HIWIN®

BALLSCREW BEARINGS

www.hiwin.tw

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

30 BSB 62 WW DFD P4

- 30 — Bearing I.D., two digit designation (unit: mm)
- BSB — Bearing Type, BSB stands for the angular contact ball bearings designed specifically for supporting ballscrews.
- 62 — Bearing O.D., two digit designation (unit: mm)
- WW — Dust proof type:
  Open type：Blank
  Contact type (Black)：WW, WB, WF
  Non-contact type (Brown)：UU, UB, UF
- DFD — Assembly arrangement
  Blank：Single row (for universal combination)
  Duplex：DB, DF, DT
  Triplex：DBD, DFD, DTD
  Quadruplex：DBB, DFF, DFT
- P4 — Accuracy class

Standard BSB dimensional tolerances

Unit: μm

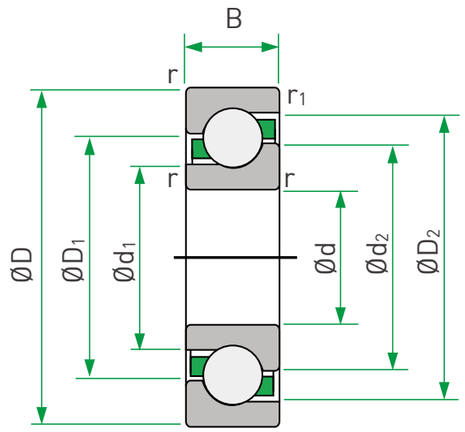
Nominal Bearing I.D. or O.D. (mm)		Inside diameter deviations		Outside diameter deviations		Deviations of width		Outer or inner ring axial run out
		$\triangle_{dmp}$		$\triangle_{Dmp}$		$\triangle_{Bs}$		S_{ea}, S_{ia}
Over	Include	Upper Limit	Lower Limit	Upper Limit	Lower Limit	Upper Limit	Lower Limit	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

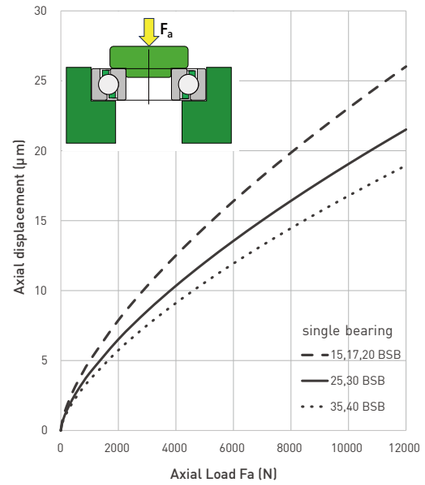
Unit: μm

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



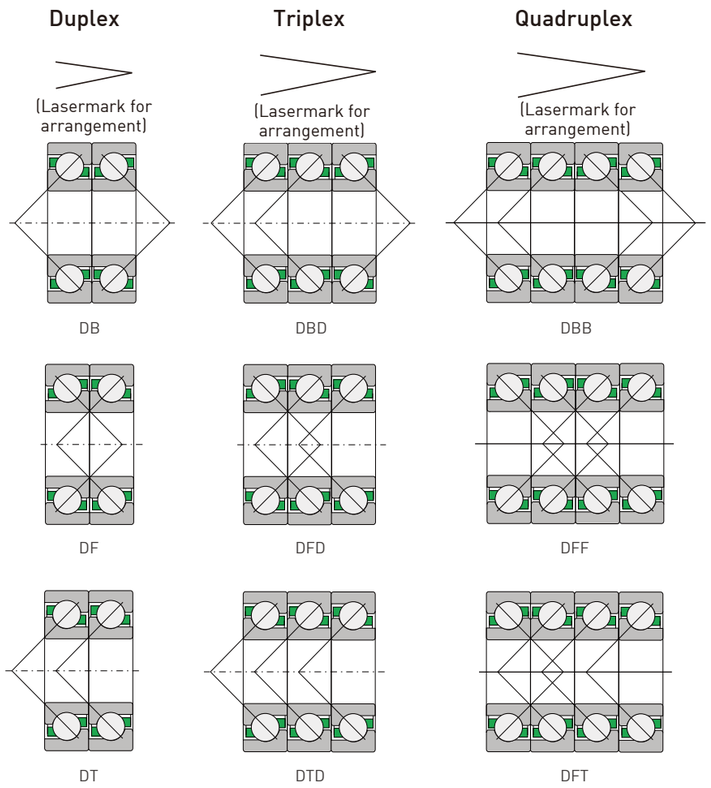
Single bearing calculated rigidity chart



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

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

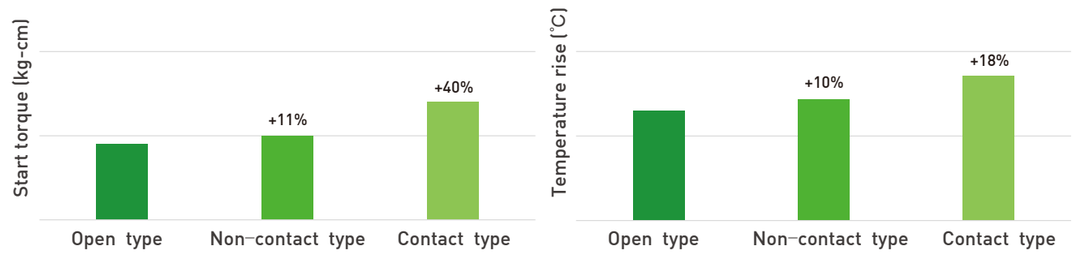


Dynamic equivalent load

$$P_a = XF_r + YF_a$$

Assembly row		Duplex		Triplex			Quadruplex		
Assembly arrangement		DB/ DF	DT	DBD/ DFD		DTD	DFT	DFF	DFT
Load carrying row(s) / e=2.17		1 row	2 rows	1 row	2 rows	3 rows	1 row	2 rows	3 rows
$F_a/F_r \leq e$	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
$F_a/F_r > e$	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 1800min^{-1}

Bearing performance by assembly arrangement

Spec.	Bearing assembly type							Bearing assembly type			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	21.9	35.5	47.5
17 BSB 47	2.1	0.75	14	2.9	1.1	20		4.3	1.4	29	21.9	35.5	47.5
20 BSB 47	2.1	0.75	14	2.9	1.1	20		4.3	1.4	29	21.9	35.5	47.5
25 BSB 62	3.3	1.0	24	4.5	1.5	33		6.6	2.0	49	29.2	47.5	63
30 BSB 62	3.3	1.0	24	4.5	1.5	33		6.6	2.0	49	29.2	47.5	63
35 BSB 72	3.9	1.2	28	5.3	1.8	37		7.8	2.4	55	31.5	51.5	68.5
40 BSB 72	3.9	1.2	28	5.3	1.8	37		7.8	2.4	55	31.5	51.5	68.5

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