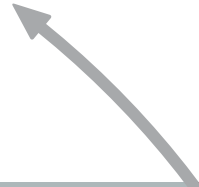


# BALL SCREW SUPPORT BEARINGS

BSBD SERIES



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As one of the world's leading manufacturers of rolling bearings, linear technology components and steering systems, we can be found on almost every continent – with production facilities, sales offices and technology centres – because our customers appreciate short decision-making channels, prompt deliveries and local service.



### The NSK company

NSK commenced operations as the first Japanese manufacturer of rolling bearings back in 1916. Ever since, we have been continuously expanding and improving not only our product portfolio but also our range of services for various industrial sectors. In this context, we develop technologies in the fields of rolling bearings, linear systems, components for the automotive industry and mechatronic systems. Our research and production facilities in Europe, Americas and Asia are linked together in a global technology

network. Here we concentrate not only on the development of new technologies, but also on the continuous optimisation of quality – at every process stage.

Among other things, our research activities include product design, simulation applications using a variety of analytical systems and the development of different steels and lubricants for rolling bearings.

## Partnership based on trust – and trust based on quality

Total Quality by NSK: The synergies of our global network of NSK Technology Centres. Just one example of how we meet our requirements for high quality.

NSK is one of the leading companies with a long tradition in patent applications for machine parts. In our worldwide research centres, we not only concentrate on the development of new technologies, but also on the continual

improvement of quality based on the integrated technology platform of tribology, material technology, analysis and mechatronics.

**More about NSK at [www.nskEurope.com](http://www.nskEurope.com) or call us on +44 (0) 1636 605123**



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# Ball Screw Support Bearings

BSBD Series

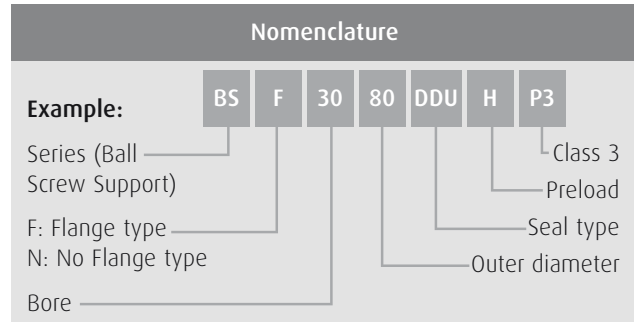


Picture courtesy of Stama GmbH, Germany

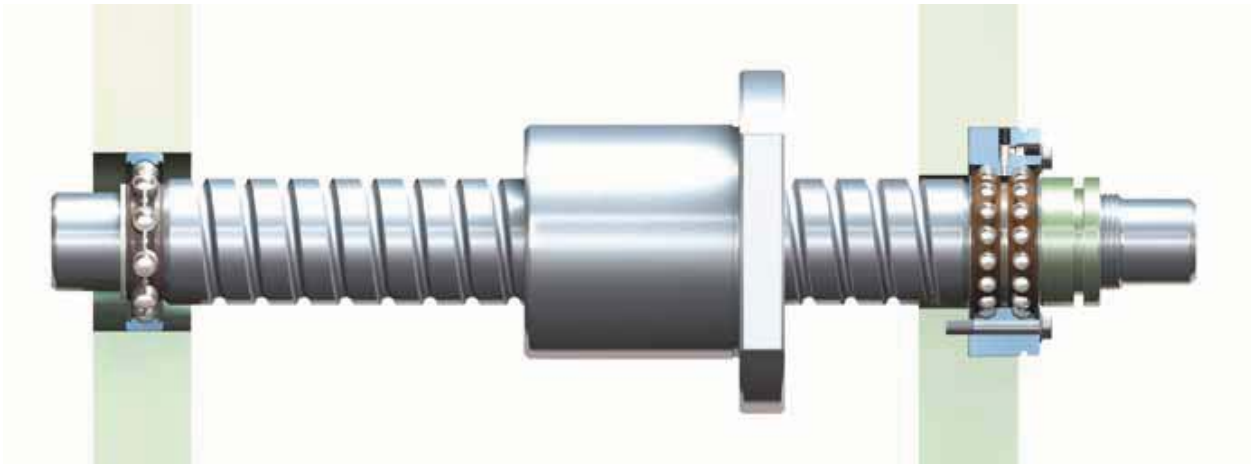


Modern machine tools require ball screws that can accurately position a work piece or machine component, quickly and efficiently. The BSN / BSF range of bearings are support bearings designed to specifically meet these demanding requirements.

The double row configuration, with a 60° contact angle, enables the bearings to support large axial forces in both directions, while providing the accuracy and stiffness required by modern high precision machinery. The bearings are supplied sealed, greased for life and ready for installation.



Feature	Benefit
60° contact angle	Enables bearings to support large axial forces
Double row	Supports axial load in two directions
Contact lip seal (seal runs in inner ring groove)	Provides excellent sealing characteristics, with low friction and heat generation
Greased	Greased for life (under normal operating conditions)
Relubrication facilities	Enables relubrication of bearing during operation if required
Mounting holes (BSF only)	Easy mounting of bearing, directly onto machinery
Extraction groove (BSF only)	To help with removal of bearing from machine
Set screws (BSF only)	Plugs relubrication holes to prevent contamination



# BSN Series

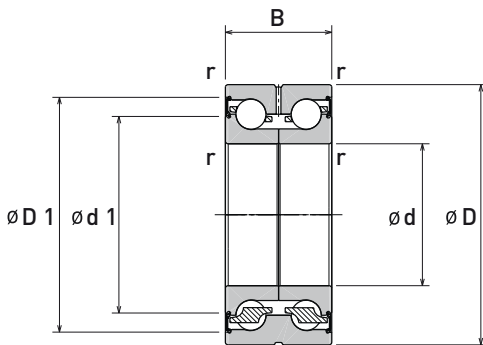


## BSN series

The BSN series of ball screw support bearings are double row, angular contact thrust ball bearings, with a 60° contact angle. They are equivalent to two single row bearings in a back-to-back arrangement, with a single outer ring. Bearings are supplied ready to be mounted. They come greased with long life lithium soap grease, with synthetic hydrocarbon base oil.

Under normal operating conditions, the bearings are greased for life. A relubrication groove located on the outside surface of the outer ring allows the bearings to be relubricated during operation if required. The bearings are sealed on both sides. The low friction contact lip seal runs in a groove in the inner ring. This gives excellent sealing characteristics, while minimising torque and heat generation.

Preload is set during manufacture so that the correct loading is achieved when the lock nut is tightened to the recommended torque.



Bearing Numbers	Boundary Dimensions (mm)				Reference Dimensions (mm)		Basic Dynamic Load Rating (kN)	Limiting Axial Load (kN)	Axial Rigidity (N/μm)	Mass (kg)	Limiting Speed (min <sup>-1</sup> )
	d	D	B	r (min)	d <sub>1</sub>	D <sub>1</sub>					
BSN1747	17	47	25	0.6	28.1	37.7	19.3	21.2	450	0.23	6,700
BSN2052	20	52	28	0.6	32.6	43.0	25.1	29.3	650	0.31	5,800
BSN2557	25	57	28	0.6	37.6	48.0	27.0	34.0	750	0.36	5,100
BSN3062	30	62	28	0.6	42.6	53.0	28.6	38.5	850	0.40	4,500
BSN3072	30	72	38	0.6	49.1	64.4	57.5	66.5	950	0.74	3,900
BSN3572	35	72	34	0.6	53.1	62.2	40.0	52.0	900	0.66	3,800
BSN4075	40	75	34	0.6	56.2	68.1	42.0	58.5	1,000	0.65	3,500
BSN4090	40	90	46	0.6	63.2	80.0	75.0	91.0	1,200	1.38	3,100
BSN5090	50	90	34	0.6	70.2	82.1	45.5	71.5	1,250	0.93	2,800
BSN50110	50	110	54	0.6	78.2	97.4	110.0	149.0	1,400	2.46	2,500
BSN60110	60	110	45	0.6	83.2	99.2	82.5	126.0	1,300	1.82	2,400

# BSF Series

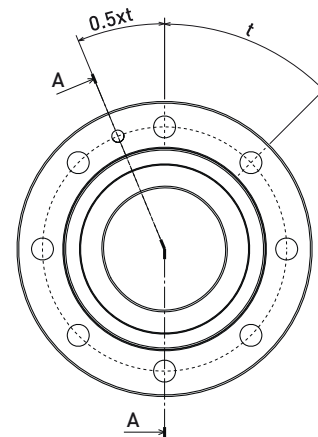
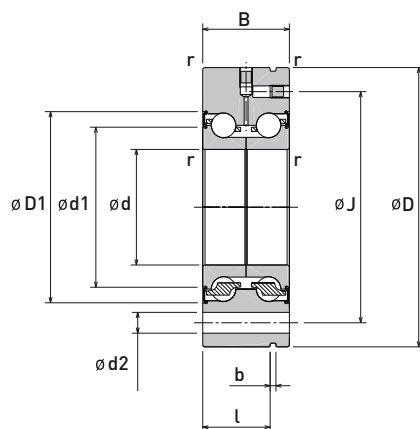
## BSF series

The BSF series of bearings is equivalent to the BSN range of bearings, with an extended outer ring, with bolt holes for easy direct mounting.

Relubrication holes in outside surface and face of the outer ring allow for relubrication during operation if required. The holes are closed off with set screws. An extraction groove on the outer surface of the outer ring aids removal of the bearing.



Design for  $d \leq 50$  mm



Bearing Numbers	Boundary Dimensions (mm)				Reference Dimensions (mm)							Fixing Screws		Basic Dynamic Load Rating (kN)	Limiting Axial Load (kN)	Axial Rigidity (N/μm)	Mass (kg)	Limiting Speed (min <sup>-1</sup> )
	d	D	B	r (min)	d <sub>1</sub>	D <sub>1</sub>	J	d <sub>2</sub>	l	b	t	Size	Quantity					
BSF1762	17	62	25	0.6	28.1	37.7	48	6.8	17	3	3 x 120°	M6	3	19.3	21.2	450	0.46	6,700
BSF2068	20	68	28	0.6	32.6	43.0	53	6.8	19	3	4 x 90°	M6	4	25.1	29.3	650	0.61	5,800
BSF2575	25	75	28	0.6	37.6	48.0	58	6.8	19	3	4 x 90°	M6	4	27.0	34.0	750	0.73	5,100
BSF3080	30	80	28	0.6	42.6	53.0	63	6.8	19	3	6 x 60°	M6	6	28.6	38.5	850	0.79	4,500
BSF30100	30	100	38	0.6	49.1	64.4	80	8.8	30	3	8 x 45°	M8	8	57.5	66.5	950	1.71	3,900
BSF3590	35	90	34	0.6	53.1	62.2	75	8.8	25	3	4 x 90°	M8	4	40.0	52.0	900	1.20	3,800
BSF40100	40	100	34	0.6	56.2	68.1	80	8.8	25	3	4 x 90°	M8	4	42.0	58.5	1,000	1.49	3,500
BSF40115	40	115	46	0.6	63.2	80.0	94	8.8	36	3	12 x 30°	M8	12	75.0	91.0	1,200	2.56	3,100
BSF50115	50	115	34	0.6	70.2	82.1	94	8.8	25	3	6 x 60°	M8	6	45.5	71.5	1,250	1.89	2,800
BSF50140	50	140	54	0.6	78.2	97.4	113	11.0	45	3	12 x 30°	M10	12	110.0	149.0	1,400	4.46	2,500
BSF60145	60	145	45	0.6	83.2	99.2	120	8.8	35	3	8 x 45°	M8	8	82.5	126.0	1,300	4.06	2,400