

2 Bearing Number Codes

2.1 Bearing Designations

Rolling bearing part numbers indicate bearing type, dimensions, tolerances, internal construction, and other

related specifications. Bearing numbers are comprised of a "basic number" followed by "supplementary codes." The makeup and order of bearing numbers is shown in Table 2.1, 2.2.

Table 2.1 Number and code arrangement for deep groove and miniature ball bearings

Code		Explanation
Basic numbers	Ball material	5S- Si ₃ N ₄ Ceramic balls
		blank SUJ2
	Ring material	F- SUS440C
		blank SUJ2
	Bearing series	7 Standard type ACBB
		HSE High Speed Type ACBB
		HTA High Speed Thrust ACBB
		BS Thrust ACBB (60° angle)
	Diameter series	9
		0 BST B may not shown in code
	Bore diameter number	2
		8 : BS shown (I.D.) (O.D.)
	Contact angle code	20
		C 15°
		CE1 18°
AD 25°		
(A) 30°, may not shown in code		
B 40°		
Supplementary suffix code	Cage codes	T1 Phenolic machined cage
		(T2) Engineering plastic molded cage
	Matching code	DB Back to back(double-row)
		DF Face to face(double-row)
		DT Tandem(double-row)
		DBT Tandem and back to back (triple-row)
		DTBT Tandem and back to back (quad-row)
	Flush grinding	G Flush ground type
		blank Without flush ground
	Preload codes	/GL Light preload
		/GN Normal preload
		/GM Medium preload
		/GH Heavy preload
		/Gxx Special preload
		/CSxx Special clearance
Tolerance standard	P5 JIS standard Class 5	
	P4 JIS standard Class 4	
	P4X JIS standard Class 4 \ special bore and outside diameter tolerance	
	P4L JIS standard Class 4 \ special outer diameter for HTA	
	P42 JIS standard Class 4 (dimensional) \ JIS standard Class 2 (running accuracy)	
	P4A JIS standard class 4 \ special Class UP bore and outside diameter	
	P2 JIS standard Class 2	

5S-7014C T1 DB G/GL P4

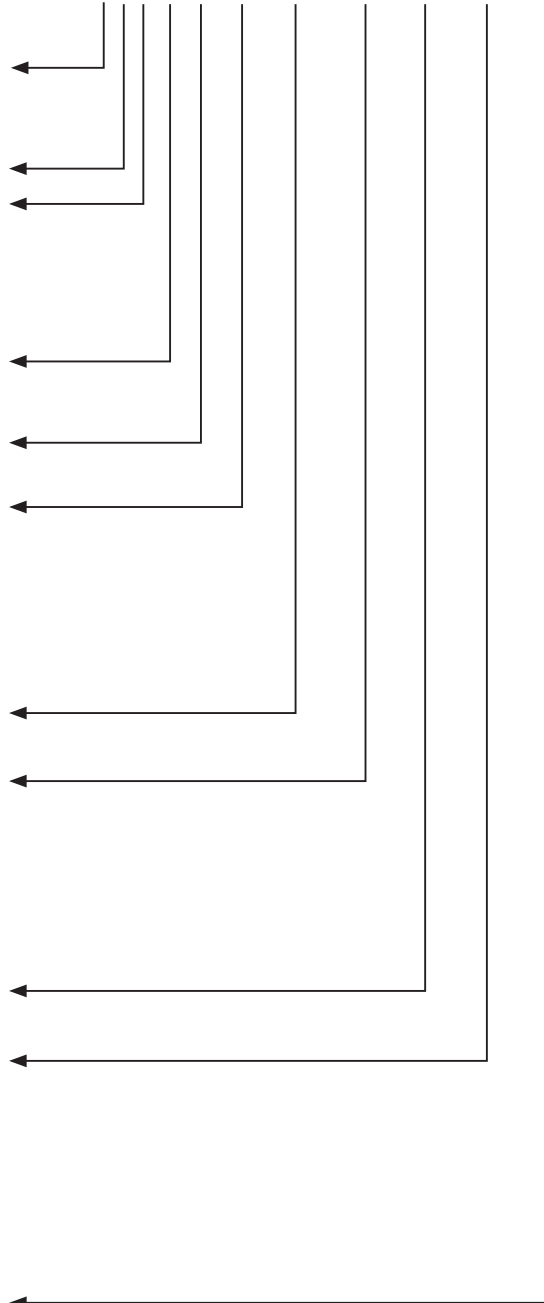
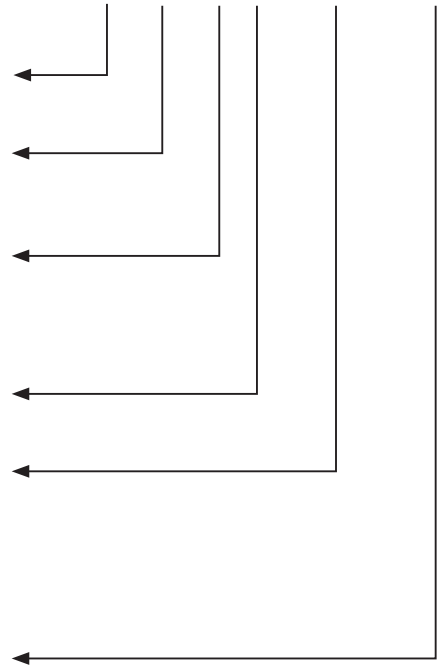


Table 2.2 Number and code arrangement for double-row cylindrical roller bearings

Code		Explanation	
Basic numbers	Bearing series	NN	Double row with ribbed inner ring
		NNU	Double row with ribbed outer ring
	Diameter series	30	
		49	
Bore diameter number	11 : 34		
Supplementary suffix code	Cage codes	T2	Engineering plastic molded cage
		blank	Machined brass
	Taper bore code	K	Tapered inner ring bore, taper ratio 1/12
		blank	Cylindrical inner ring bore
	Internal clearance	C0NA	Internal clearance smaller than Normal
		C1NA	Internal clearance smaller than Normal
		C2NA	Internal clearance smaller than Normal
		NA	Normal internal clearance
	Tolerance standard	P5	JIS standard Class 5
		P4	JIS standard Class 4
P2		JIS standard Class 2	

NN3020K C0NA P4



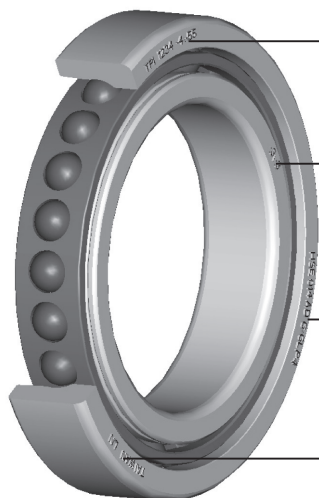
2.2 Bearing Marking

Each TPI high precision bearing is marked with various identifiers on one side face of the inner and outer ring as shown in Fig. 2.1. Outer diameter and width deviation from the nominal diameter are marked on the outer ring, bore diameter and offset of flush side face on the inner ring. “\” marks the position of the maximum eccentricity.

2.3 Comparison Table of TPI bearings with Other Brand Bearings

For user's convenience, Table 2.2 lists TPI bearing number codes with those of other brand bearings side by side as quick reference to identify bearing characteristics including bearing series, dimensions, tolerance, and other internal structure etc.

Fig.2.1 Bearing marking designation



- TPI Brand Serial Number
- Outer Diameter Deviation\Width Deviation
- “\” marks the position of Outer Ring Max.Radial Run Out
- Bore Diameter Deviation\Offset of Flush Side Faces)
- “\” marks the position of Inner Ring Max. Radial Run Out
- Bearing Code
- Country of Origin & Semi-year Code

Table 2.2 Comparison Table of TPI bearings with other brand bearings

		Code						Explanation
Brand		TPI	NTN	NSK	FAG	SKF	GMN	
Basic numbers	Ball material	5S-	5S-	H	HC	C-or/HC	HY	Si ₃ N ₄ Ceramic balls
		blank	blank	blank	blank	blank	blank	SUJ2
	Bearing series	7	7	7	B7	7	S	Standard type ACBB
		HSE	HSE	BNR,BER	HS-,HC-	CE,DB,FB	KH	High Speed Type ACBB
		BS	BST B	TAC B	BSB	BSD	—	Thrust ACBB (60o angle)
	Diameter series	HTA A HTA B	HTA A HTA B	BAR BTR	—	BTM A BTM B	—	High Speed Thrust ACBB
		9	9	9	19	19	19	BS may not shown in code
		0	0	0	0	0	0	
	2	2	2	2	2	2		
	Bore diameter number	8	6	5	6	8	5	BS shown (I.D.) (O.D.)
		:	:	:	:	:	:	
		20	26	40	48	48	24	
	Contact angle code	C	C	C	C	CD,CE	C	15°
		CE1	—	(BNR)	—	FB	18°	18°
		AD	AD	A5,(BER)	E	ACD,ACE,DB	E	25°

		Code						Explanation	
Brand		TPI	NTN	NSK	FAG	SKF	GMN		
Basic numbers	Cage codes	T1	T1	TR	T	blank	TA	Phenolic machined cage	
		T2	T2	TYN	—	TN,TN9	—	Engineering plastic molded cage	
	Matching code	DB	DB	DB	DB	DB	DB	DB	Back to back(double-row)
		DF	DF	DF	DF	DF	DF	DF	Face to face(double-row)
		DT	DT	DT	DT	DT	DT	DT	Tandem(double-row)
		DBT	DBT	DBD	TBT	TBT	TBT	TBT	Tandem and back to back
	Flush grinding	DTBT	DTBT	DBT	QBC	QBC	QBC	QBC	Tandem and back to back(quad-row)
		G	G	SU	U	G			Flush ground type
	Preload codes	/GL	/GL	EL	—	A	UL	UL	Light preload
		/GN	/GN	L	L	B	UM	UM	Normal preload
		/GM	/GM	M	M	C	US	US	Medium preload
		/GH	—	H	H	—	—	—	Heavy preload
		/Gxx	/Gxx	CP	—	Gxxx	UV	UV	Special preload
	Tolerance standard	P4	P4	P4	—	P4A,P7	P4	P4	JIS standard Class 4
		P4X	—	P4Y	—	blank	—	—	JIS standard Class 4 、 special bore and outside diameter
P42		P42	P3	P4S	P4A	A7/9	A7/9	JIS standard Class 4 (dimensional) 、 JIS standard Class 2 (running)	
P2		P2	P2	—	PA9A,P9	P2	P2	JIS standard Class 2	