bearing. This is necessary because the rings of the spindle bearings, particularly if the dimensional series have small cross-sections, adapt to the shape of the shaft or the housing bore. This can result in shape inaccuracies and misalignments, which, in turn, raise operating temperatures. The higher the required speed values and accuracy values for the bearing, the more clearly these errors stand out. The average roughness profile parameter Ra of the bearing seats must be strictly maintained to ensure only minor changes in fit in installation (smoothing of surfaces).

If this is not considered, the fitting surfaces can be excessively smoothed, which impacts the bearing's functionality, particularly at high operating speeds. Drifting of the bearing rings, losses in accuracy, or corrosion at the seat/ fitting surfaces may result from this.

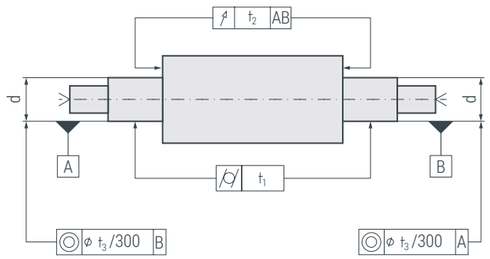


Figure: Machining of cylindrical shaft

Installation tolerances of high-precision cylindrical roller bearings / recommended values for machining of cylindrical shaft

			Nominal size shaft d (in mm)									
	Tolerance class of bearing	greater than	18	30	50	80	120	180	250	315	400	500
		up to	30	50	80	120	180	250	315	400	500	630
			Dimensions and tolerances (in µm)									
Allowance for d	HP(SP)		3	3,5	4	5	6	7	8	9	10	11
			-3	-3,5	-4	-5	-6	-7	-8	-9	-10	-11
	UP		2	2	2,5	3	4	5	6	6,5	7,5	8
			-2	-2	-2,5	-3	-4	-5	-6	-6,5	-7,5	-8
Cylinder shape t_1	HP(SP)		1	1	1,2	1,5	2	3	4	5	6	7
	UP		0,6	0,6	0,8	1	1,2	2	2,5	3	4	5
Coaxiality t_2	HP(SP)		1,5	1,5	2	2,5	3,5	4,5	6	7	8	9
	UP		1	1	1,2	1,5	2	3	4	5	6	7
Coaxiality t_3	HP(SP)		4	4	5	6	8	10	12	13	15	16
	UP		2,5	2,5	3	4	5	7	8	9	10	11
Average roughness profile parameter Ra	HP(SP), UP		0,2	0,2	0,2	0,2	0,2	0,2	0,4	0,4	0,4	0,4

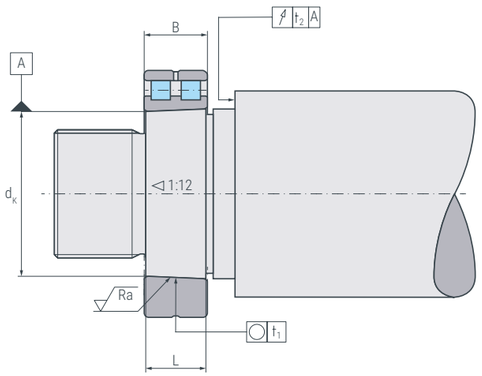


Figure: Machining of tapered shaft

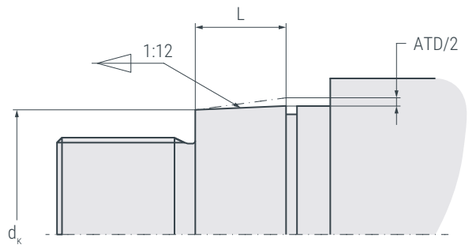


Figure: Machining of tapered shaft (detail)

Installation tolerances of high-precision cylindrical roller bearings / recommended values for machining of tapered shaft

			Nominal size of shaft d_k (in mm)										
	Tolerance class of bearing	greater than	18	30	40	50	65	80	100	120	140	160	180
		up to	30	40	50	65	80	100	120	140	160	180	200
			Dimensions and tolerances (in µm)										
Allowance taper d_k	HP(SP), UP		73	94	108	135	159	193	225	266	298	328	370
			64	80	97	122	146	178	210	248	280	310	350
Roundness t_1	HP(SP)		1	1	1	1,2	1,2	1,5	1,5	2	2	2	3
	UP		0,6	0,6	0,6	0,8	0,8	1	1	1,2	1,2	1,2	2
Coaxiality t_2	HP(SP)		1,5	1,5	1,5	2	2	2,5	2,5	3,5	3,5	3,5	4,5
	UP		1	1	1	1,2	1,2	1,5	1,5	2	2	2	3
Average roughness profile parameter Ra	HP(SP), UP		0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2

			Nominal size of shaft d_k (in mm)										
	Tolerance class of bearing	greater than	200	225	250	280	315	355	400	450	500	560	630
		up to	225	250	280	315	355	400	450	500	560	630	710
			Dimensions and tolerances (in µm)										
Allowance taper d_k	HP(SP), UP		405	445	498	548	615	685	767	847	928	1008	1092
			385	425	475	525	590	660	740	820	900	980	1060
Roundness t_1	HP(SP)		3	3	4	4	5	5	6	6	7	7	8
	UP		2	2	2,5	2,5	3	3	4	4	5	5	5
Coaxiality t_2	HP(SP)		4,5	4,5	6	6	7	7	8	8	9	9	10
	UP		3	3	4	4	5	5	6	6	7	7	8
Average peak-to-valley height Ra	HP(SP), UP		0,2	0,2	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4	0,4

Installation tolerances of high-precision cylindrical roller bearings / taper angle tolerance

		Taper length L (in mm)					
	Tolerance class of bearing	>16…25	>25…40	>40…63	>63…100	>100…160	>160…250
		Tolerances (in µm)					
Taper angle tolerance ATD	HP(SP)	+2…+3,2	+2,5…+4	+3,2…+5	+4…+6,3	+5…+8	+6,3…+10
		0	0	0	0	0	0
	UP	+1,3…+2	+1,6…+2,5	+2…+3,2	+2,5…+4	+3,2…+5	+4…+6,3
		0	0	0	0	0	0

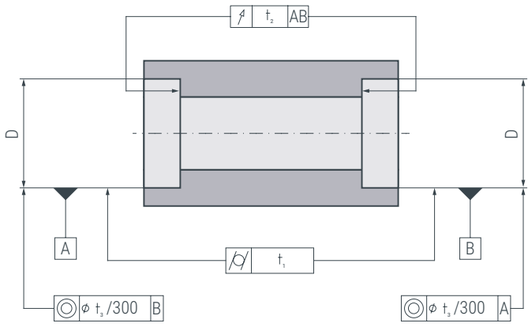


Figure: Machining of housing bore

Installation tolerances of high-precision cylindrical roller bearings / recommended values for machining of the housing bore

			Nominal size housing bore D (in mm)									
	Tolerance class of bearing	greater than	30	50	80	120	180	250	315	400	500	630
		up to	50	80	120	180	250	315	400	500	630	800
			Dimensions and tolerances (in µm)									
Dimension for D	HP(SP)		2	3	2	3	2	3	3	2	0	0
			-9	-10	-13	-15	-18	-20	-22	-25	-29	-32
	UP		1	1	1	1	0	0	0	0	0	0
			-6	-7	-9	-11	-14	-16	-17	-20	-22	-24
Cylinder shape t_1	HP(SP)		1,5	2	2,5	3,5	4,5	6	7	8	9	10
	UP		1	1,2	1,5	2	3	4	5	6	7	8
Coaxiality t_2	HP(SP)		2,5	3	4	5	7	8	9	10	11	12
	UP		1,5	2	2,5	3,5	4,5	6	7	8	9	10
Coaxiality t_3	HP(SP)		4	5	6	8	10	12	13	15	16	18
	UP		2,5	3	4	5	7	8	9	10	11	12
Average roughness profile parameter Ra	HP(SP), UP		0,2	0,4	0,4	0,4	0,4	0,8	0,8	0,8	1,6	1,6

1.5.3 Installation tolerances for angular contact thrust ball bearings

To achieve top performance for double-acting angular contact thrust ball bearings, an adequate design of the surrounding parts must be ensured.

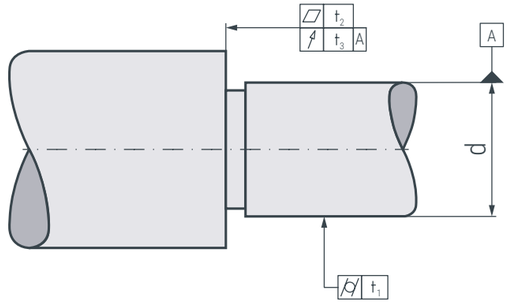


Figure: Shaft machining

Installation tolerances of angular contact thrust ball bearings / recommended values for shaft machining

			Nominal size shaft d (in mm)								
	Tolerance class of bearing	greater than	18	30	50	80	120	180	250	315	400
		up to	30	50	80	120	180	250	315	400	500
			Dimensions and tolerances (in µm)								
Allowance for d	HP(SP)		0	0	0	0	0	0	0	0	0
			-6	-7	-8	-10	-12	-14	-16	-18	-20
	UP		0	0	0	0	0	0	0	0	0
			-4	-4	-5	-6	-8	-10	-12	-13	-15
Cylinder shape t_1	HP(SP)		1	1	1,2	1,5	2	3	4	5	6
	UP		0,6	0,6	0,8	1	1,2	2	2,5	3	4
Coaxiality t_2	HP(SP)		1	1	1,2	1,5	2	3	4	5	6
	UP		0,6	0,6	0,8	1	1,2	2	2,5	3	4
Coaxiality t_3	HP(SP)		1,5	1,5	2	2,5	3,5	4,5	6	7	8
	UP		1	1	1,2	1,5	2	3	4	5	6
Average roughness profile parameter Ra	HP(SP)		0,2	0,2	0,4	0,4	0,4	0,4	0,8	0,8	0,8
	UP		0,2	0,2	0,2	0,2	0,2	0,2	0,4	0,4	0,4

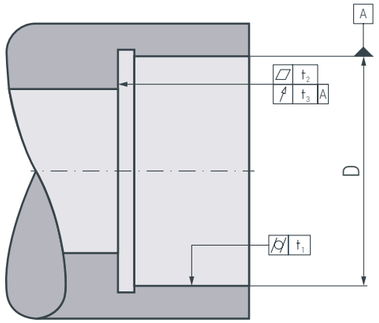


Figure: Machining of housing bore

Installation tolerances of angular contact thrust ball bearings / recommended values for machining of housings

			Nominal size housing bore D (in mm)									
Tolerance class of bearing		greater than	30	50	80	120	180	250	315	400	500	630
		up to	50	80	120	180	250	315	400	500	630	800
			Dimensions and tolerances (in µm)									
Dimension for D	HP(SP)		2	3	2	3	2	3	3	2	0	0
			-9	-10	-13	-15	-18	-20	-22	-25	-30	-32
	UP		1	1	1	1	0	0	1	0	0	0
			-6	-7	-9	-11	-14	-16	-17	-20	-22	-24
Cylinder shape t_1	HP(SP)		1,5	2	2,5	3,5	4,5	6	7	8	9	10
	UP		1	1,2	1,5	2	3	4	5	6	7	8
Coaxiality t_2	HP(SP)		1	1,2	1,5	2	3	4	5	6	7	8
	UP		0,6	0,8	1	1,2	2	2,5	3	4	5	6
Coaxiality t_3	HP(SP)		1,5	2	2,5	3,5	4,5	6	7	8	9	10
	UP		1	1,2	1,5	2	3	4	5	6	7	8
Average roughness profile parameter Ra	HP(SP)		0,8	0,8	0,8	0,8	0,8	1,6	1,6	1,6	1,6	1,6
	UP		0,2	0,4	0,4	0,4	0,4	0,8	0,8	0,8	1,6	1,6

1.6 Lubrication

In principle, high-precision bearings are lubricated both by means of grease and oil.

Lubricant is a load-bearing element and provides a separating layer between the rolling elements and the bearing rings. For this reason, it is necessary that lubricant is available at all points of contact during operation.

The selection of the adequate lubricating technique depends on various operating conditions, such as speeds, temperatures, loads and stresses, but also ambient conditions.

Even if advanced greases can achieve speed characteristic values up to $2,5 * 10^6$ $n*d_m$ in case of continuous operation at the speed limit, it is advisable to plan for lubrication by oil.

The oil in oil circulation lubrication, which is continuously fed and, as a rule, cooled, not only has a separating effect, but also provides for improved elimination of heat.

1.6.1 Grease lubrication

If extremely high speeds are not required, then grease is generally applied for lubrication. In most of these cases, pre-greased sealed bearings are used, providing sound protection against external contaminants.

The advantages of grease lubrication are:

- Minimal design effort
- Minimal system effort
- Option of lifetime lubrication
- Minimal space occupied by lubricating devices and sealing.

1.6.1.1 Grease distribution cycle

Careful commissioning or regreasing (for unsealed bearings) of greased high-precision bearings positively affects the bearing performance and, thus, their lifetime.

For this reason, it is necessary to execute a multi-step grease distribution run before the bearings are brought to the maximum operating speed. To avoid temperature peaks in the contacting surfaces, this run should consist of several phases with different speeds and cycle times. The standstill times between the individual phases are mandatory, so that all bearing components can temper homogeneously. The required number of cycles can vary depending on bearing size, bearing number, maximum speed, and bearing ambient. The cycles must be repeated until a constant bearing temperature (steady-state temperature) has been established.

If the temperature in a cycle exceeds 60 °C, the cycle must be interrupted. Otherwise, damage may occur due to excessive temperature differences in the bearing. After cooling, the cycle can be repeated. If the temperature rises above 60 °C again, the grease distribution run should be interrupted, and the bearing structure examined.

In general, we recommend the start / stop cycle explained below.

Speed	**Running time**	**Stoppage / standstill time**	**Repetitions**	**Total time**
$0,5*n_{max}$	20 s	2 min	5	11 min 40 s
$0,75*n_{max}$	20 s	2 min	5	11 min 40 s
n_{max}	20 s	2 min	5	11 min 40 s
n_{max}	30 s	2 min	10	25 min
n_{max}	1 min	1 min	10	20 min

If the steady-state temperature has not been achieved after this running-in procedure, then execute additional cycles with extended run time and shorter idle time.

1.6.1.2 Grease quantities

During initial lubrication, about 50 % of the undisturbed interior bearing space is filled. For exact values, read the following tables. Since the greases may have different density values, the values are specified in cm³.

Grease quantities for spindle bearings

Bearing series	HS719	HS70	B719	B70	B72
	HC719	HC70	HCB719	HCB70	HCB72
	XC719	XC70	XCB719	XCB70	XCB72
Bore reference number	**Grease quantity in cm^3 per bearing**				
03	0,29	0,39	0,13	0,38	0,57
04	0,41	0,77	0,33	0,69	1,15
05	0,49	0,90	0,38	0,78	1,52
06	0,61	1,29	0,44	1,22	2,06
07	0,90	1,77	0,71	1,45	2,88
08	1,43	2,26	1,01	1,93	3,05
09	1,40	2,91	1,21	2,31	3,87
10	1,52	3,20	1,30	2,50	4,82
11	2,14	4,82	1,75	3,38	5,77
12	2,34	4,82	2,08	4,08	7,80
13	2,50	5,56	2,04	4,21	8,23
14	4,12	7,27	3,52	5,85	9,33
15	4,56	7,63	3,62	6,17	12,5
16	4,86	10,5	3,61	9,81	11,9
17	7,24	11,0	5,01	9,68	17,8
18	7,04	13,4	5,24	10,1	18,5
19	8,03	15,3	5,48	10,5	25,3
20	9,84	14,8	7,60	11,0	26,4
21	12,0	23,1	10,1	14,2	35,2
22	11,1	22,7	8,28	17,3	42,6
24	16,1	28,5	10,7	19,1	48,3
26	18,6	41,1	15,0	29,2	40,6
28	25,6	46,3	14,1	37,6	54,7
30	37,8	57,1	23,9	42,9	78,9
32	39,9	69,7	24,9	55,9	99,8
34			26,3	62,7	115
36			38,7	82,7	110
38			43,7	95,1	151
40			60,2	114	164
44			65,6	193	243
48			70,8	206	
52			113		
56			121		

Grease quantities for high-precision cylindrical roller bearings

Bearing series	N19	N10	NN30	NNU49
	HCN19	HCN10		
Bore reference number	**Grease quantity in cm^3 per bearing**			
06		0,66	0,74	
07		0,88	0,92	
08		1,12	1,21	
09		1,42	1,59	
10	0,79	1,52	1,71	
11	1,02	2,22	2,52	
12	1,09	2,41	2,66	
13	1,17	2,55	2,82	
14	1,95	2,95	4,11	
15	2,16	3,24	4,22	
16	2,25	4,22	5,95	
17	3,12	4,38	6,33	
18	3,23	5,69	7,68	
19	3,41	5,89	7,96	
20	3,98	6,12	8,45	6,21
21	4,15	7,68	10,3	6,38
22	4,38	8,44	13,4	6,68
24	5,78	8,88	15,6	9,95
26	7,55	14,6	20,9	13,4
28	7,95	15,5	23,7	11,9
30	11,7	18,7	28,6	20,6
32	12,2	22,6	35,9	22,1
34	12,9	29,7	47,5	22,9
36	18,7	36,8	61,8	31,8
38	19,7	54,4	65,8	33,6
40	28,5	66,6	84,8	52,9
44	30,9	69,9	108	57,8
48	33,8	109	125	61,8
52	51,5	117	172	107
56	54,4	154	191	114

Grease quantities for angular contact thrust ball bearings

Bearing series	2344
	2347
Bore reference number	**Grease quantity in cm^3 per bearing**
06	3,85
07	4,96
08	6,12
09	7,77
10	8,36
11	12,1
12	12,3
13	13,3
14	17,9
15	18,8
16	25,4
17	27,7
18	38,7
19	38,9
20	44,2
21	61,1
22	61,3
24	66,6
26	105
28	117
30	138
32	171
34	228
36	317
38	319
40	409
44	520
48	620
52	835
56	848

1.6.1.3 Grease service life

The efficiency of grease decreases as a function of operating time and accordingly impacts the bearing function.

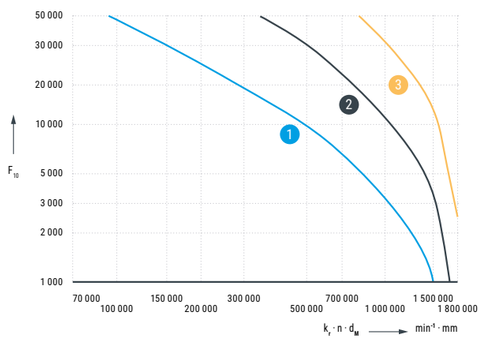
Grease service life is the period in which the bearing function is maintained by the lubricant applied. Beyond this service life, the lubricant is no longer capable of providing a sustainable film in the rolling contact, endangering bearing function.

Grease service life depends on the following factors:

- Type and volume of grease used
- Bearing design
- Speed
- Operating temperature
- Miscellaneous installation, operating and environmental conditions.

In many cases of application, grease service life F_{10} must be considered as a factor that is more important for decision-making than the fatigue lifetime. Grease service time depends on the bearing-specific speed coefficient ($k_f * n * d_M$).

Coefficient of bearing design k_f



F_{10}	grease service life
$k_f * n * d_M$	bearing-related characteristic speed value
k_f	coefficient of bearing design
n	operating speed or equivalent speed
d_M	average bearing diameter
1	steel bearing
2	hybrid bearing
3	Cronidur® bearing

One can determine grease service life using the diagram by means of the coefficient of bearing design k_f. The coefficient of bearing design k_f depends on the bearing design.

Bearing design		**coefficient k_f**
Spindle bearing with contact angle	15°	0,75
	17°	0,78
	25°	0,9
High-precision cylindrical roller bearing	single row	1
	double row	2
Double acting angular contact thrust ball bearing		2,5

Notes:

If operating speeds vary greatly and assuming the related time increments are known, then it is possible to calculate the resultant grease service life by means of the formula below:

$$F_{10\,tot} = \frac{100}{\sum_{i=1}^{n} \frac{q_i}{F_{10i}}}$$

$F_{10\,tot}$	total grease service life	[h]
n	number of load cases	[–]
q_i	time portions	[%]
$F_{10\,i}$	grease service life of the individual speeds over the entire speed range	[h]

1.6.2 Oil lubrication

the operating speed and temperature are higher than those permissible for grease lubrication, oil lubrication should be applied instead. Oil-mist or oil-air lubrication are possible methods. Both lubrication types guarantee minimum quantity lubrication and thus minimal friction losses. The bearing can be additionally cooled by oil circulation lubrication. This lubrication provides efficient heat removal from the bearing, on the one hand. On the other hand, it increases internal friction due to splashing losses in the oil.

The lubricating oil must be sufficiently viscous to generate a load-bearing hydrodynamic lubricant film on the bearing's rolling- and sliding surfaces. Oil viscosity at operating temperature is decisive. Select oil according to the nominal viscosity at 40 °C reference temperature. Oils whose nominal viscosity amounts to 68 mm^2/s are suitable, and the default is to apply oil-air lubrication.

Oil is selected according to the nominal viscosity at 40 °C reference temperature. For maximum speed applications, in practice, oils with 68 mm^2/s nominal viscosity are reliable. The oil viscosity that appears during application is called operating viscosity. It is determined based on the speed, average bearing diameter, and the reference viscosity of the applied lubricant at operating temperature. For this purpose, the two following diagrams can be used:

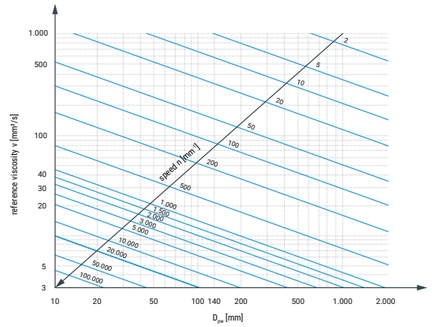


Figure: *ν = reference viscosity*
D_{pw} = average bearing diameter
n = speed

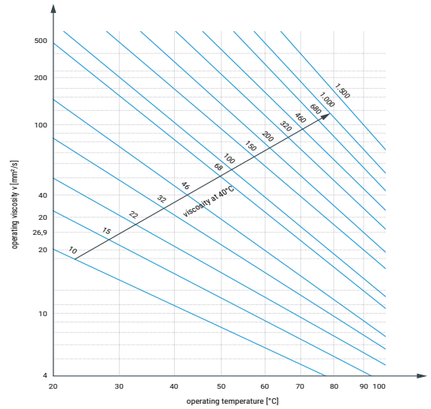


Figure: Operating viscosity

Use the values according to the following diagrams as recommended values for the oil volume in oil-air lubrication of high-precision bearings:

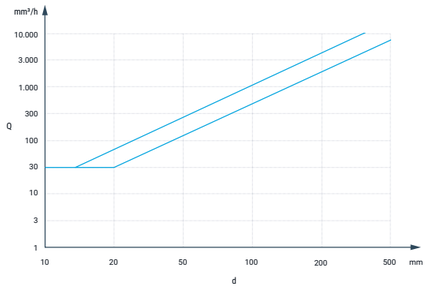


Figure: Oil amount for spindle bearings in oil-air lubrication (Q = oil amount, d = bearing bore)

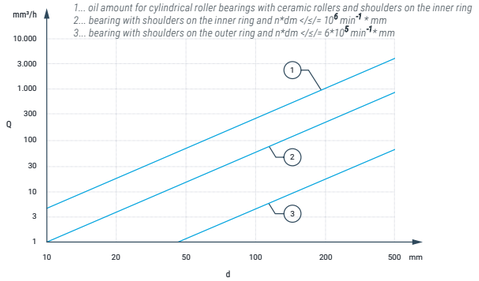


Figure: Oil amount for cylindrical roller bearings in oil-air lubrication (Q = oil amount, d = bearing bore)

Depending on the structure of the lubrication system (injection, runoff, bearing arrangement), the oil amounts can vary widely from the specified values. For this reason, it is advisable to start with a higher amount and adapt it under consideration of the temperature development.

1.7 Installation

Installation preparation

High-precision bearings are produced and packed to fulfill the strictest requirements in terms of precision and cleanliness. Bearings should be assembled just as carefully. In this process, pay attention to the following guidelines:

- Competent personnel must assemble them carefully.
- Care should be taken to ensure that the bearings are assembled in the cleanest, most dust-free and tempered room possible.
- Before bearing assembly, inspect dimensional accuracy and cleanliness of connecting parts.
- Make available and use only those resources intended for assembly.
- For bearing sets, combine, if possible, bearings with the same diameter classification (consider value-reference numbers).
- If possible, only open bearing packaging immediately before installing.
- Wipe off excess anticorrosive oil with a clean and lint-free piece of cloth.

Bearing lubrication

High-precision bearings are as a rule delivered in preserved state (even in greased bearings, anticorrosive agent is deposited on the outer surfaces). Before oiling / greasing, check compatibility of anticorrosive and the intended lubricant. If lubricant is not compatible with the anticorrosive agent, flush the bearings with low-viscosity oil or wash petroleum and dry them.

Then grease the bearings with the grease / oil volume recommended – see Section 1.6.1.3. Feed lubricant with a suitable tool (injection, spatula, etc.) into the open spaces between the rolling elements and the raceways in equal amounts. Turn the bearings manually to distribute the lubricant in the bearing.

1.7.1 Installation of spindle bearings

Installation with the help of a press

- A thin oil film or assembly paste is deposited onto the shaft.
- During pressing on, forces must not be transferred to the rolling elements.
- Press bearing over the inner ring homogeneously up to the shaft shoulder with a suitable assembly tool.
- Keep the rings from tilting.
- Remove excess assembly oil or grease afterwards.

Installation due to heated bearing

- The inner ring can be assembled easily if the inner ring is heated, for instance, with an inductive heating unit.
- The higher the overlap of the inner ring fit, the higher the heating-up temperature should be. Heating-up temperature should not exceed 100 °C.

After cooling down, press the inner ring once more against the shaft shoulder and check axial and radial running accuracies.

Bearing fixing

The inner rings are fastened to the shaft with a precision nut.

When doing this, the recommended tightening torque generates a compression force, which regularly exceeds the bearing preload in the case of O-arrangements and multiple arrangements. To avoid settling phenomena, first tighten the nut with the two- to three-fold tightening torque, loosen, and tighten again with the recommended tightening torque.

Please find the values for the respective bearing sizes and series in the table below.

Recommended tightening torque at axial clamping of bearing inner rings by means of a nut for spindle bearing

			Series 718		Series 719		Series 70		Series 72	
Bore reference number	**Bore in mm**	**Thread**	**Tightening torque in Nm**	**Clamping force in kN**	**Tightening torque in Nm**	**Clamping force in kN**	**Tightening torque in Nm**	**Clamping force in kN**	**Tightening torque in Nm**	**Clamping force in kN**
03	17	M17x1	1,12	0,55	1,70	0,84	2,28	1,12	3,36	1,65
04	20	M20x1	2,06	0,87	3,24	1,37	3,99	1,68	5,17	2,18
05	25	M25x1,5	3,21	1,07	4,99	1,66	6,12	2,04	7,89	2,63
06	30	M30x1,5	4,50	1,27	6,97	1,96	10,38	2,92	12,7	3,58
07	35	M35x1,5	6,02	1,46	9,35	2,28	14,5	3,52	21,5	5,24
08	40	M40x1,5	7,75	1,66	14,6	3,13	19,1	4,11	27,4	5,88
09	45	M45x1,5	11,0	2,10	18,2	3,49	23,8	4,57	35,4	6,80
10	50	M50x1,5	15,3	2,65	20,6	3,57	29,0	5,03	37,6	6,53
11	55	M55x2	20,5	3,20	28,9	4,52	42,1	6,59	58,9	9,21
12	60	M60x2	24,2	3,48	31,5	4,53	50,3	7,24	72,5	10,4
13	65	M65x2	33,5	4,46	39,6	5,28	57,6	7,67	96,1	12,8
14	70	M70x2	38,6	4,79	52,2	6,48	75,3	9,35	113	14,0
15	75	M75x2	44,0	5,11	60,9	7,08	85,8	10,0	120	14,0
16	80	M80x2	49,8	5,44	71,4	7,79	106	11,6	159	17,3
17	85	M85x2	70,2	7,23	94	9,7	124	12,7	193	19,8
18	90	M90x2	78,4	7,64	105	10,2	153	14,9	231	22,5
19	95	M95x2	87,0	8,04	117	10,8	170	15,7	276	25,5
20	100	M100x2	96	8,45	161	14,1	187	16,5	339	29,8
21	105	M105x2	106	8,85	163	13,6	228	19,1	381	31,9
22	110	M110x2	137	11,0	178	14,3	273	21,9	458	36,7
24	120	M120x2	162	11,9	239	17,6	322	23,7	512	37,7
26	130	M130x2	223	15,2	331	22,6	442	30,1	653	44,5
28	140	M140x2	257	16,3	357	22,6	509	32,2	886	56,1
30	150	M150x2	332	19,6	494	29,2	598	35,4	1172	69,4
32	160	M160x3	380	20,9	564	31,1	765	42,1	1509	83,1
34	170	M170x3	486	25,3	634	32,9	903	46,9	1738	90,2
36	180	M180x3	543	26,7	831	40,8	1217	59,8	1933	94,9
38	190	M190x3	691	32,2	922	42,9	1349	62,8	2392	111
40	200	M200x3	763	33,8	1172	51,9	1550	68,6	2916	129
44	220	Tr220x4	924	37,0	1417	56,8	2185	87,6	3863	155
48	240	Tr240x4	1344	49,5	1675	61,7	2578	94,9		
52	260	Tr260x4	1569	53,4	2474	84,2				
56	280	Tr280x4	2095	66,3	2853	90,3				
60	300	Tr300x4			3952	117				
64	320	Tr320x5			4495	124				
68	340	Tr340x5			5051	132				
72	360	Tr360x5			5640	139				
84	420	Tr420x5			8718	185				
92	460	Tr460x5			12991	252				
500	500	Tr500x5			16000	285				

Mounting with housing cover

Particularly for X arrangements and fixed bearings, the outer rings are, as a rule, tensioned with a housing cover. Since the width tolerance of the matched spindle bearings is relatively great, the housing cover must be matched to the width to achieve the required gap widths. Depending on the bearing size, the gap width between housing cover and housing should be as follows.

Bearing bore	housing cover gap width a
≤ 100	0,01 to 0,03 mm
≤ 100	0,02 to 0,04 mm

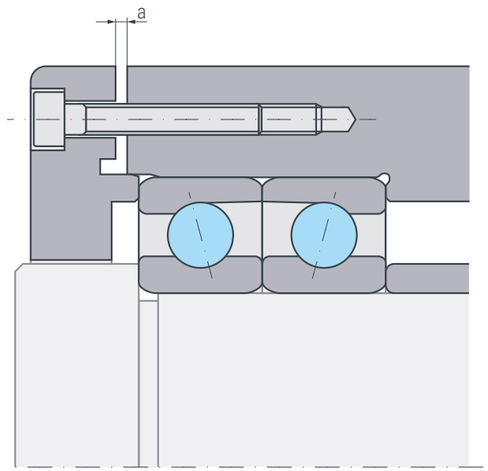


Figure: Mounting with housing cover

The gap is closed during follow-up tightening; this way, the bearing outer rings are axially correctly tensioned.

1.7.2 Installation of cylindrical roller bearings

Cylindrical roller bearings with tapered bore have greater bearing clearance than those with a cylindrical bore. The tapered inner rings are fed by means of an adjusting nut on the taper of the shaft and fixed in the final position. Depending on how strongly the inner ring is shifted onto the taper, it may expand, the bearing can be mounted with clearance, without clearance, or with preload.

The bearing inner ring should be placed on and pushed manually onto the taper until it is firmly seated. Next the inner ring is further pushed onto the taper by means of the clamping nut. A hydraulic nut may also be used, if available. In this process, pay attention to the high force build-up of the hydraulic nut. The bearing must not be damaged during pushing, which could result from inclination of or too much pressure on the inner ring.

To guarantee homogeneous placement and pushing of the inner ring, the shaft nut must be highly precise. Thus, for instance, the thread should be ground in one setup with the end face to obtain coaxiality of < 2 µm. The minimum quality of the thread should be 4H. In case of nuts with less than 60 mm outer diameter, use materials with more than 950 N/mm² tensile strength, and for diameters greater than 60mm, use those with at least 530 N/mm² tensile strength.

The required bearing clearance or preload can be set up by two different setting methods, depending on size and availability.

Adjustment with envelope circle gauge

- First mount outer ring (series NN or N) in the housing and determine raceway diameter by means of an appropriate means of measurement; the measured value is transferred onto the envelope circle gauge.
- Place the inner ring onto the shaft taper and push up to the starting point. By definition, this is the point at which the bearing inner ring is in full circumferential contact with the shaft cone and starts widening as a result of the fit pressure.
- Afterwards, measure the outer envelope circle diameter of the cylinder rollers at the inner ring with mounted roller cage by means of an envelope circle gauge.
- The difference between the outer ring's raceway diameter and the envelope circle diameter is the currently existing bearing clearance.
- The desired radial clearance or the radial load is created by widening the inner ring through step-by-step axial movement by tightening the shaft nut onto the shaft cone.
- To clamp the bearing in this position with a gauge ring, it is necessary to determine the distance to the shaft shoulder (dimension L). For this purpose, determine the distance between the bearing's inner ring and the shaft shoulder at four measuring points, offset by 90°.
- After disassembly of the inner ring, move the adjusting ring ground afterwards onto dimension L on the cylindrical section of the shaft, between shaft shoulder and inner ring.
- Then finally fix inner ring in the determined position with a clamping nut.

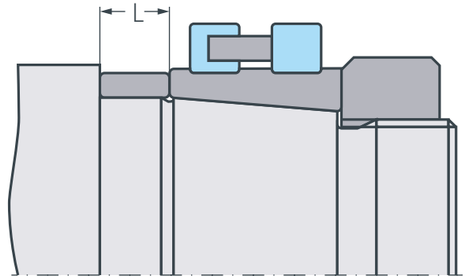


Figure: Adjustment with envelope circle gauge

Adjustment without envelope circle gauge

- This method is advisable to assemble and adjust inner rings in the NU and NNU bearing series, or for large-sized cylindrical roller bearings for which no envelope circle gauges are available.
- First mount the outer ring in the housing.
- Then place the inner ring onto the shaft taper and push to the starting point. By definition, this is the point at which the bearing inner ring is in full circumferential contact with the shaft cone and starts widening as a result of the fit pressure.
- Next position the shaft with inner ring and roller cage in the housing exactly aligned with the outer ring (roller cage must be centered in the outer ring).
- Ensure that there are no scraped areas in the bearing.
- Determine the radial clearance by moving the shaft radially (lifting or lowering) to the housing by means of a dial gauge, or by skilled personnel with feeler gauges (rough estimate as starting value).
- Carefully insert the inner ring to achieve the desired radial clearance or preloading in a minimum of 3 steps.

- Starting with the measured radial clearance starting value, roughly calculate the required axial displacement A of the inner ring in relation to the radial widening by using factor F according to the following equation.

$$A = F * \Delta G$$

A	axial displacement path
F	shifting factor (sliding on)
ΔG	change in radial clearance

Depending on shaft geometry, the factor can vary according to the following table:

Shaft geometry ratio d/D	Shifting factor F
0 to 0,3	14
0,3 to 0,5	16
0,5 to 0,8	18
greater than 0,8	19 or more trials required

d	bore diameter
D	taper seat diameter in the taper center

Recommended values of radial clearance and speed for high-precision cylindrical roller bearings

Single row high-precision cylindrical roller bearings

Clearance or preload in µm	-5 to 0	0 (without clearance)	0 to 5	0 to 5
Achievable speed min^{-1}	<0,75*n_G grease	0,75 to 1*n_G grease	1 to 1,1*n_G grease	1*n_G oil

Double row high-precision cylindrical roller bearings

Clearance or preload in µm	-5 to 0	0,0002*((d+D)/2)	0,0004*((d+D)/2)	0,001*((d+D)/2)
Achievable speed min^{-1}	<0,5*n_G grease	0,5 to 0,75*n_G grease	0,75 to 1*n_G grease	1*n_G oil

negative values	preload
positive values	clearance

- Shifting / sliding on is carried out in several homogeneous steps, up to a remaining residual radial clearance of 0,05 to 0,10 mm (depending on bearing size).
- Document the values achieved each time after each step.
- The real shifting/ sliding factor is calculated by interpolating the recorded data. The remaining shifting / sliding-on path is obtained by multiplying the difference between measured and nominal radial clearance.
- As in the procedure with the envelope circle gauge, dismount the bearing inner ring, measure the nominal width of the adjusting ring, grind-in and mount adjusting ring.
- After each shifting / sliding operation, tighten the clamping nut before radial clearance is measured again. Once nominal clearance or nominal preload is achieved, finally tighten and secure the clamping nut.

The set radial clearance or preload affects the achievable speed as shown in the following:

1.7.3 Installation of angular contact thrust ball bearings

Double-acting angular contact thrust ball bearings are detachable bearings. For this reason, they must be handled and assembled with special care for all individual components.

The sequence of assembly follows the specific installation situation in the spindle. As a rule, the angular contact thrust ball bearing is located inside the spindle between the cylindrical roller bearing positions, and thus fits into the logical assembly sequence for shaft, housing, and the other parts of the spindle system. The two shaft washers and the distance sleeve located in between are, for instance, placed against the inner ring of the cylindrical roller bearing, a shaft shoulder, or a distance washer as a shaft assembly, secured with a shaft nut, and tightened to the specified tightening torque value.

Please find the values for the respective bearing parameters and series in the following table:

Recommended tightening torque values with axial preload of the bearing inner rings by means of a nut for angular contact thrust ball bearings of the series 2344 / 2347

Bore reference number	Bore in mm	Thread	Tightening torque in Nm		Clamping force in kN	
			from	to	from	to
06	30	M30x1,5	5,1	10,2	1,5	2,7
07	35	M35x1,5	7,1	13,2	1,8	3,2
08	40	M40x1,5	11,1	18,1	2,3	3,7
09	45	M45x1,5	12,5	19,7	2,4	3,6
10	50	M50x1,5	15,1	23,4	2,7	3,9
11	55	M55x2	19,2	27,5	3,1	4,2
12	60	M60x2	22,8	32,6	3,4	4,6
13	65	M65x2	27,7	38,5	3,7	5,0
14	70	M70x2	33,1	43,5	4,2	5,3
15	75	M75x2	37,8	50,1	4,5	5,7
16	80	M80x2	44,2	56,5	4,9	6,1
17	85	M85x2	51,2	64,2	5,5	6,4
18	90	M90x2	57,5	72,4	5,9	6,9
19	95	M95x2	66,1	80,8	6,2	7,2
20	100	M100x2	73,9	90,7	6,6	7,4
21	105	M105x2	82,6	99,8	7,1	8,3
22	110	M110x2	91,6	108	7,5	8,7
24	120	M120x2	112	131	8,5	9,6
26	130	M130x2	133	157	9,4	10,7
28	140	M140x2	161	182	10,4	11,6
30	150	M150x2	188	215	11,4	12,6
32	160	M160x3	222	245	12,5	13,6
34	170	M170x3	255	281	13,5	14,8
36	180	M180x3	290	322	14,6	15,8
38	190	M190x3	333	366	15,8	17,1
40	200	M200x3	375	411	16,9	18,2
44	220	Tr220x4	472	510	19,4	20,5
48	240	Tr240x4	578	622	21,8	23,1
52	260	Tr260x4	702	749	24,4	25,6
56	280	Tr280x4	835	888	26,8	28,2
60	300	Tr300x4	988	1050	29,7	31,2

1.8 Fields of application

To address the many applications in the field of spindles for machine tools, many high-precision bearing variants are also needed, combined, and arranged as flexibly as possible. Depending on the application, different requirements must be met. Bearings in grinding spindles must be suitable for high-speed use, whereas others, such as milling spindles, must not only guarantee their suitability for use at high speeds, but also significantly higher load absorption. All applications, though, have in common the need for the highest precision.

SLF specializes not only in manufacturing high-precision bearings, but also in engineering and producing customized solutions for spindles and spindle units with a diameter range from 30 to 600mm, up to 1800mm length. Please find a general overview of the wide range of manufacturing on the SLF homepage.

To meet requirements, careful design and dimensioning of the bearing positions is needed. Some general examples of potential application-specific designs are described below.

Grinding spindles
Grinding spindles are employed in grinding machines and machining centers for external and internal machining of an extremely wide variety of workpieces and materials (such as metals, ceramic, special alloys, glass, etc.). They are characterized by quiet running in precision machining, as well as by their durable, robust and compact design.

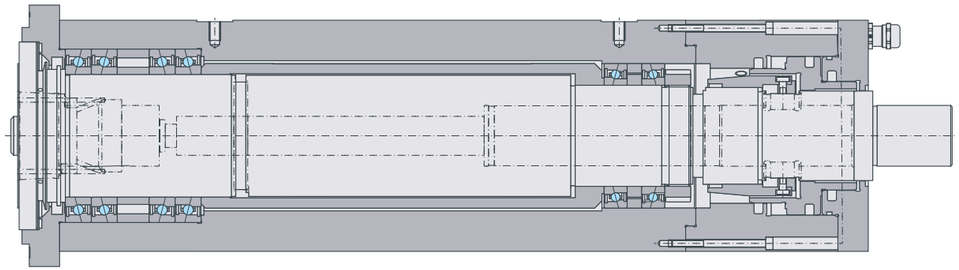


Figure: Grinding spindle, externally driven

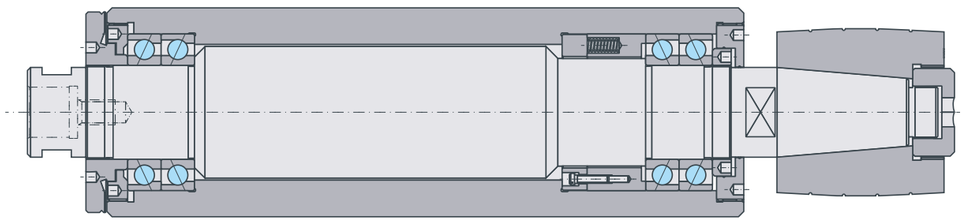


Figure: HF grinding spindle, externally driven (belt-driven)

Workpiece spindles and sleeves
Workpiece spindles or head spindles and tailstock sleeves are highly precise positioning systems and are used in all types of machine tools for rotary part machining (turning, grinding, etc.). In combination, they mount, support, and drive workpieces. In this setup, the workpiece spindle or head spindle provides for driving, whereas the sleeve, as a rotating unit, guides and centers the opposite workpiece end.

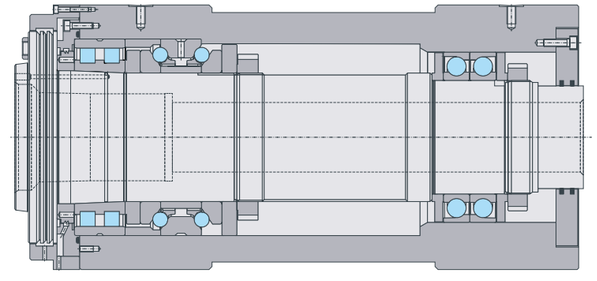


Figure: Workpiece spindle

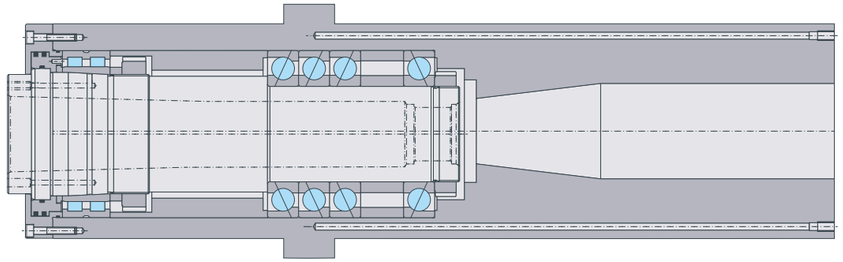


Figure: Tailstock sleeve, eccentric design

Drilling and milling spindles

Drilling and milling spindles are used in milling machines and machining centers. They are designed for various tool interfaces (such as hollow-shaft taper, steep taper, and collet chuck, as well as short taper) that enable the precise fixing / mounting of the drilling or milling tools. Their design combines maximum load-bearing capacity with simultaneous suitability for high-speed use and top precision.

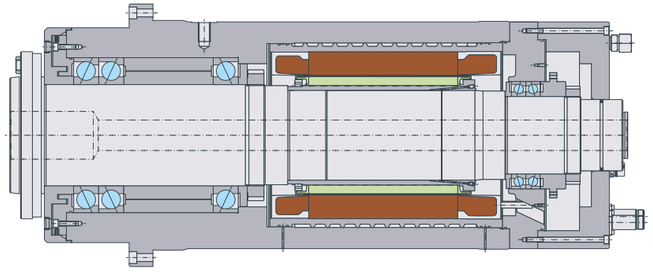


Figure: Motor spindle

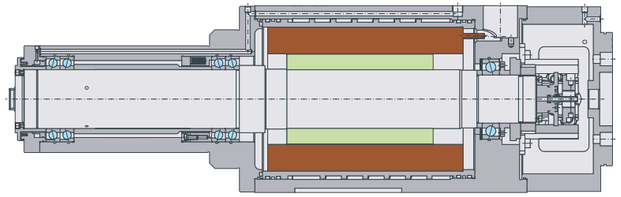
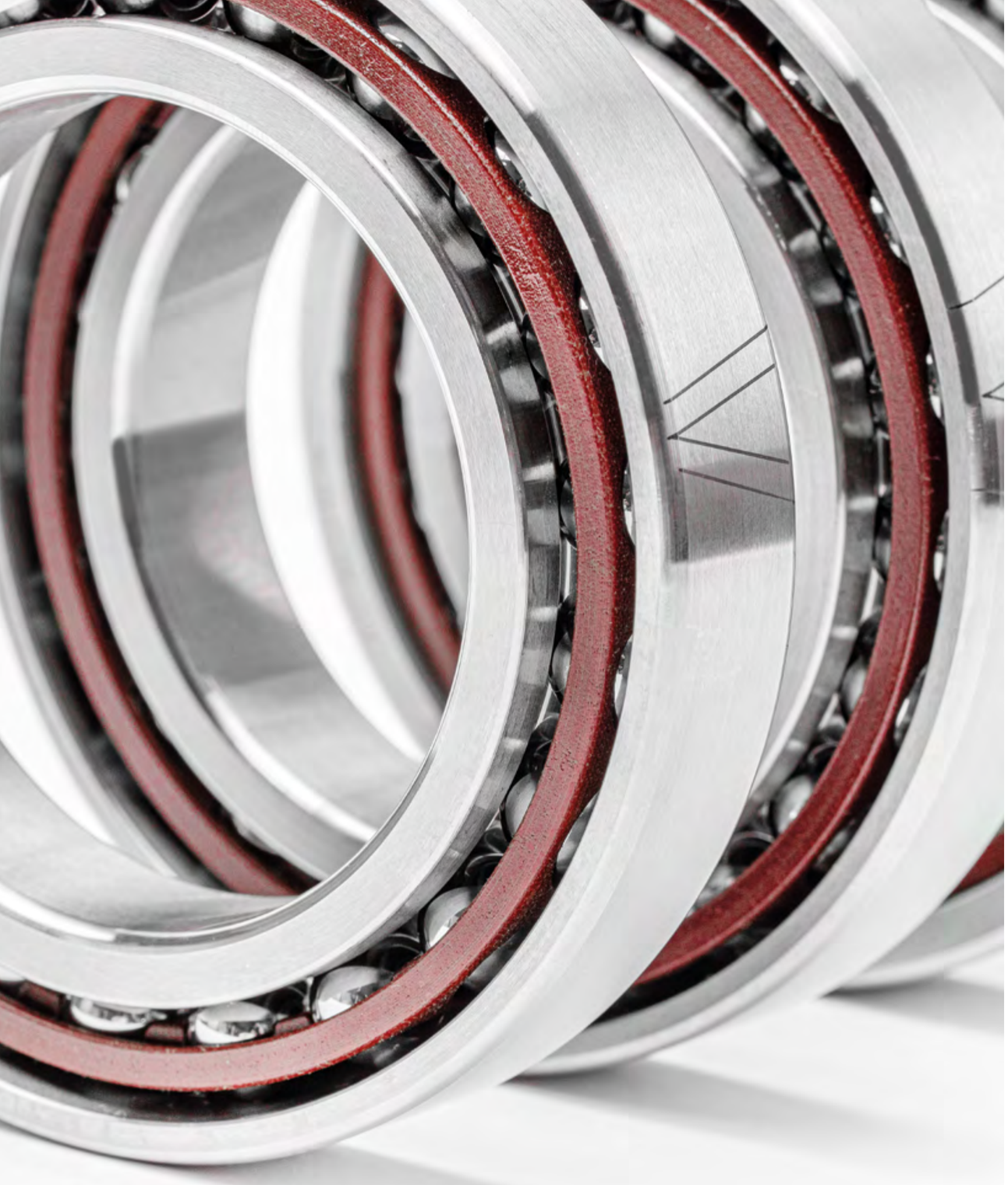


Figure: Milling spindle

Technical fundamentals
Fields of application



2. Spindle bearings

2.1 Bearing designs

The individual designs of the SLF high-precision spindle bearings are introduced in detail in the following.

2.1.1 Standard spindle bearings A and B

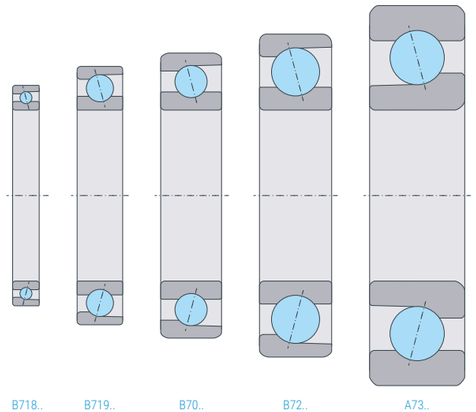


Figure: Bearing designs spindle bearings

SLF standard spindle bearings are produced in the B718, B719, B70, B72, and A73 design series with C 15° and E 25° contact angles as well as open or sealed. They can be delivered in various material combinations and designs. The standard design, which is very robust and uses large-sized balls, is primarily used in applications in which high load-bearing capacity and suitability for high-speed use are both called for.

2.1.2 Spindle bearings BS

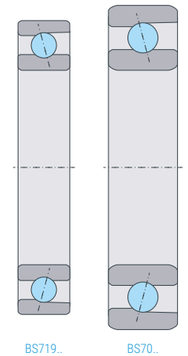


Figure: Bearing designs spindle bearings BS series

The BS719 and BS70 designs use a larger number of balls with smaller diameters than in the B719 and B70 design series, with identical outer dimensions. This makes it possible to achieve higher speeds than in the standard series with only slightly reduced load ratings.

The BS series is particularly dimensioned for applications whose requirements exceed the speed limits of the standard B design and the load-bearing capacity limits of the HS design. Thanks to the specific design, the BS series is an optimal compromise between the B and HS designs and has frequently turned out to be an ideal compromise in practice.

The optimized interior design with optional contact angles of 17° or 25° makes it possible to extend the performance range of, for instance, machine tool spindles, and is an innovative, economical bearing concept.

2.1.3 High-speed spindle bearings HS

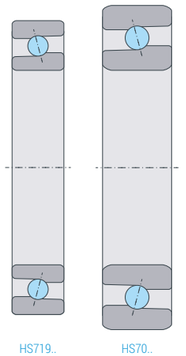


Figure: Designs high-speed spindle bearings

In their main dimensions, high-speed spindle bearings in the HS series are identical to the spindle bearings in the B and BS series. Their design with the maximum quantity of small-sized balls is particularly suitable for use at the highest speeds.

The interior design – optimized for top suitability for high-speed use – with smaller, lighter balls, provides for reduced friction and less heat build-up, which, in turn, results in lower stress inside the bearing.

Despite the lower load-bearing capacity, the bearing provides high stiffness, and is particularly suitable for applications requiring the highest speed and precision with reduced loads. SLF high-speed spindle bearings are produced in the HS719 and HS70 design series.

2.2 Design variants

The B, BS, and HS designs of high-speed spindle bearings are available in the following designs.

- Hybrid design
- Design open or sealed
- Design with direct lubrication

The variety of designs available and the options to combine them cover all the relevant requirements normally found on the market. This provides an optimum solution for every application.

2.2.1 Hybrid spindle bearings

Hybrid spindle bearings are bearings with raceways made of roller bearing steel and balls made of ceramic material (silicon nitride Si3N4) of the greatest homogeneity and hardness (designation: HCB, HCBS, HC). For outstandingly demanding applications with extreme operating conditions, rings made of Cronidur® 30 are used (designation: XCB, XCBS, XC).

Thanks to their significantly lower density, ceramic balls are lighter than conventional steel balls. This drastically reduces centrifugal forces inside the bearing and friction between balls, so the raceway is optimized. These bearings are non-conducting, non-magnetic, and able to withstand corrosion.

Hybrid spindle bearings were especially developed for use in machine tool spindles and provide the conditions needed for increased performance. Their low affinity to other materials makes them a perfect material separator, avoiding micro welding, and results in reduced susceptibility to wear, positively affecting the lubricant's operational life and, in turn, the bearing's lifetime.

The main advantages of the hybrid design are listed below:

- Approximately 30 % higher speeds
- Better emergency running properties in case of insufficient lubrication
- Low affinity to other materials
- Higher bearing stiffness coefficient
- Lower friction and heat build-up,
- Outstanding thermal characteristics
- More favorable acceleration and deceleration characteristics
- High specific resistance (non-conducting)

2.2.2 Sealed spindle bearings

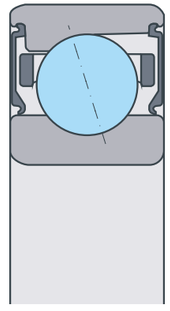


Figure: Sealed spindle bearings

Sealed spindle bearings (2RSD) are maintenance-free. Lubrication for these bearings is preset to guarantee their operation at the highest speeds and low temperatures over a long period.

Requiring minimal effort for assembly, lubrication and maintenance, sealed spindle bearings are the optimal solution for long-term use in applications designed to accommodate them.

The main dimensions are identical to those of unsealed spindle bearings. In terms of design, it must be noted that the edge radiuses and their plane parallel bearing faces may differ depending on design series and bearing size. Unsealed bearings can be replaced by sealed bearings if they are identical in size and design. However, it is necessary to first check the connection geometry in each case.

2.2.3 Spindle bearings with direct lubrication (DLR)

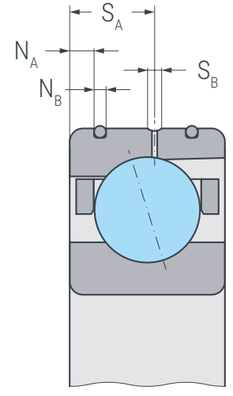


Figure: Spindle bearing with direct lubrication

When using bearings with a minimal amount of lubrication, it is possible in this design to feed lubricant directly at the ball-to-raceway point of contact. For this purpose, the design of the DLR has a circumferential lubrication groove and an oiling bore of about Ø 0.5 mm at the outer ring. Two circular grooves with integrated NBR (nitrile butadiene rubber, as standard) O-rings inserted into the groove, provide for optimal sealing against the spindle housing. The position of the feeding bore in the housing must be planned appropriately.

Consequently, the DLR design provides the design engineer with an ideal option for oil lubrication with very little effort expended on connection geometry design and oil supply.

2.3 Universal bearings and bearing arrangement

2.3.1 Universal bearings

The SLF standard manufacturing program comprises bearings in universally matched designs (UL, UM, US).

Universal bearings ("U") are designed / dimensioned so that both sides of the inner- and outer ring are aligned under a pre-defined axial force. If the inner rings are axially tensioned (O arrangement) at two identical spindle bearings, then the predefined preload is adjusted according to the respective preload class in the bearing set.

The following preload classes are available in batches:

- light (L)
- medium (M) or
- heavy (S).

This is analogous to the X arrangement, wherein the outer rings of the two bearings are clamped axially.

Spindle bearings in universal design can be installed in any arrangement. A uniform load distribution is best achieved by means of SLF bearing sets which have already been matched with each other in manufacturing.

To simplify stockkeeping or to achieve high flexibility, SLF offers the following additional options:

- Sets of 2 bearings, for instance with the suffix DU. This is a coupled bearing, in which the dimensions of bore and outside diameter are matched with each other, and which can be mounted in both an O (DB)-, X (DF) or T (DT) arrangement. The outstanding uniformity this guarantees is particularly important for high-speed use and high precision, and we at SLF recommend this choice.
- Sets of 3 bearings, for instance with suffix TU, analogous to sets of 2 bearings
- Sets of 4 bearings, for instance with suffix QU, analogous to sets of 2 bearings

Matched spindle bearings are produced with modified variations in width.

2.3.2 O / X and tandem arrangement of bearing pairs

O arrangement (suffix DB)

Figure: O arrangement

The lines of resulting pressure (center lines of thrust) diverge in the direction of the bearing axis. This results in a large support width on the bearing axis. This arrangement provides a very robust configuration to withstand tilting moments, and the bearing / mounting carries axial forces in both directions.

X arrangement (suffix DF)

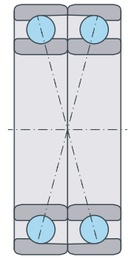


Figure: X arrangement

The lines of resultant pressure (center lines of thrust) converge in the direction of the bearing axis. This, in turn, results in a narrow support width on the bearing axis. Tilting resistance is less than that in O arrangement. The arrangement is less sensitive to misalignments. Load absorption and bearing springing are analogous to the O arrangement.

Tandem arrangement (suffix DT)

Figure: Tandem arrangement

Both paired bearings are positioned in parallel in load direction. As a result, in load direction, a higher axial load can be carried than in single bearing.

Each of the two paired bearings carries the same amount of axial load. Please note that, in any case, the tandem pair must be set against a third bearing or another bearing package.

2.3.3 Multiple bearing arrangements

With greater loads or if high stiffness values are required, then 3 (T=Triplex), 4 (Q=Quadroplex), or even more bearings are put together into sets and installed. At SLF, bearings of this pairing type are manufactured, marked, and packed in pairs or sets. These bearings also have identical dimensions in the bore and in the outer diameter.

TO arrangement (suffix TBT) and TX arrangement (suffix TFT)

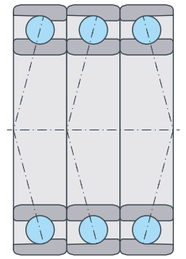


Figure: TO arrangement

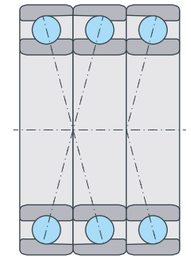


Figure: TX arrangement

These two arrangements are applied, like the tandem arrangement, to carry high axial loads in one direction. The third bearing installed additionally is intended as a thrust bearing; thanks to this bearing, the multiple arrangement is fixed.

TOT arrangement (suffix QBC) and TXT arrangement (suffix QFC)

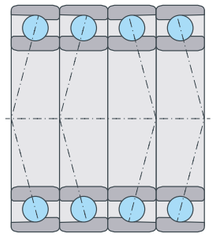


Figure: TOT arrangement

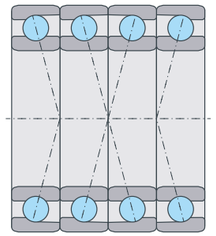


Figure: TXT arrangement

Both arrangements are employed to carry high radial and axial loads, as fixed bearings. These arrangements result in high stiffness values.

It is useful to install a maximum of three bearings next to one another; otherwise, thermal conduction deteriorates, and it is more difficult to introduce lubricant. For this reason, insert distance sleeves here.

2.3.4 Distance sleeves

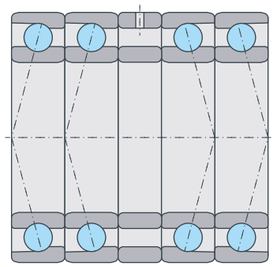


Figure: TOT arrangement

Installing distance sleeves (both an inner and an outer ring) between the paired bearings results in the following effects:

- Increased support width H in X and O arrangements.
- Better lubrication, since oil can be supplied to each bearing, and when using grease, a grease reserve is built up.
- Better removal of emerging frictional heat.
- Using distance sleeves, it is possible to change the preload in an X or O arrangement: if the inner distance washer is thinner than the outer one, preload diminishes in an X arrangement, or increases in an O arrangement. (The required size difference is provided upon request.)

Ensure sound plane-parallel faces and evenness in the manufacturing of distance sleeves. If possible, grind the surfaces of the distance sleeves in one operation.

Tolerances for the outer and inner distance washer (maximally admissible values in µm):

Tolerance class	P4	P4S, P2
Difference in width between inner and outer distance washer	3	2
Variation of width	2,5	1,3
Axial runout	2,5	1,3

SLF also provides bearing sets with suitable distance sleeves upon request.

Spindle bearings
Universal bearings and bearing arrangement

2.4 Marking of bearings

Content and position of marking

Standard markings of bearings include the following information:

- Trademark "SLF"
- Product name, such as "B71910C.T.P4S.UL"
- Country of origin "MADE IN GERMANY"
- In-plant specification of the manufacturing period, such as "121H"

As a rule, bearings are marked on the plane face of the outer ring, additionally, the axial loading direction (>) is indicated on the peripheral surface of the outer ring.

On spindle bearings, the real dimensions of outer and bore diameters, as well as the width, are additionally marked with a real value reference number, in µm, as described below:

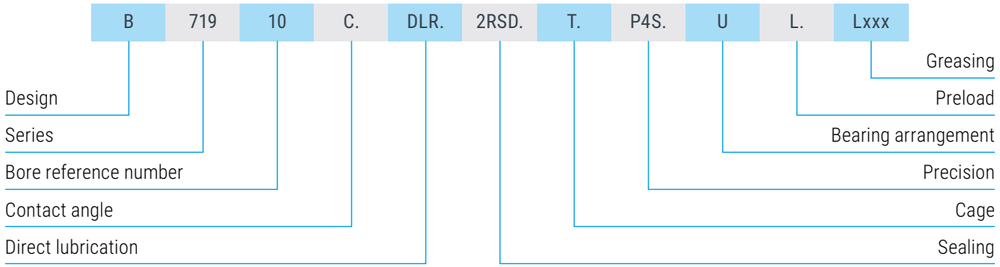
Outer ring	The real value reference number of outer diameter and width are specified between product name and "MADE IN GERMANY".
	Example: <-3/-80>
	<Dimension of outer diameter / dimension of width>
Inner ring	Real value-reference number of bore diameter.
	Example: <-1>
	<Dimension of bore diameter>

If the marking is only provided on the inner ring:

Inner ring	The real value-reference numbers of bore-, outer diameter and width are specified between product name and "MADE IN GERMANY".
	Example: <-1/-3/-80>
	<Dimension of bore diameter/allowance of outer diameter / dimension of width>

The inner ring is identified with a dash at the position with maximal wall thickness (raceway to bore).

On the label of the packaging, the real value-reference numbers are shown without variation of the bearing width (example * –1/–3 *).



Design	
B	Standard design, inner ring symmetrical with steel balls
HCB	Standard design, inner ring symmetrical with ceramic balls
XCB	Standard design, inner ring symmetrical with ceramic balls, bearing rings made of Cronidur® 30
A	Standard design, outer ring symmetrical with steel balls
BS	Special design for higher speeds, inner ring symmetrical with steel balls
HCBS	Special design for higher speeds, inner ring symmetrical with ceramic balls
XCBS	Special Universal design for higher speeds, inner ring symmetrical with ceramic balls, bearing rings made of Cronidur® 30
HS	High-speed bearing with steel balls
HC	High-speed bearing with ceramic balls
XC	High-speed bearing with ceramic balls, bearing rings made of Cronidur® 30

Series	
718	extra light series
719	light series
70	medium series
72	medium heavy series
73	heavy series

Bore reference number	
02	15 mm
03	17 mm
04	4*5 = 20 mm
05	5*5 = 25 mm
06	6*5 = 30 mm (etc.)

Contact angle	
C	15° / 17° (BS series)
E	25°

Direct lubrication	
DLR	circumferential snap ring groove and radial feeding bore, as well as two snap ring grooves with O rings on the outer diameter

Sealing	
2RSD	sealed on both sides and greased
RSDO	sealed on one side, disk at the side of the large outer ring-shoulder diameter, ungreased
RSDX	sealed at one side, disk at the side of the small outer ring-shoulder diameter, ungreased
VSD	Fluorine rubber seal

Cage	
T	Window cage made of laminated fabric, guided on outer ring
MPA	Window cage made of brass, guided on outer ring
ENPA	Window cage made of PEEK, guided on outer ring
EVPA	Window cage made of fiberglass-reinforced PEEK, guided on outer ring

Precision	
P4S	Standard design according to factory standard (running tolerances according to P2)
K5	with additionally limited bore and outer diameter tolerance of the corresponding tolerance class
P4	according to DIN 620-2
P2	according to DIN 620-2
P2S	Tolerance according to factory standard better than P2

Bearing arrangement / Number of bearings in et	
U	Single bearing
D	Bearing set, 2 bearings
T	Bearing set, 3 bearings
Q	Bearing set, 4 bearings
P	Bearing set, 5 bearings

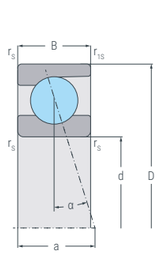
Arrangement of bearings in the set	
U	Single bearing for arbitrary arrangement
B	O arrangement
F	X arrangement
T	Tandem arrangement

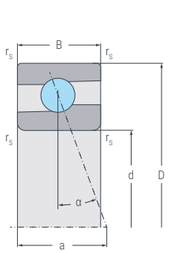
Preload	
L	low
M	medium
S	high
/...	individual [N]

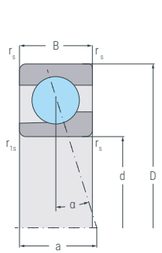
Lubrication	
	Preserved in unsealed design
	L252 in sealed design
Lxxx	individual greasing

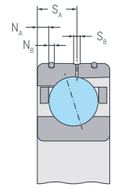
Spindle bearings
Dimensional tables of spindle bearings

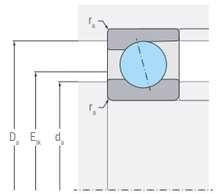
2.5 Dimensional tables of spindle bearings

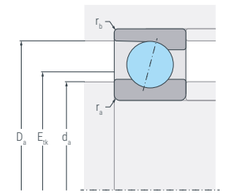


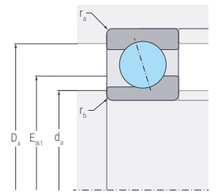


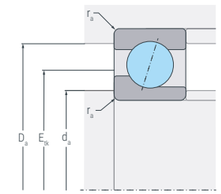








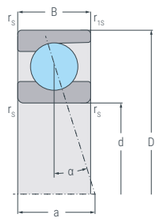


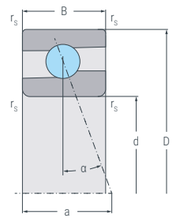


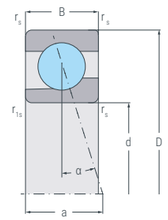
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1	B71903C.2RSD.T.P4S	17	30	7	6,6	0,3	0,15	15					20,0	27,5	0,3	0,1			5,3	3,1	0,159	50 000		21	81	176	17,7	32,1	47,1	66	280	656	0,017	1
2	B71903E.2RSD.T.P4S	17	30	7	9	0,3	0,15	25					20,0	27,5	0,3	0,1			5,0	2,8	0,148	45 000		23	116	268	37,8	68,9	96,7	67	355	850	0,017	2
3	B71903C.T.P4S	17	30	7	6,6	0,3	0,15	15					20,0	27,5	0,3	0,1	22,2		5,3	3,1	0,159	50 000	80 000	21	81	176	17,7	32,1	47,1	66	280	656	0,017	3
4	B71903E.T.P4S	17	30	7	9	0,3	0,15	25					20,0	27,5	0,3	0,1	22,2		5,0	2,8	0,148	45 000	70 000	23	116	268	37,8	68,9	96,7	67	355	850	0,017	4
5	HCB71903C.T.P4S	17	30	7	6,6	0,3	0,15	15					20,0	27,5	0,3	0,1	22,2		5,3	2,8	0,112	70 000	110 000	11	39	91	15,7	26,4	39,3	34	125	315	0,015	5
6	HCB71903E.T.P4S	17	30	7	9	0,3	0,15	25					20,0	27,5	0,3	0,1	22,2		5,0	2,6	0,104	63 000	100 000	18	50	132	38,9	56,5	81,9	53	150	405	0,015	6
7	XCB71903C.T.P4S	17	30	7	6,6	0,3	0,15	15					20,0	27,5	0,3	0,1	22,2		8,4	2,8	0,265	80 000	120 000	11	39	91	15,7	26,4	39,3	34	125	315	0,015	7
8	XCB71903E.T.P4S	17	30	7	9	0,3	0,15	25					20,0	27,5	0,3	0,1	22,2		8,0	2,6	0,245	70 000	110 000	18	50	132	38,9	56,5	81,9	53	150	405	0,015	8
9	B7003C.2RSD.T.P4S	17	35	10	8	0,3	0,15	15					21,0	32,0	0,3	0,1			8,7	5,2	0,270	45 000		41	145	306	21,2	37,7	55,3	127	490	1 115	0,040	9
10	B7003E.2RSD.T.P4S	17	35	10	11,0	0,3	0,15	25					21,0	32,0	0,3	0,1			8,3	5,0	0,260	43 000		54	220	485	48,0	81,2	113	158	668	1 520	0,040	10
11	B7003C.T.P4S	17	35	10	8	0,3	0,15	15					21,0	32,0	0,3	0,1	24,4		8,7	5,2	0,270	45 000	70 000	41	145	306	21,2	37,7	55,3	127	490	1 115	0,040	11
12	B7003E.T.P4S	17	35	10	11	0,3	0,15	25					21,0	32,0	0,3	0,1	24,4		8,3	5,0	0,260	43 000	63 000	54	220	485	48,0	81,2	113	158	668	1 520	0,040	12
13	HCB7003C.T.P4S	17	35	10	8	0,3	0,15	15					21,0	32,0	0,3	0,1	24,4		8,7	4,8	0,190	63 000	100 000	18	73	161	17,1	30,4	44,0	54	230	550	0,035	13
14	HCB7003E.T.P4S	17	35	10	11	0,3	0,15	25					21,0	32,0	0,3	0,1	24,4		8,3	4,6	0,182	56 000	90 000	28	105	250	43,1	69,0	96,2	82	311	760	0,035	14
15	XCB7003C.T.P4S	17	35	10	8	0,3	0,15	15					21,0	32,0	0,3	0,1	24,4		13,8	4,8	0,450	70 000	110 000	18	73	161	17,1	30,4	44,0	54	230	550	0,035	15
16	XCB7003E.T.P4S	17	35	10	11	0,3	0,15	25					21,0	32,0	0,3	0,1	24,4		13,4	4,6	0,431	63 000	100 000	28	105	250	43,1	69,0	96,2	82	311	760	0,035	16
17	HS7003C.2RSD.T.P4S	17	35	10	9	0,3		15					21,0	32,0	0,3				3,9	1,6	0,078	63 000		13	39	78	14,5	22,5	31,5	39	121	256	0,040	17
18	HS7003E.2RSD.T.P4S	17	35	10	11	0,3		25					21,0	32,0	0,3				3,6	1,5	0,074	56 000		21	63	126	35,8	52,9	69,3	61	183	375	0,040	18
19	HC7003C.2RSD.T.P4S	17	35	10	9	0,3		15					21,0	32,0	0,3				3,9	1,4	0,056	78 000		9	27	54	14,2	21,3	29,2	27	81	173	0,039	19
20	HC7003E.2RSD.T.P4S	17	35	10	11	0,3		25					21,0	32,0	0,3				3,6	1,3	0,053	75 000		14	42	84	35,5	52,1	68,2	41	127	259	0,039	20
21	HS7003C.T.P4S	17	35	10	9	0,3		15					21,0	32,0	0,3		25	24,4	3,9	1,6	0,078	63 000	95 000	13	39	78	14,5	22,5	31,5	39	121	256	0,040	21
22	HS7003E.T.P4S	17	35	10	11	0,3		25					21,0	32,0	0,3		25	24,4	3,6	1,5	0,074	56 000	85 000	21	63	126	35,8	52,9	69,3	61	183	375	0,040	22
23	HC7003C.T.P4S	17	35	10	9	0,3		15					21,0	32,0	0,3		25	24,4	3,9	1,4	0,056	78 000	120 000	9	27	54	14,2	21,3	29,2	27	81	173	0,040	23
24	HC7003E.T.P4S	17	35	10	11	0,3		25					21,0	32,0	0,3		25	24,4	3,6	1,3	0,053	75 000	110 000	14	42	84	35,5	52,1	68,2	41	127	259	0,039	24
25	XC7003C.T.P4S	17	35	10	9	0,3		15					21,0	32,0	0,3		25	24,4	6,2	1,4	0,133	90 000	130 000	9	27	54	14,2	21,3	29,2	27	81	173	0,039	25
26	XC7003E.T.P4S	17	35	10	11	0,3		25					21,0	32,0	0,3		25	24,4	5,8	1,3	0,126	80 000	120 000	14	42	84	35,5	52,1	68,2	41	127	259	0,039	26
27	B7203C.2RSD.T.P4S	17	40	12	10	0,6	0,3	15					22,5	34,5	0,6	0,3			10,8	6,1	0,316	38 000		53	185	390	23,6	42,8	63,8	165	650	1 470	0,060	27
28	B7203E.2RSD.T.P4S	17	40	12	13	0,6	0,3	25					22,5	34,5	0,6	0,3			10,4	5,8	0,304	36 000		75	290	625	54,0	90,6	126,0	222	890	2 000	0,060	28
29	B7203C.T.P4S	17	40	12	10	0,6	0,3	15					22,5	34,5	0,6	0,3	26,7		10,8	6,1	0,316	38 000	56 000	53	185	390	23,6	42,8	63,8	165	650	1 470	0,060	29

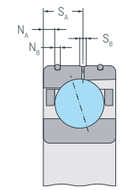
The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

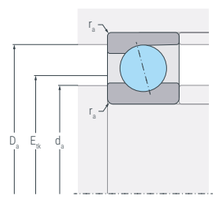
Spindle bearings
Dimensional tables of spindle bearings

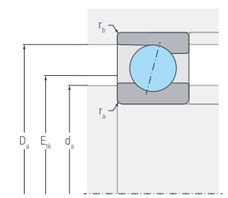


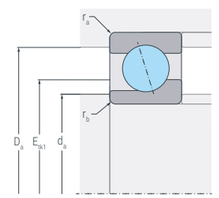


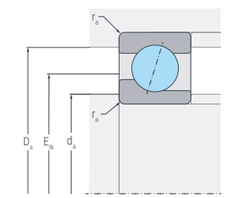








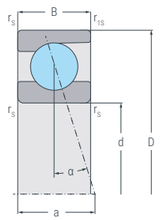


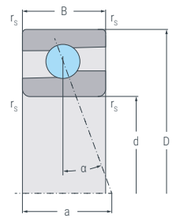


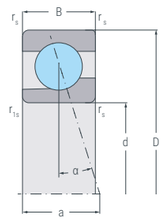
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
30	B7203E.T.P4S	17	40	12	13	0,6	0,3	25					22,5	34,5	0,6	0,3	26,7		10,4	5,8	0,304	36 000	53 000	75	290	625	54,0	90,6	126	222	890	2 000	0,060	30
31	HCB7203C.T.P4S	17	40	12	10	0,6	0,3	15					22,5	34,5	0,6	0,3	26,7		10,8	5,6	0,221	50 000	75 000	25	98	210	19,5	35,0	50,5	77	320	740	0,052	31
32	HCB7203E.T.P4S	17	40	12	13	0,6	0,3	25					22,5	34,5	0,6	0,3	26,7		10,4	5,4	0,213	43 000	63 000	28	141	328	42,5	77,5	107	82	430	1 020	0,052	32
33	A7303C.T.P4S	17	47	14	11	1	0,6	15					23,0	41,0	1	0,6	29,8	28	14,5	9,4	0,541	29 000	48 000	70	140	290	35,0	45,0	70,0	222	473	1 050	0,120	33
34	A7303E.T.P4S	17	47	14	14	1	0,6	25					23,0	41,0	1	0,6	29,8	28	13,9	9,1	0,522	26 000	43 000	120	250	490	80,0	100	140	358	762	1 550	0,120	34
35	B71904C.2RSD.T.P4S	20	37	9	8	0,3	0,15	15					22,0	33,5	0,3	0,1			7,3	4,5	0,233	43 000		38	135	298	24,3	43,6	66,0	110	480	1 120	0,034	35
36	B71904E.2RSD.T.P4S	20	37	9	11	0,3	0,15	25					22,0	33,5	0,3	0,1			6,9	4,2	0,216	38 000		41	172	391	47,0	84,1	118	130	525	1 240	0,034	36
37	B71904C.T.P4S	20	37	9	8	0,3	0,15	15					22,0	33,5	0,3	0,1	27,3		7,3	4,5	0,233	43 000	63 000	38	135	298	24,3	43,6	66,0	110	480	1 120	0,034	37
38	B71904E.T.P4S	20	37	9	11	0,3	0,15	25					22,0	33,5	0,3	0,1	27,3		6,9	4,2	0,216	38 000	60 000	41	172	391	47,0	84,1	118	130	525	1 240	0,034	38
39	HCB71904C.T.P4S	20	37	9	8	0,3	0,15	15					22,0	33,5	0,3	0,1	27,3		7,3	4,1	0,163	60 000	90 000	13	59	130	16,9	32,0	47,3	39	190	457	0,030	39
40	HCB71904E.T.P4S	20	37	9	11	0,3	0,15	25					22,0	33,5	0,3	0,1	27,3		6,9	3,8	0,151	53 000	80 000	27	77	192	47,8	69,5	98,7	80	230	595	0,030	40
41	XCB71904C.T.P4S	20	37	9	8	0,3	0,15	15					22,0	33,5	0,3	0,1	27,3		11,7	4,1	0,387	63 000	100 000	13	59	130	16,9	32,0	47,3	39	190	457	0,030	41
42	XCB71904E.T.P4S	20	37	9	11	0,3	0,15	25					22,0	33,5	0,3	0,1	27,3		11,1	3,8	0,359	60 000	90 000	27	77	192	47,8	69,5	98,7	80	230	595	0,030	42
43	HS71904C.2RSD.T.P4S	20	37	9	8	0,3		15					24,0	33,5	0,3				3,9	1,7	0,087	56 000		13	39	79	15,0	23,5	32,7	39	124	262	0,040	43
44	HS71904E.2RSD.T.P4S	20	37	9	11	0,3		25					24,0	33,5	0,3				3,7	1,6	0,083	53 000		21	63	126	37,0	55,0	72,8	61	186	384	0,040	44
45	HC71904C.2RSD.T.P4S	20	37	9	8	0,3		15					24,0	33,5	0,3				3,9	1,6	0,063	70 000		9	27	54	14,5	22,5	31,0	27	84	180	0,039	45
46	HC71904E.2RSD.T.P4S	20	37	9	11	0,3		25					24,0	33,5	0,3				3,7	1,5	0,060	67 000		15	45	90	37,5	54,5	71,5	44	130	268	0,039	46
47	HS71904C.T.P4S	20	37	9	8	0,3		15					24,0	33,5	0,3		27,3	26,7	3,9	1,7	0,087	56 000	90 000	13	39	79	15,0	23,5	32,7	39	124	262	0,040	47
48	HS71904E.T.P4S	20	37	9	11	0,3		25					24,0	33,5	0,3		27,3	26,7	3,7	1,6	0,083	53 000	80 000	21	63	126	37,0	55,0	72,8	61	186	384	0,040	48
49	HC71904C.T.P4S	20	37	9	8	0,3		15					24,0	33,5	0,3		27,3	26,7	3,9	1,6	0,063	70 000	110 000	9	27	54	14,5	22,5	31,0	27	84	180	0,039	49
50	HC71904E.T.P4S	20	37	9	11	0,3		25					24,0	33,5	0,3		27,3	26,7	3,7	1,5	0,060	67 000	100 000	15	45	90	37,5	54,5	71,5	44	130	268	0,039	50
51	XC71904C.T.P4S	20	37	9	8	0,3		15					24,0	33,5	0,3		27,3	26,7	6,3	1,6	0,149	80 000	125 000	9	27	54	14,5	22,5	31,0	27	84	180	0,039	51
52	XC71904E.T.P4S	20	37	9	11	0,3		25					24,0	33,5	0,3		27,3	26,7	5,9	1,5	0,141	75 000	110 000	15	45	90	37,5	54,5	71,5	44	130	268	0,039	52
53	B7004C.2RSD.T.P4S	20	42	12	10	0,6	0,3	15					25,0	37,0	0,6	0,3			11,1	7,0	0,362	38 000		52	180	378	22,7	40,0	58,9	160	600	1 370	0,069	53
54	B7004E.2RSD.T.P4S	20	42	12	13	0,6	0,3	25					25,0	37,0	0,6	0,3			10,6	6,7	0,347	34 000		71	277	599	51,6	86,6	119	205	840	1 870	0,069	54
55	B7004C.T.P4S	20	42	12	10	0,6	0,3	15					25,0	37,0	0,6	0,3	29,1		11,1	7,0	0,352	38 000	60 000	52	180	378	22,7	40,0	58,9	160	600	1 370	0,069	55
56	B7004E.T.P4S	20	42	12	13	0,6	0,3	25					25,0	37,0	0,6	0,3	29,1		10,6	6,7	0,347	34 000	53 000	71	277	599	51,6	86,6	119	205	840	1 870	0,069	56
57	B7004C.DLR.T.P4S	20	42	12	10	0,6	0,3	15	1,5	2,2	1,4	6,6	25,0	37,0	0,6	0,3			11,1	7,0	0,352		60 000	52	180	378	22,7	40,0	58,9	160	600	1 370	0,069	57
58	B7004E.DLR.T.P4S	20	42	12	13	0,6	0,3	25	1,5	2,2	1,4	6,6	25,0	37,0	0,6	0,3			10,6	6,7	0,347		53 000	71	277	599	51,6	86,6	119	205	840	1 870	0,069	58
59	HCB7004C.T.P4S	20	42	12	10	0,6	0,3	15					25,0	37,0	0,6	0,3	29,1		11,1	6,4	0,254	53 000	80 000	24	92	202	18,8	33,0	47,3	73	301	690	0,062	59
60	HCB7004E.T.P4S	20	42	12	13	0,6	0,3	25					25,0	37,0	0,6	0,3	29,1		10,6	6,1	0,243	48 000	75 000	26	131	304	41,4	73,5	102	76	390	930	0,062	60

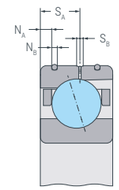
The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

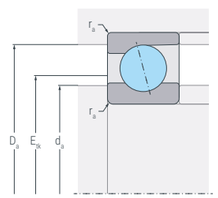
Spindle bearings
Dimensional tables of spindle bearings

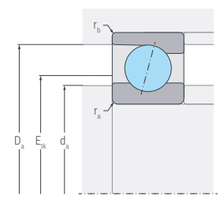


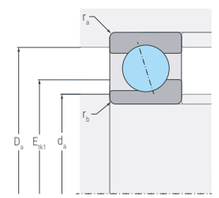


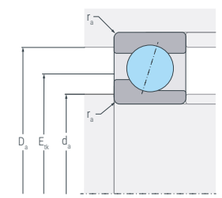












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
61	XCB7004C.T.P4S	20	42	12	10	0,6	0,3	15					25,0	37,0	0,6	0,3	29,1		17,8	6,4	0,600	60 000	90 000	24	92	202	18,8	33,0	47,3	73	301	690	0,062	61
62	XCB7004E.T.P4S	20	42	12	13	0,6	0,3	25					25,0	37,0	0,6	0,3	29,1		17,0	6,1	0,576	53 000	80 000	26	131	304	41,4	73,5	102	76	390	930	0,062	62
63	HCB7004C.DLR.T.P4S	20	42	12	10	0,6	0,3	15	1,5	2,2	1,4	6,6	25,0	37,0	0,6	0,3			11,1	6,4	0,254		80 000	24	92	202	18,8	33,0	47,3	73	301	690	0,062	63
64	HCB7004E.DLR.T.P4S	20	42	12	13	0,6	0,3	25	1,5	2,2	1,4	6,6	25,0	37,0	0,6	0,3			10,6	6,1	0,243		75 000	26	131	304	41,4	73,5	102	76	390	930	0,062	64
65	XCB7004C.DLR.T.P4S	20	42	12	10	0,6	0,3	15	1,5	2,2	1,4	6,6	25,0	37,0	0,6	0,3			17,8	6,4	0,600		90 000	24	92	202	18,8	33,0	47,3	73	301	690	0,062	65
66	XCB7004E.DLR.T.P4S	20	42	12	13	0,6	0,3	25	1,5	2,2	1,4	6,6	25,0	37,0	0,6	0,3			17,0	6,1	0,576		80 000	26	131	304	41,4	73,5	102	76	390	930	0,062	66
67	HS7004C.2RSD.T.P4S	20	42	12	10	0,6		15					25,0	37,0	0,6				6,2	2,7	0,135	53 000		20	63	126	20,0	31,5	43,5	63	198	420	0,080	67
68	HS7004E.2RSD.T.P4S	20	42	12	13	0,6		25					25,0	37,0	0,6				5,9	2,5	0,128	48 000		34	102	204	49,3	73,5	96,0	98	299	610	0,080	68
69	HC7004C.2RSD.T.P4S	20	42	12	10	0,6		15					25,0	37,0	0,6				6,2	2,4	0,097	67 000		15	45	90	19,5	30,0	41,0	45	138	284	0,077	69
70	HC7004E.2RSD.T.P4S	20	42	12	13	0,6		25					25,0	37,0	0,6				5,9	2,3	0,092	60 000		23	69	138	49,0	72,5	94,0	67	207	421	0,077	70
71	HS7004C.T.P4S	20	42	12	10	0,6		15					25,0	37,0	0,6		29,8	29	6,2	2,7	0,135	53 000	80 000	20	63	126	20,0	31,5	43,5	63	198	420	0,080	71
72	HS7004E.T.P4S	20	42	12	13	0,6		25					25,0	37,0	0,6		29,8	29	5,9	2,5	0,128	48 000	75 000	34	102	204	49,3	73,5	96,0	98	299	610	0,080	72
73	HC7004C.T.P4S	20	42	12	10	0,6		15					25,0	37,0	0,6		29,8	29	6,2	2,4	0,097	67 000	100 000	15	45	90	19,5	30,0	41,0	45	138	284	0,077	73
74	HC7004E.T.P4S	20	42	12	13	0,6		25					25,0	37,0	0,6		29,8	29	5,9	2,3	0,092	60 000	95 000	23	69	138	49,0	72,5	94,0	67	207	421	0,077	74
75	XC7004C.T.P4S	20	42	12	10	0,6		15					25,0	37,0	0,6		29,8	29	9,9	2,4	0,231	75 000	110 000	15	45	90	19,5	30,0	41,0	45	138	284	0,077	75
76	XC7004E.T.P4S	20	42	12	13	0,6		25					25,0	37,0	0,6		29,8	29	9,5	2,3	0,219	67 000	100 000	23	69	138	49,0	72,5	94,0	67	207	421	0,077	76
77	HS7004C.DLR.T.P4S	20	42	12	10	0,6		15	1,5	2,2	1,4	6,6	25,0	37,0	0,6				6,2	2,7	0,135		80 000	20	63	126	20,0	31,5	43,5	63	198	420	0,080	77
78	HS7004E.DLR.T.P4S	20	42	12	13	0,6		25	1,5	2,2	1,4	6,6	25,0	37,0	0,6				5,9	2,5	0,128		75 000	34	102	204	49,3	73,5	96,0	98	299	610	0,080	78
79	HC7004C.DLR.T.P4S	20	42	12	10	0,6		15	1,5	2,2	1,4	6,6	25,0	37,0	0,6				6,2	2,4	0,097		100 000	15	45	90	19,5	30,0	41,0	45	138	284	0,077	79
80	HC7004E.DLR.T.P4S	20	42	12	13	0,6		25	1,5	2,2	1,4	6,6	25,0	37,0	0,6				5,9	2,3	0,092		95 000	23	69	138	49,0	72,5	94,0	67	207	421	0,077	80
81	XC7004C.DLR.T.P4S	20	42	12	10	0,6		15	1,5	2,2	1,4	6,6	25,0	37,0	0,6				9,9	2,4	0,231		110 000	15	45	90	19,5	30,0	41,0	45	138	284	0,077	81
82	XC7004E.DLR.T.P4S	20	42	12	13	0,6		25	1,5	2,2	1,4	6,6	25,0	37,0	0,6				9,5	2,3	0,219		100 000	23	69	138	49,0	72,5	94,0	67	207	421	0,077	82
83	B7204C.2RSD.T.P4S	20	47	14	12	1	0,6	15					26,5	40,5	1	0,6			13,0	8,0	0,417	32 000		74	250	528	27,6	49,5	73,2	230	855	1 930	0,108	83
84	B7204E.2RSD.T.P4S	20	47	14	15	1	0,6	25					26,5	40,5	1	0,6			12,4	7,7	0,400	30 000		105	392	844	63,1	105	145	302	1 180	2 640	0,108	84
85	B7204C.T.P4S	20	47	14	12	1	0,6	15					26,5	40,5	1	0,6	31,3		13,0	8,0	0,417	32 000	48 000	74	250	528	27,6	49,5	73,2	230	855	1 930	0,108	85
86	B7204E.T.P4S	20	47	14	15	1	0,6	25					26,5	40,5	1	0,6	31,3		12,4	7,7	0,400	30 000	45 000	105	392	844	63,1	105	145	302	1 180	2 640	0,108	86
87	HCB7204C.T.P4S	20	47	14	12	1	0,6	15					26,5	40,5	1	0,6	31,3		13,0	7,4	0,292	43 000	63 000	45	161	348	24,3	44,2	64,2	135	530	1 200	0,098	87
88	HCB7204E.T.P4S	20	47	14	15	1	0,6	25					26,5	40,5	1	0,6	31,3		12,4	7,1	0,280	36 000	53 000	56	240	540	57,0	98,0	135	160	720	1 650	0,098	88
89	A7304C.T.P4S	20	52	15	12	1,1	0,6	15					27,0	45,0	1,1	0,6	33,4	31,2	18,5	13,3	0,694	26 000	42 000	90	180	370	34,0	45,0	70,0	288	608	1 350	0,150	89
90	A7304E.T.P4S	20	52	15	16	1,1	0,6	25					27,0	45,0	1,1	0,6	33,4	31,2	17,9	12,9	0,670	23 000	38 000	160	310	630	80,0	110	140	477	942	1 980	0,150	90
91	B71805C.T.P4S	25	37	7	8	0,3	0,1	15					28,0	34,0	0,3	0,1	30		4,2	3,2	0,102	36 000	53 000	15	53	121	19,3	33	51	48	177	436	0,021	91

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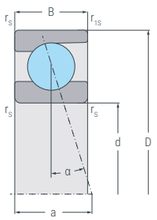
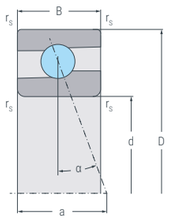
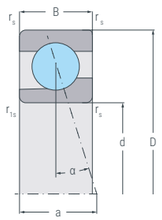
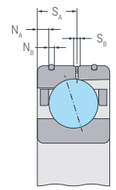
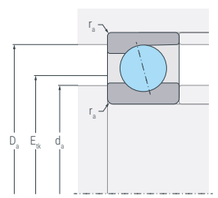
Spindle bearings
Dimensional tables of spindle bearings

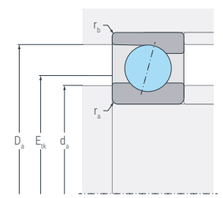


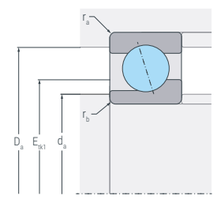


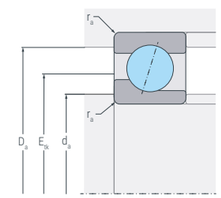












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
92	B71805E.T.P4S	25	37	7	11	0,3	0,1	25					28,0	34,0	0,3	0,1	30		3,9	3,0	0,096	32 000	48 000	17	70	179	41,1	69	100	50	211	555	0,021	92
93	B71905C.2RSD.T.P4S	25	42	9	9	0,3	0,15	15					27,0	38,5	0,3	0,1			7,9	5,0	0,260	36 000		39	140	325	27,1	48,5	75,5	117	480	1 220	0,040	93
94	B71905E.2RSD.T.P4S	25	42	9	12	0,3	0,15	25					27,0	38,5	0,3	0,1			7,4	4,6	0,241	32 000		41	188	429	54,4	98,0	138	125	575	1 350	0,040	94
95	B71905C.T.P4S	25	42	9	9	0,3	0,15	15					27,0	38,5	0,3	0,1	32,3		7,9	5,0	0,260	36 000	56 000	39	140	325	27,1	48,5	75,5	117	480	1 220	0,040	95
96	B71905E.T.P4S	25	42	9	12	0,3	0,15	25					27,0	38,5	0,3	0,1	32,3		7,4	4,6	0,241	32 000	50 000	41	188	429	54,4	98,0	138	125	575	1 350	0,040	96
97	HCB71905C.T.P4S	25	42	9	9	0,3	0,15	15					27,0	38,5	0,3	0,1	32,3		7,9	4,6	0,181	50 000	75 000	13	63	148	19,2	37,3	55,0	39	204	505	0,035	97
98	HCB71905E.T.P4S	25	42	9	12	0,3	0,15	25					27,0	38,5	0,3	0,1	32,3		7,4	4,3	0,169	45 000	67 000	30	85	215	55,6	81,0	116	88	251	660	0,035	98
99	XCB71905C.T.P4S	25	42	9	9	0,3	0,15	15					27,0	38,5	0,3	0,1	32,3		12,6	4,6	0,430	56 000	85 000	13	63	148	19,2	37,3	55,0	39	204	505	0,035	99
100	XCB71905E.T.P4S	25	42	9	12	0,3	0,15	25					27,0	38,5	0,3	0,1	32,3		11,9	4,3	0,400	50 000	75 000	30	85	215	55,6	81,0	116	88	251	660	0,035	100
101	HS71905C.2RSD.T.P4S	25	42	9	9	0,3		15					29,0	38,5	0,3				4,2	2,1	0,105	48 000		14	42	84	17,0	26,5	36,5	42	133	280	0,050	101
102	HS71905E.2RSD.T.P4S	25	42	9	12	0,3		25					29,0	38,5	0,3				3,9	2,0	0,099	43 000		23	69	138	42,0	63,0	82,5	66	203	416	0,050	102
103	HC71905C.2RSD.T.P4S	25	42	9	9	0,3		15					29,0	38,5	0,3				4,2	1,9	0,075	60 000		10	30	60	16,5	25,5	34,5	30	90	188	0,048	103
104	HC71905E.2RSD.T.P4S	25	42	9	12	0,3		25					29,0	38,5	0,3				3,9	1,8	0,071	56 000		16	48	96	42,5	62,0	80,0	47	139	282	0,048	104
105	HS71905C.T.P4S	25	42	9	9	0,3		15					29,0	38,5	0,3		32,5	31,9	4,2	2,1	0,105	48 000	75 000	14	42	84	17,0	26,5	36,5	42	133	280	0,050	105
106	HS71905E.T.P4S	25	42	9	12	0,3		25					29,0	38,5	0,3		32,5	31,9	3,9	2,0	0,099	43 000	67 000	23	69	138	42,0	63,0	82,5	66	203	416	0,050	106
107	HC71905C.T.P4S	25	42	9	9	0,3		15					29,0	38,5	0,3		32,5	31,9	4,2	1,9	0,075	60 000	95 000	10	30	60	16,5	25,5	34,5	30	90	188	0,048	107
108	HC71905E.T.P4S	25	42	9	12	0,3		25					29,0	38,5	0,3		32,5	31,9	3,9	1,8	0,071	56 000	85 000	16	48	96	42,5	62,0	80,0	47	139	282	0,048	108
109	XC71905C.T.P4S	25	42	9	9	0,3		15					29,0	38,5	0,3		32,5	31,9	6,7	1,9	0,178	68 000	105 000	10	30	60	16,5	25,5	34,5	30	90	188	0,048	109
110	XC71905E.T.P4S	25	42	9	12	0,3		25					29,0	38,5	0,3		32,5	31,9	6,2	1,8	0,169	63 000	95 000	16	48	96	42,5	62,0	80,0	47	139	282	0,048	110
111	B7005C.2RSD.T.P4S	25	47	12	11	0,6	0,3	15					30,0	42,0	0,6	0,3			12,3	8,5	0,443	34 000		74	255	534	29,8	51,9	75,5	230	851	1 920	0,084	111
112	B7005E.2RSD.T.P4S	25	47	12	14	0,6	0,3	25					30,0	42,0	0,6	0,3			11,7	7,9	0,414	30 000		100	382	830	67,7	112	154	295	1 160	2 580	0,084	112
113	B7005C.T.P4S	25	47	12	11	0,6	0,3	15					30,0	42,0	0,6	0,3	34,1		12,3	8,5	0,443	34 000	50 000	74	255	534	29,8	51,9	75,5	230	851	1 920	0,084	113
114	B7005E.T.P4S	25	47	12	14	0,6	0,3	25					30,0	42,0	0,6	0,3	34,1		11,7	7,9	0,414	30 000	45 000	100	382	830	67,7	112	154	295	1 160	2 580	0,084	114
115	B7005C.DLR.T.P4S	25	47	12	11	0,6	0,3	15	1,5	2,2	1,4	6,6	30,0	42,0	0,6	0,3			12,3	8,5	0,443		50 000	74	255	534	29,8	51,9	75,5	230	851	1 920	0,084	115
116	B7005E.DLR.T.P4S	25	47	12	14	0,6	0,3	25	1,5	2,2	1,4	6,6	30,0	42,0	0,6	0,3			11,7	7,9	0,414		45 000	100	382	830	67,7	112	154	295	1 160	2 580	0,084	116
117	HCB7005C.T.P4S	25	47	12	11	0,6	0,3	15					30,0	42,0	0,6	0,3	34,1		12,3	7,8	0,310	45 000	70 000	33	131	280	24,5	42,5	60,5	103	415	950	0,073	117
118	HCB7005E.T.P4S	25	47	12	14	0,6	0,3	25					30,0	42,0	0,6	0,3	34,1		11,7	7,3	0,290	40 000	63 000	39	190	430	55,0	96,5	132	115	562	1 320	0,073	118
119	XCB7005C.T.P4S	25	47	12	11	0,6	0,3	15					30,0	42,0	0,6	0,3	34,1		19,6	7,8	0,734	50 000	80 000	33	131	280	24,5	42,5	60,5	103	415	950	0,073	119
120	XCB7005E.T.P4S	25	47	12	14	0,6	0,3	25					30,0	42,0	0,6	0,3	34,1		18,7	7,3	0,687	45 000	70 000	39	190	430	55,0	96,5	132	115	562	1 320	0,073	120
121	HCB7005C.DLR.T.P4S	25	47	12	11	0,6	0,3	15	1,5	2,2	1,4	6,6	30,0	42,0	0,6	0,3			12,3	7,8	0,310		70 000	33	131	280	24,5	42,5	60,5	103	415	950	0,073	121
122	HCB7005E.DLR.T.P4S	25	47	12	14	0,6	0,3	25	1,5	2,2	1,4	6,6	30,0	42,0	0,6	0,3			11,7	7,3	0,290		63 000	39	190	430	55,0	96,5	132	115	562	1 320	0,073	122

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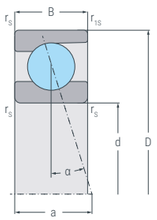
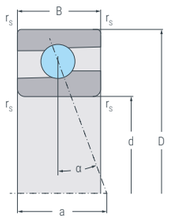
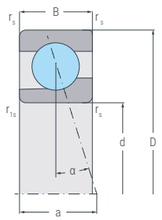
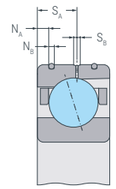
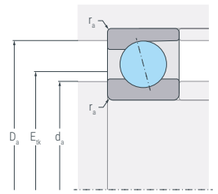
Spindle bearings
Dimensional tables of spindle bearings

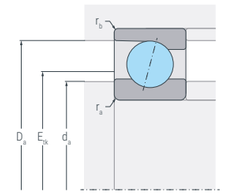


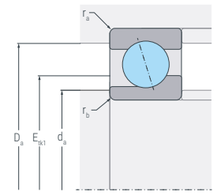


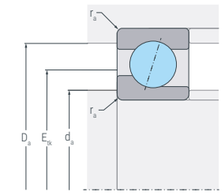












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
123	XCB7005C.DLR.T.P4S	25	47	12	11	0,6	0,3	15	1,5	2,2	1,4	6,6	30,0	42,0	0,6	0,3			19,6	7,8	0,734		80 000	33	131	280	24,5	42,5	60,5	103	415	950	0,073	123
124	XCB7005E.DLR.T.P4S	25	47	12	14	0,6	0,3	25	1,5	2,2	1,4	6,6	30,0	42,0	0,6	0,3			18,7	7,3	0,687		70 000	39	190	430	55,0	96,5	132	115	562	1 320	0,073	124
125	B7205C.2RSD.T.P4S	25	52	15	13	1	0,6	15					31,5	45,5	1	0,6			15,3	9,4	0,491	28 000		80	270	560	30,1	53,6	79,2	244	908	2 050	0,133	125
126	B7205E.2RSD.T.P4S	25	52	15	17	1	0,6	25					31,5	45,5	1	0,6			14,6	9,0	0,471	26 000		113	420	900	68,9	144	158	325	1 260	2 820	0,133	126
127	B7205C.T.P4S	25	52	15	13	1	0,6	15					31,5	45,5	1	0,6	36,3		15,3	9,4	0,491	28 000	43 000	80	270	560	30,1	53,6	79,2	244	908	2 050	0,133	127
128	B7205E.T.P4S	25	52	15	17	1	0,6	25					31,5	45,5	1	0,6	36,3		14,6	9,0	0,471	26 000	40 000	113	420	900	68,9	144	158	325	1 260	2 820	0,133	128
129	HS7005C.2RSD.T.P4S	25	47	12	11	0,6		15					30,0	42,0	0,6				6,3	2,9	0,146	45 000		21	63	126	20,5	33,0	45,5	63	204	426	0,090	129
130	HS7005E.2RSD.T.P4S	25	47	12	14	0,6		25					30,0	42,0	0,6				5,9	2,7	0,138	40 000		35	105	210	51,5	76,5	101	101	307	624	0,090	130
131	HC7005C.2RSD.T.P4S	25	47	12	11	0,6		15					30,0	42,0	0,6				6,3	2,7	0,105	56 000		15	45	90	20,1	31,5	42,0	45	138	283	0,087	131
132	HC7005E.2RSD.T.P4S	25	47	12	14	0,6		25					30,0	42,0	0,6				5,9	2,5	0,099	53 000		24	72	144	51,0	75,0	98,0	70	210	430	0,087	132
133	HS7005C.T.P4S	25	47	12	11	0,6		15					30,0	42,0	0,6		34,8	34	6,3	2,9	0,146	45 000	70 000	21	63	126	20,5	33,0	45,5	63	204	426	0,090	133
134	HS7005E.T.P4S	25	47	12	14	0,6		25					30,0	42,0	0,6		34,8	34	5,9	2,7	0,138	40 000	63 000	35	105	210	51,5	76,5	101	101	307	624	0,090	134
135	HC7005C.T.P4S	25	47	12	11	0,6		15					30,0	42,0	0,6		34,8	34	6,3	2,7	0,105	56 000	88 000	15	45	90	20,1	31,5	42,0	45	138	283	0,087	135
136	HC7005E.T.P4S	25	47	12	14	0,6		25					30,0	42,0	0,6		34,8	34	5,9	2,5	0,099	53 000	80 000	24	72	144	51,0	75,0	98,0	70	210	430	0,087	136
137	XC7005C.T.P4S	25	47	12	11	0,6		15					30,0	42,0	0,6		34,8	34	10,1	2,7	0,249	63 000	100 000	15	45	90	20,1	31,5	42,0	45	138	283	0,087	137
138	XC7005E.T.P4S	25	47	12	14	0,6		25					30,0	42,0	0,6		34,8	34	9,5	2,5	0,236	56 000	90 000	24	72	144	51,0	75,0	98,0	70	210	430	0,087	138
139	HS7005C.DLR.T.P4S	25	47	12	11	0,6		15	1,5	2,2	1,4	6,6	30,0	42,0	0,6				6,3	2,9	0,146		70 000	21	63	126	20,5	33,0	45,5	63	204	426	0,090	139
140	HS7005E.DLR.T.P4S	25	47	12	14	0,6		25	1,5	2,2	1,4	6,6	30,0	42,0	0,6				5,9	2,7	0,138		63 000	35	105	210	51,5	76,5	101	101	307	624	0,090	140
141	HC7005C.DLR.T.P4S	25	47	12	11	0,6		15	1,5	2,2	1,4	6,6	30,0	42,0	0,6				6,3	2,7	0,105		88 000	15	45	90	20,1	31,5	42,0	45	138	283	0,087	141
142	HC7005E.DLR.T.P4S	25	47	12	14	0,6		25	1,5	2,2	1,4	6,6	30,0	42,0	0,6				5,9	2,5	0,099		80 000	24	72	144	51,0	75,0	98,0	70	210	430	0,087	142
143	XC7005C.DLR.T.P4S	25	47	12	11	0,6		15	1,5	2,2	1,4	6,6	30,0	42,0	0,6				10,1	2,7	0,249		100 000	15	45	90	20,1	31,5	42,0	45	138	283	0,087	143
144	XC7005E.DLR.T.P4S	25	47	12	14	0,6		25	1,5	2,2	1,4	6,6	30,0	42,0	0,6				9,5	2,5	0,236		90 000	24	72	144	51,0	75,0	98,0	70	210	430	0,087	144
145	HCB7205C.T.P4S	25	52	15	13	1	0,6	15					31,5	45,5	1	0,6	36,3		15,3	8,7	0,344	36 000	53 000	46	171	366	27,4	47,7	69,1	142	560	1 275	0,122	145
146	HCB7205E.T.P4S	25	52	15	17	1	0,6	25					31,5	45,5	1	0,6	36,3		14,6	8,3	0,329	32 000	48 000	58	250	562	61,5	105	145	165	750	1 728	0,122	146
147	A7305C.T.P4S	25	62	17	14	1,1	1,1	15					32,0	55,0	1,1	1,1	40,4	37,9	26,3	18,2	1,04	30 000	47 500	120	240	470	45,0	60,0	85,0	382	805	1 680	0,222	147
148	A7305E.T.P4S	25	62	17	19	1,1	1,1	25					32,0	55,0	1,1	1,1	40,4	37,9	25,5	17,6	0,999	26 500	43 000	200	400	800	100	130	180	591	1 210	2 500	0,222	148
149	B71806C.T.P4S	30	42	7	8	0,3	0,1	15					33,0	39,0	0,3	0,1	35		4,4	3,6	0,168	30 000	45 000	15	55	127	21	37	55	48	180	455	0,031	149
150	B71806E.T.P4S	30	42	7	12	0,3	0,1	25					33,0	39,0	0,3	0,1	35		4,1	3,4	0,156	28 000	43 000	18	72	188	44	75	111	50	213	577	0,031	150
151	B71906C.2RSD.T.P4S	30	47	9	10	0,3	0,15	15					32,0	43,5	0,3	0,1			8,6	5,8	0,302	30 000		40	160	346	30,0	54,5	82,0	117	540	1 280	0,046	151
152	B71906E.2RSD.T.P4S	30	47	9	14	0,3	0,15	25					32,0	43,5	0,3	0,1			8,1	5,4	0,280	28 000		42	195	446	58,7	106	149	131	588	1 400	0,046	152
153	B71906C.T.P4S	30	47	9	10	0,3	0,15	15					32,0	43,5	0,3	0,1	37,3		8,6	5,8	0,302	30 000	48 000	40	160	346	30,0	54,5	82,0	117	542	1 280	0,046	153

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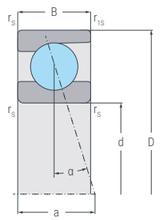
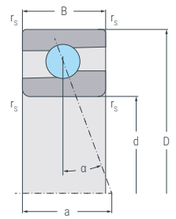
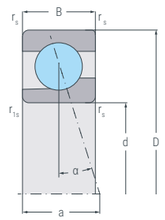
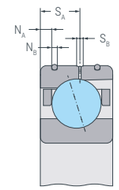
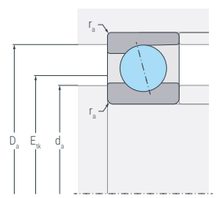
Spindle bearings
Dimensional tables of spindle bearings

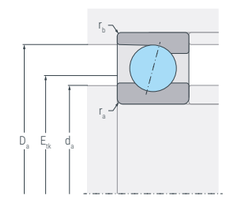


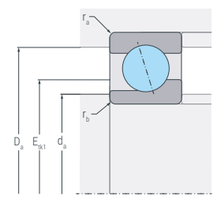


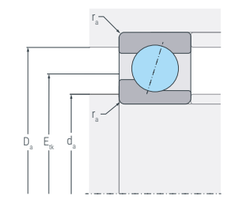






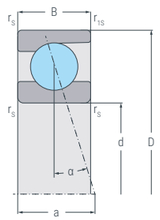


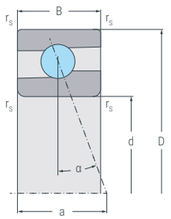


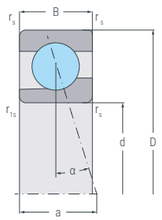


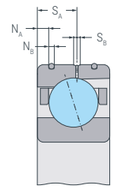
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
154	B71906E.T.P4S	30	47	9	14	0,3	0,15	25					32,0	43,5	0,3	0,1	37,3		8,1	5,4	0,280	28 000	43 000	42	195	446	58,7	106	149	131	588	1 400	0,046	154
155	HCB71906C.T.P4S	30	47	9	10	0,3	0,15	15					32,0	43,5	0,3	0,1	37,3		8,6	5,3	0,211	43 000	67 000	15	65	152	21,2	40,1	59,4	42	210	522	0,041	155
156	HCB71906E.T.P4S	30	47	9	14	0,3	0,15	25					32,0	43,5	0,3	0,1	37,3		8,1	5,0	0,196	38 000	60 000	30	85	224	60,0	87,8	126,0	88	254	680	0,041	156
157	XCB71906C.T.P4S	30	47	9	10	0,3	0,15	15					32,0	43,5	0,3	0,1	37,3		13,8	5,3	0,500	48 000	75 000	15	65	152	21,2	40,1	59,4	42	210	522	0,041	157
158	XCB71906E.T.P4S	30	47	9	14	0,3	0,15	25					32,0	43,5	0,3	0,1	37,3		13,0	5,0	0,465	43 000	67 000	30	85	224	60,0	87,8	126,0	88	254	680	0,041	158
159	HS71906C.2RSD.T.P4S	30	47	9	10	0,3		15					34,0	43,5	0,3				6,4	3,2	0,160	43 000		21	63	126	21,3	33,5	47,0	63	203	431	0,050	159
160	HS71906E.2RSD.T.P4S	30	47	9	13	0,3		25					34,0	43,5	0,3				6,0	3,0	0,152	38 000		35	105	210	53,2	79,5	104	101	310	629	0,050	160
161	HC71906C.2RSD.T.P4S	30	47	9	10	0,3		15					34,0	43,5	0,3				6,4	2,9	0,115	54 000		15	45	90	21,0	32,5	44,0	45	141	292	0,047	161
162	HC71906E.2RSD.T.P4S	30	47	9	13	0,3		25					34,0	43,5	0,3				6,0	2,8	0,109	48 000		24	72	144	53,0	78,0	102	70	213	435	0,047	162
163	HS71906C.T.P4S	30	47	9	10	0,3		15					34,0	43,5	0,3		37,2	36,5	6,4	3,2	0,160	43 000	63 000	21	63	126	21,3	33,5	47,0	63	203	431	0,050	163
164	HS71906E.T.P4S	30	47	9	13	0,3		25					34,0	43,5	0,3		37,2	36,5	6,0	3,0	0,152	38 000	60 000	35	105	210	53,2	79,5	104	101	310	629	0,050	164
165	HC71906C.T.P4S	30	47	9	10	0,3		15					34,0	43,5	0,3		37,2	36,5	6,4	2,9	0,115	54 000	80 000	15	45	90	21,0	32,5	44,0	45	141	292	0,047	165
166	HC71906E.T.P4S	30	47	9	13	0,3		25					34,0	43,5	0,3		37,2	36,5	6,0	2,8	0,109	48 000	75 000	24	72	144	53,0	78,0	102	70	213	435	0,047	166
167	XC71906C.T.P4S	30	47	9	10	0,3		15					34,0	43,5	0,3		37,2	36,5	10,3	2,9	0,273	60 000	90 000	15	45	90	21,0	32,5	44,0	45	141	292	0,047	167
168	XC71906E.T.P4S	30	47	9	13	0,3		25					34,0	43,5	0,3		37,2	36,5	9,6	2,8	0,259	53 000	85 000	24	72	144	53,0	78,0	102	70	213	435	0,047	168
169	B7006C.2RSD.T.P4S	30	55	13	14	1	0,6	15					36,0	49,0	1	0,3			15,1	9,7	0,504	28 000		74	258	546	32,6	57,8	85,0	234	885	2 000	0,117	169
170	B7006E.2RSD.T.P4S	30	55	13	16	1	0,6	25					36,0	49,0	1	0,3			14,3	9,2	0,481	24 000		102	397	860	74,0	124	171	300	1 210	2 715	0,117	170
171	B7006C.T.P4S	30	55	13	14	1	0,6	15					36,0	49,0	1	0,3	40,8		15,1	9,7	0,504	28 000	43 000	74	258	546	32,6	57,8	85,0	234	885	2 000	0,117	171
172	B7006E.T.P4S	30	55	13	16	1	0,6	25					36,0	49,0	1	0,3	40,8		14,3	9,2	0,481	24 000	38 000	102	397	860	74,0	124	171	300	1 210	2 715	0,117	172
173	B7006C.DLR.T.P4S	30	55	13	14	1	0,6	15	1,5	2,8	1,4	7,2	36,0	49,0	1	0,3			15,1	9,7	0,504		43 000	74	258	546	32,6	57,8	85,0	234	885	2 000	0,117	173
174	B7006E.DLR.T.P4S	30	55	13	16	1	0,6	25	1,5	2,8	1,4	7,2	36,0	49,0	1	0,3			14,3	9,2	0,481		38 000	102	397	860	74,0	124	171	300	1 210	2 715	0,117	174
175	HCB7006C.T.P4S	30	55	13	14	1	0,6	15					36,0	49,0	1	0,3	40,8		15,1	8,9	0,353	38 000	60 000	34	138	298	27,1	47,8	68,6	105	445	1 020	0,106	175
176	HCB7006E.T.P4S	30	55	13	16	1	0,6	25					36,0	49,0	1	0,3	40,8		14,3	8,5	0,337	34 000	53 000	38	194	445	59,0	106	147	109	580	1 370	0,106	176
177	XCB7006C.T.P4S	30	55	13	14	1	0,6	15					36,0	49,0	1	0,3	40,8		24,1	8,9	0,837	43 000	67 000	34	138	298	27,1	47,8	68,6	105	445	1 020	0,106	177
178	XCB7006E.T.P4S	30	55	13	16	1	0,6	25					36,0	49,0	1	0,3	40,8		22,8	8,5	0,798	38 000	60 000	38	194	445	59,0	106	147	109	580	1 370	0,106	178
179	HCB7006C.DLR.T.P4S	30	55	13	14	1	0,6	15	1,5	2,8	1,4	7,2	36,0	49,0	1	0,3			15,1	8,9	0,353		60 000	34	138	298	27,1	47,8	68,6	105	445	1 020	0,106	179
180	HCB7006E.DLR.T.P4S	30	55	13	16	1	0,6	25	1,5	2,8	1,4	7,2	36,0	49,0	1	0,3			14,3	8,5	0,337		53 000	38	194	445	59,0	106	147	109	580	1 370	0,106	180
181	XCB7006C.DLR.T.P4S	30	55	13	14	1	0,6	15	1,5	2,8	1,4	7,2	36,0	49,0	1	0,3			24,1	8,9	0,837		67 000	34	138	298	27,1	47,8	68,6	105	445	1 020	0,106	181
182	XCB7006E.DLR.T.P4S	30	55	13	16	1	0,6	25	1,5	2,8	1,4	7,2	36,0	49,0	1	0,3			22,8	8,5	0,798		60 000	38	194	445	59,0	106	147	109	580	1 370	0,106	182
183	HS7006C.2RSD.T.P4S	30	55	13	12	1		15					36,0	49,0	1				8,8	4,3	0,215	38 000		29	87	174	24,3	38,8	53,5	87	280	589	0,130	183
184	HS7006E.2RSD.T.P4S	30	55	13	16	1		25					36,0	49,0	1				8,2	4,0	0,204	34 000		48	144	288	61,0	90,5	118	139	422	859	0,130	184

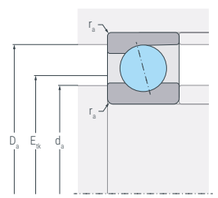
Spindle bearings
Dimensional tables of spindle bearings

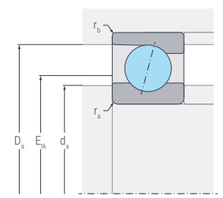


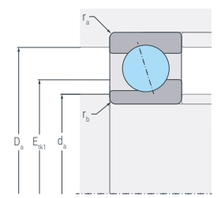


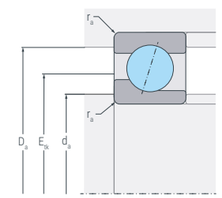








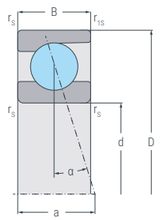


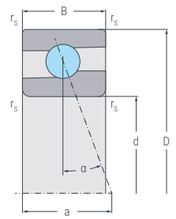


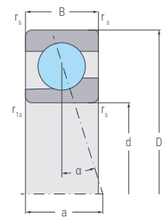
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
185	HC7006C.2RSD.T.P4S	30	55	13	12	1		15					36,0	49,0	1				8,8	3,9	0,155	48 000		20	60	120	24,0	37,0	50,0	60	190	397	0,125	185
186	HC7006E.2RSD.T.P4S	30	55	13	16	1		25					36,0	49,0	1				8,2	3,7	0,147	43 000		33	99	198	60,5	89,5	116	96	293	595	0,125	186
187	HS7006C.T.P4S	30	55	13	12	1		15					36,0	49,0	1		40,9	40,1	8,8	4,3	0,215	38 000	56 000	29	87	174	24,3	38,8	53,5	87	280	589	0,130	187
188	HS7006E.T.P4S	30	55	13	16	1		25					36,0	49,0	1		40,9	40,1	8,2	4,0	0,204	34 000	53 000	48	144	288	61,0	90,5	118	139	422	859	0,130	188
189	HC7006C.T.P4S	30	55	13	12	1		15					36,0	49,0	1		40,9	40,1	8,8	3,9	0,155	48 000	70 000	20	60	120	24,0	37,0	50,0	60	190	397	0,013	189
190	HC7006E.T.P4S	30	55	13	16	1		25					36,0	49,0	1		40,9	40,1	8,2	3,7	0,147	43 000	67 000	33	99	198	60,5	89,5	116	96	293	595	0,125	190
191	XC7006C.T.P4S	30	55	13	12	1		15					36,0	49,0	1		40,9	40,1	14,1	3,9	0,367	54 000	80 000	20	60	120	24,0	37,0	50,0	60	190	397	0,125	191
192	XC7006E.T.P4S	30	55	13	16	1		25					36,0	49,0	1		40,9	40,1	13,2	3,7	0,348	48 000	75 000	33	99	198	60,5	89,5	116	96	293	595	0,125	192
193	HS7006C.DLR.T.P4S	30	55	13	12	1		15	1,5	2,8	1,4	7,2	36,0	49,0	1				8,8	4,3	0,215		56 000	29	87	174	24,3	38,8	53,5	87	280	589	0,130	193
194	HS7006E.DLR.T.P4S	30	55	13	16	1		25	1,5	2,8	1,4	7,2	36,0	49,0	1				8,2	4,0	0,204		53 000	48	144	288	61,0	90,5	118	139	422	859	0,130	194
195	HC7006C.DLR.T.P4S	30	55	13	12	1		15	1,5	2,8	1,4	7,2	36,0	49,0	1				8,8	3,9	0,155		70 000	20	60	120	24,0	37,0	50,0	60	190	397	0,013	195
196	HC7006E.DLR.T.P4S	30	55	13	16	1		25	1,5	2,8	1,4	7,2	36,0	49,0	1				8,2	3,7	0,147		67 000	33	99	198	60,5	89,5	116	96	293	595	0,125	196
197	XC7006C.DLR.T.P4S	30	55	13	12	1		15	1,5	2,8	1,4	7,2	36,0	49,0	1				14,1	3,9	0,367		80 000	20	60	120	24,0	37,0	50,0	60	190	397	0,125	197
198	XC7006E.DLR.T.P4S	30	55	13	16	1		25	1,5	2,8	1,4	7,2	36,0	49,0	1				13,2	3,7	0,348		75 000	33	99	198	60,5	89,5	116	96	293	595	0,125	198
199	B7206C.2RSD.T.P4S	30	62	16	14	1	0,6	15					37,5	54,5	1	0,6			21,3	13,5	0,706	24 000		121	410	857	42,0	75,4	112	388	1 445	3 250	0,204	199
200	B7206E.2RSD.T.P4S	30	62	16	19	1	0,6	25					37,5	54,5	1	0,6			20,3	13,0	0,676	22 000		175	638	1 360	95,0	157	218	517	1 960	4 355	0,204	200
201	B7206C.T.P4S	30	62	16	14	1	0,6	15					37,5	54,5	1	0,6	43,2		21,3	13,5	0,706	24 000	38 000	121	410	857	42,0	75,4	112	388	1 445	3 250	0,204	201
202	B7206E.T.P4S	30	62	16	19	1	0,6	25					37,5	54,5	1	0,6	43,2		20,3	13,0	0,676	22 000	36 000	175	638	1 360	95,0	157	218	517	1 960	4 355	0,204	202
203	HCB7206C.T.P4S	30	62	16	14	1	0,6	15					37,5	54,5	1	0,6	43,2		21,3	12,5	0,494	30 000	45 000	74	270	568	38,5	67,5	98,5	228	900	2 040	0,183	203
204	HCB7206E.T.P4S	30	62	16	19	1	0,6	25					37,5	54,5	1	0,6	43,2		20,3	11,9	0,473	26 000	40 000	99	406	894	87,5	148	204	295	1 240	2 820	0,183	204
205	A7306C.T.P4S	30	72	19	16	1,1	1,1	15					37,0	65,0	1,1	1,1	47,7	45	32,1	23,9	1,40	25 500	40 500	160	320	640	50,0	70,0	100	512	1 080	2 310	0,329	205
206	A7306E.T.P4S	30	72	19	21	1,1	1,1	25					37,0	65,0	1,1	1,1	47,7	45	31,0	23,0	1,35	23 000	37 000	270	550	1 090	120,0	160	210	800	1 670	3 420	0,329	206
207	B71807C.T.P4S	35	47	7	9	0,3	0,1	15					38,0	44,0	0,3	0,1	40		4,6	4,1	0,188	26 000	40 000	16	55	133	23,1	39,7	60,5	50	187	472	0,029	207
208	B71807E.T.P4S	35	47	7	13	0,3	0,1	25					38,0	44,0	0,3	0,1	40		4,4	3,8	0,175	24 000	38 000	18	75	195	49,2	82,4	121	53	222	599	0,029	208
209	B71907C.2RSD.T.P4S	35	55	10	11	0,6	0,15	15					40,0	50,5	0,6	0,15			11,0	7,5	0,390	26 000		59	210	480	36,2	64,0	99,5	178	708	1 780	0,076	209
210	B71907E.2RSD.T.P4S	35	55	10	16	0,6	0,15	25					40,0	50,5	0,6	0,15			10,3	7,0	0,362	24 000		61	275	620	73,5	130	181	190	835	1 945	0,076	210
211	B71907C.T.P4S	35	55	10	11	0,6	0,15	15					40,0	50,5	0,6	0,15	42,7		11,0	7,5	0,390	26 000	40 000	59	210	480	36,2	64,0	99,5	178	708	1 780	0,076	211
212	B71907E.T.P4S	35	55	10	16	0,6	0,15	25					40,0	50,5	0,6	0,15	42,7		10,3	7,0	0,362	24 000	36 000	61	275	620	73,5	130	181	190	835	1 945	0,076	212
213	HCB71907C.T.P4S	35	55	10	11	0,6	0,15	15					40,0	50,5	0,6	0,15	42,7		11,0	6,9	0,273	36 000	56 000	20	95	218	26,5	50,0	72,5	61	307	738	0,069	213
214	HCB71907E.T.P4S	35	55	10	16	0,6	0,15	25					40,0	50,5	0,6	0,15	42,7		10,3	6,4	0,254	32 000	50 000	44	128	315	74,0	109	154	129	380	968	0,069	214
215	XCB71907C.T.P4S	35	55	10	11	0,6	0,15	15					40,0	50,5	0,6	0,15	42,7		17,6	6,9	0,646	40 000	60 000	20	95	218	26,5	50,0	72,5	61	307	738	0,069	215

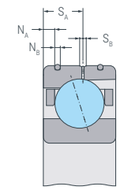
The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

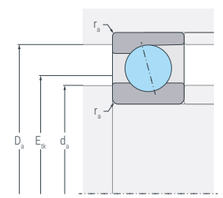
Spindle bearings
Dimensional tables of spindle bearings

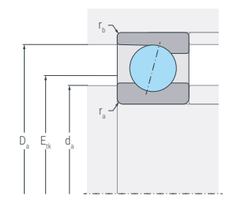


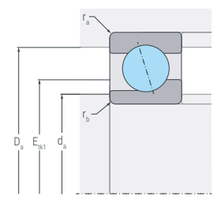


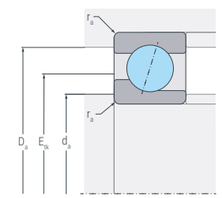








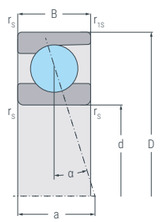


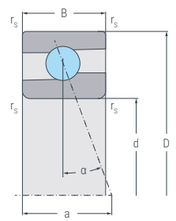


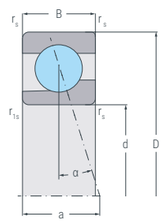
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
216	XCB71907E.T.P4S	35	55	10	16	0,6	0,15	25					40,0	50,5	0,6	0,15	42,7		16,5	6,4	0,601	36 000	56 000	44	128	315	74,0	109	154	129	380	968	0,069	216
217	HS71907C.2RSD.T.P4S	35	55	10	11	0,6		15					40,0	51,5	0,6				7,0	3,8	0,195	36 000		24	72	144	25,0	39,0	53,5	72	224	471	0,080	217
218	HS71907E.2RSD.T.P4S	35	55	10	16	0,6		25					40,0	51,5	0,6				6,6	3,6	0,184	32 000		38	114	228	61,5	91,5	120	110	339	690	0,080	218
219	HC71907C.2RSD.T.P4S	35	55	10	11	0,6		15					40,0	51,5	0,6				7,0	3,5	0,140	45 000		16	48	96	24,0	37,0	50,0	48	152	316	0,076	219
220	HC71907E.2RSD.T.P4S	35	55	10	16	0,6		25					40,0	51,5	0,6				6,6	3,3	0,132	40 000		26	78	156	60,5	90,5	117	75	233	476	0,076	220
221	HS71907C.T.P4S	35	55	10	11	0,6		15					40,0	51,5	0,6		43,5	42,8	7,0	3,8	0,195	36 000	56 000	24	72	144	25,0	39,0	53,5	72	224	471	0,080	221
222	HS71907E.T.P4S	35	55	10	16	0,6		25					40,0	51,5	0,6		43,5	42,8	6,6	3,6	0,184	32 000	50 000	38	114	228	61,5	91,5	120	110	339	690	0,080	222
223	HC71907C.T.P4S	35	55	10	11	0,6		15					40,0	51,5	0,6		43,5	42,8	7,0	3,5	0,140	45 000	70 000	16	48	96	24,0	37,0	50,0	48	152	316	0,076	223
224	HC71907E.T.P4S	35	55	10	16	0,6		25					40,0	51,5	0,6		43,5	42,8	6,6	3,3	0,132	40 000	63 000	26	78	156	60,5	90,5	117	75	233	476	0,076	224
225	XC71907C.T.P4S	35	55	10	11	0,6		15					40,0	51,5	0,6		43,5	42,8	11,3	3,5	0,332	52 000	78 000	16	48	96	24,0	37,0	50,0	48	152	316	0,076	225
226	XC71907E.T.P4S	35	55	10	16	0,6		25					40,0	51,5	0,6		43,5	42,8	10,5	3,3	0,314	45 000	70 000	26	78	156	60,5	90,5	117	75	233	476	0,076	226
227	B7007C.2RSD.T.P4S	35	62	14	14	1	0,6	15					41,0	56,0	1	0,3			16,3	12,7	0,660	24 000		96	332	698	38,8	67,5	99,5	300	1130	2550	0,157	227
228	B7007E.2RSD.T.P4S	35	62	14	18	1	0,6	25					41,0	56,0	1	0,3			15,4	11,8	0,613	22 000		135	520	1 118	88,2	147	202	400	1580	3525	0,157	228
229	B7007C.T.P4S	35	62	14	14	1	0,6	15					41,0	56,0	1	0,3	46,3		16,2	12,7	0,660	24 000	38 000	96	332	698	38,8	67,5	99,5	300	1130	2550	0,157	229
230	B7007E.T.P4S	35	62	14	18	1	0,6	25					41,0	56,0	1	0,3	46,3		15,4	11,8	0,613	22 000	34 000	135	520	1 118	88,2	147	202	400	1580	3525	0,157	230
231	B7007C.DLR.T.P4S	35	62	14	14	1	0,6	15	1,5	2,8	1,4	8,0	41,0	56,0	1	0,3			16,2	12,7	0,660		38 000	96	332	698	38,8	67,5	99,5	300	1130	2550	0,157	231
232	B7007E.DLR.T.P4S	35	62	14	18	1	0,6	25	1,5	2,8	1,4	8,0	41,0	56,0	1	0,3			15,4	11,8	0,613		34 000	135	520	1 118	88,2	147	202	400	1580	3525	0,157	232
233	HCB7007C.T.P4S	35	62	14	14	1	0,6	15					41,0	56,0	1	0,3	46,3		16,3	11,6	0,462	34 000	53 000	45	176	380	32,0	56,0	80,5	140	574	1300	0,143	233
234	HCB7007E.T.P4S	35	62	14	18	1	0,6	25					41,0	56,0	1	0,3	46,3		15,4	10,8	0,429	30 000	45 000	55	254	580	72,5	126	173	159	767	1790	0,143	234
235	XCB7007C.T.P4S	35	62	14	14	1	0,6	15					41,0	56,0	1	0,3	46,3		26,1	11,6	1,09	38 000	56 000	45	176	380	32,0	56,0	80,5	140	574	1300	0,143	235
236	XCB7007E.T.P4S	35	62	14	18	1	0,6	25					41,0	56,0	1	0,3	46,3		24,7	10,8	1,02	34 000	53 000	55	254	580	72,5	126	173	159	767	1790	0,143	236
237	HCB7007C.DLR.T.P4S	35	62	14	14	1	0,6	15	1,5	2,8	1,4	8,0	41,0	56,0	1	0,3			16,3	11,6	0,462		53 000	45	176	380	32,0	56,0	80,5	140	574	1300	0,143	237
238	HCB7007E.DLR.T.P4S	35	62	14	18	1	0,6	25	1,5	2,8	1,4	8,0	41,0	56,0	1	0,3			15,4	10,8	0,429		45 000	55	254	580	72,5	126	173	159	767	1790	0,143	238
239	XCB7007C.DLR.T.P4S	35	62	14	14	1	0,6	15	1,5	2,8	1,4	8,0	41,0	56,0	1	0,3			26,1	11,6	1,09		56 000	45	176	380	32,0	56,0	80,5	140	574	1300	0,143	239
240	XCB7007E.DLR.T.P4S	35	62	14	18	1	0,6	25	1,5	2,8	1,4	8,0	41,0	56,0	1	0,3			24,7	10,8	1,02		53 000	55	254	580	72,5	126	173	159	767	1790	0,143	240
241	HS7007C.2RSD.T.P4S	35	62	14	14	1		15					41,0	56,0	1				9,2	5,0	0,252	34 000		32	96	192	27,5	43,0	60,0	96	300	632	0,170	241
242	HS7007E.2RSD.T.P4S	35	62	14	18	1		25					41,0	56,0	1				8,8	4,7	0,239	30 000		51	153	306	67,5	102	133	147	453	926	0,170	242
243	HC7007C.2RSD.T.P4S	35	62	14	14	1		15					41,0	56,0	1				9,2	4,6	0,182	43 000		22	66	132	27,0	41,0	55,5	66	205	424	0,164	243
244	HC7007E.2RSD.T.P4S	35	62	14	18	1		25					41,0	56,0	1				8,8	4,3	0,172	38 000		36	108	216	68,5	101	130	105	316	642	0,164	244
245	HS7007C.T.P4S	35	62	14	14	1		15					41,0	56,0	1		46,9	46,1	9,2	5,0	0,252	34 000	50 000	32	96	192	27,5	43,0	60,0	96	300	632	0,170	245
246	HS7007E.T.P4S	35	62	14	18	1		25					41,0	56,0	1		46,9	46,1	8,8	4,7	0,239	30 000	45 000	51	153	306	67,5	102	133	147	453	926	0,170	246

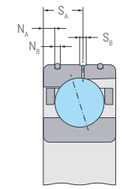
The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

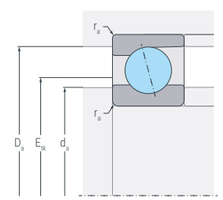
Spindle bearings
Dimensional tables of spindle bearings

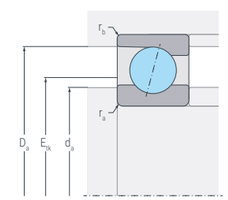


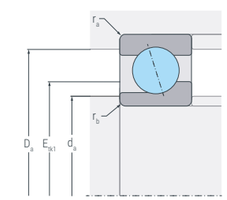


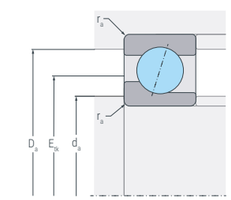






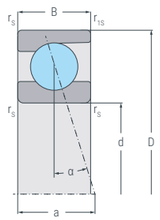


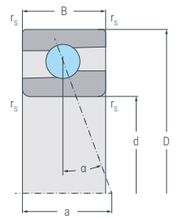


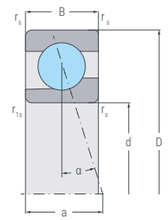


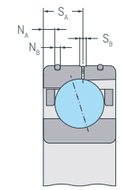
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
247	HC7007C.T.P4S	35	62	14	14	1		15					41,0	56,0	1		46,9	46,1	9,2	4,6	0,182	43 000	63 000	22	66	132	27,0	41,0	55,5	66	205	424	0,164	247
248	HC7007E.T.P4S	35	62	14	18	1		25					41,0	56,0	1		46,9	46,1	8,8	4,3	0,172	38 000	60 000	36	108	216	68,5	101	130	105	316	642	0,164	248
249	XC7007C.T.P4S	35	62	14	14	1		15					41,0	56,0	1		46,9	46,1	14,8	4,6	0,431	48 000	70 000	22	66	132	27,0	41,0	55,5	66	205	424	0,164	249
250	XC7007E.T.P4S	35	62	14	18	1		25					41,0	56,0	1		46,9	46,1	14,2	4,3	0,408	43 000	67 000	36	108	216	68,5	101	130	105	316	642	0,164	250
251	HS7007C.DLR.T.P4S	35	62	14	14	1		15	1,5	2,8	1,4	8,0	41,0	56,0	1				9,2	5,0	0,252		50 000	32	96	192	27,5	43,0	60,0	96	300	632	0,170	251
252	HS7007E.DLR.T.P4S	35	62	14	18	1		25	1,5	2,8	1,4	8,0	41,0	56,0	1				8,8	4,7	0,239		45 000	51	153	306	67,5	102	133	147	453	926	0,170	252
253	HC7007C.DLR.T.P4S	35	62	14	14	1		15	1,5	2,8	1,4	8,0	41,0	56,0	1				9,2	4,6	0,182		63 000	22	66	132	27,0	41,0	55,5	66	205	424	0,164	253
254	HC7007E.DLR.T.P4S	35	62	14	18	1		25	1,5	2,8	1,4	8,0	41,0	56,0	1				8,8	4,3	0,172		60 000	36	108	216	68,5	101	130	105	316	642	0,164	254
255	XC7007C.DLR.T.P4S	35	62	14	14	1		15	1,5	2,8	1,4	8,0	41,0	56,0	1				14,8	4,6	0,431		70 000	22	66	132	27,0	41,0	55,5	66	205	424	0,164	255
256	XC7007E.DLR.T.P4S	35	62	14	18	1		25	1,5	2,8	1,4	8,0	41,0	56,0	1				14,2	4,3	0,408		67 000	36	108	216	68,5	101	130	105	316	642	0,164	256
257	B7207C.2RSD.T.P4S	35	72	17	16	1,1	0,6	15					44,0	63,0	1	0,6			25,4	19,4	0,983	20 000		135	455	940	45,0	79,0	116,0	427	1550	3475	0,296	257
258	B7207E.2RSD.T.P4S	35	72	17	21	1,1	0,6	25					44,0	63,0	1	0,6			34,3	18,5	0,938	19 000		196	715	1 520	103	170	234	580	2180	4825	0,296	258
259	B7207C.T.P4S	35	72	17	16	1,1	0,6	15					44,0	63,0	1	0,6	50,7		25,4	19,4	0,983	20 000	34 000	135	455	940	45,0	79,0	116,0	427	1550	3475	0,296	259
260	B7207E.T.P4S	35	72	17	21	1,1	0,6	25					44,0	63,0	1	0,6	50,7		24,3	18,5	0,938	19 000	32 000	196	715	1 520	103	170	234	580	2180	4825	0,296	260
261	HCB7207C.T.P4S	35	72	17	16	1,1	0,6	15					44,0	63,0	1	0,6	50,7		25,4	17,8	0,708	26 000	40 000	65	240	512	38,0	65,0	93,5	202	784	1 770	0,267	261
262	HCB7207E.T.P4S	35	72	17	21	1,1	0,6	25					44,0	63,0	1	0,6	50,7		24,3	17,0	0,676	22 000	36 000	85	360	805	87,0	148	202	247	1 090	2 490	0,267	262
263	A7307C.T.P4S	35	80	21	18	1,5	1,1	15					43,0	72,0	1,5	1,1	53,7	50,7	40,3	30,6	1,89	22 000	36 000	200	400	810	60,0	85,0	120	650	1 370	3 050	0,428	263
264	A7307E.T.P4S	35	80	21	24	1,5	1,1	25					43,0	72,0	1,5	1,1	53,7	50,7	38,3	29,5	1,82	21 000	32 500	340	680	1 370	140	180	250	1020	2 080	4 350	0,428	264
265	B71808C.T.P4S	40	52	7	10	0,3	0,1	15					43,0	49,0	0,3	0,1	45		4,9	4,5	0,207	24 000	38 000	16	57	133	24,5	42,2	65,0	47	188	479	0,031	265
266	B71808E.T.P4S	40	52	7	14			25					43,0	26,0	-0,9	-0,9	45		4,5	4,2	0,193	22 000	36 000	18	73	195	50,5	88,0	130	52	221	602	0,031	266
267	B71908C.2RSD.T.P4S	40	62	12	13	0,6	0,3	15					45,0	57,5	0,6	0,1			17,6	13,0	0,675	24 000		84	300	632	41,0	73,0	108	265	1 020	2 315	0,105	267
268	B71908E.2RSD.T.P4S	40	62	12	18	0,6	0,3	25					45,0	57,5	0,6	0,1			16,7	12,3	0,642	20 000		112	450	985	92,0	155	215	328	1 360	3 100	0,105	268
269	B71908C.T.P4S	40	62	12	13	0,6	0,3	15					45,0	57,5	0,6	0,1	49,1		17,6	13,0	0,675	24 000	36 000	84	300	632	41,0	73,0	108	265	1 020	2 315	0,105	269
270	B71908E.T.P4S	40	62	12	18	0,6	0,3	25					45,0	57,5	0,6	0,1			16,7	12,3	0,642	20 000	32 000	112	450	985	92,0	155	215	328	1 360	3 100	0,105	270
271	B71908C.DLR.T.P4S	40	62	12	13	0,6	0,3	15	1,5	2,2	1,6	6,6	45,0	57,5	0,6	0,1			17,6	13,0	0,675		36 000	84	300	632	41,0	73,0	108	265	1 020	2 315	0,105	271
272	B71908E.DLR.T.P4S	40	62	12	18	0,6	0,3	25	1,5	2,2	1,6	6,6	45,0	57,5	0,6	0,1			16,7	12,3	0,642		32 000	112	450	985	92,0	155	215	328	1 360	3 100	0,105	272
273	HCB71908C.T.P4S	40	62	12	13	0,6	0,15	15					45,0	57,5	0,6	0,1	49,1		17,6	11,9	0,473	32 000	50 000	39	155	340	34,0	60,0	86,1	119	505	1 170	0,089	273
274	HCB71908E.T.P4S	40	62	12	18	0,6	0,15	25					45,0	57,5	0,6	0,1	49,1		16,7	11,3	0,449	28 000	45 000	75	222	520	90,8	134	185	224	666	1 590	0,089	274
275	XCB71908C.T.P4S	40	62	12	13	0,6	0,15	15					45,0	57,5	0,6	0,1	49,1		28,2	11,9	1,12	36 000	53 000	39	155	340	34,0	60,0	86,1	119	505	1 170	0,089	275
276	XCB71908E.T.P4S	40	62	12	18	0,6	0,15	25					45,0	57,5	0,6	0,1	49,1		26,7	11,3	1,07	32 000	50 000	75	222	520	90,8	134	185	224	666	1 590	0,089	276
277	HCB71908C.DLR.T.P4S	40	62	12	13	0,6	0,15	15	1,5	2,2	1,6	6,6	45,0	57,5	0,6	0,1			17,6	11,9	0,473		50 000	39	155	340	34,0	60,0	86,1	119	505	1 170	0,089	277

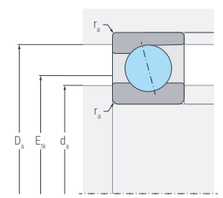
Spindle bearings
Dimensional tables of spindle bearings

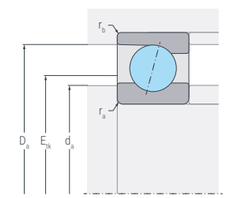


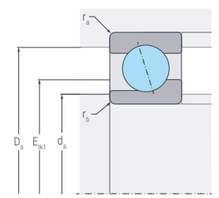


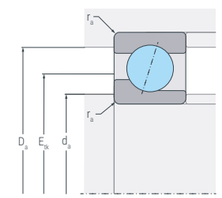








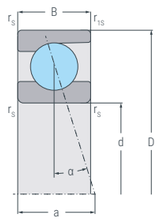


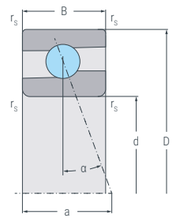


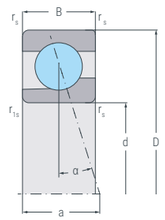
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
278	HCB71908E.DLR.T.P4S	40	62	12	18	0,6	0,15	25	1,5	2,2	1,6	6,6	45,0	57,5	0,6	0,1			16,7	11,3	0,449		45 000	75	222	520	90,8	134	185	224	666	1 590	0,089	278
279	XCB71908C.DLR.T.P4S	40	62	12	13	0,6	0,15	15	1,5	2,2	1,6	6,6	45,0	57,5	0,6	0,1			28,2	11,9	1,12		53 000	39	155	340	34,0	60,0	86,1	119	505	1 170	0,089	279
280	XCB71908E.DLR.T.P4S	40	62	12	18	0,6	0,15	25	1,5	2,2	1,6	6,6	45,0	57,5	0,6	0,1			26,7	11,3	1,07		50 000	75	222	520	90,8	134	185	224	666	1 590	0,089	280
281	HS71908C.2RSD.T.P4S	40	62	12	13	0,6		15					45,0	58,5	0,6				7,4	4,4	0,220	32 000		25	75	150	27,0	42,0	58,0	75	233	484	0,130	281
282	HS71908E.2RSD.T.P4S	40	62	12	18	0,6		25					45,0	58,5	0,6				6,8	4,1	0,209	28 000		40	120	240	67,0	100	130	115	352	715	0,130	282
283	HC71908C.2RSD.T.P4S	40	62	12	13	0,6		15					45,0	58,5	0,6				7,4	4,0	0,159	40 000		17	51	102	26,5	40,5	54,5	51	158	328	0,126	283
284	HC71908E.2RSD.T.P4S	40	62	12	18	0,6		25					45,0	58,5	0,6				6,8	3,8	0,150	36 000		28	84	168	67,0	99,0	128	81	244	496	0,160	284
285	HS71908C.T.P4S	40	62	12	13	0,6		15					45,0	58,5	0,6		49,5	48,8	7,4	4,4	0,220	32 000	48 000	25	75	150	27,0	42,0	58,0	75	233	484	0,130	285
286	HS71908E.T.P4S	40	62	12	18	0,6		25					45,0	58,5	0,6		49,5	48,8	6,8	4,1	0,209	28 000	43 000	40	120	240	67,0	100	130	115	352	715	0,130	286
287	HC71908C.T.P4S	40	62	12	13	0,6		15					45,0	58,5	0,6		49,5	48,8	7,4	4,0	0,159	40 000	60 000	17	51	102	26,5	40,5	54,5	51	158	328	0,126	287
288	HC71908E.T.P4S	40	62	12	18	0,6		25					45,0	58,5	0,6		49,5	48,8	6,8	3,8	0,150	36 000	56 000	28	84	168	67,0	99,0	128	81	244	496	0,126	288
289	XC71908C.T.P4S	40	62	12	13	0,6		15					45,0	58,5	0,6		49,5	48,8	11,8	4,0	0,377	45 000	68 000	17	51	102	26,5	40,5	54,5	51	158	328	0,126	289
290	XC71908E.T.P4S	40	62	12	18	0,6		25					45,0	58,5	0,6		49,5	48,8	10,9	3,8	0,357	40 000	63 000	28	84	168	67,0	99,0	128	81	244	496	0,126	290
291	HS71908C.DLR.T.P4S	40	62	12	13	0,6		15	1,5	2,2	1,6	6,6	45,0	58,5	0,6				7,4	4,4	0,220		48 000	25	75	150	27,0	42,0	58,0	75	233	484	0,130	291
292	HS71908E.DLR.T.P4S	40	62	12	18	0,6		25	1,5	2,2	1,6	6,6	45,0	58,5	0,6				6,8	4,1	0,209		43 000	40	120	240	67,0	100	130	115	352	715	0,130	292
293	HC71908C.DLR.T.P4S	40	62	12	13	0,6		15	1,5	2,2	1,6	6,6	45,0	58,5	0,6				7,4	4,0	0,159		60 000	17	51	102	26,5	40,5	54,5	51	158	328	0,126	293
294	HC71908E.DLR.T.P4S	40	62	12	18	0,6		25	1,5	2,2	1,6	6,6	45,0	58,5	0,6				6,8	3,8	0,150		56 000	28	84	168	67,0	99,0	128	81	244	496	0,126	294
295	XC71908C.DLR.T.P4S	40	62	12	13	0,6		15	1,5	2,2	1,6	6,6	45,0	58,5	0,6				11,8	4,0	0,377		68 000	17	51	102	26,5	40,5	54,5	51	158	328	0,126	295
296	XC71908E.DLR.T.P4S	40	62	12	18	0,6		25	1,5	2,2	1,6	6,6	45,0	58,5	0,6				10,9	3,8	0,357		63 000	28	84	168	67,0	99,0	128	81	244	496	0,126	296
297	B7008C.2RSD.T.P4S	40	68	15	15	1	0,6	15					46,0	62,0	1	0,3			17,5	14,0	0,730	22 000		101	354	744	44,0	77,0	113	318	1 200	2 720	0,196	297
298	B7008E.2RSD.T.P4S	40	68	15	20	1	0,6	25					46,0	62,0	1	0,3			16,5	13,0	0,679	20 000		142	546	1 180	99,0	166	229	417	1 660	3 730	0,196	298
299	B7008C.T.P4S	40	68	15	15	1	0,6	15					46,0	62,0	1	0,3	51,7		17,5	14,0	0,730	22 000	34 000	101	354	744	44,0	77,0	113	318	1 200	2 720	0,196	299
300	B7008E.T.P4S	40	68	15	20	1	0,6	25					46,0	62,0	1	0,3	51,7		16,5	13,0	0,679	20 000	30 000	142	546	1 180	99,0	166	229	417	1 660	3 730	0,196	300
301	B7008C.DLR.T.P4S	40	68	15	15	1	0,6	15	1,5	2,8	1,4	8,5	46,0	62,0	1	0,3			17,5	14,0	0,730		34 000	101	354	744	44,0	77,0	113	318	1 200	2 720	0,196	301
302	B7008E.DLR.T.P4S	40	68	15	20	1	0,6	25	1,5	2,8	1,4	8,5	46,0	62,0	1	0,3			16,5	13,0	0,679		30 000	142	546	1 180	99,0	166	229	417	1 660	3 730	0,196	302
303	HCB7008C.T.P4S	40	68	15	15	1	0,6	15					46,0	62,0	1	0,3	51,7		17,5	12,9	0,511	30 000	45 000	48	188	405	36,0	63,5	91,0	146	605	1 397	0,180	303
304	HCB7008E.T.P4S	40	68	15	20	1	0,6	25					46,0	62,0	1	0,3	51,7		16,5	12,0	0,475	28 000	43 000	55	270	618	80,0	143	196	161	809	1 900	0,180	304
305	XCB7008C.T.P4S	40	68	15	15	1	0,6	15					46,0	62,0	1	0,3	51,7		28,0	12,9	1,21	34 000	50 000	48	188	405	36,0	63,5	91,0	146	605	1 397	0,180	305
306	XCB7008E.T.P4S	40	68	15	20	1	0,6	25					46,0	62,0	1	0,3	51,7		26,4	12,0	1,13	30 000	45 000	55	270	618	80,0	143	196	161	809	1 900	0,180	306
307	HCB7008C.DLR.T.P4S	40	68	15	15	1	0,6	15	1,5	2,8	1,4	8,5	46,0	62,0	1	0,3			17,5	12,9	0,511		45 000	48	188	405	36,0	63,5	91,0	146	605	1 397	0,180	307
308	HCB7008E.DLR.T.P4S	40	68	15	20	1	0,6	25	1,5	2,8	1,4	8,5	46,0	62,0	1	0,3			16,5	12,0	0,475		43 000	55	270	618	80,0	143	196	161	809	1 900	0,180	308

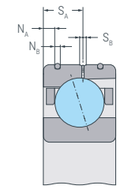
The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

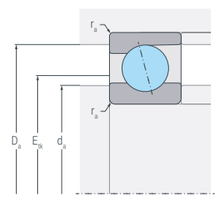
Spindle bearings
Dimensional tables of spindle bearings

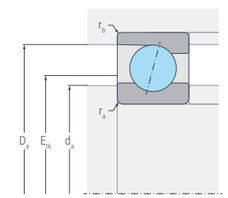


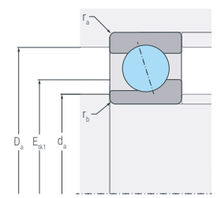


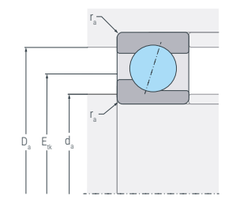








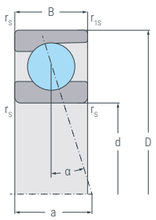


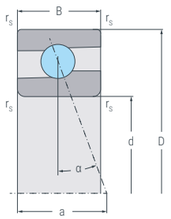


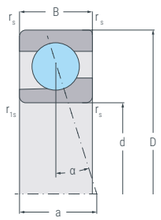
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
309	XCB7008C.DLR.T.P4S	40	68	15	15	1	0,6	15	1,5	2,8	1,4	8,5	46,0	62,0	1	0,3			28,0	12,9	1,21		50 000	48	188	405	36,0	63,5	91,0	146	605	1 397	0,180	309
310	XCB7008E.DLR.T.P4S	40	68	15	20	1	0,6	25	1,5	2,8	1,4	8,5	46,0	62,0	1	0,3			26,4	12,0	1,13		45 000	55	270	618	80,0	143	196	161	809	1 900	0,180	310
311	HS7008C.2RSD.T.P4S	40	68	15	15	1		15					46,0	62,0	1				10,0	5,7	0,290	30 000		34	102	204	30,0	48,0	65,0	102	318	665	0,220	311
312	HS7008E.2RSD.T.P4S	40	68	15	20	1		25					46,0	62,0	1				9,3	5,4	0,274	26 000		54	160	324	75,0	112	146	156	479	981	0,220	312
313	HC7008C.2RSD.T.P4S	40	68	15	15	1		15					46,0	62,0	1				10,0	5,3	0,208	38 000		23	69	138	29,5	45,5	61,0	69	217	448	0,213	313
314	HC7008E.2RSD.T.P4S	40	68	15	20	1		25					46,0	62,0	1				9,3	5,0	0,197	34 000		38	114	228	74,8	111	143	110	333	673	0,213	314
315	HS7008C.T.P4S	40	68	15	15	1		15					46,0	62,0	1		52,4	51,6	10,0	5,7	0,290	30 000	45 000	34	102	204	30,0	48,0	65,0	102	318	665	0,220	315
316	HS7008E.T.P4S	40	68	15	20	1		25					46,0	62,0	1		52,4	51,6	9,3	5,4	0,274	26 000	40 000	54	160	324	75,0	112	146	156	479	981	0,220	316
317	HC7008C.T.P4S	40	68	15	15	1		15					46,0	62,0	1		52,4	51,6	10,0	5,3	0,208	38 000	56 000	23	69	138	29,5	45,5	61,0	69	217	448	0,213	317
318	HC7008E.T.P4S	40	68	15	20	1		25					46,0	62,0	1		52,4	51,6	9,3	5,0	0,197	34 000	53 000	38	114	228	74,8	111	143	110	333	673	0,213	318
319	XC7008C.T.P4S	40	68	15	15	1		15					46,0	62,0	1		52,4	51,6	16,1	5,3	0,494	42 000	63 000	23	69	138	29,5	45,5	61,0	69	217	448	0,213	319
320	XC7008E.T.P4S	40	68	15	20	1		25					46,0	62,0	1		52,4	51,6	14,9	5,0	0,467	38 000	60 000	38	114	228	74,8	111	143	110	333	673	0,213	320
321	HS7008C.DLR.T.P4S	40	68	15	15	1		15	1,5	2,8	1,4	8,5	46,0	62,0	1				10,0	5,7	0,290		45 000	34	102	204	30,0	48,0	65,0	102	318	665	0,220	321
322	HS7008E.DLR.T.P4S	40	68	15	20	1		25	1,5	2,8	1,4	8,5	46,0	62,0	1				9,3	5,4	0,274		40 000	54	160	324	75,0	112	146	156	479	981	0,220	322
323	HC7008C.DLR.T.P4S	40	68	15	15	1		15	1,5	2,8	1,4	8,5	46,0	62,0	1				10,0	5,3	0,208		56 000	23	69	138	29,5	45,5	61,0	69	217	448	0,213	323
324	HC7008E.DLR.T.P4S	40	68	15	20	1		25	1,5	2,8	1,4	8,5	46,0	62,0	1				9,3	5,0	0,197		53 000	38	114	228	74,8	111	143	110	333	673	0,213	324
325	XC7008C.DLR.T.P4S	40	68	15	15	1		15	1,5	2,8	1,4	8,5	46,0	62,0	1				16,1	5,3	0,494		63 000	23	69	138	29,5	45,5	61,0	69	217	448	0,213	325
326	XC7008E.DLR.T.P4S	40	68	15	20	1		25	1,5	2,8	1,4	8,5	46,0	62,0	1				14,9	5,0	0,467		60 000	38	114	228	74,8	111	143	110	333	673	0,213	326
327	B7208C.2RSD.T.P4S	40	80	18	17	1,1	1,1	15					48,0	72,0	1	1			33,7	22,8	1,19	18 000		175	585	1 205	47,0	86,5	126,5	554	2 010	4 450	0,364	327
328	B7208E.2RSD.T.P4S	40	80	18	23	1,1	1,1	25					48,0	72,0	1	1			32,2	21,8	1,14	17 000		259	910	1 925	114	186	254	764	2 800	6 110	0,364	328
329	B7208C.T.P4S	40	80	18	17	1,1	1,1	15					48,0	72,0	1	1	56,7		33,7	22,8	1,19	18 000	30 000	175	585	1 205	47,0	86,5	126,5	554	2 010	4 450	0,364	329
330	B7208E.T.P4S	40	80	18	23	1,1	1,1	25					48,0	72,0	1	1	56,7		32,2	21,8	1,14	17 000	28 000	259	910	1 925	114	186	254	764	2 800	6 110	0,364	330
331	HCB7208C.T.P4S	40	80	18	17	1,1	1,1	15					48,0	72,0	1	1	56,7		33,7	21,0	0,832	24 000	38 000	89	315	660	42,0	71,5	102	273	1 030	2 290	0,315	331
332	HCB7208E.T.P4S	40	80	18	23	1,1	1,1	25					48,0	72,0	1	1	56,7		32,2	20,0	0,795	20 000	34 000	117	478	1 045	97,5	163	220	347	1 440	3 230	0,315	332
333	A7308C.T.P4S	40	90	23	20	1,5	1,5	15					48,0	82,0	1,5	1,5	61	57,8	47,7	38,4	2,25	21 000	32 500	240	470	950	65,0	90,0	130	765	1 580	3 410	0,622	333
334	A7308E.T.P4S	40	90	23	27	1,5	1,5	25					48,0	82,0	1,5	1,5	61	57,8	45,7	36,9	2,16	18 500	29 000	400	810	1 610	150	200	260	2 370	4 910	5 040	0,622	334
335	B71809C.T.P4S	45	58	7	10	0,3	0,1	15					48,0	55,5	0,3	0,1	50,5		5,0	4,9	0,266	22 000	36 000	21	97	220	28,1	53,3	80	64	315	770	0,041	335
336	B71809E.T.P4S	45	58	7	16	0,3	0,1	25					48,0	55,5	0,3	0,1	50,5		4,8	4,6	0,211	19 000	32 000	33	132	325	69	111	161	99	389	995	0,041	336
337	B71909C.2RSD.T.P4S	45	68	12	14	0,6	0,15	15					50,0	63,5	0,6	0,1			18,5	14,7	0,766	20 000		89	316	666	44,2	79,0	116	276	1 060	2 420	0,126	337
338	B71909E.2RSD.T.P4S	45	68	12	19	0,6	0,15	25					50,0	63,5	0,6	0,1			17,4	13,7	0,713	19 000		115	472	1 040	99,0	169	234	339	1 430	3 260	0,126	338
339	B71909C.T.P4S	45	68	12	14	0,6	0,15	15					50,0	63,5	0,6	0,1	54,4		18,5	14,7	0,766	20 000	32 000	89	316	666	44,2	79,0	116	276	1 060	2 420	0,126	339

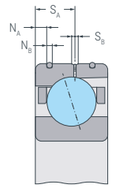
The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

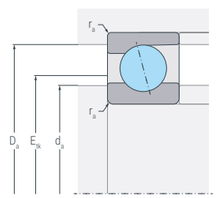
Spindle bearings
Dimensional tables of spindle bearings

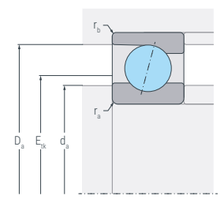


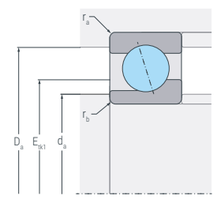


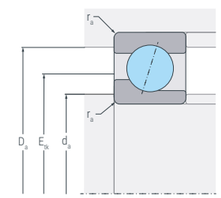






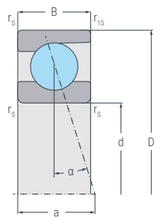


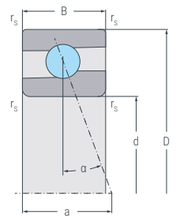


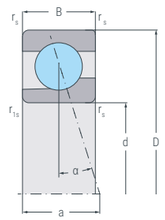


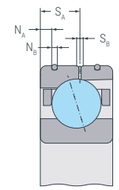
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
340	B71909E.T.P4S	45	68	12	19	0,6	0,15	25					50,0	63,5	0,6	0,1	54,4		17,4	13,7	0,713	19 000	28 000	115	472	1 040	99,0	169	234	339	1 430	3 260	0,126	340
341	B71909C.DLR.T.P4S	45	68	12	14	0,6	0,15	15	1,5	2,8	1,6	6,6	50,0	63,5	0,6	0,1			18,5	14,7	0,766		32 000	89	316	666	44,2	79,0	116	276	1 060	2 420	0,126	341
342	B71909E.DLR.T.P4S	45	68	12	19	0,6	0,15	25	1,5	2,8	1,6	6,6	50,0	63,5	0,6	0,1			17,4	13,7	0,713		28 000	115	472	1 040	99,0	169	234	339	1 430	3 260	0,126	342
343	HCB71909C.T.P4S	45	68	12	14	0,6	0,15	15					50,0	63,5	0,6	0,1	54,4		18,5	13,5	0,536	28 000	45 000	41	164	360	36,5	65,0	93,5	124	529	1 230	0,108	343
344	HCB71909E.T.P4S	45	68	12	19	0,6	0,15	25					50,0	63,5	0,6	0,1	54,4		17,4	12,6	0,466	26 000	40 000	79	230	540	98,0	145	201	232	689	1 660	0,108	344
345	XCB71909C.T.P4S	45	68	12	14	0,6	0,15	15					50,0	63,5	0,6	0,1	54,4		29,6	13,5	1,27	32 000	48 000	41	164	360	36,5	65,0	93,5	124	529	1 230	0,108	345
346	XCB71909E.T.P4S	45	68	12	19	0,6	0,15	25					50,0	63,5	0,6	0,1	54,4		27,9	12,6	1,18	28 000	45 000	79	230	540	98,0	145	201	232	689	1 660	0,108	346
347	HCB71909C.DLR.T.P4S	45	68	12	14	0,6	0,15	15	1,5	2,8	1,6	6,6	50,0	63,5	0,6	0,1			18,5	13,5	0,536		45 000	41	164	360	36,5	65,0	93,5	124	529	1 230	0,108	347
348	HCB71909E.DLR.T.P4S	45	68	12	19	0,6	0,15	25	1,5	2,8	1,6	6,6	50,0	63,5	0,6	0,1			17,4	12,6	0,466		40 000	79	230	540	98,0	145	201	232	689	1 660	0,108	348
349	XCB71909C.DLR.T.P4S	45	68	12	14	0,6	0,15	15	1,5	2,8	1,6	6,6	50,0	63,5	0,6	0,1			29,6	13,5	1,27		48 000	41	164	360	36,5	65,0	93,5	124	529	1 230	0,108	349
350	XCB71909E.DLR.T.P4S	45	68	12	19	0,6	0,15	25	1,5	2,8	1,6	6,6	50,0	63,5	0,6	0,1			27,9	12,6	1,18		45 000	79	230	540	98,0	145	201	232	689	1 660	0,108	350
351	HS71909C.2RSD.T.P4S	45	68	12	14	0,6		15					50,0	63,5	0,6				10,0	6,0	0,302	28 000		34	102	204	31,3	49,0	67,0	102	323	677	0,140	351
352	HS71909E.2RSD.T.P4S	45	68	12	19	0,6		25					50,0	63,5	0,6				9,6	5,6	0,286	26 000		55	165	330	77,7	116	151	159	487	992	0,140	352
353	HC71909C.2RSD.T.P4S	45	68	12	14	0,6		15					50,0	63,5	0,6				10,0	5,5	0,218	35 000		24	72	144	31,0	47,0	63,0	72	220	457	0,133	353
354	HC71909E.2RSD.T.P4S	45	68	12	19	0,6		25					50,0	63,5	0,6				9,6	5,2	0,206	32 000		38	114	228	77,0	114	148	110	339	688	0,133	354
355	HS71909C.T.P4S	45	68	12	14	0,6		15					50,0	63,5	0,6		54,7	53,9	10,0	6,0	0,302	28 000	43 000	34	102	204	31,3	49,0	67,0	102	323	677	0,140	355
356	HS71909E.T.P4S	45	68	12	19	0,6		25					50,0	63,5	0,6		54,7	53,9	9,6	5,6	0,286	26 000	40 000	55	165	330	77,7	116	151	159	487	992	0,140	356
357	HC71909C.T.P4S	45	68	12	14	0,6		15					50,0	63,5	0,6		54,7	53,9	10,0	5,5	0,218	35 000	54 000	24	72	144	31,0	47,0	63,0	72	220	457	0,133	357
358	HC71909E.T.P4S	45	68	12	19	0,6		25					50,0	63,5	0,6		54,7	53,9	9,6	5,2	0,206	32 000	50 000	38	114	228	77,0	114	148	110	339	688	0,133	358
359	XC71909C.T.P4S	45	68	12	14	0,6		15					50,0	63,5	0,6		54,7	53,9	16,0	5,5	0,516	40 000	60 000	24	72	144	31,0	47,0	63,0	72	220	457	0,133	359
360	XC71909E.T.P4S	45	68	12	19	0,6		25					50,0	63,5	0,6		54,7	53,9	15,3	5,2	0,487	36 000	56 000	38	114	228	77,0	114	148	110	339	688	0,133	360
361	HS71909C.DLR.T.P4S	45	68	12	14	0,6		15	1,5	2,8	1,6	6,6	50,0	63,5	0,6				10,0	6,0	0,302		43 000	34	102	204	31,3	49,0	67,0	102	323	677	0,140	361
362	HS71909E.DLR.T.P4S	45	68	12	19	0,6		25	1,5	2,8	1,6	6,6	50,0	63,5	0,6				9,6	5,6	0,286		40 000	55	165	330	77,7	116	151	159	487	992	0,140	362
363	HC71909C.DLR.T.P4S	45	68	12	14	0,6		15	1,5	2,8	1,6	6,6	50,0	63,5	0,6				10,0	5,5	0,218		54 000	24	72	144	31,0	47,0	63,0	72	220	457	0,133	363
364	HC71909E.DLR.T.P4S	45	68	12	19	0,6		25	1,5	2,8	1,6	6,6	50,0	63,5	0,6				9,6	5,2	0,206		50 000	38	114	228	77,0	114	148	110	339	688	0,133	364
365	XC71909C.DLR.T.P4S	45	68	12	14	0,6		15	1,5	2,8	1,6	6,6	50,0	63,5	0,6				16,0	5,5	0,516		60 000	24	72	144	31,0	47,0	63,0	72	220	457	0,133	365
366	XC71909E.DLR.T.P4S	45	68	12	19	0,6		25	1,5	2,8	1,6	6,6	50,0	63,5	0,6				15,3	5,2	0,487		56 000	38	114	228	77,0	114	148	110	339	688	0,133	366
367	B7009C.2RSD.T.P4S	45	75	16	16	1	0,6	15					51,0	69,0	1	0,3			27,4	19,5	1,02	19 000		144	490	1 020	50,0	88,0	129	453	1 660	3 730	0,236	367
368	B7009E.2RSD.T.P4S	45	75	16	22	1	0,6	25					51,0	69,0	1	0,3			25,9	18,6	0,968	17 000		210	768	1 640	115	190	260	614	2 340	5 170	0,236	368
369	B7009C.T.P4S	45	75	16	16	1	0,6	15					51,0	69,0	1	0,3	57,2		27,4	19,5	1,02	19 000	30 000	144	490	1 020	50,0	88,0	129	453	1 660	3 730	0,236	369
370	B7009E.T.P4S	45	75	16	22	1	0,6	25					51,0	69,0	1	0,3	57,2		25,9	18,6	0,968	17 000	26 000	210	768	1 640	115	190	260	614	2 340	5 170	0,236	370

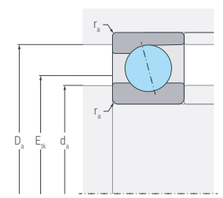
Spindle bearings
Dimensional tables of spindle bearings

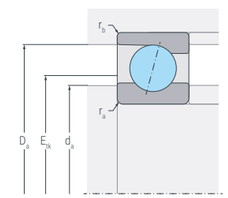


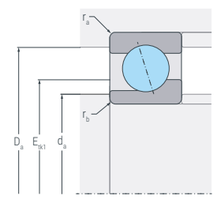


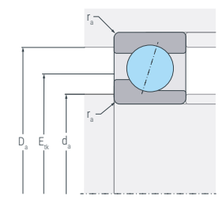












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
371	B7009C.DLR.T.P4S	45	75	16	16	1	0,6	15	1,5	3,4	1,4	9,3	51,0	69,0	1	0,3			27,4	19,5	1,02		30 000	144	490	1 020	50,0	88,0	129	453	1 660	3 730	0,236	371
372	B7009E.DLR.T.P4S	45	75	16	22	1	0,6	25	1,5	3,4	1,4	9,3	51,0	69,0	1	0,3			25,9	18,6	0,968		26 000	210	768	1 640	115	190	260	614	2 340	5 170	0,236	372
373	HCB7009C.T.P4S	45	75	16	16	1	0,6	15					51,0	69,0	1	0,3	57,2		27,4	17,9	0,712	26 000	40 000	72	265	560	42,0	73,0	104	220	858	1 930	0,211	373
374	HCB7009E.T.P4S	45	75	16	22	1	0,6	25					51,0	69,0	1	0,3	57,2		25,9	17,1	0,678	24 000	38 000	90	394	876	97,0	165	226	264	1 180	2 700	0,211	374
375	XCB7009C.T.P4S	45	75	16	16	1	0,6	15					51,0	69,0	1	0,3	57,2		43,8	17,9	1,69	30 000	45 000	72	265	560	42,0	73,0	104	220	858	1 930	0,211	375
376	XCB7009E.T.P4S	45	75	16	22	1	0,6	25					51,0	69,0	1	0,3	57,2		41,4	17,1	1,61	26 000	40 000	90	394	876	97,0	165	226	264	1 180	2 700	0,211	376
377	HCB7009C.DLR.T.P4S	45	75	16	16	1	0,6	15	1,5	3,4	1,4	9,3	51,0	69,0	1	0,3			27,4	17,9	0,712		40 000	72	265	560	42,0	73,0	104	220	858	1 930	0,211	377
378	HCB7009E.DLR.T.P4S	45	75	16	22	1	0,6	25	1,5	3,4	1,4	9,3	51,0	69,0	1	0,3			25,9	17,1	0,678		38 000	90	394	876	97,0	165	226	264	1 180	2 700	0,211	378
379	XCB7009C.DLR.T.P4S	45	75	16	16	1	0,6	15	1,5	3,4	1,4	9,3	51,0	69,0	1	0,3			43,8	17,9	1,69		45 000	72	265	560	42,0	73,0	104	220	858	1 930	0,211	379
380	XCB7009E.DLR.T.P4S	45	75	16	22	1	0,6	25	1,5	3,4	1,4	9,3	51,0	69,0	1	0,3			41,4	17,1	1,61		40 000	90	394	876	97,0	165	226	264	1 180	2 700	0,211	380
381	HS7009C.2RSD.T.P4S	45	75	16	16	1		15					51,0	69,0	1				12,9	7,5	0,380	26 000		44	132	264	34,0	54,0	75,0	131	412	870	0,270	381
382	HS7009E.2RSD.T.P4S	45	75	16	22	1		25					51,0	69,0	1				12,0	7,1	0,359	24 000		71	213	426	86,0	128	168	204	628	1 283	0,270	382
383	HC7009C.2RSD.T.P4S	45	75	16	16	1		15					51,0	69,0	1				12,9	6,9	0,274	33 000		30	90	180	33,5	52,0	70,0	89	282	586	0,260	383
384	HC7009E.2RSD.T.P4S	45	75	16	22	1		25					51,0	69,0	1				12,0	6,5	0,259	30 000		49	147	294	85,0	126	164	142	431	876	0,260	384
385	HS7009C.T.P4S	45	75	16	16	1		15					51,0	69,0	1		58,2	57,2	12,9	7,5	0,380	26 000	40 000	44	132	264	34,0	54,0	75,0	131	412	870	0,270	385
386	HS7009E.T.P4S	45	75	16	22	1		25					51,0	69,0	1		58,2	57,2	12,0	7,1	0,359	24 000	36 000	71	213	426	86,0	128	168	204	628	1 283	0,270	386
387	HC7009C.T.P4S	45	75	16	16	1		15					51,0	69,0	1		58,2	57,2	12,9	6,9	0,274	33 000	50 000	30	90	180	33,5	52,0	70,0	89	282	586	0,260	387
388	HC7009E.T.P4S	45	75	16	22	1		25					51,0	69,0	1		58,2	57,2	12,0	6,5	0,259	30 000	48 000	49	147	294	85,0	126	164	142	431	876	0,260	388
389	XC7009C.T.P4S	45	75	16	16	1		15					51,0	69,0	1		58,2	57,2	20,6	6,9	0,648	36 000	56 000	30	90	180	33,5	52,0	70,0	89	282	586	0,260	389
390	XC7009E.T.P4S	45	75	16	22	1		25					51,0	69,0	1		58,2	57,2	19,2	6,5	0,613	34 000	53 000	49	147	294	85,0	126	164	142	431	876	0,260	390
391	HS7009C.DLR.T.P4S	45	75	16	16	1		15	1,5	3,4	1,4	9,3	51,0	69,0	1				12,9	7,5	0,380		40 000	44	132	264	34,0	54,0	75,0	131	412	870	0,270	391
392	HS7009E.DLR.T.P4S	45	75	16	22	1		25	1,5	3,4	1,4	9,3	51,0	69,0	1				12,0	7,1	0,359		36 000	71	213	426	86,0	128	168	204	628	1 283	0,270	392
393	HC7009C.DLR.T.P4S	45	75	16	16	1		15	1,5	3,4	1,4	9,3	51,0	69,0	1				12,9	6,9	0,274		50 000	30	90	180	33,5	52,0	70,0	89	282	586	0,260	393
394	HC7009E.DLR.T.P4S	45	75	16	22	1		25	1,5	3,4	1,4	9,3	51,0	69,0	1				12,0	6,5	0,259		48 000	49	147	294	85,0	126	164	142	431	876	0,260	394
395	XC7009C.DLR.T.P4S	45	75	16	16	1		15	1,5	3,4	1,4	9,3	51,0	69,0	1				20,6	6,9	0,648		56 000	30	90	180	33,5	52,0	70,0	89	282	586	0,260	395
396	XC7009E.DLR.T.P4S	45	75	16	22	1		25	1,5	3,4	1,4	9,3	51,0	69,0	1				19,2	6,5	0,613		53 000	49	147	294	85,0	126	164	142	431	876	0,260	396
397	B7209C.2RSD.T.P4S	45	85	19	18	1,1	1,1	15					52,5	78,0	1	1			35,3	30,6	1,59	17 000		185	605	1 250	53,0	91,0	134	578	2 080	4 610	0,408	397
398	B7209E.2RSD.T.P4S	45	85	19	25	1,1	1,1	25					52,5	78,0	1	1			33,7	29,3	1,48	15 000		270	955	2 016	122	197	270	796	2 900	6 390	0,408	398
399	B7209C.T.P4S	45	85	19	18	1,1	1,1	15					52,5	78,0	1	1	61,7		35,3	30,6	1,59	17 000	28 000	185	605	1 250	53,0	91,0	134	578	2 080	4 610	0,408	399
400	B7209E.T.P4S	45	85	19	25	1,1	1,1	25					52,5	78,0	1	1	61,7		33,7	29,3	1,48	15 000	24 000	270	955	2 016	122	197	270	796	2 900	6 390	0,408	400
401	HCB7209C.T.P4S	45	85	19	18	1,1	1,1	15					52,5	78,0	1	1	61,7		35,3	28,1	1,12	22 000	36 000	92	330	695	45,0	76,0	108	285	1 070	2 400	0,344	401

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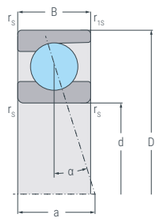
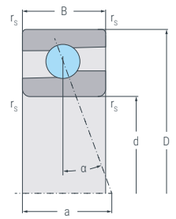
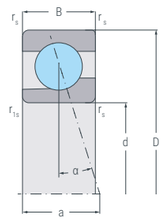
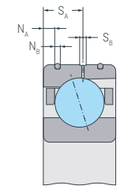
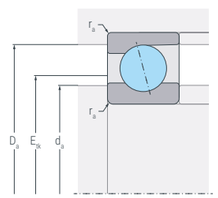
Spindle bearings
Dimensional tables of spindle bearings

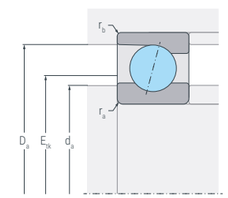


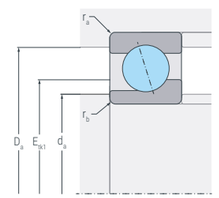


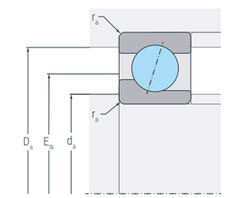












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
402	HCB7209E.T.P4S	45	85	19	25	1,1	1,1	25					52,5	78,0	1	1	61,7		33,7	26,9	1,07	18 000	30 000	120	494	1 080	103	172	234	356	1 480	3 346	0,344	402
403	A7309C.T.P4S	45	100	25	22	1,5	1,5	15					54,0	91,0	1,5	1,5	68,1	64,5	57,6	47,5	2,65	18 500	29 000	290	580	1 150	75,0	100	140	930	1 960	4 160	0,829	403
404	A7309E.T.P4S	45	100	25	29	1,5	1,5	25					54,0	91,0	1,5	1,5	68,1	64,5	55,2	45,6	2,54	16 000	23 000	490	980	1 950	170	220	300	1 450	2 980	6 130	0,829	404
405	B71810C.T.P4S	50	65	7	11	0,3	0,1	15					54,0	61,5	0,3	0,1	56,3		7,5	7,4	0,281	19 000	32 000	22	97	221	28,3	55,5	83	60	318	778	0,048	405
406	B71810E.T.P4S	50	65	7	17	0,3	0,1	25					54,0	61,5	0,3	0,1	56,3		6,9	6,8	0,244	17 000	28 000	33	130	330	70,5	118	170	95	388	1 008	0,048	406
407	B71910C.2RSD.T.P4S	50	72	12	14	0,6	0,15	15					55,0	67,5	0,6	0,1			18,8	15,3	0,797	19 000		90	320	680	46,0	81,5	120	279	1 080	2 460	0,129	407
408	B71910E.2RSD.T.P4S	50	72	12	20	0,6	0,15	25					55,0	67,5	0,6	0,1			18,0	14,2	0,742	17 000		117	480	1 060	103	175	242	345	1 450	3 320	0,129	408
409	B71910C.T.P4S	50	72	12	14	0,6	0,15	15					55,0	67,5	0,6	0,1	58,9		18,8	15,3	0,797	19 000	30 000	90	320	680	46,0	81,5	120	279	1 080	2 460	0,129	409
410	B71910E.T.P4S	50	72	12	20	0,6	0,15	25					55,0	67,5	0,6	0,1	58,9		18,0	14,2	0,742	17 000	26 000	117	480	1 060	103	175	242	345	1 450	3 320	0,129	410
411	B71910C.DLR.T.P4S	50	72	12	14	0,6	0,15	15	1,5	2,8	1,6	6,6	55,0	67,5	0,6	0,1			18,8	15,3	0,797		30 000	90	320	680	46,0	81,5	120	279	1 080	2 460	0,129	411
412	B71910E.DLR.T.P4S	50	72	12	20	0,6	0,15	25	1,5	2,8	1,6	6,6	55,0	67,5	0,6	0,1			18,0	14,2	0,742		26 000	117	480	1 060	103	175	242	345	1 450	3 320	0,129	412
413	HCB71910C.T.P4S	50	72	12	14	0,6	0,15	15					55,0	67,5	0,6	0,1	58,9		18,8	14,1	0,558	26 000	40 000	40	164	364	38,0	67,0	96,5	124	534	1 250	0,110	413
414	HCB71910E.T.P4S	50	72	12	20	0,6	0,15	25					55,0	67,5	0,6	0,1	58,9		18,0	13,1	0,519	24 000	36 000	79	233	550	101	150	208	232	694	1 675	0,110	414
415	XCB71910C.T.P4S	50	72	12	14	0,6	0,15	15					55,0	67,5	0,6	0,1	58,9		30,1	14,1	1,32	30 000	43 000	40	164	364	38,0	67,0	96,5	124	534	1 250	0,110	415
416	XCB71910E.T.P4S	50	72	12	20	0,6	0,15	25					55,0	67,5	0,6	0,1	58,9		28,8	13,1	1,23	26 000	40 000	79	233	550	101	150	208	232	694	1 675	0,110	416
417	HCB71910C.DLR.T.P4S	50	72	12	14	0,6	0,15	15	1,5	2,8	1,6	6,6	55,0	67,5	0,6	0,1			18,8	14,1	0,558		40 000	40	164	364	38,0	67,0	96,5	124	534	1 250	0,110	417
418	HCB71910E.DLR.T.P4S	50	72	12	20	0,6	0,15	25	1,5	2,8	1,6	6,6	55,0	67,5	0,6	0,1			18,0	13,1	0,519		36 000	79	233	550	101	150	208	232	694	1 675	0,110	418
419	XCB71910C.DLR.T.P4S	50	72	12	14	0,6	0,15	15	1,5	2,8	1,6	6,6	55,0	67,5	0,6	0,1			30,1	14,1	1,32		43 000	40	164	364	38,0	67,0	96,5	124	534	1 250	0,110	419
420	XCB71910E.DLR.T.P4S	50	72	12	20	0,6	0,15	25	1,5	2,8	1,6	6,6	55,0	67,5	0,6	0,1			28,8	13,1	1,23		40 000	79	233	550	101	150	208	232	694	1 675	0,110	420
421	BS71910C.2RSD.T.P4S	50	72	12	15	0,6	0,3	17					55,0	67,5	0,6	0,3			15,8	8,8	0,75	27 000		74	196	413	44	64	88	215	595	1 300	0,12	421
422	BS71910E.2RSD.T.P4S	50	72	12	20	0,6	0,3	25					55,0	67,5	0,6	0,3			14,8	8,4	0,72	25 000		106	278	580	88	124	164	305	810	1 720	0,12	422
423	BS71910C.T.P4S	50	72	12	15	0,6	0,3	17					55,0	67,5	0,6	0,3	59,2		15,8	8,8	0,75	27 000	41 000	74	196	413	44	64	88	215	595	1 300	0,12	423
424	BS71910E.T.P4S	50	72	12	20	0,6	0,3	25					55,0	67,5	0,6	0,3	59,2		14,8	8,4	0,72	25 000	38 000	106	278	580	88	124	164	305	810	1 720	0,12	424
425	HCBS71910C.T.P4S	50	72	12	15	0,6	0,3	17					55,0	67,5	0,6	0,3	59,2		15,8	8,1	0,53	34 000	49 000	52	137	288	43	62	84	150	410	880	0,105	425
426	HCBS71910E.T.P4S	50	72	12	20	0,6	0,3	25					55,0	67,5	0,6	0,3	59,2		14,8	7,8	0,51	32 000	46 000	75	196	407	88	123	161	210	565	1 190	0,105	426
427	HS71910C.2RSD.T.P4S	50	72	12	14	0,6		15					55,0	67,5	0,6				10,5	6,5	0,328	26 000		35	105	210	33,0	51,0	70,0	105	329	687	0,150	427
428	HS71910E.2RSD.T.P4S	50	72	12	20	0,6		25					55,0	67,5	0,6				9,7	6,1	0,309	24 000		58	174	348	82,0	122	160	167	507	1 033	0,150	428
429	HC71910C.2RSD.T.P4S	50	72	12	14	0,6		15					55,0	67,5	0,6				10,5	5,9	0,236	33 000		24	72	144	32,0	49,0	66,0	71	222	465	0,142	429
430	HC71910E.2RSD.T.P4S	50	72	12	20	0,6		25					55,0	67,5	0,6				9,7	5,6	0,223	30 000		39	117	234	81,7	120	156	113	344	702	0,142	430
431	HS71910C.T.P4S	50	72	12	14	0,6		15					55,0	67,5	0,6		59,2	58,4	10,5	6,5	0,328	26 000	40 000	35	105	210	33,0	51,0	70,0	105	329	687	0,150	431
432	HS71910E.T.P4S	50	72	12	20	0,6		25					55,0	67,5	0,6		59,2	58,4	9,7	6,1	0,309	24 000	36 000	58	174	348	82,0	122	160	167	507	1 033	0,150	432

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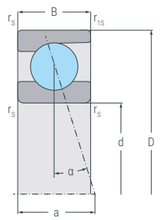
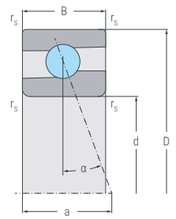
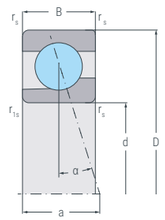
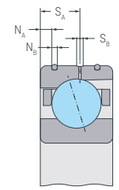
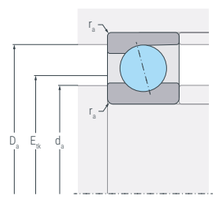
Spindle bearings
Dimensional tables of spindle bearings

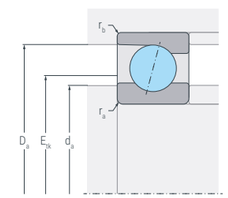


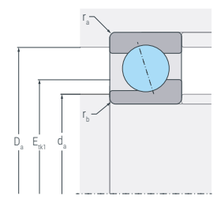


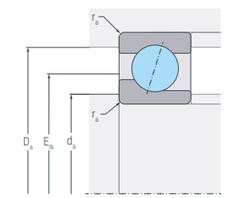








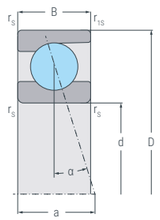


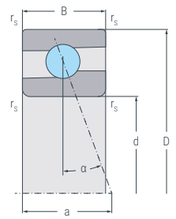


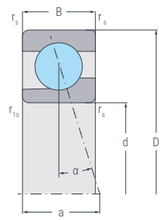
Symbol		Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
433	HC71910C.T.P4S	50	72	12	14	0,6		15					55,0	67,5	0,6		59,2	58,4	10,5	5,9	0,236	33 000	50 000	24	72	144	32,0	49,0	66,0	71	222	465	0,142	433
434	HC71910E.T.P4S	50	72	12	20	0,6		25					55,0	67,5	0,6		59,2	58,4	9,7	5,6	0,223	30 000	48 000	39	117	234	81,7	120	156	113	344	702	0,142	434
435	XC71910C.T.P4S	50	72	12	14	0,6		15					55,0	67,5	0,6		59,2	58,4	16,8	5,9	0,559	36 000	56 000	24	72	144	32,0	49,0	66,0	71	222	465	0,142	435
436	XC71910E.T.P4S	50	72	12	20	0,6		25					55,0	67,5	0,6		59,2	58,4	15,5	5,6	0,528	34 000	53 000	39	117	234	81,7	120	156	113	344	702	0,142	436
437	HS71910C.DLR.T.P4S	50	72	12	14	0,6		15	1,5	2,8	1,6	6,6	55,0	67,5	0,6				10,5	6,5	0,328		40 000	35	105	210	33,0	51,0	70,0	105	329	687	0,150	437
438	HS71910E.DLR.T.P4S	50	72	12	20	0,6		25	1,5	2,8	1,6	6,6	55,0	67,5	0,6				9,7	6,1	0,309		36 000	58	174	348	82,0	122	160	167	507	1 033	0,150	438
439	HC71910C.DLR.T.P4S	50	72	12	14	0,6		15	1,5	2,8	1,6	6,6	55,0	67,5	0,6				10,5	5,9	0,236		50 000	24	72	144	32,0	49,0	66,0	71	222	465	0,142	439
440	HC71910E.DLR.T.P4S	50	72	12	20	0,6		25	1,5	2,8	1,6	6,6	55,0	67,5	0,6				9,7	5,6	0,223		48 000	39	117	234	81,7	120	156	113	344	702	0,142	440
441	XC71910C.DLR.T.P4S	50	72	12	14	0,6		15	1,5	2,8	1,6	6,6	55,0	67,5	0,6				16,8	5,9	0,559		56 000	24	72	144	32,0	49,0	66,0	71	222	465	0,142	441
442	XC71910E.DLR.T.P4S	50	72	12	20	0,6		25	1,5	2,8	1,6	6,6	55,0	67,5	0,6				15,5	5,6	0,528		53 000	39	117	234	81,7	120	156	113	344	702	0,142	442
443	B7010C.2RSD.T.P4S	50	80	16	17	1	0,6	15					56,0	74,0	1	0,3			28,5	21,1	1,10	18 000		150	505	1 050	52,0	92,0	135	468	1 720	3 850	0,262	443
444	B7010E.2RSD.T.P4S	50	80	16	23	1	0,6	25					56,0	74,0	1	0,3			27,0	20,1	1,05	16 000		210	780	1 665	120	199	272	620	2 370	5 240	0,262	444
445	B7010C.T.P4S	50	80	16	17	1	0,6	15					56,0	74,0	1	0,3	62,2		28,5	21,1	1,10	18 000	28 000	150	505	1 050	52,0	92,0	135	468	1 720	3 850	0,262	445
446	B7010E.T.P4S	50	80	16	23	1	0,6	25					56,0	74,0	1	0,3	62,2		27,0	20,1	1,05	16 000	24 000	210	780	1 665	120	199	272	620	2 370	5 240	0,262	446
447	B7010C.DLR.T.P4S	50	80	16	17	1	0,6	15	1,5	3,4	1,4	9,3	56,0	74,0	1	0,3			28,5	21,1	1,10		28 000	150	505	1 050	52,0	92,0	135	468	1 720	3 850	0,262	447
448	B7010E.DLR.T.P4S	50	80	16	23	1	0,6	25	1,5	3,4	1,4	9,3	56,0	74,0	1	0,3			27,0	20,1	1,05		24 000	210	780	1 665	120	199	272	620	2 370	5 240	0,262	448
449	HCB7010C.T.P4S	50	80	16	17	1	0,6	15					56,0	74,0	1	0,3	62,2		28,5	19,4	0,778	24 000	38 000	75	275	588	45,0	77,0	110	226	892	2 010	0,226	449
450	HCB7010E.T.P4S	50	80	16	23	1	0,6	25					56,0	74,0	1	0,3	62,2		27,0	18,5	0,733	22 000	34 000	88	396	890	100	172	236	260	1 190	2 740	0,226	450
451	XCB7010C.T.P4S	50	80	16	17	1	0,6	15					56,0	74,0	1	0,3	62,2		45,6	19,4	1,83	28 000	43 000	75	275	588	45,0	77,0	110	226	892	2 010	0,226	451
452	XCB7010E.T.P4S	50	80	16	23	1	0,6	25					56,0	74,0	1	0,3	62,2		43,1	18,5	1,74	24 000	38 000	88	396	890	100	172	236	260	1 190	2 740	0,226	452
453	HCB7010C.DLR.T.P4S	50	80	16	17	1	0,6	15	1,5	3,4	1,4	9,3	56,0	74,0	1	0,3			28,5	19,4	0,778		38 000	75	275	588	45,0	77,0	110	226	892	2 010	0,226	453
454	HCB7010E.DLR.T.P4S	50	80	16	23	1	0,6	25	1,5	3,4	1,4	9,3	56,0	74,0	1	0,3			27,0	18,5	0,733		34 000	88	396	890	100	172	236	260	1 190	2 740	0,226	454
455	XCB7010C.DLR.T.P4S	50	80	16	17	1	0,6	15	1,5	3,4	1,4	9,3	56,0	74,0	1	0,3			45,6	19,4	1,83		43 000	75	275	588	45,0	77,0	110	226	892	2 010	0,226	455
456	XCB7010E.DLR.T.P4S	50	80	16	23	1	0,6	25	1,5	3,4	1,4	9,3	56,0	74,0	1	0,3			43,1	18,5	1,74		38 000	88	396	890	100	172	236	260	1 190	2 740	0,226	456
457	BS7010C.2RSD.T.P4S	50	80	16	18	1	0,6	17					56,0	74,0	1	0,6			19,0	10,9	0,78	25 000		77	202	430	44	65	90	230	630	1 370	0,256	457
458	BS7010E.2RSD.T.P4S	50	80	16	23	1	0,6	25					56,0	74,0	1	0,6			18,2	10,4	0,73	24 000		110	290	612	90	130	170	320	850	1 800	0,256	458
459	BS7010C.T.P4S	50	80	16	18	1	0,6	17					56,0	74,0	1	0,6	62,4		19,0	10,9	0,78	25 000	38 000	77	202	430	44	65	90	230	630	1 370	0,256	459
460	BS7010E.T.P4S	50	80	16	23	1	0,6	25					56,0	74,0	1	0,6	62,4		18,2	10,4	0,73	24 000	35 000	110	290	612	90	130	170	320	850	1 800	0,256	460
461	HCBS7010C.T.P4S	50	80	16	18	1	0,6	17					56,0	74,0	1	0,6	62,4		19,0	10,0	0,55	32 000	46 000	56	145	305	44	66	90	160	430	930	0,246	461
462	HCBS7010E.T.P4S	50	80	16	23	1	0,6	25					56,0	74,0	1	0,6	62,4		18,2	9,6	0,53	30 000	43 000	80	205	430	90	128	170	222	595	1 250	0,246	462
463	HS7010C.2RSD.T.P4S	50	80	16	17	1		15					56,0	74,0	1				13,2	8,2	0,426	24 000		46	138	276	37,0	58,0	79,5	137	430	900	0,290	463

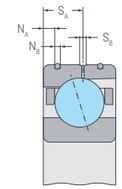
The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

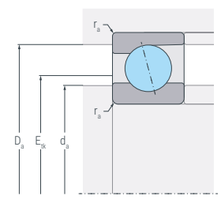
Spindle bearings
Dimensional tables of spindle bearings

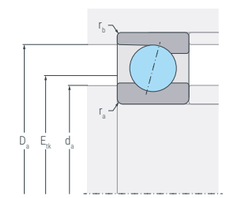


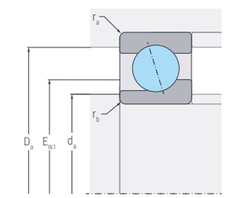


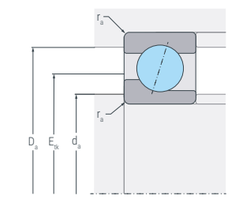












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
464	HS7010E.2RSD.T.P4S	50	80	16	23	1		25					56,0	74,0	1				12,6	7,7	0,403	22 000		74	222	444	91,0	136	178	212	650	1 330	0,290	464
465	HC7010C.2RSD.T.P4S	50	80	16	17	1		15					56,0	74,0	1				13,2	7,5	0,298	30 000		32	96	192	36,0	55,0	75,0	95	294	610	0,279	465
466	HC7010E.2RSD.T.P4S	50	80	16	23	1		25					56,0	74,0	1				12,6	7,1	0,282	28 000		51	153	306	91,5	135	174	148	451	917	0,279	466
467	HS7010C.T.P4S	50	80	16	17	1		15					56,0	74,0	1		63,2	62,2	13,2	8,2	0,426	24 000	38 000	46	138	276	37,0	58,0	79,5	137	430	900	0,290	467
468	HS7010E.T.P4S	50	80	16	23	1		25					56,0	74,0	1		63,2	62,2	12,6	7,7	0,403	22 000	34 000	74	222	444	91,0	136	178	212	650	1 330	0,290	468
469	HC7010C.T.P4S	50	80	16	17	1		15					56,0	74,0	1		63,2	62,2	13,2	7,5	0,298	30 000	48 000	32	96	192	36,0	55,0	75,0	95	294	610	0,279	469
470	HC7010E.T.P4S	50	80	16	23	1		25					56,0	74,0	1		63,2	62,2	12,6	7,1	0,282	28 000	43 000	51	153	306	91,5	135	174	148	451	917	0,279	470
471	XC7010C.T.P4S	50	80	16	17	1		15					56,0	74,0	1		63,2	62,2	21,1	7,5	0,707	34 000	53 000	32	96	192	36,0	55,0	75,0	95	294	610	0,279	471
472	XC7010E.T.P4S	50	80	16	23	1		25					56,0	74,0	1		63,2	62,2	20,2	7,1	0,668	32 000	48 000	51	153	306	91,5	135	174	148	451	917	0,279	472
473	HS7010C.DLR.T.P4S	50	80	16	17	1		15	1,5	3,4	1,4	9,3	56,0	74,0	1				13,2	8,2	0,426		38 000	46	138	276	37,0	58,0	79,5	137	430	900	0,290	473
474	HS7010E.DLR.T.P4S	50	80	16	23	1		25	1,5	3,4	1,4	9,3	56,0	74,0	1				12,6	7,7	0,403		34 000	74	222	444	91,0	136	178	212	650	1 330	0,290	474
475	HC7010C.DLR.T.P4S	50	80	16	17	1		15	1,5	3,4	1,4	9,3	56,0	74,0	1				13,2	7,5	0,298		48 000	32	96	192	36,0	55,0	75,0	95	294	610	0,279	475
476	HC7010E.DLR.T.P4S	50	80	16	23	1		25	1,5	3,4	1,4	9,3	56,0	74,0	1				12,6	7,1	0,282		43 000	51	153	306	91,5	135	174	148	451	917	0,279	476
477	XC7010C.DLR.T.P4S	50	80	16	17	1		15	1,5	3,4	1,4	9,3	56,0	74,0	1				21,1	7,5	0,707		53 000	32	96	192	36,0	55,0	75,0	95	294	610	0,279	477
478	XC7010E.DLR.T.P4S	50	80	16	23	1		25	1,5	3,4	1,4	9,3	56,0	74,0	1				20,2	7,1	0,668		48 000	51	153	306	91,5	135	174	148	451	917	0,279	478
479	B7210C.2RSD.T.P4S	50	90	20	19	1,1	1,1	15					57,0	83,0	1	1			42,8	29,3	1,53	16 000		242	790	1 630	60,0	105	153	760	2 700	6 000	0,459	479
480	B7210E.2RSD.T.P4S	50	90	20	26	1,1	1,1	25					57,0	83,0	1	1			40,8	28,0	1,46	14 000		350	1 220	2 580	138	222	305	1 040	3 750	8 180	0,459	480
481	B7210C.T.P4S	50	90	20	19	1,1	1,1	15					57,0	83,0	1	1	65,9		42,8	29,3	1,53	16 000	26 000	242	790	1 630	60,0	105	153	760	2 700	6 000	0,459	481
482	B7210E.T.P4S	50	90	20	26	1,1	1,1	25					57,0	83,0	1	1	65,9		40,8	28,0	1,46	14 000	22 000	350	1 220	2 580	138	222	305	1 040	3 750	8 180	0,459	482
483	B7210C.DLR.T.P4S	50	90	20	19	1,1	1,1	15	1,5	4,0	1,6	11,2	57,0	83,0	1	1			42,8	29,3	1,53		26 000	242	790	1 630	60,0	105	153	760	2 700	6 000	0,459	483
484	B7210E.DLR.T.P4S	50	90	20	26	1,1	1,1	25	1,5	4,0	1,6	11,2	57,0	83,0	1	1			40,8	28,0	1,46		22 000	350	1 220	2 580	138	222	305	1 040	3 750	8 180	0,459	484
485	HCB7210C.T.P4S	50	90	20	19	1,1	1,1	15					57,0	83,0	1	1	65,9		42,8	26,9	1,07	20 000	34 000	122	423	895	51,0	85,0	123	375	1 380	3050	0,385	485
486	HCB7210E.T.P4S	50	90	20	26	1,1	1,1	25					57,0	83,0	1	1	65,9		40,8	25,7	1,02	17 000	28 000	168	655	1 420	120	199	267	495	1 980	4400	0,385	486
487	HCB7210C.DLR.T.P4S	50	90	20	19	1,1	1,1	15	1,5	4,0	1,6	11,2	57,0	83,0	1	1			42,8	26,9	1,07		34 000	122	423	895	51,0	85,0	123	375	1 380	3050	0,385	487
488	HCB7210E.DLR.T.P4S	50	90	20	26	1,1	1,1	25	1,5	4,0	1,6	11,2	57,0	83,0	1	1			40,8	25,7	1,02		28 000	168	655	1 420	120	199	267	495	1 980	4400	0,385	488
489	A7310C.T.P4S	50	110	27	24	2	2	15					60,0	100,0	2	2	74,9	70,8	69,7	56,2	3,26	16 000	26 500	350	700	1 400	75,0	110	150	1 120	2 360	5060	1,07	489
490	A7310E.T.P4S	50	110	27	32	2	2	25					60,0	100,0	2	2	74,9	70,8	56,2	54,5	3,14	15 000	23 000	590	1 190	2 380	180	240	320	1 750	3 600	7460	1,07	490
491	B71911C.2RSD.T.P4S	55	80	13	16	1	0,6	15					60,0	75,5	0,6	0,3			22,8	18,8	0,978	17 000		110	390	820	51,0	90,0	132	345	1 300	2 980	0,176	491
492	B71911E.2RSD.T.P4S	55	80	13	22	1	0,6	25					60,0	75,5	0,6	0,3			21,8	17,5	0,910	15 000		150	595	1 290	114	195	265	430	1 790	4 030	0,176	492
493	B71911C.T.P4S	55	80	13	16	1	0,6	15					60,0	75,5	0,6	0,3	65,1		22,8	18,8	0,978	17 000	26 000	110	390	820	51,0	90,0	132	345	1 300	2 980	0,176	493
494	B71911E.T.P4S	55	80	13	22	1	0,6	25					60,0	75,5	0,6	0,3	65,1		21,8	17,5	0,910	15 000	24 000	150	595	1 290	114	195	265	430	1 790	4 030	0,176	494

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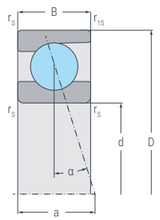
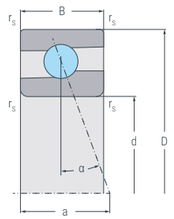
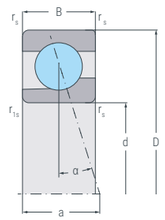
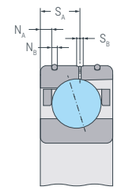
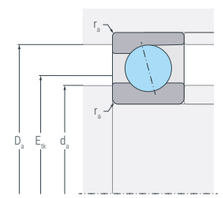
Spindle bearings
Dimensional tables of spindle bearings

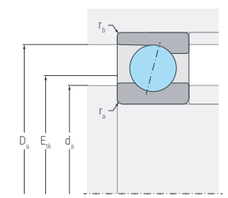


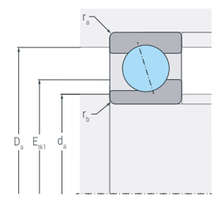


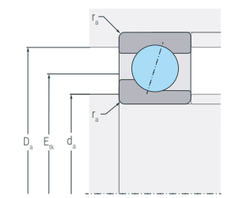












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
495	B71911C.DLR.T.P4S	55	80	13	16	1	0,6	15	1,5	2,8	1,6	7,2	60,0	75,5	0,6	0,3			22,8	18,8	0,978		26 000	110	390	820	51,0	90,0	132	345	1 300	2 980	0,176	495
496	B71911E.DLR.T.P4S	55	80	13	22	1	0,6	25	1,5	2,8	1,6	7,2	60,0	75,5	0,6	0,3			21,8	17,5	0,910		24 000	150	595	1 290	114	195	265	430	1 790	4 030	0,176	496
497	HCB71911C.T.P4S	55	80	13	16	1	0,6	15					60,0	75,5	0,6	0,3	65,1		22,8	17,3	0,685	24 000	36 000	50	202	442	42,0	74,2	106	150	655	1 510	0,151	497
498	HCB71911E.T.P4S	55	80	13	22	1	0,6	25					60,0	75,5	0,6	0,3	65,1		21,8	16,1	0,637	22 000	32 000	58	296	692	94,0	169	233	170	890	2 120	0,151	498
499	XCB71911C.T.P4S	55	80	13	16	1	0,6	15					60,0	75,5	0,6	0,3	65,1		36,4	17,3	1,62	26 000	40 000	50	202	442	42,0	74,2	106	150	655	1 510	0,151	499
500	XCB71911E.T.P4S	55	80	13	22	1	0,6	25					60,0	75,5	0,6	0,3	65,1		34,8	16,1	1,51	24 000	36 000	58	296	692	94,0	169	233	170	890	2 120	0,151	500
501	HCB71911C.DLR.T.P4S	55	80	13	16	1	0,6	15	1,5	2,8	1,6	7,2	60,0	75,5	0,6	0,3			22,8	17,3	0,685		36 000	50	202	442	42,0	74,2	106	150	655	1 510	0,151	501
502	HCB71911E.DLR.T.P4S	55	80	13	22	1	0,6	25	1,5	2,8	1,6	7,2	60,0	75,5	0,6	0,3			21,8	16,1	0,637		32 000	58	296	692	94,0	169	233	170	890	2 120	0,151	502
503	XCB71911C.DLR.T.P4S	55	80	13	16	1	0,6	15	1,5	2,8	1,6	7,2	60,0	75,5	0,6	0,3			36,4	17,3	1,62		40 000	50	202	442	42,0	74,2	106	150	655	1 510	0,151	503
504	XCB71911E.DLR.T.P4S	55	80	13	22	1	0,6	25	1,5	2,8	1,6	7,2	60,0	75,5	0,6	0,3			34,8	16,1	1,51		36 000	58	296	692	94,0	169	233	170	890	2 120	0,151	504
505	BS71911C.2RSD.T.P4S	55	80	13	17	1	0,6	17					60,0	75,5	1	0,6			18,1	10,4	1,05	25 000		104	276	583	50	73	100	307	840	1 840	0,166	505
506	BS71911E.2RSD.T.P4S	55	80	13	22	1	0,6	25					60,0	75,5	1	0,6			17,0	9,9	1,01	23 000		150	393	820	100	141	186	431	1 150	2 440	0,166	506
507	BS71911C.T.P4S	55	80	13	17	1	0,6	17					60,0	75,5	1	0,6	65,3		18,1	10,4	1,05	25 000	37 000	104	276	583	50	73	100	307	840	1 840	0,166	507
508	BS71911E.T.P4S	55	80	13	22	1	0,6	25					60,0	75,5	1	0,6	65,3		17,0	9,9	1,01	23 000	34 000	150	393	820	100	141	186	431	1 150	2 440	0,166	508
509	HCBS71911C.T.P4S	55	80	13	17	1	0,6	17					60,0	75,5	1	0,6	65,3		18,1	9,6	0,75	30 000	45 000	73	194	406	49	71	95	210	575	1 240	0,155	509
510	HCBS71911E.T.P4S	55	80	13	22	1	0,6	25					60,0	75,5	1	0,6	65,3		17,0	9,1	0,72	29 000	42 000	106	277	575	100	140	183	300	800	1 690	0,155	510
511	HS71911C.2RSD.T.P4S	55	80	13	16	1		15					60,0	75,5	0,6				13,5	8,5	0,431	24 000		46	138	276	38,0	59,0	82,0	137	436	919	0,200	511
512	HS71911E.2RSD.T.P4S	55	80	13	22	1		25					60,0	75,5	0,6				12,5	8,1	0,410	22 000		75	225	450	94,0	140	183	215	659	1 349	0,200	512
513	HC71911C.2RSD.T.P4S	55	80	13	16	1		15					60,0	75,5	0,6				13,5	7,8	0,311	30 000		32	96	192	37,0	57,0	77,0	95	296	619	0,188	513
514	HC71911E.2RSD.T.P4S	55	80	13	22	1		25					60,0	75,5	0,6				12,5	7,4	0,294	28 000		52	156	312	93,5	139	180	150	457	931	0,188	514
515	HS71911C.T.P4S	55	80	13	16	1		15					60,0	75,5	0,6		65,5	64,5	13,5	8,5	0,431	24 000	36 000	46	138	276	38,0	59,0	82,0	137	436	919	0,200	515
516	HS71911E.T.P4S	55	80	13	22	1		25					60,0	75,5	0,6		65,5	64,5	12,5	8,1	0,410	22 000	32 000	75	225	450	94,0	140	183	215	659	1 349	0,200	516
517	HC71911C.T.P4S	55	80	13	16	1		15					60,0	75,5	0,6		65,5	64,5	13,5	7,8	0,311	30 000	46 000	32	96	192	37,0	57,0	77,0	95	296	619	0,188	517
518	HC71911E.T.P4S	55	80	13	22	1		25					60,0	75,5	0,6		65,5	64,5	12,5	7,4	0,294	28 000	43 000	52	156	312	93,5	139	180	150	457	931	0,188	518
519	XC71911C.T.P4S	55	80	13	16	1		15					60,0	75,5	0,6		65,5	64,5	21,7	7,8	0,736	34 000	52 000	32	96	192	37,0	57,0	77,0	95	296	619	0,188	519
520	XC71911E.T.P4S	55	80	13	22	1		25					60,0	75,5	0,6		65,5	64,5	20,0	7,4	0,696	30 000	48 000	52	156	312	93,5	139	180	150	457	931	0,188	520
521	HS71911C.DLR.T.P4S	55	80	13	16	1		15	1,5	2,8	1,6	7,2	60,0	75,5	0,6				13,5	8,5	0,431		36 000	46	138	276	38,0	59,0	82,0	137	436	919	0,200	521
522	HS71911E.DLR.T.P4S	55	80	13	22	1		25	1,5	2,8	1,6	7,2	60,0	75,5	0,6				12,5	8,1	0,410		32 000	75	225	450	94,0	140	183	215	659	1 349	0,200	522
523	HC71911C.DLR.T.P4S	55	80	13	16	1		15	1,5	2,8	1,6	7,2	60,0	75,5	0,6				13,5	7,8	0,311		46 000	32	96	192	37,0	57,0	77,0	95	296	619	0,188	523
524	HC71911E.DLR.T.P4S	55	80	13	22	1		25	1,5	2,8	1,6	7,2	60,0	75,5	0,6				12,5	7,4	0,294		43 000	52	156	312	93,5	139	180	150	457	931	0,188	524
525	XC71911C.DLR.T.P4S	55	80	13	16	1		15	1,5	2,8	1,6	7,2	60,0	75,5	0,6				21,7	7,8	0,736		52 000	32	96	192	37,0	57,0	77,0	95	296	619	0,188	525

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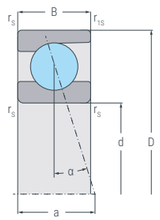
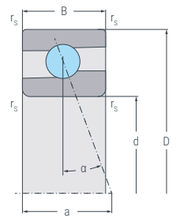
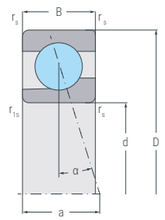
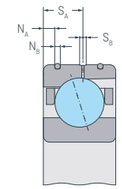
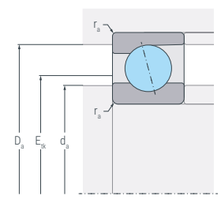
Spindle bearings
Dimensional tables of spindle bearings

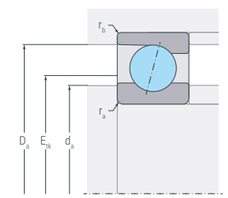


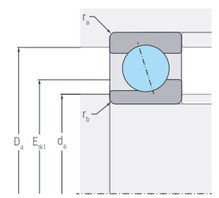


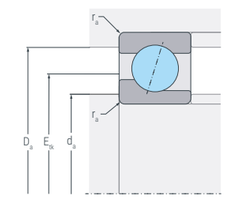






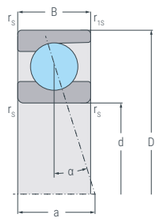


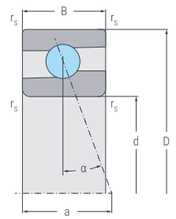


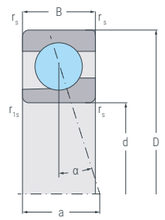


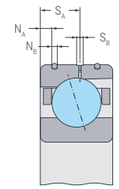
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
526	XC71911E.DLR.T.P4S	55	80	13	22	1		25	1,5	2,8	1,6	7,2	60,0	75,5	0,6				20,0	7,4	0,696		48 000	52	156	312	93,5	139	180	150	457	931	0,188	526
527	B7011C.2RSD.T.P4S	55	90	18	19	1,1	1	15					62,0	83,0	1	0,6			34,2	30,5	1,59	16 000		205	680	1 425	62,0	107	155	642	2 330	5 200	0,383	527
528	B7011E.2RSD.T.P4S	55	90	18	26	1,1	1	25					62,0	83,0	1	0,6			32,4	28,4	1,48	14 000		298	1 065	2 260	141	230	318	871	3 240	7 110	0,383	528
529	B7011C.T.P4S	55	90	18	19	1,1	1	15					62,0	83,0	1	0,6	69,3		34,2	30,5	1,59	16 000	24 000	205	680	1 425	62,0	107	155	642	2 330	5 200	0,383	529
530	B7011E.T.P4S	55	90	18	26	1,1	1	25					62,0	83,0	1	0,6	69,3		32,4	28,4	1,48	14 000	22 000	298	1 065	2 260	141	230	318	871	3 240	7 110	0,383	530
531	B7011C.DLR.T.P4S	55	90	18	19	1,1	1	15	1,5	3,8	1,4	9,7	62,0	83,0	1	0,6			34,2	30,5	1,59		24 000	205	680	1 425	62,0	107	155	642	2 330	5 200	0,383	531
532	B7011E.DLR.T.P4S	55	90	18	26	1,1	1	25	1,5	3,8	1,4	9,7	62,0	83,0	1	0,6			32,4	28,4	1,48		22 000	298	1 065	2 260	141	230	318	871	3 240	7 110	0,383	532
533	HCB7011C.T.P4S	55	90	18	19	1,1	1	15					62,0	83,0	1	0,6	69,3		34,2	28,1	1,11	22 000	34 000	102	370	785	52,0	90,0	128	310	1 210	2 700	0,335	533
534	HCB7011E.T.P4S	55	90	18	26	1,1	1	25					62,0	83,0	1	0,6	69,3		32,4	26,1	1,03	20 000	30 000	135	550	1 220	120	203	277	390	1 660	3 750	0,335	534
535	XCB7011C.T.P4S	55	90	18	19	1,1	1	15					62,0	83,0	1	0,6	69,3		54,7	28,1	2,64	24 000	38 000	102	370	785	52,0	90,0	128	310	1 210	2 700	0,335	535
536	XCB7011E.T.P4S	55	90	18	26	1,1	1	25					62,0	83,0	1	0,6	69,3		51,8	26,1	2,45	22 000	34 000	135	550	1 220	120	203	277	390	1 660	3 750	0,335	536
537	HCB7011C.DLR.T.P4S	55	90	18	19	1,1	1	15	1,5	3,8	1,4	9,7	62,0	83,0	1	0,6			34,2	28,1	1,11		34 000	102	370	785	52,0	90,0	128	310	1 210	2 700	0,335	537
538	HCB7011E.DLR.T.P4S	55	90	18	26	1,1	1	25	1,5	3,8	1,4	9,7	62,0	83,0	1	0,6			32,4	26,1	1,03		30 000	135	550	1 220	120	203	277	390	1 660	3 750	0,335	538
539	XCB7011C.DLR.T.P4S	55	90	18	19	1,1	1	15	1,5	3,8	1,4	9,7	62,0	83,0	1	0,6			54,7	28,1	2,64		38 000	102	370	785	52,0	90,0	128	310	1 210	2 700	0,335	539
540	XCB7011E.DLR.T.P4S	55	90	18	26	1,1	1	25	1,5	3,8	1,4	9,7	62,0	83,0	1	0,6			51,8	26,1	2,45		34 000	135	550	1 220	120	203	277	390	1 660	3 750	0,335	540
541	BS7011C.2RSD.T.P4S	55	90	18	20	1,1	0,6	17					62,0	83,0	1,1	0,6			26,6	14,6	1,14	23 000		116	306	645	55	80	110	340	931	2 040	0,363	541
542	BS7011E.2RSD.T.P4S	55	90	18	26	1,1	0,6	25					62,0	83,0	1,1	0,6			25,0	13,9	1,08	21 000		166	435	908	110	155	205	477	1 270	2 700	0,363	542
543	BS7011C.T.P4S	55	90	18	20	1,1	0,6	17					62,0	83,0	1,1	0,6	69,6		26,6	13,9	1,14	23 000	35 000	116	306	645	55	80	110	340	931	2 040	0,363	543
544	BS7011E.T.P4S	55	90	18	26	1,1	0,6	25					62,0	83,0	1,1	0,6	69,6		25,0	14,6	1,08	21 000	32 000	166	435	908	110	155	205	477	1 270	2 700	0,363	544
545	HCBS7011C.T.P4S	55	90	18	20	1,1	0,6	17					62,0	83,0	1,1	0,6	69,6		26,6	13,4	0,85	28 000	41 000	81	214	450	54	78	105	236	638	1 380	0,348	545
546	HCBS7011E.T.P4S	55	90	18	26	1,1	0,6	25					62,0	83,0	1,1	0,6	69,6		25,0	12,8	0,81	27 000	39 000	117	306	367	110	154	201	335	887	1 870	0,348	546
547	HS7011C.2RSD.T.P4S	55	90	18	19	1,1		15					62,0	83,0	1				18,8	11,5	0,581	22 000		64	192	384	42,5	67,0	92,5	191	603	1 264	0,430	547
548	HS7011E.2RSD.T.P4S	55	90	18	26	1,1		25					62,0	83,0	1				17,5	10,9	0,550	20 000		105	315	630	105	160	208	301	922	1 883	0,430	548
549	HC7011C.2RSD.T.P4S	55	90	18	19	1,1		15					62,0	83,0	1				18,8	10,6	0,419	28 000		45	135	270	42,0	65,0	87,0	134	415	861	0,411	549
550	HC7011E.2RSD.T.P4S	55	90	18	26	1,1		25					62,0	83,0	1				17,5	10,0	0,396	26 000		73	220	438	107	158	204	211	643	1 303	0,411	550
551	HS7011C.T.P4S	55	90	18	19	1,1		15					62,0	83,0	1		70,2	69,1	18,8	11,5	0,581	22 000	34 000	64	192	384	42,5	67,0	92,5	191	603	1 264	0,430	551
552	HS7011E.T.P4S	55	90	18	26	1,1		25					62,0	83,0	1		70,2	69,1	17,5	10,9	0,550	20 000	30 000	105	315	630	105	160	208	301	922	1 883	0,430	552
553	HC7011C.T.P4S	55	90	18	19	1,1		15					62,0	83,0	1		70,2	69,1	18,8	10,6	0,419	28 000	43 000	45	135	270	42,0	65,0	87,0	134	415	861	0,411	553
554	HC7011E.T.P4S	55	90	18	26	1,1		25					62,0	83,0	1		70,2	69,1	17,5	10,0	0,396	26 000	40 000	73	220	438	107	158	204	211	643	1 303	0,411	554
555	XC7011C.T.P4S	55	90	18	19	1,1		15					62,0	83,0	1		70,2	69,1	30,1	10,6	0,993	31 000	48 000	45	135	270	42,0	65,0	87,0	134	415	861	0,411	555
556	XC7011E.T.P4S	55	90	18	26	1,1		25					62,0	83,0	1		70,2	69,1	28,0	10,0	0,939	28 000	43 000	73	220	438	107	158	204	211	643	1 303	0,411	556

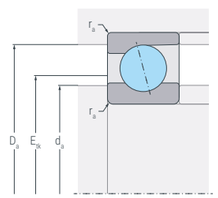
Spindle bearings
Dimensional tables of spindle bearings

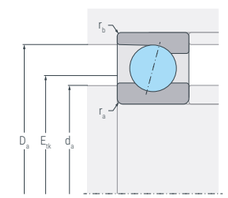


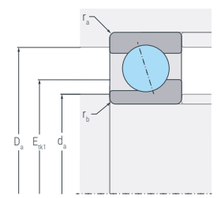


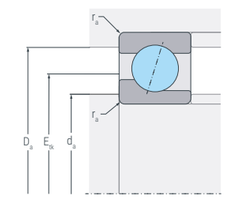








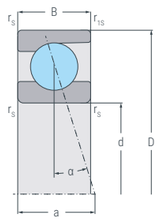


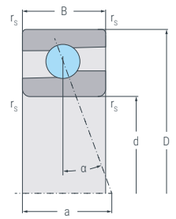


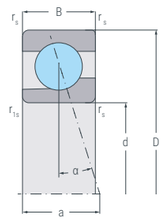
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
557	HS7011C.DLR.T.P4S	55	90	18	19	1,1		15	1,3	4,3	1,4	9,7	62,0	83,0	1				18,8	11,5	0,581		34 000	64	192	384	42,5	67,0	92,5	191	603	1 264	0,430	557
558	HS7011E.DLR.T.P4S	55	90	18	26	1,1		25	1,3	4,3	1,4	9,7	62,0	83,0	1				17,5	10,9	0,550		30 000	105	315	630	105	160	208	301	922	1 883	0,430	558
559	HC7011C.DLR.T.P4S	55	90	18	19	1,1		15	1,3	4,3	1,4	9,7	62,0	83,0	1				18,8	10,6	0,419		43 000	45	135	270	42,0	65,0	87,0	134	415	861	0,411	559
560	HC7011E.DLR.T.P4S	55	90	18	26	1,1		25	1,3	4,3	1,4	9,7	62,0	83,0	1				17,5	10,0	0,396		40 000	73	220	438	107	158	204	211	643	1 303	0,411	560
561	XC7011C.DLR.T.P4S	55	90	18	19	1,1		15	1,3	4,3	1,4	9,7	62,0	83,0	1				30,1	10,6	0,993		48 000	45	135	270	42,0	65,0	87,0	134	415	861	0,411	561
562	XC7011E.DLR.T.P4S	55	90	18	26	1,1		25	1,3	4,3	1,4	9,7	62,0	83,0	1				28,0	10,0	0,939		43 000	73	220	438	107	158	204	211	643	1 303	0,411	562
563	B7211C.2RSD.T.P4S	55	100	21	21	1,5	1,1	15					63,0	92,0	1,5	1,1			46,6	34,4	1,79	14 000		260	850	1 750	66,0	114	166	810	2 880	6 390	0,608	563
564	B7211E.2RSD.T.P4S	55	100	21	29	1,5	1,1	25					63,0	92,0	1,5	1,1			44,3	32,8	1,71	13 000		380	1 330	2 795	155	252	342	1 120	4 050	8 820	0,608	564
565	B7211C.T.P4S	55	100	21	21	1,5	1,1	15					63,0	92,0	1,5	1,1	73,7		46,6	34,4	1,79	14 000	22 000	260	850	1 750	66,0	114	166	810	2 880	6 390	0,608	565
566	B7211E.T.P4S	55	100	21	29	1,5	1,1	25					63,0	92,0	1,5	1,1	73,7		4,3	32,8	1,71	13 000	20 000	380	1 330	2 795	155	252	342	1 120	4 050	8 820	0,608	566
567	B7211C.DLR.T.P4S	55	100	21	21	1,5	1,1	15	1,8	3,8	1,6	12,0	63,0	92,0	1,5	1,1			46,6	34,4	1,79		22 000	260	850	1 750	66,0	114	166	810	2 880	6 390	0,608	567
568	B7211E.DLR.T.P4S	55	100	21	29	1,5	1,1	25	1,8	3,8	1,6	12,0	63,0	92,0	1,5	1,1			4,3	32,8	1,71		20 000	380	1 330	2 795	155	252	342	1 120	4 050	8 820	0,608	568
569	HCB7211C.T.P4S	55	100	21	21	1,5	1,1	15					63,0	92,0	1,5	1,1	73,7		46,6	31,6	1,26	18 000	30 000	135	462	980	58,0	97,0	138	410	1 500	3 360	0,509	569
570	HCB7211E.T.P4S	55	100	21	29	1,5	1,1	25					63,0	92,0	1,5	1,1	73,7		44,3	30,2	1,20	15 000	24 000	178	700	1 530	135	220	296	520	2 100	4 700	0,509	570
571	HCB7211C.DLR.T.P4S	55	100	21	21	1,5	1,1	15	1,8	3,8	1,6	12,0	63,0	92,0	1,5	1,1			46,6	31,6	1,26		30 000	135	462	980	58,0	97,0	138	410	1 500	3 360	0,509	571
572	HCB7211E.DLR.T.P4S	55	100	21	29	1,5	1,1	25	1,8	3,8	1,6	12,0	63,0	92,0	1,5	1,1			44,3	30,2	1,20		24 000	178	700	1 530	135	220	296	520	2 100	4 700	0,509	572
573	A7311C.T.P4S	55	120	29	26	2	2	15					65,0	110,0	2	2	82,4	78,3	74,3	63,9	3,68	15 000	24 500	370	740	1 490	85,0	120	170	1 180	2 490	5 370	1,36	573
574	A7311E.T.P4S	55	120	29	35	2	2	25					65,0	110,0	2	2	82,4	78,3	71,0	61,3	3,53	14 000	22 000	630	1 260	2 520	200	260	340	1 860	3 820	7 890	1,36	574
575	B71812C.T.P4S	60	78	10	14	0,3	0,1	15					63,0	74,5	0,3	0,1	67,3		13,2	13,1	0,491	16 000	26 000	50	198	433	41	75	110	150	652	1 520	0,11	575
576	B71812E.T.P4S	60	78	10	21	0,3	0,1	25					63,0	74,5	0,3	0,1	67,3		12,2	12,1	0,445	14 000	22 000	78	278	645	100	158	222	230	825	1 980	0,11	576
577	B71912C.2RSD.T.P4S	60	85	13	16	1	0,6	15					65,0	80,5	0,6	0,3			23,7	20,4	1,06	16 000		116	410	868	55,0	95,0	140	360	1 370	3 100	0,190	577
578	B71912E.2RSD.T.P4S	60	85	13	23	1	0,6	25					65,0	80,5	0,6	0,3			22,7	19,0	0,988	14 000		156	622	1 353	124	209	388	450	1 880	4 220	0,190	578
579	B71912C.T.P4S	60	85	13	16	1	0,6	15					65,0	80,5	0,6	0,3	69,9		23,7	20,4	1,06	16 000	24 000	116	410	868	55,0	95,0	140	360	1 370	3 100	0,190	579
580	B71912E.T.P4S	60	85	13	23	1	0,6	25					65,0	80,5	0,6	0,3	69,9		22,7	19,0	0,988	14 000	22 000	156	622	1 353	124	209	388	450	1 880	4 220	0,190	580
581	B71912C.DLR.T.P4S	60	85	13	16	1	0,6	15	1,5	2,8	1,6	7,2	65,0	80,5	0,6	0,3			23,7	20,4	1,06		24 000	116	410	868	55,0	95,0	140	360	1 370	3 100	0,190	581
582	B71912E.DLR.T.P4S	60	85	13	23	1	0,6	25	1,5	2,8	1,6	7,2	65,0	80,5	0,6	0,3			22,7	19,0	0,988		22 000	156	622	1 353	124	209	388	450	1 880	4 220	0,190	582
583	HCB71912C.T.P4S	60	85	13	16	1	0,6	15					65,0	80,5	0,6	0,3	69,9		23,7	18,7	0,743	22 000	34 000	54	214	470	44,8	80,1	114	165	690	1590	0,162	583
584	HCB71912E.T.P4S	60	85	13	23	1	0,6	25					65,0	80,5	0,6	0,3	69,9		22,7	17,4	0,692	20 000	30 000	56	300	705	98,0	180	248	170	902	2160	0,162	584
585	XCB71912C.T.P4S	60	85	13	16	1	0,6	15					65,0	80,5	0,6	0,3	69,9		37,9	18,7	1,76	24 000	38 000	54	214	470	44,8	80,1	114	165	690	1590	0,162	585
586	XCB71912E.T.P4S	60	85	13	23	1	0,6	25					65,0	80,5	0,6	0,3	69,9		36,3	17,4	1,64	22 000	34 000	56	300	705	98,0	180	248	170	902	2160	0,162	586
587	HCB71912C.DLR.T.P4S	60	85	13	16	1	0,6	15	1,5	2,8	1,6	7,2	65,0	80,5	0,6	0,3			23,7	18,7	0,743		34 000	54	214	470	44,8	80,1	114	165	690	1590	0,162	587

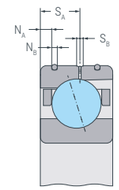
The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

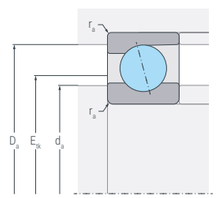
Spindle bearings
Dimensional tables of spindle bearings

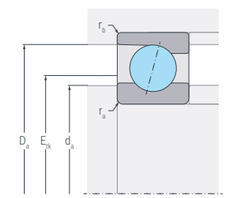


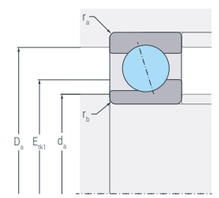


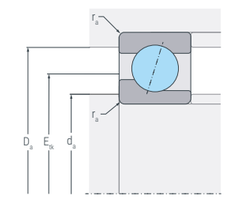












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
588	HCB71912E.DLR.T.P4S	60	85	13	23	1	0,6	25	1,5	2,8	1,6	7,2	65,0	80,5	0,6	0,3			22,7	17,4	0,692		30 000	56	300	705	98,0	180	248	170	902	2160	0,162	588
589	XCB71912C.DLR.T.P4S	60	85	13	16	1	0,6	15	1,5	2,8	1,6	7,2	65,0	80,5	0,6	0,3			37,9	18,7	1,76		38 000	54	214	470	44,8	80,1	114	165	690	1590	0,162	589
590	XCB71912E.DLR.T.P4S	60	85	13	23	1	0,6	25	1,5	2,8	1,6	7,2	65,0	80,5	0,6	0,3			36,3	17,4	1,64		34 000	56	300	705	98,0	180	248	170	902	2160	0,162	590
591	BS71912C.2RSD.T.P4S	60	85	13	18	1	0,6	17					65,0	80,5	1	0,6			18,7	11,4	1,14	23 000		116	306	645	55	80	110	340	930	2 040	0,185	591
592	BS71912E.2RSD.T.P4S	60	85	13	23	1	0,6	25					65,0	80,5	1	0,6			17,5	10,8	1,09	21 000		166	435	908	110	155	205	475	1 270	2 700	0,185	592
593	BS71912C.T.P4S	60	85	13	18	1	0,6	17					65,0	80,5	1	0,6	70,3		18,7	11,4	1,14	23 000	35 000	116	306	645	55	80	110	610	1 610	3 360	0,185	593
594	BS71912E.T.P4S	60	85	13	23	1	0,6	25					65,0	80,5	1	0,6	70,3		17,5	10,8	1,09	21 000	32 000	166	435	908	110	155	205	745	1 950	4 020	0,185	594
595	HCBS71912C.T.P4S	60	85	13	18	1	0,6	17					65,0	80,5	1	0,6	70,3		18,7	10,5	0,84	28 000	41 000	81	214	450	54	78	105	233	635	1 380	0,172	595
596	HCBS71912E.T.P4S	60	85	13	23	1	0,6	25					65,0	80,5	1	0,6	70,3		17,5	10,1	0,79	27 000	39 000	117	306	637	110	154	201	332	885	1 870	0,172	596
597	HS71912C.2RSD.T.P4S	60	85	13	16	1		15					65,0	80,5	0,6				13,7	9,2	0,466	22 000		48	144	288	40,0	63,0	86,0	143	454	949	0,210	597
598	HS71912E.2RSD.T.P4S	60	85	13	23	1		25					65,0	80,5	0,6				13,1	8,7	0,440	20 000		78	234	468	100	150	194	224	688	1 401	0,210	598
599	HC71912C.2RSD.T.P4S	60	85	13	16	1		15					65,0	80,5	0,6				13,7	8,5	0,336	28 000		34	102	204	39,5	60,5	81,0	101	312	643	0,198	599
600	HC71912E.2RSD.T.P4S	60	85	13	23	1		25					65,0	80,5	0,6				13,1	8,0	0,317	26 000		53	159	318	99,0	146	189	153	468	951	0,198	600
601	HS71912C.T.P4S	60	85	13	16	1		15					65,0	80,5	0,6		70,7	69,7	13,7	9,2	0,466	22 000	34 000	48	144	288	40,0	63,0	86,0	143	454	949	0,210	601
602	HS71912E.T.P4S	60	85	13	23	1		25					65,0	80,5	0,6		70,7	69,7	13,1	8,7	0,440	20 000	30 000	78	234	468	100	150	194	224	688	1 401	0,210	602
603	HC71912C.T.P4S	60	85	13	16	1		15					65,0	80,5	0,6		70,7	69,7	13,7	8,5	0,336	28 000	43 000	34	102	204	39,5	60,5	81,0	101	312	643	0,198	603
604	HC71912E.T.P4S	60	85	13	23	1		25					65,0	80,5	0,6		70,7	69,7	13,1	8,0	0,317	26 000	40 000	53	159	318	99,0	146	189	153	468	951	0,198	604
605	XC71912C.T.P4S	60	85	13	16	1		15					65,0	80,5	0,6		70,7	69,7	21,9	8,5	0,795	31 000	48 000	34	102	204	39,5	60,5	81,0	101	312	643	0,198	605
606	XC71912E.T.P4S	60	85	13	23	1		25					65,0	80,5	0,6		70,7	69,7	21,0	8,0	0,751	28 000	43 000	53	159	318	99,0	146	189	153	468	951	0,198	606
607	HS71912C.DLR.T.P4S	60	85	13	16	1		15	1,5	2,8	1,6	7,2	65,0	80,5	0,6				13,7	9,2	0,466		34 000	48	144	288	40,0	63,0	86,0	143	454	949	0,210	607
608	HS71912E.DLR.T.P4S	60	85	13	23	1		25	1,5	2,8	1,6	7,2	65,0	80,5	0,6				13,1	8,7	0,440		30 000	78	234	468	100	150	194	224	688	1 401	0,210	608
609	HC71912C.DLR.T.P4S	60	85	13	16	1		15	1,5	2,8	1,6	7,2	65,0	80,5	0,6				13,7	8,5	0,336		43 000	34	102	204	39,5	60,5	81,0	101	312	643	0,198	609
610	HC71912E.DLR.T.P4S	60	85	13	23	1		25	1,5	2,8	1,6	7,2	65,0	80,5	0,6				13,1	8,0	0,317		40 000	53	159	318	99,0	146	189	153	468	951	0,198	610
611	XC71912C.DLR.T.P4S	60	85	13	16	1		15	1,5	2,8	1,6	7,2	65,0	80,5	0,6				21,9	8,5	0,795		48 000	34	102	204	39,5	60,5	81,0	101	312	643	0,198	611
612	XC71912E.DLR.T.P4S	60	85	13	23	1		25	1,5	2,8	1,6	7,2	65,0	80,5	0,6				21,0	8,0	0,751		43 000	53	159	318	99,0	146	189	153	468	951	0,198	612
613	B7012C.2RSD.T.P4S	60	95	18	19	1,1	1	15					67,0	88,0	1	0,6			35,1	31,9	1,66	15 000		209	705	1 460	64,7	112	163	655	2 390	5310	0,410	613
614	B7012E.2RSD.T.P4S	60	95	18	27	1,1	1	25					67,0	88,0	1	0,6			33,2	29,6	1,54	13 000		300	1 077	2 280	148	240	330	875	3 263	7170	0,410	614
615	B7012C.T.P4S	60	95	18	19	1,1	1	15					67,0	88,0	1	0,6	74,3		35,1	31,9	1,66	15 000	22 000	209	705	1 460	64,7	112,0	163	655	2 390	5310	0,410	615
616	B7012E.T.P4S	60	95	18	27	1,1	1	25					67,0	88,0	1	0,6	74,3		33,2	29,6	1,54	13 000	20 000	300	1 077	2 280	148	240	330	875	3 263	7170	0,410	616
617	B7012C.DLR.T.P4S	60	95	18	19	1,1	1	15	1,5	3,8	1,6	9,7	67,0	88,0	1	0,6			35,1	31,9	1,66		22 000	209	705	1 460	64,7	112,0	163	655	2 390	5310	0,410	617
618	B7012E.DLR.T.P4S	60	95	18	27	1,1	1	25	1,5	3,8	1,6	9,7	67,0	88,0	1	0,6			33,2	29,6	1,54		20 000	300	1 077	2 280	148	240	330	875	3 263	7170	0,410	618

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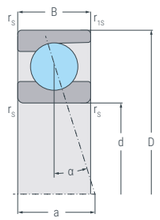
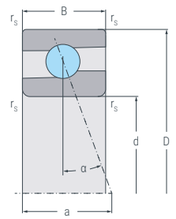
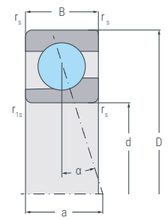
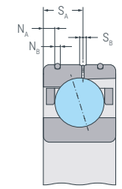
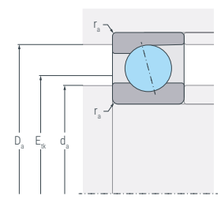
Spindle bearings
Dimensional tables of spindle bearings

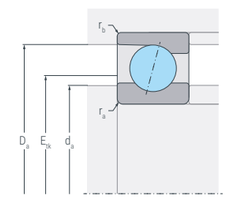


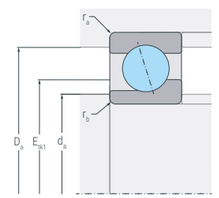


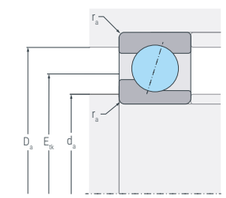












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
619	HCB7012C.T.P4S	60	95	18	19	1,1	1	15					67,0	88,0	1	0,6	74,3		35,1	29,3	1,16	20 000	32 000	105	380	800	55,1	93,0	132	320	1 220	2740	0,359	619
620	HCB7012E.T.P4S	60	95	18	27	1,1	1	25					67,0	88,0	1	0,6	74,3		33,2	27,3	1,08	19 000	28 000	136	570	1 265	127	213	287	400	1 720	3880	0,359	620
621	XCB7012C.T.P4S	60	95	18	19	1,1	1	15					67,0	88,0	1	0,6	74,3		56,2	29,3	2,76	22 000	36 000	105	380	800	55,1	93,0	132	320	1 220	2740	0,359	621
622	XCB7012E.T.P4S	60	95	18	27	1,1	1	25					67,0	88,0	1	0,6	74,3		53,1	27,3	2,56	20 000	32 000	136	570	1 265	127	213	287	400	1 720	3880	0,359	622
623	HCB7012C.DLR.T.P4S	60	95	18	19	1,1	1	15	1,5	3,8	1,6	9,7	67,0	88,0	1	0,6			35,1	29,3	1,16		32 000	105	380	800	55,1	93,0	132	320	1 220	2740	0,359	623
624	HCB7012E.DLR.T.P4S	60	95	18	27	1,1	1	25	1,5	3,8	1,6	9,7	67,0	88,0	1	0,6			33,2	27,3	1,08		28 000	136	570	1 265	127	213	287	400	1 720	3880	0,359	624
625	XCB7012C.DLR.T.P4S	60	95	18	19	1,1	1	15	1,5	3,8	1,6	9,7	67,0	88,0	1	0,6			56,2	29,3	2,76		36 000	105	380	800	55,1	93,0	132	320	1 220	2740	0,359	625
626	XCB7012E.DLR.T.P4S	60	95	18	27	1,1	1	25	1,5	3,8	1,6	9,7	67,0	88,0	1	0,6			53,1	27,3	2,56		32 000	136	570	1 265	127	213	287	400	1 720	3880	0,359	626
627	BS7012C.2RSD.T.P4S	60	95	18	21	1,1	0,6	17					67,0	88,0	1,1	0,6			27,3	16,2	1,20	21 000		122	323	680	57	84	115	358	981	2 150	0,402	627
628	BS7012E.2RSD.T.P4S	60	95	18	27	1,1	0,6	25					67,0	88,0	1,1	0,6			26,1	15,5	1,15	20 000		175	458	956	115	162	214	503	1 340	2 845	0,402	628
629	BS7012C.T.P4S	60	95	18	21	1,1	0,6	17					67,0	88,0	1,1	0,6	74,9		27,3	16,2	1,20	21 000	32 000	122	323	680	57	84	115	358	981	2 150	0,402	629
630	BS7012E.T.P4S	60	95	18	27	1,1	0,6	25					67,0	88,0	1,1	0,6	74,9		26,1	15,5	1,15	20 000	30 000	175	458	956	115	162	214	503	1 340	2 845	0,402	630
631	HCBS7012C.T.P4S	60	95	18	21	1,1	0,6	17					67,0	88,0	1,1	0,6	74,9		27,6	14,9	0,885	27 000	39 000	86	226	474	57	81	110	249	673	1 450	0,388	631
632	HCBS7012E.T.P4S	60	95	18	27	1,1	0,6	25					67,0	88,0	1,1	0,6	74,9		26,1	14,3	0,845	25 000	36 000	123	323	671	115	161	211	353	934	1 970	0,388	632
633	HS7012C.2RSD.T.P4S	60	95	18	19	1,1		15					67,0	88,0	1				19,2	12,5	0,631	20 000		67	201	402	45,0	71,5	98,0	200	630	1 323	0,460	633
634	HS7012E.2RSD.T.P4S	60	95	18	27	1,1		25					67,0	88,0	1				18,4	11,8	0,597	18 000		107	321	642	113	168	220	307	941	1 921	0,460	634
635	HC7012C.2RSD.T.P4S	60	95	18	19	1,1		15					67,0	88,0	1				19,2	11,5	0,455	26 000		46	138	276	44,0	68,5	92,5	136	429	895	0,439	635
636	HC7012E.2RSD.T.P4S	60	95	18	27	1,1		25					67,0	88,0	1				18,4	10,8	0,430	24 000		75	225	450	112	166	216	217	660	1 343	0,439	636
637	HS7012C.T.P4S	60	95	18	19	1,1		15					67,0	88,0	1		75,4	74,2	19,2	12,5	0,631	20 000	32 000	67	201	402	45,0	71,5	98,0	200	630	1 323	0,460	637
638	HS7012E.T.P4S	60	95	18	27	1,1		25					67,0	88,0	1		75,4	74,2	18,4	11,8	0,597	18 000	28 000	107	321	642	113	168	220	307	941	1 921	0,460	638
639	HC7012C.T.P4S	60	95	18	19	1,1		15					67,0	88,0	1		75,4	74,2	19,2	11,5	0,455	26 000	40 000	46	138	276	44,0	68,5	92,5	136	429	895	0,439	639
640	HC7012E.T.P4S	60	95	18	27	1,1		25					67,0	88,0	1		75,4	74,2	18,4	10,8	0,430	24 000	36 000	75	225	450	112	166	216	217	660	1 343	0,439	640
641	XC7012C.T.P4S	60	95	18	19	1,1		15					67,0	88,0	1		75,4	74,2	30,7	11,5	1,080	28 000	45 000	46	138	276	44,0	68,5	92,5	136	429	895	0,439	641
642	XC7012E.T.P4S	60	95	18	27	1,1		25					67,0	88,0	1		75,4	74,2	29,4	10,8	1,020	26 000	40 000	75	225	450	112	166	216	217	660	1 343	0,439	642
643	HS7012C.DLR.T.P4S	60	95	18	19	1,1		15	1,5	3,8	1,6	10,4	67,0	88,0	1				19,2	12,5	0,631		32 000	67	201	402	45,0	71,5	98,0	200	630	1 323	0,460	643
644	HS7012E.DLR.T.P4S	60	95	18	27	1,1		25	1,5	3,8	1,6	10,4	67,0	88,0	1				18,4	11,8	0,597		28 000	107	321	642	113	168	220	307	941	1 921	0,460	644
645	HC7012C.DLR.T.P4S	60	95	18	19	1,1		15	1,5	3,8	1,6	10,4	67,0	88,0	1				19,2	11,5	0,455		40 000	46	138	276	44,0	68,5	92,5	136	429	895	0,439	645
646	HC7012E.DLR.T.P4S	60	95	18	27	1,1		25	1,5	3,8	1,6	10,4	67,0	88,0	1				18,4	10,8	0,430		36 000	75	225	450	112	166	216	217	660	1 343	0,439	646
647	XC7012C.DLR.T.P4S	60	95	18	19	1,1		15	1,5	3,8	1,6	10,4	67,0	88,0	1				30,7	11,5	1,080		45 000	46	138	276	44,0	68,5	92,5	136	429	895	0,439	647
648	XC7012E.DLR.T.P4S	60	95	18	27	1,1		25	1,5	3,8	1,6	10,4	67,0	88,0	1				29,4	10,8	1,020		40 000	75	225	450	112	166	216	217	660	1 343	0,439	648
649	B7212C.2RSD.T.P4S	60	110	22	23	1,5	1,5	15					69,5	101,5	1,5	1,5			64,1	52,8	2,68	13 000		313	1 020	2 100	71,3	123	179	985	3 480	7690	0,782	649

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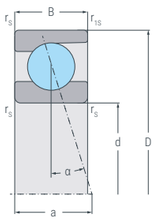
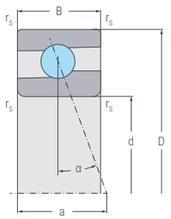
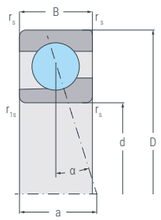
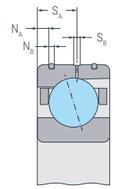
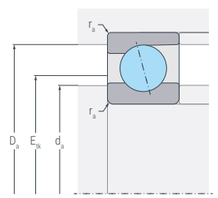
Spindle bearings
Dimensional tables of spindle bearings

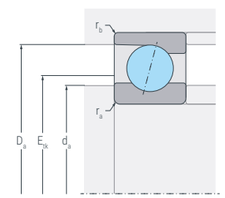


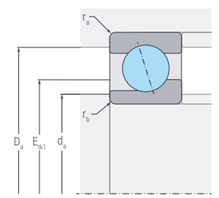


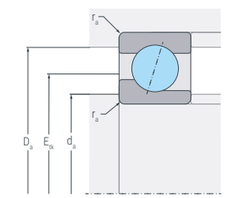








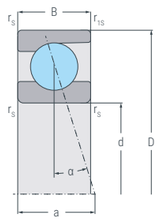


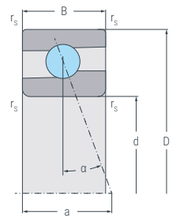


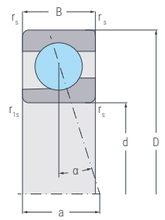
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
650	B7212E.2RSD.T.P4S	60	110	22	31	1,5	1,5	25					69,5	101,5	1,5	1,5			61,2	50,5	2,56	12 000		466	1 600	3 335	166	266	360	1 370	4 570	10500	0,782	650
651	B7212C.T.P4S	60	110	22	23	1,5	1,5	15					69,5	101,5	1,5	1,5	80,5		64,1	52,8	2,68	13 000	20 000	313	1 020	2 100	71,3	123	179	985	3 480	7690	0,782	651
652	B7212E.T.P4S	60	110	22	31	1,5	1,5	25					69,5	101,5	1,5	1,5	80,5		61,2	50,5	2,56	12 000	19 000	466	1 600	3 335	166	266	360	1 370	4 570	10500	0,782	652
653	HCB7212C.T.P4S	60	110	22	23	1,5	1,5	15					69,5	101,5	1,5	1,5	80,5		64,1	48,6	1,93	16 000	26 000	160	560	1 160	61,1	102	145	490	1 810	4000	0,646	653
654	HCB7212E.T.P4S	60	110	22	31	1,5	1,5	25					69,5	101,5	1,5	1,5	80,5		61,2	46,5	1,84	14 000	22 000	230	865	1 863	145	236	319	672	2 610	5760	0,646	654
655	A7312C.T.P4S	60	130	31	28	2,1	2,1	15					71,0	119,0	2,1	2,1	89,7	85,4	84,6	76,4	4,60	14 000	22 000	420	850	1 690	95,0	130	190	1 340	2 280	6130	1,75	655
656	A7312E.T.P4S	60	130	31	38	2,1	2,1	25					71,0	119,0	2,1	2,1	89,7	85,4	80,9	73,2	4,40	12 500	19 500	720	1 430	2 870	220	290	390	2 130	4 340	9020	1,75	656
657	B71913C.2RSD.T.P4S	65	90	13	17	1	0,6	15					70,0	85,5	0,6	0,3			24,4	21,1	1,10	15 000		120	420	880	56,7	99,0	146	362	1 390	3170	0,202	657
658	B71913E.2RSD.T.P4S	65	90	13	25	1	0,6	25					70,0	85,5	0,6	0,3			22,8	19,6	1,02	13 000		152	620	1 350	128	215	295	445	1 860	4200	0,202	658
659	B71913C.T.P4S	65	90	13	17	1	0,6	15					70,0	85,5	0,6	0,3	75,1		24,4	21,1	1,10	15 000	22 000	120	420	880	56,7	99,0	146	362	1 390	3170	0,202	659
660	B71913E.T.P4S	65	90	13	25	1	0,6	25					70,0	85,5	0,6	0,3	75,1		22,8	19,6	1,02	13 000	20 000	152	620	1 350	128	215	295	445	1 860	4200	0,202	660
661	B71913C.DLR.T.P4S	65	90	13	17	1	0,6	15	1,5	2,8	1,6	7,2	70,0	85,5	0,6	0,3			24,4	21,1	1,10		22 000	120	420	880	56,7	99,0	146	362	1 390	3170	0,202	661
662	B71913E.DLR.T.P4S	65	90	13	25	1	0,6	25	1,5	2,8	1,6	7,2	70,0	85,5	0,6	0,3			22,8	19,6	1,02		20 000	152	620	1 350	128	215	295	445	1 860	4200	0,202	662
663	HCB71913C.T.P4S	65	90	13	17	1	0,6	15					70,0	85,5	0,6	0,3	75,1		24,4	19,4	0,769	20 000	32 000	55	220	480	46,9	82,4	118	165	700	1610	0,173	663
664	HCB71913E.T.P4S	65	90	13	25	1	0,6	25					70,0	85,5	0,6	0,3	75,1		22,8	18,0	0,716	19 000	28 000	57	308	720	101	185	257	168	920	2200	0,173	664
665	XCB71913C.T.P4S	65	90	13	17	1	0,6	15					70,0	85,5	0,6	0,3	75,1		39,0	19,4	1,82	22 000	36 000	55	220	480	46,9	82,4	118	165	700	1610	0,173	665
666	XCB71913E.T.P4S	65	90	13	25	1	0,6	25					70,0	85,5	0,6	0,3	75,1		36,5	18,0	1,70	20 000	32 000	57	308	720	101	185	257	168	920	2200	0,173	666
667	HCB71913C.DLR.T.P4S	65	90	13	17	1	0,6	15	1,5	2,8	1,6	7,2	70,0	85,5	0,6	0,3			24,4	19,4	0,769		32 000	55	220	480	46,9	82,4	118	165	700	1610	0,173	667
668	HCB71913E.DLR.T.P4S	65	90	13	25	1	0,6	25	1,5	2,8	1,6	7,2	70,0	85,5	0,6	0,3			22,8	18,0	0,716		28 000	57	308	720	101	185	257	168	920	2200	0,173	668
669	XCB71913C.DLR.T.P4S	65	90	13	17	1	0,6	15	1,5	2,8	1,6	7,2	70,0	85,5	0,6	0,3			39,0	19,4	1,82		36 000	55	220	480	46,9	82,4	118	165	700	1610	0,173	669
670	XCB71913E.DLR.T.P4S	65	90	13	25	1	0,6	25	1,5	2,8	1,6	7,2	70,0	85,5	0,6	0,3			36,5	18,0	1,70		32 000	57	308	720	101	185	257	168	920	2200	0,173	670
671	BS71913C.2RSD.T.P4S	65	90	13	18	1	0,6	17					70,0	85,5	1,1	0,6			19,1	12,4	1,15	21 000		120	318	670	61	87	115	290	980	2 150	0,212	671
672	BS71913E.2RSD.T.P4S	65	90	13	25	1	0,6	25					70,0	85,5	1,1	0,6			18,4	11,8	1,12	20 000		169	448	945	120	158	210	384	1 330	2 840	0,212	672
673	BS71913C.T.P4S	65	90	13	18	1	0,6	17					70,0	85,5	1,1	0,6	75,5		19,1	12,4	1,15	21 000	32 000	120	318	670	61	87	115	290	980	2 150	0,212	673
674	BS71913E.T.P4S	65	90	13	25	1	0,6	25					70,0	85,5	1,1	0,6	75,5		18,4	11,8	1,12	20 000	30 000	169	448	945	120	158	210	384	1 330	2 840	0,212	674
675	HCBS71913C.T.P4S	65	90	13	18	1	0,6	17					70,0	85,5	1,1	0,6	75,5		19,1	11,4	0,88	26 000	38 000	82	222	470	55	80	108	240	670	1 450	0,18	675
676	HCBS71913E.T.P4S	65	90	13	25	1	0,6	25					70,0	85,5	1,1	0,6	75,5		18,4	10,8	0,83	25 000	36 000	118	318	660	107	158	208	350	930	1 960	0,18	676
677	XCBS71913C.T.P4S	65	90	13	18	1	0,6	17					70,0	85,5	1,1	0,6	75,5		30,5	11,4	1,07	27 000	48 000	82	222	470	55	80	108	240	670	1 450	0,18	677
678	XCBS71913E.T.P4S	65	90	13	25	1	0,6	25					70,0	85,5	1,1	0,6	75,5		29,4	10,8	1,02	26 000	45 000	118	318	660	107	158	208	350	930	1 960	0,18	678
679	BS71913C.DLR.T.P4S	65	90	13	18	1	0,6	17	1,5	2,8	1,6	7,2	70,0	85,5	1,1	0,6			19,2	12,4	1,15		32 000	120	318	670	61	87	115	290	980	2 150	0,212	679
680	BS71913E.DLR.T.P4S	65	90	13	25	1	0,6	25	1,5	2,8	1,6	7,2	70,0	85,5	1,1	0,6			18,4	11,8	1,12		30 000	169	448	945	120	158	210	384	1 330	2 840	0,212	680

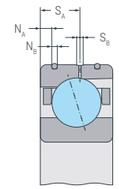
The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

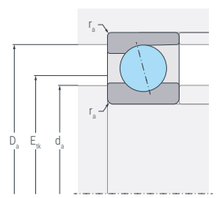
Spindle bearings
Dimensional tables of spindle bearings

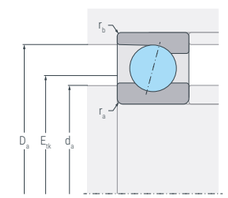


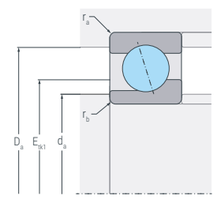


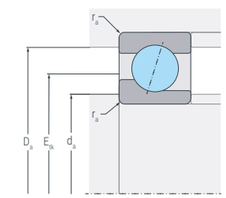












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
681	HCBS71913C.DLR.T.P4S	65	90	13	18	1	0,6	17	1,5	2,8	1,6	7,2	70,0	85,5	1,1	0,6			19,1	11,4	0,88		38 000	82	222	470	55	80	108	240	670	1 450	0,18	681
682	HCBS71913E.DLR.T.P4S	65	90	13	25	1	0,6	25	1,5	2,8	1,6	7,2	70,0	85,5	1,1	0,6			18,4	10,8	0,83		36 000	118	318	660	107	158	208	350	930	1 960	0,18	682
683	XCBS71913C.DLR.T.P4S	65	90	13	18	1	0,6	17	1,5	2,8	1,6	7,2	70,0	85,5	1,1	0,6			30,5	11,4	1,07		48 000	82	222	470	55	80	108	240	670	1 450	0,18	683
684	XCBS71913E.DLR.T.P4S	65	90	13	25	1	0,6	25	1,5	2,8	1,6	7,2	70,0	85,5	1,1	0,6			29,4	10,8	1,02		45 000	118	318	660	107	158	208	350	930	1 960	0,18	684
685	HS71913C.2RSD.T.P4S	65	90	13	17	1		15					70,0	85,5	0,6				14,3	9,9	0,500	20 000		49	147	294	41,5	65,5	90,0	145	459	965	0,230	685
686	HS71913E.2RSD.T.P4S	65	90	13	25	1		25					70,0	85,5	0,6				13,7	9,3	0,472	18 000		80	240	480	105	156	202	229	698	1 426	0,230	686
687	HC71913C.2RSD.T.P4S	65	90	13	17	1		15					70,0	85,5	0,6				14,3	9,1	0,360	26 000		34	102	204	41,0	63,0	85,0	101	317	654	0,217	687
688	HC71913E.2RSD.T.P4S	65	90	13	25	1		25					70,0	85,5	0,6				13,7	8,6	0,340	24 000		55	165	330	104	154	199	159	486	983	0,217	688
689	HS71913C.T.P4S	65	90	13	17	1		15					70,0	85,5	0,6		75,7	74,7	14,3	9,9	0,500	20 000	32 000	49	147	294	41,5	65,5	90,0	145	459	965	0,230	689
690	HS71913E.T.P4S	65	90	13	25	1		25					70,0	85,5	0,6		75,7	74,7	13,7	9,3	0,472	18 000	28 000	80	240	480	105	156	202	229	698	1 426	0,230	690
691	HC71913C.T.P4S	65	90	13	17	1		15					70,0	85,5	0,6		75,7	74,7	14,3	9,1	0,360	26 000	40 000	34	102	204	41,0	63,0	85,0	101	317	654	0,217	691
692	HC71913E.T.P4S	65	90	13	25	1		25					70,0	85,5	0,6		75,7	74,7	13,7	8,6	0,340	24 000	36 000	55	165	330	104	154	199	159	486	983	0,217	692
693	XC71913C.T.P4S	65	90	13	17	1		15					70,0	85,5	0,6		75,7	74,7	22,9	9,1	0,854	28 000	45 000	34	102	204	41,0	63,0	85,0	101	317	654	0,217	693
694	XC71913E.T.P4S	65	90	13	25	1		25					70,0	85,5	0,6		75,7	74,7	21,9	8,6	0,806	26 000	40 000	55	165	330	104	154	199	159	486	983	0,217	694
695	HS71913C.DLR.T.P4S	65	90	13	17	1		15	1,5	2,6	1,6	7,2	70,0	85,5	0,6				14,3	9,9	0,500		32 000	49	147	294	41,5	65,5	90,0	145	459	965	0,230	695
696	HS71913E.DLR.T.P4S	65	90	13	25	1		25	1,5	2,6	1,6	7,2	70,0	85,5	0,6				13,7	9,3	0,472		28 000	80	240	480	105	156	202	229	698	1 426	0,230	696
697	HC71913C.DLR.T.P4S	65	90	13	17	1		15	1,5	2,6	1,6	7,2	70,0	85,5	0,6				14,3	9,1	0,360		40 000	34	102	204	41,0	63,0	85,0	101	317	654	0,217	697
698	HC71913E.DLR.T.P4S	65	90	13	25	1		25	1,5	2,6	1,6	7,2	70,0	85,5	0,6				13,7	8,6	0,340		36 000	55	165	330	104	154	199	159	486	983	0,217	698
699	XC71913C.DLR.T.P4S	65	90	13	17	1		15	1,5	2,6	1,6	7,2	70,0	85,5	0,6				22,9	9,1	0,854		45 000	34	102	204	41,0	63,0	85,0	101	317	654	0,217	699
700	XC71913E.DLR.T.P4S	65	90	13	25	1		25	1,5	2,6	1,6	7,2	70,0	85,5	0,6				21,9	8,6	0,806		40 000	55	165	330	104	154	199	159	486	983	0,217	700
701	B7013C.2RSD.T.P4S	65	100	18	20	1,1	1	15					72,0	93,0	1	0,6			35,9	33,3	1,73	14 000		215	720	1 490	67,2	115	169	668	2 430	5420	0,435	701
702	B7013E.2RSD.T.P4S	65	100	18	28	1,1	1	25					72,0	93,0	1	0,6			33,8	30,9	1,61	13 000		310	1 120	2 375	155	254	344	910	3 390	7450	0,435	702
703	B7013C.T.P4S	65	100	18	20	1,1	1	15					72,0	93,0	1	0,6	79,3		35,9	33,3	1,73	14 000	22 000	215	720	1 490	67,2	115	169	668	2 430	5420	0,435	703
704	B7013E.T.P4S	65	100	18	28	1,1	1	25					72,0	93,0	1	0,6	79,3		33,8	30,9	1,61	13 000	19 000	310	1 120	2 375	155	254	344	910	3 390	7450	0,435	704
705	B7013C.DLR.T.P4S	65	100	18	20	1,1	1	15	1,5	3,8	1,6	10,2	72,0	93,0	1	0,6			35,9	33,3	1,73		22 000	215	720	1 490	67,2	115	169	668	2 430	5420	0,435	705
706	B7013E.DLR.T.P4S	65	100	18	28	1,1	1	25	1,5	3,8	1,6	10,2	72,0	93,0	1	0,6			33,8	30,9	1,61		19 000	310	1 120	2 375	155	254	344	910	3 390	7450	0,435	706
707	HCB7013C.T.P4S	65	100	18	20	1,1	1	15					72,0	93,0	1	0,6	79,3		35,9	30,6	1,21	19 000	30 000	110	390	830	57,2	97,0	139	331	1 260	2840	0,382	707
708	HCB7013E.T.P4S	65	100	18	28	1,1	1	25					72,0	93,0	1	0,6	79,3		33,8	28,4	1,13	17 000	26 000	136	580	1 280	132	220	300	400	1 740	3930	0,382	708
709	XCB7013C.T.P4S	65	100	18	20	1,1	1	15					72,0	93,0	1	0,6	79,3		57,4	30,6	2,87	22 000	36 000	110	390	830	57,2	97,0	139	331	1 260	2840	0,382	709
710	XCB7013E.T.P4S	65	100	18	28	1,1	1	25					72,0	93,0	1	0,6	79,3		54,1	28,4	2,67	19 000	32 000	136	580	1 280	132	220	300	400	1 740	3930	0,382	710
711	HCB7013C.DLR.T.P4S	65	100	18	20	1,1	1	15	1,5	3,8	1,6	10,2	72,0	93,0	1	0,6			35,9	30,6	1,21		30 000	110	390	830	57,2	97,0	139	331	1 260	2840	0,382	711

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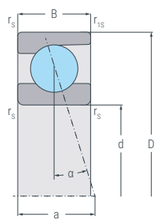
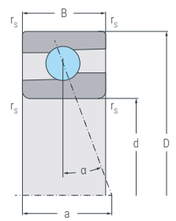
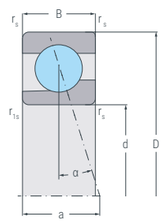
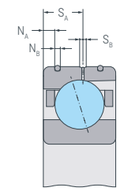
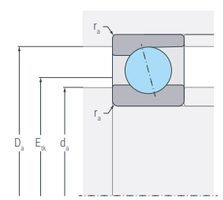
Spindle bearings
Dimensional tables of spindle bearings

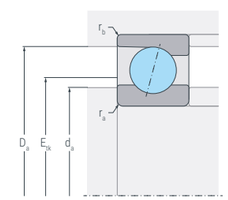


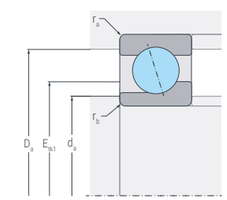


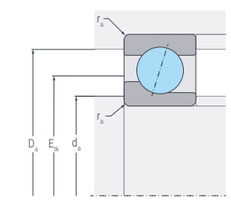












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
712	HCB7013E.DLR.T.P4S	65	100	18	28	1,1	1	25	1,5	3,8	1,6	10,2	72,0	93,0	1	0,6			33,8	28,4	1,13		26 000	136	580	1 280	132	220	300	400	1 740	3930	0,382	712
713	XCB7013C.DLR.T.P4S	65	100	18	20	1,1	1	15	1,5	3,8	1,6	10,2	72,0	93,0	1	0,6			57,4	30,6	2,87		36 000	110	390	830	57,2	97,0	139	331	1 260	2840	0,382	713
714	XCB7013E.DLR.T.P4S	65	100	18	28	1,1	1	25	1,5	3,8	1,6	10,2	72,0	93,0	1	0,6			54,1	28,4	2,67		32 000	136	580	1 280	132	220	300	400	1 740	3930	0,382	714
715	BS7013C.2RSD.T.P4S	65	100	18	22	1,1	0,6	17					72,0	93,0	1,1	0,6			28,1	17,2	1,25	20 000		136	408	815	66	88	120	377	1 030	2 260	0,466	715
716	BS7013E.2RSD.T.P4S	65	100	18	28	1,1	0,6	25					72,0	93,0	1,1	0,6			26,9	16,4	1,20	19 000		189	567	1 134	131	170	224	528	1 400	2 990	0,466	716
717	BS7013C.T.P4S	65	100	18	22	1,1	0,6	17					72,0	93,0	1,1	0,6	79,9		28,1	17,5	1,25	20 000	30 000	136	408	815	66	88	120	377	1 030	2 260	0,466	717
718	BS7013E.T.P4S	65	100	18	28	1,1	0,6	25					72,0	93,0	1,1	0,6	79,9		26,9	16,4	0,854	19 000	28 000	189	567	1 134	131	170	224	528	1 400	2 990	0,466	718
719	HCBS7013C.T.P4S	65	100	18	22	1,1	0,6	17					72,0	93,0	1,1	0,6	79,9		28,1	15,8	0,93	25 000	36 000	68	204	408	57	85	115	262	707	1 530	0,401	719
720	HCBS7013E.T.P4S	65	100	18	28	1,1	0,6	25					72,0	93,0	1,1	0,6	79,9		26,9	15,1	0,91	24 000	34 000	95	284	567	116	170	217	371	981	2 060	0,401	720
721	XCBS7013C.T.P4S	65	100	18	22	1,1	0,6	17					72,0	93,0	1,1	0,6	79,9		45,0	15,8	1,48	30 000	45 000	68	204	408	57	85	115	262	707	1 530	0,401	721
722	XCBS7013E.T.P4S	65	100	18	28	1,1	0,6	25					72,0	93,0	1,1	0,6	79,9		43,1	15,1	1,42	29 000	42 000	95	284	567	116	170	217	371	981	2 060	0,401	722
723	HS7013C.2RSD.T.P4S	65	100	18	20	1,1		15					72,0	93,0	1				20,1	13,5	0,681	19 000		70	210	420	48,0	76,0	104,0	208	654	1 373	0,480	723
724	HS7013E.2RSD.T.P4S	65	100	18	28	1,1		25					72,0	93,0	1				18,6	12,7	0,644	18 000		112	336	672	120	178	233	321	981	2 002	0,480	724
725	HC7013C.2RSD.T.P4S	65	100	18	20	1,1		15					72,0	93,0	1				20,1	12,4	0,491	24 000		47	141	282	46,0	72,0	97,0	139	438	907	0,458	725
726	HC7013E.2RSD.T.P4S	65	100	18	28	1,1		25					72,0	93,0	1				18,6	11,7	0,464	22 000		77	231	462	119	176	225	222	674	1 367	0,458	726
727	HS7013C.T.P4S	65	100	18	20	1,1		15					72,0	93,0	1		80,4	79,1	20,1	13,5	0,681	19 000	30 000	70	210	420	48,0	76,0	104	208	654	1 373	0,480	727
728	HS7013E.T.P4S	65	100	18	28	1,1		25					72,0	93,0	1		80,4	79,1	18,6	12,7	0,644	18 000	26 000	112	336	672	120	178	233	321	981	2 002	0,480	728
729	HC7013C.T.P4S	65	100	18	20	1,1		15					72,0	93,0	1		80,4	79,1	20,1	12,4	0,491	24 000	38 000	47	141	282	46,0	72,0	97,0	139	438	907	0,458	729
730	HC7013E.T.P4S	65	100	18	28	1,1		25					72,0	93,0	1		80,4	79,1	18,6	11,7	0,464	22 000	34 000	77	231	462	119	176	225	222	674	1 367	0,458	730
731	XC7013C.T.P4S	65	100	18	20	1,1		15					72,0	93,0	1		80,4	79,1	32,2	12,4	1,16	27 000	42 000	47	141	282	46,0	72,0	97,0	139	438	907	0,458	731
732	XC7013E.T.P4S	65	100	18	28	1,1		25					72,0	93,0	1		80,4	79,1	29,8	11,7	1,10	24 000	38 000	77	231	462	119	176	225	222	674	1 367	0,458	732
733	HS7013C.DLR.T.P4S	65	100	18	20	1,1		15	1,8	4,0	1,6	10,4	72,0	93,0	1				20,1	13,5	0,681		30 000	70	210	420	48,0	76,0	104	208	654	1 373	0,480	733
734	HS7013E.DLR.T.P4S	65	100	18	28	1,1		25	1,8	4,0	1,6	10,4	72,0	93,0	1				18,6	12,7	0,644		26 000	112	336	672	120	178	233	321	981	2 002	0,480	734
735	HC7013C.DLR.T.P4S	65	100	18	20	1,1		15	1,8	4,0	1,6	10,4	72,0	93,0	1				20,1	12,4	0,491		38 000	47	141	282	46,0	72,0	97,0	139	438	907	0,458	735
736	HC7013E.DLR.T.P4S	65	100	18	28	1,1		25	1,8	4,0	1,6	10,4	72,0	93,0	1				18,6	11,7	0,464		34 000	77	231	462	119	176	225	222	674	1 367	0,458	736
737	XC7013C.DLR.T.P4S	65	100	18	20	1,1		15	1,8	4,0	1,6	10,4	72,0	93,0	1				32,2	12,4	1,16		42 000	47	141	282	46,0	72,0	97,0	139	438	907	0,458	737
738	XC7013E.DLR.T.P4S	65	100	18	28	1,1		25	1,8	4,0	1,6	10,4	72,0	93,0	1				29,8	11,7	1,10		38 000	77	231	462	119	176	225	222	674	1 367	0,458	738
739	B7213C.2RSD.T.P4S	65	120	23	24	1,5	1,5	15					75,5	109,5	1,5	1,5			66,9	57,9	2,93	12 000		325	1 050	2 160	75,0	129	187	1 010	3 560	7 870	0,997	739
740	B7213E.2RSD.T.P4S	65	120	23	33	1,5	1,5	25					75,5	109,5	1,5	1,5			63,8	55,2	2,80	11 000		482	1 660	3 460	175	280	380	1 410	5 040	10 870	0,997	740
741	B7213C.T.P4S	65	120	23	24	1,5	1,5	15					75,5	109,5	1,5	1,5	87,5		66,9	57,9	2,93	12 000	19 000	325	1 050	2 160	75,0	129	187	1 010	3 560	7 870	0,997	741
742	B7213E.T.P4S	65	120	23	33	1,5	1,5	25					75,5	109,5	1,5	1,5	87,5		63,8	55,2	2,80	11 000	18 000	482	1 660	3 460	175	280	380	1 410	5 040	10 870	0,997	742

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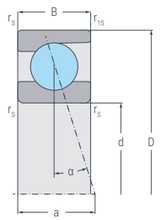
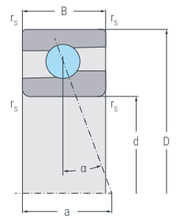
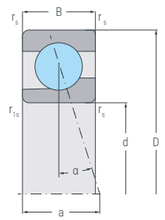
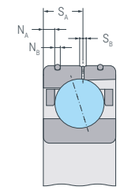
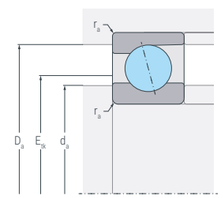
Spindle bearings
Dimensional tables of spindle bearings

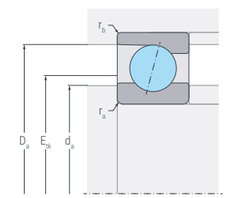


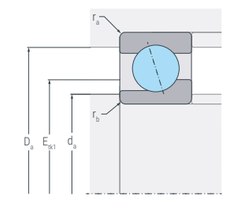


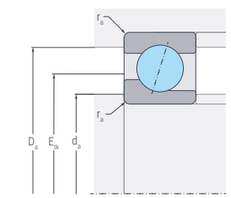












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
743	HCB7213C.T.P4S	65	120	23	24	1,5	1,5	15					75,5	109,5	1,5	1,5	87,5		66,9	53,3	2,11	15 000	24 000	170	582	1 215	65,0	108	153	520	1 880	4 160	0,852	743
744	HCB7213E.T.P4S	65	120	23	33	1,5	1,5	25					75,5	109,5	1,5	1,5	87,5		63,8	50,8	2,02	13 000	20 000	232	890	1 920	154	249	335	680	2 680	5 920	0,852	744
745	B71814C.T.P4S	70	90	10	16	0,6	0,3	15					74,0	85,5	0,6	0,3	78,3		14,0	14,9	0,702	14 000	22 000	52	208	455	46	84	124	158	685	1 610	0,142	745
746	B71814E.T.P4S	70	90	10	24	0,6	0,3	25					74,0	85,5	0,6	0,3	78,3		12,9	13,8	0,675	13 000	20 000	80	290	676	110	176	250	230	850	2 080	0,142	746
747	B71914C.2RSD.T.P4S	70	100	16	19	1	0,6	15					76,0	94,5	0,6	0,3			33,6	29,6	1,54	14 000		170	585	1 230	66,7	115	168	530	1 970	4 420	0,331	747
748	B71914E.2RSD.T.P4S	70	100	16	28	1	0,6	25					76,0	94,5	0,6	0,3			31,5	27,5	1,44	12 000		232	890	1 920	152	252	340	685	1 690	5 980	0,331	748
749	B71914C.T.P4S	70	100	16	19	1	0,6	15					76,0	94,5	0,6	0,3	81,9		33,6	29,6	1,54	14 000	20 000	170	585	1 230	66,7	115	168	530	1 970	4 420	0,331	749
750	B71914E.T.P4S	70	100	16	28	1	0,6	25					76,0	94,5	0,6	0,3	81,9		31,5	27,5	1,44	12 000	19 000	232	890	1 920	152	252	340	685	1 690	5 980	0,331	750
751	B71914C.DLR.T.P4S	70	100	16	19	1	0,6	15	1,8	3,1	1,6	9,3	76,0	94,5	0,6	0,3			33,6	29,6	1,54		20 000	170	585	1 230	66,7	115	168	530	1 970	4 420	0,331	751
752	B71914E.DLR.T.P4S	70	100	16	28	1	0,6	25	1,8	3,1	1,6	9,3	76,0	94,5	0,6	0,3			31,5	27,5	1,44		19 000	232	890	1 920	152	252	340	685	1 690	5 980	0,331	752
753	HCB71914C.T.P4S	70	100	16	19	1	0,6	15					76,0	94,5	0,6	0,3	81,9		33,6	27,2	1,08	19 000	28 000	82	310	670	55,9	96,0	137	250	998	2 270	0,283	753
754	HCB71914E.T.P4S	70	100	16	28	1	0,6	25					76,0	94,5	0,6	0,3	81,9		31,5	25,3	1,00	17 000	26 000	95	450	1 030	126	218	300	278	1 350	3 140	0,283	754
755	XCB71914C.T.P4S	70	100	16	19	1	0,6	15					76,0	94,5	0,6	0,3	81,9		53,7	27,2	2,56	20 000	32 000	82	310	670	55,9	96,0	137	250	998	2 270	0,283	755
756	XCB71914E.T.P4S	70	100	16	28	1	0,6	25					76,0	94,5	0,6	0,3	81,9		50,4	25,3	2,38	19 000	28 000	95	450	1 030	126	218	300	278	1 350	3 140	0,283	756
757	HCB71914C.DLR.T.P4S	70	100	16	19	1	0,6	15	1,8	3,1	1,6	9,3	76,0	94,5	0,6	0,3			33,6	27,2	1,08		28 000	82	310	670	55,9	96,0	137	250	998	2 270	0,283	757
758	HCB71914E.DLR.T.P4S	70	100	16	28	1	0,6	25	1,8	3,1	1,6	9,3	76,0	94,5	0,6	0,3			31,5	25,3	1,00		26 000	95	450	1 030	126	218	300	278	1 350	3 140	0,283	758
759	XCB71914C.DLR.T.P4S	70	100	16	19	1	0,6	15	1,8	3,1	1,6	9,3	76,0	94,5	0,6	0,3			53,7	27,2	2,56		32 000	82	310	670	55,9	96,0	137	250	998	2 270	0,283	759
760	XCB71914E.DLR.T.P4S	70	100	16	28	1	0,6	25	1,8	3,1	1,6	9,3	76,0	94,5	0,6	0,3			50,4	25,3	2,38		28 000	95	450	1 030	126	218	300	278	1 350	3 140	0,283	760
761	BS71914C.2RSD.T.P4S	70	100	16	21	1	0,6	17					76,0	94,5	1	0,6			28,8	18,0	1,56	20 000		160	447	895	70	94	128	442	1 320	2 900	0,335	761
762	BS71914E.2RSD.T.P4S	70	100	16	28	1	0,6	25					76,0	94,5	1	0,6			27,1	17,2	1,55	18 000		220	612	1 280	138	188	243	675	1 800	3 850	0,335	762
763	BS71914C.T.P4S	70	100	16	21	1	0,6	17					76,0	94,5	1	0,6	82,4		28,8	18,0	1,56	20 000	29 000	160	447	895	70	94	128	442	1 320	2 900	0,29	763
764	BS71914E.T.P4S	70	100	16	28	1	0,6	25					76,0	94,5	1	0,6	82,4		27,1	17,2	1,55	18 000	27 000	220	612	1 280	138	188	243	675	1 800	3 850	0,29	764
765	HCBS71914C.T.P4S	70	100	16	21	1	0,6	17					76,0	94,5	1	0,6	82,4		28,8	16,5	1,18	24 000	35 000	114	301	635	61	90	122	330	900	1 960	0,29	765
766	HCBS71914E.T.P4S	70	100	16	28	1	0,6	25					76,0	94,5	1	0,6	82,4		27,1	15,8	1,12	23 000	33 000	162	428	902	122	179	224	470	1 260	2 660	0,29	766
767	XCBS71914C.T.P4S	70	100	16	21	1	0,6	17					76,0	94,5	1	0,6	82,4		46,0	16,5	1,55	30 000	44 000	114	301	635	61	90	122	330	900	1 960	0,29	767
768	XCBS71914E.T.P4S	70	100	16	28	1	0,6	25					76,0	94,5	1	0,6	82,4		43,4	15,8	1,49	27 000	41 000	162	428	902	122	179	224	470	1 260	2 660	0,29	768
769	BS71914C.DLR.T.P4S	70	100	16	21	1	0,6	17	1,8	3,1	1,6	9,3	76,0	94,5	1	0,6			28,8	18,0	1,56		29 000	160	447	895	70	94	128	442	1 320	2 900	0,29	769
770	BS71914E.DLR.T.P4S	70	100	16	28	1	0,6	25	1,8	3,1	1,6	9,3	76,0	94,5	1	0,6			27,1	17,1	1,55		27 000	220	612	1 280	138	188	243	675	1 800	3 850	0,29	770
771	HCBS71914C.DLR.T.P4S	70	100	16	21	1	0,6	17	1,8	3,1	1,6	9,3	76,0	94,5	1	0,6			28,8	16,5	1,18		35 000	114	301	635	61	90	122	330	900	1 960	0,29	771
772	HCBS71914E.DLR.T.P4S	70	100	16	28	1	0,6	25	1,8	3,1	1,6	9,3	76,0	94,5	1	0,6			27,1	15,8	1,12		33 000	162	428	902	122	179	224	470	1 260	2 660	0,29	772
773	XCBS71914C.DLR.T.P4S	70	100	16	21	1	0,6	17	1,8	3,1	1,6	9,3	76,0	94,5	1	0,6			46,0	16,5	1,55		44 000	114	301	635	61	90	122	330	900	1 960	0,29	773

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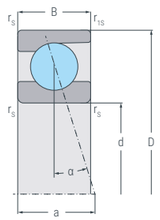
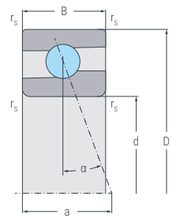
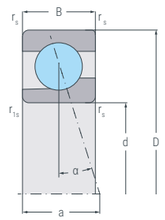
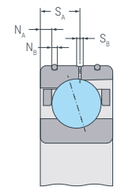
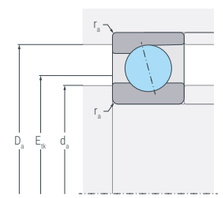
Spindle bearings
Dimensional tables of spindle bearings

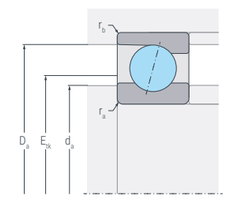


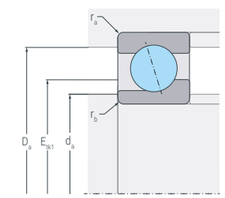


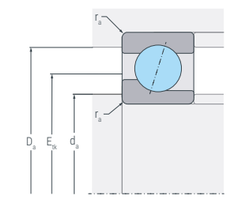












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
774	XCBS71914E.DLR.T.P4S	70	100	16	28	1	0,6	25	1,8	3,1	1,6	9,3	76,0	94,5	1	0,6			43,4	15,8	1,49		41 000	162	428	902	122	179	224	470	1 260	2 660	0,29	774
775	HS71914C.2RSD.T.P4S	70	100	16	19	1		15					76,0	94,5	0,6				18,2	12,9	0,655	19 000		64	192	384	48,0	75,0	103	190	600	1 254	0,370	775
776	HS71914E.2RSD.T.P4S	70	100	16	28	1		25					76,0	94,5	0,6				17,4	12,2	0,618	17 000		103	309	618	120	177	230	295	898	1 833	0,370	776
777	HC71914C.2RSD.T.P4S	70	100	16	19	1		15					76,0	94,5	0,6				18,2	11,9	0,472	24 000		44	132	264	47,0	72,0	96,0	131	403	839	0,350	777
778	HC71914E.2RSD.T.P4S	70	100	16	28	1		25					76,0	94,5	0,6				17,4	11,2	0,446	22 000		71	213	426	118	175	227	205	626	1 271	0,350	778
779	HS71914C.T.P4S	70	100	16	19	1		15					76,0	94,5	0,6		83	81,8	18,2	12,9	0,655	19 000	28 000	64	192	384	48,0	75,0	103	190	600	1 254	0,370	779
780	HS71914E.T.P4S	70	100	16	28	1		25					76,0	94,5	0,6		83	81,8	17,4	12,2	0,618	17 000	26 000	103	309	618	120	177	230	295	898	1 833	0,370	780
781	HC71914C.T.P4S	70	100	16	19	1		15					76,0	94,5	0,6		83	81,8	18,2	11,9	0,472	24 000	36 000	44	132	264	47,0	72,0	96,0	131	403	839	0,350	781
782	HC71914E.T.P4S	70	100	16	28	1		25					76,0	94,5	0,6		83	81,8	17,4	11,2	0,446	22 000	34 000	71	213	426	118	175	227	205	626	1271	0,350	782
783	XC71914C.T.P4S	70	100	16	19	1		15					76,0	94,5	0,6		83	81,8	29,1	11,9	1,12	27 000	40 000	44	132	264	47,0	72,0	96,0	131	403	839	0,350	783
784	XC71914E.T.P4S	70	100	16	28	1		25					76,0	94,5	0,6		83	81,8	27,9	11,2	1,06	24 000	36 000	71	213	426	118	175	227	205	626	1 271	0,350	784
785	HS71914C.DLR.T.P4S	70	100	16	19	1		15	1,8	3,1	1,6	9,3	76,0	94,5	0,6				18,2	12,9	0,655		28 000	64	192	384	48,0	75,0	103	190	600	1 254	0,370	785
786	HS71914E.DLR.T.P4S	70	100	16	28	1		25	1,8	3,1	1,6	9,3	76,0	94,5	0,6				17,4	12,2	0,618		26 000	103	309	618	120	177	230	295	898	1 833	0,370	786
787	HC71914C.DLR.T.P4S	70	100	16	19	1		15	1,8	3,1	1,6	9,3	76,0	94,5	0,6				18,2	11,9	0,472		36 000	44	132	264	47,0	72,0	96,0	131	403	839	0,350	787
788	HC71914E.DLR.T.P4S	70	100	16	28	1		25	1,8	3,1	1,6	9,3	76,0	94,5	0,6				17,4	11,2	0,446		34 000	71	213	426	118	175	227	205	626	1271	0,350	788
789	XC71914C.DLR.T.P4S	70	100	16	19	1		15	1,8	3,1	1,6	9,3	76,0	94,5	0,6				29,1	11,9	1,12		40 000	44	132	264	47,0	72,0	96,0	131	403	839	0,350	789
790	XC71914E.DLR.T.P4S	70	100	16	28	1		25	1,8	3,1	1,6	9,3	76,0	94,5	0,6				27,9	11,2	1,06		36 000	71	213	426	118	175	227	205	626	1 271	0,350	790
791	B7014C.2RSD.T.P4S	70	110	20	22	1,1	1	15					77,0	102,0	1	0,6			49,2	40,1	2,09	13 000		275	910	1 890	74,0	127	185	860	3 090	6860	0,590	791
792	B7014E.2RSD.T.P4S	70	110	20	31	1,1	1	25					77,0	102,0	1	0,6			46,5	38,1	1,98	11 000		400	1 400	2 950	172	274	374	1 160	4 240	9260	0,590	792
793	B7014C.T.P4S	70	110	20	22	1,1	1	15					77,0	102,0	1	0,6	86,2		49,2	40,1	2,09	13 000	20 000	275	910	1 890	74,0	127	185	860	3 090	6860	0,590	793
794	B7014E.T.P4S	70	110	20	31	1,1	1	25					77,0	102,0	1	0,6	86,2		46,5	38,1	1,98	11 000	18 000	400	1 400	2 950	172	274	374	1 160	4 240	9260	0,590	794
795	B7014C.DLR.T.P4S	70	110	20	22	1,1	1	15	1,8	4,0	1,6	11,6	77,0	102,0	1	0,6			49,2	40,1	2,09		20 000	275	910	1 890	74,0	127	185	860	3 090	6860	0,590	795
796	B7014E.DLR.T.P4S	70	110	20	31	1,1	1	25	1,8	4,0	1,6	11,6	77,0	102,0	1	0,6			46,5	38,1	1,98		18 000	400	1 400	2 950	172	274	374	1 160	4 240	9260	0,590	796
797	HCB7014C.T.P4S	70	110	20	22	1,1	1	15					77,0	102,0	1	0,6	86,2		49,2	36,9	1,46	18 000	28 000	140	490	1 040	63,0	106	150	425	1 590	3 540	0,504	797
798	HCB7014E.T.P4S	70	110	20	31	1,1	1	25					77,0	102,0	1	0,6	86,2		46,5	35,0	1,39	16 000	24 000	185	740	1 610	147	242	326	538	2 200	4 950	0,504	798
799	XCB7014C.T.P4S	70	110	20	22	1,1	1	15					77,0	102,0	1	0,6	86,2		78,7	36,9	3,47	20 000	30 000	140	490	1 040	63,0	106	150	425	1 590	3 540	0,504	799
800	XCB7014E.T.P4S	70	110	20	31	1,1	1	25					77,0	102,0	1	0,6	86,2		74,4	35,0	3,30	18 000	28 000	185	740	1 610	147	242	326	538	2 200	4 950	0,504	800
801	HCB7014C.DLR.T.P4S	70	110	20	22	1,1	1	15	1,8	4,0	1,6	11,6	77,0	102,0	1	0,6			49,2	36,9	1,46		28 000	140	490	1 040	63,0	106	150	425	1 590	3 540	0,504	801
802	HCB7014E.DLR.T.P4S	70	110	20	31	1,1	1	25	1,8	4,0	1,6	11,6	77,0	102,0	1	0,6			46,5	35,0	1,39		24 000	185	740	1 610	147	242	326	538	2 200	4 950	0,504	802
803	XCB7014C.DLR.T.P4S	70	110	20	22	1,1	1	15	1,8	4,0	1,6	11,6	77,0	102,0	1	0,6			78,7	36,9	3,47		30 000	140	490	1 040	63,0	106	150	425	1 590	3 540	0,504	803
804	XCB7014E.DLR.T.P4S	70	110	20	31	1,1	1	25	1,8	4,0	1,6	11,6	77,0	102,0	1	0,6			74,4	35,0	3,30		28 000	185	740	1 610	147	242	326	538	2 200	4 950	0,504	804

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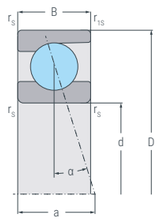
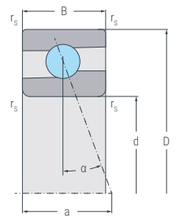
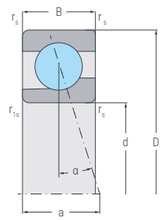
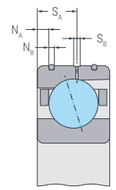
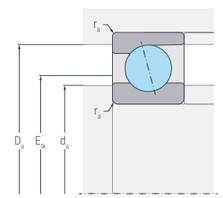
Spindle bearings
Dimensional tables of spindle bearings

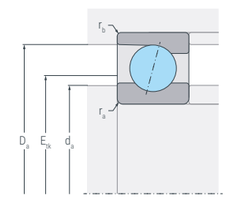


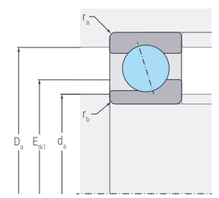


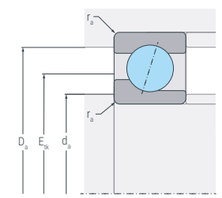












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
805	BS7014C.2RSD.T.P4S	70	110	20	24	1,1	0,6	17					77,0	102,0	1,1	0,6			37,6	22,7	1,69	18 000		181	544	1 088	74	102	138	510	1 370	3 060	0,62	805
806	BS7014E.2RSD.T.P4S	70	110	20	31	1,1	0,6	25					77,0	102,0	1,1	0,6			35,3	21,7	1,64	17 000		253	758	1 516	148	199	261	716	1 900	4 050	0,62	806
807	BS7014C.T.P4S	70	110	20	24	1,1	0,6	17					77,0	102,0	1,1	0,6	86,9		37,6	22,7	1,69	18 000	28 000	181	544	1 088	74	102	138	510	1 370	3 060	0,62	807
808	BS7014E.T.P4S	70	110	20	31	1,1	0,6	25					77,0	102,0	1,1	0,6	86,9		35,3	21,7	1,64	17 000	26 000	253	758	1 516	148	199	261	716	1 900	4 050	0,62	808
809	HCBS7014C.T.P4S	70	110	20	24	1,1	0,6	17					77,0	102,0	1,1	0,6	86,9		37,6	20,9	1,25	23 000	33 000	91	272	544	65	99	130	355	958	2 060	0,55	809
810	HCBS7014E.T.P4S	70	110	20	31	1,1	0,6	25					77,0	102,0	1,1	0,6	86,9		35,3	20,0	1,18	22 000	31 000	126	379	758	131	192	246	503	1 330	2 800	0,55	810
811	XCBS7014C.T.P4S	70	110	20	24	1,1	0,6	17					77,0	102,0	1,1	0,6	86,9		60,2	20,6	1,96	27 000	42 000	91	272	544	65	99	130	355	958	2 060	0,55	811
812	XCBS7014E.T.P4S	70	110	20	31	1,1	0,6	25					77,0	102,0	1,1	0,6	86,9		56,5	20,2	1,88	26 000	39 000	126	379	758	131	192	246	503	1 330	2 800	0,55	812
813	BS7014C.DLR.T.P4S	70	110	20	24	1,1	0,6	17	1,8	4	1,6	11,6	77,0	102,0	1,1	0,6			37,6	22,7	1,69		28 000	181	544	1 088	74	102	138	510	1 370	3 060	0,62	813
814	BS7014E.DLR.T.P4S	70	110	20	31	1,1	0,6	25	1,8	4	1,6	11,6	77,0	102,0	1,1	0,6			35,3	21,7	1,64		26 000	253	758	1 516	148	199	261	716	1 900	4 050	0,62	814
815	HCBS7014C.DLR.T.P4S	70	110	20	24	1,1	0,6	17	1,8	4	1,6	11,6	77,0	102,0	1,1	0,6			37,6	20,9	1,25		33 000	91	272	544	65	99	130	355	958	2 060	0,55	815
816	HCBS7014E.DLR.T.P4S	70	110	20	31	1,1	0,6	25	1,8	4	1,6	11,6	77,0	102,0	1,1	0,6			35,3	20,2	1,18		31 000	126	379	758	131	192	246	503	1 330	2 800	0,55	816
817	XCBS7014C.DLR.T.P4S	70	110	20	24	1,1	0,6	17	1,8	4	1,6	11,6	77,0	102,0	1,1	0,6			60,2	20,9	1,96		42 000	91	272	544	65	99	130	355	958	2 060	0,55	817
818	XCBS7014E.DLR.T.P4S	70	110	20	31	1,1	0,6	25	1,8	4	1,6	11,6	77,0	102,0	1,1	0,6			56,0	20,2	1,88		39 000	126	379	758	131	192	246	503	1 330	2 800	0,55	818
819	HS7014C.2RSD.T.P4S	70	110	20	22	1,1		15					77,0	102,0	1				26,5	17,2	0,872	18 000		89	267	534	53,0	82,5	114	265	837	1 757	0,670	819
820	HS7014E.2RSD.T.P4S	70	110	20	31	1,1		25					77,0	102,0	1				24,6	16,3	0,824	16 000		146	438	876	132	197	257	419	1 277	2 608	0,670	820
821	HC7014C.2RSD.T.P4S	70	110	20	22	1,1		15					77,0	102,0	1				26,5	15,8	0,628	22 000		63	189	378	52,0	80,0	108	187	579	1 202	0,636	821
822	HC7014E.2RSD.T.P4S	70	110	20	31	1,1		25					77,0	102,0	1				24,6	15,0	0,594	20 000		101	303	606	132	195	252	292	892	1 807	0,636	822
823	HS7014C.T.P4S	70	110	20	22	1,1		15					77,0	102,0	1		87,5	86	26,5	17,2	0,872	18 000	28 000	89	267	534	53,0	82,5	114	265	837	1 757	0,670	823
824	HS7014E.T.P4S	70	110	20	31	1,1		25					77,0	102,0	1		87,5	86	24,6	16,3	0,824	16 000	24 000	146	438	876	132	197	257	419	1 277	2 608	0,670	824
825	HC7014C.T.P4S	70	110	20	22	1,1		15					77,0	102,0	1		87,5	86	26,5	15,8	0,628	22 000	35 000	63	189	378	52,0	80,0	108	187	579	1 202	0,636	825
826	HC7014E.T.P4S	70	110	20	31	1,1		25					77,0	102,0	1		87,5	86	24,6	15,0	0,594	20 000	32 000	101	303	606	132	195	252	292	892	1 807	0,636	826
827	XC7014C.T.P4S	70	110	20	22	1,1		15					77,0	102,0	1		87,5	86	42,3	15,8	1,49	25 000	39 000	63	189	378	52,0	80,0	108	187	579	1 202	0,636	827
828	XC7014E.T.P4S	70	110	20	31	1,1		25					77,0	102,0	1		87,5	86	39,3	15,0	1,41	22 000	34 000	101	303	606	132	195	252	292	892	1 807	0,636	828
829	HS7014C.DLR.T.P4S	70	110	20	22	1,1		15	1,8	4,0	1,6	11,6	77,0	102,0	1				26,5	17,2	0,872		28 000	89	267	534	53,0	82,5	114	265	837	1 757	0,670	829
830	HS7014E.DLR.T.P4S	70	110	20	31	1,1		25	1,8	4,0	1,6	11,6	77,0	102,0	1				24,6	16,3	0,824		24 000	146	438	876	132	197	257	419	1 277	2 608	0,670	830
831	HC7014C.DLR.T.P4S	70	110	20	22	1,1		15	1,8	4,0	1,6	11,6	77,0	102,0	1				26,5	15,8	0,628		35 000	63	189	378	52,0	80,0	108	187	579	1 202	0,636	831
832	HC7014E.DLR.T.P4S	70	110	20	31	1,1		25	1,8	4,0	1,6	11,6	77,0	102,0	1				24,6	15,0	0,594		32 000	101	303	606	132	195	252	292	892	1 807	0,636	832
833	XC7014C.DLR.T.P4S	70	110	20	22	1,1		15	1,8	4,0	1,6	11,6	77,0	102,0	1				42,3	15,8	1,49		39 000	63	189	378	52,0	80,0	108	187	579	1 202	0,636	833
834	XC7014E.DLR.T.P4S	70	110	20	31	1,1		25	1,8	4,0	1,6	11,6	77,0	102,0	1				39,3	15,0	1,41		34 000	101	303	606	132	195	252	292	892	1 807	0,636	834
835	B7214C.T.P4S	70	125	24	25	1,5	1,5	15					80,0	115,0	1,5	1,5	92,7		69,6	58,9	2,98	11 000	18 000	402	1 300	2 660	84,0	144	208	1 260	4 420	9 700	1,08	835

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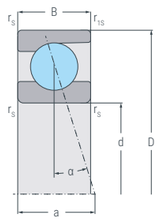
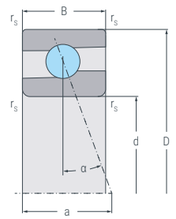
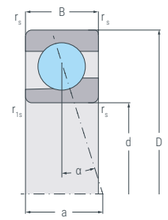
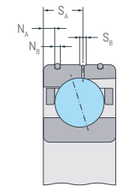
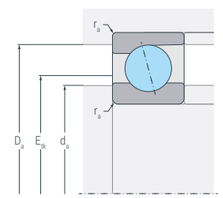
Spindle bearings
Dimensional tables of spindle bearings

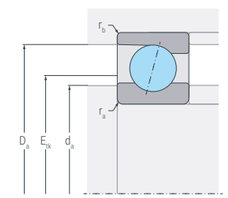


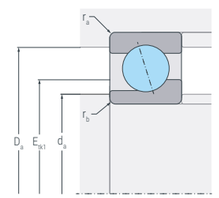


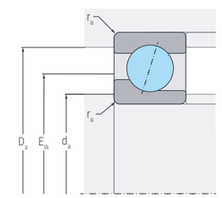












Symbol		Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
Bearing		d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
836	B7214E.T.P4S	70	125	24	35	1,5	1,5	25					80,0	115,0	1,5	1,5	92,7		66,1	56,2	2,80	10 000	17 000	600	2 040	4 240	195	310	422	1 760	6 180	13 300	1,08	836
837	HCB7214C.T.P4S	70	125	24	25	1,5	1,5	15					80,0	115,0	1,5	1,5	92,7		69,6	54,2	2,15	14 000	22 000	207	709	1 480	72,0	120	170	635	2 290	5 060	0,925	837
838	HCB7214E.T.P4S	70	125	24	35	1,5	1,5	25					80,0	115,0	1,5	1,5	92,7		66,1	51,6	2,05	12 000	19 000	293	1 100	2 350	172	277	371	866	3 300	7 230	0,925	838
839	B71815C.T.P4S	75	95	10	16	0,6	0,3	15					79,0	90,5	0,6	0,3	83,3		14,0	15,6	0,751	13 000	20 000	51	210	462	47,5	86,9	130	156	693	1 640	0,145	839
840	B71815E.T.P4S	75	95	10	25			25					79,0	90,5	0,6	0,3	83,3		13,4	14,7	0,701	12 000	19 000	82	296	704	115	185	262	240	880	2 150	0,145	840
841	B71915C.2RSD.T.P4S	75	105	16	20	1	0,6	15					81,0	99,5	0,6	0,3			33,9	30,7	1,60	13 000		172	594	1 244	68,3	118	172	532	1 990	4 460	0,351	841
842	B71915E.2RSD.T.P4S	75	105	16	29	1	0,6	25					81,0	99,5	0,6	0,3			32,4	28,6	1,49	11 000		234	900	1 940	156	258	353	685	2 720	6 050	0,351	842
843	B71915C.T.P4S	75	105	16	20	1	0,6	15					81,0	99,5	0,6	0,3	87		33,9	30,7	1,60	13 000	20 000	172	594	1 244	68,3	118	172	532	1 990	4 460	0,351	843
844	B71915E.T.P4S	75	105	16	29	1	0,6	25					81,0	99,5	0,6	0,3	87		32,4	28,6	1,49	11 000	18 000	234	900	1 940	156	258	353	685	2 720	6 050	0,351	844
845	B71915C.DLR.T.P4S	75	105	16	20	1	0,6	15	1,8	3,1	1,6	9,3	81,0	99,5	0,6	0,3			33,9	30,7	1,60		20 000	172	594	1 244	68,3	118	172	532	1 990	4 460	0,351	845
846	B71915E.DLR.T.P4S	75	105	16	29	1	0,6	25	1,8	3,1	1,6	9,3	81,0	99,5	0,6	0,3			32,4	28,6	1,49		18 000	234	900	1 940	156	258	353	685	2 720	6 050	0,351	846
847	HCB71915C.T.P4S	75	105	16	20	1	0,6	15					81,0	99,5	0,6	0,3	87		33,9	28,2	1,12	18 000	28 000	84	320	690	57,9	99,4	142	252	1 020	2 330	0,303	847
848	HCB71915E.T.P4S	75	105	16	29	1	0,6	25					81,0	99,5	0,6	0,3	87		32,4	26,3	1,04	16 000	24 000	96	455	1 040	129	226	308	280	1 360	3 180	0,303	848
849	XCB71915C.T.P4S	75	105	16	20	1	0,6	15					81,0	99,5	0,6	0,3	87		54,2	28,2	2,65	20 000	30 000	84	320	690	57,9	99,4	142	252	1 020	2 330	0,303	849
850	XCB71915E.T.P4S	75	105	16	29	1	0,6	25					81,0	99,5	0,6	0,3	87		51,8	26,3	2,47	18 000	28 000	96	455	1 040	129	226	308	280	1 360	3 180	0,303	850
851	HCB71915C.DLR.T.P4S	75	105	16	20	1	0,6	15	1,8	3,1	1,6	9,3	81,0	99,5	0,6	0,3			33,9	28,2	1,12		28 000	84	320	690	57,9	99,4	142	252	1 020	2 330	0,303	851
852	HCB71915E.DLR.T.P4S	75	105	16	29	1	0,6	25	1,8	3,1	1,6	9,3	81,0	99,5	0,6	0,3			32,4	26,3	1,04		24 000	96	455	1 040	129	226	308	280	1 360	3 180	0,303	852
853	XCB71915C.DLR.T.P4S	75	105	16	20	1	0,6	15	1,8	3,1	1,6	9,3	81,0	99,5	0,6	0,3			54,2	28,2	2,65		30 000	84	320	690	57,9	99,4	142	252	1 020	2 330	0,303	853
854	XCB71915E.DLR.T.P4S	75	105	16	29	1	0,6	25	1,8	3,1	1,6	9,3	81,0	99,5	0,6	0,3			51,8	26,3	2,47		28 000	96	455	1 040	129	226	308	280	1 360	3 180	0,303	854
855	BS71915C.2RSD.T.P4S	75	105	16	22	1	0,6	17					81,0	99,5	1	0,6			28,9	18,9	1,71	18 000		171	460	966	66	98	135	505	1 390	3 050	0,32	855
856	BS71915E.2RSD.T.P4S	75	105	16	29	1	0,6	25					81,0	99,5	1	0,6			27,8	18,0	1,65	17 000		245	650	1 350	134	191	254	710	1 900	4 050	0,32	856
857	BS71915C.T.P4S	75	105	16	22	1	0,6	17					81,0	99,5	1	0,6	87,6		28,9	18,9	1,71	18 000	28 000	171	460	966	66	98	135	505	1 390	3 050	0,32	857
858	BS71915E.T.P4S	75	105	16	29	1	0,6	25					81,0	99,5	1	0,6	87,6		27,8	18,0	1,65	17 000	26 000	245	650	1 350	134	191	254	710	1 900	4 050	0,32	858
859	HCBS71915C.T.P4S	75	105	16	22	1	0,6	17					81,0	99,5	1	0,6	87,6		28,9	17,4	1,22	23 000	33 000	120	320	672	66	95	130	350	950	2 070	0,295	859
860	HCBS71915E.T.P4S	75	105	16	29	1	0,6	25					81,0	99,5	1	0,6	87,6		27,8	16,6	1,19	22 000	31 000	174	455	952	134	190	250	500	1 330	2 800	0,295	860
861	B7015C.2RSD.T.P4S	75	115	20	23	1,1	1	15					82,0	107,0	1	0,6			51,0	42,8	2,23	12 000		280	930	1 925	76,6	132	192	880	3 140	6 960	0,620	861
862	B7015E.2RSD.T.P4S	75	115	20	32	1,1	1	25					82,0	107,0	1	0,6			48,2	40,7	2,12	11 000		405	1 440	3 030	178	288	390	1 190	4 360	9 500	0,620	862
863	B7015C.T.P4S	75	115	20	23	1,1	1	15					82,0	107,0	1	0,6	91,2		51,0	42,8	2,23	12 000	19 000	280	930	1 925	76,6	132	192	880	3 140	6 960	0,620	863
864	B7015E.T.P4S	75	115	20	32	1,1	1	25					82,0	107,0	1	0,6	91,2		48,2	40,7	2,12	11 000	17 000	405	1 440	3 030	178	288	390	1 190	4 360	9 500	0,620	864
865	B7015C.DLR.T.P4S	75	115	20	23	1,1	1	15	1,8	4,0	1,6	11,6	82,0	107,0	1	0,6			51,0	42,8	2,23		19 000	280	930	1 925	76,6	132	192	880	3 140	6 960	0,620	865
866	B7015E.DLR.T.P4S	75	115	20	32	1,1	1	25	1,8	4,0	1,6	11,6	82,0	107,0	1	0,6			48,2	40,7	2,12		17 000	405	1 440	3 030	178	288	390	1 190	4 360	9 500	0,620	866

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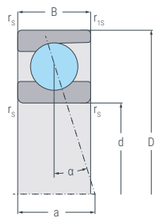
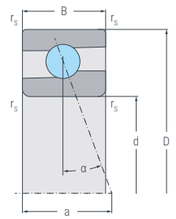
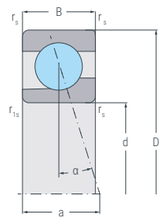
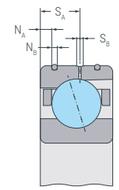
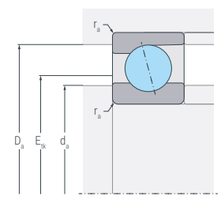
Spindle bearings
Dimensional tables of spindle bearings

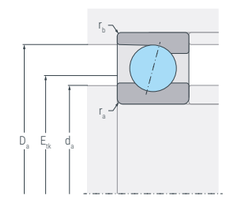


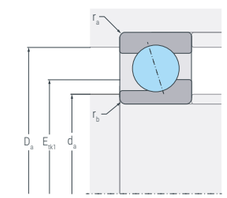


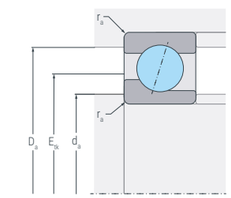








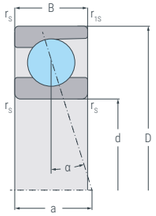


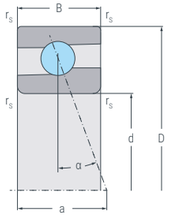


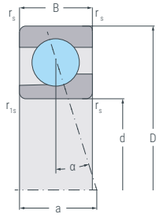
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
867	HS71915C.2RSD.T.P4S	75	105	16	20	1		15					81,0	99,5	0,6				19,0	13,8	0,700	18 000		65	195	390	50,1	78,2	107	193	611	1 276	0,400	867
868	HS71915E.2RSD.T.P4S	75	105	16	29	1		25					81,0	99,5	0,6				17,4	13,0	0,661	16 000		105	310	630	125	185	241	301	918	1 872	0,400	868
869	HC71915C.2RSD.T.P4S	75	105	16	20	1		15					81,0	99,5	0,6				19,0	12,7	0,504	23 000		45	133	265	48,6	75,1	101	133	412	852	0,379	869
870	HC71915E.2RSD.T.P4S	75	105	16	29	1		25					81,0	99,5	0,6				17,4	12,0	0,476	20 000		72	220	435	125	185	238	211	641	1 297	0,379	870
871	HS71915C.T.P4S	75	105	16	20	1		15					81,0	99,5	0,6		88	86,8	19,0	13,8	0,700	18 000	28 000	65	195	390	50,1	78,2	107	193	611	1 276	0,400	871
872	HS71915E.T.P4S	75	105	16	29	1		25					81,0	99,5	0,6		88	86,8	17,4	13,0	0,661	16 000	24 000	105	310	630	125	185	241	301	918	1 872	0,400	872
873	HC71915C.T.P4S	75	105	16	20	1		15					81,0	99,5	0,6		88	86,8	19,0	12,7	0,504	23 000	35 000	45	133	265	48,6	75,1	101	133	412	852	0,379	873
874	HC71915E.T.P4S	75	105	16	29	1		25					81,0	99,5	0,6		88	86,8	17,4	12,0	0,476	20 000	32 000	72	220	435	125	185	238	211	641	1 297	0,379	874
875	XC71915C.T.P4S	75	105	16	20	1		15					81,0	99,5	0,6		88	86,8	30,3	12,7	1,19	25 000	39 000	45	133	265	48,6	75,1	101	133	412	852	0,379	875
876	XC71915E.T.P4S	75	105	16	29	1		25					81,0	99,5	0,6		88	86,8	27,9	12,0	1,13	22 000	34 000	72	220	435	125	185	238	211	641	1 297	0,379	876
877	HS71915C.DLR.T.P4S	75	105	16	20	1		15	1,8	3,1	1,6	9,3	81,0	99,5	0,6				19,0	13,8	0,700		28 000	65	195	390	50,1	78,2	107	193	611	1 276	0,400	877
878	HS71915E.DLR.T.P4S	75	105	16	29	1		25	1,8	3,1	1,6	9,3	81,0	99,5	0,6				17,4	13,0	0,661		24 000	105	310	630	125	185	241	301	918	1 872	0,400	878
879	HC71915C.DLR.T.P4S	75	105	16	20	1		15	1,8	3,1	1,6	9,3	81,0	99,5	0,6				19,0	12,7	0,504		35 000	45	133	265	48,6	75,1	101	133	412	852	0,379	879
880	HC71915E.DLR.T.P4S	75	105	16	29	1		25	1,8	3,1	1,6	9,3	81,0	99,5	0,6				17,4	12,0	0,476		32 000	72	220	435	125	185	238	211	641	1 297	0,379	880
881	XC71915C.DLR.T.P4S	75	105	16	20	1		15	1,8	3,1	1,6	9,3	81,0	99,5	0,6				30,3	12,7	1,19		39 000	45	133	265	48,6	75,1	101	133	412	852	0,379	881
882	XC71915E.DLR.T.P4S	75	105	16	29	1		25	1,8	3,1	1,6	9,3	81,0	99,5	0,6				27,9	12,0	1,13		34 000	72	220	435	125	185	238	211	641	1 297	0,379	882
883	HCB7015C.T.P4S	75	115	20	23	1,1	1	15					82,0	107,0	1	0,6	91,2		51,0	39,4	1,56	17 000	26 000	142	508	1 070	66,1	111	157	435	1 640	3 650	0,530	883
884	HCB7015E.T.P4S	75	115	20	32	1,1	1	25					82,0	107,0	1	0,6	91,2		48,2	37,4	1,48	15 000	24 000	192	760	1 670	154	254	343	555	2 280	5 120	0,530	884
885	XCB7015C.T.P4S	75	115	20	23	1,1	1	15					82,0	107,0	1	0,6	91,2		81,6	39,4	3,70	19 000	28 000	142	508	1 070	66,1	111	157	435	1 640	3 650	0,530	885
886	XCB7015E.T.P4S	75	115	20	32	1,1	1	25					82,0	107,0	1	0,6	91,2		77,1	37,4	3,52	17 000	26 000	192	760	1 670	154	254	343	555	2 280	5 120	0,530	886
887	HCB7015C.DLR.T.P4S	75	115	20	23	1,1	1	15	1,8	4,0	1,6	11,6	82,0	107,0	1	0,6			51,0	39,4	1,56		26 000	142	508	1 070	66,1	111	157	435	1 640	3 650	0,530	887
888	HCB7015E.DLR.T.P4S	75	115	20	32	1,1	1	25	1,8	4,0	1,6	11,6	82,0	107,0	1	0,6			48,2	37,4	1,48		24 000	192	760	1 670	154	254	343	555	2 280	5 120	0,530	888
889	XCB7015C.DLR.T.P4S	75	115	20	23	1,1	1	15	1,8	4,0	1,6	11,6	82,0	107,0	1	0,6			81,6	39,4	3,70		28 000	142	508	1 070	66,1	111	157	435	1 640	3 650	0,530	889
890	XCB7015E.DLR.T.P4S	75	115	20	32	1,1	1	25	1,8	4,0	1,6	11,6	82,0	107,0	1	0,6			77,1	37,4	3,52		26 000	192	760	1 670	154	254	343	555	2 280	5 120	0,530	890
891	BS7015C.2RSD.T.P4S	75	115	20	25	1,1	0,6	17					82,0	107,0	1,1	0,6			38,0	23,9	1,79	17 000		182	483	1 017	71	105	143	536	1 460	3 210	0,65	891
892	BS7015E.2RSD.T.P4S	75	115	20	32	1,1	0,6	25					82,0	107,0	1,1	0,6			36,4	22,8	1,72	16 000		261	685	1 429	143	203	268	752	2 000	4 250	0,65	892
893	BS7015C.T.P4S	75	115	20	25	1,1	0,6	17					82,0	107,0	1,1	0,6			38,0	23,9	1,79	17 000	26 000	182	483	1 017	71	105	143	536	1 460	3 210	0,65	893
894	BS7015E.T.P4S	75	115	20	32	1,1	0,6	25					82,0	107,0	1,1	0,6			36,4	22,8	1,72	16 000	24 000	261	685	1 429	143	203	268	752	2 000	4 250	0,65	894
895	HCBS7015C.T.P4S	75	115	20	25	1,1	0,6	17					82,0	107,0	1,1	0,6			38,0	22,0	1,29	22 000	32 000	128	338	709	71	102	137	373	1 000	2 170	0,625	895
896	HCBS7015E.T.P4S	75	115	20	32	1,1	0,6	25					82,0	107,0	1,1	0,6			36,4	21,0	1,24	20 000	30 000	184	483	1 003	144	202	263	528	1 390	2 940	0,625	896
897	BS7015C.DLR.T.P4S	75	115	20	25	1,1	0,6	17	1,8	4	1,6	11,6	82,0	107,0	1,1	0,6			38,0	23,9	1,79		26 000	182	483	1 017	71	105	143	536	1 460	3 210	0,65	897

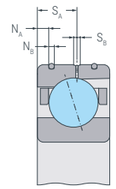
The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

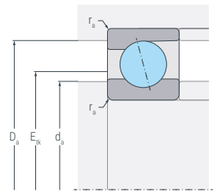
Spindle bearings
Dimensional tables of spindle bearings

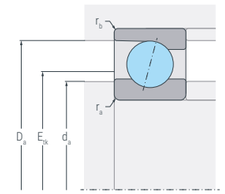


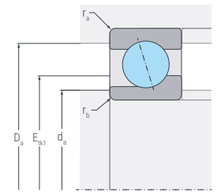


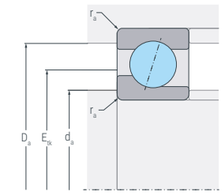












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
898	BS7015E.DLR.T.P4S	75	115	20	32	1,1	0,6	25	1,8	4	1,6	11,6	82,0	107,0	1,1	0,6			36,4	22,8	1,72		24 000	261	685	1 429	143	203	268	752	2 000	4 250	0,65	898
899	HCBS7015C.DLR.T.P4S	75	115	20	25	1,1	0,6	17	1,8	4	1,6	11,6	82,0	107,0	1,1	0,6			38,0	22,0	1,29		32 000	128	338	709	71	102	137	373	1 000	2 170	0,625	899
900	HCBS7015E.DLR.T.P4S	75	115	20	32	1,1	0,6	25	1,8	4	1,6	11,6	82,0	107,0	1,1	0,6			36,4	21,0	1,24		30 000	184	483	1 003	144	202	263	528	1 390	2 940	0,625	900
901	HS7015C.2RSD.T.P4S	75	115	20	23	1,1		15					82,0	107,0	1				26,3	17,9	0,909	18 000		91	273	546	55,0	86,0	117	270	852	1 790	0,710	901
902	HS7015E.2RSD.T.P4S	75	115	20	32	1,1		25					82,0	107,0	1				25,2	17,0	0,859	16 000		148	444	888	136	202	262	425	1 297	2 647	0,710	902
903	HC7015C.2RSD.T.P4S	75	115	20	23	1,1		15					82,0	107,0	1				26,3	16,5	0,655	22 000		64	192	378	54,0	82,0	110	187	578	1 199	0,675	903
904	HC7015E.2RSD.T.P4S	75	115	20	32	1,1		25					82,0	107,0	1				25,2	15,6	0,619	19 000		102	306	610	134	199	257	292	891	1 805	0,675	904
905	HS7015C.T.P4S	75	115	20	23	1,1		15					82,0	107,0	1		92,4	91	26,3	17,9	0,909	18 000	28 000	91	273	546	55,0	86,0	117	270	852	1 790	0,710	905
906	HS7015E.T.P4S	75	115	20	32	1,1		25					82,0	107,0	1		92,4	91	25,2	17,0	0,859	16 000	24 000	148	444	888	136	202	262	425	1 297	2 647	0,710	906
907	HC7015C.T.P4S	75	115	20	23	1,1		15					82,0	107,0	1		92,4	91	26,3	16,5	0,655	22 000	34 000	64	192	378	54,0	82,0	110	187	578	1 199	0,675	907
908	HC7015E.T.P4S	75	115	20	32	1,1		25					82,0	107,0	1		92,4	91	25,2	15,6	0,619	19 000	30 000	102	306	610	134	199	257	292	891	1 805	0,675	908
909	XC7015C.T.P4S	75	115	20	23	1,1		15					82,0	107,0	1		92,4	91	42,1	16,5	1,55	25 000	38 000	64	192	378	54,0	82,0	110	187	578	1 199	0,675	909
910	XC7015E.T.P4S	75	115	20	32	1,1		25					82,0	107,0	1		92,4	91	40,3	15,6	1,47	22 000	32 000	102	306	610	134	199	257	292	891	1 805	0,675	910
911	HS7015C.DLR.T.P4S	75	115	20	23	1,1		15	1,8	4,0	1,6	11,6	82,0	107,0	1				26,3	17,9	0,909		28 000	91	273	546	55,0	86,0	117	270	852	1 790	0,710	911
912	HS7015E.DLR.T.P4S	75	115	20	32	1,1		25	1,8	4,0	1,6	11,6	82,0	107,0	1				25,2	17,0	0,859		24 000	148	444	888	136	202	262	425	1 297	2 647	0,710	912
913	HC7015C.DLR.T.P4S	75	115	20	23	1,1		15	1,8	4,0	1,6	11,6	82,0	107,0	1				26,3	16,5	0,655		34 000	64	192	378	54,0	82,0	110	187	578	1 199	0,675	913
914	HC7015E.DLR.T.P4S	75	115	20	32	1,1		25	1,8	4,0	1,6	11,6	82,0	107,0	1				25,2	15,6	0,619		30 000	102	306	610	134	199	257	292	891	1 805	0,675	914
915	XC7015C.DLR.T.P4S	75	115	20	23	1,1		15	1,8	4,0	1,6	11,6	82,0	107,0	1				42,1	16,5	1,55		38 000	64	192	378	54,0	82,0	110	187	578	1 199	0,675	915
916	XC7015E.DLR.T.P4S	75	115	20	32	1,1		25	1,8	4,0	1,6	11,6	82,0	107,0	1				40,3	15,6	1,47		32 000	102	306	610	134	199	257	292	891	1 805	0,675	916
917	B7215C.T.P4S	75	130	25	26	1,5	1,5	15					85,0	120,0	1,5	1,5	97,2		79,2	71,9	3,59	11 000	18 000	415	1 345	2 760	87,6	150	217	1 290	4 560	10 000	1,18	917
918	B7215E.T.P4S	75	130	25	36	1,5	1,5	25					85,0	120,0	1,5	1,5	97,2		72,5	68,5	3,43	9 500	16 000	620	2 100	4 390	205	325	442	1 800	6 400	13 800	1,18	918
919	HCB7215C.T.P4S	75	130	25	26	1,5	1,5	15					85,0	120,0	1,5	1,5	97,2		79,2	66,1	2,59	14 000	22 000	215	735	1 530	75,0	126	178	652	2 370	5 230	0,987	919
920	HCB7215E.T.P4S	75	130	25	36	1,5	1,5	25					85,0	120,0	1,5	1,5	97,2		72,5	63,0	2,47	12 000	19 000	305	1 140	2 440	180	291	389	900	3 420	7 500	0,987	920
921	B71916C.2RSD.T.P4S	80	110	16	21	1	0,6	15					86,0	104,0	0,6	0,3			34,8	31,7	1,65	12 000		174	600	1 260	70,1	120	175	535	2 000	4 500	0,370	921
922	B71916E.2RSD.T.P4S	80	110	16	30	1	0,6	25					86,0	104,0	0,6	0,3			32,6	29,6	1,55	11 000		236	910	1 970	161	260	365	691	2 740	6 120	0,370	922
923	B71916C.T.P4S	80	110	16	21	1	0,6	15					86,0	104,0	0,6	0,3	92,2		34,8	31,7	1,65	12 000	19 000	174	600	1 260	70,1	120	175	535	2 000	4 500	0,370	923
924	B71916E.T.P4S	80	110	16	30	1	0,6	25					86,0	104,0	0,6	0,3	92,2		32,6	29,6	1,45	11 000	17 000	236	910	1 970	161	260	365	691	2 740	6 120	0,370	924
925	B71916C.DLR.T.P4S	80	110	16	21	1	0,6	15	1,8	3,1	1,6	9,3	86,0	104,0	0,6	0,3			34,8	31,7	1,65		19 000	174	600	1 260	70,1	120	175	535	2 000	4 500	0,370	925
926	B71916E.DLR.T.P4S	80	110	16	30	1	0,6	25	1,8	3,1	1,6	9,3	86,0	104,0	0,6	0,3			32,6	29,6	1,45		17 000	236	910	1 970	161	260	365	691	2 740	6 120	0,370	926
927	HCB71916C.T.P4S	80	110	16	21	1	0,6	15					86,0	104,0	0,6	0,3	92,2		34,8	29,2	1,16	17 000	26 000	83	320	690	58,5	102	145	250	1 020	2 320	0,318	927
928	HCB71916E.T.P4S	80	110	16	30	1	0,6	25					86,0	104,0	0,6	0,3	92,2		32,6	27,2	1,08	15 000	24 000	95	460	1 050	133	233	318	280	1 370	3 210	0,318	928

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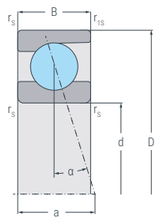
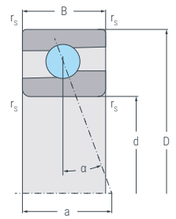
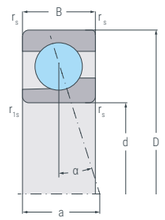
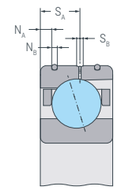
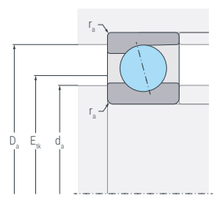
Spindle bearings
Dimensional tables of spindle bearings

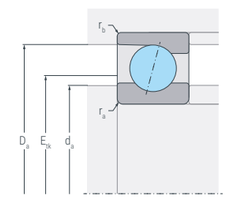


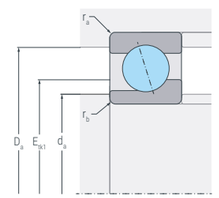


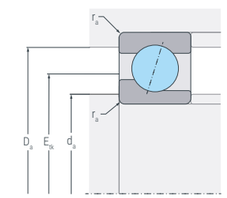












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
929	XCB71916C.T.P4S	80	110	16	21	1	0,6	15					86,0	104,0	0,6	0,3	92,2		55,7	29,2	2,74	19 000	28 000	83	320	690	58,5	102	145	250	1 020	2 320	0,318	929
930	XCB71916E.T.P4S	80	110	16	30	1	0,6	25					86,0	104,0	0,6	0,3	92,2		52,1	27,2	2,56	17 000	26 000	95	460	1 050	133	233	318	280	1 370	3 210	0,318	930
931	HCB71916C.DLR.T.P4S	80	110	16	21	1	0,6	15	1,8	3,1	1,6	9,3	86,0	104,0	0,6	0,3			34,8	29,2	1,16		26 000	83	320	690	58,5	102	145	250	1 020	2 320	0,318	931
932	HCB71916E.DLR.T.P4S	80	110	16	30	1	0,6	25	1,8	3,1	1,6	9,3	86,0	104,0	0,6	0,3			32,6	27,2	1,08		24 000	95	460	1 050	133	233	318	280	1 370	3 210	0,318	932
933	XCB71916C.DLR.T.P4S	80	110	16	21	1	0,6	15	1,8	3,1	1,6	9,3	86,0	104,0	0,6	0,3			55,7	29,2	2,74		28 000	83	320	690	58,5	102	145	250	1 020	2 320	0,318	933
934	XCB71916E.DLR.T.P4S	80	110	16	30	1	0,6	25	1,8	3,1	1,6	9,3	86,0	104,0	0,6	0,3			52,1	27,2	2,56		26 000	95	460	1 050	133	233	318	280	1 370	3 210	0,318	934
935	BS71916C.2RSD.T.P4S	80	110	16	23	1	0,6	17					86,0	104,0	1	0,6			30,4	20,5	1,75	17 000		177	473	995	77	117	157	530	1 460	3 210	0,374	935
936	BS71916E.2RSD.T.P4S	80	110	16	30	1	0,6	25					86,0	104,0	1	0,6			28,5	19,6	1,68	16 000		255	678	1 395	146	206	273	750	2 000	4 250	0,374	936
937	BS71916C.T.P4S	80	110	16	23	1	0,6	17					86,0	104,0	1	0,6	92,3		30,4	20,5	1,75	17 000	26 000	177	473	995	77	117	157	530	1 460	3 210	0,374	937
938	BS71916E.T.P4S	80	110	16	30	1	0,6	25					86,0	104,0	1	0,6	92,3		28,5	19,6	1,68	16 000	24 000	255	678	1 395	146	206	273	750	2 000	4 250	0,374	938
939	HCBS71916C.T.P4S	80	110	16	23	1	0,6	17					86,0	104,0	1	0,6	92,3		30,4	18,9	1,25	21 000	32 000	122	332	698	67	100	131	370	1 000	2 150	0,313	939
940	HCBS71916E.T.P4S	80	110	16	30	1	0,6	25					86,0	104,0	1	0,6	92,3		28,5	18,0	1,19	20 000	30 000	177	476	986	134	197	252	520	1 390	2 940	0,313	940
941	XCBS71916C.T.P4S	80	110	16	23	1	0,6	17					86,0	104,0	1	0,6	92,3		48,7	18,9	1,78	26 000	39 000	122	332	698	67	100	131	370	1 000	2 150	0,313	941
942	XCBS71916E.T.P4S	80	110	16	30	1	0,6	25					86,0	104,0	1	0,6	92,3		45,6	18,0	1,69	24 000	36 000	177	476	986	134	197	252	520	1 390	2 940	0,313	942
943	BS71916C.DLR.T.P4S	80	110	16	23	1	0,6	17	1,8	3,1	1,6	9,3	86,0	104,0	1	0,6			30,4	20,5	1,75		26 000	177	473	995	77	117	157	530	1 460	3 210	0,374	943
944	BS71916E.DLR.T.P4S	80	110	16	30	1	0,6	25	1,8	3,1	1,6	9,3	86,0	104,0	1	0,6			28,5	19,6	1,68		24 000	255	678	1 395	146	206	273	750	2 000	4 250	0,374	944
945	HCBS71916C.DLR.T.P4S	80	110	16	23	1	0,6	17	1,8	3,1	1,6	9,3	86,0	104,0	1	0,6			30,4	18,9	1,25		32 000	122	332	698	67	100	131	370	1 000	2 150	0,313	945
946	HCBS71916E.DLR.T.P4S	80	110	16	30	1	0,6	25	1,8	3,1	1,6	9,3	86,0	104,0	1	0,6			28,5	18,0	1,19		30 000	177	476	986	134	197	252	520	1 390	2 940	0,313	946
947	XCBS71916C.DLR.T.P4S	80	110	16	23	1	0,6	17	1,8	3,1	1,6	9,3	86,0	104,0	1	0,6			48,7	18,9	1,78		39 000	122	332	698	67	100	131	370	1 000	2 150	0,313	947
948	XCBS71916E.DLR.T.P4S	80	110	16	30	1	0,6	25	1,8	3,1	1,6	9,3	86,0	104,0	1	0,6			45,6	18,0	1,69		36 000	177	476	986	134	197	252	520	1 390	2 940	0,313	948
949	HS71916C.2RSD.T.P4S	80	110	16	21	1		15					86,0	104,0	0,6				21,1	15,5	0,784	17 000		73	219	438	53,0	83,0	113	217	679	1 425	0,410	949
950	HS71916E.2RSD.T.P4S	80	110	16	30	1		25					86,0	104,0	0,6				19,4	14,6	0,740	15 000		117	351	702	132	196	256	335	1 026	2 092	0,410	950
951	HC71916C.2RSD.T.P4S	80	110	16	21	1		15					86,0	104,0	0,6				21,1	14,2	0,565	22 000		50	150	300	52,0	79,0	106	148	461	954	0,385	951
952	HC71916E.2RSD.T.P4S	80	110	16	30	1		25					86,0	104,0	0,6				19,4	13,4	0,533	19 000		81	243	486	130	194	251	234	714	1 448	0,385	952
953	HS71916C.T.P4S	80	110	16	21	1		15					86,0	104,0	0,6		92,8	91,6	21,1	15,5	0,784	17 000	26 000	73	219	438	53,0	83,0	113	217	679	1 425	0,410	953
954	HS71916E.T.P4S	80	110	16	30	1		25					86,0	104,0	0,6		92,8	91,6	19,4	14,6	0,740	15 000	24 000	117	351	702	132	196	256	335	1 026	2 092	0,410	954
955	HC71916C.T.P4S	80	110	16	21	1		15					86,0	104,0	0,6		92,8	91,6	21,1	14,2	0,565	22 000	33 000	50	150	300	52,0	79,0	106	148	461	954	0,385	955
956	HC71916E.T.P4S	80	110	16	30	1		25					86,0	104,0	0,6		92,8	91,6	19,4	13,4	0,533	19 000	30 000	81	243	486	130	194	251	234	714	1 448	0,385	956
957	XC71916C.T.P4S	80	110	16	21	1		15					86,0	104,0	0,6		92,8	91,6	33,8	14,2	1,34	24 000	36 000	50	150	300	52,0	79,0	106	148	461	954	0,385	957
958	XC71916E.T.P4S	80	110	16	30	1		25					86,0	104,0	0,6		92,8	91,6	31,1	13,4	1,26	21 000	32 000	81	243	486	130	194	251	234	714	1 448	0,385	958
959	HS71916C.DLR.T.P4S	80	110	16	21	1		15	1,8	3,1	1,6	9,3	86,0	104,0	0,6				21,1	15,5	0,784		26 000	73	219	438	53,0	83,0	113	217	679	1 425	0,410	959

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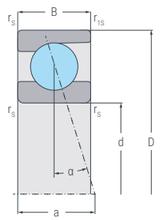
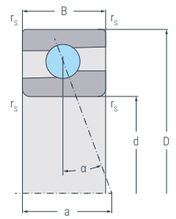
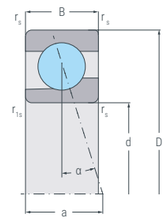
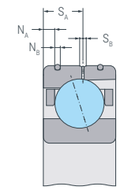
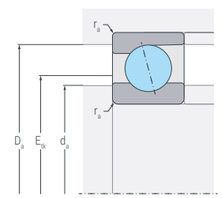
Spindle bearings
Dimensional tables of spindle bearings

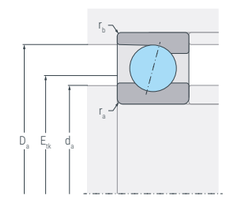


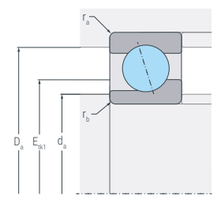


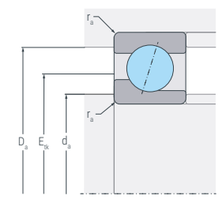












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
960	HS71916E.DLR.T.P4S	80	110	16	30	1		25	1,8	3,1	1,6	9,3	86,0	104,0	0,6				19,4	14,6	0,740		24 000	117	351	702	132	196	256	335	1 026	2 092	0,410	960
961	HC71916C.DLR.T.P4S	80	110	16	21	1		15	1,8	3,1	1,6	9,3	86,0	104,0	0,6				21,1	14,2	0,565		33 000	50	150	300	52,0	79,0	106	148	461	954	0,385	961
962	HC71916E.DLR.T.P4S	80	110	16	30	1		25	1,8	3,1	1,6	9,3	86,0	104,0	0,6				19,4	13,4	0,533		30 000	81	243	486	130	194	251	234	714	1 448	0,385	962
963	XC71916C.DLR.T.P4S	80	110	16	21	1		15	1,8	3,1	1,6	9,3	86,0	104,0	0,6				33,8	14,2	1,34		36 000	50	150	300	52,0	79,0	106	148	461	954	0,385	963
964	XC71916E.DLR.T.P4S	80	110	16	30	1		25	1,8	3,1	1,6	9,3	86,0	104,0	0,6				31,1	13,4	1,26		32 000	81	243	486	130	194	251	234	714	1 448	0,385	964
965	B7016C.2RSD.T.P4S	80	125	22	25	1,1	1	15					88,0	117,0	1	0,6			58,9	58,3	3,00	11 000		355	1 160	2 390	86,1	148	214	1 100	3 920	8 630	0,857	965
966	B7016E.2RSD.T.P4S	80	125	22	35	1,1	1	25					88,0	117,0	1	0,6			55,6	54,2	2,79	10 000		530	1 830	3 830	200	322	440	1 550	5 550	11 200	0,857	966
967	B7016C.T.P4S	80	125	22	25	1,1	1	15					88,0	117,0	1	0,6	98		58,9	58,3	3,00	11 000	17 000	355	1 160	2 390	86,1	148	214	1 100	3 920	8 630	0,857	967
968	B7016E.T.P4S	80	125	22	35	1,1	1	25					88,0	117,0	1	0,6	98		55,6	54,2	2,79	10 000	15 000	530	1 830	3 830	200	322	440	1 550	5 550	11 200	0,857	968
969	B7016C.DLR.T.P4S	80	125	22	25	1,1	1	15	1,8	4,7	2,6	12,2	88,0	117,0	1	0,6			58,9	58,3	3,00		17 000	355	1 160	2 390	86,1	148	214	1 100	3 920	8 630	0,857	969
970	B7016E.DLR.T.P4S	80	125	22	35	1,1	1	25	1,8	4,7	2,6	12,2	88,0	117,0	1	0,6			55,6	54,2	2,79		15 000	530	1 830	3 830	200	322	440	1 550	5 550	11 200	0,857	970
971	HCB7016C.T.P4S	80	125	22	25	1,1	1	15					88,0	117,0	1	0,6	98		58,9	53,6	2,10	15 000	24 000	185	640	1 350	73,9	125	176	562	2 070	4 580	0,738	971
972	HCB7016E.T.P4S	80	125	22	35	1,1	1	25					88,0	117,0	1	0,6	98		55,6	49,8	1,95	14 000	22 000	250	970	2 090	175	285	384	732	2 900	6 420	0,738	972
973	XCB7016C.T.P4S	80	125	22	25	1,1	1	15					88,0	117,0	1	0,6	98		94,2	53,6	4,98	17 000	26 000	185	640	1 350	73,9	125	176	562	2 070	4 580	0,738	973
974	XCB7016E.T.P4S	80	125	22	35	1,1	1	25					88,0	117,0	1	0,6	98		89,0	49,8	4,63	15 000	24 000	250	970	2 090	175	285	384	732	2 900	6 420	0,738	974
975	HCB7016C.DLR.T.P4S	80	125	22	25	1,1	1	15	1,8	4,7	2,6	12,2	88,0	117,0	1	0,6			58,9	53,6	2,10		24 000	185	640	1 350	73,9	125	176	562	2 070	4 580	0,738	975
976	HCB7016E.DLR.T.P4S	80	125	22	35	1,1	1	25	1,8	4,7	2,6	12,2	88,0	117,0	1	0,6			55,6	49,8	1,95		22 000	250	970	2 090	175	285	384	732	2 900	6 420	0,738	976
977	XCB7016C.DLR.T.P4S	80	125	22	25	1,1	1	15	1,8	4,7	2,6	12,2	88,0	117,0	1	0,6			94,2	53,6	4,98		26 000	185	640	1 350	73,9	125	176	562	2 070	4 580	0,738	977
978	XCB7016E.DLR.T.P4S	80	125	22	35	1,1	1	25	1,8	4,7	2,6	12,2	88,0	117,0	1	0,6			89,0	49,8	4,63		24 000	250	970	2 090	175	285	384	732	2 900	6 420	0,738	978
979	BS7016C.2RSD.T.P4S	80	125	22	27	1,1	0,6	17					88,0	117,0	1,1	0,6			43,4	28,2	2,33	16 000		241	640	1 353	83	122	170	715	1 970	4 350	0,87	979
980	BS7016E.2RSD.T.P4S	80	125	22	32	1,1	0,6	25					88,0	117,0	1,1	0,6			41,6	26,9	2,22	15 000		345	907	1 895	164	234	311	996	2 660	5 700	0,87	980
981	BS7016C.T.P4S	80	125	22	27	1,1	0,6	17					88,0	117,0	1,1	0,6			43,4	28,2	2,33	16 000	24 000	241	640	1 353	83	122	170	715	1 970	4 350	0,87	981
982	BS7016E.T.P4S	80	125	22	32	1,1	0,6	25					88,0	117,0	1,1	0,6			41,6	26,9	2,22	15 000	22 000	345	907	1 895	164	234	311	996	2 660	5 700	0,87	982
983	HCBS7016C.T.P4S	80	125	22	27	1,1	0,6	17					88,0	117,0	1,1	0,6			43,4	25,9	1,71	20 000	29 000	169	447	941	81	118	161	495	1 340	2 900	0,845	983
984	HCBS7016E.T.P4S	80	125	22	32	1,1	0,6	25					88,0	117,0	1,1	0,6			41,6	24,7	1,62	19 000	27 000	243	638	1 328	164	231	304	698	1 850	3 920	0,845	984
985	BS7016C.DLR.T.P4S	80	125	22	27	1,1	0,6	17	1,8	4,7	2,6	12,2	88,0	117,0	1,1	0,6			43,4	28,2	2,33		24 000	241	640	1 353	83	122	170	715	1 970	4 350	0,87	985
986	BS7016E.DLR.T.P4S	80	125	22	32	1,1	0,6	25	1,8	4,7	2,6	12,2	88,0	117,0	1,1	0,6			41,6	26,9	2,22		22 000	345	907	1 895	164	234	311	996	2 660	5 700	0,87	986
987	HCBS7016C.DLR.T.P4S	80	125	22	27	1,1	0,6	17	1,8	4,7	2,6	12,2	88,0	117,0	1,1	0,6			43,4	25,9	1,71		29 000	169	447	941	81	118	161	495	1 340	2 900	0,845	987
988	HCBS7016E.DLR.T.P4S	80	125	22	32	1,1	0,6	25	1,8	4,7	2,6	12,2	88,0	117,0	1,1	0,6			41,6	24,7	1,62		27 000	243	638	1 328	164	231	304	698	1 850	3 920	0,845	988
989	HS7016C.2RSD.T.P4S	80	125	22	25	1,1		15					88,0	117,0	1				31,3	21,8	1,09	15 000		109	327	654	59,0	93,0	128	323	1 024	2 150	0,960	989
990	HS7016E.2RSD.T.P4S	80	125	22	35	1,1		25					88,0	117,0	1				29,9	20,6	1,03	14 000		175	525	1 050	148	220	288	502	1 530	3 127	0,960	990

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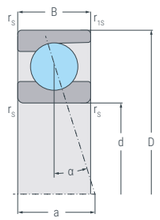
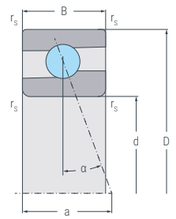
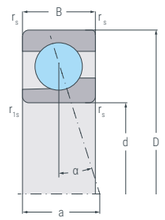
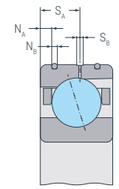
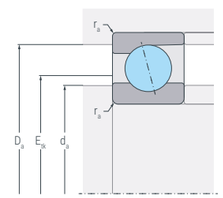
Spindle bearings
Dimensional tables of spindle bearings

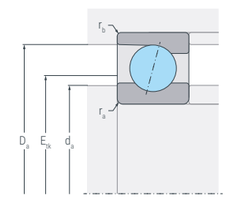


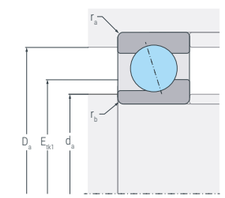


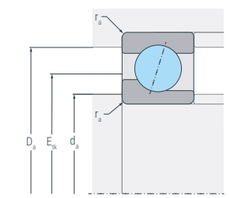












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
991	HC7016C.2RSD.T.P4S	80	125	22	25	1,1		15					88,0	117,0	1				31,3	20,0	0,784	19 000		74	222	444	57,0	88,0	119	219	682	1 418	0,915	991
992	HC7016E.2RSD.T.P4S	80	125	22	35	1,1		25					88,0	117,0	1				29,9	18,9	0,741	18 000		123	369	738	147	218	283	355	1 079	2 185	0,192	992
993	HS7016C.T.P4S	80	125	22	25	1,1		15					88,0	117,0	1		99,7	91	31,3	21,8	1,09	15 000	26 000	109	327	654	59,0	93,0	128	323	1 024	2 150	0,960	993
994	HS7016E.T.P4S	80	125	22	35	1,1		25					88,0	117,0	1		99,7	91	29,0	20,6	1,03	14 000	24 000	175	525	1 050	148	220	288	502	1 530	3 127	0,960	994
995	HC7016C.T.P4S	80	125	22	25	1,1		15					88,0	117,0	1		99,7	91	31,3	20,0	0,784	19 000	33 000	74	222	444	57,0	88,0	119	219	682	1 418	0,915	995
996	HC7016E.T.P4S	80	125	22	35	1,1		25					88,0	117,0	1		99,7	91	29,9	18,9	0,741	18 000	28 000	123	369	738	147	218	283	355	1 079	2 185	0,915	996
997	XC7016C.T.P4S	80	125	22	25	1,1		15					88,0	117,0	1		99,7	91	50,0	20,0	1,86	21 000	36 000	74	222	444	57,0	88,0	119	219	682	1 418	0,915	997
998	XC7016E.T.P4S	80	125	22	35	1,1		25					88,0	117,0	1		99,7	91	47,8	18,9	1,76	20 000	30 000	123	369	738	147	218	283	355	1 079	2 185	0,915	998
999	HS7016C.DLR.T.P4S	80	125	22	25	1,1		15	1,8	4,7	2,6	12,2	88,0	117,0	1				31,3	21,8	1,09		26 000	109	327	654	59,0	93,0	128	323	1 024	2 150	0,960	999
1000	HS7016E.DLR.T.P4S	80	125	22	35	1,1		25	1,8	4,7	2,6	12,2	88,0	117,0	1				29,0	20,6	1,03		24 000	175	525	1 050	148	220	288	502	1 530	3 127	0,960	1000
1001	HC7016C.DLR.T.P4S	80	125	22	25	1,1		15	1,8	4,7	2,6	12,2	88,0	117,0	1				31,3	20,0	0,784		33 000	74	222	444	57,0	88,0	119	219	682	1 418	0,915	1001
1002	HC7016E.DLR.T.P4S	80	125	22	35	1,1		25	1,8	4,7	2,6	12,2	88,0	117,0	1				29,9	18,9	0,741		28 000	123	369	738	147	218	283	355	1 079	2 185	0,915	1002
1003	XC7016C.DLR.T.P4S	80	125	22	25	1,1		15	1,8	4,7	2,6	12,2	88,0	117,0	1				50,0	20,0	1,86		36 000	74	222	444	57,0	88,0	119	219	682	1 418	0,915	1003
1004	XC7016E.DLR.T.P4S	80	125	22	35	1,1		25	1,8	4,7	2,6	12,2	88,0	117,0	1				47,8	18,9	1,76		30 000	123	369	738	147	218	283	355	1 079	2 185	0,915	1004
1005	B7216C.T.P4S	80	140	26	28	2	2	15					91,0	129,0	2	2	104,8		85,6	70,7	3,51	10 000	17 000	555	1 760	3 600	95,2	162	234	1 730	5 970	13 100	1,45	1005
1006	B7216E.T.P4S	80	140	26	39	2	2	25					91,0	129,0	2	2	104,8		81,2	67,4	3,35	9 000	15 000	840	2 780	5 750	222	351	475	2 470	8 470	18 100	1,45	1006
1007	HCB7216C.T.P4S	80	140	26	28	2	2	15					91,0	129,0	2	2	104,8		85,6	65,0	2,46	12 000	19 000	290	960	1 995	82,0	135	190	885	3 120	6 810	1,20	1007
1008	HCB7216E.T.P4S	80	140	26	39	2	2	25					91,0	129,0	2	2	104,8		81,2	62,0	2,34	11 000	18 000	420	1 515	3 200	196	312	416	1 240	4 560	9 860	1,20	1008
1009	B71917C.2RSD.T.P4S	85	120	18	23	1,1	1	15					92,0	114,0	0,6	0,6			44,7	41,4	2,13	11 000		240	806	1 675	80,1	138	200	734	2 680	5 980	0,536	1009
1010	B71917E.2RSD.T.P4S	85	120	18	33	1,1	1	25					92,0	114,0	0,6	0,6			42,7	38,6	1,99	10 000		335	1 230	2 630	185	300	410	981	3 710	8 200	0,536	1010
1011	B71917C.T.P4S	85	120	18	23	1,1	1	15					92,0	114,0	0,6	0,6	99,2		44,7	41,4	2,13	11 000	17 000	240	806	1 675	80,1	138	200	734	2 680	5 980	0,536	1011
1012	B71917E.T.P4S	85	120	18	33	1,1	1	25					92,0	114,0	0,6	0,6	99,2		42,7	38,6	1,99	10 000	15 000	335	1 230	2 630	185	300	410	981	3 710	8 200	0,536	1012
1013	B71917C.DLR.T.P4S	85	120	18	23	1,1	1	15	1,8	4,0	2,2	10,4	92,0	114,0	0,6	0,6			44,7	41,4	2,13		17 000	240	806	1 675	80,1	138	200	734	2 680	5 980	0,536	1013
1014	B71917E.DLR.T.P4S	85	120	18	33	1,1	1	25	1,8	4,0	2,2	10,4	92,0	114,0	0,6	0,6			42,7	38,6	1,99		15 000	335	1 230	2 630	185	300	410	981	3 710	8 200	0,536	1014
1015	HCB71917C.T.P4S	85	120	18	23	1,1	1	15					92,0	114,0	0,6	0,6	99,2		44,7	38,1	1,49	15 000	24 000	120	440	935	68,3	116	165	361	1 400	3 160	0,460	1015
1016	HCB71917E.T.P4S	85	120	18	33	1,1	1	25					92,0	114,0	0,6	0,6	99,2		42,7	35,5	1,39	14 000	22 000	148	640	1 440	158	267	362	431	1 920	4 390	0,460	1016
1017	XCB71917C.T.P4S	85	120	18	23	1,1	1	15					92,0	114,0	0,6	0,6	99,2		71,5	38,1	3,54	17 000	26 000	120	440	935	68,3	116	165	361	1 400	3 160	0,460	1017
1018	XCB71917E.T.P4S	85	120	18	33	1,1	1	25					92,0	114,0	0,6	0,6	99,2		68,4	35,5	3,29	15 000	24 000	148	640	1 440	158	267	362	431	1 920	4 390	0,460	1018
1019	HCB71917C.DLR.T.P4S	85	120	18	23	1,1	1	15	1,8	4,0	2,2	10,4	92,0	114,0	0,6	0,6			44,7	38,1	1,49		24 000	120	440	935	68,3	116	165	361	1 400	3 160	0,460	1019
1020	HCB71917E.DLR.T.P4S	85	120	18	33	1,1	1	25	1,8	4,0	2,2	10,4	92,0	114,0	0,6	0,6			42,7	35,5	1,39		22 000	148	640	1 440	158	267	362	431	1 920	4 390	0,460	1020
1021	XCB71917C.DLR.T.P4S	85	120	18	23	1,1	1	15	1,8	4,0	2,2	10,4	92,0	114,0	0,6	0,6			71,5	38,1	3,54		26 000	120	440	935	68,3	116	165	361	1 400	3 160	0,460	1021

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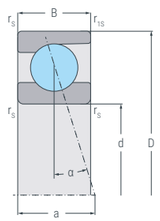
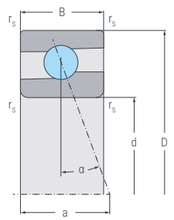
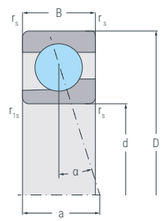
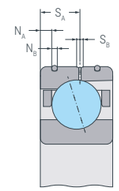
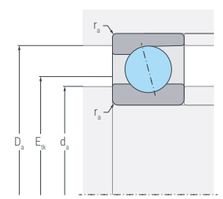
Spindle bearings
Dimensional tables of spindle bearings

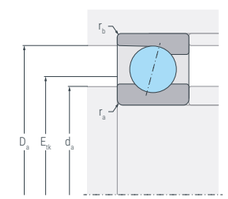


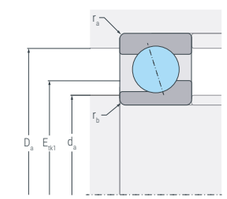


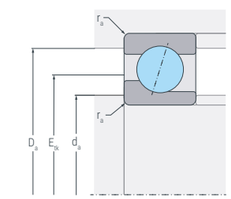








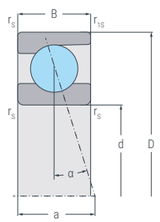


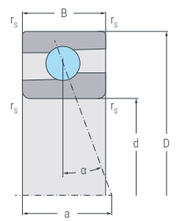


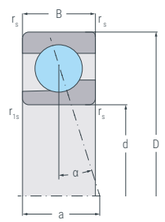
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1022	XCB71917E.DLR.T.P4S	85	120	18	33	1,1	1	25	1,8	4,0	2,2	10,4	92,0	114,0	0,6	0,6			68,4	35,5	3,29		24 000	148	640	1 440	158	267	362	431	1 920	4 390	0,460	1022
1023	HS71917C.2RSD.T.P4S	85	120	18	23	1,1		15					92,0	114,0	0,6				21,5	17,0	0,848	15 000		76	228	456	58,0	89,0	121	225	705	1 482	0,610	1023
1024	HS71917E.2RSD.T.P4S	85	120	18	33	1,1		25					92,0	114,0	0,6				20,6	16,0	0,824	14 000		123	369	738	142	210	274	352	1 071	2 184	0,610	1024
1025	HC71917C.2RSD.T.P4S	85	120	18	23	1,1		15					92,0	114,0	0,6				21,5	15,6	0,611	19 000		53	159	318	56,0	85,0	115	157	485	1 003	0,582	1025
1026	HC71917E.2RSD.T.P4S	85	120	18	33	1,1		25					92,0	114,0	0,6				20,6	14,7	0,577	18 000		84	252	504	141	208	269	242	739	1 499	0,582	1026
1027	HS71917C.T.P4S	85	120	18	23	1,1		15					92,0	114,0	0,6		100,4	99,1	21,5	17,0	0,848	15 000	24 000	76	228	456	58,0	89,0	121	225	705	1 482	0,610	1027
1028	HS71917E.T.P4S	85	120	18	33	1,1		25					92,0	114,0	0,6		100,4	99,1	20,6	16,0	0,824	14 000	22 000	123	369	738	142	210	274	352	1 071	2 184	0,610	1028
1029	HC71917C.T.P4S	85	120	18	23	1,1		15					92,0	114,0	0,6		100,4	99,1	21,5	15,6	0,611	19 000	30 000	53	159	318	56,0	85,0	115	157	485	1 003	0,582	1029
1030	HC71917E.T.P4S	85	120	18	33	1,1		25					92,0	114,0	0,6		100,4	99,1	20,6	14,7	0,577	18 000	28 000	84	252	504	141	208	269	242	739	1 499	0,582	1030
1031	XC71917C.T.P4S	85	120	18	23	1,1		15					92,0	114,0	0,6		100,4	99,1	34,4	15,6	1,45	22 000	34 000	53	159	318	56,0	85,0	115	157	485	1 003	0,582	1031
1032	XC71917E.T.P4S	85	120	18	33	1,1		25					92,0	114,0	0,6		100,4	99,1	32,9	14,7	1,37	20 000	30 000	84	252	504	141	208	269	242	739	1 499	0,582	1032
1033	HS71917C.DLR.T.P4S	85	120	18	23	1,1		15	1,8	4,0	2,2	10,4	92,0	114,0	0,6				21,5	17,0	0,848		24 000	76	228	456	58,0	89,0	121	225	705	1 482	0,610	1033
1034	HS71917E.DLR.T.P4S	85	120	18	33	1,1		25	1,8	4,0	2,2	10,4	92,0	114,0	0,6				20,6	16,0	0,824		22 000	123	369	738	142	210	274	352	1 071	2 184	0,610	1034
1035	HC71917C.DLR.T.P4S	85	120	18	23	1,1		15	1,8	4,0	2,2	10,4	92,0	114,0	0,6				21,5	15,6	0,611		30 000	53	159	318	56,0	85,0	115	157	485	1 003	0,582	1035
1036	HC71917E.DLR.T.P4S	85	120	18	33	1,1		25	1,8	4,0	2,2	10,4	92,0	114,0	0,6				20,6	14,7	0,577		28 000	84	252	504	141	208	269	242	739	1 499	0,582	1036
1037	XC71917C.DLR.T.P4S	85	120	18	23	1,1		15	1,8	4,0	2,2	10,4	92,0	114,0	0,6				34,4	15,6	1,45		34 000	53	159	318	56,0	85,0	115	157	485	1 003	0,582	1037
1038	XC71917E.DLR.T.P4S	85	120	18	33	1,1		25	1,8	4,0	2,2	10,4	92,0	114,0	0,6				32,9	14,7	1,37		30 000	84	252	504	141	208	269	242	739	1 499	0,582	1038
1039	B7017C.2RSD.T.P4S	85	130	22	25	1,1	1	15					93,0	122,0	1	0,6			60,1	60,8	3,06	11 000		372	1 205	2 480	90,1	154	223	1 150	4 070	8600	0,903	1039
1040	B7017E.2RSD.T.P4S	85	130	22	36	1,1	1	25					93,0	122,0	1	0,6			56,6	56,5	2,84	9 500		544	1 890	3 950	211	337	457	1 590	5 720	12 300	0,903	1040
1041	B7017C.T.P4S	85	130	22	25	1,1	1	15					93,0	122,0	1	0,6	103,3		60,1	60,8	3,06	11 000	16 000	372	1 205	2 480	90,1	154	223	1 150	4 070	8600	0,903	1041
1042	B7017E.T.P4S	85	130	22	36	1,1	1	25					93,0	122,0	1	0,6	103,3		56,6	56,5	2,84	9 500	15 000	544	1 890	3 950	211	337	457	1 590	5 720	12 300	0,903	1042
1043	B7017C.DLR.T.P4S	85	130	22	25	1,1	1	15	1,8	4,7	2,6	12,2	93,0	122,0	1	0,6			60,1	60,8	3,06		16 000	372	1 205	2 480	90,1	154	223	1 150	4 070	8600	0,903	1043
1044	B7017E.DLR.T.P4S	85	130	22	36	1,1	1	25	1,8	4,7	2,6	12,2	93,0	122,0	1	0,6			56,6	56,5	2,84		15 000	544	1 890	3 950	211	337	457	1 590	5 720	12 300	0,903	1044
1045	HCB7017C.T.P4S	85	130	22	25	1,1	1	15					93,0	122,0	1	0,6	103,3		60,1	55,9	2,14	15 000	22 000	190	666	1 400	78,0	130	185	585	2 150	4 770	0,778	1045
1046	HCB7017E.T.P4S	85	130	22	36	1,1	1	25					93,0	122,0	1	0,6	103,3		56,6	52,0	1,99	13 000	20 000	262	1 010	2 180	185	300	401	761	3 020	6 690	0,778	1046
1047	XCB7017C.T.P4S	85	130	22	25	1,1	1	15					93,0	122,0	1	0,6	103,3		96,1	55,9	5,07	16 000	26 000	190	666	1 400	78,0	130	185	585	2 150	4 770	0,778	1047
1048	XCB7017E.T.P4S	85	130	22	36	1,1	1	25					93,0	122,0	1	0,6	103,3		90,5	52,0	4,72	15 000	22 000	262	1 010	2 180	185	300	401	761	3 020	6 690	0,778	1048
1049	HCB7017C.DLR.T.P4S	85	130	22	25	1,1	1	15	1,8	4,7	2,6	12,2	93,0	122,0	1	0,6			60,1	55,9	2,14		22 000	190	666	1 400	78,0	130	185	585	2 150	4 770	0,778	1049
1050	HCB7017E.DLR.T.P4S	85	130	22	36	1,1	1	25	1,8	4,7	2,6	12,2	93,0	122,0	1	0,6			56,6	52,0	1,99		20 000	262	1 010	2 180	185	300	401	761	3 020	6 690	0,778	1050
1051	XCB7017C.DLR.T.P4S	85	130	22	25	1,1	1	15	1,8	4,7	2,6	12,2	93,0	122,0	1	0,6			96,1	55,9	5,07		26 000	190	666	1 400	78,0	130	185	585	2 150	4 770	0,778	1051
1052	XCB7017E.DLR.T.P4S	85	130	22	36	1,1	1	25	1,8	4,7	2,6	12,2	93,0	122,0	1	0,6			90,5	52,0	4,72		22 000	262	1 010	2 180	185	300	401	761	3 020	6 690	0,778	1052

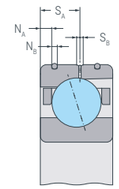
The current product data can be found in the online catalog on our website **https://www.slf-fraueuth.de/en/catalogue/**

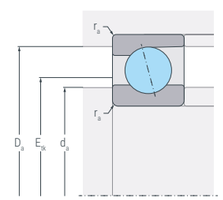
Spindle bearings
Dimensional tables of spindle bearings

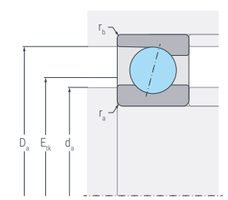


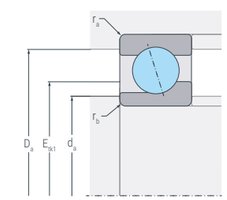


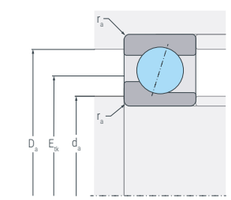








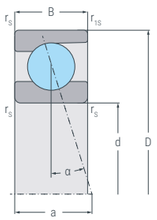


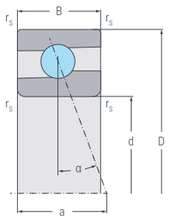


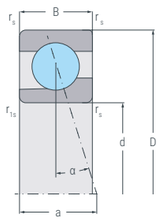
Symbol		Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
Bearing		d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1053	HS7017C.2RSD.T.P4S	85	130	22	25	1,1		15					93,0	122,0	1				32,0	22,6	1,11	15 000		109	327	654	61,0	95,0	130	323	1 022	2 144	0,990	1053
1054	HS7017E.2RSD.T.P4S	85	130	22	36	1,1		25					93,0	122,0	1				29,6	21,4	1,04	13 000		178	534	1 068	152	225	295	509	1 559	3 178	0,990	1054
1055	HC7017C.2RSD.T.P4S	85	130	22	25	1,1		15					93,0	122,0	1				32,0	20,8	0,796	19 000		76	228	456	60,0	92,0	123	225	700	1 452	0,942	1055
1056	HC7017E.2RSD.T.P4S	85	130	22	36	1,1		25					93,0	122,0	1				29,6	19,7	0,752	17 000		123	369	738	152	224	289	355	1 079	2 183	0,942	1056
1057	HS7017C.T.P4S	85	130	22	25	1,1		15					93,0	122,0	1		104,7	103,1	32,0	22,6	1,11	15 000	22 000	109	327	654	61,0	95,0	130	323	1 022	2 144	0,990	1057
1058	HS7017E.T.P4S	85	130	22	36	1,1		25					93,0	122,0	1		104,7	103,1	29,6	21,4	1,04	13 000	20 000	178	534	1068	152	225	295	509	1 559	3 178	0,990	1058
1059	HC7017C.T.P4S	85	130	22	25	1,1		15					93,0	122,0	1		104,7	103,1	32,0	20,8	0,796	19 000	28 000	76	228	456	60,0	92,0	123	225	700	1 452	0,942	1059
1060	HC7017E.T.P4S	85	130	22	36	1,1		25					93,0	122,0	1		104,7	103,1	29,6	19,7	0,752	17 000	26 000	123	369	738	152	224	289	355	1 079	2 183	0,942	1060
1061	XC7017C.T.P4S	85	130	22	25	1,1		15					93,0	122,0	1		104,7	103,1	51,1	20,8	1,890	21 000	32 000	76	228	456	60,0	92,0	123	225	700	1 452	0,942	1061
1062	XC7017E.T.P4S	85	130	22	36	1,1		25					93,0	122,0	1		104,7	103,1	47,3	19,7	1,780	19 000	30 000	123	369	738	152	224	289	355	1 079	2 183	0,942	1062
1063	HS7017C.DLR.T.P4S	85	130	22	25	1,1		15	1,8	4,7	2,6	12,2	93,0	122,0	1				32,0	22,6	1,11		22 000	109	327	654	61,0	95,0	130	323	1 022	2 144	0,990	1063
1064	HS7017E.DLR.T.P4S	85	130	22	36	1,1		25	1,8	4,7	2,6	12,2	93,0	122,0	1				29,6	21,4	1,04		20 000	178	534	1068	152	225	295	509	1 559	3 178	0,990	1064
1065	HC7017C.DLR.T.P4S	85	130	22	25	1,1		15	1,8	4,7	2,6	12,2	93,0	122,0	1				32,0	20,8	0,796		28 000	76	228	456	60,0	92,0	123	225	700	1 452	0,942	1065
1066	HC7017E.DLR.T.P4S	85	130	22	36	1,1		25	1,8	4,7	2,6	12,2	93,0	122,0	1				29,6	19,7	0,752		26 000	123	369	738	152	224	289	355	1 079	2 183	0,942	1066
1067	XC7017C.DLR.T.P4S	85	130	22	25	1,1		15	1,8	4,7	2,6	12,2	93,0	122,0	1				51,1	20,8	1,890		32 000	76	228	456	60,0	92,0	123	225	700	1 452	0,942	1067
1068	XC7017E.DLR.T.P4S	85	130	22	36	1,1		25	1,8	4,7	2,6	12,2	93,0	122,0	1				47,3	19,7	1,780		30 000	123	369	738	152	224	289	355	1 079	2 183	0,942	1068
1069	B7217C.T.P4S	85	150	28	30	2	2	15					98,0	138,0	2	2	112		104	85,2	3,97	9 000	15 000	575	1 830	3 740	100	170	245	1 790	6 170	13 600	1,85	1069
1070	B7217E.T.P4S	85	150	28	41	2	2	25					98,0	138,0	2	2	112		98,8	81,2	3,79	8 000	13 000	870	2 890	5 970	233	372	504	2 550	8780	18 700	1,85	1070
1071	HCB7217C.T.P4S	85	150	28	30	2	2	15					98,0	138,0	2	2	112		104	78,3	2,86	11 000	18 000	300	1 000	2 070	86,5	143	200	920	3 230	7 060	1,55	1071
1072	HCB7217E.T.P4S	85	150	28	41	2	2	25					98,0	138,0	2	2	112		98,8	74,7	2,73	10 000	17 000	439	1 570	3 325	205	329	442	1 280	4 720	10 200	1,55	1072
1073	B71818C.T.P4S	90	115	13	20	1	0,3	15					95,0	109,5	1	0,3	100,4		21,6	23,8	0,852	11 000	18 000	89	334	722	58	105	153	272	1 100	2 540	0,278	1073
1074	B71818E.T.P4S	90	115	13	30	1	0,3	25					95,0	109,5	1	0,3	100,4		19,8	22,1	0,788	9 500	16 000	108	490	1 110	130	225	315	314	1 470	3 420	0,278	1074
1075	B71918C.2RSD.T.P4S	90	125	18	23	1,1	1	15					97,0	119,0	0,6	0,6			45,9	42,9	2,16	11 000		242	810	1 690	82,5	142	206	740	2 700	6 020	0,565	1075
1076	B71918E.2RSD.T.P4S	90	125	18	34	1,1	1	25					97,0	119,0	0,6	0,6			43,0	39,9	2,01	9 500		339	1 240	2 660	190	310	424	985	3 740	8 270	0,565	1076
1077	B71918C.T.P4S	90	125	18	23	1,1	1	15					97,0	119,0	0,6	0,6	104,2		45,9	42,9	2,16	11 000	16 000	242	810	1 690	82,5	142	206	740	2 700	6 020	0,565	1077
1078	B71918E.T.P4S	90	125	18	34	1,1	1	25					97,0	119,0	0,6	0,6	104,2		43,0	39,9	2,01	9 500	15 000	339	1 240	2 660	190	310	424	985	3 740	8 270	0,565	1078
1079	B71918C.DLR.T.P4S	90	125	18	23	1,1	1	15	1,8	4,0	2,4	10,4	97,0	119,0	0,6	0,6			45,9	42,9	2,16		16 000	242	810	1 690	82,5	142	206	740	2 700	6 020	0,565	1079
1080	B71918E.DLR.T.P4S	90	125	18	34	1,1	1	25	1,8	4,0	2,4	10,4	97,0	119,0	0,6	0,6			43,0	39,9	2,01		15 000	339	1 240	2 660	190	310	424	985	3 740	8 270	0,565	1080
1081	HCB71918C.T.P4S	90	125	18	23	1,1	1	15					97,0	119,0	0,6	0,6	104,2		45,9	39,4	1,51	15 000	22 000	121	444	950	70,7	120	170	366	1 420	3 200	0,493	1081
1082	HCB71918E.T.P4S	90	125	18	34	1,1	1	25					97,0	119,0	0,6	0,6	104,2		43,0	36,7	1,41	13 000	20 000	150	650	1 460	162	275	375	433	1 950	4 460	0,493	1082
1083	XCB71918C.T.P4S	90	125	18	23	1,1	1	15					97,0	119,0	0,6	0,6	104,2		73,5	39,4	3,58	16 000	26 000	121	444	950	70,7	120	170	366	1 420	3 200	0,493	1083

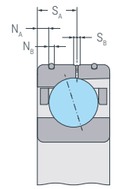
The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

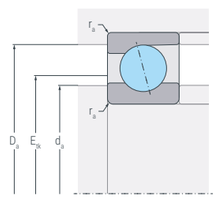
Spindle bearings
Dimensional tables of spindle bearings

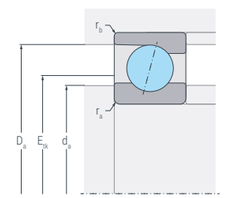


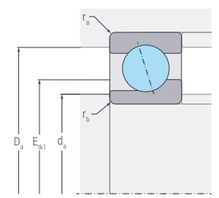


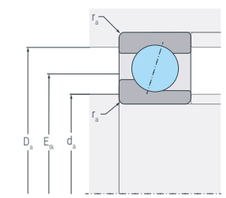






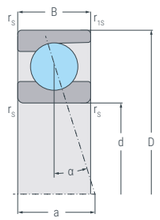


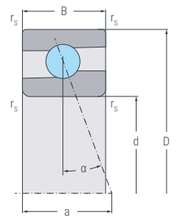


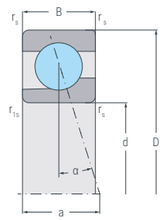


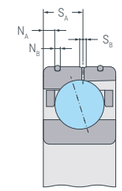
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1084	XCB71918E.T.P4S	90	125	18	34	1,1	1	25					97,0	119,0	0,6	0,6	104,2		68,8	36,7	3,33	15 000	22 000	150	650	1 460	162	275	375	433	1 950	4 460	0,493	1084
1085	HCB71918C.DLR.T.P4S	90	125	18	23	1,1	1	15	1,8	4,0	2,4	10,4	97,0	119,0	0,6	0,6			45,9	39,4	1,51		22 000	121	444	950	70,7	120	170	366	1 420	3 200	0,493	1085
1086	HCB71918E.DLR.T.P4S	90	125	18	34	1,1	1	25	1,8	4,0	2,4	10,4	97,0	119,0	0,6	0,6			43,0	36,7	1,41		20 000	150	650	1 460	162	275	375	433	1 950	4 460	0,493	1086
1087	XCB71918C.DLR.T.P4S	90	125	18	23	1,1	1	15	1,8	4,0	2,4	10,4	97,0	119,0	0,6	0,6			73,5	39,4	3,58		26 000	121	444	950	70,7	120	170	366	1 420	3 200	0,493	1087
1088	XCB71918E.DLR.T.P4S	90	125	18	34	1,1	1	25	1,8	4,0	2,4	10,4	97,0	119,0	0,6	0,6			68,8	36,7	3,33		22 000	150	650	1 460	162	275	375	433	1 950	4 460	0,493	1088
1089	HS71918C.2RSD.T.P4S	90	125	18	23	1,1		15					97,0	119,0	0,6				23,4	18,7	0,914	15 000		83	249	498	58,0	91,0	125	246	772	1 620	0,630	1089
1090	HS71918E.2RSD.T.P4S	90	125	18	34	1,1		25					97,0	119,0	0,6				22,4	17,7	0,863	13 000		133	399	798	146	215	280	381	1 158	2 362	0,630	1090
1091	HC71918C.2RSD.T.P4S	90	125	18	23	1,1		15					97,0	119,0	0,6				23,4	17,2	0,659	19 000		57	171	342	56,0	87,0	117	168	520	1 078	0,598	1091
1092	HC71918E.2RSD.T.P4S	90	125	18	34	1,1		25					97,0	119,0	0,6				22,4	16,2	0,622	17 000		92	276	552	145	215	277	265	807	1 636	0,598	1092
1093	HS71918C.T.P4S	90	125	18	23	1,1		15					97,0	119,0	0,6		105,2	103,9	23,4	18,7	0,914	15 000	22 000	83	249	498	58,0	91,0	125	246	772	1 620	0,630	1093
1094	HS71918E.T.P4S	90	125	18	34	1,1		25					97,0	119,0	0,6		105,2	103,9	22,4	17,7	0,863	13 000	20 000	133	399	798	146	215	280	381	1 158	2 362	0,630	1094
1095	HC71918C.T.P4S	90	125	18	23	1,1		15					97,0	119,0	0,6		105,2	103,9	23,4	17,2	0,659	19 000	28 000	57	171	342	56,0	87,0	117	168	520	1 078	0,598	1095
1096	HC71918E.T.P4S	90	125	18	34	1,1		25					97,0	119,0	0,6		105,2	103,9	22,4	16,2	0,622	17 000	26 000	92	276	552	145	215	277	265	807	1 636	0,598	1096
1097	XC71918C.T.P4S	90	125	18	23	1,1		15					97,0	119,0	0,6		105,2	103,9	37,4	17,2	1,56	21 000	32 000	57	171	342	56,0	87,0	117	168	520	1 078	0,598	1097
1098	XC71918E.T.P4S	90	125	18	34	1,1		25					97,0	119,0	0,6		105,2	103,9	35,8	16,2	1,47	19 000	30 000	92	276	552	145	215	277	265	807	1 636	0,598	1098
1099	HS71918C.DLR.T.P4S	90	125	18	23	1,1		15	1,8	4,0	2,4	10,4	97,0	119,0	0,6				23,4	18,7	0,914		22 000	83	249	498	58,0	91,0	125	246	772	1 620	0,630	1099
1100	HS71918E.DLR.T.P4S	90	125	18	34	1,1		25	1,8	4,0	2,4	10,4	97,0	119,0	0,6				22,4	17,7	0,863		20 000	133	399	798	146	215	280	381	1 158	2 362	0,630	1100
1101	HC71918C.DLR.T.P4S	90	125	18	23	1,1		15	1,8	4,0	2,4	10,4	97,0	119,0	0,6				23,4	17,2	0,659		28 000	57	171	342	56,0	87,0	117	168	520	1 078	0,598	1101
1102	HC71918E.DLR.T.P4S	90	125	18	34	1,1		25	1,8	4,0	2,4	10,4	97,0	119,0	0,6				22,4	16,2	0,622		26 000	92	276	552	145	215	277	265	807	1 636	0,598	1102
1103	XC71918C.DLR.T.P4S	90	125	18	23	1,1		15	1,8	4,0	2,4	10,4	97,0	119,0	0,6				37,4	17,2	1,56		32 000	57	171	342	56,0	87,0	117	168	520	1 078	0,598	1103
1104	XC71918E.DLR.T.P4S	90	125	18	34	1,1		25	1,8	4,0	2,4	10,4	97,0	119,0	0,6				35,8	16,2	1,47		30 000	92	276	552	145	215	277	265	807	1 636	0,598	1104
1105	B7018C.2RSD.T.P4S	90	140	24	27	1,5	1,1	15					100,0	131,0	1,5	0,6			76,2	76,0	3,69	10 000		440	1 430	2 930	96,2	164	235	1 370	4 800	10 500	1,18	1105
1106	B7018E.2RSD.T.P4S	90	140	24	39	1,5	1,1	25					100,0	131,0	1,5	0,6			72,9	70,6	3,43	9 000		650	2 220	4 630	223	357	482	1 900	6730	14 400	1,18	1106
1107	B7018C.T.P4S	90	140	24	27	1,5	1,1	15					100,0	131,0	1,5	0,6	110,2		76,2	76,0	3,69	10 000	16 000	440	1 430	2 930	96,2	164	235	1 370	4 800	10 500	1,18	1107
1108	B7018E.T.P4S	90	140	24	39	1,5	1,1	25					100,0	131,0	1,5	0,6	110,2		72,9	70,6	3,43	9 000	14 000	650	2 220	4 630	223	357	482	1 900	6730	14 400	1,18	1108
1109	B7018C.DLR.T.P4S	90	140	24	27	1,5	1,1	15	1,8	4,4	2,6	13,3	100,0	131,0	1,5	0,6			76,2	76,0	3,69		16 000	440	1 430	2 930	96,2	164	235	1 370	4 800	10 500	1,18	1109
1110	B7018E.DLR.T.P4S	90	140	24	39	1,5	1,1	25	1,8	4,4	2,6	13,3	100,0	131,0	1,5	0,6			72,9	70,6	3,43		14 000	650	2 220	4 630	223	357	482	1 900	6730	14 400	1,18	1110
1111	HCB7018C.T.P4S	90	140	24	27	1,5	1,1	15					100,0	131,0	1,5	0,6	110,2		76,2	69,9	2,58	14 000	22 000	223	777	1 620	83,2	136	192	688	2 500	5 510	0,996	1111
1112	HCB7018E.T.P4S	90	140	24	39	1,5	1,1	25					100,0	131,0	1,5	0,6	110,2		72,9	64,9	2,40	12 000	19 000	320	1 205	2 590	198	320	428	933	3 620	7 920	0,996	1112
1113	XCB7018C.T.P4S	90	140	24	27	1,5	1,1	15					100,0	131,0	1,5	0,6	110,2		122	69,9	6,13	15 000	24 000	223	777	1 620	83,2	136	192	688	2 500	5 510	0,996	1113
1114	XCB7018E.T.P4S	90	140	24	39	1,5	1,1	25					100,0	131,0	1,5	0,6	110,2		117	64,9	5,69	14 000	22 000	320	1 205	2 590	198	320	428	933	3 620	7 920	0,996	1114

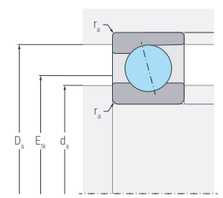
Spindle bearings
Dimensional tables of spindle bearings

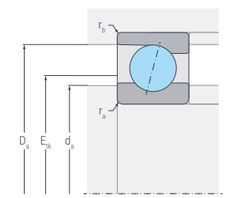


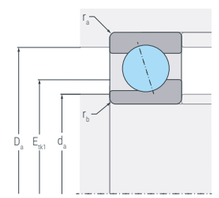


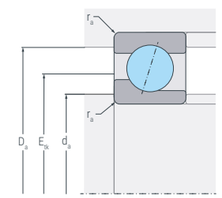








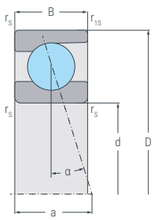


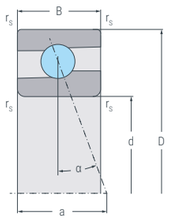


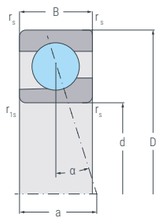
Symbol		Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
Bearing		d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1115	HCB7018C.DLR.T.P4S	90	140	24	27	1,5	1,1	15	1,8	4,4	2,6	13,3	100,0	131,0	1,5	0,6			76,2	69,9	2,58		22 000	223	777	1 620	83,2	136	192	688	2 500	5 510	0,996	1115
1116	HCB7018E.DLR.T.P4S	90	140	24	39	1,5	1,1	25	1,8	4,4	2,6	13,3	100,0	131,0	1,5	0,6			72,9	64,9	2,40		19 000	320	1 205	2 590	198	320	428	933	3 620	7 920	0,996	1116
1117	XCB7018C.DLR.T.P4S	90	140	24	27	1,5	1,1	15	1,8	4,4	2,6	13,3	100,0	131,0	1,5	0,6			122	69,9	6,13		24 000	223	777	1 620	83,2	136	192	688	2 500	5 510	0,996	1117
1118	XCB7018E.DLR.T.P4S	90	140	24	39	1,5	1,1	25	1,8	4,4	2,6	13,3	100,0	131,0	1,5	0,6			117	64,9	5,69		22 000	320	1 205	2 590	198	320	428	933	3 620	7 920	0,996	1118
1119	HS7018C.2RSD.T.P4S	90	140	24	27	1,5		15					100,0	131,0	1,5				37,4	26,6	1,26	14 000		130	390	780	66,0	104	142	386	1 212	2 536	1,31	1119
1120	HS7018E.2RSD.T.P4S	90	140	24	39	1,5		25					100,0	131,0	1,5				35,8	25,1	1,19	12 000		207	621	1 242	165	245	318	592	1 813	3 689	1,31	1120
1121	HC7018C.2RSD.T.P4S	90	140	24	27	1,5		15					100,0	131,0	1,5				37,4	24,5	0,905	18 000		89	267	534	64,0	99,5	134	264	823	1 706	1,25	1121
1122	HC7018E.2RSD.T.P4S	90	140	24	39	1,5		25					100,0	131,0	1,5				35,8	23,1	0,855	16 000		146	438	876	165	245	315	422	1 278	2 593	1,25	1122
1123	HS7018C.T.P4S	90	140	24	27	1,5		15					100,0	131,0	1,5		112	110,2	37,4	26,6	1,26	14 000	22 000	130	390	780	66,0	104	142	386	1 212	2 536	1,31	1123
1124	HS7018E.T.P4S	90	140	24	39	1,5		25					100,0	131,0	1,5		112	110,2	35,8	25,1	1,19	12 000	18 000	207	621	1 242	165	245	318	592	1 813	3 689	1,31	1124
1125	HC7018C.T.P4S	90	140	24	27	1,5		15					100,0	131,0	1,5		112	110,2	37,4	24,5	0,905	18 000	27 000	89	267	534	64,0	99,5	134	264	823	1 706	1,25	1125
1126	HC7018E.T.P4S	90	140	24	39	1,5		25					100,0	131,0	1,5		112	110,2	35,8	23,1	0,855	16 000	24 000	146	438	876	165	245	315	422	1 278	2 593	1,25	1126
1127	XC7018C.T.P4S	90	140	24	27	1,5		15					100,0	131,0	1,5		112	110,2	59,8	24,5	2,14	20 000	31 000	89	267	534	64,0	99,5	134	264	823	1 706	1,25	1127
1128	XC7018E.T.P4S	90	140	24	39	1,5		25					100,0	131,0	1,5		112	110,2	57,2	23,1	2,03	18 000	28 000	146	438	876	165	245	315	422	1 278	2 593	1,25	1128
1129	HS7018C.DLR.T.P4S	90	140	24	27	1,5		15	1,8	4,4	2,6	13,3	100,0	131,0	1,5				37,4	26,6	1,26		22 000	130	390	780	66,0	104	142	386	1 212	2 536	1,31	1129
1130	HS7018E.DLR.T.P4S	90	140	24	39	1,5		25	1,8	4,4	2,6	13,3	100,0	131,0	1,5				35,8	25,1	1,19		18 000	207	621	1 242	165	245	318	592	1 813	3 689	1,31	1130
1131	HC7018C.DLR.T.P4S	90	140	24	27	1,5		15	1,8	4,4	2,6	13,3	100,0	131,0	1,5				37,4	24,5	0,905		27 000	89	267	534	64,0	99,5	134	264	823	1 706	1,25	1131
1132	HC7018E.DLR.T.P4S	90	140	24	39	1,5		25	1,8	4,4	2,6	13,3	100,0	131,0	1,5				35,8	23,1	0,855		24 000	146	438	876	165	245	315	422	1 278	2 593	1,25	1132
1133	XC7018C.DLR.T.P4S	90	140	24	27	1,5		15	1,8	4,4	2,6	13,3	100,0	131,0	1,5				59,8	24,5	2,14		31 000	89	267	534	64,0	99,5	134	264	823	1 706	1,25	1133
1134	XC7018E.DLR.T.P4S	90	140	24	39	1,5		25	1,8	4,4	2,6	13,3	100,0	131,0	1,5				57,2	23,1	2,03		28 000	146	438	876	165	245	315	422	1 278	2 593	1,25	1134
1135	B7218C.T.P4S	90	160	30	32	2	2	15					104,0	147,0	2	2	119		120	110	5,00	8 500	14 000	740	2 330	4 750	110	186	268	2 300	7 900	17 200	2,25	1135
1136	B7218E.T.P4S	90	160	30	44	2	2	25					104,0	147,0	2	2	119		114	105	4,77	7 500	12 000	1 140	3 720	7 650	256	405	550	3 340	11 300	24 100	2,25	1136
1137	HCB7218C.T.P4S	90	160	30	32	2	2	15					104,0	147,0	2	2	119		120	101	3,60	11 000	18 000	400	1 310	2 690	96,5	158	221	1 220	4 250	9 220	1,87	1137
1138	HCB7218E.T.P4S	90	160	30	44	2	2	25					104,0	147,0	2	2	119		114	96,8	3,43	9 000	15 000	580	2 020	4 250	231	363	485	1 700	6 080	13 100	1,87	1138
1139	B71919C.2RSD..T.P4S	95	130	18	24	1,1	1	15					102,0	124,0	0,6	0,6			47,1	44,4	2,18	10 000		244	830	1 720	84,6	146	212	751	2 750	6 130	0,578	1139
1140	B71919E.2RSD.T.P4S	95	130	18	35	1,1	1	25					102,0	124,0	0,6	0,6			44,1	41,3	2,03	9 000		345	1 270	2 715	195	321	437	1 000	3 820	8 440	0,578	1140
1141	B71919C.T.P4S	95	130	18	24	1,1	1	15					102,0	124,0	0,6	0,6	109,2		47,1	44,4	2,18	10 000	16 000	244	830	1 720	84,6	146	212	751	2 750	6 130	0,578	1141
1142	B71919E.T.P4S	95	130	18	35	1,1	1	25					102,0	124,0	0,6	0,6	109,2		44,1	41,3	2,03	9 000	14 000	345	1 270	2 715	195	321	437	1 000	3 820	8 440	0,578	1142
1143	B71919C.DLR.T.P4S	95	130	18	24	1,1	1	15	1,8	4,0	2,4	10,4	102,0	124,0	0,6	0,6			47,1	44,4	2,18		16 000	244	830	1 720	84,6	146	212	751	2 750	6 130	0,578	1143
1144	B71919E.DLR.T.P4S	95	130	18	35	1,1	1	25	1,8	4,0	2,4	10,4	102,0	124,0	0,6	0,6			44,1	41,3	2,03		14 000	345	1 270	2 715	195	321	437	1 000	3 820	8 440	0,578	1144
1145	HCB71919C.T.P4S	95	130	18	24	1,1	1	15					102,0	124,0	0,6	0,6	109,2		47,1	40,8	1,53	14 000	22 000	120	440	950	72,8	124	175	362	1 410	3 180	0,495	1145

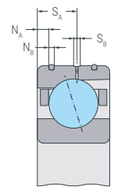
The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

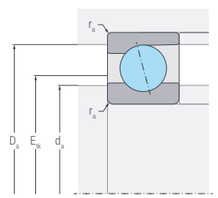
Spindle bearings
Dimensional tables of spindle bearings

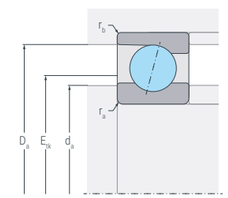


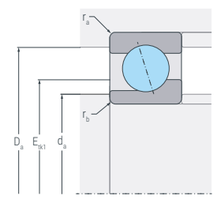


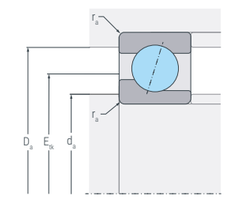






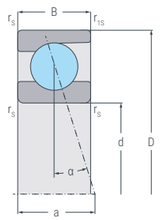


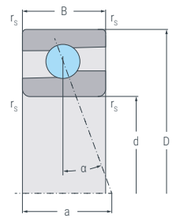


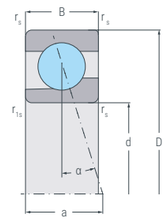


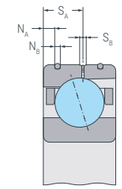
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1146	HCB71919E.T.P4S	95	130	18	35	1,1	1	25					102,0	124,0	0,6	0,6	109,2		44,1	38,0	1,43	13 000	19 000	150	665	1 480	166	285	385	433	1 980	4 540	0,495	1146
1147	XCB71919C.T.P4S	95	130	18	24	1,1	1	15					102,0	124,0	0,6	0,6	109,2		75,4	40,8	3,62	16 000	26 000	120	440	950	72,8	124	175	362	1 410	3 180	0,495	1147
1148	XCB71919E.T.P4S	95	130	18	35	1,1	1	25					102,0	124,0	0,6	0,6	109,2		70,6	38,0	3,37	14 000	22 000	150	665	1 480	166	285	385	433	1 980	4 540	0,495	1148
1149	HCB71919C.DLR.T.P4S	95	130	18	24	1,1	1	15	1,8	4,0	2,4	10,4	102,0	124,0	0,6	0,6			47,1	40,8	1,53		22 000	120	440	950	72,8	124	175	362	1 410	3 180	0,495	1149
1150	HCB71919E.DLR.T.P4S	95	130	18	35	1,1	1	25	1,8	4,0	2,4	10,4	102,0	124,0	0,6	0,6			44,1	38,0	1,43		19 000	150	665	1 480	166	285	385	433	1 980	4 540	0,495	1150
1151	XCB71919C.DLR.T.P4S	95	130	18	24	1,1	1	15	1,8	4,0	2,4	10,4	102,0	124,0	0,6	0,6			75,4	40,8	3,62		26 000	120	440	950	72,8	124	175	362	1 410	3 180	0,495	1151
1152	XCB71919E.DLR.T.P4S	95	130	18	35	1,1	1	25	1,8	4,0	2,4	10,4	102,0	124,0	0,6	0,6			70,6	38,0	3,37		22 000	150	665	1 480	166	285	385	433	1 980	4 540	0,495	1152
1153	HS71919C.2RSD.T.P4S	95	130	18	24	1,1		15					102,0	124,0	0,6				24,3	19,8	0,947	14 000		85	255	509	60,8	94,8	129	252	789	1 651	0,660	1153
1154	HS71919E.2RSD.T.P4S	95	130	18	35	1,1		25					102,0	124,0	0,6				23,2	18,7	0,894	13 000		138	414	828	153	227	295	395	1 205	2 455	0,660	1154
1155	HC71919C.2RSD.T.P4S	95	130	18	24	1,1		15					102,0	124,0	0,6				24,3	18,3	0,683	18 000		59	177	354	59,7	91,4	123	174	541	1 122	0,626	1155
1156	HC71919E.2RSD.T.P4S	95	130	18	35	1,1		25					102,0	124,0	0,6				23,2	17,2	0,644	16 000		96	288	575	153	226	290	277	842	1 704	0,626	1156
1157	HS71919C.T.P4S	95	130	18	24	1,1		15					102,0	124,0	0,6		110,2	103,9	24,3	19,8	0,947	14 000	22 000	85	255	509	60,8	94,8	129	252	789	1 651	0,660	1157
1158	HS71919E.T.P4S	95	130	18	35	1,1		25					102,0	124,0	0,6		110,2	103,9	23,2	18,7	0,894	13 000	19 000	138	414	828	153	227	295	395	1 205	2 455	0,660	1158
1159	HC71919C.T.P4S	95	130	18	24	1,1		15					102,0	124,0	0,6		110,2	103,9	24,3	18,3	0,683	18 000	28 000	59	177	354	59,7	91,4	123	174	541	1 122	0,626	1159
1160	HC71919E.T.P4S	95	130	18	35	1,1		25					102,0	124,0	0,6		110,2	103,9	23,2	17,2	0,644	16 000	24 000	96	288	575	153	226	290	277	842	1 704	0,626	1160
1161	XC71919C.T.P4S	95	130	18	24	1,1		15					102,0	124,0	0,6		110,2	103,9	38,8	18,3	1,62	20 000	30 000	59	177	354	59,7	91,4	123	174	541	1 122	0,626	1161
1162	XC71919E.T.P4S	95	130	18	35	1,1		25					102,0	124,0	0,6		110,2	103,9	37,1	17,2	1,53	18 000	28 000	96	288	575	153	226	290	277	842	1 704	0,626	1162
1163	HS71919C.DLR.T.P4S	95	130	18	24	1,1		15	1,8	4,0	2,4	10,4	102,0	124,0	0,6				24,3	19,8	0,947		22 000	85	255	509	60,8	94,8	129	252	789	1 651	0,660	1163
1164	HS71919E.DLR.T.P4S	95	130	18	35	1,1		25	1,8	4,0	2,4	10,4	102,0	124,0	0,6				23,2	18,7	0,894		19 000	138	414	828	153	227	295	395	1 205	2 455	0,660	1164
1165	HC71919C.DLR.T.P4S	95	130	18	24	1,1		15	1,8	4,0	2,4	10,4	102,0	124,0	0,6				24,3	18,3	0,683		28 000	59	177	354	59,7	91,4	123	174	541	1 122	0,626	1165
1166	HC71919E.DLR.T.P4S	95	130	18	35	1,1		25	1,8	4,0	2,4	10,4	102,0	124,0	0,6				23,2	17,2	0,644		24 000	96	288	575	153	226	290	277	842	1 704	0,626	1166
1167	XC71919C.DLR.T.P4S	95	130	18	24	1,1		15	1,8	4,0	2,4	10,4	102,0	124,0	0,6				38,8	18,3	1,62		30 000	59	177	354	59,7	91,4	123	174	541	1 122	0,626	1167
1168	XC71919E.DLR.T.P4S	95	130	18	35	1,1		25	1,8	4,0	2,4	10,4	102,0	124,0	0,6				37,1	17,2	1,53		28 000	96	288	575	153	226	290	277	842	1 704	0,626	1168
1169	B7019C.2RSD.T.P4S	95	145	24	28	1,5	1,1	15					105,0	136,0	1,5	0,6			78,9	73,0	3,47	9 500		450	1 450	2 980	99,1	169	248	1 390	4 880	10 700	1,19	1169
1170	B7019E.2RSD.T.P4S	95	145	24	40	1,5	1,1	25					105,0	136,0	1,5	0,6			74,5	69,0	3,28	8 500		670	2 315	4 815	234	374	506	1 980	7 000	15 100	1,19	1170
1171	B7019C.T.P4S	95	145	24	28	1,5	1,1	15					105,0	136,0	1,5	0,6	115,2		78,9	73,0	3,47	9 500	15 000	450	1 450	2 980	99,1	169	248	1 390	4 880	10 700	1,19	1171
1172	B7019E.T.P4S	95	145	24	40	1,5	1,1	25					105,0	136,0	1,5	0,6	115,2		74,5	69,0	3,28	8 500	13 000	670	2 315	4 815	234,4	374	506	1 980	7 000	15 100	1,19	1172
1173	B7019C.DLR.T.P4S	95	145	24	28	1,5	1,1	15	1,8	5,5	2,6	14,5	105,0	136,0	1,5	0,6			78,9	73,0	3,47		15 000	450	1 450	2 980	99,1	169	248	1 390	4 880	10 700	1,19	1173
1174	B7019E.DLR.T.P4S	95	145	24	40	1,5	1,1	25	1,8	5,5	2,6	14,5	105,0	136,0	1,5	0,6			74,5	69,0	3,28		13 000	670	2 315	4 815	234,4	374	506	1 980	7 000	15 100	1,19	1174
1175	HCB7019C.T.P4S	95	145	24	28	1,5	1,1	15					105,0	136,0	1,5	0,6	115,2		78,9	67,2	2,43	13 000	20 000	240	815	1 690	86,7	145	203	721	1 610	5 750	1,02	1175
1176	HCB7019E.T.P4S	95	145	24	40	1,5	1,1	25					105,0	136,0	1,5	0,6	115,2		74,5	63,4	2,30	12 000	18 000	325	1 230	2 650	205	332	445	951	3 690	8 090	1,02	1176

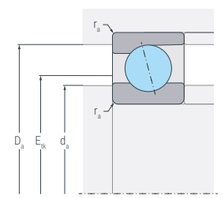
Spindle bearings
Dimensional tables of spindle bearings

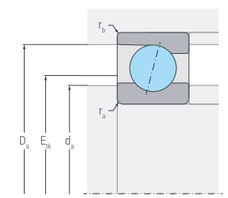


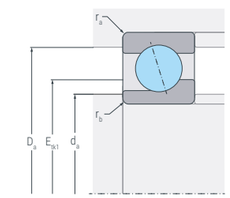


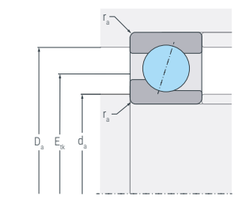












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1177	XCB7019C.T.P4S	95	145	24	28	1,5	1,1	15					105,0	136,0	1,5	0,6	115,2		126	67,2	5,76	15 000	24 000	240	815	1 690	86,7	145	203	721	1 610	5 750	1,02	1177
1178	XCB7019E.T.P4S	95	145	24	40	1,5	1,1	25					105,0	136,0	1,5	0,6	115,2		119	63,4	5,45	13 000	20 000	325	1 230	2 650	205	332	445	951	3 690	8 090	1,02	1178
1179	HCB7019C.DLR.T.P4S	95	145	24	28	1,5	1,1	15	1,8	5,5	2,6	14,5	105,0	136,0	1,5	0,6			78,9	67,2	2,43		20 000	240	815	1 690	86,7	145	203	721	1 610	5 750	1,02	1179
1180	HCB7019E.DLR.T.P4S	95	145	24	40	1,5	1,1	25	1,8	5,5	2,6	14,5	105,0	136,0	1,5	0,6			74,5	63,4	2,30		18 000	325	1 230	2 650	205	332	445	951	3 690	8 090	1,02	1180
1181	XCB7019C.DLR.T.P4S	95	145	24	28	1,5	1,1	15	1,8	5,5	2,6	14,5	105,0	136,0	1,5	0,6			126	67,2	5,76		24 000	240	815	1 690	86,7	145	203	721	1 610	5 750	1,02	1181
1182	XCB7019E.DLR.T.P4S	95	145	24	40	1,5	1,1	25	1,8	5,5	2,6	14,5	105,0	136,0	1,5	0,6			119	63,4	5,45		20 000	325	1 230	2 650	205	332	445	951	3 690	8 090	1,02	1182
1183	HS7019C.2RSD.T.P4S	95	145	24	28	1,5		15					105,0	136,0	1,5				38,2	27,6	1,28	13 000		130	390	780	67,5	105	144	385	1 210	2 529	1,34	1183
1184	HS7019E.2RSD.T.P4S	95	145	24	40	1,5		25					105,0	136,0	1,5				35,4	26,1	1,20	12 000		211	633	1 266	170	252	328	604	1 847	3 756	1,34	1184
1185	HC7019C.2RSD.T.P4S	95	145	24	28	1,5		15					105,0	136,0	1,5				38,2	25,4	0,920	16 000		89	267	534	65,0	101	135	263	822	1 702	1,28	1185
1186	HC7019E.2RSD.T.P4S	95	145	24	40	1,5		25					105,0	136,0	1,5				35,4	24,0	0,869	15 000		146	438	876	169	249	321	422	1 277	2 591	1,28	1186
1187	HS7019C.T.P4S	95	145	24	28	1,5		15					105,0	136,0	1,5		117	115,2	38,2	27,6	1,28	13 000	20 000	130	390	780	67,5	105	144	385	1 210	2 529	1,34	1187
1188	HS7019E.T.P4S	95	145	24	40	1,5		25					105,0	136,0	1,5		117	115,2	35,4	26,1	1,20	12 000	18 000	211	633	1 266	170	252	328	604	1 847	3 756	1,34	1188
1189	HC7019C.T.P4S	95	145	24	28	1,5		15					105,0	136,0	1,5		117	115,2	38,2	25,4	0,920	16 000	25 000	89	267	534	65,0	101	135	263	822	1 702	1,28	1189
1190	HC7019E.T.P4S	95	145	24	40	1,5		25					105,0	136,0	1,5		117	115,2	35,4	24,0	0,869	15 000	24 000	146	438	876	169	249	321	422	1 277	2 591	1,28	1190
1191	XC7019C.T.P4S	95	145	24	28	1,5		15					105,0	136,0	1,5		117	115,2	61,1	25,4	2,18	19 000	28 000	89	267	534	65,0	101	135	263	822	1 702	1,28	1191
1192	XC7019E.T.P4S	95	145	24	40	1,5		25					105,0	136,0	1,5		117	115,2	56,6	24,0	2,06	17 000	26 000	146	438	876	169	249	321	422	1 277	2 591	1,28	1192
1193	HS7019C.DLR.T.P4S	95	145	24	28	1,5		15	1,8	5,5	2,6	14,5	105,0	136,0	1,5				38,2	27,6	1,28		20 000	130	390	780	67,5	105	144	385	1 210	2 529	1,34	1193
1194	HS7019E.DLR.T.P4S	95	145	24	40	1,5		25	1,8	5,5	2,6	14,5	105,0	136,0	1,5				35,4	26,1	1,20		18 000	211	633	1 266	170	252	328	604	1 847	3 756	1,34	1194
1195	HC7019C.DLR.T.P4S	95	145	24	28	1,5		15	1,8	5,5	2,6	14,5	105,0	136,0	1,5				38,2	25,4	0,920		25 000	89	267	534	65,0	101	135	263	822	1 702	1,28	1195
1196	HC7019E.DLR.T.P4S	95	145	24	40	1,5		25	1,8	5,5	2,6	14,5	105,0	136,0	1,5				35,4	24,0	0,869		24 000	146	438	876	169	249	321	422	1 277	2 591	1,28	1196
1197	XC7019C.DLR.T.P4S	95	145	24	28	1,5		15	1,8	5,5	2,6	14,5	105,0	136,0	1,5				61,1	25,4	2,18		28 000	89	267	534	65,0	101	135	263	822	1 702	1,28	1197
1198	XC7019E.DLR.T.P4S	95	145	24	40	1,5		25	1,8	5,5	2,6	14,5	105,0	136,0	1,5				56,6	24,0	2,06		26 000	146	438	876	169	249	321	422	1 277	2 591	1,28	1198
1199	B7219C.T.P4S	95	170	32	34	2,1	2,1	15					110,5	154,0	2	2	125,8		128	107	4,72	8 000	13 000	770	2 430	4 930	115	196	282	2 390	8 200	17 900	2,72	1199
1200	B7219E.T.P4S	95	170	32	47	2,1	2,1	25					110,5	154,0	2	2	125,8		121	102	4,50	7 000	11 000	1 195	3 900	8 040	274	432	582	3 500	11 900	25 300	2,72	1200
1201	HCB7219C.T.P4S	95	170	32	34	2,1	2,1	15					110,5	154,0	2	2	125,8		128	98,7	3,34	10 000	17 000	410	1 350	2 780	101	166	232	1 260	4 380	9 510	2,30	1201
1202	HCB7219E.T.P4S	95	170	32	47	2,1	2,1	25					110,5	154,0	2	2	125,8		121	94,1	3,24	8 500	14 000	600	2 090	4 400	243	383	510	1 760	6 290	13 500	2,30	1202
1203	B71820C.T.P4S	100	125	13	22	1	0,3	15					105,0	119,5	1	0,3	110,4		21,6	25,1	1,08	9 500	16 000	89	340	733	61	108	159	272	1 110	2 560	0,305	1203
1204	B71820E.T.P4S	100	125	13	33	1	0,3	25					105,0	119,5	1	0,3	110,4		20,7	23,5	0,989	8 500	14 000	106	495	1 130	133	234	330	310	1 480	3 460	0,305	1204
1205	B71920C.2RSD.T.P4S	100	140	20	26	1,1	1	15					107,0	133,0	0,6	0,6			58,4	57,2	2,71	9 500		320	1 060	2 195	93,9	162	234	980	3 520	7 830	0,882	1205
1206	B71920E.2RSD.T.P4S	100	140	20	38	1,1	1	25					107,0	133,0	0,6	0,6			55,9	53,3	2,52	8 500		455	1 630	3 440	221	355	482	1 320	4 900	10 700	0,882	1206
1207	B71920C.T.P4S	100	140	20	26	1,1	1	15					107,0	133,0	0,6	0,6	117,2		58,4	57,2	2,71	9 500	14 000	320	1 060	2 195	93,9	162	234	980	3 520	7 830	0,882	1207

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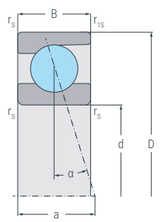
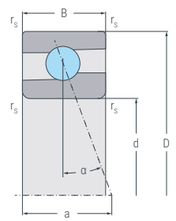
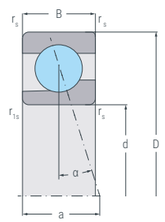
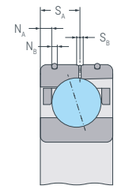
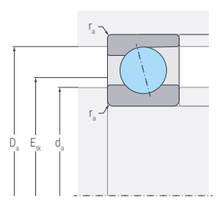
Spindle bearings
Dimensional tables of spindle bearings

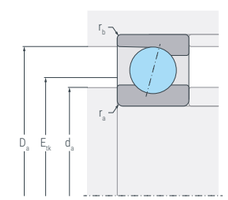


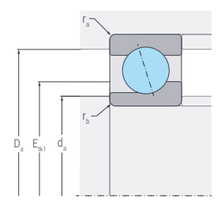


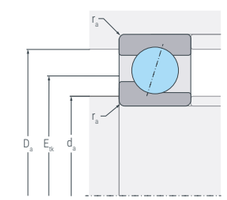












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1208	B71920E.T.P4S	100	140	20	38	1,1	1	25					107,0	133,0	0,6	0,6	117,2		55,9	53,3	2,52	8 500	13 000	455	1 630	3 440	221	355	482	1 320	4 900	10 700	0,882	1208
1209	B71920C.DLR.T.P4S	100	140	20	26	1,1	1	15	1,8	4,0	2,6	12,0	107,0	133,0	0,6	0,6			58,4	57,2	2,71		14 000	320	1 060	2 195	93,9	162	234	980	3 520	7 830	0,882	1209
1210	B71920E.DLR.T.P4S	100	140	20	38	1,1	1	25	1,8	4,0	2,6	12,0	107,0	133,0	0,6	0,6			55,9	53,3	2,52		13 000	455	1 630	3 440	221	355	482	1 320	4 900	10 700	0,882	1210
1211	HCB71920C.T.P4S	100	140	20	26	1,1	1	15					107,0	133,0	0,6	0,6	117,2		58,4	52,6	1,90	13 000	20 000	160	577	1 220	81,2	136	192	485	1 840	4 100	0,758	1211
1212	HCB71920E.T.P4S	100	140	20	38	1,1	1	25					107,0	133,0	0,6	0,6	117,2		55,9	49,0	1,77	12 000	18 000	202	850	1 880	188	314	424	592	2 540	5740	0,758	1212
1213	XCB71920C.T.P4S	100	140	20	26	1,1	1	15					107,0	133,0	0,6	0,6	117,2		93,5	52,6	3,43	14 000	22 000	160	577	1 220	81,2	136	192	485	1 840	4 100	0,758	1213
1214	XCB71920E.T.P4S	100	140	20	38	1,1	1	25					107,0	133,0	0,6	0,6	117,2		89,4	49,0	3,25	13 000	20 000	202	850	1 880	188	314	424	592	2 540	5740	0,758	1214
1215	HCB71920C.DLR.T.P4S	100	140	20	26	1,1	1	15	1,8	4,0	2,6	12,0	107,0	133,0	0,6	0,6			58,4	52,6	1,90		20 000	160	577	1 220	81,2	136	192	485	1 840	4 100	0,758	1215
1216	HCB71920E.DLR.T.P4S	100	140	20	38	1,1	1	25	1,8	4,0	2,6	12,0	107,0	133,0	0,6	0,6			55,9	49,0	1,77		18 000	202	850	1 880	188	314	424	592	2 540	5740	0,758	1216
1217	XCB71920C.DLR.T.P4S	100	140	20	26	1,1	1	15	1,8	4,0	2,6	12,0	107,0	133,0	0,6	0,6			93,5	52,6	3,43		22 000	160	577	1 220	81,2	136	192	485	1 840	4 100	0,758	1217
1218	XCB71920E.DLR.T.P4S	100	140	20	38	1,1	1	25	1,8	4,0	2,6	12,0	107,0	133,0	0,6	0,6			89,4	49,0	3,25		20 000	202	850	1 880	188	314	424	592	2 540	5740	0,758	1218
1219	BS71920C.2RSD.T.P4S	100	140	20	28	1,1	0,6	17					107,0	133,0	1,1	0,6			47,0	33,8	1,61	14 000		246	739	1 478	97	148	198	790	2 160	4 750	0,65	1219
1220	BS71920E.2RSD.T.P4S	100	140	20	38	1,1	0,6	25					107,0	133,0	1,1	0,6			44,0	32,2	1,53	13 000		335	1 005	2 010	192	284	368	1 110	2 950	6 300	0,65	1220
1221	BS71920C.T.P4S	100	140	20	28	1,1	0,6	17					107,0	133,0	1,1	0,6	116,7		47,0	33,8	1,61	14 000	20 000	246	739	1 478	97	148	198	790	2 160	4 750	0,65	1221
1222	BS71920E.T.P4S	100	140	20	38	1,1	0,6	25					107,0	133,0	1,1	0,6	116,7		44,0	32,2	1,53	13 000	19 000	335	1 005	2 010	192	284	368	1 110	2 950	6 300	0,65	1222
1223	HCBS71920C.T.P4S	100	140	20	28	1,1	0,6	17					107,0	133,0	1,1	0,6	116,7		47,0	31,1	1,13	17 000	25 000	123	370	739	85	126	165	550	1 480	3 200	0,62	1223
1224	HCBS71920E.T.P4S	100	140	20	38	1,1	0,6	25					107,0	133,0	1,1	0,6	116,7		44,0	29,7	1,07	16 000	23 000	168	503	1 005	170	249	319	770	2 050	4 350	0,62	1224
1225	XCBS71920C.T.P4S	100	140	20	28	1,1	0,6	17					107,0	133,0	1,1	0,6	116,7		75,2	31,1	2,67	21 000	30 000	123	370	739	85	126	165	550	1 480	3 200	0,62	1225
1226	XCBS71920E.T.P4S	100	140	20	38	1,1	0,6	25					107,0	133,0	1,1	0,6	116,7		70,4	29,7	2,55	20 000	29 000	168	503	1 005	170	249	319	770	2 050	4 350	0,62	1226
1227	HS71920C.2RSD.T.P4S	100	140	20	26	1,1		15					107,0	133,0	0,6				28,8	23,5	1,08	13 000		102	306	612	66,0	103	140	301	947	1 978	0,900	1227
1228	HS71920E.2RSD.T.P4S	100	140	20	38	1,1		25					107,0	133,0	0,6				27,5	22,1	1,02	12 000		166	498	996	166	245	320	476	1 447	2 950	0,900	1228
1229	HC71920C.2RSD.T.P4S	100	140	20	26	1,1		15					107,0	133,0	0,6				28,8	21,6	0,781	16 000		70	210	420	64,0	98,0	131	207	639	1 324	0,855	1229
1230	HC71920E.2RSD.T.P4S	100	140	20	38	1,1		25					107,0	133,0	0,6				27,5	20,4	0,737	15 000		115	345	690	164	243	314	332	1 009	2 046	0,855	1230
1231	HS71920C.T.P4S	100	140	20	26	1,1		15					107,0	133,0	0,6		117,5	116	28,8	23,5	1,08	13 000	20 000	102	306	612	66,0	103	140	301	947	1 978	0,900	1231
1232	HS71920E.T.P4S	100	140	20	38	1,1		25					107,0	133,0	0,6		117,5	116	27,5	22,1	1,02	12 000	18 000	166	498	996	166	245	320	476	1 447	2 950	0,900	1232
1233	HC71920C.T.P4S	100	140	20	26	1,1		15					107,0	133,0	0,6		117,5	116	28,8	21,6	0,781	16 000	26 000	70	210	420	64,0	98,0	131	207	639	1 324	0,855	1233
1234	HC71920E.T.P4S	100	140	20	38	1,1		25					107,0	133,0	0,6		117,5	116	27,5	20,4	0,737	15 000	24 000	115	345	690	164	243	314	332	1 009	2 046	0,855	1234
1235	XC71920C.T.P4S	100	140	20	26	1,1		15					107,0	133,0	0,6		117,5	116	46,1	21,6	1,85	19 000	28 000	70	210	420	64,0	98,0	131	207	639	1 324	0,855	1235
1236	XC71920E.T.P4S	100	140	20	38	1,1		25					107,0	133,0	0,6		117,5	116	44,1	20,4	1,75	17 000	26 000	115	345	690	164	243	314	332	1 009	2 046	0,855	1236
1237	HS71920C.DLR.T.P4S	100	140	20	26	1,1		15	1,8	4,0	2,6	12,0	107,0	133,0	0,6				28,8	23,5	1,08		20 000	102	306	612	66,0	103	140	301	947	1 978	0,900	1237
1238	HS71920E.DLR.T.P4S	100	140	20	38	1,1		25	1,8	4,0	2,6	12,0	107,0	133,0	0,6				27,5	22,1	1,02		18 000	166	498	996	166	245	320	476	1 447	2 950	0,900	1238

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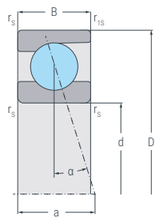
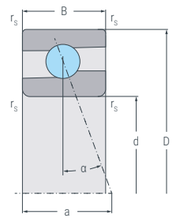
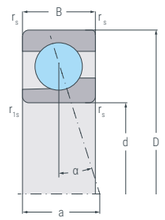
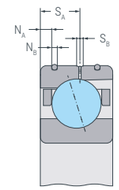
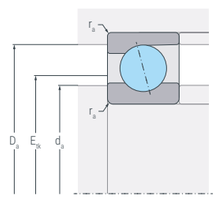
Spindle bearings
Dimensional tables of spindle bearings

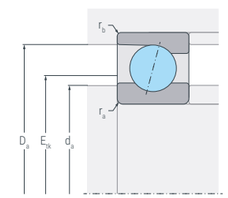


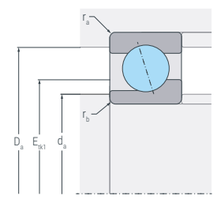


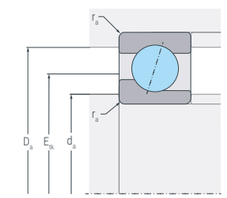








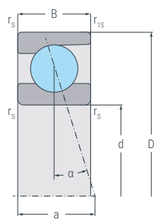


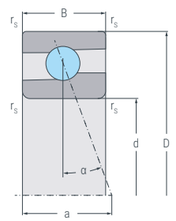


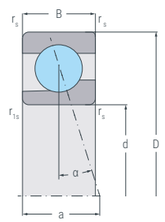
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1239	HC71920C.DLR.T.P4S	100	140	20	26	1,1		15	1,8	4,0	2,6	12,0	107,0	133,0	0,6				28,8	21,6	0,781		26 000	70	210	420	64,0	98,0	131	207	639	1 324	0,855	1239
1240	HC71920E.DLR.T.P4S	100	140	20	38	1,1		25	1,8	4,0	2,6	12,0	107,0	133,0	0,6				27,5	20,4	0,737		24 000	115	345	690	164	243	314	332	1 009	2 046	0,855	1240
1241	XC71920C.DLR.T.P4S	100	140	20	26	1,1		15	1,8	4,0	2,6	12,0	107,0	133,0	0,6				46,1	21,6	1,85		28 000	70	210	420	64,0	98,0	131	207	639	1 324	0,855	1241
1242	XC71920E.DLR.T.P4S	100	140	20	38	1,1		25	1,8	4,0	2,6	12,0	107,0	133,0	0,6				44,1	20,4	1,75		26 000	115	345	690	164	243	314	332	1 009	2 046	0,855	1242
1243	B7020C.2RSD.T.P4S	100	150	24	29	1,5	1,1	15					110,0	141,0	1,5	0,6			80,5	77,3	3,60	9 000		465	1 520	3 110	104	178	256	1 450	5 090	11 200	1,28	1243
1244	B7020E.2RSD.T.P4S	100	150	24	41	1,5	1,1	25					110,0	141,0	1,5	0,6			77,0	72,0	3,36	8 000		683	2 345	4 900	243	387	525	2 000	7 110	15 300	1,28	1244
1245	B7020C.T.P4S	100	150	24	29	1,5	1,1	15					110,0	141,0	1,5	0,6	120,2		80,5	77,3	3,60	9 000	14 000	465	1 520	3 110	104	178	256	1 450	5 090	11 200	1,28	1245
1246	B7020E.T.P4S	100	150	24	41	1,5	1,1	25					110,0	141,0	1,5	0,6	120,2		77,0	72,0	3,36	8 000	13 000	683	2 345	4 900	243	387	525	2 000	7 110	15 300	1,28	1246
1247	B7020C.DLR.T.P4S	100	150	24	29	1,5	1,1	15	1,8	5,5	2,6	14,5	110,0	141,0	1,5	0,6			80,5	77,3	3,60		14 000	465	1 520	3 110	104	178	256	1 450	5 090	11 200	1,28	1247
1248	B7020E.DLR.T.P4S	100	150	24	41	1,5	1,1	25	1,8	5,5	2,6	14,5	110,0	141,0	1,5	0,6			77,0	72,0	3,36		13 000	683	2 345	4 900	243	387	525	2 000	7 110	15 300	1,28	1248
1249	HCB7020C.T.P4S	100	150	24	29	1,5	1,1	15					110,0	141,0	1,5	0,6	120,2		80,5	71,1	2,52	13 000	19 000	240	820	1 705	89,2	150	209	721	2 630	5 780	1,08	1249
1250	HCB7020E.T.P4S	100	150	24	41	1,5	1,1	25					110,0	141,0	1,5	0,6	120,2		77,0	66,2	2,35	11 000	17 000	332	1 270	2 735	214	346	465	980	3 800	8 360	1,08	1250
1251	XCB7020C.T.P4S	100	150	24	29	1,5	1,1	15					110,0	141,0	1,5	0,6	120,2		129	71,1	5,98	14 000	22 000	240	820	1 705	89,2	150	209	721	2 630	5 780	1,08	1251
1252	XCB7020E.T.P4S	100	150	24	41	1,5	1,1	25					110,0	141,0	1,5	0,6	120,2		123	66,2	5,57	13 000	19 000	332	1 270	2 735	214	346	465	980	3 800	8 360	1,08	1252
1253	HCB7020C.DLR.T.P4S	100	150	24	29	1,5	1,1	15	1,8	5,5	2,6	14,5	110,0	141,0	1,5	0,6			80,5	71,1	2,52		19 000	240	820	1 705	89,2	150	209	721	2 630	5 780	1,08	1253
1254	HCB7020E.DLR.T.P4S	100	150	24	41	1,5	1,1	25	1,8	5,5	2,6	14,5	110,0	141,0	1,5	0,6			77,0	66,2	2,35		17 000	332	1 270	2 735	214	346	465	980	3 800	8 360	1,08	1254
1255	XCB7020C.DLR.T.P4S	100	150	24	29	1,5	1,1	15	1,8	5,5	2,6	14,5	110,0	141,0	1,5	0,6			129	71,1	5,98		22 000	240	820	1 705	89,2	150	209	721	2 630	5 780	1,08	1255
1256	XCB7020E.DLR.T.P4S	100	150	24	41	1,5	1,1	25	1,8	5,5	2,6	14,5	110,0	141,0	1,5	0,6			123	66,2	5,57		19 000	332	1 270	2 735	214	346	465	980	3 800	8 360	1,08	1256
1257	HS7020C.2RSD.T.P4S	100	150	24	29	1,5		15					110,0	141,0	1,5				37,9	28,6	1,30	13 000		134	402	804	70,0	109	150	397	1 250	2 618	1,40	1257
1258	HS7020E.2RSD.T.P4S	100	150	24	41	1,5		25					110,0	141,0	1,5				36,1	27,0	1,23	11 000		215	645	1 290	174	259	335	615	1 879	3 822	1,40	1258
1259	HC7020C.2RSD.T.P4S	100	150	24	29	1,5		15					110,0	141,0	1,5				37,9	26,3	0,934	16 000		91	273	546	67,0	104	139	269	837	1 736	1,33	1259
1260	HC7020E.2RSD.T.P4S	100	150	24	41	1,5		25					110,0	141,0	1,5				36,1	24,9	0,882	15 000		148	444	888	173	255	330	428	1 297	2 631	1,33	1260
1261	HS7020C.T.P4S	100	150	24	29	1,5		15					110,0	141,0	1,5		122	120,2	37,9	28,6	1,30	13 000	19 000	134	402	804	70,0	109	150	397	1 250	2 618	1,40	1261
1262	HS7020E.T.P4S	100	150	24	41	1,5		25					110,0	141,0	1,5		122	120,2	36,1	27,0	1,23	11 000	17 000	215	645	1 290	174	259	335	615	1 879	3 822	1,40	1262
1263	HC7020C.T.P4S	100	150	24	29	1,5		15					110,0	141,0	1,5		122	120,2	37,9	26,3	0,934	16 000	24 000	91	273	546	67,0	104	139	269	837	1 736	1,33	1263
1264	HC7020E.T.P4S	100	150	24	41	1,5		25					110,0	141,0	1,5		122	120,2	36,1	24,9	0,882	15 000	22 000	148	444	888	173	255	330	428	1 297	2 631	1,33	1264
1265	XC7020C.T.P4S	100	150	24	29	1,5		15					110,0	141,0	1,5		122	120,2	60,4	26,3	2,21	18 000	27 000	91	273	546	67,0	104	139	269	837	1 736	1,33	1265
1266	XC7020E.T.P4S	100	150	24	41	1,5		25					110,0	141,0	1,5		122	120,2	57,8	24,9	2,09	16 000	24 000	148	444	888	173	255	330	428	1 297	2 631	1,33	1266
1267	HS7020C.DLR.T.P4S	100	150	24	29	1,5		15	1,8	5,5	2,6	14,5	110,0	141,0	1,5				37,9	28,6	1,30		19 000	134	402	804	70,0	109	150	397	1 250	2 618	1,40	1267
1268	HS7020E.DLR.T.P4S	100	150	24	41	1,5		25	1,8	5,5	2,6	14,5	110,0	141,0	1,5				36,1	27,0	1,23		17 000	215	645	1 290	174	259	335	615	1 879	3 822	1,40	1268
1269	HC7020C.DLR.T.P4S	100	150	24	29	1,5		15	1,8	5,5	2,6	14,5	110,0	141,0	1,5				37,9	26,3	0,934		24 000	91	273	546	67,0	104	139	269	837	1 736	1,33	1269

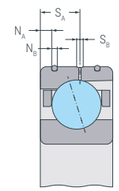
The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

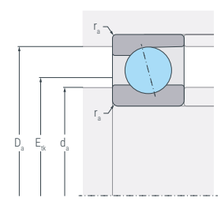
Spindle bearings
Dimensional tables of spindle bearings

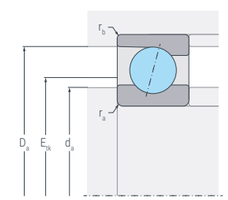


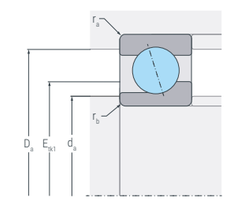


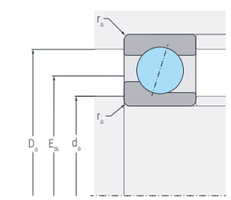








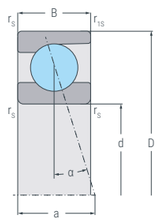


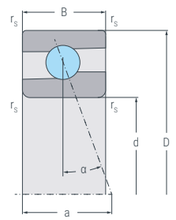


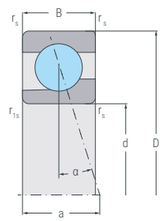
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1270	HC7020E.DLR.T.P4S	100	150	24	41	1,5		25	1,8	5,5	2,6	14,5	110,0	141,0	1,5				36,1	24,9	0,882		22 000	148	444	888	173	255	330	428	1 297	2 631	1,33	1270
1271	XC7020C.DLR.T.P4S	100	150	24	29	1,5		15	1,8	5,5	2,6	14,5	110,0	141,0	1,5				60,4	26,3	2,21		27 000	91	273	546	67,0	104	139	269	837	1 736	1,33	1271
1272	XC7020E.DLR.T.P4S	100	150	24	41	1,5		25	1,8	5,5	2,6	14,5	110,0	141,0	1,5				57,8	24,9	2,09		24 000	148	444	888	173	255	330	428	1 297	2 631	1,33	1272
1273	B7220C.T.P4S	100	180	34	36	2,1	2,1	15					114,5	165,5	2,1	2,1	133,3		132	116	4,95	7 500	12 000	795	2 520	5 130	122	206	294	2 480	8 500	18 500	3,21	1273
1274	B7220E.T.P4S	100	180	34	50	2,1	2,1	25					114,5	165,5	2,1	2,1	133,3		125	110	4,71	6 700	10 000	1 210	4 000	8 250	287	450	606	3 570	12 100	25 800	3,21	1274
1275	B7220C.DLR.T.P4S	100	180	34	36	2,1	2,1	15	2,0	6,5	2,6	20,4	114,5	165,5	2,1	2,1			132	116	4,95		12 000	795	2 520	5 130	122	206	294	2 480	8 500	18 500	3,21	1275
1276	B7220E.DLR.T.P4S	100	180	34	50	2,1	2,1	25	2,0	6,5	2,6	20,4	114,5	165,5	2,1	2,1			125	110	4,71		10 000	1 210	4 000	8 250	287	450	606	3 570	12 100	25 800	3,21	1276
1277	HCB7220C.T.P4S	100	180	34	36	2,1	2,1	15					114,5	165,5	2,1	2,1	133,3		132	106	3,56	9 500	16 000	430	1 410	2 900	106	175	245	1 300	4 550	9 550	2,76	1277
1278	HCB7220E.T.P4S	100	180	34	50	2,1	2,1	25					114,5	165,5	2,1	2,1	133,3		125	101	3,40	8 000	13 000	620	2 180	5 430	256	404	548	1 830	6 550	16 700	2,76	1278
1279	HCB7220C.DLR.T.P4S	100	180	34	36	2,1	2,1	15	2,0	6,5	2,6	20,4	114,5	165,5	2,1	2,1			132	106	3,56		16 000	430	1 410	2 900	106	175	245	1 300	4 550	9 550	2,76	1279
1280	HCB7220E.DLR.T.P4S	100	180	34	50	2,1	2,1	25	2,0	6,5	2,6	20,4	114,5	165,5	2,1	2,1			125	101	3,40		13 000	620	2 180	5 430	256	404	548	1 830	6 550	16 700	2,76	1280
1281	B71921C.2RSD.T.P4S	105	145	20	27	1,1	1	15					112,0	138,0	0,6	0,6			58,4	57,0	2,66	9 000		320	1 060	2 190	93,8	161	234	980	3 520	7 820	0,810	1281
1282	B71921E.2RSD.T.P4S	105	145	20	39	1,1	1	25					112,0	138,0	0,6	0,6			54,7	53,1	2,47	8 000		455	1 630	3 440	220	355	482	1 320	4 900	10 700	0,810	1282
1283	B71921C.T.P4S	105	145	20	27	1,1	1	15					112,0	138,0	0,6	0,6	121,2		58,4	57,0	2,66	9 000	14 000	320	1 060	2 190	93,8	161	234	980	3 520	7 820	0,810	1283
1284	B71921E.T.P4S	105	145	20	39	1,1	1	25					112,0	138,0	0,6	0,6	121,2		54,7	53,1	2,47	8 000	13 000	455	1 630	3 440	220	355	482	1 320	4 900	10 700	0,810	1284
1285	B71921C.DLR.T.P4S	105	145	20	27	1,1	1	15	1,8	4,0	2,6	12,0	112,0	138,0	0,6	0,6			58,4	57,0	2,66		14 000	320	1 060	2 190	93,8	161	234	980	3 520	7 820	0,810	1285
1286	B71921E.DLR.T.P4S	105	145	20	39	1,1	1	25	1,8	4,0	2,6	12,0	112,0	138,0	0,6	0,6			54,7	53,1	2,47		13 000	455	1 630	3 440	220	355	482	1 320	4 900	10 700	0,810	1286
1287	HCB71921C.T.P4S	105	145	20	27	1,1	1	15					112,0	138,0	0,6	0,6	121,2		58,4	52,4	1,86	13 000	19 000	160	580	1 220	81,5	138	191	485	1 840	4 100	0,686	1287
1288	HCB71921E.T.P4S	105	145	20	39	1,1	1	25					112,0	138,0	0,6	0,6	121,2		54,7	48,8	1,73	11 000	17 000	202	850	1 880	187	315	424	592	2 540	5 470	0,686	1288
1289	XCB71921C.T.P4S	105	145	20	27	1,1	1	15					112,0	138,0	0,6	0,6	121,2		93,5	52,4	4,41	14 000	22 000	160	580	1 220	81,5	138	191	485	1 840	4 100	0,686	1289
1290	XCB71921E.T.P4S	105	145	20	39	1,1	1	25					112,0	138,0	0,6	0,6	121,2		87,5	48,8	4,11	12 000	19 000	202	850	1 880	187	315	424	592	2 540	5 470	0,686	1290
1291	HCB71921C.DLR.T.P4S	105	145	20	27	1,1	1	15	1,8	4,0	2,6	12,0	112,0	138,0	0,6	0,6			58,4	52,4	1,86		19 000	160	580	1 220	81,5	138	191	485	1 840	4 100	0,686	1291
1292	HCB71921E.DLR.T.P4S	105	145	20	39	1,1	1	25	1,8	4,0	2,6	12,0	112,0	138,0	0,6	0,6			54,7	48,8	1,73		17 000	202	850	1 880	187	315	424	592	2 540	5 470	0,686	1292
1293	XCB71921C.DLR.T.P4S	105	145	20	27	1,1	1	15	1,8	4,0	2,6	12,0	112,0	138,0	0,6	0,6			93,5	52,4	4,41		22 000	160	580	1 220	81,5	138	191	485	1 840	4 100	0,686	1293
1294	XCB71921E.DLR.T.P4S	105	145	20	39	1,1	1	25	1,8	4,0	2,6	12,0	112,0	138,0	0,6	0,6			87,5	48,8	4,11		19 000	202	850	1 880	187	315	424	592	2 540	5 470	0,686	1294
1295	HS71921C.T.P4S	105	145	20	27	1,1		15					112,0	138,0	0,6		121,7	120,2	29,8	24,2	1,10	13 000	19 000	104	312	624	68,0	107	145	307	961	2 008	0,900	1295
1296	HS71921E.T.P4S	105	145	20	39	1,1		25					112,0	138,0	0,6		121,7	120,2	28,5	22,8	1,03	11 000	17 000	169	507	1 014	172	255	332	484	1 472	2 990	0,900	1296
1297	HC71921C.T.P4S	105	145	20	27	1,1		15					112,0	138,0	0,6		121,7	120,2	29,8	22,2	0,789	16 000	24 000	71	213	426	67,0	102	137	209	653	1 357	0,850	1297
1298	HC71921E.T.P4S	105	145	20	39	1,1		25					112,0	138,0	0,6		121,7	120,2	28,5	21,0	0,744	15 000	22 000	117	351	702	171	253	327	337	1 029	2 086	0,850	1298
1299	XC71921C.T.P4S	105	145	20	27	1,1		15					112,0	138,0	0,6		121,7	120,2	47,7	22,2	1,87	18 000	27 000	71	213	426	67,0	102	137	209	653	1 357	0,850	1299
1300	XC71921E.T.P4S	105	145	20	39	1,1		25					112,0	138,0	0,6		121,7	120,2	45,6	21,0	1,76	16 000	24 000	117	351	702	171	253	327	337	1 029	2 086	0,850	1300

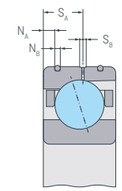
The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

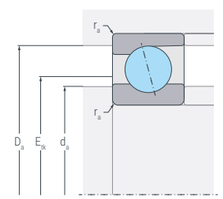
Spindle bearings
Dimensional tables of spindle bearings

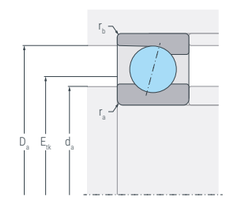


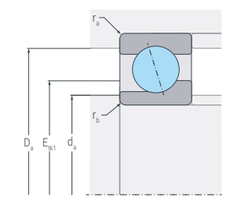


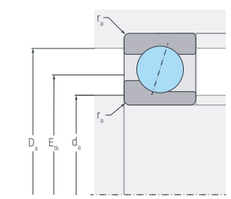












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1301	HS71921C.DLR.T.P4S	105	145	20	27	1,1		15	1,4	4,0	2,6	12,0	112,0	138,0	0,6				29,8	24,2	1,10		19 000	104	312	624	68,0	107	145	307	961	2 008	0,900	1301
1302	HS71921E.DLR.T.P4S	105	145	20	39	1,1		25	1,4	4,0	2,6	12,0	112,0	138,0	0,6				28,5	22,8	1,03		17 000	169	507	1 014	172	255	332	484	1 472	2 990	0,900	1302
1303	HC71921C.DLR.T.P4S	105	145	20	27	1,1		15	1,4	4,0	2,6	12,0	112,0	138,0	0,6				29,8	22,2	0,789		24 000	71	213	426	67,0	102	137	209	653	1 357	0,850	1303
1304	HC71921E.DLR.T.P4S	105	145	20	39	1,1		25	1,4	4,0	2,6	12,0	112,0	138,0	0,6				28,5	21,0	0,744		22 000	117	351	702	171	253	327	337	1 029	2 086	0,850	1304
1305	XC71921C.DLR.T.P4S	105	145	20	27	1,1		15	1,4	4,0	2,6	12,0	112,0	138,0	0,6				47,7	22,2	1,87		27 000	71	213	426	67,0	102	137	209	653	1 357	0,850	1305
1306	XC71921E.DLR.T.P4S	105	145	20	39	1,1		25	1,4	4,0	2,6	12,0	112,0	138,0	0,6				45,6	21,0	1,76		24 000	117	351	702	171	253	327	337	1 029	2 086	0,850	1306
1307	B7021C.2RSD.T.P4S	105	160	26	31	2	1,1	15					116,0	150,0	2	1			93,6	86,7	3,93	8 500		620	2 000	4 080	114	193	280	1 940	6 710	14 600	1,52	1307
1308	B7021E.2RSD.T.P4S	105	160	26	44	2	1,1	25					116,0	150,0	2	1			88,5	82,0	3,71	7 500		960	3 200	6 645	270	428	577	2 800	9 720	20 800	1,52	1308
1309	B7021C.T.P4S	105	160	26	31	2	1,1	15					116,0	150,0	2	1	127,3		93,6	86,7	3,93	8 500	13 000	620	2 000	4 080	114	193	280	1 940	6 710	14 600	1,52	1309
1310	B7021E.T.P4S	105	160	26	44	2	1,1	25					116,0	150,0	2	1	127,3		88,5	82,0	3,71	7 500	12 000	960	3 200	6 645	270	428	577	2 800	9 720	20 800	1,52	1310
1311	B7021C.DLR.T.P4S	105	160	26	31	2	1,1	15	2,0	6,0	2,6	15,2	116,0	150,0	2	1			93,6	86,7	3,93		13 000	620	2 000	4 080	114	193	280	1 940	6 710	14 600	1,52	1311
1312	B7021E.DLR.T.P4S	105	160	26	44	2	1,1	25	2,0	6,0	2,6	15,2	116,0	150,0	2	1			88,5	82,0	3,71		12 000	960	3 200	6 645	270	428	577	2 800	9 720	20 800	1,52	1312
1313	HCB7021C.T.P4S	105	160	26	44	2	1,1	15					116,0	150,0	2	1	127,3		93,6	79,7	2,75	12 000	18 000	335	1 130	2 330	100	165	230	1 030	3 630	7 910	1,21	1313
1314	HCB7021E.T.P4S	105	160	26	44	2	1,1	25					116,0	150,0	2	1	127,3		88,5	75,4	2,60	11 000	16 000	470	1 700	3 620	236	380	505	1 380	5 110	11 100	1,21	1314
1315	XCB7021C.T.P4S	105	160	26	44	2	1,1	15					116,0	150,0	2	1	127,3		150	79,7	6,51	13 000	20 000	335	1 130	2 330	100	165	230	1 030	3 630	7 910	1,21	1315
1316	XCB7021E.T.P4S	105	160	26	44	2	1,1	25					116,0	150,0	2	1	127,3		142	75,4	6,16	12 000	18 000	470	1 700	3 620	236	380	505	1 380	5 110	11 100	1,21	1316
1317	HCB7021C.DLR.T.P4S	105	160	26	44	2	1,1	15	2,0	6,0	2,6	15,2	116,0	150,0	2	1			93,6	79,7	2,75		18 000	335	1 130	2 330	100	165	230	1 030	3 630	7 910	1,21	1317
1318	HCB7021E.DLR.T.P4S	105	160	26	44	2	1,1	25	2,0	6,0	2,6	15,2	116,0	150,0	2	1			88,5	75,4	2,60		16 000	470	1 700	3 620	236	380	505	1 380	5 110	11 100	1,21	1318
1319	XCB7021C.DLR.T.P4S	105	160	26	44	2	1,1	15	2,0	6,0	2,6	15,2	116,0	150,0	2	1			150	79,7	6,51		20 000	335	1 130	2 330	100	165	230	1 030	3 630	7 910	1,21	1319
1320	XCB7021E.DLR.T.P4S	105	160	26	44	2	1,1	25	2,0	6,0	2,6	15,2	116,0	150,0	2	1			142	75,4	6,16		18 000	470	1 700	3 620	236	380	505	1 380	5 110	11 100	1,21	1320
1321	HS7021C.T.P4S	105	160	26	31	2		15					116,0	150,0	2		127,9	125,9	49,3	36,4	1,61	12 000	18 000	170	510	1 020	76,0	120	162	504	1 580	3 317	1,80	1321
1322	HS7021E.T.P4S	105	160	26	44	2		25					116,0	150,0	2		127,9	125,9	45,7	34,4	1,53	11 000	16 000	276	828	1 656	190	285	369	790	2 412	4 919	1,80	1322
1323	HC7021C.T.P4S	105	160	26	31	2		15					116,0	150,0	2		127,9	125,9	49,3	33,4	1,16	15 000	23 000	118	354	708	74,0	114	152	350	1 088	2 259	1,70	1323
1324	HC7021E.T.P4S	105	160	26	44	2		25					116,0	150,0	2		127,9	125,9	45,7	31,6	1,10	14 000	22 000	192	576	1 152	190	280	363	555	1 682	3 412	1,70	1324
1325	XC7021C.T.P4S	105	160	26	31	2		15					116,0	150,0	2		127,9	125,9	78,9	33,4	2,76	17 000	25 000	118	354	708	74,0	114	152	350	1 088	2 259	1,70	1325
1326	XC7021E.T.P4S	105	160	26	44	2		25					116,0	150,0	2		127,9	125,9	73,1	31,6	2,61	16 000	23 000	192	576	1 152	190	280	363	555	1 682	3 412	1,70	1326
1327	HS7021C.DLR.T.P4S	105	160	26	31	2		15	2,0	6,0	2,6	15,2	116,0	150,0	2				49,3	36,4	1,61		18 000	170	510	1 020	76,0	120	162	504	1 580	3 317	1,80	1327
1328	HS7021E.DLR.T.P4S	105	160	26	44	2		25	2,0	6,0	2,6	15,2	116,0	150,0	2				45,7	34,4	1,53		16 000	276	828	1 656	190	285	369	790	2 412	4 919	1,80	1328
1329	HC7021C.DLR.T.P4S	105	160	26	31	2		15	2,0	6,0	2,6	15,2	116,0	150,0	2				49,3	33,4	1,16		23 000	118	354	708	74,0	114	152	350	1 088	2 259	1,70	1329
1330	HC7021E.DLR.T.P4S	105	160	26	44	2		25	2,0	6,0	2,6	15,2	116,0	150,0	2				45,7	31,6	1,10		22 000	192	576	1 152	190	280	363	555	1 682	3 412	1,70	1330
1331	XC7021C.DLR.T.P4S	105	160	26	31	2		15	2,0	6,0	2,6	15,2	116,0	150,0	2				78,9	33,4	2,76		25 000	118	354	708	74,0	114	152	350	1 088	2 259	1,70	1331

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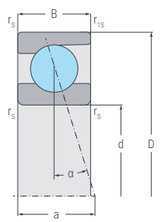
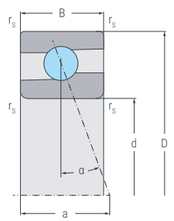
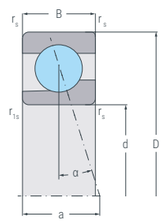
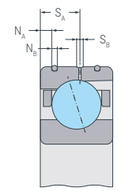
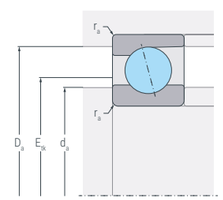
Spindle bearings
Dimensional tables of spindle bearings

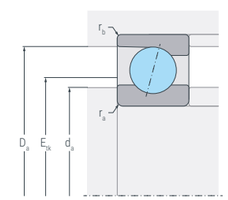


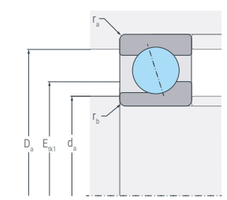


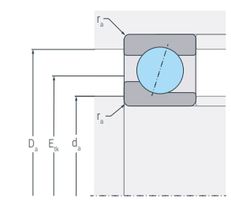






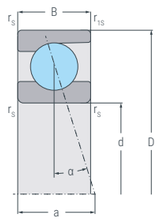


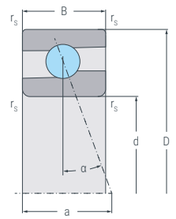


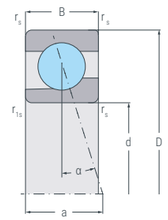


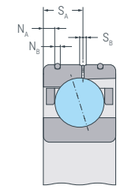
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1332	XC7021E.DLR.T.P4S	105	160	26	44	2		25	2,0	6,0	2,6	15,2	116,0	150,0	2				73,1	31,6	2,61		23 000	192	576	1 152	190	280	363	555	1 682	3 412	1,70	1332
1333	B7221C.T.P4S	105	190	36	38	2,1	2,1	15					120,5	174,5	2,1	2,1	139,9		163	140	5,85	7 000	11 000	1 000	3 130	6 380	132	222	320	3 120	10 600	23 100	3,88	1333
1334	B7221E.T.P4S	105	190	36	52	2,1	2,1	25					120,5	174,5	2,1	2,1	139,9		155	134	5,58	6 300	9 500	1558	5 050	10 300	312	490	660	4 590	15 300	32 500	3,88	1334
1335	HCB7221C.T.P4S	105	190	36	38	2,1	2,1	15					120,5	174,5	2,1	2,1	139,9		163	129	4,21	9 000	15 000	530	1 730	3 560	115	188	263	1 630	5 600	12 100	3,25	1335
1336	HCB7221E.T.P4S	105	190	36	52	2,1	2,1	25					120,5	174,5	2,1	2,1	139,9		155	123	4,02	7 500	12 000	804	2 760	5 750	281	439	582	2 370	8 290	17 700	3,25	1336
1337	B71822C.T.P4S	110	140	16	25	1	0,3	15					116,0	133,5	1	0,3	122,3		32,0	37,0	1,70	8 500	14 000	144	520	1 100	77	134	196	442	1 700	3 920	0,508	1337
1338	B71822E.T.P4S	110	140	16	37	1	0,3	25					116,0	133,5	1	0,3	122,3		29,0	34,0	1,59	7 500	12 000	180	755	1 670	168	290	400	520	2 260	5 150	0,508	1338
1339	B71922C.2RSD.T.P4S	110	150	20	27	1,1	1	15					117,0	143,0	0,6	0,6			58,7	59,0	2,70	8 500		315	1 050	2 190	96,5	165	235	970	3 500	7 780	0,850	1339
1340	B71922E.2RSD.T.P4S	110	150	20	40	1,1	1	25					117,0	143,0	0,6	0,6			56,1	55,0	2,51	8 000		460	1 650	3 495	226	365	496	1 330	4 970	10 800	0,850	1340
1341	B71922C.T.P4S	110	150	20	27	1,1	1	15					117,0	143,0	0,6	0,6	126,2		58,7	59,0	2,70	8 500	13 000	315	1 050	2 190	96,5	165	235	970	3 500	7 780	0,850	1341
1342	B71922E.T.P4S	110	150	20	40	1,1	1	25					117,0	143,0	0,6	0,6	126,2		56,1	55,0	2,51	8 000	12 000	460	1 650	3 495	226	365	496	1 330	4 970	10 800	0,850	1342
1343	B71922C.DLR.T.P4S	110	150	20	27	1,1	1	15	1,8	4,0	2,6	12,0	117,0	143,0	0,6	0,6			58,7	59,0	2,70		13 000	315	1 050	2 190	96,5	165	235	970	3 500	7 780	0,850	1343
1344	B71922E.DLR.T.P4S	110	150	20	40	1,1	1	25	1,8	4,0	2,6	12,0	117,0	143,0	0,6	0,6			56,1	55,0	2,51		12 000	460	1 650	3 495	226	365	496	1 330	4 970	10 800	0,850	1344
1345	HCB71922C.T.P4S	110	150	20	27	1,1	1	15					117,0	143,0	0,6	0,6	126,2		58,7	54,3	1,89	12 000	19 000	162	580	1 235	84,4	142	198	491	1 860	4 150	0,721	1345
1346	HCB71922E.T.P4S	110	150	20	40	1,1	1	25					117,0	143,0	0,6	0,6	126,2		56,1	50,6	1,76	11 000	17 000	203	860	1 905	192	320	435	596	2 570	5 810	0,721	1346
1347	XCB71922C.T.P4S	110	150	20	27	1,1	1	15					117,0	143,0	0,6	0,6	126,2		93,9	54,3	4,48	13 000	20 000	162	580	1 235	84,4	142	198	491	1 860	4 150	0,721	1347
1348	XCB71922E.T.P4S	110	150	20	40	1,1	1	25					117,0	143,0	0,6	0,6	126,2		89,9	50,6	4,17	12 000	19 000	203	860	1 905	192	320	435	596	2 570	5 810	0,721	1348
1349	HCB71922C.DLR.T.P4S	110	150	20	27	1,1	1	15	1,8	4,0	2,6	12,0	117,0	143,0	0,6	0,6			58,7	54,3	1,89		19 000	162	580	1 235	84,4	142	198	491	1 860	4 150	0,721	1349
1350	HCB71922E.DLR.T.P4S	110	150	20	40	1,1	1	25	1,8	4,0	2,6	12,0	117,0	143,0	0,6	0,6			56,1	50,6	1,76		17 000	203	860	1 905	192	320	435	596	2 570	5 810	0,721	1350
1351	XCB71922C.DLR.T.P4S	110	150	20	27	1,1	1	15	1,8	4,0	2,6	12,0	117,0	143,0	0,6	0,6			93,9	54,3	4,48		20 000	162	580	1 235	84,4	142	198	491	1 860	4 150	0,721	1351
1352	XCB71922E.DLR.T.P4S	110	150	20	40	1,1	1	25	1,8	4,0	2,6	12,0	117,0	143,0	0,6	0,6			89,9	50,6	4,17		19 000	203	860	1 905	192	320	435	596	2 570	5 810	0,721	1352
1353	BS71922C.2RSD.T.P4S	110	150	20	30	1,1	0,6	17					117,0	143,0	1,1	0,6			49,0	37,9	1,73	13 000		260	779	1 558	106	142	195	860	2 350	5 150	0,883	1353
1354	BS71922E.2RSD.T.P4S	110	150	20	40	1,1	0,6	25					117,0	143,0	1,1	0,6			47,2	36,2	1,65	12 000		352	1 056	2 112	209	276	365	1 200	3 200	6 800	0,883	1354
1355	BS71922C.T.P4S	110	150	20	30	1,1	0,6	17					117,0	143,0	1,1	0,6	126,7		49,0	37,9	1,73	13 000	19 000	260	779	1 558	106	142	195	860	2 350	5 150	0,883	1355
1356	BS71922E.T.P4S	110	150	20	40	1,1	0,6	25					117,0	143,0	1,1	0,6	126,7		47,2	36,2	1,65	12 000	18 000	352	1 056	2 112	209	276	365	1 200	3 200	6 800	0,883	1356
1357	HCBS71922C.T.P4S	110	150	20	30	1,1	0,6	17					117,0	143,0	1,1	0,6	126,7		49,0	34,9	1,21	16 000	23 000	130	390	779	92	138	180	590	1 600	3 450	0,767	1357
1358	HCBS71922E.T.P4S	110	150	20	40	1,1	0,6	25					117,0	143,0	1,1	0,6	126,7		47,2	33,3	1,16	15 000	22 000	176	528	1 056	185	271	347	840	2 200	4 700	0,767	1358
1359	XCBS71922C.T.P4S	110	150	20	30	1,1	0,6	17					117,0	143,0	1,1	0,6	126,7		78,4	34,9	2,88	20 000	29 000	130	390	779	92	138	180	590	1 600	3 450	0,767	1359
1360	XCBS71922E.T.P4S	110	150	20	40	1,1	0,6	25					117,0	143,0	1,1	0,6	126,7		75,5	33,3	2,74	18 000	27 000	176	528	1 056	185	271	347	840	2 200	4 700	0,767	1360
1361	BS71922C.DLR.T.P4S	110	150	20	30	1,1	0,6	17	1,8	4	2,6	12	117,0	143,0	1,1	0,6			49,0	37,9	1,73		19 000	260	779	1 558	106	142	195	860	2 350	5 150	0,883	1361
1362	BS71922E.DLR.T.P4S	110	150	20	40	1,1	0,6	25	1,8	4	2,6	12	117,0	143,0	1,1	0,6			47,2	36,2	1,65		18 000	352	1 056	2 112	209	276	365	1 200	3 200	6 800	0,883	1362

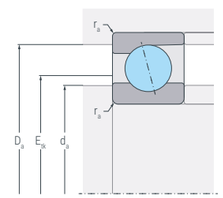
Spindle bearings
Dimensional tables of spindle bearings

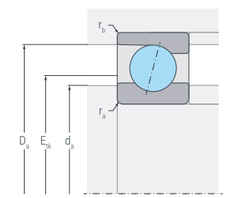


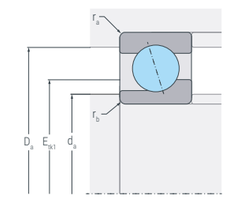


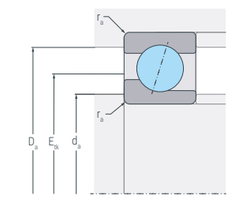








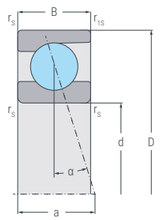


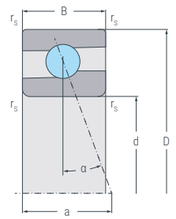


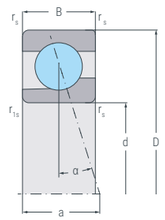
	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1363	HCBS71922C.DLR.T.P4S	110	150	20	30	1,1	0,6	17	1,8	4	2,6	12	117,0	143,0	1,1	0,6			49,0	34,9	1,21		23 000	130	390	779	92	138	180	590	1 600	3 450	0,767	1363
1364	HCBS71922E.DLR.T.P4S	110	150	20	40	1,1	0,6	25	1,8	4	2,6	12	117,0	143,0	1,1	0,6			47,2	33,3	1,16		22 000	176	528	1 056	185	271	347	840	2 200	4 700	0,767	1364
1365	XCBS71922C.DLR.T.P4S	110	150	20	30	1,1	0,6	17	1,8	4	2,6	12	117,0	143,0	1,1	0,6			78,4	34,9	2,88		29 000	130	390	779	92	138	180	590	1 600	3 450	0,767	1365
1366	XCBS71922E.DLR.T.P4S	110	150	20	40	1,1	0,6	25	1,8	4	2,6	12	117,0	143,0	1,1	0,6			75,5	33,3	2,74		27 000	176	528	1 056	185	271	347	840	2 200	4 700	0,767	1366
1367	HS71922C.T.P4S	110	150	20	27	1,1		15					117,0	143,0	0,6		127,2	125,7	34,2	28,5	1,26	12 000	19 000	121	363	726	71,0	112	152	357	1 120	2 342	1,00	1367
1368	HS71922E.T.P4S	110	150	20	40	1,1		25					117,0	143,0	0,6		127,2	125,7	32,7	26,8	1,19	11 000	17 000	196	588	1 175	180	268	349	560	1 709	3 480	1,00	1368
1369	HC71922C.T.P4S	110	150	20	27	1,1		15					117,0	143,0	0,6		127,2	125,7	34,2	26,2	0,910	15 000	24 000	83	249	498	70,0	107	144	245	761	1 573	0,940	1369
1370	HC71922E.T.P4S	110	150	20	40	1,1		25					117,0	143,0	0,6		127,2	125,7	32,7	24,7	0,859	14 000	22 000	135	405	810	180	265	340	390	1 185	2 395	0,940	1370
1371	XC71922C.T.P4S	110	150	20	27	1,1		15					117,0	143,0	0,6		127,2	125,7	54,7	26,2	2,16	17 000	26 000	83	249	498	70,0	107	144	245	761	1 573	0,940	1371
1372	XC71922E.T.P4S	110	150	20	40	1,1		25					117,0	143,0	0,6		127,2	125,7	52,3	24,7	2,39	15 000	24 000	135	405	810	180	265	340	390	1 185	2 395	0,940	1372
1373	HS71922C.DLR.T.P4S	110	150	20	27	1,1		15	1,8	4,0	2,6	12,0	117,0	143,0	0,6				34,2	28,5	1,26		19 000	121	363	726	71,0	112	152	357	1 120	2 342	1,00	1373
1374	HS71922E.DLR.T.P4S	110	150	20	40	1,1		25	1,8	4,0	2,6	12,0	117,0	143,0	0,6				32,7	26,8	1,19		17 000	196	588	1 175	180	268	349	560	1 709	3 480	1,00	1374
1375	HC71922C.DLR.T.P4S	110	150	20	27	1,1		15	1,8	4,0	2,6	12,0	117,0	143,0	0,6				34,2	26,2	0,910		24 000	83	249	498	70,0	107	144	245	761	1 573	0,940	1375
1376	HC71922E.DLR.T.P4S	110	150	20	40	1,1		25	1,8	4,0	2,6	12,0	117,0	143,0	0,6				32,7	24,7	0,859		22 000	135	405	810	180	265	340	390	1 185	2 395	0,940	1376
1377	XC71922C.DLR.T.P4S	110	150	20	27	1,1		15	1,8	4,0	2,6	12,0	117,0	143,0	0,6				54,7	26,2	2,16		26 000	83	249	498	70,0	107	144	245	761	1 573	0,940	1377
1378	XC71922E.DLR.T.P4S	110	150	20	40	1,1		25	1,8	4,0	2,6	12,0	117,0	143,0	0,6				52,3	24,7	2,39		24 000	135	405	810	180	265	340	390	1 185	2 395	0,940	1378
1379	B7022C.2RSD.T.P4S	110	170	28	33	2	1,1	15					121,0	159,0	2	1			110	103	4,54	8 000		650	2 070	4 235	119	204	293	2 010	6 950	15 200	1,94	1379
1380	B7022E.2RSD.T.P4S	110	170	28	47	2	1,1	25					121,0	159,0	2	1			103	95,8	4,22	7 500		975	3 260	6 760	284	445	600	2 860	9 880	21 100	1,94	1380
1381	B7022C.T.P4S	110	170	28	33	2	1,1	15					121,0	159,0	2	1	134,3		110	103	4,54	8 000	12 000	650	2 070	4 235	119	204	293	2 010	6 950	15 200	1,94	1381
1382	B7022E.T.P4S	110	170	28	47	2	1,1	25					121,0	159,0	2	1	134,3		103	95,8	4,22	7 500	11 000	975	3 260	6 760	284	445	600	2 860	9 880	21 100	1,94	1382
1383	B7022C.DLR.T.P4S	110	170	28	33	2	1,1	15	2,0	6,0	2,6	16,2	121,0	159,0	2	1			110	103	4,54		12 000	650	2 070	4 235	119	204	293	2 010	6 950	15 200	1,94	1383
1384	B7022E.DLR.T.P4S	110	170	28	47	2	1,1	25	2,0	6,0	2,6	16,2	121,0	159,0	2	1			103	95,8	4,22		11 000	975	3 260	6 760	284	445	600	2 860	9 880	21 100	1,94	1384
1385	HCB7022C.T.P4S	110	170	28	33	2	1,1	15					121,0	159,0	2	1	134,3		110	94,8	3,02	12 000	18 000	340	1 145	2 365	105	171	240	1 030	3 660	8 000	1,61	1385
1386	HCB7022E.T.P4S	110	170	28	47	2	1,1	25					121,0	159,0	2	1	134,3		103	88,1	2,95	11 000	16 000	480	1 740	3 700	250	395	528	1 400	5 230	11 300	1,61	1386
1387	XCB7022C.T.P4S	110	170	28	33	2	1,1	15					121,0	159,0	2	1	134,3		145	94,8	7,53	13 000	20 000	340	1 145	2 365	105	171	240	1 030	3 660	8 000	1,61	1387
1388	XCB7022E.T.P4S	110	170	28	47	2	1,1	25					121,0	159,0	2	1	134,3		166	88,1	7,00	12 000	18 000	480	1 740	3 700	250	395	528	1 400	5 230	11 300	1,61	1388
1389	HCB7022C.DLR.T.P4S	110	170	28	33	2	1,1	15	2,0	6,0	2,6	16,2	121,0	159,0	2	1			110	94,8	3,02		18 000	340	1 145	2 365	105	171	240	1 030	3 660	8 000	1,61	1389
1390	HCB7022E.DLR.T.P4S	110	170	28	47	2	1,1	25	2,0	6,0	2,6	16,2	121,0	159,0	2	1			103	88,1	2,95		16 000	480	1 740	3 700	250	395	528	1 400	5 230	11 300	1,61	1390
1391	XCB7022C.DLR.T.P4S	110	170	28	33	2	1,1	15	2,0	6,0	2,6	16,2	121,0	159,0	2	1			145	94,8	7,53		20 000	340	1 145	2 365	105	171	240	1 030	3 660	8 000	1,61	1391
1392	XCB7022E.DLR.T.P4S	110	170	28	47	2	1,1	25	2,0	6,0	2,6	16,2	121,0	159,0	2	1			166	88,1	7,00		18 000	480	1 740	3 700	250	395	528	1 400	5 230	11 300	1,61	1392
1393	HS7022C.T.P4S	110	170	28	33	2		15					121,0	159,0	2		136,5	134,4	50,4	37,9	1,62	12 000	18 000	174	522	1 044	78,0	122	167	516	1 623	3 403	2,20	1393

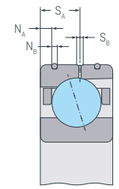
The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

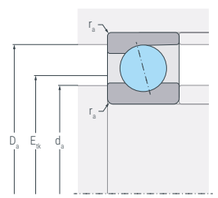
Spindle bearings
Dimensional tables of spindle bearings

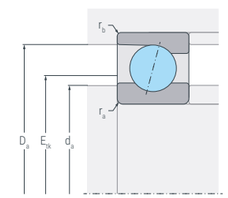


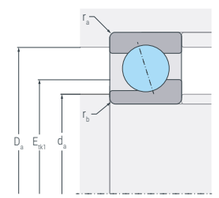


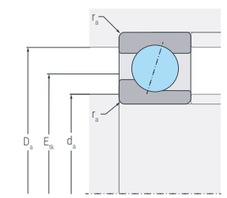






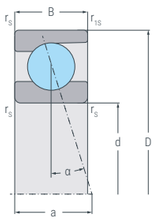


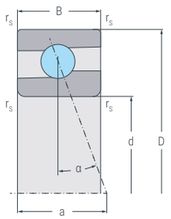


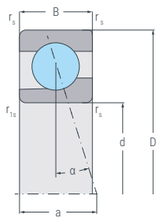


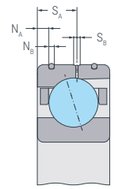
Symbol		Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
Bearing		d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1394	HS7022E.T.P4S	110	170	28	47	2		25					121,0	159,0	2		136,5	134,4	46,7	35,8	1,53	11 000	16 000	280	840	1 680	196	292	379	802	2 446	4 984	2,20	1394
1395	HC7022C.T.P4S	110	170	28	33	2		15					121,0	159,0	2		136,5	134,4	50,4	34,8	1,17	15 000	23 000	118	354	708	76,0	117	157	349	1 086	2 254	2,10	1395
1396	HC7022E.T.P4S	110	170	28	47	2		25					121,0	159,0	2		136,5	134,4	46,7	32,9	1,10	14 000	22 000	192	576	1 152	195	287	370	555	1 681	3 409	2,10	1396
1397	XC7022C.T.P4S	110	170	28	33	2		15					121,0	159,0	2		136,5	134,4	80,7	34,8	2,77	17 000	25 000	118	354	708	76,0	117	157	349	1 086	2 254	2,10	1397
1398	XC7022E.T.P4S	110	170	28	47	2		25					121,0	159,0	2		136,5	134,4	74,7	32,9	2,62	15 000	23 000	192	576	1 152	195	287	370	555	1 681	3 409	2,10	1398
1399	HS7022C.DLR.T.P4S	110	170	28	33	2		15	2,0	6,0	2,6	16,2	121,0	159,0	2				50,4	37,9	1,62		18 000	174	522	1 044	78,0	122	167	516	1 623	3 403	2,20	1399
1400	HS7022E.DLR.T.P4S	110	170	28	47	2		25	2,0	6,0	2,6	16,2	121,0	159,0	2				46,7	35,8	1,53		16 000	280	840	1 680	196	292	379	802	2 446	4 984	2,20	1400
1401	HC7022C.DLR.T.P4S	110	170	28	33	2		15	2,0	6,0	2,6	16,2	121,0	159,0	2				50,4	34,8	1,17		23 000	118	354	708	76,0	117	157	349	1 086	2 254	2,10	1401
1402	HC7022E.DLR.T.P4S	110	170	28	47	2		25	2,0	6,0	2,6	16,2	121,0	159,0	2				46,7	32,9	1,10		22 000	192	576	1 152	195	287	370	555	1 681	3 409	2,10	1402
1403	XC7022C.DLR.T.P4S	110	170	28	33	2		15	2,0	6,0	2,6	16,2	121,0	159,0	2				80,7	34,8	2,77		25 000	118	354	708	76,0	117	157	349	1 086	2 254	2,10	1403
1404	XC7022E.DLR.T.P4S	110	170	28	47	2		25	2,0	6,0	2,6	16,2	121,0	159,0	2				74,7	32,9	2,62		23 000	192	576	1 152	195	287	370	555	1 681	3 409	2,10	1404
1405	B7222C.T.P4S	110	200	38	40	2,1	2,1	15					126,5	183,5	2,1	2,1	147,4		162	142	5,78	6 700	10 000	1000	3 140	6 380	131	222	322	3 110	10 500	23 100	4,59	1405
1406	B7222E.T.P4S	110	200	38	55	2,1	2,1	25					126,5	183,5	2,1	2,1	147,4		154	136	5,50	6 000	9 000	1525	4 940	10 140	310	487	655	4 480	15 000	31 800	4,59	1406
1407	B7222C.DLR.T.P4S	110	200	38	40	2,1	2,1	15	2,0	6,5	2,6	22,6	126,5	183,5	2,1	2,1			162	142	5,78		10 000	1000	3 140	6 380	131	222	322	3 110	10 500	23 100	4,59	1407
1408	B7222E.DLR.T.P4S	110	200	38	55	2,1	2,1	25	2,0	6,5	2,6	22,6	126,5	183,5	2,1	2,1			154	136	5,50		9 000	1525	4 940	10 140	310	487	655	4 480	15 000	31 800	4,59	1408
1409	HCB7222C.T.P4S	110	200	38	40	2,1	2,1	15					126,5	183,5	2,1	2,1	147,4		162	131	4,16	8 500	14 000	535	1 740	3 560	116	188	263	1 630	5 600	12 100	3,96	1409
1410	HCB7222E.T.P4S	110	200	38	55	2,1	2,1	25					126,5	183,5	2,1	2,1	147,4		154	125	3,97	7 000	11 000	790	2 705	5 650	277	434	579	2 320	8 130	17 400	3,96	1410
1411	HCB7222C.DLR.T.P4S	110	200	38	40	2,1	2,1	15	2,0	6,5	2,6	22,6	126,5	183,5	2,1	2,1			162	131	4,16		14 000	535	1 740	3 560	116	188	263	1 630	5 600	12 100	3,96	1411
1412	HCB7222E.DLR.T.P4S	110	200	38	55	2,1	2,1	25	2,0	6,5	2,6	22,6	126,5	183,5	2,1	2,1			154	125	3,97		11 000	790	2 705	5 650	277	434	579	2 320	8 130	17 400	3,96	1412
1413	B71924C.2RSD.T.P4S	120	165	22	30	1,1	1	15					128,0	157,0	0,6	0,6			72,5	73,4	3,07	8 000		410	1 345	2 770	109	186	268	1 250	4 460	9 840	1,16	1413
1414	B71924E.2RSD.T.P4S	120	165	22	44	1,1	1	25					128,0	157,0	0,6	0,6			69,4	68,4	2,86	7 000		590	2 090	4 390	256	412	557	1 720	6 290	13 600	1,16	1414
1415	B71924C.T.P4S	120	165	22	30	1,1	1	15					128,0	157,0	0,6	0,6	138,3		72,5	73,4	3,07	8 000	12 000	410	1 345	2 770	109	186	268	1 250	4 460	9 840	1,16	1415
1416	B71924E.T.P4S	120	165	22	44	1,1	1	25					128,0	157,0	0,6	0,6	138,3		69,4	68,4	2,86	7 000	11 000	590	2 090	4 390	256	412	557	1 720	6 290	13 600	1,16	1416
1417	HCB71924C.T.P4S	120	165	22	30	1,1	1	15					128,0	157,0	0,6	0,6	138,3		72,5	64,6	2,15	11 000	17 000	210	740	1 570	95	159	222	640	2 370	5 260	0,976	1417
1418	HCB71924E.T.P4S	120	165	22	44	1,1	1	25					128,0	157,0	0,6	0,6	138,3		69,4	60,2	2,00	10 000	15 000	276	1 110	2 420	222	366	492	810	3 310	7 390	0,976	1418
1419	XCB71924C.T.P4S	120	165	22	30	1,1	1	15					128,0	157,0	0,6	0,6	138,3		116	64,6	5,09	12 000	19 000	210	740	1 570	95	159	222	640	2 370	5 260	0,976	1419
1420	XCB71924E.T.P4S	120	165	22	44	1,1	1	25					128,0	157,0	0,6	0,6	138,3		111	60,2	4,74	11 000	17 000	276	1 110	2 420	222	366	492	810	3 310	7 390	0,976	1420
1421	HS71924C.T.P4S	120	165	22	30	1,1		15					128,0	157,0	0,6		139,7	138,1	36,6	30,6	1,30	11 000	17 000	127	381	762	78,0	122	165	374	1 179	2 462	1,30	1421
1422	HS71924E.T.P4S	120	165	22	44	1,1		25					128,0	157,0	0,6		139,7	138,1	35,0	28,8	1,22	10 000	15 000	207	621	1 242	196	291	379	591	1 806	3 680	1,30	1422
1423	HC71924C.T.P4S	120	165	22	30	1,1							128,0	157,0	0,6		139,7	138,1	36,6	28,1	0,94	14 000	22 000	88	264	528	76,0	116	155	260	802	1 654	1,23	1423
1424	HC71924E.T.P4S	120	165	22	44	1,1		25					128,0	157,0	0,6		139,7	138,1	35,0	26,5	0,88	13 000	20 000	143	429	858	195	288	371	413	1 248	2 528	1,23	1424

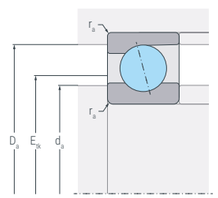
Spindle bearings
Dimensional tables of spindle bearings

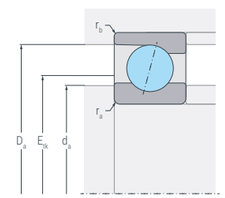


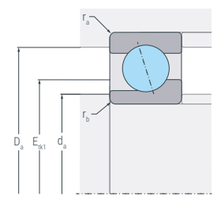


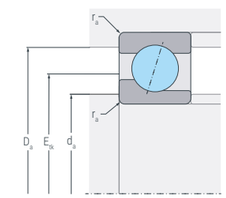












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1425	XC71924C.T.P4S	120	165	22	30	1,1		15					128,0	157,0	0,6		139,7	138,1	58,6	28,1	2,22	16 000	24 000	88	264	528	76,0	116	155	260	802	1 654	1,23	1425
1426	XC71924E.T.P4S	120	165	22	44	1,1		25					128,0	157,0	0,6		139,7	138,1	56,0	26,5	2,09	14 000	22 000	143	429	858	195	288	371	413	1 248	2 528	1,23	1426
1427	B7024C.2RSD.T.P4S	120	180	28	34	2	1,1	15					131,0	169,0	2	1			112	107	4,56	7 500		660	2 110	4 310	124	210	302	2 030	7 040	15 400	2,07	1427
1428	B7024E.2RSD.T.P4S	120	180	28	49	2	1,1	25					131,0	169,0	2	1			107	99,6	4,24	6 700		990	3 320	6 880	290	460	622	2 890	10 000	21 400	2,07	1428
1429	B7024C.T.P4S	120	180	28	34	2	1,1	15					131,0	169,0	2	1	144,3		112	107	4,56	7 500	12 000	660	2 110	4 310	124	210	302	2 030	7 040	15 400	2,07	1429
1430	B7024E.T.P4S	120	180	28	49	2	1,1	25					131,0	169,0	2	1	144,3		107	99,6	4,24	6 700	10 000	990	3 320	6 880	290	460	622	2 890	10 000	21 400	2,07	1430
1431	HCB7024C.T.P4S	120	180	28	34	2	1,1	15					131,0	169,0	2	1	144,3		112	98,5	3,19	10 000	16 000	350	1 180	2 440	107	178	250	1 070	3 770	8 240	1,72	1431
1432	HCB7024E.T.P4S	120	180	28	49	2	1,1	25					131,0	169,0	2	1	144,3		107	91,6	2,97	9 500	14 000	490	1 780	3 795	258	411	550	1 430	5 330	11 600	1,72	1432
1433	XCB7024C.T.P4S	120	180	28	34	2	1,1	15					131,0	169,0	2	1	144,3		179	98,5	7,56	12 000	18 000	350	1 180	2 440	107	178	250	1 070	3 770	8 240	1,72	1433
1434	XCB7024E.T.P4S	120	180	28	49	2	1,1	25					131,0	169,0	2	1	144,3		171	91,6	7,03	10 000	16 000	490	1 780	3 795	258	411	550	1 430	5 330	11 600	1,72	1434
1435	HS7024C.T.P4S	120	180	28	34	2		15					131,0	169,0	2		145,4	143,2	52,6	40,6	1,68	10 000	16 000	179	537	1 074	82,5	128	175	530	1 659	3 480	2,30	1435
1436	HS7024E.T.P4S	120	180	28	49	2		25					131,0	169,0	2		145,4	143,2	48,7	38,3	1,59	9 500	14 000	288	864	1 728	207	305	398	824	2 511	5 114	2,30	1436
1437	HC7024C.T.P4S	120	180	28	34	2		15					131,0	169,0	2		145,4	143,2	52,6	37,4	1,21	13 000	21 000	123	369	738	81,0	123	165	363	1 128	2 336	2,10	1437
1438	HC7024E.T.P4S	120	180	28	49	2		25					131,0	169,0	2		145,4	143,2	48,7	35,3	1,14	12 000	19 000	199	597	1 194	204	303	390	575	1 747	3 543	2,10	1438
1439	XC7024C.T.P4S	120	180	28	34	2		15					131,0	169,0	2		145,4	143,2	84,1	37,4	2,87	14 000	23 000	123	369	738	81,0	123	165	363	1 128	2 336	2,10	1439
1440	XC7024E.T.P4S	120	180	28	49	2		25					131,0	169,0	2		145,4	143,2	77,9	35,3	2,71	13 000	20 000	199	597	1 194	204	303	390	575	1 747	3 543	2,10	1440
1441	B7224C.T.P4S	120	215	40	43	2,1	2,1	15					140,0	195,0	2,1	2,1	158		204	184	7,19	6 000	9 000	1 270	3 960	8 040	140	234	336	3 940	13 200	28 900	5,29	1441
1442	B7224E.T.P4S	120	215	40	59	2,1	2,1	25					140,0	195,0	2,1	2,1	158		195	176	6,87	5 300	8 000	2 000	6 425	13 100	334	520	700	5 890	19 500	41 000	5,29	1442
1443	HCB7224C.T.P4S	120	215	40	43	2,1	2,1	15					140,0	195,0	2,1	2,1	158		204	169	5,18	7 500	12 000	685	2 190	4 485	124	200	276	2 090	7 050	15 100	4,21	1443
1444	HCB7224E.T.P4S	120	215	40	59	2,1	2,1	25					140,0	195,0	2,1	2,1	158		195	161	4,95	6 300	9 500	1 050	3 500	7 290	301	466	620	3 080	10 500	22 300	4,21	1444
1445	B71926C.2RSD.T.P4S	130	180	24	33	1,5	1,1	15					139,0	171,0	0,6	0,6			76,2	79,2	3,32	7 000		490	1 600	3 290	117	200	287	1 500	5 310	11 600	1,52	1445
1446	B71926E.2RSD.T.P4S	130	180	24	48	1,5	1,1	25					139,0	171,0	0,6	0,6			70,9	73,9	3,09	6 700		712	2 480	5 190	275	440	594	2 090	7 470	16 100	1,52	1446
1447	B71926C.T.P4S	130	180	24	33	1,5	1,1	15					139,0	171,0	0,6	0,6	150,8		76,2	79,2	3,32	7 000	10 000	490	1 600	3 290	117	200	287	1 500	5 310	11 600	1,52	1447
1448	B71926E.T.P4S	130	180	24	48	1,5	1,1	25					139,0	171,0	0,6	0,6	150,8		70,9	73,9	3,09	6 700	9 000	712	2 480	5 190	275	440	594	2 090	7 470	16 100	1,52	1448
1449	HCB71926C.T.P4S	130	180	24	33	1,5	1,1	15					139,0	171,0	0,6	0,6	150,8		76,2	72,9	2,32	10 000	15 000	256	888	1 858	102	171	236	780	2 830	6 250	1,28	1449
1450	HCB71926E.T.P4S	130	180	24	48	1,5	1,1	25					139,0	171,0	0,6	0,6	150,8		70,9	67,9	2,16	9 000	14 000	350	1 355	2 925	242	395	529	1 020	4 050	8 910	1,28	1450
1451	XCB71926C.T.P4S	130	180	24	33	1,5	1,1	15					139,0	171,0	0,6	0,6	150,8		122	72,9	5,50	11 000	17 000	256	888	1 858	102	171	236	780	2 830	6 250	1,28	1451
1452	XCB71926E.T.P4S	130	180	24	48	1,5	1,1	25					139,0	171,0	0,6	0,6	150,8		113	67,9	5,13	10 000	15 000	350	1 355	2 925	242	395	529	1 020	4 050	8 910	1,28	1452
1453	HS71926C.T.P4S	130	180	24	33	1,5		15					139,0	171,0	0,6		152	150,2	42,1	36,5	1,49	10 000	16 000	145	435	870	83,0	129	175	427	1 345	2 804	1,80	1453
1454	HS71926E.T.P4S	130	180	24	48	1,5		25					139,0	171,0	0,6		152	150,2	40,3	34,4	1,40	9 000	14 000	238	714	1 428	208	309	400	680	2 074	4 214	1,80	1454
1455	HC71926C.T.P4S	130	180	24	33	1,5		15					139,0	171,0	0,6		152	150,2	42,1	33,6	1,07	13 000	20 000	100	300	600	82,0	124	164	295	914	1 889	1,70	1455

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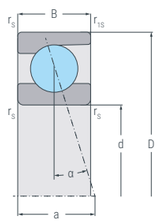
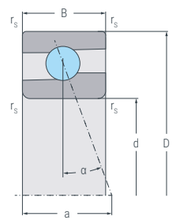
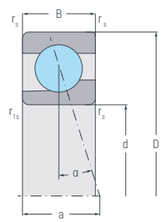
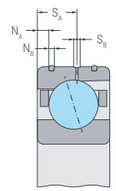
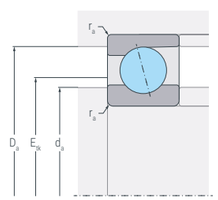
Spindle bearings
Dimensional tables of spindle bearings

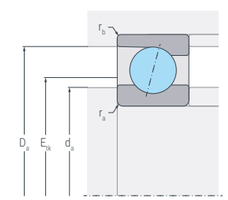


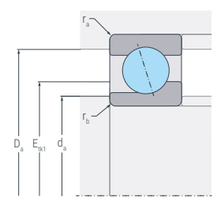


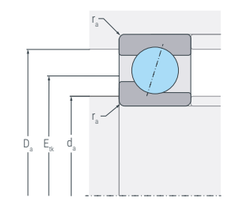












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions						Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																	Injection pitch		dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1456	HC71926E.T.P4S	130	180	24	48	1,5		25					139,0	171,0	0,6		152	150,2	40,3	31,7	1,01	12 000	18 000	163	489	978	207	305	392	470	1 423	2 879	1,70	1456
1457	XC71926C.T.P4S	130	180	24	33	1,5		15					139,0	171,0	0,6		152	150,2	67,4	33,6	2,54	14 000	22 000	100	300	600	82,0	124	164	295	914	1 889	1,70	1457
1458	XC71926E.T.P4S	130	180	24	48	1,5		25					139,0	171,0	0,6		152	150,2	64,5	31,7	2,39	13 000	20 000	163	489	978	207	305	392	470	1 423	2 879	1,70	1458
1459	B7026C.2RSD.T.P4S	130	200	33	39	2	1,1	15					142,0	189,0	2	1			145	141	5,73	6 700		860	2 720	5 550	137	232	333	2 650	9 100	19 800	3,15	1459
1460	B7026E.2RSD.T.P4S	130	200	33	55	2	1,1	25					142,0	189,0	2	1			137	133	5,39	6 000		1 320	4 370	8 960	329	517	692	3 870	13 200	28 000	3,15	1460
1461	B7026C.T.P4S	130	200	33	39	2	1,1	15					142,0	189,0	2	1	158,3		145	141	5,73	6 700	10 000	860	2 720	5 550	137	232	333	2 650	9 100	19 800	3,15	1461
1462	B7026E.T.P4S	130	200	33	55	2	1,1	25					142,0	189,0	2	1	158,3		137	133	5,39	6 000	9 500	1 320	4 370	8 960	329	517	692	3 870	13 200	28 000	3,15	1462
1463	HCB7026C.T.P4S	130	200	33	39	2	1,1	15					142,0	189,0	2	1	158,3		145	130	4,01	9 500	14 000	460	1 520	3 140	122	199	277	1 400	4 880	10 600	2,62	1463
1464	HCB7026E.T.P4S	130	200	33	55	2	1,1	25					142,0	189,0	2	1	158,3		137	122	3,77	8 500	13 000	675	2 375	5 020	291	461	615	1 970	7 130	15 400	2,62	1464
1465	XCB7026C.T.P4S	130	200	33	39	2	1,1	15					142,0	189,0	2	1	158,3		231	130	9,50	10 000	16 000	460	1 520	3 140	122	199	277	1 400	4 880	10 600	2,62	1465
1466	XCB7026E.T.P4S	130	200	33	55	2	1,1	25					142,0	189,0	2	1	158,3		219	122	8,94	9 000	14 000	675	2 375	5 020	291	461	615	1 970	7 130	15 400	2,62	1466
1467	HS7026C.T.P4S	130	200	33	39	2		15					142,0	189,0	2		159,7	157,5	66,9	53,2	2,10	9 500	15 000	228	684	1368	93,0	145	198	675	2 113	4 422	3,70	1467
1468	HS7026E.T.P4S	130	200	33	55	2		25					142,0	189,0	2		159,7	157,5	61,9	50,2	1,98	8 500	13 000	368	1 104	2 208	234	347	450	1053	3 212	6 547	3,70	1468
1469	HC7026C.T.P4S	130	200	33	39	2		15					142,0	189,0	2		159,7	157,5	66,9	48,9	1,51	12 000	19 000	159	477	954	91,0	140	187	470	1 455	3 007	3,50	1469
1470	HC7026E.T.P4S	130	200	33	55	2		25					142,0	189,0	2		159,7	157,5	61,9	46,2	1,43	11 000	17 000	257	771	1 542	232	345	444	741	2 254	4 567	3,50	1470
1471	XC7026C.T.P4S	130	200	33	39	2		15					142,0	189,0	2		159,7	157,5	107	48,9	3,58	13 000	21 000	159	477	954	91,0	140	187	470	1 455	3 007	3,50	1471
1472	XC7026E.T.P4S	130	200	33	55	2		25					142,0	189,0	2		159,7	157,5	99,0	46,2	3,38	12 000	19 000	257	771	1 542	232	345	444	741	2 254	4 567	3,50	1472
1473	B7226C.T.P4S	130	230	40	44	3	3	15					148,0	211,5	2,5	2,5	170,5		213	201	7,59	5 600	8 500	1 310	4 100	8 350	149	245	353	4 080	13 700	29 800	6,10	1473
1474	B7226E.T.P4S	130	230	40	62	3	3	25					148,0	211,5	2,5	2,5	170,5		203	192	7,24	5 000	7 500	2 080	6 675	13 600	351	555	742	6 110	20 200	42 600	6,10	1474
1475	HCB7226C.T.P4S	130	230	40	44	3	3	15					148,0	211,5	2,5	2,5	170,5		213	185	5,47	7 000	11 000	720	2 300	4 700	130	212	293	2 190	7 400	15 900	5,00	1475
1476	HCB7226E.T.P4S	130	230	40	62	3	3	25					148,0	211,5	2,5	2,5	170,5		203	176	5,22	6 000	9 000	1 080	3 650	7 520	316	496	654	3 180	10 800	23 000	5,00	1476
1477	B71928C.2RSD.T.P4S	140	190	24	34	1,5	1,1	15					149,0	181,0	0,6	0,6			89,9	94,1	3,82	6 700		505	1 665	3 415	126	212	303	1 560	5500	12 000	1,63	1477
1478	B71928E.2RSD.T.P4S	140	190	24	50	1,5	1,1	25					149,0	181,0	0,6	0,6			86,0	87,7	3,56	6 000		740	2 580	5 400	295	470	632	2 160	7 760	16 700	1,63	1478
1479	B71928C.T.P4S	140	190	24	34	1,5	1,1	15					149,0	181,0	0,6	0,6	160,2		89,9	94,1	3,82	6 700	10 000	505	1 665	3 415	126	212	303	1 560	5500	12 000	1,63	1479
1480	B71928E.T.P4S	140	190	24	50	1,5	1,1	25					149,0	181,0	0,6	0,6	160,2		86,0	87,7	3,56	6 000	9 500	740	2 580	5 400	295	470	632	2 160	7 760	16 700	1,63	1480
1481	HCB71928C.T.P4S	140	190	24	34	1,5	1,1	15					149,0	181,0	0,6	0,6	160,2		89,9	86,5	2,67	9 500	14 000	265	920	1 930	109	183	252	800	2 930	6 460	1,37	1481
1482	HCB71928E.T.P4S	140	190	24	50	1,5	1,1	25					149,0	181,0	0,6	0,6	160,2		86,0	80,6	2,49	8 500	13 000	355	1 390	3 000	258	417	562	1 030	4 140	9 140	1,37	1482
1483	XCB71928C.T.P4S	140	190	24	34	1,5	1,1	15					149,0	181,0	0,6	0,6	160,2		144	86,5	6,33	11 000	16 000	265	920	1 930	109	183	252	800	2 930	6 460	1,37	1483
1484	XCB71928E.T.P4S	140	190	24	50	1,5	1,1	25					149,0	181,0	0,6	0,6	160,2		138	80,6	5,90	9 500	15 000	355	1 390	3 000	258	417	562	1 030	4 140	9 140	1,37	1484
1485	B7028C.2RSD.T.P4S	140	210	33	40	2	1,1	15					152,0	199,0	2	1			148	149	5,86	6 300		870	2 775	5 660	142	240	340	2 700	9 270	20 200	3,34	1485
1486	B7028E.2RSD.T.P4S	140	210	33	57	2	1,1	25					152,0	199,0	2	1			141	138	5,45	5 600		1 345	4 445	9 460	340	537	720	3 940	13 400	28 500	3,34	1486

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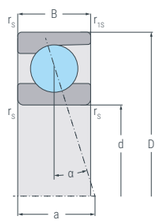
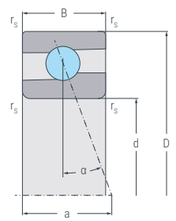
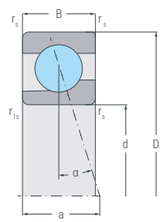
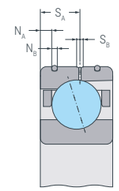
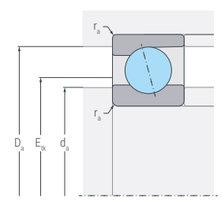
Spindle bearings
Dimensional tables of spindle bearings

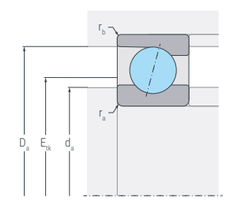


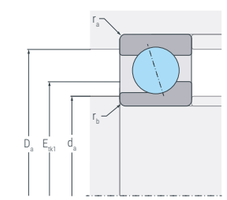


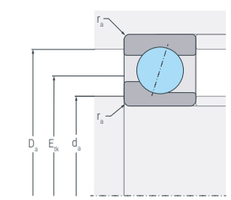












	Symbol	Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
	Bearing	d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1487	B7028C.T.P4S	140	210	33	40	2	1,1	15					152,0	199,0	2	1	168,3		148	149	5,86	6 300	10 000	870	2 775	5 660	142	240	340	2 700	9 270	20 200	3,34	1487
1488	B7028E.T.P4S	140	210	33	57	2	1,1	25					152,0	199,0	2	1	168,3		141	138	5,45	5 600	9 000	1 345	4 445	9 460	340	537	720	3 940	13 400	28 500	3,34	1488
1489	HCB7028C.T.P4S	140	210	33	40	2	1,1	15					152,0	199,0	2	1	168,3		148	137	4,10	9 000	14 000	480	1 580	3 270	126	206	290	1 460	5 090	11 000	2,78	1489
1490	HCB7028E.T.P4S	140	210	33	57	2	1,1	25					152,0	199,0	2	1	168,3		141	127	3,81	8 000	12 000	685	2 435	5 130	303	481	639	2 000	7 290	15 700	2,78	1490
1491	XCB7028C.T.P4S	140	210	33	40	2	1,1	15					152,0	199,0	2	1	168,3		236	137	9,72	10 000	16 000	480	1 580	3 270	126	206	290	1 460	5 090	11 000	2,78	1491
1492	XCB7028E.T.P4S	140	210	33	57	2	1,1	25					152,0	199,0	2	1	168,3		226	127	9,04	9 000	14 000	685	2 435	5 130	303	481	639	2 000	7 290	15 700	2,78	1492
1493	B7228C.T.P4S	140	250	42	47	3	3	15					163,0	226,5	2,5	2,5	185,5		222	248	9,00	5 000	7 500	1 360	4 260	8 640	155	260	370	4 200	14 200	30 700	7,87	1493
1494	B7228E.T.P4S	140	250	42	66	3	3	25					163,0	226,5	2,5	2,5	185,5		211	236	8,57	4 500	6 700	2 150	6 930	14 100	377	580	780	6 300	20 900	44 200	7,87	1494
1495	HCB7228C.T.P4S	140	250	42	47	3	3	15					163,0	226,5	2,5	2,5	185,5		222	228	6,48	6 300	9 500	750	2 400	4 900	137	222	307	2 280	7 690	16 500	6,67	1495
1496	HCB7228E.T.P4S	140	250	42	66	3	3	25					163,0	226,5	2,5	2,5	185,5		211	217	6,17	5 300	8 000	1 130	3 800	7 910	340	523	690	3 330	11 400	24 200	6,67	1496
1497	B71930C.2RSD.T.P4S	150	210	28	38	2	1,1	15					160,0	199,0	1	1			121	124	4,84	6 300		710	2 290	4 680	141	238	342	2 180	7 580	16 600	2,49	1497
1498	B71930E.2RSD.T.P4S	150	210	28	56	2	1,1	25					160,0	199,0	1	1			116	116	4,50	5 600		1 050	3 540	7 370	333	528	708	3 050	10 600	22 800	2,49	1498
1499	B71930C.T.P4S	150	210	28	38	2	1,1	15					160,0	199,0	1	1	174,3		122	124	4,84	6 300	9 500	710	2 290	4 680	141	238	342	2 180	7 580	16 600	2,49	1499
1500	B71930E.T.P4S	150	210	28	56	2	1,1	25					160,0	199,0	1	1	174,3		116	116	4,50	5 600	8 500	1 050	3 540	7 370	333	528	708	3 050	10 600	22 800	2,49	1500
1501	HCB71930C.T.P4S	150	210	28	38	2	1,1	15					160,0	199,0	1	1	174,3		121	114	3,38	8 500	13 000	375	1 260	2 625	125	204	282	1 140	4 020	8 790	2,07	1501
1502	HCB71930E.T.P4S	150	210	28	56	2	1,1	25					160,0	199,0	1	1	174,3		116	107	3,15	7 500	11 000	520	1 925	4 115	295	471	630	1 520	5 750	12 500	2,07	1502
1503	XCB71930C.T.P4S	150	210	28	38	2	1,1	15					160,0	199,0	1	1	174,3		194	114	8,02	9 500	15 000	375	1 260	2 625	125	204	282	1 140	4 020	8 790	2,07	1503
1504	XCB71930E.T.P4S	150	210	28	56	2	1,1	25					160,0	199,0	1	1	174,3		185	107	7,47	8 500	13 000	520	1 925	4 115	295	471	630	1 520	5 750	12 500	2,07	1504
1505	B7030C.T.P4S	150	225	35	43	2,1	1,5	15					163,0	213,0	2,1	1	179,9		184	184	6,99	6 000	9 000	1 100	3 500	7 150	156	265	378	3 450	11 700	25 500	3,99	1505
1506	B7030E.T.P4S	150	225	35	61	2,1	1,5	25					163,0	213,0	2,1	1	179,9		174	173	6,60	5 300	8 000	1 700	5 555	11 420	373	584	785	5 000	16 800	35 600	3,99	1506
1507	HCB7030C.T.P4S	150	225	35	43	2,1	1,5	15					163,0	213,0	2,1	1	179,9		184	169	4,89	8 000	13 000	600	1 960	4 020	138	224	313	1 860	6 280	13 600	3,20	1507
1508	HCB7030E.T.P4S	150	225	35	61	2,1	1,5	25					163,0	213,0	2,1	1	179,9		174	159	4,62	7 500	11 000	900	3 100	6 500	336	528	700	2 640	9 320	19 900	3,20	1508
1509	XCB7030C.T.P4S	150	225	35	43	2,1	1,5	15					163,0	213,0	2,1	1	179,9		294	169	11,6	9 000	15 000	600	1 960	4 020	138	224	313	1 860	6 280	13 600	3,20	1509
1510	XCB7030E.T.P4S	150	225	35	61	2,1	1,5	25					163,0	213,0	2,1	1	179,9		278	159	10,9	8 500	13 000	900	3 100	6 500	336	528	700	2 640	9 320	19 900	3,20	1510
1511	B7230C.T.P4S	150	270	45	51	3	3	15					178,0	241,5	2,5	2,5	200,6		230	268	9,37	4 500	6 700	1 400	4 410	8 950	166	274	389	4 360	14 600	31 700	10,1	1511
1512	B7230E.T.P4S	150	270	45	71	3	3	25					178,0	241,5	2,5	2,5	200,3		218	255	8,92	4 000	6 000	2 190	7 025	14 400	393	606	815	6 400	21 100	44 800	10,1	1512
1513	HCB7230C.T.P4S	150	270	45	51	3	3	15					178,0	241,5	2,5	2,5	200,6		230	247	6,75	5 600	8 500	770	2 470	5 050	143	236	322	2 330	7 900	16 900	8,70	1513
1514	HCB7230E.T.P4S	150	270	45	71	3	3	25					178,0	241,5	2,5	2,5	200,3		218	235	6,43	5 000	7 500	1 140	3 860	8 025	353	548	723	3 360	11 600	24 500	8,70	1514
1515	B71932C.T.P4S	160	220	28	40	2	1,1	15					170,0	209,0	1	1	184,3		124	132	4,99	6 000	9 000	730	2 340	4 790	146	245	353	2 240	7 750	16 900	2,62	1515
1516	B71932E.T.P4S	160	220	28	58	2	1,1	25					170,0	209,0	1	1	184,3		116	123	4,65	5 300	8 000	1 050	3 600	7 500	344	544	730	3 090	10 800	23 200	2,62	1516
1517	HCB71932C.T.P4S	160	220	28	40	2	1,1	15					170,0	209,0	1	1	184,3		124	121	3,49	8 000	13 000	380	1 285	2 670	127	209	292	1 150	4 100	8 960	2,19	1517

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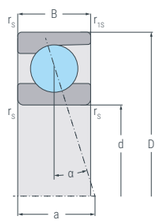
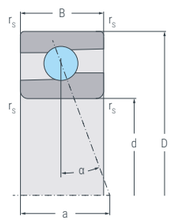
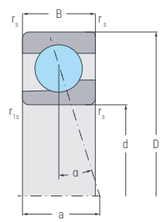
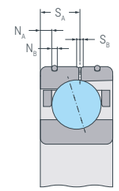
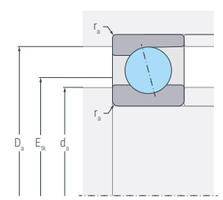
Spindle bearings
Dimensional tables of spindle bearings

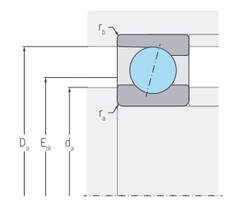


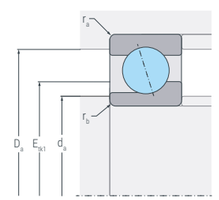


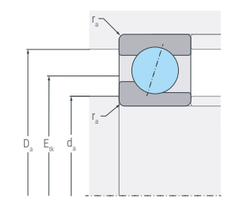












Symbol		Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
Bearing		d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1518	HCB71932E.T.P4S	160	220	28	58	2	1,1	25					170,0	209,0	1	1	184,3		116	113	3,25	7 500	11 000	530	1 965	4 200	305	488	650	1 550	5 860	12 800	2,19	1518
1519	XCB71932C.T.P4S	160	220	28	40	2	1,1	15					170,0	209,0	1	1	184,3		199	121	8,28	9 000	15 000	380	1 285	2 670	127	209	292	1 150	4 100	8 960	2,19	1519
1520	XCB71932E.T.P4S	160	220	28	58	2	1,1	25					170,0	209,0	1	1	184,3		186	113	7,71	8 500	13 000	530	1 965	4 200	305	488	650	1 550	5 860	12 800	2,19	1520
1521	B7032C.T.P4S	160	240	38	46	2,1	1,5	15					174,0	228,0	2	1	192,4		188	194	7,15	5 600	8 500	1 150	3 640	7 400	163	275	395	3 570	12 100	26 400	5,01	1521
1522	B7032E.T.P4S	160	240	38	66	2,1	1,5	25					174,0	228,0	2	1	192,4		179	180	6,65	5 000	7 500	1 720	5 640	11 600	387	605	813	5 060	17 000	36 000	5,01	1522
1523	HCB7032C.T.P4S	160	240	38	46	2,1	1,5	15					174,0	228,0	2	1	192,4		188	178	5,00	7 500	12 000	625	2 030	4 180	145	233	324	1 890	6 520	14 100	4,20	1523
1524	HCB7032E.T.P4S	160	240	38	66	2,1	1,5	25					174,0	228,0	2	1	192,4		179	166	4,65	7 000	11 000	910	3 160	6 620	350	549	727	2 670	9 470	20 200	4,20	1524
1525	XCB7032C.T.P4S	160	240	38	46	2,1	1,5	15					174,0	228,0	2	1	192,4		300	178	11,9	8 500	14 000	625	2 030	4 180	145	233	324	1 890	6 520	14 100	4,20	1525
1526	XCB7032E.T.P4S	160	240	38	66	2,1	1,5	25					174,0	228,0	2	1	192,4		587	166	11,0	8 000	13 000	910	3 160	6 620	350	549	727	2 670	9 470	20 200	4,20	1526
1527	B7232C.T.P4S	160	290	48	54	3	3	15					191,0	259,0	2,5	2,5	215,5		245	305	10,3	4 300	6 300	1 500	4 730	9 600	182	300	425	4 670	15 700	33 900	12,9	1527
1528	B7232E.T.P4S	160	290	48	76	3	3	25					191,0	259,0	2,5	2,5	215,5		232	290	9,77	3 800	5 600	2 340	7 530	15 450	432	667	895	6 840	22 600	48 000	12,9	1528
1529	HCB7232C.T.P4S	160	290	48	54	3	3	15					191,0	259,0	2,5	2,5	215,5		245	280	7,41	5 300	8 000	830	2 660	5 480	160	258	356	2 520	8 550	18 300	11,5	1529
1530	HCB7232E.T.P4S	160	290	48	76	3	3	25					191,0	259,0	2,5	2,5	215,5		232	266	7,04	4 500	6 700	1 230	4 170	8 670	390	606	798	3 600	12 400	26 400	11,5	1530
1531	B71934C.T.P4S	170	230	28	41	2	1,1	15					180,0	219,0	1	1	194,3		128	141	5,21	5 600	8 500	750	2 400	4 950	152	261	370	2 290	7 950	17 400	2,78	1531
1532	B71934E.T.P4S	170	230	28	61	2	1,1	25					180,0	219,0	1	1	194,3		122	132	4,85	5 000	7 500	1 100	3 780	7 870	365	580	779	3 240	11 300	24 400	2,78	1532
1533	HCB71934C.T.P4S	170	230	28	41	2	1,1	15					180,0	219,0	1	1	194,3		128	130	3,65	7 500	12 000	390	1 330	2 770	135	222	309	1 180	4 220	9 220	2,31	1533
1534	HCB71934E.T.P4S	170	230	28	61	2	1,1	25					180,0	219,0	1	1	194,3		122	121	3,40	7 000	11 000	540	2 030	4 350	323	518	690	1 590	6 040	13 200	2,31	1534
1535	B7034C.T.P4S	170	260	42	50	2,1	2,1	15					185,0	246,0	2	1	205,5		237	252	8,97	5 300	8 000	1 460	4 560	9 250	174	285	408	4 500	15 100	32 700	6,51	1535
1536	B7034E.T.P4S	170	260	42	71	2,1	2,1	25					185,0	246,0	2	1	205,5		224	240	8,53	4 500	7 000	2 260	7 280	14 900	410	638	855	6 640	21 900	46 400	6,51	1536
1537	B7234C.T.P4S	170	310	52	58	4	4	15					205,0	275,0	3	3	228,6		297	336	11,3	3 800	5 600	1 880	5 840	11 825	190	314	445	5 790	19 300	41 600	15,6	1537
1538	B7234E.T.P4S	170	310	52	82	4	4	25					205,0	275,0	3	3	228,6		281	320	10,9	3 600	5 300	2 880	9 185	18 735	455	702	936	8 420	27 600	58 000	15,6	1538
1539	B71836C. T.P4S	180	225	22	38	1,1	0,6	15					189,0	216,0	1,1	0,6	198,5		69,3	92,3	3,36	4 800	7 000	370	1 250	2 600	127	220	320	1 140	4 140	9 240	1,72	1539
1540	B71836E. T.P4S	180	225	22	58	1,1	0,6	25					189,0	216,0	1,1	0,6	198,5		66,3	86,6	3,14	4 300	6 300	515	1 920	4 100	298	485	660	1 500	5 760	12 700	1,72	1540
1541	B71936C.T.P4S	180	250	33	46	2	1,1	15					192,0	238,0	1	1	208,3		164	179	6,37	5 300	8 000	962	3 080	6 300	169	282	401	2 970	10 200	22 200	4,13	1541
1542	B71936E.T.P4S	180	250	33	67	2	1,1	25					192,0	238,0	1	1	208,3		154	167	5,92	4 500	7 000	1 470	4 915	10 160	402	634	850	4 320	14 800	31 400	4,13	1542
1543	HCB71936C.T.P4S	180	250	33	46	2	1,1	15					192,0	238,0	1	1	208,3		164	165	4,46	7 000	11 000	515	1 700	3 550	148	240	335	1 560	5 440	11 800	3,44	1543
1544	HCB71936E.T.P4S	180	250	33	67	2	1,1	25					192,0	238,0	1	1	208,3		154	153	4,15	6 300	10 000	735	2 640	5 600	356	567	755	2 150	7 890	17 000	3,44	1544
1545	B7036C.T.P4S	180	280	46	54	2,1	2,1	15					196,0	264,0	2	1	220,5		243	270	9,29	4 800	7 500	1 510	4 740	9 600	180	300	425	4 700	15 600	33 900	8,77	1545
1546	B7036E.T.P4S	180	280	46	77	2,1	2,1	25					196,0	264,0	2	1	220,5		232	257	8,83	4 300	6 700	2 340	7 530	15 450	433	670	895	6 800	22 600	48 000	8,77	1546
1547	B7236C.T.P4S	180	320	52	60	4	4	15					213,5	286,5	3	3	238,6		308	373	11,9	3 800	5 600	1 900	5 950	12 000	200	329	465	5 860	19 500	42 100	16,3	1547
1548	B7236E.T.P4S	180	320	52	84	4	4	25					213,5	286,5	3	3	238,6		292	355	11,3	3 400	5 000	2 980	9 500	19 400	475	735	985	8 700	28 600	60 000	16,3	1548

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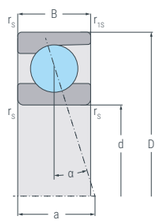
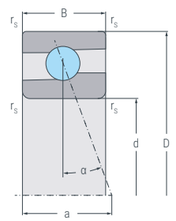
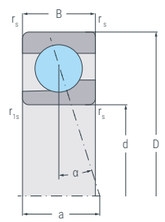
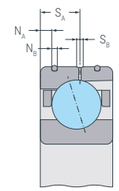
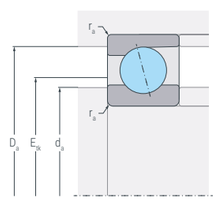
Spindle bearings
Dimensional tables of spindle bearings

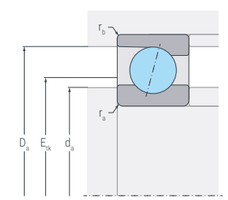


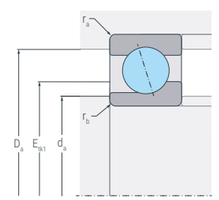


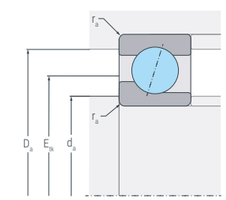






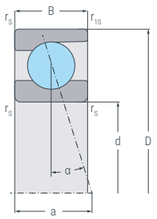


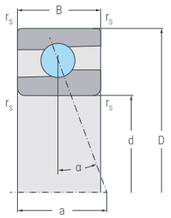


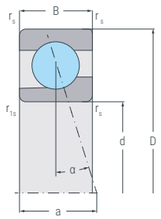


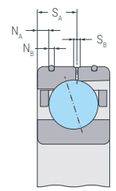
Symbol		Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
Bearing		d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1549	B71938C.T.P4S	190	260	33	47	2	1,1	15					202,0	247,0	1	1	218,3		168	185	6,43	5 000	7 500	895	3 000	6 200	167	282	408	2 730	9 840	21 800	4,31	1549
1550	B71938E.T.P4S	190	260	33	69	2	1,1	25					202,0	247,0	1	1	218,3		158	172	5,99	4 500	6 700	1 260	4 575	9 700	388	630	850	3 660	13 700	29 900	4,31	1550
1551	HCB71938C.T.P4S	190	260	33	47	2	1,1	15					202,0	247,0	1	1	218,3		168	170	4,50	6 700	10 000	450	1 620	3 440	143	242	336	1 350	5 130	11 400	3,59	1551
1552	HCB71938E.T.P4S	190	260	33	69	2	1,1	25					202,0	247,0	1	1	218,3		158	159	4,19	6 000	9 500	565	2 400	5 310	333	560	757	1 650	7 150	16 100	3,59	1552
1553	B7038C.T.P4S	190	290	46	55	2,1	2,1	15					206,0	274,0	2	1	230,5		251	287	9,65	4 500	7 000	1 450	4 670	9 580	181	303	440	4 430	15 400	33 600	9,18	1553
1554	B7038E.T.P4S	190	290	46	79	2,1	2,1	25					206,0	274,0	2	1	230,5		237	271	9,11	4 000	6 300	2 150	7 285	15 230	430	680	913	6 260	21 900	47 000	9,18	1554
1555	B7238C.T.P4S	190	340	55	63	4	4	15					223,5	306,5	3	3	253,6		317	399	12,4	3 400	5 000	1 860	5 960	12 160	202	335	478	5 700	19 500	24 500	20,0	1555
1556	B7238E.T.P4S	190	340	55	89	4	4	25					223,5	306,5	3	3	253,6		300	371	11,6	3 200	4 800	2 815	9 425	19 525	485	760	1 015	8 200	28 300	60 200	20,0	1556
1557	B71840C.T.P4S	200	250	24	42	1,5	0,6	15					211,0	239,0	1,5	0,6	220,7		82	113	4,01	4 300	6 300	350	1 300	2 810	135	240	346	1 070	4 300	9 850	2,31	1557
1558	B71840E.T.P4S	200	250	24	64	1,5	0,6	25					211,0	239,0	1,5	0,6	220,7		78	106	3,74	3 800	5 600	425	1 910	4 320	296	520	717	1 220	5 720	13 300	2,31	1558
1559	B71940C.T.P4S	200	280	38	51	2,1	1,5	15					214,0	266,0	1	1	232,4		203	225	7,58	4 500	7 000	1 135	3 735	7 700	180	305	435	3 480	12 300	27 000	6,03	1559
1560	B71940E.T.P4S	200	280	38	75	2,1	1,5	25					214,0	266,0	1	1	232,4		195	210	7,06	4 000	6 300	1 645	5 800	12 200	425	680	915	4 790	17 400	37 800	6,03	1560
1561	HCB71940C.T.P4S	200	280	38	51	2,1	1,5	15					214,0	266,0	1	1	232,4		203	207	5,31	6 300	10 000	580	2 030	4 270	156	260	360	1 740	6 440	14 200	5,04	1561
1562	HCB71940E.T.P4S	200	280	38	75	2,1	1,5	25					214,0	266,0	1	1	232,4		195	193	4,94	5 600	9 000	760	3 060	6 660	365	602	810	2 220	9 110	20 200	5,04	1562
1563	B7040C.T.P4S	200	310	51	60	2,1	2,1	15					217,0	293,0	2	1	243,5		305	375	12,2	4 300	6 700	1 800	5 770	11 780	194	322	458	5 540	19 000	41 200	11,6	1563
1564	B7040E.T.P4S	200	310	51	85	2,1	2,1	25					217,0	293,0	2	1	243,5		292	354	11,3	3 800	6 000	2 730	9 120	18 890	463	725	970	7 970	27 400	58 300	11,6	1564
1565	B7240C.T.P4S	200	360	58	67	4	4	15					238,5	321,5	3	3	268,6		398	418	12,8	3 200	4 800	1 915	6 140	12 500	211	350	498	5 860	20 100	43 700	24,1	1565
1566	B7240E.T.P4S	200	360	58	94	4	4	25					238,5	321,5	3	3	268,6		377	388	12,1	3 000	4 500	2 900	9 725	20 160	506	795	1 060	8 460	29 100	62 100	24,1	1566
1567	B71844C.T.P4S	220	270	24	45	1,5	0,6	15					231,0	259,0	1,5	0,6	240,7		84,5	119	4,03	3 800	5 600	355	1 330	2 860	133	236	347	1 070	4 310	9 890	2,48	1567
1568	B71844E.T.P4S	220	270	24	69	1,5	0,6	25					231,0	259,0	1,5	0,6	240,7		76,8	110	3,77	3 400	5 000	425	1 920	4 320	297	520	720	1 230	5 730	13 300	2,48	1568
1569	B71944C.T.P4S	220	300	38	54	2,1	1,5	15					234,0	286,0	1	1	252,4		215	250	8,08	4 300	6 700	1 190	3 940	8 140	197	332	475	3 640	12 900	28 400	6,57	1569
1570	B71944E.T.P4S	220	300	38	80	2,1	1,5	25					234,0	286,0	1	1	252,4		205	233	7,53	3 800	6 000	1 715	6 085	12 865	463	742	998	4 990	18 200	39 600	6,57	1570
1571	HCB71944C.T.P4S	220	300	38	54	2,1	1,5	15					234,0	286,0	1	1	252,4		215	230	5,66	6 000	9 000	620	2 180	4 600	172	285	398	1 860	6 880	15 200	5,46	1571
1572	HCB71944E.T.P4S	220	300	38	80	2,1	1,5	25					234,0	286,0	1	1	252,4		205	214	5,27	5 300	7 500	800	3 260	7 120	400	660	890	2 330	9 690	21 500	5,46	1572
1573	B7044C.T.P4S	220	340	56	66	3	3	15					239,0	321,0	2,5	1	268,6		324	418	13,0	4 000	6 000	1 915	6 140	12 540	213	352	500	5 860	20 100	43 700	15,7	1573
1574	B7044E.T.P4S	220	340	56	93	3	3	25					239,0	321,0	2,5	1	268,6		306	388	12,1	3 600	5 300	2 905	9 730	20 165	507	795	1 063	8 460	29 100	62 100	15,7	1574
1575	B7244C.T.P4S	220	400	65	74	4	4	15					264,0	356,0	3	3	296,2		398	527	15,2	2 800	4 300	2 405	7 620	15 565	225	370	525	7 360	24 800	54 000	33,0	1575
1576	B7244E.T.P4S	220	400	65	104	4	4	25					264,0	356,0	3	3	296,2		377	502	14,4	2 600	4 000	3 670	12 080	24 980	543	844	1 130	10 700	36 100	76 900	33,0	1576
1577	B71948C.T.P4S	240	320	38	57	2,1	1,5	15					254,0	307,0	1	1	272,4		225	266	8,28	4 000	6 000	1 230	4 080	8 430	208	350	500	3 760	13 300	29 300	7,08	1577
1578	B71948E.T.P4S	240	320	38	84	2,1	1,5	25					254,0	307,0	1	1	272,4		209	248	7,71	3 600	5 300	1 770	6 300	13 350	490	785	1 060	5 100	18 800	41 000	7,08	1578
1579	HCB71948C.T.P4S	240	320	38	57	2,1	1,5	15					254,0	307,0	1	1	272,4		225	244	5,79	5 300	8 500	630	2 240	4 730	180	300	420	1 900	7 060	15 600	5,89	1579

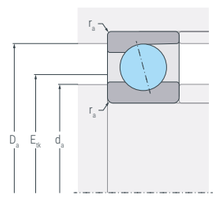
Spindle bearings
Dimensional tables of spindle bearings

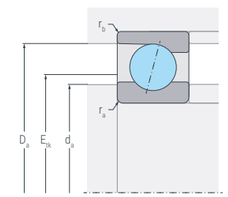


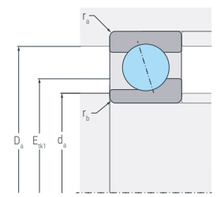


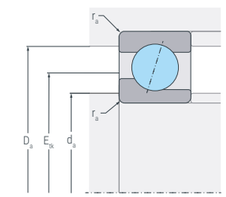












Symbol		Dimensions						Contact angle	DLR dimensions				Connecting dimensions				Injection pitch		Load rating		Fatigue load limit	Limiting speed		Preload			Axial stiffness			Lifting-off force			Mass	
																			dynamic	static		grease	oil	light	med.	heavy	low	med.	heavy	low	med	heavy		
Bearing		d	D	B	a	$r_{s\,min}$	$r_{1s\,min}$	α	N_B	N_A	S_B	S_A	d_a h12	D_a H12	$r_{a\,max}$	$r_{b\,max}$	E_{tk}	E_{tk1}	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$	$F_{V\,L}$	$F_{V\,M}$	$F_{V\,S}$	$c_{a\,L}$	$c_{a\,M}$	$c_{a\,S}$	$K_{aE\,L}$	$K_{aE\,M}$	$K_{aE\,S}$		
		mm	mm	mm	mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N	N	N/µm	N/µm	N/µm	N	N	N	kg	
1580	HCB71948E.T.P4S	240	320	38	84	2,1	1,5	25					254,0	307,0	1	1	272,4		209	228	5,40	4 800	7 500	795	3 280	7 200	420	695	930	2 320	9 750	21 800	5,89	1580
1581	B7048C.T.P4S	240	360	56	68	3	3	15					260,0	341,0	2,5	1	288,6		331	434	13,1	3 600	5 600	1 970	6 330	12 925	220	365	518	6 020	20 700	44 900	16,7	1581
1582	B7048E.T.P4S	240	360	56	98	3	3	25					260,0	341,0	2,5	1	288,6		317	404	12,1	3 200	5 000	2 930	9 865	20 450	520	820	1 100	8 540	29 500	62 900	16,7	1582
1583	B71952C.T.P4S	260	360	46	65	2,1	1,5	15					278,0	342,0	1	1	300,5		285	366	10,8	3 600	5 300	1 630	5 290	10 875	222	372	529	4 950	17 200	37 700	12,1	1583
1584	B71952E.T.P4S	260	360	46	95	2,1	1,5	25					278,0	342,0	1	1	330,5		267	341	10,1	3 200	4 800	2 390	8 250	17 270	530	840	1 130	6 980	24 700	53 000	12,1	1584
1585	B71956C.T.P4S	280	380	46	67	2,1	1,5	15					298,0	362,0	1	1	320,5		293	391	11,2	3 200	5 000	1 700	5 560	11 440	239	398	560	5 190	18 100	39 500	12,9	1585
1586	B71956E.T.P4S	280	380	46	100	2,1	1,5	25					298,0	362,0	1	1	320,5		280	365	10,5	3 000	4 500	2 460	8 530	17 850	560	890	1 190	7 170	25 500	54 800	12,9	1586
1587	B71960C.T.P4S	300	420	56	76	3	3	15					322,0	398,0	1,5	1	348,6		359	504	13,8	3 000	4 500	2 100	6 770	13 860	250	414	585	6 380	21 900	47 700	20,4	1587
1588	B71960E.T.P4S	300	420	56	112	3	3	25					322,0	398,0	1,5	1	348,6		343	470	12,9	2 800	4 300	3 120	10 570	21 990	600	940	1 250	9 060	31 500	67 300	20,4	1588
1589	B71964C.T.P4S	320	440	56	79	3	3	15					342,0	418,0	1,5	1	368,6		378	544	14,5	2 800	4 300	2 180	7 020	14 400	267	440	620	6 610	22 600	49 400	21,6	1589
1590	B71964E.T.P4S	320	440	56	117	3	3	25					342,0	418,0	1,5	1	368,6		353	506	13,5	2 600	4 000	3 240	11 000	22 900	640	1 000	1 335	9 400	32 800	70 100	21,6	1590
1591	B71968C.T.P4S	340	460	56	82	3	3	15					362,0	438,0	1,5	1	388,6		379	560	14,6	2 800	4 300	2 060	6 880	14 300	267	444	625	6 230	22 100	48 700	22,7	1591
1592	B71968E.T.P4S	340	460	56	121	3	3	25					362,0	438,0	1,5	1	388,6		362	522	13,6	2 400	3 600	2 920	10 600	22 500	633	1 010	1 350	8 500	31 500	68 700	22,7	1592
1593	B71972C.T.P4S	360	480	56	84	3	3	15					382,0	458,0	1,5	1	408,6		396	597	15,2	2 600	4 000	2 100	7 040	14 640	280	465	655	6 340	22 500	49 700	23,9	1593
1594	B71972E.T.P4S	360	480	56	126	3	3	25					382,0	458,0	1,5	1	408,6		369	557	14,2	2 400	3 600	3 030	11 030	23 400	670	1 070	1 440	8 800	32 700	71 400	23,9	1594
1595	B71984C.T.P4S	420	560	65	98	4	4	15					443,0	537,0	1,5	1	476,2		505	853	20,1	2 200	3 400	2 840	9 400	19 300	320	530	742	8 560	29 900	65 200	36,7	1595
1596	B71984E.T.P4S	420	560	65	114	4	4	25					443,0	537,0	1,5	1	476,2		483	795	18,7	2 000	3 000	4 020	14 220	30 000	760	1 205	1 610	11 600	42 200	91 000	36,7	1596
1597	B71992C.T.P4S	460	620	74	109	4	4	15					493,0	587,0	1,5	1	526,2		524	931	20,9	2 000	3 000	2 930	9 700	20 000	345	570	795	8 800	30 800	67 300	54,7	1597
1598	B71992E.T.P4S	460	620	74	163	4	4	25					493,0	587,0	1,5	1	526,2		502	868	19,5	1 800	2 800	4 180	14 900	31 500	820	1 300	1 740	12 100	44 100	95 300	54,7	1598

The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

3. High-precision cylindrical roller bearings

3.1 Designs

SLF high-precision cylindrical roller bearings are available for various applications in single row (N), and double row (NNU, NN) designs.

3.1.1 Single-row high-precision cylindrical roller bearings

Single-row high-precision cylindrical roller bearings are available as standard in the N19 and N10 designs with tapered bore (1:12, suffix K), or alternatively with cylindrical bore (without suffix). The tapered bore makes it possible to precisely adjust the required radial clearance or preload by means of axial movement on the shaft.

In the N design, two fixed shoulders are on the inner ring, while the outer ring is designed without a shoulder. In this setup, the inner ring with roller cage assembly can be easily separated from the outer ring, which significantly simplifies assembly and disassembly. Extensions resulting from thermal and mechanical loads in the whole system are compensated for by the given axial movability in the mounted state. For this reason, single-row high-precision cylindrical roller bearings are used as floating bearings.

Single-row high-precision cylindrical roller bearings allow for use at the highest speeds with simultaneous high radial stiffness and load carrying capacity.

3.1.2 Double-row high-precision cylindrical roller bearings

Double-row high-precision cylindrical roller bearings are available as standard in the NN30 and NNU49 designs with tapered bore (1:12, suffix K), or alternatively with cylindrical bore (without suffix).

In the NN30 design, three fixed shoulders are on the inner ring, outer ring is made without a shoulder. As is also true for the single-row N design, separation and simplified assembly are possible. Their design and inner structure are combined to allow for the highest load carrying capacity and are equipped with high stiffness and sound suitability for high speed. For this reason, they are particularly suitable for use as main bearings (tool or part, as a rule in combination with an axial bearing) or as supporting bearings beside the drive in externally driven machine tool spindles.

In the NNU49 design, three fixed shoulders are on the outer ring, whereas the inner ring is made without a shoulder. These bearings are detachable, too, and can be separated to simplify assembly. Because the cross-section is smaller than that of NN30, a higher number of smaller rolling elements is required. This approach provides particularly high stiffness with slightly reduced load carrying capacity.

Double-row high-precision cylindrical roller bearings enable higher loads than single-row high-precision cylindrical roller bearings with lower suitability for high-speed use.

3.1.3 Design variants

Any designs of the SLF high-precision cylindrical roller bearings are available in the following variants:

- Hybrid design
- High-speed design with half roller number and
- Design with oiling bores in the outer ring
- Thermally robust bearings.

Hybrid cylindrical roller bearings are equipped with cylinder rollers made of ceramic. Their use clearly enhances the characteristics in terms of friction and wear. This, in turn, results in lower lubricant consumption and lower temperatures. For this reason, higher speeds are permitted.

Hybrid cylindrical roller bearings with half roller number (HRS) are more suitable for high speed use, but radial load carrying capacity and stiffness are diminished. For ideal lubricant supply to both roller rows, the outer ring can be manufactured with an oiling groove and at least three oiling bores (suffix S) upon request.

Bearings in a thermally robust design (suffix TR) can much better compensate extensions and temperature variations at the highest speeds. This way, during operation, the radial clearance or preload set are kept constant over a wide range of temperature. This special design is available upon request.

3.2 Marking of bearings

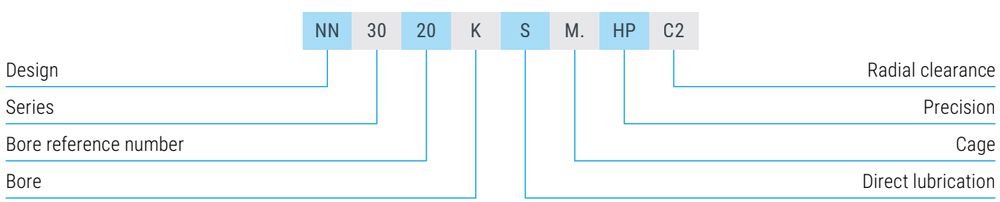
Content and position of marking

Standard roller bearing markings include the following information:

- Trademark “SLF“
- Product name, such as “N1920K.M1.HP“
- Country of origin “MADE IN GERMANY“
- In-plant specification of the manufacturing period, such as “121H“

As a rule, bearings are marked on the plane faces of outer and inner rings.

Designation scheme for high-precision cylindrical roller bearings



Design	
N	single-row, two shoulders on inner ring, outer ring without shoulders, with steel rollers
HCN	single-row, two shoulders on inner ring, outer ring without shoulders, with ceramic rollers
NNU	double-row, three shoulders on outer ring, inner ring without shoulders, with steel rollers
NN	double-row, three shoulders on inner ring, outer ring without shoulders, with steel rollers

Series	
19	light series (single-row)
10	medium series (single-row)
49	light series (double-row)
30	medium series (double-row)

Hole reference number	
06	6*5 = 30 mm
07	7*5 = 35 mm
08	8*5 = 40 mm

Bore	
K	Tapered bore, taper 1:12 (standard)

Direct lubrication	
S	Lubrication groove and oiling bores on outer ring

Cage	
M1	Brass cage, roller-guided, single row
ENPA	Window cage made of PEEK, guided on outer ring, single row
M	Brass cage, roller-guided, double row

Precision	
HP	Tolerance class SP, DIN 5412-4 (standard)
UP	Tolerance class UP, DIN 5412-4

Radial clearance	
-	Radial clearance C1NA, DIN 5412-4 (standard)
C2	Radial clearance greater than C1NA, DIN 620-4
R10.30	Special radial clearance, specified in µm

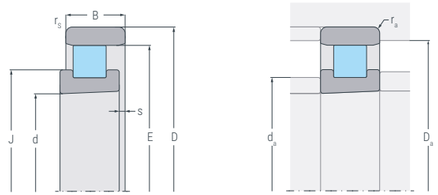
High-precision cylindrical roller bearings
Marking of bearings

Dimensional table of high-precision cylindrical roller bearings
High-precision cylindrical roller bearings, single-row

3.3 Dimensional table of high-precision cylindrical roller bearings

3.3.1 Dimensional table of single-row high-precision cylindrical roller bearings

◁ 1:12

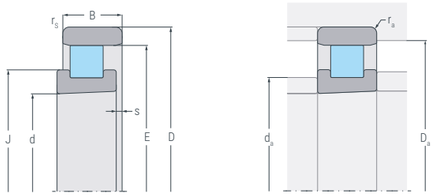


	Symbol	Dimensions							Connection dimensions			Load rating		Fatigue load limit	Limiting speed		Mass	
												dynamic	static		grease	oil		
	Bearing	d	D	B	$r_{s\,min}$	E	J	s	d_a h12	D_a H12	$r_{a\,max}$	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$		
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	kg	
1	N1006K.M1.HP	30	55	13	0,6	48,5	38,7	1,9	36,5	49,4	0,6	20,7	21,1	2,64	20 000	24 000	0,130	1
2	HCN1006K.M1.HP	30	55	13	0,6	48,5	38,7	1,9	36,5	49,4	0,6	20,7	19,5	2,00	26 000	31 000	0,120	2
3	N1007K.M1.HP	35	62	14	0,6	55,0	44,4	2,0	42,0	56,1	0,6	25,8	27,7	3,47	18 000	20 000	0,170	3
4	HCN1007K.M1.HP	35	62	14	0,6	55,0	44,4	2,0	42,0	56,1	0,6	25,8	25,5	2,64	23 000	26 000	0,150	4
5	N1008K.M1.HP	40	68	15	0,6	61,0	49,7	2,1	47,0	62,1	0,6	29,9	32,8	4,13	16 000	18 000	0,210	5
6	HCN1008K.M1.HP	40	68	15	0,6	61,0	49,7	2,1	47,0	62,1	0,6	29,9	30,3	3,14	21 000	23 000	0,190	6
7	N1009K.M1.HP	45	75	16	0,6	67,5	55,4	2,2	52,5	68,6	0,6	35,4	40,2	5,06	15 000	17 000	0,260	7
8	HCN1009K.M1.HP	45	75	16	0,6	67,5	55,4	2,2	52,5	68,6	0,6	35,4	37,1	3,85	20 000	22 000	0,230	8
9	N1910K.M1.HP	50	72	12	0,6	66,5	57,9	1,8	55,5	67,0	0,6	22,4	27,5	3,72	15 000	17 000	0,150	9
10	N1010K.M1.HP	50	80	16	0,6	72,5	60,5	2,2	57,5	73,6	0,6	36,3	42,6	5,37	14 000	16 000	0,280	10
11	HCN1010K.M1.HP	50	80	16	0,6	72,5	60,5	2,2	57,5	73,6	0,3	36,3	39,3	4,09	18 000	21 000	0,250	11
12	N1911K.M1.HP	55	80	13	1	73,5	64,1	1,9	61,5	74,0	1	25,0	31,5	4,44	14 000	16 000	0,210	12
13	N1011K.M1.HP	55	90	18	1	80,5	67,7	2,5	64,5	81,8	1	41,3	49,9	6,31	12 000	14 000	0,440	13
14	HCN1011K.M1.HP	55	90	18	1	80,5	67,7	2,5	64,5	81,8	1	41,3	46,0	4,80	16 000	18 000	0,400	14
15	N1912K.M1.HP	60	85	13	1	78,5	69,1	1,9	66,5	79,0	1	26,0	34,0	4,62	13 000	15 000	0,220	15
16	N1012K.M1.HP	60	95	18	1	85,5	72,6	2,5	69,5	86,8	1	45,1	57,1	7,23	11 000	13 000	0,470	16
17	HCN1012K.M1.HP	60	95	18	1	85,5	72,6	2,5	69,5	86,8	1	45,1	52,6	5,51	14 000	17 000	0,410	17
18	N1913K.M1.HP	65	90	13	1	83,5	74,1	1,9	71,5	84,0	1	29,0	40,0	4,65	12 000	14 000	0,240	18
19	N1013K.M1.HP	65	100	18	1	90,5	77,6	2,5	74,5	91,8	1	44,9	57,3	7,26	11 000	13 000	0,500	19
20	HCN1013K.M1.HP	65	100	18	1	90,5	77,6	2,5	74,5	91,8	1	44,9	52,8	5,53	14 000	17 000	0,450	20
21	N1914K.M1.HP	70	100	16	1	92,5	81,0	2,3	78,0	93,0	1	36,5	49,0	7,18	11 000	13 000	0,380	21
22	N1014K.M1.HP	70	110	20	1	100,0	83,9	2,5	80,0	101,3	1	64,7	81,3	10,30	10 000	12 000	0,670	22
23	HCN1014K.M1.HP	70	110	20	1	100,0	83,9	2,5	80,0	101,3	1	64,7	75,0	7,83	13 000	16 000	0,590	23
24	N1915K.M1.HP	75	105	16	1	97,0	86,0	2,3	83,0	98,0	1	38,0	53,0	7,47	10 000	12 000	0,410	24
25	N1015K.M1.HP	75	115	20	1	105,0	88,9	2,5	85,0	106,3	1	66,3	85,4	10,80	9 500	11 000	0,710	25
26	HCN1015K.M1.HP	75	115	20	1	105,0	88,9	2,5	85,0	106,3	1	66,3	78,8	8,24	12 000	14 000	0,630	26

The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

Dimensional table of high-precision cylindrical roller bearings
High-precision cylindrical roller bearings, single-row

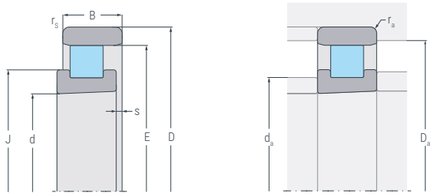
◁ 1:12



	Symbol	Dimensions							Connection dimensions			Load rating		Fatigue load limit	Limiting speed		Mass	
												dynamic	static		grease	oil		
	Bearing	d	D	B	$r_{s\,min}$	E	J	s	d_a h12	D_a H12	$r_{a\,max}$	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$		
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	kg	
27	N1916K.M1.HP	80	110	16	1	102,5	91,0	2,3	88,0	103,0	1	39,0	56,0	7,51	9 500	11 000	0,430	27
28	N1016K.M1.HP	80	125	22	1	113,5	95,8	3,0	91,5	115,0	1	76,8	98,9	12,40	8 500	9 500	1,00	28
29	HCN1016K.M1.HP	80	125	22	1	113,5	95,8	3,0	91,5	115,0	1	76,8	91,3	9,46	11 000	12 000	0,880	29
30	N1917K.M1.HP	85	120	18	1	110,5	97,9	2,5	94,5	112,0	1	51,8	75,1	9,51	8 500	9 500	0,600	30
31	HCN1917K.M1.HP	85	120	18	1	110,5	97,9	2,5	94,5	112,0	1	51,8	69,3	7,25	11 000	12 000	0,541	31
32	N1017K.M1.HP	85	130	22	1	118,5	100,7	3,0	96,5	120,0	1	78,6	104	12,80	8 000	9 000	1,04	32
33	HCN1017K.M1.HP	85	130	22	1	118,5	100,7	3,0	96,5	120,0	1	78,6	95,6	9,78	10 000	12 000	0,920	33
34	N1918K.M1.HP	90	125	18	1	115,5	102,9	2,5	99,5	117,0	1	52,6	77,9	9,72	8 500	9 500	0,630	34
35	HCN1918K.M1.HP	90	125	18	1	115,5	102,9	2,5	99,5	117,0	1	52,6	71,8	7,42	11 000	12 000	0,567	35
36	N1018K.M1.HP	90	140	24	1,1	127,0	107,6	3,2	103,0	128,6	1,1	93,6	125	15,1	7 500	8 500	1,39	36
37	HCN1018K.M1.HP	90	140	24	1,1	127,0	107,6	3,2	103,0	128,6	1,1	93,6	115	11,5	9 800	11 000	1,23	37
38	N1919K.M1.HP	95	130	18	1	120,5	107,9	2,5	104,5	122,0	1	53,3	80,5	9,9	8 000	9 000	0,660	38
39	HCN1919K.M1.HP	95	130	18	1	120,5	107,9	2,5	104,5	122,0	1	53,3	74,2	7,6	10 000	12 000	0,595	39
40	N1019K.M1.HP	95	145	24	1,1	132,0	112,6	3,2	108,0	133,6	1,1	95,8	130	15,6	7 000	8 000	1,34	40
41	HCN1019K.M1.HP	95	145	24	1,1	132,0	112,6	3,2	108,0	133,6	1,1	95,8	120	11,9	9 100	10 000	1,20	41
42	N1920K.M1.HP	100	140	20	1	130,0	114,2	2,5	110,0	132,0	1	77,4	113	13,6	7 000	8 000	0,894	42
43	HCN1920K.M1.HP	100	140	20	1	130,0	114,2	2,5	110,0	132,0	1	77,4	104	10,4	9 100	10 000	0,782	43
44	N1020K.M1.HP	100	150	24	1,1	137,0	117,6	3,2	113,0	138,6	1,1	97,2	135	16,0	6 700	7 500	1,39	44
45	HCN1020K.M1.HP	100	150	24	1,1	137,0	117,6	3,2	113,0	138,6	1,1	97,2	124	12,2	8 700	9 800	1,23	45
46	N1921K.M1.HP	105	145	20	1	135,0	119,2	2,5	115,0	137,0	1	78,7	117	14,0	6 700	7 500	0,930	46
47	HCN1921K.M1.HP	105	145	20	1	135,0	119,2	2,5	115,0	137,0	1	78,7	108	10,7	8 700	9 800	0,814	47
48	N1021K.M1.HP	105	160	26	1,1	145,5	124,5	3,4	119,5	147,2	1,1	113	158	18,4	6 300	7 000	1,82	48
49	HCN1021K.M1.HP	105	160	26	1,1	145,5	124,5	3,4	119,5	147,2	1,1	113	145	14,0	8 200	9 100	1,61	49
50	N1922K.M1.HP	110	150	20	1	140,0	123,9	2,5	120,0	142,0	1	79,9	121	14,3	6 700	7 500	0,960	50
51	HCN1922K.M1.HP	110	150	20	1	140,0	123,9	2,5	120,0	142,0	1	79,9	112	10,9	8 700	9 800	0,840	51
52	N1022K.M1.HP	110	170	28	1,1	155,0	130,8	3,4	125,0	156,7	1,1	140	190	21,8	6 000	6 700	2,23	52
53	HCN1022K.M1.HP	110	170	28	1,1	155,0	130,8	3,4	125,0	156,7	1,1	140	176	16,6	7 800	8 700	1,94	53
54	N1924K.M1.HP	120	165	22	1	153,5	135,6	3,0	131,5	156,0	1	95,4	147	16,8	6 000	6 700	1,33	54
55	HCN1924K.M1.HP	120	165	22	1	153,5	135,6	3,0	131,5	156,0	1	95,4	135	12,8	7 800	8 700	1,17	55
56	N1024K.M1.HP	120	180	28	1,1	165,0	140,8	3,4	135,0	166,7	1,1	148	209	23,5	5 600	6 300	2,45	56

Dimensional table of high-precision cylindrical roller bearings
High-precision cylindrical roller bearings, single-row

◁ 1:12



	Symbol	Dimensions							Connection dimensions			Load rating		Fatigue load limit	Limiting speed		Mass	
												dynamic	static		grease	oil		
	Bearing	d	D	B	$r_{s\,min}$	E	J	s	d_a h12	D_a H12	$r_{a\,max}$	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$		
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	kg	
57	HCN1024K.M1.HP	120	180	28	1,1	165,0	140,8	3,4	135,0	166,7	1,1	148	193	17,9	7 300	8 200	2,14	57
58	N1926K.M1.HP	130	180	24	1,1	167,0	147,7	3,2	143,0	170,0	1,1	112	174	19,5	5 300	6 000	1,77	58
59	N1026K.M1.HP	130	200	33	1,1	182,0	154,6	4,2	148,0	184,1	1,1	182	258	28,1	5 000	5 600	3,62	59
60	N1928K.M1.HP	140	190	24	1,1	177,0	158,0	3,2	153,0	180,0	1,1	118	191	21,0	4 500	5 000	1,89	60
61	N1028K.M1.HP	140	210	33	1,1	192,0	164,6	4,2	158,0	194,1	1,1	186	270	29,0	4 300	4 800	3,83	61
62	N1930K.M1.HP	150	210	28	1,1	194,0	171,7	3,6	166,0	197,0	1,1	153	244	26,1	4 500	5 000	2,93	62
63	N1030K.M1.HP	150	225	35	1,5	205,5	176,5	4,4	169,5	207,8	1,5	212	315	33,1	4 300	4 800	4,71	63
64	N1932K.M1.HP	160	220	28	1,1	204,0	181,7	3,6	176,0	206,0	1,1	158	260	27,4	4 300	4 800	3,13	64
65	N1032K.M1.HP	160	240	38	1,5	220,0	187,8	4,6	180,0	222,4	1,5	245	358	36,0	4 000	4 500	5,79	65
66	N1934K.M1.HP	170	230	28	1,1	214,0	191,6	3,6	186,0	216,0	1,1	160	268	27,9	3 800	4 300	3,23	66
67	N1034K.M1.HP	170	260	42	2,1	237,0	200,9	5,0	193,0	239,7	2,1	299	443	44,7	3 600	4 000	7,70	67
68	N1936K.M1.HP	180	250	33	1,1	232,0	204,8	4,2	198,0	234,0	1,1	215	349	35,4	3 600	4 000	4,82	68
69	N1036K.M1.HP	180	280	46	2,1	255,0	214,1	5,6	205,0	257,8	2,1	370	544	53,6	3 400	3 800	9,96	69
70	N1938K.M1.HP	190	260	33	1,1	242,0	214,8	4,2	208,0	244,0	1,1	218	361	36,2	3 400	3 800	5,00	70
71	N1038K.M1.HP	190	290	46	2,1	265,0	224,1	5,6	215,0	267,8	2,1	379	569	55,5	3 200	3 600	10,4	71
72	N1940K.M1.HP	200	280	38	1,5	259,0	228,5	4,8	221,0	261,0	1,5	268	445	43,7	3 200	3 600	6,00	72
73	N1040K.M1.HP	200	310	51	2,1	281,0	239,1	6,4	229,0	284,3	2,1	407	619	59,3	3 000	3 400	13,7	73
74	N1944K.M1.HP	220	300	38	1,5	279,0	248,5	4,8	241,0	281,0	1,5	277	476	45,7	3 000	3 400	7,63	74
75	N1044K.M1.HP	220	340	56	3	310,0	261,7	6,6	250,0	313,5	3	514	778	72,4	2 600	3 000	17,9	75
76	N1948K.M1.HP	240	320	38	1,5	299,0	268,5	4,8	261,0	301,0	1,5	291	521	49,0	2 800	3 200	8,22	76
77	N1048K.M1.HP	240	360	56	3	330,0	281,7	6,6	270,0	333,5	3	540	850	77,6	2 400	2 800	19,2	77
78	N1952K.M1.HP	260	360	46	1,5	334,0	295,4	5,4	286,0	336,0	1,5	440	754	68,5	2 400	2 800	16,8	78
79	N1052K.M1.HP	260	400	65	4	364,0	309,3	8,1	296,0	368,2	4	670	1 060	93,8	2 200	2 600	28,6	79
80	N1956K.M1.HP	280	380	46	1,5	354,0	313,1	5,4	306,0	356,0	1,5	455	804	71,8	2 200	2 600	14,6	80
81	N1056K.M1.HP	280	420	65	4	384,0	329,3	8,1	316,0	388,2	4	705	1 150	101	2 000	2 400	30,4	81
82	N1960K.M1.HP	300	420	56	3	390,0	341,7	6,6	330,0	392,0	3	613	1 070	92,5	1 900	2 200	23,1	82
83	N1060K.M1.HP	300	460	74	4	420,0	355,7	8,7	340,0	424,6	4	900	1 440	123	1 800	2 000	43,0	83
84	N1964K.M1.HP	320	440	56	3	410,0	361,7	6,6	350,0	412,0	3	635	1 140	97,5	1 800	2 000	24,9	84
85	N1064K.M1.HP	320	480	74	4	440,0	375,7	8,7	360,0	444,6	4	920	1 510	126	1 700	1 900	45,2	85
86	N1968K.M1.HP	340	460	56	3	430,0	381,7	6,6	370,0	433,0	3	657	1 210	102	1 700	1 900	26,3	86

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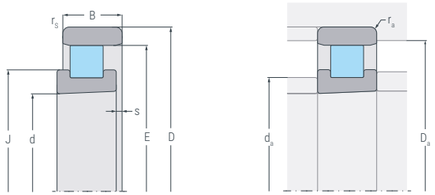
Dimensional table of high-precision cylindrical roller bearings
High-precision cylindrical roller bearings, single-row

◁ 1:12

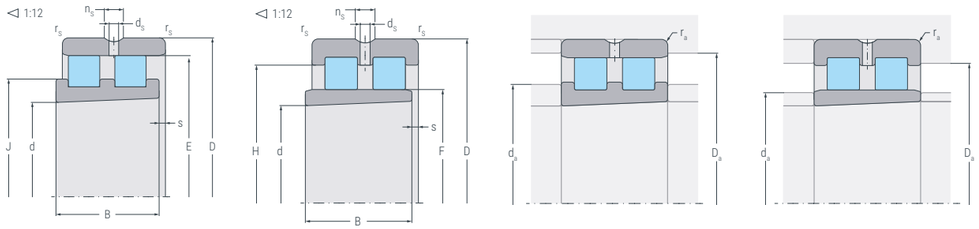


	Symbol	Dimensions							Connection dimensions			Load rating		Fatigue load limit	Limiting speed		Mass	
												dynamic	static		grease	oil		
	Bearing	d	D	B	$r_{s\,min}$	E	J	s	d_a h12	D_a H12	$r_{a\,max}$	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$		
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	kg	
87	N1068K.M1.HP	340	520	82	5	475,0	402,7	9,3	385,0	480,0	5	1 110	1 800	147	1 600	1 800	60,7	87
88	N1972K.M1.HP	360	480	56	3	450,0	401,7	6,6	390,0	453,0	3	665	1 250	104	1 600	1 800	27,5	88
89	N1072K.M1.HP	360	540	82	5	495,0	421,6	9,3	405,0	500,0	5	1 130	1 880	152	1 500	1 700	64,4	89
90	N1076K.M1.HP	380	560	82	5	515,0	441,6	9,3	425,0	520,0	5	1 160	1 970	157	1 400	1 600	66,8	90
91	N1080K.M1.HP	400	600	90	5	550,0	470,0	10,4	450,0	555,4	5	1 430	2 460	193	1 300	1 500	86,2	91
92	N1084K.M1.HP	420	620	90	5	570,0	489,7	10,4	470,0	575,4	5	1 450	2 520	195	1 300	1 500	90,7	92

The current product data can be found in the online catalog on our website **https://www.slf-fraureuth.de/en/catalogue/**

Dimensional table of high-precision cylindrical roller bearings
High-precision cylindrical roller bearings, double-row

3.3.2 Dimensional table of double-row high-precision cylindrical roller bearingsr



	Symbol	Dimensions											Connection dimensions			Load rating		Fatigue load limit	Limiting speed		Mass	
																dynamic	static		grease	oil		
	Bearing	d	D	B	$r_{s\,min}$	E	J	F	H	n_s	d_s	s	d_a h12	D_a H12	$r_{a\,max}$	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$		
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	kg	
1	NN3006K.M.HP	30	55	19	1	48,5	39,7					1,4	38	50	1	28,9	34,2	4,31	16 000	19 000	0,191	1
2	NN3006K.S.M.HP	30	55	19	1	48,5	39,7			4,8	3,2	1,4	38	50	1	28,9	34,2	4,31	16 000	19 000	0,191	2
3	NN3007K.M.HP	35	62	20	1	55,0	45,4					1,4	43	57	1	35,6	44,2	5,56	14 000	17 000	0,249	3
4	NN3007K.S.M.HP	35	62	20	1	55,0	45,4			4,8	3,2	1,4	43	57	1	35,6	44,2	5,56	14 000	17 000	0,249	4
5	NN3008K.M.HP	40	68	21	1	61,0	50,6					1,4	48	63	1	41,7	53,1	6,67	12 000	15 000	0,303	5
6	NN3008K.S.M.HP	40	68	21	1	61,0	50,6			4,8	3,2	1,4	48	63	1	41,7	53,1	6,67	12 000	15 000	0,303	6
7	NN3009K.M.HP	45	75	23	1	67,5	56,3					1,7	54	69	1	53,6	72,2	9,11	11 000	14 000	0,393	7
8	NN3009K.S.M.HP	45	75	23	1	67,5	56,3			4,8	3,2	1,7	54	69	1	53,6	72,2	9,11	11 000	14 000	0,393	8
9	NN3010K.M.HP	50	80	23	1	72,5	61,3					1,7	59	74	1	56,6	79,6	10,1	10 000	13 000	0,426	9
10	NN3010K.S.M.HP	50	80	23	1	72,5	61,3			4,8	3,2	1,7	59	74	1	56,6	79,6	10,1	10 000	13 000	0,426	10
11	NN3011K.M.HP	55	90	26	1,1	81,0	68,2					1,9	65	83	1,1	70,8	99,9	12,6	9 000	11 000	0,630	11
12	NN3011K.S.M.HP	55	90	26	1,1	81,0	68,2			4,8	3,2	1,9	65	83	1,1	70,8	99,9	12,6	9 000	11 000	0,630	12
13	NN3012K.M.HP	60	95	26	1,1	86,1	73,3					1,9	70	88	1,1	74,7	109	13,9	8 500	10 000	0,674	13
14	NN3012K.S.M.HP	60	95	26	1,1	86,1	73,3			4,8	3,2	1,9	70	88	1,1	74,7	109	13,9	8 500	10 000	0,674	14
15	NN3013K.M.HP	65	100	26	1,1	91,0	78,2					1,9	75	93	1,1	76,2	115	14,5	8 000	9 500	0,715	15
16	NN3013K.S.M.HP	65	100	26	1,1	91,0	78,2			4,8	3,2	1,9	75	93	1,1	76,2	115	14,5	8 000	9 500	0,715	16
17	NN3014K.M.HP	70	110	30	1,1	100,0	85,6					2,3	82	102	4,1	97,4	149	18,9	7 000	8 500	1,04	17
18	NN3014K.S.M.HP	70	110	30	1,1	100,0	85,6			6,5	3,2	2,3	82	102	4,1	97,4	149	18,9	7 000	8 500	1,04	18
19	NN3015K.M.HP	75	115	30	1,1	105,0	90,6					2,3	87	107	1,1	99,4	156	19,8	6 700	8 000	1,07	19
20	NN3015K.S.M.HP	75	115	30	1,1	105,0	90,6			6,5	3,2	2,3	87	107	1,1	99,4	156	19,8	6 700	8 000	1,07	20
21	NN3016K.M.HP	80	125	34	1,1	113,0	97,0					2,5	93	116	1,1	119	187	23,5	6 300	7 500	1,50	21
22	NN3016K.S.M.HP	80	125	34	1,1	113,0	97,0			6,5	3,2	2,5	93	116	1,1	119	187	23,5	6 300	7 500	1,50	22
23	NN3017K.M.HP	85	130	34	1,1	118,0	102,0					2,5	98	121	1,1	125	202	25,1	6 000	7 000	1,56	23
24	NN3017K.S.M.HP	85	130	34	1,1	118,0	102,0			6,5	3,2	2,5	98	121	1,1	125	202	25,1	6 000	7 000	1,56	24
25	NN3018K.M.HP	90	140	37	1,5	127,0	109,4					2,6	105	130	1,5	141	226	27,4	5 600	6 700	2,05	25
26	NN3018K.S.M.HP	90	140	37	1,5	127,0	109,4			6,5	3,2	2,6	105	130	1,5	141	226	27,4	5 600	6 700	2,05	26
27	NN3019K.M.HP	95	145	37	1,5	132,0	114,4					2,6	110	135	1,5	144	235	28,2	5 300	6 300	2,13	27
28	NN3019K.S.M.HP	95	145	37	1,5	132,0	114,4			6,5	3,2	2,6	110	135	1,5	144	235	28,2	5 300	6 300	2,13	28
29	NNU4920K.M.HP	100	140	40	1,1			113,0	125,8			2	112	129	1,1	128	254	31,1	5 300	6 300	1,85	29
30	NNU4920K.S.M.HP	100	140	40	1,1			113,0	125,8	6,5	3,2	2	112	129	1,1	128	254	31,1	5 300	6 300	1,85	30

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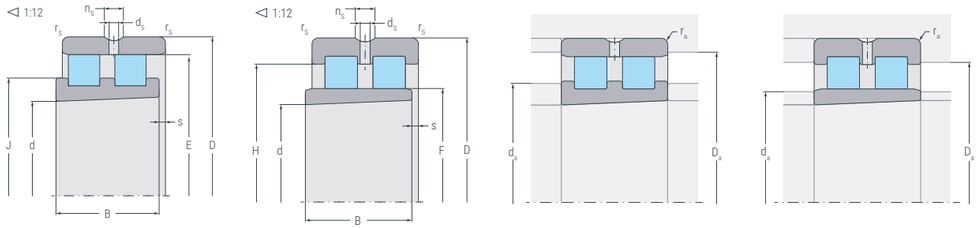
Dimensional table of high-precision cylindrical roller bearings
High-precision cylindrical roller bearings, double-row



	Symbol	Dimensions											Connection dimensions			Load rating		Fatigue load limit	Limiting speed		Mass	
																dynamic	static		grease	oil		
	Bearing	d	D	B	$r_{s\,min}$	E	J	F	H	n_s	d_s	s	d_a h12	D_a H12	$r_{a\,max}$	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$		
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	kg	
31	NN3020K.M.HP	100	150	37	1,5	137,0	119,4					2,6	115	140	1,5	147	244	29,0	5 300	6 300	2,28	31
32	NN3020K.S.M.HP	100	150	37	1,5	137,0	119,4			6,5	3,2	2,6	115	140	1,5	147	244	29,0	5 300	6 300	2,28	32
33	NNU4921K.M.HP	105	145	40	1,1			118,0	130,8			2	117	134	1,1	130	262	31,7	5 300	6 300	1,92	33
34	NNU4921K.S.M.HP	105	145	40	1,1			118,0	130,8	6,5	3,2	2	117	134	1,1	130	262	31,7	5 300	6 300	1,92	34
35	NN3021K.M.HP	105	160	41	2	146,0	125,2					2,6	120	149	2	194	315	36,7	4 800	5 600	2,84	35
36	NN3021K.S.M.HP	105	160	41	2	146,0	125,2			6,5	3,2	2,6	120	149	2	194	315	36,7	4 800	5 600	2,84	36
37	NNU4922K.M.HP	110	150	40	1,1			123,0	135,8			2	122	139	1,1	131	270	32,3	5 000	6 000	2,07	37
38	NNU4922K.S.M.HP	110	150	40	1,1			123,0	135,8	6,5	3,2	2	122	139	1,1	131	270	32,3	5 000	6 000	2,07	38
39	NN3022K.M.HP	110	170	45	2	155,0	132,6					2,9	127	158	2	222	362	41,4	4 500	5 300	3,61	39
40	NN3022K.S.M.HP	110	170	45	2	155,0	132,6			6,5	3,2	2,9	127	158	2	222	362	41,4	4 500	5 300	3,61	40
41	NNU4924K.M.HP	120	165	45	1,1			134,5	150,5			2,3	133	155	1,1	175	342	39,6	4 500	5 300	2,75	41
42	NNU4924K.S.M.HP	120	165	45	1,1			134,5	150,5	6,5	3,2	2,3	133	155	1,1	175	342	39,6	4 500	5 300	2,75	42
43	NN3024K.M.HP	120	180	46	2	165,0	142,6					3,1	137	168	2	243	418	47,0	4 300	5 000	3,92	43
44	NN3024K.S.M.HP	120	180	46	2	165,0	142,6			6,5	3,2	3,1	137	168	2	243	418	47,0	4 300	5 000	3,92	44
45	NNU4926K.M.HP	130	180	50	1,5			146,0	162,0			2,7	145	166	1,5	188	387	43,8	4 000	4 800	3,80	45
46	NNU4926K.S.M.HP	130	180	50	1,5			146,0	162,0	6,5	3,2	2,7	145	166	1,5	188	387	43,8	4 000	4 800	3,80	46
47	NN3026K.M.HP	130	200	52	2	182,0	156,4					3,1	150	186	2	294	500	54,6	3 800	4 500	5,80	47
48	NN3026K.S.M.HP	130	200	52	2	182,0	156,4			9,5	4,8	3,1	150	186	2	294	500	54,6	3 800	4 500	5,80	48
49	NNU4928K.M.HP	140	190	50	1,5			156,0	172,0			2,7	155	176	1,5	190	400	44,4	3 800	4 500	4,05	49
50	NNU4928K.S.M.HP	140	190	50	1,5			156,0	172,0	6,5	3,2	2,7	155	176	1,5	190	400	44,4	3 800	4 500	4,05	50
51	NN3028K.M.HP	140	210	53	2	192,0	166,4					3,4	160	196	2	299	522	56,0	3 600	4 300	6,15	51
52	NN3028K.S.M.HP	140	210	53	2	192,0	166,4			9,5	4,8	3,4	160	196	2	299	522	56,0	3 600	4 300	6,15	52
53	NNU4930K.M.HP	150	210	60	2			168,5	191,0			2,7	167	197	2	329	655	70,5	3 600	4 300	6,00	53
54	NNU4930K.S.M.HP	150	210	60	2			168,5	191,0	6,5	3,2	2,7	167	197	2	329	655	70,5	3 600	4 300	6,00	54
55	NN3030K.M.HP	150	225	56	2,1	206,0	178,8					3,8	172	210	2,1	336	595	62,5	3 400	4 000	7,53	55
56	NN3030K.S.M.HP	150	225	56	2,1	206,0	178,8			9,5	4,8	3,8	172	210	2,1	336	595	62,5	3 400	4 000	7,53	56
57	NNU4932K.M.HP	160	220	60	2			178,5	201,0			2,7	177	207	2	333	679	72,0	3 400	4 000	6,40	57
58	NNU4932K.S.M.HP	160	220	60	2			178,5	201,0	6,5	3,2	2,7	177	207	2	333	679	72,0	3 400	4 000	6,40	58
59	NN3032K.M.HP	160	240	60	2,1	219,0	190,2					4,3	183	224	2,1	376	672	69,3	3 200	3 800	9,10	59
60	NN3032K.S.M.HP	160	240	60	2,1	219,0	190,2			9,5	4,8	4,3	183	224	2,1	376	672	69,3	3 200	3 800	9,10	60
61	NNU4934K.M.HP	170	230	60	2			188,5	211,0			2,7	187	217	2	338	703	73,5	3 200	3 800	6,68	61
62	NNU4934K.S.M.HP	170	230	60	2			188,5	211,0	6,5	3,2	2,7	187	217	2	338	703	73,5	3 200	3 800	6,68	62

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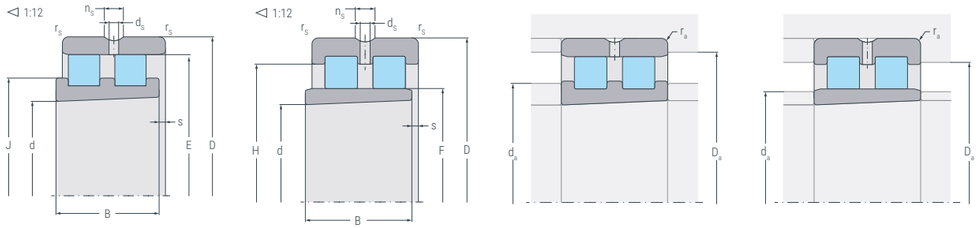
Dimensional table of high-precision cylindrical roller bearings
High-precision cylindrical roller bearings, double-row



	Symbol	Dimensions											Connection dimensions			Load rating		Fatigue load limit	Limiting speed		Mass	
																dynamic	static		grease	oil		
	Bearing	d	D	B	$r_{s\,min}$	E	J	F	H	n_s	d_s	s	d_a h12	D_a H12	$r_{a\,max}$	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$		
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	kg	
63	NN3034K.M.HP	170	260	67	2,1	236,0	204,0					4,6	196	241	2,1	451	808	81,6	3 000	3 600	12,5	63
64	NN3034K.S.M.HP	170	260	67	2,1	236,0	204,0			9,5	4,8	4,6	196	241	2,1	451	808	81,6	3 000	3 600	12,5	64
65	NNU4936K.M.HP	180	250	69	2			202,0	222,0			3,2	200	232	2	403	860	88,1	3 000	3 600	9,89	65
66	NNU4936K.S.M.HP	180	250	69	2			202,0	222,0	9,5	4,8	3,2	200	232	2	403	860	88,1	3 000	3 600	9,89	66
67	NN3036K.M.HP	180	280	74	2,1	255,0	218,2					4,8	209	260	2,1	565	1 000	98,6	2 800	3 400	16,4	67
68	NN3036K.S.M.HP	180	280	74	2,1	255,0	218,2			12,2	6,3	4,8	209	260	2,1	565	1 000	98,6	2 800	3 400	16,4	68
69	NNU4938K.M.HP	190	260	69	2			212,0	236,0			3,2	210	242	2	408	888	89,9	2 800	3 400	10,2	69
70	NNU4938K.S.M.HP	190	260	69	2			212,0	236,0	9,5	4,8	3,2	210	242	2	408	888	89,9	2 800	3 400	10,2	70
71	NN3038K.M.HP	190	290	75	2,1	265,0	228,2					4,8	219	271	2,1	578	1 040	102	2 600	3 200	17,3	71
72	NN3038K.S.M.HP	190	290	75	2,1	265,0	228,2			12,2	6,3	4,8	219	271	2,1	578	1 040	102	2 600	3 200	17,3	72
73	NNU4940K.M.HP	200	280	80	2,1			225,0	252,2			4,3	223	259	2,1	488	1 040	103	2 600	3 200	14,5	73
74	NNU4940K.S.M.HP	200	280	80	2,1			225,0	252,2	12,2	6,3	4,3	223	259	2,1	488	1 040	103	2 600	3 200	14,5	74
75	NN3040K.M.HP	200	310	82	2,1	282,0	242,0					5,7	232	288	2,1	662	1 200	114	2 400	3 000	22,2	75
76	NN3040K.S.M.HP	200	310	82	2,1	282,0	242,0			12,2	6,3	5,7	232	288	2,1	662	1 200	114	2 400	3 000	22,2	76
77	NNU4944K.M.HP	220	300	80	2,1			245,0	272,2			4,3	243	279	2,1	512	1 140	111	2 400	3 000	15,7	77
78	NNU4944K.S.M.HP	220	300	80	2,1			245,0	272,2	12,2	6,3	4,3	243	279	2,1	512	1 140	111	2 400	3 000	15,7	78
79	NN3044K.M.HP	220	340	90	3	310,0	265,2					5,7	254	317	3	805	1 460	136	2 200	2 800	29,1	79
80	NN3044K.S.M.HP	220	340	90	3	310,0	265,2			15,0	8,0	5,7	254	317	3	805	1 460	136	2 200	2 800	29,1	80
81	NNU4948K.M.HP	240	320	80	2,1			265,0	292,2			4,3	263	299	2,1	525	1 210	115	2 200	2 800	16,8	81
82	NNU4948K.S.M.HP	240	320	80	2,1			265,0	292,2	12,2	6,3	4,3	263	299	2,1	525	1 210	115	2 200	2 800	16,8	82
83	NN3048K.M.HP	240	360	92	3	330,0	285,2					6,1	274	337	3	842	1 580	145	2 000	2 600	31,6	83
84	NN3048K.S.M.HP	240	360	92	3	330,0	285,2			15,0	8,0	6,1	274	337	3	842	1 580	145	2 000	2 600	31,6	84
85	NNU4952K.M.HP	260	360	100	2,1			292,0	325,6			5,4	289	334	2,1	749	1 700	156	2 000	2 600	29,3	85
86	NNU4952K.S.M.HP	260	360	100	2,1			292,0	325,6	15,0	8,0	5,4	289	334	2,1	749	1 700	156	2 000	2 600	29,3	86
87	NN3052K.M.HP	260	400	104	4	364,0	312,8					6,6	300	372	4	1 070	2 020	179	1 900	2 400	46,2	87
88	NN3052K.S.M.HP	260	400	104	4	364,0	312,8			15,0	8,0	6,6	300	372	4	1 070	2 020	179	1 900	2 400	46,2	88
89	NNU4956K.M.HP	280	380	100	2,1			312,0	345,6			5,4	309	354	2,1	771	1 800	162	1 900	2 400	31,2	89
90	NNU4956K.S.M.HP	280	380	100	2,1			312,0	345,6	15,0	8,0	5,4	309	354	2,1	771	1 800	162	1 900	2 400	31,2	90
91	NN3056K.M.HP	280	420	106	4	384,0	332,8					6,9	320	392	4	1 090	2 100	183	1 800	2 200	49,7	91
92	NN3056K.S.M.HP	280	420	106	4	384,0	332,8			15,0	8,0	6,9	320	392	4	1 090	2 100	183	1 800	2 200	49,7	92
93	NNU4960K.M.HP	300	420	118	3			339,0	379,0			6,3	336	389	3	1 040	2 390	210	1 700	2 000	48,7	93
94	NNU4960K.S.M.HP	300	420	118	3			339,0	379,0	17,7	9,5	6,3	336	389	3	1 040	2 390	210	1 700	2 000	48,7	94

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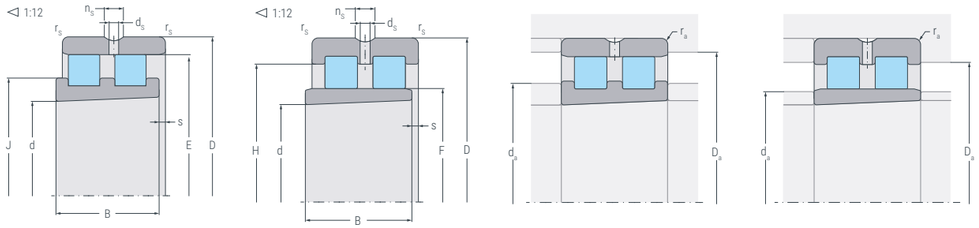

	Symbol	Dimensions											Connection dimensions			Load rating		Fatigue load limit	Limiting speed		Mass	
																dynamic	static		grease	oil		
	Bearing	d	D	B	$r_{s\,min}$	E	J	F	H	n_s	d_s	s	d_a h12	D_a H12	$r_{a\,max}$	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$		
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	kg	
95	NN3060K.M.HP	300	460	118	4	418,0	360,4					7,5	346	427	4	1 270	2 410	205	1 600	1 900	68,8	95
96	NN3060K.S.M.HP	300	460	118	4	418,0	360,4			17,7	9,5	7,5	346	427	4	1 270	2 410	205	1 600	1 900	68,8	96
97	NNU4964K.M.HP	320	440	118	3			359,0	399,0			6,3	356	409	3	1 070	2 540	219	1 600	1 900	51,0	97
98	NNU4964K.S.M.HP	320	440	118	3			359,0	399,0	17,7	9,5	6,3	356	409	3	1 070	2 540	219	1 600	1 900	51,0	98
99	NN3064K.M.HP	320	480	121	4	438,0	380,4					8	366	447	4	1 330	2 610	219	1 600	1 900	74,2	99
100	NN3064K.S.M.HP	320	480	121	4	438,0	380,4			17,7	9,5	8	366	447	4	1 330	2 610	219	1 600	1 900	74,2	100
101	NNU4968K.M.HP	340	460	118	3			379,0	419,0			6,3	376	429	3	1 100	2 680	228	1 500	1 800	56,3	101
102	NNU4968K.S.M.HP	340	460	118	3			379,0	419,0	17,7	9,5	6,3	376	429	3	1 100	2 680	228	1 500	1 800	56,3	102
103	NN3068K.M.HP	340	520	133	5	473,0	409,0					8,8	393	483	5	1 630	3 230	265	1 400	1 700	99,3	103
104	NN3068K.S.M.HP	340	520	133	5	473,0	409,0			17,7	9,5	8,8	393	483	5	1 630	3 230	265	1 400	1 700	99,3	104
105	NNU4972K.M.HP	360	480	118	3			399,0	439,0			6,3	396	449	3	1 130	2 830	238	1 500	1 800	59,2	105
106	NNU4972K.S.M.HP	360	480	118	3			399,0	439,0	17,7	9,5	6,3	396	449	3	1 130	2 830	238	1 500	1 800	59,2	106
107	NN3072K.M.HP	360	540	134	5	493,0	429,0					8,8	413	503	5	1 660	3 370	272	1 400	1 700	104	107
108	NN3072K.S.M.HP	360	540	134	5	493,0	429,0			17,7	9,5	8,8	413	503	5	1 660	3 370	272	1 400	1 700	104	108
109	NNU4976K.M.HP	380	520	140	4			426,0	470,0			7,2	423	482	4	1 440	3 640	300	1 400	1 700	87,5	109
110	NNU4976K.S.M.HP	380	520	140	4			426,0	470,0	17,7	9,5	7,2	423	482	4	1 440	3 640	300	1 400	1 700	87,5	110
111	NN3076K.M.HP	380	560	135	5	513,0	449,0					9,1	433	523	5	1 690	3 500	279	1 300	1 600	110	111
112	NN3076K.S.M.HP	380	560	135	5	513,0	449,0			17,7	9,5	9,1	433	523	5	1 690	3 500	279	1 300	1 600	110	112
113	NNU4980K.M.HP	400	540	140	4			446,0	491,0			7,2	443	502	4	1 490	3 840	312	1 300	1 600	91,7	113
114	NNU4980K.S.M.HP	400	540	140	4			446,0	491,0	17,7	9,5	7,2	443	502	4	1 490	3 840	312	1 300	1 600	91,7	114
115	NN3080K.M.HP	400	600	148	5	549,0	477,0					9,5	459	560	5	2 160	4 500	445	1 200	1 500	143	115
116	NN3080K.S.M.HP	400	600	148	5	549,0	477,0			17,7	9,5	9,5	459	560	5	2 160	4 500	445	1 200	1 500	143	116
117	NNU4984K.M.HP	420	560	140	4			466,0	511,0			7,2	463	522	4	1 530	4 040	325	1 300	1 600	95,4	117
118	NNU4984K.S.M.HP	420	560	140	4			466,0	511,0	17,7	9,5	7,2	463	522	4	1 530	4 040	325	1 300	1 600	95,4	118
119	NN3084K.M.HP	420	620	150	5	569,0	497,0					10	479	580	5	2 100	4 520	440	1 200	1 500	148	119
120	NN3084K.S.M.HP	420	620	150	5	569,0	497,0			17,7	9,5	10	479	580	5	2 100	4 520	440	1 200	1 500	148	120
121	NNU4988K.M.HP	440	600	160	4			490,0	545,0			6,8	487	558	4	2 040	5 180	409	1 200	1 500	133	121
122	NNU4988K.S.M.HP	440	600	160	4			490,0	545,0	17,7	9,5	6,8	487	558	4	2 040	5 180	409	1 200	1 500	133	122
123	NN3088K.M.HP	440	650	157	6	597,0	520,0					10,2	501	609	6	2 460	5 120	500	1 100	1 400	170	123
124	NN3088K.S.M.HP	440	650	157	6	597,0	520,0			23,5	12,5	10,2	501	609	6	2 460	5 120	500	1 100	1 400	170	124
125	NNU4992K.M.HP	460	620	160	4			510,0	564,0			6,8	507	578	4	2 110	5 480	428	1 100	1 400	135	125
126	NNU4992K.S.M.HP	460	620	160	4			510,0	564,0	17,7	9,5	6,8	507	578	4	2 110	5 480	428	1 100	1 400	135	126

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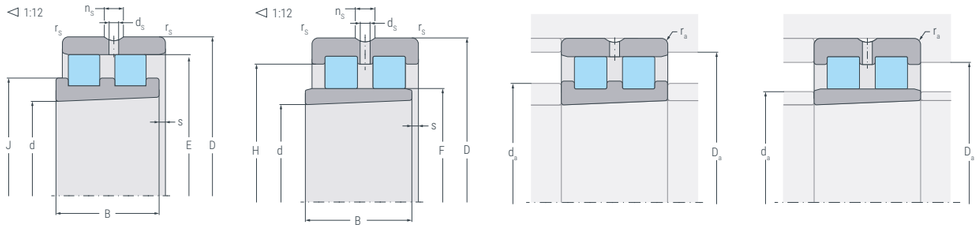
Dimensional table of high-precision cylindrical roller bearings
High-precision cylindrical roller bearings, double-row



Symbol		Dimensions											Connection dimensions			Load rating		Fatigue load limit	Limiting speed		Mass	
																dynamic	static		grease	oil		
	Bearing	d	D	B	$r_{s\,min}$	E	J	F	H	n_s	d_s	s	d_a h12	D_a H12	$r_{a\,max}$	C_r	C_{0r}	C_{ur}	$n_{G\,Grease}$	$n_{G\,Oil}$		
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	kg	
127	NN3092K.M.HP	460	680	163	6	624,0	544,0					10,9	524	636	6	2 610	5 395	510	1 100	1 400	197	127
128	NN3092K.S.M.HP	460	680	163	6	624,0	544,0			23,5	12,5	10,9	524	636	6	2 610	5 395	510	1 100	1 400	197	128
129	NNU4996K.M.HP	480	650	170	5			534,0	593,0			7,2	531	606	5	2 350	6 140	473	1 100	1 400	156	129
130	NNU4996K.S.M.HP	480	650	170	5			534,0	593,0	17,7	9,5	7,2	531	606	5	2 350	6 140	473	1 100	1 400	156	130
131	NN3096K.M.HP	480	700	165	6	644,0	564,0					11,2	544	656	6	2 690	5 860	540	1 000	1 300	203	131
132	NN3096K.S.M.HP	480	700	165	6	644,0	564,0			23,5	12,5	11,2	544	656	6	2 690	5 860	540	1 000	1 300	203	132
133	NNU49/500K.M.HP	500	670	170	5			554,0	613,0			7,2	551	626	5	2 258	5 900	600	1 000	1 300	161	133
134	NNU49/500K.S.M.HP	500	670	170	5			554,0	613,0	17,7	9,5	7,2	551	626	5	2 258	5 900	600	1 000	1 300	161	134
135	NN30/500K.M.HP	500	720	167	6	664,0	584,0					11,7	564	677	6	2 600	5 840	530	1 000	1 300	212	135
136	NN30/500K.S.M.HP	500	720	167	6	664,0	584,0			23,5	12,5	11,7	564	677	6	2 600	5 840	530	1 000	1 300	212	136

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4. Double-acting angular contact thrust ball

In this chapter, the individual designs of the double-acting angular contact thrust ball bearings made by SLF are introduced in detail.

4.1 Designs

Double-acting angular contact thrust ball bearings of the 2344 and 2347 designs are used for axial mounting of shafts in machine tool spindles. Both designs are very stiff high-precision bearings with axial preload, with limited tolerances in the HP class.

To absorb the radial loads arising in the application, these bearings are used in combination with SLF high-precision cylindrical roller bearings in the N10..K (2344) or NN30..K (2344 and 2347) series. For this purpose, either bearings in the 2344 series with the small taper diameter of the N10..K or NN30..K or bearings in the 2347 series with the large taper diameter of the NN30..K are used.

At the factory, the outer diameter of the double-acting angular contact thrust ball bearings is matched to preclude transmission of impermissible radial forces. It is not necessary to match the housing fit to the radial bearing of the N10 or NN30 series.

Both design series 2344 and 2347 are manufactured as detachable bearings and consist of two solid shaft sleeves with a distance washer between them, a housing washer, and two non-detaching ball cage assemblies with a solid cage. To achieve the predefined preload, all bearing components are matched. During assembly, they can be separated from one another and installed individually. However, since they are matched, they are not interchangeable with components from other bearings.

4.2 Design variants

The designs of the double-acting angular contact thrust ball bearings are available in the following variants.

- Hybrid design
- Individual preload

With the hybrid design of the double-acting angular contact thrust ball bearings, we mainly get an increase in performance like that for the hybrid designs of spindle bearings.

Individual preload values, adapted to the respective application requirements, can be made available upon request.

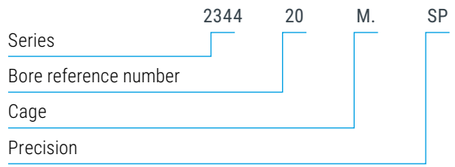
4.3 Marking bearings

Content and position of marking
Standard roller bearing markings include the following information:

- Trademark "SLF"
- Product name, such as "234420M.SP"
- Country of origin "MADE IN GERMANY"
- In-plant specification of the manufacturing period, such as "121H"

As a rule, bearings are marked on the plane faces of outer and both inner rings.

Designation scheme for angular contact thrust ball bearings



Series	
2344	Installation on small taper end
2347	Installation on large taper end

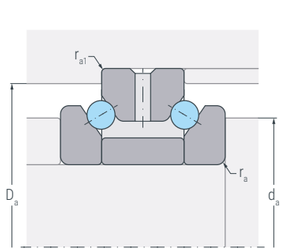
Bore reference number	
06	6*5 = 30 mm
07	7*5 = 35 mm
08	8*5 = 40 mm

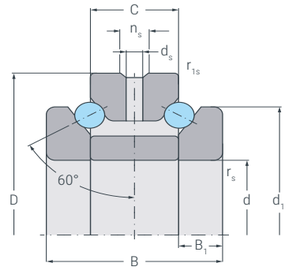
Cage	
M	Brass cage, guided by rolling elements

Precision	
SP	Tolerance class HP
UP	Tolerance class UP

Double-acting angular contact thrust ball
Dimensional table of angular contact thrust ball bearings

4.4 Dimensional table of angular contact thrust ball bearings





	Symbol	Dimensions (mm)										Connection dimensions (mm)				Load rating		Fatigue load limit	Limiting speed		Preload force	Axial stiffness	Lifting-off force	Mass	
																dynamic	static		grease	oil					
	Bearing	d	D	B	C	d_1	B_1	$r_{s\,min}$	$r_{1s\,min}$	d_s	n_s	d_a h12	D_a H12	$r_{a\,max}$	$r_{a1\,max}$	C_a	C_{0a}	C_{ua}	$n_{G\,Grease}$	$n_{G\,Oil}$	F_V	c_a	K_{aE}		
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N/µm	N	kg	
1	234406M.SP	30	55	32	16	47	8	1	0,15	3,2	4,8	40,5	50,5	1	0,15	15,3	36,0	3,25	11 000	16 000	108	276	308	0,297	1
2	234706M.SP	32	55	32	16	47	8	1	0,15	3,2	4,8	40,5	50,5	1	0,15	15,3	36,0	3,25	11 000	16 000	108	276	308	0,232	2
3	234407M.SP	35	62	34	17	53	8,5	1	0,15	3,2	4,8	46,5	57	1	0,15	18,9	47,0	4,25	9 500	14 000	134	316	382	0,318	3
4	234707M.SP	37	62	34	17	53	8,5	1	0,15	3,2	4,8	46,5	57	1	0,15	18,9	47,0	4,25	9 500	14 000	134	316	382	0,302	4
5	234408M.SP	40	68	36	18	58,5	9	1	0,15	3,2	4,8	51,5	63,5	1	0,15	22,9	59,0	5,3	8 500	12 000	160	354	456	0,390	5
6	234708M.SP	42	68	36	18	58,5	9	1	0,15	3,2	4,8	51,5	63,5	1	0,15	22,9	59,0	5,3	8 500	12 000	160	354	456	0,371	6
7	234409M.SP	45	75	38	19	65	9,5	1	0,15	3,2	4,8	57,5	70	1	0,15	25,0	67,0	6	7 500	10 000	180	387	514	0,486	7
8	234709M.SP	47	75	38	19	65	9,5	1	0,15	3,2	4,8	57,5	70	1	0,15	25,0	67,0	6	7 500	10 000	180	387	514	0,472	8
9	234410M.SP	50	80	38	19	70	9,5	1	0,15	3,2	4,8	62,5	75	1	0,15	26,0	72,0	6,5	7 000	9 500	183	410	522	0,630	9
10	234710M.SP	52	80	38	19	70	9,5	1	0,15	3,2	4,8	62,5	75	1	0,15	26,0	72,0	6,5	7 000	9 500	183	410	522	0,580	10
11	234411M.SP	55	90	44	22	78	11	1,1	0,3	3,2	6,5	69	84,5	1,1	0,3	36,5	99,0	8,9	6 300	8 500	260	458	743	0,944	11
12	234711M.SP	57	90	44	22	78	11	1,1	0,3	3,2	6,5	69	84,5	1,1	0,3	36,5	99,0	8,9	6 300	8 500	260	458	743	0,884	12
13	234412M.SP	60	95	44	22	83	11	1,1	0,3	3,2	6,5	74	89,5	1,1	0,3	36,0	98,0	8,9	6 000	8 000	255	455	728	1,01	13
14	234712M.SP	62	95	44	22	83	11	1,1	0,3	3,2	6,5	74	89,5	1,1	0,3	36,0	98,0	8,9	6 000	8 000	255	455	728	0,940	14
15	234413M.SP	65	100	44	22	88	11	1,1	0,3	3,2	6,5	79	94,5	1,1	0,3	38,5	111	10	5 600	7 500	275	506	785	1,08	15
16	234713M.SP	67	100	44	22	88	11	1,1	0,3	3,2	6,5	79	94,5	1,1	0,3	38,5	111	10	5 600	7 500	275	506	785	1,01	16
17	234414M.SP	70	110	48	24	97	12	1,1	0,3	3,2	6,5	86,5	103,5	1,1	0,3	46,0	134	12,1	5 300	7 000	325	552	926	1,49	17
18	234714M.SP	73	110	48	24	97	12	1,1	0,3	3,2	6,5	86,5	103,5	1,1	0,3	46,0	134	12,1	5 300	7 000	325	552	926	1,36	18
19	234415M.SP	75	115	48	24	102	12	1,1	0,3	3,2	6,5	91,5	108,5	1,1	0,3	47,5	144	12,9	5 000	6 700	340	589	969	1,57	19
20	234715M.SP	78	115	48	24	102	12	1,1	0,3	3,2	6,5	91,5	108,5	1,1	0,3	47,5	144	12,9	5 000	6 700	340	589	969	1,43	20
21	234416M.SP	80	125	54	27	110	13,5	1,1	0,3	3,2	6,5	98,5	117	1,1	0,3	56,0	175	15,5	4 500	6 000	400	640	1 140	1,79	21
22	234716M.SP	83	125	54	27	110	13,5	1,1	0,3	3,2	6,5	98,5	117	1,1	0,3	56,0	175	15,5	4 500	6 000	400	640	1 140	1,69	22
23	234417M.SP	85	130	54	27	115	13,5	1,1	0,3	4,8	9,5	103,5	122	1,1	0,3	57,0	181	15,6	4 500	6 000	400	655	1 140	1,85	23
24	234717M.SP	88	130	54	27	115	13,5	1,1	0,3	4,8	9,5	103,5	122	1,1	0,3	57,0	181	15,6	4 500	6 000	400	655	1 140	1,77	24
25	234418M.SP	90	140	60	30	123	15	1,5	0,3	4,8	9,5	110,5	130,5	1,5	0,3	66,0	213	17,7	4 000	5 300	465	708	1 326	2,45	25
26	234718M.SP	93	140	60	30	123	15	1,5	0,3	4,8	9,5	110,5	130,5	1,5	0,3	66,0	213	17,7	4 000	5 300	465	708	1 326	2,35	26
27	234419M.SP	95	145	60	30	128	15	1,5	0,3	4,8	9,5	115,5	135,5	1,5	0,3	66,0	219	17,9	4 000	5 300	465	724	1 326	2,55	27

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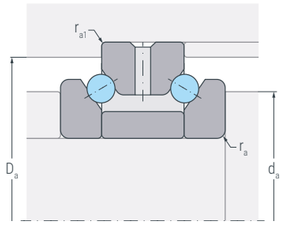
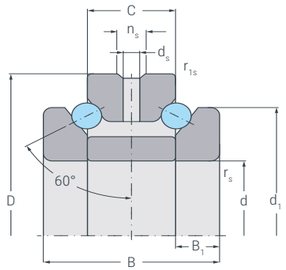
Double-acting angular contact thrust ball
Dimensional table of angular contact thrust ball bearings





	Symbol	Dimensions (mm)										Connection dimensions (mm)				Load rating		Fatigue load limit	Limiting speed		Preload force	Axial stiffness	Lifting-off force	Mass	
																dynamic	static		grease	oil					
	Bearing	d	D	B	C	d_1	B_1	$r_{s\,min}$	$r_{1s\,min}$	d_s	n_s	d_a h12	D_a H12	$r_{a\,max}$	$r_{a1\,max}$	C_a	C_{0a}	C_{ua}	$n_{G\,Grease}$	$n_{G\,Oil}$	F_V	c_a	K_{aE}		
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N/µm	N	kg	
28	234719M.SP	98	145	60	30	128	15	1,5	0,3	4,8	9,5	115,5	135,5	1,5	0,3	66,0	219	17,9	4 000	5 300	465	724	1 326	2,15	28
29	234420M.SP	100	150	60	30	133	15	1,5	0,3	4,8	9,5	120,5	140,5	1,5	0,3	67,0	226	18,1	3 800	5 000	485	743	1 956	2,66	29
30	234720M.SP	103	150	60	30	133	15	1,5	0,3	4,8	9,5	120,5	140,5	1,5	0,3	67,0	226	18,1	3 800	5 000	485	743	1 956	2,54	30
31	234421M.SP	105	160	66	33	142	16,5	2	0,6	4,8	9,5	128	150	2	0,6	74,0	250	19,5	3 600	4 800	530	775	1 511	3,41	31
32	234721M.SP	109	160	66	33	142	16,5	2	0,6	4,8	9,5	128	150	2	0,6	74,0	250	19,5	3 600	4 800	530	775	1 511	3,24	32
33	234422M.SP	110	170	72	36	150	18	2	0,6	4,8	9,5	134,5	160	2	0,6	98,0	325	24,4	3 400	4 500	695	853	1 983	4,75	33
34	234722M.SP	114	170	72	36	150	18	2	0,6	4,8	9,5	134,5	160	2	0,6	98,0	325	24,4	3 400	4 500	695	853	1 983	4,51	34
35	234424M.SP	120	180	72	36	160	18	2	0,6	4,8	9,5	144,5	170	2	0,6	101	345	25	3 200	4 300	860	896	2 736	5,19	35
36	234724M.SP	124	180	72	36	160	18	2	0,6	4,8	9,5	144,5	170	2	0,6	101	345	25	3 200	4 300	860	896	2 736	5,14	36
37	234426M.SP	130	200	84	42	177	21	2	0,6	6,3	12,2	159	188	2	0,6	128	440	30,5	2 800	3 800	900	978	2 570	6,86	37
38	234726M.SP	135	200	84	42	177	21	2	0,6	6,3	12,2	159	188	2	0,6	128	440	30,5	2 800	3 800	900	978	2 570	6,52	38
39	234428M.SP	140	210	84	42	187	21	2,1	0,6	6,3	12,2	169	198	2,1	0,6	132	470	31,5	2 600	3 600	930	1 034	2 649	8,78	39
40	234728M.SP	145	210	84	42	187	21	2,1	0,6	6,3	12,2	169	198	2,1	0,6	132	470	31,5	2 600	3 600	930	1 034	2 649	8,07	40
41	234430M.SP	150	225	90	45	200	22,5	2,1	0,6	8	15	181	211,5	2,1	0,6	142	520	34	2 600	3 600	1 120	1 083	3 764	9,21	41
42	234730M.SP	155	225	90	45	200	22,5	2,1	0,6	8	15	181	211,5	2,1	0,6	142	520	34	2 600	3 600	1 120	1 083	3 764	8,79	42
43	234432M.SP	160	240	96	48	212	24	2,1	0,6	8	15	192,5	226	2,1	0,6	168	600	38	2 400	3 400	1 180	1 149	3 362	11,1	43
44	234732M.SP	165	240	96	48	212	24	2,1	0,6	8	15	192,5	226	2,1	0,6	168	600	38	2 400	3 400	1 180	1 149	3 362	10,7	44
45	234434M.SP	170	260	108	54	230	27	2,1	0,6	8	15	206,5	245	2,1	0,6	207	740	45,5	2 200	3 200	1 347	1 262	5 270	15,3	45
46	234734M.SP	176	260	108	54	230	27	2,1	0,6	8	15	206,5	245	2,1	0,6	207	740	45,5	2 200	3 200	1 347	1 262	5 270	14,6	46
47	234436M.SP	180	280	120	60	248	30	2,1	0,6	8	15	221	263	2,1	0,6	235	840	49,5	2 000	3 000	1 660	1 315	4 733	20,5	47
48	234736M.SP	187	280	120	60	248	30	2,1	0,6	8	15	221	263	2,1	0,6	235	840	49,5	2 000	3 000	1 660	1 315	4 733	19,6	48
49	234438M.SP	190	290	120	60	258	30	2,1	0,6	8	15	231	273	2,1	0,6	244	900	52	1 900	2 800	1 810	1 395	6 021	24,1	49
50	234738M.SP	197	290	120	60	258	30	2,1	0,6	8	15	231	273	2,1	0,6	244	900	52	1 900	2 800	1 810	1 395	6 021	21,2	50
51	234440M.SP	200	310	132	66	274	33	2,1	0,6	8	15	245	291,5	2,1	0,6	285	1 060	59	1 800	2 600	2 000	1 449	5 704	30,9	51
52	234740M.SP	207	310	132	66	274	33	2,1	0,6	8	15	245	291,5	2,1	0,6	285	1 060	59	1 800	2 600	2 000	1 449	5 704	28,6	52
53	234444M.SP	220	340	144	72	304	36	3	1,1	9,5	17,7	269	318	3	1,1	340	1 330	71	1 600	2 200	2 400	1 629	6 848	36,9	53
54	234744M.SP	228	340	144	72	304	36	3	1,1	9,5	17,7	269	318	3	1,1	340	1 330	71	1 600	2 200	2 400	1 629	6 848	35,3	54
55	234448M.SP	240	360	144	72	322	36	3	1,1	9,5	17,7	289	338	3	1,5	350	1 420	73	1 500	2 000	2 500	1 729	7 134	38,9	55
56	234748M.SP	248	360	144	72	322	36	3	1,1	9,5	17,7	289	338	3	1,5	350	1 420	73	1 500	2 000	2 500	1 729	7 134	37,2	56
57	234452M.SP	260	400	164	82	354	41	4	1,5	9,5	17,7	317,5	374,5	4	1,5	400	1 680	83	1 400	1 900	2 900	1 814	8 257	56,5	57
58	234752M.SP	269	400	164	82	354	41	4	1,5	9,5	17,7	317,5	374,5	4	1,5	400	1 680	83	1 400	1 900	2 900	1 814	8 257	54,1	58

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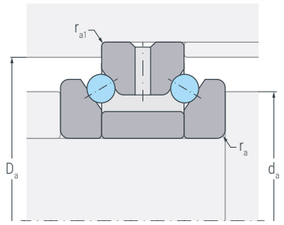

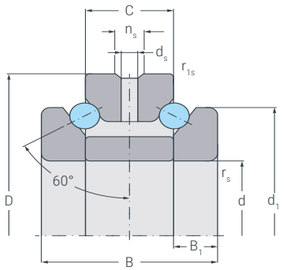

	Symbol	Dimensions (mm)										Connection dimensions (mm)				Load rating		Fatigue load limit	Limiting speed		Preload force	Axial stiffness	Lifting-off force	Mass	
																dynamic	static		grease	oil					
	Bearing	d	D	B	C	d_1	B_1	$r_{s\,min}$	$r_{1s\,min}$	d_s	n_s	d_a h12	D_a H12	$r_{a\,max}$	$r_{a1\,max}$	C_a	C_{0a}	C_{ua}	$n_{G\,Grease}$	$n_{G\,Oil}$	F_V	c_a	K_{aE}		
		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN	kN	min^{-1}	min^{-1}	N	N/µm	N	kg	
59	234456M.SP	280	420	164	82	374	41	4	1,5	9,5	17,7	337,5	394,5	4	1,5	415	1 790	86	1 300	1 800	3 000	1 920	8 542	69,0	59
60	234756M.SP	289	420	164	82	374	41	4	1,5	9,5	17,7	337,5	394,5	4	1,5	415	1 790	86	1 300	1 800	3 000	1 920	8 542	63,8	60
61	234460M.SP	300	460	190	95	406	47,5	4	1,5	9,5	17,7	366	428,5	4	1,5	480	2 170	99	1 200	1 700	3 400	2 027	9 682	90,7	61
62	234760M.SP	310	460	190	95	406	47,5	4	1,5	9,5	17,7	366	428,5	4	1,5	480	2 170	99	1 200	1 700	3 400	2 027	9 682	86,5	62

Double-acting angular contact thrust ball
Dimensional table of angular contact thrust ball bearings

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Imprint

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