

Ballscrews

Shaft ends and accessories

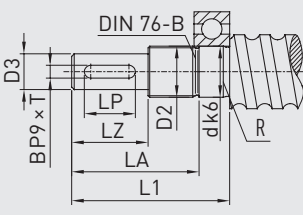
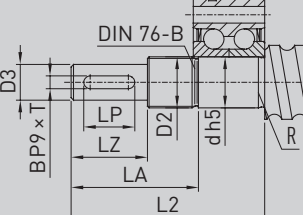
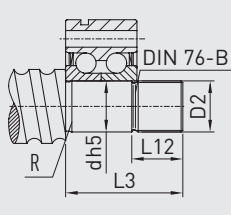
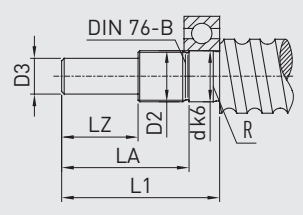
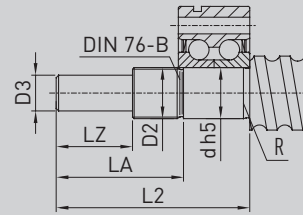
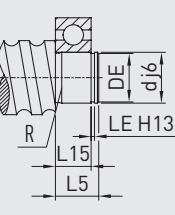
8. Shaft ends and accessories

8.1 Shaft ends and bearing configuration

To reduce the amount of design work required, we provide standardised end machining processes and bearing units. We recommend the "B", "E" and "F" bearing series for simple transport applications and low axial forces. The SFA and SLA bearing units are suited to more challenging precision applications. The WBK series is available for heavy-duty applications.

When selecting the suitable bearing type, the permissible axial force of the fixed bearing must also be taken into account.

Table 8.1 Overview of standard shaft ends for SFA, SLA bearing series

		
Supported bearing type S1 Bearing: deep groove ball bearing 60.. or 62.. For SLA bearing unit	Fixed bearing type S2 Bearing: ZKL.. or ZKLN.. For SFA bearing unit	Fixed bearing type S3 Bearing: ZKL.. or ZKLN.. For SFA bearing unit
		
Supported bearing type S11 Bearing: deep groove ball bearing 60.. or 62.. For SLA bearing unit	Fixed bearing type S21 Bearing: ZKL.. or ZKLN.. For SFA bearing unit	Supported bearing type S5 Bearing: deep groove ball bearing 62.. For SLA bearing unit

Example: Designation of shaft end, type S2, with the fit diameter $d = 20$: S2-20

When using bearings other than the specified bearing units, it must be checked whether the size of the bearing installation surface is sufficient.

Table 8.2 Dimensions of standard shaft ends for SFA, SLA bearing series

Shaft end type	Ballscrew nominal $\emptyset$	d	D2	D3	L1	L2	L3	L5	L12	L15	DE	LE	LA	LP	LZ	B x T	Recess R
S_-06	12	6	M6 x 0.5	5 j6	31	37	—	8	—	6	5.7 h10	0.80	26	—	16	—	10002475
S_-10	15, 16	10	M10 x 0.75	8 j6	39	50	30	12	12	9	9.6 h10	1.10	32	14	20	2 x 1.2	10002475
S_-12	20	12	M12 x 1	10 j6	43	58	35	13	12	10	11.5 h11	1.10	35	16	23	3 x 1.8	10002475
S_-17	25	17	M17 x 1	14 j6	60	73	43	15	20	12	16.2 h11	1.10	50	20	30	5 x 3	10002475
S_-20	32	20	M20 x 1	14 j6	62	76	46	17	20	14	19 h12	1.30	50	20	30	5 x 3	10002476
S_-25	40	25	M25 x 1.5	20 j6	83	96	46	19	20	15	23.9 h12	1.30	71	36	50	6 x 3.5	10002476
S_-30	40	30	M30 x 1.5	25 j6	95	108	48	20	22	16	28.6 h12	1.60	82	45	60	8 x 4	10002476
S_-40	50	40	M40 x 1.5	32 k6	119	135	55	22	24	18	37.5 h12	1.85	104	56	80	10 x 5	10002476
S_-50	63	50	M50 x 1.5	40 k6	142	155	55	25	24	20	47 h12	2.15	124	70	100	12 x 5	10002476
S_-60	80	60	M60 x 2	50 k6	155	177	67	28	25	22	57 h12	2.15	135	70	110	14 x 5.5	10002476

Unit: mm

It goes without saying that we also machine the shaft ends to your drawings and individual requirements.

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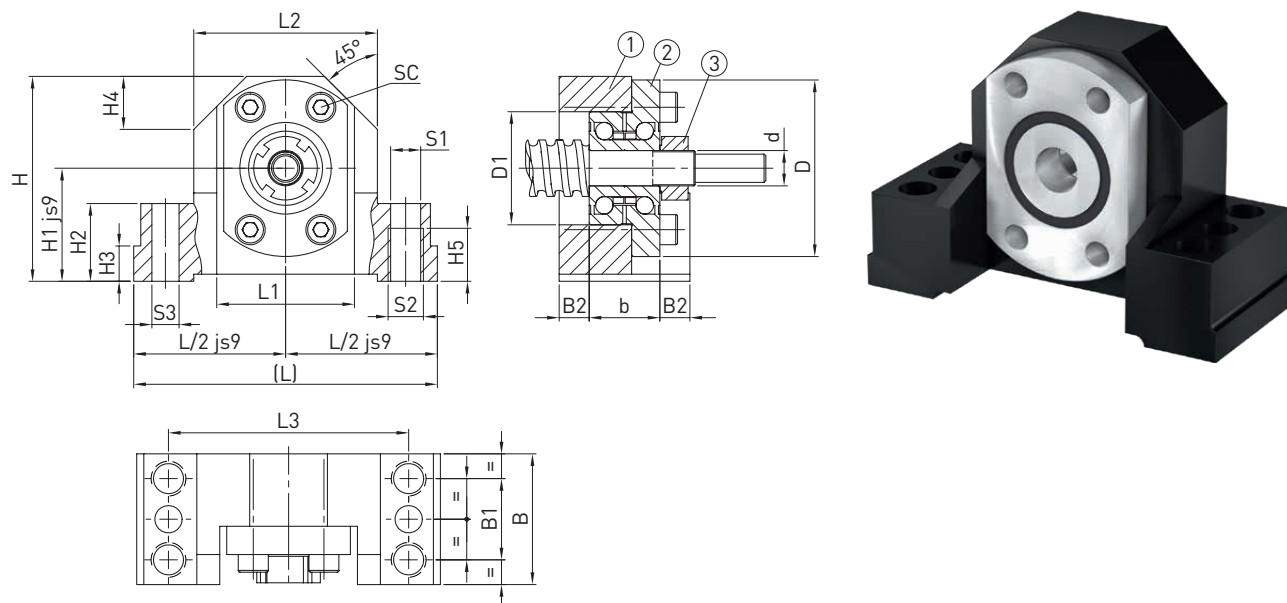
8.3 SFA/SLA bearing series

8.3.1 Fixed bearing SFA

The axis height of the fixed bearing is matched to supported bearing SLA (Section 8.3.2) and nut housing GFD (Section 8.4). The pillow block can be screwed on from above (S1) and below (S2).

The reference edge makes it easier to align the unit. The fixed bearing can be pinned with two tapered pins or cylindrical pins. The end machining suited to the fixed bearing is the S2-xx/S3-xx type (Section 8.1).

SFA06/SFA10



(1) Steel pillow block housing, (2) Bearing, (3) Lock nut

Table 8.13 Bearing unit dimensions

Type	Shaft nominal Ø	L	L/2	L1	L2	L3	H	H1	H2	H3	H4	H5	d	D	D1	b
SFA06	12	62	31	34	38	50	41	22	13	5	11	9	6	30	19	12
SFA10	16	86	43	52	52	68	58	32	22	10	15	15	10	50	32	20

Unit: mm

Table 8.14 Bearing unit dimensions

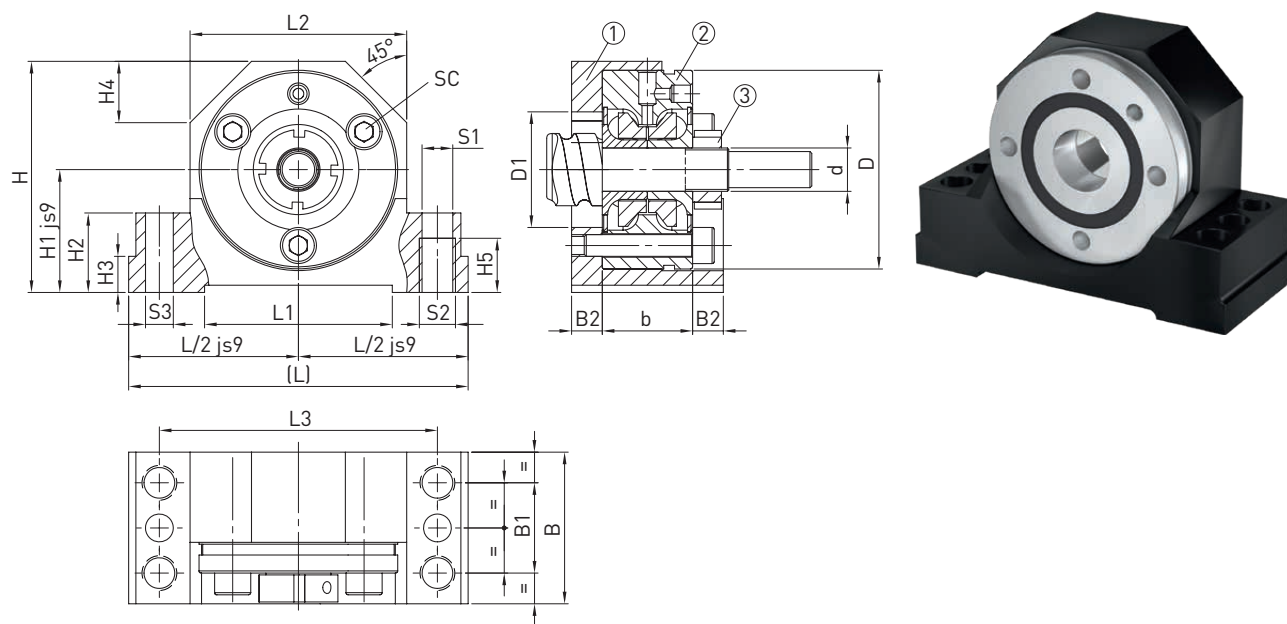
Type	Shaft nominal Ø	B	B1	B2	S1	S2	S3	SC ISO 4762-10.9
SFA06	12	32	16	10.0	5.3	M6	3.7	4 × M3 × 12
SFA10	16	37	23	8.5	8.5	M10	7.7	4 × M5 × 20

Unit: mm

Table 8.15 Technical data of bearing

Type	Bearing type	C ₀ axial [N]	C _{dyn} axial [N]	Permissible speed [rpm]	Lock nut				Article number
					Type	Nut tightening torque [Nm]	Screw size	Screw tightening torque [Nm]	
SFA06	ZKLFA0630.2Z	6,100	4,900	14,000	HIR 06	2	M4	1	18-000109
SFA10	ZKLFA1050.2RS	8,500	6,900	6,800	HIR 10	6	M4	1	18-000111

SFA12 – SFA40



(1) Steel pillow block housing, (2) Bearing, (3) Lock nut

Table 8.16 Bearing unit dimensions

Type	Shaft nominal Ø	L	L/2	L1	L2	L3	H	H1	H2	H3	H4	H5	d	D	D1	b
SFA12	20	94	47	52	60	77	64	34	22	10	17	15	12	55	32	25
SFA17	25	108	54	65	66	88	72	39	27	10	19	18	17	62	36	25
SFA20	32	112	56	65	73	92	78	42	27	10	20	18	20	68	42	28
SFA30	40	126	63	82	84	105	92	50	32	13	23	21	30	80	52	28
SFA40	50	146	73	82	104	125	112	60	32	13	30	21	40	100	66	34

Unit: mm

Table 8.17 Bearing unit dimensions

Type	Shaft nominal Ø	B	B1	B2	S1	S2	S3	Lock nut	SC ISO 4762-10.9
SFA12	20	42	25	8.5	8.5	M10	7.7	HIR 12	3 × M6 × 35
SFA17	25	46	29	10.5	10.5	M12	9.7	HIR 17	3 × M6 × 35
SFA20	32	49	29	10.5	10.5	M12	9.7	HIR 20 × 1	4 × M6 × 40
SFA30	40	53	32	12.5	12.6	M14	9.7	HIR 30	6 × M6 × 40
SFA40	50	59	34	12.5	12.6	M14	9.7	HIR 40	4 × M8 × 50

Unit: mm

Table 8.18 Technical data of bearing

Type	Bearing type	C ₀ axial [N]	C _{dyn} axial [N]	Permissible speed [rpm]	Lock nut				Article number
					Type	Nut tightening torque [Nm]	Screw size	Screw tightening torque [Nm]	
SFA12	ZKLF1255.2RS-PE	24,700	18,600	3,800	HIR 12	8	M4	1	18-000113
SFA17	ZKLF1762.2RS-PE	31,000	20,700	3,300	HIR 17	15	M5	3	18-000116
SFA20	ZKLF2068.2RS-PE	47,000	28,500	3,000	HIR 20 × 1	18	M5	3	18-000274
SFA30	ZKLF3080.2RS-PE	64,000	32,000	2,200	HIR 30	32	M6	5	18-000121
SFA40	ZKLF40100.2RS-PE	101,000	47,500	1,800	HIR 40	55	M6	5	18-000123