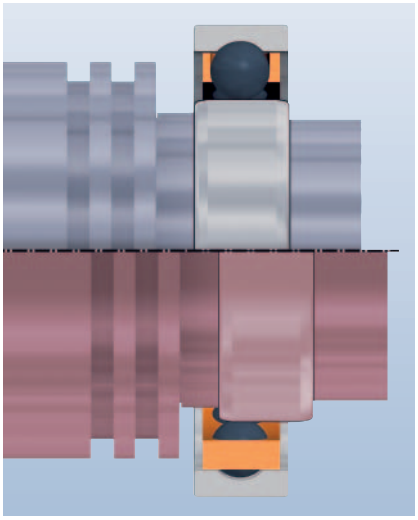
The FAG Floating Displacement Bearing (FD) is the ideal floating bearing solution for when maximum speeds should be achieved and the requirements for carrying capacity are not decisive. FD Bearings reach the speeds of High Speed Angular Contact Thrust Ball Bearings. They run more than twice as quickly as Standard Cylindrical Roller Bearings. They therefore are used especially in motor spindles.
The design is basically a combination of a ball bearing outer ring and a Cylindrical Roller Bearing inner ring. Ceramic balls are used standard as rolling elements. This design ensures a free displacement of the outer ring relative to the inner ring during operation. The inner ring is made of Cronidur 30 high performance steel, which permits higher Hertzian contact pressures in comparison with conventional rolling bearing steel. The contact between the inner ring and rolling elements ensures that the material pairing of Cronidur 30 and ceramic balls has adequate load carrying capacity. During fitting, the bearing clearance must be set according to the operating conditions. The application engineering department of the Schaeffler Group Industrial offers consultation in this regard by simulating the operating conditions. FAG FD bearings exhibit the same external dimensions as Spindle Bearings of the series B70.. or Cylindrical Roller Bearings of the series N10... Sufficient load carrying capacity coupled with very high speed-ability gives the designer entirely new possibilities for the floating bearing location. FD Bearings can also be integrated into existing structures with low load rating requirements in order to easily increase the permissible speeds.
FAG offers both Floating Displacement Bearings and Spindle Bearings in an optional design sealed on both sides (2RSD) or in Direct Lube (DLR) design for oil-air lubrication. Analogous to FAG Super Precision Cylindrical Roller Bearings, FD Bearings are also available with a tapered inner ring bore (K).
FD Bearings are also available with a radial clearance matched to the bearing bore (T64), which simplifies allocating bearings to the shaft and also permits multiple bearings to be mounted side by side in a set. (See the “Customized special solutions” chapter, pages 218 ff.)

1: Floating Displacement Bearing (FD..)

2: FD..DLR
Direct Lube design



3: FD Bearings permit a sure and free displacement between inner and outer ring.

Bearing Code of FAG Floating Displacement Bearings

FD 10 10 -T-P4S
FD 10 10 -T-P4S-R10-15
FD 10 10-K -T-P4S
FD 10 10 -DLR-T-P4S
FD 10 10-2RSD-T-P4S

Bearing Type

FD Floating Displacement Bearing
Cronidur inner ring
Ceramic balls

Dimension Series

10 Medium series

Bore Reference Number

00 10 mm
01 12 mm
02 15 mm
03 17 mm
04 4 · 5 = 20 mm
05 5 · 5 = 25 mm

External Form

-DLR Direct Lube
Direct radial lubrication holes
with integral O rings

Individual Radial Clearance

freely selectable in µm steps
See bearing data for standard radial clearance.

Accuracy

P4S FAG standard
better than P4 according to
DIN 620

Cage

T Textile laminated phenolic resin
Outer ring guided

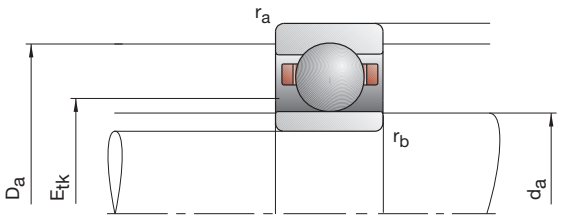
Tapered Bore

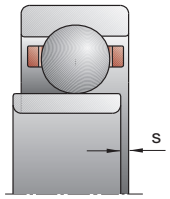
K tapered bore (taper 1:12)

Seal

-2RSD Sealed on both sides and
lubricated with L075
Sealed designs are indicated with
a point (•) in the bearing tables.

FAG Floating Displacement Bearings





Bearing code	Dimensions						Abutment dimensions			
	d	D	B	r_{smin}	r_{1smin}	s	d_a h12	D_a H12	r_a max	r_b max
FAG	mm									
FD1000-T-P4S	10	26	8	0,30	0,30	1,2	13,5	22,0	0,3	0,3
FD1001-T-P4S	12	28	8	0,30	0,30	1,2	16,0	24,5	0,3	0,3
FD1002-T-P4S	15	32	9	0,30	0,30	1,7	18,0	29,0	0,3	0,3
FD1003-T-P4S	17	35	10	0,30	0,30	2,0	20,0	32,0	0,3	0,3
FD1004-T-P4S	20	42	12	0,60	0,30	2,3	24,0	37,0	0,6	0,3
FD1005-T-P4S	25	47	12	0,60	0,30	2,5	28,0	42,5	0,6	0,3
FD1006-T-P4S	30	55	13	1,00	0,60	2,6	35,0	50,0	1,0	0,6
FD1007-T-P4S	35	62	14	1,00	0,60	2,7	40,0	56,5	1,0	0,6
FD1008-T-P4S	40	68	15	1,00	0,60	2,7	45,0	62,0	1,0	0,6
FD1009-T-P4S	45	75	16	1,00	0,60	3,2	50,0	69,0	1,0	0,6
FD1010-T-P4S	50	80	16	1,00	0,60	3,2	55,0	74,5	1,0	0,6
FD1011-T-P4S	55	90	18	1,10	1,00	3,8	60,0	84,0	1,1	1,0
FD1012-T-P4S	60	95	18	1,10	1,00	3,8	65,0	89,0	1,1	1,0
FD1013-T-P4S	65	100	18	1,10	1,00	3,8	70,0	94,0	1,1	1,0
FD1014-T-P4S	70	110	20	1,10	1,00	4,3	76,0	103,0	1,1	1,0
FD1015-T-P4S	75	115	20	1,10	1,00	4,3	81,0	108,0	1,1	1,0
FD1016-T-P4S	80	125	22	1,10	1,00	4,8	87,0	117,0	1,1	1,0

* options; • = possible, – = not possible

See “Customized Solutions” for additional FD design variants.

Designation examples:

Design with tapered bore
FD1010-K-T-P4S

Sealed design
FD1010-2RSD-T-P4S

Direct Lube design
FD1010-DLR-T-P4S