

BALLSCREW BEARINGS



HIWIN Support

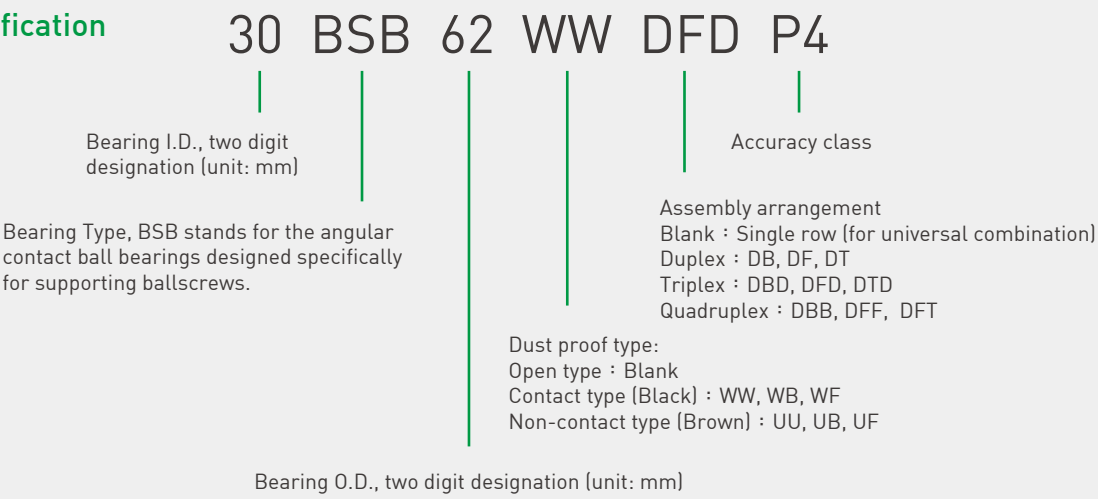


About HIWIN

Product Features

- Excellent axial rigidity.
- Excellent tolerance control supports flexible bearing arrangement combinations for custom application requirements.
- HIWIN provides complete solution services, including bearings combined with HIWIN ballscrews.

Product Specification



Standard BSB dimensional tolerances

Unit: μm

Nominal Bearing I.D. or O.D. (mm)		Inside diameter deviations		Outside diameter deviations		Deviations of width		Outer or inner ring axial run out
		Δ_{dmp}		Δ_{Dmp}		Δ_{Bs}		$S_{\text{ea}}, S_{\text{ia}}$
Over	Include	Upper Limit	Lower Limit	Upper Limit	Lower Limit	Upper Limit	Lower Limit	Max
10	18	0	-4	-	-	0	-80	2.5
18	30	0	-5	-	-	0	-120	2.5
30	50	0	-6	0	-6	0	-120	2.5
50	80	0	-7	0	-7	0	-150	2.5
80	120	0	-8	0	-8	0	-200	2.5

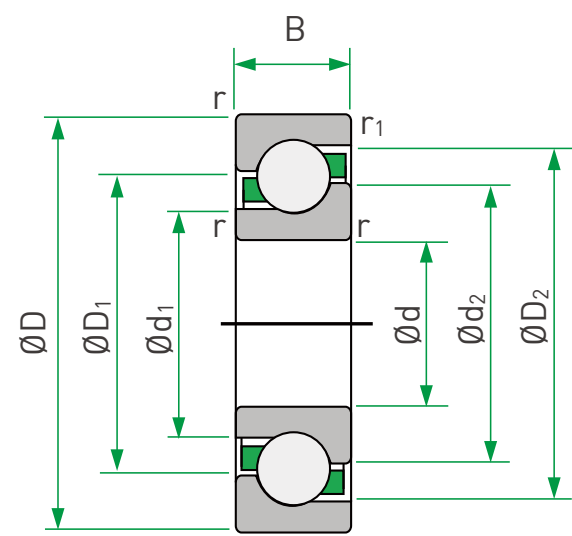
Standard shaft diameter and bearing bore dimensional tolerance

Unit: μm

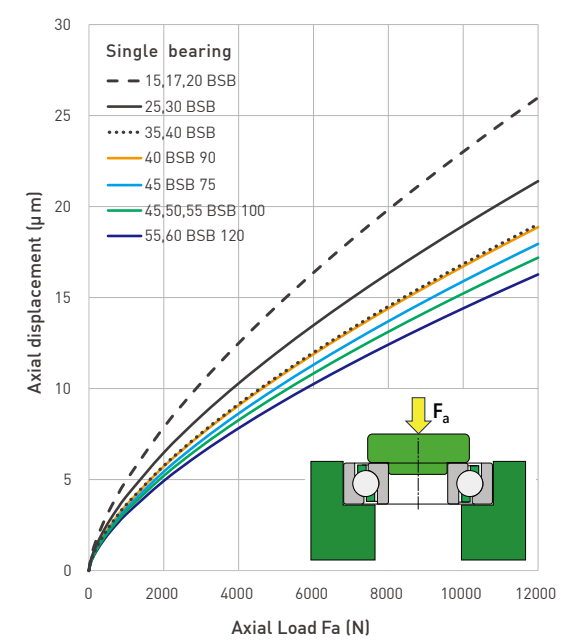
Shaft dia./ Bearing bore dimension (mm)		Tolerance of shaft dia.		Tolerance of bearing bore	
		h5		H6	
Over	Include	Upper Limit	Lower Limit	Upper Limit	Lower Limit
10	18	0	-8	-	-
18	30	0	-9	-	-
30	50	0	-11	+16	0
50	80	0	-13	+19	0
80	120	0	-15	+22	0



Bearing specification table



Single bearing calculated rigidity chart

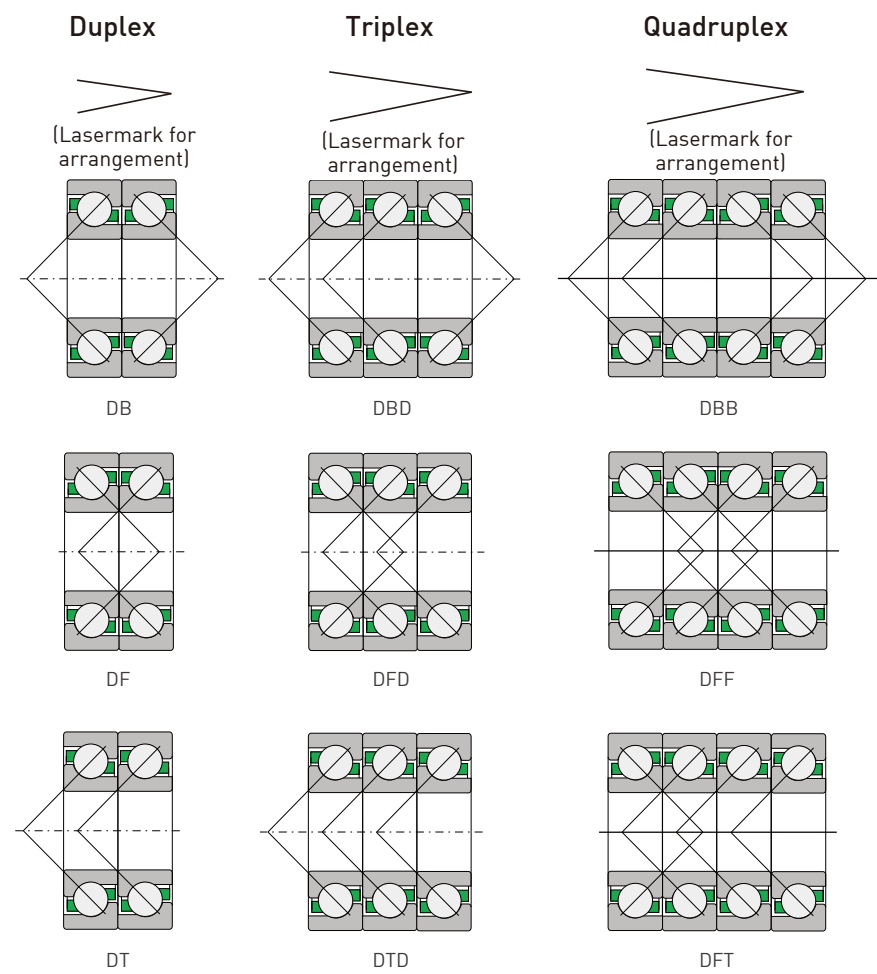


Specification			Main dimensions (mm)						Basic dynamic load rating (Note1)	Max axial load (Note2)	Shaft diameter (mm)	Allowable speed (rpm)	Other dimensions (mm)			
Open type	with dust proof cap (contact type)	with dust proof cap (non-contact type)	d	D	B	r(min)	r ₁ (min)		Ca (kN)	C _{0a} (kN)			d ₁	d ₂	D ₁	D ₂
15 BSB 47	15 BSB 47 WW	15 BSB 47 UU	15	47	15	1	0.6		21.9	26.6	Ø20	6000	27.3	34	34.2	39.6
17 BSB 47	17 BSB 47 WW	17 BSB 47 UU	17	47	15	1	0.6		21.9	26.6	Ø25-Ø28	6000	27.3	34	34.2	39.6
20 BSB 47	20 BSB 47 WW	20 BSB 47 UU	20	47	15	1	0.6		21.9	26.6	Ø25-Ø28	6000	27.3	34	34.2	39.6
25 BSB 62	25 BSB 62 WW	25 BSB 62 UU	25	62	15	1	0.6		29.2	43	Ø30-Ø36	4300	39.6	47.2	47.5	53.3
30 BSB 62	30 BSB 62 WW	30 BSB 62 UU	30	62	15	1	0.6		29.2	43	Ø40	4300	39.6	47.2	47.5	53.3
35 BSB 72	35 BSB 72 WW	35 BSB 72 UU	35	72	15	1	0.6		31.5	52	Ø45	3600	49.3	57.1	57.4	63.2
40 BSB 72	40 BSB 72 WW	40 BSB 72 UU	40	72	15	1	0.6		31.5	52	Ø50	3600	49.3	57.1	57.4	63.2
40 BSB 90	40 BSB 90 WW	40 BSB 90 UU	40	90	20	1	0.6		58.7	98.7	Ø63	3000	57	68.4	68.7	77.2
45 BSB 75	45 BSB 75 WW	45 BSB 75 UU	45	75	15	1	0.6		32.5	60.5	Ø63	3200	54.6	62.2	62.5	67.7
45 BSB 100	45 BSB 100 WW	45 BSB 100 UU	45	100	20	1	0.6		62.4	114.1	Ø63	2600	67.5	78.9	79.2	87.7
50 BSB 100	50 BSB 100 WW	50 BSB 100 UU	50	100	20	1	0.6		62.4	114.1	Ø63	2600	67.5	78.9	79.2	87.7
55 BSB 100	55 BSB 100 WW	55 BSB 100 UU	55	100	20	1	0.6		62.4	114.1	Ø63	2600	67.5	78.9	79.2	87.7
55 BSB 120	55 BSB 120 WW	55 BSB 120 UU	55	120	20	1	0.6		70.1	124.6	Ø63	2200	81	93	93.3	102.2
60 BSB 120	60 BSB 120 WW	60 BSB 120 UU	60	120	20	1	0.6		70.1	124.6	Ø80	2200	81	93	93.3	102.2

Note: 1.For the axial load capacity of multiplex arrangements, please refer to the basic dynamic load rating in the "Bearing performance" table.
2.In applications with multiplex arrangements, the value in this table will be multiplied accordingly.



Assembly arrangement

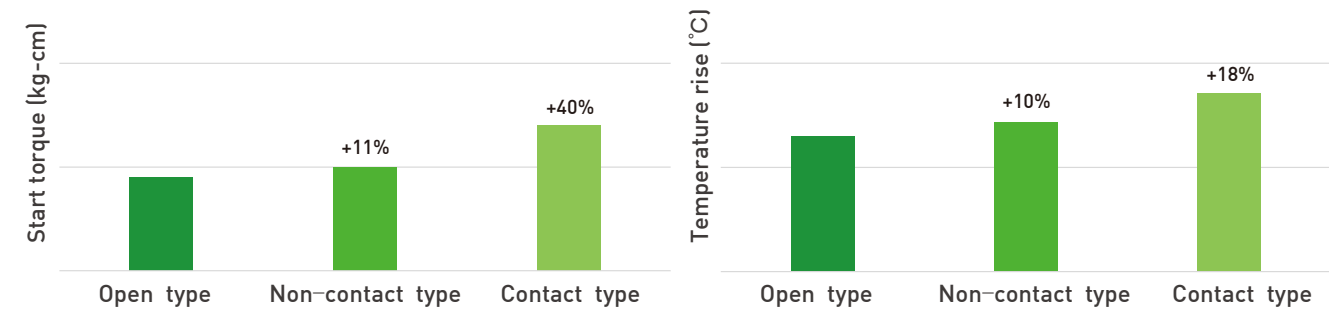


Dynamic equivalent load

Pa=XFr+YFa

Assembly row Assembly arrangement Load carrying row (s) e=2.17		Duplex		Triplex			Quadruplex		
		DB/DF	DT	DBD/DFD		DTD	DFT	DFF	DFT
		1 row	2 rows	1 row	2 rows	3 rows	1 row	2 rows	3 rows
Fa/Fr ≤ e	X	1.9	-	1.43	2.33	-	1.17	2.33	2.53
	Y	0.54	-	0.77	0.35	-	0.89	0.35	0.26
Fa/Fr > e	X	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
	Y	1	1	1	1	1	1	1	1

Dust proof cap comparison



*Tested bearings:30 BSB 62, DF design, RPM 1800 rpm

Bearing performance by assembly arrangement

Specification	Bearing assembly type							Bearing assembly type			Allowable speed (rpm)	Basic dynamic load rating (kN)		
	Duplex DF, DB			Triplex DFD, DBD				Quadruplex DFF, DBB				supported by 1 row	supported by 2 rows	supported by 3 rows
	Preload (kN)	Stiffness (kN/ μ m)	Start torque (N.cm)	Preload (kN)	Stiffness (kN/ μ m)	Start torque (N.cm)		Preload (kN)	Stiffness (kN/ μ m)	Start torque (N.cm)		Single row, DF, DB	DT, DBD, DFD, DBB, DFF	DTD, DFT, DBT
15 BSB 47	2.1	0.75	14	2.9	1.1	20		4.3	1.4	29	6000	21.9	35.5	47.5
17 BSB 47	2.1	0.75	14	2.9	1.1	20		4.3	1.4	29	6000	21.9	35.5	47.5
20 BSB 47	2.1	0.75	14	2.9	1.1	20		4.3	1.4	29	6000	21.9	35.5	47.5
25 BSB 62	3.3	1.0	24	4.5	1.5	33		6.6	2.0	49	4300	29.2	47.5	63
30 BSB 62	3.3	1.0	24	4.5	1.5	33		6.6	2.0	49	4300	29.2	47.5	63
35 BSB 72	3.9	1.2	28	5.3	1.8	37		7.8	2.4	55	3600	31.5	51.5	68.5
40 BSB 72	3.9	1.2	28	5.3	1.8	37		7.8	2.4	55	3600	31.5	51.5	68.5
40 BSB 90	5.0	1.3	48	5.8	2.0	65		10.3	2.7	96	3000	58.7	95.3	126.6
45 BSB 75	4.1	1.3	29	5.6	2.0	40		8.3	2.6	59	3200	32.5	52.8	70.1
45 BSB 100	6.1	1.6	60	8.3	2.3	80		12.3	3.1	118	2600	62.4	101.3	134.7
50 BSB 100	6.1	1.6	60	8.3	2.3	80		12.3	3.1	118	2600	62.4	101.3	134.7
55 BSB 100	6.1	1.6	60	8.3	2.3	80		12.3	3.1	118	2600	62.4	101.3	134.7
55 BSB 120	6.7	1.8	64	9.1	2.7	86		13.2	3.6	127	2200	70.1	113.9	151.2
60 BSB 120	6.7	1.8	64	9.1	2.7	86		13.2	3.6	127	2200	70.1	113.9	151.2

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