

BEARING AND LINEAR REFERENCE GUIDE



SINGLE ROW DEEP GROOVE BALL BEARINGS

NOMENCLATURE

Basic Type & Series

R: Inch
600: Metric, Extra Small
6000: Metric, Extra Light
6200: Metric, Light
6300: Metric, Medium
6800: Metric, Extra Thin Section
6900: Metric, Very Thin Section
63200: Metric, Light Cartridge
63300: Metric, Medium Cartridge
BL 200: Metric, Maximum Capacity, Light
BL 300: Metric, Maximum Capacity, Medium

Cage Option

M: Brass
Blank: Steel
T1X: Polyamide
MR: Brass Ball Guided

Internal Clearance

C2: Tighter than Normal
Blank: Normal
C3: Greater than Normal
C4: Greater than C3
CM: Electric Motor Standard Clearance

Heat Treatment

Blank: Normal 120°C
X26: Heat stabilized to 150°C
X28: Heat stabilized to 200°C
X29: Heat stabilized to 250°C

Grease Fill

S: Standard
L: Light
H: Heavy

62

05

T1X

ZZ

C3

E

X28

SRI

S

Bore Size

(04 and up: multiply last two numbers by 5 to get bore in mm)

00: 10 mm **04:** 20 mm
01: 12 mm **05:** 25 mm
02: 15 mm **12:** 60 mm
03: 17 mm **20:** 100 mm

Features

DW: Light contact seal
DDW: Double light contact seal
DU: Single Contact Seal
DDU: Double Contact Seal
V: Single Non-Contact Seal
VV: Double Non-Contact Seal
Z: Single Shield
ZZ: Double Shield
NR: Snap Ring and Groove
ZS: Removeable shield held via snap ring

Noise Level

E: Electric Motor Grade

Grease Type

NS7: NS Hi-Lube (Multemp SRL)
AS2: Alvania #2
B32: Beacon 325
SRI: Chevron SRI-2
EEM: Polyrex EM

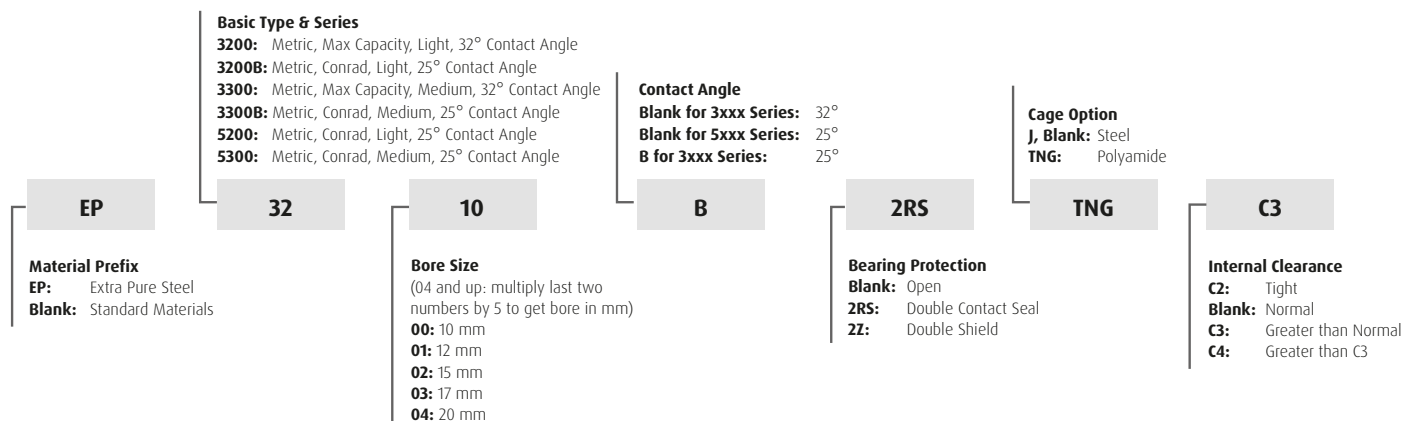
INTERCHANGE

Description		Interchange					
		NSK	SKF	FAF/TIMKEN	FAG	MRC	NTN
Part Number	Inch	Rxx	Rxx	SxxK	Rxx	Rxx	Rxx
	Extra Small	6xx	6xx	3xK	6xx	3x	6xx
	Extra Light	60xx	60xx	91xxK	60xx	1xxK	60xx
	Light	62xx	62xx	2xxK	62xx	2xxS	62xx
	Medium	63xx	63xx	3xxK	63xx	3xxS	63xx
	Extra Thin Section	68xx	618xx	--	618xx	18xxS	--
	Very Thin Section	69xx	619xx	93xxK	619xx	19xxS	69xx
	Thin Section	16xxx	16xxx	--	16xxx	--	--
	Maximum Capacity, Light	BL2xx	2xx	2xxW	2xx	2xxM	BL2xx
	Maximum Capacity, Medium	BL3xx	3xx	3xxW	3xx	3xxM	BL3xx
	Cartridge Type	632xx 633xx	4622xx 4623xx	W2xx W3xx	335xx 336xx	2xxC 3xxC	632xx 633xx
Part Number Suffix	Two Seals (Non Contact)	VV	--	--	2RSD	--	LLB
	Two Seals (Contact)	DDU	2RS	PP	2RSR	ZZ	LLU
	One Seals (Contact)	DU	RS	P	RSR	Z	LU
	Two Shield	ZZ	ZZ	DD	ZZR	FF	ZZ
	One Shield	Z	Z	D	ZR	F	Z
	Snap Ring	NR	NR	G	NR	G	NR
	Steel Cage	BLANK	J or BLANK	BLANK	BLANK	BLANK or STL	BLANK
	Polyamide Cage	T1X	TN9	PRB	TVH	TN9	T2
	Brass Cage	M	MA	MBR	M	BRS	L1
	Heat Stabilized to 200°C	X28	S1	--	S1	HT	TS3 (prefix)
	Tight Clearance	C2	C2	H	C2	C2	C2
	Normal Clearance	BLANK	BLANK	R	BLANK	C0	BLANK
	Greater than Normal Clearance	C3	C3	P	C3	C3	C3
	Greater than C3 Clearance	C4	C4	J	C4	C4	C4
	Radial Clearance in Microns	CGXX	RLXX	--	RXX	--	--
	Electric Motor Grade	E	EM (C3)	--	--	EMQ	--

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DOUBLE ROW ANGULAR CONTACT BALL BEARINGS

NOMENCLATURE



INTERCHANGE

Description		Interchange				
		NSK	SKF	FAG	NTN	FAF/TIMKEN
Part Number	Maximum Capacity, Light	32xx, 32xxJ	52xxE, 32xx	32xx, 32xxC	32xx	52xx, 52xxW
	Maximum Capacity, Medium	33xx, 33xxJ	53xxE, 33xx	33xx, 33xxC	33xx	53xx, 53xxW
	Conrad, Light	32xxB, 52xx	52xxA, 32xxA	32xxB, 32xxBC	52xx	52xxK
	Conrad, Medium	33xxB, 53xx	53xxA, 33xxA	33xxB, 33xxBC	53xx	53xxK
Part Number Suffix	Polyamide Cage	TNG/TNH	TN9	TVP, TVH	--	PRB
	Steel Cage	Blank	Blank	Blank	Blank	Blank
	2 Contact Seals	2RS	2RS1	2RSR	LLU	PP
	2 Shields	2Z	2Z	2ZR	ZZ	FF
	Tight Clearance	C2	C2	C2	C2	H
	Normal Clearance	Blank	Blank	Blank	Blank	R
	Greater than Normal Clearance	C3	C3	C3	C3	P

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SELF-ALIGNING BALL BEARINGS

NOMENCLATURE

Basic Type & Series 1200: Metric, Self-Aligning, Extra Narrow 1300: Metric, Self-Aligning, Narrow 2200: Metric, Self-Aligning, Wide 2300: Metric, Self-Aligning, Extra Wide		Suffixes 2RS: Double Contact Seal K: Taper Bore 1:12 E: Extra Capacity NR: Snap Ring		Internal Clearance C2: Tight Blank: Normal C3: Greater than Normal C4: Greater than C3	
22	06	2RS	TNG	C3	
Bore Size (04 and up: multiply last two numbers by 5 to get bore in mm) 00: 10 mm 04: 20 mm 01: 12 mm 05: 25 mm 02: 15 mm 12: 60 mm 03: 17 mm 20: 100 mm Inch: directly indicated		Cage Option TNG: Polyamide J: Pressed Steel			

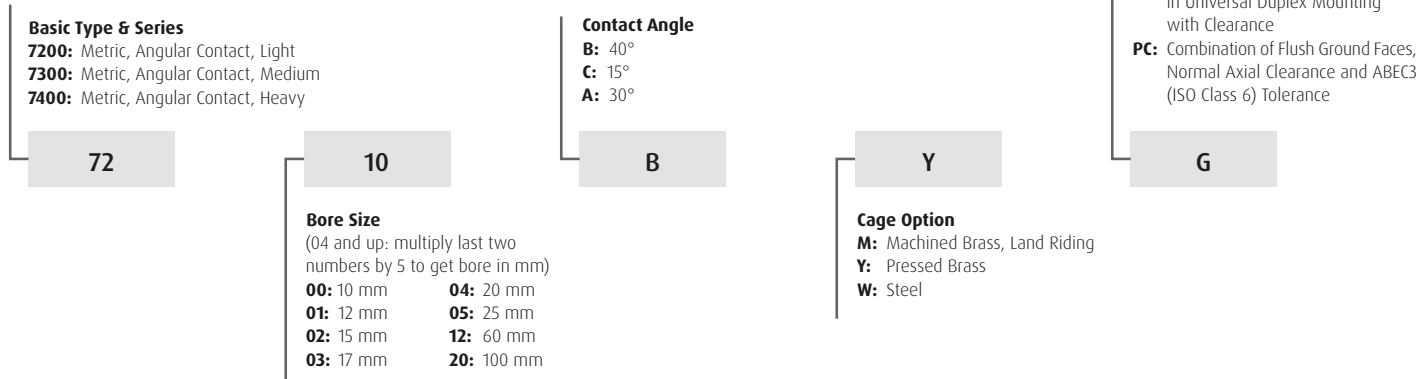
INTERCHANGE

Description		Interchange			
		NSK	SKF	FAG	NTN
Part Number	Metric, Self-Aligning, Extra Narrow	12xx	12xx	12xx	12xx
	Metric, Self-Aligning, Narrow	13xx	13xx	13xx	13xx
	Metric, Self-Aligning, Wide	22xx	22xx	22xx	22xx
	Metric, Self-Aligning, Extra Wide	23xx	23xx	23xx	23xx
Part Number Suffix	Polyamide Cage	TNG	TN9	TV	--
	Steel Cage	Blank, J	Blank	Blank	Blank
	2 Contact Seals	2RS	2RS1	2RSR	LLU
	Tight Clearance	C2	C2	C2	C2
	Normal Clearance	Blank	Blank	Blank	Blank
	Greater than Normal Clearance	C3	C3	C3	C3
	Tapered Bore 1:12	K	K	K	K

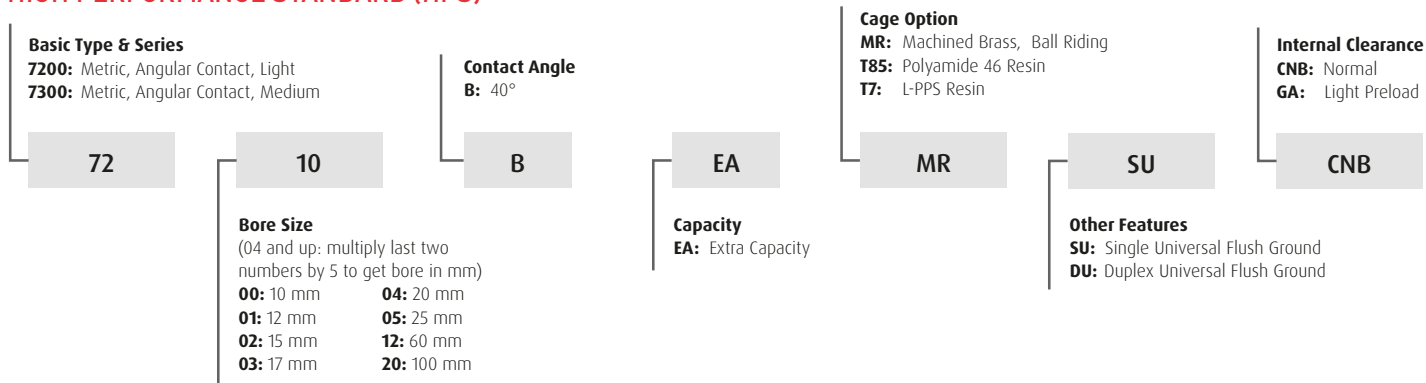
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ANGULAR CONTACT BALL BEARINGS

NOMENCLATURE



HIGH PERFORMANCE STANDARD (HPS)



INTERCHANGE

Description		Interchange					
		NSK	SKF	FAF/TIMKEN	FAG	MRC	NTN
Part No.	Light	72xx	72xx	72xx	72xx	72xx	72xx
	Medium	73xx	73xx	73xx	73xx	73xx	73xx
	Heavy	74xx	74xx	74xx	74xx	74xx	74xx
Part Number Suffix	40° Contact	B	B	WN	B	P	B
	30° Contact	A	A	--	--	BLANK	BLANK
	25° Contact	A5	ACD, AC	--	E	--	--
	15° Contact	C	CD	--	C	R	C
	Machined Brass Cage	M	M	MBR	MP	BRZ	L1
	Pressed Brass Cage	Y	Y	BLANK	YP	--	--
	Polyamide Cage	TY	P	PRC	TVP	BKE	T2
	Steel Cage	W	J	--	JP	BLANK	J
	Universal Ground Faces	G	CA, CB	SU	UA	DE	G
	Pump Specification	BMPC	BECBM	--	--	PumpPac*	--

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INTERCHANGE - HPS (EXTRA-CAPACITY PUMP SPECIFICATION)

Interchange				
Series	Clearance	NSK	SKF	FAG
72xx, 73xx				
	Normal	BEAMRSUCNB	BECBY	BMPUA
	Light	BEAMRSUGA	BEGAM	BMPUL

CYLINDRICAL ROLLER BEARINGS

NOMENCLATURE

Basic Type

N: Single Row, No Flanges on Outer Ring
NU: Single Row, No Flanges on Inner Ring
NJ: Single Row, One Flange on Inner Ring
NUP: Single Row, One Flange Inner with Retaining Ring
NF: Single Row, One Flange on Outer Ring
NH: Single Row, One Flange Inner with Stabilizing Ring
NN/ Double Row, Flanges Outer/Flanges
NNU: Inner

Bore Size

(04 and up: multiply last two numbers by 5 to get bore in mm)

00: 10 mm **04:** 20 mm
01: 12 mm **05:** 25 mm
02: 15 mm **12:** 60 mm
03: 17 mm **20:** 100 mm

Cage Option

M: Machined Brass
W/WS: Pressed Steel
T: Polyamide 6-6 Resin
 (only available with type "E"
 high capacity bearings)
T7: L-PPS Resin

E: Electric Motor Quality

NJ

3

20

E

M

C3

E

Series

2: Light
3: Medium
4: Heavy
10: Extra Light
22: Light, Wide
23: Medium, Wide

Internal Design

Blank: Standard Design
E: High Capacity Design

Internal Clearance

C2: Tight
Blank: Normal
C3: Greater than Normal
C4: Greater than C3

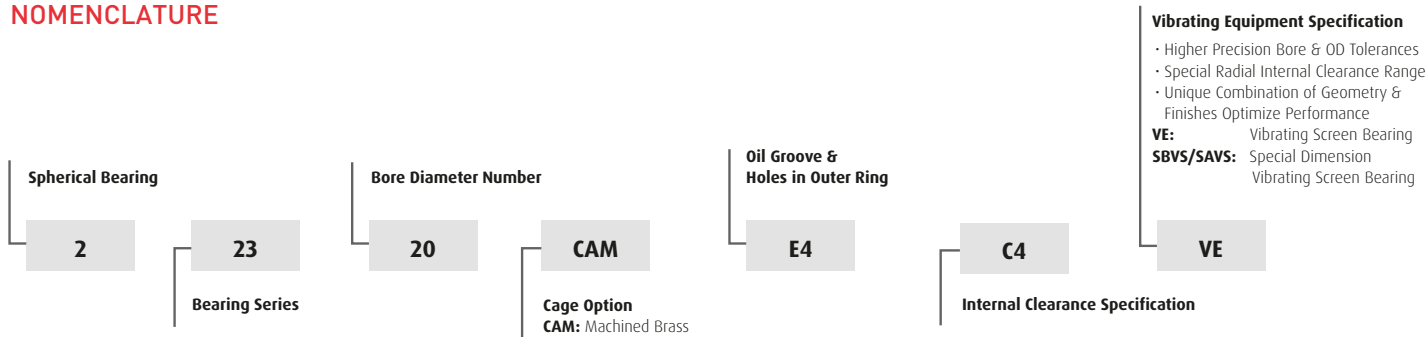
INTERCHANGE

Description		Interchange		
		NSK	SKF	FAG
Part Number Prefix	Single Row, No Flanges on Outer Ring	N	N	N
	Single Row, No Flanges on Inner Ring	NU	NU	NU
	Single Row, 1 Flange Inner	NJ	NJ	NJ
	Single Row, 1 Flange Outer	NF	NF	--
	Single Row, 1 Flange Inner with Retaining Ring	NUP	NUP	NUP
	Single Row, 1 Flange Inner with Stabilizing Ring	NH	NH	NH
	Stabilizing Ring	HJ	HJ	HJ
	Double Row, Flanges Outer/Flanges Inner	NNU/NN	NNU/NN	NNU/NN
Part Number	Light	2xx	2xx	2xx
	Medium	3xx	3xx	3xx
	Heavy	4xx	4xx	4xx
	Extra Light	10xx	10xx	10xx
	Light, Wide	22xx	22xx	22xx
	Medium, Wide	23xx	23xx	23xx
Part Number Suffix	Polyamide Cage	T	P	TVP2
	Composite High Temp Cage	T7	--	--
	Machined Brass Cage	M	M	M, M1
	Pressed Steel Cage	W,WS	J	JP1
	High Capacity Design	E	EC	E
	Full Complement (No Cage)	V	V	V
	Tight Clearance	C2	C2	C2
	Normal Clearance	BLANK	BLANK	BLANK
	Greater than Normal Clearance	C3	C3	C3
	Greater than C3 Clearance	C4	C4	C4

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SHAKER SCREEN BEARINGS

NOMENCLATURE



INTERCHANGE

	NSK	TORR/TIMKEN	SKF	FAG ¹
Part Number Interchange	22308CAME4C4VE	22308YMW33W800C4	22308 E/VA405	22308 EAS.MA.T41A
	22309CAME4C4VE	22309YMW33W800C4	22309 E/VA405	22309 EAS.MA.T41A
	22310CAME4C4VE	22310YMW33W800C4	22310 E/VA405	22310 EAS.MA.T41A
	22311CAME4C4VE	22311YMW33W800C4	22311 E/VA405	22311 EAS.MA.T41A
	22312CAME4C4VE	22312YMW33W800C4	22312 E/VA405	22312 EAS.MA.T41A
	22313CAME4C4VE	22313YMW33W800C4	22313 E/VA405	22313 EAS.MA.T41A
	22314CAME4C4VE	22314YMW33W800C4	22314 E/VA405	22314 EAS.MA.T41A
	22315CAME4C4VE	22315YMW33W800C4	22315 EJA/VA405	22315 EAS.MA.T41A
	22316CAME4C4VE	22316YMW33W800C4	22316 EJA/VA405	22316 EAS.MA.T41A
	22317CAME4C4VE	22317YMW33W800C4	22317 EJA/VA405	22317 EAS.MA.T41A
	22318CAME4C4VE	22318YMW33W800C4	22318 EJA/VA405	22318 EAS.MA.T41A
	22319CAME4C4VE	22319YMW33W800C4	22319 EJA/VA405	22319 EAS.MA.T41A
	22319CAMC4VE	22319YMW800C4	-	-
	22320CAME4C4VE	22320YMW33W800C4	22320 EJA/VA405	22320 EAS.MA.T41A
	22322CAME4C4VE	22322YMW33W800C4	22322 EJA/VA405	22322 EAS.MA.T41A
	22322CAME4CG195SBVS	22322YMW47W22C3	22322 EJA/VA414	22322 EAS.MA.T41B
	22324CAME4C4VE	22324YMW33W800C4	22324 CCJA/W33VA405	22324 EAS.MA.T41A
	22326CAME4C4VE	22326YMW33W800C4	22326 CCJA/W33VA405	22326 EAS.MA.T41A
	22328CAME4C4VE	22328YMW33W800C4	22328 CCJA/W33VA405	22328 EAS.MA.T41A
	22330CAME4C4VE	22330YMW33W800C4	22330 CCJA/W33VA405	22330 EAS.MA.T41A
	22332CAME4C4VE	22332YMW33W800C4	22332 CCJA/W33VA405	22332 A.MA.T41A
	22334CAME4C4VE	22334YMBW33W800C4	22334 CCJA/W33VA405	22334 A.MA.T41A
	22336CAME4C4VE	22336YMBW33W800C4	22336 CCJA/W33VA405	22336 A.MA.T41A
	22338CAME4C4VE	22338YMBW33W800C4	22338 CCJA/W33VA405	22338 A.MA.T41A
	22340CAME4C4VE	22340 YMBW33W45AW800C4	22340 CCJA/W33VA405	22340 A.MA.T41A
	23322CAME4C4VE	23322W33W800C4	453322 EJA/VA405	23322 AS.MA.T41A
	23322CAMC4VE	23322 YW W800 C4	-	532689.C3.F80
	23324CAME4C4VE	23324YMW33W800C4	453324 CCJA/W33VA405	23324 AS.MA.T41A
	23324CAMC4VE	23324YMW800C4	-	-
	23326CAME4C4VE	23326YMW33W800C4	453326 CCJA/W33VA405	23326 AS.MA.T41A
	23328CAME4C4VE	23328YMW33W800C4	453328 CCJA/W33VA405	23328 AS.MA.T41A
	23328CAMC4VE	23328YMW800C4	-	-
	23330CAME4C4VE	23330YMBW33W800C4	453330 CCJA/W33VA405	23330 A.MA.T41A
	23332CAME4C4VE	23332YMBW33W800C4	453332 CCJA/W33VA405	23332 A.MA.T41A
	23332CAMC4VE	23332YMBW800C4	-	-
	23332CAME4C4SBVS	23332YMBW33W47W22C4	453332 CCJA/W33VA414	23332 EAS.MA.T41B
	23338CAME4C4VE	23338YMBW33W22BRC4	453338 CCJA/W33VA405	23338ASMAC4F80
	23340CAME4C4VE	-	453340 CCJA/W33VA405	-

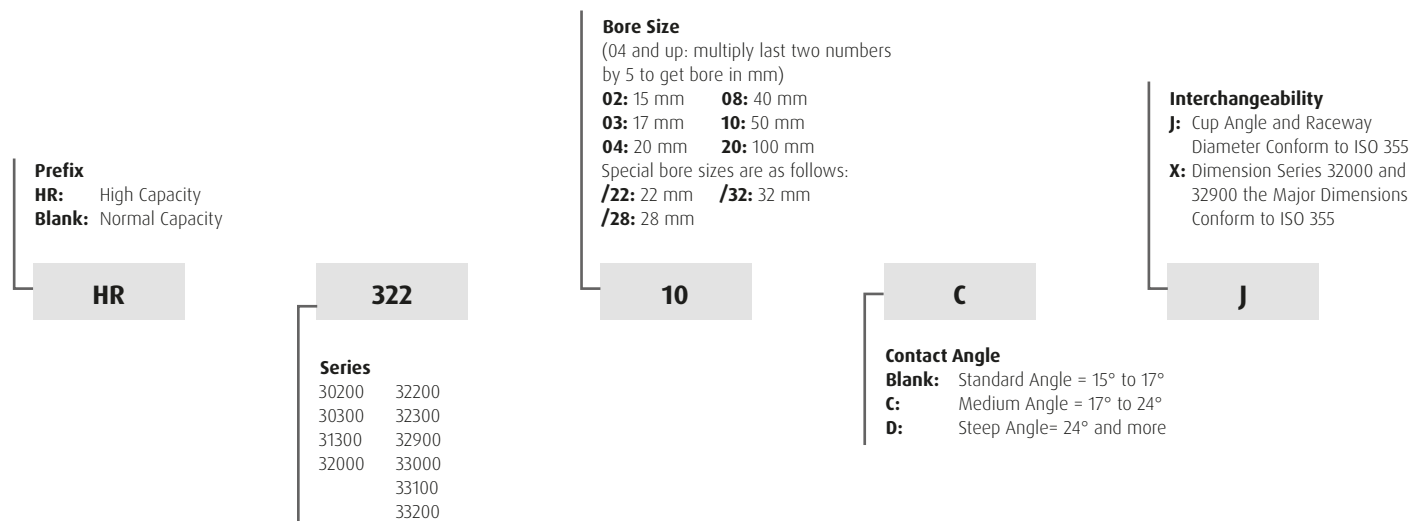
Nomenclature Interchange	Shaker Screen Specification	VE	W800	VA405	T41A
	Durotect Bore Coating	-	-	-	T41D
	Standard Series	223	223	223 or 452	223
	Wide Series	233	233	453	233
	Allis Chalmers Oversized Bore	Sa, Sb	W47	VA414	T41B
	PTFE Coating On Bore	-	-	VA406	-
	See tables on pages D-41 thru D-42 in Bearing & Linear Replacement Guide		W810	-	5XXX.F80
	Cedar Rapids Undersized Bore				

¹ NSK bearings with "CAME4C4VE" suffix may also be used in place of bearings with FAG suffix "T41A" and "T41".

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METRIC TAPERED ROLLER BEARINGS

NOMENCLATURE



INTERCHANGE

Description		Interchange			
		NSK	SKF	Timken	FAG
Part Number	High Capacity Design	HR	--	--	--
	Light	HR302xx	302xx	302xx	302xx
	Medium	HR303xx	303xx	303xx	303xx
	Medium, Steep Angle	HR313xx	313xx	313xx	313xx
	Extra Light, Wide	HR329xx	329xx	329xx	329xx
	Very Light, Wide	HR320xx	320xx	320xx	320xx
	Light, Wide	HR322xx	322xx	322xx	322xx
	Medium, Wide	HR323xx	323xx	323xx	323xx
	Very Light, Extra Wide	HR330xx	330xx	330xx	330xx
	Light, Extra Wide	HR331xx	331xx	331xx	331xx
	Medium, Extra Wide	HR332xx	332xx	332xx	332xx
Suffix	Medium Contact Angle	C	B	B	B
	Steep Contact Angle	D	--	--	--
	Boundary Dimensions Conform to ISO 355	X	X	X	X
	Conforms to ISO 355	J	--	--	A

*HR313xx is directly equal to HR303xxD.

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INCH TAPERED ROLLER BEARINGS

NOMENCLATURE

Prefix

EH: Extra Heavy
EL: Extra Light
H: Heavy
HH: Heavier than Heavy
HM: Heavy Medium
L: Light
LL: Lighter than Light
LM: Light Medium
M: Medium

Basic Series

1-3 digit number that identifies maximum bore range

Additional Features*

R: Conforms to ABMA Standard
G: Case Carburized Cups & Cone

*NSK uses these two standard suffixes. Either one or two letter suffixes may appear.

LM

1

19

49

R

Code Included Cup Angle

1 0 to 23°59'59.99"
2 24° to 25°29'59.99"
3 25°30' to 26°59'59.99"
4 27° to 28°29'59.99"
5 28°30' to 30°29'59.99"
6 30°30' to 32°29'59.99"
7 32°30' to 35°59'59.99"
8 36° to 44°59'59.99"
9 45° up, but not thrust only

Design Number

2 digits which identify the cup or cone

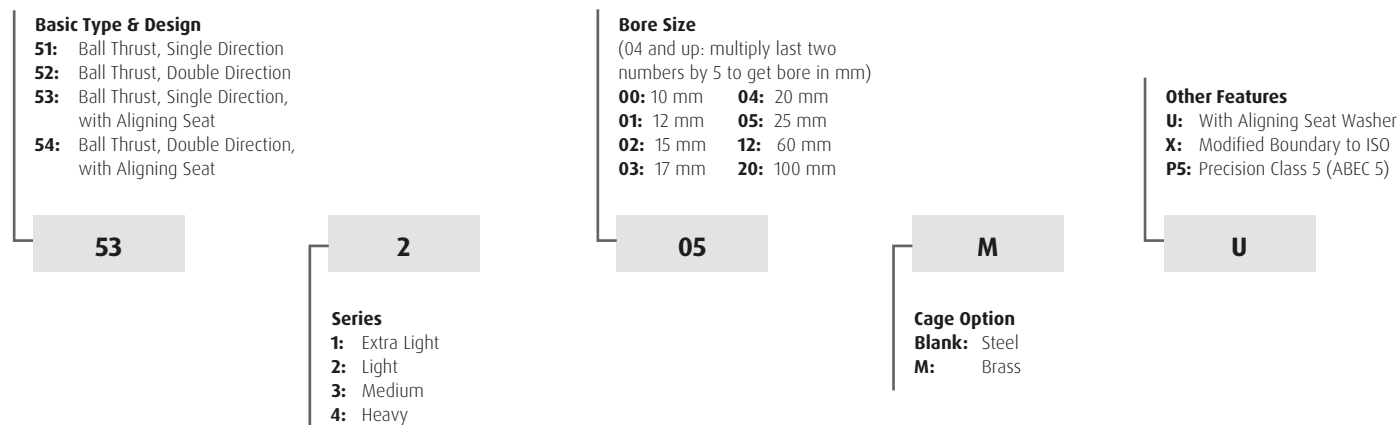
INTERCHANGE

Description		Interchange			
		NSK	SKF	Timken	FAG
Prefix	Extra Heavy	EH	EH	EH	KEH
	Heavier Than Heavy	HH	HH	HH	KHH
	Heavy	H	H	H	KH
	Heavy Medium	HM	HM	HM	KHM
	Medium	M	M	M	KM
	Light Medium	LM	LM	LM	KLM
	Light	L	L	L	KL
	Lighter Than Light	LL	LL	LL	KLL
Cup Angle	Extra Light	EL	E	L EL	KEL
	0° To 23°59'59.99	1xxxx	1xxxx	1xxxx	1xxxx
	24° To 25°29'59.99	2xxxx	2xxxx	2xxxx	2xxxx
	25°30' To 26°59'59.99	3xxxx	3xxxx	3xxxx	3xxxx
	27° To 28°29'59.99	4xxxx	4xxxx	4xxxx	4xxxx
	28°30' To 30°29'59.99	5xxxx	5xxxx	5xxxx	5xxxx
	30°30' To 32°29'59.99	6xxxx	6xxxx	6xxxx	6xxxx
	32°30' To 35°59'59.99	7xxxx	7xxxx	7xxxx	7xxxx
	36° To 44°59'59.99	8xxxx	8xxxx	8xxxx	8xxxx
	45° Up, But Not Thrust Only	9xxxx	9xxxx	9xxxx	9xxxx
	Conforms To ABMA Standard	R	--	blank	--
	Case Carburized Cup & Cone	G	--	blank	--

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BALL THRUST BEARINGS

NOMENCLATURE



INTERCHANGE

Description		Interchange		
		NSK	SKF	FAG
Part Number	Single Direction	511xx	511xx	511xx
	Single Direction	512xx	512xx	512xx
	Single Direction	513xx	513xx	513xx
	Single Direction	514xx	514xx	514xx
	Single Direction with Aligning Seat	532xx	532xx	532xx
	Single Direction with Aligning Seat	533xx	533xx	533xx
	Single Direction with Aligning Seat	534xx	534xx	534xx
	Double Direction	522xx	522xx	522xx
	Double Direction	523xx	523xx	523xx
	Double Direction	524xx	524xx	524xx
	Double Direction with Aligning Seat	542xx	542xx	542xx
	Double Direction with Aligning Seat	543xx	543xx	543xx
	Double Direction with Aligning Seat	544xx	544xx	544xx
Suffix	Steel Cage	BLANK	J	FP
	Brass Cage	M	M	MP
	Boundary Dimensions Adopted to ISO	X	--	X
	With Self-Aligning Seat Washer	U	U	U
	ABEC 5 Precision Class	P5	P5	P5

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SPHERICAL ROLLER THRUST BEARINGS

NOMENCLATURE

Basic Type & Design

292xx: Spherical Roller Thrust, Light
293xx: Spherical Roller Thrust, Medium
294xx: Spherical Roller Thrust, Heavy

Cage Option

E: Pressed Steel¹
M: Machined Brass (not always shown in the part number)

293

26

E

Bore Size

(05 and up: multiply last two numbers by 5 to get bore in mm)

05: 25 mm **48:** 240 mm

20: 100 mm **96:** 480 mm

500 millimeters and larger written as:

/500: 500 mm **/710:** 710 mm

/630: 630 mm **/1000:** 1000 mm

¹The "E" designation has replaced the "H." This is nomenclature change only, not a design change.

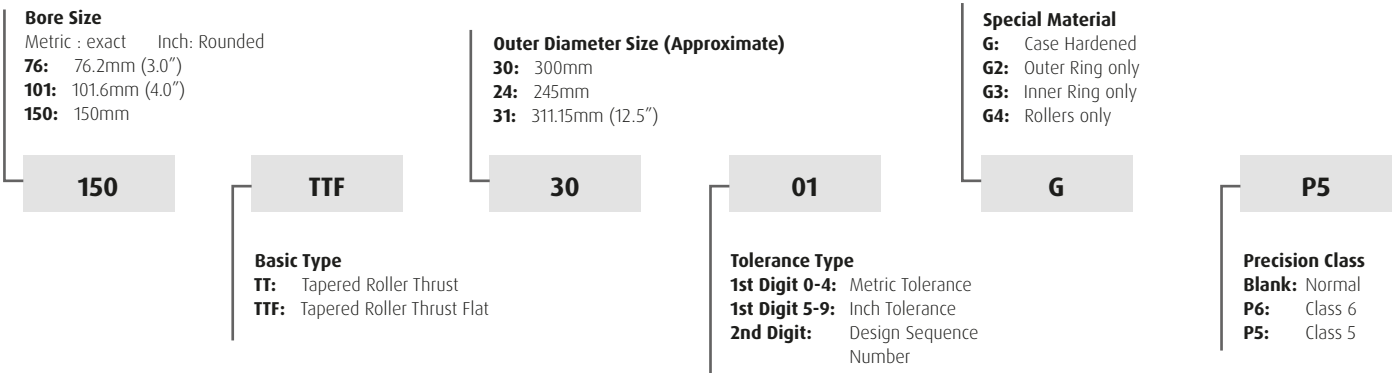
INTERCHANGE

Description		Interchange			
		NSK	SKF	FAG	
Part Number	Light	292xx	292xx	292xx	292xx
	Medium	293xx	293xx	293xx	293xx
	Heavy	294xx	294xx	294xx	294xx
Suffix	Steel Cage	E	EJ	E	EJ
	Brass Cage	M	M	EMB	EM

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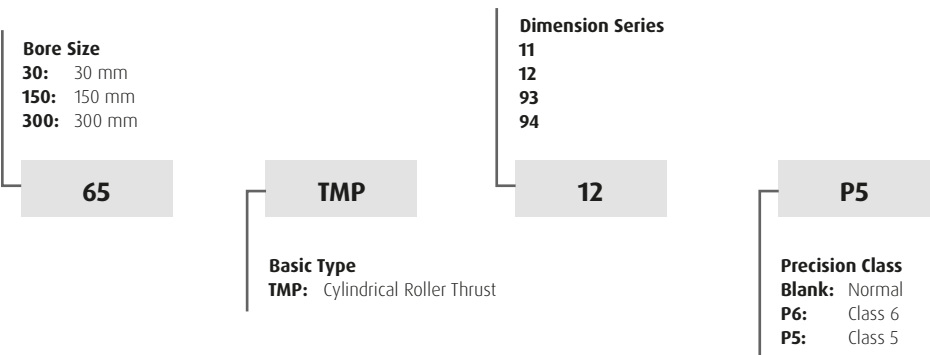
TAPERED ROLLER THRUST BEARINGS

NOMENCLATURE



CYLINDRICAL ROLLER THRUST BEARINGS

NOMENCLATURE



SPLIT PILLOW BLOCKS

NOMENCLATURE

Housing Type

- SAF:** Two or Four Bolt Pillow Block, Cast Iron
- SDAF:** Four Bolt Heavy Duty Type Pillow Block, Cast Iron
- SAFS:** Two or Four Bolt Pillow Block, Cast Steel
- FSAF:** Four Bolt Pillow Block, Cast Iron (optional)
- FSAFS:** Four Bolt Pillow Block, Cast Steel (optional)
- SDAFS:** Four Bolt Heavy Duty Pillow Block, Cast Steel

SAF

517

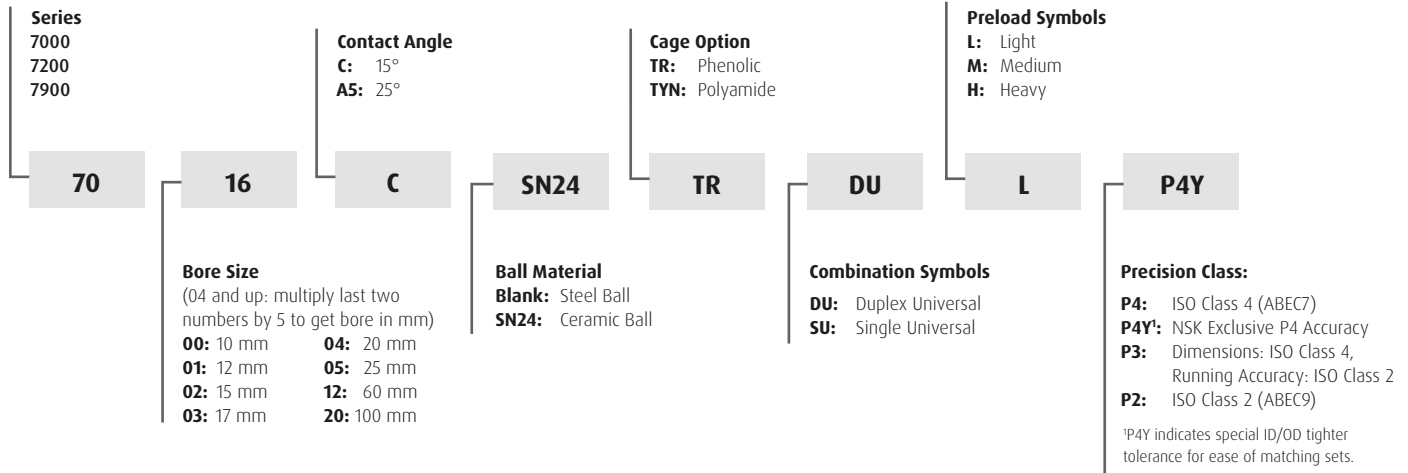
Housing Series

- 2xx:** Housings using straight bore 222XX, 22XX and 12XX series bearings
- 3xx:** Housings using straight bore 223XX, 213XX, 23XX and 13XX series bearings
- 5xx:** Housings using tapered bore 222XX, 12XX and 22XX bearings
- 6xx:** Housings using tapered bore 223XX, 213XX, 23XX and 13XX bearings

For other housing styles and series (SD, SN, etc.) contact NSK.

SUPER PRECISION ANGULAR CONTACT BALL BEARINGS

NOMENCLATURE



INTERCHANGE

Description		Interchange							
		NSK	SKF	FAG	BARDEN	OLD BARDEN	FAF/TIMKEN	SNFA	NTN
Part No.	Ultra Light Series	79XX	719XX	719XX	19XX	-	93XXWI	EB/ESP	79XX
	Extra Light Series	70XX	70XX	70XX	1XX	1XX	91XXWI	EX/ESX	70XX
	Light Series	72XX	72XX	72XX	2XX	2XX	2XXWI	E2/ES2	72XX
Part Number Suffix	15° Contact Angle	C	CD	C	C	BLANK	2 ²	1	C
	25° Contact Angle	A5	ACD	E	E	2 ²	3 ²	3	AD
	Polyamide Cage	TYN	-	-	TMT	-	PRC	P	T2
	Phenolic Cage	TR	BLANK	T	T, TA	BLANK	CR	C	T1
	Seals	V1V	S ²	2RSD OR S ²	RR	VV, PP	-	/S	-
	Duplex Universal	DU	DG	DU	DU	D	DU	DU	GD2
	Single Universal	SU	G	U	U	-	SU	U	G
	Extra Light Preload	EL	-	-	-	-	X	-	GL
	Light Preload	L	A	L	L	L	L	L	GN
	Medium Preload	M	B	M	M	M	M	M	GM
	Heavy Preload	H	C	H	H	H	H	H	-
	Ceramic Balls	SN24	HC	HCB ²	C ²	-	C ²	/NS	5S ²
	ABEC 7 Precision	P4Y	P4A	P4S	BLANK	BLANK	MM/MMV ²	7	P4
	ABEC 9 Precision	P2	PA9A, P9	-	ABEC 9	ABEC 9	MMX ²	9	P2

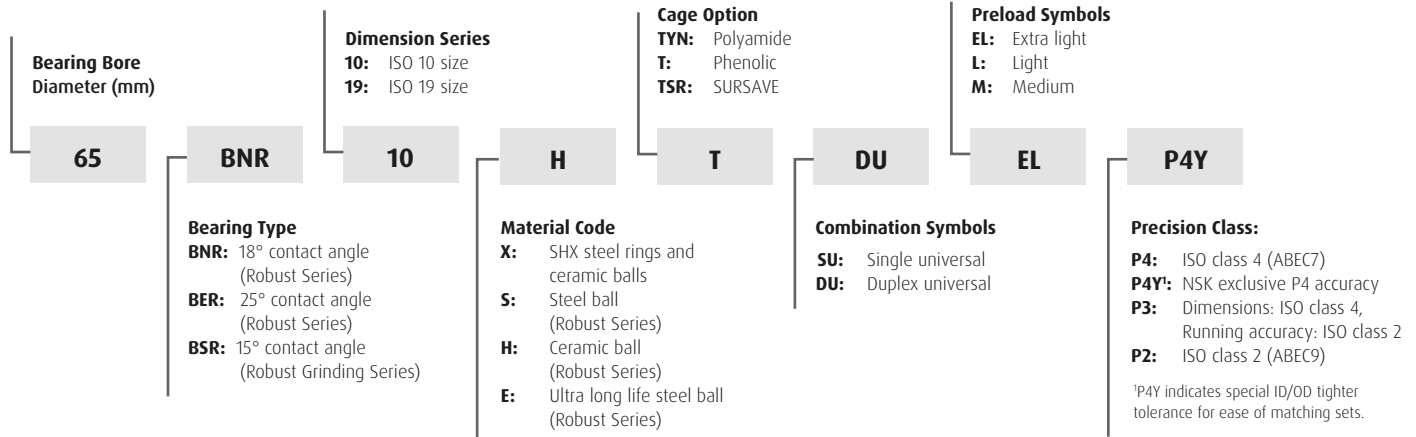
¹TYN cage replaces TY, TR cage replaces T. Sealed (V1V) versions are a new option and P4Y tolerance specification replaces P4. P4Y tolerance specification has tighter bore and OD control than ABEC 7 (class 4 or P4). NSK supplies the following bearing series with P4Y tolerance: 7000; 7200.

²Indicates prefix not suffix.

The competitive manufacturers are provided for a convenient source of unit substitution. They can be considered interchangeable in most instances, but for special applications, please contact NSK. NSK assumes no liability with respect to errors or omissions.

HIGH SPEED SUPER PRECISION ANGULAR CONTACT BALL BEARINGS

NOMENCLATURE



INTERCHANGE

Description		Interchange						
		NSK	SKF	BARDEN	FAF/TIMKEN	SNFA	NTN	FAG
Part No.	Ultra light robust high speed series	XXXXX19	719XXCE	ZSB19XX	93XXWO,WN,HX	VEBXX	HSE9XX	XX719
	Extra light robust high speed series	XXXXX10	70XXCE	ZSB1XX	91XXWO,WN,HX	VEXXX	HSE0XX	XX70
	15° contact angle	XXBSRXX ⁴	CE, CB	C	2 ²	0 ⁵ , 1	C	C
	18° contact angle	XXBNRXX	FE, FB, FW	-	-	2	BLANK	-
	25° contact angle	XXBERXX	ACE	E	3 ²	3	AD	E
Part Number Suffix	Polyamide cage	TYN	BLANK, TNH	TMT	PRC	P	T2	TVP
	Phenolic cage (L-PPS)	TR, T (TSR) ³	-	T, TA	CR	C	T1	T, TPA, TX
	Duplex universal	DU	DG	DU	DU	DU	D	DU
	Single universal	SU	G	U	SU	U	BLANK	U
	Extra light preload	EL	A	-	X	-	GL	L
	Light preload	L	B	L	L	L	GN	M
	Ceramic balls	H	HC	C ²	C ²	/NS	5S ²	HC ² , HCS ²
	Steel balls	S, E	BLANK	BLANK	BLANK	BLANK	BLANK	HS ² , HSS ²
	High speed steel	X	-	CS/CM	-	/XN	2LA	XC ² , XCS ²
	ABEC 7 precision	P4Y	P4	BLANK	MM/MMV ²	7	P4	P4S
	ABEC 9 precision	P2	P2	ABEC 9	MMX ²	9	P2	P2

¹BNR has replaced BNC series. P4Y tolerance specification replaces P4. P4Y tolerance specification has tighter bore and OD control than ABEC 7 (class 4 or P4). NSK supplies the following bearing series with P4Y tolerance: 7000; 7200; 7900; and BNR.

² Indicates prefix not suffix.

³TSR cage may replace TR phenolic cage in some types and sizes.

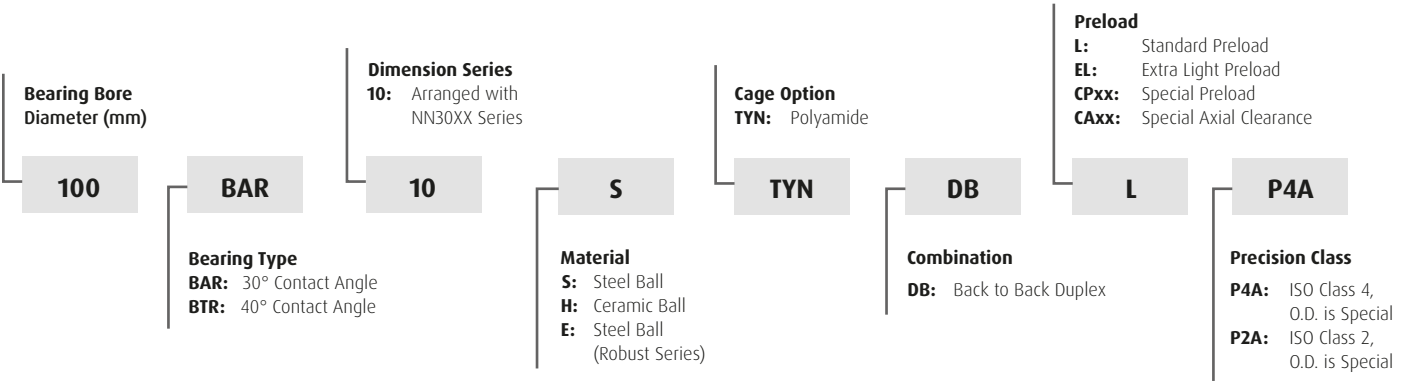
⁴ NSK BSR series applies to bore size of 25mm and less, when bore size is 30mm or less, use NSK BNR series.

⁵ SNFA contact angle is 12 degrees, use NSK BSR or BNR series.

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SUPER PRECISION ANGULAR CONTACT THRUST BALL BEARINGS

NOMENCLATURE



INTERCHANGE

Description		Interchange		
		NSK	SKF	NTN
Part No.	30° Angular Contact Thrust Bearings	XXBAR10	BTMXXA	HTA0XXA
	40° Angular Contact Thrust Bearings	XXBTR10	BTMXXB	HTA0XX
Part Number Suffix	Polyamide Cage	TYN	BLANK	T2
	Phenolic Cage	TR	-	BLANK
	Duplex Universal	DU	DB	GD2
	Single Universal	SU	-	G
	Extra Light Preload	EL	-	-
	Light Preload	L	A	GN
	Ceramic Balls	H	HC	5S ²
	Steel Balls	S/E	BLANK	BLANK
	ABEC 7 Precision	P4A	PC	P4
	ABEC 9 Precision	P2A	PA9A	P2

¹BAR and BTR series have replaced BA and BT series.

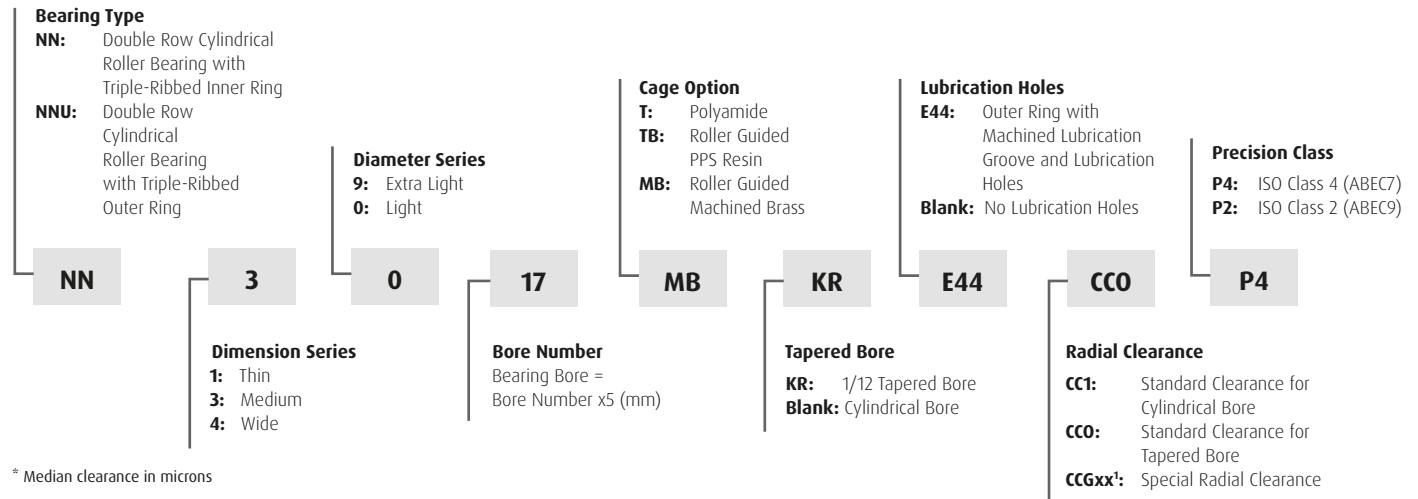
² Indicates prefix not suffix

The competitive manufacturers are provided for a convenient source of unit substitution. They can be considered interchangeable in most instances, but for special applications, please contact NSK. NSK assumes no liability with respect to errors or omissions.

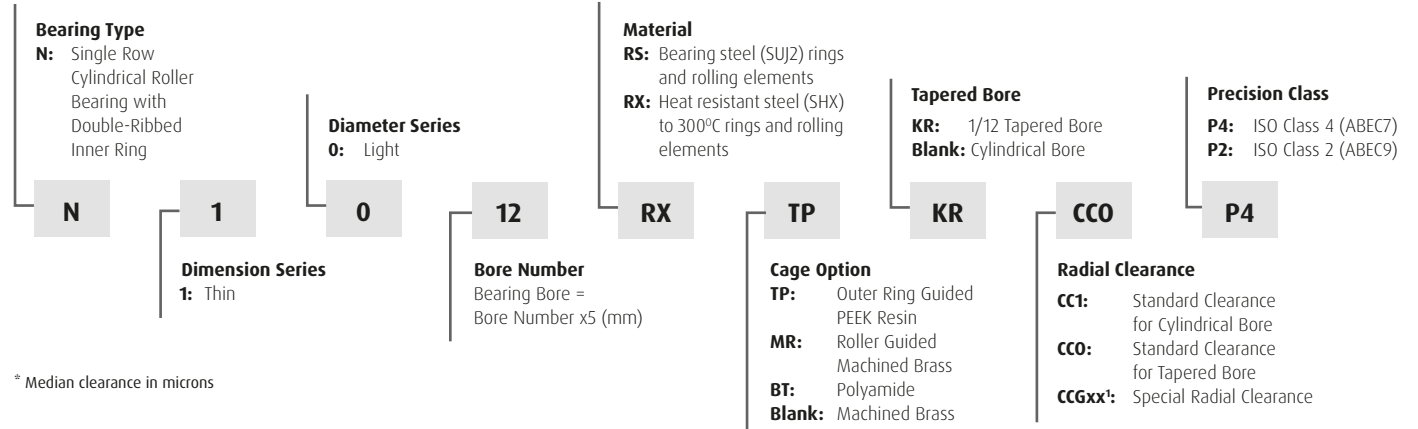
SUPER PRECISION CYLINDRICAL ROLLER BEARINGS

NOMENCLATURE

DOUBLE ROW



SINGLE ROW



INTERCHANGE

Description		Interchange			
		NSK	SKF	FAG	NTN
Part No.	Ultra Light Double Row Cylindrical Series	NN39XX	-	-	-
	Extra Light Double Row Cylindrical Series	NN30XX	NN30XX	NN30XX	NN30XX
	Extra Light Single Row Cylindrical Series	N10XX	N10XX	N10XX	N10XX
Part Number Suffix	Non-Metallic Cage	TB	TN, TN9, TNHA	-	T6
	Brass Cage	MB	BLANK	M, MI	BLANK
	Tapered Bore	KR	UPK	K	K
	Lube Groove And Holes On Outer Ring	E44	W33, U33X	AS	-
	Matched Clearance, Rings Not To Be Mixed	CCX	CX	CX	CXNA
	ABEC 7 Precision	P4	SP	SP	P4

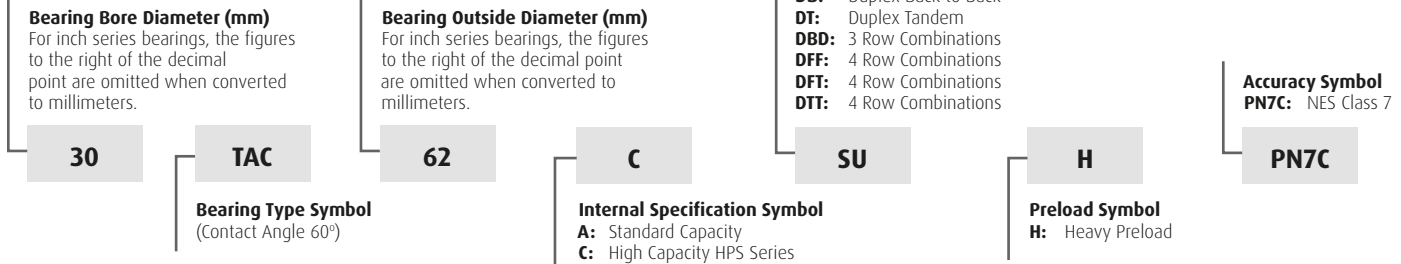
*The outer ring machined lubrication groove and holes (E44) is now a standard feature. TB cage replaces T cage, MB replaces M and KR replaces K.

The competitive manufacturers are provided for a convenient source of unit substitution. They can be considered interchangeable in most instances, but for special applications, please contact NSK. NSK assumes no liability with respect to errors or omissions.

BALL SCREW SUPPORT BEARINGS

TAC SERIES

NOMENCLATURE



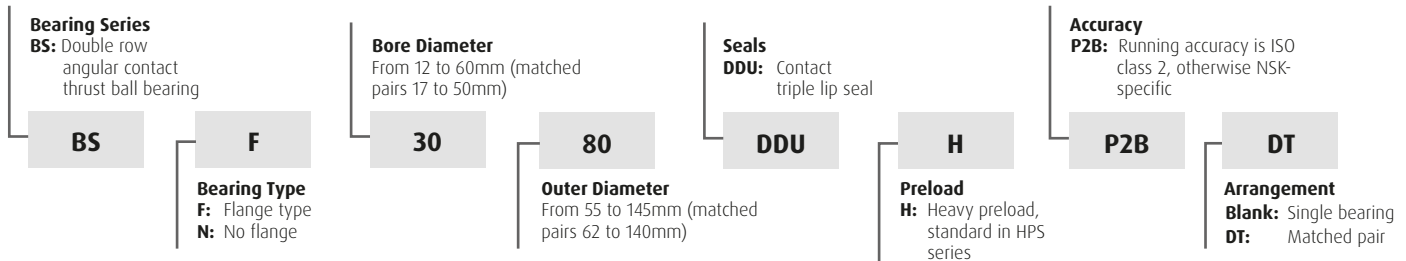
INTERCHANGE

Description		Interchange				
		NSK	SKF	FAF/TIMKEN	MRC	NTN
Part No.	Metric Type	xxTACxxx	BDAB6342xx	MMxxBSxxx	--	BSTxxXxx
	Inch Type	xxTACxxx	BDAB6342xx	MM93xxWI xH	Jxxx	--
Part Number Suffix	Internal Specifications (Standard Capacity)	A	--	--	--	X
	Internal Specifications (High Capacity HPS Series)	C	C	--	--	-1B
	Single Universal	SU	G	SU	DS	G
	Duplex Universal	DU	DG	DU	DU	GD2
	Duplex Face to Face	DF	DF	DU	DF	DF
	Duplex Back to Back	DB	DB	DU	DB	DB
	Duplex Tandem	DT	DT	DU	DT	DT
	Quad Set \ \ \ /	DFF	QFC	QU	--	DTFT
	Quad Set \ \ / \ /	DFT	QFT	QU	DFDT	--
	Quad Set / / \ \	DBB	QBC	QU	--	--
	Quad Set / \ \ \	DBT	QBT	QU	--	DTBT
	Quad Set / / / \	DTT	QT	QU	--	--
	NES Class 7	PN7C	P4(PA7)	MM	BLANK	P4/UP
	Heavy Preload	H	BLANK	H	BLANK	BLANK

The competitive manufacturers are provided for a convenient source of unit substitution. They can be considered interchangeable in most instances, but for special applications, please consult NSK Engineering. NSK assumes no liability with respect to errors or omissions.

BSBD SERIES

NOMENCLATURE



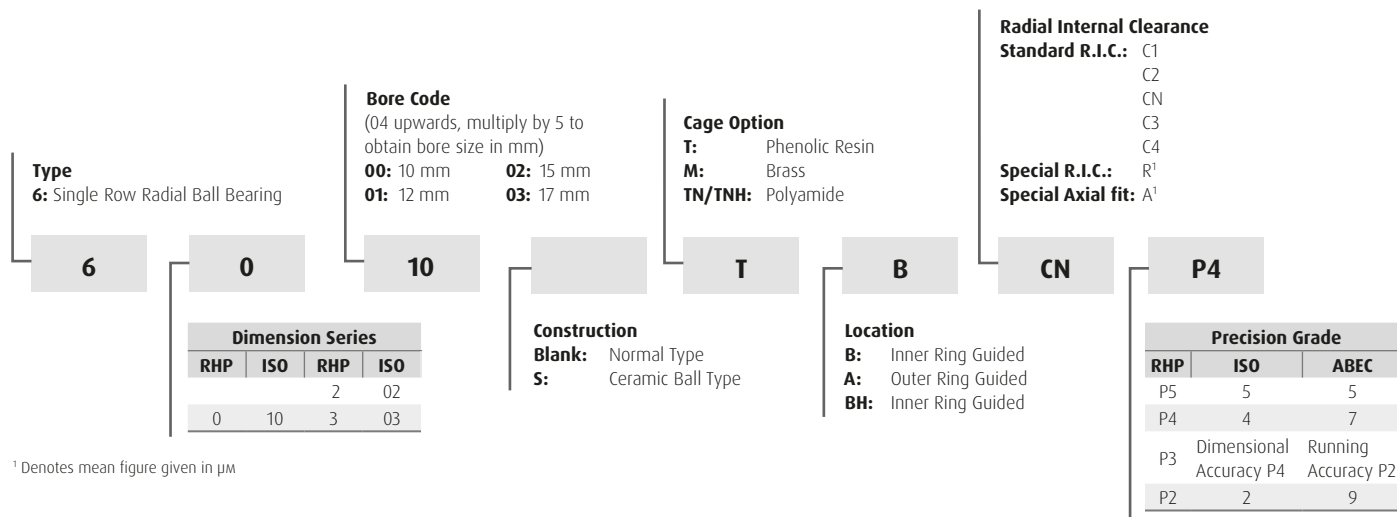
INTERCHANGE

Description		Interchange	
		NSK	INA
Part No.	Double row thrust angular contact ball bearing	BS	ZKL
Part Number Suffix	Flanged bearing type	F	F
	Nonflanged bearing type	N	N
	DDU contact type triple lip seals	DDU	-2RS
	ISO class 2 running accuracy	P2B	BLANK/-PE
	Single bearing	BLANK	BLANK
	Matched pair	DT	-2AP

The competitive manufacturers are provided for a convenient source of unit substitution. They can be considered interchangeable in most instances, but for special applications, please consult NSK Engineering. NSK assumes no liability with respect to errors or omissions.

PRECISION DEEP GROOVE BALL BEARINGS

NOMENCLATURE



INTERCHANGE

Description		Interchange		
		NSK	FAF/TIMKEN	Barden
Part Number	ISO 19	69xx	---	---
	ISO 10	60xx	91xxK	1xx
	ISO 02	62xx	2xxK	2xx
	ISO 03	63xx	3xxK	---
Prefixes / Suffixes	Polyamide Cage	T1X	PRB	TMT
	High Speed Polyamide Cage	TYA	---	---
	Phenolic Cage	T	CR	T
	Shield	Z	---	S
	Non-contact Seal	V	V	A
	Contact Seal	(D)DU	---	Y
	Radial Clearance (Loose)	C3	P	(K)5
	ABEC 7 Precision	P4	MM	---

The competitive manufacturers are provided for a convenient source of unit substitution. They can be considered interchangeable in most instances, but for special applications, please contact NSK. NSK assumes no liability with respect to errors or omissions.

The competitive manufacturers are provided for a convenient source of unit substitution. They can be considered interchangeable in most instances, but for special applications, please consult NSK Engineering. NSK assumes no liability with respect to errors or omissions.

ACK	THK	
-----	-----	--

² See Slider and Rail Section for Exact Series for INA

	NGK	THK
--	-----	-----

BOSCH - REXROTH (STAR)

	THK	THOMSON
--	-----	---------

NSK	THOMSON		THOMSON		SKF	BOSCH - KEXROTH (STAR)	INA
	Common	Less Common	Old	New			
NAH##AN	HSR##R (SHS##R/V)	HSR##TR/TRX/CR	CG##CE	511H##E	LLRHC##R/U (20,45)	R1621	KWVE##-B-H
NAH##BN	HSR##LR (SHS##LR/LN)	HSR##HTR/HR	CG##DE	511H##F	LLRHC##LR	R1624	KWVE##-B-HL
NAH##EM	HSR##A/B/CA/CB (SHS##C)	HSR##TA	CG##AA	511H##A	LLRHC##A	R1651	KWVE##-B
NAH##GM	HSR##HA/LA/HB/LB (SHS##LC)	HSR##HTA/HTB	CG##BA	511H##B	LLRHC##LA	R1653	KWVE##-BL
NAH##AL	(SHS##V)			511H##C (25,30,35)	LLRHC##U (25,30,35)	R1622 (except R1622-1)	KWVE##-B-S
NAH##BL	(SHS##LV)			511H##D (25,30,35)		R1623	KWVE##-B-SL
NAS##EM	SR##TB (SSR##XTB)					R1693	
NAS##AL	SR##W (SSR##XW)	SR##TX/WY (SSR##XWY)			LLRHC15U	R1694/R1622-1	
NAS##CL	SR##V (SSR##XV)	SR##SX/VY (SSR##XVY)			LLRHC##SU (15,30,35)	R1662/R1666/R1664	KWVE##-B-ESC
NAS##JM	SR##SB				LLRHC##SA	R1663	KWVE##-B-EC
LAW##EL	HRW##CA/CR					R1671	KWVE##-W
PAU##AR	RSR07M/RSR07N				LLMHC##TA		KWEM##-
PAU##TR	RSR05M/##N (5,9)	RSR09KM/RSR12VM			LLMHC##TA	R0442	KWEM##-
PAU##UR	RSR12N					R0444	KWEM##-L
PAU##AL	RSR15VM						KWEM##-
PAE##AR	RSR05WM/##WN (5,12,15)	RSR12WVM/RSR15WVN			LLMWC##TA	R0443	KWEM##-W
PAE##TR	RSR07WM/##WN (7,9)	RSR09WVM			LLMWC##TA	R0441	KWEM##-WL

4 - LINEAR GUIDE RAIL LENGTH (MM) ## = SIZE (RAIL WIDTH) XXXX = LENGTH

NSK	THK	THOMSON		SKF	BOSCH - REXROTH (STAR)	INA
		Old	New			
N1H##XXXXZ	HSR##+XXXXL	RG##NLXXXX	521H##A+XXXX	LLRHR##xXXXXP5	R1605-###-XXX ¹	TKVD##-##/XXXX ²
N1S##XXXXZ	SR##+XXXXL			LLRHR##xXXXXP5	R1605-###-XXX ¹	TKVD##-##/XXXX ²
L1W##XXXXZ	HRW##+XXXXL				R1605-###-XXX	TKVD##-W-##/XXXX
P1U##XXXXZ	RSR##+XXXXL	RD##HLXXXX	TSR##Z+XXXX	LLMHR##xXXXXP5	R0445-###-XXX	TKDM##-##/XXX
P1E##XXXXZ	RSR##W+XXXXL		TSR##WZ+XXXX	LLMWR##xXXXXP5	R0455-###-XXX	

¹ See Slider Section for Exact Series for Bosch - Rexroth (STAR)

² See Slider and Rail Section for Exact Series for INA

5 - SLIDERS

The number following the carriage style equals the number of carriages per rail.

6 - ACCURACY CLASS

NSK	THK	THOMSON	SKF	BOSCH - REXROTH (STAR)	INA
PC (interchangeable)	BLANK	N	P5	4- (N)	G3
P6	H	H	P3	3- (H)	
P5	P	P	P1	2- (P)	G2
P4	SP	S	P01	1- (XP/SP)	G1
P3	UP	U	P001	9- (UP)	

7 - PRELOAD

NSK (Matched Assembly)	THK	THOMSON		SKF	BOSCH - REXROTH (STAR)	INA
		Old	New			
T or Z0	BLANK	A	0	T0	-#9#	
Z or Z1	C1	B	1	T1	-#1#	V1
Z2	C1	B	1	T1	-#2#	V2
H or Z3	C0	C	2	T2	-#3#	V3
Z4	C0	C	3	T3		V4

8 - SEALS

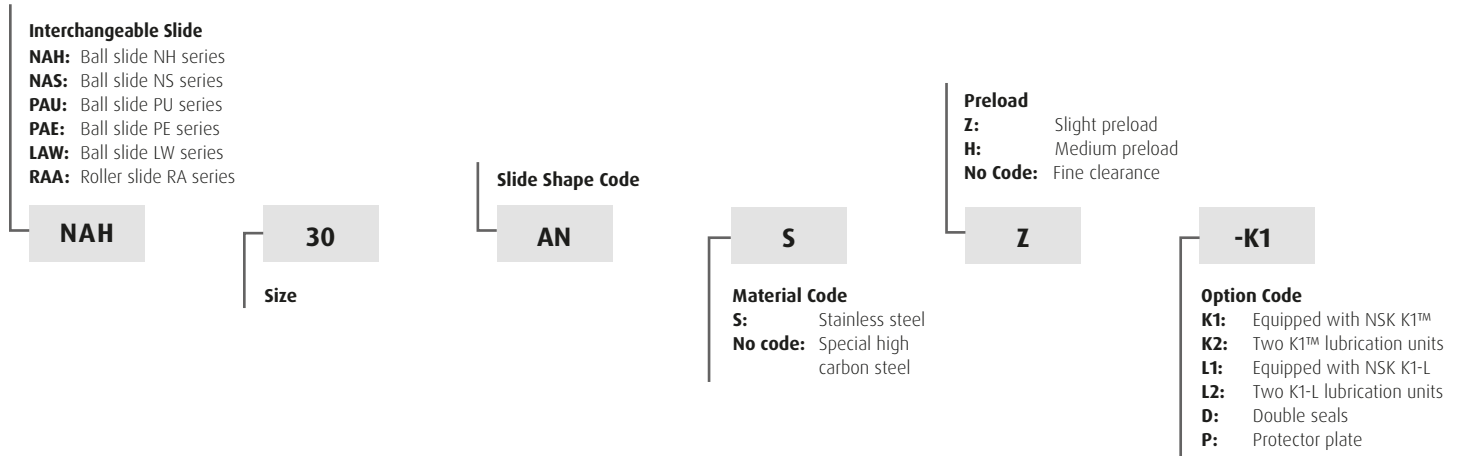
NSK	THK	THOMSON		SKF	BOSCH - REXROTH (STAR)	INA
		Old	New			
Standard (End Seals)	UU-End Seals			Standard	-10 or -20 or -22	
Standard (Side Seals)	SS-Side Seals+End Seals	LDS		Standard	-10 or -20 or -22	
-P (Protector)	ZZ-End, Side, Inner Seals and Scraper	ZZ	Z	S1	None	Separate Part Numbers
-D (Double End Seals)	DD-Double End, Side, and Inner Seals	DD	W	S2	None	
-DP (Double End Seals, Protector)	KK-Double End, Side, Inner Seals and Scraper	KK	WZ	S3	None	

LUBRICATION SYSTEMS

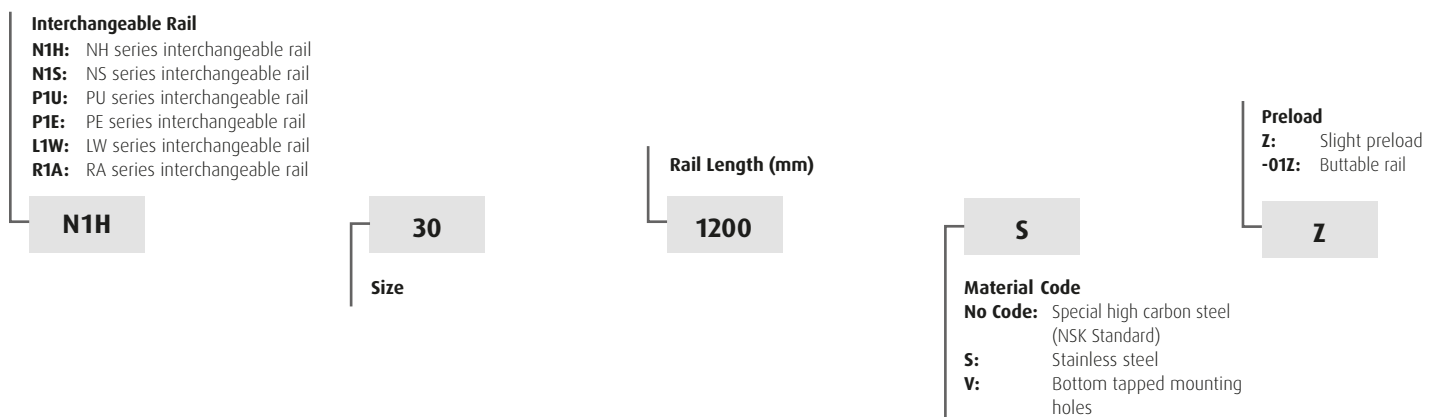
NSK	THK	THOMSON	SKF
-K1™ or K1-L	QZ	LL	Standard
External to the Slider	External to the Slider	External to the Slider	Internal Foam Insert

LINEAR GUIDES

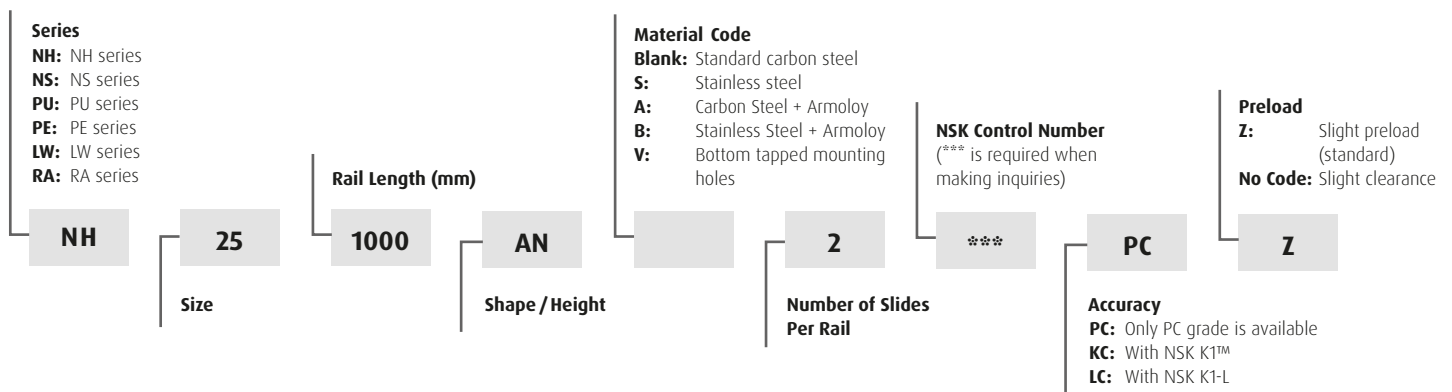
PART NUMBER EXAMPLE FOR SLIDE ONLY



REFERENCE PART NUMBER FOR RAIL ONLY



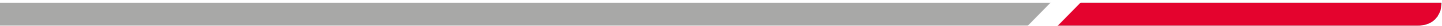
REFERENCE PART NUMBER FOR INTERCHANGEABLE ASSEMBLY (SLIDE + RAIL)



NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

NOTES



Lined area for notes, consisting of multiple horizontal lines.



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