

**High Durability
Ball Screw Support Bearings**



High Durability Ball Screw Support Bearings

More than Double the Durability

(Multi-tough Series)



Features

Long Life and High Reliability (Multi-tough Series)

- Greatly improved rolling life by using specialized heat treatment
- Withstands surface damage from impact load and fretting and shows superior durability even in contaminated environments

High-performance seal

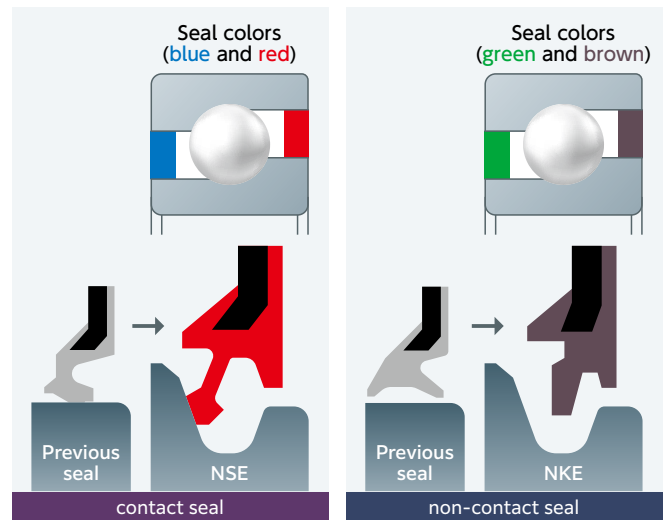
- Uses triple-lip construction to better keep grease in and dust out
- Light contact and energy savings

Long lasting grease

- Grease forms superior oil film at high surface pressure to provide excellent protection from fretting and coolant intrusion

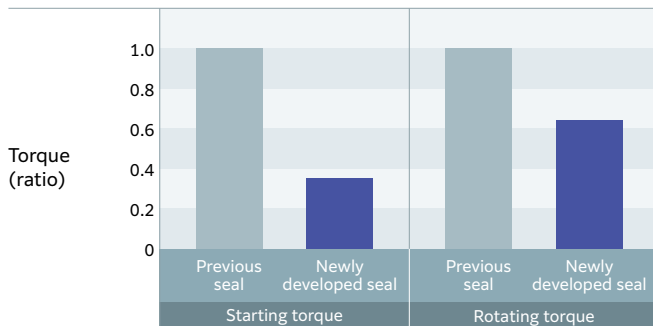
High Axial Rigidity

- The axial rigidity is high because of a contact angle 60° and a large number of balls



The both sides of the seal are different colors, making it easy to determine the correct orientation during assembly.

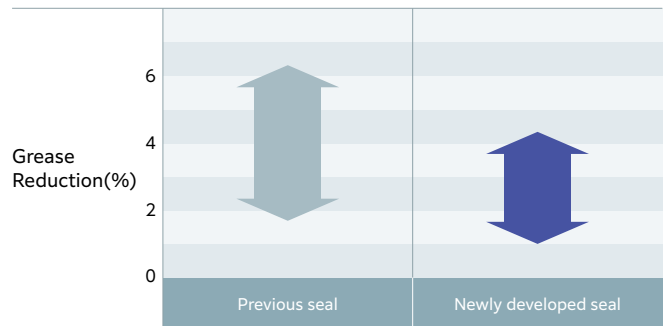
Torque(contact seal)



Bearing
20TAB04-2LR (previous seal)
20TAB04-2NSE (newly developed seal)

RPM:1800min⁻¹
Bearing Temperature
:Room Temperature

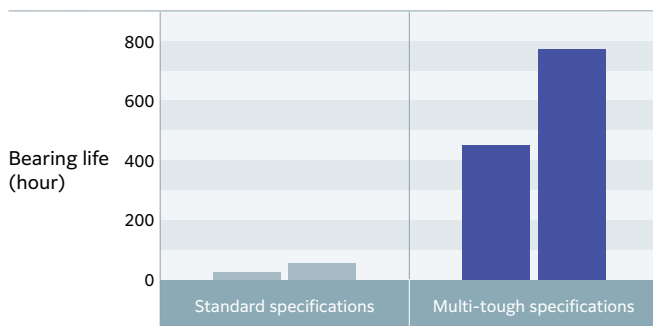
Grease Reduction(contact seal)



Bearing
20TAB04-2LR (previous seal)
20TAB04-2NSE (newly developed seal)

RPM:1800min⁻¹
Bearing Temperature
:Room Temperature
Load:Medium preload

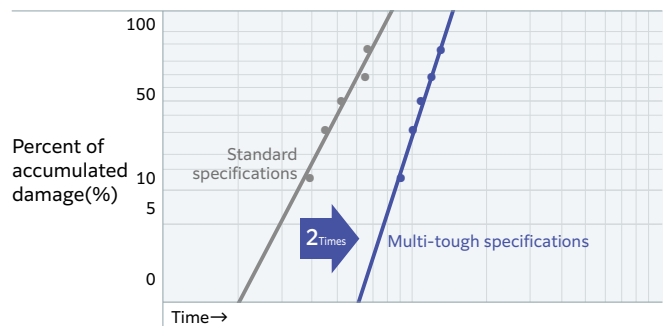
Life characteristics(with indentation)



Bearing
30TAB06 (standard specifications:with indentation)
30TAB06 (multi-tough specifications:with indentation)

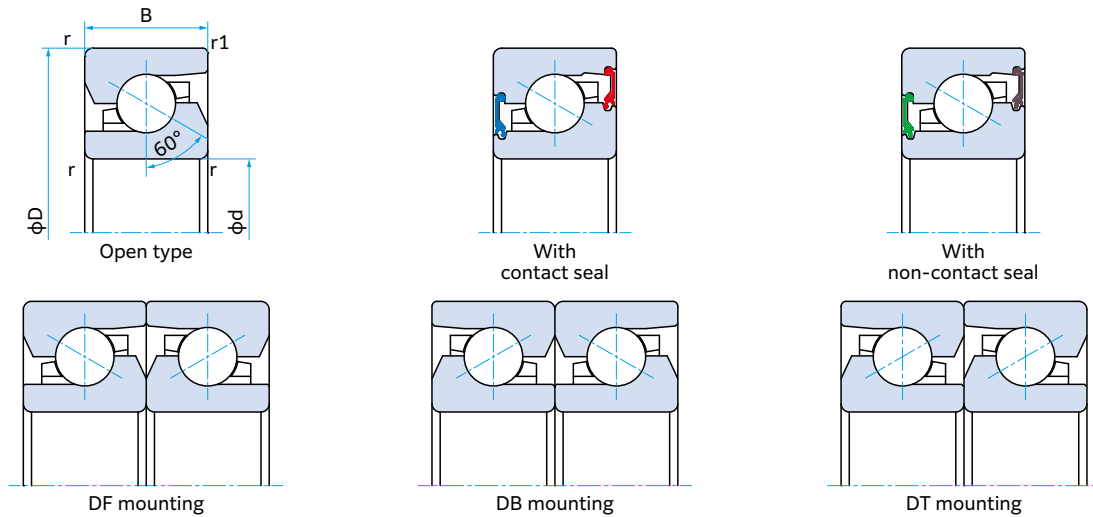
RPM :1400min⁻¹
Axial load:20,000N
Bearing Temperature
:Room Temperature

Life characteristics(contaminated oil)

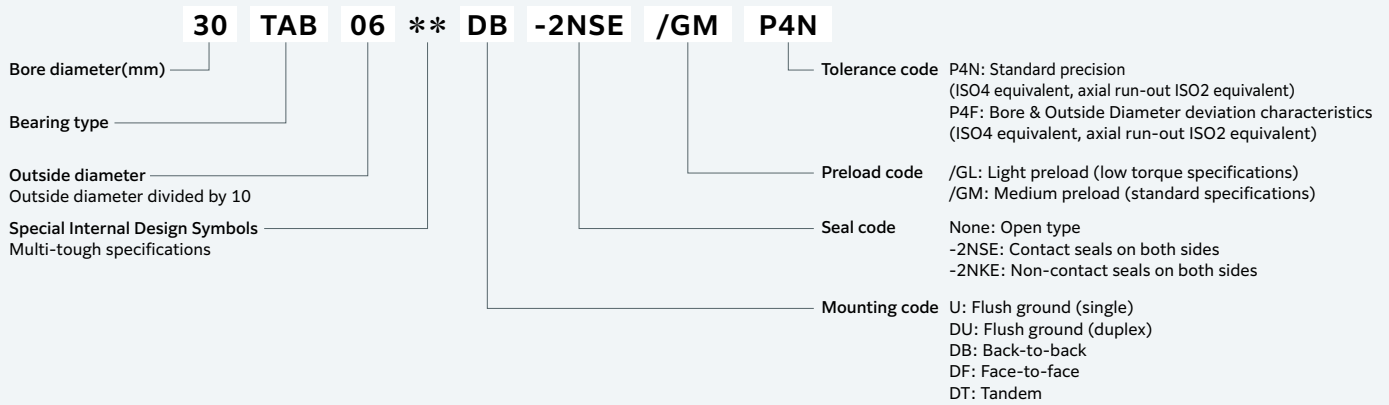


Sample:φ62×20×9 (disc) Bearing Temperature:Room Temperature
RPM :1800min⁻¹ Contaminant :0.2g/l

Configurations



Configuration of Bearing Numbers



Bearing No.			Boundary dimensions (mm)					Basic dynamic load rating $C_a^{(2)}$ (N)		Axial limiting load ⁽³⁾ (N)	Limiting speed ⁽⁴⁾ (min^{-1}) Grease lubrication
Open type	With seal		d	D	B	r (min)	r1 (min)	Standard specifications	Multi-tough specifications		
	Contact	Non-contact									
15TAB04	15TAB04-2NSE	15TAB04-2NKE	15	47	15	1 ⁽¹⁾	0.6	32,500	41,000	32,000	6,300
17TAB04	17TAB04-2NSE	17TAB04-2NKE	17	47	15	1	0.6	32,500	41,000	32,000	6,300
20TAB04	20TAB04-2NSE	20TAB04-2NKE	20	47	15	1	0.6	32,500	41,000	32,000	6,300
25TAB06	25TAB06-2NSE	25TAB06-2NKE	25	62	15	1	0.6	37,500	47,500	46,400	4,650
30TAB06	30TAB06-2NSE	30TAB06-2NKE	30	62	15	1	0.6	37,500	47,500	46,400	4,650
35TAB07	35TAB07-2NSE	35TAB07-2NKE	35	72	15	1	0.6	41,000	51,500	54,300	3,750
40TAB07	40TAB07-2NSE	40TAB07-2NKE	40	72	15	1	0.6	41,000	51,500	54,300	3,750
40TAB09	40TAB09-2NSE	40TAB09-2NKE	40	90	20	1	0.6	82,000	103,000	101,000	3,150
45TAB07	45TAB07-2NSE	45TAB07-2NKE	45	75	15	1	0.6	42,500	53,500	59,500	3,400
45TAB10	45TAB10-2NSE	45TAB10-2NKE	45	100	20	1	0.6	86,000	108,000	113,000	2,850
50TAB10	50TAB10-2NSE	50TAB10-2NKE	50	100	20	1	0.6	88,000	111,000	119,000	2,700
55TAB10	55TAB10-2NSE	55TAB10-2NKE	55	100	20	1	0.6	88,000	111,000	119,000	2,700
55TAB12	55TAB12-2NSE	55TAB12-2NKE	55	120	20	1	0.6	92,500	116,000	137,000	2,300
60TAB12	60TAB12-2NSE	60TAB12-2NKE	60	120	20	1	0.6	92,500	116,000	137,000	2,300

Note 1: Minimum r for inner ring is 0.6.

Note 2: When the axial load is on a 2-row or 3-row arrangement, the values in the table for the basic dynamic load rating should be multiplied by 1.62 or 2.16 respectively.

Note 3: When the axial load is on a 2-row or 3-row arrangement, the values in the table for the axial limiting load should be multiplied by 2 or 3 respectively.

Note 4: Limiting speeds for M preload.

Accuracy table

P4N Standard precision (ISO4 equivalent, axial run-out ISO2 equivalent)

P4F Bore & outside diameter deviation characteristics (ISO4 equivalent, axial run-out ISO2 equivalent)

Tolerances for Inner Ring (Including Outer Ring Width and Outer Ring Axial Runout) [Unit:μm]

Nominal bearing bore diameter d(mm)		Single plane mean bore diameter deviation and deviation of a single bore diameter $\Delta_{dmp}, \Delta_{ds}$				Variation of bore diameter in a single plane V_{dsp}	Mean bore diameter variation V_{dmp}	Deviation of a single inner/outer ring width Δ_{Bs}, Δ_{Cs}		Inner ring width variation V_{Bs}	Radial runout of assembled bearing inner ring K_{ia}	Perpendicularity of inner ring face with respect to the bore S_d	Axial runout of inner/outer ring of assembled bearing S_{ia}, S_{ea}
		P4N		P4F		P4N,P4F	P4N,P4F	P4N,P4F		P4N,P4F	P4N,P4F	P4N,P4F	P4N,P4F
Over	Incl.	Upper	Lower	Upper	Lower	max	max	Upper	Lower	max	max	max	max
10	18	0	-4	0	-4	3	2	0	-80	2.5	2.5	3	2
18	30	0	-5	0	-4	4	2.5	0	-120	2.5	3	4	2.5
30	50	0	-6	0	-4	5	3	0	-120	3	4	4	2.5
50	80	0	-7	0	-5	5	3.5	0	-150	4	4	5	2.5

Tolerances for Outer Ring [Unit:μm]

Nominal bearing outside diameter D(mm)		Single plane mean outside diameter deviation and deviation of a single outside diameter $\Delta_{Dmp}, \Delta_{Ds}$				Variation of outside diameter in a single plane V_{Dsp}	Mean outside diameter variation V_{Dmp}	Outer ring width variation V_{Cs}	Radial runout of assembled bearing outer ring K_{ea}	Perpendicularity of outer ring outside surface with respect to the face S_D
		P4N		P4F		P4N,P4F	P4N,P4F	P4N,P4F	P4N,P4F	P4N,P4F
Over	Incl.	Upper	Lower	Upper	Lower	max	max	max	max	
30	50	0	-6	0	-4	5	3	2.5	5	
50	80	0	-7	0	-5	5	3.5	3	5	
80	120	0	-8	0	-6	6	4	4	6	

Preload and torque

Bearing No.	DB or DF mounting					
	Preload(N)		Axial rigidity(N/μm)		Starting torque ⁽¹⁾ (N·cm)	
	/GL	/GM	/GL	/GM	/GL	/GM
15TAB04	1,080	2,160	540	735	10	15
17TAB04	1,080	2,160	540	735	10	15
20TAB04	1,080	2,160	540	735	10	15
25TAB06	1,665	3,330	757	981	15	20
30TAB06	1,665	3,330	757	981	15	20
35TAB07	1,960	3,920	933	1,230	20	25
40TAB07	1,960	3,920	933	1,230	20	25
40TAB09	2,600	5,200	1,000	1,320	30	50
45TAB07	2,060	4,120	981	1,270	20	30
45TAB10	2,990	5,980	1,107	1,470	35	60
50TAB10	3,140	6,280	1,163	1,520	40	65
55TAB10	3,140	6,280	1,163	1,520	40	65
55TAB12	3,530	7,060	1,358	1,770	45	70
60TAB12	3,530	7,060	1,358	1,770	45	70

Note 1: Starting torque shows values for an open type and non-contact seal type with grease lubrication.

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