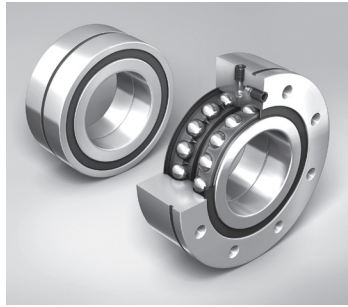


NSKHPS™ BSBD Series

The BSBD Series are double-row bearing units for the support of ball screws that can accurately and quickly position a work piece or a spindle unit.



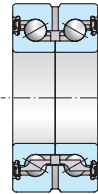
Features

The bearings of this series are double-row angular contact thrust ball bearings with a 60° contact angle and a single outer ring. The specifications are the same as those of the NSKTAC bearings, both series being optimized for the support of ball screws in machine tools. All BSBD Series bearings are equipped with a rubber contact seal and prepacked with high performance grease.

● BSN Type

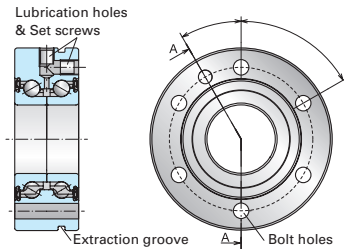
The BSN type of ball screw support bearings are double row angular contact thrust ball bearings in a back-to-back arrangement, with a single outer ring.

The bearings are prepacked with high performance grease. Lubrication holes allow for relubrication during operation if necessary. The contact seal offers minimized friction and temperature rise while providing excellent sealing performance.



● BSF Type

The BSF type of bearings is equivalent to the BSN range of bearings, with bolt holes on the outer ring for easy direct mounting. Two lubrication holes – one in the outer surface and one in the face of the outer ring – allow for relubrication during operation if required. If not used, these holes are closed off with set screws. An extraction groove on the outer surface of the outer ring aids removal of the bearing.



Note: BSF type bearings are supplied with seal and set screws included. Mounting bolts are not included.

BSN Type Single product

Bearing Numbers	Boundary Dimensions (mm)							Abutment and Fillet Dimensions (mm)		Contact Angle (°)	Basic Load Rating (kN)		Limiting ⁽¹⁾ Axial Load (kN)	Preload (N)	Axial Rigidity (N/μm)	Mass (kg)	Limiting speed (min ⁻¹) Greased	Starting torque ⁽²⁾ (N·m) H	Recommended Clamping force (N)
	d	D	B	r (min)	r ₁ (min)	φd _a (min)	φD _b (max)	C _a (Dynamic)	C _{0a} (Static)										
BSN1242	12	42	25	0.6	0.3	15	33	60	18.5	24.0	17.6	720	375	0.20	8 000	0.038	4 030		
BSN1545	15	45	25	0.6	0.3	19	35	60	19.4	26.9	19.4	675	400	0.22	7 100	0.034	4 050		
BSN1747	17	47	25	0.6	0.6	21	37	60	20.3	29.7	21.2	880	450	0.23	6 700	0.05	4 400		
BSN2052	20	52	28	0.6	0.6	24	43	60	26.4	41.0	29.3	1 885	650	0.31	5 800	0.13	7 600		
BSN2557	25	57	28	0.6	0.6	29	48	60	28.3	48.0	34.0	2 245	750	0.36	5 100	0.16	8 100		
BSN3062	30	62	28	0.6	0.6	34	53	60	30.0	55.5	38.5	2 625	850	0.40	4 500	0.19	8 600		
BSN3072	30	72	38	0.6	0.6	35	64	60	60.5	94.0	66.5	4 855	950	0.74	3 900	0.59	11 100		
BSN3572	35	72	34	0.6	0.6	40	62	60	42.0	77.5	52.0	2 630	900	0.66	3 800	0.21	13 500		
BSN4075	40	75	34	0.6	0.6	46	67	60	44.5	88.0	58.5	3 065	1 000	0.65	3 500	0.24	14 100		
BSN4090	40	90	46	0.6	0.6	46	80	60	78.5	135	91.0	7 220	1 200	1.38	3 100	1.02	18 700		
BSN5090	50	90	34	0.6	0.6	56	82	60	48.0	110	71.5	4 020	1 250	0.93	2 800	0.33	15 400		
BSN50110	50	110	54	0.6	0.6	57	98	60	116	219	149	7 435	1 400	2.46	2 500	1.06	19 100		
BSN60110	60	110	45	0.6	0.6	68	100	60	86.5	187	126	4 780	1 300	1.82	2 400	0.50	20 900		

Notes: 1. Permissible axial load equals 0.7 times of limiting axial load.
2. The values indicate starting torque of preloaded bearings, not including seal torque.

NSKHPS BSBD Series

Bearing number

Example: **BS F 30 80 DDU H P2B DT**

Bearing type

F: Flange type
N: No Flange type

Bore diameter

Outer diameter

Arrangement

Accuracy

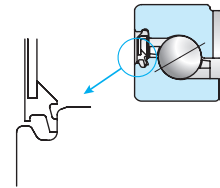
Preload

Seal type

Note: P2B is an accuracy class specific to the BSBD Series, indicating the following:
Running accuracy: ISO Class 2
Others: NSK-specific

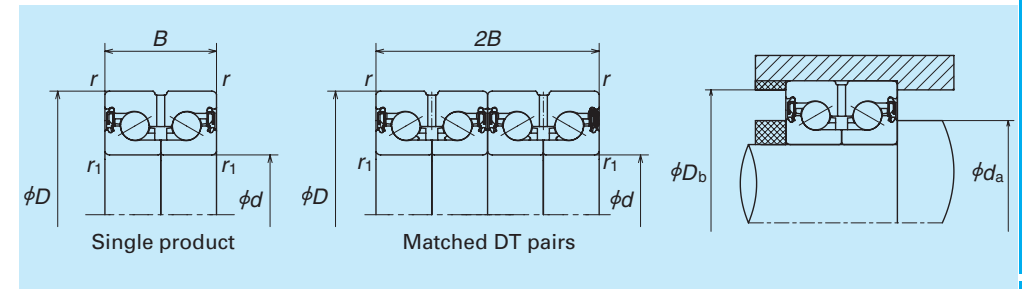
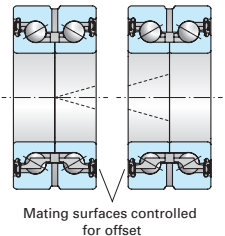
● Seal

Rubber contact seal on both sides. Triple lip structure provides high grease sealing performance and dust resistance.



● Matched DT pairs

BSBD bearings are available in matched DT pairs for applications with large external loads or where high rigidity and long life are required. The mating surfaces of the 2-row bearing set are controlled for offset, so as to have no impact on the preload of each individual bearing.

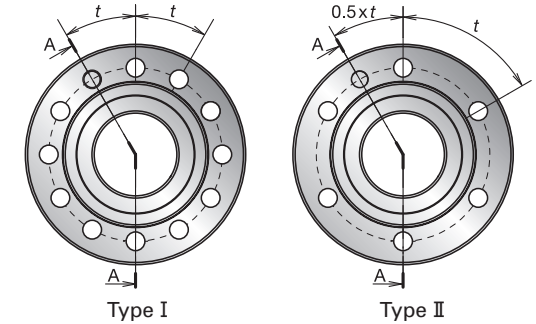
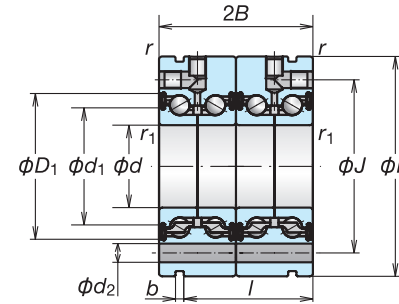
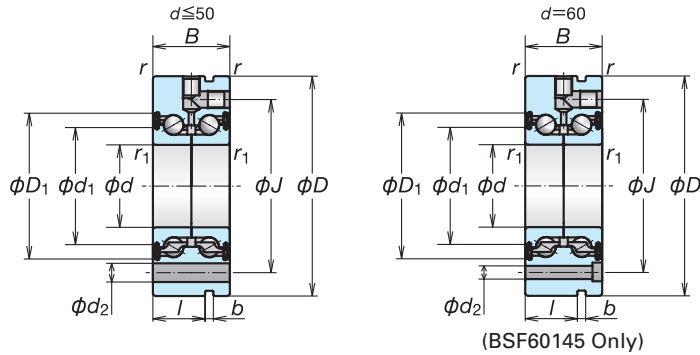


BSN Type Matched DT pairs

Bearing Numbers	Boundary Dimensions (mm)							Abutment and Fillet Dimensions (mm)		Contact Angle (°)	Basic Load Rating (kN)		Limiting ⁽¹⁾ Axial Load (kN)	Axial Rigidity (N/μm)	Mass (kg)	Limiting speed (min ⁻¹) Greased	Starting torque ⁽²⁾ (N·m) H	Recommended Clamping force (N)
	d	D	2B	r (min)	r ₁ (min)	φd _a (min)	φD _b (max)	C _a (Dynamic)	C _{0a} (Static)									
BSN1747-DT	17	47	50	0.6	0.6	21	37	60	33.0	59.5	42.5	790	0.46	6 700	0.10	4 400		
BSN2052-DT	20	52	56	0.6	0.6	24	43	60	43.0	82.0	58.5	1 180	0.62	5 800	0.26	7 600		
BSN2557-DT	25	57	56	0.6	0.6	29	48	60	46.0	96.0	68.0	1 370	0.71	5 100	0.32	8 100		
BSN3062-DT	30	62	56	0.6	0.6	34	53	60	49.0	111	77.0	1 580	0.80	4 500	0.37	8 600		
BSN3072-DT	30	72	76	0.6	0.6	35	64	60	98.0	188	133	1 800	1.47	3 900	1.17	11 100		
BSN3572-DT	35	72	68	0.6	0.6	40	62	60	68.0	155	104	1 630	1.32	3 800	0.41	13 500		
BSN4075-DT	40	75	68	0.6	0.6	46	67	60	72.0	176	117	1 850	1.30	3 500	0.49	14 100		
BSN4090-DT	40	90	92	0.6	0.6	46	80	60	128	269	182	2 300	2.76	3 100	2.03	18 700		
BSN5090-DT	50	90	68	0.6	0.6	56	82	60	78.0	220	143	2 330	1.86	2 800	0.66	15 400		
BSN50110-DT	50	110	108	0.6	0.6	57	98	60	188	440	299	2 690	4.92	2 500	2.11	19 100		

3. Inner rings can be separable easily. Please push or pull bearings by clamping innerring at mounting and dismounting.
4. Abutment and fillet dimensions are recommendable values for the use of standard Machine tool applications. For heavy load applications, please ask NSK.

NSKHPS™ BSBD Series



BSF Type Single product

Bearing Numbers	Boundary Dimensions (mm)					Basic Load Rating (kN)		Limiting ⁽¹⁾ Axial Load (kN)	Axial Rigidity (N/μm)	Mass (kg)	Limiting speed (min ⁻¹)	
	d	D	B	r (min)	r ₁ (min)	C _d (Dynamic)	C ₀ (Static)				Grease	Oil
BSF1255	12	55	25	0.6	0.3	18.5	24.0	17.6	375	0.37	8 000	
BSF1560	15	60	25	0.6	0.3	19.4	26.9	19.4	400	0.44	7 100	
BSF1762	17	62	25	0.6	0.6	20.3	29.7	21.2	450	0.46	6 700	
BSF2068	20	68	28	0.6	0.6	26.4	41.0	29.3	650	0.61	5 800	
BSF2575	25	75	28	0.6	0.6	28.3	48.0	34.0	750	0.73	5 100	
BSF3080	30	80	28	0.6	0.6	30.0	55.5	38.5	850	0.79	4 500	
BSF30100	30	100	38	0.6	0.6	60.5	94	66.5	950	1.71	3 900	
BSF3590	35	90	34	0.6	0.6	42.0	77.5	52.0	900	1.20	3 800	
BSF40100	40	100	34	0.6	0.6	44.5	88.0	58.5	1 000	1.49	3 500	
BSF40115	40	115	46	0.6	0.6	78.5	135	91.0	1 200	2.56	3 100	
BSF50115	50	115	34	0.6	0.6	48.0	110	71.5	1 250	1.89	2 800	
BSF50140	50	140	54	0.6	0.6	116	219	149	1 400	4.46	2 500	
BSF60145	60	145	45	0.6	0.6	86.5	187	126	1 300	4.06	2 400	

BSF Type Matched pairs

Bearing Numbers	Boundary Dimensions (mm)					Basic Load Rating (kN)		Limiting ⁽¹⁾ Axial Load (kN)	Axial Rigidity (N/μm)	Mass (kg)	Limiting speed (min ⁻¹)	
	d	D	2B	r (min)	r ₁ (min)	C _d (Dynamic)	C ₀ (Static)				Grease	Oil
BSF1762-DT	17	62	50	0.6	0.6	33.0	59.5	42.5	790	0.890	6 700	
BSF2068-DT	20	68	56	0.6	0.6	43.0	82.0	58.5	1 180	1.17	5 800	
BSF2575-DT	25	75	56	0.6	0.6	46.0	96.0	68.0	1 370	1.46	5 100	
BSF3080-DT	30	80	56	0.6	0.6	49.0	111	77.0	1 580	1.58	4 500	
BSF30100-DT	30	100	76	0.6	0.6	98.0	188	133	1 800	3.41	3 900	
BSF3590-DT	35	90	68	0.6	0.6	68.0	155	104	1 630	2.30	3 800	
BSF40100-DT	40	100	68	0.6	0.6	72.0	176	117	1 850	2.88	3 500	
BSF40115-DT	40	115	92	0.6	0.6	128	269	182	2 300	5.12	3 100	
BSF50115-DT	50	115	68	0.6	0.6	78.0	220	143	2 330	3.78	2 800	
BSF50140-DT	50	140	108	0.6	0.6	188	440	299	2 690	8.92	2 500	

Notes: 1. Permissible axial load equals 0.7 times of limiting axial load. The values refer to the limiting load of the bearing only, without taking the mounting bolts into account.

Reference Dimensions (mm)							Type	Mounting Bolts		Preload (N)	Starting torque ⁽²⁾ (N·m) H	Recommended Clamping Force (N)
d ₁	D ₁	J	d ₂	l	b	t		Bolt Dia.	Number of Bolts			
23.7	32.7	42	6.8	17	3	3 × 120°	II	M6	3	720	0.038	4 030
26.7	35.7	46	6.8	17	3	3 × 120°	II	M6	3	675	0.034	4 050
28.1	37.7	48	6.8	17	3	3 × 120°	II	M6	3	890	0.05	4 400
32.6	43	53	6.8	19	3	4 × 90°	II	M6	4	1 885	0.13	7 600
37.6	48	58	6.8	19	3	4 × 90°	II	M6	4	2 245	0.16	8 100
42.6	53	63	6.8	19	3	6 × 60°	II	M6	6	2 625	0.19	8 600
49.1	64.4	80	8.8	30	3	8 × 45°	II	M8	8	4 855	0.59	11 100
53.1	62.2	75	8.8	25	3	4 × 90°	II	M8	4	2 630	0.21	13 500
55.1	67.2	80	8.8	25	3	4 × 90°	II	M8	4	3 065	0.24	14 100
63.1	80.1	94	8.8	36	3	12 × 30°	II	M8	12	7 220	1.02	18 700
70.1	82.2	94	8.8	25	3	6 × 60°	II	M8	6	4 020	0.33	15 400
78.1	97.5	113	11	45	3	12 × 30°	II	M10	12	7 435	1.06	19 100
83.1	99.3	120	8.8	35	3	8 × 45°	II	M8	8	4 780	0.50	20 900

Reference Dimensions (mm)							Type	Mounting Bolts		Starting torque ⁽²⁾ (N·m) H	Recommended Clamping Force (N)
d ₁	D ₁	J	d ₂	l	b	t		Bolt Dia.	Number of Bolts		
28.1	37.7	48	6.8	42	3	6 × 60°	I	M6	5	0.10	4 400
32.6	43	53	6.8	47	3	8 × 45°	I	M6	7	0.26	7 600
37.6	48	58	6.8	47	3	8 × 45°	I	M6	7	0.32	8 100
42.6	53	63	6.8	47	3	12 × 30°	I	M6	11	0.37	8 600
49.1	64.4	80	8.8	68	3	8 × 45°	II	M8	8	1.17	11 100
53.1	62.2	75	8.8	59	3	8 × 45°	I	M8	7	0.41	13 500
55.1	67.2	80	8.8	59	3	8 × 45°	I	M8	7	0.49	14 100
63.1	80.1	94	8.8	82	3	12 × 30°	II	M8	12	2.03	18 700
70.1	82.2	94	8.8	59	3	12 × 30°	I	M8	11	0.66	15 400
78.1	97.5	113	11	99	3	12 × 30°	II	M10	12	2.11	19 100

2. The values indicate starting torque of preloaded bearings, not including seal torque.
3. Inner rings can be separable easily. Please push or pull bearings by clamping inner ring at mounting and dismounting.