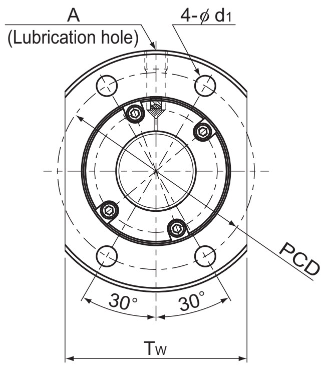
SBK Small With Preload

DN value	130,000



Model No.	Screw shaft outer diameter d	Lead Ph	Ball center-to-center diameter dp	Thread minor diameter dc	No. of loaded circuits Rows × turns	Basic load rating Ca kN	Basic load rating C_0a kN	Rigidity K N/μm
SBK 1520-3.6	15	20	15.75	12.2	1×1.8	5.8	7.8	178
SBK 1616-3.6	16	16	16.65	13.5	1×1.8	4.6	6.4	182
SBK 2010-5.6	20	10	20.75	17.2	1×2.8	10.7	17.3	353
SBK 2020-3.6	20	20	20.75	17.2	1×1.8	7	10.5	229
SBK 2030-3.6	20	30	20.75	17.2	1×1.8	6.9	11.2	236
SBK 2520-3.6	25	20	26	21.5	1×1.8	11	16.9	292
SBK 2525-3.6	25	25	26	21.5	1×1.8	10.8	16.9	290
SBK 3220-5.6	32	20	33.25	27.9	1×2.8	23.6	41.1	565
SBK 3232-5.6	32	32	33.25	27.9	1×2.8	23.1	41.8	567

Note: With model SBK, the raising of both ends of the thread groove is not available. When designing your system this way, contact THK.

Axial Clearance

Unit: mm

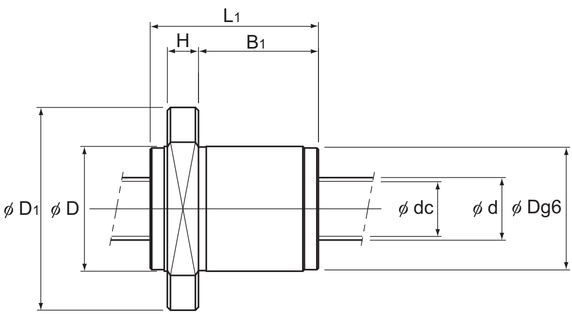
Clearance symbol	G0
Axial Clearance	0 or less

Model number coding

SBK2525-3.6 QZ G0 +1200L C5

- SBK2525-3.6: Model Number
- QZ: With QZ Lubricator (no symbol if the model is without a QZ Lubricator)
- G0: Symbol for clearance in the axial direction (G0 for all SBK variations)
- +1200L: Overall screw shaft length (in mm)
- C5: Accuracy symbol[1]

[1] See A15-12.



Unit: mm

	Nut dimensions									Screw shaft inertial moment/mm	Nut mass	Shaft mass	Permissible rotational speed
	Outer diameter D	Flange diameter D_1	Overall length L_1	H	B_1	PCD	d_1	T_w	Lubrication hole A	$kg\cdot m^2/mm$	kg	kg/m	min^{-1}
	38	62	54	10	38.5	49	5.5	39	M6	3.90×10^{-8}	0.41	1.27	5,000
	33	54	45	10	29.5	43	4.5	38	M6	5.05×10^{-8}	0.25	1.46	5,000
	40	65	45	10	29.5	53	5.5	49	M6	1.23×10^{-7}	0.37	2.18	5,000
	40	65	54	10	38.5	53	5.5	49	M6	1.23×10^{-7}	0.43	2.32	5,000
	40	65	71	10	55.5	53	5.5	49	M6	1.23×10^{-7}	0.55	2.36	5,000
	47	74	57	12	38	60	6.6	56	M6	3.01×10^{-7}	0.59	3.58	5,000
	47	74	68	12	49	60	6.6	56	M6	3.01×10^{-7}	0.69	3.63	5,000
	58	92	82	15	58	74	9	68	M6	8.08×10^{-7}	1.23	5.82	3,900
	58	92	118	15	94	74	9	68	M6	8.08×10^{-7}	1.70	5.99	3,900

The rigidity values in the table represent spring constants, each obtained from the load and the elastic deformation when providing a preload equal to 10% of the basic axial dynamic load rating (Ca) and applying an axial load three times greater than the preload.
These values do not include the rigidity of the components related to mounting the ball screw nut. Therefore, it is normally appropriate to regard roughly 80% of the value in the table as the actual value.
If the applied preload (Fa_0) is not 10% of Ca, the rigidity value (K_N) is obtained from the following equation.

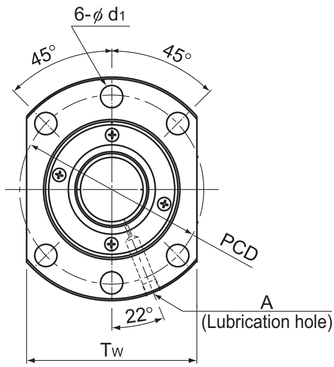
$$K_N = K\left(\frac{Fa_0}{0.1Ca}\right)^{\frac{1}{3}}$$

K: Rigidity value in the dimensional table

Options⇒A15-355

SBK Medium With Preload

DN value	SBK3636, 4040, 5050	210,000
	All other Model SBK units	160,000



Model No.	Screw shaft outer diameter d	Lead Ph	Ball center-to-center diameter dp	Thread minor diameter dc	No. of loaded circuits Rows × turns	Basic load rating Ca kN	Basic load rating C_0a kN	Rigidity K N/μm
SBK 3620-7.6	36	20	37.75	30.4	1×3.8	48.5	85	870
SBK 3636-5.6	36	36	37.75	31.4	1×2.8	36.6	64.7	460
SBK 4020-7.6	40	20	42	34.1	1×3.8	59.7	112.7	970
SBK 4030-7.6	40	30	42	34.1	1×3.8	59.2	107.5	970
SBK 4040-5.6	40	40	42	34.9	1×2.8	44.8	80.3	520
SBK 5020-7.6	50	20	52	44.1	1×3.8	66.8	141.9	1,170
SBK 5030-7.6	50	30	52	44.1	1×3.8	66.5	135	1,170
SBK 5036-7.6	50	36	52	44.1	1×3.8	65.9	135	1,170
SBK 5050-5.6	50	50	52	44.9	1×2.8	50.3	102.4	630
SBK 5520-7.6	55	20	57	49.1	1×3.8	69.8	156.4	1,250
SBK 5530-7.6	55	30	57	49.1	1×3.8	69.2	147	1,250
SBK 5536-7.6	55	36	57	49.1	1×3.8	69.1	148.7	1,260

Note: With model SBK, the raising of both ends of the thread groove is not available. When designing your system this way, contact THK.

Axial Clearance

Unit: mm

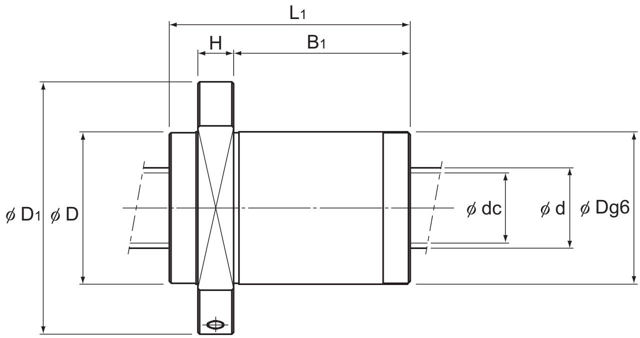
Clearance symbol	G0
Axial Clearance	0 or less

Model number coding

SBK3620-7.6 RR G0 +1500L C5

- SBK3620-7.6: Model number
- RR: Seal symbol[1]
- G0: Symbol for clearance in the axial direction (G0 for all SBK variations)
- +1500L: Overall screw shaft length (in mm)
- C5: Accuracy symbol[2]

[1] See A15-356. [2] See A15-12.



Unit: mm

	Nut dimensions									Screw shaft inertial moment/mm	Nut mass	Shaft mass	Permissible rotational speed
	Outer diameter D	Flange diameter D_1	Overall length L_1	H	B_1	PCD	d_1	T_w	Lubrication hole A	kg·m²/mm	kg	kg/m	min^{-1}
	73	114	110	18	81	93	11	86		1.29×10^{-6}	3.4	5	4,230
	73	114	134	18	105	93	11	86		1.29×10^{-6}	3.37	7.43	5,000
	80	136	110	20	79	112	14	103		1.97×10^{-6}	4.5	5.7	3,800
	80	136	148	20	117	112	14	103		1.97×10^{-6}	5.6	7	3,800
	80	136	146	20	115	112	14	103		1.97×10^{-6}	4.74	9.16	5,000
	90	146	110	22	77	122	14	110	Rc1/8	4.82×10^{-6}	5.3	10.2	3,070
	90	146	149	22	116	122	14	110	(PT1/8)	4.82×10^{-6}	6.6	11.9	3,070
	90	146	172	22	139	122	14	110		4.82×10^{-6}	7.4	12.5	3,070
	90	146	175	22	142	122	14	110		4.82×10^{-6}	6.46	14.72	4,030
	96	152	110	22	77	128	14	114		7.05×10^{-6}	5.7	13	2,800
	96	152	149	22	116	128	14	114		7.05×10^{-6}	7.2	14.8	2,800
	96	152	172	22	139	128	14	114		7.05×10^{-6}	8.1	15.5	2,800

The rigidity values in the table represent spring constants, each obtained from the load and the elastic deformation when providing a preload equal to 10% of the basic axial dynamic load rating (Ca) and applying an axial load three times greater than the pre-load.
These values do not include the rigidity of the components related to mounting the ball screw nut. Therefore, it is normally appropriate to regard roughly 80% of the value in the table as the actual value.
If the applied preload (Fa_0) is not 10% of Ca, the rigidity value (K_N) is obtained from the following equation.

$$K_N = K\left(\frac{Fa_0}{0.1Ca}\right)^{\frac{1}{3}}$$

K: Rigidity value in the dimensional table

Ball Screw