

# CATALOG 2009

TENGEN BEARING COMPANY



HIGH PRECISION BEARINGS  
Catalog No. PH1200



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## FOREWORD

We would like to thank you for your interest of our catalog 2009, after months of researches and preparations, we are proud to publish this catalog for all our valued customers. We promise we have contributed our best efforts ensuring the correctness, accuracy and completeness of information made available in this catalog. We sincerely hope this publish will help to fill your needs.

The main objective of this catalog is to act as a bearing handbook for bearings substitution from one brand to a product of China. We assure that bearings which are listed in this catalog are within the competitive edge of China market, which means that they are technically established, available in stocks or within the shortest possible delivery lead-time, and lowest requirement of minimum order. Bearing numbers that are not listed in this book might probably available too, please contact us for further information if your bearing numbers are not listed.

The reason why we design this catalog in a way of bearings interchangeability, having few main internationally renowned brands lined up for comparison, is intending to save our customers' hassles when they are looking for bearings substitutions in China. More brands of bearings' numbers will be added for comparison in future version of this catalog. We believe with information published in this book, in cooperation with our professional product consultation, we certainly are the Ease of Buying Solution for you to source from China.

Note:

Relevant information of bearings such as Basic Load Ratings, Speed Ratings, Factor, Bearings Weight and etc... published here are extracted from one manufacturers' catalog, these statistics may not be applicable for all brands of bearings, please use these information for reference purpose only.

## ABOUT THE COMPANY

TENGEN Bearing Company is established by a group of people who possess vast experiences, professional knowledge of bearings, and bearings' industrial applications. Most of our managers and engineers have been in the bearings market for over 10 years and now closely tightened up with the Chinese market and being constantly updated about the local market information. This has consequently granted us the exclusive access to the rich market resources from around the China regions, and that enabling us the great advantages in aspect of both cost and quality of products.

Locally in China, we are not only dealing with Chinese bearings. We are also a reseller of most internationally renowned brands of bearings such as SKF, FAG, NSK, TIMKEN and etc... This provides us the capability and greater technical knowledge of bearings exchangeability in China market.

### ***OUR MISSION***

*“We aim to be one of the most preferred Chinese bearings suppliers to all our customers and potential customers worldwide”*



# FREQUENTLY APPLIED TECHNICAL DATA OF BEARINGS

Bearings Tolerance Class  
Bearings Tolerance Symbols  
Tolerance Tables  
Bearings Series Symbols  
Bearings Supplementary Designations

## BEARINGS TOLERANCES CLASSES

Types of Bearings		Tolerance Classes				
Deep Groove Ball Bearings		Normal	Class 6	Class 5	Class 4	Class 2
Angular Contact Ball Bearings		Normal	Class 6	Class 5	Class 4	Class 2
Self-aligning Ball Bearings		Normal	Class 6 equivalent	Class 5 equivalent	—	—
Cylindrical Roller Bearings		Normal	Class 6	Class 5	Class 4	Class 2
Solid Type Needle Roller Bearings		Normal	Class 6	Class 5	Class 4	—
Spherical Roller Bearings		Normal	Class 6 equivalent	Class 5 equivalent	—	—
Thrust Ball Bearings		Normal	Class 6	Class 5	Class 4	—
Spherical Thrust Roller Bearings		Normal	—	—	—	—
Metric-design Tapered Roller Bearings		Normal Class 6X	—	Class 5	Class 4	—
Inch-design Tapered Roller Bearings		ABMA CLASS 4	ABMA CLASS 2	ABMA CLASS 3	ABMA CLASS 0	ABMA CLASS 00
Equivalent standards						
GB/T 307.1 Chinese National Standard		Class 0	Class 6	Class 5	Class 4	Class 2
JIS B1514 Japanese Industrial Standard		Class 0	Class 6	Class 5	Class 4	Class 2
DIN 620 (Deutsches Institut für Normung) German Institute for Standardization		P0	P6	P5	P4	P2
ABMA American Bearing Manufacturers Association	Ball Bearings	ABEC 1	ABEC 3	ABEC 5 (CLASS 5P)	ABEC 7 (CLASS 7P)	ABEC 9 (CLASS 9P)
	Roller Bearings	RBEC 1	RBEC 3	RBEC 5	—	—
	Tapered Roller Bearings	CLASS 4	CLASS 2	CLASS 3	CLASS 0	CLASS 00

### Note

1. The most common bearings produced in China are basically Normal Class, in accordance to JIS standard at class zero. (please refer to ISO 492/199/582/ABEC1/GB/T307.1 P0 for detailed requirements of bearings tolerance) You may also obtain detailed bearings tolerance statistics from manufacturers' catalog.
2. Bearings may be produced at Class 6 upon requested by customers for relatively rigid applications. Please contact our sales personnel for detailed information before placing an order.



## BEARING TOLERANCES

### Symbols of Boundary Dimension and Running Accuracy

$d$	<i>Nominal bearing bore diameter</i>
$\Delta_{ds}$	<i>Deviation of single bore diameter</i>
$\Delta_{dmp}$	<i>Deviation of mean bore diameter in a single plane</i>
$V_{dp}$	<i>Variation of mean bore diameter in a single plane</i>
$V_{dmp}$	<i>Variation of mean bore diameter</i>
$B$	<i>Nominal inner ring width</i>
$\Delta_{Bs}$	<i>Deviation of single ring width</i>
$V_{Bs}$	<i>Variation of single ring width</i>
$K_{ia}$	<i>Radial runout of inner ring of assembled bearing</i>
$S_d$	<i>Runout of inner ring face to the bore</i>
$S_{ia}$	<i>Axial runout of end face to inner ring raceway of assembled bearing</i>
$S_i / S_e$	<i>Variation of washer thickness of (shaft / housing) locating washers</i>
$T$	<i>Nominal bearing height of a single direction axial bearing</i>
$D$	<i>Nominal bearing outer diameter</i>
$\Delta_{Ds}$	<i>Deviation of single outer diameter</i>
$\Delta_{Dmp}$	<i>Deviation of mean outer diameter in a single plane</i>
$V_{Dp}$	<i>Variation of single outer diameter in a single plane</i>
$V_{Dmp}$	<i>Variation of mean outer diameter</i>
$C$	<i>Nominal outer ring width</i>
$\Delta_{Cs}$	<i>Deviation of single outer ring width</i>
$V_{Cs}$	<i>Variation of outer ring width</i>
$K_{ea}$	<i>Radial runout of outer ring of assembled bearing</i>
$S_D$	<i>Runout of outer ring outside surface generatrix to the face</i>
$S_{ea}$	<i>Axial runout of end face to outer ring raceway of assembled bearing</i>

Tolerance Tables (Part 1)

<i>d</i> (mm)		$\Delta_{dmp}$ Deviation of Mean Bore Diameter										<i>units</i> : $\mu\text{m}$	
		Normal		Class 6		Class 5		Class 4		Class 2			
Over	Incl.	High	Low	High	Low	High	Low	High	Low	High	Low		
0.6	2.5	0	-8	0	-7	0	-5	0	-4	0	-2.5		
2.5	10	0	-8	0	-7	0	-5	0	-4	0	-2.5		
10	18	0	-8	0	-7	0	-5	0	-4	0	-2.5		
18	30	0	-10	0	-8	0	-6	0	-5	0	-2.5		
30	50	0	-12	0	-10	0	-8	0	-6	0	-2.5		
50	80	0	-15	0	-12	0	-9	0	-7	0	-4		
80	120	0	-20	0	-15	0	-10	0	-8	0	-5		
120	150	0	-25	0	-18	0	-13	0	-10	0	-7		
150	180	0	-25	0	-18	0	-13	0	-10	0	-7		
180	250	0	-30	0	-22	0	-15	0	-12	0	-8		
250	315	0	-35	0	-25	0	-18	-	-	-	-		
315	400	0	-40	0	-30	0	-23	-	-	-	-		
400	500	0	-45	0	-35	-	-	-	-	-	-		
500	630	0	-50	0	-40	-	-	-	-	-	-		
630	800	0	-75	-	-	-	-	-	-	-	-		
800	1,000	0	-100	-	-	-	-	-	-	-	-		
1,000	1,250	0	-125	-	-	-	-	-	-	-	-		
1,250	1,600	0	-160	-	-	-	-	-	-	-	-		
1,600	2,000	0	-200	-	-	-	-	-	-	-	-		

<i>d</i> (mm)		$V_{dmp}$ Variation of Mean Bore Diameter					$\Delta_{Bs}$ ( or $\Delta_{Cs}$ ) Deviation of Single (Outer) Ring Width												<i>units</i> : $\mu\text{m}$	
		Normal	Class 6	Class 5	Class 4	Class 2	Single Bearing						Combined Bearings							
							Normal Class 6		Class 5 Class 4		Class 2		Normal Class 6		Class 5 Class 4		Class 2			
Over	Incl.	Max	Max	Max	Max	Max	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low		
0.6	2.5	6	5	3	2	1.5	0	-40	0	-40	0	-40	-	-	0	-250	0	-250	0	-250
2.5	10	6	5	3	2	1.5	0	-120	0	-40	0	-40	0	-250	0	-250	0	-250	0	-250
10	18	6	5	3	2	1.5	0	-120	0	-80	0	-80	0	-250	0	-250	0	-250	0	-250
18	30	8	6	3	2.5	1.5	0	-120	0	-120	0	-120	0	-250	0	-250	0	-250	0	-250
30	50	9	8	4	3	1.5	0	-120	0	-120	0	-120	0	-250	0	-250	0	-250	0	-250
50	80	11	9	5	3.5	2	0	-150	0	-150	0	-150	0	-380	0	-250	0	-250	0	-250
80	120	15	11	5	4	2.5	0	-200	0	-200	0	-380	0	-380	0	-380	0	-380	0	-380
120	150	19	14	7	5	3.5	0	-250	0	-250	0	-250	0	-500	0	-380	0	-380	0	-380
150	180	19	14	7	5	3.5	0	-250	0	-250	0	-250	0	-500	0	-380	0	-380	0	-380
180	250	23	17	8	6	4	0	-300	0	-300	0	-300	0	-500	0	-500	0	-500	0	-500
250	315	26	19	9	-	-	0	-350	0	-350	-	-	0	-500	0	-500	-	-	-	-
315	400	30	23	12	-	-	0	-400	0	-400	-	-	0	-630	0	-630	-	-	-	-
400	500	34	26	-	-	-	0	-450	-	-	-	-	-	-	-	-	-	-	-	-
500	630	38	30	-	-	-	0	-500	-	-	-	-	-	-	-	-	-	-	-	-
630	800	-	-	-	-	-	0	-750	-	-	-	-	-	-	-	-	-	-	-	-
800	1,000	-	-	-	-	-	0	-1,000	-	-	-	-	-	-	-	-	-	-	-	-
1,000	1,250	-	-	-	-	-	0	-1,250	-	-	-	-	-	-	-	-	-	-	-	-
1,250	1,600	-	-	-	-	-	0	-1,600	-	-	-	-	-	-	-	-	-	-	-	-
1,600	2,000	-	-	-	-	-	0	-2,000	-	-	-	-	-	-	-	-	-	-	-	-

## Tolerance Tables (Part 2)

<i>units : μm</i>		$K_{ia}$ Radial runout of inner ring of assembled bearing					$S_d$ Runout of inner ring face to the bore			$S_{ia}$ Axial runout of end face to inner ring raceway of assembled bearing		
		Class 0	Class 6	Class 5	Class 4	Class 2	Class 5	Class 4	Class 2	Class 5	Class 4	Class 2
Over	Incl	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max
0.6	2.5	10	5	4	2.5	1.5	7	3	1.5	7	3	1.5
2.5	10	10	6	4	2.5	1.5	7	3	1.5	7	3	1.5
10	18	10	7	4	2.5	1.5	7	3	1.5	7	3	1.5
18	30	13	8	4	3	2.5	8	4	1.5	8	4	2.5
30	50	15	10	5	4	2.5	8	4	1.5	8	4	2.5
50	80	20	10	5	4	2.5	8	5	1.5	8	5	2.5
80	120	25	13	6	5	2.5	9	5	2.5	9	5	2.5
120	150	30	18	8	6	2.5	10	6	2.5	10	7	2.5
150	180	30	18	8	6	5	10	6	4	10	7	5
180	250	40	20	10	8	5	11	7	5	13	8	5
250	315	50	25	13	-	-	13	-	-	15	-	-
315	400	60	30	15	-	-	15	-	-	20	-	-
400	500	65	35	-	-	-	-	-	-	-	-	-
500	630	70	40	-	-	-	-	-	-	-	-	-
630	800	80	-	-	-	-	-	-	-	-	-	-
800	1,000	90	-	-	-	-	-	-	-	-	-	-
1,000	1,250	100	-	-	-	-	-	-	-	-	-	-
1,250	1,600	120	-	-	-	-	-	-	-	-	-	-
1,600	2,000	140	-	-	-	-	-	-	-	-	-	-

<i>D (mm)</i>		$\Delta_{Dmp}$ Deviation of mean outer diameter in a single plane										<i>units : μm</i>	
		Normal		Class 6		Class 5		Class 4		Class 2		High	Low
		High	Low	High	Low	High	Low	High	Low	High	Low		
2.5	Incl. 6	0	-8	0	-7	0	-5	0	-4	0	-2.5	0	-2.5
6	18	0	-8	0	-7	0	-5	0	-4	0	-2.5	0	-2.5
18	30	0	-9	0	-8	0	-6	0	-5	0	-4	0	-4
30	50	0	-11	0	-9	0	-7	0	-6	0	-4	0	-4
50	80	0	-13	0	-11	0	-9	0	-7	0	-4	0	-4
80	120	0	-15	0	-13	0	-10	0	-8	0	-5	0	-5
120	150	0	-18	0	-15	0	-11	0	-9	0	-5	0	-5
150	180	0	-25	0	-18	0	-13	0	-10	0	-7	0	-7
180	250	0	-30	0	-20	0	-15	0	-11	0	-8	0	-8
250	315	0	-35	0	-25	0	-18	0	-13	0	-8	0	-8
315	400	0	-40	0	-28	0	-20	0	-15	0	-10	0	-10
400	500	0	-45	0	-33	0	-23	-	-	-	-	-	-
500	630	0	-50	0	-38	0	-28	-	-	-	-	-	-
630	800	0	-75	0	-45	0	-35	-	-	-	-	-	-
800	1,000	0	-100	0	-60	-	-	-	-	-	-	-	-
1,000	1,250	0	-125	-	-	-	-	-	-	-	-	-	-
1,250	1,600	0	-160	-	-	-	-	-	-	-	-	-	-
1,600	2,000	0	-200	-	-	-	-	-	-	-	-	-	-
2,000	2,500	0	-250	-	-	-	-	-	-	-	-	-	-

Tolerance Tables (Part 3)

<i>units : <math>\mu\text{m}</math></i>		$\Delta_{Dmp}$					$K_{ea}$					$S_D$		
		Deviation of mean outer diameter in a single plane					Radial runout of outer ring of assembled bearing					Runout of outer ring outside surface generatrix to the face		
		$D$ (mm)		Normal	Class 6	Class 5	Class 4	Class 2	Normal	Class 6	Class 5	Class 4	Class 2	Class 5
Over	Incl.	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max
2.5	6	6	5	3	2	1.5	15	8	5	3	1.5	8	4	1.5
6	18	6	5	3	2	1.5	15	8	5	3	1.5	8	4	1.5
18	30	7	6	3	2.5	2	15	9	6	4	2.5	8	4	1.5
30	50	8	7	4	3	2	20	10	7	5	2.5	8	4	1.5
50	80	10	8	5	3.5	2	25	13	8	5	4	8	4	1.5
80	120	11	10	5	4	2.5	35	18	10	6	5	9	5	2.5
120	150	14	11	6	5	2.5	40	20	11	7	5	10	5	2.5
150	180	19	14	7	5	3.5	45	23	13	8	5	10	5	2.5
180	250	23	15	8	6	4	50	25	15	10	7	11	7	4
250	315	26	19	9	7	4	60	30	18	11	7	13	8	5
315	400	30	21	10	8	5	70	35	20	13	8	13	10	7
400	500	34	25	12	-	-	80	40	23	-	-	15	-	-
500	630	38	29	14	-	-	100	50	25	-	-	18	-	-
630	800	55	34	18	-	-	120	60	30	-	-	20	-	-
800	1,000	75	45	-	-	-	140	75	-	-	-	-	-	-
1,000	1,250	-	-	-	-	-	160	-	-	-	-	-	-	-
1,250	1,600	-	-	-	-	-	190	-	-	-	-	-	-	-
1,600	2,000	-	-	-	-	-	220	-	-	-	-	-	-	-
2,000	2,500	-	-	-	-	-	250	-	-	-	-	-	-	-

<i>units : <math>\mu\text{m}</math></i>		$S_{ea}$			$V_{Cs}$		
		Axial runout of end face to outer ring raceway of assembled bearing			Variation of outer ring width		
		$D$ (mm)		Class 5	Class 4	Class 2	Class 5
Over	Incl.	Max	Max	Max	Max	Max	Max
2.5	6	8	5	1.5	5	2.5	1.5
6	18	8	5	1.5	5	2.5	1.5
18	30	8	5	2.5	5	2.5	1.5
30	50	8	5	2.5	5	2.5	1.5
50	80	10	5	4	6	3	1.5
80	120	11	6	5	8	4	2.5
120	150	13	7	5	8	5	2.5
150	180	14	8	5	8	5	2.5
180	250	15	10	7	10	7	4
250	315	18	10	7	11	7	5
315	400	20	13	8	13	8	7
400	500	23	-	-	15	-	-
500	630	25	-	-	18	-	-
630	800	30	-	-	20	-	-
800	1,000	-	-	-	-	-	-
1,000	1,250	-	-	-	-	-	-
1,250	1,600	-	-	-	-	-	-
1,600	2,000	-	-	-	-	-	-
2,000	2,500	-	-	-	-	-	-

## BEARINGS SERIES SYMBOLS

Types of Bearings	Bearing Series Symbols	Symbols Type	Dimension Symbols		Types of Bearings	Bearing Series Symbols	Symbols Type	Dimension Symbols		
			Width or Height Symbols	Symbols				Width or Height Symbols	Symbols	
Single-Row Deep Groove Ball Bearings	68	6	(1)	8	Single-Row Cylindrical Roller Bearings	NU10	NU	1	0	
	69	6	(1)	9		NU2	NU	(0)	2	
	60	6	(1)	0		NU22	NU	2	2	
	62	6	(0)	2		NU3	NU	(0)	3	
	63	6	(0)	3		NU23	NU	2	3	
Single Row Angular Contact Ball Bearings	79	7	(1)	9		NU4	NU	(0)	4	
	70	7	(1)	0		NJ2	NJ	(0)	2	
	72	7	(0)	2		NJ22	NJ	2	2	
	73	7	(0)	3		NJ3	NJ	(0)	3	
Self-Aligning Ball Bearings	12	1	(0)	2		NJ23	NJ	2	3	
	13	1	(0)	3		NJ4	NJ	(0)	4	
	22	(1)	2	2		NUP2	NUP	(0)	2	
	23	(1)	2	3		NUP22	NUP	2	2	
Spherical Roller Bearings	230	2	3	0		NUP3	NUP	(0)	3	
	231	2	3	1		NUP23	NUP	2	3	
	222	2	2	2		NUP4	NUP	(0)	4	
	232	2	3	2		N10	N	1	0	
	213(1)	2	0	3		N2	N	(0)	2	
	223	2	2	3		N3	N	(0)	3	
Thrust Ball Bearings	511	5	1	1		N4	N	(0)	4	
	512	5	1	2		NF2	NF	(0)	2	
	513	5	1	3		NF3	NF	(0)	3	
	514	5	1	4		NF4	NF	(0)	4	
	522	5	2	2		Double Row Cylindrical Roller Bearing	NNU49	NNU	4	9
	523	5	2	3			NN30	NNU	3	0
	524	5	2	4	Thrust Spherical Roller Bearings	292	2	9	2	
Taper Roller Bearings	329	3	2	9		293	2	9	3	
	320	3	2	0		294	2	9	4	
	330	3	3	0	Needle Roller Bearings	NA48	N/A	4	8	
	331	3	3	1		NA49	N/A	4	9	
	302	3	0	2		NA59	N/A	5	9	
	322	3	2	2		NA69	N/A	6	9	
	332	3	3	2	Note Numbers in "( )" are normally omitted from the bearing numbers.					
	303	3	0	3						
	323	3	2	3						

## BEARINGS SUPPLEMENTARY DESIGNATIONS

### Frequently Used Suffixes of Bearing Numbers

Attribute	Supplementary Designation			
	Local	SKF	FAG	NSK
<b>Contact Angle Symbol</b>				
Standard contact angle of 30°	A			A
Standard contact angle of 25°	A5	ACD	E	A5
Standard contact angle of 40°	B	B	B	B
Standard contact angle of 15°	C	CD	C	C
Contact angle about 20° (only applied to Tapered Roller Bearings)	C			C
Contact angle about 28° (only applied to Tapered Roller Bearings)	D			D
<b>Internal Design Symbol</b>				
Internal design differs from standard	A	A	A	A
Smaller diameter of outer ring raceway, contact angle, and outer ring width of tapered roller bearings conform to ISO 355	J	X/Q	X	J
<b>Material Symbol</b>				
Case-hardened steel used in rings, rolling elements	G			G
Stainless steel used in rings, rolling elements	H		Z	H
<b>Cage Symbol</b>				
Machined brass cage	M	M	M	M
Synthetic resin cage	T	TN9	TV	T
Pressed steel cage	W	F	F	W
Without cage	V	V	V	V
<b>External Features – Seals, Shields Symbol</b>				
Shield on one side only	Z / ZS	Z	ZR	Z / ZS
Shield on both sides	ZZ / ZZS	2Z	2ZR	ZZ / ZZS
Contact rubber seal on one side only	D / DU	RS	RSR	D / DU
Contact rubber shield on both sides	DD / DDU	2RS	2RSR	DD / DDU
Non-contact rubber seal on one side only	V	RZ		V
Non-contact rubber seal on both sides	VV	2RZ		VV
<b>Rings Design Symbol</b>				
Tapered bore of inner ring (Taper 1:12)	K	K	K	K
Tapered bore of inner ring (Taper 1:30)	K30	K30	K30	K30
Notch or lubricating groove ring	E	E	E	E
Lubricating groove in outside surface and holes in outer ring	E4	E	S	E4
Snap ring groove in outer ring	N	N	N	N
Snap ring groove with snap ring in outer ring	NR	NR	NR	NR
<b>Bearing Arrangement Symbol</b>				
Back to back arrangement	DB	DB	UA	DB
Face to face arrangement	DF	DF	UO	DF
Tandem arrangement	DT	DT	UL	DT
<b>Internal Clearance Symbol</b>				
Clearance less than C2	C1	C1	C1	C1
Clearance less than CN	C2	C2	C2	C2
CN Clearance	CN	C0	C0	CN
Clearance greater than CN	C3	C3	C3	C3
Clearance greater than C3	C4	C4	C4	C4
Clearance greater than C4	C5	C5	C5	C5
<b>Tolerance Class Symbol</b>				
ISO normal (P0 is usually omitted from the bearing numbers)	P0	P0	P0	P0
ISO Class 6	P6	P6	P6	P6
ISO Class 5	P5	P5	P5	P5
ISO Class 4	P4	P4	P4	P4
ISO Class 2	P2			P2
<b>Special Specification Symbol</b>				
Working temperature lower than 150°C	X26	S0	S0	X26
Working temperature lower than 200°C	X28	S1	S1	X28
Working temperature lower than 250°C	X29	S2	S2	X29
Dimensional stabilizing treatment working temperature lower than 200°C	S11	S1	S1	S11

# COMPETITIVE PRODUCTS & PRODUCTS GALLERY

## COMPETITIVE PRODUCTS LIST

Below listed products are technically established, available in stock or within the shortest possible delivery lead-time, and lowest requirement of minimum order. Please contact us if you are looking for something out of the list.

### Deep Groove Ball Bearings

- Single Row Deep Groove Ball Bearings
- Double Row Deep Groove Ball Bearings

### Angular Contact Ball Bearings

- Single Row Angular Contact Ball Bearings
- Double Row Angular Contact Ball Bearings
- Four Point Contact Ball Bearings

### Self-Aligning Ball Bearings

### Spherical Roller Bearings

### Thrust Ball Bearings

- Single Direction Thrust Ball Bearings
- Double Direction Thrust Ball Bearings

### Thrust Spherical Roller Bearings

### Cylindrical Roller Bearings

- Single Row Cylindrical Roller Bearings
- Double Row Cylindrical Roller Bearings
- Full Complement Type Cylindrical Roller Bearings
  - Full Complement Type Single Row Cylindrical Roller Bearings
  - Full Complement Type Double Row Cylindrical Roller Bearings

### Tapered Roller Bearings

- Single Row Tapered Roller Bearings
- Double Row Tapered Roller Bearings

### Needle Roller Bearings

- Needle Rollers & Cage Assemblies
- Drawn Cup Needle Roller Bearings
- Solid Needle Roller Bearings
- Cam Rollers
- Cam Followers

### High Precision Bearings

- High Precision Angular Contact Ball Bearings
- Single Row High Precision Cylindrical Roller Bearings
- Double Row High Precision Cylindrical Roller Bearings

### Bearing Units

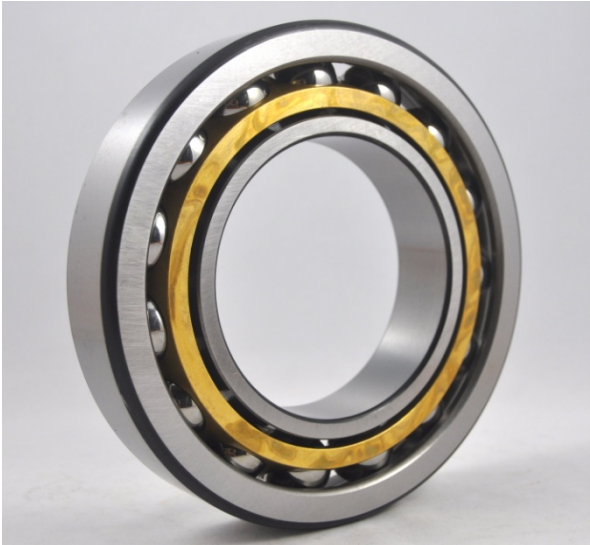
- Pillow Type Units
  - UCP Series
  - UKT Series
- Square Four Bolt Flange Type Units
  - UCF Series
  - UKF Series
- Oval Flange Type Units
  - UCFL Series
  - UKFL Series
- Round Flange Cartridge Type Units
  - UCFC Series
  - UKFC Series
- Take Up Type Units
  - UCT Series
  - UKT Series
- Ball Bearing Inserts
  - UC, SB, SU Series
  - NA Series
  - ER, RB Series



PRODUCTS GALLERY



DEEP GROOVE BALL BEARINGS



ANGULAR CONTACT BALL BEARINGS



SELF-ALIGNING BALL BEARINGS



SPHERICAL ROLLER BEARINGS



THRUST BALL BEARINGS



THRUST SPHERICAL ROLLER BEARINGS



CYLINDRICAL ROLLER BEARINGS



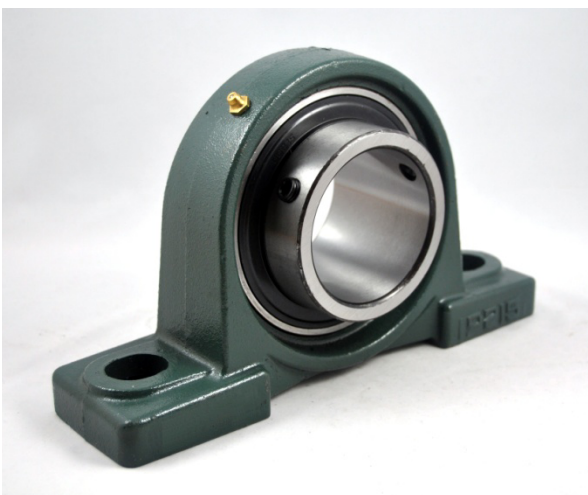
TAPERED ROLLER BEARINGS



NEEDLE ROLLER BEARINGS



HIGH PRECISION BEARINGS



BEARING UNITS

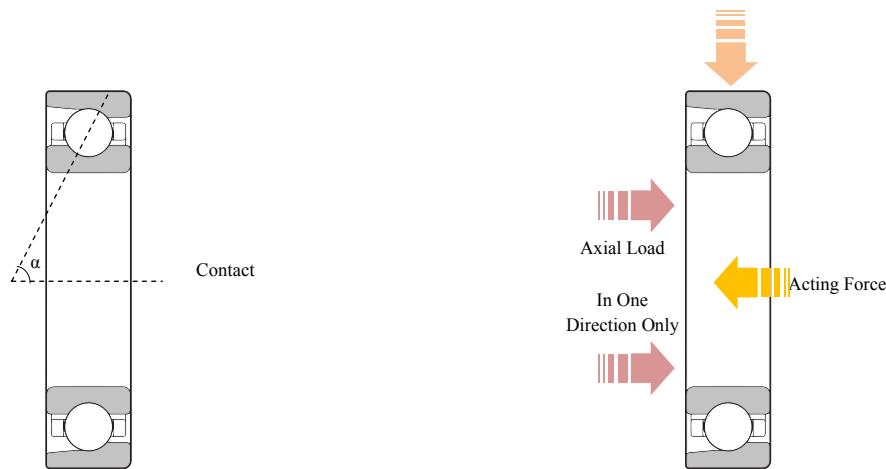
# BEARING TABLES

## HIGH PRECISION BEARINGS

High precision bearings are sometimes called super precision bearings. They are specifically designed for rigid, high speed, and high precision machine tools spindles, where high speed and high accuracy are critically necessary.

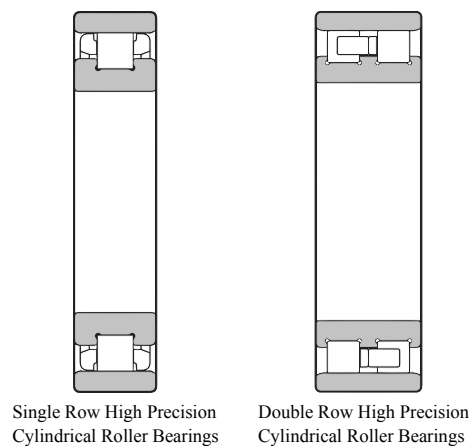
### High Precision Angular Contact Ball Bearings

Precision angular contact ball bearings are specially designed for high precision machines. They are available in large numbers of sizes of bores, which are almost virtually made available to every machine tools application where the bearings can be used. It has similar characteristics like a conventional angular contact ball bearings, the inner rings and outer rings are offset in certain angle to the bearing axis, where the loads will be transmitted across this angle through the balls. The design provides a capability to carry axial loads in one direction, in addition to radial loads. An axial force acting in one direction will be produced under a radial load, and that axial force need to be counteracted, thus angular contact ball bearings are often used in a pair or set.



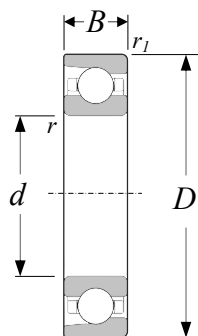
### High Precision Cylindrical Roller Bearings

High precision cylindrical roller bearings have similar characteristics and features of its' conventional type. Their cross section is relatively low, high radial load carrying capacity, as well as high speed applications. They are designed specifically to provide high degree of stiffness, and carry heavy radial loads in high speed spindle applications, where running accuracy of spindle bearing is necessary. High precision cylindrical roller bearings are also available as single row and double row types.



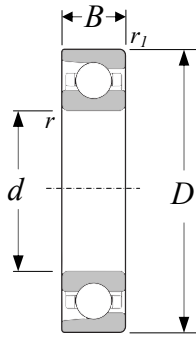
**HIGH PRECISION BEARINGS**  
Angular Contact Ball Bearings

Table 123  
Bore Diameter 8mm – 15mm



Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	Dynamic C	Static C <sub>0</sub>	Grease	Oil-Air		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
8	22	7	2.91	1.12	70000	110000	0.01	708 A5P4	708 ACD/HCP4A	708 E.P4S	708 A5P4
8	22	7	2.91	1.12	67000	100000	0.011	708 A5P4	708 ACD/P4A	708 E.P4S	708 A5P4
8	22	7	2.96	1.16	75000	120000	0.01	708 CP4	708 CD/HCP4A	708 C.P4S	708 CP4
8	22	7	2.96	1.16	70000	110000	0.011	708 CP4	708 CD/P4A	708 C.P4S	708 CP4
9	24	7	3.12	1.29	70000	110000	0.012	709 A5P4	709 ACD/HCP4A	709 E.P4S	709 A5P4
9	24	7	3.12	1.29	63000	95000	0.014	709 A5P4	709 ACD/P4A	709 E.P4S	709 A5P4
9	24	7	3.25	1.34	75000	120000	0.012	709 CP4	709 CD/HCP4A	709 C.P4S	709 CP4
9	24	7	3.25	1.34	70000	110000	0.014	709 CP4	709 CD/P4A	709 C.P4S	709 CP4
10	19	5	1.78	0.93	85000	130000	0.005	71800 A5P4	71800 ACD/HCP4A	71800 E.P4S	71800 A5P4
10	19	5	1.78	0.93	70000	110000	0.005	71800 A5P4	71800 ACD/P4A	71800 E.P4S	71800 A5P4
10	19	5	1.9	0.98	95000	150000	0.005	71800 CP4	71800 CD/HCP4A	71800 C.P4S	71800 CP4
10	19	5	1.9	0.98	80000	120000	0.005	71800 CP4	71800 CD/P4A	71800 C.P4S	71800 CP4
10	22	6	2.42	1.06	70000	110000	0.008	71900 A5P4	71900 ACD/HCP4A	71900 E.P4S	71900 A5P4
10	22	6	2.42	1.06	63000	95000	0.009	71900 A5P4	71900 ACD/P4A	71900 E.P4S	71900 A5P4
10	22	6	2.51	1.1	80000	120000	0.008	71900 CP4	71900 CD/HCP4A	71900 C.P4S	71900 CP4
10	22	6	2.51	1.1	70000	110000	0.009	71900 CP4	71900 CD/P4A	71900 C.P4S	71900 CP4
10	26	8	3.97	1.6	67000	100000	0.016	7000 A5P4	7000 ACD/HCP4A	7000 E.P4S	7000 A5P4
10	26	8	3.97	1.6	56000	85000	0.018	7000 A5P4	7000 ACD/P4A	7000 E.P4S	7000 A5P4
10	26	8	4.1	1.66	70000	110000	0.016	7000 CP4	7000 CD/HCP4A	7000 C.P4S	7000 CP4
10	26	8	4.1	1.66	67000	100000	0.018	7000 CP4	7000 CD/P4A	7000 C.P4S	7000 CP4
10	30	9	5.2	2.45	63000	95000	0.025	7200 A5P4	7200 ACD/HCP4A	7200 E.P4S	7200 A5P4
10	30	9	5.2	2.45	53000	80000	0.029	7200 A5P4	7200 ACD/P4A	7200 E.P4S	7200 A5P4
10	30	9	5.4	2.6	70000	100000	0.025	7200 CP4	7200 CD/HCP4A	7200 C.P4S	7200 CP4
10	30	9	5.4	2.6	60000	90000	0.029	7200 CP4	7200 CD/P4A	7200 C.P4S	7200 CP4
12	21	5	1.95	1.12	75000	110000	0.006	71801 A5P4	71801 ACD/HCP4A	71801 E.P4S	71801 A5P4
12	21	5	1.95	1.12	63000	95000	0.006	71801 A5P4	71801 ACD/P4A	71801 E.P4S	71801 A5P4
12	21	5	2.08	1.18	85000	130000	0.006	71801 CP4	71801 CD/HCP4A	71801 C.P4S	71801 CP4
12	21	5	2.08	1.18	70000	110000	0.006	71801 CP4	71801 CD/P4A	71801 C.P4S	71801 CP4
12	24	6	2.55	1.18	67000	100000	0.009	71901 A5P4	71901 ACD/HCP4A	71901 E.P4S	71901 A5P4
12	24	6	2.55	1.18	56000	85000	0.01	71901 A5P4	71901 ACD/P4A	71901 E.P4S	71901 A5P4
12	24	6	2.65	1.25	75000	110000	0.009	71901 CP4	71901 CD/HCP4A	71901 C.P4S	71901 CP4
12	24	6	2.65	1.25	63000	95000	0.01	71901 CP4	71901 CD/P4A	71901 C.P4S	71901 CP4
12	28	8	4.36	1.83	63000	95000	0.017	7001 A5P4	7001 ACD/HCP4A	7001 E.P4S	7001 A5P4
12	28	8	4.36	1.83	53000	80000	0.02	7001 A5P4	7001 ACD/P4A	7001 E.P4S	7001 A5P4
12	28	8	4.49	1.9	67000	100000	0.017	7001 CP4	7001 CD/HCP4A	7001 C.P4S	7001 CP4
12	28	8	4.49	1.9	60000	90000	0.02	7001 CP4	7001 CD/P4A	7001 C.P4S	7001 CP4
12	32	10	5.72	2.75	56000	85000	0.032	7201 A5P4	7201 ACD/HCP4A	7201 E.P4S	7201 A5P4
12	32	10	5.72	2.75	48000	70000	0.036	7201 A5P4	7201 ACD/P4A	7201 E.P4S	7201 A5P4
12	32	10	5.85	2.9	67000	95000	0.032	7201 CP4	7201 CD/HCP4A	7201 C.P4S	7201 CP4
12	32	10	5.85	2.9	53000	80000	0.036	7201 CP4	7201 CD/P4A	7201 C.P4S	7201 CP4
15	24	5	2.16	1.4	63000	100000	0.006	71802 A5P4	71802 ACD/HCP4A	71802 E.P4S	71802 A5P4
15	24	5	2.16	1.4	53000	80000	0.007	71802 A5P4	71802 ACD/P4A	71802 E.P4S	71802 A5P4
15	24	5	2.29	1.5	70000	110000	0.006	71802 CP4	71802 CD/HCP4A	71802 C.P4S	71802 CP4
15	24	5	2.29	1.5	60000	90000	0.007	71802 CP4	71802 CD/P4A	71802 C.P4S	71802 CP4
15	28	7	3.77	1.8	60000	90000	0.013	71902 A5P4	71902 ACD/HCP4A	71902 E.P4S	71902 A5P4
15	28	7	3.77	1.8	50000	75000	0.015	71902 A5P4	71902 ACD/P4A	71902 E.P4S	71902 A5P4
15	28	7	3.97	1.9	70000	100000	0.013	71902 CP4	71902 CD/HCP4A	71902 C.P4S	71902 CP4
15	28	7	3.97	1.9	56000	85000	0.015	71902 CP4	71902 CD/P4A	71902 C.P4S	71902 CP4
15	32	9	4.94	2.32	53000	80000	0.025	7002 A5P4	7002 ACD/HCP4A	7002 E.P4S	7002 A5P4
15	32	9	4.94	2.32	45000	67000	0.028	7002 A5P4	7002 ACD/P4A	7002 E.P4S	7002 A5P4





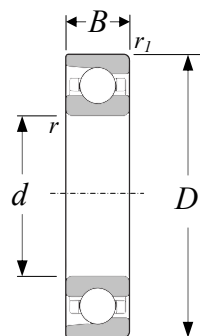
**HIGH PRECISION BEARINGS**  
Angular Contact Ball Bearings

Table 124  
Bore Diameter 15mm – 25mm

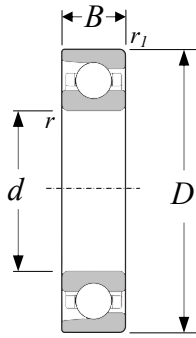
Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations				
d	D	B	Dynamic	Static	Grease	Oil-Air		Local		SKF	FAG	NSK
mm			C	C <sub>0</sub>	r/min		kg					
15	32	9	5.2	2.45	60000	90000	0.025	7002 CP4	7002 CD/HCP4A	7002 C.P4S	7002 CP4	
15	32	9	5.2	2.45	50000	75000	0.028	7002 CP4	7002 CD/P4A	7002 C.P4S	7002 CP4	
15	35	11	7.28	3.6	50000	75000	0.037	7202 A5P4	7202 ACD/HCP4A	7202 E.P4S	7202 A5P4	
15	35	11	7.28	3.6	43000	63000	0.043	7202 A5P4	7202 ACD/P4A	7202 E.P4S	7202 A5P4	
15	35	11	7.41	3.8	60000	85000	0.037	7202 CP4	7202 CD/HCP4A	7202 C.P4S	7202 CP4	
15	35	11	7.41	3.8	48000	70000	0.043	7202 CP4	7202 CD/P4A	7202 C.P4S	7202 CP4	
17	26	5	2.21	1.53	60000	90000	0.009	71803 A5P4	71803 ACD/HCP4	71803 E.P4S	71803 A5P4	
17	26	5	2.21	1.53	48000	75000	0.01	71803 A5P4	71803 ACD/P4	71803 E.P4S	71803 A5P4	
17	26	5	2.34	1.6	63000	100000	0.009	71803 CP4	71803 CD/HCP4A	71803 C.P4S	71803 CP4	
17	26	5	2.34	1.6	53000	85000	0.01	71803 CP4	71803 CD/P4A	71803 C.P4S	71803 CP4	
17	30	7	3.97	2	53000	80000	0.015	71903 A5P4	71903 ACD/HCP4A	71903 E.P4S	71903 A5P4	
17	30	7	3.97	2	45000	67000	0.017	71903 A5P4	71903 ACD/P4A	71903 E.P4S	71903 A5P4	
17	30	7	4.16	2.08	63000	90000	0.017	71903 CP4	71903 CD/HCP4A	71903 C.P4S	71903 CP4	
17	30	7	4.16	2.08	50000	75000	0.017	71903 CP4	71903 CD/P4A	71903 C.P4S	71903 CP4	
17	35	10	6.5	3.1	50000	75000	0.032	7003 A5P4	7003 ACD/HCP4A	7003 E.P4S	7003 A5P4	
17	35	10	6.5	3.1	40000	60000	0.037	7003 A5P4	7003 ACD/P4A	7003 E.P4S	7003 A5P4	
17	35	10	6.76	3.25	53000	80000	0.032	7003 CP4	7003 CD/HCP4A	7003 C.P4S	7003 CP4	
17	35	10	6.76	3.25	48000	70000	0.037	7003 CP4	7003 CD/P4A	7003 C.P4S	7003 CP4	
17	40	12	8.84	4.55	45000	67000	0.054	7203 A5P4	7203 ACD/HCP4A	7203 E.P4S	7203 A5P4	
17	40	12	8.84	4.55	38000	56000	0.062	7203 A5P4	7203 ACD/P4A	7203 E.P4S	7203 A5P4	
17	40	12	9.23	4.8	53000	75000	0.054	7203 CP4	7203 CD/HCP4A	7203 C.P4S	7203 CP4	
17	40	12	9.23	4.8	43000	63000	0.062	7203 CP4	7203 CD/P4A	7203 C.P4S	7203 CP4	
20	32	7	3.64	2.5	48000	75000	0.017	71804 A5P4	71804 ACD/HCP4	71804 E.P4S	71804 A5P4	
20	32	7	3.64	2.5	40000	63000	0.018	71804 A5P4	71804 ACD/P4	71804 E.P4S	71804 A5P4	
20	32	7	3.9	2.65	53000	80000	0.017	71804 CP4	71804 CD/HCP4A	71804 C.P4S	71804 CP4	
20	32	7	3.9	2.65	45000	70000	0.018	71804 CP4	71804 CD/P4A	71804 C.P4S	71804 CP4	
20	37	9	5.72	3.05	45000	67000	0.031	71904 A5P4	71904 ACD/HCP4A	71904 E.P4S	71904 A5P4	
20	37	9	5.72	3.05	38000	56000	0.035	71904 A5P4	71904 ACD/P4A	71904 E.P4S	71904 A5P4	
20	37	9	4.42	2.04	56000	85000	0.032	71904 A5P4	71904 ACE/HCP4A	71904 E.P4S	71904 A5P4	
20	37	9	4.42	2.04	48000	75000	0.035	71904 A5P4	71904 ACE/P4A	71904 E.P4S	71904 A5P4	
20	37	9	6.05	3.2	53000	75000	0.031	71904 CP4	71904 CD/HCP4A	71904 C.P4S	71904 CP4	
20	37	9	6.05	3.2	43000	63000	0.035	71904 CP4	71904 CD/P4A	71904 C.P4S	71904 CP4	
20	37	9	4.68	2.12	63000	95000	0.032	71904 CP4	71904 CE/HCP4A	71904 C.P4S	71904 CP4	
20	37	9	4.68	2.12	56000	85000	0.035	71904 CP4	71904 CE/P4A	71904 C.P4S	71904 CP4	
20	42	12	8.32	4.15	40000	60000	0.058	7004 A5P4	7004 ACD/HCP4A	7004 E.P4S	7004 A5P4	
20	42	12	8.32	4.15	34000	50000	0.065	7004 A5P4	7004 ACD/P4A	7004 E.P4S	7004 A5P4	
20	42	12	6.76	2.9	50000	80000	0.056	7004 A5P4	7004 ACE/HCP4A	7004 E.P4S	7004 A5P4	
20	42	12	6.76	2.9	45000	70000	0.063	7004 A5P4	7004 ACE/P4A	7004 E.P4S	7004 A5P4	
20	42	12	8.71	4.3	45000	67000	0.058	7004 CP4	7004 CD/HCP4A	7004 C.P4S	7004 CP4	
20	42	12	8.71	4.3	38000	56000	0.065	7004 CP4	7004 CD/P4A	7004 C.P4S	7004 CP4	
20	42	12	7.02	3.05	56000	90000	0.056	7004 CP4	7004 CE/HCP4A	7004 C.P4S	7004 CP4	
20	42	12	7.02	3.05	50000	80000	0.063	7004 CP4	7004 CE/P4A	7004 C.P4S	7004 CP4	
20	47	14	11.4	5.6	38000	56000	0.089	7204 A5P4	7204 ACD/HCP4A	7204 E.P4S	7204 A5P4	
20	47	14	11.4	5.6	32000	48000	0.1	7204 A5P4	7204 ACD/P4A	7204 E.P4S	7204 A5P4	
20	47	14	11.9	5.85	43000	60000	0.089	7204 CP4	7204 CD/HCP4A	7204 C.P4S	7204 CP4	
20	47	14	11.9	5.85	36000	53000	0.1	7204 CP4	7204 CD/P4A	7204 C.P4S	7204 CP4	
25	37	7	3.9	3.05	40000	63000	0.019	71805 A5P4	71805 ACD/HCP4	71805 E.P4S	71805 A5P4	
25	37	7	3.9	3.05	34000	53000	0.021	71805 A5P4	71805 ACD/P4	71805 E.P4S	71805 A5P4	
25	37	7	4.16	3.2	45000	70000	0.019	71805 CP4	71805 CD/HCP4A	71805 C.P4S	71805 CP4	
25	37	7	4.16	3.2	38000	56000	0.021	71805 CP4	71805 CD/P4A	71805 C.P4S	71805 CP4	

**HIGH PRECISION BEARINGS**  
Angular Contact Ball Bearings

Table 125  
Bore Diameter 25mm – 35mm



Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	Dynamic C	Static C <sub>0</sub>	Grease	Oil-Air		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
25	42	9	6.37	3.8	38000	56000	0.037	71905 A5P4	71905 ACD/HCP4A	71905 E.P4S	71905 A5P4
25	42	9	6.37	3.8	32000	48000	0.042	71905 A5P4	71905 ACD/P4A	71905 E.P4S	71905 A5P4
25	42	9	4.94	2.55	48000	75000	0.038	71905 A5P4	71905 ACE/HCP4A	71905 E.P4S	71905 A5P4
25	42	9	4.94	2.55	40000	67000	0.042	71905 A5P4	71905 ACE/P4A	71905 E.P4S	71905 A5P4
25	42	9	6.76	4	45000	63000	0.037	71905 CP4	71905 CD/HCP4A	71905 C.P4S	71905 CP4
25	42	9	6.76	4	36000	53000	0.042	71905 CP4	71905 CD/P4A	71905 C.P4S	71905 CP4
25	42	9	5.27	2.7	53000	85000	0.038	71905 CP4	71905 CE/HCP4A	71905 C.P4S	71905 CP4
25	42	9	5.27	2.7	48000	70000	0.042	71905 CP4	71905 CE/P4A	71905 C.P4S	71905 CP4
25	47	12	9.23	5	36000	53000	0.066	7005 A5P4	7005 ACD/HCP4A	7005 E.P4S	7005 A5P4
25	47	12	9.23	5	28000	43000	0.075	7005 A5P4	7005 ACD/P4A	7005 E.P4S	7005 A5P4
25	47	12	7.41	3.55	43000	67000	0.064	7005 A5P4	7005 ACE/HCP4A	7005 E.P4S	7005 A5P4
25	47	12	7.41	3.55	38000	60000	0.073	7005 A5P4	7005 ACE/P4A	7005 E.P4S	7005 A5P4
25	47	12	9.56	5.2	38000	56000	0.066	7005 CP4	7005 CD/HCP4A	7005 C.P4S	7005 CP4
25	47	12	9.56	5.6	34000	50000	0.075	7005 CP4	7005 CD/P4A	7005 C.P4S	7005 CP4
25	47	12	7.8	3.75	50000	75000	0.064	7005 CP4	7005 CE/HCP4A	7005 C.P4S	7005 CP4
25	47	12	7.8	3.75	43000	67000	0.073	7005 CP4	7005 CE/P4A	7005 C.P4S	7005 CP4
25	52	15	13	6.95	32000	48000	0.12	7205 A5P4	7205 ACD/HCP4A	7205 E.P4S	7205 A5P4
25	52	15	13	6.95	26000	40000	0.14	7205 A5P4	7205 ACD/P4A	7205 E.P4S	7205 A5P4
25	52	15	13.5	7.2	38000	53000	0.12	7205 CP4	7205 CD/HCP4A	7205 C.P4S	7205 CP4
25	52	15	13.5	7.2	30000	45000	0.14	7205 CP4	7205 CD/P4A	7205 C.P4S	7205 CP4
30	42	7	4.16	3.55	34000	53000	0.024	71806 A5P4	71806 ACD/HCP4A	71806 E.P4S	71806 A5P4
30	42	7	4.16	3.55	28000	45000	0.026	71806 A5P4	71806 ACD/P4A	71806 E.P4S	71806 A5P4
30	42	7	4.42	3.75	38000	60000	0.024	71806 CP4	71806 CD/HCP4A	71806 C.P4S	71806 CP4
30	42	7	4.42	3.75	32000	50000	0.026	71806 CP4	71806 CD/P4A	71806 C.P4S	71806 CP4
30	47	9	6.76	4.3	32000	48000	0.043	71906 A5P4	71906 ACD/HCP4A	71906 E.P4S	71906 A5P4
30	47	9	6.76	4.3	26000	40000	0.048	71906 A5P4	71906 ACD/P4A	71906 E.P4S	71906 A5P4
30	47	9	5.27	2.9	40000	63000	0.043	71906 A5P4	71906 ACE/HCP4A	71906 E.P4S	71906 A5P4
30	47	9	5.27	2.9	36000	56000	0.048	71906 A5P4	71906 ACE/P4A	71906 E.P4S	71906 A5P4
30	47	9	7.15	4.55	38000	53000	0.043	71906 CP4	71906 CD/HCP4A	71906 C.P4S	71906 CP4
30	47	9	7.15	4.55	30000	45000	0.048	71906 CP4	71906 CD/P4A	71906 C.P4S	71906 CP4
30	47	9	5.59	3.1	45000	70000	0.043	71906 CP4	71906 CE/HCP4A	71906 C.P4S	71906 CP4
30	47	9	5.59	3.1	40000	63000	0.048	71906 CP4	71906 CE/P4A	71906 C.P4S	71906 CP4
30	47	9	6.24	5.2	32000	50000	0.045	71906 DB	71906 DB/P7	71906 DB/P7	71906 DB
30	47	9	6.5	5.4	36000	56000	0.045	71906 W	71906 FB/P7	71906 FB/P7	71906 W
30	55	13	13.8	7.65	30000	45000	0.094	7006 A5P4	7006 ACD/HCP4A	7006 E.P4S	7006 A5P4
30	55	13	13.8	7.65	24000	38000	0.11	7006 A5P4	7006 ACD/P4A	7006 E.P4S	7006 A5P4
30	55	13	9.56	4.9	38000	60000	0.095	7006 A5P4	7006 ACE/HCP4A	7006 E.P4S	7006 A5P4
30	55	13	9.56	4.9	32000	50000	0.11	7006 A5P4	7006 ACE/P4A	7006 E.P4S	7006 A5P4
30	55	13	14.3	8	32000	48000	0.094	7006 CP4	7006 CD/HCP4A	7006 C.P4S	7006 CP4
30	55	13	14.3	8	28000	43000	0.11	7006 CP4	7006 CD/P4A	7006 C.P4S	7006 CP4
30	55	13	10.1	5.1	43000	67000	0.095	7006 CP4	7006 CE/HCP4A	7006 C.P4S	7006 CP4
30	55	13	10.1	5.1	38000	56000	0.11	7006 CP4	7006 CE/P4A	7006 C.P4S	7006 CP4
30	55	13	8.32	6.7	30000	45000	0.12	7006 DB	7006 DB/P7	7006 DB/P7	7006 DB
30	55	13	8.71	6.95	32000	50000	0.12	7006 W	7006 FB/P7	7006 FB/P7	7006 W
30	62	16	23.4	15.3	26000	40000	0.17	7206 A5P4	7206 ACD/HCP4A	7206 E.P4S	7206 A5P4
30	62	16	23.4	15.3	20000	34000	0.19	7206 A5P4	7206 ACD/P4A	7206 E.P4S	7206 A5P4
30	62	16	24.2	16	32000	45000	0.17	7206 CP4	7206 CD/HCP4A	7206 C.P4S	7206 CP4
30	62	16	24.2	16	24000	38000	0.19	7206 CP4	7206 CD/P4A	7206 C.P4S	7206 CP4
35	47	7	4.36	4.05	30000	48000	0.026	71807 A5P4	71807 ACD/HCP4A	71807 E.P4S	71807 A5P4
35	47	7	4.36	4.05	26000	40000	0.028	71807 A5P4	71807 ACD/P4A	71807 E.P4S	71807 A5P4



**HIGH PRECISION BEARINGS**  
Angular Contact Ball Bearings

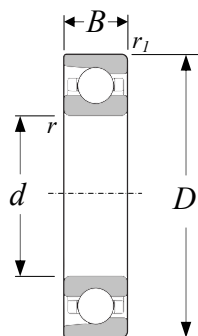
Table 126  
Bore Diameter 35mm – 40mm

Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	Dynamic	Static	Grease	Oil-Air		Local	SKF	FAG	NSK
mm			C	C <sub>0</sub>	r/min		kg				
35	47	7	4.62	4.3	34000	53000	0.026	71807 CP4	71807 CD/HCP4A	71807 C.P4S	71807 CP4
35	47	7	4.62	4.3	28000	43000	0.028	71807 CP4	71807 CD/P4A	71807 C.P4S	71807 CP4
35	55	10	9.23	6.2	28000	43000	0.065	71907 A5P4	71907 ACD/HCP4A	71907 E.P4S	71907 A5P4
35	55	10	9.23	6.2	22000	36000	0.074	71907 A5P4	71907 ACD/P4A	71907 E.P4S	71907 A5P4
35	55	10	7.15	4.15	36000	56000	0.066	71907 A5P4	71907 ACE/HCP4A	71907 E.P4S	71907 A5P4
35	55	10	7.15	4.15	30000	48000	0.075	71907 A5P4	71907 ACE/P4A	71907 E.P4S	71907 A5P4
35	55	10	9.75	6.55	32000	45000	0.065	71907 CP4	71907 CD/HCP4A	71907 C.P4S	71907 CP4
35	55	10	9.75	6.55	26000	40000	0.074	71907 CP4	71907 CD/P4A	71907 C.P4S	71907 CP4
35	55	10	7.61	4.4	40000	60000	0.066	71907 CP4	71907 CE/HCP4A	71907 C.P4S	71907 CP4
35	55	10	7.61	4.4	36000	53000	0.075	71907 CP4	71907 CE/P4A	71907 C.P4S	71907 CP4
35	55	10	6.5	6	28000	43000	0.075	71907 DB	71907 DB/P7	71907 DB/P7	71907 DB
35	55	10	6.89	6.3	30000	48000	0.075	71907 W	71907 FB/P7	71907 FB/P7	71907 W
35	62	14	14.8	9	24000	38000	0.13	7007 A5P4	7007 ACD/HCP4A	7007 E.P4S	7007 A5P4
35	62	14	14.8	9	19000	32000	0.15	7007 A5P4	7007 ACD/P4A	7007 E.P4S	7007 A5P4
35	62	14	10.4	5.7	32000	50000	0.13	7007 A5P4	7007 ACE/HCP4A	7007 E.P4S	7007 A5P4
35	62	14	10.4	5.7	28000	45000	0.15	7007 A5P4	7007 ACE/P4A	7007 E.P4S	7007 A5P4
35	62	14	15.6	9.5	28000	43000	0.13	7007 CP4	7007 CD/HCP4A	7007 C.P4S	7007 CP4
35	62	14	15.6	9.5	22000	36000	0.15	7007 CP4	7007 CD/P4A	7007 C.P4S	7007 CP4
35	62	14	10.8	6	36000	56000	0.13	7007 CP4	7007 CE/HCP4A	7007 C.P4S	7007 CP4
35	62	14	10.8	6	32000	50000	0.15	7007 CP4	7007 CE/P4A	7007 C.P4S	7007 CP4
35	62	14	8.84	7.8	26000	40000	0.17	7007 DB	7007 DB/P7	7007 DB/P7	7007 DB
35	62	14	9.23	8.15	28000	45000	0.17	7007 W	7007 FB/P7	7007 FB/P7	7007 W
35	72	17	30.7	20.8	20000	34000	0.24	7207 A5P4	7207 ACD/HCP4A	7207 E.P4S	7207 A5P4
35	72	17	30.7	2.08	18000	30000	0.28	7207 A5P4	7207 ACD/P4A	7207 E.P4S	7207 A5P4
35	72	17	31.9	21.6	26000	38000	0.24	7207 CP4	7207 CD/HCP4A	7207 C.P4S	7207 CP4
35	72	17	31.9	2.16	20000	34000	0.28	7207 CP4	7207 CD/P4A	7207 C.P4S	7207 CP4
40	52	7	4.49	4.55	28000	43000	0.029	71808 A5P4	71808 ACD/HCP4A	71808 E.P4S	71808 A5P4
40	52	7	4.49	4.55	22000	34000	0.031	71808 A5P4	71808 ACD/P4A	71808 E.P4S	71808 A5P4
40	52	7	4.88	4.9	30000	45000	0.029	71808 CP4	71808 CD/HCP4A	71808 C.P4S	71808 CP4
40	52	7	4.88	4.9	26000	38000	0.031	71808 CP4	71808 CD/P4A	71808 C.P4S	71808 CP4
40	62	12	11.7	8	22000	36000	0.096	71908 A5P4	71908 ACD/HCP4A	71908 E.P4S	71908 A5P4
40	62	12	11.7	8	18000	30000	0.11	71908 A5P4	71908 ACD/P4A	71908 E.P4S	71908 A5P4
40	62	12	9.23	5.4	30000	48000	0.097	71908 A5P4	71908 ACE/HCP4A	71908 E.P4S	71908 A5P4
40	62	12	9.23	5.4	28000	43000	0.109	71908 A5P4	71908 ACE/P4A	71908 E.P4S	71908 A5P4
40	62	12	12.4	8.5	28000	40000	0.096	71908 CP4	71908 CD/HCP4A	71908 C.P4S	71908 CP4
40	62	12	12.4	8.5	20000	34000	0.11	71908 CP4	71908 CD/P4A	71908 C.P4S	71908 CP4
40	62	12	9.56	5.7	34000	53000	0.097	71908 CP4	71908 CE/HCP4A	71908 C.P4S	71908 CP4
40	62	12	9.56	5.7	30000	48000	0.109	71908 CP4	71908 CE/P4A	71908 C.P4S	71908 CP4
40	62	12	6.89	6.8	24000	38000	0.12	71908 DB	71908 DB/P7	71908 DB/P7	71908 DB
40	62	12	7.15	7.2	28000	43000	0.12	71908 W	71908 FB/P7	71908 FB/P7	71908 W
40	68	15	15.9	10.4	20000	34000	0.16	7008 A5P4	7008 ACD/HCP4A	7008 E.P4S	7008 A5P4
40	68	15	15.9	10.4	18000	30000	0.19	7008 A5P4	7008 ACD/P4A	7008 E.P4S	7008 A5P4
40	68	15	11.1	6.55	30000	45000	0.17	7008 A5P4	7008 ACE/HCP4A	7008 E.P4S	7008 A5P4
40	68	15	11.1	6.55	26000	40000	0.18	7008 A5P4	7008 ACE/P4A	7008 E.P4S	7008 A5P4
40	68	15	16.8	11	24000	38000	0.16	7008 CP4	7008 CD/HCP4A	7008 C.P4S	7008 CP4
40	68	15	16.8	11	19000	32000	0.19	7008 CP4	7008 CD/P4A	7008 C.P4S	7008 CP4
40	68	15	11.7	6.8	32000	50000	0.17	7008 CP4	7008 CE/HCP4A	7008 C.P4S	7008 CP4
40	68	15	11.7	6.8	30000	45000	0.18	7008 CP4	7008 CE/P4A	7008 C.P4S	7008 CP4
40	68	15	9.36	9	22000	36000	0.21	7008 DB	7008 DB/P7	7008 DB/P7	7008 DB
40	68	15	9.75	9.5	26000	40000	0.21	7008 W	7008 FB/P7	7008 FB/P7	7008 W

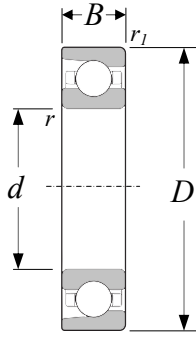


**HIGH PRECISION BEARINGS**  
Angular Contact Ball Bearings

Table 127  
Bore Diameter 40mm – 50mm



Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	Dynamic C	Static C <sub>0</sub>	Grease	Oil-Air		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
40	80	18	39	27	19000	32000	0.3	7208 A5P4	7208 ACD/HCP4A	7208 E.P4S	7208 A5P4
40	80	18	39	27	16000	26000	0.36	7208 A5P4	7208 ACD/P4A	7208 E.P4S	7208 A5P4
40	80	18	41	28	22000	34000	0.3	7208 CP4	7208 CD/HCP4A	7208 C.P4S	7208 CP4
40	80	18	41	28	18000	30000	0.36	7208 CP4	7208 CD/P4A	7208 C.P4S	7208 CP4
45	58	7	4.62	5	24000	38000	0.037	71809 A5P4	71809 ACD/HCP4	71809 E.P4S	71809 A5P4
45	58	7	4.62	5	20000	30000	0.039	71809 A5P4	71809 ACD/P4	71809 E.P4S	71809 A5P4
45	58	7	4.88	5.3	26000	40000	0.037	71809 CP4	71809 CD/HCP4A	71809 C.P4S	71809 CP4
45	58	7	4.88	5.3	22000	34000	0.039	71809 CP4	71809 CD/P4A	71809 C.P4S	71809 CP4
45	68	12	12.4	9	20000	34000	0.11	71909 A5P4	71909 ACD/HCP4A	71909 E.P4S	71909 A5P4
45	68	12	12.4	9	17000	28000	0.13	71909 A5P4	71909 ACD/P4A	71909 E.P4S	71909 A5P4
45	68	12	9.56	6.1	28000	43000	0.12	71909 A5P4	71909 ACE/HCP4A	71909 E.P4S	71909 A5P4
45	68	12	9.56	6.1	24000	38000	0.13	71909 A5P4	71909 ACE/P4A	71909 E.P4S	71909 A5P4
45	68	12	13	9.5	24000	36000	0.11	71909 CP4	71909 CD/HCP4A	71909 C.P4S	71909 CP4
45	68	12	13	9.5	19000	32000	0.13	71909 CP4	71909 CD/P4A	71909 C.P4S	71909 CP4
45	68	12	10.1	6.4	32000	48000	0.12	71909 CP4	71909 CE/HCP4A	71909 C.P4S	71909 CP4
45	68	12	10.1	6.4	28000	43000	0.13	71909 CP4	71909 CE/P4A	71909 C.P4S	71909 CP4
45	68	12	9.56	6.1	22000	34000	0.13	71909 DB	71909 DB/P7	71909 DB/P7	71909 DB
45	68	12	9.95	9.8	24000	38000	0.13	71909 W	71909 FB/P7	71909 FB/P7	71909 W
45	75	16	27.6	21.6	19000	32000	0.2	7009 A5P4	7009 ACD/HCP4A	7009 E.P4S	7009 A5P4
45	75	16	27.6	21.6	16000	26000	0.23	7009 A5P4	7009 ACD/P4A	7009 E.P4S	7009 A5P4
45	75	16	13.3	8	26000	40000	0.21	7009 A5P4	7009 ACE/HCP4A	7009 E.P4S	7009 A5P4
45	75	16	13.3	8	24000	36000	0.23	7009 A5P4	7009 ACE/P4A	7009 E.P4S	7009 A5P4
45	75	16	28.6	22.4	20000	34000	0.2	7009 CP4	7009 CD/HCP4A	7009 C.P4S	7009 CP4
45	75	16	28.6	22.4	18000	30000	0.23	7009 CP4	7009 CD/P4A	7009 C.P4S	7009 CP4
45	75	16	14	8.5	30000	45000	0.21	7009 CP4	7009 CE/HCP4A	7009 C.P4S	7009 CP4
45	75	16	14	8.5	26000	40000	0.23	7009 CP4	7009 CE/P4A	7009 C.P4S	7009 CP4
45	75	16	12.1	11.8	20000	32000	0.26	7009 DB	7009 DB/P7	7009 DB/P7	7009 DB
45	75	16	12.7	12.2	22000	36000	0.26	7009 W	7009 FB/P7	7009 FB/P7	7009 W
45	85	19	41	30	17000	28000	0.34	7209 A5P4	7209 ACD/HCP4A	7209 E.P4S	7209 A5P4
45	85	19	41	30	15000	24000	0.41	7209 A5P4	7209 ACD/P4A	7209 E.P4S	7209 A5P4
45	85	19	42.3	31	20000	32000	0.34	7209 CP4	7209 CD/HCP4A	7209 C.P4S	7209 CP4
45	85	19	42.3	31	17000	28000	0.41	7209 CP4	7209 CD/P4A	7209 C.P4S	7209 CP4
50	65	7	6.89	7.35	22000	34000	0.046	71810 A5P4	71810 ACD/HCP4	71810 E.P4S	71810 A5P4
50	65	7	6.89	7.35	18000	28000	0.051	71810 A5P4	71810 ACD/P4	71810 E.P4S	71810 A5P4
50	65	7	7.41	7.8	24000	36000	0.046	71810 CP4	71810 CD/HCP4A	71810 C.P4S	71810 CP4
50	65	7	7.41	7.8	20000	30000	0.051	71810 CP4	71810 CD/P4A	71810 C.P4S	71810 CP4
50	72	12	12.7	9.8	19000	30000	0.11	71910 A5P4	71910 ACD/HCP4A	71910 E.P4S	71910 A5P4
50	72	12	12.7	9.8	16000	26000	0.13	71910 A5P4	71910 ACD/P4A	71910 E.P4S	71910 A5P4
50	72	12	9.95	6.7	26000	40000	0.13	71910 A5P4	71910 ACE/HCP4A	71910 E.P4S	71910 A5P4
50	72	12	9.95	6.7	22000	36000	0.13	71910 A5P4	71910 ACE/P4A	71910 E.P4S	71910 A5P4
50	72	12	13.5	10.4	22000	34000	0.11	71910 CP4	71910 CD/HCP4A	71910 C.P4S	71910 CP4
50	72	12	13.5	10.4	17000	28000	0.13	71910 CP4	71910 CD/P4A	71910 C.P4S	71910 CP4
50	72	12	10.6	7.1	28000	45000	0.13	71910 CP4	71910 CE/HCP4A	71910 C.P4S	71910 CP4
50	72	12	10.6	7.1	26000	40000	0.13	71910 CP4	71910 CE/P4A	71910 C.P4S	71910 CP4
50	72	12	9.75	10.2	20000	32000	0.14	71910 DB	71910 DB/P7	71910 DB/P7	71910 DB
50	72	12	10.1	10.6	22000	36000	0.14	71910 W	71910 FB/P7	71910 FB/P7	71910 W
50	80	16	28.1	23.2	17000	28000	0.21	7010 A5P4	7010 ACD/HCP4A	7010 E.P4S	7010 A5P4
50	80	16	28.1	23.2	15000	24000	0.25	7010 A5P4	7010 ACD/P4A	7010 E.P4S	7010 A5P4
50	80	16	14	9	24000	38000	0.23	7010 A5P4	7010 ACE/HCP4A	7010 E.P4S	7010 A5P4
50	80	16	14	9	22000	34000	0.25	7010 A5P4	7010 ACE/P4A	7010 E.P4S	7010 A5P4



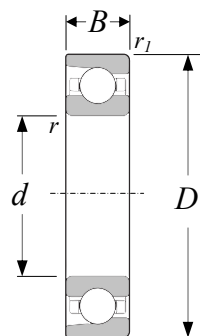
**HIGH PRECISION BEARINGS**  
Angular Contact Ball Bearings

Table 128  
Bore Diameter 50mm – 60mm

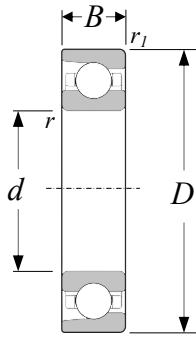
Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	Dynamic	Static	Grease	Oil-Air		Local	SKF	FAG	NSK
mm			C	C <sub>0</sub>	r/min						
50	80	16	29.6	24	19000	32000	0.21	7010 CP4	7010 CD/HCP4A	7010 C.P4S	7010 CP4
50	80	16	29.6	24	17000	28000	0.25	7010 CP4	7010 CD/P4A	7010 C.P4S	7010 CP4
50	80	16	14.8	9.5	28000	43000	0.23	7010 CP4	7010 CE/HCP4A	7010 C.P4S	7010 CP4
50	80	16	14.8	9.5	24000	36000	0.25	7010 CP4	7010 CE/P4A	7010 C.P4S	7010 CP4
50	80	16	12.5	12.9	19000	30000	0.28	7010 DB	7010 DB/P7	7010 DB/P7	7010 DB
50	80	16	13.3	13.4	22000	34000	0.28	7010 W	7010 FB/P7	7010 FB/P7	7010 W
50	90	20	42.3	32.5	16000	26000	0.38	7210 A5P4	7210 ACD/HCP4A	7210 E.P4S	7210 A5P4
50	90	20	42.3	32.5	14000	22000	0.46	7210 A5P4	7210 ACD/P4A	7210 E.P4S	7210 A5P4
50	90	20	44.9	34	19000	30000	0.38	7210 CP4	7210 CD/HCP4A	7210 C.P4S	7210 CP4
50	90	20	44.9	34	16000	26000	0.46	7210 CP4	7210 CD/P4A	7210 C.P4S	7210 CP4
55	72	9	9.56	10.2	19000	30000	0.073	71811 A5P4	71811 ACD/HCP4	71811 E.P4S	71811 A5P4
55	72	9	9.56	10.2	16000	24000	0.081	71811 A5P4	71811 ACD/P4	71811 E.P4S	71811 A5P4
55	72	9	10.1	10.8	22000	32000	0.073	71811 CP4	71811 CD/HCP4A	71811 C.P4S	71811 CP4
55	72	9	10.1	10.8	18000	28000	0.081	71811 CP4	71811 CD/P4A	71811 C.P4S	71811 CP4
55	80	13	18.2	13.7	17000	28000	0.15	71911 A5P4	71911 ACD/HCP4A	71911 E.P4S	71911 A5P4
55	80	13	18.2	13.7	15000	24000	0.18	71911 A5P4	71911 ACD/P4A	71911 E.P4S	71911 A5P4
55	80	13	14.6	9.5	24000	36000	0.15	71911 A5P4	71911 ACE/HCP4A	71911 E.P4S	71911 A5P4
55	80	13	14.6	9.5	20000	32000	0.18	71911 A5P4	71911 ACE/P4A	71911 E.P4S	71911 A5P4
55	80	13	19.5	14.6	19000	30000	0.15	71911 CP4	71911 CD/HCP4A	71911 C.P4S	71911 CP4
55	80	13	19.5	14.6	16000	26000	0.18	71911 CP4	71911 CD/P4A	71911 C.P4S	71911 CP4
55	80	13	15.3	10	26000	40000	0.15	71911 CP4	71911 CE/HCP4A	71911 C.P4S	71911 CP4
55	80	13	15.3	10	24000	36000	0.18	71911 CP4	71911 CE/P4A	71911 C.P4S	71911 CP4
55	80	13	12.7	13.4	18000	30000	0.18	71911 DB	71911 DB/P7	71911 DB/P7	71911 DB
55	80	13	13.3	14	20000	32000	0.18	71911 W	71911 FB/P7	71911 FB/P7	71911 W
55	90	18	37.1	31	16000	26000	0.31	7011 A5P4	7011 ACD/HCP4A	7011 E.P4S	7011 A5P4
55	90	18	37.1	31	14000	22000	0.37	7011 A5P4	7011 ACD/P4A	7011 E.P4S	7011 A5P4
55	90	18	14.8	10	22000	34000	0.36	7011 A5P4	7011 ACE/HCP4A	7011 E.P4S	7011 A5P4
55	90	18	14.8	10	19000	30000	0.39	7011 A5P4	7011 ACE/P4A	7011 E.P4S	7011 A5P4
55	90	18	39.7	32.5	17000	28000	0.31	7011 CP4	7011 CD/HCP4A	7011 C.P4S	7011 CP4
55	90	18	39.7	32.5	15000	24000	0.37	7011 CP4	7011 CD/P4A	7011 C.P4S	7011 CP4
55	90	18	15.6	10.6	24000	38000	0.36	7011 CP4	7011 CE/HCP4A	7011 C.P4S	7011 CP4
55	90	18	15.6	10.6	22000	34000	0.39	7011 CP4	7011 CE/P4A	7011 C.P4S	7011 CP4
55	90	18	17.8	18	17000	28000	0.4	7011 DB	7011 DB/P7	7011 DB/P7	7011 DB
55	90	18	18.6	18.6	19000	30000	0.4	7011 W	7011 FB/P7	7011 FB/P7	7011 W
55	100	21	52.7	40.5	15000	24000	0.51	7211 A5P4	7211 ACD/HCP4A	7211 E.P4S	7211 A5P4
55	100	21	52.7	40.5	13000	20000	0.61	7211 A5P4	7211 ACD/P4A	7211 E.P4S	7211 A5P4
55	100	21	55.3	43	17000	26000	0.51	7211 CP4	7211 CD/HCP4A	7211 C.P4S	7211 CP4
55	100	21	55.3	43	14000	22000	0.61	7211 CP4	7211 CD/P4A	7211 C.P4S	7211 CP4
60	78	10	12.7	13.4	18000	26000	0.088	71812 A5P4	71812 ACD/HCP4	71812 E.P4S	71812 A5P4
60	78	10	12.7	13.4	15000	22000	0.1	71812 A5P4	71812 ACD/P4	71812 E.P4S	71812 A5P4
60	78	10	13.5	14.3	19000	30000	0.088	71812 CP4	71812 CD/HCP4A	71812 C.P4S	71812 CP4
60	78	10	13.5	14.3	16000	24000	0.1	71812 CP4	71812 CD/P4A	71812 C.P4S	71812 CP4
60	85	13	18.6	14.6	16000	26000	0.16	71912 A5P4	71912 ACD/HCP4A	71912 E.P4S	71912 A5P4
60	85	13	18.6	14.6	14000	22000	0.19	71912 A5P4	71912 ACD/P4A	71912 E.P4S	71912 A5P4
60	85	13	14.8	10	22000	34000	0.16	71912 A5P4	71912 ACE/HCP4A	71912 E.P4S	71912 A5P4
60	85	13	14.8	10	19000	30000	0.19	71912 A5P4	71912 ACE/P4A	71912 E.P4S	71912 A5P4
60	85	13	19.9	15.3	18000	28000	0.16	71912 CP4	71912 CD/HCP4A	71912 C.P4S	71912 CP4
60	85	13	19.9	15.3	15000	24000	0.19	71912 CP4	71912 CD/P4A	71912 C.P4S	71912 CP4
60	85	13	15.6	10.6	24000	38000	0.16	71912 CP4	71912 CE/HCP4A	71912 C.P4S	71912 CP4
60	85	13	15.6	10.6	22000	34000	0.19	71912 CP4	71912 CE/P4A	71912 C.P4S	71912 CP4

**HIGH PRECISION BEARINGS**  
Angular Contact Ball Bearings

Table 129  
Bore Diameter 60mm – 70mm



Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	Dynamic C	Static C <sub>0</sub>	Grease	Oil-Air		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
60	85	13	13	14.3	17000	28000	0.2	71912 DB	71912 DB/P7	71912 DB/P7	71912 DB
60	85	13	13.8	15	19000	30000	0.2	71912 W	71912 FB/P7	71912 FB/P7	71912 W
60	95	18	39	33.5	15000	24000	0.34	7012 A5P4	7012 ACD/HCP4A	7012 E.P4S	7012 A5P4
60	95	18	39	33.5	13000	20000	0.4	7012 A5P4	7012 ACD/P4A	7012 E.P4S	7012 A5P4
60	95	18	15.3	11	20000	32000	0.39	7012 A5P4	7012 ACE/HCP4A	7012 E.P4S	7012 A5P4
60	95	18	15.3	11	18000	28000	0.42	7012 A5P4	7012 ACE/P4A	7012 E.P4S	7012 A5P4
60	95	18	40.3	34.5	16000	26000	0.34	7012 CP4	7012 CD/HCP4A	7012 C.P4S	7012 CP4
60	95	18	40.3	34.5	14000	22000	0.4	7012 CP4	7012 CD/P4A	7012 C.P4S	7012 CP4
60	95	18	16.3	11.6	22000	36000	0.39	7012 CP4	7012 CE/HCP4A	7012 C.P4S	7012 CP4
60	95	18	16.3	11.6	20000	30000	0.42	7012 CP4	7012 CE/P4A	7012 C.P4S	7012 CP4
60	95	18	18.2	19.6	16000	26000	0.44	7012 DB	7012 DB/P7	7012 DB/P7	7012 DB
60	95	18	19	20.4	18000	28000	0.44	7012 W	7012 FB/P7	7012 FB/P7	7012 W
60	110	22	63.7	50	14000	22000	0.65	7212 A5P4	7212 ACD/HCP4A	7212 E.P4S	7212 A5P4
60	110	22	63.7	50	11000	18000	0.8	7212 A5P4	7212 ACD/P4A	7212 E.P4S	7212 A5P4
60	110	22	67.6	53	16000	24000	0.65	7212 CP4	7212 CD/HCP4A	7212 C.P4S	7212 CP4
60	110	22	67.6	53	13000	20000	0.8	7212 CP4	7212 CD/P4A	7212 C.P4S	7212 CP4
65	85	10	12.7	14	16000	24000	0.114	71813 A5P4	71813 ACD/HCP4	71813 E.P4S	71813 A5P4
65	85	10	12.7	14	13000	20000	0.126	71813 A5P4	71813 ACD/P4	71813 E.P4S	71813 A5P4
65	85	10	13.5	14.6	18000	28000	0.114	71813 CP4	71813 CD/HCP4A	71813 C.P4S	71813 CP4
65	85	10	13.5	14.6	15000	22000	0.126	71813 CP4	71813 CD/P4A	71813 C.P4S	71813 CP4
65	90	13	19.5	16	15000	24000	0.17	71913 A5P4	71913 ACD/HCP4A	71913 E.P4S	71913 A5P4
65	90	13	19.5	16	13000	20000	0.21	71913 A5P4	71913 ACD/P4A	71913 E.P4S	71913 A5P4
65	90	13	15.3	11	20000	32000	0.17	71913 A5P4	71913 ACE/HCP4A	71913 E.P4S	71913 A5P4
65	90	13	15.3	11	18000	28000	0.2	71913 A5P4	71913 ACE/P4A	71913 E.P4S	71913 A5P4
65	90	13	20.8	17	17000	26000	0.17	71913 CP4	71913 CD/HCP4A	71913 C.P4S	71913 CP4
65	90	13	20.8	17	14000	22000	0.21	71913 CP4	71913 CD/P4A	71913 C.P4S	71913 CP4
65	90	13	16.3	11.6	22000	36000	0.17	71913 CP4	71913 CE/HCP4A	71913 C.P4S	71913 CP4
65	90	13	16.3	11.6	20000	30000	0.2	71913 CP4	71913 CE/P4A	71913 C.P4S	71913 CP4
65	90	13	13.8	16	16000	26000	0.2	71913 DB	71913 DB/P7	71913 DB/P7	71913 DB
65	90	13	14.3	16.6	18000	28000	0.2	71913 W	71913 FB/P7	71913 FB/P7	71913 W
65	100	18	39	35.5	14000	22000	0.36	7013 A5P4	7013 ACD/HCP4A	7013 E.P4S	7013 A5P4
65	100	18	39	35.5	12000	19000	0.42	7013 A5P4	7013 ACD/P4A	7013 E.P4S	7013 A5P4
65	100	18	15.9	12	19000	30000	0.41	7013 A5P4	7013 ACE/HCP4A	7013 E.P4S	7013 A5P4
65	100	18	15.9	12	17000	26000	0.44	7013 A5P4	7013 ACE/P4A	7013 E.P4S	7013 A5P4
65	100	18	41.6	37.5	15000	24000	0.36	7013 CP4	7013 CD/HCP4A	7013 C.P4S	7013 CP4
65	100	18	41.6	37.5	14000	22000	0.42	7013 CP4	7013 CD/P4A	7013 C.P4S	7013 CP4
65	100	18	16.8	12.7	22000	34000	0.41	7013 CP4	7013 CE/HCP4A	7013 C.P4S	7013 CP4
65	100	18	16.8	12.7	19000	28000	0.44	7013 CP4	7013 CE/P4A	7013 C.P4S	7013 CP4
65	100	18	19.9	21.2	15000	24000	0.45	7013 DB	7013 DB/P7	7013 DB/P7	7013 DB
65	100	18	20.8	22	17000	26000	0.45	7013 W	7013 FB/P7	7013 FB/P7	7013 W
65	120	23	72.8	57	10000	17000	1	7213 A5P4	7213 ACD/P4A	7213 E.P4S	7213 A5P4
65	120	23	76.1	60	12000	19000	1	7213 CP4	7213 CD/P4A	7213 C.P4S	7213 CP4
70	90	10	13	15	15000	24000	0.121	71814 A5P4	71814 ACD/HCP4	71814 E.P4S	71814 A5P4
70	90	10	13	15	13000	19000	0.134	71814 A5P4	71814 ACD/P4	71814 E.P4S	71814 A5P4
70	90	10	13.8	16	17000	26000	0.121	71814 CP4	71814 CD/HCP4A	71814 C.P4S	71814 CP4
70	90	10	13.8	16	14000	22000	0.134	71814 CP4	71814 CD/P4A	71814 C.P4S	71814 CP4
70	100	16	32.5	32.5	14000	22000	0.28	71914 A5P4	71914 ACD/HCP4A	71914 E.P4S	71914 A5P4
70	100	16	32.5	32.5	11000	18000	0.33	71914 A5P4	71914 ACD/P4A	71914 E.P4S	71914 A5P4
70	100	16	20.3	14.3	18000	28000	0.28	71914 A5P4	71914 ACE/HCP4A	71914 E.P4S	71914 A5P4
70	100	16	20.3	14.3	16000	26000	0.32	71914 A5P4	71914 ACE/P4A	71914 E.P4S	71914 A5P4



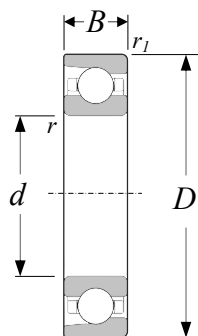
**HIGH PRECISION BEARINGS**  
Angular Contact Ball Bearings

Table 130  
Bore Diameter 70mm – 80mm

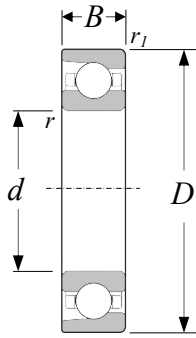
Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	Dynamic	Static	Grease	Oil-Air		Local	SKF	FAG	NSK
mm			C	C <sub>0</sub>	r/min		kg				
70	100	16	34.5	34	16000	24000	0.28	71914 CP4	71914 CD/HCP4A	71914 C.P4S	71914 CP4
70	100	16	34.5	34	13000	20000	0.33	71914 CP4	71914 CD/P4A	71914 C.P4S	71914 CP4
70	100	16	21.6	15	20000	32000	0.28	71914 CP4	71914 CE/HCP4A	71914 C.P4S	71914 CP4
70	100	16	21.6	15	18000	28000	0.32	71914 CP4	71914 CE/P4A	71914 C.P4S	71914 CP4
70	100	16	17.2	20	14000	22000	0.35	71914 DB	71914 DB/P7	71914 DB/P7	71914 DB
70	100	16	18.2	21.2	16000	26000	0.35	71914 W	71914 FB/P7	71914 FB/P7	71914 W
70	110	20	48.8	44	13000	20000	0.49	7014 A5P4	7014 ACD/HCP4A	7014 E.P4S	7014 A5P4
70	110	20	48.8	44	10000	17000	0.59	7014 A5P4	7014 ACD/P4A	7014 E.P4S	7014 A5P4
70	110	20	21.6	15.6	17000	28000	0.56	7014 A5P4	7014 ACE/HCP4A	7014 E.P4S	7014 A5P4
70	110	20	21.6	15.6	15000	24000	0.61	7014 A5P4	7014 ACE/P4A	7014 E.P4S	7014 A5P4
70	110	20	52	45.5	14000	22000	0.49	7014 CP4	7014 CD/HCP4A	7014 C.P4S	7014 CP4
70	110	20	52	45.5	12000	19000	0.59	7014 CP4	7014 CD/P4A	7014 C.P4S	7014 CP4
70	110	20	22.5	16.6	19000	30000	0.56	7014 CP4	7014 CE/HCP4A	7014 C.P4S	7014 CP4
70	110	20	22.5	16.6	17000	26000	0.61	7014 CP4	7014 CE/P4A	7014 C.P4S	7014 CP4
70	110	20	24.7	27	14000	22000	0.64	7014 DB	7014 DB/P7	7014 DB/P7	7014 DB
70	110	20	26	28	15000	24000	0.64	7014 W	7014 FB/P7	7014 FB/P7	7014 W
70	125	24	76.1	62	9500	16000	1.1	7214 A5P4	7214 ACD/P4A	7214 E.P4S	7214 A5P4
70	125	24	79.3	64	11000	18000	1.1	7214 CP4	7214 CD/P4A	7214 C.P4S	7214 CP4
75	95	10	13.3	16	14000	22000	0.128	71815 A5P4	71815 ACD/HCP4	71815 E.P4S	71815 A5P4
75	95	10	13.3	16	12000	18000	0.142	71815 A5P4	71815 ACD/P4	71815 E.P4S	71815 A5P4
75	95	10	14.3	17	16000	24000	0.128	71815 CP4	71815 CD/HCP4A	71815 C.P4S	71815 CP4
75	95	10	14.3	17	13000	20000	0.142	71815 CP4	71815 CD/P4A	71815 C.P4S	71815 CP4
75	105	16	33.8	35.5	13000	20000	0.3	71915 A5P4	71915 ACD/HCP4A	71915 E.P4S	71915 A5P4
75	105	16	33.8	35.5	10000	17000	0.35	71915 A5P4	71915 ACD/P4A	71915 E.P4S	71915 A5P4
75	105	16	21.6	15.6	17000	28000	0.29	71915 A5P4	71915 ACE/HCP4A	71915 E.P4S	71915 A5P4
75	105	16	21.6	15.6	15000	24000	0.35	71915 A5P4	71915 ACE/P4A	71915 E.P4S	71915 A5P4
75	105	16	35.8	37.5	15000	22000	0.3	71915 CP4	71915 CD/HCP4A	71915 C.P4S	71915 CP4
75	105	16	35.8	37.5	12000	19000	0.35	71915 CP4	71915 CD/P4A	71915 C.P4S	71915 CP4
75	105	16	22.5	16.6	19000	30000	0.29	71915 CP4	71915 CE/HCP4A	71915 C.P4S	71915 CP4
75	105	16	22.5	16.6	17000	26000	0.35	71915 CP4	71915 CE/P4A	71915 C.P4S	71915 CP4
75	105	16	17.8	21.6	14000	22000	0.35	71915 DB	71915 DB/P7	71915 DB/P7	71915 DB
75	105	16	18.6	22.4	15000	24000	0.35	71915 W	71915 FB/P7	71915 FB/P7	71915 W
75	115	20	49.4	46.5	12000	19000	0.52	7015 A5P4	7015 ACD/HCP4A	7015 E.P4S	7015 A5P4
75	115	20	49.4	46.5	9500	16000	0.62	7015 A5P4	7015 ACD/P4A	7015 E.P4S	7015 A5P4
75	115	20	21.6	16.3	16000	26000	0.59	7015 A5P4	7015 ACE/HCP4A	7015 E.P4S	7015 A5P4
75	115	20	21.6	16.3	14000	22000	0.64	7015 A5P4	7015 ACE/P4A	7015 E.P4S	7015 A5P4
75	115	20	52.7	49	14000	22000	0.52	7015 CP4	7015 CD/HCP4A	7015 C.P4S	7015 CP4
75	115	20	52.7	49	11000	18000	0.62	7015 CP4	7015 CD/P4A	7015 C.P4S	7015 CP4
75	115	20	22.9	17.3	18000	28000	0.59	7015 CP4	7015 CE/HCP4A	7015 C.P4S	7015 CP4
75	115	20	22.9	17.3	16000	26000	0.64	7015 CP4	7015 CE/P4A	7015 C.P4S	7015 CP4
75	115	20	25.5	29	13000	20000	0.68	7015 DB	7015 DB/P7	7015 DB/P7	7015 DB
75	115	20	26.5	30.5	14000	22000	0.68	7015 W	7015 FB/P7	7015 FB/P7	7015 W
75	130	25	79.3	67	9000	15000	1.2	7215 A5P4	7215 ACD/P4A	7215 E.P4S	7215 A5P4
75	130	25	83.2	69.5	10000	17000	1.2	7215 CP4	7215 CD/P4A	7215 C.P4S	7215 CP4
80	100	10	13.8	17	13000	20000	0.136	71816 A5P4	71816 ACD/HCP4	71816 E.P4S	71816 A5P4
80	100	10	13.8	17	11000	17000	0.151	71816 A5P4	71816 ACD/P4	71816 E.P4S	71816 A5P4
80	100	10	14.6	18.3	15000	22000	0.136	71816 CP4	71816 CD/HCP4A	71816 C.P4S	71816 CP4
80	100	10	14.6	18.3	12000	19000	0.151	71816 CP4	71816 CD/P4A	71816 C.P4S	71816 CP4
80	110	16	34.5	36.5	12000	19000	0.31	71916 A5P4	71916 ACD/HCP4A	71916 E.P4S	71916 A5P4
80	110	16	34.5	36.5	9500	16000	0.37	71916 A5P4	71916 ACD/P4A	71916 E.P4S	71916 A5P4

**HIGH PRECISION BEARINGS**  
Angular Contact Ball Bearings

Table 131  
Bore Diameter 80mm – 90mm



Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	Dynamic C	Static C <sub>0</sub>	Grease	Oil-Air		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
80	110	16	21.6	16.3	16000	26000	0.31	71916 A5P4	71916 ACE/HCP4A	71916 E.P4S	71916 A5P4
80	110	16	21.6	16.3	14000	22000	0.36	71916 A5P4	71916 ACE/P4A	71916 E.P4S	71916 A5P4
80	110	16	36.4	39	15000	22000	0.31	71916 CP4	71916 CD/HCP4A	71916 C.P4S	71916 CP4
80	110	16	36.4	39	11000	18000	0.37	71916 CP4	71916 CD/P4A	71916 C.P4S	71916 CP4
80	110	16	22.9	17.3	18000	28000	0.31	71916 CP4	71916 CE/HCP4A	71916 C.P4S	71916 CP4
80	110	16	22.9	17.3	16000	26000	0.36	71916 CP4	71916 CE/P4A	71916 C.P4S	71916 CP4
80	110	16	19.9	24.5	13000	20000	0.38	71916 DB	71916 DB/P7	71916 DB/P7	71916 DB
80	110	16	20.8	25.5	14000	22000	0.38	71916 W	71916 FB/P7	71916 FB/P7	71916 W
80	125	22	62.4	58.5	11000	18000	0.71	7016 A5P4	7016 ACD/HCP4A	7016 E.P4S	7016 A5P4
80	125	22	62.4	58.5	9000	15000	0.85	7016 A5P4	7016 ACD/P4A	7016 E.P4S	7016 A5P4
80	125	22	27.6	20.4	15000	24000	0.77	7016 A5P4	7016 ACE/HCP4A	7016 E.P4S	7016 A5P4
80	125	22	27.6	20.4	13000	20000	0.85	7016 A5P4	7016 ACE/P4A	7016 E.P4S	7016 A5P4
80	125	22	65	61	13000	20000	0.71	7016 CP4	7016 CD/HCP4A	7016 C.P4S	7016 CP4
80	125	22	65	61	10000	17000	0.85	7016 CP4	7016 CD/P4A	7016 C.P4S	7016 CP4
80	125	22	29.1	21.6	17000	26000	0.77	7016 CP4	7016 CE/HCP4A	7016 C.P4S	7016 CP4
80	125	22	29.1	21.6	15000	24000	0.85	7016 CP4	7016 CE/P4A	7016 C.P4S	7016 CP4
80	125	22	33.8	37.5	12000	19000	0.89	7016 DB	7016 DB/P7	7016 DB/P7	7016 DB
80	125	22	35.1	39	13000	20000	0.89	7016 W	7016 FB/P7	7016 FB/P7	7016 W
80	140	26	92.3	78	8500	14000	1.45	7216 A5P4	7216 ACD/P4A	7216 E.P4S	7216 A5P4
80	140	26	97.5	81.5	9500	16000	1.45	7216 CP4	7216 CD/P4A	7216 C.P4S	7216 CP4
85	110	13	20.3	24	12000	19000	0.239	71817 A5P4	71817 ACD/HCP4	71817 E.P4S	71817 A5P4
85	110	13	20.3	24	10000	16000	0.266	71817 A5P4	71817 ACD/P4	71817 E.P4S	71817 A5P4
85	110	13	21.6	25.5	14000	20000	0.239	71817 CP4	71817 CD/HCP4A	71817 C.P4S	71817 CP4
85	110	13	21.6	25.5	11000	17000	0.266	71817 CP4	71817 CD/P4A	71817 C.P4S	71817 CP4
85	120	18	43.6	45.5	11000	18000	0.44	71917 A5P4	71917 ACD/HCP4A	71917 E.P4S	71917 A5P4
85	120	18	43.6	45.5	9000	15000	0.53	71917 A5P4	71917 ACD/P4A	71917 E.P4S	71917 A5P4
85	120	18	27.6	20.4	15000	24000	0.44	71917 A5P4	71917 ACE/HCP4A	71917 E.P4S	71917 A5P4
85	120	18	27.6	20.4	13000	20000	0.52	71917 A5P4	71917 ACE/P4A	71917 E.P4S	71917 A5P4
85	120	18	46.2	48	14000	20000	0.44	71917 CP4	71917 CD/HCP4A	71917 C.P4S	71917 CP4
85	120	18	46.2	48	10000	17000	0.53	71917 CP4	71917 CD/P4A	71917 C.P4S	71917 CP4
85	120	18	29.1	21.6	17000	26000	0.44	71917 CP4	71917 CE/HCP4A	71917 C.P4S	71917 CP4
85	120	18	29.1	21.6	15000	24000	0.52	71917 CP4	71917 CE/P4A	71917 C.P4S	71917 CP4
85	120	18	21.6	26.5	12000	19000	0.54	71917 DB	71917 DB/P7	71917 DB/P7	71917 DB
85	120	18	22.5	27.5	13000	20000	0.54	71917 W	71917 FB/P7	71917 FB/P7	71917 W
85	130	22	63.7	62	10000	17000	0.74	7017 A5P4	7017 ACD/HCP4A	7017 E.P4S	7017 A5P4
85	130	22	63.7	62	8500	14000	0.89	7017 A5P4	7017 ACD/P4A	7017 E.P4S	7017 A5P4
85	130	22	28.1	21.6	14000	22000	0.81	7017 A5P4	7017 ACE/HCP4A	7017 E.P4S	7017 A5P4
85	130	22	28.1	21.6	13000	20000	0.89	7017 A5P4	7017 ACE/P4A	7017 E.P4S	7017 A5P4
85	130	22	67.6	65.5	12000	19000	0.74	7017 CP4	7017 CD/HCP4A	7017 C.P4S	7017 CP4
85	130	22	67.6	65.5	9500	16000	0.89	7017 CP4	7017 CD/P4A	7017 C.P4S	7017 CP4
85	130	22	29.6	22.8	16000	26000	0.81	7017 CP4	7017 CE/HCP4A	7017 C.P4S	7017 CP4
85	130	22	29.6	22.8	14000	22000	0.89	7017 CP4	7017 CE/P4A	7017 C.P4S	7017 CP4
85	130	22	34.5	39	11000	18000	0.9	7017 DB	7017 DB/P7	7017 DB/P7	7017 DB
85	130	22	35.8	40.5	13000	20000	0.9	7017 W	7017 FB/P7	7017 FB/P7	7017 W
85	150	28	95.6	85	8000	13000	1.8	7217 A5P4	7217 ACD/P4A	7217 E.P4S	7217 A5P4
85	150	28	99.5	88	9000	15000	1.8	7217 CP4	7217 CD/P4A	7217 C.P4S	7217 CP4
90	115	13	20.3	25	12000	18000	0.251	71818 A5P4	71818 ACD/HCP4	71818 E.P4S	71818 A5P4
90	115	13	20.3	25	10000	15000	0.279	71818 A5P4	71818 ACD/P4	71818 E.P4S	71818 A5P4
90	115	13	21.6	26.5	13000	20000	0.251	71818 CP4	71818 CD/HCP4A	71818 C.P4S	71818 CP4
90	115	13	21.6	26.5	11000	17000	0.279	71818 CP4	71818 CD/P4A	71818 C.P4S	71818 CP4



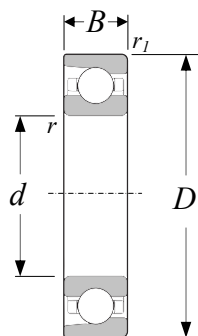
**HIGH PRECISION BEARINGS**  
Angular Contact Ball Bearings

Table 132  
Bore Diameter 90mm – 100mm

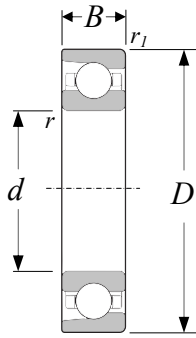
Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	Dynamic C	Static C <sub>0</sub>	Grease	Oil-Air		Local	SKF	FAG	NSK
mm			kN		r/min						
90	125	18	44.2	48	10000	17000	0.47	71918 A5P4	71918 ACD/HCP4A	71918 E.P4S	71918 A5P4
90	125	18	44.2	48	8500	14000	0.55	71918 A5P4	71918 ACD/P4A	71918 E.P4S	71918 A5P4
90	125	18	28.1	21.6	14000	22000	0.46	71918 A5P4	71918 ACE/HCP4A	71918 E.P4S	71918 A5P4
90	125	18	28.1	21.6	13000	20000	0.54	71918 A5P4	71918 ACE/P4A	71918 E.P4S	71918 A5P4
90	125	18	47.5	51	13000	19000	0.47	71918 CP4	71918 CD/HCP4A	71918 C.P4S	71918 CP4
90	125	18	47.5	51	9500	16000	0.55	71918 CP4	71918 CD/P4A	71918 C.P4S	71918 CP4
90	125	18	29.6	22.8	16000	26000	0.46	71918 CP4	71918 CE/HCP4A	71918 C.P4S	71918 CP4
90	125	18	29.6	22.8	14000	22000	0.54	71918 CP4	71918 CE/P4A	71918 C.P4S	71918 CP4
90	125	18	22.5	29	11000	18000	0.57	71918 DB	71918 DB/P7	71918 DB/P7	71918 DB
90	125	18	23.4	30.5	13000	20000	0.57	71918 W	71918 FB/P7	71918 FB/P7	71918 W
90	140	24	74.1	72	9500	16000	0.95	7018 A5P4	7018 ACD/HCP4A	7018 E.P4S	7018 A5P4
90	140	24	74.1	72	8000	13000	1.15	7018 A5P4	7018 ACD/P4A	7018 E.P4S	7018 A5P4
90	140	24	35.1	26.5	13000	22000	1.03	7018 A5P4	7018 ACE/HCP4A	7018 E.P4S	7018 A5P4
90	140	24	35.1	26.5	12000	19000	1.15	7018 A5P4	7018 ACE/P4A	7018 E.P4S	7018 A5P4
90	140	24	79.3	76.5	11000	18000	0.95	7018 CP4	7018 CD/HCP4A	7018 C.P4S	7018 CP4
90	140	24	79.3	76.5	9000	15000	1.15	7018 CP4	7018 CD/P4A	7018 C.P4S	7018 CP4
90	140	24	37.1	28	15000	24000	1.03	7018 CP4	7018 CE/HCP4A	7018 C.P4S	7018 CP4
90	140	24	37.1	28	13000	20000	1.15	7018 CP4	7018 CE/P4A	7018 C.P4S	7018 CP4
90	140	24	37.1	40.5	11000	17000	1.2	7018 DB	7018 DB/P7	7018 DB/P7	7018 DB
90	140	24	39	42.5	12000	18000	1.2	7018 W	7018 FB/P7	7018 FB/P7	7018 W
90	160	30	121	106	7500	12000	2.25	7218 A5P4	7218 ACD/P4A	7218 E.P4S	7218 A5P4
90	160	30	127	112	8500	14000	2.25	7218 CP4	7218 CD/P4A	7218 C.P4S	7218 CP4
95	120	13	20.8	25.5	11000	17000	0.263	71819 A5P4	71819 ACD/HCP4	71819 E.P4S	71819 A5P4
95	120	13	20.8	25.5	9500	14000	0.292	71819 A5P4	71819 ACD/P4	71819 E.P4S	71819 A5P4
95	120	13	22.1	27.5	12000	19000	0.263	71819 CP4	71819 CD/HCP4A	71819 C.P4S	71819 CP4
95	120	13	22.1	27.5	10000	16000	0.292	71819 CP4	71819 CD/P4A	71819 C.P4S	71819 CP4
95	130	18	46.2	52	9500	16000	0.49	71919 A5P4	71919 ACD/HCP4A	71919 E.P4S	71919 A5P4
95	130	18	46.2	52	8500	14000	0.58	71919 A5P4	71919 ACD/P4A	71919 E.P4S	71919 A5P4
95	130	18	29.6	23.2	14000	22000	0.48	71919 A5P4	71919 ACE/HCP4A	71919 E.P4S	71919 A5P4
95	130	18	29.6	23.2	12000	19000	0.57	71919 A5P4	71919 ACE/P4A	71919 E.P4S	71919 A5P4
95	130	18	49.4	55	12000	18000	0.49	71919 CP4	71919 CD/HCP4A	71919 C.P4S	71919 CP4
95	130	18	49.4	55	9000	15000	0.58	71919 CP4	71919 CD/P4A	71919 C.P4S	71919 CP4
95	130	18	31.2	24.5	15000	24000	0.48	71919 CP4	71919 CE/HCP4A	71919 C.P4S	71919 CP4
95	130	18	31.2	24.5	14000	22000	0.57	71919 CP4	71919 CE/P4A	71919 C.P4S	71919 CP4
95	130	18	23.4	31.5	11000	17000	0.6	71919 DB	71919 DB/P7	71919 DB/P7	71919 DB
95	130	18	24.7	32.5	12000	19000	0.6	71919 W	71919 FB/P7	71919 FB/P7	71919 W
95	145	24	76.1	76.5	9000	15000	1	7019 A5P4	7019 ACD/HCP4A	7019 E.P4S	7019 A5P4
95	145	24	76.1	76.5	8000	13000	1.2	7019 A5P4	7019 ACD/P4A	7019 E.P4S	7019 A5P4
95	145	24	35.8	28	13000	20000	1.07	7019 A5P4	7019 ACE/HCP4A	7019 E.P4S	7019 A5P4
95	145	24	35.8	28	11000	18000	1.12	7019 A5P4	7019 ACE/P4A	7019 E.P4S	7019 A5P4
95	145	24	81.9	80	10000	17000	1	7019 CP4	7019 CD/HCP4A	7019 C.P4S	7019 CP4
95	145	24	81.9	80	8500	14000	1.2	7019 CP4	7019 CD/P4A	7019 C.P4S	7019 CP4
95	145	24	37.7	29	14000	22000	1.07	7019 CP4	7019 CE/HCP4A	7019 C.P4S	7019 CP4
95	145	24	37.7	29	13000	20000	1.12	7019 CP4	7019 CE/P4A	7019 C.P4S	7019 CP4
95	145	24	37.1	42.5	10000	16000	1.23	7019 DB	7019 DB/P7	7019 DB/P7	7019 DB
95	145	24	39	44	11000	18000	1.23	7019 W	7019 FB/P7	7019 FB/P7	7019 W
95	170	32	133	114	7500	12000	2.7	7219 A5P4	7219 ACD/P4A	7219 E.P4S	7219 A5P4
95	170	32	138	120	8000	13000	2.7	7219 CP4	7219 CD/P4A	7219 C.P4S	7219 CP4
100	125	13	21.2	27.5	10000	15000	0.279	71820 A5P4	71820 ACD/HCP4	71820 E.P4S	71820 A5P4
100	125	13	21.2	27.5	8500	13000	0.31	71820 A5P4	71820 ACD/P4	71820 E.P4S	71820 A5P4

**HIGH PRECISION BEARINGS**  
Angular Contact Ball Bearings

Table 133  
Bore Diameter 100mm – 110mm



Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	Dynamic C	Static C <sub>0</sub>	Grease	Oil-Air		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
100	125	13	22.5	29	11000	17000	0.279	71820 CP4	71820 CD/HCP4A	71820 C.P4S	71820 CP4
100	125	13	22.5	29	9000	14000	0.31	71820 CP4	71820 CD/P4A	71820 C.P4S	71820 CP4
100	140	20	57.2	63	9000	15000	0.66	71920 A5P4	71920 ACD/HCP4A	71920 E.P4S	71920 A5P4
100	140	20	57.2	63	8000	13000	0.8	71920 A5P4	71920 ACD/P4A	71920 E.P4S	71920 A5P4
100	140	20	35.8	28	13000	20000	0.65	71920 A5P4	71920 ACE/HCP4A	71920 E.P4S	71920 A5P4
100	140	20	35.8	28	11000	18000	0.77	71920 A5P4	71920 ACE/P4A	71920 E.P4S	71920 A5P4
100	140	20	60.5	65.5	11000	17000	0.66	71920 CP4	71920 CD/HCP4A	71920 C.P4S	71920 CP4
100	140	20	60.5	65.5	8500	14000	0.8	71920 CP4	71920 CD/P4A	71920 C.P4S	71920 CP4
100	140	20	37.7	29	14000	22000	0.65	71920 CP4	71920 CE/HCP4A	71920 C.P4S	71920 CP4
100	140	20	37.7	29	13000	20000	0.77	71920 CP4	71920 CE/P4A	71920 C.P4S	71920 CP4
100	140	20	30.2	38	10000	16000	0.79	71920 DB	71920 DB/P7	71920 DB/P7	71920 DB
100	140	20	31.9	40	11000	18000	0.79	71920 W	71920 FB/P7	71920 FB/P7	71920 W
100	150	24	79.3	80	9000	15000	1.05	7020 A5P4	7020 ACD/HCP4A	7020 E.P4S	7020 A5P4
100	150	24	79.3	80	7500	12000	1.25	7020 A5P4	7020 ACD/P4A	7020 E.P4S	7020 A5P4
100	150	24	36.4	29	12000	19000	1.12	7020 A5P4	7020 ACE/HCP4A	7020 E.P4S	7020 A5P4
100	150	24	36.4	29	11000	17000	1.25	7020 A5P4	7020 ACE/P4A	7020 E.P4S	7020 A5P4
100	150	24	83.2	85	9500	16000	1.05	7020 CP4	7020 CD/HCP4A	7020 C.P4S	7020 CP4
100	150	24	83.2	85	8500	14000	1.25	7020 CP4	7020 CD/P4A	7020 C.P4S	7020 CP4
100	150	24	39	30.5	14000	22000	1.12	7020 CP4	7020 CE/HCP4A	7020 C.P4S	7020 CP4
100	150	24	39	30.5	12000	19000	1.25	7020 CP4	7020 CE/P4A	7020 C.P4S	7020 CP4
100	150	24	37.7	44	9500	15000	1.28	7020 DB	7020 DB/P7	7020 DB/P7	7020 DB
100	150	24	39.7	46.5	11000	17000	1.28	7020 W	7020 FB/P7	7020 FB/P7	7020 W
100	180	34	148	129	7000	11000	3.25	7220 A5P4	7220 ACD/P4A	7220 E.P4S	7220 A5P4
100	180	34	156	137	7500	12000	3.25	7220 CP4	7220 CD/P4A	7220 C.P4S	7220 CP4
105	130	13	21.6	28.5	9500	15000	0.289	71821 A5P4	71821 ACD/HCP4	71821 E.P4S	71821 A5P4
105	130	13	21.6	28.5	8000	12000	0.32	71821 A5P4	71821 ACD/P4	71821 E.P4S	71821 A5P4
105	130	13	22.9	30	11000	16000	0.289	71821 CP4	71821 CD/HCP4A	71821 C.P4S	71821 CP4
105	130	13	22.9	30	9000	14000	0.32	71821 CP4	71821 CD/P4A	71821 C.P4S	71821 CP4
105	145	20	57.2	65.5	9000	15000	0.69	71921 A5P4	71921 ACD/HCP4A	71921 E.P4S	71921 A5P4
105	145	20	57.2	65.5	7500	12000	0.82	71921 A5P4	71921 ACD/P4A	71921 E.P4S	71921 A5P4
105	145	20	61.8	69.5	10000	16000	0.69	71921 CP4	71921 CD/HCP4A	71921 C.P4S	71921 CP4
105	145	20	61.8	69.5	8500	14000	0.82	71921 CP4	71921 CD/P4A	71921 C.P4S	71921 CP4
105	160	26	90.4	93	7500	12000	1.6	7021 A5P4	7021 ACD/P4A	7021 E.P4S	7021 A5P4
105	160	26	95.6	96.5	8000	13000	1.6	7021 CP4	7021 CD/P4A	7021 C.P4S	7021 CP4
105	190	36	163	146	6700	10000	3.85	7221 A5P4	7221 ACD/P4A	7221 E.P4S	7221 A5P4
105	190	36	172	153	7500	12000	3.85	7221 CP4	7221 CD/P4A	7221 C.P4S	7221 CP4
110	140	16	30.2	38	9000	14000	0.453	71822 A5P4	71822 ACD/HCP4	71822 E.P4S	71822 A5P4
110	140	16	30.2	38	7500	12000	0.505	71822 A5P4	71822 ACD/P4	71822 E.P4S	71822 A5P4
110	140	16	31.9	40.5	10000	15000	0.453	71822 CP4	71822 CD/HCP4A	71822 C.P4S	71822 CP4
110	140	16	31.9	40.5	8000	13000	0.505	71822 CP4	71822 CD/P4A	71822 C.P4S	71822 CP4
110	150	20	58.5	68	8500	14000	0.72	71922 A5P4	71922 ACD/HCP4A	71922 E.P4S	71922 A5P4
110	150	20	58.5	68	7500	12000	0.86	71922 A5P4	71922 ACD/P4A	71922 E.P4S	71922 A5P4
110	150	20	37.1	30.5	12000	19000	0.71	71922 A5P4	71922 ACE/HCP4A	71922 E.P4S	71922 A5P4
110	150	20	37.1	30.5	10000	16000	0.84	71922 A5P4	71922 ACE/P4A	71922 E.P4S	71922 A5P4
110	150	20	62.4	72	10000	16000	0.72	71922 CP4	71922 CD/HCP4A	71922 C.P4S	71922 CP4
110	150	20	62.4	72	8000	13000	0.86	71922 CP4	71922 CD/P4A	71922 C.P4S	71922 CP4
110	150	20	39.7	32	13000	20000	0.71	71922 CP4	71922 CE/HCP4A	71922 C.P4S	71922 CP4
110	150	20	39.7	32	12000	18000	0.84	71922 CP4	71922 CE/P4A	71922 C.P4S	71922 CP4
110	150	20	32.5	43	9500	15000	0.85	71922 DB	71922 DB/P7	71922 DB/P7	71922 DB
110	150	20	33.8	45	10000	16000	0.85	71922 W	71922 FB/P7	71922 FB/P7	71922 W



**HIGH PRECISION BEARINGS**  
Angular Contact Ball Bearings

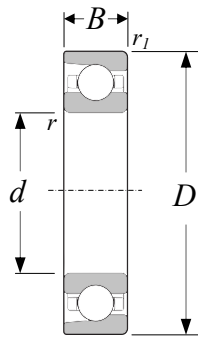
Table 134  
Bore Diameter 110mm – 150mm

Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	Dynamic C	Static C <sub>0</sub>	Grease	Oil-Air		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
110	170	28	104	104	7000	11000	1.95	7022 A5P4	7022 ACD/P4A	7022 E.P4S	7022 A5P4
110	170	28	111	108	7500	12000	1.95	7022 CP4	7022 CD/P4A	7022 C.P4S	7022 CP4
110	170	28	46.8	60	8500	14000	2	7022 DB	7022 DB/P7	7022 DB/P7	7022 DB
110	170	28	49.4	62	9500	15000	2	7022 W	7022 FB/P7	7022 FB/P7	7022 W
110	200	38	168	160	6700	10000	4.55	7222 A5P4	7222 ACD/P4A	7222 E.P4S	7222 A5P4
110	200	38	178	166	7000	11000	4.55	7222 CP4	7222 CD/P4A	7222 C.P4S	7222 CP4
120	150	16	31.2	42.5	8000	13000	0.493	71824 A5P4	71824 ACD/HCP4	71824 E.P4S	71824 A5P4
120	150	16	31.2	42.5	6700	11000	0.55	71824 A5P4	71824 ACD/P4	71824 E.P4S	71824 A5P4
120	150	16	33.2	45	9000	14000	0.493	71824 CP4	71824 CD/HCP4A	71824 C.P4S	71824 CP4
120	150	16	33.2	45	7500	12000	0.55	71824 CP4	71824 CD/P4A	71824 C.P4S	71824 CP4
120	165	22	72.8	86.5	8000	13000	0.97	71924 A5P4	71924 ACD/HCP4A	71924 E.P4S	71924 A5P4
120	165	22	72.8	86.5	7000	11000	1.15	71924 A5P4	71924 ACD/P4A	71924 E.P4S	71924 A5P4
120	165	22	46.2	38	11000	17000	0.96	71924 A5P4	71924 ACE/HCP4A	71924 E.P4S	71924 A5P4
120	165	22	46.2	38	9500	15000	1.15	71924 A5P4	71924 ACE/P4A	71924 E.P4S	71924 A5P4
120	165	22	78	91.5	9000	14000	0.97	71924 CP4	71924 CD/HCP4A	71924 C.P4S	71924 CP4
120	165	22	78	91.5	7500	12000	1.15	71924 CP4	71924 CD/P4A	71924 C.P4S	71924 CP4
120	165	22	49.4	40.5	12000	19000	0.96	71924 CP4	71924 CE/HCP4A	71924 C.P4S	71924 CP4
120	165	22	49.4	40.5	11000	16000	1.15	71924 CP4	71924 CE/P4A	71924 C.P4S	71924 CP4
120	165	22	36.4	49	8500	13000	1.17	71924 DB	71924 DB/P7	71924 DB/P7	71924 DB
120	165	22	37.7	51	9500	15000	1.17	71924 W	71924 FB/P7	71924 FB/P7	71924 W
120	180	28	111	116	6700	10000	2.1	7024 A5P4	7024 ACD/P4A	7024 E.P4S	7024 A5P4
120	180	28	114	122	7000	11000	2.1	7024 CP4	7024 CD/P4A	7024 C.P4S	7024 CP4
120	180	28	49.4	65.5	8000	13000	2.15	7024 DB	7024 DB/P7	7024 DB/P7	7024 DB
120	180	28	52	68	9000	14000	2.15	7024 W	7024 FB/P7	7024 FB/P7	7024 W
120	215	40	190	183	6000	9000	5.4	7224 A5P4	7224 ACD/P4A	7224 E.P4S	7224 A5P4
120	215	40	199	193	6700	10000	5.4	7224 CP4	7224 CD/P4A	7224 C.P4S	7224 CP4
130	165	18	36.4	50	7500	12000	0.696	71826 A5P4	71826 ACD/HCP4	71826 E.P4S	71826 A5P4
130	165	18	36.4	50	6300	9500	0.77	71826 A5P4	71826 ACD/P4	71826 E.P4S	71826 A5P4
130	165	18	39	53	8500	13000	0.696	71826 CP4	71826 CD/HCP4A	71826 C.P4S	71826 CP4
130	165	18	39	53	7000	11000	0.77	71826 CP4	71826 CD/P4A	71826 C.P4S	71826 CP4
130	180	24	87.1	102	7500	12000	1.3	71926 A5P4	71926 ACD/HCP4A	71926 E.P4S	71926 A5P4
130	180	24	87.1	102	6700	10000	1.55	71926 A5P4	71926 ACD/P4A	71926 E.P4S	71926 A5P4
130	180	24	92.3	108	8500	13000	1.3	71926 CP4	71926 CD/HCP4A	71926 C.P4S	71926 CP4
130	180	24	92.3	108	7000	11000	1.55	71926 CP4	71926 CD/P4A	71926 C.P4S	71926 CP4
130	200	33	140	150	6000	9000	3.2	7026 A5P4	7026 ACD/P4A	7026 E.P4S	7026 A5P4
130	200	33	148	156	6700	10000	3.2	7026 CP4	7026 CD/P4A	7026 C.P4S	7026 CP4
140	175	18	42.3	58.5	7000	11000	0.705	71828 A5P4	71828 ACD/HCP4	71828 E.P4S	71828 A5P4
140	175	18	42.3	58.5	6000	9000	0.8	71828 A5P4	71828 ACD/P4	71828 E.P4S	71828 A5P4
140	175	18	44.9	62	8000	12000	0.705	71828 CP4	71828 CD/HCP4A	71828 C.P4S	71828 CP4
140	175	18	44.9	62	6300	10000	0.8	71828 CP4	71828 CD/P4A	71828 C.P4S	71828 CP4
140	190	24	90.4	110	7000	11000	1.35	71928 A5P4	71928 ACD/HCP4A	71928 E.P4S	71928 A5P4
140	190	24	90.4	110	6000	9000	1.65	71928 A5P4	71928 ACD/P4A	71928 E.P4S	71928 A5P4
140	190	24	95.6	116	8000	12000	1.35	71928 CP4	71928 CD/HCP4A	71928 C.P4S	71928 CP4
140	190	24	95.6	116	6700	10000	1.65	71928 CP4	71928 CD/P4A	71928 C.P4S	71928 CP4
140	210	33	146	156	5600	8500	3.4	7028 A5P4	7028 ACD/P4A	7028 E.P4S	7028 A5P4
140	210	33	153	166	6700	10000	3.4	7028 CP4	7028 CD/P4A	7028 C.P4S	7028 CP4
150	190	20	48.8	68	6300	10000	0.982	71830 A5P4	71830 ACD/HCP4	71830 E.P4S	71830 A5P4
150	190	20	48.8	68	5300	8500	1.1	71830 A5P4	71830 ACD/P4	71830 E.P4S	71830 A5P4
150	190	20	52	72	7000	11000	0.982	71830 CP4	71830 CD/HCP4A	71830 C.P4S	71830 CP4
150	190	20	52	72	6000	9000	1.1	71830 CP4	71830 CD/P4A	71830 C.P4S	71830 CP4

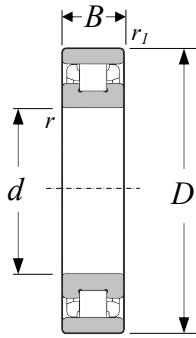


**HIGH PRECISION BEARINGS**  
Angular Contact Ball Bearings

Table 135  
Bore Diameter 150mm – 320mm



Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	Dynamic C	Static C <sub>0</sub>	Grease	Oil-Air		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
150	210	28	119	140	5600	8500	2.55	71930 A5P4	71930 ACD/P4A	71930 E.P4S	71930 A5P4
150	210	28	125	146	6300	9500	2.55	71930 CP4	71930 CD/P4A	71930 C.P4S	71930 CP4
150	225	35	163	180	5300	8000	4.15	7030 A5P4	7030 ACD/P4A	7030 E.P4S	7030 A5P4
150	225	35	172	190	6000	9000	4.15	7030 CP4	7030 CD/P4A	7030 C.P4S	7030 CP4
160	200	20	50.7	75	6000	9500	1,105	71832 A5P4	71832 ACD/HCP4A	71832 E.P4S	71832 A5P4
160	200	20	50.7	75	5000	8000	1,233	71832 A5P4	71832 ACD/P4	71832 E.P4S	71832 A5P4
160	200	20	54	78	6700	10000	1,105	71832 CP4	71832 CD/HCP4A	71832 C.P4S	71832 CP4
160	200	20	54	78	5600	8500	1,233	71832 CP4	71832 CD/P4A	71832 C.P4S	71832 CP4
160	220	28	124	153	5300	8000	2.7	71932 A5P4	71932 ACD/P4A	71932 E.P4S	71932 A5P4
160	220	28	130	160	6000	9000	2.7	71932 CP4	71932 CD/P4A	71932 C.P4S	71932 CP4
160	240	38	182	204	5000	7500	5.1	7032 A5P4	7032 ACD/P4A	7032 E.P4S	7032 A5P4
160	240	38	195	216	5600	8500	5.1	7032 CP4	7032 CD/P4A	7032 C.P4S	7032 CP4
170	230	28	124	160	5000	7500	2.85	71934 A5P4	71934 ACD/P4A	71934 E.P4S	71934 A5P4
170	230	28	133	166	5600	8500	2.85	71934 CP4	71934 CD/P4A	71934 C.P4S	71934 CP4
170	260	42	199	232	4800	7000	6.85	7034 A5P4	7034 ACD/P4A	7034 E.P4S	7034 A5P4
170	260	42	212	245	5300	8000	6.85	7034 CP4	7034 CD/P4A	7034 C.P4S	7034 CP4
180	250	33	159	200	4800	7000	4.2	71936 A5P4	71936 ACD/P4A	71936 E.P4S	71936 A5P4
180	250	33	168	212	5300	8000	4.2	71936 CP4	71936 CD/P4A	71936 C.P4S	71936 CP4
180	280	46	229	275	4300	6300	8.9	7036 A5P4	7036 ACD/P4A	7036 E.P4S	7036 A5P4
180	280	46	242	290	5000	7500	8.9	7036 CP4	7036 CD/P4A	7036 C.P4S	7036 CP4
190	260	33	163	208	4500	6700	4.35	71938 A5P4	71938 ACD/P4A	71938 E.P4S	71938 A5P4
190	260	33	172	220	5000	7500	4.35	71938 CP4	71938 CD/P4A	71938 C.P4S	71938 CP4
190	290	46	234	290	4300	6300	9.35	7038 A5P4	7038 ACD/P4A	7038 E.P4S	7038 A5P4
190	290	46	247	300	4800	7000	9.35	7038 CP4	7038 CD/P4A	7038 C.P4S	7038 CP4
200	280	38	199	250	4300	6300	6.1	71940 A5P4	71940 ACD/P4A	71940 E.P4S	71940 A5P4
200	280	38	208	265	4800	7000	6.1	71940 CP4	71940 CD/P4A	71940 C.P4S	71940 CP4
200	310	51	281	365	4000	6000	12	7040 A5P4	7040 ACD/P4A	7040 E.P4S	7040 A5P4
200	310	51	296	390	4500	6700	12	7040 CP4	7040 CD/P4A	7040 C.P4S	7040 CP4
220	300	38	208	285	3800	5600	6.6	71944 A5P4	71944 ACD/P4A	71944 E.P4S	71944 A5P4
220	300	38	221	300	4300	6300	6.6	71944 CP4	71944 CD/P4A	71944 C.P4S	71944 CP4
220	340	56	338	455	3600	5300	16	7044 A5P4	7044 ACD/P4A	7044 E.P4S	7044 A5P4
220	340	56	338	455	4000	6000	16	7044 CP4	7044 CD/P4A	7044 C.P4S	7044 CP4
240	320	38	212	300	3200	4800	8.5	71948 A5P4	71948 ACD/P4A	71948 E.P4S	71948 A5P4
240	320	38	225	310	3800	5600	8.5	71948 CP4	71948 CD/P4A	71948 C.P4S	71948 CP4
240	360	56	325	465	3200	4800	17	7048 A5P4	7048 ACD/P4A	7048 E.P4S	7048 A5P4
240	360	56	345	490	3800	5600	17	7048 CP4	7048 CD/P4A	7048 C.P4S	7048 CP4
260	360	46	265	400	2800	4300	12.2	71952 A5P4	71952 ACD/P4A	71952 E.P4S	71952 A5P4
260	360	46	281	425	3400	5000	12.2	71952 CP4	71952 CD/P4A	71952 C.P4S	71952 CP4
280	380	46	276	430	2600	4000	12.9	71956 A5P4	71956 ACD/P4A	71956 E.P4S	71956 A5P4
280	380	46	291	455	3200	4800	12.9	71956 CP4	71956 CD/P4A	71956 C.P4S	71956 CP4
300	420	56	351	560	2200	3400	20.5	71960 A5P4	71960 ACD/P4A	71960 E.P4S	71960 A5P4
300	420	56	371	600	2400	3600	20.5	71960 CP4	71960 CD/P4A	71960 C.P4S	71960 CP4
320	440	56	351	585	2000	3200	21.5	71964 A5P4	71964 ACD/P4A	71964 E.P4S	71964 A5P4
320	440	56	377	620	2200	3400	21.5	71964 CP4	71964 CD/P4A	71964 C.P4S	71964 CP4



**HIGH PRECISION BEARINGS**  
Cylindrical Roller Bearings, Single Row

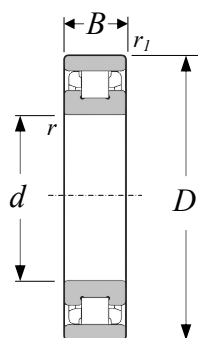
Table 136  
Bore Diameter 40mm – 100mm

Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	Dynamic	Static	Grease	Oil-Air		Local	SKF	FAG	NSK
mm			C	C <sub>0</sub>	r/min						
40	68	15	25.1	28	18000	20000	0.17	N1008 RXTRKCCOP4	N1008 KTN/HC5SP	N1008 K.M1.SP	N1008 RXTRKCCOP4
40	68	15	25.1	28	15000	17000	0.19	N1008 RXTRKCCOP4	N1008 KTN/SP	N1008 K.M1.SP	N1008 RXTRKCCOP4
40	68	15	24.2	26.5	26000	36000	0.17	N1008 RXTRKCCOP4	N1008 KTNHA/HC5SP	N1008 K.M1.SP	N1008 RXTRKCCOP4
40	68	15	24.2	26.5	22000	32000	0.19	N1008 RXTRKCCOP4	N1008 KTNHA/SP	N1008 K.M1.SP	N1008 RXTRKCCOP4
45	75	16	29.2	32.5	16000	18000	0.22	N1009 RXTRKCCOP4	N1009 KTN/HC5SP	N1009 K.M1.SP	N1009 RXTRKCCOP4
45	75	16	29.2	32.5	13000	15000	0.24	N1009 RXTRKCCOP4	N1009 KTN/SP	N1009 K.M1.SP	N1009 RXTRKCCOP4
45	75	16	28.1	31	22000	32000	0.21	N1009 RXTRKCCOP4	N1009 KTNHA/HC5SP	N1009 K.M1.SP	N1009 RXTRKCCOP4
45	75	16	28.1	31	20000	28000	0.24	N1009 RXTRKCCOP4	N1009 KTNHA/SP	N1009 K.M1.SP	N1009 RXTRKCCOP4
50	80	16	30.8	36.5	15000	17000	0.23	N1010 RXTRKCCOP4	N1010 KTN/HC5SP	N1010 K.M1.SP	N1010 RXTRKCCOP4
50	80	16	30.8	36.5	12000	14000	0.26	N1010 RXTRKCCOP4	N1010 KTN/SP	N1010 K.M1.SP	N1010 RXTRKCCOP4
50	80	16	29.7	34.5	20000	28000	0.23	N1010 RXTRKCCOP4	N1010 KTNHA/HC5SP	N1010 K.M1.SP	N1010 RXTRKCCOP4
50	80	16	29.7	34.5	19000	26000	0.26	N1010 RXTRKCCOP4	N1010 KTNHA/SP	N1010 K.M1.SP	N1010 RXTRKCCOP4
55	90	18	40.2	48	13000	15000	0.35	N1011 RXTRKCCOP4	N1011 KTN/HC5SP	N1011 K.M1.SP	N1011 RXTRKCCOP4
55	90	18	40.2	48	11000	13000	0.39	N1011 RXTRKCCOP4	N1011 KTN/SP	N1011 K.M1.SP	N1011 RXTRKCCOP4
55	90	18	39.1	46.5	19000	26000	0.35	N1011 RXTRKCCOP4	N1011 KTNHA/HC5SP	N1011 K.M1.SP	N1011 RXTRKCCOP4
55	90	18	39.1	46.5	17000	24000	0.39	N1011 RXTRKCCOP4	N1011 KTNHA/SP	N1011 K.M1.SP	N1011 RXTRKCCOP4
60	95	18	42.9	53	12000	14000	0.37	N1012 RXTRKCCOP4	N1012 KTN/HC5SP	N1012 K.M1.SP	N1012 RXTRKCCOP4
60	95	18	42.9	53	10000	12000	0.42	N1012 RXTRKCCOP4	N1012 KTN/SP	N1012 K.M1.SP	N1012 RXTRKCCOP4
60	95	18	41.3	51	18000	24000	0.37	N1012 RXTRKCCOP4	N1012 KTNHA/HC5SP	N1012 K.M1.SP	N1012 RXTRKCCOP4
60	95	18	41.3	51	16000	22000	0.42	N1012 RXTRKCCOP4	N1012 KTNHA/SP	N1012 K.M1.SP	N1012 RXTRKCCOP4
65	100	18	44.6	58.5	11000	13000	0.39	N1013 RXTRKCCOP4	N1013 KTN/HC5SP	N1013 K.M1.SP	N1013 RXTRKCCOP4
65	100	18	44.6	58.5	9500	11000	0.44	N1013 RXTRKCCOP4	N1013 KTN/SP	N1013 K.M1.SP	N1013 RXTRKCCOP4
65	100	18	44	56	17000	22000	0.39	N1013 RXTRKCCOP4	N1013 KTNHA/HC5SP	N1013 K.M1.SP	N1013 RXTRKCCOP4
65	100	18	44	56	15000	20000	0.44	N1013 RXTRKCCOP4	N1013 KTNHA/SP	N1013 K.M1.SP	N1013 RXTRKCCOP4
70	110	20	57.2	75	10000	12000	0.55	N1014 RXTRKCCOP4	N1014 KTN/HC5SP	N1014 K.M1.SP	N1014 RXTRKCCOP4
70	110	20	57.2	75	9000	10000	0.62	N1014 RXTRKCCOP4	N1014 KTN/SP	N1014 K.M1.SP	N1014 RXTRKCCOP4
70	110	20	55	72	15000	20000	0.55	N1014 RXTRKCCOP4	N1014 KTNHA/HC5SP	N1014 K.M1.SP	N1014 RXTRKCCOP4
70	110	20	55	72	13000	19000	0.62	N1014 RXTRKCCOP4	N1014 KTNHA/SP	N1014 K.M1.SP	N1014 RXTRKCCOP4
75	115	20	56.1	75	9500	11000	0.57	N1015 RXTRKCCOP4	N1015 KTN/HC5SP	N1015 K.M1.SP	N1015 RXTRKCCOP4
75	115	20	56.1	75	8500	9500	0.65	N1015 RXTRKCCOP4	N1015 KTN/SP	N1015 K.M1.SP	N1015 RXTRKCCOP4
75	115	20	55	72	14000	20000	0.57	N1015 RXTRKCCOP4	N1015 KTNHA/HC5SP	N1015 K.M1.SP	N1015 RXTRKCCOP4
75	115	20	55	72	13000	18000	0.65	N1015 RXTRKCCOP4	N1015 KTNHA/SP	N1015 K.M1.SP	N1015 RXTRKCCOP4
80	125	22	69.3	93	9000	10000	0.79	N1016 RXTRKCCOP4	N1016 KTN/HC5SP	N1016 K.M1.SP	N1016 RXTRKCCOP4
80	125	22	69.3	93	8000	9000	0.89	N1016 RXTRKCCOP4	N1016 KTN/SP	N1016 K.M1.SP	N1016 RXTRKCCOP4
80	125	22	67.1	90	13000	18000	0.79	N1016 RXTRKCCOP4	N1016 KTNHA/HC5SP	N1016 K.M1.SP	N1016 RXTRKCCOP4
80	125	22	67.1	90	12000	16000	0.88	N1016 RXTRKCCOP4	N1016 KTNHA/SP	N1016 K.M1.SP	N1016 RXTRKCCOP4
85	130	22	73.7	102	9000	10000	0.8	N1017 RXTRKCCOP4	N1017 KTN9/HC5SP	N1017 K.M1.SP	N1017 RXTRKCCOP4
85	130	22	73.7	102	7500	8500	0.9	N1017 RXTRKCCOP4	N1017 KTN9/SP	N1017 K.M1.SP	N1017 RXTRKCCOP4
85	130	22	70.4	98	13000	17000	0.79	N1017 RXTRKCCOP4	N1017 KTNHA/HC5SP	N1017 K.M1.SP	N1017 RXTRKCCOP4
85	130	22	70.4	98	11000	16000	0.89	N1017 RXTRKCCOP4	N1017 KTNHA/SP	N1017 K.M1.SP	N1017 RXTRKCCOP4
90	140	24	79.2	108	8500	9500	1.08	N1018 RXTRKCCOP4	N1018 KTN9/HC5SP	N1018 K.M1.SP	N1018 RXTRKCCOP4
90	140	24	79.2	108	7000	8000	1.2	N1018 RXTRKCCOP4	N1018 KTN9/SP	N1018 K.M1.SP	N1018 RXTRKCCOP4
90	140	24	76.5	104	12000	16000	1.07	N1018 RXTRKCCOP4	N1018 KTNHA/HC5SP	N1018 K.M1.SP	N1018 RXTRKCCOP4
90	140	24	76.5	104	10000	14000	1.19	N1018 RXTRKCCOP4	N1018 KTNHA/SP	N1018 K.M1.SP	N1018 RXTRKCCOP4
95	145	24	84.2	116	8000	9000	1.12	N1019 RXTRKCCOP4	N1019 KTN9/HC5SP	N1019 K.M1.SP	N1019 RXTRKCCOP4
95	145	24	84.2	116	6700	7500	1.25	N1019 RXTRKCCOP4	N1019 KTN9/SP	N1019 K.M1.SP	N1019 RXTRKCCOP4
95	145	24	80.9	112	11000	15000	1.12	N1019 RXTRKCCOP4	N1019 KTNHA/HC5SP	N1019 K.M1.SP	N1019 RXTRKCCOP4
95	145	24	80.9	112	10000	14000	1.25	N1019 RXTRKCCOP4	N1019 KTNHA/SP	N1019 K.M1.SP	N1019 RXTRKCCOP4
100	150	24	88	125	7500	8500	1.17	N1020 RXTRKCCOP4	N1020 KTN9/HC5SP	N1020 K.M1.SP	N1020 RXTRKCCOP4
100	150	24	88	125	6700	7500	1.31	N1020 RXTRKCCOP4	N1020 KTN9/SP	N1020 K.M1.SP	N1020 RXTRKCCOP4

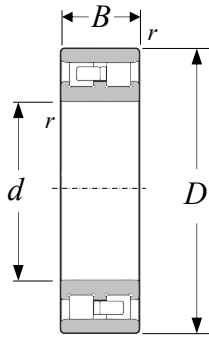
## HIGH PRECISION BEARINGS

### Cylindrical Roller Bearings, Single Row

Table 137  
Bore Diameter 100mm – 120mm



Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	Dynamic C	Static C <sub>0</sub>	Grease	Oil-Air		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
100	150	24	85.8	120	11000	15000	1.17	N1020 RXTRKRCCOP4	N1020 KTNHA/HC5SP	N1020 K.M1.SP	N1020 RXTRKRCCOP4
100	150	24	85.8	120	9500	13000	1.31	N1020 RXTRKRCCOP4	N1020 KTNHA/SP	N1020 K.M1.SP	N1020 RXTRKRCCOP4
105	160	26	110	153	7000	8000	1.44	N1021 RXTRKRCCOP4	N1021 KTN9/HC5SP	N1021 K.M1.SP	N1021 RXTRKRCCOP4
105	160	26	110	153	6300	7000	1.65	N1021 RXTRKRCCOP4	N1021 KTN9/SP	N1021 K.M1.SP	N1021 RXTRKRCCOP4
105	160	26	108	146	10000	14000	1.44	N1021 RXTRKRCCOP4	N1021 KTNHA/HC5SP	N1021 K.M1.SP	N1021 RXTRKRCCOP4
105	160	26	108	146	9000	13000	1.64	N1021 RXTRKRCCOP4	N1021 KTNHA/SP	N1021 K.M1.SP	N1021 RXTRKRCCOP4
110	170	28	128	180	6300	7000	1.79	N1022 RXTRKRCCOP4	N1022 KTN9/HC5SP	N1022 K.M1.SP	N1022 RXTRKRCCOP4
110	170	28	128	180	5600	6300	2.04	N1022 RXTRKRCCOP4	N1022 KTN9/SP	N1022 K.M1.SP	N1022 RXTRKRCCOP4
110	170	28	125	173	9500	13000	1.78	N1022 RXTRKRCCOP4	N1022 KTNHA/HC5SP	N1022 K.M1.SP	N1022 RXTRKRCCOP4
110	170	28	125	173	8500	12000	2.03	N1022 RXTRKRCCOP4	N1022 KTNHA/SP	N1022 K.M1.SP	N1022 RXTRKRCCOP4
120	180	28	134	196	9500	13000	1.92	N1024 RXTRKRCCOP4	N1024 KTN9/HC5SP	N1024 K.M1.SP	N1024 RXTRKRCCOP4
120	180	28	134	196	5300	6000	2.2	N1024 RXTRKRCCOP4	N1024 KTN9/SP	N1024 K.M1.SP	N1024 RXTRKRCCOP4
120	180	28	130	186	9000	12000	1.92	N1024 RXTRKRCCOP4	N1024 KTNHA/HC5SP	N1024 K.M1.SP	N1024 RXTRKRCCOP4
120	180	28	130	186	8000	11000	2.18	N1024 RXTRKRCCOP4	N1024 KTNHA/SP	N1024 K.M1.SP	N1024 RXTRKRCCOP4



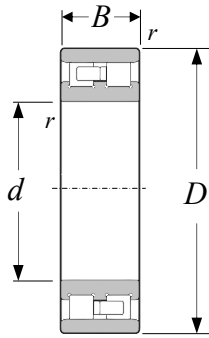
**HIGH PRECISION BEARINGS**  
Cylindrical Roller Bearings, Double Row

Table 138  
Bore Diameter 25mm – 130mm

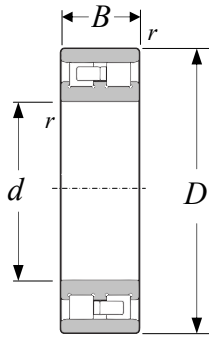
Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	C	C <sub>0</sub>	Grease	Oil-Air		Local	SKF	FAG	NSK
mm	mm	mm	kN		r/min	r/min	kg				
25	47	16	26	30	19000	22000	0.12	NN3005 MBP4	NN3005 /SP	NN3005 M.SP	NN3005 MBP4
25	47	16	26	30	19000	22000	0.12	NN3005 MBKRCCOP4	NN3005 K/SP	NN3005 SK.M.SP	NN3005 MBKRCCOP4
30	55	19	30.8	37.5	16000	18000	0.19	NN3006 TBKRCCOP4	NN3006 KTN/SP	NN3006 SK.M.SP	NN3006 TBKRCCOP4
30	55	19	30.8	37.5	16000	18000	0.19	NN3006 TBP4	NN3006 TN/SP	NN3006 M.SP	NN3006 TBP4
35	62	20	39.1	50	14000	16000	0.25	NN3007 MBP4	NN3007 /SP	NN3007 M.SP	NN3007 MBP4
35	62	20	39.1	50	14000	16000	0.25	NN3007 MBKRCCOP4	NN3007 K/SP	NN3007 SK.M.SP	NN3007 MBKRCCOP4
40	68	21	42.9	56	12000	14000	0.3	NN3008 TBKRCCOP4	NN3008 KTN/SP	NN3008 SK.M.SP	NN3008 TBKRCCOP4
40	68	21	42.9	56	12000	14000	0.3	NN3008 TBP4	NN3008 TN/SP	NN3008 M.SP	NN3008 TBP4
45	75	23	50.1	65.5	11000	13000	0.38	NN3009 TBKRCCOP4	NN3009 KTN/SP	NN3009 SK.M.SP	NN3009 TBKRCCOP4
45	75	23	50.1	65.5	11000	13000	0.38	NN3009 TBP4	NN3009 TN/SP	NN3009 M.SP	NN3009 TBP4
50	80	23	52.8	73.5	10000	12000	0.42	NN3010 TBKRCCOP4	NN3010 KTN/SP	NN3010 SK.M.SP	NN3010 TBKRCCOP4
50	80	23	52.8	73.5	10000	12000	0.42	NN3010 TBP4	NN3010 TN/SP	NN3010 M.SP	NN3010 TBP4
55	90	26	69.3	96.5	9500	11000	0.62	NN3011 TBKRCCOP4	NN3011 KTN/SP	NN3011 SK.M.SP	NN3011 TBKRCCOP4
55	90	26	69.3	96.5	9500	11000	0.62	NN3011 TBP4	NN3011 TN/SP	NN3011 M.SP	NN3011 TBP4
60	95	26	73.7	106	9000	10000	0.66	NN3012 TBKRCCOP4	NN3012 KTN/SP	NN3012 SK.M.SP	NN3012 TBKRCCOP4
60	95	26	73.7	106	9000	10000	0.66	NN3012 TBP4	NN3012 TN/SP	NN3012 M.SP	NN3012 TBP4
65	100	26	76.5	116	8500	9500	0.71	NN3013 TBKRCCOP4	NN3013 KTN/SP	NN3013 SK.M.SP	NN3013 TBKRCCOP4
65	100	26	76.5	116	8500	9500	0.71	NN3013 TBP4	NN3013 TN/SP	NN3013 M.SP	NN3013 TBP4
70	110	30	96.8	150	7500	8500	1	NN3014 TBKRCCOP4	NN3014 KTN/SP	NN3014 SK.M.SP	NN3014 TBKRCCOP4
70	110	30	96.8	150	7500	8500	1	NN3014 TBP4	NN3014 TN/SP	NN3014 M.SP	NN3014 TBP4
75	115	30	96.8	150	7000	8000	1.1	NN3015 TBKRCCOP4	NN3015 KTN/SP	NN3015 SK.M.SP	NN3015 TBKRCCOP4
75	115	30	96.8	150	7000	8000	1.1	NN3015 TBP4	NN3015 TN/SP	NN3015 M.SP	NN3015 TBP4
80	125	34	119	186	6700	7500	1.45	NN3016 TBKRCCOP4	NN3016 KTN/SP	NN3016 SK.M.SP	NN3016 TBKRCCOP4
80	125	34	119	186	6700	7500	1.45	NN3016 TBP4	NN3016 TN/SP	NN3016 M.SP	NN3016 TBP4
85	130	34	125	204	6300	7000	1.6	NN3017 TBKRCCOP4	NN3017 KTN9/SP	NN3017 SK.M.SP	NN3017 TBKRCCOP4
85	130	34	125	204	6300	7000	1.6	NN3017 TBP4	NN3017 TN9/SP	NN3017 M.SP	NN3017 TBP4
90	140	37	138	216	6000	6700	2	NN3018 TBKRCCOP4	NN3018 KTN9/SP	NN3018 SK.M.SP	NN3018 TBKRCCOP4
90	140	37	138	216	6000	6700	2	NN3018 TBP4	NN3018 TN9/SP	NN3018 M.SP	NN3018 TBP4
95	145	37	142	232	5600	6300	2.1	NN3019 TBKRCCOP4	NN3019 KTN9/SP	NN3019 SK.M.SP	NN3019 TBKRCCOP4
95	145	37	142	232	5600	6300	2.1	NN3019 TBP4	NN3019 TN9/SP	NN3019 M.SP	NN3019 TBP4
100	140	40	128	255	5600	6300	1.9	NNU4920 MBE44P4	NNU4920 B/SPW33	NNU4920 S.M.SP	NNU4920 MBE44P4
100	140	40	128	255	5600	6300	1.9	NNU4920 MBKRE44CCOP4	NNU4920 BK/SPW33	NNU4920 SK.M.SP	NNU4920 MBKRE44CCOP4
100	150	37	151	250	5300	6000	2.2	NN3020 TBKRCCOP4	NN3020 KTN9/SP	NN3020 SK.M.SP	NN3020 TBKRCCOP4
100	150	37	151	250	5300	6000	2.2	NN3020 TBP4	NN3020 TN9/SP	NN3020 M.SP	NN3020 TBP4
105	145	40	130	260	5300	6000	2	NNU4921 MBE44P4	NNU4921 B/SPW33	NNU4921 S.M.SP	NNU4921 MBE44P4
105	145	40	130	260	5300	6000	2	NNU4921 MBKRE44CCOP4	NNU4921 BK/SPW33	NNU4921 SK.M.SP	NNU4921 MBKRE44CCOP4
105	160	41	190	305	5000	5600	2.7	NN3021 TBKRCCOP4	NN3021 KTN9/SP	NN3021 SK.M.SP	NN3021 TBKRCCOP4
105	160	41	190	305	5000	5600	2.7	NN3021 TBP4	NN3021 TN9/SP	NN3021 M.SP	NN3021 TBP4
110	150	40	132	270	5300	6000	2.05	NNU4922 MBE44P4	NNU4922 B/SPW33	NNU4922 S.M.SP	NNU4922 MBE44P4
110	150	40	132	270	5300	6000	2.05	NNU4922 MBKRE44CCOP4	NNU4922 BK/SPW33	NNU4922 SK.M.SP	NNU4922 MBKRE44CCOP4
110	170	45	220	360	4800	5300	3.4	NN3022 TBKRCCOP4	NN3022 KTN9/SP	NN3022 SK.M.SP	NN3022 TBKRCCOP4
110	170	45	220	360	4800	5300	3.4	NN3022 TBP4	NN3022 TN9/SP	NN3022 M.SP	NN3022 TBP4
120	165	45	176	340	4800	5300	2.8	NNU4924 MBE44P4	NNU4924 B/SPW33	NNU4924 S.M.SP	NNU4924 MBE44P4
120	165	45	176	340	4800	5300	2.8	NNU4924 MBKRE44CCOP4	NNU4924 BK/SPW33	NNU4924 SK.M.SP	NNU4924 MBKRE44CCOP4
120	180	46	229	390	4500	5000	3.7	NN3024 TBKRCCOP4	NN3024 KTN9/SP	NN3024 SK.M.SP	NN3024 TBKRCCOP4
120	180	46	229	390	4500	5000	3.7	NN3024 TBP4	NN3024 TN9/SP	NN3024 M.SP	NN3024 TBP4
130	180	50	187	390	4300	4800	3.85	NNU4926 MBE44P4	NNU4926 B/SPW33	NNU4926 S.M.SP	NNU4926 MBE44P4
130	180	50	187	390	4300	4800	3.85	NNU4926 MBKRE44CCOP4	NNU4926 BK/SPW33	NNU4926 SK.M.SP	NNU4926 MBKRE44CCOP4
130	200	52	286	480	4000	4500	5.55	NN3026 TBKRCCOP4	NN3026 KTN9/SP	NN3026 SK.M.SP	NN3026 TBKRCCOP4
130	200	52	286	480	4000	4500	5.55	NN3026 TBP4	NN3026 TN9/SP	NN3026 M.SP	NN3026 TBP4

**HIGH PRECISION BEARINGS**  
Cylindrical Roller Bearings, Double Row

Table 139  
Bore Diameter 140mm – 260mm



Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	C	C <sub>0</sub>	Grease	Oil-Air		Local	SKF	FAG	NSK
mm	mm	mm	kN		r/min		kg				
140	210	53	297	520	3800	4300	6	NN3028 MBE44P4	NN3028 /SPW33	NN3028 M.SP	NN3028 MBE44P4
140	190	50	190	400	4000	4500	4.1	NNU4928 MBE44P4	NNU4928 B/SPW33	NNU4928 S.M.SP	NNU4928 MBE44P4
140	190	50	190	400	4000	4500	4.1	NNU4928 MBKRE44CCOP4	NNU4928 BK/SPW33	NNU4928 SK.M.SP	NNU4928 MBKRE44CCOP4
140	210	53	297	520	3800	4300	6	NN3028 MBKRE44CCOP4	NN3028 K/SPW33	NN3028 SK.M.SP	NN3028 MBKRE44CCOP4
150	210	60	330	655	3800	4300	6.25	NNU4930 MBE44P4	NNU4930 B/SPW33	NNU4930 S.M.SP	NNU4930 MBE44P4
150	210	60	330	655	3800	4300	6.25	NNU4930 MBKRE44CCOP4	NNU4930 BK/SPW33	NNU4930 SK.M.SP	NNU4930 MBKRE44CCOP4
150	225	56	330	570	3600	4000	7.3	NN3030 MBKRE44CCOP4	NN3030 K/SPW33	NN3030 SK.M.SP	NN3030 MBKRE44CCOP4
150	225	56	330	570	3600	4000	7.3	NN3030 E44P4	NN3030 SPW33	NN3030 M.SP	NN3030 E44P4
160	220	60	330	680	3600	4000	6.6	NNU4932 MBE44P4	NNU4932 B/SPW33	NNU4932 S.M.SP	NNU4932 MBE44P4
160	220	60	330	680	3600	4000	6.6	NNU4932 MBKRE44CCOP4	NNU4932 BK/SPW33	NNU4932 SK.M.SP	NNU4932 MBKRE44CCOP4
160	240	60	369	655	3400	3800	8.8	NN3032 MBKRE44CCOP4	NN3032 K/SPW33	NN3032 SK.M.SP	NN3032 MBKRE44CCOP4
160	240	60	369	655	3400	3800	8.8	NN3032 E44P4	NN3032 SPW33	NN3032 M.SP	NN3032 E44P4
170	230	60	336	695	3400	3800	6.95	NNU4934 MBE44P4	NNU4934 B/SPW33	NNU4934 S.M.SP	NNU4934 MBE44P4
170	230	60	336	695	3400	3800	6.95	NNU4934 MBKRE44CCOP4	NNU4934 BK/SPW33	NNU4934 SK.M.SP	NNU4934 MBKRE44CCOP4
170	260	67	457	800	3200	3600	12	NN3034 MBKRE44CCOP4	NN3034 K/SPW33	NN3034 SK.M.SP	NN3034 MBKRE44CCOP4
170	260	67	457	800	3200	3600	12	NN3034 E44P4	NN3034 SPW33	NN3034 M.SP	NN3034 E44P4
180	250	69	402	850	3000	3400	10.5	NNU4936 MBE44P4	NNU4936 B/SPW33	NNU4936 S.M.SP	NNU4936 MBE44P4
180	250	69	402	850	3000	3400	10.5	NNU4936 MBKRE44CCOP4	NNU4936 BK/SPW33	NNU4936 SK.M.SP	NNU4936 MBKRE44CCOP4
180	280	74	561	1000	2800	3200	16	NN3036 MBKRE44CCOP4	NN3036 K/SPW33	NN3036 SK.M.SP	NN3036 MBKRE44CCOP4
180	280	74	561	1000	2800	3200	16	NN3036 E44P4	NN3036 SPW33	NN3036 M.SP	NN3036 E44P4
190	260	69	402	880	2800	3200	11	NNU4938 MBE44P4	NNU4938 B/SPW33	NNU4938 S.M.SP	NNU4938 MBE44P4
190	260	69	402	880	2800	3200	11	NNU4938 MBKRE44CCOP4	NNU4938 BK/SPW33	NNU4938 SK.M.SP	NNU4938 MBKRE44CCOP4
190	290	75	594	1080	2600	3000	17	NN3038 MBKRE44CCOP4	NN3038 K/SPW33	NN3038 SK.M.SP	NN3038 MBKRE44CCOP4
190	290	75	594	1080	2600	3000	17	NN3038 E44P4	NN3038 SPW33	NN3038 M.SP	NN3038 E44P4
200	280	80	484	1040	2600	3000	15	NNU4940 MBE44P4	NNU4940 B/SPW33	NNU4940 S.M.SP	NNU4940 MBE44P4
200	280	80	484	1040	2600	3000	15	NNU4940 MBKRE44CCOP4	NNU4940 BK/SPW33	NNU4940 SK.M.SP	NNU4940 MBKRE44CCOP4
200	280	80	484	1040	2600	3000	15	NNU4940 MBKRE44CCOP4	NNU4940 BK/SPW33	NNU4940 SK.M.SP	NNU4940 MBKRE44CCOP4
200	310	82	644	1140	2400	2800	21	NN3040 MBKRE44CCOP4	NN3040 K/SPW33	NN3040 SK.M.SP	NN3040 MBKRE44CCOP4
200	310	82	644	1140	2400	2800	21	NN3040 MBKRE44CCOP4	NN3040 K/SPW33	NN3040 SK.M.SP	NN3040 MBKRE44CCOP4
200	310	82	644	1140	2400	2800	21	NN3040 E44P4	NN3040 SPW33	NN3040 M.SP	NN3040 E44P4
200	310	82	644	1140	2400	2800	21	NN3040 E44P4	NN3040 SPW33	NN3040 M.SP	NN3040 E44P4
220	300	80	512	1140	2400	2800	16.5	NNU4944 MBE44P4	NNU4944 B/SPW33	NNU4944 S.M.SP	NNU4944 MBE44P4
220	300	80	512	1140	2400	2800	16.5	NNU4944 MBE44P4	NNU4944 B/SPW33	NNU4944 S.M.SP	NNU4944 MBE44P4
220	300	80	512	1140	2400	2800	16.5	NNU4944 MBKRE44CCOP4	NNU4944 BK/SPW33	NNU4944 SK.M.SP	NNU4944 MBKRE44CCOP4
220	300	80	512	1140	2400	2800	16.5	NNU4944 MBKRE44CCOP4	NNU4944 BK/SPW33	NNU4944 SK.M.SP	NNU4944 MBKRE44CCOP4
220	340	90	809	1460	2200	2600	27.5	NN3044 MBKRE44CCOP4	NN3044 K/SPW33	NN3044 SK.M.SP	NN3044 MBKRE44CCOP4
220	340	90	809	1460	2200	2600	27.5	NN3044 MBKRE44CCOP4	NN3044 K/SPW33	NN3044 SK.M.SP	NN3044 MBKRE44CCOP4
220	340	90	809	1460	2200	2600	27.5	NN3044 E44P4	NN3044 SPW33	NN3044 M.SP	NN3044 E44P4
220	340	90	809	1460	2200	2600	27.5	NN3044 E44P4	NN3044 SPW33	NN3044 M.SP	NN3044 E44P4
240	320	80	528	1220	2200	2600	17.5	NNU4948 MBE44P4	NNU4948 B/SPW33	NNU4948 S.M.SP	NNU4948 MBE44P4
240	320	80	528	1220	2200	2600	17.5	NNU4948 MBE44P4	NNU4948 B/SPW33	NNU4948 S.M.SP	NNU4948 MBE44P4
240	320	80	528	1220	2200	2600	17.5	NNU4948 MBKRE44CCOP4	NNU4948 BK/SPW33	NNU4948 SK.M.SP	NNU4948 MBKRE44CCOP4
240	320	80	528	1220	2200	2600	17.5	NNU4948 MBKRE44CCOP4	NNU4948 BK/SPW33	NNU4948 SK.M.SP	NNU4948 MBKRE44CCOP4
240	360	92	842	1560	2000	2400	30.5	NN3048 MBKRE44CCOP4	NN3048 K/SPW33	NN3048 SK.M.SP	NN3048 MBKRE44CCOP4
240	360	92	842	1560	2000	2400	30.5	NN3048 MBKRE44CCOP4	NN3048 K/SPW33	NN3048 SK.M.SP	NN3048 MBKRE44CCOP4
240	360	92	842	1560	2000	2400	30.5	NN3048 E44P4	NN3048 SPW33	NN3048 M.SP	NN3048 E44P4
240	360	92	842	1560	2000	2400	30.5	NN3048 E44P4	NN3048 SPW33	NN3048 M.SP	NN3048 E44P4
260	360	100	748	1700	2000	2400	30.5	NNU4952 MBE44P4	NNU4952 B/SPW33	NNU4952 S.M.SP	NNU4952 MBE44P4
260	360	100	748	1700	2000	2400	30.5	NNU4952 MBE44P4	NNU4952 B/SPW33	NNU4952 S.M.SP	NNU4952 MBE44P4
260	360	100	748	1700	2000	2400	30.5	NNU4952 MBKRE44CCOP4	NNU4952 BK/SPW33	NNU4952 SK.M.SP	NNU4952 MBKRE44CCOP4
260	360	100	748	1700	2000	2400	30.5	NNU4952 MBKRE44CCOP4	NNU4952 BK/SPW33	NNU4952 SK.M.SP	NNU4952 MBKRE44CCOP4



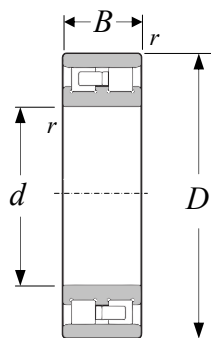
**HIGH PRECISION BEARINGS**  
Cylindrical Roller Bearings, Double Row

Table 140  
Bore Diameter 260mm – 400mm

Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	C	C <sub>0</sub>	Grease	Oil-Air					
mm	mm	mm	kN		r/min		kg	Local	SKF	FAG	NSK
260	360	100	748	1700	2000	2400	30.5	NNU4952 MBKRE44CCOP4	NNU4952 BK/SPW33	NNU4952 SK.M.SP	NNU4952 MBKRE44CCOP4
260	400	104	1020	1930	1900	2200	44	NN3052 MBKRE44CCOP4	NN3052 K/SPW33	NN3052 SK.M.SP	NN3052 MBKRE44CCOP4
260	400	104	1020	1930	1900	2200	44	NN3052 MBKRE44CCOP4	NN3052 K/SPW33	NN3052 SK.M.SP	NN3052 MBKRE44CCOP4
260	400	104	1020	1930	1900	2200	44	NN3052 E44P4	NN3052 SPW33	NN3052 M.SP	NN3052 E44P4
260	400	104	1020	1930	1900	2200	44	NN3052 E44P4	NN3052 SPW33	NN3052 M.SP	NN3052 E44P4
280	380	100	765	1800	1900	2200	32.5	NNU4956 MBE44P4	NNU4956 B/SPW33	NNU4956 S.M.SP	NNU4956 MBE44P4
280	380	100	765	1800	1900	2200	32.5	NNU4956 MBE44P4	NNU4956 B/SPW33	NNU4956 S.M.SP	NNU4956 MBE44P4
280	380	100	765	1800	1900	2200	32.5	NNU4956 MBKRE44CCOP4	NNU4956 BK/SPW33	NNU4956 SK.M.SP	NNU4956 MBKRE44CCOP4
280	380	100	765	1800	1900	2200	32.5	NNU4956 MBKRE44CCOP4	NNU4956 BK/SPW33	NNU4956 SK.M.SP	NNU4956 MBKRE44CCOP4
280	420	106	1080	2080	1800	2000	47.5	NN3056 MBKRE44CCOP4	NN3056 K/SPW33	NN3056 SK.M.SP	NN3056 MBKRE44CCOP4
280	420	106	1080	2080	1800	2000	47.5	NN3056 MBKRE44CCOP4	NN3056 K/SPW33	NN3056 SK.M.SP	NN3056 MBKRE44CCOP4
280	420	106	1080	2080	1800	2000	47.5	NN3056 E44P4	NN3056 SPW33	NN3056 M.SP	NN3056 E44P4
280	420	106	1080	2080	1800	2000	47.5	NN3056 E44P4	NN3056 SPW33	NN3056 M.SP	NN3056 E44P4
300	420	118	1020	2360	1800	2000	48	NNU4960 MBE44P4	NNU4960 B/SPW33	NNU4960 S.M.SP	NNU4960 MBE44P4
300	420	118	1020	2360	1800	2000	48	NNU4960 MBE44P4	NNU4960 B/SPW33	NNU4960 S.M.SP	NNU4960 MBE44P4
300	420	118	1020	2360	1800	2000	48	NNU4960 MBKRE44CCOP4	NNU4960 BK/SPW33	NNU4960 SK.M.SP	NNU4960 MBKRE44CCOP4
300	420	118	1020	2360	1800	2000	48	NNU4960 MBKRE44CCOP4	NNU4960 BK/SPW33	NNU4960 SK.M.SP	NNU4960 MBKRE44CCOP4
300	460	118	1250	2400	1700	1900	66.5	NN3060 MBKRE44CCOP4	NN3060 K/SPW33	NN3060 SK.M.SP	NN3060 MBKRE44CCOP4
300	460	118	1250	2400	1700	1900	66.5	NN3060 MBKRE44CCOP4	NN3060 K/SPW33	NN3060 SK.M.SP	NN3060 MBKRE44CCOP4
300	460	118	1250	2400	1700	1900	66.5	NN3060 E44P4	NN3060 SPW33	NN3060 M.SP	NN3060 E44P4
300	460	118	1250	2400	1700	1900	66.5	NN3060 E44P4	NN3060 SPW33	NN3060 M.SP	NN3060 E44P4
320	440	118	1060	2500	1700	1900	50	NNU4964 MBE44P4	NNU4964 B/SPW33	NNU4964 S.M.SP	NNU4964 MBE44P4
320	440	118	1060	2500	1700	1900	50	NNU4964 MBE44P4	NNU4964 B/SPW33	NNU4964 S.M.SP	NNU4964 MBE44P4
320	440	118	1060	2500	1700	1900	50	NNU4964 MBKRE44CCOP4	NNU4964 BK/SPW33	NNU4964 SK.M.SP	NNU4964 MBKRE44CCOP4
320	440	118	1060	2500	1700	1900	50	NNU4964 MBKRE44CCOP4	NNU4964 BK/SPW33	NNU4964 SK.M.SP	NNU4964 MBKRE44CCOP4
320	480	121	1320	2600	1600	1800	71	NN3064 MBKRE44CCOP4	NN3064 K/SPW33	NN3064 SK.M.SP	NN3064 MBKRE44CCOP4
320	480	121	1320	2600	1600	1800	71	NN3064 MBKRE44CCOP4	NN3064 K/SPW33	NN3064 SK.M.SP	NN3064 MBKRE44CCOP4
340	460	118	1100	2650	1500	1700	53	NNU4968 MBE44P4	NNU4968 B/SPW33	NNU4968 S.M.SP	NNU4968 MBE44P4
340	460	118	1100	2650	1500	1700	53	NNU4968 MBE44P4	NNU4968 B/SPW33	NNU4968 S.M.SP	NNU4968 MBE44P4
340	460	118	1100	2650	1500	1700	53	NNU4968 MBKRE44CCOP4	NNU4968 BK/SPW33	NNU4968 SK.M.SP	NNU4968 MBKRE44CCOP4
340	460	118	1100	2650	1500	1700	53	NNU4968 MBKRE44CCOP4	NNU4968 BK/SPW33	NNU4968 SK.M.SP	NNU4968 MBKRE44CCOP4
340	520	133	1650	3250	1400	1600	94.5	NN3068 MBKRE44CCOP4	NN3068 K/SPW33	NN3068 SK.M.SP	NN3068 MBKRE44CCOP4
340	520	133	1650	3250	1400	1600	94.5	NN3068 MBKRE44CCOP4	NN3068 K/SPW33	NN3068 SK.M.SP	NN3068 MBKRE44CCOP4
360	480	118	1120	2800	1500	1700	55	NNU4972 MBE44P4	NNU4972 B/SPW33	NNU4972 S.M.SP	NNU4972 MBE44P4
360	480	118	1120	2800	1500	1700	55	NNU4972 MBE44P4	NNU4972 B/SPW33	NNU4972 S.M.SP	NNU4972 MBE44P4
360	480	118	1120	2800	1500	1700	55	NNU4972 MBKRE44CCOP4	NNU4972 BK/SPW33	NNU4972 SK.M.SP	NNU4972 MBKRE44CCOP4
360	480	118	1120	2800	1500	1700	55	NNU4972 MBKRE44CCOP4	NNU4972 BK/SPW33	NNU4972 SK.M.SP	NNU4972 MBKRE44CCOP4
360	540	134	1720	3450	1300	1500	102	NN3072 MBKRE44CCOP4	NN3072 K/SPW33	NN3072 SK.M.SP	NN3072 MBKRE44CCOP4
360	540	134	1720	3450	1300	1500	102	NN3072 MBKRE44CCOP4	NN3072 K/SPW33	NN3072 SK.M.SP	NN3072 MBKRE44CCOP4
380	520	140	1450	3600	1300	1500	83.5	NNU4976 MBE44P4	NNU4976 B/SPW33	NNU4976 S.M.SP	NNU4976 MBE44P4
380	520	140	1450	3600	1300	1500	83.5	NNU4976 MBE44P4	NNU4976 B/SPW33	NNU4976 S.M.SP	NNU4976 MBE44P4
380	520	140	1450	3600	1300	1500	83.5	NNU4976 MBKRE44CCOP4	NNU4976 BK/SPW33	NNU4976 SK.M.SP	NNU4976 MBKRE44CCOP4
380	520	140	1450	3600	1300	1500	83.5	NNU4976 MBKRE44CCOP4	NNU4976 BK/SPW33	NNU4976 SK.M.SP	NNU4976 MBKRE44CCOP4
380	560	135	1680	3450	1300	1500	105	NN3076 MBKRE44CCOP4	NN3076 K/SPW33	NN3076 SK.M.SP	NN3076 MBKRE44CCOP4
380	560	135	1680	3450	1300	1500	105	NN3076 MBKRE44CCOP4	NN3076 K/SPW33	NN3076 SK.M.SP	NN3076 MBKRE44CCOP4
400	540	140	1470	3800	1300	1500	87.5	NNU4980 MBKRE44CCOP4	NNU4980 BK/SPW33	NNU4980 SK.M.SP	NNU4980 MBKRE44CCOP4
400	540	140	1470	3800	1300	1500	87.5	NNU4980 MBE44P4	NNU4980 B/SPW33	NNU4980 S.M.SP	NNU4980 MBE44P4
400	540	140	1470	3800	1300	1500	87.5	NNU4980 MBE44P4	NNU4980 B/SPW33	NNU4980 S.M.SP	NNU4980 MBE44P4
400	540	140	1470	3800	1300	1500	87.5	NNU4980 MBKRE44CCOP4	NNU4980 BK/SPW33	NNU4980 SK.M.SP	NNU4980 MBKRE44CCOP4
400	600	148	2160	4500	1200	1400	135	NN3080 MBKRE44CCOP4	NN3080 K/SPW33	NN3080 SK.M.SP	NN3080 MBKRE44CCOP4

**HIGH PRECISION BEARINGS**  
Cylindrical Roller Bearings, Double Row

Table 141  
Bore Diameter 400mm – 670mm



Principal Dimensions			Basic Load Ratings		Max. Speed		Mass	Designations			
d	D	B	C	C <sub>0</sub>	Grease	Oil-Air		Local	SKF	FAG	NSK
mm	mm	mm	kN	kN	r/min	r/min	kg				
400	600	148	2160	4500	1200	1400	135	NN3080 MBKRE44CCOP4	NN3080 K/SPW33	NN3080 SK.M.SP	NN3080 MBKRE44CCOP4
420	560	140	1510	4000	1200	1400	91	NNU4984 MBE44P4	NNU4984 B/SPW33	NNU4984 S.M.SP	NNU4984 MBE44P4
420	560	140	1510	4000	1200	1400	91	NNU4984 MBKRE44CCOP4	NNU4984 BK/SPW33	NNU4984 SK.M.SP	NNU4984 MBKRE44CCOP4
420	560	140	1510	4000	1200	1400	91	NNU4984 MBKRE44CCOP4	NNU4984 BK/SPW33	NNU4984 SK.M.SP	NNU4984 MBKRE44CCOP4
420	620	150	2120	4500	1100	1300	140	NN3084 MBKRE44CCOP4	NN3084 K/SPW33	NN3084 SK.M.SP	NN3084 MBKRE44CCOP4
420	620	150	2120	4500	1100	1300	140	NN3084 MBKRE44CCOP4	NN3084 K/SPW33	NN3084 SK.M.SP	NN3084 MBKRE44CCOP4
460	620	160	2090	5500	1000	1200	130	NNU4992 MBE44P4	NNU4992 B/SPW33	NNU4992 S.M.SP	NNU4992 MBE44P4
460	620	160	2090	5500	1000	1200	130	NNU4992 MBE44P4	NNU4992 B/SPW33	NNU4992 S.M.SP	NNU4992 MBE44P4
460	620	160	2090	5500	1000	1200	130	NNU4992 MBKRE44CCOP4	NNU4992 BK/SPW33	NNU4992 SK.M.SP	NNU4992 MBKRE44CCOP4
460	620	160	2090	5500	1000	1200	130	NNU4992 MBKRE44CCOP4	NNU4992 BK/SPW33	NNU4992 SK.M.SP	NNU4992 MBKRE44CCOP4
460	680	163	2600	5500	1000	1200	190	NN3092 MBKRE44CCOP4	NN3092 K/SPW33	NN3092 SK.M.SP	NN3092 MBKRE44CCOP4
460	680	163	2600	5500	1000	1200	190	NN3092 MBKRE44CCOP4	NN3092 K/SPW33	NN3092 SK.M.SP	NN3092 MBKRE44CCOP4
500	670	170	2330	6100	950	1100	165	NNU49/500 MBE44P4	NNU49/500 B/SPW33X	NNU49/500 S.M.SP	NNU49/500 MBE44P4
500	670	170	2330	6100	950	1100	165	NNU49/500 MBE44P4	NNU49/500 B/SPW33X	NNU49/500 S.M.SP	NNU49/500 MBE44P4
500	670	170	2330	6100	950	1100	165	NNU49/500 MBKRE44CCOP4	NNU49/500 BK/SPW33X	NNU49/500 SK.M.SP	NNU49/500 MBKRE44CCOP4
500	670	170	2330	6100	950	1100	165	NNU49/500 MBKRE44CCOP4	NNU49/500 BK/SPW33X	NNU49/500 SK.M.SP	NNU49/500 MBKRE44CCOP4
600	800	200	3580	10200	800	900	280	NNU49/600 MBE44P4	NNU49/600 B/SPW33X	NNU49/600 S.M.SP	NNU49/600 MBE44P4
600	800	200	3580	10200	800	900	280	NNU49/600 MBE44P4	NNU49/600 B/SPW33X	NNU49/600 S.M.SP	NNU49/600 MBE44P4
600	800	200	3580	10200	800	900	280	NNU49/600 MBKRE44CCOP4	NNU49/600 BK/SPW33X	NNU49/600 SK.M.SP	NNU49/600 MBKRE44CCOP4
600	800	200	3580	10200	800	900	280	NNU49/600 MBKRE44CCOP4	NNU49/600 BK/SPW33X	NNU49/600 SK.M.SP	NNU49/600 MBKRE44CCOP4
670	900	230	4950	13700	700	800	410	NNU49/670 MBE44P4	NNU49/670 B/SPW33X	NNU49/670 S.M.SP	NNU49/670 MBE44P4
670	900	230	4950	13700	700	800	410	NNU49/670 MBE44P4	NNU49/670 B/SPW33X	NNU49/670 S.M.SP	NNU49/670 MBE44P4
670	900	230	4950	13700	700	800	410	NNU49/670 MBKRE44CCOP4	NNU49/670 BK/SPW33X	NNU49/670 SK.M.SP	NNU49/670 MBKRE44CCOP4
670	900	230	4950	13700	700	800	410	NNU49/670 MBKRE44CCOP4	NNU49/670 BK/SPW33X	NNU49/670 SK.M.SP	NNU49/670 MBKRE44CCOP4





# APPENDICES CONTENTS

Conversion Tables, [N - kgf] [kg - lb] [inch - mm]

Tolerance Tables for Shaft Diameters

Tolerance Tables for Housing Bore Diameters

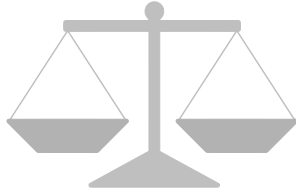


CONVERSION TABLE [N-kgf] [kg-lb]

<i>N</i>	-	<i>kgf</i>	<i>N</i>	-	<i>kgf</i>
9.8066	1	0.1020	500.14	51	5.2006
19.613	2	0.2039	509.95	52	5.3025
29.420	3	0.3059	519.75	53	5.4045
39.227	4	0.4079	529.56	54	5.5065
49.033	5	0.5099	539.37	55	5.6084
58.840	6	0.6118	549.17	56	5.7104
68.647	7	0.7138	558.98	57	5.8124
78.453	8	0.8158	568.79	58	5.9144
88.260	9	0.9177	578.59	59	6.0163
98.066	10	1.0197	588.40	60	6.1183
107.87	11	1.1217	598.21	61	6.2203
117.68	12	1.2237	608.01	62	6.3222
127.49	13	1.3256	617.82	63	6.4242
137.29	14	1.4276	627.63	64	6.5262
147.10	15	1.5296	637.43	65	6.6282
156.91	16	1.6315	647.24	66	6.7301
166.71	17	1.7335	657.05	67	6.8321
176.52	18	1.8355	666.85	68	6.9341
186.33	19	1.9375	676.66	69	7.0360
196.13	20	2.0394	686.47	70	7.1380
205.94	21	2.1414	696.27	71	7.2400
215.75	22	2.2434	706.08	72	7.3420
225.55	23	2.3453	715.89	73	7.4439
235.36	24	2.4473	725.69	74	7.5459
245.17	25	2.5493	735.50	75	7.6479
254.97	26	2.6513	745.31	76	7.7498
264.78	27	2.7532	755.11	77	7.8518
274.59	28	2.8552	764.92	78	7.9538
284.39	29	2.9572	774.73	79	8.0558
294.20	30	3.0591	784.53	80	8.1577
304.01	31	3.1611	794.34	81	8.2597
313.81	32	3.2631	804.15	82	8.3617
323.62	33	3.3651	813.95	83	8.4636
333.43	34	3.4670	823.76	84	8.5656
343.23	35	3.5690	833.57	85	8.6676
353.04	36	3.6710	843.37	86	8.7696
362.85	37	3.7729	853.18	87	8.8715
372.65	38	3.8749	862.99	88	8.9735
382.46	39	3.9769	872.79	89	9.0755
392.27	40	4.0789	882.60	90	9.1774
402.07	41	4.1808	892.41	91	9.2794
411.88	42	4.2828	902.21	92	9.3814
421.69	43	4.3848	912.02	93	9.4834
431.49	44	4.4868	921.83	94	9.5853
441.30	45	4.5887	931.63	95	9.6873
451.11	46	4.6907	941.44	96	9.7893
460.91	47	4.7927	951.25	97	9.8912
470.72	48	4.8946	961.05	98	9.9932
480.53	49	4.9966	970.86	99	10.095
490.33	50	5.0986	980.07	100	10.197

<i>kg</i>	-	<i>lb</i>	<i>kg</i>	-	<i>lb</i>
0.454	1	2.205	23.133	51	112.44
0.907	2	4.409	23.587	52	114.64
1.361	3	6.614	24.040	53	116.84
1.814	4	8.818	24.494	54	119.05
2.268	5	11.023	24.948	55	121.25
2.722	6	13.228	25.401	56	123.46
3.175	7	15.432	25.855	57	125.66
3.629	8	17.637	26.308	58	127.87
4.082	9	19.842	26.762	59	130.07
4.536	10	22.046	27.216	60	132.28
4.990	11	24.251	27.669	61	134.48
5.443	12	26.455	28.123	62	136.69
5.897	13	28.660	28.576	63	138.89
6.350	14	30.865	29.030	64	141.10
6.804	15	33.069	29.484	65	143.30
7.257	16	35.274	29.937	66	145.51
7.711	17	37.479	30.391	67	147.71
8.165	18	39.683	30.844	68	149.91
8.618	19	41.888	31.298	69	152.12
9.072	20	44.092	31.751	70	154.32
9.525	21	46.297	32.205	71	156.53
9.979	22	48.502	32.659	72	158.73
10.433	23	50.706	33.112	73	160.94
10.886	24	52.911	33.566	74	163.14
11.340	25	55.116	34.019	75	165.35
11.793	26	57.320	34.473	76	167.55
12.247	27	59.525	34.927	77	169.76
12.701	28	61.729	35.380	78	171.96
13.154	29	63.934	35.834	79	174.17
13.608	30	66.139	36.287	80	176.37
14.061	31	68.343	36.741	81	178.57
14.515	32	70.548	37.195	82	180.78
14.969	33	72.753	37.648	83	182.98
15.422	34	74.957	38.102	84	185.19
15.876	35	77.162	38.555	85	187.39
16.329	36	79.366	39.009	86	189.60
16.783	37	81.571	39.463	87	191.80
17.237	38	83.776	39.916	88	194.01
17.690	39	85.980	40.370	89	196.21
18.144	40	88.185	40.823	90	198.42
18.597	41	90.390	41.277	91	200.62
19.051	42	92.594	41.730	92	202.83
19.504	43	94.799	42.184	93	205.03
19.958	44	97.003	42.638	94	207.23
20.412	45	99.208	43.091	95	209.44
20.865	46	101.41	43.545	96	211.64
21.319	47	103.62	43.998	97	213.85
21.772	48	105.82	44.452	98	216.05
22.226	49	108.03	44.906	99	218.26
22.680	50	110.23	45.360	100	220.46





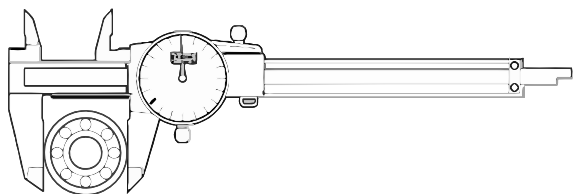
CONVERSION TABLE

*Inch – mm*  
*1” – 40”*

<i>Inch</i>		<i>Inches</i>									
<i>Fraction</i>	<i>Decimal</i>	<i>11</i>	<i>12</i>	<i>13</i>	<i>14</i>	<i>15</i>	<i>16</i>	<i>17</i>	<i>18</i>	<i>19</i>	<i>20</i>
		<i>mm</i>									
<b>0</b>	<b>0.0000</b>	<b>279.400</b>	<b>304.800</b>	<b>330.200</b>	<b>355.600</b>	<b>381.000</b>	<b>406.400</b>	<b>431.800</b>	<b>457.200</b>	<b>482.600</b>	<b>508.000</b>
1 / 16	0.0625	280.988	306.388	331.788	357.188	382.588	407.988	433.388	458.788	484.188	509.588
1 / 8	0.1250	282.575	307.975	333.375	358.775	384.175	409.575	434.975	460.375	485.775	511.175
3 / 16	0.1875	284.162	309.562	334.962	360.362	385.762	411.162	436.562	461.962	487.362	512.762
<b>1 / 4</b>	<b>0.2500</b>	<b>285.750</b>	<b>311.150</b>	<b>336.550</b>	<b>361.950</b>	<b>387.350</b>	<b>412.750</b>	<b>438.150</b>	<b>463.550</b>	<b>488.950</b>	<b>514.350</b>
5 / 16	0.3125	287.338	312.738	338.138	363.538	388.938	414.338	439.738	465.138	490.538	515.938
3 / 8	0.3750	288.925	314.325	339.725	365.125	390.525	415.925	441.325	466.725	492.125	517.525
7 / 16	0.4375	290.512	315.912	341.312	366.712	392.112	417.512	442.912	468.312	493.712	519.112
<b>1 / 2</b>	<b>0.5000</b>	<b>292.100</b>	<b>317.500</b>	<b>342.900</b>	<b>368.300</b>	<b>393.700</b>	<b>419.100</b>	<b>444.500</b>	<b>469.900</b>	<b>495.300</b>	<b>520.700</b>
9 / 16	0.5625	293.688	319.088	344.488	369.888	395.288	420.688	446.088	471.488	496.888	522.288
5 / 8	0.6250	295.275	320.675	346.075	371.475	396.875	422.275	447.675	473.075	498.475	523.875
11 / 16	0.6875	296.862	322.262	347.662	373.062	398.462	423.862	449.262	474.662	500.062	525.462
<b>3 / 4</b>	<b>0.7500</b>	<b>298.450</b>	<b>323.850</b>	<b>349.250</b>	<b>374.650</b>	<b>400.050</b>	<b>425.450</b>	<b>450.850</b>	<b>476.250</b>	<b>501.650</b>	<b>527.050</b>
13 / 16	0.8125	300.038	325.438	350.838	376.238	401.638	427.038	452.438	477.838	503.238	528.638
7 / 8	0.8750	301.625	327.025	352.425	377.825	403.225	428.625	454.025	479.425	504.825	530.225
15 / 16	0.9375	303.212	328.612	354.012	379.412	404.812	430.212	455.612	481.012	506.412	531.812

<i>Inch</i>		<i>Inches</i>									
<i>Fraction</i>	<i>Decimal</i>	<i>21</i>	<i>22</i>	<i>23</i>	<i>24</i>	<i>25</i>	<i>26</i>	<i>27</i>	<i>28</i>	<i>29</i>	<i>30</i>
		<i>mm</i>									
<b>0</b>	<b>0.0000</b>	<b>533.400</b>	<b>558.800</b>	<b>584.200</b>	<b>609.600</b>	<b>635.000</b>	<b>660.400</b>	<b>685.800</b>	<b>711.200</b>	<b>736.600</b>	<b>762.000</b>
1 / 16	0.0625	534.988	560.388	585.788	611.188	636.588	661.988	687.388	712.788	738.188	763.588
1 / 8	0.1250	536.575	561.975	587.375	612.775	638.175	663.575	688.975	714.375	739.775	765.175
3 / 16	0.1875	538.162	563.562	588.962	614.362	639.762	665.162	690.562	715.962	741.362	766.762
<b>1 / 4</b>	<b>0.2500</b>	<b>539.750</b>	<b>565.150</b>	<b>590.550</b>	<b>615.950</b>	<b>641.350</b>	<b>666.750</b>	<b>692.150</b>	<b>717.550</b>	<b>742.950</b>	<b>768.350</b>
5 / 16	0.3125	541.338	566.738	592.138	617.538	642.938	668.338	693.738	719.138	744.538	769.938
3 / 8	0.3750	542.925	568.325	593.725	619.125	644.525	669.925	695.325	720.725	746.125	771.525
7 / 16	0.4375	544.512	569.912	595.312	620.712	646.112	671.512	696.912	722.312	747.712	773.112
<b>1 / 2</b>	<b>0.5000</b>	<b>546.100</b>	<b>571.500</b>	<b>596.900</b>	<b>622.300</b>	<b>647.700</b>	<b>673.100</b>	<b>698.500</b>	<b>723.900</b>	<b>749.300</b>	<b>774.700</b>
9 / 16	0.5625	547.688	573.088	598.488	623.888	649.288	674.688	700.088	725.488	750.888	776.288
5 / 8	0.6250	549.275	574.675	600.075	625.475	650.875	676.275	701.675	727.075	752.475	777.875
11 / 16	0.6875	550.862	576.262	601.662	627.062	652.462	677.862	703.262	728.662	754.062	779.462
<b>3 / 4</b>	<b>0.7500</b>	<b>552.450</b>	<b>577.850</b>	<b>603.250</b>	<b>628.650</b>	<b>654.050</b>	<b>679.450</b>	<b>704.850</b>	<b>730.250</b>	<b>755.650</b>	<b>781.050</b>
13 / 16	0.8125	554.038	579.438	604.838	630.238	655.638	681.038	706.438	731.838	757.238	782.638
7 / 8	0.8750	555.625	581.025	606.425	631.825	657.225	682.625	708.025	733.425	758.825	784.225
15 / 16	0.9375	557.212	582.612	608.012	633.412	658.812	684.212	709.612	735.012	760.412	785.812

<i>Inch</i>		<i>Inches</i>									
<i>Fraction</i>	<i>Decimal</i>	<i>31</i>	<i>32</i>	<i>33</i>	<i>34</i>	<i>35</i>	<i>36</i>	<i>37</i>	<i>38</i>	<i>39</i>	<i>40</i>
		<i>mm</i>									
<b>0</b>	<b>0.0000</b>	<b>787.400</b>	<b>812.800</b>	<b>838.200</b>	<b>863.600</b>	<b>889.000</b>	<b>914.400</b>	<b>939.800</b>	<b>965.200</b>	<b>990.600</b>	<b>1016.000</b>
1 / 16	0.0625	788.988	814.388	839.788	865.188	890.588	915.988	941.388	966.788	992.188	1017.588
1 / 8	0.1250	790.575	815.975	841.375	866.775	892.175	917.575	942.975	968.375	993.775	1019.175
3 / 16	0.1875	792.162	817.562	842.962	868.362	893.762	919.162	944.562	969.962	995.362	1020.762
<b>1 / 4</b>	<b>0.2500</b>	<b>793.750</b>	<b>819.150</b>	<b>844.550</b>	<b>869.950</b>	<b>895.350</b>	<b>920.750</b>	<b>946.150</b>	<b>971.550</b>	<b>996.950</b>	<b>1022.350</b>
5 / 16	0.3125	795.338	820.738	846.138	871.538	896.938	922.338	947.738	973.138	998.538	1023.938
3 / 8	0.3750	796.925	822.325	847.725	873.125	898.525	923.925	949.325	974.725	1000.125	1025.525
7 / 16	0.4375	798.512	823.912	849.312	874.712	900.112	925.512	950.912	976.312	1001.712	1027.112
<b>1 / 2</b>	<b>0.5000</b>	<b>800.100</b>	<b>825.500</b>	<b>850.900</b>	<b>876.300</b>	<b>901.700</b>	<b>927.100</b>	<b>952.500</b>	<b>977.900</b>	<b>1003.300</b>	<b>1028.700</b>
9 / 16	0.5625	801.688	827.088	852.488	877.888	903.288	928.688	954.088	979.488	1004.888	1030.288
5 / 8	0.6250	803.275	828.675	854.075	879.475	904.875	930.275	955.675	981.075	1006.475	1031.875
11 / 16	0.6875	804.862	830.262	855.662	881.062	906.462	931.862	957.262	982.662	1008.062	1033.462
<b>3 / 4</b>	<b>0.7500</b>	<b>806.450</b>	<b>831.850</b>	<b>857.250</b>	<b>882.650</b>	<b>908.050</b>	<b>933.450</b>	<b>958.850</b>	<b>984.250</b>	<b>1009.650</b>	<b>1035.050</b>
13 / 16	0.8125	808.038	833.438	858.838	884.238	909.638	935.038	960.438	985.838	1011.238	1036.638
7 / 8	0.8750	809.625	835.025	860.425	885.825	911.225	936.625	962.025	987.425	1012.825	1038.225
15 / 16	0.9375	811.212	836.612	862.012	887.412	912.812	938.212	963.621	989.012	1014.412	1039.812

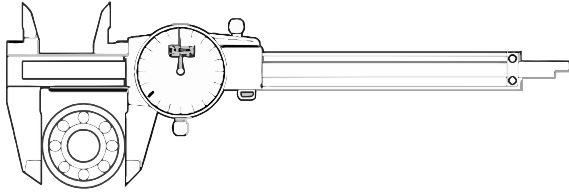


## TOLERANCE TABLES

Tolerances for Shaft Diameters

units :  $\mu\text{m}$

Diameter (mm)		$\Delta_{dmp}$	d6	e6	f6	g5	g6	h5	h6	h7	h8	h9	h10	js5	js6	j5	j6	j7	k5	k6	k7	m5	m6	n6	p6
over	incl																								
3	6	0	-30	-20	-10	-4	-4	0	0	0	0	0	0	$\pm 2.5$	$\pm 4.0$	+3	+6	+8	+6	+9	+13	+9	+12	+16	+20
		-8	-38	-28	-18	-9	-12	-5	-8	-12	-18	-30	-48			-2	-2	-4	+1	+1	+1	+4	+4	+8	+12
6	10	0	-40	-25	-13	-5	-5	0	0	0	0	0	0	$\pm 3.0$	$\pm 4.5$	+4	+7	+10	+7	+10	+16	+12	+15	+19	+24
		-8	-49	-34	-22	-11	-14	-6	-9	-15	-22	-36	-58			-2	-2	-5	+1	+1	+1	+6	+6	+10	+15
10	18	0	-50	-32	-16	-6	-6	0	0	0	0	0	0	$\pm 4.0$	$\pm 5.5$	+5	+8	+12	+9	+12	+19	+15	+18	+23	+29
		-8	-61	-43	-27	-14	-17	-8	-11	-18	-27	-43	-70			-3	-3	-6	+1	+1	+1	+7	+7	+12	+18
18	30	0	-65	-40	-20	-7	-7	0	0	0	0	0	0	$\pm 4.5$	$\pm 6.5$	+5	+9	+13	+11	+15	+23	+17	+21	+28	+35
		-10	-78	-53	-33	-16	-20	-9	-13	-21	-33	-52	-84			-4	-4	-8	+2	+2	+2	+8	+8	+15	+22
30	50	0	-80	-50	-25	-9	-9	0	0	0	0	0	0	$\pm 5.5$	$\pm 8.0$	+6	+11	+15	+13	+18	+27	+20	+25	+33	+42
		-12	-96	-66	-41	-20	-25	-11	-16	-25	-39	-62	-100			-5	-5	-10	+2	+2	+2	+9	+9	+17	+26
50	80	0	-100	-60	-30	-10	-10	0	0	0	0	0	0	$\pm 6.5$	$\pm 9.5$	+6	+12	+18	+15	+21	+32	+24	+30	+39	+51
		-15	-119	-79	-49	-23	-29	-13	-19	-30	-46	-74	-120			-7	-7	-12	+2	+2	+2	+11	+11	+20	+32
80	120	0	-120	-72	-36	-12	-12	0	0	0	0	0	0	$\pm 7.5$	$\pm 11.0$	+6	+13	+20	+18	+25	+38	+28	+35	+45	+59
		-20	-142	-94	-58	-27	-34	-15	-22	-35	-54	-87	-140			-9	-9	-15	+3	+3	+3	+13	+13	+23	+37
120	180	0	-145	-85	-43	-14	-14	0	0	0	0	0	0	$\pm 9.0$	$\pm 12.5$	+7	+14	+22	+21	+28	+43	+33	+40	+52	+68
		-25	-170	-110	-68	-32	-39	-18	-25	-40	-63	-100	-160			-11	-11	-18	+3	+3	+3	+15	+15	+27	+43
180	250	0	-170	-100	-50	-15	-15	0	0	0	0	0	0	$\pm 10.0$	$\pm 14.5$	+7	+16	+25	+24	+33	+50	+37	+46	+60	+79
		-30	-199	-129	-79	-35	-44	-20	-29	-46	-72	-115	-185			-13	-13	-21	+4	+4	+4	+17	+17	+31	+50
250	315	0	-190	-110	-56	-17	-17	0	0	0	0	0	0	$\pm 11.5$	$\pm 16.0$	+7	$\pm 16$	$\pm 26$	+27	+36	+56	+43	+52	+66	+88
		-35	-222	-142	-88	-40	-49	-23	-32	-52	-81	-130	-210			-16			+4	+4	+4	+20	+20	+34	+56
315	400	0	-210	-125	-62	-18	-18	0	0	0	0	0	0	$\pm 12.5$	$\pm 18.0$	+7	$\pm 18$	+29	+29	+40	+61	+46	+57	+73	+98
		-40	-246	-161	-98	-43	-54	-25	-36	-57	-89	-140	-230			-18		-28	+4	+4	+4	+21	+21	+37	+62
400	500	0	-230	-135	-68	-20	-20	0	0	0	0	0	0	$\pm 13.5$	$\pm 20.0$	+7	$\pm 20$	+31	+32	+45	+68	+50	+63	+80	+108
		-45	-270	-175	-108	-47	-60	-27	-40	-63	-97	-155	-250			-20		-32	+5	+5	+5	+23	+23	+40	+68
500	630	0	-260	-145	-76	-	-22	-	0	0	0	0	0	-	$\pm 22.0$	-	-	-	-	+44	+70	-	+70	+88	+122
		-50	-304	-189	-120	-	-66	-	-44	-70	-110	-175	-280							0	0	-	+26	+44	+78
630	800	0	-290	-160	-80	-	-24	-	0	0	0	0	0	-	$\pm 25.0$	-	-	-	-	+50	+80	-	+80	+100	+138
		-75	-340	-210	-130	-	-74	-	-50	-80	-125	-200	-320							0	0	-	+30	+50	+88
800	1000	0	-320	-170	-86	-	-26	-	0	0	0	0	0	-	$\pm 28.0$	-	-	-	-	+56	+90	-	+90	+112	+156
		-100	-376	-226	-142	-	-82	-	-56	-90	-140	-230	-360							0	0	-	+34	+56	+100
1000	1250	0	-350	-195	-98	-	-28	-	0	0	0	0	0	-	$\pm 33.0$	-	-	-	-	+66	+105	-	+106	+132	+186
		-125	-416	-261	-164	-	-94	-	-66	-105	-165	-260	-420							0	0	-	+40	+66	+120
1250	1600	0	-390	-220	-110	-	-30	-	0	0	0	0	0	-	$\pm 39.0$	-	-	-	-	+78	+125	-	+126	+156	+218
		-160	-468	-298	-188	-	-108	-	-78	-125	-195	-310	-500							0	0	-	+48	+78	+140
1600	2000	0	-430	-240	-120	-	-32	-	0	0	0	0	0	-	$\pm 46.0$	-	-	-	-	+92	+150	-	+150	+184	+262
		-200	-522	-332	-212	-	-124	-	-92	-150	-230	-370	-600							0	0	-	+58	+92	+170



**TOLERANCE TABLES**  
Tolerances for  
Housing Bore Diameters

units :  $\mu\text{m}$

Diameters (mm)		$\Delta_{Dmp}$	E6	F6	F7	G6	G7	H6	H7	H8	J6	J7	JS6	JS7	K5	K6	K7	M5	M6	M7	N5	N6	N7	P6	P7
over	incl																								
10	18	0 -8	+43 +32	+27 +16	+34 +16	+17 +6	+24 +6	+11 0	+18 0	+27 0	+6 -5	+10 -8	$\pm 5.5$	$\pm 9$	+2 -6	+2 -9	+6 -12	-4 -12	-4 -15	0 -18	-9 -17	-9 -20	-5 -23	-15 -26	-11 -29
18	30	0 -9	+53 +40	+33 +20	+41 +20	+20 +7	+28 +7	+13 0	+21 0	+33 0	+8 -5	+12 -9	$\pm 6.5$	$\pm 10.5$	+1 -8	+2 -11	+6 -15	-5 -14	-4 -17	0 -21	-12 -21	-11 -24	-7 -28	-18 -31	-14 -35
30	50	0 -11	+66 +50	+41 +25	+50 +25	+25 +9	+34 +9	+16 0	+25 0	+39 0	+10 -6	+14 -11	$\pm 8$	$\pm 12.5$	+2 -9	+3 -13	+7 -18	-5 -16	-4 -20	0 -25	-13 -24	-12 -28	-8 -33	-21 -37	-17 -42
50	80	0 -13	+79 +60	+49 +30	+60 +30	+29 +10	+40 +10	+19 0	+30 0	+46 -6	+13 -12	+18 -12	$\pm 9.5$	$\pm 15$	+3 -10	+4 -15	+9 -21	-6 -19	-5 -24	0 -30	-15 -28	-14 -33	-9 -39	-26 -45	-21 -51
80	120	0 -15	+94 +72	+58 +36	+71 +36	+34 +12	+47 +12	+22 0	+35 0	+54 0	+16 -6	+22 -13	$\pm 11$	$\pm 17.5$	+2 -13	+4 -18	+10 -25	-8 -23	-6 -28	0 -35	-18 -33	-16 -38	-10 -45	-30 -52	-24 -59
120	150	0 -18	+110 +85	+68 +43	+83 +43	+39 +14	+54 +14	+25 0	+40 0	+63 0	+18 -7	+26 -14	$\pm 12.5$	$\pm 20$	+3 -15	+4 -21	+12 -28	-9 -27	-8 -33	0 -40	-21 -39	-20 -45	-12 -52	-36 -61	-28 -68
150	180	0 -25	+110 +85	+68 +43	+83 +43	+39 +14	+54 +14	+25 0	+40 0	+63 0	+18 -7	+26 -14	$\pm 12.5$	$\pm 20$	+3 -15	+4 -21	+12 -28	-9 -27	-8 -33	0 -40	-21 -39	-20 -45	-12 -52	-36 -61	-28 -68
180	250	0 -30	+129 +100	+79 +50	+96 +50	+44 +15	+61 +15	+29 0	+46 0	+72 0	+22 -7	+30 -16	$\pm 14.5$	$\pm 23$	+2 -18	+5 -24	+13 -33	-11 -31	-8 -37	0 -46	-25 -45	-22 -51	-14 -60	-41 -70	-33 -79
250	315	0 -35	+142 +110	+88 +56	+108 +56	+49 +17	+69 +17	+32 0	+52 0	+81 0	+25 -7	+36 -16	$\pm 16$	$\pm 26$	+3 -20	+5 -27	+16 -36	-13 -36	-9 -41	0 -52	-27 -50	-25 -57	-14 -66	-47 -79	-36 -88
315	400	0 -40	+161 +125	+98 +62	+119 +62	+54 +18	+75 +18	+36 0	+57 0	+89 0	+29 -7	+39 -18	$\pm 18$	$\pm 28.5$	+3 -22	+7 -29	+17 -40	-14 -39	-10 -46	0 -57	-30 -62	-26 -73	-16 -87	-51 -97	-41 -98
400	500	0 -45	+175 +135	+108 +68	+131 +68	+60 +20	+83 +20	+40 0	+63 0	+97 0	+33 -7	+43 -20	$\pm 20$	$\pm 31.5$	+2 -25	+8 -32	+18 -45	-16 -43	-10 -50	0 -63	-33 -60	-27 -67	-17 -80	-55 -95	-45 -108
500	630	0 -50	+189 +145	+120 +76	+146 +76	+66 +22	+92 +22	+44 0	+70 0	+110 0	-	-	$\pm 22$	$\pm 35$	-	0 -44	0 -70	-	-26 -70	-26 -96	-	-44 -88	-44 -114	-78 -122	-78 -148
630	800	0 -75	+210 +160	+130 +80	+160 +80	+74 +24	+104 +24	+50 0	+80 0	+125 0	-	-	$\pm 25$	$\pm 40$	-	0 -50	0 -80	-	-30 -80	-30 -110	-	-50 -100	-50 -130	-88 -138	-88 -168
800	1000	0 -100	+226 +170	+142 +86	+176 +86	+82 +26	+116 +26	+56 0	+90 0	+140 0	-	-	$\pm 28$	$\pm 45$	-	0 -56	0 -90	-	-34 -90	-34 -124	-	-56 -112	-56 -146	-100 -156	-100 -190
1000	1250	0 -125	+261 +195	+164 +98	+203 +98	+94 +28	+133 +28	+66 0	+105 0	+165 0	-	-	$\pm 33$	$\pm 52.5$	-	0 -66	0 -105	-	-40 -106	-40 -145	-	-66 -132	-66 -171	-120 -186	-120 -225
1250	1600	0 -160	+298 +220	+188 +110	+235 +110	+108 +30	+155 +30	+78 0	+125 0	+195 0	-	-	$\pm 39$	$\pm 62.5$	-	0 -78	0 -125	-	-48 -126	-48 -173	-	-78 -156	-78 -203	-140 -218	-140 -265
1600	2000	0 -200	+332 +240	+212 +120	+270 +120	+124 +32	+182 +32	+92 0	+150 0	+230 0	-	-	$\pm 46$	$\pm 75$	-	0 -92	0 -150	-	-58 -150	-58 -208	-	-92 -184	-92 -242	-170 -262	-170 -320
2000	2500	0 -250	+370 +260	+240 +130	+305 +130	+144 +34	+209 +34	+110 0	+175 0	+280 0	-	-	$\pm 55$	$\pm 87.5$	-	0 -110	0 -175	-	-68 -178	-68 -243	-	-110 -220	-110 -285	-195 -305	-195 -370







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