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PRECISION BEARINGS PVT. LTD.



INDEX

1.	The company	2
2.	Technical information	4
3.	Deep groove ball bearing	25
	i) Deep groove ball bearing single row	27
	ii) Deep groove ball bearing with filling slot single row	34
	iii.) Sealed Single Row Deep Groove Ball Bearings	35
4.	Angular contact ball bearing	42
	i. Angular contact ball bearing - Single row	45
	ii. Angular contact ball bearing - Double row	48
	iii. Angular contact ball bearing - Double row with shield	50
5.	Self aligning ball bearing	51
6.	Four point contact ball bearing	57
7.	Thrust ball bearing	61
8.	Cylindrical roller bearing	66
	i. Cylindrical roller bearing with cage , non locating	68
	ii. Cylindrical roller bearing with cage, semi locating & locating	73
9.	Full complement cylindrical roller bearing	79
	i. Full complement cylindrical roller bearing - Single row semi locating.	81
	ii. Full complement cylindrical roller bearing - Sealed double row	84
10.	Taper roller bearing	86
	i. Taper roller bearing - Single row - metric	88
	ii. Taper roller bearing - Single row - inch	94
	iii. Taper roller bearing - Double outer race inch	110
11.	Spherical roller bearing	118
	I. Spherical roller bearing	121
	II. Spherical roller bearing with rubber seal	127
	III. Spherical roller bearing - E type	128
	IV. Roller bearing units (insert bearing / collar mounted)	130
12.	Spherical roller thrust bearing	131
	I. Spherical roller thrust bearing - Metal Cage	133
	II. Spherical roller thrust bearing - Steel Cage	135
13.	Needle roller bearing	137
	i. Needle roller bearing - with flange - without inner ring	139
	ii. Needle roller bearing - with flange - with inner ring	144
	iii. Needle roller and cage assembly	148
14.	Automobile section	156
	I. DAC type ball bearing	157
	ii Clutch bearing	161
	iii. Steering bearing	168
	iV Hub units	169
15.	Ball bearing units and insert bearing	172
	i. Insert bearing	174
	ii. Pillow block	176
	iii. Square flange units	179
	iv. Oval flange units	182
	v. Take up units	185
	vi. Round flange units	188
16.	Bearings Accessories	190
	i. Adopter Sleeve	191
	ii. Withdrawal Sleeve	193
	iii. Lock Nut & Locking Washer	194
	iv. Cylindrical Roller & Needle Roller	196
	V. Steel Balls	198
17.	ZNL Special Products	200

THE COMPANY

PRECISION BEARINGS PVT. LTD.

Precision Bearings Private Limited (ZNL) is one of the leading manufacturers of ball and roller bearings in India covering more than 3000 different sizes in spherical, taper, cylindrical, taper thrust, angular contact and other types of roller bearings. With the most advanced manufacturing technology and quality control systems, ZNL meets the ISO 9001:2008 quality control standards and is now moving towards the TS-16949 standards. ZNL continues to add new sizes to its existing portfolio based on customer demands. With a strong application engineering team ZNL has succeeded in helping a lot of customers with hard to find bearings.

With fully equipped Chemical & metallurgical laboratory and standard room facilities, ZNL Bearings are designed as per BS/ISO DIN Standards to perform well in a variety of applications like construction, mining, material handling equipment, farm machinery, reduction gear boxes, mechanical power transmission equipments, crusher, oil field equipment, wood working machinery, crane & hoist, rolling mill machinery, textile machinery, paper machinery, printing machinery, fan & blower, automobile axle, railways and a wide range of other industrial machinery.







ZNL also produces special bearings based on customer drawings and is also capable of reverse engineering samples to manufacture the same.

We always study and analyze our customer's need and their difficulties, and try to provide them the best suitable product on a cost effective and affordable price.

Even for special requirements, our response is immediate and we always try to be at our customer's doorsteps to understand their needs. This facilitates to develop a strong relationship bond between the two companies. International Standard Organization (ISO) has set up the international standards for the bearing industries. The standardization of boundary dimensions and tolerances allows the bearing manufacturer to utilize the most modern production machinery and quality control techniques in producing high quality bearings at an economical price level.

MANUFACTURING CAPABILITY

ZNL manufactures bearings according to standard Tolerances (P0 and P6) and on Normal Class Clearance for specific requirements. ZNL can produce C2, C3, or C4 Clearance bearings. In addition ZNL has the equipments for super finishing of track for the bearing rings as well as rollers. Each bearing component i.e. inner and outer Rings and rollers have super finish which helps in achieving maximum bearing life.

QUALITY

Quality is an integral part of our culture and every effort is made to ensure that customer get value for money. "Zero Defects "is our quality objective. We are working towards this objective everyday. ZNL follows "in process" quality control technique at each stage of manufacturing to achieve high standards. Our quality control room consists of the highest industry standard instruments like life testing, noise checking, vibration checking, crowning checking, roundness tester, surface finish tester, profile projector and other calibrating equipments for the standard room. ZNL also has a full-fledged laboratory for micro-structure and chemical analysis. 100% inspection of ID, OD, Width, radial clearance and noise is done for all bearings.

APPLICATION ENGINEERING

ZNL has a strong team of application engineers willing to understand your application needs and provide appropriate solutions by selecting the right bearing which fits your needs. ZNL's application engineering approach has helped gain a lot of customer's confidence about our practical knowledge of the field of bearings. Our design team is capable of designing a custom solution for your needs and manufacturing it in a cost effective way.

WORLDWIDE PRESENCE

With the help of wide distributor network in more than 40 countries ZNL can serve all your needs. In addition to the distributor network ZNL has a Joint Venture in Brazil to better serve its customers in the Latin American market. Apart from this ZNL also has a sales office and a distribution center in California, USA to serve the North American market as well. In its vision to grow the business further ZNL is aiming to have a local presence in the German and Italian market to better serve its customers.

With all the details about our capabilities we are bringing up a catalogue which has more technical and product details by which we will be able to serve the customers to their satisfaction. We hope you will like this catalogue. We believe the customer is god and we also welcome the opinion of all our customers.

Technical Information

TABLE-RECOMMENDED SEATING FITS FOR HOUSINGS*

Load Conditions			Examples	Housing bore Tolerances	Axial Displacement of Outer Ring
Solid Housing	Rotating Outer Ring Load	Heavy Loads on Bearing in Thin-Walled Housing Heavy Shock Loads	Automotive Wheel Hubs (Roller Bearings) Crane Traveling Wheels	P7	Impossible
		Normal And Heavy Loads	Automotive Wheel Hubs (Roller Bearings) Vibrating Screens	N7	
		Light and Variable Loads	Conveyor Rollers, Rope Sheaves, Tension Pulleys	M7	
	Direction Of Load Indeterminate	Heavy Shock Loads	Traction Motors		
		Normal and Heavy Loads	Pumps, Cranskhaft Main Bearings	K7	Generally Impossible
		Normal and Light Loads	Medium Large Motors	JS7 (JS7)	
Solid or Split Housings	Rotating Inner Ring Load	Loads of All kinds	General Bearing Application, Railway Axle Boxes	H7	Easy Displacement
		Normal and Light Loads	Plummer Blocks	H8	
		High Temperature Rise of Inner Ring Through Shaft	Papers Dryers	G7	
Solid Housings	Direction of Load Indeterminate	Accurate Running Desirable under Normal and Light Load	Grinding Spindle Rear Ball Bearings, High Speed Centrifugal Compressor Fixed Bearings	JS6(J6)	Possible
			Grinding Spindle Front Ball Bearings, High Speed Centrifugal Compressor Fixed Bearings	K6	Generally Impossible
	Rotating Ringing Load	Accurate Running and High Rigidity Desirable Under Normal and Light Loads	Cylindrical Roller Bearings for Machine Tool Main Spindle	M6 or N6	Impossible
		Minimum Noise is required	Electrical Home Appliances	H6	Easily Possible

* ***Applicable For Cast Iron And Steel Housings. For Housings Machines Light Alloy, The Interference Should Be Tighter Than Those***

TABLE-RECOMMENDED SEATING FITS FOR SHAFTS*

Load conditions		Example	Shaft Diameter (mm)			Shaft Tolerances
			Ball Bearings	Cylindrical Roller & Tapered Roller Bearing	Spherical Roller Bearings	
Rotating Outer Ring Load	Easy Axial Displacement of Inner ring on shaft describable	Wheels on stationary Axles	All Shaft Diameters			G^6
	Easy axial displacement of inner ring on shaft unnecessary	Tension Pulleys and Rope Sheaves				H^6
Rotating Inner Ring Load or Direction of Load Indeterminate	Light Load (<0.06C[(1)]) Variable Load	Electrical appliances, Pumps, Blowers, Transport Vehicles, Precision Machinery, Machine Tools	< 18		60 60	Js^5
			18 ~ 100	< 40		Js(j6)
			100 ~ 200	40 ~ 140		K6
				140 ~ 200		M6
	Normal Loads (0.06 to 0.13 C[(1)])	General Bearing Applications, Medium & Large Motors, Tubines, Pumps, Engine Main Bearings, Gears, Woodworking Machines	< 18			Js6 ~ 6 (j5-6)
			1_8 ~ 100	> 40	> 40	k5~6
			100 ~ 400	40 ~ 100	40 ~ 64	m5~6
			140 ~ 200	100 ~ 140	65 ~ 100	m6
			200 ~ 280	140 ~ 200	100 ~ 140	n6
				200 ~ 400	140 ~ 280	p6
					280 ~ 500	r6
					Over 500	r7
	Heavy Loads (>0.3 C[(1)]) Shock Loads	Railway Axle boxes, Industrial Vehicles, Traction Motors, Construction Equipments, Crushers		50 ~ 140	50 ~ 100	n6
				140 ~ 200	100 ~ 140	p6
				Over 200	140 ~ 200	r6
					200 ~ 500	r7
Axial Loads Only			All Shaft Diameters			js6(j6)

Note (1) C represents the basic dynamic capacity of the bearing

* Applicable only to solid steel shafts

DIMENSIONAL ACCURACY

dm = $\frac{dmax + dmin}{2}$ = mean diameter of bore

Dm = $\frac{Dmax + Dmin}{2}$ = mean diameter of out side diameter

B = Width of inner ring and outer ring (only cone width in case of tapered roller bearings)
T = total width of tapered roller bearings

FORM ACCURACY

d = largest (dmax) or smallest (dmin) diameter of bore
D = largest (Dmax) or smallest (Dmin) diameter of outside diameter.
Up = Bmax Bmin = width variation

RUNNING ACCURACY

Ri	=	radial runout of inner ring	= maximum variation of ring thickness
Ra	=	radial runout of outer ring	= maximum variation of ring thickness
A	=	axial runout of thrust bearings	= maximum variation of shaft or housing washer thickness
Si	=	side runout of inner ring	= out-or-square of bore to face
Sa	=	side runout of outer ring	= out-or-square of outside diameter to face
Aj	=	axial runout of inner ring	= out-or-square of inner ring raceway to face
Aa	=	axial runout of outer ring	= out-or-square of outer ring raceway to face

Tolerance of chamfer r and r1

Nominal Dimension	[mm]	0.2	0.3	0.4	0.5	0.8	1	1.2	1.5	1.6	2	2.4	2.5	3	3.2	3.5	4	4.8	5	6	8	10	12	15	18
	min	0.1	0.1	0.2	0.3	0.5	0.7	0.9	1.1	1.2	1.5	1.8	1.9	2.3	2.5	2.7	3.1	3.7	3.9	4.7	6.3	8	9.5	11.8	14.2
	max	0.4	0.5	0.6	0.8	1.2	1.5	1.7	2.1	2.2	2.7	3.2	3.3	4	4.2	4.5	5.2	6.3	6.5	7.5	10	12.5	15	19	23

Tolerances of metric radial Bearings(Eccept metric Tapered Roller Bearings)
Inner Ring **Dimension in mm**

Nominal bore	over	2.5	10	18	30	50	80	120	180	250	315	400	500	360	800
Diameter	To	10	18	30	50	80	120	180	250	315	400	500	630	800	1000

Standard tolerance PO (approx ABEC-1)

Tolerance in microns

Bore	dm	-8 0	-8 0	-10 0	-12 0	-15 0	-20 0	-25 0	-30 0	-35 0	-40 0	-45 0	-50 0	-75 0	-100 0
	d	-10 +2	-11 +3	-13 +3	-15 +3	-19 +4	-25 +5	-31 +6	-38 +8	-44 +9	-50 +10	-57 +12	-64 +14	-90 +15	-120 +20
Width	-B	0 -120	0 -120	0 -120	0 -120	0 -150	0 -200	0 -250	0 -300	0 -350	0 -400	0 -450	0 -500	0 -750	0 -1000
Width Variation	Up	15	20	20	20	25	25	30	30	35	40	60	60	80	80
Radial runout	Ri	10	10	13	15	20	25	30	40	50	60	65	70	80	90

Tolerance class P6 (Approx. ABEC-3)

Bore	dm	-7 0	-7 0	-8 0	-10 0	-12 0	-15 0	-18 0	-22 0	-25 0	-30 0	-35 0	-40 0
	d	-8 +1	-8 +1	-9 +1	-11 +1	-14 +2	-18 +3	-21 +3	-26 +4	-30 +5	-35 +5	-41 +6	-48 +8
Width	-B	0 -120	0 -120	0 -120	0 -120	0 -150	0 -200	0 -250	0 -300	0 -350	0 -400	0 -450	0 -500
Width Variation	Up	15	20	20	20	25	25	30	30	35	40	45	50
Radial runout	Ri	6	7	8	10	10	13	18	20	25	30	35	40



Outer ring

Dimension in mm

Nominal outside diameter	Over	6	18	30	50	80	120	150	180	250	315	400	500	360	800	1000	1250
	to	18	30	50	80	120	150	180	250	315	400	500	630	800	1000	1250	1600

Standard tolerance (approx. ABEC-1) — **Tolerance in micrones**

Outside diameter	Dm	0 -8	0 -9	0 - 11	0 - 13	0 - 15	0 - 18	0 - 25	0 - 30	0 - 35	0 -40	0 -45	0 -50	0 -75	0 - 100	0 - 125	0 - 160
		+2 - 10	+2 - 11	+3 - 14	+4 - 17	+5 - 20	+6 - 24	+7 - 32	+8 - 38	+9 - 44	+10 -50	+12 -57	+14 -64	+17 -92	+20 - 120	+25 - 150	+30 - 190
Radial runout	Ra	15	15	20	25	35	40	45	50	60	70	80	100	120	120	120	120

The width tolerance is the same for outer and inner ring

Tolerance class P6 (approx ABEC-3)

Outside diameter	Dm	0 - 7	0 - 8	0 -9	0 -11	0 -13	0 -15	0 -18	0 -20	0 -25	0 -28	0 -33	0 -38	0 -45	0 -60
		+1 -8	+1 -9	+2 -11	+2 -13	+3 -15	+3 -18	+3 -21	+4 -24	+4 -29	+5 -33	+5 -38	+7 -45	+10 -55	+10 -70
Radial runout	Ra	8	9	10	13	18	20	23	25	30	35	40	50	60	75

The width tolerance is the same for outer and inner ring.

Tolerances of metric Tapered roller bearings

Cone — Dimension in mm

Nominal bore	over	6	18	30	50	80	120	180	250	315	400	500	630	800
diameter	to	18	30	50	80	120	180	250	315	400	500	630	800	1000

Standard tolerance — **Tolerance in microns**

Bore	dm	-8 0	-10 0	-12 0	-15 0	-20 0	-25 0	-30 0	-35 0	-40 0	-45 0	-50 0	-75 0	-100 0
	d	-11 +3	-13 +3	-15 +3	-19 +4	-25 +5	-31 +6	-38 +8	-44 +9	-50 +10	-57 +12	-64 +14	-90 +15	-120 +20
Width	B	0 -200	0 -200	0 -240	0 -300	0 -400	0 -500	0 -600	0 -700	0 -800	0 -900	0 - 1000	0 - 1500	0 - 2000
Redial Runout	Ri	15	18	20	25	30	35	50	60	70	70	85	100	120
Total width	T	0 +200	0 +200	0 +200	0 +200	-200 +200	-250 +350	-250 +350	-250 +350	-250 +350	-400 +400	-500 +500	-600 +600	-750 +750

Tolerance class P6

Bore	dm	-7 0	-8 0	-10 0	-12 0	-15 0	-18 0	-22 0	-25 0
	d	-8 +1	-9 +1	-11 +1	-14 +2	-18 +3	-21 +3	-26 +4	-30 +5
Width	B	0 -200	0 -200	0 -240	0 -300	0 -400	0 -500	0 -600	0 -700
Radial runout	Ri	7	8	10	10	13	18	20	25
Side runout	Si	10	10	12	12	15	15	15	18
Total width	T	+200 0	+200 0	+200 0	+200 0	+200 -200	+350 -250	+350 +250	+350 -250

Cup — Dimension in mm

Nominal outside	Over		30	50	80	120	150	180	250	315	400	500	630	800	1000	1250
diameter	to	30	50	80	120	150	180	250	315	400	500	630	800	1000	1250	1600

Standard tolerance — **Tolerance in microns**

Outside diameter	Dm	0 -9	0 -11	0 -13	0 -15	0 -18	0 -25	0 -30	0 -35	0 -40	0 -45	0 50	0 -75	0 -100	0 -125	0 -160
	D	+2 -11	+3 -14	+4 -24	+5 -20	+7 -32	+8 -38	+9 -44	+10 -50	+12 -57	+14 -64	+17 -92	+20 -92	+20 -120	+25 150	+30 190
Redial runout	Ra	18	20	25	35	40	45	50	60	70	80	100	120	120	120	120

Tolerance class P6

Outside diameter	Dm	0 -8	0 -9	0 -11	0 -13	0 -15	0 18	0 -20	0 -25	0 -28
	D	+1 -9	+2 -11	+2 -13	+2 -15	+3 -18	+3 -21	+4 -24	+4 -29	+5 -33
Redial runout	Ra	9	10	13	18	20	23	25	30	35

Tolerance of metric thrust bearings

Shaft washer Dimensions in mm

Nominal bore diameter	Over to		18 30	30 50	50 80	80 120	120 180	180 250	250 315	315 400	400 500	500 630	630 800	800 1000

Standard tolerance (approx. ABEC-1)

Bore	dm	-8 0	-10 0	-12 0	-15 0	-20 0	-25 0	-30 0	-35 0	-40 0	-45 0	-50 0	-75 0	-100 0
Axial runout	A	10	10	10	10	15	15	20	25	30	30	35	40	45

Tolerance class P6 (approx. ABEC-3)

Bore	dm	-8 0	-10 0	-12 0	-15 0	-20 0	-25 0	-30 0	-35 0	-40 0	-45 0	-50 0	-75 0	-100 0
Axial runout	A	5	5	6	7	8	9	10	13	15	18	21	25	30

Housing washer Dimension in mm

Nominal outside diameter	Over To		30 50	50 80	80 120	120 180	180 250	250 315	315 400	400 500	500 630	630 800	800 1000	1000 1250

Standard tolerance (approx. ABEC-!)

Outside diameter	Dm	0 -13	0 -16	0 -19	0 -22	0 -25	0 -30	0 -35	0 -40	0 -45	0 -50	0 -75	0 -100	0 -125
Axial runout	A	10	10	10	15	15	20	25	30	30	35	40	45	50

Tolerance class P6 (approx. ABEC-3)

Outside diameter	Dm	0 -13	0 -16	0 -19	0 -22	0 -25	0 -30	0 -35	0 -40	0 -45	0 -50	0 -75	0 -100	0 -125
Axial runout	A	5	6	7	8	9	10	13	15	18	21	25	30	35

Tolerance of inch radial bearings (except inch tapered roller bearings)

Inner ring. **Dimension in mm**

Nominal outside diameter	Over to	1/8 3/8	3/8 3/4	3/8 1 1/8	1 1/8 2	2 3 1/8	3 1/8 4 3/4	4 3/4 7	7 10	10 12 1/2	12 1/2 16

Tolerance in 0.0001 INCH

Bore	dm	-2 +2	-2 +2	-2 +2	-3 +2	-3 +2	-3 +2	-3 +2	-5 +2	-5 +2	-8 +2
Width	B	0 -20	0 -20	0 -20	0 -20	0 -20	0 -20	0 -20	0 -20	0 -20	0 -20
Width variation	Up	5	5	5	5	5	5	5	5	5	5
Radial runout	Ri	4	4	4	4	5	7	7	13	13	20

Tolerances of inch thrust ball bearings

Shaft washer

Nominal bore diameter		all Sizes
Bore	- dm	0 +10

Outer ring **Tolerance in 0.0001 inch**

Nominal outside diameter	Over to	3/8 3/4	3/4 1 1/8	1 1/18 2	2 1/8 3 1/8	3 1/8 4 3/4	4 3/4 7	7 10	10 12 1/2	12 1/2 16	16 20

Tolerance in 0.0001 inch

Outside diameter	Dm	-3 -7	-3 -7	-3 -8	-5 -15	-8 -13	-13 -18	-13 -18	-13 -18	-13 -23	-13 -23
Width	B	0 -20	0 -20	0 -20	0 -20	0 -20	0 -20	0 -20	0 -20	0 -20	0 -20
Width variation	Up	5	5	5	5	5	5	5	5	5	5
Radial runout	Ra	4	4	4	5	7	13	13	13	20	20

INNER RING							
d							
		Tolerance Class					
		Normal		CL3		CL0	
Over	Incl.	Max	Min	Max	Min	Max	Min
mm		Micron					
	76.2	+13	0	+13	0	+13	0
76.2	101.6	+25	0	+13	0	+13	0
101.6	266.7	+25	0	+13	0	+13	0
266.7	304.8	+25	0	+13	0	+13	0
304.8	609.6	+51	0	+25	0		
609.6	914.4	+76	0	+38	0		

OUTER RING							
D							
		Tolerance class					
		Normal		CL3		CL0	
Over	Incl.	Max	Min	Max	Min	Max	Min
		Micron					
	266.7	+25	0	+13	0	+13	0
266.7	304.8	+25	0	+13	0	+13	0
304.8	609.6	+51	0	+25	0	+25	0
609.6	914.4	+76	0	+38	0	+38	0

Abutment (overall) width of single row bearing									
d		D		Ts					
Over	Incl.	Over	Incl.	Max	Min	Max	Min	Max	Min
mm		mm		Micron					
	101.6			+203	0	+203	-203	+203	-203
101.6	266.7			+356	-254	+203	-203	+203	-203
266.7	304.8			+356	-254	+203	-203	+203	-203
304.8	609.6		508	+381	-381	+203	-203	+203	-203
304.8	609.6	508		+381	-381	+381	-381	+381	-381
609.6				+381	-381	+381	-381	+381	-381

Classification of bearing

There is several way by which we can differentiate bearing types

1. **Contact wise**
    - Point contact
    - Line contact
2. **Application wise**
    - Industrial
    - Automobile
    - Agricultural
3. **Rolling element wise**
    - Ball bearing
    - Roller bearing
4. **Design and construction wise**
    - Radial bearing
    - Thrust bearing

BEARING:

BALL BEARING:
- Deep groove ball bearing
- Angular contact ball bearing
- Four point contact ball bearing
- Self aligning ball bearing
- Thrust ball bearing
- Angular contact thrust ball bearing
- Pillow block bearing

ROLLER BEARING:
- Cylindrical roller bearing
- Full complement cylindrical roller bearing
- Needle roller bearing
- Taper roller bearing
- Spherical roller bearing
- Cylindrical roller thrust bearing
- Needle roller thrust bearing
- Spherical roller thrust bearing
- Taper roller thrust bearing

Rolling element & ring carry the applied load; cage does not carry any direct load. Function of cage is to hold the rolling element at an equal distance from each other to prevent their fall out.

To get better performance and life for any bearings, it is important to define very properly and understand application.



SELECTION OF BEARING

Legend:
A = Excellent
B = good
C = Satisfactory
F = Poor
NR = Inconvenient or not recommended
= Not applicable

Axial Disp. Possible in Bearing	Pure Radial Load	Pure Axial Load	Combined Load	Moment Load	High Speed	High Running Accuracy	High Stiffness	Quiet Running	Low Friction	Comp. for Errors of Alignment During Operation	Comp. for Errors of Alignment (Initial)	Location Bearing Installation	Non-location Bearing Installation	Axial Disp. Possible in Bearing
Ball Single Row	C	C	C	F	A	A	C	A	A	F	F	B	C	NR
Ball double-row	C	C	C	C	C	C	C	C	B	NR	NR	C	C	NR
Self aligning	C	F	F	NR	B	B	F	B	B	A	B	C	C	NR
Ball Angular Contact	C	C	B	F	B	A	C	B	B	F	F	B	NR	NR
Ball Angular Contact Back-to-back	B	C	B	C	C	B	B	C	C	NR	NR	B	C	NR
Ball for point contact	F	C	C	C	B	C	C	C	C	NR	NR	B	F	NR
Cylindrical roller N, Nu	B	NR	NR	NR	A	B	B	B	B	F	F	NR	A	A
Cylindrical Roller NJ, NUP	B	C	C	NR	A	B	B	C	B	F	F	C	C	C
Cylindrical Roller Double Row	A	NR	NR	C	A	A	A	B	B	NR	NR	NR	A	A
Complement Cylinder Roller	A	C	F	NR	F	C	A	F	F	F	F	C	C	C
Full Cylinder roller Double row	A	C	F	C	F	C	A	F	F	NR	NR	C	C	C
Needle Roller	B	NR	NR	NR	C	C	B	C	F	NR	NR	NR	A	A
Spherical Roller	A	C	A	NR	C	C	B	C	C	A	B	B	C	NR
Upper Roller	B	B	A	NR	C	B	B	C	C	F	F	B	NR	NR
Taper Roller (Face to Face)	A	B	A	F	C	C	A	C	C	F	F	A	C	NR
Thrust Ball	NR	C	NR	NR	C	B	C	F	C	NR	NR	C	NR	NR
Thrust Bal with Spherical Housing Washer	NR	C	NR	NR	C	C	C	F	C	NR	-	C	NR	NR
Thrust Cylinder roller	NR	B	NR	NR	F	B	B	F	F	NR	NR	C	C	NR
Thrust Needle Roller	NR	B	NR	NR	F	C	B	F	F	NR	NR	C	C	NR
Thrust Spherical Roller	NR	A	C	NR	C	C	B	F	C	A	B	B	B	NR

LOAD CARRYING CAPACITY AND LIFE

Fatigue theory as a principle

Modern, high quality bearings can exceed by a considerable margin the values calculate in accordance with ISO 281 under favorable operating conditions.

The above conditions may be because of following factor

- The bearing load
- The fatigue limit of the material
- The extent to which the surfaces are separated by the lubricant
- The cleanliness in the lubrication gap
- Additives in the lubricant
- The internal load distribution and frictional conditions in the bearing

Dynamic load carrying capacity and life:

- The required size of a rolling bearing is dependent on the demands made on its Load carrying capacity
- Rating life
- Operational reliability.

- The dynamic load carrying capacity is described in terms of the basic dynamic load ratings. The basic dynamic load ratings are based on DIN ISO 281

The rating life as fatigue period depends on:

- The statistical probability of the first appearance of failure.
- The operating speed
- The load
- The basic dynamic load rating C applies to rotating rolling bearings.
- A constant, concentrically acting axial load Ca for axial bearings.
- A constant radial load Cr for radial bearings.

Calculation of the rating life:
The methods for calculating the rating life are:

- The adjusted rating life to DIN ISO 281,
- The basic rating life to DIN ISO 281,

Basic Rating life:
The basic rating life L and Lh is determined using the following formulae:

$$L = (C/P)^{p}$$
$$Lh = 16666 / n \times (C/P)^{p}$$
$$L = 10^{6} \text{ revolutions}$$

The basic rating life in millions of revolutions is the life reached or exceeded by 90% of a sufficiently large group of pparently identical bearings before the first evidence of material fatigue develops.

Lh=The basic rating life as defined for L but expressed in operating hours

C = Basic dynamic load rating
P = Equivalent dynamic bearing load for radial and axial bearings
P = life exponent;

For roller bearings: p = 10/3 for ball bearings: p=3
N = Operating speed

Equivalent dynamic load:

Dynamic load the equivalent dynamic load P is a calculated value. This value is constant in size and direction; it is a radial load for radial bearings and an axial load for axial bearings.

P gives the same rating life as the combined load occurring in practice.

$$P = X \cdot Fr + Y \cdot Fa$$
P = Equivalent dynamic bearing load
Fr = radial dynamic bearing load
Fa = Axial dynamic bearing load



Adjusted rating life:

The adjusted rating life can be calculated if, in addition to the load and speed, other influences known as:

- Lubrication
- Special material characteristic
- If a requisite reliability other than 90% is specified.

$Lna = a1 \cdot a2 \cdot a3 \cdot L$

$Lna 10^6$ revolutions

Adjusted rating life for special material characteristic and operating conditions with a requisite reliability of (100-n)%

10^6 revolutions



Basic rating life

a 1 Life adjustment factor for a requisite reliability other than 90%

a 2 Life adjustment factor for special material characteristics

For standard rolling bearing steels: a2 = 1

a 3 Life adjustment factor for special operating conditions

Required rating life:
If no information is available on the required rating life, the guide Values from the following tables may be used.

Caution!
Do not over specify the bearing. If the calculated life is greater
Than 60 000 h, this normally means that the bearing arrangement is Over specified. Pay attention to the minimum load for the bearings; see the design and safety guidelines in the product sections.

Motor Vehicles



Mounting location **Recommended rating life in h**

	Ball bearings		Roller bearings	
	From	To	From	To
Motorcycles	450	1900	450	2300
Passenger car power trains	530	1000	550	1100
Passenger car bearings protected	210	490	200	500
Against contamination (gearbox)				
Passenger car wheel bearings	1300	5000	1400	65000
Light commercial vehicles	2000	4000	2400	5000
Medium commercial vehicles	2900	5300	3600	7000

Machine tools



Mounting location **Recommended rating life in h**

	Ball bearing	Roller bearings		
	From	To	From	To
Headstock spindles,	13000	46000	20000	74000
Milling spindles				
Drilling spindles	13000	31000	19000	45000
Grinding spindles	7600	21000	9000	34000
Work piece spindles	20000	62000	34000	100000
In grinding machines				
Machine tool gearboxes	13000	31500	19000	48500
Presses / fly wheels	20000	31500	34000	49500
Presses / eccentric shafts	13500	20000	19000	34000
Electric tools And compressed air tools	3500	13500	4500	19000

Rolling mills, steelworks equipment

Mounting location **Recommended rating life in h**

	Ball bearing	Roller bearings		
	From	To	From	To
Rolling mill frames	450	13500	450	19000
Rolling mill gearboxes	13000	30000	195000	49000
Roller tables	7600	20000	9000	33000
Centrifugal casting machines	20000	45000	33000	74000

Electric Motors

Mounting location **Recommended rating life in h**

	Ball bearing	Roller bearings		
	From	To	From	To
Electric motors for house hold appliances	1600	3900	-	-
Series motors	20000	31000	33000	49000
Large motors	31000	61000	49000	100000



Paper and printing machinery

Mounting location **Recommended rating life in h**

	Ball bearing	Roller bearings		
	From	To	From	To
Paper machinery / wet section	-	-	100000	140000
Paper machinery / dry section	-	-	140000	240000
Paper machinery / refiners	-	-	100000	140000
Paper machinery / calenders	-	-	74000	100000
Printing machinery	31000	45000	49000	74000

Gearboxes in general machine building

Mounting location **Recommended rating life in h**

	Ball bearing	Roller bearings		
	From	To	From	To
Universal gearboxes	3900	13000	4500	19000
Geared motors	3900	13000	4500	19000
Large gearboxes, stationary	13000	45000	20000	74000

Pumps, fans, compressors

Mounting location **Recommended rating life in h**

	Ball bearing	Roller bearings		
	From	To	From	To
Belt drives / mining		-	75000	150000
Conveyor bell rollers / mining	45000	62000	74000	110000
Conveyor belt rollers / general	7700	20000	10000	35000
Belt drums	-	-	49000	75000
Bucket wheel excavators / tray. Dr.	7700	20000	90000	35000
Bucket wheel excavators buck. Wh.-	-	-	74000	20000
Bucket wheel excavators /	45000	82000	74000	15000
Bucket wheel drive				
Winding cable sheaves	31000	45000	49000	74000
Sheaves	7600	20000	9000	34000

Centrifuses

Mounting location **Recommended rating life in h**

	Ball bearing	Roller bearings		
	From	To	From	To
Centrifuges	7700	13000	9000	19000
Large stirrers	20000	31000	34000	49000

Conveying equipment

Mounting location **Recommended rating life in h**

	Ball bearing	Roller bearings		
	From	To	From	To
Ventilators, fans	20000	44500	34000	74000
Large fans	31000	62000	49000	11000
Pistons pumps	20000	45000	34000	74000
Centrifugal pumps	13000	45000	19000	74000
Hydraulic axial and radial piston engines	450	7700	550	9000
Gear pumps	450	7700	550	9000
Compressors	3900	20000	4900	34000

Operating life

The operating life is the life actually achieved by a rolling bearing. It may differ significantly from the calculated life. This may be due to wear or fatigue as a result of:

Misalignment Between The Shaft And Housing
Insufficient Or Excessive Operating Clearance
Deviating Operating Conditions
Insufficient Lubrication
Excessive Operative Temperature
Very High Shock Loads Leading To Static Overloading
Prior Damage During Installation.

Axial load carrying capacity of cylindrical roller bearings:
Radial cylindrical roller bearings used as semi-locating and locating bearings can support axial forces in one or both directions in addition to radial forces.

The axial load carrying capacity is dependent on:
The size of the sliding surfaces between the ribs and the end faces of the rolling elements
The sliding velocity at the ribs
The lubrication on the contact surfaces.

Static load carrying capacity

Very high static loads or shock loads can cause plastic deformation on the raceways and rolling elements. This deformation limits the static load carrying capacity of the rolling bearing with respect to the permissible noise level during running.

If a rolling bearing operates without rotary motion or with only infrequent rotary motion, its size is determined in accordance with the basic static load rating Co.
According to DIN ISO 76, this is:

A constant radial load Cor for radial bearings
A constant, concentrically acting axial load Cor for axial bearings.

The basic static load rating Co is that load under which the Hertzian pressure at the most heavily loaded point between the rolling elements and raceways reaches the following values.

For roller bearings, 4000 N/mm2
For ball bearings, 4200 N / mm2
For self-aligning ball bearings, 4600 N/mm2

Friction and increases in temperature

Friction

The friction in a rolling bearing is made up of several components; see table Frictional component and influencing factor. Due to the large number of influencing factors, the frictional torque and thus the frictional energy can only be calculated in approximate Terms and on the precondition of constant operating conditions.

Friction and increases in temperature

Frictional component and influencing factor	Frictional component	Influencing factor
	Rolling friction	Magnitude of load
	Sliding friction of rolling elements	Magnitude and direction of load
	Sliding friction of cage	Speed and lubrication conditions,

Running-in condition

Fluid Friction Flow Resistance	Type And Speed
Seal friction The idling friction is dependent on: The quantity of lubricant The speed The operating viscosity of the lubricant The seals The running-in condition of the bearing.	Type, quantity and operating viscosity Of lubricant Type and preload of seal



Speeds
On the basis of DIN-732-1, calculation of the thermal reference speed nB has been standardized in ISO 15312. The calculation of reference speeds was matched to this standard, giving modified values compared to the previous catalogue data.The symbols used in the formula have been
matched to the international standard.

Thermal reference speed
The thermal reference speed nB is used as an auxiliary quantity for calculating the thermally safe operating speed n. this is the speed at which, Under defined reference conditions, a bearing operating temperature of +70 °C is achieved.

Lubrication

Principals
Lubrication and maintenance are important for the reliable operation and long operating life of rolling bearings.

Functions of lubricant the lubricant should,

From a lubricant film on the contact surfaces that is sufficiently capable of supporting loads and thus preventing wear and premature fatigue.
Dissipate heat in the case of oil lubrication
Give additional sealing of the bearing, in the case of grease lubrication, against the entry of both solid and fluid contaminants.
Reduce the running noise.
Protect the bearing against corrosion

Selection of the type of lubrication:

It should be determined as early as possible in the design process whether bearings should be lubricated using grease or oil.
The following factors are decisive in determining the type of lubrication and quantity of lubricant:
The operating conditions
The type and size of the bearing

Criteria for grease lubrication:

In case of grease lubrication, the following criteria must be considered.
Normal assembly
Sealing action
Time to time lubrication

Criteria for oil in the case of oil lubrication, the following criteria

Lubrication: must be considered.

Good lubricant distribution and supply to contact areas
Dissipation of heat possible from the bearing (significant principally at high speeds and / or loads)
Should be more perfect sealing.

Under extreme operating conditions (such as very high temperatures, vacuum, aggressive media), it may be possible to use special lubrication methods such as solid lubricants in consultation with the engineering service.

Grease lubrication:

Greases can be differentiated in terms of their thickeners and base oils. The base oils of greases are covered by information in table.

Composition of grease:

Conventional greases have metal soaps as thickeners and mineral Base oil. They also contain additives. These have a specific influence on, for example, the characteristics in relation to wear prevention, corrosion prevention or resistance to ageing. These combinations of additives are not, however, fully effective across every temperature and load range.
Grease exhibit widely varying behavior in response to environmental influences such as temperature and moisture.

Type of Grease
The characteristics of greases are dependent on: The base oil

The viscosity of the base oil (this is important for the speed range)
The thickener (the shear strength is significant for the speed range)
The additives.

Selection of suitable grease
Suitable greases should be selected in accordance with the operating conditions of the bearing:

Temperature
Compressive load
Speed
The presence of water / moisture.

Bearing-specific speed parameter Fk.n.Dm:

The basic grease operating life is dependent on bearing specific speed parameter Fk.n.Dm.
Fk- factor for bearing type,
n- Operating speed or equivalent speed
Dm- mean bearing diameter (d+D)/2

Bearing type	Fk
Deep Groove ball bearings, single row	1
Deep groove ball bearings, double row	1,5
Angular contact ball bearings, single row	1,6
Angular contact ball bearings, double row	2
Four point contact bearings	1,6
Sell-aligning ball bearings	1,45
Axial deep groove ball bearings	5,5
Axial angular contact ball bearings, double row	1,4
Cylindrical roller bearings, single row, with constant axial load	3,25
Cylindrical roller bearing, single row, with alternating axial load	2
Cylindrical roller bearings, double row	3,5
Cylindrical roller bearings, full complement	5,3
Tapered roller bearings	4
Spherical roller bearings without central rib	8
Spherical roller bearings with central rib	10,5
Needle roller and cage assemblies, needle roller bearings	3,6
Drawn cup needle roller bearings	4,2



Cleanliness

The cleanliness of the oil influences the rating life of bearings,
Recommendation:
An oil filter should be provided and attention should be paid to the filtration rate (recommended filter mesh < 25 µm).

Lubrication methods: A distinction can essentially be drawn between the following methods

Drip feed oil lubrication
Pneumatic oil lubrication in order to protect the environment, this should be used as a substitute for oil mist lubrication
Oil bath lubrication splash or sump lubrication
Recirculation oil lubrication.

Oil bath lubrication

The oil level should reach the centre line of the lowest rolling element, if the oil level is higher than this, the bearing temperature may increase at high circumferential speeds and looses Due to splashing may occur. Furthermore, foaming of the oil may

Recalculating oil lubrication

In recirculation oil lubrication, the oil is subjected to additional cooling; the oil can therefore dissipate heat from the bearing.
The quantity of oil required for heat dissipation is Dependent on the cooling conditions.
Design of adjacent construction for oil Lubrication

The lubrication holes in the housing and shaft must align with those in the rolling bearing.
Adequate cross-sections must be provided for annular slots, pockets, etc,

The oil must be able to flow out without pressure (this prevents oil build-up and additional heating of the oil).
In axial bearings, the oil must always be fed from the inside to the outside.

Outlet cross-section - Guide values for oil lubrication

The cross-section of the oil outlet hole should be significantly larger than that of the inlet.

Oil injection lubrication

In bearing running at high speeds, the oil is injected into the gap between the cage and bearing ring. Injection lubrication using large recirculation quantities is associated with high power loss.

Radial internal clearance
The radial internal clearance applies to bearings with an inner ring before the bearing is fitted. It is defined as the amount, by which the inner ring can be moved in a radial direction from one extreme position to the other in relation to the outer ring,

The radial internal clearance is subdivided into groups according to DIN 620 and ISO 5 753, see table Radial internal clearance groups. The values for the radial internal clearance are given in DIN 620-4, ISO 5 753 and in the Features section of the product description.

CN, C2, C3, C4, C5
Internal clearance groups

Radial internal clearance groups

Internal	Description	Standard	Application
Clearance			
Group			
CN	Normal	DIN 62-4	Normal operating conditions,
	CN is not included	ISO 5 753	shaft and housing tolerances
	in bearing		as shown in operating clearance
	designations		and Design of bearing arrangement
C2	Smaller than CN		High alternating loads combined
			with oscillating motion
C3	Larger than CN		Bearing rings with press fits and
C4	Larger than C3		Large temperature differential
			between inner and outer rine
C5	Larger than C4	ISO 5 7 53	



FAILURE OF BEARING

Bearing are used to control following parameter]
Vibration
Operating noise
Increase in temperature.

Any Change in above parameter level, invite bearing failure. Failure causes are classified in to following category
Failure because of misapplication
Failure because of environment factor
Failure because of quality of bearing include

- Design
- Material

Environmental factor and origin of failure

Mounting condition
Improper mounting procedure and tools
Dirty mounting condition
Improper manufacturing of housing or shaft (i.e. tolerance, misalignment etc.)

Operation condition

External vibration
Over loading – speeding
Shaft deflection (more than acceptable)

Environmental condition
Foreign particle from water, dust, chemical, textile or Too low or too high an ambient temperature.

TYPES OF FAILURE

Wear – foreign material
Etching – corrosion
Inadequate lubrication
Fatigue spalling
Excessive preload or overload
Misalignment and inaccurate machining of seats or shoulder
Handling and installation damage
Damaged bearing cage or retainers
Improper fit in housing or shaft
Brinell and impact damage
False brinelling
burning

The greases in the range are arrange in grades in items of Performance capability such that almost all areas of application Are covered, see table Arcanol rolling bearing greases.



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Arcanol Grease	Designation To DIN 51825	Classification	Type of grease	Operating Temperature Range ^0C	Upper continuous Limit temperature T upperlimt ^0C	NLGI Class	Speed Parameter $n\text{-}d_M$ min^{-1} .mm	Kinematic viscosity	
								at + 40 ^0C mm^2/s	At + 100 ^0C
MULTI2	K2N-30	Low-noise ball bearing grease for dd62mm	Lithium soap mineral oil	-30 to + 140	+ 75	2	500000	100	10
MULTI3	K3N-30	Standard ball bearing/insert bearing grease for d > 62mm	Lithium soap mineral oil	-30 to + 140	+ 75	3	500000	80	8
SPEED2,6	KE3K-50	Spindle bearing grease standard	Polycarbamide PAO + ester oil [1)]	-50 to + 120	+ 80	2/3	2000000	22	5
MULTITOP	KE2N-40	Universal high performance grease	Calcium soap + polycarbamide, PAO1 [1)]	-40 to + 150	+ 80	2	800000	52	12,5
TEMP90	KP2P-40	Low noise rolling bearing grease, up to + 160 ^0C	Calcium soap + polycarbamide, PAO [1)]	-40 to + 160	+ 90	2	500000	130	15,5
TIMP110	KE2P-40	Universal grease for higher temperatures	Lithium complex soap, ester oil	-40 to + 160	+ 110	2	600000	150	19,8
TEMP120	KPHC2R-30	Grease for high temperatures and high loads	Ply carbamide PAO + ester oil [1)]	-35 to + 180	+ 120	2	300000	460	40
TEMP200	KFK2U-40	Rolling bearing grease for T>+150 ^0C to + 250 ^0C	PTFE alkoxyfluoroether	-40 to + 260	+ 200	2	300000	400	35
LOAD220	KP2N-20	Heavy duty grease, wide speed range	Lithium-calcium soap [1)] Mineral oil	-20 to + 140	+ 80	2	500000	220	16
LOAD400	KP2N-20	Grease for high loads, shocks	Lithium-calcium soap [1)] Mineral oil	-25 to + 140	+ 80	2	400000	400	28
LOAD1000	KP2N-20	Grease for high loads, shocks, large bearings	Lithium-calcium soap [1)] Mineral oil	-20 to + 140	+ 80	2	300000	1000	42
FOOD2	KPF2K-30	Grease with foodstuffs approval	Aluminum complex soap white oil	-30 to + 120	+ 70	2	500000	192	17,5
VIB3	KP3N-30	Grease for oscillating motion	Lithium complex mineral oil	-30 to + 150	+ 90	3	350000	170	13,5
BIO2	KPE2K-30	Grease with rapid biodegradability	Lithium-calcium soap [1)] Ester oil	-30 to + 120	+ 80	2	300000	58	10



Designation To	Classification	Type of grease	Operating Temperature Range ^0C	Upper continuous Limit temperature T upperlimt ^0C	NLGI Class	Speed Parameter $n\text{-}d_M$ min^{-1} .mm	ISO VG class (base oil)[2]
A01	Ball bearing grease for T<+180 ^0C	Polycarbamide ester oil	-40 to + 180	+ 115	2 to 3	600000	68 to 220
A02	Ball bearing grease for T<+180 ^0C	Polycarbamide SHC	-40 to + 160	+ 85	2 to 3	500000	68 to 220
A13	Standard ball bearing / insert bearing grease for d>62mm	Lithium soap mineral oil	-30 to +140	+ 75	3	500000	68 to 150
A14	Low-noise ball bearing grease for Dd62 mm	Lithium soap mineral oil	-30 to +140	+ 75	2	500000	68 to 150
A15	Low-noise ball bearing grease for high speed	Lithium soap ester oil	-50 to + 150	+ 70	2 to 3	1000000	22 to 32
A22	Free-running grease with low frictional torque	Lithium soap ester oil	-50 to + 120	+ 70	2	1000000	10 to 22
014	Initial greasing for insert bearings for low temperatures	Gel ester oil	-54 to + 204[3]	+ 80	1 to 2	900000	22 to 46
086	Initial greasing for insert bearings for wide temperature range and low loads	Sodium complex soap silicone oil	-40 to + 180	+ 115	3	150000	68 to 150
A08	Grease for line contact	Lithium complex soap mineral oil	-30 to + 140	+ 95	2 to 3	500000	150 to 320
A126	Standard grease for drawn cup roller clutches	Calcium / lithium soap mineral oil	-20 to + 80	+ 60	2	500000	10 to 22
A28	Screw drive bearing grease	Lithium soap ester oil	-30 to + 160	+ 110	2	600000	15 to 100
A11	Rolling bearing grease resistant to media for temperatures up to + 250 ^0c	PTFE Alkoxyfluoroether	-40 to + 250	+ 180	2	300000	460 to 680
A47	Rolling bearing grease resistant to media for temperatures up to +140 ^0C	Barium complex soap	-20 to + 140	+ 70	1 to 2	350000	150 to 320

Maintenance

In general, if rolling bearings are used correctly, they will survive to their predicted fatigue life bearings, however, often fail prematurely due to avoidable mistakes. The causes of, this premature failure include improper mounting, mishandling, poor lubrication, entry of foreign matter or abnormal heat generation. All the various causes and the prevention required for that cause areas mentioned below:

Flaking

Flaking occurs when small pieces of bearing material are split off from the smooth surface of the raceway or rolling elements due to rolling fatigue, thereby creating regions having rough and coarse texture.

Causes

Excessive load, poor mounting (misalignment), entry of foreign debris, water penetration; Poor lubrication, unsuitable bearing clearance, improper precision for shaft or housing, large shaft bending, Rust, corrosion pits, smearing, dents (brinelling)

Preventive measures

- Reconfirm the bearing application and check the load conditions
- Improve mounting method
- Improve the sealing mechanism, prevent rusting during non-running
- Use a lubricant with a proper viscosity, improve the lubrication method
- Check the precision of shaft and housing
- Check the bearing internal clearance

Peeling

Dull spots appear on surface along with light wear, from such dull spots tiny cracks are generated downward to a depth of 5-10μm.

Causes

Unsuitable lubricant entry of debris into lubrication rough surface due to poor lubrication surface roughness of mating rolling parts

Preventive measures

Select a proper lubricant
Improve the sealing mechanism
Improve the surface finish of the rolling mating parts

Scoring

Scoring is surface damage due to accumulated small seizures cause by siding under improper lubrication or severe operating conditions. Linear damage appears circumferentially on the raceway and roller surfaces. Cycloidal shaped damage on the roller ends and scoring on the rib surface contacting roller ends also occur.

Causes

Excessive load, excessive preload Poor lubrication Particles are caught in the surface Inclination of inner and outer rings Shaft bending Poor precision of the shaft and housing

Preventive measures

Check the magnitude of the load
Adjust the pre load
Improve the lubricant and the lubrication method
Check the precision of the shaft and housing

Smearing

Smearing is surface damage which occurs from a collection of small seizures between bearing components caused by oil film rupture and / or sliding.

High speed and light load Sudden acceleration / deceleration improper lubricant Entry of water

Preventive measures

Improve the bearing clearance
Use a lubricant with good oil film formation ability
Improve the sealing mechanism

Fracture

Fracture refers to small pieces which were broken off due to excessive load or shock load acting locally on a roller corner or rib of a raceway nng.

Causes

Impact during mounting Excessive load

Preventive measures

Improve the mounting method (shrink fit, use of proper tools)
Reconsider the load conditions
Provide enough back up and support for the bearing rib

Cracks

Cracks in the raceway ring and rolling elements. Continued use under this condition leads to larger Cracks or Fractures

Causes

Excessive interference Excessive load shock load Progression Flaking Heat generation and fretting caused by contact between mounting parts and raceway nng
Heat generation due to creep
Poor taper angle of tapered shaft
Poor cylindricality of shaft
Interference with bearing chamfer due to a large shaft corner radius

Preventive measures

- Correct the interference
- Check the load conditions
- Improve the mounting method



Cage Damage

Cage damage includes cage deformation fracture and wear fracture of cage pillars deformation of side face
Wear of pocket surface Wear of guide surface

Causes

Improper mounting (Bearing Misalignment), Large moment load , Shock and large vibration
Excessive rotation speed, sudden acceleration and deceleration , Poor lubrication Temperature rise

Preventive measures

- check the mounting method
- check the temperature, rotation and load conditions
- reduce the vibration
- use and appropriate shaft shape select a different cage type
- select a different lubrication method and / or lubricant

Denting

When debris such as small metallic particles are caught in the rolling contact zone, denting occurs on the raceway surface or rolling element surface.

Causes
Debris such as metallic particles are caught in the surface excessive load shock during mounting

Preventive measures

Clean the housing
Improve the sealing mechanism
Filter the lubrication oil
Improve the mounting and handling methods

Pitting

Pitting has a dull luster and appears on the rolling element surface or raceway surface

Causes

Debris becomes caught in the lubricant exposure to moisture in poor lubrication

Preventive Measures

Improve the sealing mechanism
Filter the lubrication oil thoroughly
Use a proper lubricant

Wear

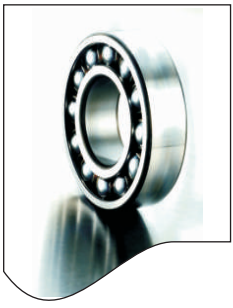
Wear is surface deterioration due to sliding friction at the surface of the raceway, rolling elements, roller end faces, rib face, cage pockets, etc. Entry of debris progression from rust and electrical corrosion poor lubrication sliding due to irregular motion of rolling elements

Preventive measures

- Improve the sealing mechanism
  - Clean this housing
  - Filter the lubrication oil thoroughly
  - Check the lubricant and lubrication method
  - Prevent misalignment

Fretting

Wear occurs due to repeated sliding between the two surfaces.



Causes

Poor lubrication
Vibration with a small amplitude
Insufficient interference

Preventive measures

Use a proper lubricant
Apply a preload
Check the interference fit
Apply a film of lubricant to the fitting surface

False Brinelling

Among the different types of fretting, false brinelling is the occurrence of hollow spots that resemble brinell dents and are due to wear caused by vibration and swaying at the contact points between the rolling elements and raceway

Causes

Oscillation and vibration of a stationary bearing during such times as transporting Oscillating motion with a small amplitude Poor lubrication

Preventive measures

Transport with the inner and outer rings packed separately
Reduce the vibration by preloading
Use a proper lubricant

Creep

Creep is the phenomenon in bearings where relative slippage occurs between fitting surfaces and thereby creates a clearance between them surface Creep causes a shiny appearance, occasionally with Scoring or Wear

Causes

Insufficient interference or loose fit
Insufficient sleeve tightening

Preventive measures

- Check the interference and prevent rotation
- Correct the sleeve tightening
- Study the shaft and housing precision
- Pre load in the axial direction
- Tighten the raceway ring side face

Seizure

When sudden overheating occurs during rotation, the bearing becomes discolored. The, the raceway rings, rolling elements and cage will soften melt and deform as damage accumulates

Causes

- Poor lubrication
- Excessive load (Excessive pre load)
- Excessive rotational speed)
- Excessively small internal clearance
- Entry of water and debris
- Poor precision of shaft and housing Excessive shaft bending

Preventive measures

- Study the lubricant and lubrication method
- Reinvestigate the suitability of the bearing type selected
- Study bearing clearance and fitting
- Improve the sealing mechanism
- Check the precision of the shaft and housing
- Improve the mounting method

Rust and Corrosion

Bearing rust and corrosion are pits on the surface of rings and rolling elements and may occur at the rolling elements pitch on the rings or over the entire bearing surfaces.

Causes

Entry of corrosive gas or water Improper lubricant
Formation of water droplets due to condensation of moisture High temperature and high humidity while
Stationary Poor rust-preventive treatment during transporting Improper storage conditions Improper handling



Preventive measures

- Improve the sealing mechanism
- Study the lubrication method
- Anti rust treatment during periods of non-running
- Improve the storage methods
- Improve the handling method

Mounting Flaws

Straight line scratches on surface of raceways or rolling elements caused during mounting or dismounting of bearing

Causes

Inclination of inner and outer rings during mounting of dismounting
Shock load during mounting or dismounting

Preventive measures

- Avoid shock loads by using a press machine
- Center the relative mating parts during mounting

Discoloration

Discoloration of cages, rolling elements and raceway rings occurs due to their reacting with lubricant at high temperature

PREFIXES

L	Removable inner or outer ring of separable bearings Ex: LNU 205 inner rong of cylindrical roller bearing NU 205 L 30205 outer ring of taper roller bearing 30205
R	separable bearing without removable inner or outer ring Ex.: RNU 205 outer ring with roller and cage assembly of cylindrical roller bearing NU 205 R 30205 inner ring with roller and cage assembly of taper roller bearings 30205

SUFFIXES

INTERNAL DESIGN:

CC improved internal design
A,B,C,D:-Daviation or Modified internal Design

Ex:7306B-Single Row Angular Contact Ball Bearing With a Contact angle 40°

E High Capacity, improved internal design

INTERNAL CLEARANCE:

C1	Clearance less than C2
C2	Clearance less than normal
C3	Clearance greater than normal
C4	Clearance greater than C3
C5	Clearance greater than C4

EXTERNAL DESIGN:

CA, CB, CC
Single row angular contact ball bearing for paired mounting in random order (tandem, back to back or Face to Face). When arranged back-to-back or face-to-face, the bearing have a small (CA), normal(CB), or larger than normal (CC) axial internal clearance.

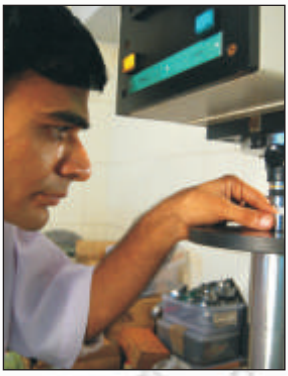
GA, GB, GC
When arranged back-to-back or face-to-face, bearing have a light (GA), medium (GB), or heavy preload (GC)

ACCURACY:

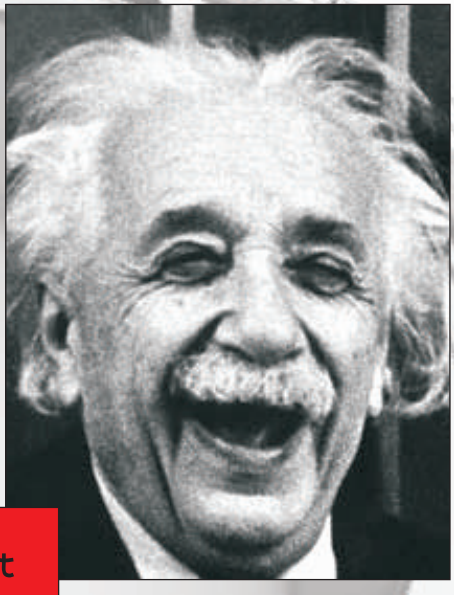
CL0	CORROSPOND TO ISO TOLERANCE CLASS 0 (INCH SIZE TAPPER ROLLER BEARINGS
CL3	CORROSPOND TO ISO TOLLERANCE CLASS 3 (NCH SIZE TAPPER ROLLER BEARING (CORROSPOND TO ISO TOLLERANCE 6X FOR TAPPER ROLLER BEARING (METRIC) (REDUCED CLN WIDH TOLERANCE)
P2	DIMENSIONAL ND RUNNING ACCURACY TO ISO TOLERANCE CLASS 2
P4	DIMENSIONAL ND RUNNING ACCURACY TO ISO TOLLERANCE CLASS 4
2ZNR	as 2Z but with snap ring
2Z	Z shield at both side of bearing
2ZN	Z shield at both side of bearing and snap ring groove in outer ring
2NR	Bearing with two retaining rings
2RS	RS seal of both side of bearing
K30	K30- Tapered bore, taper 1:30
L	L – Removable inner ring or outer ring of separable bearing
M	M – Solid brass, guided by rollers
MA	MA – Solid brass, guidance on outer ring
MB	M B – Solid brass, guidance on inner ring
MC	M C – machined brass cage
N	N – Snap ring groove in outside cylindrical surface of outer ring
N2	N2 - Two locating slots (at 180^0) in outer ring
NR	NR – as per N but with snap ring
P	MOULDED CAGE OF GLASS FIBRE
R	r – separable bearing without removable inner or outer ring
RS	RS – Rubbing seal of synthetic rubber or polyurethane at one side of bearing
S0	UP TO 150^0 C
S1	UP TO 200^0 C
S2	UP TO 250^0 C
S3	UP TO 300^0 C
S4	UP TO 350^0 C
TN	MOULDED CAGE OF PLASTIC
TVP	TVP – polyamide cage
V	FULL COMPLEMENT BEARING (W/O CAGE)
VH	FULL COMPLEMENT BEARING WITH NON-SEPERABLE ROLLER COMPLEMNET (CYLINDRICAL ROLLER BEARING)
W	NO LUBRICATION FACITLITY
W20	W20 – three lubrication holes in outer ring
W22	W22 – special reduced O.D. tolerance, for outer ring; normal tolerance for inner ring
W26	W26 – six lubrication holes in inner ring
W33	W33 – lubrication groove and 3 holes in inner ring
Z	Z – Shield at one side of bearing and snap ring groove in outer ring of bearing at opposite side
ZNR	as ZN but with snap ring

D	nominal bore diameter
d_{mp}	mean bore diameter; arithmetical mean of the largest and smallest single bore diameters in one plane
	mean diameter at the small end of a tapered bore; arithmetical mean of the largest and smallest single diameter
D_{1mp}	mean diameter at theoretical large end of tapered bore; arithmetical mean of the largest and smallest single bore diameters
d_s	single bore diameter
dmp	deviation of the mean bore diameter from the nominal
	($_{d1mp}$ = d_{mp} d)
d1mp	deviation of the mean bore diameter at the theoretical large end of a tapered bore from the nominal
	($_{ds}$ = ds d)
V_{dp}	bore diameter variation; difference between the largest and smallest single bore diameter in one plane
V_{dmp}	mean bore diameter variation; difference between the largest and smallest mean bore diameters of one ring or washer
D	nominal outside diameter
D_{mp}	mean outside diameter; arithmetical mean of the largest and smallest single outside diameter in one plane
D_s	single outside diameter
Dmp	deviation of the mean outside diameter from the nominal
	($_{Dmp}$ = D_{mp} D)
Ds	deviation of a single out side diameter from the nominal ($_{Ds}$ = D_s D)
VDp	outside diameter variation; difference between the largest and smallest single outside diameters in one plane
V_{Dmp}	mean outside diameter variation; difference between the largest and smallest mean outside diameters of one ring or washer
B_s, C_s	single width of inner ring and outer ring, respectively
B_{1s}, C_{1s}	single width of inner ring and outer ring, respectively of a bearing specially manufactured for paired mounting
Bs, Cs	deviation of single inner ring width or single outer ring width from the nominal ($_{Bs}$ = B_s B etc)
V_{Bs}, V_{cs}	ring width variation; difference between the largest and smallest single widths of inner ring and of outer ring, respectively
T_s	
.	Single width (abutment width) of taper roller bearing: distance between inner ring (cone) back face and outer ring (cup) back face
	Single height (H) of single direction thrust bearing (except spherical roller thrust bearing, see T_{4s})
T_{1s}	
.	Single width of cone assembled with master cup of taper roller bearing
	Single height (H_1) of single direction thrust ball bearing with seating washer
T_{2s}	
	single width of cup assembled with master cone of taper roller bearing
	Single height (h) of double direction thrust bearing
T3s	single height (H_1) of double direction thrust ball bearing with seating washer
T4s	single height (H) of spherical roller thrust bearing
Ts, T1s	
	deviation of single width of taper roller bearing from the nominal ($_{Ts}$ = T_s T etc.)
.	deviation of single height of thrust bearing from the nominal
K_{ia}, K_{ea}	radial run out of assembled bearing inner ring and assembled bearing outer, ring respectively
S_d	side face run out with reference to bore (of inner ring)
S_D	outside inclination variation: variation in inclination of outside cylindrical surface to outer ring side face
S_{ia}, S_{ea}	side face run out of assembled bearing inner ring and assembled bearing outer ring, respectively
S_i, S_e	thickness variation, measured from middle of raceway to back (seating) face of shaft washer and of housing washer, respectively
	(axial run out)

THE COMMITMENT TO QUALITY...
THE COMMITMENT TO GROWTH...
Precision Bearings Pvt. Ltd.





"Scientists investigate that which already is, Engineers create that which has never been!"

Albert Einstein



Deep Groove
Ball Bearings



DEEP GROOVE BALL BEARING

These types of bearing contains of inner ring, outer ring, ball and cage. Also available in rubber seals and steel shields, snap ring grooves with snap-rings and also in different types of cage.

These bearings are of mainly

Single row deep groove ball bearings
Double row deep groove ball bearings

Characteristic of deep groove ball bearing

Low, medium and very high speed rotation
Require low maintenance
Able to accommodate axial load in both direction.
Able to accommodate radial load at high speed.
Unidirectional and bidirectional load carrying capacity
Good running accuracy and low noise
Use for low and medium load application

Series available

For Single Row
6800, 6900, 16000, 6000, 6200, 6300, 6400, 62000, 62300, 63000, 61800, 61900,
6200, 6300 - Also manufacture in EMQ [Electric Motor Quality]

For double row
4200, 4300

Double row deep groove ball bearing has

Deep interrupted raceways and high conformity between ball and raceways.
Carry axial load in unidirectional and bidirectional, addition to radial load.
Suitable where load carrying capacity of single row deep groove ball bearing is inadequate.
Double row deep groove ball bearing are wider than single row deep groove ball bearing for same bore diameter and outer diameter, but have higher load carrying capacity than single row deep groove ball bearing.

Precautions for use of Deep Groove Ball Bearings

If the bearing load is too small during operation slippage occurs between the balls and raceway. Which may result in smearing in deep Groove ball bearing. The higher the weight of ball and cage, the higher the foundry becomes, specially for large bearings. So if very Small bearing load are expected than please contact ZNL for selection of appropriate bearings

Misalignment

for double row deep groove ball bearing misalignment of inner ring relative to outer ring can only accommodate by force, which results ball load and cage force and result in reduce bearing life. Any misalignment in bearing ring will result increase noise during application.

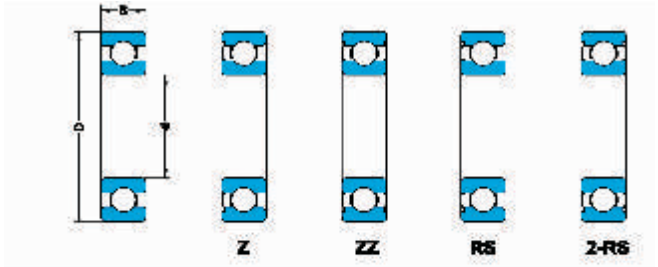
ZNL offering

All type of ball bearing
With Z, 2Z shield and with Rubber seal RS, 2RS
With snap ring groove and snap ring
For radial clearance C2, CN, C3, C4, C5
As per ISO grade P0 ABEC1 And as per ISO Grade P6 ABEC3
Cage type riveted of steel and brass steel, machined brass cage, polyimide.
Dimension as per ISO standard, DIN standard and ISI standard.
RLS,RMS,XLJ Available

Radial internal clearance of deep groove ball bearings

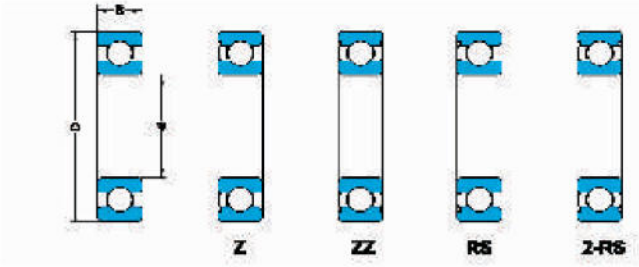
Bore		Radial internal clearance									
Diameter d over	Incl.	C2 Min	Max	Normal Min	Max	C3 Min	Max	C4 Min	Max	C5 Min	Max
mm		Micron									
	6	0	7	2	13	8	23	-	-	-	-
6	10	0	7	2	13	8	23	14	29	20	37
10	18	0	9	3	18	11	25	18	33	25	45
18	24	0	10	5	20	13	28	20	36	28	48
24	30	1	11	5	20	13	28	23	41	30	53
30	40	1	11	6	20	15	33	28	46	40	64
40	50	1	11	6	23	18	36	30	51	45	73
50	65	1	15	8	28	23	43	38	61	55	90
65	80	1	15	10	30	25	51	46	71	65	105
80	100	1	18	12	36	30	58	53	84	75	120
100	120	2	20	15	41	36	66	61	97	90	140
120	140	2	23	18	48	41	81	71	114	105	160
140	160	2	23	18	53	46	91	81	130	120	180
160	180	2	25	20	61	53	102	91	147	135	200
180	200	2	30	25	71	63	117	107	163	150	230
200	225	4	32	28	82	73	132	120	187	175	255
225	250	4	36	31	92	87	152	140	217	205	290
250	280	4	39	36	97	97	162	152	237	255	320

Deep groove ball bearings
Single row
d 8-20 mm



Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u		RPM		
mm			kN		kN			kg	-
8	16	4	1.33	0.57	0.024	40000	480000	0.0030	**618/8**
	22	7	3.25	1.37	0.057	36000	43000	0.012	**608**
9	17	4	1.43	0.64	0.27	38000	45000	0.0034	**618/9**
	24	7	3.71	1.66	0.071	32000	38000	0.014	**609**
	26	8	4.62	1.96	0.083	28000	34000	0.020	**629**
10	19	5	1.38	0.58	0.025	36000	43000	0.0055	**61800**
	22	6	1.95	0.75	0.032	34000	40000	0.010	**61900**
	26	8	4.62	1.96	0.083	30000	36000	0.019	**6000**
	28	8	4.62	1.96	0.083	28000	34000	0.022	**16100**
	30	9	5.07	2.36	0.1	24000	30000	0.032	**6200**
	35	11	8.06	3.40	0.143	20000	26000	0.053	**6300**
12	21	5	1.43	0.67	0.028	32000	38000	0.0063	**61801**
	24	6	2.25	0.98	0.043	30000	36000	0.011	**61901**
	28	8	5.07	2.36	0.100	26000	32000	0.022	**6001**
	30	8	5.07	2.36	0.100	26000	32000	0.023	**16101**
	32	10	6.89	3.10	0.132	22000	28000	0.037	**6201**
	37	12	9.75	4.15	0.176	19000	24000	0.060	**6301**
15	24	5	1.56	0.80	0.034	28000	34000	0.0074	**61802**
	28	7	4.03	2.04	0.085	24000	30000	0.016	**61902**
	32	8	5.59	2.85	0.120	22000	28000	0.025	**16002**
	32	9	5.59	2.85	0.120	22000	28000	0.030	**6002**
	35	11	7.80	3.75	0.160	19000	24000	0.045	**6202**
	42	13	11.40	5.40	0.228	17000	20000	0.082	**6302**
17	26	5	1.68	0.93	0.039	24000	30000	0.0082	**61803**
	30	7	4.36	2.32	0.098	22000	28000	0.018	**61903**
	35	8	6.05	3.25	0.137	19000	24000	0.032	**16003**
	35	10	6.05	3.25	0.137	19000	24000	0.039	**6003**
	40	12	9.56	4.75	0.200	17000	20000	0.065	**6203**
	47	14	13.50	6.55	0.275	16000	19000	0.12	**6303**
	62	17	22.90	10.80	0.455	12000	15000	0.27	**6403**
20	32	7	2.70	1.50	0.063	19000	24000	0.018	**61804**
	37	9	6.37	3.65	0.156	18000	22000	0.038	**61904**
	42	8	6.89	4.05	0.173	17000	20000	0.050	**16004**
	42	12	9.36	5.00	0.212	17000	20000	0.069	**6004**
	47	14	12.70	6.55	0.280	15000	18000	0.11	**6204**
	52	15	15.90	7.80	0.335	13000	16000	0.14	**6304**
	72	19	30.70	15.0	0.640	10000	13000	0.40	**6404**

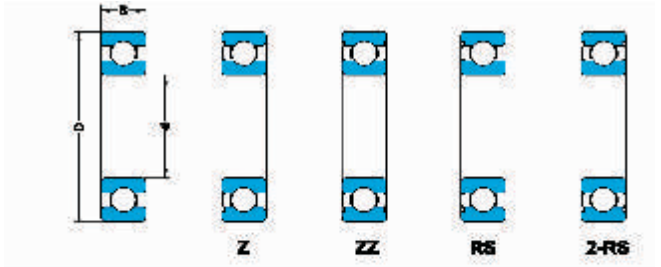
Deep groove ball bearings
Single row
d 25-45 mm



Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	Pu				
mm			kN		kN	RPM		kg	-
25	37	7	4.36	2.60	0.125	17000	20000	0.022	**61805**
	42	9	6.63	4.00	0.176	16000	19000	0.045	**61905**
	47	8	7.61	4.75	0.212	14000	17000	0.060	**16005**
	47	12	11.20	6.55	0.275	15000	18000	0.080	**6005**
	52	15	14.00	7.80	0.335	12000	15000	0.13	**6205**
	62	17	22.50	11.60	0.49	11000	14000	0.23	**6305**
	80	21	35.80	19.30	0.815	9000	11000	0.53	**6405**
30	42	7	4.49	2.90	0.146	15000	18000	0.027	**61806**
	47	9	7.28	4.55	0.212	14000	17000	0.051	**61906**
	55	9	11.20	7.35	0.31	12000	15000	0.085	**16006**
	62	16	19.50	11.20	0.475	10000	13000	0.20	**6206**
	72	19	28.10	16.00	0.67	9000	11000	0.35	**6306**
	90	23	43.60	23.60	1.0	8500	10000	0.74	**6406**
35	47	7	4.75	3.20	0.166	13000	16000	0.030	**61807**
	55	10	9.56	6.20	0.29	11000	14000	0.080	**61907**
	55	13	13.30	8.30	0.355	12000	15000	0.12	**6006**
	62	9	12.40	8.15	0.375	11500	13500	0.11	**16007**
	62	14	15.90	10.20	0.44	10000	13000	0.16	**6007**
	72	17	25.50	15.30	0.655	9000	11000	0.29	**6207**
	80	21	33.20	19.00	0.815	8500	10000	0.46	**6307**
	100	25	55.30	31.00	1.29	7000	8500	0.95	**6407**
40	52	7	4.94	3.45	0.186	11000	14000	0.034	**61808**
	62	12	13.80	9.30	0.425	10000	13000	0.12	**61908**
	68	9	13.30	9.15	0.44	9500	12000	0.13	**16008**
	68	15	16.80	11.60	0.49	9500	12000	0.19	**6008**
	80	18	30.70	19.00	0.80	8500	10000	0.37	**6280**
	90	23	41.00	24.00	1.02	7500	9000	0.63	**6308**
	110	27	63.70	36.50	1.53	6700	8000	1.25	**6408**
45	58	7	6.05	4.3	0.22	9500	12000	0.040	**61809**
	68	12	14.0	98.0	0.46	90000	11000	0.14	**61909**
	75	10	15.6	10.8	0.52	9000	11000	0.17	**16009**
	75	16	20.8	14.6	0.64	9000	11000	0.25	**6009**
	85	19	33.2	21.6	0.91	7500	9000	0.41	**6209**
	100	25	52.7	31.5	1.34	6700	8000	0.83	**6309**
	120	29	76.1	45.0	1.90	6000	7000	1.55	**6409**

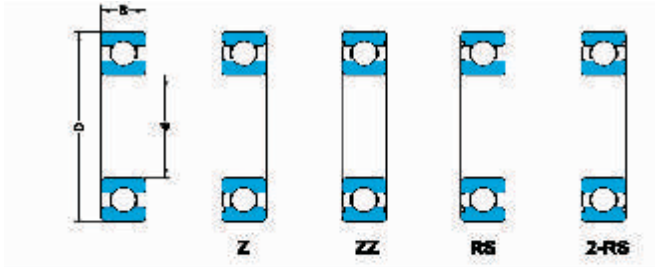
DGBB

Deep groove ball bearings
Single row
d 50-70 mm



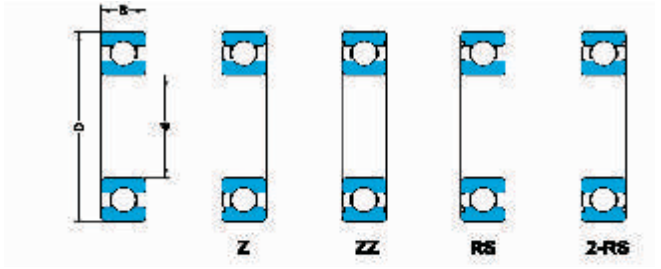
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u	RPM		kg	-
mm			kN		kN				
50	65	7	6.24	4.75	0.25	9000	11000	0.052	**61810**
	72	12	14.6	10.4	0.50	8500	10000	0.14	**61910**
	80	10	16.3	11.4	0.56	8500	10000	0.18	**16010**
	80	16	21.6	16.0	0.71	8500	10000	0.26	**6010**
	90	20	35.1	23.2	0.98	7000	8500	0.46	**6210**
	110	27	61.8	38.0	1.60	6300	7500	1.05	**6310**
	130	31	87.1	52.0	2.20	5300	6300	1.90	**6410**
55	72	9	8.84	6.8	0.36	8500	10000	0.083	**61811**
	80	13	15.9	11.4	0.56	8000	9500	0.19	**61911**
	90	11	19.5	14.0	0.69	7500	9000	0.26	**16011**
	90	18	28.1	21.2	0.90	7500	9000	0.39	**6011**
	100	21	43.6	29.0	1.25	6300	7500	0.61	**6211**
	120	21	43.6	29.0	1.25	6300	7500	0.61	**6311**
	140	33	99.5	62.0	2.60	5000	6000	2.30	**6411**
60	78	10	8.71	6.7	0.36	7500	9000	0.11	**61812**
	85	13	16.5	12.0	0.60	7500	9000	0.20	**61912**
	95	11	19.9	15.0	0.73	6700	8000	0.28	**16012**
	95	18	29.6	23.2	0.98	6700	8000	0.42	**6012**
	110	22	52.7	36.0	1.53	6000	7000	0.78	**6212**
	130	31	81.9	52.0	2.2	5000	6000	1.70	**6312**
	150	35	10.8	69.5	2.9	4800	5600	2.75	**6412**
65	85	10	11.9	9.65	0.51	7000	8500	0.13	**61813**
	90	13	17.4	13.4	0.63	6700	8000	0.22	**61913**
	100	11	21.2	16.6	0.83	6300	7500	0.30	**16013**
	100	18	21.2	16.6	0.83	6300	7500	0.30	**6013**
	120	23	55.9	40.5	1.73	5300	6300	0.99	**6213**
	140	33	92.3	60.0	2.50	4800	5600	2.10	**6313**
	160	37	119.0	78.0	3.15	4500	5300	3.30	**6413**
70	90	10	12.1	1.0	0.54	6700	8000	0.14	**61814**
	100	16	23.8	18.3	0.90	6300	7500	0.35	**61914**
	110	13	28.1	25.0	1.06	6000	7000	0.43	**16014**
	110	20	37.7	31.0	1.32	6000	7000	0.60	**6014**
	125	24	60.5	45.0	1.90	5000	6000	1.05	**6214**
	150	35	104.0	68.0	2.75	4500	5300	2.50	**6314**
	180	42	143.0	104.0	3.90	3800	4500	4.85	**6414**

Deep groove ball bearings
Single row
d 75-100 mm



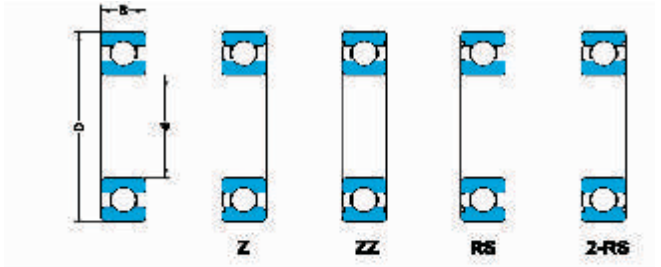
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u	RPM		kg	-
mm			kN		kN				
75	95	10	12.5	10.8	0.58	6300	7500	0.15	**61815**
	105	16	24.2	19.3	0.96	6000	7000	0.37	**61915**
	115	13	28.6	27.0	1.14	5600	6700	0.46	**16015**
	115	20	39.7	33.5	1.43	5600	6700	0.64	**6015**
	130	25	66.3	49.0	2.04	4800	5600	1.20	**6215**
	160	37	114.0	76.5	3.00	4300	5000	3.00	**6315**
	190	45	153.0	114.0	4.15	3600	4300	6.80	**6415**
80	100	10	12.7	11.2	0.61	6000	7000	0.15	**61816**
	110	16	25.1	20.4	1.02	5600	6700	0.40	**61916**
	125	14	33.2	31.5	1.32	5300	6300	0.60	**16016**
	125	22	47.5	40.0	1.66	5300	6300	0.85	**6016**
	140	26	70.2	55.0	2.20	4500	5300	1.40	**6216**
	170	39	124.0	86.5	3.25	3800	4500	3.60	**6316**
	200	48	163.0	125.0	4.50	3400	4000	8.00	**6416**
85	110	13	19.5	16.6	0.88	5300	6300	0.27	**61817**
	120	18	31.9	30.0	1.25	5300	6300	0.55	**61917**
	130	14	33.8	33.5	1.37	5000	6000	0.63	**16017**
	130	22	49.4	43.0	1.76	5000	6000	0.89	**6017**
	150	28	83.2	64.0	2.50	4300	5000	1.80	**6217**
	180	41	133.0	96.5	3.55	3600	4300	4.25	**6317**
	210	52	174.0	137.0	4.75	3200	3800	9.50	**6417**
90	115	13	19.5	17.0	0.91	5300	6300	0.28	**61818**
	125	18	33.2	31.5	1.23	5000	6000	0.59	**61918**
	140	16	41.6	39.0	1.56	4800	5600	0.85	**16018**
	140	24	58.5	50.0	1.96	4800	5600	1.15	**6018**
	160	30	95.6	73.5	2.80	3800	4500	2.15	**6218**
	190	43	143.0	108.0	3.85	3400	4000	4.90	**6318**
	225	54	186.0	15.0	5.00	3000	3600	11.5	**6418**
95	120	13	19.9	17.6	0.93	5000	6000	0.30	**61819**
	130	18	33.8	33.5	1.43	4800	5600	0.61	**61919**
	145	16	42.3	41.5	1.63	4500	5300	0.89	**16019**
	145	24	60.5	5.4	2.08	4500	5300	1.20	**6019**
	170	32	108.0	81.5	3.00	3600	4300	2.60	**6219**
	200	45	153.0	118.0	4.15	3200	3800	5.65	**6319**
100	125	13	19.9	18.3	0.95	4800	5600	0.31	**61820**
	140	20	42.3	41.5	1.63	4500	5300	0.83	**61920**
	150	16	44.2	44.0	1.70	4300	5000	0.91	**16020**
	150	24	60.5	54.0	2.04	4300	5000	1.25	**6020**
	180	34	124.00	93.0	3.35	3400	4000	3.158	**6220**
	215	47	174.0	140.0	4.75	3000	3600	7.00	**6320**

Deep groove ball bearings
Single row
d105-150 mm



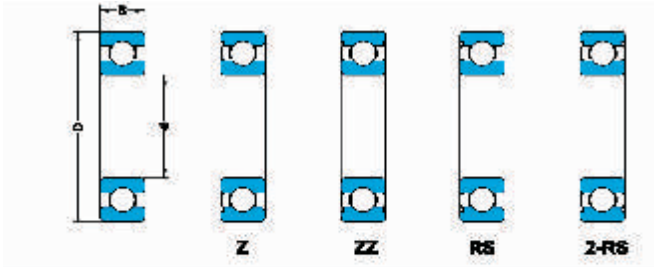
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u	RPM		kg	-
mm			kN		kN				
105	130	13	20.8	19.6	1.0	4500	5300	0.32	**61821**
	145	20	44.2	44.0	1.70	4300	5000	0.87	**61921**
	160	18	52.0	51.0	1.86	4000	4800	1.20	**16021**
	160	26	72.8	65.5	2.4	4000	4800	1.60	**6021**
	190	36	133.0	104.0	3.6	3200	3800	3.70	**6221**
	225	49	182.0	153.0	5.1	2800	3400	8.25	**6321**
110	140	16	28.1	26.0	1.25	4300	5000	0.60	**61822**
	150	20	43.6	45.0	1.66	4000	4800	0.90	**61922**
	170	19	57.2	57.0	2.04	3800	4500	1.45	**16022**
	170	28	81.9	73.5	2.40	3800	4500	1.95	**6022**
	200	38	143.0	118.0	4.0	3000	3600	4.35	**6222**
	240	50	203.0	180.0	5.70	2600	3200	9.55	**6322**
120	150	16	29.1	28.0	1.29	3800	4500	0.65	**61824**
	165	22	55.3	57.0	2.04	3600	4300	1.20	**61924**
	180	19	60.5	64.0	2.20	3400	40000	1.60	**16024**
	180	28	85.2	80.0	2.75	3400	4000	2.05	**6024**
	215	40	146.0	118.0	3.90	2800	3400	5.15	**6224**
	260	55	208.0	186.0	5.70	2400	3000	14.5	**6324**
130	165	18	37.7	43.0	1.66	3600	4300	0.93	**61826**
	180	24	65.0	670.0	2.28	3400	4000	1.60	**61926**
	200	22	79.3	81.5	2.70	3200	3800	2.35	**16026**
	200	33	106.0	100.0	3.35	3200	3800	3.15	**6026**
	230	40	156.0	132.0	4.15	2600	3200	5.80	**6226**
	280	58	229.0	216.0	6.30	2200	2800	18.0	**6326**
140	175	18	39.0	46.5	1.66	3400	4000	0.99	**61828**
	190	24	66.3	72.0	2.28	3200	3800	1.70	**61928**
	210	22	80.6	86.5	2.70	3000	3600	2.50	**16028**
	210	33	111 .0	108.0	3.35	3000	3600	3.35	**6028**
	250	42	165.000	150.0	4.15	2400	3000	7.45	**6228**
	300	62	251.000	245.00	7.10	2000	2600	22.0	**6328**
150	190	20	48.800	61.0	1.96	3000	3600	1.40	**61830**
	210	28	88.400	93.0	2.90	2800	3400	3.05	**61930**
	225	24	92.300	98.0	3.05	2600	3200	3.15	**16030**
	225	35	125.000	125.0	3.90	2600	3200	4.80	**6030**
	270	45	174.000	166.0	4.90	2000	2600	9.40	**6230**
	320	65	276.000	285.0	7.80	1900	2400	26.0	**6330**

Deep groove ball bearings
Single row
d160-220 mm



Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u	RPM		kg	-
mm			kN		kN				
160	200	20	49.400	64.0	2.00	2800	3400	1.45	**61832**
	220	28	92.300	98.0	3.05	2600	3200	3.25	**61932**
	240	25	99.500	108.0	3.25	2400	3000	3.70	**16032**
	240	38	143.000	143.0	4.30	2400	3000	5.90	**6032**
	290	48	186.000	186.0	5.30	1900	2400	14.5	**6232**
	340	68	276.000	28.5	7.65	1800	2200	29.0	**6332**
170	215	22	61.800	78.0	2.40	2600	3200	1.90	**61834**
	230	28	93.600	106.0	3.15	2400	3000	3.40	**61934**
	260	28	119.000	129.0	3.75	2200	2800	5.00	**16034**
	260	42	168.000	173.0	5.00	2200	2800	7.90	**6034**
	310	52	212.000	224.0	6.10	1900	2400	17.5	**6234**
	360	72	312.000	340.0	8.80	1700	2000	34.5	**6334**
180	225	22	62.400	81.5	2.45	2400	3000	2.00	**61836**
	250	33	119.000	134.0	3.90	2200	2800	5.05	**61936**
	280	31	138.000	146.0	4.15	2000	2600	6.60	**16036**
	280	46	190.000	200.0	5.60	2000	2600	10.5	**6036**
	320	52	229.000	24.0	6.40	1800	2200	18.5	**6236**
	380	75	351.000	405.0	10.40	1700	2000	42.5	**6336**
190	240	24	76.1	98.0	2.80	2200	2800	2.60	**61838**
	260	33	117.0	134.0	3.80	2200	2800	5.25	**61938**
	290	31	148.0	16.0	4.55	2000	2600	7.90	**160.8**
	290	46	195.0	216.0	5.85	2000	2600	11.0	**6038**
	340	55	255.0	280.0	7.35	1700	2000	23.0	**6238**
	400	78	371.0	430.0	10.80	1600	1900	49.0	**6338**
200	250	24	76.1	102.0	2.90	2200	2800	2.70	**61840**
	280	38	148.0	166.0	4.55	2000	2600	7.40	**61940**
	310	34	168.0	190.0	5.10	1900	2400	8.85	**16040**
	310	51	216.0	245.0	6.40	1900	2400	14.0	**6040**
	360	58	270.0	310.0	7.80	1700	2000	28.0	**6240**
	420	80	377.0	465.0	11.20	1500	1800	55.5	**6340**
220	270	24	78.0	110.0	3.00	1900	2400	3.00	**61844**
	300	38	151.0	180.0	4.75	1900	2400	8.00	**61944**
	340	37	174.0	204.0	5.20	1800	2200	11.5	**16044**
	340	56	2470.0	290.0	7.35	1800	2200	18.5	**6044**
	400	65	296.0	365.0	8.80	1500	1800	37.0	**6244**
	460	88	410.0	520.0	12.00	1300	1600	72.5	**6344**

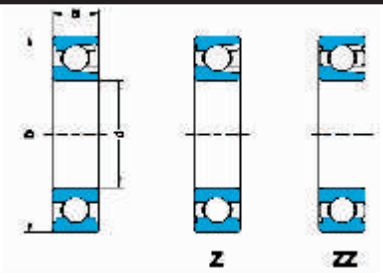
Deep groove ball bearings
Single row
d240-280 mm



Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u				
mm			kN		kN	RPM		kg	-
240	300	28	108.0	150.0	3.80	1800	2200	4.50	**61848**
	320	38	159.0	200.0	5.10	1800	2200	8.60	**61048**
	360	37	178.0	220.0	5.30	1700	2000	14.5	**16048**
	360	56	255.0	315.0	7.80	1700	2000	19.5	**6048**
	440	72	358.0	475.0	10.80	1300	1600	51.0	**6248**
260	320	28	111 .0	163.0	4.00	1700	2000	4.80	**61852**
	360	46	212.0	270.0	6.55	1600	1900	14.5	**61952**
	400	44	238.0	310.0	7.20	1500	1800	21.5	**16052**
	400	65	291.0	375.0	8.80	1500	1800	29.5	**6052**
	480	80	390.0	530.0	11.80	1100	1400	65.5	**6252**
280	350	33	138.000	200.0	4.75	1600	1900	7.40	**61856**
	380	46	216.0	285.0	6.7	1500	1800	15.5	**61956**
	420	44	242.0	335.0	7.5	1400	1700	23.0	**16056**
	420	65	302.0	405.0	9.3	1400	1700	31.0	**6056**
	500	80	423.0	600.0	12.9	1100	1400	71.0	**6256**

DGBB

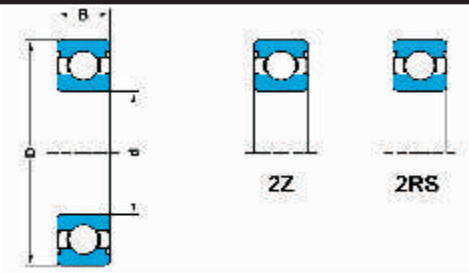
Deep groove ball bearings with filling Slots
Single row
d25-100mm



Principal dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings		Mass	Designation Bearing Open
			Dynamic	Static		Reference speed	Limiting speed		
d mm	D	B	C kN	C_o	P_u kN	RPM		Kg.	
25	62	17	22.9	15.6	0.67	20 000	13 000	0.24	**305**
30	62	16	22.9	17.3	0.735	20 000	12 000	0.21	**206**
	72	19	29.2	20.8	0.88	18 000	11 000	0.37	**306**
35	72	17	29.7	22.8	0.965	17 000	11 000	0.31	**207**
	80	21	39.1	28.5	1.2	16 000	10 000	0.48	**307**
40	80	18	33.6	26.5	1.12	15 000	9 500	0.39	**208**
	90	23	46.8	36	1.53	14 000	9 000	0.64	**308**
45	85	19	39.6	32.5	1.37	14 000	9 000	0.44	**209**
	100	25	59.4	46.5	1.96	13 000	8 000	0.88	**309**
50	90	20	39.1	34.5	1.46	13 000	8 000	0.5	**210**
	110	27	64.4	52	202	11 000	7 000	1.15	**310**
55	100	21	48.4	44	1.86	12 000	7 500	0.66	**211**
	120	29	79.2	67	2.85	10 000	6 700	1.5	**311**
60	110	22	56.1	50	2.12	11 000	6 700	0.85	**212**
	130	31	91.3	78	3.35	9 500	6 000	1.85	**312**
65	120	23	60.5	58.5	2.5	10 000	6 000	1.05	**213**
	140	33	102	90	3.75	9 000	5 600	2.3	**313**
70	125	24	66	65.5	2.75	9 500	6 000	1.15	**214**
	150	35	114	102	4.15	8 000	5 000	2.75	**314**
75	130	25	72.1	72	3	9 000	5 600	1.25	**215**
	160	37	125	116	4.55	7 500	4 800	3.25	**315**
80	140	26	88	85	3.45	8 500	5 300	1.55	**216**
	170	39	138	129	4.9	7 000	4 500	3.95	**316**
85	150	28	96.8	100	3.9	7 500	4 800	1.95	**217**
	180	41	147	146	5.3	6 700	4 300	4.6	**317**
90	160	30	112	114	4.3	7 000	4 500	2.35	**218**
	190	43	157	160	5.7	6 300	4 000	5.40	**318**
95	170	32	121	122	4.5	6 700	4 300	2.70	**219**
100	180	34	134	140	5	6 300	4 000	3.45	**220**

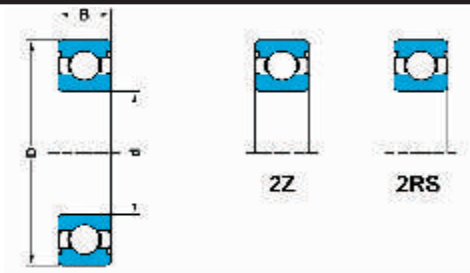
DGBB

Sealed Single Row Deep groove ball bearings d6-12mm



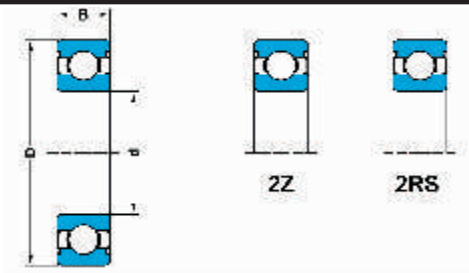
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u				
mm			kN		kN	RPM		kg	-
6	19	6	2.34	0.95	0.04	80 000	40 000	0.0084	626-2Z
	19	6	2.34	0.95	0.04	80 000	40 000	0.0084	626-2RS
7	19	6	2.34	0.95	0.04	85 000	43 000	0.0075	607-2Z
	19	6	2.34	0.95	0.04	85 000	43 000	0.0075	607-2RS
	22	7	3.45	1.37	0.057	70 000	36 000	0.013	627-2Z
	22	7	3.45	1.37	0.057	70 000	36 000	1.012	627-2RS
	22	7	3.45	1.37	0.057	70 000	38 000	0.012	608-2Z
	22	7	3.45	1.37	0.057	70 000	38 000	0.012	608-2RS
	24	8	3.9	1.66	0.071	63 000	32 000	0.017	628-2Z
	24	8	3.9	1.66	0.071	63 000	19 000	0.017	628-2RS
9	24	7	3.9	1.66	0.071	70 000	34 000	0.014	609-2Z
	24	7	3.9	1.66	0.071	70 000	34 000	0.014	609-2RS
	26	8	4.75	1.96	0.083	60 000	32 000	0.020	629-2Z
	26	8	4.75	1.96	0.083	60 000	32 000	0.020	629-2RS
10	19	5	1.38	0.59	0.025	80 000	38 000	0.0055	61800-2Z
	19	5	1.38	0.59	0.025	80 000	22 000	0.0055	61800-2RS
	22	6	2.08	0.82	0.036	75 000	36 000	0.010	61900-2Z
	22	6	2.08	0.82	0.036	75 000	20 000	0.010	619-2RS
	26	8	4.75	1.96	0.083	67 000	34 000	0.019	6000-2Z
	26	8	4.75	1.96	0.083	67 000	34 000	0.025	6000-2RS
	26	12	4.62	1.96	0.083	67 000	19 000	0.022	63000-2RS
	30	9	5.4	2.36	0.1	56 000	28 000	0.032	6200-2Z
	30	9	5.4	2.36	0.1	56 000	28 000	0.032	6200-2RS
	30	14	5.07	2.36	0.1	56 000	17 000	0.04	62200-2RS
	35	11	8.52	3.4	0.143	50 000	26 000	0.053	6300-2Z
	35	11	8.52	3.4	0.143	50 000	26 000	0.053	6300-2RS
	35	17	8.06	3.4	0.143	50 000	15 000	0.06	62300-2RS
12	21	5	1.43	0.67	0.028	70 000	36 000	0.0063	61801-2Z
	21	5	1.43	0.67	0.028	70 000	20 000	0.0063	61801-2RS
	24	6	2.25	0.98	0.043	67 000	32 000	0.011	61901-2Z
	24	6	2.25	0.98	0.043	67 000	19 000	0.011	61901-2RS
	28	8	5.4	2.36	0.1	60 000	30 000	0.022	6001-2Z
	28	8	5.4	2.36	0.1	60 000	30 000	0.022	6001-2RS
	28	12	5.07	2.36	0.1	60 000	17 000	0.029	63001-2RS
	32	10	7.28	3.1	0.132	50 000	26 000	0.037	6201-2Z
	32	10	7.28	3.1	0.132	50 000	26 000	0.037	6201-2RS
	32	14	6.89	3.1	0.132	50 000	15 000	0.045	62001-2RS
	37	12	10.1	4.15	0.176	45 000	22 000	0.060	6301-2Z
	37	12	10.1	4.15	0.176	45 000	22 000	0.060	6301-2RS
	37	17	9.75	4.15	0.173	45 000	14 000	0.070	62301-2RS

Sealed Single Row Deep groove ball bearings
d15-20mm



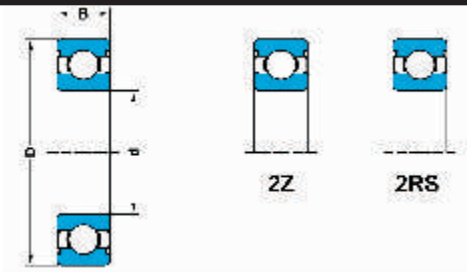
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u				
mm			kN		kN	RPM		kg	-
15	24	5	1.56	0.8	0.034	60 000	30 000	0.0074	**61802-2Z**
	24	5	1.56	0.6	0.034	60 000	17 000	0.0074	**61802-2RS**
	28	7	4.36	2.24	0.095	56 000	28 000	0.016	**61902-2Z**
	28	7	4.36	2.24	0.095	56 000	19 000	0.016	**61902-2RS**
	32	8	5.85	2.85	0.12	50 000	26 000	0.025	**16002-2Z**
	32	9	5.85	2.85	0.12	50 000	26 000	0.030	**6002-2Z**
	32	9	5.85	2.85	0.12	50 000	26 000	0.030	**6002-2RS**
	32	13	5.59	2.85	0.12	50 000	14 000	0.039	**63002-2RS**
	35	11	8.06	3.75	0.16	43 000	22 000	0.045	**6202-2Z**
	35	11	8.06	3.75	0.16	43 000	22 000	0.045	**6202-2RS**
	35	14	7.8	3.75	0.16	43 000	13 000	0.054	**62202-2RS**
	42	13	11.9	5.4	0.228	38 000	19 000	0.082	**6302-2Z**
	42	13	11.9	5.4	0.228	38 000	19 000	0.082	**6302-2RS**
	42	17	11.4	5.4	0.228	38 000	12 000	0.11	**62302-2RS**
17	26	5	1.68	0.93	0.039	56 000	28 000	0.0082	**61803-2Z**
	26	5	1.68	0.93	0.039	56 000	16 000	0.0082	**61803-2RS**
	30	7	4.62	2.55	0.108	50 000	26 000	0.018	**61903-2Z**
	30	7	4.62	2.55	0.108	50 000	14 000	0.018	**61903-2RS**
	35	8	6.37	3.25	0.137	45 000	22 000	0.032	**16003-2Z**
	35	10	6.37	3.25	0.137	45 000	22 000	0.039	**6003-2ZZ**
	35	10	6.37	3.25	0.137	45 000	22 000	0.039	**6003-2RS**
	35	14	6.05	3.25	0.137	45 000	13 000	0.052	**63003-2RS**
	40	12	9.95	4.75	0.02	38 000	19 000	0.065	**6203-2Z**
	40	12	9.95	4.75	0.02	38 000	19 000	0.065	**6203-2RS**
	40	16	9.56	4.75	0.02	38 000	12 000	0.083	**62203-2RS**
	47	14	14.3	6.55	0.275	34 000	17 000	0.12	**6303-2Z**
	47	14	14.3	6.55	0.275	34 000	17 000	0.12	**6303-2RS**
	47	19	13.5	6.55	0.275	34 000	11 000	0.15	**62303-2RS**
20	32	7	4.03	2.32	1.104	45 000	13 000	0.018	**61804-2RS**
	37	9	6.37	3.65	0.156	43 000	12 000	0.038	**61904-2RS**
	42	12	9.95	5	0.212	38 000	19 000	0.069	**6004-2Z**
	42	12	9.95	5	0.212	38 000	19 000	0.069	**6004-2RS**
	42	12	9.95	5	0.212	38 000	11 000	0.086	**63004-2RS**
	47	14	13.5	6.55	0.28	32 000	17 000	0.11	**6204-2Z**
	47	14	13.5	6.55	0.28	32 000	17 000	0.11	**6204-2RS**
	47	18	12.7	6.55	0.28	32 000	10 000	0.13	**62204-2RS**
	52	15	16.8	7.8	0.335	30 000	15 000	0.14	**6304-2Z**
	52	15	16.8	7.8	0.335	30 000	15 000	0.14	**6304-2RS**
	52	15	16.8	7.8	0.335	30 000	9 000	0.20	**62304-2RS**

Sealed Single Row Deep groove ball bearings
d25-40mm



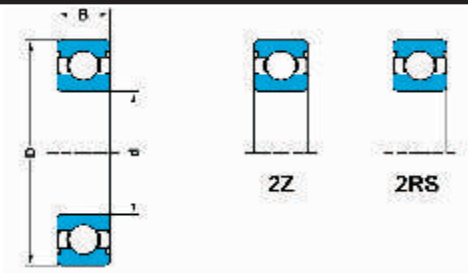
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u				
mm			kN		kN	RPM		kg	-
25	37	7	4.36	2.6	0.125	38 000	11 000	0.022	**61805-2RS**
	42	9	7.02	4.3	0.193	36 000	10 000	0.045	**61905-2RS**
	47	12	11.9	6.55	0.275	32 000	16 000	0.08	**6005-2Z**
	47	12	11.9	6.55	0.275	32 000	16 000	0.08	**6005-2RS**
	47	12	11.9	6.55	0.275	32 000	9 500	0.10	**63005-2RS**
	52	15	14.8	7.8	0.335	28 000	14 000	0.13	**6205-2Z**
	52	15	14.8	7.8	0.335	28 000	14 000	0.13	**6205-2RS**
	52	15	14.8	7.8	0.335	28 000	8 500	0.15	**62205-2RS**
	62	17	23.4	11.6	0.49	24 000	13 000	0.23	**6305-2Z**
	62	17	23.4	11.6	0.49	24 000	13 000	0.23	**6305-2RS**
	62	24	22.5	11.6	0.49	24 000	7 500	0.32	**62305-2RS**
30	42	7	4.49	2.9	0.146	32 000	9 500	0.027	**61806-2Z**
	47	9	7.28	4.55	0.212	30 000	8 500	0.051	**60905-2RS**
	55	13	13.8	8.3	0.355	28 000	14 000	0.12	**6006-2Z**
	55	13	13.8	8.3	0.355	28 000	8 000	0.12	**6006-2RS**
	55	19	13.3	8.3	0.355	28 000	8 000	0.16	**63006-2RS**
	62	16	20.3	11.2	0.475	24 000	12 000	0.20	**6206-2Z**
	62	16	20.3	11.2	0.475	24 000	7 500	0.20	**6206-2RS**
	62	20	19.5	11.2	0.475	24 000	7 500	0.24	**62206-2RS**
	72	19	29.6	16	0.67	20 000	11 000	0.35	**6306-2Z**
	72	19	29.6	16	0.67	20 000	6 300	0.35	**6306-2RS**
	72	27	28.1	16	0.67	20 000	6 300	0.48	**63206-2RS**
35	47	7	4.75	3.2	0.166	28 000	8 000	0.03	**61807-2RS**
	55	10	4.75	608	0.29	26 000	7 500	0.08	**61907-2RS**
	62	14	16.8	10.2	0.44	24 000	12 000	0.16	**6007-2Z**
	62	14	16.8	10.2	0.44	24 000	7 000	0.16	**6007-2RS**
	62	20	15.9	10.2	0.44	24 000	7 000	0.21	**63007-2RS**
	72	17	27	15.3	0.655	20 000	10 000	0.29	**6207-2Z**
	72	17	27	15.3	0.655	20 000	6 300	0.29	**6207-2RS**
	72	23	25.5	15.3	0.655	20 000	6 300	0.37	**62207-2RS**
	80	21	35.1	19	0.815	19 000	9 500	0.46	**6307-2Z**
	80	21	35.1	19	0.815	19 000	6 000	0.46	**6307-2RS**
	80	31	33.2	19	0.815	19 000	6 000	0.66	**62307-2RS**
40	52	7	4.94	3.45	0.186	26 000	7 500	0.034	**61808-2RS**
	62	12	13.8	10	0.425	24 000	6 700	0.12	**61908-2RS**
	68	15	17.8	11.6	0.49	22 000	11 000	0.19	**6008-2Z**
	68	15	17.8	11.6	0.49	22 000	6 300	0.19	**6008-2RS**
	68	21	16.8	11.6	0.49	22 000	6 300	0.26	**63008-2RS**
	80	18	32.5	19	0.8	18 000	9 000	0.37	**6208-2Z**
	80	18	32.5	19	0.8	18 000	5 600	0.37	**6208-2RS**
	80	23	30.7	19	0.8	18 000	5 600	0.44	**62208-2RS**
	90	23	42.3	24	1.02	17 000	8 500	0.63	**6308-2Z**
	90	23	42.3	24	1.02	17 000	5 000	0.63	**6308-2RS**
	90	33	41	24	1.02	17 000	5 000	0.89	**62308-2RS**

Sealed Single Row Deep groove ball bearings
d45-60mm



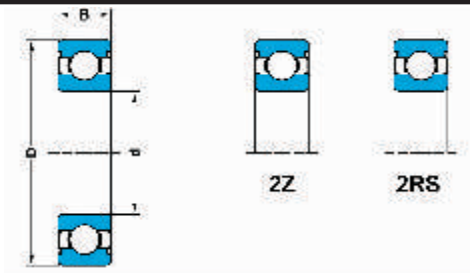
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u				
mm			kN		kN	RPM		kg	-
45	58	7	6.63	6.1	0.26	22 000	6 700	0.04	**61809-2RS**
	68	12	14	10.8	0.465	20 000	6 000	0.14	**61909-2RS**
	75	16	22.1	14.6	0.64	20 000	10 000	0.25	**6009-2Z**
	75	16	22.1	14.6	0.64	20 000	5 600	0.25	**6009-2RS**
	75	26	20.8	14.6	0.64	20 000	5 600	0.34	**63009-2RS**
	85	19	35.1	21.6	0.915	17 000	8 500	0.41	**6209-2Z**
	85	19	35.1	21.6	0.915	17 000	5 000	0.41	**6209-2RS**
	85	23	33.2	21.6	0.915	17 000	5 000	0.48	**62209-2RS**
	100	25	55.3	31.5	1.34	15 000	7 500	0.83	**6309-2Z**
	100	25	55.3	31.5	1.34	15 000	4 500	0.83	**6309-2RS**
	100	36	52.7	31.5	1.34	15 000	4 500	1.15	**62309-2RS**
50	65	7	6.76	6.8	0.285	20 000	6 000	0.052	**61810-2RS**
	72	12	14.6	11.8	0.5	19 000	5 600	0.14	**61910-2RS**
	80	16	22.9	16	0.71	18 000	9 000	0.26	**6010-2Z**
	80	16	22.9	16	0.71	18 000	5 000	0.26	**6010-2RS**
	80	23	21.6	16	0.71	18 000	5 000	0.37	**63010-2RS**
	90	20	37.1	23.2	0.98	15 000	8 000	0.46	**6210-2Z**
	90	20	37.1	23.2	0.98	15 000	4 800	0.46	**6210-2RS**
	90	23	35.1	23.2	0.98	15 000	4 800	0.52	**62210-2RS**
	110	27	65	38	1.6	13 000	6 700	1.05	**6310-2Z**
	110	27	65	38	1.6	13 000	4 300	1.05	**6310-2RS**
	110	40	61.8	38	1.6	13 000	4 300	1.55	**62310-2RS**
55	72	9	9.04	8.8	0.375	19 000	5 300	0.083	**61811-2RS**
	80	13	16.5	14	0.6	17 000	5 000	0.19	**61911-2RS**
	90	18	26.6	21.2	0.9	16 000	8 000	0.39	**6011-2Z**
	90	18	29.6	21.2	0.9	16 000	4 500	0.39	**6011-2RS**
	100	21	46.2	29	1.25	14 000	7 000	0.61	**6211-2Z**
	100	21	46.2	29	1.25	14 000	4 300	0.61	**6211-2RS**
	100	25	43.6	29	1.25	14 000	4 300	0.70	**62211-2RS**
	120	29	74.1	45	1.9	12 000	6 300	1.35	**6311-2Z**
	120	29	74.1	45	1.9	12 000	3 800	1.35	**6311-2RS**
	120	43	71.5	45	1.9	12 000	3 800	1.95	**62312-2RS**
60	78	10	11.9	11.4	0.49	17 000	4 800	0.11	**61812-2RS**
	85	13	16.5	14.3	0.6	16 000	4 500	0.20	**61912-2RS**
	95	18	30.7	23.2	0.98	15 000	7 500	0.42	**6012-2Z**
	95	18	30.7	23.2	0.98	15 000	4 300	0.42	**6012-2RS**
	110	22	55.3	36	1.53	13 000	6 300	0.78	**6212-2Z**
	110	22	55.3	36	1.53	13 000	4 000	0.78	**6212-2RS**
	110	28	52.7	36	1.53	13 000	4 000	0.97	**62212-2RS**
	130	31	85.2	52	2.2	11 000	5 600	1.70	**6312-2Z**
	130	31	85.2	52	2.2	11 000	4 300	1.70	**6312-2RS**
	130	46	81.9	52	2.2	11 000	4 300	2.50	**62312-2RS**

Sealed Single Row Deep groove ball bearings
d65-85mm



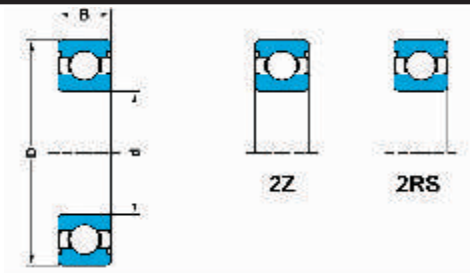
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u				
mm			kN		kN	RPM		kg	-
65	85	10	12.4	12.7	0.54	16 000	4 500	0.13	**61813-2RS**
	90	13	17.4	16	0.68	15 000	4 300	0.22	**61913-2RS**
	100	18	31.9	25	1.06	14 000	7 000	0.44	**6013-2Z**
	100	18	31.9	25	1.06	14 000	4 000	0.44	**6013-2RS**
	120	23	58.5	40.5	1.73	12 000	6 000	0.99	**6213-2Z**
	120	23	58.5	40.5	1.73	12 000	3 600	0.99	**6213-2RS**
	120	31	55.9	40.5	1.73	12 000	3 600	1.25	**62213-2RS**
	140	33	97.5	60	2.5	10 000	5 300	2.10	**6313-2Z**
	140	33	97.5	60	2.5	10 000	3 200	2.10	**6313-2RS**
	140	48	92.3	60	2.5	10 000	3 200	3.00	**62313-2RS**
70	90	10	12.4	132	0.56	15 000	4 300	0.14	**61814-2RS**
	100	16	23.8	21.2	0.9	14 000	4 000	0.35	**61914-2RS**
	110	20	39.7	31	1.32	13 000	6 300	0.60	**6014-2Z**
	110	20	39.7	31	1.32	13 000	3 600	0.60	**6014-2RS**
	125	24	63.7	45	1.9	11 000	5 600	1.10	**6214-2Z**
	125	24	63.7	45	1.9	11 000	3 400	1.10	**6214-2RS**
	125	31	60.5	45	1.9	11 000	3 400	1.30	**62214-2RS**
	150	35	111	68	2.75	9 500	5 000	2.50	**6314-2Z**
	150	35	111	68	2.75	9 500	3 000	2.50	**6314-2RS**
	150	51	104	68	2.75	9 500	3 000	3.55	**62314-2RS**
75	95	10	12.7	14.3	0.61	14 000	4 000	0.15	**61815-2RS**
	105	16	24.2	19.3	0.965	13 000	3 600	0.37	**61914-2RS**
	115	20	41.6	33.5	1.43	12 000	6 000	0.64	**6015-2Z**
	115	20	41.6	33.5	1.43	12 000	3 400	0.64	**6015-2RS**
	130	25	68.9	49	2.04	10 000	5 300	1.20	**6215-2Z**
	130	25	68.9	49	2.04	10 000	3 200	1.20	**3215-2RS**
	160	37	119	76.9	3	9 000	4 500	3.00	**6315-2Z**
	160	37	119	76.5	3	9 000	2 800	3.00	**6315-2RS**
80	100	10	13	15	0.64	13 000	3 600	6.15	**61816-2RS**
	110	16	25.1	20.4	1.02	12 000	3 400	0.40	**61916-2RS**
	125	22	49.4	40	1.66	11 000	5 600	0.85	**6016-2Z**
	125	22	49.4	40	1.66	11 000	3 200	0.85	**6016-2RS**
	140	26	72.8	55	2.2	9.500	4 800	1.40	**6216-2Z**
	140	26	42.8	55	2.2	9 500	3 000	1.40	**6216-2RS**
	170	39	130	86.5	3.25	8 500	4 300	3.60	**6316-2Z**
	170	39	130	86.5	3.25	8 500	2 600	3.60	**6316-2RS**
85	110	13	19.5	20.8	0.88	12 000	3 400	0.27	**61817-2RS**
	130	22	52	43	1.76	11 000	5 300	0.89	**6017-2Z**
	130	22	2	43	1.76	11 000	3 000	0.89	**9017-2RS**
	150	28	87.1	64	2.5	9 000	4 500	1.80	**6217-2Z**
	180	41	140	96.5	3.55	8 000	4 000	4.25	**6317-2Z**
	180	41	140	96.5	3.55	8 000	2 400	4.25	**6317-2RS**

Sealed Single Row Deep groove ball bearings d90-120mm



Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u	RPM		kg	-
mm			kN		kN				
90	115	13	19.5	22	0.915	11 000	3 200	0.28	**61818-2RS**
	140	24	60.5	50	1.96	10 000	5 000	1.15	**6018-2Z**
	140	24	60.5	50	1.96	10 000	2 800	1.15	**6018-2RS**
	160	30	101	73.5	2.8	8 500	4 300	2.15	**6218-2Z**
	160	30	101	73.5	2.8	8 500	2 600	2.15	**6218-2RS**
	190	43	151	108	3.8	7 500	3 800	4.90	**6318-2Z**
	190	43	151	108	3.8	7 500	2 400	4.90	**6318-2RS**
95	120	13	19.9	22.8	0.93	11 000	3 000	0.30	**61819-2RS**
	130	18	33.8	33.5	1.43	11 000	3 000	0.61	**61919-2RS**
	145	24	63.7	54	2.08	9 500	4 800	1.20	**6019-2Z**
	145	24	63.7	54	2.08	9 500	2 800	1.20	**6019-2RS**
	170	32	114	81.5	3	8 000	4 000	2.60	**6219-2Z**
	170	32	114	81.5	3	8 000	2 400	2.60	**6219-2RS**
	200	45	159	118	4.15	7 000	3 600	5.65	**6319-2Z**
	200	45	159	118	4.15	7 000	2 200	5.65	**6319-2RS**
100	125	13	19.9	24	0.95	10 000	3 000	0.31	**61820-2RS**
	150	24	63.7	54	2.04	9 500	4 500	1.25	**6020-2Z**
	150	24	63.7	54	2.04	9 500	2 600	1.25	**6020-2RS**
	180	34	127	93	3.35	7 500	3 800	3.15	**6220-2Z**
	180	34	127	93	3.35	7 500	2 400	3.15	**6220-2RS**
	215	47	174	140	4.75	6 700	3 400	7.00	**6320-2Z**
105	130	13	20.8	19.6	1	10 000	2 800	0.32	**61821-2RS**
	160	26	76.1	65.5	2.4	8 500	4 300	1.60	**6021-2Z**
	160	26	76.1	65.5	2.4	8 500	2 400	1.60	**6021-2RS**
	190	36	140	104	3.65	7 000	3 600	3.70	**6221-2Z**
	190	36	140	104	3.65	7 000	2 200	3.70	**6221-2RS**
	225	49	182	153	5.1	6 300	3 200	8.25	**6321-2Z**
110	140	16	28.1	26	1.25	9 500	2 600	0.60	**61822-2RS**
	170	28	85.2	73.5	2.4	8 000	4 000	1.95	**6022-2Z**
	170	28	85.2	73.5	2.4	8 000	2 400	1.95	**6022-2RS**
	200	38	151	118	4	6 700	3 400	4.35	**6222-2Z**
120	150	16	29.1	28	1.29	8 500	4 300	0.65	**61824-2RZ**
	150	16	29.1	28	1.29	8 500	2 400	0.65	**61824-2RS**
	180	28	88.4	80	2.75	7 500	3 800	2.05	**6024-2Z**
	180	28	88.4	80	2.75	7 500	2 200	2.05	**6024-2RS**
	215	40	146	118	3.9	6 300	3 200	5.15	**6224-2Z**
130	165	18	37.7	43	1.6	8 000	2 200	0.93	**61826-2RS**
	200	33	112	100	3.35	7 000	3 400	3.15	**6026-2Z**
	200	33	112	100	3.35	7 000	2 000	3.15	**6026-2RS**
	230	40	156	132	4.15	5.600	3 000	5.80	**6226-2Z**

Sealed Single Row Deep groove ball bearings
d140-160mm



Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u				
mm			kN		kN	RPM		kg	-
140	175	18	37.7	43	1.66	7 500	2 000	0.99	**61828-2RS**
	210	33	111	108	3045	6 700	3 200	3.35	**6028-2Z**
	210	33	111	108	3045	6 700	1 800	3.35	**6028-2RS**
150	225	35	125	125	3.9	6 000	3 000	4.80	**6030-2Z**
	225	35	125	125	3.9	6 000	1 700	4.80	**6030-2RS**
160	240	38	143	143	4.3	5 600	2 800	5.90	**6032-2Z**
	240	38	143	143	4.3	5 600	1 600	5.90	**6032-2RS**

AVIATION INDUSTRIES

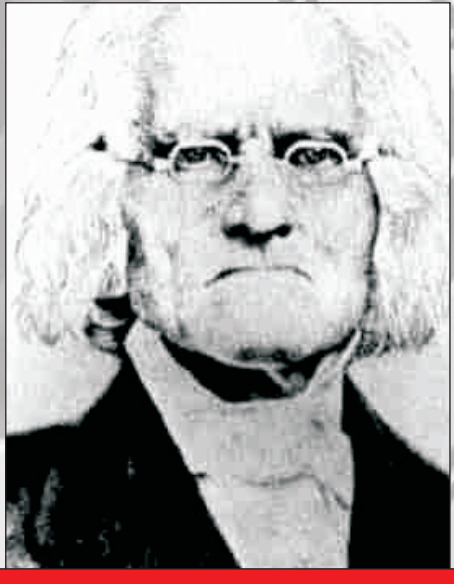
NEXT GENERATION



THE COMMITMENT TO QUALITY...
THE COMMITMENT TO GROWTH...
Precision Bearings Pvt. Ltd.





" It will be hard work. It's always hard work, and hard work from everybody within the team - technical director, mechanics, drivers, engineers - everyone in the team.."

David Leslie



ANGULAR CONTACT
Ball Bearings



ANGULAR CONTACT BALL BEARING

In angular contact ball bearing inner and outer rings are displaced with respect to each other in direction of bearing axis. They are designed for commendation of combined load, acting radial and axial. An axial load carrying capacity of angular contact ball bearing increase as increase contact angle.

Type

Single row angular contact ball bearing
Double row angular contact ball bearing
Four point contact ball bearing

Series available

Single row
7000, 7200, 7300, 7400

Double row
3200, 3300, 5200, 5300

4 point contact
QJ 200 & QJ 300

Single Row Angular Contact Ball Bearing (Available in Steal,Brass & Polymide Cages)

Can accommodate axial load acting in unidirectional only. Have only limited ability to accommodate misalignment.
More Series Available ALS,AMS

Double row angular contact ball bearing

It is designed to correspond, two single row angular contact ball bearing, which take less axial space.
Can accommodate high radial and axial load acting in bidirectional

Single Row Angular Contact Ball Bearing:-

These bearings have a contact angle so they can sustain significant axial loads in one direction together with radial loads. Because of their design, when radial load is applied componam\nt produce an axial force. Because of these two opposed bearings or a combination of more than two must be used. As the regidity of single row angular contact ball bearings can be increased by preloading. They are often used in the main spindless a machine tools which wish running accuracy is require.

Double Angular Contact Ball Bearing:-

This is basically a back to back mounting of two single angular contact ball bearings, but there inner and outer rings are each integrated into one.This type of bearings can be sustained axial load in both direction this type is used as fixed end bearings.

Precaution for use of angular contact ball bearings:-

Operating conditions; where vibration and moment load are heavy, Lubrication is marginal,the speed and temperature are closed to their limit,this bearing may not be suitable and if the load on angular contact ball bearings become too small or it the ratio of the axial and radial loads for matched bearings exceed durings operation,slippage occures between the bal and raceways, which may result in smearing, especially in large bearing where the weight of ball and cage is high.

Preload of universally match able single row angular contact ball bearings arranged back-to-back or Face-to-face

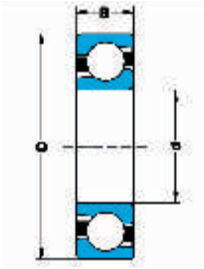
Single Row

Bore Diameter		Axial internal clearance of Bearings in Series 72XX And 73XX					
d		CA		CB		CC	
over	incl.	Min	Max	Min	Max	Min	Max
mm		Micron					
10	18	5	13	15	23	24	32
18	30	7	15	18	26	32	40
30	50	9	17	22	30	40	48
50	80	11	23	26	38	48	60
80	110	14	26	32	44	55	67
110	180	17	29	35	47	62	74
180	250	21	37	45	61	74	90

Double Row

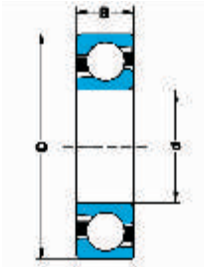
Bore Diameter		Axial Internal clearance of bearings in series 32XX and 33XX					
d		C2		Normal		C3	
over	Incl.	Min	Max	Min	Max	Min	Max
mm		Micron					
-	10	1	11	5	21	12	28
10	18	1	12	6	23	13	31
18	24	2	14	7	25	16	34
24	30	2	15	8	27	18	37
30	40	2	16	9	29	21	40
40	50	2	18	11	33	23	44
50	65	3	22	13	36	26	48
65	80	3	24	15	40	30	54
80	100	3	26	18	46	35	63
100	110	4	30	22	53	42	73

Angular Contact ball bearings
Single row
d10-60 mm



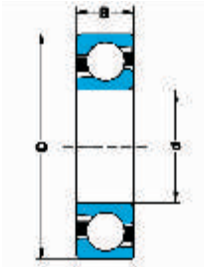
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d mm	D	B	C kN	C_0	P_u kN	RPM		kg	-
10	30	9	7.02	3.35	0.14	19000	28000	0.030	**7200 B**
12	32	10	7.61	3.80	0.16	18000	26000	0.036	**7201 B**
	37	12	10.60	5.00	0.20	17000	24000	0.060	**7301 B**
15	35	11	8.84	4.80	0.20	17000	24000	0.045	**7202 B**
	42	13	13.00	6.70	0.28	15000	20000	0.080	**7302 B**
17	40	12	11.10	6.10	0.26	15000	20000	0.065	**7203 B**
	47	14	15.90	8.30	0.35	13000	18000	0.11	**7303 B**
20	47	14	14.00	8.30	0.35	12000	17000	0.11	**7204 B**
	52	15	19.00	10.40	0.44	11000	16000	0.14	**7304 B**
25	52	15	15.60	10.20	0.43	10000	15000	0.13	**7205 B**
	62	17	26.00	15.60	0.65	9000	13000	0.23	**7305 B**
30	62	16	23.80	15.60	0.65	8500	12000	0.20	**7206 B**
	72	19	34.50	21.20	0.90	8000	11000	0.34	**7306 B**
35	72	17	30.70	20.80	0.88	8000	11000	0.28	**7207 B**
	80	21	39.00	24.50	1.04	7500	10000	0.45	**7307 B**
40	80	18	34.60	26.00	1.10	7000	9500	0.37	**7208 B**
	90	23	49.40	33.50	1.40	6700	9000	0.63	**7308 B**
45	85	19	37.70	28.00	1.20	6700	9000	0.42	**7209 B**
	100	25	60.50	41.50	1.73	6000	8000	0.85	**7309 B**
50	90	20	39.00	30.50	1.29	6000	8000	0.47	**7210 B**
	110	27	74.10	51.00	2.20	5300	7000	1.10	**7310 B**
55	100	21	48.80	38.00	1.63	5600	7500	0.62	**7211 B**
	120	29	85.20	60.00	2.55	4800	6300	1.40	**7311 B**
60	110	22	57.20	45.50	1.93	5000	6700	0.80	**7212 B**
	130	31	95.600	69.50	3.00	4500	6000	1.75	**7312 B**

Angular Contact ball bearings
Single row
d65-140 mm



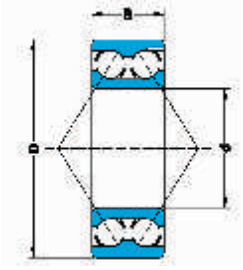
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u				
mm			kN		kN	RPM		kg	-
65	120	23	66.30	54.00	2.28	4500	6000	1.00	**7213 B**
	140	33	108.00	80.00	3.35	4300	5600	2.15	**7313 B**
70	125	24	71.50	60.00	2.50	4300	5600	1.10	**7214 B**
	150	35	119.00	90.00	3.65	3800	5000	2.65	**7314 B**
75	130	25	72.80	64.00	2.65	4300	5600	1.20	**7215 B**
	160	37	133.00	106.00	4.15	3600	4800	3.20	**7315 B**
80	140	26	83.20	73.50	3.00	3800	5000	1.45	**7216 B**
	170	39	143.00	118.00	4.50	3400	4500	3.80	**7316 B**
85	150	28	95.60	83.00	3.25	3600	4800	1.85	**7217 B**
	180	41	153.00	132.00	4.90	3200	4300	4.45	**7317 B**
90	160	30	108.00	96.50	3.65	3400	4500	2.30	**7218 B**
	190	43	165.00	146.00	5.20	3000	4000	5.20	**7318 B**
95	170	32	124.00	108.00	4.00	3200	4300	2.70	**7219 B**
	200	45	178.00	163.00	5.60	2800	3800	6.05	**7319 B**
100	180	34	135.00	122.00	4.40	3000	4000	3.30	**7220 B**
	215	47	203.00	19.00	6.40	2600	3600	7.50	**7320 B**
105	190	36	148.00	137.00	4.80	2800	3800	3.95	**7221 B**
	225	49	212.00	208.00	6.95	2400	3400	8.55	**7321 B**
110	200	38	163.00	153.00	5.20	2600	3600	4.60	**7222 B**
	240	50	225.00	224.00	7.20	2200	3200	10.0	**7322 B**
120	215	40	165.00	163.00	5.30	2200	3200	6.10	**7224 B**
	260	55	238.00	250.00	7.65	1900	2800	14.5	**7324 B**
130	230	40	186.00	193.00	6.10	1900	2800	6.95	**7226 B**
	280	58	251.00	270.00	8.00	1800	2600	17.5	**7326 B**
140	250	42	182.00	196.00	5.85	1800	2600	8.85	**7228 B**
	300	62	276.00	310.00	8.80	1700	2400	21.5	**7328 B**

Angular Contact ball bearings
Single row
d150-240 mm



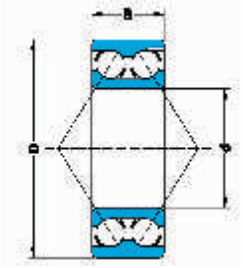
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u				
mm			kN		kN	RPM		kg	-
150	270	45	195	224	6.55	1700	2400	11.5	**7230 B**
	320	65	302	365	10.2	1600	2200	26.0	**7330 B**
160	290	48	199	236	6.7	1600	2200	14.0	**7232 B**
170	310	52	221	270	7.35	1600	2200	17.5	**7234 B**
	360	72	358	455	12	1400	1900	36.0	**7334 B**
180	320	52	251	320	8.5	1500	2000	18.0	**7236 B**
	380	75	371	490	12.5	1300	1800	42.0	**7336 B**
190	340	55	276	355	9.15	1400	1900	22.0	**7238 B**
	400	78	410	560	13.7	1200	1700	48.5	**7338 B**
220	400	65	319	465	11.2	1100	1600	37.0	**7244 B**
240	440	72	364	540	12.5	1000	1500	49.0	**7248 B**

Angular Contact ball bearings
Double row
d10-50 mm



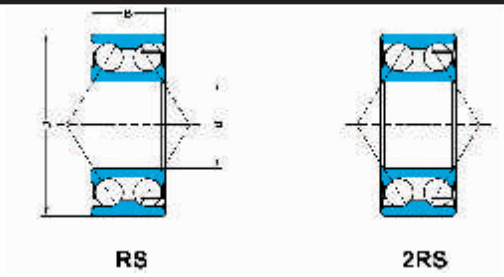
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u				
mm			kN		kN	RPM		kg	-
10	30	14	7.61	4.3	0.183	22 000	24 000	0.051	**3200**
12	32	15.9	10.1	5.6	0.24	20 000	22 000	0.058	**3201**
15	35	15.9	11.2	6.8	0.285	17 000	18 000	0.066	**3202**
	42	19	15.1	9.3	0.4	15 000	16 000	0.13	**3302**
17	40	17.5	14.3	8.8	0.365	15 000	16 000	0.096	**3203**
	47	2202	21.6	12.7	0.54	14 000	14 000	0.18	**3303**
20	47	20.6	20	12	0.51	14 000	14 000	0.16	**3204**
	52	22.2	23.6	14.6	0.62	13 000	13 000	0.22	**3304**
25	52	20.6	21.6	14.3	0.6	12 000	12 000	0.18	**3205**
	62	25.4	32	20.4	0.865	11 000	11 000	0.35	**3305**
30	62	23.8	30	20.4	0.865	10 000	10 000	0.29	**3206**
	72	30.2	41.5	27.5	1.16	9 000	9 000	0.53	**3306**
35	72	27	40	28	1.18	9 000	9 000	0.44	**3207**
	80	34.9	52	35.5	1.5	8 500	8 500	0.71	**3307**
40	80	30.2	47.5	34	1.43	8 000	8 000	0.58	**3208**
	90	36.5	64	44	1.86	7 500	7 500	1.05	**3308**
45	85	30.2	51	39	1.63	7 500	7 500	0.63	**3209**
	100	39.7	75	53	2.24	6 700	6 700	1.40	**3309**
50	90	30.2	51	39	1.66	7 000	7 000	0.66	**3210**
	110	44.4	90	64	2.75	6 000	6 000	1.95	**3310**

Angular Contact ball bearings
Double row
d55-110 mm



Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u				
mm			kN		kN	RPM		kg	-
55	100	33.36	60	47.5	2	6 300	6 000	1.05	**3211**
	120	49.2	112	81.5	3.45	5 300	5 300	2.55	**3311**
60	110	36.5	73.5	58.5	2.5	5 600	5 600	1.40	**3212**
	130	54	127	95	4.05	5 000	5 000	3.25	**3312**
65	120	38.1	80.6	73.5	3.1	4 500	4 800	1.75	**3213**
	140	58.7	146	110	4.55	4 500	4 500	4.10	**3313**
70	125	39.7	88.4	80	3.4	4 300	4 500	1.90	**3214**
	150	63.5	153	125	5	4 000	4 000	5.05	**3314**
75	130	41.3	95.6	88	3.75	4 300	4 500	2.10	**3215**
	160	68.3	176	140	5.5	4 000	4 000	5.55	**3315**
80	140	44.4	106	95	3.9	4 000	4 300	2.65	**3216**
	170	68.3	182	156	6	3 400	3 600	6.80	**3316**
85	150	49.2	124	110	4.4	3 600	3 800	3.40	**3217**
	180	73	195	176	6.55	3 200	3 400	8.30	**3317**
90	160	52.4	130	120	4.55	3 400	3 600	4.15	**3218**
	190	73	195	180	6.4	3 000	3 200	9.25	**3318**
95	170	55.6	159	146	5.4	3 200	3 400	5.00	**3219**
	200	77.8	225	216	7.5	2 800	3 000	11.0	**3319**
100	180	60.3	178	166	6	3 000	3 200	6.10	**3220**
	215	82.6	255	216	7.5	2 800	3 000	11.0	**3320**
110	200	69.8	212	212	7.25	2 800	2 800	8.80	**3222**
	240	92.1	291	305	9.8	2 400	2 600	19.0	**3322**

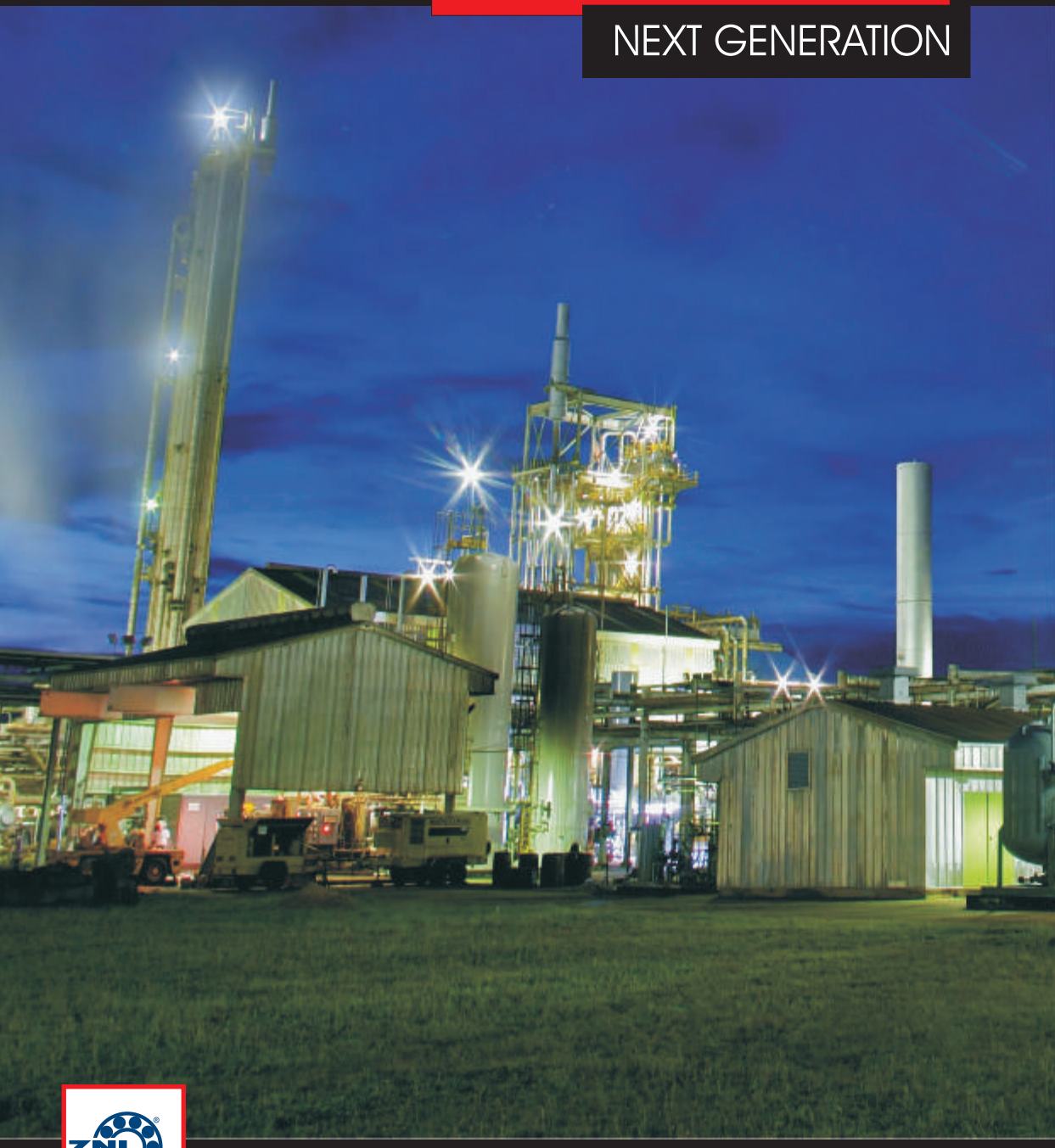
Angular Contact ball bearings
Double row with Shield
d10-90 mm



Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed Ratings Lubrication		Mass	Designation	
			dynamic	Static		Grease	Oil			
d mm	D	B	C N	C_o	P_u N	R/Min		Kg	Rubber Shield	Tow Shield
10	30	14.39	7150	3900	166	16000	22000	0.045	5200 RS	**5200 2RS**
12	32	15.88	10600	5850	245	15000	20000	0.050	5201 RS	**5201 2RS**
15	35	15.88	11700	6950	300	12000	17000	0.068	5202 RS	**5202 2RS**
17	40	17.46	14800	9000	380	10000	15000	0.090	5203 RS	**5203 2RS**
20	47	20.64	19500	12200	520	9000	13000	0.14	5204 RS	**5204 2RS**
	52	22.23	22500	14600	620	8500	12000	0.20	5304 RS	**5304 2RS**
25	52	20.64	21200	14600	620	8000	11000	0.16	5205 RS	**5205 2RS**
	62	25.40	30700	20400	865	7500	10000	0.32	5305 RS	**5305 2RS**
30	62	23.81	29600	21200	900	70000	9500	0.26	5206 RS	**5206 2RS**
	62	23.81	30300	28000	1200	7000	9500	0.35	5206 RS	**5206 2RS**
	72	30.16	41600	29000	1220	6300	8500	0.48	5306 RS	**5306 2RS**
	72	30.16	46800	43000	1830	6300	8500	0.48	5306 RS	**5306 2RS**
35	72	26.99	37700	27500	1180	6000	8000	0.40	5207 RS	**5207 2RS**
	72	26.99	39100	36500	1560	6000	8000	0.54	5207 RS	**5207 2RS**
	80	34.93	49400	34500	1460	5600	7500	0.66	5307 RS	**5307 2RS**
	80	34.93	52300	48000	2.040	5600	7500	0.86	5307 RS	**5307 2RS**
40	80	30.16	44900	34000	1430	5600	7500	0.53	5208 RS	**5208 2RS**
	80	30.16	49500	49000	2080	5600	7500	0.73	5208 RS	**5208 2RS**
	90	36.51	60500	43000	1830	5000	6700	0.86	5308 RS	**5308 2RS**
	90	36.51	67100	65500	2750	5000	6700	1.15	5308 RS	**5308 2RS**
45	85	30.2	48.80	39.00	1.66	5000	6700	0.57	5209 RS	**5209 2RS**
	100	39.7	72.80	53.00	2.24	4500	6000	1.15	5309 RS	**5309 2RS**
50	90	30.2	48.80	39.00	1.66	4800	6300	0.59	5210 RS	**5210 2RS**
	110	44.4	85.20	64.00	2.70	4000	5300	1.55	5310 RS	**5310 2RS**
55	100	33.3	57.20	47.50	2.00	4300	5600	0.83	5211 RS	**5211 2RS**
	120	49.2	106.00	81.50	3.45	3800	5000	2.00	5311 RS	**5311 2RS**
60	110	36.5	70.20	58.50	2.50	3800	5000	1.10	5212 RS	**5212 2RS**
	130	54.0	121.00	95.00	4.00	3400	4500	2.60	5312 RS	**5312 2RS**
65	120	38.1	80.60	73.50	3.10	3600	4800	1.58	5213 RS	**5213 2RS**
	140	58.7	138.00	108.00	4.55	3200	4300	3.30	5313 RS	**5313 2RS**
70	125	39.7	88.40	80.00	3.40	3200	4300	1.50	5214 RS	**5214 2RS**
	150	63.5	153.00	125.00	5.00	2800	3800	4.05	5314 RS	**5314 2RS**
75	130	41.3	95.600	88.000	3.750	3200	4300	1.70	5215	**5215**
	160	68.3	168.000	14.000	5.500	2600	3600	4.90	5315	**5315**
80	140	44.4	106.000	95.000	3.900	2800	3800	2.10	5216	**5216**
85	150	49.2	124.000	110.000	4.400	2600	3600	2.70	5217	**5217**
90	160	52.4	130.000	120.000	4.550	2400	3400	3.40	5218	**5218**

FERTILIZER PLANT

NEXT GENERATION



THE COMMITMENT TO QUALITY...
THE COMMITMENT TO GROWTH...
Precision Bearings Pvt. Ltd.













"Strive for perfection in everything you do. Take the best that exists and make it better. When it does not exist, design it."

Sir Henry Royce



SELF ALIGNING
Ball Bearings



SELF ALIGNING BALL BEARING

This type is recommended when the alignment of the shaft and housing is difficult. Since the contact angle is small the axial load capacity is low.

Self aligning ball bearing contains two rows of ball and common sphere race ways in outer ring.

- These bearings are useful in application where small deflection of shaft may our relative to housing.
- Self aligning ball bearing has lowest friction of all rolling bearing, so it allows running cooler even at high speed.
- Can carry radial load, but not suitable for axial loads.
- Usable for low or medium speed application.
- Available with cylindrical bore or in certain size rangs with tapered bore.
- Self aligning ball bearings with tapered bore are available with adapter sleeve.
- These bearings are provided with an annular groove and lubrication holes in outer and inner ring
- These type are recommended when the alignment of the shaft and housing is difficult. since the contact angle is small, the axial load capacity is low

Misalignment:

Self alignment ball bearing is designed in such a way that angular misalignment between inner and outer ring can be accommodate without effecting on bearing performance.

Permissible Misalignment:

This permissible misalignment of self-aligning ball bearing is approximately 0.07 to 0.12 radian (4° to 7°) under normal loads. However, depending on the surrounding structure, such an angle may not be possible.

Series available:

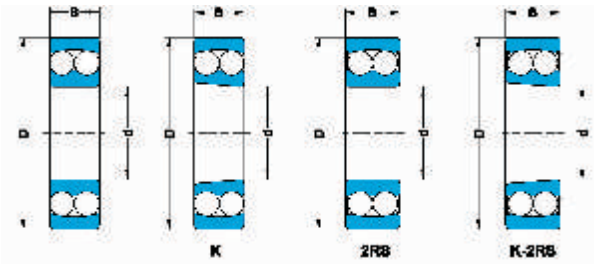
Double row

1200, 1300, 1400, 2200, 2300

ZNL offering:

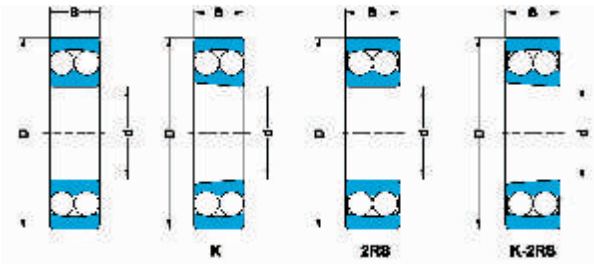
Bore Diameter		Radial Internal Clearance							
d		C2		Normal		C3		C4	
over	Incl.	Min	Max	Min	Max	Min	Max	Min	Max
mm		Micron							
Bearing with cylindrical bore									
2.5	6	1	8	5	15	10	20	15	25
6	10	2	9	6	17	12	25	19	33
10	14	2	10	6	19	13	26	21	35
14	18	3	12	8	21	15	28	23	37
18	24	4	14	10	23	17	30	25	39
24	30	5	16	11	24	19	35	29	46
30	40	6	18	13	29	23	40	34	53
40	50	6	19	14	31	25	44	37	57
50	65	7	21	16	36	30	50	45	69

Self Aligning ball bearings
d 5-20mm



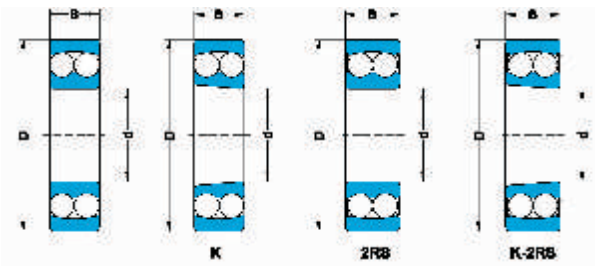
Principal Dimensions			load ratings		Speed Rating		Mass	Designation
			dynamic	Static	Grease	Oil		
d	D	B	C	C_0				
mm			kN		RPM		kg	-
5	19	6	2.4	0.5	30000	35000	0.01	**135**
6	19	6	2.4	0.5	30000	35000	0.01	**126**
7	22	7	2.6	0.6	30000	35000	0.02	**127**
8	22	7	2.6	0.6	30000	35000	0.02	**108**
9	26	8	3.8	0.8	26000	32000	0.02	**129**
10	30	9	5.3	1.1	24000	30000	0.03	**1200**
	30	14	8.3	1.75	22000	28000	0.05	**2200**
	35	11	7.1	1.6	20000	25000	0.06	**1300**
12	32	10	5.5	1.3	23000	29000	0.04	**1201**
	32	14	9	1.95	20000	26000	0.05	**2201**
	32	14	5.6	1.27	16000	--	0.05	**2201.2RS**
	37	12	9.5	2.2	18000	22000	0.07	**1301**
15	35	11	7.5	1.7	20000	25000	0.05	**1202**
	35	14	9.1	2.1	19000	24000	0.06	**2202**
	35	14	7.5	1.76	15000	--	0.06	**2202.2RS**
	42	13	9.5	2.3	17000	20000	0.10	**1302**
	42	17	11.9	2.8	16000	19000	0.13	**2302**
17	40	12	8	2	18000	22000	0.08	**1203**
	40	16	11.2	2.7	16000	19000	0.09	**2203**
	40	16	1.0	2.65	11000	--	0.14	**2203.RS**
	47	14	12.5	3.2	15000	17000	0.14	**1303**
	47	19	14.2	3.6	14000	17000	0.18	**2303**
	47	19	12.5	3.2	11000	--	0.18	**2303.2RS**
20	47	14	10	2.65	15000	18000	0.13	**1204**
	47	14	10	2.65	15000	18000	0.12	**1204K**
	47	18	14	3.5	14000	17000	0.14	**2204**
	47	18	10	2.65	11000	--	0.14	**2204.2RS**
	52	15	12.5	3.35	13000	16000	0.17	**1304**
	52	15	12.5	3.35	13000	16000	0.17	**1304K**
	52	21	18	4.65	13000	16000	0.24	**2304**
	52	21	12.5	3.35	10000	--	0.24	**2304.2RS**

Self Aligning ball bearings
d25-40mm



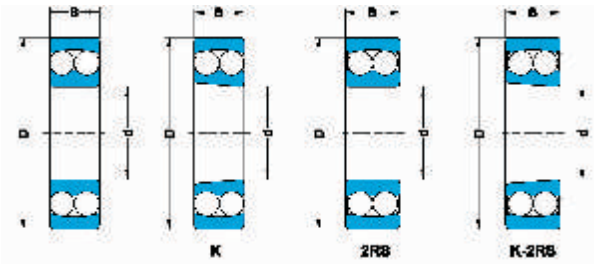
Principal Dimensions			load ratings		Speed Rating		Mass	Designation
			dynamic	Static	Grease	Oil		
d	D	B	C	C_0				
mm			kN		RPM		kg	-
25	52	15	12,2	3,35	13000	16000	0,14	**1205**
	52	15	12,2	3,35	13000	16000	0,14	**1205K**
	52	18	16,9	4,2	12000	15000	0,16	**2205**
	52	18	16,9	4,2	12000	15000	0,16	**2205K**
	52	18	12,2	3,35	9500	--	0,16	**2205.2RS**
	52	18	12,2	3,35	9500	--	0,16	**2205.2RS**
	62	17	18	5	11000	14000	0,28	**1305**
	62	17	18	5	11000	14000	0,28	**1305K**
	62	24	24,5	6,55	10000	13000	0,37	**2305**
	62	24	24,5	6,55	10000	13000	0,37	**2305K**
	62	24	18	5	8000	--	0,37	**2305.2RS**
30	62	16	15,6	4,65	11000	14000	0,22	**1206**
	62	16	15,6	4,65	11000	14000	0,22	**1206K**
	62	20	25	6,9	9500	12000	0,25	**2206**
	62	20	25	6,0	9500	12000	0,25	**2206K**
	62	20	15,6	4,65	80000	--	0,25	**2206K.2RS**
	62	20	15,6	4,65	8000	--	0,25	**2206.2RS**
	72	19	21,2	6,3	9000	11000	0,41	**1306**
	72	19	21,2	6,3	90000	11000	0,41	**1306K**
	72	27	31,5	8,65	8500	10000	0,55	**2306**
	72	27	31,5	8,65	8500	10000	0,55	**2306K**
	72	27	21,2	6,3	6700	--	0,55	**2306.2RS**
35	72	17	16	5,2	9500	12000	0,33	**1207**
	72	17	16	5,2	9500	12000	0,33	**1207K**
	72	23	31,5	9	8000	9500	0,4	**2207**
	72	23	31,5	9	8000	9500	0,4	**2207K**
	72	23	16	5,2	7000	--	0,4	**2207.2RS**
	72	23	16	5,2	7000	--	0,4	**2207.2RS**
	80	21	25	8	8000	9500	0,54	**1307**
	80	21	25	8	80000	9500	0,54	**1307K**
	80	31	39	11,2	7500	9000	0,74	**2307**
	80	31	39	11,2	7500	9000	0,74	**2307K**
	80	31	25	8	6000	--	0,74	**2307.2RS**
40	80	18	19,3	6,55	8500	10000	0,42	**1208**
	80	18	19,3	6,55	8500	10000	0,42	**1208K**
	80	23	32	9,5	7500	9000	0,49	**2208**
	80	23	32	9,5	7500	9000	0,49	**2208K**
	80	23	193	6,55	6300	--	0,49	**2208K.2RS**
	80	23	193	6,55	6300	--	0,49	**2208.2RS**
	90	23	29	9,65	7000	8500	0,74	**1308**
	90	23	29	9,65	7000	8500	0,72	**1308K**
	85	23	22	7,35	5600	--	0,53	**2209K.2RS**
	85	23	22	7,35	5600	--	0,53	**2209.2RS**

Self Aligning ball bearings
d50-65mm



Principal Dimensions			load ratings		Speed Rating		Mass	Designation
			dynamic	Static	Grease	Oil		
d	D	B	C	C_0				
mm			kN		RPM		kg	-
50	110	27	41.5	14.3	5600	6700	1.29	**1310**
	110	27	41.5	14.3	5600	6700	1.29	**1310K**
	110	40	64	20	5300	6300	1.78	**2310**
	110	40	64	20	5300	6300	1.78	**2310K**
	110	40	41.5	14,3	4300	--	1.78	**2310.2RS**
	90	20	22.8	8.15	7000	8500	0.53	**1210**
	90	20	22.8	8.15	7000	8500	0.53	**1210K**
	90	23	28	9.5	6700	8000	0.6	**2210**
	90	23	28	9.5	6700	8000	0.6	**2210K**
	90	23	22.8	8.15	5300	--	0.6	**2210K2RS**
	90	23	22.8	8.15	5300	--	0.6	**2210.2RS**
55	100	21	27	10	6300	7500	0.69	**1211**
	100	21	27	10	6300	7500	0.69	**1211K**
	100	25	39	12,5	5500	6600	0.75	**2211**
	100	25	39	12.5	5500	6600	0.75	**2211K**
	100	25	27	10	4800	--	0.8	**2211K.2RS**
	100	25	27	10	4800	--	0.8	**2211.2RS**
	120	29	51	18	5000	6000	1.6	**1311**
	120	29	51	18	5000	6000	1.6	**1311K**
	120	43	75	23.6	4800	5600	2.3.	**2311**
	120	43	75	23.6	4800	5600	2.3	**2311K**
60	110	22	30	11.6	5600	6700	0.9	**1212**
	110	22	30	11.6	5600	6700	0.9	**1212K**
	110	28	45	16.5	5200	6200	1.1	**2212**
	110	28	45	16.5	5200	6200	1.1	**2212K**
	110	28	30	11.6	3800	--	1.1	**2212K.2RS**
	110	28	30	11.6	3800	--	1.1	**2212.2RS**
	130	31	57	20.8	4500	5300	2.0	**1312**
	130	31	57	20.8	4500	5300	2.0	**1312K**
	130	46	86.5	28	4300	5000	2.9	**2312**
	130	46	86.5	28	4300	5000	2.9	**2312K**
65	120	23	31	12.5	5300	6300	1.2	**1213**
	120	23	31	12.5	5300	6300	1.2	**1213K**
	120	31	57	19.5	4500	5200	1.4	**2213**
	120	31	57	19.5	4500	5200	1.4	**2213K**
	140	33	62	22.8	4300	5000	2.5	**1313**
	140	33	62	22.8	4300	5000	2.5	**1313K**
	140	48	95	32.5	4000	4800	3.4	**2313**

Self Aligning ball bearings
d80-85mm



Principal Dimensions			load ratings		Speed Rating		Mass	Designation
			dynamic	Static	Grease	Oil		
d	D	B	C	C_0				
mm			kN		RPM		kg	-
70	125	24	34.5	13.7	5000	6000	1.3	**1214**
	125	24	34.5	13.7	5000	6000	1.3	**1214k**
	125	31	44	16.9	4700	5100	1.6	**2214**
	125	31	44	16.9	4700	5100	1.6	**2214k**
	150	35	75	27.5	4000	4800	3.1	**1314**
	150	35	75	27.5	4000	4800	3.1	**1314k**
	150	51	110	37.5	3600	4300	4.2	**2314**
	150	51	110	37.5	3600	4300	4.2	**2314k**
75	130	25	39	15.6	4800	5600	1.4	**1215**
	130	25	39	15.6	4800	5600	1.4	**1215k**
	130	31	44	17.9	4500	5000	1.7	**2215**
	130	31	44	17.9	4500	5000	1.7	**2215k**
	160	37	80	30	3600	4300	3.6	**1315**
	160	37	80	30	3600	4300	3.6	**1315k**
	160	55	122	42.5	3400	4000	5.2	**2315**
	160	55	1222	42.5	3400	4000	5.2	**2315k**
80	140	26	40	17	4300	5000	1.7	**1216**
	140	26	40	17	4300	5000	1.7	**1216k**
	140	33	50	21	4200	4800	2.1	**2216**
	140	33	50	21	4200	4800	2.1	**2216k**
85	150	28	49	20.4	4000	4800	2.2	**1217k**
	150	36	58	23.5	4000	4700	2.6	**2217**
	150	36	58	23.5	4000	4700	2.6	**2217k**

THE COMMITMENT TO QUALITY...
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Precision Bearings Pvt. Ltd.













" Engineering is the professional art of applying science to the optimum conversion of natural resources to the benefit of man."

Ralph J. Smith



Four Point contact

Ball Bearings



Four Point Contact Ball Bearings

FPCBB

These bearings contains solid outer ring, split inner ring and ball & cage assembly. Two piece inner rings allow large complement of ball to accommodate.

Inner ring halves are matched to particular bearing and not be interchanged with other bearings of same size.

The outer ring with ball & cage assembly can be interchangeable. These bearings can carry high axial load in both direction, and also with small radial load. With or without retaining slots: quick and safety location, larger four point contact ball bearings have two retaining slots at 180°. These bearings have suffix N2.

The Inner ring is splits radially into two pieces and this can sustain significant axial load in either direction the contact angle is 35° so axial load capacity is high this bearings is suitable for carrying pure axial load or combined load, where the axial load is high.

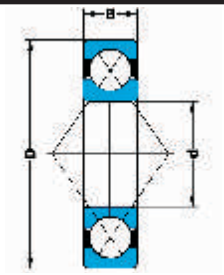
These bearings are not suitable for angular miss -alignment in housing or shaft deflection. These bearings are not sealed

Series Available

QJ2XX, QJ3XX

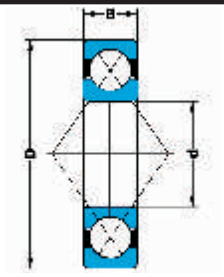
Bore Diameter		Axial Internal clearance							
d		C2		Normal		C3		C4	
Over	Incl.	min.	max	min.	max	min.	max	min.	max
mm		Micron							
10	17	15	55	45	85	75	125	115	**165**
17	40	26	66	56	106	96	146	136	**186**
40	60	36	86	76	126	116	166	156	**206**
60	80	46	96	86	136	126	176	166	**226**
80	100	56	106	96	156	136	196	186	**246**
100	140	66	126	116	176	156	216	206	**266**
140	180	76	156	136	196	176	246	226	**296**
180	220	96	176	156	226	206	276	256	**326**

Four Point Contact ball bearings
d15-75mm



Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation Bearing With Locating Shield
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u				
mm			kN		kN	RPM		kg	-
15	35	11	12,7	8,3	0,36	22000	36000	0,062	**QJ 202**
17	40	12	15,9	10,6	0,45	19000	30000	0,082	**QJ 203**
	47	14	23,4	15	0,64	17000	28000	0,14	**QJ 303**
20	52	15	29,6	20	0,85	15000	24000	0,18	**QJ 304**
25	52	15	25,1	20	0,83	14000	22000	0,16	**QJ 205**
	62	17	39	28	1,18	12000	20000	0,29	**QJ 305**
30	62	16	35,1	28,5	,12	12000	19000	0,24	**QJ 206**
	72	19	49,4	38	1,63	10000	17000	0,42	**QJ 306**
35	72	17	46,2	39	1,63	10000	17000	0,36	**QJ 207**
	80	21	59,2	46,5	1,96	9500	15000	0,57	**QJ 307**
40	80	18	52,7	45	,19	9000	15000	0,45	**QJ 208**
	90	23	71,5	58,5	2,45	8500	14000	0,78	**QJ 308**
45	85	19	58,5	51	2,16	8500	14000	0,52	**QJ 209**
	100	25	93,6	76,5	3,25	7500	12000	1,05	**QJ 309**
50	90	20	61,8	56	2,4	7500	13000	0,59	**QJ 210**
	110	27	111	91,5	3,9	6700	11000	1,35	**QJ 310**
55	100	21	79,3	76,5	3,2	7000	11000	0,77	**QJ 211**
	120	29	127	108	4,55	6000	10000	1,75	**QJ 311**
60	110	22	92,3	86,5	3,65	6300	10000	0,99	**QJ 212**
	130	31	146	125	5,3	5600	9000	2,15	**QJ 312**
65	120	23	104	104	4,4	5600	9500	1,20	**QJ 213**
	140	33	165	146	6,1	5300	8500	2,70	**QJ 313**
70	125	24	114	114	4,8	5600	9000	1,32	**QJ 214**
	150	35	186	166	6,7	4800	8000	3,15	**QJ 314**
75	130	25	117	122	5,2	5300	8500	1,45	**QJ 215**
	160	37	199	186	7,35	4500	7500	3,90	**QJ 315**

Four Point Contact ball bearings
d80-200mm

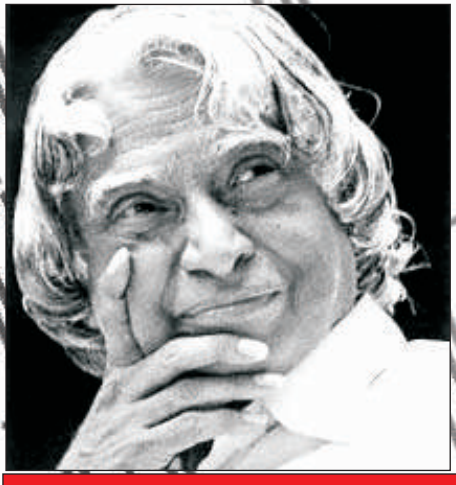


Principal Dimensions			Basic load ratings		Fatigue Load Limit	Speed ratings Lubrication		Mass	Designation Bearing With Locating Shield
			dynamic	Static		Grease	Oil		
d	D	B	C	C_0	P_u				
mm			kN		kN	RPM		kg	-
80	140	26	138	146	5,85	4800	8000	1,85	**QJ 216**
	170	39	216	208	8	4300	7000	4,60	**QJ 316**
85	150	28	148	160	6,2	4500	7500	2,25	**QJ 217**
	180	41	234	236	8,65	4000	6700	5,45	**QJ 317**
90	160	30	174	186	6,95	4300	7000	2,75	**QJ 218**
	190	43	265	285	10,2	3800	6300	6,45	**QJ 318**
95	170	32	199	212	7,8	4000	6700	3,35	**QJ 219**
	200	45	286	315	11	3600	6000	7,45	**QJ 319**
100	180	34	225	240	8,65	3800	6300	4,05	**QJ 220**
	215	47	307	340	11,6	3400	5600	9,30	**QJ 320**
110	200	38	265	305	10,4	3400	5600	5,60	**QJ 222**
	240	50	390	475	15	3000	4800	12,5	**QJ 322**
120	215	40	286	340	11,2	3200	5000	6,95	**QJ 224**
	260	55	390	490	15	2800	4500	16,0	**QJ 324**
130	230	40	296	365	11,6	2800	4800	7,75	**QJ 226**
	280	58	423	560	16,6	2600	4000	19,5	**QJ 326**
140	250	42	325	440	13,2	2600	4300	9,85	**QJ 228**
	300	62	468	640	18,6	2400	3800	24,0	**QJ 328**
150	270	45	377	530	15,3	2400	4000	12,5	**QJ 230**
	320	65	494	710	19,6	2200	3600	29,0	**QJ 330**
160	290	48	423	620	17,6	2200	3800	15,5	**QJ 232**
	340	68	540	815	21,6	2000	3400	34,5	**QJ 332**
170	310	52	436	670	18,3	2200	3400	19,5	**QJ 234**
	360	72	618	965	25	1000	3200	41,5	**QJ 334**
180	320	52	449	710	19	2000	3400	20,5	**QJ 236**
	380	75	637	1020	26	1800	30000	47,5	**QJ 336**
190	400	78	702	1160	28,5	1700	2800	49,0	**QJ 338**
200	360	58	540	915	23,2	1800	3000	28,5	**QJ 240**

THE COMMITMENT TO QUALITY...
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Precision Bearings Pvt. Ltd.





" Those who cannot work with their hearts achieve but a hollow, half-hearted success that breeds bitterness all around. "

Dr. A.P.J. Abdul Kalam



THRUST
Ball Bearings



Thrust Ball Bearings

Thrust ball bearings are classified into flat seats or aligning seats depending on the shape of the outer ring seat (Housing Washer). They can sustain axial load but no radical load.

Single Direction Thrust Ball Bearing

These bearings contain a shaft washer, a housing washer and a ball and cage thrust assembly and simple in mounting.

These bearings can carry axial load in one direction and hence locate shaft axially on one direction, & not suitable for any radial load.

Series available:

511XX, 512XX, 513XX, 514XX etc

-Brass Cage Available

-Inch Tape Thrust Tape Ball Bearing Available.

Double direction thrust ball bearing

These bearings consist of one shaft washer; two housing washer and two balls and cage assembly.

These bearings are also mounting separable as per single direction thrust ball bearing.

These bearings can carry axial load acting in both direction, and hence locate shaft in both direction, & not suitable for any radial load

Series Available.

522XX,523XX,524XX

CYLINDRICAL ROLLER THRUST BEARINGS

These bearings contain cylindrical roller and cage assembly, shaft washer and housing washer.

These bearings are suitably for heavy axial load shock load and are require less axial space.

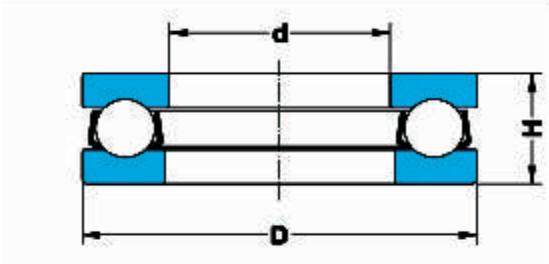
Single direction bearings can carry axial load in one direction.

Double direction bearings can carry axial load in both direction.

Series available:

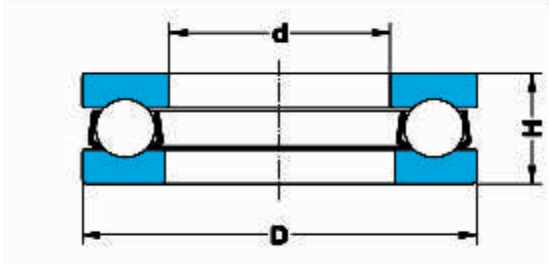
811XX, 812XX

Thrust Ball Bearings
d10-55mm



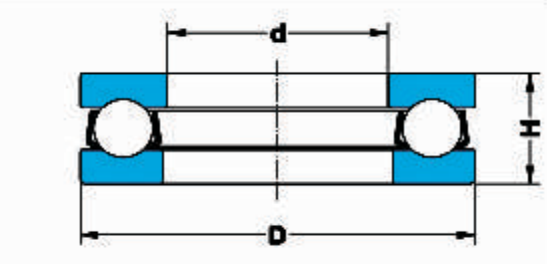
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Minimum Load Factor	Speed ratings Lubrication		Mass	Designation
			dynamic	Static			Grease	Oil		
d mm	D	B	C kN	C_0	P_u kN	A	RPM		kg	-
10	24	9	9.95	15.3	0.56	1.2	7000	9500	0.020	**51100**
	26	11	12.7	18.6	0.695	1.8	6000	8000	0.031	**51200**
12	26	9	10.4	16.6	0.62	1.4	6700	9000	0.022	**51101**
	28	11	13.3	20.8	0.765	2.2	6000	8000	0.034	**51201**
15	28	9	9.36	15.3	0.56	1.2	6300	8500	0.023	**51102**
	32	12	16.5	27	1	3.8	5300	7000	0.046	**51202**
17	30	9	9.75	16.6	0.62	1.4	6300	8500	0.025	**51103**
	35	12	17.2	30	1.1	4.7	5000	6700	0.053	**51203**
20	35	10	12.7	22.8	0.85	2.7	5600	7500	0.038	**51104**
	40	14	22.5	40.5	1.53	8.5	4500	6000	0.033	**51204**
25	42	11	15.9	31.5	1.16	5.2	4800	6300	0.058	**51105**
	47	15	27.6	55	2.04	15	4000	5300	0.11	**51205**
	52	18	34.5	60	2.24	18	3400	4500	0.17	**51305**
	60	24	55.3	96.5	3.6	48	2600	3600	0.34	**51405**
30	47	11	16.8	36	1.34	6.7	4500	6000	0.068	**51106**
	52	16	25.5	51	1.9	13	3600	4800	0.13	**51206**
	60	21	37.7	71	2.65	26	2800	3800	0.26	**51306**
	70	28	72.8	137	5.1	97	2000	3000	0.52	**51406**
35	52	12	17.4	40.5	1.53	8.5	4300	5600	0.080	**51107**
	62	18	35.1	73.5	2.7	28	3000	4000	0.22	**51207**
	68	24	49.4	96.5	3.55	48	2400	3400	0.38	**51307**
	80	32	87.1	170	6.2	150	1800	2600	0.76	**51407**
40	60	13	23.4	55	2.04	15	3800	5000	0.12	**51108**
	68	19	46.8	106	4	58	2800	3800	0.28	**51208**
	78	26	61.8	122	4.5	77	2000	3000	0.53	**51308**
	90	36	112	224	8.3	260	1700	2400	1.10	**51408**
45	65	14	24.2	61	2.28	19	3400	4500	0.14	**51109**
	73	20	39	86.5	3.2	38	2600	3600	0.30	**51209**
	85	28	76.1	153	5.6	120	1900	2800	0.66	**51309**
	100	39	130	265	9.8	370	1600	2200	1.40	**51409**
50	70	14	25.5	68	2.55	24	3200	4300	0.16	**51110**
	78	22	49.4	116	4.3	69	2400	3400	0.37	**51210**
	95	31	88.4	19	6.95	190	1800	2600	0.94	**51310**
	110	43	159	340	12.5	600	1500	2000	2.00	**51410**
55	78	16	30.7	85	3.1	37	2800	3800	0.23	**51111**
	90	25	61.8	146	5.4	110	1900	2800	0.59	**51211**
	105	35	104	224	8.3	260	1600	2200	1.30	**51311**
	120	48	1780	390	14.3	790	1300	1800	2.55	**51411**

Thrust Ball Bearings
d60-120mm



Principal Dimensions			Basic load ratings		Fatigue Load Limit	Minimum Load Factor	Speed ratings Lubrication		Mass	Designation
			dynamic	Static			Grease	Oil		
d mm	D	B	C kN	C_0	P_u kN	A	RPM		kg	-
60	85	17	36.4	102	3.8	54	2600	3600	0.20	**51112**
	95	26	62.4	150	5.6	120	1900	2800	0.65	**51212**
	110	35	101	224	8.3	260	1600	2200	1.35	**51312**
	130	51	199	430	16	960	1100	1600	3.10	**51412**
65	90	18	37.1	108	4	60	2400	3400	0.33	**51113**
	100	27	63.7	163	6	140	1800	2600	0.78	**51213**
	115	36	106	240	8.8	300	1500	2000	1.60	**51313**
	140	56	216	490	18	1200	1000	1500	4.00	**51413**
70	95	18	37.7	112	4.15	65	2400	3400	0.35	**51114**
	105	27	65	173	6.4	160	1800	2600	0.79	**51214**
	125	40	135	320	11.8	530	1400	1900	2.00	**51314**
	150	60	234	550	19.3	1600	950	1400	5.00	**51414**
75	100	19	44.2	146	5.5	110	2200	3200	0.40	**51115**
	110	27	67.6	183	6.8	170	1700	2400	0.83	**51215**
	135	44	163	390	14	790	1200	1700	2.60	**51315**
	160	65	251	610	20.8	1900	900	1300	6.75	**51415**
80	105	19	44.9	153	5.7	120	2000	3000	0.42	**51116**
	115	28	76.1	208	7.65	220	1700	2400	0.91	**51216**
	140	44	159	390	13.7	790	1200	1700	2.70	**51316**
	170	68	270	670	22.4	2300	850	1200	7.95	**51416**
85	110	19	46.2	163	6	140	2000	3000	0.44	**51117**
	125	31	97.5	275	9.8	390	1600	2200	1.20	**51217**
	150	49	190	465	16	1100	1100	1600	3.55	**51317**
	180	72	286	750	24	2900	850	1200	9.45	**51417**
90	120	22	59.2	208	7.5	220	1800	2600	0.67	**51118**
	135	35	106	325	10.6	550	1500	2000	1.70	**51218**
	155	50	195	500	16.6	1300	1000	1500	3.80	**51318**
	190	77	3070	815	25.5	3500	800	1100	11.0	**51418**
100	135	25	85.2	290	10	440	1700	2400	0.97	**51120**
	150	38	124	345	11.4	620	1300	1800	2.20	**51220**
	170	55	229	610	19.6	1900	950	1400	4.95	**51320**
	210	85	371	1060	31.5	5800	700	950	15.0	**51420**
110	145	25	87.1	315	10.2	520	1600	2200	1.05	**51122**
	160	38	130	390	12.5	790	1200	1700	2.40	**51222**
	190	63	276	780	24	3200	850	1200	7.85	**51322**
	230	95	410	1220	34.5	7700	630	850	20.0	**51422**
120	155	25	88.4	335	10.6	580	1600	2200	1.15	**51124**
	170	39	140	440	13.4	1000	1100	1600	2.65	**51224**
	210	70	325	980	28.5	5000	800	1100	11.0	**51324**
	250	102	423	1320	36	9100	600	800	25.5	**51424**

Thrust Ball Bearings
d130-240mm



Principal Dimensions			Basic load ratings		Fatigue Load Limit	Minimum Load Factor	Speed ratings Lubrication		Mass	Designation
			dynamic	Static			Grease	Oil		
d	D	B	C	C_0	P_u	A				
mm			kN		kN		RPM		kg	-
130	170	30	111	425	12.9	940	1400	1900	1.85	**51126**
	190	45	186	585	17	1800	950	1400	4.00	**51226**
	225	75	358	1140	32	6800	750	1000	13.0	**51326**
	270	110	520	1730	45	16000	560	750	32.0	**51426**
140	180	31	111	440	12.9	1000	1300	1800	2.05	**51128**
	200	46	190	620	17.6	2000	950	1400	4.35	**51228**
	240	80	397	1320	35.5	9100	700	950	15.5	**51328**
	280	112	520	1730	44	16000	530	700	34.5	**51428**
150	190	31	111	440	12.5	1000	1200	1700	2.20	**51130**
	215	50	238	800	22	3300	900	1300	610	**51230**
	250	80	410	1400	36.5	10000	670	900	16.5	**51330**
	300	120	559	1960	48	20000	500	670	42.5	**51430**
160	200	31	112	465	12.9	1100	1200	1700	2.35	**51132**
	225	51	242	850	22.8	3800	850	1200	6.55	**51232**
	270	87	449	1660	41.5	14000	630	850	21.0	**51332**
170	215	34	133	540	14.3	1500	1100	1600	3.30	**51134**
	240	55	286	1020	26	5400	800	1100	8.15	**51234**
	280	87	468	1760	43	16000	600	800	22.0	**51334**
180	225	34	135	570	15	1700	1000	1500	3.50	**51136**
	250	56	296	1080	27.5	6100	800	1100	8.60	**51236**
	300	95	520	2000	47.5	21000	560	750	28.5	**51336**
190	240	37	172	710	18	2600	950	1400	4.05	**51138**
	270	62	332	1270	31	8400	750	1000	12.0	**51238**
200	250	37	168	71	17.6	2600	950	1400	4.25	**51140**
	280	62	338	1320	31.5	9100	750	1000	12.0	**51240**
	340	110	624	2600	58.5	35000	480	630	44.5	**51340**
220	270	37	178	800	19	3300	900	1300	4.60	**51144**
	300	63	351	1460	33.5	11000	700	950	13.0	**51244**
240	300	45	234	1040	23.6	5600	800	1100	7.55	**51148**
	340	78	462	2000	44	21000	600	800	23.0	**51248**

PAPER PLANT

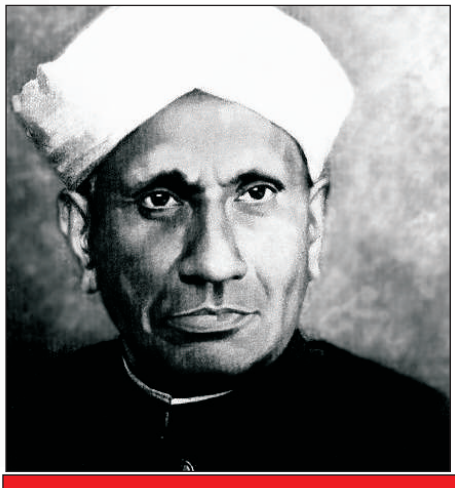
NEXT GENERATION



THE COMMITMENT TO QUALITY...
THE COMMITMENT TO GROWTH...
Precision Bearings Pvt. Ltd.





"Success can only come to you by courageous devotion to the task lying in front of you and there is nothing worth in this world that can come without the sweat of our brow."

Sir C.V. Raman



CYLINDRICAL
Roller Bearings



CYLINDRICAL ROLLER BEARING

It contains cylindrical roller as rolling element.
It Contains solid inner and outer rings, cylindrical roller and cage assembly.
The outer rings have rib on both side or no ribs.
The inner rings have one or two rigid ribs or can be designer without ribs
The cylindrical roller bearings have high radical load carrying capacity, higher speed compared to full complement designed., Because of cage bearing with suffix E have higher load carrying capacity.
These bearings are separable in design.
Cylindrical roller bearing can accommodate heavy radical load at high speed.
For cylindrical roller bearing axial load carrying capacity is limited

Depending on the existence of ribs on their rings, Cylindrical Roller Bearings are classified into the following types.

NU Design - Outer ring has two integral flanges, while inner ring had no flange.
N Design - Inner ring has two integral flanges while outer ring has no flange.
NJ Design - Outer ring has two integral flanges and inner ring has no integral flange.
NUP Design - Outer ring has two integral flanges and inner ring had one integral flange & loose flange ring for both side axial locations
NU & N types are suitable as free- end bearings .
NJ type can sustain Limited axial load in one direction.
NUP can be used as fixed - end bearing.

Series Available

N 2 XX	NF2XX	NJ2XX	NJ22XX	NU2XX	NU10XX	NUP2XX	NUP22XX
N3XX	NF3XX	NJ3XX	NJ23XX	NU3XX	NU22XX	NUP3XX	NUP23XX
N4XX	NF4XX	NJ4XX		NU4XX	NU23XX	NUP4XX	

MORE SERIES AVAILABILITY : CRL, CRM, CFL, CFM
Available Iin Steal,Brass and Polymide Cage.

Precautions for use of Cylindrical Roller Bearings.

If the load on cylindrical roller bearings becomes two small during operation then slippage between the rollers and raceway occurs. Which may result in smearing, especially with large bearing science the weight of roller and cage is high.

In case of vibration or strong shock loads, pressed steel cages are sometime inadequate.

Permissible Mis alignment.

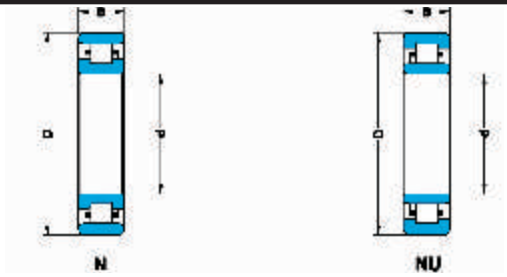
The permissible misalignment of cylindrical roller bearing varies depending on the type and internal specifications but under normal loads. Permissible misalignment is below
Cylindrical Rollar Bearing of width series 0 or 1.....0.0012 radian(4')

Cylindrical Roller Bearing of width series 2.....0.006radian(2'). For Double Row cylindrical roller bearings, mis alignment is not allowed.

Radial internal clearance
to DIN 620-4

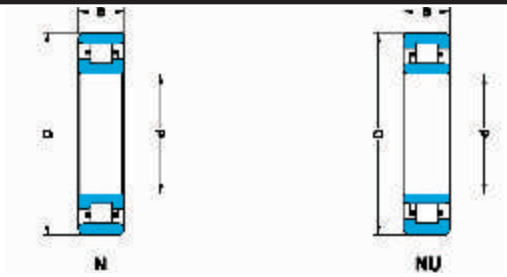
Bore Diameter		Radial internal clearance					
d		CN		C3		C4	
over	incl.	Min	Max	Min	Max	Min	Max
mm		Micron					
-	24	20	45	35	60	50	75
24	30	20	45	35	60	50	75
30	40	25	50	45	70	60	85
40	50	30	60	50	80	70	100
50	65	40	70	60	90	80	110
65	80	40	75	65	100	90	125
80	100	50	85	75	110	105	140
100	120	50	90	85	125	125	165
120	140	60	105	100	145	145	190
140	160	70	120	115	165	165	215
160	180	75	125	123	170	170	220
180	200	90	145	140	195	195	250
200	225	105	165	160	220	220	280
225	250	110	175	170	235	235	300
250	280	125	195	190	260	260	330

Cylindrical Roller bearings With Cage
Non-Locating
d15-40mm



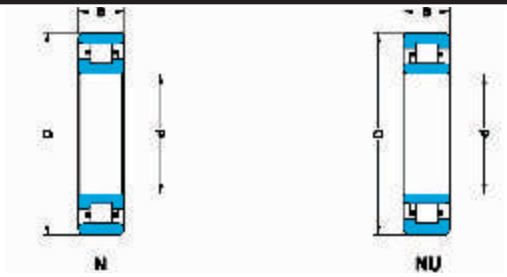
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Limiting Speed	Mass	Designation
d mm	D	B	dynamic C kN	Static C_0	P_u kN	RPM	kg	
15	35	11	15.1	10.4	1.47	22000	0.047	**N202-E**
	35	11	15.1	10.4	1.29	22000	0.048	**NU202-E**
17	40	12	20.8	14.6	2.11	18000	0.068	**N203-E**
	40	12	20.8	14.6	1.82	18000	0.069	**NU203-E**
	40	16	28.5	21.9	3.50	18000	0.051	**NU-2203-E**
	47	14	30	21.2	2.65	16000	0.121	**NU-303-E**
20	47	14	32.5	24.7	3.85	16000	0.112	**N204-E**
	47	14	32.5	24.7	3.1	16000	0.114	**NU-204-E**
	47	18	38.5	31	5	16000	0.146	**NU-204-E**
	52	15	36.5	26	3.25	14000	0.153	**NU2204-E**
	52	21	48.5	38	6.3	14000	0.215	**NU304-E**
25	47	12	16.7	12.9	1.52	28000	0.092	**NU2304-E**
	52	15	34.5	27.5	4.35	15000	0.135	**NU1005-M**
	52	15	34.5	27.5	3.5	15000	0.137	**N205-E**
	52	18	41.5	34.5	5.7	15000	0.165	**NU205-E**
	62	17	48	36.5	5.8	12000	0.242	**NU2205-E**
	62	17	48	36.5	4.7	12000	0.245	**N305-E**
	62	24	66	55	9.4	12000	0.349	**NU305-E**
30	55	13	22.9	19.3	2.4	24000	0.134	**NU2305-E**
	62	16	45	36	5.7	12000	0.205	**NU1006-M**
	62	16	45	36	4.65	12000	0.207	**N206-E**
	62	20	57	48.5	8.1	12000	0.255	**NU-206E**
	72	19	61	480	8	10000	0.366	**NU2206-E**
	72	19	61	48	6.4	10000	0.368	**N306-E**
	72	27	86	75	13.2	10000	0.529	**NU2306-E**
35	62	14	29	26	3.15	20000	0.177	**NU1007-M**
	72	17	58	48.5	7.9	10000	0.301	**N207-E**
	72	17	58	48	6.4	10000	0.303	**NU207-E**
	72	23	72	64	10.8	10000	0.406	**NU2207-E**
	80	21	76	63	10.7	9000	0.486	**N307-E**
	80	21	76	63	8.6	9000	0.486	**NU307-E**
	80	31	108	98	17.4	9000	0.723	**NU2307-E**
40	68	15	33.5	30.5	3.35	19000	0.216	**NU1008-M**
	80	18	63	53	8.7	9000	0.358	**N208-E**
	80	18	63	53	7	9000	0.379	**NU208-E**
	80	23	83	75	12.9	9000	0.492	**NU2208-E**
	90	23	95	78	12.9	7500	0.656	**N308-E**
	90	23	95	78	10.4	7500	0.659	**NU308-E**
	90	33	132	119	20.7	7500	0.958	**NU2308-E**

Cylindrical Roller bearings With Cage
Non-Locating
d45-70mm



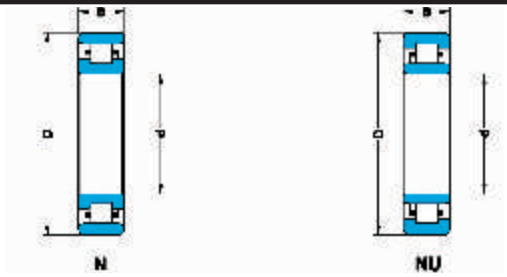
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Limiting Speed	Mass	Designation
d mm	D	B	dynamic C kN	Static C_0	P_u kN	RPM	kg	
45	75	16	40	37.5	4.8	16000	0.277	**NU1009-M**
	85	19	72	63	10.6	8500	0.434	**N209-E**
	85	19	72	63	8.6	8500	0.434	**NU209-E**
	85	23	87	82	14.1	8500	0.532	**NU2209-E**
	100	25	115	98	16.4	6700	0.891	**N309-E**
	100	25	115	98	13.3	6700	0.893	**NU309-E**
	100	36	162	153	27	6700	1.3	**NU2309-E**
50	80	16	42.5	41.5	5.3	15000	0.305	**NU1010-M**
	90	20	75	69	11.5	8000	0.488	**N210-E**
	90	20	75	69	9.3	8000	0.49	**NU210-E**
	90	23	92	88	15.3	8000	0.573	**NU2210-E**
	110	27	130	113	19.1	6300	1.16	**N310-E**
	110	27	130	113	1.5	6300	1.16	**NU310-E**
	110	40	192	187	33	6300	1.75	**NU2310-E**
55	90	18	53	62	6.6	13000	0.451	**NU1011-E-M**
	100	21	99	95	16.3	7000	0.668	**N211-E**
	100	21	99	95	13.2	7000	0.665	**NU211-E**
	100	25	117	118	20.7	7000	0.796	**NU2211-E**
	120	29	159	139	23.6	5600	1.48	**N311-E**
	120	29	159	139	19.1	5600	1.48	**NU311-E**
	120	43	235	230	41	5600	2.23	**NU2311-E**
60	95	18	52	55	7.1	13000	0.48	**NU1012-M**
	110	22	111	102	16.8	6300	0.827	**N212-E**
	110	22	111	102	13.9	6300	0.824	**NU212-E**
	110	28	151	15	26.5	6300	1.08	**NU2212-E**
	130	31	177	157	26.5	5000	1.84	**N312-E**
	130	31	177	157	21.7	5000	1.85	**NU312-E**
	130	46	265	260	47	5000	2.78	**NU2312-E**
65	100	18	53	58	7.5	12000	0.507	**NU1013-M**
	120	23	127.0	119.0	19.8	6000	1.05	**N213-E**
	120	23	127.0	119.0	16.3	6000	1.04	**NU213-E**
	120	31	176.0	181.0	32.0	5600	1.43	**NU2213-E**
	140	33	214.0	191.0	32.0	4800	2.28	**N313-E**
	140	33	214.0	191.0	26.0	4800	2.28	**NU313-E**
	140	48	295.0	285.0	50.0	4800	3.32	**NU2313-E**
70	110	20	75.0	78.0	10.6	11000	0.706	**NU1014-M**
	125	24	140.0	137.0	23.1	5300	1.16	**N214-E**
	125	24	140.0	137.0	19.0	5300	1.15	**NU214-E**
	125	31	184.0	194.0	34.0	5300	1.52	**NU2214-E**
	150	35	242.0	222.0	37.0	4500	2.79	**N314-E**
	150	35	242.0	222.0	30.0	4500	2.79	**NU314-E**
	150	51	325.0	325.0	56.0	4500	4.02	**NU2314-E**

Cylindrical Roller bearings With Cage
Non-Locating
d75-105mm



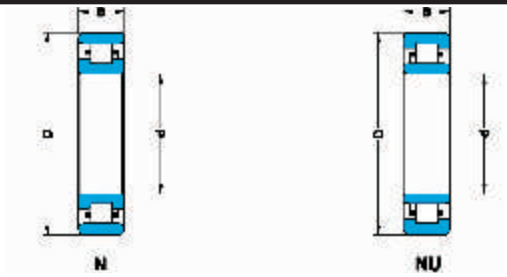
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Limiting Speed	Mass	Designation
d mm	D	B	dynamic C kN	Static C_0	P_u kN	RPM	kg	-
75	115	20	76	82	11.1	10000	0.737	**NU1015-M**
	130	25	154	15	26.5	5300	1.29	**N215-E**
	130	25	154	156	21.7	5300	1.27	**NU215-E**
	130	31	191	207	36.0	5300	1.6	**NU2215-E**
	160	37	285	265	43.0	4000	3.34	**N315-E**
	160	37	285	265	34.5	4000	3.33	**NU315-E**
	160	55	390	395	67.0	4000	4.95	**NU2315-E**
80	125	22	91	99	13.6	9500	0.99	**NU1016-M**
	140	26	165	167	27.5	4800	1.55	**N216-E**
	140	26	165	167	22.6	4800	1.55	**NU216-E**
	140	33	220	243	42.0	4800	2.01	**NU2216-E**
	170	39	300	275	46.0	3800	4.12	**N316-E**
	170	39	300	275	37.0	3800	3.96	**NU316-E**
	170	58	420	425	73.0	3800	5.89	**NU2316-E**
85	130	22	93	103	14.0	9000	1.04	**NU1017-M**
	150	28	194	194	31.50	4500	1.92	**N214-E**
	150	28	194	194	26.0	4500	1.91	**NU217-E**
	150	36	255	275	46.5	4500	2.5	**NU2217-E**
	180	41	340	325	53.0	5600	5.3	**N317-E-M**
	180	41	320	300	40.0	3600	4.62	**NU317-E**
	180	60	435	445	75.0	3600	6.72	**NU2317-E**
90	140	24	111	124	16.8	8500	1.31	**NU1018-M**
	160	30	215	217	35.0	4300	2.37	**N218-E**
	160	30	215	217	28.5	4300	2.36	**NU218-E**
	160	40	285	315	52.0	4300	3.17	**NU2218-E**
	190	43	370	350	55.0	5300	6.19	**N318-E**
	190	43	370	350	44.0	3400	5.39	**NU318-E**
	190	64	510	530	86.0	3400	8.04	**NU2318-E**
95	145	24	113	130	17.3	8000	1.41	**NU1019-M**
	170	32	260	265	41.5	3800	2.89	**N219-E**
	170	32	260	265	34.0	3800	2.88	**NU219-E**
	170	43	340	370	60.0	3800	3.9	**NU2219-E**
	200	45	390	380	59.0	5300	7.05	**N319-EM**
	200	45	390	380	48.0	3400	6.32	**NU319-E**
	200	67	540	580	93.0	3400	9.4	**NU2319-E**
100	150	24	116	135	17.9	7500	1.46	**NU1020-M**
	180	34	295	305	47.5	3800	3.5	**N220-E**
	180	34	295	305	38.5	3800	3.49	**NU220-E**
	180	46	395	445	72.0	3800	4.77	**NU2220-E**
	215	47	450	425	65.0	5000	8.75	**N320-E-M**
	215	47	450	425	53.0	3200	7.67	**NU320-E**
	215	73	680	720	114.0	3200	12.1	**NU2320-E**
105	160	26	131	153	19.4	7000	1.84	**NU1021-M**
	190	36	310	320	49.0	5600	4.63	**N221-E-M**
	190	36	310	320	40.0	3600	4.08	**NU221-E**

Cylindrical Roller bearings With Cage
Non-Locating
d110-160mm



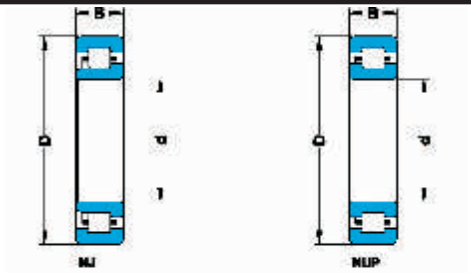
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Limiting Speed	Mass	Designation
d mm	D	B	dynamic C kN	Static C_0	P_u kN	RPM	kg	
110	170	28	166	190	24.2	7000	2.31	**NU1022-M**
	200	38	345	365	56.0	3400	4.85	**N222-E**
	200	38	345	365	56.0	3400	4.84	**NU222-E**
	200	53	455	520	81.0	3400	6.67	**NU2222-E**
	240	50	520	510	78.0	4800	11.7	**N322-E**
	240	50	495	475	59.0	3000	10.3	**NU322-E**
	240	80	750	800	126	2800	16.6	**NU2322-E**
120	180	28	174	207	26	6300	2.47	**NU1024-M**
	215	40	390	415	64	3200	5.67	**N224-E**
	215	40	390	415	52	3200	5.8	**NU224-E**
	215	58	530	610	97	3200	8.38	**NU2224-E**
	260	55	610	600	87	4500	15.1	**N324-E-M**
	260	55	610	60	70	2800	13.3	**NU324-E**
	260	86	930	1010	153	4300	23.2	**NU2324-E-M**
130	200	33	212	250	31	5600	3.81	**NU1026-M**
	230	40	425	445	65	3000	6.51	**N226-E**
	230	40	425	445	54	3000	6.5	**NU226-E**
	230	64	620	730	111	3000	10.4	**NU2226-E**
	280	58	720	720	103	4300	18.4	**N326-E-M**
	280	58	680	670	79	2600	16.2	**NU326-E**
	280	93	1080	1220	180	3800	28.8	**NU2326-E-M**
140	210	33	216	265	32	5300	3.94	**NU1028-M**
	250	42	460	510	72	4800	9.3	**N228-E-M**
	250	42	460	510	59	4800	9.31	**NU228-E-M**
	250	68	670	830	123	4500	14.5	**NU2228-E-M**
	300	62	790	800	113	3800	22.5	**N328-E-M**
	300	62	790	800	92	2400	20.1	**NU328-E**
	300	102	1210	1390	202	3600	36	**NU2328-E-M**
150	225	35	248	310	37	5000	4.93	**NU1030-M**
	270	45	520	590	82	4500	11.7	**N230-E-M**
	270	45	520	590	68	4500	11.8	**NU230-E-M**
	270	73	780	970	142	4300	18.4	**NU2230-E-M**
	320	65	900	930	126	3600	26.8	**N330-E-M**
	320	65	900	930	103	3600	26.8	**NU330E-M**
	320	108	1380	1600	226	3200	43.2	**NU2330-E-M**
160	240	38	290	355	42.5	4800	5.92	**NU1032-M**
	290	48	590	670	93	4300	14.6	**N232-E-M**
	290	48	590	670	76	4300	14.6	**NU232-E-M**
	290	80	940	1170	172	3800	23.5	**NU2232-E-M**
	340	68	865	1060	114	3000	32.6	**N332-E-M**
	340	68	865	1060	96	3000	31.8	**NU332-E-M**
	340	114	1320	1830	204	3000	51.5	**NU2332-E-M**

Cylindrical Roller bearings With Cage
Non-Locating
d170-240mm



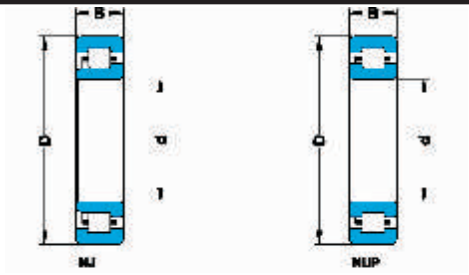
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Limiting Speed	Mass	Designation
d mm	D	B	dynamic C kN	Static C_0	P_u kN	RPM	kg	
170	260	42	350	435	49.5	4500	8.03	**NU1034-M**
	310	52	700	780	107	3600	18	**N234-E-M**
	310	52	700	780	88	3600	18.1	**NU234-E-M**
	310	86	1130	1400	198	3200	29.4	**NU2234-E-M**
	360	72	965	1220	132	3000	37.9	**N334-E-M**
	360	72	965	1220	105	3000	38	**NU334-E-M**
	360	120	1500	2080	231	2800	61.4	**NU2334-E-M**
180	280	46	425	520	61	4500	10.5	**NU1036-M**
	320	52	730	830	93	3600	18.9	**NU236-E-M**
	320	86	1180	1490	209	3200	30.5	**NU2236-E-M**
	380	75	1040	1320	112	2800	43.9	**NU336-E-M**
	380	126	1660	2320	260	2800	71.8	**NU2336-E-M**
190	290	46	435	550	63	4300	10.9	**NU1038-M**
	340	55	680	930	100	3200	22.8	**N238-E-M**
	340	55	680	930	85	3200	22.8	**NU238-E-M**
	340	92	1100	1660	184	3000	37.1	**NU2238-E-M**
	400	78	1120	1430	120	2800	50.6	**NU338-E-M**
	400	132	1900	2650	285	2600	83.1	**NU2338-E-M**
200	310	51	470	600	68	3800	14.1	**NU1040-M**
	360	58	750	1040	110	3000	27.2	**N240-E-M**
	360	58	750	1040	110	3000	27.2	**NU240E-M**
	360	98	1220	1860	206	2800	44.7	**NU2240-E-M**
	420	80	1180	1530	128	2600	57.3	**NU340-E-M**
	420	138	2040	2900	310	2400	95.6	**NU2340-E-M**
	340	56	510	765	69	3200	20.5	**NU1044-M**
	400	65	950	1320	109	2800	38.5	**NU244-E-M**
	400	108	1630	2360	250	2600	61.6	**NU2244-E-M**
	460	88	1430	1900	152	2400	75.5	**NU344-E-M**
	460	145	2360	3350	340	2200	121	**NU2344-E-M**
220	340	56	510	765	69	3200	19.8	**NU1044-M**
	400	65	950	1320	109	2800	38.5	**NU244-E-M**
	400	108	1630	2360	250	2600	61.6	**NU2244-E-M**
	460	88	1430	1900	152	2400	75.5	**NU344-E-M**
	460	145	2360	3350	340	2200	121	**NU3444-E-M**
240	360	56	540	850	74	3000	19.8	**NU1048-M**
	440	72	1140	1600	163	2600	51.5	**N248-E-M**
	440	72	1140	1600	132	2600	51.8	**NU248-E-M**
	440	120	1830	2800	295	2400	82.8	**NU2248-E-M**
	500	95	1730	2280	176	2200	95.7	**NU348-E-M**
	500	155	2600	3750	375	2000	151	**NU2348-E-M**

Cylindrical Roller bearings With Cage
Semi-Locating & Locating Bearings
d15-35mm



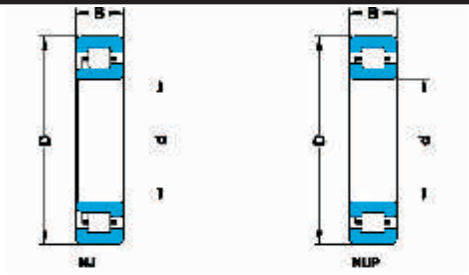
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Limiting Speed	Mass	Designation
d mm	D	B	dynamic C kN	Static C_0	P_u kN	RPM	kg	
15	35	11	15.1	10.4	1.4	22000	0.049	**NJ202-E**
17	40	12	20.8	14.6	2.1	18000	0.07	**NJ203-E**
	40	12	20.8	14.6	2.1	18000	0.073	**NUP203-E**
	40	16	28.5	21.9	3.5	18000	0.053	**NJ2203-E**
	40	16	28.5	21.9	3.5	18000	0.055	**NUP2203-E**
	47	14	30.0	21.2	3.3	16000	0.124	**NJ303-E**
20	47	14	32.5	24.7	3.8	16000	1.17	**NJ204-E**
	47	14	32.5	24.7	3.8	16000	0.119	**NUP204-E**
	47	18	38.5	31.0	5.0	16000	0.15	**NJ2204-E**
	47	18	38.5	31.0	5.0	16000	0.154	**NUP2204-E**
	52	15	36.5	26.0	4.0	14000	0.156	**NJ304-E**
	52	15	36.5	26.0	4.0	14000	0.16	**NJP304-E**
	52	21	48.5	38.0	6.3	14000	0.219	**NJ2304-E**
	52	21	48.5	38.0	6.3	14000	2.24	**NUP2304-E**
25	52	15	34.5	27.5	4.3	15000	0.14	**NJ205-E**
	52	15	34.5	27.5	4.3	15000	0.145	**NUP205-E**
	52	18	41.5	34.5	5.7	15000	0.17	**NJ2205-E**
	52	18	41.5	34.5	5.7	15000	0.174	**NUP2205-E**
	62	17	48.0	36.5	5.8	12000	0.25	**NJ305-E**
	62	17	48.0	36.5	5.8	12000	0.256	**NUP305-E**
	62	24	66.0	55.0	9.4	12000	0.356	**NJ2305-E**
	62	24	66.0	55.0	9.4	12000	0.364	**NUP2305-E**
30	62	16	45	36	5.7	12000	0.213	**NJ206-E**
	62	16	45	36	5.7	12000	0.219	**NUP206-E**
	62	20	57	48.5	8.1	12000	0.261	**NJ2206-E**
	62	20	57	48.5	8.1	12000	0.268	**NUP2206-E**
	72	19	61	48	8	10000	0.376	**NJ306-E**
	72	19	61	48	8	10000	0.385	**NUP306-E**
	72	27	86	75	13.2	10000	0.54	**NJ2306-E**
	72	27	86	75	13.2	10000	0.551	**NUP2306-E**
35	72	17	58	48.5	7.9	10000	0.309	**NJ207-E**
	72	17	58	48.5	7.9	10000	0.317	**NUP207-E**
	72	23	72	64	10.8	10000	0.416	**NJ2207-E**
	72	23	72	64	10.8	10000	0.427	**NUP2207-E**
	80	21	76.	63	10.7	9000	0.496	**NJ307-E**
	80	21	76	63	10.7	9000	0.506	**NUP307-E**
	80	31	108	98	17.4	9000	0.736	**NJ2307-E**
	80	31	108	98	17.4	9000	0.751	**NUP2307-E**

Cylindrical Roller bearings With Cage
Semi-Locating & Locating Bearings
d40-60mm



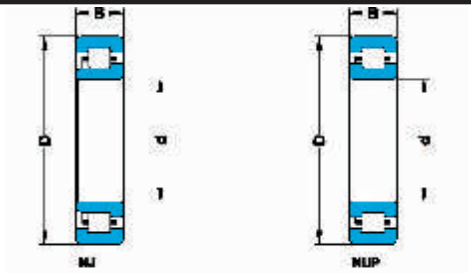
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Limiting Speed	Mass	Designation
d mm	D	B	dynamic C kN	Static C_0	P_u kN	RPM	kg	
40	80	18	63	53	8.7	9000	0.389	**NJ208-E**
	80	18	63	53	8.7	9000	0.399	**NUP208-E**
	80	23	83	75	12.9	9000	0.504	**NJ2208-E**
	80	23	83	75	12.9	9000	0.518	**NUP2208-E**
	80	23	95	78	12.9	7500	0.674	**NJ308-E**
	80	23	95	78	12.9	7500	0.674	**NUP308-E**
	80	23	95	78	12.9	7500	0.688	**NUP308-E**
	80	33	132	119	20.7	7500	0.978	**NJ2308-E**
	80	33	132	119	20.7	7500	0.999	**NUP2308-E**
45	85	19	72	63	10.6	8500	0.445	**NJ209-E**
	85	19	72	63	10.6	8500	0.457	**NUP209-E**
	85	23	87	82	141	8500	0.544	**NJ2209-E**
	85	23	87	82	14.1	8500	0.559	**NUP2209-E**
	100	25	108	91	15.2	6700	0.913	**NJ309-E**
	100	25	115	98	16.4	6700	0.937	**NUP309-E**
	100	36	162	153	27	6700	1.33	**NJ2309-E**
	100	36	162	153	27	6700	1.36	**NUP2309-E**
50	90	20	75	69	11.5	8000	0.503	**NJ210-E**
	90	20	75	69	11.5	8000	0.517	**NUP210-E**
	90	23	92	88	15.3	8000	0.586	**NJ2210-E**
	90	23	92	88	15.3	8000	0.597	**NUP2210-E**
	110	27	130	113	19.1	6300	1.19	**NJ310-E**
	110	27	130	113	19.1	6300	0.121	**NUP310-E**
	110	40	192	187	33	6300	1.77	**NJ2310-E**
	110	40	192	187	33	6300	1.82	**NUP2310-E**
55	100	21	99	95	16.3	7000	0.679	**NJ211-E**
	100	21	99	95	16.3	7000	0.693	**NUP211-E**
	100	25	117	118	20.7	7000	0.812	**NJ2211-E**
	100	25	117	118	20.7	7000	0.828	**NUP2211-E**
	120	29	159	139	23.6	5600	1.51	**NJ311-E**
	120	29	159	139	23.6	5600	1.54	**NUP311-E**
	120	43	235	230	41	5600	0.227	**NJ2311-E**
	120	43	235	230	41	5600	0.231	**NUP2311-E**
60	110	22	111	102	16.8	6300	0.845	**NJ212-E**
	110	22	111	102	16.8	6300	0.865	**NUP212-E**
	110	28	151	152	26.5	6300	1.1	**NJ2212-E**
	110	28	151	152	26.5	6300	1.12	**NUP2212-E**
	130	31	177	157	26.5	5000	1.89	**NJ312-E**
	130	31	177	157	26.5	5000	1.93	**NUP312-E**
	130	46	265	260	47	5000	2.83	**NJ2312-E**
	130	46	265	260	47	5000	2.88	**NUP2312-E**

Cylindrical Roller bearings With Cage
Semi-Locating & Locating Bearings
d65-85mm



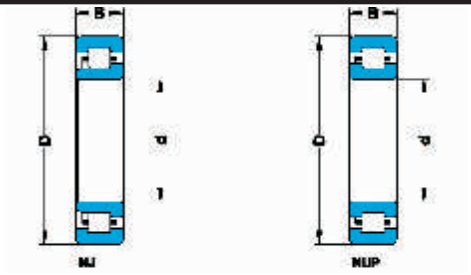
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Limiting Speed	Mass	Designation
d mm	D	B	dynamic C kN	Static C_0	P_u kN	RPM	kg	
65	120	23	127	119	198	6000	1.06	**NJ213-E**
	120	23	127	119	19.8	6000	1.09	**NUP213-E**
	120	31	176	181	32	5600	1.46	**NJ2213-E**
	120	31	176	181	32	5600	1.54	**NUP2213-E**
	140	33	214	191	32	4800	2.32	**NJ313-E**
	140	33	214	191	32	4800	2.37	**NUP313-E**
	140	48	295	285	50	4800	3.38	**NJ2313-E**
	140	48	295	285	50	4800	3.45	**NUP2313-E**
70	125	24	140	137	23.1	5300	1.18	**NJ217-E**
	125	24	140	137	23.1	5300	1.18	**NJ214-E**
	125	24	140	137	23.1	5300	1.2	**NUP214-E**
	125	31	184	194	34	5300	1.54	**NJ2214-E**
	125	31	184	194	34.	5300	1.58	**NUP2214-E**
	150	35	242	222	3.7	4500	2.84	**NJ314-E**
	150	35	242	222	37	4500	2.89	**NUP314-E**
	150	51	325	325	56	4500	4.1	**NJ2314-E**
	150	51	325	325	56	4500	4.18	**NUP2314-E**
75	130	25	154	156	26.5	5300	1.3	**NJ215-E**
	130	25	154	156	26.5	5300	1.33	**NUP215-E**
	130	31	191	207	36	5300	1.64	**NJ2215-E**
	130	31	191	207	36	5300	1.67	**NUP2215-E**
	160	37	285	265	43	4000	3.39	**NJ315-E**
	160	37	285	265	43	4000	3.45	**NUP315-E**
	160	55	390	395	67	4000	5.04	**NJ2315-E**
	160	55	390	395	67	4000	5.14	**NUP2315-E**
80	140	26	165	167	27.5	4800	1.58	**NJ216-E**
	140	26	165	167	27.5	4800	1.62	**NUP216-E**
	140	33	220	243	42	4800	2.04	**NJ2216-E**
	140	33	220	243	42	4800	2.08	**NUP2216-E**
	170	39	300	275	46	3800	4.03	**NJ316-E**
	170	39	300	275	46	3800	4.11	**NUP316-E**
	170	58	420	425	73	3800	6	**NJ2316-E**
	170	58	420	425	73	3800	6.11	**NUP2316-E**
85	150	28	194	194	31.5	4500	1.95	**NJ217-E**
	150	28	194	194	31.5	4500	2.08	**NUP217-E**
	150	36	255	275	46	4500	2.55	**NJ2217-E**
	150	36	255	275	46	4500	2.6	**NUP2217-E**
	180	41	320	300	49.5	3600	4.71	**NJ317-E**
	180	41	320	300	49.5	3600	4.8	**NUP317-E**
	180	60	435	445	75	3600	6.85	**NJ2317-E**
	180	60	435	445	75	3600	6.99	**NUP2317-E**

Cylindrical Roller bearings With Cage
Semi-Locating & Locating Bearings
d90-120mm



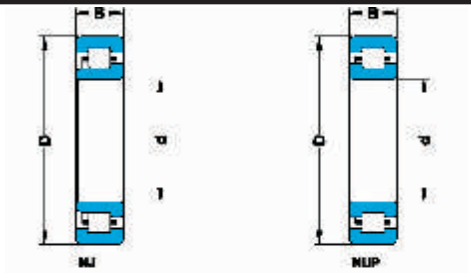
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Limiting Speed	Mass	Designation
d mm	D	B	dynamic C kN	Static C_0	P_u kN	RPM	kg	
90	160	30	215	217	35	4300	2.41	**NJ218-E**
	160	30	215	217	35	4300	2.46	**NUP218-E**
	160	40	285	315	52	4300	3.23	**NJ2218-E**
	160	40	285	315	52	4300	3.29	**NUP2218-E**
	190	43	370	350	55	3400	5.49	**NJ318-E**
	190	43	370	350	55	3400	0.559	**NUP318-E**
	190	64	510	530	86	3400	0.819	**NJ2318-E**
	190	64	510	530	86	3400	8.35	**NUP2318-E**
95	170	32	260	265	41.5	3800	2.94	**NJ219-E**
	170	32	260	265	41.5	3800	2.99	**NUP219-E**
	170	43	340	370	60	3800	3.98	**NJ2219-E**
	170	43	340	370	60	3800	4.05	**NUP2219-E**
	200	45	390	380	59	3400	6.44	**NJ319-E**
	200	45	390	380	59	3400	6.56	**NUP319-E**
	200	67	540	580	92	3400	9.58	**NJ2319-E**
	200	67	540	58	92	3400	9.77	**NUP2319-E**
100	180	34	295	305	47.5	3800	3.55	**NJ220-E**
	180	34	295	305	47.5	3800	3.61	**NUP220-E**
	180	46	395	445	72	3800	4.85	**NJ2220-E**
	180	46	395	445	72	3800	4.92	**NUP2220-E**
	215	47	450	425	65	3200	7.82	**NJ320-E**
	215	47	450	425	65	3200	7.96	**NJP320-E**
	215	73	680	720	114	3200	12.3	**NJ2320-E**
	215	73	680	720	114	3200	12.5	**NUP2320-E**
105	190	36	310	320	49	3600	4.17	**NJ221-E**
	190	36	310	320	49	3600	4.26	**NUP221-E**
110	200	38	345	365	55	3400	4.93	**NJ222-E**
	200	38	345	365	55	3400	5.02	**NUP222-E**
	200	53	455	520	81	3400	6.89	**NJ2222-E**
	200	53	455	520	81	3400	7.02	**NUP2222-E**
	240	50	495	475	73	3000	10.3	**NJ322-E**
	240	50	495	475	73	3000	10.7	**NUP322-E**
	240	80	750	800	126	2800	16.9	**NJ2322-E**
	240	80	750	800	126	2800	17.2	**NUP2322-E**
120	215	40	390	415	64	3200	5.91	**NJ224-E**
	215	40	390	415	64	3200	6.02	**NUP224-E**
	215	58	530	610	96	3200	8.54	**NJ2224-E**
	215	58	530	610	96	3200	8.7	**NUP2224-E**
	260	55	610	600	87	2800	13.5	**NJ324-E**
	260	55	610	600	87	2800	13.8	**NUP324-E**
	260	86	930	1010	153	4300	23.5	**NJ2324-E**
	260	86	930	1010	153	4300	23.8	**NUP2324-EM**

Cylindrical Roller bearings With Cage
Semi-Locating & Locating Bearings
d120-160mm



Principal Dimensions			Basic load ratings		Fatigue Load Limit	Limiting Speed	Mass	Designation
d mm	D	B	dynamic C kN	Static C_0	P_u kN	RPM	kg	
130	230	40	425	445	65	3000	6.63	**NJ226-E**
	230	40	425	445	65	3000	6.74	**NUP226-E**
	230	64	620	730	111	3000	10.6	**NJ2226-E**
	230	64	620	730	111	3000	10.8	**NUP2226-E**
	280	58	680	670	96	2600	16.5	**NJ326-E**
	280	58	680	670	96	2600	16.7	**NUP326-E**
	280	93	1080	1220	180	3800	29.2	**NJ2326-EM**
	280	93	1080	1220	180	3800	29.7	**NUP2326-EM**
140	250	42	460	510	72	4800	94.6	**NJ228-E**
	250	42	460	510	72	4800	96.1	**NUP228-EM**
	250	68	670	830	123	4500	14.7	**NJ2228-EM**
	250	68	670	830	123	4500	16.8	**NUP2228-EM**
	300	62	790	800	113	2400	20.5	**NJ328-E**
	300	62	7900	800	113	2400	20.8	**NUP328-E**
	300	102	1210	1390	202	3600	36.6	**NJ2328-EM**
	300	102	1.21	1.33	202	3600	37.1	**NUP2328-EM**
150	270	45	520	590	82	4500	119	**NJ230-EM**
	270	45	520	590	82	4500	12.1	**NUP230-EM**
	270	73	780	970	142	4300	187	**NJ2230-EM**
	270	73	780	970	142	4300	19.1	**NUP2230-EM**
	320	65	900	930	126	3600	27.2	**NJ330-EM**
	320	65	900	930	126	3600	27.7	**NUP330-EM**
	320	108	1380	1600	226	3200	43.8	**NJ2330-EM**
	320	108	1380	1600	226	3200	44.6	**NUP2330-EM**
160	290	48	590	670	93	4300	14.8	**NJ232-EM**
	290	48	590	670	93	4300	15.1	**NUP232-EM**
	290	80	940	1170	171	3800	23.9	**NJ2232-EM**
	290	80	940	1170	171	3800	24.3	**NUP2232-EM**
	340	68	865	1060	1140	3000	32.3	**NJ332-EM**
	340	114	1320	1830	204	3000	52.3	**NJ2332-EM**
170	310	52	700	780	107	3600	18.4	**NJ234-EM**
	310	52	700	780	107	3600	18.6	**NUP234-EM**
	310	86	1130	1400	198	3200	29.8	**NJ2234-EM**
	310	86	1130	1400	198	3200	30.2	**NUP2234-EM**
	360	72	965	1220	132	3000	38.6	**NJ334-EM**
	360	120	1500	2080	230	2800	62.3	**NJ2334-EM**
180	320	52	730	830	112	3600	19.2	**NJ236-EM**
	320	52	730	830	112	3600	17.3	**NUP236-EM**
	320	86	1180	1490	208	3200	30.9	**NJ2236-EM**
	320	86	1180	1490	208	3200	31.4	**NUP2236-EM**
	380	75	1040	1320	141	2800	44.6	**NJ336-EM**
	380	126	1660	2320	260	2800	72.9	**NJ2336-EM**

Cylindrical Roller bearings With Cage
Semi-Locating & Locating Bearings
d170-240mm



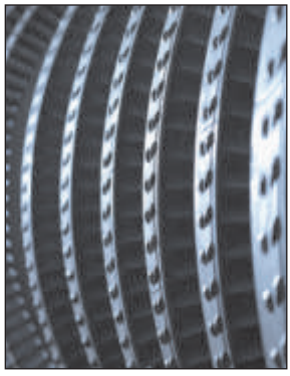
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Limiting Speed	Mass	Designation
d mm	D	B	dynamic C kN	Static C_0	P_u kN	RPM	kg	
190	340	55	680.0	930.0	100.0	3200	23.2	**NJ238-EM**
	340	55	680.0	930.0	100.0	3200	23.5	**NUP238-EM**
	340	92	1100.0	1660.0	184.0	3000	37.7	**NJ2238-EM**
	400	132	1900.0	2650.0	285.0	2600	84.4	**NJ2338-EM**
200	360	58	750.0	1040.0	110.0	3000	27.5	**NJ240-EM**
	360	58	750.0	1040.0	110.0	3000	28	**NUP240-EM**
	360	98	1220.0	1860.0	206.0	2800	45.3	**NJ2240-EM**
	420	80	1180.0	1530.0	161.0	2600	58.1	**NJ340-EM**
	420	138	2040.0	2900.0	310.0	2400	97.2	**NJ2340-EM**
220	400	65	950.0	1320.0	134.0	2800	38.7	**NJ244-EM**
	400	65	950.0	1320.0	134.0	2800	39.3	**NUP244-EM**
	400	108	1630.0	2360.0	250.0	2600	63.4	**NUP2244-EM**
	460	145	2360.0	3350.0	340.0	2200	124	**NUP2344-EM**
240	440	72	1140.0	1600.0	163.0	2600	52.5	**NJ248-EM**
	500	95	1730.0	2280.0	221.0	2200	97	**NJ348-EM**

STEEL PLANT

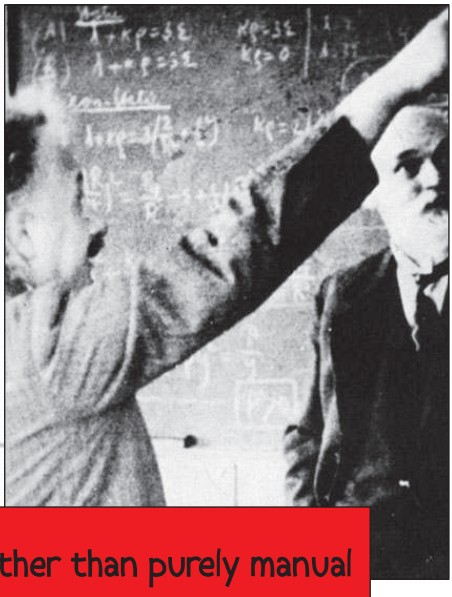
NEXT GENERATION

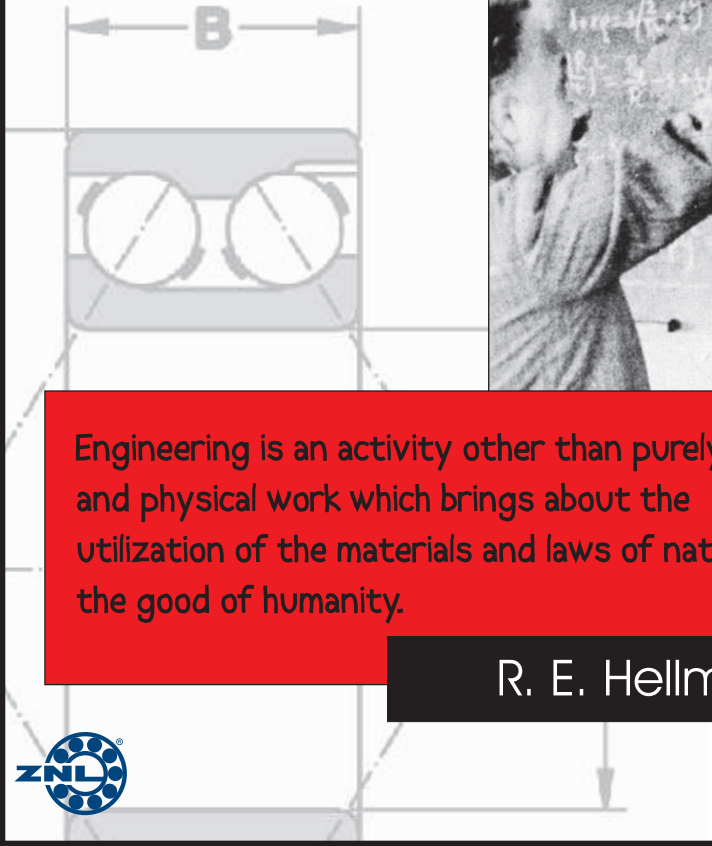


THE COMMITMENT TO QUALITY...
THE COMMITMENT TO GROWTH...
Precision Bearings Pvt. Ltd.



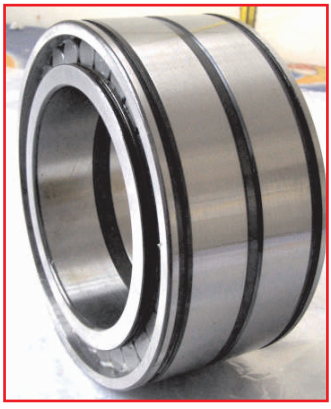




Engineering is an activity other than purely manual and physical work which brings about the utilization of the materials and laws of nature for the good of humanity.

R. E. Hellmund



Full Compliment Cylindrical

Roller Bearings



FULL COMPLEMENT CYLINDRICAL ROLLER BEARING

Full complement bearing are suitable for heavy radial load.
This bearing contains solid outer and inner rings and rib gui ded cylindrical rollers.
These bearings have Extremely high radial load carrying capacity.
These bearings available as locating, semi-locating and non-locating as well as single and double row design.
Compare to single row, double row cylindrical roller be arings are applicable for higher speed & greater auracy. (in special application)
The outer ring without rib can be axially displaced in both directions relative to inner ring.
These bearings have lubrication groove and lubricating holes in outer ring.
These bearing can carry axial load in uni and bi-direction in addition to radial load.

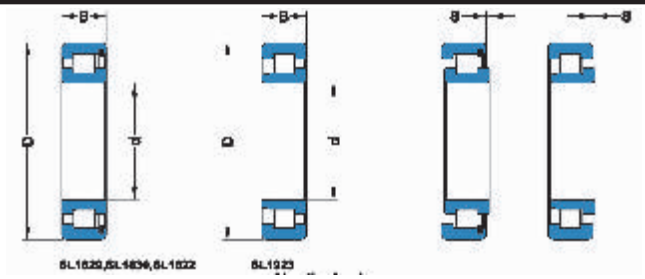
WITH SNAP RING GROOVES.

These bearing contains solid outer and inner ring with ribs, rib guided cylindrical roller and sealing rings.
The outer rings have grooves for retaining rings. Inner rings areAxial split, 1 mm wider than outer ring and held together by rolled in steel strip.
These bearings can carry axial load in both direction as well as redial load

Redial Internal Clearance

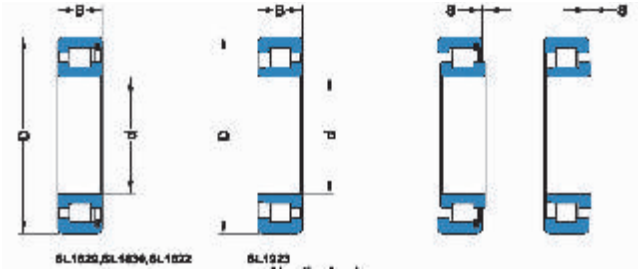
Bore		Radial Internal Clearance (Micron)							
d		CN		C3		C4		C5	
Over	Incl.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
mm		Micron							
-	24	20	45	35	60	50	75	65	**90**
24	30	20	45	35	60	50	75	70	**95**
30	40	25	50	45	70	60	85	80	**105**
40	50	30	60	50	80	70	100	95	**125**
50	65	40	70	60	90	80	110	110	**140**
65	80	40	75	65	100	90	125	130	**165**
80	100	50	85	75	110	105	140	155	**190**
100	120	50	90	85	125	125	165	180	**220**
120	140	60	105	100	145	145	190	200	**245**
140	160	70	120	115	165	165	215	225	**275**
160	180	75	125	120	170	170	220	250	**300**
180	200	90	145	140	195	195	250	275	**330**
200	225	105	165	160	220	220	280	305	**365**
225	250	110	175	170	235	235	300	330	**395**
250	280	125	195	190	260	260	330	370	**440**

Cylindrical Roller bearings Full Compliment,Single Row Semi-Locating Bearings
d20-75mm



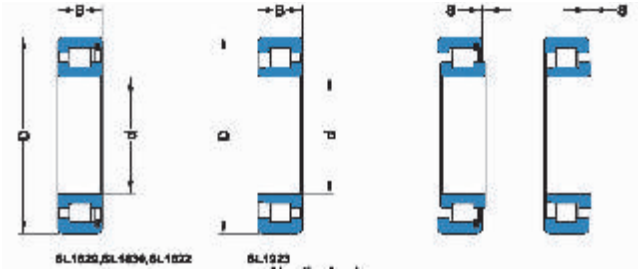
Principal Dimensions			Basic load ratings		Fatigue Load Limit	Limiting Speed	Mass	Designation
d mm	D	B	dynamic C kN	Static C_0	P_u kN	RPM	kg	
20	42	16	30.5	26.5	4.45	10500	0.11	**SL183004**
	47	18	45.5	37.5	6.1	9700	0.16	**SL182204**
25	47	16	35	32.5	5.5	9000	0.12	**SL183005**
	52	18	51	45	7.4	8400	0.18	**SL182205**
	62	24	73	60	9.4	7400	0.37	**SL192305**
30	55	19	45	43	7.5	7600	0.2	**SL183006**
	62	20	70	65	10.2	7000	0.3	**SL182206**
	72	27	100	88	14.5	6400	0.56	**SL192306**
35	62	20	55	55	9.4	6700	0.26	**SL183007**
	72	23	88	79	12.7	6100	0.44	**SL182207**
	80	31	126	112	19.0	5600	0.74	**SL192307**
40	68	21	66	68	11.2	6000	0.31	**SL183008**
	80	23	97	93	14.9	5400	0.55	**SL182208**
	90	33	170	156	27	5000	1.01	**SL192308**
45	75	23	70	76	12.5	5400	0.4	**SL183009**
	85	23	101	99	16	5000	0.59	**SL182209**
	100	36	181	169	30	4450	1.37	**SL192309**
50	80	23	70	76	12.5	5400	0.43	**SL183010**
	90	23	109	113	18.1	4650	0.64	**SL182210**
	110	40	232	219	38.5	4050	1.81	**SL192310**
55	90	26	120	136	22.6	4450	0.64	**SL183011**
	100	25	140	150	25	4200	0.87	**SL182211**
	120	43	270	255	45.5	3700	2.28	**SL192311**
60	85	16	63	78	13.7	4450	0.29	**SL182912**
	95	26	123	145	23.7	4200	0.69	**SL183012**
	110	28	169	180	31	1800	1.18	**SL182212**
	130	46	285	280	50	3400	2.88	**SL192312**
	90	16	67	86	15.1	4200	0.31	**SL182913**
	100	26	130	159	26	3950	0.73	**SL183013**
65	120	31	198	214	37.0	3500	0.157	**SL182213**
	140	48	350	355	63.0	3150	3.52	**SL192313**
70	100	19	88	114	18.8	3800	0.49	**SL182914**
	110	30	153	176	29.5	3600	1.02	**SL183014**
	125	31	184	227	32.0	3300	1.66	**SL182214**
	150	51	385	390	69.0	2950	4.33	**SL192314**
75	105	19	91	121	20.1	3600	0.52	**SL182915**
	115	30	162	194	32.5	3400	1.06	**SL183015**
	130	31	190	241	33.5	3150	1.75	**SL182215**
	160	55	460	465	83	2750	5.3	**SL192315**

Cylindrical Roller bearings Full Compliment,Single Row Semi-Locating Bearings
d80-160mm



Principal Dimensions			Basic load ratings		Fatigue Load Limit	Limiting Speed	Mass	Designation
d mm	D	B	dynamic C kN	Static C_0	P_u kN	RPM	kg	
80	110	19	94	129	21.4	3400	0.55	**SL182916**
	125	34	173	225	31	3150	1.43	**SL183016**
	140	33	226	285	38.5	2950	2.15	**SL182216**
	170	58	540	560	96	2600	6.32	**SL192316**
85	120	22	118	162	25.5	3150	0.81	**SL182917**
	130	34	178	237	3.2	3000	1.51	**SL183017**
	150	36	255	325	44.5	2750	2.74	**SL182217**
	180	60	570	620	103	2450	7.34	**SL192317**
90	125	22	122	172	26.5	3000	0.84	**SL182918**
	140	37	208	280	38	2800	1.97	**SL183018**
	160	40	290	370	51	2600	3.48	**SL182218**
	190	64	620	660	112	2310	8.83	**SL192318**
95	130	22	132	179	27.5	2900	0.86	**SL182919**
	170	43	340	435	58	2450	4.17	**SL182219**
	200	67	650	720	120	2200	10.2	**SL192319**
100	140	24	152	206	31.5	2700	1.14	**SL182920**
	150	37	219	31	40.5	2600	2.15	**SL183020**
	180	46	395	520	70	2310	5.13	**SL182220**
	215	73	790	86	143	2060	13	**SL192320**
110	150	24	155	220	34	2490	1.23	**SL182922**
	170	45	285	395	52	2310	3.5	**SL183022**
	200	53	455	590	78	2090	7.24	**SL182222**
	240	80	950	980	156	1850	17	**SL192322**
120	165	27	199	295	45.5	2270	1.73	**SL182924**
	180	46	30	435	56	2160	3.8	**SL183024**
	215	58	540	730	95	1930	9.08	**SL182224**
	260	86	1130	1240	195	1710	22.3	**SL192324**
130	180	30	238	355	54	2090	2.33	**SL182926**
	200	52	435	620	79	1960	5.65	**SL183026**
	230	64	630	860	110.0	1800	11.25	**SL182226**
140	190	30	260	385	57	1960	2.42	**SL182928**
	210	53	455	680	85	1850	6.04	**SL183028**
	250	68	720	1020	127	1660	14.47	**SL182228**
150	210	36	340	490	73	1800	3.77	**SL182930**
	225	56	480	710	88	1730	7.33	**SL183030**
	270	73	830	1180	146	1540	18.43	**SL182230**
	220	36	350	520	77	1710	4	**SL182932**
160	240	60	550	820	99	1620	8.8	**SL183032**
	290	80	1030	1490	178	1440	23	**SL182232**

Cylindrical Roller bearings Full Compliment,Single Row Semi-Locating Bearings
d170-280mm



Principal Dimensions			Basic load ratings		Fatigue Load Limit	Limiting Speed	Mass	Designation
d mm	D	B	dynamic C kN	Static C_0	P_u kN	RPM	kg	
170	230	36	365	560	80	1620	4.3	**SL182934**
	260	67	710	1070	129	1510	12.2	**SL183034**
	310	86	1150	1680	199	1350	28.65	**SL182234**
180	250	42	455	690	100	1510	6.2	**SL182936**
	280	74	820	1260	149	1410	16.1	**SL183036**
	320	86	1190	1780	204	1300	29.8	**SL182236**
190	260	42	510	790	112	1440	6.5	**SL182938**
	290	75	840	1320	155	1350	17	**SL183038**
	340	92	1310	1920	223	1220	35.65	**SL182238**
200	250	24	183	330	33.5	1440	2.57	**SL181840**
	280	48	610	960	134	1350	9.1	**SL182940**
	310	82	960	1530	178	1270	21.8	**SL183040**
	360	98	1420	2040	235	1160	43.12	**SL182240**
220	270	24	192	365	36	1320	2.8	**SL181844**
	300	48	650	1050	144	1250	9.9	**SL182944**
	340	90	1160	1840	209	1160	28.4	**SL183044**
240	300	28	265	490	51	1200	4.29	**SL181848**
	320	48	610	1140	124	1160	10.6	**SL182948**
	360	92	1220	2010	224	1080	30.9	**SL183048**
260	320	28	275	530	54	1120	4.61	**SL181852**
	360	60	790	1470	160	1050	18.5	**SL182952**
	400	104	1620	2550	280	980	44.5	**SL183052**
280	350	33	355	670	69	1030	6.89	**SL181856**
	380	60	920	1740	184	980	19.7	**SL182956**
	420	106	1670	2700	290	930	48	**SL183056**

Cylindrical roller bearings Full complement, sealed
Double Row
d20-300mm



Principal Dimensions			Basic Load Rating		Fatigue Limit Load	Limiting Speed	Mass	Designation
d	D	B	Dynamic C	Static Co	Pu	RPM		
mm			kN	kN			Kg.	
20	42	30	40.5	49.0	6.9	4000	0.2	**SL045004-PP**
25	47	30	44.5	58.0	8.1	3600	0.24	**SL045005-PP**
30	55	34	50.0	67.0	9.5	3000	0.37	**SL045006-PP**
35	62	36	63.0	88.0	12.4	2600	0.48	**SL045007-PP**
40	68	38	76.00	103.0	16.0	2400	0.56	**SL045008-PP**
45	75	40	92.0	130.0	19.9	2200	0.7	**SL045009-PP**
50	80	40	97.0	142.0	21.7	2000	0.76	**SL045010-PP**
55	90	46	115.0	175.0	25.5	1800	1.18	**SL045011-PP**
60	95	46	120.0	189.0	27.5	1700	1.26	**SL045012-PP**
65	100	46	125.0	203.0	29.5	1600	1.33	**SL045013-PP**
70	110	54	168.0	265.0	36.0	1400	1.87	**SL045014-PP**
75	115	54	194.0	300.0	42.0	1400	1.96	**SL045015-PP**
80	125	60	203.0	325.0	45.0	1300	2.71	**SL045016-PP**
85	130	60	211.0	350.0	47.5	1200	2.83	**SL045017-PP**
90	140	67	305.0	510.0	69.0	1100	3.71	**SL045018-PP**
95	145	67	315.0	530.0	71.0	1100	3.88	**SL045019-PP**
100	150	67	330.0	550.0	73.0	1000	3.95	**SL045020-PP**
110	170	80	395.00	680.0	89.0	900	6.57	**SL045022-PP**
120	180	80	410.0	740.0	94.0	900	7.04	**SL045024-PP**
130	200	95	540.0	960.0	122.0	800	10.5	**SL045026-PP**
130	190	80	430.0	790.0	99.0	800	7.5	**SL04130-PP**
140	210	95	610.0	1100..0	139.0	750	11.1	**SL045028-PP**
140	200	80	445.0	840.0	104.0	750	8	**SL04140-PP**
150	225	100	710.0	1260.0	156.0	700	13.3	**SL045030-PP**
150	210	80	465.0	920.0	111 .0	700	8.4	**SL04150-PP**
160	240	109	740.0	1360.0	165.0	650	16.6	**SL045032-PP**
160	220	80	480.0	970.0	116.0	700	88	**SL04160-PP**
170	260	122	960.0	1750.0	212.0	600	22.6	**SL045034-PP**
170	230	80	490.0	1030.0	120.0	650	9.3	**SL04170-PP**
180	280	136	1140.0	2130.0	255.0	550	30.1	**SL045036-PP**
180	240	80	500.0	1080.0	125.0	600	9.8	**SL04180-PP**
190	290	136	1160.0	2210.0	260.0	550	31.5	**SL045038-PP**
190	260	80	520.0	1130.0	131.0	550	12.7	**SL04190-PP**
200	310	150	1350.0	2600.0	300.0	500	40.8	**SL045040-PP**
200	270	80	540.0	1210.0	136.0	550	13.2	**SL04200-PP**
220	340	160	1570.0	3050.0	350.0	480	52.5	**SL045044-PP**
220	300	95	700.0	1550.0	174.0	480	19.5	**SL04220-PP**
240	360	160	1630.0	3300.0	370.0	440	56	**SL045048-PP**
240	320	95	740.0	1700.0	186.0	480	21	**SL04240-PP**
260	400	190	2380.0	4700.0	520.0	400	84.5	**SL045052-PP**
260	340	95	840.0	1990.0	215.0	440	22.5	**SL04260-PP**
280	420	190	2600.0	5200.0	570.0	380	90	**SL045056-PP**
300	460	218	3000.0	5800.0	620.0	340	126	**SL045060-PP**
300	380	95	900.0	2250.0	234.0	380	25.5	**SL04300-PP**

Cylindrical roller bearings
NU 52XX Series



Designation	Bore	OD	Width	Load Rating kN	
	d	D	W	Dynamic	Static
NU 5204	20	47	20.638	33	**34.5**
NU 5205	25	52	20.638	38.5	**43.5**
NU 5206	30	62	23.9875	55.5	**63**
NU 5207	35	72	26.1625	87	**79.5**
NU 5208	40	80	30.1625	87	**106**
NU 5209	45	85	30.1625	64.5	**122**
NU 5210	50	90	30.1625	94	**125**
NU 5211	55	100	33.3375	114	**155**
NU 5212	60	110	36. 5125	148	**196**
NU 5213	65	120	38.1	153	**211**
NU 5214	70	125	39.6875	170	**235**
NU 5215	75	130	41.275	191	**178**
NU 5216	80	140	44.45	207	**294**
NU 5217	85	150	49.2125	246	**350**
NU 5218	90	160	52.3875	290	**420**
NU 5219	95	170	55.5625	320	**460**
NU 5220	100	180	60.325	370	**540**
NU 5221	105	190	65.0875		
NU 5222	110	200	69.85.	420	**620**
NU 5224	120	215	76.2	570	**905**
NU 5226	130	230	79.375	515	**775**
NU 5228	140	250	82.55		
NU 5230	150	270	88.9	825	**1300**
NU 5232	160	290	98.425		
NU 5234	170	310	104.775		
NU 5236	180	320	107.95		
NU 5238	190	340	114.3		
NU 5240	200	360	120.65		
NU 5242	210	380	127		
NU 5244	220	400	133.35		
NU 5246	230	420	139.7		
NU 5248	240	440	146.05		
NU 5250	250	460	152.4		
NU 5252	260	480	158.75		
NU 5256	280	500	165.1		
NU 5260	300	540	177.8		

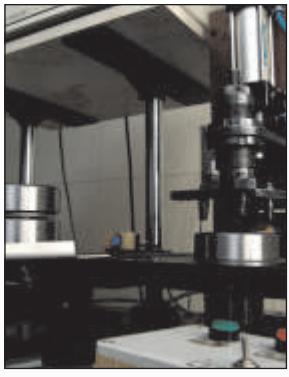
RAILWAY INDUSTRIES

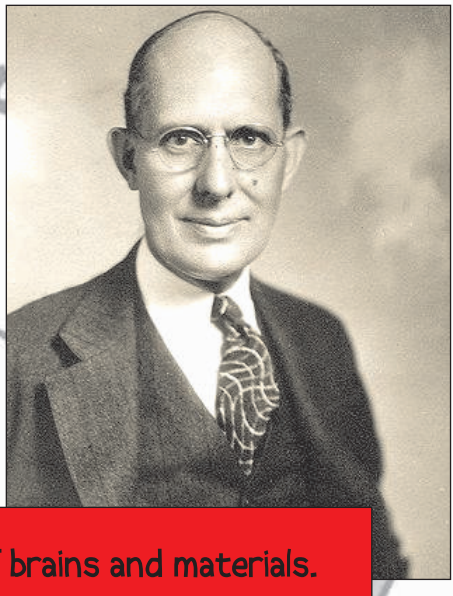
NEXT GENERATION



THE COMMITMENT TO QUALITY...
THE COMMITMENT TO GROWTH...
Precision Bearings Pvt. Ltd.





"Inventing is the mixing of brains and materials. The more brains you use, the less materials you need."

Charles F. Kettering



TAPER
Roller Bearings



TAPER ROLLER BEARING

Taper roller bearings contain tapered inner and outer ring raceways, between there tapered roller are assembled.
Projection lines of all tapered surface get connect at common point on axis of bearing.
Tapper roller bearings are suitable, where combined radial and axial loads are acting.

Axial load carrying capacity of bearing depends on contact angle á, as angle increase, axial load carrying capacity also increase.
Taper roller bearings are separable type i.e. cone (inner ring with roller and cage assembly) and cup (outer ring).

i) Single row tapper roller bearings and also with seal on one side.
ii) Paired single row tapper roller bearings. (double row and four row bearings)
iii) Also, inch size and metric size of bearings.

Series Available

302XX	303XX	313XX	329XX
320XX	322XX	331XX	
323XX	330XX	332XX	

ALSO IN COMPLETE INCH SERIES

H, HL, HM, T4CB, JM, JL, LM, HH and Various.

For metric size steep angle and medium angle tapered roller bearings, the respective contact angle symbol is added After the bore number. For normal angle tapered roller bearings no contact angle symbol is used. Medium angle tapered roller bearings are primarily used for the pinion shaft of differential gears of automobiles.

The cages of tapered roller bearings are usually steel cage

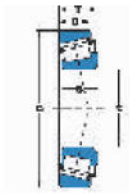
Permissible Mis alignment.

The permissible misalignment angle for tapered roller bearings is approximately 0.0009a radian (3')

Precautions for use of Taper Roller Bearings.

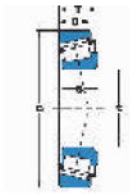
If the load on tapered roller bearings become too small or the ratio of the radial & axial loads for matched bearings exceeds during operation, slippage between the roller and race ways occurs, which may result in smearing especially in large bearings where the weight of roller and cage is high.
-At the time of adoption as he series. Please confirm the "abutment and filler dimensions",
-Bearing Feature:
●Both inner and outer rings and roller have Tapered surface whose apexes converge at a common point on the bearing axis.
●Designed to support large radial and direction thrust load, well suited for heavy duty machinery subjected to impect loads.
●Separable inner and outer rings simply mounting and dismounting.
●Usually two bearing are arranged back to back or face to face on one shaft. They may also be used in pairs with clearance.

Taper Roller Bearing(Metric)
Single Row
d15-40mm



Principal Dimension					Basic Load Rating		Fatigue	Speed Rating		Mass	Designation
					Dynamic	Static	Load Limit	Reference Speed	Limiting Speed		
d	D	T	B	C	C	Co	Pu	Grease	Oil		
mm					kN		kN	RPM		kg	
15	42	14,25	13	11	22,4	20	2,08	13000	18000	0,095	**30302**
17	40	13,25	12	11	19	18,6	1,83	13000	18000	0,075	**30203**
	47	15,25	14	12	28,1	25	2,75	12000	16000	0,13	**30303**
	47	20,25	19	16	40	33,5	3,65	12000	16000	0,17	**32303**
20	42	15	15	12	28	27	2,7	13000	16000	0,097	**32004X**
	47	15,25	14	12	32	28	3	12000	15000	0,12	**30204**
	52	16,25	15	13	39	32,5	3,6	12000	14000	0,17	**30304**
	52	22,25	21	18	51	45,5	5	12000	14000	0,23	**32304**
22	44	15	15	11,5	25,1	29	2,85	11000	15000	0,10	**320/22X**
25	47	15	15	11,5	31	32,5	3,25	12000	14000	0,11	**32005 X**
	52	16,25	15	13	35,5	33,5	3,45	11000	13000	0,15	**30205**
	52	19,25	18	15	41,5	44	4,65	10000	13000	0,19	**32205**
	52	22	22	18	54	56	6	10000	13000	0,23	**33205**
	62	18,25	17	15	44,6	43	4,75	9000	12000	0,26	**30305**
	62	18,25	17	13	38	40	4,4	7500	11000	0,26	**31305**
	62	25,25	24	20	60,5	63	7,1	8000	12000	0,36	**32305**
28	52	16	16	12	36,5	38	4	10000	13000	0,15	**320/28X**
30	55	17	17	13	40,5	44	4,55	10000	12000	0,17	**32006X**
	62	17,25	16	14	46,5	44	4,8	9000	11000	0,23	**30206**
	62	21,25	20	17	58,5	57	6,3	9000	11000	0,28	**32206**
	72	20.75	19	16	56,1	56	3.65	5600	7500	0.39	**30306**
35	62	18	18	14	49	54	5,85	8500	11000	0,22	**32007X**
	72	18,25	17	15	58,5	56	6,1	8000	9500	0,32	**30207**
	72	24,25	23	19	76,5	78	8,5	8000	9500	0,43	**32207**
	72	28	28	22	96,5	106	11,8	7000	9500	0,56	**33207**
	80	22,75	21	18	83	73,5	8,3	7500	9000	0,52	**30307**
	80	22,75	21	15	71	67	7,8	6300	8500	0,52	**31307**
	80	32,75	31	25	95,2	106	12,2	6700	9000	0,73	**32307**
38	63	17	17	13,5	42,5	52	5,4	8500	11000	0,20	**JL69349A/310**
	63	17	17	13,5	42,5	52	5,4	8500	11000	0,20	**JL69349X/310**
	68	19	19	14,5	60	71	7,65	7500	10000	0,27	**32008/38X**
40	68	19	19	14,5	60	71	7,65	7500	9500	0,27	**32008X**
	75	26	26	20,5	91,5	104	11,4	7000	9000	0,51	**33108**
	80	19,75	18	16	71	68	7,65	7000	8500	0,42	**30208**
	80	24,75	23	19	85	86,5	9,8	7000	8500	0,53	**32208**
	80	32	32	25	120	132	15	6300	8500	0,77	**33208**
	85	33	32,5	28	121	150	17,3	6000	9000	0,90	**T2EE040**
	90	25,25	23	20	100	95	10,8	6300	8000	0,72	**30308**
	90	25,25	23	17	85	81,5	9,5	5600	7500	0,72	**31308**
	90	35,25	33	27	117	140	16	5300	8000	1,00	**32308**

Taper Roller Bearing(Metric)
Single Row
d45-60mm



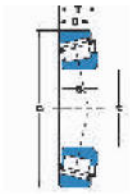
d mm	D	T	B	C	Basic Load Rating Dynamic C kN	Basic Load Rating Static Co kN	Fatigue Load Limit Pu kN	Speed Rating Reference Speed Grease RPM	Speed Rating Limiting Speed Oil RPM	Mass kg	Designation
45	75	20	20	15,5	67	80	8,8	7000	8500	0,34	**32009X**
	80	26	26	20,5	96,5	114	12,9	6700	8000	0,56	**33109/**
	85	20,75	19	16	76,5	76,5	8,65	6300	8000	0,48	**30209**
	85	24,75	23	19	91,5	98	11	6300	8000	0,58	**32209**
	85	32	32	25	108	143	16,3	5300	7500	0,82	**33209**
	95	29	26,5	20	104	112	12,7	5300	7000	0,92	**T7FC 045**
	95	36	35	30	106	146	16,6	5300	8000	1,20	**T2ED 045**
	100	27,25	25	22	125	120	14,3	5600	7000	0,97	**30309**
	100	27,25	25	18	106	102	12,5	5000	6700	0,95	**31309**
	100	38,25	36	30	140	174	20,4	4800	7000	1,35	**32309**
46	75	18	18	14	58,5	71	7.65	7000	9500	0,30	**LM 503349/310**
50	80	20	20	15,5	69,5	88	9.65	6300	8000	0,37	**3201OX**
	80	24	24	19	80	102	11,4	6300	8000	0,45	**33010**
	82	21.5	21,5	17	83	100	11	6300	8500	0,43	**JLM 104948**
	85	26	26	20	100	122	13,4	6000	7500	0,59	**33110**
	90	21,75	20	17	86,5	91,5	10,4	6000	7500	0,54	**30210**
	90	24,75	23	19	95	100	11,4	6000	7500	0,61	**32210**
	90	28	28	23	122	140	16	6000	8000	0,75	**JM 2015149/110**
	90	32	32	24,5	114	160	18,3	5000	7000	0,90	**33210**
	100	36	35	30	154	200	22,4	5000	7500	1,30	**T2ED 050**
	105	32	29	22	125	137	16	4800	6300	1,20	**T7FC 050**
	110	29,25	27	23	143	144	16,6	5300	6300	1,25	**30310**
	110	29,25	27	19	122	120	14,3	4500	6000	1,30	**31310**
	110	42,25	40	33	172	212	24	4300	6300	1,80	**32310**
55	90	23	23	17,5	93	116	12,9	5600	7000	0,55	**32011**
	90	27	27	21	104	137	15,3	5600	7000	0,67	**33011**
	95	30	30	23	110	156	17,6	5000	6700	0,86	**33111**
	100	22,75	21	18	104	106	12	5300	6700	0,70	**30211**
	100	26,75	25	21	106	129	15	5000	6700	0,83	**32211**
	100	35	35	27	138	190	21,6	4500	6300	1,20	**33211**
	110	39	39	32	179	232	26	4500	6700	1,70	**T2ED 055**
	115	34	31	23,5	146	163	19,3	4300	5600	1,60	**T7FC 055**
	120	31,5	29	25	166	163	19,3	4800	5600	1,65	**30311**
	120	31,5	29	21	140	137	16,6	4300	5600	1,55	**31311**
	120	45,5	43	35	198	250	28,5	4000	5600	2,30	**32311**
60	95	23	23	17,5	95	122	13,4	5300	6700	0,59	**32012X**
	95	24	24	19	96,5	132	15	5300	7000	0,63	**JLM 508748/710**
	95	27	27	21	106	143	16	5300	6700	0,71	**33012**
	100	30	30	23	134	170	19,6	5300	6300	0,92	**33112**
	110	23,75	22	19	112	114	13,2	5000	6000	0,88	**30212**
	110	29,75	28	24	146	160	18,6	5000	6000	1,15	**32212**
	110	38	38	29	168	236	26,5	4000	6000	1,60	**33212**
	115	40	39	33	194	260	30	4300	6300	1,85	**T2EE 060**
	125	37	33.5	26	176	204	24,5	4000	5300	2,05	**T7FC060**
	130	33,5	31	26	168	196	23,6	4000	5300	1,95	**30312**
	130	33,5	31	22	166	166	20,4	3800	5300	1,90	**31312**
	130	48,5	46	37	229	290	34	3600	5300	2,85	**32312**

Taper Roller Bearing(Metric)
Single Row
d65-80mm



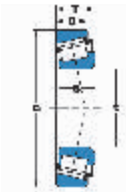
d	D	T	B	C	Basic Load Rating Dynamic C	Basic Load Rating Static Co	Fatigue Load Limit Pu	Speed Rating Reference Speed Grease	Speed Rating Limiting Speed **Oil**	Mass	Designation
mm					kN		kN	RPM		kg	
65	100	23	23	17,5	96,5	127	14	5000	6000	0,63	**32013X**
	100	27	27	21	110	153	17,3	5000	6300	0,78	**33013**
	110	28	28	22,5	143	283	21,2	4800	6300	1,05	**JM 511946/910**
	110	31	31	25	138	193	22,4	4300	6300	1,15	**T2DD 065**
	110	34	34	26,5	142	208	24	4300	5600	1,30	**33113**
	120	24,75	23	20	132	134	16,3	4500	5600	1,15	**30213**
	120	32,75	31	27	158	218	22,8	4000	5600	1,50	**32213**
	120	41	41	32	194	270	30,5	3800	5300	2,05	**33213**
	130	37	33,5	26	180	216	25,5	3800	5000	2,20	**T7FC 065**
	140	36	33	28	194	228	27,5	3600	4800	2,40	**30313**
	140	36	33	23	190	193	23,6	3600	4800	2,35	**31313**
	140	51	48	39	264	335	40	3400	4800	3,45	**32313**
70	110	25	25	19	116	153	17,3	4500	5600	0,84	**32014 X**
	110	31	31	25,5	130	196	22,8	4300	5600	1,10	**33014**
	120	37	37	29	172	250	30	4000	5300	1,70	**33114**
	125	26,25	24	21	125	156	18	4000	5300	1,25	**30214**
	125	33,25	31	27	157	208	24,5	3800	5300	1,60	**32214**
	125	41	41	32	201	285	32,5	3600	5000	2,10	**33214**
	130	43	42	35	233	325	38	3800	5600	2,45	**T2ED 070**
	140	39	35,5	27	204	240	27,5	3400	4500	2,65	**T7FC 070**
	150	38	35	30	220	260	34	3400	4500	2,90	**30314**
	150	38	35	25	216	220	27	3400	4500	2,95	**31314**
	150	54	51	42	297	380	45	3200	4500	4,30	**32314**
75	105	20	20	16	81,5	116	13,2	4800	6300	0,52	**32915**
	115	25	25	19	122	163	18,6	4300	5300	0,90	**32015**
	115	31	31	25,5	134	228	26	4000	5300	1,15	**33015**
	120	31	29,5	25	160	216	25	4300	5600	1,30	**JM714249/210**
	125	37	37	29	176	265	31,5	3800	5000	1,80	**33115**
	130	27,25	25	22	140	176	20,4	3800	5000	1,40	**30215**
	130	33,25	31	27	161	212	24,5	3600	5000	1,70	**32215**
	130	41	41	31	209	300	34	3400	4800	2,25	**33215**
	150	42	38	29	232	280	31	3200	4300	3,25	**T7FC 075**
	160	40	37	31	246	290	34	3200	4300	3,45	**30315**
	160	40	37	26	240	245	29	3200	4300	3,50	**31315**
	160	58	55	45	336	440	51	3000	4300	5,20	**32315**
80	125	29	29	22	138	216	24,5	3600	5000	1,30	**32016X**
	125	36	36	29,5	168	285	32	3600	5000	1,65	**33016**
	130	35	38	31,5	176	275	32,5	3600	5300	1,70	**JM 515649/610**
	130	37	37	29	179	280	32,5	3600	4800	1,90	**33116**
	140	28,25	26	22	151	183	21,2	3400	4800	1,60	**30216**
	140	35,25	33	28	187	245	28,5	3400	4500	2,05	**32216**
	140	46	46	35	251	375	41,5	3200	4500	2,90	**33216**
	160	45	41	31	260	315	35,5	3000	4000	3,95	**T7FC 080**
	170	42.5	39	33	270	320	38	3000	4300	4,10	**30316**
	170	42.5	39	27	260	265	32	3000	4000	4,05	**31316**
	170	61.5	58	48	380	500	57	3000	4300	6,20	**32316**

Taper Roller Bearing(Metric)
Single Row
d85-105mm



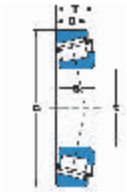
d	Principal Dimension D	T	B	C	Basic Load Rating Dynamic C	Static Co	Fatigue Load Limit Pu	Speed Rating Reference Speed Grease	Limiting Speed Oil	Mass	Designation
mm					kN		kN	RPM		kg	
85	130	29	29	22	140	224	25,5	3400	4800	1,35	**32017**
	130	36	36	29,5	183	310	34,5	3600	4800	1,75	**33017**
	140	41	41	32	220	340	38	3400	4500	2,45	**33117**
	150	30,5	28	24	176	220	25,5	3200	4300	2,05	**30217**
	150	38,5	36	30	212	285	33,5	3200	4300	2,60	**32217**
	150	49	49	37	286	430	48	3000	4300	3,70	**33217**
	180	44,5	41	34	303	365	40,5	2800	4000	4,85	**30317**
	180	44,5	41	28	242	285	33,5	2600	3800	4,60	**31317**
	180	63,5	60	49	402	530	60	2800	4000	6,85	**32317**
90	140	32	32	24	168	270	31	3200	4300	1,75	**32018**
	140	39	39	32,5	216	355	39	3200	4500	2,20	**33018**
	145	35	34	27	201	305	35,5	3200	4800	2,10	**JM 718149 A/110**
	150	45	45	35	251	390	43	3000	4300	3,10	**33118**
	150	45	45	35	251	390	43	3000	4300	3,10	**33118**
	160	32,5	30	26	194	245	28,5	3000	4000	2,55	**30218**
	160	42,5	40	34	251	340	38	3000	4000	3,35	**32218**
	190	46,5	43	36	330	400	44	2600	4000	5,65	**30318**
	190	46,5	43	30	264	315	36,5	2500	3400	5,90	**31318**
	190	67,5	64	53	457	610	67	2600	4000	8,40	**32318**
95	145	32	32	24	168	270	30,5	3200	4300	1,80	**32019**
	145	39	39	32,5	220	375	40,5	3200	4300	2,30	**33019**
	170	34,5	32	27	216	275	31,5	2800	3800	3,00	**30219**
	170	45,5	43	37	281	390	43	2800	3800	4,05	**32219**
	170	58	58	44	374	560	62	2600	3800	5,50	**33219**
	200	49,5	45	38	330	390	42,5	2600	3400	6,70	**30319**
	200	49,5	45	32	292	355	39	2400	3400	6,95	**31319**
	200	71,5	67	55	501	670	72	2400	3400	1,10	**32319**
100	140	25	25	20	119	204	22,4	3200	4800	1,15	**32920**
	145	24	22,5	17,5	125	190	20,8	3200	4500	1,15	**T4CB 100**
	150	32	32	24	172	280	31	3000	4000	1,90	**32020X**
	150	39	39	32,5	224	390	41,5	3000	4000	2,40	**33020/**
	157	42	42	34	246	400	42,5	3000	4300	2,90	**HM 220149/110**
	165	47	46	39	314	480	53	2800	4300	3,90	**JHM720249/210**
	165	47	46	39	314	480	53	2800	4300	3,90	**T2EE 100**
	180	37	34	29	246	320	36	2800	3600	3,65	**30220**
	180	49	46	39	319	440	48	2600	3600	4,90	**32220**
	180	63	63	48	429	655	71	2400	3600	6,95	**33220**
	215	51,5	47	39	402	490	53	2400	3200	8,05	**30320**
	215	56,5	51	35	430	465	51	2400	3000	8,60	**31320**
	215	77,5	73	60	572	780	83	2200	3000	12,5	**32320**
105	160	35	35	26	201	335	37,5	2800	3800	2,40	**32021X**
	160	43	43	34	246	430	45,5	2800	3800	3,05	**33021**
	190	39	36	30	270	355	40	2600	3400	4,25	**30221**
	190	53	50	43	358	510	55	2600	3400	6,00	**32221**
	225	81,5	77	63	605	815	85	2000	3000	14.5	**32321**

Taper Roller Bearing(Metric)
Single Row
d110-170mm



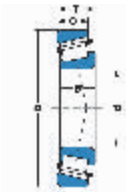
Principal Dimension					Basic Load Rating		Fatigue	Speed Rating		Mass	Designation
					Dynamic	Static	Load Limit	Reference Speed	Limiting Speed		
d	D	T	B	C	C	Co	Pu	Grease	Oil		
mm					kN		kN	RPM		kg	
110	150	25	25	20	125	224	24	3000	4300	1,25	**32922**
	170	38	38	29	233	390	42,5	2600	3600	3,05	**32022X**
	170	47	47	37	281	500	53	2600	3600	3,85	**33022**
	180	56	56	43	369	630	67	2600	3400	5,55	**33122**
	200	41	38	32	308	405	45	2400	3200	5,10	**30222**
	200	56	53	46	402	570	61	2400	3200	7,10	**32222**
	240	54,5	50	42	473	585	62	2200	2800	11,0	**30322**
	240	63	57	38	457	585	62	1900	2800	12,0	**31322X**
	240	84,5	80	65	627	830	86,5	1900	2800	17,0	**32322**
120	165	29	29	23	165	305	32	2600	3800	1,60	**32924**
	170	27	25	19.5	157	250	26,5	2600	3800	1,70	**T4CB 120**
	180	38	38	29	242	415	44	2400	3400	3,25	**32024X**
	180	48	48	38	292	540	56	2600	3400	4,20	**33024**
	215	43,5	40	34	341	465	49	2200	3000	6,15	**30224**
	215	61,5	58	50	468	695	72	2200	3000	9,15	**32224**
	260	59,5	55	46	561	710	73,5	2000	2600	1,40	**30324**
	260	68	62	42	539	695	73,5	1700	2400	1,55	**31324**
	260	90,5	86	69	792	1120	110	1800	2600	21,5	**32324**
130	180	32	32	25	198	365	38	2400	3600	2,40	**32926**
	200	45	45	34	314	540	55	2200	3000	4,95	**32026X**
	230	43,75	40	34	369	490	53	2000	2800	7,60	**30226**
	230	67,75	64	54	550	830	85	2000	2800	1,15	**32226**
	280	63,75	58	49	627	800	83	1800	2400	1,70	**30326**
	280	72	66	44	605	780	81,5	1600	2400	1,85	**31326X**
140	190	32	32	25	205	390	40	2200	3400	2,55	**32928**
	195	29	27	21	194	325	33,5	2200	3200	2,40	**T4CB 140**
	210	45	45	34	330	585	58,5	2200	2800	5,25	**32028X**
	250	45,75	42	36	418	570	58,5	1900	2600	8,65	**30228**
	250	71,75	68	58	644	1000	100	1900	2600	1,45	**32228**
	300	77	70	47	693	900	88	1500	2200	2,45	**31328X**
150	225	48	48	36	369	655	65,5	2000	2600	6,35	**32030X**
	225	59	59	46	457	865	86,5	2000	2600	8,15	**33030**
	270	49	45	38	429	560	57	1800	2400	1,10	**30230**
	270	77	73	60	737	1140	112	1700	2400	17.5	**32230**
	320	82	75	50	781	1020	100	1400	2000	29.5	**31330X**
160	240	51	51	38	429	780	78	1800	2400	7,75	**32032X**
	290	52	48	40	528	735	72	1600	2200	1,30	**30232**
	290	84	80	67	880	1400	132	1600	2200	2,55	**32232**
	340	75	68	58	913	1180	114	1500	2000	2,90	**30332**
170	230	32	30	23	251	440	43	1900	2800	3,45	**T4DB 170**
	230	38	38	30	286	585	55	1900	2800	4,50	**32934**
	260	57	57	43	512	915	90	1700	2200	10,5	**32034X**
	310	57	52	43	616	865	83	1500	2000	19,0	**30234**
	310	91	86	71	1010	1630	150	1500	2000	28,5	**32234**

Taper Roller Bearing(Metric)
Single Row
d180-360mm



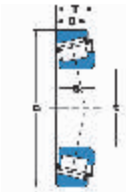
d mm	D	T	B	C	Basic Load Rating Dynamic C kN	Basic Load Rating Static Co kN	Fatigue Load Limit Pu kN	Speed Rating Reference Speed Grease RPM	Speed Rating Limiting Speed Oil RPM	Mass kg	Designation
180	240	32	30	23	251	450	44	1800	2600	3,60	**T4DB 180**
	250	45	45	34	352	735	68	1700	2600	6,65	**32936**
	280	64	64	48	644	1160	110	1600	2200	14,5	**32036X**
	320	57	52	43	583	815	80	1500	2000	20,0	**30236**
	320	91	86	71	1010	1630	150	1400	1900	29,5	**32236**
190	260	45	45	34	358	765	72	1600	2400	7,00	**32938**
	260	46	44	36,5	380	800	75	1600	2400	6,70	**JM 738249/210**
	290	64	64	48	660	1200	112	1500	2000	15,0	**32038X**
	340	60	55	46	721	1000	95	1400	1800	24,0	**30238**
200	270	37	34	27	330	600	57	1600	2400	5,45	**T4DB 200**
	280	51	51	39	473	950	88	1500	2200	9,50	**32940**
	310	70	70	53	748	1370	127	1400	1900	19,5	**32040X**
	360	64	58	48	792	1120	106	1300	1700	25,0	**30240**
	360	104	98	82	1210	2000	180	1300	1700	42,5	**32240**
220	285	41	40	33	396	830	75	1500	2200	6,45	**T2DC 220**
	300	51	51	39	484	1000	91.5	1400	2000	10,0	**32944**
	340	76	76	57	897	1660	150	1300	1700	25,5	**32044X**
	400	72	65	54	990	1400	129	1200	1600	40,0	**30244**
	400	114	108	90	1610	2700	232	1100	1500	60,0	**32244**
240	320	42	39	30	429	815	73.5	1300	1900	84,5	**T4EB 240**
	320	51	51	39	512	1080	96.5	1300	1900	11,0	**32948**
	360	76	76	57	935	1800	160	1200	1600	27,5	**32048X**
	440	127	120	100	1790	3350	275	1000	1400	83,5	**32248**
260	400	87	87	65	1170	2200	190	1100	1400	40,0	**32052X**
	480	137	130	106	2200	3650	300	900	1200	105	**32252**
	540	113	102	85	2120	3050	250	850	1200	110	**30352**
280	380	63,5	63.5	48	765	1660	143	1100	1600	20,0	**32956**
	420	87	87	65	1210	2360	200	1000	1300	40,5	**32056X**
300	420	76	76	57	1050	2240	190	950	1400	32,0	**32960**
	460	100	100	74	1540	3000	250	900	1200	58,0	**32060X**
	540	149	140	115	2750	4750	365	800	1100	140	**32260**
320	440	76	76	57	1080	2360	196	900	1300	33,5	**32964**
	480	100	100	74	1540	3100	255	850	1100	64,0	**32064X**
340	460	76	76	57	1080	2400	200	850	1300	35,0	**32968**
360	480	76	76	57	1120	2550	204	800	1200	37,0	**32972**

Taper Roller Bearings(Inch)
d12.700-25.159mm



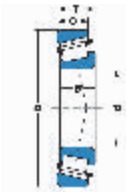
Boundary Dimensions					Basic Load Rating		Limiting Speeds		WT	Bearing Number
					Dynamic	Static	Grease	Oil		
d	D	T	B	C	C	C_0	RPM			
mm					kN				kg	
12.700	34.988	10.998	10.988	8.730	12.3	11.6	12000	16000	0.053	**A4050/A4138**
14.989	34.988	10.998	10.988	8.730	12.3	11.6	12000	16000	0.049	**A4059/A4138**
15.875	41.275	14.288	14.681	11.112	20.3	18.7	10000	13000	0.092	**03062/03162**
	42.862	14.288	14.288	9.525	17.6	17.5	8700	12000	0.103	**11590/11520**
	42.862	16.670	16.670	13.495	26.7	26.0	9800	13000	0.122	**17580/17520**
	47.000	14.381	14.381	11.112	24.0	24.2	8600	11000	0.131	**05062/05185**
	49.225	19.845	21.539	14.288	38.5	39.0	8500	11000	0.203	**09062/09195**
16.993	47.000	14.381	14.381	11.112	24.0	24.2	8600	11000	0.127	**05066/05185**
17.462	39.878	13.843	14.605	10.668	23.8	24.2	10000	13000	0.084	**LM11749/LM11710**
19.050	39.992	12.014	11.153	9.525	12.8	12.8	10000	13000	0.065	**A6075/A6157**
	45.237	15.494	16.637	12.065	28.3	28.6	8900	12000	0.122	**LM11949/LM11910**
	47.000	14.381	14.381	11.112	24.0	24.2	8600	11000	0.121	**05075/05185**
	49.225	18.034	19.050	14.288	38.5	39.0	8500	11000	0.179	**09067/09195**
	49.225	19.845	21.539	14.288	38.5	39.0	8500	11000	0.188	**09078/09195**
	49.225	21.209	19.050	17.462	38.5	39.0	8500	11000	0.198	**09067/09196**
	53.975	22.225	21.839	15.875	40.0	39.0	8000	11000	0.248	**21075/21212**
	56.896	19.368	19.837	15.875	42.5	46.5	7200	9600	0.272	**1775/1729**
19.987	47.000	14.381	14.381	11.112	24.0	24.2	8600	11000	0.177	**05079/05185**
20.000	50.005	13.495	14.260	9.525	26.0	27.9	7500	10000	0.138	**07079/07196**
20.625	49.225	19.845	21.539	14.288	38.5	39.0	8500	11000	0.179	**09081/09195**
20.638	49.225	19.845	19.845	15.875	37.5	39.0	8200	11000	0.182	**12580/12520**
21.430	50.005	17.526	18.288	13.970	38.0	39.0	8000	11000	0.169	**M12649/M12610**
21.986	45.974	15.494	16.637	12.065	29.6	34.0	8400	11000	0.123	**LM12749/LM12711**
22.225	50.005	13.495	14.260	9.525	26.0	27.9	7500	10000	0.13	**07087/07196**
	50.005	17.526	18.288	13.970	38.0	39.0	8000	11000	0.165	**M12648/M12610**
	52.388	19.368	20.168	14.288	40.5	43.0	7600	10000	0.2	**1380/1328**
	53.975	19.368	20.168	14.288	40.5	43.0	7600	10000	0.215	**1380/1329**
	58.896	19.368	19.837	15.875	42.5	46.5	7200	9600	0.256	**1755/1729**
	57.150	22.225	22.225	17.462	47.0	49.5	7100	9500	0.286	**1280/1220**
22.606	47.000	15.500	15.500	12.000	27.5	32.5	8200	11000	0.125	**LM72849/LM72810**
23.812	50.005	13.495	14.260	9.525	26.0	27.9	7500	10000	0.123	**07093/07196**
	50.292	14.224	17.732	10.668	28.8	34.0	7400	9900	0.137	**L44640/L44610**
	56.896	19.368	19.837	15.875	42.5	46.5	7200	9600	0.247	**1779/1729**
24.981	50.005	13.495	14.260	9.525	26.0	27.9	7500	10000	0.118	**07098/07196**
25.000	50.005	13.495	14.260	9.525	26.0	27.9	7500	10000	0.118	**07097/07196**
25.159	50.005	13.495	14.260	9.525	26.0	27.9	7500	10000	0.117	**07096/07196**

Taper Roller Bearings (Inch)
d25.400-30.112mm



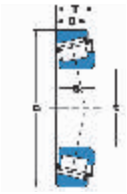
Boundary Dimensions					Basic Load Rating		Limiting Speeds		WT	Bearing Number
					Dynamic	Static	Grease	Oil		
d	D	T	B	C	C	C_0	RPM			
mm					kN				kg	
25.400	50.005	13.495	14.260	9.525	26.0	27.9	7500	10000	0.117	**07100/07196**
	50.005	13.495	14.260	9.525	26.0	27.9	7500	10000	0.166	**07100S/07196**
	50.292	14.224	14.732	10.668	28.8	34.0	7400	9900	0.13	**L44643/L/44610**
	51.994	15.011	14.260	12.700	26.0	27.9	7500	10000	0.144	**07100/07204**
	56.896	19.368	19.837	15.875	42.5	46.5	7200	9600	0.238	**1780/1729**
	57.150	19.431	19.431	14.732	42.0	48.5	6900	9200	0.241	**M84548/M84510**
	61.912	19.050	20.638	14.288	46.5	54.0	6100	8200	0.3	**15101/15243**
	62.000	19.050	20.638	14.288	46.5	54.0	6100	8200	0.299	**15100/15245**
	62.000	19.050	20.638	14.288	46.5	54.0	6100	8200	0.301	**15102/15245**
	64.292	21.433	21.433	16.670	51.5	64.5	6100	8100	0.371	**M86643/M86610**
	65.088	22.225	21.463	15.875	47.0	50.5	5700	7600	0.36	**23100/23256**
	66.421	23.812	25.433	19.050	64.5	72.5	6200	8200	0.442	**2687/2631**
26.157	62.000	19.050	20.638	14.288	46.5	54.0	6100	8200	0.296	**15103/15245**
26.162	66.421	23.812	25.433	19.050	64.5	72.5	6200	8200	0.436	**2682/2631**
26.988	50.292	14.224	14.732	10.668	28.8	34.0	7400	9900	0.12	**L44649/L44610**
	60.325	19.842	17.462	15.875	39.5	45.5	6700	8900	0.26	**15580/15523**
	62.000	19.050	20.638	14.288	46.5	54.0	6100	8200	0.291	**15106/15245**
	66.421	23.812	25.433	19.050	64.5	72.5	6200	8200	0.429	**2688/2631**
28.575	56.896	19.845	19.355	15.875	40.5	44.5	6700	8900	0.217	**1985/1930**
	57.150	17.462	17.462	13.495	39.5	45.5	6700	8900	0.196	**15590/15520**
	58.738	19.050	19.355	15.080	40.5	44.5	6700	8900	0.23	**1985/1932**
	60.325	19.842	17.462	15.875	39.5	45.5	6700	8900	0.25	**15590/15523**
	60.325	19.845	19.355	15.875	40.5	44.5	6700	8900	0.255	**1985/1931**
	62.000	19.050	20.638	14.288	46.5	54.0	6100	8200	0.277	**15112/15245**
	64.292	21.433	21.433	16.670	51.5	64.5	6100	8100	0.348	**M86647/M86610**
	66.421	23.812	25.433	19.050	64.5	72.5	6200	8200	0.416	**2689/2631**
	68.262	22.225	22.225	17.462	57.0	67.0	5800	7700	0.409	**02474/02420**
	68.262	22.225	23.812	17.462	57.5	65.5	5700	7700	0.41	**2474/2420**
	69.850	23.812	25.357	19.050	69.0	81.5	5700	7600	0.483	**2578/2523**
	72.626	24.608	24.257	17.462	58.0	55.5	5800	7700	0.477	**41125/41286**
	73.025	22.225	22.225	17.462	56.5	68.0	5300	7000	0.48	**02872/02820**
29.000	50.292	14.224	14.732	10.668	28.0	35.5	7200	9600	0.113	**L45449/L45410**
29.367	66.421	23.812	25.433	19.050	64.5	72.5	6200	8200	0.406	**2690/2631**
	62.000	16.002	16.566	14.288	39.0	42.0	6300	8400	0.228	**17118/17244**
29.987	62.000	19.050	20.638	14.288	46.5	54.0	6100	8200	0.269	**15117/15245**
30.000	69.012	19.845	19.583	15.875	48.5	58.0	5600	7400	0.369	**14117A/14276**
	72.000	29.370	27.783	23.020	72.0	97.0	5400	7100	0.619	**JHM88540/JHM88513**
30.112	62.000	19.050	20.638	14.288	46.5	54.0	6100	8200	0.268	**15116/15245**

Taper Roller Bearings (Inch)
d30.162-33.338mm



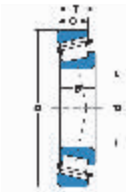
Boundary Dimensions					Basic Load Rating		Limiting Speeds		WT	Bearing Number
					Dynamic	Static	Grease	Oil		
d	D	T	B	C	C	C_0	RPM			
mm					kN				kg	
30.162	62.000	16.002	16.566	14.288	39.0	42.0	6300	8400	0.226	**17119/17244**
	64.292	21.433	21.433	16.670	51.5	64.5	6100	8100	0.336	**M86649/M86610**
	69.850	23.812	25.357	19.050	69.0	81.5	5700	7600	0.468	**2558/2523**
	72.626	30.162	29.997	23.812	84.5	98.0	5500	7300	0.621	**3187/3120**
30.213	62.000	19.050	20.638	14.288	46.5	54.0	6100	8200	0.265	**15118/15245**
	62.000	19.050	20.638	14.288	46.5	54.0	6100	8200	0.267	**15119/15245**
	62.000	19.050	20.638	14.288	46.5	54.0	6100	8200	0.267	**15120/15245**
30.226	69.012	19.845	19.583	15.875	48.5	58.0	5600	7400	0.366	**14116/14274**
	69.012	19.845	19.583	15.875	48.5	58.0	5600	7400	0.37	**14116/14276**
31.750	59.131	15.875	16.764	11.811	34.5	41.0	6300	8400	0.182	**LM67048/LM67010**
	62.000	18.161	19.050	14.288	46.5	54.0	6100	8200	0.244	**15123/15245**
	62.000	19.050	20.638	14.288	46.5	54.0	6100	8200	0.253	**15125/15245**
	62.00	19.050	20.638	14.288	46.5	54.0	6100	8200	0.255	**15126/15245**
	66.421	25.400	25.357	20.638	69.0	81.5	5700	7600	0.409	**2580/2520**
	68.262	22.225	22.225	17.462	57.0	67.0	5800	7700	0.38	**02475/02420**
	68.262	22.225	22.225	17.462	57.0	67.0	5800	7700	0.383	**02476/02420**
	69.012	19.845	19.583	15.875	48.5	58.0	5600	7400	0.359	**14124/14276**
	69.012	19.845	19.583	15.875	48.5	58.0	5600	7400	0.356	**14125A/14276**
	69.850	23.812	25.357	19.050	69.0	81.5	5700	7600	0.454	**2580/2523**
	69.850	23.812	25.357	19.050	69.0	81.5	5700	7600	0.451	**4T/2582/2523**
	72.626	30.162	29.997	23.812	84.5	98.0	5500	7300	0.603	**3188/3120**
	72.626	30.162	29.997	23.812	84.5	98.0	5500	7300	0.601	**3193/3120**
	73.025	22.225	22.225	17.462	56.5	68.0	5300	7000	0.451	**02875/02820**
	73.025	22.225	23.812	17.462	62.5	75.5	5200	7000	0.465	**2879/2820**
	73.025	29.370	27.783	23.020	72.0	97.0	5400	7100	0.622	**HM88542/HM88510**
	73.812	29.370	27.783	23.020	72.0	97.0	5400	7100	0.638	**HM88542/HM88512**
	76.200	29.370	28.575	23.020	78.0	105	5100	6800	0.686	**HM89440/HM89410**
	79.375	29.370	29.771	23.812	93.0	114	4900	6600	0.767	**3476/3420**
33.338	68.262	22.225	22.225	17.462	56.5	71.0	5700	7500	0.378	**M88048/M88010**
	69.012	19.845	19.583	15.875	48.5	58.0	5600	7400	0.344	**14130/14276**
	69.850	23.812	25.357	19.050	69.0	81.5	5700	7600	0.435	**2585/2523**
	72.626	30.162	29.997	23.812	84.5	98.0	5500	7300	0.581	**3196/3120**
	73.025	29.370	27.783	23.020	72.0	97.0	5400	7100	0.604	**HM88547/HM88510**
	76.200	23.812	25.654	19.050	73.0	90.5	5100	6800	0.551	**2785/2720**
	76.200	29.370	28.575	23.020	78.0	105	5100	6800	0.668	**HM89443/HM89410**
	76.200	29.370	28.575	23.020	78.0	105	5100	6800	0.665	**HM89444/HM89410**
	79.375	25.400	24.074	17.462	65.5	67.0	5200	6900	0.568	**43131/43312**

Taper Roller Bearings (Inch)
d34.925-38.000mm



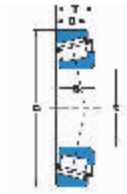
Boundary Dimensions					Basic Load Rating		Limiting Speeds		WT	Bearing Number
					Dynamic	Static	Grease	Oil		
d	D	T	B	C	C	C_0	RPM			
mm					kN				kg	
34.925	65.088	18.034	18.288	13.970	46.5	56.0	5700	7600	0.249	**LM48548/LM48510**
	65.088	18.034	18.288	13.970	46.5	56.0	5700	7600	0.252	**LM48548A/LM48510**
	69.012	19.845	19.583	15.875	48.5	58.0	5600	7400	0.333	**14137A/14276**
	72.233	25.400	25.400	19.842	65.0	84.5	5400	7200	0.489	**HM88649/HM88610**
	72.238	20.638	20.638	15.875	48.0	58.5	5300	7000	0.385	**16137/16284**
	73.025	22.225	22.225	17.462	56.5	68.0	5300	7000	0.422	**02877/02820**
	73.025	22.225	22.225	17.462	56.5	68.0	5300	7000	0.425	**02878/02820**
	73.025	22.225	23.812	17.462	62.5	75.5	5200	7000	0.434	**2878/2820**
	73.025	23.812	24.608	19.050	71.0	85.0	5300	7100	0.471	**25877/25820**
	73.025	23.812	24.608	19.050	71.0	85.0	5300	7100	0.474	**25877/25821**
	73.025	23.812	25.654	19.050	73.0	90.5	5100	6800	0.485	**2793/2735X**
	76.200	23.812	25.654	19.050	73.0	90.5	5100	6800	0.536	**2793/2720**
	76.200	23.812	25.654	19.050	73.0	90.5	5100	6800	0.541	**2793/2729**
	76.200	29.370	28.574	23.020	78.0	105	5100	6800	0.464	**HM89446/HM89410**
	76.200	29.370	28.575	23.812	80.5	97.0	5100	6800	0.625	**31593/31520**
	76.200	29.370	258.575	23.812	80.5	97.0	5100	6800	0.627	**34594/31520**
	79.375	29.370	29.771	23.812	93.0	114	4900	6600	0.725	**3478/3420**
	80.167	29.370	30.391	23.812	95.0	112	4800	6400	0.732	**3379/3320**
	85.725	30.162	30.162	23.812	105	132	4500	6000	0.897	**3872/3820**
34.976	69.012	19.845	19.583	15.875	48.5	58.0	5600	7400	0.333	**14139/14276**
34.988	59.974	15.875	16.764	11.938	35.5	47.5	6100	8100	0.179	**L68149/L68111**
	61.973	16.700	17.000	13.600	37.0	48.0	5900	7900	0.209	**LM78349A/LM78310A**
	61.973	18.000	17.000	15.000	37.0	48.0	5900	7900	0.218	**LM78349/LM78310C**
35.000	70.000	24.00	23.500	19.000	62.0	78.0	5500	7300	0.42	**JS3549AJS5310**
	79.375	23.812	25.400	19.050	76.5	97.5	4800	6400	0.61	**26883/26822**
	88.000	21.000	22.403	17.826	68.0	75.0	4700	6300	0.534	**339/332**
35.717	72.233	25.400	25.400	19.842	65.0	84.5	5400	7200	0.478	**HM88648/hM88610**
	72.626	25.400	25.400	19.842	65.0	84.5	5400	7200	0.482	**HM88648/HM88611AS**
36.487	73.025	23.812	24.608	19.050	71.0	85.0	5300	7100	0.457	**25880/25821**
	76.200	23.812	25.654	19.050	73.0	90.5	5100	6800	0.518	**2780/2720**
36.512	76.200	29.370	28.575	23.020	78.0	105	5100	6800	0.629	**HM89448/HM89410**
	76.200	29.370	28.575	23.020	78	105	5100	6800	0.631	**HM89449/HM89411**
	76.200	29.370	28.575	23.812	80.5	97.0	5100	6800	0.605	**31597/31520**
	79.375	29.370	28.829	22.664	86.5	104	5000	6600	0.686	**HM89249/HM89210**
	79.375	29.370	29.771	23.812	93.0	114	4900	6600	0.707	**3479/3420**
	88.500	25.400	23.698	17.462	70.5	78.0	4000	5300	0.729	**44143/44348**
38.000	63.00	17.00	17.00	13.500	38.5	52.5	5700	7600		**JL69349/JL69310**

Taper Roller Bearings (Inch)
d38.100-41.275mm



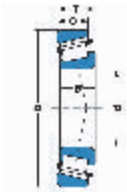
Boundary Dimensions					Basic Load Rating		Limiting Speeds		WT	Bearing Number
					Dynamic	Static	Grease	Oil		
d	D	T	B	C	C	C_0	RPM			
mm					kN				kg	
38.100	63.500	12.700	11.908	9.525	25.9	33.5	5500	7300	0.147	**13889/13830**
	65.088	18.034	18.288	13.970	43.5	57.0	5500	7400	0.233	**LM29748/LM29710**
	69.012	19.05	19.050	15.083	47.5	59.5	5300	7100	0.293	**13685/13621**
	69.012	19.050	19.050	15.083	47.5	59.5	5300	7100	0.296	**13687/13621**
	73.438	15.875	16.520	11.908	43.5	51.0	5400	7200	0.273	**19150/19281**
	72.000	19.000	20.638	14.237	48.0	58.5	5300	7000	0.331	**16150/16282**
	76.200	20.638	20.940	15.507	55.5	63.0	5000	6700	0.405	**28150/28300**
	76.200	23.812	25.654	19.050	73.0	90.5	5100	6800	0.495	**2776/2720**
	76.200	23.812	25.654	19.050	73.0	90.5	5100	6800	0.497	**2788/2720**
	79.375	23.812	25.400	19.050	76.5	97.5	4800	6400	0.574	**26878/26822**
	79.375	29.370	29.771	23.812	93.0	114	4900	6600	0.683	**3490/3420**
	80.000	21.006	20.940	15.875	55.5	63.0	5000	6700	0.467	**28150/28315**
	80.035	24.608	23.698	18.512	67.0	82.5	4800	6400	0.562	**27880/27820**
	82.550	29.370	28.575	23.020	87.0	117	4700	6200	0.767	**HM801346/HM801310**
	82.931	23.812	25.400	19.050	76.0	98.0	4500	6000	0.645	**25572/25520**
	85.725	30.162	30.162	23.812	105	132	4500	6000	0.857	**3875/3820**
	87.312	30.162	30.886	23.812	94.0	117	4400	5900	0.881	**3580/3525**
	88.500	25.400	23.698	17.462	70.5	78.0	4000	5300	0.711	**44150/44348**
	88.500	26.988	29.083	22.225	95.5	107	4600	6100	0.84	**418/414**
39.688	76.200	23.812	25.654	19.050	73.0	90.5	5100	6800	0.477	**2789/2720**
	77.534	29.370	30.391	23.812	95.0	112	4800	6400	0.669	**3382/3321**
	79.375	23.812	25.400	19.050	76.5	97.5	4800	6400	0.554	**26880/26822**
	80.035	29.370	30.391	23.812	95.0	112	4800	6400	0.666	**3382/3339**
	80.167	29.370	30.391	23.812	95.0	112	4800	6400	0.668	**3386/3320**
	88.500	25.400	23.698	17.462	70.5	78.0	4000	5300	0.691	**44158/44348**
40.000	76.200	20.638	20.940	15.507	55.5	63.0	5000	6700	0.386	**28158/28300**
	80.000	21.000	22.403	17.826	68.0	75.0	4700	6300	0.479	**344/332**
	85.000	20.638	21.692	17.462	69.5	79.5	4400	5800	0.562	**350A/354A**
	88.500	26.988	29.083	22.225	95.5	107	4600	6100	0.813	**420/414**
	107.950	36.512	36.957	28.575	141	177	3600	4800	1.77	**543/532**
40.483	82.550	29.370	28.575	23.020	87.0	117	4700	6200	0.731	**HM801349/HM801310**
40.988	67.975	17.500	18.000	13.500	46.0	62.5	5300	7000	0.239	**LM300849/LM300811**
41.275	73.025	16.667	17.462	12.700	46.0	55.5	5000	6600	0.281	**18590/18520**
	73.431	19.558	19.812	14.732	56.0	69.5	5000	6600	0.335	**LM501349/LM501310**
	73.431	21.430	19.812	16.604	56.0	69.5	5000	6600	0.355	**LM501349/LM501314**
	76.200	18.009	17.384	14.288	42.5	51.5	4900	6500	0.337	**11162/11300**
	76.200	22.225	23.020	17.462	65.0	80.5	4900	6500	0.432	**24780/24720**
	76.200	25.400	25.400	20.638	76.5	97.5	4800	6400	0.488	**26882/26823**
	79.375	23.812	25.400	19.050	76.5	97.5	4800	6400	0.535	**26885/26822**
	80.000	18.009	17.384	14.288	42.5	51.5	4900	6500	0.389	**11162/11315**
	80.000	21.000	22.403	17.826	68.0	75.0	4700	6300	0.468	**336/332**
	80.000	23.812	25.400	19.050	76.5	97.5	4800	6400	0.542	**26882/26824**
	82.550	26.543	25.654	20.193	80.5	104	4600	6100	0.642	**M802048/M802011**

Taper Roller Bearings (Inch)
d41.275-45.237mm



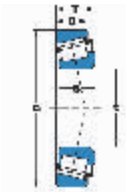
Boundary Dimensions					Basic Load Rating		Limiting Speeds		WT	Bearing Number
					Dynamic	Static	Grease	Oil		
d	D	T	B	C	C	C_0	RPM			
mm					kN				kg	
41.275	85.725	30.162	30.162	23.812	105	132	4500	6000	0.81	**3880/3820**
	87.312	30.162	30.886	23.812	94.0	117	4400	5900	0.834	**3576/3525**
	88.900	30.162	29.370	23.020	93.5	125	4300	5800	0.901	**HM803145/HM803110**
	90.488	39.688	40.386	33.338	136	175	4300	5800	1.25	**4388/4335**
	92.075	26.195	23.812	16.670	72.5	81.5	3800	5000	0.758	**M903345/M903310**
	93.662	31.750	31.750	26.195	104	131	4100	5500	1.09	**46162/46368**
	95.250	30.162	29.370	23.020	109	147	4000	5300	1.08	**HM804840/HM804810**
	95.250	30.958	28.300	20.638	82.5	92.0	3700	5000	0.975	**53162/53375**
	95.250	30.958	28.575	22.225	96.0	116	3700	4900	1.05	**HM903245/HM903210**
42.070	90.488	39.688	40.386	33.338	136	175	4300	5800	1.24	**4395/4335**
42.862	82.550	26.195	26.988	20.638	75.5	97.0	4600	6100	0.617	**22780/22720**
	82.931	23.812	25.400	19.050	76.0	98.0	4500	6000	0.584	**25578/25520**
	87.312	30.162	30.886	23.812	94.0	117	4400	5900	0.805	**3579/3525**
42.875	79.375	23.812	25.400	19.050	76.5	97.5	4800	6400	0.51	**26884/26822**
	82.931	23.812	25.400	19.050	76.0	98.0	4500	6000	0.581	**25577/25520**
44.450	76.992	17.462	17.145	11.908	44.0	54.0	4700	6300	0.308	**12175/12303**
	79.375	17.462	17.462	13.495	45.5	56.0	4600	6200	0.345	**18685/18620**
	82.931	23.812	25.400	19.050	76.0	98.0	4500	6000	0.56	**25580/25520**
	82.931	23.812	25.400	19.050	76.0	98.0	4500	6000	0.556	**25582/25520**
	84.138	30.162	30.886	23.812	94.0	117	4400	5900	0.699	**3578/3520**
	85.000	20.638	21.692	17.462	69.5	79.5	4400	5800	0.511	**355/354A**
	87.312	30.162	30.886	23.812	94.0	117	4400	5900	0.779	**3578/3525**
	88.900	30.162	29.370	23.020	93.5	125	4300	5800	0.849	**HM803149/HM803110**
	93.264	30.162	30.302	23.812	102	134	4000	5300	0.961	**3782/3720**
	93.662	31.750	31.750	26.195	103	131	4100	5500	1.04	**46175/46368**
	95.250	27.783	28.575	22.225	107	139	3900	5200	0.987	**33885/33821**
	95.250	27.783	29.900	22.225	108	129	4200	5600	0.953	**438/432**
	95.250	30.162	29.3370	23.020	109	147	4000	5300	1.04	**HM804882/HM804810**
	95.250	30.958	28.300	20.638	82.5	92.0	3700	5000	0.925	**53177/53375**
	95.250	30.958	28.575	22.225	96	116	3700	4900	1	**HM903249/HM903210**
	101.600	34.925	36.068	26.88	135	162	3800	5000	1.37	**527/522**
	104.775	30.162	29.317	24.605	115	148	3500	4700	1.29	**460/453**
	104.775	30.162	30.958	23.812	130	169	3500	4700	1.35	**45280/45220**
	104.775	36.512	36.512	28.575	138	189	3600	4800	1.62	**HM807040/HM807010**
	111.125	30.162	26.909	20.638	104	136	3200	4200	1.45	**55175C/55437**
	111.125	30.162	26.909	20.638	104	136	3200	4200	1.09	**55176C/55437**
	127.000	50.800	52.388	41.275	250	320	3200	4300	3.58	**6277/6220**
44.983	82.931	23.812	25.400	19.050	76.0	98.0	4500	6000	0.555	**25584/25520**
	93.264	30.162	30.302	23.812	102	134	4000	5300	0.952	**3776/3720**
45.000	85.000	20.638	21.692	17.462	69.5	79.5	4400	5800	0.505	**358/354A**
	88.900	20.638	22.225	16.513	76.5	90.5	4100	5500	0.595	**367/362A**
45.237	87.312	30.162	30.886	23.812	94.0	117	4400	5900	0.765	**3586/3525**

Taper Roller Bearings (Inch)
d45.242-50.000mm



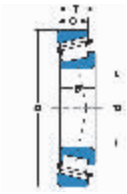
Boundary Dimensions					Basic Load Rating		Limiting Speeds		WT	Bearing Number
					Dynamic	Static	Grease	Oil		
d	D	T	B	C	C	C_0	RPM			
mm					kN				kg	
45.242	73.431	19.558	19.812	15.748	54.0	76.0	4800	6400	0.307	**LM102949/LM102910**
	77.788	19.842	19.842	15.080	57.5	73.5	4600	6200	0.372	**LM603049/LM603011**
45.618	82.550	23.812	25.400	19.050	76.0	98.0	4500	6000	0.534	**25590/25519**
	82.931	23.812	25.400	19.050	76.0	98.0	4500	6000	0.543	**25590/25520**
	83.058	23.876	25.400	19.114	76.0	98.0	4500	6000	0.545	**25590/25522**
	85.000	23.812	25.400	19.050	76.0	98.0	4500	6000	0.581	**25590/25526**
45.987	74.976	18.000	18.000	14.000	51.0	71.0	4700	6300	0.296	**LM5033491A/ LM503310**
46.038	79.375	17.462	17.462	13.495	45.5	56.0	4600	6200	0.329	**18690/18620**
	82.931	23.812	25.400	19.050	76.0	98.0	4500	6000	0.538	**25592/25520**
	85.000	20.638	21.692	17.462	69.5	79.5	4400	5800	0.489	**359A/354A**
	85.000	25.400	28.608	20.638	79.0	104	4400	5800	0.615	**2984/2924**
	90.119	23.000	21.692	21.808	69.5	79.5	4400	5800	0.651	**359S/352**
	93.264	30.162	30.302	23.812	102	134	4000	5300	0.934	**3777/3720**
	95.250	27.783	29.900	22.225	108	129	4200	5600	0.927	**436/432**
	88.900	20.638	22.225	16.513	76.5	90.5	4100	5500	0.559	**369A/362A**
	88.900	25.400	25.400	19.050	82.0	101	4200	5600	0.662	**M804048/M804010**
	93.264	30.162	30.302	23.812	102	134	4000	5300	0.898	**3778/3720**
	95.250	30.162	29.370	23.020	109	147	4000	5300	0.978	**HM804846/HM804810**
47.625	96.838	21.000	21.946	15.875	78.0	96.5	3700	5000	0.72	**386A/382A**
	101.600	34.925	36.068	26.988	135	165	3800	5000	1.3	**528/522**
	104.775	30.162	29.317	24.605	115	148	3500	4700	1.24	**463/453**
	104.775	30.162	30.958	23.812	130	169	3500	4700	1.29	**45282/45220**
	111.125	30.162	26.909	20.638	104	136	3200	4200	1.4	**55187C/55437**
	123.825	36.512	32.791	25.400	154	188	2900	3900	2.16	**72188C/72487**
48.412	95.250	30.162	29.370	23.020	109	147	4000	5300	0.967	**HM804848/HM804810**
	95.250	30.162	29.370	23.020	109	147	4000	5300	0.964	**HM804849/HM804810**
49.212	93.264	30.162	30.302	23.812	102	134	4000	5300	0.877	**3781/3720**
	103.188	43.658	44.475	36.512	174	232	3800	5000	1.75	**5395/5335**
	104.775	36.512	36.512	28.575	138	189	3600	4800	1.52	**HM807044/HM807010**
	114.300	44.450	44.450	34.925	186	225	3600	4800	2.23	**65390/65320**
	114.300	44.450	44.450	36.068	203	261	3500	4700	2.33	**HH506348/HH506310**
49.987	82.550	21.590	22.225	16.510	69.5	94.0	4300	5700	0.434	**LM104947A/LM104911**
	92.075	24.608	25.400	19.845	83.5	116	4000	5300	0.718	**28579/28521**
	114.300	44.450	44.450	36.068	203	261	3500	4700	2.27	**HH506349/HH506310**
50.000	82.000	21.500	21.500	17.000	69.5	94.0	4300	5700	0.42	**JLM104948/JLM104910**
	84.000	22.000	22.000	17.500	69.5	94.5	4300	5700	0.466	**JLM704649/JLM704610**
	88.900	20.638	22.225	16.513	76.5	90.5	4100	5500	0.53	**365/362A**
	88.900	20.638	22.225	16.513	76.5	90.5	4100	5500	0.529	**366/362A**
	90.000	28.000	28.000	23.000	106	141	4100	5400	0.752	**JM205149/JM205110**
	105.000	37.000	36.000	29.000	138	189	3600	4800	1.52	**JHM807045/JHM807012**
	110.000	22.000	21.996	18.824	89.5	120	3200	4300	1.06	**396/394A**

Taper Roller Bearings (Inch)
d50.800-53.975mm



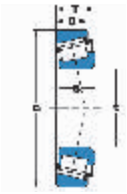
Boundary Dimensions					Basic Load Rating		Limiting Speeds		WT	Bearing Number
					Dynamic	Static	Grease	Oil		
d	D	T	B	C	C	C_0	RPM			
mm					kN				kg	
50.800	82.550	21.590	22.225	16.510	69.5	94.0	4300	5700	0.419	**LM104949/LM104911**
	85.000	17.462	17.462	13.495	49.5	65.0	4200	5600	0.374	**18790/18720**
	88.900	17.462	17.462	13.495	49.5	65.0	4200	5600	0.431	**18790/18724**
	88.900	20.638	22.225	16.513	76.5	90.5	4100	5500	0.519	**368/362A**
	88.900	20.638	22.225	16.513	76.5	90.5	4100	5500	0.511	**370A/362A**
	90.000	20.000	22.225	15.875	76.5	90.5	4100	5500	0.525	**368A/362**
	92.075	24.608	25.400	19.845	83.5	116	4000	5300	0.703	**28580/28521**
	93.264	30.162	30.302	23.812	102	134	4000	5300	0.852	**3775/3720**
	93.264	30.162	30.302	23.812	102	134	4000	5300	0.848	**3780/3720**
	95.250	27.783	28.575	22.225	107	139	3900	5200	0.876	**33889/33821**
	95.250	30.162	30.302	23.812	102	134	4000	5300	0.903	**3780/3726**
	96.838	21.000	21.946	15.875	78.0	96.5	3700	5000	0.676	**385A/382A**
	97.630	24.608	24.608	19.446	88.5	128	3700	4900	0.852	**28678/28622**
	98.425	30.162	30.302	23.812	102	134	4000	5300	0.993	**3780/3732**
	101.600	31.750	31.750	25.400	110	136	3700	5000	1.13	**49585/49520**
	101.600	34.925	36.068	26.988	135	165	3800	5000	1.24	**529/522**
	104.775	30.162	29.317	24.605	115	148	3500	4700	1.19	**455/453**
	104.775	30.162	30.958	23.812	130	169	3500	4700	1.22	**45284/45220**
	104.775	36.512	36.512	28.575	138	189	3600	4800	1.49	**HM807046/HM807010**
	104.775	36.512	36.512	28.575	143	178	3700	4900	1.44	**59200/59412**
	107.950	36.512	36.957	28.575	141	177	3600	4800	1.55	**537/532**
	111.125	30.162	28.575	20.638	104	136	3200	4200	1.36	**HM907643/HM907614**
	112.712	30.162	26.909	20.638	104	136	3200	4200	1.34	**55200C/55443**
	112.712	30.162	30.048	23.812	119	174	3200	4300	1.53	**3975/3920**
	112.712	30.162	30.162	23.812	138	195	3200	4200	1.54	**39575/39520**
	117.475	33.338	31.750	23.812	130	153	3300	4400	1.67	**66200/66462**
	120.650	41.275	41.275	31.750	172	213	3300	4400	2.3	**619/612**
	123.825	36.512	32.791	25.400	154	188	2900	3900	2.1	**72200C/72487**
	123.825	38.100	36.678	30.162	158	216	3000	4100	2.34	**555/552A**
51.592	88.900	20.638	22.225	16.513	76.5	90.5	4100	5500	0.507	**368S/362A**
52.388	92.075	24.608	25.400	19.845	83.5	116	4000	5300	0.677	**28584/28521**
	93.264	30.162	30.302	23.812	102	134	4000	5300	0.819	**3767/3720**
	95.250	27.783	28.575	22.225	107	139	3900	5200	0.851	**33890/33821**
53.975	88.900	19.050	19.050	13.492	61.0	82.5	4000	5300	0.437	**LM806649/LM806610**
	95.250	27.783	28.575	22.225	107	139	3900	5200	0.824	**33895/33822**
	96.838	21.000	21.946	15.875	78.0	96.5	3700	5000	0.633	**389A/382A**
	104.775	30.162	30.958	23.812	130	169	3500	4700	1.17	**45287/45220**
	104.775	36.512	36.512	28.575	138	189	3600	4800	1.41	**HM807049/HM807010**
	107.950	36.512	36.957	28.575	141	177	3600	4800	1.47	**539/532**
	120.650	41.275	41.275	31.750	172	213	3300	4400	2.21	**621/612**
	122.238	33.338	31.750	23.812	134	163	3100	4200	1.79	**66584/66520**
	122.238	43.658	43.764	36.512	194	283	3100	4100	2.64	**5578/5535**
	123.825	36.512	32.791	25.400	154	188	2900	3900	2.03	**72212C/72487**
	123.825	38.100	36.678	30.162	158	216	3000	4100	2.26	**557S/552A**
	130.175	36.512	33.338	23.812	156	186	2700	3600	2.27	**HM911242/HM911210**
	140.030	36.512	33.236	23.520	171	212	2600	3400	2.77	**78214C/78551**

Taper Roller Bearings (Inch)
d54.488-60.000mm



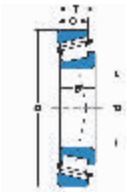
Boundary Dimensions					Basic Load Rating		Limiting Speeds		WT	Bearing Number
					Dynamic	Static	Grease	Oil		
d	D	T	B	C	C	C_0	RPM			
mm					kN				kg	
54.488	104.775	36.512	36.512	28.575	138	189	3600	4800	1.40	**HM807048/HM807010**
55.000	90.000	23.000	23.000	18.500	77.5	109	3900	5300	0.558	**JLM506849/JLM506810**
	95.000	29.00	29.000	23.500	107	144	3800	5100	0.82	**JM207049/JM207010**
	96.838	21.000	21.946	15.875	78.0	96.5	3700	5000	0.616	**385/382A**
	110.000	39.000	39.000	32.000	173	219	3500	4600	1.71	**JH307749/JH307710**
55.562	97.630	24.608	24.608	19.446	88.5	128	3700	4900	0.774	**28680/28622**
	123.825	36.512	32.791	25.400	154	188	2900	3900	1.99	**72218C/72487**
	127.000	36.512	36.512	26.988	163	228	2900	3800	2.34	**HM813840/HM813810**
55.575	96.838	21.000	21.946	15.875	78	96.5	3700	5000	0.608	**389/382A**
57.150	96.838	21.000	21.946	15.875	78	96.5	3700	5000	0.583	**387/382A**
	96.838	21.000	21.946	15.875	78	96.5	3700	5000	0.581	**387A/382A**
	96.838	21.00	21.946	15.875	78	96.5	3700	5000	0.576	**387AS/382A**
	96.838	21.000	21.946	15.875	78	96.5	3700	5000	0.585	**387S/382A**
	97.630	24.608	24.608	19.446	88.5	128	3700	4900	0.747	**28682/28622**
	104.775	30.162	29.317	24.605	115	148	3500	4700	1.06	**462/453**
	104.775	30.162	29.317	24.605	115	148	3500	4700	1.06	**469/453**
	104.775	30.162	30.958	23.812	130	169	3500	4700	1.1	**45289/45220**
	107.950	27.783	29.317	22.225	115	148	3500	4700	1.11	**469/453A**
	110.000	22.000	21.996	18.824	89.5	120	3200	4300	0.954	**390/394A**
	110.000	27.795	29.317	27.000	115	148	3500	4700	1.24	**469/454**
	112.712	30.162	30.048	23.812	119	174	3200	4300	1.4	**3979/3920**
	112.712	30.162	30.162	23.812	138	195	3200	4200	1.41	**39580/39520**
	112.712	30.162	30.162	23.812	138	195	3200	4200	1.4	**39581/39520**
	117.475	30.162	30.162	23.812	117	175	3000	4000	1.58	**33225/33462**
	117.475	33.338	31.750	23.812	130	153	3300	4400	1.54	**66225/66462**
	120.650	41.275	41.275	31.750	172	213	3300	4400	2.12	**623/612**
	123.825	36.512	32.791	25.400	154	188	2900	3900	1.96	**72225C/72487**
	123.825	38.100	36.678	30.162	158	216	3000	4100	2.18	**555S/552A**
	140.030	36.512	33.236	23.520	171	212	2600	3400	2.69	**78225/78551**
57.531	96.838	21.000	21.946	15.875	78.0	96.5	3700	5000	0.575	**388A/382A**
59.972	122.238	33.338	31.750	23.812	134	163	3100	4200	1.66	**66589/66520**
59.987	146.050	41.275	39.688	25.400	199	234	2400	3200	3.22	**H913840/H913810**
60.000	95.000	24.000	24.000	19.000	83.0	122	3700	4900	0.606	**JLM508748/JLM508710**
	107.950	25.400	25.400	19.050	91.5	140	3200	4300	0.992	**29580/29520**
	110.000	22.000	21.996	18.824	89.5	120	3200	4300	0.91	**397/394A**
	130.000	34.100	30.924	22.650	156.0	186	2700	3600	2.01	**JHM911244/JHM911211**

Taper Roller Bearings (Inch)
d60.325-66.675mm



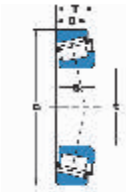
Boundary Dimensions					Basic Load Rating		Limiting Speeds		WT	Bearing Number
					Dynamic	Static	Grease	Oil		
d	D	T	B	C	C	C_0	RPM			
mm					kN				kg	
66.675	130.175	41.275	41.275	31.750	194	262	2800	3800	2.41	**641/633**
	135.755	53.975	56.007	44.450	278	380	2900	3800	3.64	**6386/6320**
	136.525	41.275	41.275	31.750	194	262	2800	3800	2.74	**641/632**
	136.525	41.275	41.275	31.750	226	293	2700	3700	2.75	**H414242/H414210**
68.262	110.000	22.000	21.996	18.824	89.5	120	3200	4300	0.764	**399A/394A**
	120.000	29.794	29.007	24.237	128	177	3000	4000	1.37	**480/472**
	123.825	38.100	36.678	30.162	158	216	3000	4100	1.87	**560S/552A**
	136.525	41.275	41.275	31.750	226	293	2700	3700	2.7	**H414245/H414210**
	136.525	46.038	46.038	36.512	224	355	2600	3500	3.24	**H715343/H715311**
69.850	112.712	25.400	25.400	19.050	95.5	151	3100	4100	0.949	**29675/29620**
	117.475	30.162	30.162	23.812	117	175	3000	4000	1.28	**33275/33462**
	120.000	29.794	29.007	24.237	128	177	3000	4000	1.33	**482/472**
	120.000	32.545	32.545	26.195	147	214	3000	4000	1.47	**47487/47420**
	120.650	25.400	25.400	19.050	95.5	151	3100	4100	1.17	**29675/29630**
	127.000	36.512	36.170	28.575	163	229	2900	3800	1.92	**566/563**
	136.525	41.275	41.275	31.750	194	262	2800	3800	2.63	**643/632**
	146.050	41.275	41.275	31.750	206	295	2500	3300	3.28	**655/653**
	150.089	44.450	46.672	36.512	261	360	2400	3200	3.92	**745A/742**
	168.275	53.975	56.363	41.275	340	460	2200	3000	6.13	**835/832**
69.952	121.442	24.608	23.012	17.462	91.0	127	2900	3800	1.11	**34274/34478**
70.000	110.000	26.000	25.000	20.500	97.0	150	3200	4200	0.889	**JLM813049/JLM813010**
	115.000	29.000	29.000	23.000	124	171	3100	4100	1.13	**JM612949/JM612910**
	120.000	29.794	29.007	24.237	128	177	3000	4000	1.33	**484/472**
	150.000	41.275	39.688	25.400	199	234	2400	3200	3.08	**JH913848/JH913811**
71.438	117.475	30.162	30.162	23.812	117	175	3000	4000	1.24	**33281/33462**
	120.000	32.545	32.545	26.195	147	214	3000	4000	1.42	**47490/47420**
	127.000	36.512	36.170	28.575	163	229	2900	3800	1.87	**567A/563**
	136.525	41.275	41.275	31.750	194	262	2800	3800	2.57	**644/632**
	136.525	41.275	41.275	31.750	226	293	2700	3700	2.58	**H414249/H414210**
	136.525	46.038	46.038	36.512	224	355	2600	3500	3.11	**H715345/H715311**
73.025	112.712	25.400	25.400	19.050	95.5	151	3100	4100	0.873	**29685/29620**
	117.475	30.162	30.162	23.812	117	175	3000	4000	1.19	**33287/33462**
	127.000	36.512	36.170	28.575	163	229	2900	3800	1.82	**567/563**
	139.992	36.512	36.098	28.575	178	265	2600	3400	2.53	**576/572**
	149.225	53.975	54.229	44.450	287	410	2500	3400	4.42	**6460/6420**
	150.089	44.450	46.672	36.512	261	360	2400	3200	3.79	**744/742**

Taper Roller Bearings (Inch)
d66.675-73.025mm



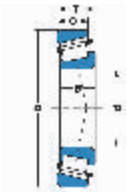
Boundary Dimensions					Basic Load Rating		Limiting Speeds		WT	Bearing Number
					Dynamic	Static	Grease	Oil		
d	D	T	B	C	C	C_0	RPM			
mm					kN				kg	
66.675	130.175	41.275	41.275	31.750	194	262	2800	3800	2.41	**641/633**
	135.755	53.975	56.007	44.450	278	380	2900	3800	3.64	**6386/6320**
	136.525	41.275	41.275	31.750	194	262	2800	3800	2.74	**641/632**
	136.525	41.275	41.275	31.750	226	293	2700	3700	2.75	**H414242/H414210**
68.262	110.000	22.000	21.996	18.824	89.5	120	3200	4300	0.764	**399A/394A**
	120.000	29.794	29.007	24.237	128	177	3000	4000	1.37	**480/472**
	123.825	38.100	36.678	30.162	158	216	3000	4100	1.87	**560S/552A**
	136.525	41.275	41.275	31.750	226	293	2700	3700	2.7	**H414245/H414210**
	136.525	46.038	46.038	36.512	224	355	2600	3500	3.24	**H715343/H715311**
69.850	112.712	25.400	25.400	19.050	95.5	151	3100	4100	0.949	**29675/29620**
	117.475	30.162	30.162	23.812	117	175	3000	4000	1.28	**33275/33462**
	120.000	29.794	29.007	24.237	128	177	3000	4000	1.33	**482/472**
	120.000	32.545	32.545	26.195	147	214	3000	4000	1.47	**47487/47420**
	120.650	25.400	25.400	19.050	95.5	151	3100	4100	1.17	**29675/29630**
	127.000	36.512	36.170	28.575	163	229	2900	3800	1.92	**566/563**
	136.525	41.275	41.275	31.750	194	262	2800	3800	2.63	**643/632**
	146.050	41.275	41.275	31.750	206	295	2500	3300	3.28	**655/653**
	150.089	44.450	46.672	36.512	261	360	2400	3200	3.92	**745A/742**
	168.275	53.975	56.363	41.275	340	460	2200	3000	6.13	**835/832**
69.952	121.442	24.608	23.012	17.462	91.0	127	2900	3800	1.11	**34274/34478**
70.000	110.000	26.000	25.000	20.500	97.0	150	3200	4200	0.889	**JLM813049/JLM813010**
	115.000	29.000	29.000	23.000	124	171	3100	4100	1.13	**JM612949/JM612910**
	120.000	29.794	29.007	24.237	128	177	3000	4000	1.33	**484/472**
	150.000	41.275	39.688	25.400	199	234	2400	3200	3.08	**JH913848/JH913811**
71.438	117.475	30.162	30.162	23.812	117	175	3000	4000	1.24	**33281/33462**
	120.000	32.545	32.545	26.195	147	214	3000	4000	1.42	**47490/47420**
	127.000	36.512	36.170	28.575	163	229	2900	3800	1.87	**567A/563**
	136.525	41.275	41.275	31.750	194	262	2800	3800	2.57	**644/632**
	136.525	41.275	41.275	31.750	226	293	2700	3700	2.58	**H414249/H414210**
	136.525	46.038	46.038	36.512	224	355	2600	3500	3.11	**H715345/H715311**
73.025	112.712	25.400	25.400	19.050	95.5	151	3100	4100	0.873	**29685/29620**
	117.475	30.162	30.162	23.812	117	175	3000	4000	1.19	**33287/33462**
	127.000	36.512	36.170	28.575	163	229	2900	3800	1.82	**567/563**
	139.992	36.512	36.098	28.575	178	265	2600	3400	2.53	**576/572**
	149.225	53.975	54.229	44.450	287	410	2500	3400	4.42	**6460/6420**
	150.089	44.450	46.672	36.512	261	360	2400	3200	3.79	**744/742**

Taper Roller Bearings (Inch)
d73.817-82.550mm



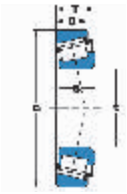
Boundary Dimensions					Basic Load Rating		Limiting Speeds		WT	Bearing Number
					Dynamic	Static	Grease	Oil		
d	D	T	B	C	C	C_0	RPM			
mm					kN				kg	
73.817	112.712	25.400	25.400	19.050	95.5	151	3100	4100	0.86	**29688/29620**
	127.000	36.512	36.170	28.575	163	229	2900	3800	1.80	**568/563**
74.612	139.992	36.512	36.098	28.575	178	265	2600	3400	2.48	**577/572**
75.000	115.000	25.000	25.000	19.000	94.5	143	3000	4000	0.875	**JLM714149/JLM714110**
	120.000	31.000	29.500	25.500	131	197	2900	3900	1.29	**JM714249/JM714210**
	145.000	51.000	51.000	42.000	287	410	2500	3400	3.81	**JH415647/JH415610**
76.200	109.538	19.050	19.050	15.083	63.0	115	3100	4100	0.579	**L814749/L814710**
	121.442	24.608	23.012	17.462	91.0	127	2900	3800	0.982	**34300/34478**
	121.442	24.608	23.012	17.462	91.0	127	2900	3800	0.977	**34301/34478**
	127.000	30.162	31.000	22.225	135	194	2800	3700	1.46	**42687/42620**
	133.350	33.338	33.338	26.195	153	235	2600	3500	1.92	**47678/47620**
	133.350	39.688	39.688	32.545	177	305	2600	3500	2.43	**HM516442/HM516410**
	135.733	44.450	46.100	34.925	211	330	2700	3500	2.75	**5760/5735**
	136.525	30.162	29.796	22.225	129	189	2600	3500	1.83	**495A/493**
	139.992	36.512	36.098	28.575	178	265	2600	3400	2.43	**575/572**
	139.992	36.512	36.098	28.575	178	265	2600	3400	2.41	**575S/572**
	146.050	41.275	41.275	31.750	206	295	2500	3300	3.04	**659/653**
	149.225	53.975	54.229	44.450	287	410	2500	3400	4.23	**6461A/6420**
	150.089	44.450	46.672	36.512	261	360	2400	3200	3.66	**748S/742**
	149.225	53.975	54.229	44.450	287	410	2500	3400	4.26	**6461/6420**
	161.925	53.975	55.100	42.862	310	460	2300	3000	5.44	**6576/6535**
	180.975	53.975	53.183	35.720	325	415	1900	2600	6.57	**H917840/H977810**
	190.500	57.150	57.531	46.038	445	610	1900	2600	8.69	**HH221430/HH221410**
77.788	117.475	25.400	25.400	19.050	99.5	162	2900	3900	0.932	**LM814849/LM814810**
	121.442	24.608	23.012	17.462	91.0	127	2900	3800	0.943	**34306/34478**
	127.000	30.162	31.000	22.225	135	194	2800	3700	1.41	**42690/42620**
	136.525	30.162	29.769	22.225	129	189	2600	3500	1.78	**495AS/493**
	136.525	46.038	46.038	36.512	224	355	2600	3500	2.84	**H715348/H715311**
79.375	146.050	41.275	41.275	31.750	206	295	2500	3300	2.91	**661/653**
	161.925	47.625	48.260	38.100	270	385	2300	3100	4.55	**756A/752**
	190.500	57.150	57.531	46.038	445	610	1900	2600	8.52	**HH221431/HH221410**
80.000	130.000	35.000	34.000	28.500	166	249	2700	3600	1.73	**JM515649/JM515610**
80.962	133.350	33.338	33.338	26.195	153	235	2600	3500	1.78	**47681/47620**
	136.525	30.162	29.769	22.225	129	189	2600	3500	1.69	**496/493**
	139.992	36.512	36.098	28.575	178	265	2600	3400	2.26	**581/572**
	150.089	44.450	46.672	36.512	261	360	2400	3200	3.43	**740/742**
82.550	125.412	25.400	25.400	19.845	102	163	2700	3600	1.07	**27687/27620**
	133.350	33.338	33.338	26.195	153	235	2600	3500	1.72	**47686/47620**
	133.350	39.688	39.688	32.545	177	305	2600	3500	2.16	**HM516448/HM516410**
	136.525	30.162	29.769	22.225	129	189	2600	3500	1.64	**495/493**
	139.992	36.512	36.098	28.575	178	265	2600	3400	2.2	**580/572**
	139.992	36.512	36.098	28.575	178	265	2600	3400	2.19	**582/572**

Taper Roller Bearings (Inch)
d82.550-95.000mm



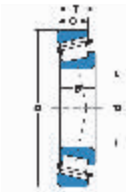
Boundary Dimensions					Basic Load Rating		Limiting Speeds		WT	Bearing Number
					Dynamic	Static	Grease	Oil		
d	D	T	B	C	C	C_0	RPM			
mm					kN				kg	
82.550	146.050	41.275	41.275	31.750	206	295	2500	3300	2.78	**663/653**
	150.089	44.450	46.672	36.512	261	360	2400	3200	3.37	**749A/742**
	152.400	39.688	36.322	30.162	180	279	2300	3100	3.02	**595/592A**
	152.400	41.275	41.275	31.750	206	295	2500	3300	3.15	**663/652**
	161.925	47.625	48.260	38.100	270	385	2300	3100	4.42	**757/752**
	161.925	53.975	55.100	42.862	310	460	2300	3000	5.09	**6559C/6535**
	168.275	53.975	56.363	41.275	340	460	2200	3000	5.46	**842/832**
83.345	125.412	25.400	25.400	19.845	102	163	2700	3600	1.06	**27689/27620**
	125.412	25.400	25.400	19.845	102	163	2700	3600	1.05	**27690/27620**
	125.412	25.400	25.400	19.845	102	163	2700	3600	1.04	**27691/27620**
84.138	136.525	30.162	29.769	22.225	129	189	2600	3500	1.6	**498/493**
85.000	130.000	30.000	29.000	24.000	135	214	2600	3500	1.37	**JM716648/JM716610**
	140.000	39.000	38.000	31.500	197	297	2500	3400	2.3	**JHM516849/JHM516810**
85.026	150.089	44.450	46.672	36.512	261	360	2400	3200	3.25	**749/742**
85.725	133.350	30.162	29.769	22.225	129	189	2600	3500	1.43	**497/492A**
	142.138	42.862	42.862	34.133	216	350	2500	3300	2.69	**HM617049/HM617010**
	146.050	41.275	41.275	31.750	206	295	2500	3300	2.65	**665/653**
	152.400	39.688	36.222	30.162	180	279	2300	3100	2.9	**596/592A**
	161.925	47.625	48.260	38.100	270	385	2300	3100	4.26	**758/752**
87.960	148.430	28.575	28.971	21.433	138	215	2300	3100	1.99	**42346/42584**
88.900	121.442	15.083	15.083	11.112	56.5	88.0	2700	3600	0.452	**LL217849/LL217810**
	123.825	20.638	20.638	16.670	80.0	141	2700	3500	0.737	**L217849/L217810**
	148.430	28.575	28.971	21.433	138	215	2300	3100	1.96	**42350/42584**
	152.400	39.688	36.322	30.162	180	279	2300	3100	2.78	**593/592A**
	161.925	47.625	48.260	38.100	270	385	2300	3100	4.09	**759/752**
	161.925	53.975	55.100	42.862	310	460	2300	3000	4.73	**6580/6535**
	168.275	53.975	56.363	41.275	340	460	2200	3000	5.08	**850/832**
89.974	146.975	40.000	40.000	32.500	227	340	2400	3200	2.55	**HM218248/HM218210**
90.000	145.000	35.000	34.000	27.000	189	279	2400	3200	2.14	**JM718149/JM718110**
	155.000	44.000	44.000	35.500	270	385	2300	3100	3.32	**JHM318448/JHM318410**
	190.000	50.800	46.038	31.750	281	365	1800	2400	6.32	**J90354/J90748**
90.488	161.925	47.625	48.260	38.100	270	385	2300	3100	4.01	**760/752**
92.075	146.050	33.338	34.925	26.195	163	266	2400	3100	2.08	**47890/47820**
	152.400	39.688	36.322	30.162	180	279	2300	3100	2.63	**598A/592A**
	168.275	41.275	41.275	30.162	222	340	2100	2800	3.87	**681/672**
93.662	148.430	28.575	28.971	21.433	138	215	2300	3100	1.8	**42368/42584**
95.000	150.000	35.000	34.000	27.000	180	279	2300	3100	2.19	**JM719149/JM719113**

Taper Roller Bearings (Inch)
d95.250-114.300mm



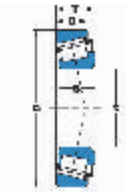
Boundary Dimensions					Basic Load Rating		Limiting Speeds		WT	Bearing Number
					Dynamic	Static	Grease	Oil		
d	D	T	B	C	C	C_0	RPM			
mm					kN				kg	
95.250	130.175	20.638	21.433	16.670	81.0	147	2500	3300	0.789	**L319249/L319210**
	146.050	33.338	34.925	26.195	163	266	2400	3100	1.95	**47896/47820**
	147.638	35.717	36.322	26.192	180	279	2300	3100	2.09	**594A/592*E**
	148.430	28.575	28.971	21.433	138	215	2300	3100	1.75	**42375/42584**
	152.400	39.688	36.322	30.162	180	279	2300	3100	2.51	**594/592A**
	157.162	36.512	36.116	26.195	188	305	2200	2900	2.76	**52375/52618**
	168.275	41.275	41.275	30.162	222	340	2100	2800	3.72	**683/672**
	190.500	57.150	57.531	46.038	445	610	1900	2600	7.5	**HH221440/HH221410**
96.838	148.430	28.575	28.971	21.433	138	215	2300	3100	1.69	**42381/42584**
	188.912	50.800	46.038	31.750	281	365	1800	2400	5.67	**90381/90744**
98.425	157.162	36.512	36.116	26.195	188	305	2200	2900	2.62	**52387/52618**
	168.275	41.275	41.275	30.162	222	340	2100	2800	3.56	**685/672**
99.974	212.725	66.675	66.675	53.975	575	810	1700	2300	11.5	**HH224334/HH224310**
100.000	155.000	36.000	35.000	28.000	192	310	2200	2900	2.4	**JM720249/JM720210**
100.012	157.162	36.512	36.116	26.195	188	305	2200	2900	2.55	**52393/52618**
101.600	157.162	36.512	36.116	26.195	188	305	2200	2900	2.48	**52400/52618**
	168.275	41.275	41.275	30.162	222	340	2100	2800	3.4	**687/672**
	180.975	47.625	48.006	38.100	285	430	2000	2700	5.11	**780/772**
	190.500	57.150	57.531	44.450	380	555	2000	2600	7	**861/854**
	190.500	57.150	57.531	46.038	445	610	1900	2600	7.06	**HH221449/HH221410**
	190.500	57.150	57.531	46.038	445	610	1900	2600	7.06	**HH221449A/HH221410**
	212.725	66.675	66.675	53.975	475	695	1800	2300	11.2	**941/932**
	212.725	66.675	66.675	53.975	575	810	1700	2300	11.3	**HH224335/HH224310**
	158.750	23.020	21.438	15.875	102	166	2100	2800	1.37	**37425/37625**
107.950	159.987	34.925	34.925	26.988	167	320	2100	2800	2.37	**LM522546/LM522510**
	165.100	36.512	36.512	26.988	191	315	2100	2700	2.69	**56425/56650**
	212.725	66.675	66.675	53.975	475	695	1800	2300	10.7	**936/932**
109.538	158.750	23.020	21.438	15.875	102	166	2100	2800	1.33	**37431/37625**
109.987	159.987	34.925	34.925	26.988	167	320	2100	2800	2.24	**LM522548/LM522510**
109.992	177.800	41.275	41.275	30.162	232	375	1900	2600	3.77	**64433/64700**
110.000	165.000	35.000	35.000	26.500	191	315	2100	2700	2.52	**JM822049/JM822010**
	180.000	47.000	46.000	38.000	305	480	1900	2600	4.61	**JHM522649/JHM522610**
111.125	214.312	55.562	52.388	39.688	405	560	1500	2000	8.18	**H924045/H924010**
114.300	177.800	41.275	41.275	30.162	232	375	1900	2600	3.52	**64450/64700**
	180.975	34.925	31.750	25.400	169	245	1900	2500	2.93	**68450/68712**
	212.725	66.675	66.675	53.975	475	695	1800	2300	10.1	**938/932**
	212.725	66.675	66.675	53.975	575	810	1700	2300	10.2	**HH224346/HH224310**
	228.600	53.975	49.428	38.100	430	620	1400	1900	9.76	**HM926740/HM926710**

Taper Roller Bearings (Inch)
d115.087-165.100mm



Boundary Dimensions					Basic Load Rating		Limiting Speeds		WT	Bearing Number
					Dynamic	Static	Grease	Oil		
d	D	T	B	C	C	C_0	RPM			
mm					kN				kg	
115.087	190.500	47.625	49.212	34.925	300	475	1800	2500	5.11	**71453/71750**
117.475	180.975	34.925	31.750	25.400	169	245	1900	2500	2.78	**68462/68712**
120.000	170.000	25.400	25.400	19.050	127	210	2000	2600	1.67	**JL724348/JL724314**
120.650	234.950	63.500	63.500	49.212	525	825	1500	2400	12.6	**95475/95925**
123.825	182.562	39.688	38.100	33.338	224	435	1800	2400	3.52	**48286/48220**
127.000	182.562	39.688	38.100	33.338	224	435	1800	2400	3.33	**48290/48220**
	196.850	46.038	46.038	38.100	310	550	1700	2200	5.1	**67388/67322**
	215.900	47.625	47.625	34.925	320	540	1600	2100	7.05	**74500/74850**
	228.600	53.975	49.428	38.100	320	445	1400	1900	8.43	**97500/97900**
	228.600	53.975	49.428	38.100	430	620	1400	1900	8.83	**HM926747/HM926710**
	230.000	63.500	63.500	49.212	525	825	1500	2000	12.9	**95500/95905**
	254.000	77.788	82.550	61.912	740	1070	1400	1900	19.5	**HH228349/HH228310**
128.588	206.375	47.625	47.625	34.925	315	520	1700	2200	5.77	**799/792**
	196.850	46.038	46.038	38.100	310	550	1700	2200	4.87	**67389/67322**
130.175	206.375	47.625	47.625	34.925	315	520	1700	2200	5.65	**799A/792**
133.350	177.008	25.400	26.195	20.638	126	259	1800	2400	1.7	**L327249/L327210**
	190.500	39.688	39.688	33.338	236	475	1700	2300	3.64	**48385/48320**
	196.850	46.038	46.038	38.100	310	550	1700	2200	4.63	**67390/67322**
	196.850	46.038	46.038	38.100	310	550	1700	2200	4.59	**67391/67322**
	215.900	47.625	47.625	34.925	320	540	1600	2100	6.56	**74525/74850**
	234.950	63.500	63.500	49.212	525	825	1500	2000	11.3	**95525/95925**
136.525	190.500	39.688	39.688	33.338	236	475	1700	2300	3.43	**48393/48320**
	228.600	57.150	57.150	44.450	445	735	1500	2000	9.07	**896/892**
139.700	215.900	47.625	47.625	34.925	320	540	1600	2100	6.05	**74550/74850**
	228.600	57.150	57.150	44.450	445	735	1500	2000	8.76	**898/892**
	254.000	66.675	66.675	47.625	550	910	1400	1800	14.3	**99550/99100**
142.875	200.025	41.275	39.688	34.130	239	490	1600	2100	3.85	**48684/48620**
	200.025	41.275	39.688	34.130	239	490	1600	2100	3.89	**48685/48620**
146.050	193.675	28.575	28.575	23.020	165	340	1600	2200	2.27	**36690/36620**
	254.000	66.675	66.675	47.625	550	910	1400	1800	13.5	**99575/99100**
152.400	192.088	25.000	24.000	19.000	130	261	1600	2100	1.53	**L630349/L630310**
	222.250	46.830	46.830	34.925	315	585	1500	2000	5.72	**M231648/M231610**
158.750	205.583	23.812	23.812	18.258	126	247	1500	2000	1.89	**L432349/L432310**
	225.425	41.275	39.688	33.338	254	555	1400	1900	5.2	**46780/46720**
165.100	225.425	41.275	39.688	33.338	254	555	1400	1900	4.69	**46790/46720**

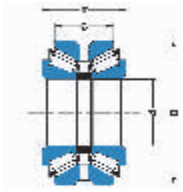
Taper Roller Bearings (Inch)
d170.000-343.154mm



Boundary Dimensions					Basic Load Rating		Limiting Speeds		WT	Bearing Number
					Dynamic	Static	Grease	Oil		
d	D	T	B	C	C	C_0	RPM			
mm					kN				kg	
170.000	230.000	39.000	38.000	31.000	282	520	1400	1800	4.37	**JHM534149/JHM534110**
177.800	227.012	30.162	30.162	23.020	181	415	1300	1800	2.92	**36990/36920**
	247.650	47.625	47.625	38.100	340	690	1300	1700	6.57	**67790/67720**
180.000	250.000	47.000	45.000	37.000	370	710	1300	1700	6.76	**JM736149/JM736110**
190.000	260.000	46.000	44.000	36.500	365	720	1200	1600	6.85	**JM738249/JM738210**
190.475	279.400	52.388	57.150	41.275	523	980	1600	2200	9.50	**M239449/410**
190.500	282.575	50.800	47.625	36.512	402	695	1600	2200	9.60	**87750/87111**
191.237	279.400	52.388	58.738	41.275	523	980	1600	2200	9.20	**M239448A/410**
196.850	241.300	23.810	23.017	17.462	154	315	1700	2600	2.00	**LL639249/210**
	241.300	23.812	23.017	17.462	154	315	1700	2600	2.00	**LL639249/2/210/4**
	257.175	39.688	39.688	30.162	275	655	1600	2400	5.30	**LM739749/710/VE174**
200.025	276.225	42.862	46.038	34.133	450	780	1700	2200	7.70	**LM241147/110/QVQ051**
203.987	276.225	42.862	46.038	34.133	450	780	1700	2200	7.25	**LM241148/110/ VQ051**
206.375	282.575	46.038	46.038	36.512	380	830	1500	2200	8.60	**67985/67920/HA3VQ117**
215.900	285.750	46.038	46.038	34.924	380	850	1500	2200	7.90	**LM742749/710/VE174**
216.408	285.750	46.038	49.212	34.924	380	850	1500	2200	7.85	**LM742747/710**
216.713	285.750	46.038	49.212	34.924	380	850	1500	2200	7.85	**LM742747A/710**
230.188	317.500	47.625	52.388	36.512	523	980	1300	2000	1.05	**LM245846/810**
231.775	300.038	33.338	31.750	23.812	216	425	1400	2000	5.30	**544091/2B/54418A/213**
	317.500	47.625	52.388	36.512	523	980	1300	2000	10.5	**LM245848/810**
255.600	342.900	57.150	63.500	44.450	594	1220	1200	1800	14.0	**M349547/510**
257.175	342.900	57.150	57.150	44.450	594	1220	1200	1800	14.0	**M349549/510VE174**
	358.775	71.438	57.150	44.450	842	1760	1200	1700	20.5	**M249747/710**
263.525	325.438	28.575	28.575	25.400	220	550	1300	1800	53.0	**38880/38820**
292.100	374.650	47.625	47.625	34.925	501	1140	1100	1600	1.2012.0	**L555249/210**
	374.650	47.625	47.625	34.925	501	1140	1100	1600	1.2012.0	**L555249/210/VE174**
304.800	393.700	50.800	50.800	38.100	528	1220	1000	1500	1405	**L357049/010/VE174**
343.154	450.850	66.675	66.675	52.388	935	2200	900	1300	28.0	**LM361649A/610**

Taper Roller Bearings (Inch)
d11.987-30.000mm

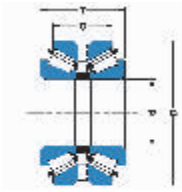
TDO-Double Outer Race



Dimensions , mm				Load Ratings, kN Dynamic	Part Number		Weight
d	D	T	B	C	Inner	Outer	Kg
11.987	30.480	25.400	21.260	18.500	A2047	A2120D	**0.08**
14.987	34.987	25.174	20.638	21.200	A4059	A4138D	**0.12**
16.993	47.000	31.750	25.212	43.100	05066	05185D	**0.28**
19.050	47.000	31.750	25.212	43.100	05075	05185D	**0.26**
	57.150	49.212	36.512	74.900	21075	21226D	**0.65**
19.987	45.984	31.750	25.212	43.100	05079	05180D	**0.26**
	47.000	31.750	25.212	43.100	05079	05185D	**0.26**
20.000	50.005	33.340	25.400	46.900	07079	07196D	**0.32**
23.812	71.438	42.862	36.512	94.700	26093	26282D	**0.88**
	71.975	42.761	36.512	94.700	26093	26284D	**0.90**
24.384	80.962	55.562	39.688	125.000	43096	43319D	**1.43**
24.981	50.005	33.340	25.400	46.900	07098	07196D	**0.28**
	62.000	39.688	36.258	69.700	17098	17245D	**0.60**
25.000	50.005	33.340	25.400	46.900	07097	07196D	**0.28**
	62.000	39.688	36.258	69.700	17098X	17245D	**0.60**
25.400	50.005	33.400	25.400	46.900	07100-S	07196D	**0.27**
	50.005	33.400	25.400	46.900	07100-SA	07196D	**0.27**
	63.500	46.038	36.512	81.400	15100	15251D	**0.69**
	63.500	46.038	36.512	81.400	15100-S	15251D	**0.72**
	63.500	46.038	36.512	81.400	15101	15251D	**0.72**
	71.438	42.862	36.512	94.700	26100	26282D	**0.87**
	71.975	42.761	36.512	94.700	26100	26284D	**0.88**
28.575	63.500	46.038	36.512	81.400	15112	15251D	**0.66**
	66.421	44.453	38.100	90.100	24112	24262D	**0.70**
	69.850	66.675	57.150	135.000	2578	2524YD	**1.19**
	71.438	42.862	36.512	94.700	26112	26282D	**0.83**
	71.975	42.761	36.512	94.700	26112	26284D	**0.84**
	76.200	47.625	38.100	106.000	02872	02823D	**1.13**
	80.962	55.562	39.688	125.000	43112	43319D	**1.37**
29.987	62.000	39.688	36.258	69.700	17118	17245D	**0.54**
	63.500	46.038	36.512	81.400	15117	15251D	**0.65**
	71.438	42.862	36.512	94.700	26118	26282D	**0.81**
	71.975	42.761	36.512	94.700	26118	26284D	**0.84**
	80.962	55.562	39.688	125.000	43117	43319D	**1.31**
30.000	69.012	46.040	38.100	88.000	14117A	14276D	**0.79**
	69.012	46.040	38.100	88.000	14118	14276D	**0.79**

Taper Roller Bearings (Inch)
d30.162-35.000mm

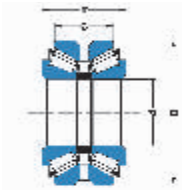
TDO-Double Outer Race



Dimensions , mm				Load Ratings, kN Dynamic	Part Number		Weight
d	D	T	B	C	Inner	Outer	Kg
30.162	58.738	32.542	24.608	51.100	08118	08231D	**0.37**
	62.000	39.688	36.258	69.700	17119	17245D	**0.53**
	66.421	44.453	38.100	90.100	24118	24262D	**0.59**
	69.850	66.675	57.150	135.000	2558	2524YD	**1.16**
	80.035	46.040	34.925	102.000	28118	28318D	**1.10**
	80.962	55.562	39.688	125.000	43118	43319D	**1.33**
30.213	63.500	46.038	36.512	81.400	15118	15251D	**0.62**
	63.500	46.038	36.512	81.400	15119	15251D	**0.65**
31.750	58.738	32.542	24.608	51.100	08125	08231d	**0.36**
	63.500	44.259	36.512	81.400	15123	15251D	**0.59**
	63.500	46.038	36.512	81.400	15125	15251D	**0.61**
	63.500	46.038	36.512	81.400	15126	15251D	**0.62**
	69.012	46.040	38.100	88.000	14125A	14276D	**0.76**
	69.850	66.675	57.150	135.000	2580	2524YD	**1.18**
	69.850	66.675	57.150	135.000	2582	2524YD	**1.13**
	76.200	47.625	38.100	106.000	02875	02823D	**1.05**
	76.200	47.625	38.100	106.000	02876	02823D	**1.06**
	80.962	55.562	39.688	125.000	43125	43319D	**1.31**
	82.550	66.678	55.562	169.000	3476	3423D	**1.84**
32.004	71.438	42.862	36.512	94.700	26126	26282D	**0.78**
	71.975	42.761	36.512	94.700	26126	26284D	**0.79**
33.338	69.012	46.040	38.100	88.000	14131	14276D	**0.74**
	69.850	66.675	57.150	135.000	2581	2523D	**1.10**
	69.850	66.675	57.150	135.000	2581	2524YD	**1.10**
	69.850	66.675	57.150	135.000	2585	2523D	**1.13**
	69.850	66.675	57.150	135.000	2585	2524YD	**1.09**
	71.438	42.862	36.512	94.700	26131	26282D	**0.76**
	71.438	42.862	36.512	94.700	26132	26282D	**0.76**
	71.975	42.761	36.512	94.700	26131	26284D	**0.78**
	71.975	42.761	36.512	94.700	26132	26284D	**0.77**
	73.025	42.862	35.522	85.700	25132	25289D	**0.87**
	80.962	55.562	39.688	125.000	43131	43319D	**1.26**
	80.962	55.562	39.688	125.000	43132	43319D	**1.27**
34.925	69.012	46.040	38.100	88.000	14137A	14276D	**0.71**
	69.012	46.040	38.100	88.000	14138A	14276D	**0.71**
	76.200	47.625	38.100	106.000	02877	02823D	**1.00**
	76.200	47.625	38.100	106.000	02878	02823D	**1.02**
	80.035	46.040	34.925	102.000	28137	28318D	**1.05**
	80.035	57.150	44.958	126.000	27875	27820D	**1.30**
	95.250	61.915	50.800	205.000	449	432D	**2.28**
34.975	69.012	46.040	38.100	88.000	14139	14276D	**0.71**
	80.035	46.040	34.925	102.000	28138	28318D	**1.02**
35.000	95.250	61.915	50.800	205.000	441	432D	**2.26**

Taper Roller Bearings (Inch)
d36.512-42.862mm

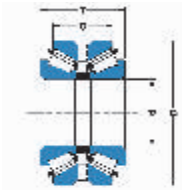
TDO-Double Outer Race



Dimensions , mm				Load Ratings, kN Dynamic	Part Number		Weight
d	D	T	B	C	Inner	Outer	Kg
36.512	69.012	46.035	38.100	91.400	13682	13621D	**0.66**
	69.012	46.035	38.100	91.400	13682	13621DC	**0.71**
	82.550	66.678	55.562	169.000	3479	3423D	**1.71**
	82.931	57.150	47.625	146.000	25570	25520D	**1.53**
	92.075	55.562	39.688	136.000	44143	44363D	**1.72**
38.100	63.500	38.100	31.750	43.800	13889	1385D	**0.42**
	69.012	46.035	38.100	91.400	13685	13621DC	**0.68**
	69.012	46.035	38.100	91.400	13685	13621D	**0.65**
	69.012	46.035	38.100	91.400	13687	13621D	**0.66**
	80.335	46.040	34.925	102.000	28150	28318D	**0.98**
	80.035	46.040	34.925	102.000	23151	28318D	**0.95**
	80.035	57.150	44.958	126.000	27880	278200	**1.22**
	80.035	57.150	44.958	126.000	27881	278200	**1.21**
	82.550	66.678	55.562	169.000	3490	3423D	**1.65**
	82.931	57.150	47.625	146.000	25572	25520D	**1.48**
	92.075	55.562	39.688	136.000	44150	44363D	**1.67**
	95.250	61.915	50.800	205.000	440	432D	**2.19**
	95.250	61.915	50.800	205.000	444	432D	**2.18**
	95.250	63.500	52.385	209.000	33880	33821D	**2.25**
	92.250	65.088	44.450	16.100	53150	53376D	**2.11**
	111.125	79.375	63.500	277.000	542	533D	**3.98**
38.481	63.500	38.100	31.750	43.800	13890	13835D	**0.41**
39.688	92.075	55.562	39.688	136.000	44156	44363D	**1.60**
	92.075	55.562	39.688	136.000	44158	44363D	**1.59**
39.980	80.035	43.459	34.925	102.000	28156	28318D	**0.90**
	80.035	46.040	34.925	102.000	28159	28318D	**0.94**
40.000	80.035	46.040	34.925	102.000	28158	28318d	**0.95**
	90.119	50.795	44.450	132.000	350	353d	**1.46**
	90.119	50.795	44.450	132.000	350	353DC	**1.52**
	90.119	50.795	44.450	132.000	350A	353D	**1.54**
	90.119	50.795	44.450	132.000	357	353D	**1.53**
	92.075	55.562	39.688	136.000	44157	44363D	**1.59**
	95.250	61.915	50.800	205.000	442-S	432D	**2.12**
41.275	76.200	49.212	39.688	122.000	24780	24720D	**0.93**
	76.200	49.212	39.688	122.000	24780	24720XD	**0.93**
	90.000	50.010	42.070	138.000	365A	363D	**1.41**
	92.075	55.562	39.688	136.000	44162	44363D	**1.59**
	95.250	61.915	50.800	205.000	447	432D	**2.11**
	95.250	65.088	44.450	161.000	53162	53376D	**1.96**
	107.950	65.090	53.975	219.000	464	452D	**3.08**
	111.125	79.375	63.500	277.000	541	533D	**3.86**
42.850	107.950	65.090	53.975	219.000	461	452D	**2.97**
42.862	82.550	44.450	34.925	105.000	22168	22325D	**1.01**
	82.931	57.150	47.625	146.000	25578	25520D	**1.33**

Taper Roller Bearings (Inch)
d44.450-47.625mm

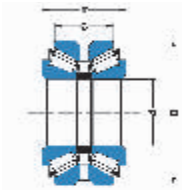
TDO-Double Outer Race



Dimensions , mm				Load Ratings, kN Dynamic	Part Number		Weight
d	D	T	B	C	Inner	Outer	Kg
44.450	79.375	41.272	33.338	83.800	18685	18620D	**0.78**
	82.931	57.150	47.625	146.000	25580	25520DC	**1.31**
	82.931	57.150	47.625	146.000	25580	25520D	**1.31**
	82.931	57.150	47.625	146.000	25581	25520D	**1.32**
	90.119	50.795	44.450	132.000	365	353D	**1.41**
	90.199	50.795	44.450	132.000	355A	353D	**1.41**
	90.119	50.795	44.450	132.000	355X	353D	**1.37**
	90.119	50.795	44.450	132.000	355X	353DC	**1.37**
	93.264	65.068	52.388	197.000	3782	3729D	**2.05**
	95.250	61.915	50.800	205.000	435	432D	**2.00**
	95.250	61.915	50.800	205.000	438	432D	**1.98**
	95.250	63.500	52.385	209.000	33885	33821D	**2.12**
	95.250	65.088	44.450	16.100	53176	53376D	**1.50**
	95.250	65.088	44.450	161.000	53177	53376D	**1.88**
	95.250	65.088	44.450	161.000	53177	53376D	**1.88**
	95.250	65.088	44.450	161.000	53178	53376D	**1.89**
	107.950	65.090	53.975	219.000	460	452D	**2.91**
	111.125	79.375	63.500	277.000	535	533D	**3.74**
	112.712	65.088	46.038	172.000	55175	55444D	**3.03**
44.983	82.931	57.150	47.625	146.000	25584	25520D	**1.30**
	93.264	65.088	52.388	197.000	3776	3729D	**2.03**
45.000	90.000	50.010	42.070	138.000	367	363D	**1.34**
	90.119	50.795	44.450	132.000	358	353D	**1.40**
	90.119	50.795	44.450	132.000	358A	353D	**1.39**
	100.000	50.800	39.690	142.000	376X	372D	**1.76**
45.618	82.931	57.150	47.625	146.000	25590	25520D	**1.27**
46.038	79.375	41.272	33.338	83.800	18690	18620DC	**0.74**
	79.375	41.272	33.338	83.000	18690	18620D	**0.74**
	90.119	50.795	44.450	132.000	359A	353D	**1.33**
	90.119	50.795	44.450	132.000	359S	353D	**1.36**
	95.250	61.915	50.800	205.000	436	432D	**1.95**
47.625	90.000	50.010	42.070	138.000	369A	363D	**1.26**
	90.000	50.010	42.070	138.000	369-S	363D	**1.27**
	93.264	65.088	52.388	197.000	3778	3729D	**1.88**
	93.264	65.088	52.388	197.000	3779	3729D	**1.94**
	100.00	49.200	39.675	147.000	386A	384ED	**1.75**
	100.00	52.388	42.862	147.000	386A	384D	**1.84**
	107.950	65.090	53.975	219.000	463	452D	**2.79**
	107.950	65.090	53.975	219.000	467	452D	**2.89**
	109.982	63.500	42.865	172.000	55187	55433D	**2.77**
	111.125	79.375	63.500	277.000	536	533D	**3.60**
	112.712	65.088	46.038	172.000	55187	55444D	**2.91**
	117.475	73.025	53.975	240.000	66187	66462D	**3.77**
	123.825	77.788	55.562	266.000	72187	72488D	**4.36**

Taper Roller Bearings (Inch)
d49.212-52.388mm

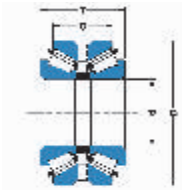
TDO-Double Outer Race



Dimensions , mm				Load Ratings, kN Dynamic	Part Number		Weight
d	D	T	B	C	Inner	Outer	Kg
49.212	93.264	65.088	52.388	197.000	3781	3729D	**1.88**
	111.125	79.375	63.500	277.000	545	533D	**3.53**
49.975	109.982	63.500	42.865	172.000	55197	55433D	**2.69**
	112.712	65.088	46.038	172.000	55197	55444D	**2.83**
49.982	111.125	79.375	63.500	277.000	546	533D	**3.50**
50.000	90.000	50.010	42.070	138.000	365	365D	**1.20**
	90.000	50.010	42.070	138.000	365	363DC	**1.24**
	90.000	50.010	42.070	138.000	366	363D	**1.20**
	110.00	52.388	46.038	159.000	396	394D	**2.31**
50.800	80.962	42.865	34.925	98.000	L305649	L305610D	**0.78**
	89.985	50.400	49.949	138.000	368A	362XD	**1.27**
	90.000	50.010	42.070	138.000	368	363D	**1.18**
	90.000	50.010	42.070	138.000	368A	363DC	**1.21**
	90.000	50.010	42.070	138.000	368A	363D	**1.17**
	93.264	65.088	52.388	197.000	3775	3729DC	**1.81**
	93.264	65.088	52.388	197.000	3775	3729D	**1.84**
	93.264	65.088	52.388	197.000	3780	3729DC	**1.82**
	93.264	65.088	52.388	197.000	3780	3729D	**1.82**
	93.264	65.088	52.388	197.000	3784	3729D	**1.78**
	95.250	63.500	52.385	209.000	33889	33821DC	**1.85**
	95.250	63.500	52.385	209.000	33889	33821D	**1.85**
	100.000	49.200	39.675	147.090	385A	384EDC	**1.62**
	100.000	49.200	39.675	147.000	385A	384ED	**1.62**
	100.000	52.388	42.862	147.000	385A	384D	**1.76**
	107.950	65.090	53.975	219.000	455	452D	**2.77**
	107.950	65.090	53.975	219.000	455-S	452D	**2.75**
	109.982	63.500	42.865	172.000	55200	55433D	**2.68**
	109.982	63.500	42.865	206.000	55200C	55443D	**2.85**
	110.000	52.388	46.038	159.000	398	394D	**2.29**
	112.712	65.088	46.038	172.000	55200	55444D	**2.79**
	117.475	73.025	53.975	240.000	66200	66462D	**3.65**
	123.825	77.785	55.562	291.000	72200C	72488D	**4.34**
	123.825	79.375	63.500	307.000	555	552D	**4.77**
51.592	90.000	50.010	42.010	138.000	368-S	363D	**1.15**
52.388	93.264	65.088	52.388	197.000	3767	3729D	**1.77**
	95.250	63.500	52.385	209.000	33890	33821D	**1.82**
	95.250	63.500	52.385	209.000	33891	33821D	**1.80**
	107.950	65.090	53.975	219.000	468	452D	**2.64**
	109.982	63.500	42.865	172.000	55206	55433D	**2.60**
	111.125	79.375	63.500	277.000	540	533D	**3.39**
	112.712	65.088	46.038	172.000	55206	55444D	**2.71**

Taper Roller Bearings (Inch)
d53.975-57.531mm

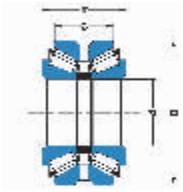
TDO-Double Outer Race



Dimensions , mm				Load Ratings, kN Dynamic	Part Number		Weight
d	D	T	B	C	Inner	Outer	Kg
53.975	95.250	63.500	52.385	209.000	33895	33821D	**1.74**
	100.000	49.200	39.675	147.000	389A	384ED	**1.55**
	100.000	52.388	42.862	147.000	389A	384D	**1.66**
	107.950	65.090	53.975	219.000	456	452DC	**2.57**
	107.950	65.090	53.975	219.000	456	452D	**2.61**
	111.125	79.375	63.500	277.000	539	533D	**3.35**
	117.475	73.025	53.975	24.000	66212	66462D	**3.57**
	123.825	79.375	63.500	307.000	557-S	552D	**4.64**
	136.525	95.250	76.200	376.000	636	632D	**6.71**
	139.700	77.790	51.803	322.000	78215C	78549D	**5.84**
54.987	107.950	65.090	53.975	219.000	466	452D	**2.58**
55.000	100.000	49.200	39.675	147.000	385	384EDC	**1.50**
	100.000	49.200	39.675	147.000	385	384ED	**1.50**
	100.000	49.200	39.675	147.000	385X	384ED	**1.49**
	100.000	52.388	42.862	147.000	385	384D	**1.61**
	100.000	52.388	42.862	147.000	385X	384D	**1.60**
	120.000	65.090	53.975	231.000	475	472DC	**3.65**
	120.000	65.090	53.975	231.000	475	472D	**3.65**
55.562	107.950	65.090	53.975	219.000	466-S	452DC	**2.52**
	107.950	65.090	53.975	219.000	466-S	452D	**2.56**
55.575	100.000	49.200	39.675	147.000	389	384ED	**1.49**
57.150	92.075	42.070	34.130	101.000	L507949	L507914D	**1.08**
	100.000	49.200	39.675	147.000	387	384ED	**1.44**
	100.000	49.200	39.675	147.000	387A	384EDC	**1.43**
	100.000	49.200	39.675	147.000	387A	384ED	**1.43**
	100.000	49.200	39.675	147.000	387AS	384ED	**1.41**
	100.000	49.200	39.675	147.000	387-S	384ED	**1.45**
	100.000	52.388	42.862	147.000	387	384D	**1.54**
	100.000	52.388	42.862	147.000	387A	384D	**1.53**
	100.000	52.388	42.862	147.000	387AS	384D	**1.51**
	100.000	52.388	42.862	147.000	387-S	384DC	**1.55**
	100.000	52.388	42.862	147.000	387-S	384D	**1.55**
	100.000	105.131	95.606	147.000	387A	384XD	**2.90**
	107.950	65.090	53.975	219.000	462	452DC	**2.51**
	107.950	95.090	53.975	219.000	462	452D	**2.51**
	107.950	65.090	53.975	219.000	469	452D	**2.50**
	110.000	52.388	46.038	159.000	390	394D	**2.12**
	114.287	58.738	46.038	178.000	29665	29622D	**2.71**
	117.475	73.025	53.975	240.000	66225	66462D	**3.34**
	123.825	77.785	55.562	291.000	72225C	72488D	**4.15**
	123.825	79.375	63.500	307.000	555-S	552D	**4.47**
	136.525	95.250	76.200	376.000	635	632D	**6.77**
	139.700	77.788	51.803	276.000	78225	78549D	**5.41**
57.531	100.000	49.200	39.675	147.000	388A	384ED	**1.46**
	100.000	52.388	42.862	147.000	388A	384D	**1.51**

Taper Roller Bearings (Inch)
d59.972-65.000mm

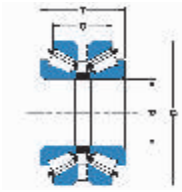
TDO-Double Outer Race



Dimensions , mm				Load Ratings, kN Dynamic	Part Number		Weight
d	D	T	B	C	Inner	Outer	Kg
59.972	129.982	69.850	47.625	249.000	66589	66522D	**3.94**
59.977	100.000	55.560	44.450	171.000	28980	289210D	**1.66**
59.987	123.825	79.375	63.500	307.000	558-S	552D	**4.31**
60.000	110.000	52.388	46.038	159.000	397	394DC	**2.01**
	110.000	52.388	46.038	159.000	397	394D	**2.01**
	120.000	65.090	53.975	231.000	476	472D	**3.42**
	129.982	69.850	47.625	249.000	66585	66522D	**3.92**
60.325	100.000	55.560	44.450	171.000	28985	28921DC	**1.65**
	100.000	55.560	44.450	171.000	28985	28921D	**1.65**
	123.825	79.375	63.500	307.000	558	552DC	**4.31**
	123.825	79.375	63.500	307.000	558	552D	**4.31**
	123.825	79.375	63.500	307.000	558A	552D	**4.29**
	136.525	95.250	76.200	376.000	637	632D	**6.55**
61.912	110.000	52.388	46.038	159.000	392	394D	**1.97**
	123.825	79.375	63.500	307.000	554	552D	**4.17**
61.976	100.000	53.975	44.450	171.000	28990	28921D	**1.58**
62.738	100.000	55.560	44.450	171.000	28995	28921DC	**1.55**
	100.000	55.560	44.450	171.000	28995	28921D	**1.55**
63.500	94.458	42.860	34.925	108.000	L610549	L610510D	**0.97**
	110.000	52.388	46.038	159.000	390A	394DC	**1.90**
	110.000	52.388	46.038	159.000	390A	394D	**1.90**
	110.000	52.388	46.038	159.000	395	394DC	**1.88**
	110.00	52.388	46.038	159.000	395	394D	**1.88**
	112.712	55.562	42.862	178.000	79586	29526D	**2.19**
	117.475	66.675	53.975	223.000	33251	33462D	**3.18**
	120.000	65.090	53.975	231.000	477	472D	**3.28**
	120.000	65.090	53.975	231.000	483	472DC	**3.26**
	120.000	65.090	53.975	231.000	483	472D	**3.26**
	123.825	79.375	63.500	307.000	559	552DC	**4.25**
	123.825	79.375	63.500	307.000	559	552D	**4.25**
	127.000	80.962	65.088	31.700	565	563D	**4.53**
	136.525	95.250	76.200	376.000	639	632D	**6.31**
	139.700	77.788	51.803	276.000	78250	78549D	**5.10**
	155.575	101.600	85.725	512.000	745-S	742D	**9.86**
64.960	152.400	95.250	76.200	398.000	656	654DC	**8.33**
	155.575	101.600	85.725	512.000	747-S	742D	**9.72**
64.963	127.000	80.962	65.088	317.000	569	563D	**4.44**
64.987	139.700	77.788	51.803	276.000	78255X	78549D	**4.99**
65.000	120.000	65.090	53.975	231.000	478	472D	**3.18**

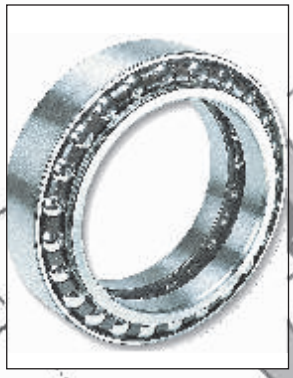
Taper Roller Bearings (Inch)
d66.675-73.025mm

TDO-Double Outer Race



Dimensions , mm				Load Ratings, kN Dynamic	Part Number		Weight
d	D	T	B	C	Inner	Outer	Kg
66.675	110.000	52.388	46.038	159.000	395A	394D	**1.76**
	110.000	52.388	46.038	159.000	395-S	394DC	**1.76**
	110.000	52.388	46.038	159.000	395-S	394D	**1.76**
	117.475	66.675	53.975	223.000	33262	33462D	**2.96**
	120.00	65.090	53.975	231.000	479	472D	**3.10**
	123.825	79.375	63.500	307.000	560	552DC	**3.90**
	123.825	79.375	63.500	307.000	560	552D	**3.90**
	136.525	95.250	76.200	376.000	641	632D	**6.08**
68.262	110.000	52.388	46.038	159.000	399A	394D	**1.69**
	110.000	52.388	46.038	159.000	399AS	394DC	**1.65**
	110.000	52.388	46.038	159.000	399AS	394D	**1.65**
	120.000	65.090	53.975	231.000	480	472D	**3.00**
	123.825	79.375	63.500	30.7.000	560-S	5520DC	**3.79**
	123.825	79.375	63.500	307.000	560-S	552D	**3.79**
	127.000	80.962	65.088	317.000	570	563D	**4.23**
	136.525	95.260	76.200	376.000	642	632D	**5.93**
	161.925	105.562	70.637	480.000	9278	9220D	**9.41**
69.850	114.287	58.738	46.038	178.000	29675	29622DC	**2.25**
	114.287	58738	46.038	178.000	29675	29622D	**2.25**
	117.475	66.675	53.975	223.000	33275	33462DC	**2.80**
	117.475	66.675	53.975	223.000	33275	33462D	**2.80**
	120.000	65.090	53.975	231.000	482	472D	**2.92**
	120.000	71.438	58.738	288.000	47487	47420D	**3.12**
	127.000	80.962	65.088	317.000	566	563D	**4.16**
	136.525	95.250	76.200	376.000	643	632D	**5.82**
	152.400	95.250	76.200	398.000	655	654D	**8.08**
	155.575	101.600	85.725	512.000	744A	742D	**9.31**
	155.575	101.600	85.725	512.000	745A	742D	**9.15**
	171.450	125.412	100.012	659.000	835	834D	**14.37**
69.914	177.800	109.538	74.612	494.000	9382	9320D	**12.79**
69.952	121.442	52.390	38.100	165.000	34274	34478D	**2.26**
70.000	120.000	65.090	53.975	231.000	484	472DC	**2.92**
	120.000	65.090	53.975	231.000	484	472D	**2.92**
70.637	114.287	58.738	46.038	178.000	29680	29622DC	**2.20**
	114.287	58.738	46.038	178.000	29680	29622D	**2.20**
71.438	117.475	66.675	53.975	223.000	33281	33462D	**2.72**
	120.000	71.438	58.738	288.000	47490	47420D	**3.02**
	127.000	80.962	65.088	317.000	567A	563D	**4.02**
	127.000	80.962	65.088	317.000	567-S	563D	**3.97**
	136.525	69.850	53.975	249.000	495-S	493D	**4.40**
	136.525	95.250	76.200	376.000	644	632D	**5.72**
	136.525	95.250	76.200	376.000	645	632D	**5.65**
73.025	114.287	58.738	46.038	178.000	29685	29622DC	**2.09**
	114.287	58.738	46.038	178.000	29685	29622D	**2.09**

THE COMMITMENT TO QUALITY...
THE COMMITMENT TO GROWTH...
Precision Bearings Pvt. Ltd.

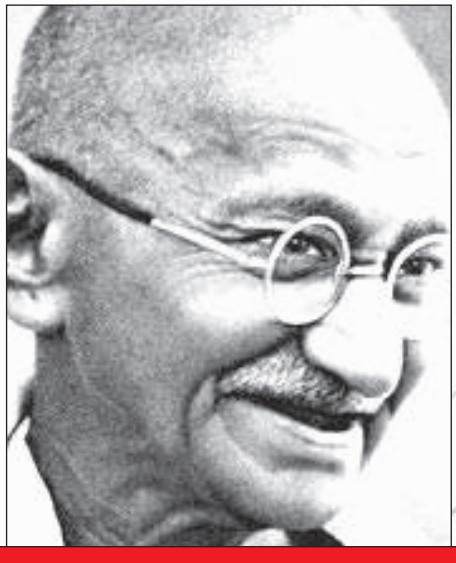












"The difference between what we do and what we are capable of doing would suffice to solve most of the world's problems"

Mahatma Gandhi



SPHERICAL
Roller Bearings



SPHERICAL Roller Bearings

Spherical Roller Bearings consist of two rows of roller with common sphere raceway in outer ring and two inner ring race way inclined at an angle of bearing axis. Most spherical roller bearings has circumferential groove and three lubrication holes in outer ring. These bearings carry high radial load, high axial load acting in both direction.

These bearings are made in cylindrical and taper bore. [K Bore]

K = Taper 1:12

K30 = Taper 1:30

240XX and 241 XX Series have a taper of 1:30, other series have a taper of 1:12

Sleeve : spherical roller bearings with tapered bore can be mounted on smooth or stepped shaft by using adapter sleeve & withdrawal sleeve.

Misalignment

As these bearings are self aligning angular misalignment between inner and outer ring can be accommodate without any effect on bearing performance. The permissible misalignment of spherical roller bearing varies depending on the size and load but it is Approximately 0.018 to 0.045 radian (1° to 2.5°) with normal load. The Limiting speed is adjusted depending on the bearing load Conditions. Also higher speeds are adjustable by making changes in the lubrication method. Cage Design etc.

Series Available

For Single Row
202XX , 203XX

Spherical Roller Bearings have two rows and roller with a common sphered raceway in the outer ring and two inner ring raceway inclined at an angle to the bearing axis. They are self aligning and consequently insensitive to misalignment of the shaft with respect to housing and to shaft bonding.

These bearings are designed for high radical load, also accommodate high axial loads acting in both directions. An oil groove and holes are provided in the outer ring to supply lubricant, to use bearings with oil grooves and holes, it is essential to provide an oil groove in the housing bore, since the depth of the groove in the bearing is limited.

Another Feather in ZNL's Research and Development Centers cap, by completely redesigning the Spherical Roller Bearings with the help of advance computer aided design and unique methods of calculations. Tests are carried out on the ZNL test rigs and in the field have confirmed the improved reliability and performance of the design.

ALL W33 Series bearings are manufactured with an oil groove and lubrication holes in the outer rings. Improved features such as cage design, surface finish, stress distribution across the rollers and elimination of the rubbing surfaces lead to: Doubling of expectancy and in some cases trebling for the same space envelope, due to the use of more reliable materials.

This allows smaller bearings to be used when machines are being redesigned. Doubling of static capacity allowing the bearing to perform well in low speed applications under a very heavy load. Higher operating speeds that allow a wider range of application. Better performance under shock loading and vibration is a valuable characteristic in difficult applications.

SPHERICAL BEARRINGS

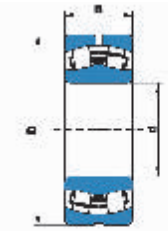
Radial Internal Clearance Of Spherical Roller Bearings With Cylindrical Bore.

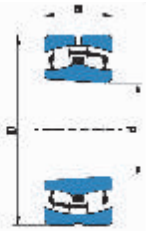
Bore Diameter d		Radial Internal Clearance									
		C2		Normal		C3		C4		C5	
Over	Incl.	Min.	Max	Min.	Max	Min.	Max	Min.	Max	Min.	Max
mm		Micron									
18	24	10	20	20	35	35	45	45	60	60	**75**
24	30	15	25	25	40	40	55	55	75	75	**95**
30	40	15	30	30	45	45	60	60	80	80	**100**
40	50	20	35	35	55	55	75	75	100	100	**125**
50	65	20	40	40	65	65	90	90	120	120	**150**
65	80	30	50	50	80	80	110	110	145	145	**185**
80	100	35	60	60	100	100	135	135	180	180	**225**
100	120	40	75	75	120	120	160	160	210	210	**260**
120	140	50	95	95	145	145	190	190	240	240	**300**
140	160	60	110	110	170	170	220	220	280	280	**350**
160	180	65	120	120	180	180	240	240	310	310	**390**
180	200	70	130	130	200	200	260	260	340	340	**430**
200	225	80	140	140	220	220	290	290	380	380	**470**
225	250	90	150	150	240	240	320	320	420	420	**520**
250	280	100	170	170	260	260	350	350	460	460	**570**

Radial internal clearance of spherical roller bearings with Taper bore

Bore Diameter d		Redial Internal Clearance									
		C2		Normal		C3		C4		C5	
Over	Incl.	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
mm		Micron									
24	30	20	30	30	40	40	55	55	75	-	-
30	40	25	35	35	50	50	65	65	85	85	**105**
40	50	30	45	45	60	60	80	80	100	100	**130**
50	65	40	55	55	75	75	95	95	120	120	**160**
65	80	50	70	70	95	95	120	120	150	150	**200**
80	100	55	80	80	110	110	140	140	180	180	**230**
100	120	65	100	100	135	135	170	170	220	220	**280**
120	140	80	120	120	160	160	200	200	260	260	**330**
140	160	90	130	130	180	180	230	230	300	300	**380**
160	180	100	140	140	200	200	260	260	340	340	**430**
180	200	110	160	160	220	220	290	290	370	370	**470**
200	225	120	180	180	250	250	320	320	410	410	**520**
225	250	140	200	2200	270	270	350	350	450	450	**570**
250	280	150	220	220	300	300	390	390	490	490	**620**
280	315	170	240	240	330	330	430	430	540	540	**680**

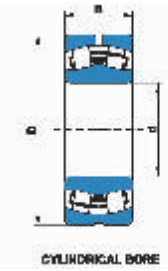
Spherical Roller Bearing
d20-90mm

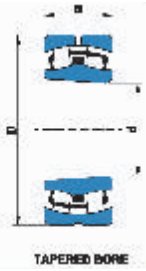

CYLINDRICAL BORE


TAPERED BORE

Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Tapered Bore	Designation
			Dynamic	Static		Grease	Oil			Bearing With Cylindrical Bore
d	D	B	C	Co	Pu					
mm			kN		kN	RPM		Kg		
20	52	15	30.5	30.5	3.4	8000	10000	0.16		**21304CCW33**
25	52	18	35.7	35.7	3.9	8500	11000	0.18	22205 CCKW33	**22205 CCW33**
	62	17	41.4	41.5	4.55	6700	8500	0.25		**21305 CCW33**
30	62	20	48.9	52	5.4	7500	9500	0.28	22206 CCKW33	**22206 CCW33**
	72	19	55.2	61	6.8	6000	7500	0.38		**21306 CCW33**
35	72	23	67.3	73.5	8	6300	8000	0.43	22207 CCKW33	**22207 CCW33**
	80	21	65.6	72	8.15	5300	6700	0.51		**21307 CCW33**
40	80	23	73.6	81.5	9.15	6000	7500	0.52	22208 CCKW33	**22208 CCW33**
	90	23	82.8	98	11	4500	5600	0.71	21308 CCKW33	**21308 CCW33**
	90	33	115	122	13.2	4500	5600	1.00	22208 CCKW33	**22208 CCW33**
45	85	23	77.1	88	9.5	5300	6700	0.56	22209 CCKW33	**22209 CCW33**
	100	25	101	114	12.9	4300	5300	0.95	21309 CCKW33	**21309 CCW33**
50	90	23	84.5	100	11	5000	6300	0.60	22210 CCKW33	**22210 CCW33**
	110	27	120	140	16	3600	4800	1.20	21310 CCKW33	**21310 CCW33**
	110	40	176	200	21.6	3400	4300	1.85	22310 CCKW33	**22310 CCW33**
55	100	25	99.5	118	12.9	4500	5600	0.82	22211 CCKW33	**22211 CCW33**
	120	29	138	163	18.6	3400	4300	1.60	21311 CCKW33	**21311 CCW33**
	120	43	199	232	25	3200	4000	2.35	22311 CCKW33	**22311 CCW33**
60	110	28	122	146	16.3	4000	5000	1.10	22212 CCKW33	**22212 CCW33**
	130	31	161	200	23.2	3000	3800	1.95	21312 CCKW33	**21312 CCW33**
	130	46	235	280	30	3000	3800	2.95	22312 CCKW33	**22312 CCW33**
65	120	31	148	183	21.2	3800	4800	1.45	22213 CCKW33	**22213 CCW33**
	140	3	184	240	270	2800	3600	2.45	21313 CCKW33	**21313 CCW33**
	140	48	253	300	32	2600	3400	3.55	22313 CCKW33	**22313 CCW33**
70	125	31	148	186	21.2	3600	4500	1.55	22214 CCKW33	**22214 CCW33**
	150	35	207	260	29	2600	3400	3.00	21314 CCKW33	**21314 CCW33**
	150	51	311	380	40	2400	3200	4.30	22314 CCKW33	**22314 CCW33**
75	130	31	158	208	23.6	3400	4300	1.65	22215 CCKW33	**22215 CCW33**
	160	37	235	300	32.5	2400	3200	3.55	21315 CCKW33	**21315 CCW33**
	160	55	345	430	44	2200	3000	5.25	22315 CCKW33	**22315 CCW33**
80	140	33	176	228	26	3200	4000	2.05	22216 CCKW33	**22216 CCW33**
	170	39	258	335	36	2200	3000	4.20	21316 CCKW33	**21316 CCW33**
	170	58	374	455	46.5	2000	2800	6.20	22316 CCKW33	**22316 CCW33**
85	150	36	210	270	31	3000	3800	2.55	22217 CCKW33	**22217 CCW33**
	180	41	293	375	40	2000	2800	5.00	21317 CCKW33	**21317 CCW33**
	180	60	420	520	52	1900	2600	7.25	22317 CCKW33	**22317 CCW33**
90	160	40	253	340	37.5	2600	3400	3.40	22218 CCKW33	**22218 CCW33**
	160	52.4	311	440	48	1900	2600	4.60	23218 CCKW33	**23218 CCW33**
	190	43	322	425	44	1900	2600	5.80	21318 CCKW33	**21318 CCW33**
	190	64	477	610	60	1800	2400	8.60	22318 CCKW33	**22318 CCW33**

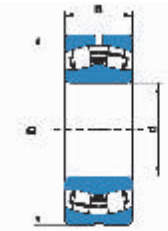
Spherical Roller Bearing
d95-150mm

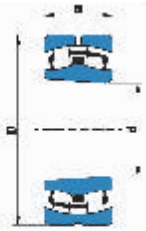




Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Tapered Bore	Designation
			Dynamic	Static		Grease	Oil			Bearing With Cylindrical Bore
d	D	B	C	Co	Pu					
mm			kN		kN	RPM		Kg		
95	170	43	282	375	40	2400	3200	4.00	22219 CCKW33	**22219 CCW33**
	200	45	351	480	49	1800	2400	7.15	21319 CCKW33	**21319 CCW33**
	200	67	518	670	64	1800	2400	10.0	22319 CCKW33	**22319 CCW33**
100	165	52	322	490	53	2000	2800	4.40	23120 CCKW33	**23120 CCW33**
	180	46	311	415	44	2200	3000	4.85	22220 CCKW33	**22220 CCW33**
	180	60.3	414	600	63	1700	2200	6.70	23220 CCKW33	**23220 CCW333**
	215	47	385	530	53	1700	2200	8.80	21320 CCKW33	**21320 CCW33**
	215	73	610	800	75	1700	2200	13.0	22320 CCKW33	**22320 CCW33**
110	170	45	267	440	46.5	2200	3000	3.75	23022 CCKW33	**23022 CCW33**
	180	56	374	585	61	1900	2600	5.55	23122 MBKW33	**23122 MBW33**
	180	69	460	750	78	1600	2000	6.85	24122 CCKW33	**24122 CCW33**
	200	53	408	560	57	2000	2800	7.00	22222 CCKW33	**22222 CCW33**
	200	69.8	518	765	76.5	1600	2000	9.70	23222 CCKW33	**23222 CCW33**
	240	50	460	630	61	1600	2000	12.00	21322 CCKW33	**21322 CCW33**
	240	80	725	965	86.5	1600	2000	18.0	23222 CCKW33	**22322 CCW33**
120	180	46	305	510	53	2000	2800	4.20	23024CCKW33	**23024 CCW33**
	180	60	374	670	68	1600	2000	5.40	24024 MBKW33	**24024 MBW33**
	200	62	449	695	71	1800	2400	7.80	23124 CCKW33	**23124 CCW33**
	200	80	575	950	95	1400	1800	10.0	24124 MBKW33	**24124 MBW33**
	215	58	466	670	67	1900	2600	8.70	22224 CCKW33	**22224 CCW33**
	215	76	610	930	93	1500	1900	12.0	23224 MBKW33	**23224 MBW33**
	260	86	845	1120	100	1400	1800	22.0	22324 CCKW33	**22324 CCW33**
130	180	37	202	360	37.5	2000	3200	2.95		**23926 MBW33**
	200	52	374	610	61	1900	2600	6.10	23026 CCKW33	**23026 CCW33**
	200	69	477	815	81.5	1500	1900	7.95	24026 MBKW33	**24026 MBW33**
	210	64	489	780	78	1700	2200	8.55	23126 CCKW33	**23126 CCW33**
	210	80	587	1000	100	1300	1700	11.0	24126 MBKW33	**24126 MBW33**
	230	64	546	800	78	1800	2400	11.0	22226 CCKW33	**22226 CCW33**
	230	80	690	1060	104	1300	1700	14.0	23226 MBKW33	**23226 MBW33**
	280	93	978	1320	114	1300	1700	28.5	22326 MBKW33	**22326 MBW33**
140	210	53	397	680	68	1800	2400	6.55	23028 CCKW33	**23028 CCW33**
	210	69	495	900	88	1400	1800	8.45	24028 MBKW33	**24028 MBW33**
	225	68	546	900	88	1600	2000	10.5	23128 CCKW33	**23128 CCW33**
	225	85	673	1160	112	1100	1500	13.0	24128MBKW33	**24128 MBW33**
	250	68	610	900	86.5	1700	2200	14.0	22228 CCKW33	**22228 CCW33**
	250	88	799	1250	120	1200	1600	18.5	23228 MBKW33	**23228 MBW33**
	300	102	1130	1560	132	1100	1500	34.5	22328 MBKW33	**22328 MBW33**
150	225	56	437	750	73.5	1700	2200	7.95	23030 CCKW33	**23030 CCW33**
	225	75	564	1040	100	1300	1700	10.5	24030 MBKW33	**24030 MBW33**
	250	80	725	1200	114	1400	1800	16.0	23130 MBKW33	**23130 MBW33**
	250	100	897	1530	146	1000	1400	19.5	24130 MBKW33	**24130 MBW33**
	270	73	736	1080	102	1600	2000	18.0	22230 CCKW33	**22230 CCW33**
	270	96	937	1460	137	1100	1500	24.0	23230 MBKW33	**23230 MBW33**
	320	108	1270	1760	146	1000	1400	41.5	22330 MBKW33	**22330 MBW33**

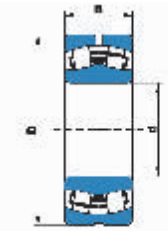
Spherical Roller Bearing
d160-220mm

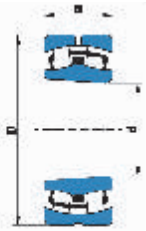

CYLINDRICAL BORE


TAPERED BORE

Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Tapered Bore	Designation
			Dynamic	Static		Grease	Oil			Bearing With Cylindrical Bore
d	D	B	C	Co	Pu					
mm			kN		kN	RPM		Kg		
160	220	45	299	570	55	1900	2600	5.20	23932 MBKW33	**23932 MBW33**
	240	60	506	880	83	1700	2200	9.70	23032 MBKW33	**23032 MBW33**
	240	80	656	1200	114	1100	1500	13.0	24032 MBKW33	**24032 MBW33**
	270	86	845	1370	129	1300	1700	20.5	23132 MBKW33	**23132 MBW33**
	270	109	1040	1760	163	950	1300	25.0	24132 MBKW33	**24132 MBW33**
	290	80	863	1290	118	1500	1900	22.5	22232 MBKW33	**22232 MBW33**
	290	104	1070	1660	153	1000	1400	30.0	23232 MBKW33	**23232 MBW33**
	340	114	1380	1960	160	950	1300	50.0	22332 MBKW33	**22332 MBW33**
170	260	67	621	1060	100	1600	2000	13.0	23034 MBKW33	**23034 MBW33**
	260	90	799	1460	137	1000	1400	17.5	24034 MBKW33	**24034 MBW33**
	280	88	897	1500	137	1200	1600	21.5	23134 MBKW33	**23134 MBW33**
	280	109	1070	1860	170	900	1200	26.5	24134 MBKW33	**24134 MBW33**
	310	86	978	1460	132	1300	1700	28.5	22234 MBKW33	**22234 MBW33**
	310	110	1220	1930	173	950	1300	36.5	23234 MBKW33	**23234 MBW33**
	360	120	1540	2160	176	950	1300	58.5	22334 MBKW33	**22334 MBW33**
180	250	52	431	830	76.5	1700	2200	8.20	23936 MBKW33	**23936 MBW33**
	280	74	725	1250	114	1400	1800	17.0	23036 MBKW33	**23036 MBW33**
	280	100	937	1730	156	950	1300	23.0	24036 MBKW33	**24036 MBW33**
	300	96	1050	1760	160	1100	1500	27.5	23136 MBKW33	**23136 MBW33**
	300	118	1220	2160	196	900	1200	33.5	24136 MBKW33	**24136 MBW33**
	320	86	1010	1560	140	1300	1700	29.5	22236 MBKW33	**22236 MBW33**
	320	112	1290	2120	186	900	1200	39.0	23236 MBKW33	**23236 MBW33**
	380	126	1730	2450	193	900	1200	69.0	22336 MBKW33	**22336 MBW33**
190	260	52	414	800	76.5	1700	2200	8.40	23938 MBKW33	**23938 MBW33**
	290	75	753	1340	122	1300	1700	18.0	23038 MBKW33	**23038 MBW33**
	290	100	978	1800	163	950	1300	24.0	24038 MBKW33	**24038 MBW33**
	320	104	1200	2080	183	1000	1400	34.5	23138 MBKW33	**23138 MBW33**
	320	128	1400	2500	212	850	1100	42.0	24138 MBKW33	**24138 MBW33**
	340	92	1110	1700	150	1200	1600	36.5	22238 MBKW33	**22238 MBW33**
	340	120	1460	2400	208	850	1100	47.5	23238 MBKW33	**23238 MBW33**
	400	132	1870	2650	208	850	1100	80.0	22338 MBKW33	**22338 MBW33**
200	280	60	546	1040	93	1600	2000	11.5	23940 MBKW33	**23940 MBW33**
	310	82	880	1530	137	1200	1600	23.0	23040 MBKW33	**23040 MBW33**
	310	109	1130	2120	186	900	1200	30.5	24040 MBKW33	**24040 MBW33**
	340	112	1380	2360	204	950	1300	42.5	23140 MBKW33	**23140 MBW33**
	340	140	1580	2800	232	800	1000	52.0	24140 MBKW33	**24140 MBW33**
	360	98	1270	1930	166	1100	1500	43.5	22240 MBKW33	**22240 MBW33**
	360	128	1610	2700	228	850	1100	57.0	23240 MBKW33	**23240 MBW33**
	420	138	2020	2900	224	850	1100	92.5	22340 MBKW33	**22340 MBW33**
220	300	60	546	1080	93	1500	1900	13.0	23944 MBKW33	**23944 MBW33**
	340	90	1050	1860	163	100	1500	30.5	23044 MBKW33	**23044 MBW33**
	340	118	1360	2600	212	850	1100	39.5	24044 MBKW33	**24044 MBW33**
	370	120	1580	2750	232	900	1200	53.0	23144 MBKW33	**23144 MBW33**
	370	150	1840	3350	285	750	950	65.0	24144 MBKW33	**24144 MBW33**
	400	108	1520	2360	196	950	1300	60.5	22244 MBKW33	**22244 MBW33**
	400	144	2070	3450	285	750	950	79.5	23244 MBKW33	**23244 MBW33**
	460	145	2350	3450	260	750	950	120	22344 MBKW33	**22344 MBW33**

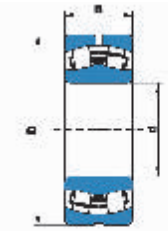
Spherical Roller Bearing
d240-340mm

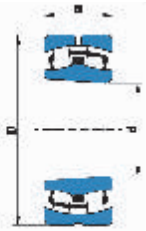




Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Tapered Bore	Designation
			Dynamic	Static		Grease	Oil			Bearing With Cylindrical Bore
d	D	B	C	Co	Pu					
mm			kN		kN	RPM		Kg		
240	320	60	564	1160	98	1300	1700	14.0	23948 MBKW33	**23948 MBW33**
	360	92	1130	2080	176	1000	1400	33.5	23048 MBKW33	**23048 MBW33**
	360	118	1380	2700	228	800	1000	42.5	24048 MBKW33	**24048 MBW33**
	400	128	1790	3200	255	850	1100	65.5	23148 MBKW33	**23148 MBW33**
	400	160	2100	3900	325	670	850	80.5	24148 MBKW33	**24148 MBW33**
	440	120	1910	3000	245	900	1200	83.0	22248 MBKW33	**22248 MBW33**
	440	160	2530	4300	345	670	850	110	23248 MBKW33	**23248 MBW33**
	500	155	2670	4000	290	670	850	155	22348 MBKW33	**22348 MBW33**
260	360	75	880	1800	156	1100	1500	24.0	23952 MBKW33	**23952 MBW33**
	400	104	1400	2550	212	900	1200	48.5	23052 MBKW33	**23052 MBW33**
	400	140	1760	3450	285	700	900	64.5	24052 MBKW33	**24052 MBW33**
	440	144	2220	3900	290	800	1000	90.5	23152 MBKW33	**23152 MBW33**
	440	180	2620	4800	390	600	750	110	24152 MBKW33	**24152 MBW33**
	480	130	2300	3550	285	850	1100	110	22252 MBKW33	**22252 MBW33**
	480	174	2820	4750	360	630	800	140	23252 MBKW33	**23252 MBW33**
	540	165	3050	4550	325	630	800	190	22352 MBKW33	**22352 MBW33**
280	380	75	845	1760	143	1000	1400	26.0	23956 MBKW33	**23956 MBW33**
	420	106	1520	2850	224	850	1100	52.5	23056 MBKW33	**23056 MBW33**
	420	140	1870	3800	285	670	850	68.5	24056 MBKW33	**24056 MBW33**
	420	140	1870	3800	285	670	850	68.5	24056 MBKW33	**24056 MBW33**
	460	146	2300	4250	335	750	950	97.0	23156 MBKW33	**23156 MBW33**
	460	180	2670	5100	415	560	700	120	24156 MBKW33	**24156 MBW33**
	500	130	2350	3750	300	800	1000	115	22256 MBKW33	**22256 MBW33**
	500	176	2820	4900	365	600	750	150	23256 MBKW33	**23256 MBW33**
	580	175	3450	5200	365	600	750	235	22356 MBKW33	**22356 MBW33**
300	420	90	1200	2500	200	950	1300	40.5	23960 MBKW33	**23960 MBW33**
	460	118	1840	3450	265	800	1000	71.5	23060 MBKW33	**23060 MBW33**
	460	160	2350	4750	355	600	750	97.0	24060 MBKW33	**24060 MBW33**
	500	160	2820	5100	380	670	850	125	23160 MBKW33	**23160 MBW33**
	500	200	3280	6300	465	530	670	160	24160 MBKW33	**24160 MBW33**
	540	140	2760	4250	325	750	950	145	22260 MBKW33	**22260 MBW33**
	540	192	3340	5850	425	530	670	190	23260 MBKW33	**23260 MBW33**
320	440	90	1240	2700	212	900	1200	42.0	23964 MBKW33	**23964 MBW33**
	480	121	1960	3800	285	800	1000	78.0	23064 MBKW33	**23064 MBW33**
	480	160	2480	5100	400	560	700	100	24064 MBKW33	**24064 MBW33**
	540	176	3280	6000	440	630	800	165	23164 MBKW33	**23164 MBW33**
	540	218	3740	7100	510	480	600	210	24164 MBKW33	**24164 MBW33**
	580	150	3160	4900	375	670	850	175	22264 MBKW33	**22264 MBW33**
	580	208	3850	6700	475	500	630	240	23264 MBKW33	**23264 MBW33**
340	460	90	1460	2800	216	1300	1400	45.5	23968 MBKW33	**23968 MBW33**
	520	133	2700	4500	335	100	1300	105	23068 MBKW33	**23068 MBW33**
	520	180	3450	6200	475	750	1100	140	24068MBKW33	**24068 MBW33**
	580	190	4250	6800	480	800	1000	210	23168MBKW33	**23168 MBW33**
	580	243	5300	8650	640	600	850	280	24168MBKW33	**24168 MBW33**
	620	224	5100	7800	550	560	800	295	23268MBKW33	**23268 MBW33**

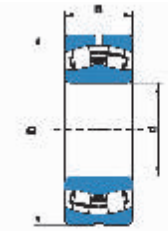
Spherical Roller Bearing
d360-460mm

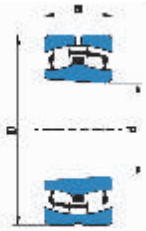




Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Tapered Bore	Designation
			Dynamic	Static		Grease	Oil			Bearing With Cylindrical Bore
d	D	B	C	Co	Pu					
mm			kN		kN	RPM		Kg		
360	480	90	1400	2750	220	1200	1300	43.0	23972 MBKW33	**23972 MBW33**
	540	134	2750	4800	345	950	1200	110	23072 MBKW33	**23072 MBW33**
	540	180	3550	6550	490	700	1000	145	24072 MBKW33	**24072 MBW33**
	600	192	4300	6950	490	750	1000	220	23172 MBKW33	**23172 MBW33**
	600	243	5600	9300	670	560	800	270	24172MBKW33	**24172MBW33**
	650	170	4300	6200	440	630	850	255	22272 MBKW33	**22272 MBW33**
	650	232	5400	8300	570	530	750	335	23272 MBKW33	**23272 MBW33**
380	520	106	1960	3800	285	1100	1200	69.0	23976 MBKW33	**23976 MBW33**
	560	135	2900	5000	380	900	1200	115	23076 MBKW33	**23076 MBW33**
	560	180	3600	6800	480	670	950	150	24076 MBKW33	**24076 MBW33**
	620	194	4400	7100	500	560	1000	230	23176 MBKW33	**23176 MBW33**
	620	243	5700	9800	710	480	850	300	24176 MBKW33	**24176 MBW33**
	680	240	5850	9150	620	500	750	375	23276 MBKW33	**23276 MBW33**
400	540	106	2000	3900	290	1100	1200	71.0	23980/MBKW33	**23980 MBW33**
	600	148	3250	5700	400	850	1100	150	23080 MBKW33	**23080 MBW33**
	600	200	4300	8150	560	630	900	205	24080 MBKW33	**24080 MBW33**
	650	200	4650	7650	530	530	950	265	23180 MBKW33	**23180 MBW33**
	650	250	6200	10600	735	430	800	340	24180 MBKW33	**24180 MBW33**
	720	256	6550	10400	680	480	670	450	23280MBKW33	**23280MBW33**
	820	243	7500	10400	670	430	750	650	22380 MBKW33	**22380 MBW33**
420	560	106	2040	4150	300	1000	1100	74.5	23984 MBKW33	**23984 MBW33**
	620	150	3400	6000	415	600	1100	155	23084 MBKW33	**23084 MBW33**
	620	200	4400	8300	585	530	480	210	24084 MBKW33	**24084 MBW33**
	700	224	5600	9300	620	480	900	350	23184 MBKW33	**23184 MBW33**
	700	280	7350	12600	850	400	750	445	24184 MBKW33	**24184 MBW33**
	760	272	7350	11600	765	450	630	535	23284 MBKW33	**23284 MBW33**
440	600	118	2450	4900	345	950	1000	99.5	23988MBKW33	**23988MBW33**
	650	157	3650	6550	450	560	1000	180	23088 MBKW33	**23088 MBW33**
	650	212	4800	9150	630	500	850	245	24088 MBKW33	**24088 MBW33**
	720	226	6000	10000	670	450	850	360	23188 MBKW33	**23188 MBW33**
	720	280	7500	13200	900	400	700	460	24188 MBKW33	**24188 MBW33**
	790	280	7800	12500	800	430	600	590	23288 MBKW33	**23288 MBW33**
460	580	118	1790	4900	345	560	1100	75.5	24892 MBKW33	**24892 MBW33**
	620	118	2500	5000	355	600	1000	105	23992 MBKW33	**23992 MBW33**
	680	163	3900	6950	465	560	950	205	23092 MBKW33	**23092 MBW33**
	680	218	5200	10000	670	480	800	275	24092 MBKW33	**24092 MBW33**
	760	240	6400	101800	680	430	800	440	23192 MBKW33	**23192 MBW33**
	760	300	8300	14600	1000	360	670	560	24192 MBKW33	**24192 MBW33**
	830	296	8500	13700	880	400	560	695	23292 MBKW33	**23292 MBW33**

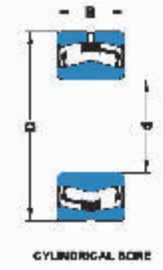
Spherical Roller Bearing
d480-500mm



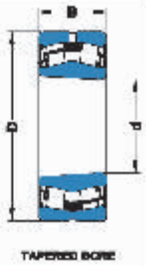


Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Tapered Bore	Designation
			Dynamic	Static		Grease	Oil			Bearing With Cylindrical Bore
d	D	B	C	Co	Pu					
mm			kN		kN	RPM		Kg		
480	600	90	1440	3750	280	530	1100	61.0	23896 MBKW33	**23896 MBW33**
	650	128	2900	5700	405	560	1000	125	23996 MBKW33	**23996 MBW33**
	700	165	3900	6800	450	530	950	215	23096 MBKW33	**23096 MBW33**
	700	218	5300	10400	695	450	750	285	24096 MBKW33	**24096 MBW33**
	790	248	6950	12000	780	400	750	485	23196 MBKW33	**23196 MBW33**
	790	308	9000	15600	1040	340	630	605	24196 MBKW33	**24196 MBW33**
	870	310	9300	15000	950	380	530	800	23296 MBKW33	**23296 MBW33**
500	620	90	1480	4000	290	530	1000	62.0	238/500MBKW33	**238/500 MBW33**
	670	128	2900	6000	415	530	950	130	239/500 MBKW33	**239/500 MBW33**
	720	167	4150	7800	510	500	900	225	230/500 MBKW33	**230/500 MBW33**
	720	218	5500	11000	735	430	700	295	240/500 MBKW33	**240/500 MBW33**
	830	264	7650	12900	830	380	700	580	231/500 MBKW33	**231/500 MBW33**
	830	325	9800	17000	1120	320	600	745	241/500 MBKW33	**241/500 MBW33**
	920	336	10600	173000	1060	360	500	985	232/500 MBKW33	**232/500 MBW33**

Spherical Roller Bearing With Rubber Seal
d30-100mm



CYLINDRICAL BORE



TAPERED BORE

Principal Dimension			Basic load ratings		Fatigue Load Limit	Limiting Speed	Mass	Designation
			dynamic	Static				
d	D	B	C	C_0	P_u	RPM		
mm			kN		N		kg	-
30	62	25	51	65	6	2800	0.350	**SB22206SS**
35	72	28	83	91	9	2400	0.520	**SB22207SS**
40	80	28	92	102	11	2200	0.570	**SB22208SS**
	90	40	143	151	16	1500	1.150	**SB22308SS**
45	85	28	96	110	11	2000	0.650	**SB22209SS**
	100	44	171	198	21	1400	1.550	**SB22309SS**
50	90	28	105	125	13	1900	0.700	**SB22210SS**
	110	48	220	250	27	1300	2.100	**SB22310SS**
55	100	31	12	146	18	1700	1.000	**SB22211SS**
	120	51	247	287	31	1200	2.520	**SB22311SS**
60	110	34	153	183	20	1600	1.300	**SB22212SS**
	130	55	293	350	37	1100	3.300	**SB22312SS**
65	120	38	191	237	28	1500	1.600	**SB22213SS**
	140	57	328	390	40	1000	3.800	**SB22313SS**
70	125	38	193	241	26	1400	1.800	**SB22214SS**
	150	60	405	494	50	950	4.600	**SB22314SS**
75	130	38	202	267	28	1300	2.100	**SB22215SS**
	160	65	448	561	65	900	5.650	**SB22315SS**
80	140	40	227	295	32	1200	2.400	**SB22216SS**
85	150	44	273	351	38	850	3.000	**SB22217SS**
90	160	48	327	438	46	1000	3.700	**SB22218SS**
95	170	51	384	485	50	900	4.300	**SB22219SS**
100	180	55	419	637	65	850	4.750	**SB22220SS**

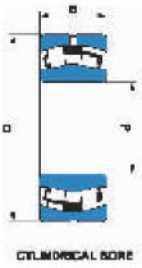
Spherical Roller Bearing With E-Type Cage
d20-90mm

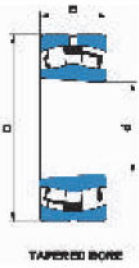




Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating	Mass	Designation
d	D	B	Dynamic C	Static Co	Pu	Grease		
mm			kN	kN	kN	RPM	Kg.	
20	52	15	40.5	33.5	3.7	15000	0.16	**21304-EW33**
25	52	18	48	42.5	4.8	17000	0.18	**22205-EW33**
	62	17	52	43	4.75	13000	0.245	**21305-EW33**
30	62	20	64	57	6.9	13000	0.275	**22206-EW33**
	72	19	72	63	7	11000	0.386	**21306-EW33**
35	72	23	88	81.5	9.4	11000	0.434	**22207-EW33**
	80	21	83	73.5	8.1	9500	0.503	**21307-EW33**
40	80	23	102	90	11.8	10000	0.528	**22208-EW33**
	90	23	108	106	14.3	9500	0.701	**21308-EW33**
	90	33	156	150	13.1	7500	1.05	**22308-EW33**
45	85	23	104	98	12.7	10000	0.589	**22209-EW33**
	100	25	129	129	17.3	8500	0.845	**21309-EW33**
	100	36	186	183	16.1	6700	1.39	**22309-EW33**
50	90	23	108	106	14.3	9500	0.622	**22210-EW33**
	110	27	129	129	17.3	8500	1.28	**21310-EW33**
	110	40	228	224	20.3	6000	1.9	**22310-EW33**
55	100	25	129	129	17.3	8500	0.851	**22211-EW33**
	120	43	265	260	23.9	5600	2.27	**22311-EW33**
60	110	28	170	166	21.2	7500	1.12	**22212-EW33**
	130	31	212	228	28	6300	1.78	**21312-EW33**
	130	46	310	310	28	5000	2.89	**22312-EW33**
65	120	31	200	208	25.5	6700	1.55	**22213-EW33**
	140	33	250	270	34	5000	2.42	**21313-EW33**
	140	48	355	365	32.5	4800	3.57	**22313-EW33**
70	125	31	212	228	28	6300	1.65	**22214-EW33**
	150	35	250	270	34	5000	3	**21314-EW33**
	150	51	390	390	36.5	4500	4.21	**22314-EW33**
75	130	31	216	236	29.5	6300	1.72	**22215-EW33**
	160	37	305	325	38.5	4800	2.86	**21315-EW33**
	160	55	440	450	40.5	4300	5.18	**22315-EW33**
80	140	33	250	270	34	5600	2.13	**22216-EW33**
	170	39	305	325	38.5	4800	2.65	**21316-EW33**
	170	58	500	510	45	4300	6.27	**22316-EW33**
85	150	36	305	325	38.5	5300	2.65	**22217-EW33**
	180	60	540	560	50	4000	7.06	**22317-EW33**
90	160	40	345	375	42.5	4800	3.43	**22218-EW33**
	160	52.4	440	520	48.5	4300	4.27	**23218-EW33**
	190	64	610	630	55	3600	8.51	**22318-EW33**

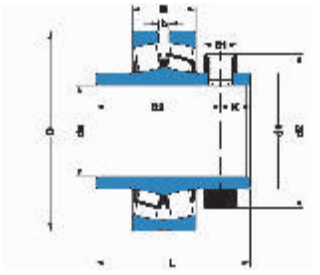
Spherical Roller Bearing With E-Type Cage
d95110mm





Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating	Mass	Designation
d	D	B	Dynamic C	Static Co	Pu	Grease		
mm			kN	kN	kN	RPM	Kg.	
95	170	43	380	415	47	4500	4.13	**22219-EW33**
	200	67	670	695	60	3000	9.69	**22319-EW33**
100	165	52	450	570	52	4300	4.22	**23120-EW33**
	180	46	430	490	52	4300	4.96	**22220-EW33**
	180	60.3	550	655	60	3600	6.32	**23220-EW33**
	215	47	490	530	61	3600	8.19	**21320-EW33**
	215	73	815	915	75	3000	13.1	**22320-EW33**
110	170	45	400	530	52	4300	3.55	**23022-EW33**
	180	56	530	680	61	4000	5.31	**23122-EW33**
	200	53	550	600	62	4000	6.99	**22222-EW33**
	200	69.8	710	865	72	3000	9.18	**23222-EW33**
	240	50	600	640	69	3000	11.1	**21322-EW33**
	240	80	950	1060	91	2600	17.7	**22322-EW33**

Roller Bearing Units
Insert bearing/collar mounted
4762XX SERIES



Shaft dia. d_a	Designation				Basic Load Rating									Set Screw	Mass
					Dynamic	Static	b	B_1	B2	d1	K	d2			
In		D mm	B mm	L In.	C lb	Co	in							in	lb
1 11/16 1 1/2	476208B-107 476208B-108	80	23	2 3/4	16 600	18 300	.219	5/8	2 3/8	1.908	1	2 3/8		3/8-24X1/2	**2.50** **2.45**
1 11/16 1 3/4	472609B-111 472609B-112	85	236	2 7/8	17 300	19 800	.219	5/8	2 3/8	2.157	1	2 5/8		3/8-24X1/2	**2.75** **2.70**
1 15/16 2	472610B-115 472610B-200	90	23	2 7/8	19 000	22 400	.219	5/8	2 15/32	2.357	1	2 7/8		3/8-24X1/2	**2.90** **2.80**
2 3/16	472611B-203	100		3 1/8	22 400	26 500	.219	3/4	2 23/32	2.600	1 1/6	3 1/4		3/8-24X1/2	**3.90**
2 7/16 2 1/2	472613B-207 472613B-208	120		3 3/8	33 300	41 100	.219	7/8	2 15/16	3.088	1 1/4	4		½-20X3/4	**6.75**
2 11/16 2 3/4 2 15/16	472615B-211 472615B-212 472615B-215 472615B-300	130		3 5/8	35 500	46 800	.219	7/8	3 1/15	3.491	1 1/4	4 1/2		½-20X7/8	**9.35**
3 7/16 3 1/2	472618B-307 472618B-308	160		4 1/32	56 900	76 400	.219	7/8	3 15/32	4.224	1 7/16	5 1/8		½-20X7/8	**13.5**
3 11/16 3 15/16 4	472620B-311 472620B-315 472620B-400	180		4 19/32	69 900	93 300	.328	1	3 15/16	4.650	1 5/8	6		5/8-18X1	**19.5**
4 7/16 4 1/2	472622B-407VSB 472622B-408VSB	200		6 1/8	91 700	126 000	.328	1	5 1/8	5.029	3 1/16	6 1/8		5/8-18X7/8	**29.5**
4 15/16	472626B-415VSB	230		6 5/8	123 000	180 000	.438	1	5 5/8	5.819	3 5/16	6 7/8		5/8-18X7/8	**46.5**

AUTOMOBILE INDUSTRIES

NEXT GENERATION



THE COMMITMENT TO QUALITY...
THE COMMITMENT TO GROWTH...
Precision Bearings Pvt. Ltd.















**"I have been impressed with the urgency of doing.
Knowing is not enough; we must apply. Being willing is not enough; we must do."**

Leonardo da Vinci



SPHERICAL
Roller Thrust Bearings



SPHERICAL Roller Thrust Bearings

In spherical roller thrust bearings the load is transmitted from one raceway to other at an angle to the bearing axis. The bearings are therefore suitable for the accommodation of radial loads. Another important characteristic of spherical roller thrust bearings is their self aligning capability. This makes the bearings insensitive to shaft deflection and misalignment of the shaft relative to the housing

ZNL spherical roller thrust bearings are produced in two designs pressed steel window type cage which, with the rollers, forms a non-separable assembly with the shaft washer. All other bearings have a machined brass steel cage which is guided by a sleeve held in the shaft washer bore. The shaft washer and cage with roller form a non- separable unit.

Mis Alignment

Spherical roller bearings are self aligning, i.e. they tolerate misalignment of the shaft relative to the housing and shaft deflections during operation.

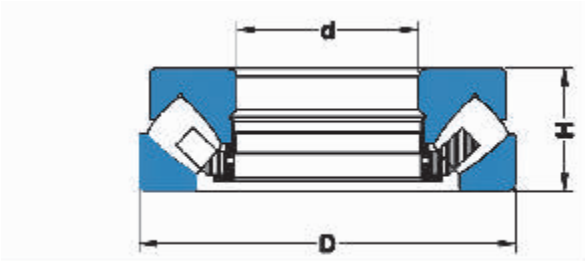
The permissible misalignment is reduced as the load increases. The values indicated ca be permitted provided there is constant misalignment and a rotating shaft washer. In applications where there are shaft deflections or where the housing washer rotates, it is advisable to contact the ZNL application engineering service.

Whether the permissible misalignment can be fully exploited depends on the design of the bearing arrangement, the type of seal etc. When designing bearing arrangements where the housing washer is to rotate, or where the shaft washer will wobble, it is also advisable to contact the ZNL application engineering service.

Permissible Angular Misalignment

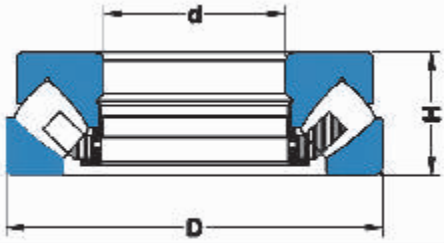
Bearing Series	Permissible Misalignment when bearing load P0		
	<0.05 Co	>0.05 Co	>0.3 Co
	degrees		
292J	2	1.5	**1**
293J	2.5	1.5	**0.3**
294J	3	1.5	**0.3**

Spherical Roller Thrust Bearing
d60-180mm



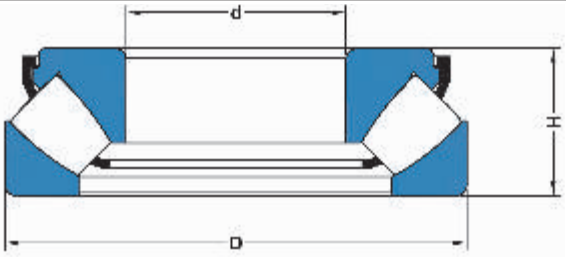
Principal Dimension			Basic Load Rating		Limiting Speed Lubrication Oil RPM	Mass	Designation
d	D	H	Dynamic C	Static Co			
mm			kN			Kg	
60	130	42	280	815	2400	2.60	**29412 M**
65	140	45	330	965	2200	3.30	**29413 M**
70	150	48	360	1060	2000	4.00	**29414 M**
75	160	51	415	1250	2000	4.87	**29415 M**
80	170	54	450	1370	1900	5.80	**29416 M**
85	180	58	510	1560	1800	6.90	**29417 M**
90	190	60	570	1760	1700	8.10	**29418 M**
100	210	67	680	2160	1500	11.8	**29420 M**
110	190	48	425	1430	1600	5.50	**29322 M**
	230	73	800	2550	1400	14.5	**29422 M**
120	210	54	530	1860	1400	7.58	**29324 M**
	250	78	900	2950	1300	18.1	**29424 M**
130	225	58	600	2120	1300	9.30	**29326 M**
	270	85	1060	3450	1200	22.5	**29426 M**
140	240	60	655	2320	1300	11.0	**29328 M**
	280	85	1100	3650	1200	24.2	**29428 M**
150	250	60	670	2450	1200	11.5	**29330 M**
	300	90	1250	4250	1100	29.4	**29430 M**
160	270	67	780	2850	1100	15.2	**29332 M**
	320	95	1400	4800	1000	35.5	**29432 M**
170	280	67	800	2950	1100	16.0	**29334 M**
	340	103	1560	5400	940	43.7	**29434 M**
180	300	73	950	3550	1000	20.3	**29336 M**
	360	109	1730	6100	890	52.0	**29436 M**

Spherical Roller Thrust Bearing
d190-280mm



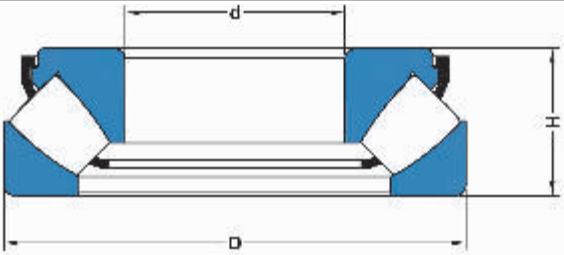
Principal Dimension			Basic Load Rating		Limiting Speed Lubrication Oil RPM	Mass	Designation
d	D	H	Dynamic C	Static Co			
mm			kN			Kg	
190	320	78	1080	4050	940	24.8	29338 M
	380	115	1900	6700	840	60.0	29438 M
200	340	85	1250	4800	890	30.8	29340 M
	400	122	2120	7500	790	69.0	29440 M
220	360	85	1290	5000	840	32.8	29344 M
	420	122	2200	8000	750	74.0	29444 M
240	340	60	750	3450	890	16.7	29248 M
	380	85	1320	5200	790	35.5	29348 M
	440	122	2240	8300	750	79.0	29448 M
260	360	60	780	3650	890	18.5	29252 M
	420	95	1320	6800	750	49.0	29352 M
	480	132	2600	9800	670	105	29452 M
280	380	60	815	3900	840	19.5	29256 M
	440	95	1730	7100	710	53.0	29356 M
	520	145	3100	11800	630	132	29456 M
300	420	73	1000	4650	750	30.5	29260 M
	480	109	2080	8500	630	74.0	29360 M
	540	145	3100	11800	600	140	29460 M
320	440	73	1020	4900	710	33.0	29264 M
	500	109	2120	8800	630	77.0	29364 M
	580	155	3750	14600	560	175	29464 M
340	460	77	1130	5400	480	33.5	29268 M
	540	122	2550	10600	560	103	29368 M
	620	170	4150	16300	500	218	29468 M
360	500	85	1340	6550	630	52.0	29272 M
	560	122	2600	11000	560	107	29372 M
380	520	85	1500	7500	600	53.0	29276M
	670	175	4550	18300	470	254	29476M
400	540	85	1610	8000	695	55.5	29280 M
	620	132	3450	14600	1200	150	29380 M
	710	185	6560	26500	1960	310	29480 M

Spherical Roller Thrust Bearing - Steel Type Cage
d60-200mm



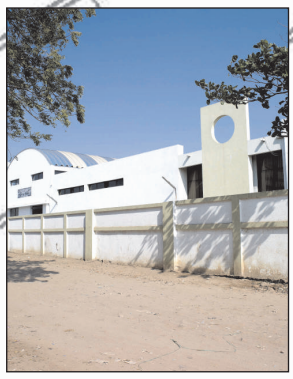
Principal dimension			Basic Load Rating		Fatigue Load Limit	Minimum Load Factor	Speed Rating		Mass	Designation
			Dynamic	Static			Reference Speed	Limiting Speed		
d	D	H	C	Co	Pu	A				
mm			kN		kN		RPM		Kg.	
60	130	42	390	915	114	0.080	2 800	5 000	2.60	29412J
65	140	45	455	1 080	137	0.11	2 600	4 800	3.20	29413J
70	150	48	520	1 250	153	0.15	2 400	4 300	3.90	29414J
75	160	51	600	1 430	173	0.19	2 400	4 000	4.70	29415J
80	170	54	670	1 630	193	0.25	2 200	3 800	5.60	29416J
85	150	39	380	1 060	129	0.11	2 400	4 000	2.75	29317J
	180	58	735	1 800	212	0.31	2 000	3 600	6.75	29418J
90	155	39	400	1 080	132	0.11	2 400	4 000	2.85	29318J
	190	60	815	2 00	232	0.38	1 900	3 400	7.75	29418J
100	170	42	465	1 290	156	0.16	2 200	3 600	3.65	29320J
	210	67	980	2 500	275	0.59	1700	3000	10.5	29420J
110	190	48	610	1730	204	0.28	1900	3200	5.30	29322J
	230	73	1180	3000	325	0.86	1600	2800	13.5	29422J
120	210	54	765	2120	245	0.43	1700	2800	7.35	29324J
	250	78	1370	3450	375	1.1	1500	2600	17.5	29424J
130	225	58	865	2500	280	0.59	1600	2600	9.00	29326J
	270	85	1560	4150	430	1.65	1300	2400	23.0	29426J
140	240	60	980	2850	315	0.77	1500	2600	10.5	29328J
	280	85	1630	4400	450	1.8	1300	2400	23.0	29428J
150	250	60	1000	2850	315	0.77	1500	2400	11.0	29330J
	300	90	1860	5100	520	2.5	1200	2200	28.0	29430J
160	270	67	1180	3450	365	1.1	1300	2200	14.5	29332J
	320	95	2080	5000	570	3	1100	2000	33.5	29432J
170	280	67	1260	3550	365	1.2	1300	2200	15.0	29334J
	340	103	2360	3550	340	4.1	1100	1900	44.5	29434J
180	300	73	1430	4300	440	1.8	1200	2000	19.5	29336J
	360	109	2600	7350	710	5.1	1000	1800	52.5	29436J
190	320	78	1630	4750	500	2.1	1100	1900	23.5	29338J
	380	115	2850	8150	765	6.1	950	1700	60.5	29438J
200	340	85	1860	5500	550	2.9	1000	1700	29.5	29340J
	400	122	3200	9000	850	7.7	850	1600	72.0	29440J

Spherical Roller Thrust Bearing - Steel Type Ca[illegible]
d220-300mm



Principal dimension			Basic Load Rating		Fatigue Load Limit	Minimum Load Factor	Speed Rating		Mass	Designation
			Dynamic	Static			Reference Speed	Limiting Speed		
d	D	H	C	Co	Pu	A				
mm			kN		kN		RPM		Kg.	
220	360	85	2000	6300	610	3.8	1000	1700	33.5	29344J
	420	122	3350	9650	900	8.8	850	1500	75.0	29444J
240	380	85	2040	6550	630	4.1	1000	1600	35.5	29348J
	440	122	3400	10200	930	9.9	850	1500	80.5	29448J
260	420	95	2550	8300	780	6.5	850	1400	49.0	29352J
	480	132	4050	1250	1140	16	750	1300	105	29452J
280	440	95	2550	8650	815	7.1	850	1400	53.0	29356J
	520	145	4900	15300	1320	22	670	1200	135	29456J
300	480	109	3100	10400	950	11	750	1200	75.0	29360J
	540	145	4310	16600	1340	26	600	1200	140	29460J

THE COMMITMENT TO QUALITY...
THE COMMITMENT TO GROWTH...
Precision Bearings Pvt. Ltd.







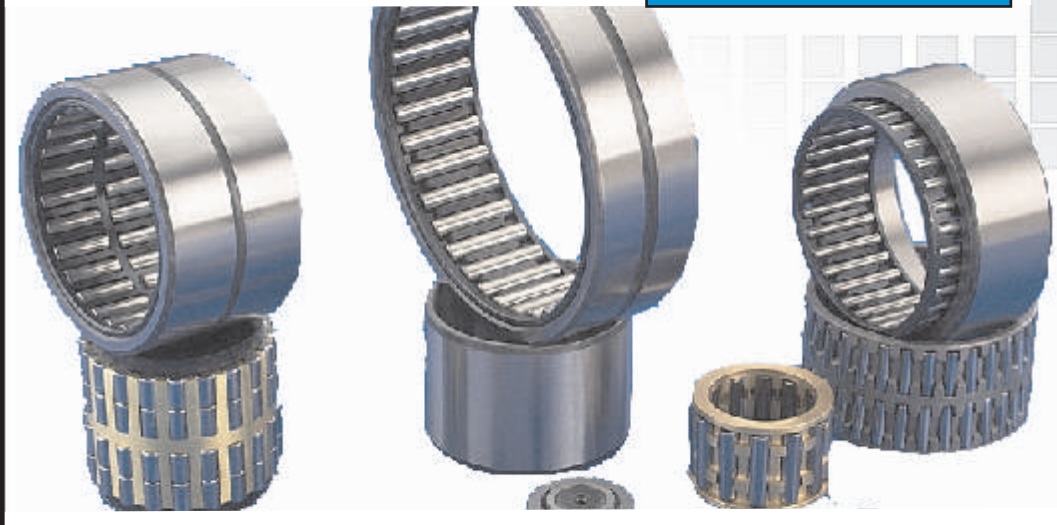


"Time stays long enough for anyone who will use it."

J R D TATA



NEEDLE
Roller Bearings



NEEDLE ROLLER BEARING

In these bearings rolling element are cylindrical roller whose length is minimum 3 times larger than diameter, so it is used where limited space between shaft and housing. Needle roller bearings carry high radial load. Needle roller bearings suitable for low and medium speed.

Type of Needle Bearings

Cage and Needle roller
Drawn cup needle roller bearings
Solid needle roller bearings
Thrust needle roller bearings
Roller followers

Series Available

NKI , NA48, NA49, NA69

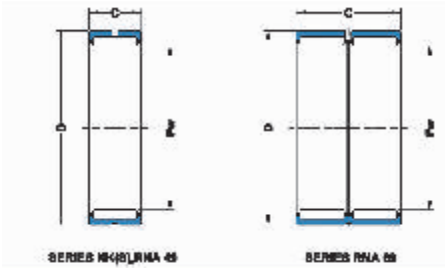
Needle Roller Bearings without inner ring

NK, RNA 48, RNA 49, RNA 69

Needle Roller and cage assembly

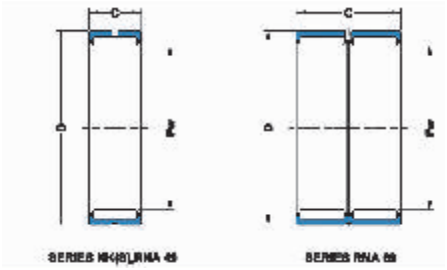
NEEDLE ROLLER BEARING WITHOUT INNER RING.

Needle Roller Bearing with flange without inner ring
d8-24mm



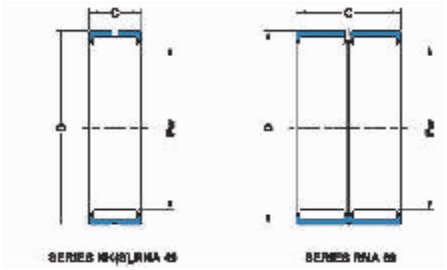
Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
			Dynamic	Static		Grease	Oil		
Fw mm	D	C	C kN	C0	Pu kN	RPM		Kg.	
8	15	12	3.8	4.25	0.465	28000	40000	0.009	NK 8/12 TN
	15	16	5.01	5.85	0.67	28000	40000	0.012	NK 8/16 TN
9	16	12	4.4	5.2	0.57	24000	36000	0.010	NK 9/12 TN
	16	16	5.01	5.85	0.67	28000	40000	0.012	NK 9/16 TN
10	17	12	4.57	5.7	0.63	22000	34000	0.012	NK 10/12 TN
	17	16	5.94	8	0.9	22000	34000	0.013	NK 10/16 TN
12	19	12	6.71	8.15	0.965	19000	30000	0.014	NK 12/12
	19	16	9.13	12	1.46	19000	30000	0.016	NK 12/16
14	22	13	8.8	10.4	1.25	17000	26000	0.018	RNA 4900
	22	16	10.2	12.5	1.530	17000	26000	0.021	NK 14/16
	22	20	12.8	16.6	2.08	17000	26000	0.026	NK 14/20
15	23	16	11	14	1.7	16000	24000	0.022	NK 15/16
	23	20	13.8	18.3	2.28	16000	24000	0.027	NK 15/20
16	24	13	9.9	12.2	1.46	16000	24000	0.020	RNA 4901
	24	16	11.7	15.3	1.86	160000	24000	0.022	NK 16/16
	24	20	14.5	20	2.5	16000	24000	0.032	NK 16/20
	24	22	16.1	23.2	2.9	16000	24000	0.032	RNA 6901
17	25	16	12.1	16.6	2	15000	22000	0.029	NK 17/16
	25	20	15.1	22	2.75	15000	22000	0.030	NK 17/20
18	26	16	12.8	17.6	2.16	15000	22000	0.025	NK 18/16
	26	20	16.1	23.6	3	15000	22000	0.032	NK 18/20
19	27	16	13.4	19	2.32	14000	20000	0.026	NK 19/16
	27	20	16.5	25.5	3.2	14000	20000	0.032	NK 19/20
20	28	13	11.2	15.3	1.83	13000	19000	0.022	RNA 4902
	28	16	13.2	19.3	2.36	13000	19000	0.027	NK 20/16
	28	20	16.5	2.55	3.2	13000	19000	0.034	NK 20/20
	28	23	17.2	27	3.4	13000	19000	0.040	RNA 6902
21	29	16	13.8	20.	2.5	13000	19000	0.028	NK 21/16
	29	20	17.2	27	3.45	13000	1900	0.035	NK 21/20
22	30	13	11.4	16.3	1.96	12000	18000	0.022	RNA 4903
	30	16	14.2	21.6	2.65	12000	18000	0.030	NK 22/16
	30	20	17.9	29	3.65	12000	18000	0.037	NK 22/20
	30	23	18.7	30.5	3.9	12000	18000	0.042	RNA 6903
24	32	16	15.4	24.5	3	10000	16000	0.032	NK 24/16
	32	20	19	32.5	4.05	10000	16000	0.040	NK 24/20
	37	20	26	33.5	4.25	9500	15000	0.065	NKS 24

Needle Roller Bearing with flange without inner ring
d25-40mm



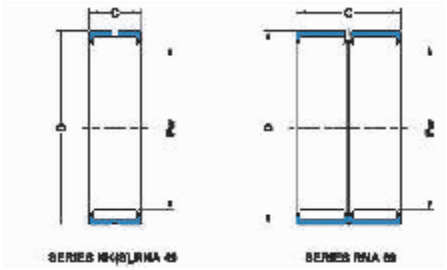
Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
			Dynamic	Static		Grease	Oil		
Fw mm	D	C	C kN	C0	Pu kN	RPM		Kg.	
25	33	16	15.1	24.5	3	10000	16000	0.033	**NK 25/16**
	33	20	19	32.5	4.15	10000	16000	0.042	**NK 25/20**
	37	17	21.6	28	3.55	9500	15000	0.052	**RNA 4904**
	37	30	35.2	53	6.95	9500	15000	010	**RNA 6904**
	38	20	27.5	36	4.55	9500	15000	0.068	**NKS 25**
26	34	16	15.7	26	3.2	9500	15000	0.034	**NK 26/16**
	34	20	19.4	34.5	4.3	9500	15000	0.042	**NK 26/20**
28	37	20	22	36.5	4.65	9000	14000	0.052	**NK 28/20**
	37	30	31.9	60	7.8	9000	14000	0.082	**NK 28/30**
	39	17	23.3	32	4.05	9000	14000	0.050	**RNA 49/22**
28	39	30	36.9	57	7.5	9000	14000	0.098	**RNA 69/22**
	42	20	28.6	39	5	8500	13000	0.084	**NKS 28**
29	38	20	22	36.5	4.65	9000	14000	0.054	**NK 29/20**
	38	30	31.9	60	7.8	9000	14000	0.084	**NK 29/30**
30	40	20	22.9	38	4.9	8500	13000	0.065	**NK 30/20**
	40	30	33	63	8.15	8500	13000	0.098	**NK 30/30**
	42	17	24.2	34.5	4.3	8500	13000	0.061	**RNA 4905**
	42	30	38	62	8.15	8500	13000	0.11	**RNA 6905**
	45	22	31.9	43	5.5	8000	12000	0.10	**NKS 30**
32	42	20	23.3	40.5	5.2	8000	12000	0.068	**NK 32/20**
	42	30	34.1	65.5	8.65	8000	12000	0.10	**NK 32/30**
	45	17	25.1	36.5	4.55	8000	12000	0.073	**NK 49/28**
	45	30	39.6	65.5	8.65	8000	12000	0.14	**RNA 69/28**
	47	22	34.1	46.5	6	8000	12000	0.11	**NKS 32**
35	45	20	24.6	45	5.7	7500	11000	0.074	**NK 35/20**
	45	30	35.8	72	9.5	7500	11000	0.11	**NK 35/30**
	47	17	25.5	39	4.9	7500	11000	0.070	**RNA 4906**
	47	30	42.9	75	9.8	7500	11000	0.13	**RNA 6906**
	50	22	35.2	50	6.4	7500	11000	0.12	**NKS 35**
37	47	20	25.1	46.5	5.85	7500	11000	0.077	**NK 37/20**
	47	30	36.9	76.5	10	7500	11000	0.11	**NK 37/30**
	52	22	36.9	54	6.95	7000	10000	0.12	**NKS 37**
38	48	20	25.5	49	6.2	7500	11000	0.080	**NK 33/20**
	48	30	37.4	80	10.4	7500	11000	0.12	**NK 33/30**
40	50	20	26.4	51	6.4	7000	10000	0.083	**NK 40/20**
	50	30	38	83	10.8	7000	10000	0.13	**NK 40/30**
	52	20	30.8	51	6.55	7000	10000	0.090	**RNA 49/32**
	50	20	26.4	51	6.4	7000	10000	0.083	**NK 40/20**
	50	30	38	83	10.8	7000	10000	0.13	**NK 40/30**
	52	20	30.8	51	6.55	7000	10000	0.090	**RNA 49/32**
	50	20	26.4	51	6.4	7000	10000	0.083	**NK 40/20**
	50	30	38	83	10.8	7000	10000	0.13	**NK 40/30**
	52	20	30.8	51	6.55	7000	10000	0.090	**RNA 49/32**

Needle Roller Bearing with flange without inner ring
d43-70mm



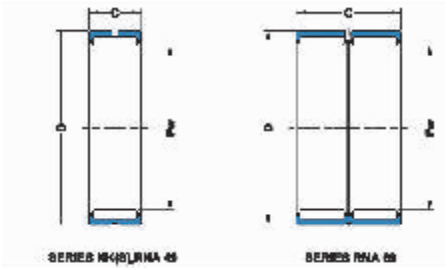
Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
			Dynamic	Static		Grease	Oil		
Fw mm	D	C	C kN	C0	Pu kN	RPM		Kg.	
43	53	20	27.5	55	6.95	6700	9500	0.086	**NK 43/20**
	53	30	40.2	90	11.6	6700	9500	0.13	**NK 43/30**
	58	22	39.1	61	7.8	6300	9000	0.14	**NK 43**
45	55	20	27.5	57	7.2	6300	9000	0.092	**NK 45/20**
	55	30	40.2	93	12	6300	9000	0.14	**NK 45/30**
	60	22	40.2	64	8.3	6000	8500	0.15	**NKS 45**
47	57	20	29.2	61	7.65	6000	8500	0.095	**NK 47/20**
	57	30	41.8	98	12.9	6000	8500	0.14	**NK 47/30**
48	62	22	42.9	71	9.15	5600	8000	0.14	**RNA 4908**
	62	40	67.1	125	16	5600	8000	0.26	**RNA 6908**
50	62	25	38	78	10	5600	8000	0.16	**NK 50/25**
	62	35	49.5	110	14.3	5600	8000	0.22	**NK 50/35**
	65	22	42.9	72	9.15	5600	8000	0.16	**NKS 50**
52	68	22	45.7	78	10	5300	7500	0.18	**RNA 4909**
	68	40	70.4	137	17.3	5300	7500	0.34	**RNA 6909**
55	68	25	40.2	88	11.2	5300	7500	0.18	**NK 55/25**
	68	35	52.3	122	16	5300	7500	0.25	**NK 55/35**
	72	22	44.6	78	10	5000	7000	0.22	**NKS 55**
58	72	22	47.3	85	11	5000	7000	0.16	**RNA 4910**
	72	40	73.7	150	19	5000	7000	0.31	**RNA 6910**
60	52	36	47.3	90	11.2	7000	10000	0.16	**RNA 69/32**
	72	25	41.8	96.5	12.2	4800	6700	0.19	**NK 60/25**
	72	35	55	134	17.6	4800	6700	0.26	**NK 60/35**
	80	28	62.7	104	13.7	4500	6300	0.34	**NKS 60**
63	80	25	57.2	106	13.7	4500	6300	0.26	**RNA 4911**
	80	45	89.7	190	24	4500	6300	0.47	**RNA 6911**
65	78	25	44	104	13.2	4500	6300	0.22	**NK 65/25**
	78	35	58.3	146	19.3	4500	6300	0.31	**NK 65/35**
	85	28	66	114	15	4300	6000	0.36	**NKS 65**
68	82	25	44	95	12	4300	6000	0.24	**NK 68/25**
	82	35	60.5	146	19	4300	6000	034	**NK 68/35**
	85	25	60.5	114	14.6	4300	6000	0.28	**RNA 4912**
	85	45	93.5	204	26	4300	6000	0.49	**RNA 6912**
70	85	25	44.6	98	12.5	4300	6000	0.26	**NK 70/25**
	85	35	61.6	150	19.6	4300	6000	0.37	**NK 70/35**
	90	28	68.2	120	15.6	4000	5600	0.38	**NKS 70**

Needle Roller Bearing with flange without inner ring
d72-115mm



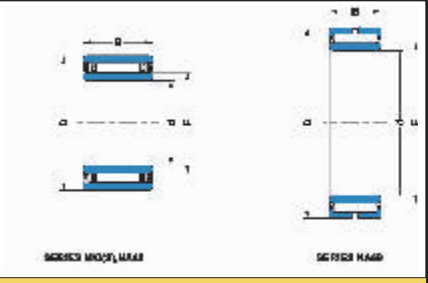
Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
			Dynamic	Static		Grease	Oil		
Fw mm	D	C	C kN	C0	Pu kN	RPM		Kg.	
72	90	25	61.6	120	15.3	4000	5600	0.31	**RNA 4913**
	90	45	95.2	212	27	4000	5600	0.58	**RNA 6913**
73	90	25	52.8	106	13.7	4000	5600	0.30	**NK 73/25**
	90	35	73.7	163	21.6	4000	5600	0.42	**NK 73/35**
75	92	25	53.9	110	14	3800	5300	0.32	**NK 72/25**
	92	35	74.8	170	22	3800	5300	0.45	**NK 75/35**
	95	28	70.4	132	17	3800	5300	0.40	**NKS 75**
80	95	25	56.1	127	16	3600	5000	0.30	**NK 80/25**
	95	35	76.5	190	25	3600	5000	0.43	**NK 80/35**
	100	28	74.8	140	18.6	3600	5000	0.41	**NKS 80**
	100	30	84.2	163	21.6	3600	5000	0.46	**RNA 4914**
	100	54	128	285	37.5	3600	5000	0.86	**RNA 6914**
85	105	25	69.3	132	17	3400	4800	0.43	**NK 85/25**
	105	30	84.2	170	22.4	3400	4800	0.60	**RNA 4915**
	105	35	96.8	200	27	3400	4800	0.49	**NK 85/35**
	105	54	130	290	38.	3400	4800	0.94	**RNA 6915**
90	110	25	72.1	140	18.3	3200	4500	0.45	**NK 90/25**
	110	30	88	183	24	3200	4500	0.52	**RNA 4916**
	110	35	101	216	29	3200	4500	0.63	**NK 90/35**
	110	54	134	315	41.5	3200	4500	1.00	**RNA 6916**
95	115	26	73.7	146	19	3000	4300	0.49	**NK 95/26**
	115	36	105	232	30.5	3000	4300	0.68	**NK 95/36**
100	120	26	76.5	156	19.6	2800	4000	0.52	**NK 100/26**
	120	35	108	250	32	2800	4000	0.66	**RNA 4917**
	120	36	108	250	32	2800	4000	0.72	**NK 100/36**
	120	63	165	425	54	2800	4000	1.20	**RNA 6917**
105	125	26	78.1	166	20.8	2600	3800	0.54	**NK 105/26**
	125	35	112	265	33.5	2600	3800	0.75	**RNA 4918**
	125	36	112	265	33.5	2600	3800	0.80	**NK 105/36**
	125	63	172	450	57	2600	3800	1.35	**RNA 6918**
110	130	30	96.8	220	27.5	2400	3600	0.65	**NK 110/30**
	130	35	114	270	34	2400	3600	0.72	**RNA 4919**
	130	40	123	305	38	2400	3600	0.83	**NK 110/40**
	130	63	172	465	57	2400	3600	1.45	**RNA 6919**
115	135	32	91.3	220	26.5	2400	3600	0.70	**NKS 115**
	140	40	125	280	34.5	2200	3400	1.20	**RNA 4920**

Needle Roller Bearing with flange without inner ring
d120-285mm



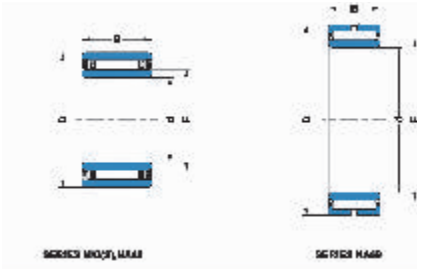
Principal Dimension			Basic Load Rating		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
			Dynamic	Static		Grease	Oil		
Fw mm	D	C	C kN	C0	Pu kN	RPM		Kg.	
120	140	30	93.5	232	27.5	2200	3400	0.67	**RNA 4822**
125	150	40	130	300	36.5	2000	3200	1.25	**RNA 4922**
130	150	30	99	255	30	2000	3200	0.73	**RNA 4824**
135	165	45	176	405	47.5	1900	3000	1.85	**RNA 4924**
145	165	35	119	325	37.5	1800	2800	1.00	**RNA 4826**
150	180	50	198	480	55	1700	2600	2.20	**RNA 4926**
155	175	35	121	345	38	1700	2600	1.05	**RNA 4828**
160	190	50	205	510	58.5	1600	2400	2.35	**RNA 4928**
165	190	40	147	415	46.5	1600	2400	1.60	**RNA 4830**
175	200	40	157	450	50	1500	2200	1.70	**RNA 4832**
185	215	45	179	520	57	1500	2200	2.55	**RNA 4834**
195	225	45	190	570	60	1400	2000	2.70	**RNA 4836**
210	240	50	220	710	73.5	1300	1900	3.20	**RNA 4838**
220	250	50	224	735	75	1200	1800	3.35	**RNA 4840**
240	270	50	238	815	81.5	1100	1700	3.60	**RNA 4844**
265	300	60	347	1120	108	950	1500	5.40	**RNA 4848**
285	320	60	358	1200	114	900	1400	5.80	**RNA 4852**

Needle Roller Bearing with Flange With Inner Ring
d9-30mm



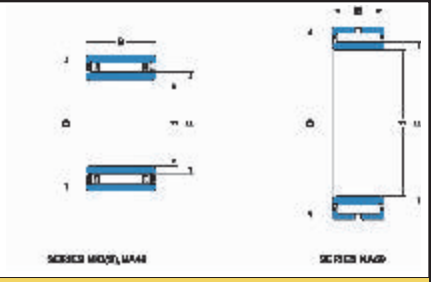
Principal Dimension			Basic Load Ratings		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
			Dynamic	Static		Grease	Oil		
d	D	C	C	C0	Pu				
mm			kN		kN	RPM		Kg.	
9	19	12	6.71	8.15	0.965	19000	30000	0.017	**NKI 9/12**
	19	16	9.13	12	1.46	19000	30000	0.022	**NKI 9/16**
10	22	13	8.8	10.4	1.25	17000	26000	0.023	**NA 4900**
	22	16	10.2	12.5	1.53	17000	26000	0.029	**NKI 10/16**
	22	20	12.8	16.6	2.08	17000	26000	0.037	**NKI 10/20**
12	24	13	9.9	12.2	1.46	16000	24000	0.026	**NA 4901**
	24	16	11.7	15.3	1.86	16000	24000	0.033	**NKI 12/16**
	24	20	14.5	20	2.5	16000	24000	0.042	**NKI 12/20**
	24	22	16.1	23.2	2.9	16000	24000	0.046	**NA 6901**
15	27	16	13.4	19	2.32	14000	20000	0.039	**NKI 15/16**
	27	20	16.5	25.5	3.2	14000	20000	0.049	**NKI 15/20**
	28	13	11.2	15.3	1.83	13000	19000	0.034	**NA 4902**
	28	23	17.2	27	3.4	13000	19000	0.064	**NA 6902**
17	29	16	13.8	20.4	2.5	13000	19000	0.043	**NKI 17/16**
	29	20	17.2	27	3.45	13000	19000	0.054	**NKI 17/20**
	30	13	11.4	16.3	1.96	12000	18000	0.037	**NA 4933**
	30	23	18.7	30.5	3.9	12000	18000	0.072	**NA 6903**
	37	20	26	33.5	4.25	9500	15000	0.098	**NKIS 17**
20	32	16	15.4	24.5	3	10000	16000	0.049	**NKI 20/16**
	32	20	19	32.5	4.05	10000	16000	0.061	**NKI 20/20**
	37	17	21.600	28.000	3.550	9500	15000	0.075	**NA 4904**
	37	30	35.200	53.000	6.950	9500	15000	0.14	**NA 6904**
	42	20	28.600	39.000	5.000	8500	13000	0.13	**NKIS 20**
22	34	16	15.700	26.000	3.200	9500	15000	0.052	**NKI 22/16**
	34	20	19.400	34.500	4.300	9500	15000	0.065	**NKI 22/20**
	39	17	23.300	32.000	4.050	9000	14000	0.080	**NA 49/22**
	39	30	36.900	57.000	7.500	9000	14000	0.15	**NA 69/22**
25	38	20	22.000	36.500	4.650	9000	14000	0.080	**NKI 25/20**
	38	30	31.900	60.000	7.800	9000	14000	0.12	**NKI 25/30**
	42	17	24.200	34.500	4.300	8500	13000	0.088	**NA 4905**
	42	30	38.000	62.000	8.150	8500	13000	0.16	**NA 6905**
	47	22	34.100	46.500	6.000	8000	12000	0.16	**NKIS 25**
28	42	20	23.300	40.500	5.200	8000	12000	0.097	**NKI 28/20**
	42	30	34.100	65.500	8.650	8000	12000	0.15	**NKI 28.30**
	45	17	25.100	36.500	4.550	8000	12000	0.098	**NA 49/28**
	45	30	39.600	65.500	8.650	8000	12000	0.18	**NA 69/28**
30	45	20	24.600	45.000	5.700	7500	11000	0.11	**NKI 30/20**
	45	30	35.800	72.000	9.500	7500	11000	0.17	**NKI 30/30**
	47	17	25.500	39.000	4.900	7500	11000	0.10	**NA 4906**
	47	30	42.900	75.000	9.800	7500	11000	0.19	**NA 6906**

Needle Roller Bearing with Flange With Inner Ring
d35-65mm



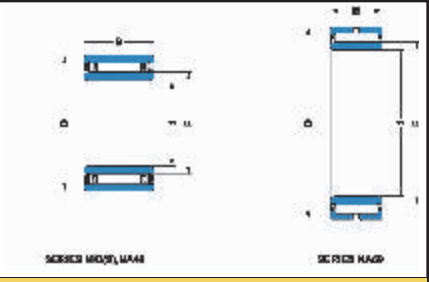
Principal Dimension			Basic Load Ratings		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
			Dynamic	Static		Grease	Oil		
d	D	C	C	C0	Pu				
mm			kN		kN	RPM		Kg.	
35	50	20	26.4	51	6.4	7000	10000	0.13	**NKI 35/20**
	50	30	38	83	10.8	7000	10000	0.19	**NKI 35/30**
	55	20	31.9	54	6.95	6700	9500	0.17	**NA 4907**
	55	36	48.4	93	11.8	6700	9500	0.31	**NA 6907**
	58	22	39.1	61	7.8	6300	9000	0.22	**NKIS 35**
38	53	20	27.5	55	6.95	6700	9500	0.14	**NKI 38/20**
	53	30	40.2	90	11.6	6700	9500	0.21	**NKI 38/30**
40	55	20	27.5	57	7.2	6300	9000	0.14	**NKI 40/20**
	55	30	40.2	93	12	6300	9000	0.22	**NKI 40/30**
	62	22	42.9	71	9.15	5600	8000	0.23	**NA 4908**
	62	40	67.1	125	16	5600	8000	0.43	**NA 6908**
	65	22	42.9	72	9.15	5600	8000	0.28	**NKIS 40**
42	57	20	29.2	61	7.65	6000	8500	0.15	**NKI 42/20**
	57	30	41.8	98	12.9	6000	8500	0.22	**NKI 42/30**
45	62	25	38	78	10	5600	8000	0.23	**NKI 45/25**
	62	35	49.5	110	14.3	5600	8000	0.32	**NKI 45/35**
	68	22	45.7	78	10	5300	7500	0.27	**NA 4909**
	68	40	70.4	137	17.3	5300	7500	0.50	**NA 6909**
	72	22	44.6	78	10	5000	7000	0.34	**NKIS 45**
50	68	25	40.2	88	11.2	5300	7500	0.27	**NKI 50/25**
	68	35	52.3	122	16	5300	7500	0.38	**NKI 50/35**
	72	22	47.3	85	11	5000	7000	0.27	**NA 4910**
	72	40	73.7	150	19	5000	7000	0.52	**NA 6910**
	80	28	62.7	104	13.7	4500	6300	0.52	**NKIS 50**
55	72	25	41.8	96.5	12.2	4800	6700	0.27	**NKI 55/25**
	72	35	55	134	17.6	4800	6700	0.38	**NKI 55/35**
	80	25	57.2	106	13.7	4500	6300	0.40	**NA 4911**
	80	45	89.7	190	24	4500	6300	0.78	**NA 6911**
	85	28	66	114	15	4300	6000	0.56	**NKIS 55**
60	82	25	44	95	12	4300	6000	0.40	**NKI 60/25**
	82	35	60.5	146	19	4300	6000	0.55	**NKI 60/35**
	85	25	60.5	114	14.6	4300	6000	0.43	**NA 4912**
	85	45	93.5	204	26	4300	6000	0.81	**NA 6912**
	90	28	68.2	120	15.6	4000	5600	0.56	**NKIS 60**
65	90	25	61.6	120	15.3	4000	5600	0.46	**NA 4913**
	90	25	52.8	106	13.7	4000	5600	0.47	**NKI 65/25**
	90	35	73.7	163	21.6	4000	5600	0.66	**NKI 65/35**
	90	45	95.2	212	27	4000	5600	0.83	**NA 6913**
	95	28	70.4	132	17	3800	5300	0.64	**NKIS 65**

Needle Roller Bearing with Flange With Inner Ring
d70-140mm



Principal Dimension			Basic Load Ratings		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
			Dynamic	Static		Grease	Oil		
d	D	C	C	C0	Pu				
mm			kN		kN	RPM		Kg.	
70	95	25	56.1	127	16	3600	5000	0.52	**NKI 70/25**
	95	35	76.5	190	25	3600	5000	0.74	**NKI 70/35**
	100	28	74.8	140	18.6	3600	5000	0.68	**NKIS 70**
	100	30	84.2	163	21.6	3600	5000	0.73	**NA 4914**
	100	54	128	285	37.5	3600	5000	1.35	**NA 6914**
75	105	25	69.3	132	17	3400	4800	0.64	**NKI 75/25**
	105	30	84.2	170	22.4	3400	4800	0.78	**NA 4915**
	105	35	96.8	200	27	3400	4800	0.91	**NKI 75/35**
	105	54	130	290	38	3400	4800	1.45	**NA 6915**
80	110	25	72.1	140	18.3	3200	4500	0.68	**NKI 80/25**
	110	30	88	183	24	3200	4500	0.88	**NA 4916**
	110	35	101	216	29	3200	4500	0.96	**NKI 80/35**
	110	54	134	315	41.5	3200	4500	1.50	**NA 6316**
85	115	26	73.7	146	19	3000	4300	0.75	**NKI 85/28**
	115	36	105	232	30.5	3000	4300	1.05	**NKI 85/36**
	120	35	108	250	32	2800	4000	1.25	**NA 4917**
	120	63	165	425	54	2800	4000	2.20	**NA 6917**
90	120	26	76.5	156	19.6	2800	4000	0.78	**NKI 90/26**
	120	36	108	250	32	2800	4000	1.10	**NKI 90/36**
	125	35	112	265	33.5	2600	3800	1.30	**NA 4918**
	125	63	172	450	57	2600	3800	2.30	**NA 6918**
95	125	26	78.1	166	20.8	2600	3800	0.82	**NKI 95/26**
	125	36	112	265	33.5	2600	3800	1.15	**NKI 95/36**
	130	35	114	270	34	2440	3600	1.40	**NA 4919**
	130	63	172	465	57	2400	3600	2.50	**NA 6919**
100	130	30	96.8	220	27.5	2400	3600	1.00	**NKI 100/30**
	130	40	123	305	38	2400	3600	1.35	**NKI 100/40**
	135	32	91.3	220	26.5	2400	3600	1.35	**NKIS 100**
	140	40	125	280	34.5	2200	3400	1.90	**NA 4920**
110	140	30	93.5	232	27.5	2200	3400	1.10	**NA 4822**
	150	40	130	300	36.5	2000	3200	2.10	**NA 4922**
120	150	30	99	255	30	2000	3200	1.15	**NA 4824**
	165	45	176	405	47.5	1900	3000	2.85	**NA 4924**
130	165	35	119	325	37.5	1800	2800	1.80	**NA 4826**
	180	50	198	480	55	1700	2600	3.90	**NA 4926**
140	175	35	121	345	3.8	1700	2600	1.95	**NA 4828**
	190	50	205	510	58.5	1600	2400	4.15	**NA 4928**

Needle Roller Bearing with Flange With Inner Ring
d150-300mm



Principal Dimension			Basic Load Ratings		Fatigue Load Limit	Speed Rating Lubrication		Mass	Designation
			Dynamic	Static		Grease	Oil		
d	D	C	C	C0	Pu				
mm			kN		kN	RPM		Kg.	
150	190	40	147	415	46.5	1600	2400	2.70	**NA 4830**
160	200	40	157	450	50	1500	2200	2.90	**NA 4832**
170	215	45	179	520	57	1500	2200	4.00	**NA 4834**
180	225	45	190	570	60	1400	2000	4.20	**NA 4836**
190	240	50	220	710	73.5	300	1900	5.60	**NA 4838**
200	250	50	224	735	75	1200	1800	5.85	**NA 4840**
220	270	50	238	815	81.5	1100	1700	6.40	**NA 4844**
240	300	60	347	1120	108	950	1500	10.0	**NA 4848**
260	320	60	358	1200	114	900	1400	10.5	**NA 4852**
280	350	69	429	1320	127	850	1300	15.5	**NA 4856**
300	380	80	594	1800	170	750	1100	22.0	**NA 4860**

Needle Roller And Cage Assemblies
d8-15mm



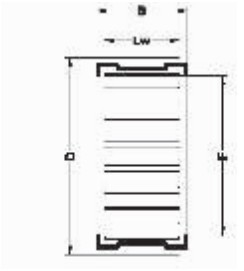
Boundary Dimension			Basic Load Ratings		Speed Rating Lubrication		Mass	Designation
			Dynamic	Static	Grease	Oil		
F	D	B	C	C0				
mm			kN		RPM		Kg.	
8	11	8	3.1	3.2	19000	32000	0.002	**K8*11*8**
	11	10	3.8	4.25	19000	32000	0.002	**K8*11*10**
	11	13	5	5.85	19000	32000	0.003	**K8*11*13**
	12	13	5.85	6	19000	32000	0.005	**K8*12*13**
9	12	10	4.05	4.75	18000	30000	0.003	**K9*12*10**
	12	13	5.3	6.55	18000	30000	0.004	**K9*12*3**
10	13	9	4.6	5.7	17000	28000	0.002	**K10*13*9**
	13	10	5.2	6.55	17000	28000	0.002	**K10*13*10**
	13	13	5.6	7.35	17000	28000	0.004	**K10*13*13**
	13	116	7.1	9.8	17000	28000	0.004	**K10*13*16**
	14	10	5.85	6.4	18000	30000	0.004	**K10*14*10**
	14	13	7.5	8.8	18000	30000	0.005	**K10*14*13**
11	14	10	4.55	5.7	17000	28000	0.003	**K11*14*10**
12	15	9	4.55	5.85	16000	26000	0.002	**K12*15*9**
	15	10	5.6	7.65	16000	26000	0.003	**K12*15*10**
	15	13	6.4	9.15	16000	26000	0.004	**K12*15*13**
	15	15	6.7	9.65	16000	26000	0.005	**K12*15*15**
	16	10	6.55	7.8	16000	26000	0.005	**K12*16*10**
	16	13	7.1	8.65	16000	26000	0.007	**K12*16*13**
	17	17	8.5	9.5	17000	28000	0.008	**K12*17*13**
	17	17	9.8	11.4	17000	28000	0.009	**K12*17*14**
	18	18	9.5	9.8	17000	28000	0.009	**K12*18*12**
13	17	17	6.8	8.5	16000	26000	0.005	**K13*17*10**
	18	18	1.04	12.2	16000	26000	0.011	**K13*18*15**
14	18	8	5.1	6	16000	26000	0.005	**K14*18*8**
	18	10	6.8	8.5	16000	26000	0.005	**K14*18*10**
	18	13	9.15	12.5	16000	26000	0.007	**K14*18*13**
	18	15	1.0	1.4	16000	26000	0.007	**K14*18*15**
	18	16	9.5	12.9	16000	26000	0.007	**K14*18*16**
	18	17	11.8	17.9	16000	26000	0.008	**K14*18*17**
	19	13	9.8	11.6	16000	26000	0.007	**K14*19*13**
	19	18	12.5	16.3	16000	26000	0.014	**K14*19*18**
	20	12	1.0	10.8	16000	26000	0.010	**K14*20*12**
15	18	14	7.8	12.5	15000	24000	0.005	**K15*18*14**
	18	16	8	12.9	15000	24000	0.007	**K15*18*16**
	18	17	8.3	13.7	15000	24000	0.005	**K15*18*17**
	19	10	7.5	9.8	15000	24000	0.005	**K15*19*10**
	19	13	9.15	12.7	15000	24000	0.007	**K15*19*13**
	19	14	10.2	14.6	15000	24000	0.007	**K15*19*14**
	19	17	11.6	17.3	15000	24000	0.009	**K15*19*17**

Needle Roller And Cage Assemblies
d15-20mm



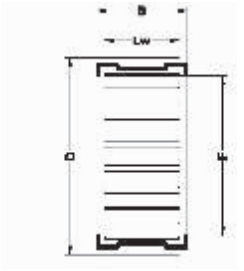
Boundary Dimension			Basic Load Ratings		Speed Rating Lubrication		Mass	Designation
			Dynamic	Static	Grease	Oil		
F	D	B	C	C0				
mm			kN		RPM		Kg.	
15	20	13	9.5	11.6	16000	26000	0.011	**K15*20*13**
	21	15	12.7	15	16000	26000	0.014	**K15*21*15**
	21	21	16.8	20.8	16000	26000	0.018	**K/15*21*21**
16	20	8	6.1	7.65	15000	24000	0.005	**K16*20*8**
	20	10	7.35	9.8	15000	24000	0.006	**K16*20*10**
	20	13	9.5	13.7	15000	24000	0.007	**K16*20*13**
	20	14	10.2	15	15000	24000	0.008	**K16*20*14**
	20	17	11.2	17	15000	24000	0.008	**K16*20*17**
	20	20	12.7	19.6	15000	24000	0.010	**K16*20*20**
	22	12	11	12.5	16000	26000	0.012	**K16*22*12**
	22	20	17.6	23.2	16000	26000	0.021	**K16*22*20**
	24	20	19.3	21.6	16000	26000	0.031	**K16*24*20**
17	20	10	5.7	8.8	15000	24000	0.005	**K17*20*10**
	21	10	7.65	10.6	15000	24000	0.005	**K17*21*10**
	21	13	10	14.6	15000	24000	0.008	**K17*21*13**
	21	15	10.8	16.3	15000	24000	0.009	**K17*21*15**
	21	17	11.2	17	15000	24000	0.012	**K17*21*17**
	22	20	16.3	23.6	15000	24000	0.018	**K17*22*20**
	23	15	13.4	16.6	15000	24000	0.017	**K17*23*15**
18	22	10	8	11.2	15000	24000	0.006	**K18*22*10**
	22	13	10.2	15.6	15000	24000	0.008	**K18*22*13**
	22	14	11	17	15000	24000	0.009	**K18*22*14**
	22	17	12.5	20	15000	24000	0.010	**K18*22*17**
	22	20	14.3	23.6	15000	24000	0.014	**K18*22*20**
	23	20	17	25.5	15000	24000	0.019	**K18*23*20**
	24	12	11.2	13.4	15000	24000	0.013	**K18*24*12**
	24	13	11.6	13.7	15000	24000	0.016	**K18*24*13**
	24	20	18.3	25	15000	24000	0.020	**K18*24*20**
	25	22	22	29	15000	24000	0.028	**K18*25*22**
	26	20	20.8	24.5	15000	24000	0.034	**K18*26*20**
19	23	13	10.2	15.6	14000	22000	0.008	**K19*23*13**
	23	17	12.7	20.8	14000	22000	0.013	**K19*23*17**
20	24	8	6.95	98	13000	20000	0.006	**K20*24*8**
	24	10	8.5	12.7	13000	20000	0.007	**K20*24*10**
	24	12	10.2	16	13000	20000	0.008	**K20*24*12**
	24	13	11	17.3	13000	20000	0.009	**K20*24*13**
	24	14	11.8	19	13000	20000	0.009	**K20*24*14**
	24	17	14	24	13000	20000	0.011	**K20*24*17**
	26	12	12.5	15.6	13000	20000	0.014	**K20*26*12**
	26	13	12.7	16	13000	20000	0.015	**K20*26*13**
	26	17	18.6	26.5	13000	20000	0.019	**K20*26*17**
	26	20	19.3	27.5	13000	20000	0.022	**K20*26*20**
	28	20	23.2	29	13000	20000	0.032	**K20*28*20**
	28	20	23.2	29	13000	20000	0.032	**K20*28*20**

Needle Roller And Cage Assemblies
d20-26mm



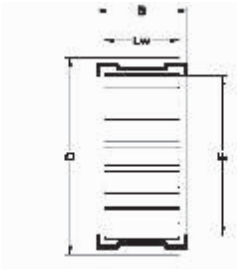
Boundary Dimension			Basic Load Ratings		Speed Rating Lubrication		Mass	Designation
			Dynamic	Static	Grease	Oil		
F	D	B	C	C0				
mm			kN		RPM		Kg.	
20	28	25	28	37.5	13000	20000	0.039	**K20*28*25**
	30	30	34.5	42.5	13000	20000	0059	**K20*30*30**
21	25	17	13.7	23.2	13000	20000	0.014	**K21*25*17**
22	26	10	86.5	13.4	12000	19000	0.006	**K22*26*10**
	26	13	11.2	18.6	12000	19000	0.010	**K22*26*13**
	26	14	12.5	21.2	12000	19000	0.010	**K22*26*14**
	26	17	14.6	26.5	12000	19000	0.012	**K22*26*17**
	26	18	14.6	25.5	12000	19000	0.013	**K22*26*18**
	27	17	15.6	24	12000	19000	0.016	**K22*27*17**
	28	13	14	18.6	12000	19000	0.017	**K22*28*13**
	28	17	17.3	24.5	12000	19000	0.021	**K22*28*17**
	30	15	18.6	22.8	12000	19000	0.027	**K22*30*15**
	32	28	37.5	48	12000	19000	0.072	**K22*32*28**
	32	30	39	51	12000	19000	0.064	**K22*32*30**
23	28	24	21.2	36.5	11000	18000	0.028	**K23*28*24**
24	28	10	88	14	10000	17000	0.008	**K24*28*10**
	28	13	11.8	20.4	10000	17000	0.010	**K24*28*13**
	28	16	12	20.4	10000	17000	0.015	**K24*28*16**
	28	17	14.6	26.5	10000	17000	0.012	**K24*28*17**
	30	17	18.6	28	10000	17000	0.023	**K24*30*17**
	30	22	22	34.5	10000	17000	0.030	**K24*30*22**
25	29	10	91.5	15	10000	17000	0.008	**K25*29*10**
	29	13	10	18.6	10000	17000	0.014	**K25*29*13**
	29	17	14.3	26.5	10000	17000	0.017	**K25*29*17**
	30	13	14	22	10000	17000	0.014	**K25*30*13**
	30	17	18	30.5	10000	17000	0.019	**K25*30*17**
	30	18	19.6	34	10000	17000	0.020	**K25*30*18**
	30	20	20	34.5	10000	17000	0.022	**K25*30*20**
	30	24	23.6	43	10000	17000	0.025	**K25*30*24**
	31	14	16	23.2	10000	17000	0.019	**K25*31*14**
	31	17	18.6	28	10000	17000	0.023	**K25*31*17**
	31	21	23.6	38	10000	17000	0.029	**K25*31*21**
	31	24	24	39	10000	17000	0.038	**K25*31*24**
	32	15	18.3	25	10000	17000	0.028	**K25*32*15**
	32	16	19	26	10000	17000	0.027	**K25*32*16**
	33	20	275	38	10000	17000	0.039	**K25*33*20**
	33	25	31	45	10000	17000	0.046	**K25*33*25**
	35	25	35.5	46.5	10000	17000	0.059	**K25*35*25**
	35	30	42.5	57	10000	17000	0.070	**K25*35*30**
26	30	13	11.6	20.4	9500	16000	0.013	**K26*30*13**
	30	17	14.3	26.5	9500	16000	0.017	**K26*30*17**
	31	20	19	32.5	9500	16000	0.026	**K26*31*20**

Needle Roller And Cage Assemblies
d27-34mm



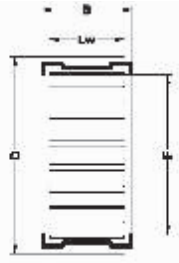
Boundary Dimension			Basic Load Ratings		Speed Rating Lubrication		Mass	Designation
			Dynamic	Static	Grease	Oil		
F	D	B	C	C0				
mm			kN		RPM		Kg.	
27	34	17	19.3	27	9000	15000	0.035	**K27*34*17**
28	32	21	17.6	36	9000	15000	0.022	**K28*32*21**
	33	17	19	33.5	9000	15000	0.020	**K28*33*17**
	33	27	27.5	54	9000	15000	0.031	**K28*33*27**
	34	17	20	32	9000	15000	0.026	**K28*34*17**
	34	20	23.2	38	9000	15000	0.024	**K28*34*20**
	35	16	20	28.5	9000	15000	0.034	**K28*35*16**
	35	17	20	28.5	9000	15000	0.036	**K28*35*17**
	35	18	23.2	34.5	9000	15000	0.033	**K28*35*18**
	35	27	33.5	55	9000	15000	0.047	**K28*35*27**
	36	20	26.5	37.5	9000	15000	0.049	**K28*36*20**
	40	30	51	68	9000	15000	0.097	**K28*40*30**
29	34	27	27.5	55	8500	14000	0.039	**K29*34*27**
30	35	13	15	25.5	8500	14000	0.017	**K30*35*13**
	35	17	19.3	35.5	8500	14000	0.022	**K30*35*17**
	35	18	20.4	37.5	8500	14000	0.023	**K30*35*18**
	35	20	21.6	43	8500	14000	0.025	**K30*35*20**
	35	23	24.5	47.5	8500	14000	0.034	**K30*35*23**
	35	24	26	52	8500	14000	0.030	**K30*35*24**
	35	27	29	60	8500	14000	0.033	**K30*35*27**
	36	14	17	26.5	8500	14000	0.023	**K30*36*14**
	37	18	23.2	35.5	8500	14000	0.040	**K30*37*18**
	40	30	44	64	8500	14000	0.081	**K30*40*30**
	42	30	51	68	8500	14000	0.096	**K30*42*30**
32	36	15	11	20.4	8000	13000	0.019	**K32*36*15**
	37	13	14.6	25	8000	13000	0.021	**K32*37*13**
	37	17	19	35.5	8000	13000	0.022	**K32*37*17**
	37	27	28	57	8000	13000	0.042	**K32*37*27**
	38	20	26	48.5	8000	13000	0.039	**K32*38*20**
	38	26	31.5	58.5	8000	13000	0.043	**K32*38*26**
	39	14	20	30	8000	13000	0.033	**K32*39*14**
	39	16	21.2	32.5	8000	13000	0.038	**K32*39*16**
	39	18	24.5	39	8000	13000	0.037	**K32*39*18**
	40	25	36	57	8000	13000	0.057	**K32*40*25**
	40	36	49	86.5	8000	13000	0.080	**K32*40*36**
	42	42	65.5	10.8	8000	13000	0.119	**K32*42*42**
34	44	26	40.5	58.5	7500	12000	0.085	**K32*44*26**

Needle Roller And Cage Assemblies
d35-43mm



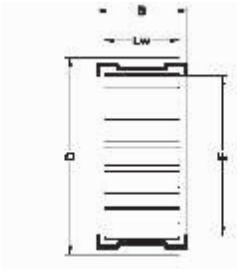
Boundary Dimension			Basic Load Ratings		Speed Rating Lubrication		Mass	Designation
			Dynamic	Static	Grease	Oil		
F	D	B	C	C0				
mm			kN		RPM		Kg.	
35	40	13	15.6	28	7500	12000	0.019	**K35*40*13**
	40	17	20	39	7500	12000	0.026	**K35*40*17**
	40	19	22	44	7500	12000	0.032	**K35*40*19**
	40	25	27	57	7500	12000	0.034	**K35*40*25**
	40	27	28.5	60	7500	12000	0.036	**K35*40*27**
	40	31	32	69.5	7500	12000	0.041	**K35*40*31**
	42	16	23.6	37.5	7500	12000	0.036	**K35*42*16**
	42	18	26	43	7500	12000	0.040	**K35*42*18**
	42	30	38	71	7500	12000	0.062	**K35*42*30**
	45	20	35.5	50	7500	12000	0.077	**K35*45*20**
	45	41	67	11.4	7500	12000	0.13	**K35*45*41**
	45	49	78	13.7	7500	12000	0.147	**K35*45*49**
36	40	29	20.4	47.5	7500	12000	0.02	**K36*40*29TN**
	42	16	21.6	38	7500	12000	0.03	**K36*42*16**
37	42	13	16.3	30	7000	11000	0.02	**K37*42*13**
	42	17	20.8	41.5	7000	11000	0.026	**K37*42*17**
	42	27	30.5	68	7000	11000	0.048	**K37*42*27**
	44	19	28.5	49	7000	11000	0.044	**K37*42*19**
38	43	17	20.8	41.5	7000	11000	0.032	**K38*43*17**
	43	27	30.5	68	7000	11000	0.05	**K38*43*27**
	46	2	31.5	52	7000	11000	0.056	**K38*46*20**
	46	32	52	98	7000	11000	0.09	**K38*46*32**
	50	33	64	98	7000	11000	0.132	**K38*50*33**
39	44	24	29	64	7000	11000	0.037	**K39*44*24**
40	45	17	22.8	48	6700	10000	0.024	**K40*45*17**
	45	18	24	51	6700	10000	0.03	**K40*45*18**
	45	21	22	45.5	6700	10000	0.031	**K40*45*21**
	45	27	31	71	6700	10000	0.041	**K40*45*27**
	46	17	24	45	6700	10000	0.035	**K40*46*17**
	47	18	27	46.5	6700	10000	0.047	**K40*47*18**
	48	20	31	51	6700	10000	0.06	**K40*48*20**
	50	27	50	81.5	6700	10000	0.094	**K4*50*27**
	55	45	96.5	146	6700	10000	0.237	**K40*55*45**
42	47	13	18	35.5	6700	10000	0.023	**K42*47*13**
	47	17	21.6	45.5	6700	10000	0.035	**K42*47*17**
	47	27	32	75	6700	10000	0.054	**K42*47*27**
	50	13	21.2	30	6700	10000	0.041	**K42*50*13**
	50	18	30	50	6700	10000	0.053	**K42*50*18**
	50	20	32	54	6700	10000	0.062	**K42*50*20**
43	48	17	21.6	46.5	6300	9500	0.036	**K43*48*17**
	48	27	32	75	6300	9500	0.045	**K43*48*27**

Needle Roller And Cage Assemblies
d44-55mm



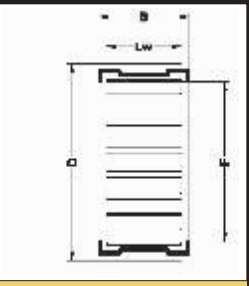
Boundary Dimension			Basic Load Ratings		Speed Rating Lubrication		Mass	Designation
			Dynamic	Static	Grease	Oil		
F	D	B	C	C0				
mm			kN		RPM		Kg.	
44	50	22	30	61	6300	9500	0.046	**K44*50*22**
45	50	13	17.6	36	6300	9500	0.024	**K45*50*13**
	50	17	23.6	53	6300	9500	0.032	**K45*50*17**
	50	21	223.2	51	6300	9500	0.034	**K45*50*21**
	50	27	32.5	78	6300	9500	0.058	**K45*50*27**
	52	18	29	53	6300	9500	0.052	**K45*52*18**
	52	21	33.5	64	6300	9500	0.067	**K45*52*21**
	53	20	34	60	6300	9500	0.065	**K45*53*20**
	53	21	37.5	67	6300	9500	0.069	**K45*53*21**
	53	25	40.5	75	6300	9500	0.094	**K45*53*25**
	53	28	46.5	90	6300	9500	0.088	**K45*53*28**
	55	20	40	62	6300	9500	0.077	**K45*55*20**
	59	18	46.5	56	6300	9500	0.079	**K45*59*18TN**
	59	36	78	118	6300	9500	0.186	**K45*59*36**
	60	40	88	134	6300	9500	0.305	**K45*60*40**
	60	45	98	153	6300	9500	0.342	**K45*60*45**
47	52	17	23.2	51	6000	9000	0.034	**K47*52*17**
	52	27	33.5	83	6000	9000	0.049	**K47*52*27**
	55	26	43	83	6000	9000	0.101	**K47*55*26**
	55	28	46.5	90	6000	9000	0.092	**K47*55*28**
48	53	17	24.5	56	5600	8500	0.033	**K48*53*17**
	54	19	29	62	5600	8500	0.047	**K48*54*19**
49	65	38	93	140	5600	8500	0.249	**K49*65*38**
50	55	17	24	56	5600	8500	0.034	**K50*55*17**
	55	20	28.5	69.5	5600	8500	0.04	**K50*55*20**
	55	30	36	93	5600	8500	0.071	**K50*55*30**
	56	23	33.5	75	5600	8500	0.056	**K50*56*23**
	58	20	36.5	68	5600	8500	0.072	**K50*58*20**
	58	25	44	86.5	5600	8500	0.087	**K50*58*25**
	58	35	61	132	5600	8500	0.105	**K50*58*35**
	60	32	58.5	106	5600	8500	0.172	**K50*60*32**
52	57	12	15.6	31.5	5300	8000	0.03	**K52*57*12**
	57	14	20.4	45	5300	8000	0.043	**K52*57*17**
	60	24	45	90	5300	8000	0.088	**K52*60*24**
55	60	17	24.5	60	5000	7500	0.045	**K55*60*17**
	60	20	29	73.5	5000	7500	0.043	**K55*60*20**
	60	27	38	102	5000	7500	0.062	**K55*60*27**
	60	30	38	104	5000	7500	0.078	**K55*60*30**
	63	15	29	52	5000	7500	0.068	**K55*63*15**
	63	20	38	75	5000	7500	0.078	**K55*63*20**
	63	25	47.5	98	5000	7500	0.095	**K55*63*25**
	63	32	57	125	5000	7500	0.143	**K55*63*32**

Needle Roller And Cage Assemblies
d55-90mm



Boundary Dimension			Basic Load Ratings		Speed Rating Lubrication		Mass	Designation
			Dynamic	Static	Grease	Oil		
F	D	B	C	C0				
mm			kN		RPM		Kg.	
55	65	36	75	150	5000	7500	0.206	**K55*65*36**
58	63	17	26	64	4800	7000	0.048	**K58*63*17**
	65	18	32.5	68	4800	7000	0.065	**K58*65*18**
60	65	20	30.5	80	4800	7000	0.046	**K60*65*20**
	65	30	40.5	116	4800	7000	0.085	**K60*65*30**
	68	20	40	80	4800	7000	0.084	**K60*68*20**
	68	23	46.5	98	4800	7000	0.112	**K60*68*23**
	68	25	49	104	4800	7000	0.123	**K60*68*25**
	75	42	11.2	196	4800	7000	0.408	**K60*75*42**
63	71	20	39	80	4500	6700	0.09	**K63*71*20**
64	70	16	25	56	4500	6700	0.061	**K64*70*16**
65	70	20	27	69.5	4300	6300	0.054	**K65*70*20**
	70	30	42.5	125	4300	6300	0.092	**K65*70*30**
	73	30	57	129	4300	6300	0.131	**K65*73*30**
68	74	28	42.5	110	4000	6000	0.081	**K68*74*28**
	74	30	45	120	4000	6000	0.098	**K68*74*30**
70	76	20	34	85	4000	6000	0.082	**K70*76*20**
	76	30	49	134	4000	6000	0.121	**K70*76*30**
	78	20	41.5	90	4000	6000	0.099	**K70*78*20**
	78	23	47.5	106	4000	6000	0.128	**K70*78*23**
	78	30	58.5	140	4000	6000	0.14	**K70*78*30**
72	80	20	42.5	91.5	4000	6000	0.101	**K73*80*20**
73	79	20	35.5	90	3800	5600	0.086	**K73*79*20**
75	83	23	50	116	3800	5600	0.12	**K75*83*23**
	83	30	57	140	3800	5600	0.181	**K75*83*20**
80	86	20	36.5	98	3600	5300	0.094	**K80*86*20**
	88	25	51	122	3600	5300	0.161	**K80*88*25**
	88	30	64	163	3600	5300	0.16	**K80*88*30**
85	92	20	38	93	3400	5000	0.096	**K85*92*20**
	93	25	53	129	3400	5000	0.17	**K85*93*20**
	93	30	65.5	173	3400	5000	0.169	**K85*93*30**
90	97	20	42	116	3000	4500	0.107	**K90*97*20**
	98	25	52	129	3000	4500	0.179	**K90*98*25**
	98	30	60	156	3000	4500	0.215	**K90*98*30**

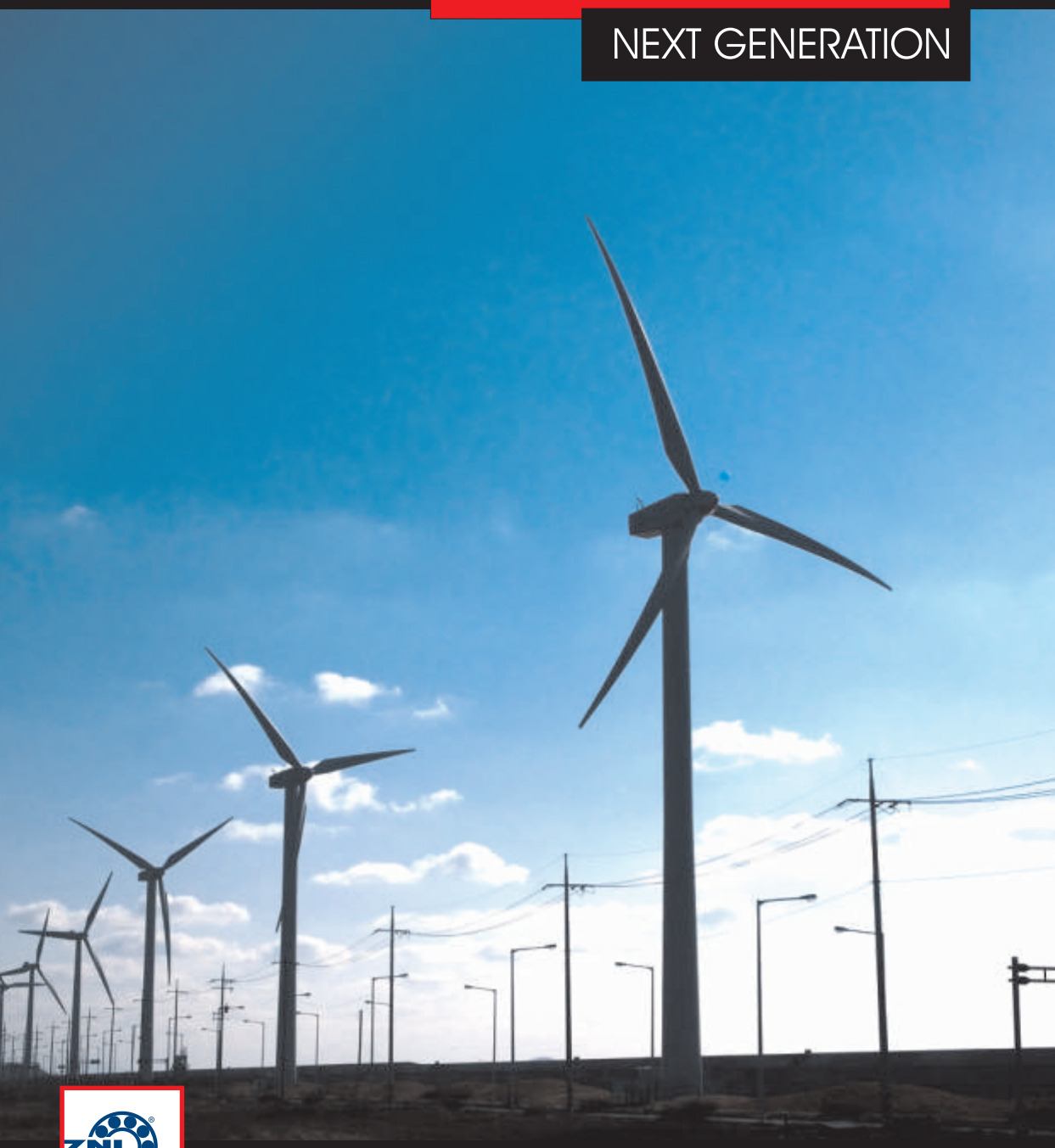
Needle Roller And Cage Assemblies
d95-165mm



Boundary Dimension			Basic Load Ratings		Speed Rating Lubrication		Mass	Designation
			Dynamic	Static	Grease	Oil		
F	D	B	C	C0				
mm			kN		RPM		Kg.	
95	103	20	46.5	116	2800	4300	0.152	**K95*103*20**
100	108	30	68	193	2800	4300	0.239	**K100*108*30**
105	113	27	64	180	2600	4000	0.225	**K105*113*27**
110	118	24	61	170	2400	3800	0.208	**K110*118*24**
	118	30	71	208	2400	3800	0.262	**K110*118*30**
120	128	25	63	183	2000	3400	0.237	**K120*128*25**
130	137	24	61	200	1900	3200	0.211	**K130*137*24**
	140	45	127	400	1900	3200	0.586	**K130*140*45**
135	145	38	116	355	1800	3000	0.511	**K135*145*38**
140	150	43	132	430	1800	3000	0.596	**K140*150*43**
150	160	43	137	455	1700	2800	0.639	**K150*160*43**
160	168	22	62	200	1600	2600	0.281	**K160*168*22**
165	173	26	75	255	1600	2600	0.338	**K165*173*26**

WIND MILL INDUSTRIES

NEXT GENERATION



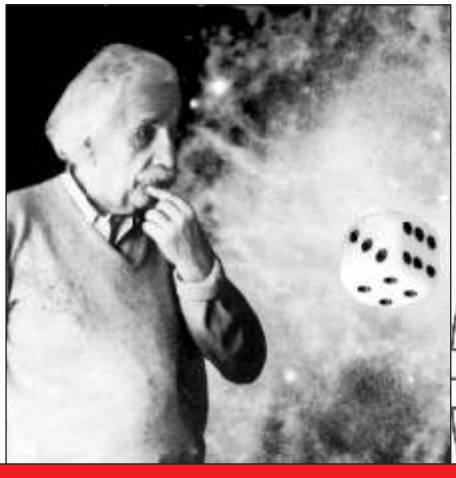
THE COMMITMENT TO QUALITY...
THE COMMITMENT TO GROWTH...
Precision Bearings Pvt. Ltd.

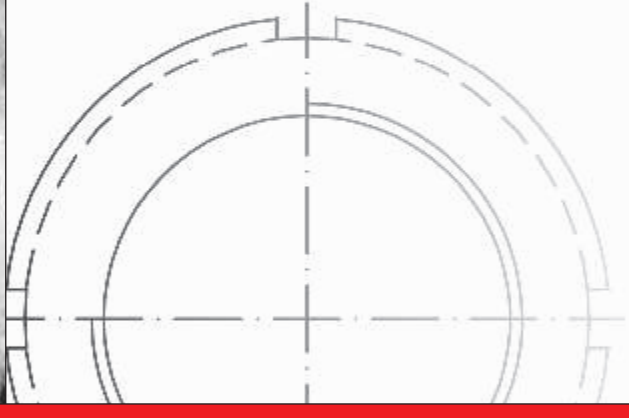










"If you don't invest properly in fundamental science, then you won't have the foundations to develop the technologies and applications of tomorrow. "

John Prebble

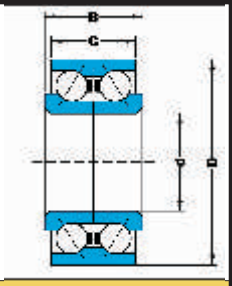


AUTOMOBILE

Bearings

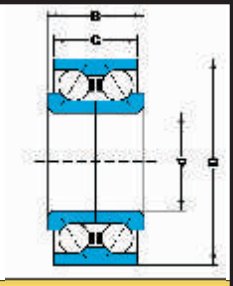


DAC Type Double Row Angular Contact Ball Bearing
d25-35



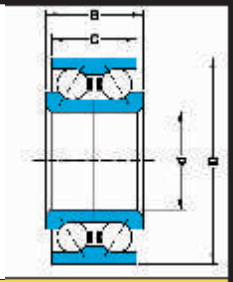
Dimension				Bearing No.	Application	Mass
d	D	B	C			
25.00	52.00	20.60	20.60	DAC255200206	Flat, Seat, oleaventilador124	**0.19**
	52.00	37.00	37.00	DAC25520037	Renault, Peugeot, Citroen, Trs	**0.31**
	52.00	43.00	43.00	DAC25520043	Renault, Peugeot, Citroen	**0.36**
	55.00	43.00	43.00	DAC25550043	Renault	**0.44**
	56.00	32.00	32.00	DAC25560032	Citroen	**0.34**
27.00	53.00	43.00	43.00	DAC27580043	Nissan	**0.34**
	60.00	50.00	50.00	DAC27600050	Nissan	**0.56**
28.00	58.00	42.00	42.00	DAC28580042	Sk10, Skoda 410	**0.47**
	61.00	42.00	42.00	DAC28610042	Toyota Corolla Gtiae92 1.6*16v8f	**0.56**
29.00	53.00	37.00	37.00	DAC29530037		**0.35**
30.00	58.00	42.00	42.00	DAC30580042		**0.40**
	60.00	37.00	37.00	DAC30600037	Flat, Lada, Lancia, Seat Volvo	**0.42**
	60.03	37.00	37.00	DAC30600337	Flat, Lada, Lancia, Seat Volvo	**0.42**
	64.00	42.00	42.00	DAC30640042		**0.49**
	65.00	26.40	26.40	DAC306500264		**0.36**
32.00	70.00	38.00	38.00	DAC32700038		**0.62**
	72.03	45.00	45.00	DAC32720345		**0.60**
34.00	62.00	37.00	37.00	DAC34620037	Audi, Volkswagen, Chrysler	**0.41**
	64.00	34.00	34.00	DAC34640034	Honda, JAZZAA1.2 B4-86	**0.43**
	65.00	37.00	37.00	DAC34640037	Lada, Opel, Volkswagen, Bedford	**0.47**
	66.00	37.00	37.00	DAC34660037	Opel, Vau*hall, Accord, Corsa	**3.50**
35.00	61.80	40.00	40.00	DAC35618040		**0.43**
	65.00	37.00	37.00	DAC35640037	TJ7300:Daihatsu	**0.46**
	65.00	35.00	35.000	DAC35650035	Renault, Chrysler	**0.40**
	66.00	32.00	32.00	DAC35660032	Subaru	**0.42**

DAC Type Double Row Angular Contact Ball Bearing



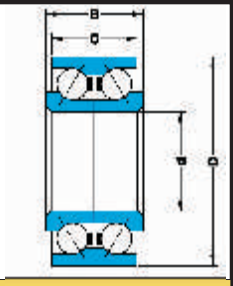
Equivalent Bearing No. In Other Brands				Equivalent Bearing No. In Other Brands		
KOYO	FAG	NTN	NSK	SKF	SNR	IRB
				BAHB617546A		IR-8032
	546467, 576467			BAHB445539	FC12025, SO7 &SO9, GB40570	IR-2220
					FC12180	IR-2221
	803837				FC12271S03	IR-2222
	445979			BAHB5000		IR8520
		DE0565LZCS34P*K244	288WD8A, 27KWD01			IR-8653
DAC2858WCS47, DAC2858AWCS40			28BW03A, 28BWD08A			
DAC286142AWCS40, DAC28614AW			288WD01ACA60, 28BWD01A			IR-8549
		4T-CRI-0678	30KWD01AG3			
DAC3060372RS	(581736)	6-256706			HB-3080C/SBR	
DAC3060W	529891AB, 545312, 581736		30BWD07	BA2B 633313C, BAHB405956A, BAHB848780	GB10790S05	IR-8040
DAC3064W2RKBCS28		DEO776CS46	34BWD03ACA78			
			32BWD05CA75, 32W07-7			
	531910, 561447			BAHB311316B, BAHB309724		IR-8051
DAC3464D		DEO776CS4615A	34BWD03			
DAC3464G1	532066DE, 540466B	DEO7A39LL, 6-256907E1	34WD04BCA70, 34BWD11	BAH0092, 309726DA	GB10884, HB-4022C/SBR	IR-8041
	580400CA, 559529		34BWD10B	BAHB636114A, BAHB479399	HB-110487/SBR	IR-8622
DAC3562W-S, DAC3562W-5CS35		AUO706-3				
DAC3564A-1		DEO749, DE-0766LUA, AUO704-ALL		BAHB0042, BT2B445620B		
DAC35WCS30	546238A		(12438GB)	BT2B445620B, BAHB443952	GB12004, FC12033S03, GB12438S01	IR-8042
			35BWD14, 35BWD19E			

DAC Type Double Row Angular Contact Ball Bearing
d35-38



Dimension				Bearing No.	Application	Mass
d	D	B	C			
35.00	66.00	33.00	33.00	DAC35660033	Flat, TIPO 1.4	**0.43**
	66.00	37.00	37.00	DAC35660037	Volkswagen, Chrysler, Goif11, polo, VW	**0.48**
	68.00	37.00	37.00	DAC35680037	Flat, lancia, Seat, Volvo, Zastava, Chrysler	**0.52**
	68.00	39.00	36.00	DAC35680039/36		**0.56**
	68.02	33.00	30.00	DAC35680233/30	Nissan Micra 10	**0.47**
	72.00	33.00	33.00	DAC35720033	Citroen, Peugeot	**0.58**
	72.00	34.00	34.00	DAC35720034	LZW7100, Honda Civic 1.2SF,1.2SG77.01	**0.58**
	72.02	28.00	28.00	DAC35720228	Citroen, Peugeot, Renault, Simca, Talbot	**0.49**
	72.02	33.00	31.00	DAC35720233/31	Toyota Tercel AI20 13 82, -4WDAL251	**0.54**
	72.04	33.00	33.00	DAC35720433	Flat, Lancia, TIPO 1.6, Honda, Suzuki	**0.58**
	72.04	34.00	34.00	DAC35720434	Honda, TIPO 1.6	**0.58**
	76.00	54.00	54.00	DAC35760054		**0.95**
36.00	68.00	33.00	33.00	DAC36680033	Suzuki Swift 10 86-89,1.3 84-89 GTI1	**0.47**
	72.00	33.00	28.00	DAC36720033/28		**0.50**
	72.05	34.00	34.00	DAC36720534	Chrysler, Honda	**0.58**
	76.00	29.00	27.00	DAC36760029/27		**0.55**
37.00	72.00	33.00	33.00	DAC37720033		**0.51**
	72.00	37.00	37.00	DAC37720037	Flat, Ford, Lancia, Renault19-21, Chrysler	**0.59**
	72.02	37.00	37.00	DAC37720237	Chrysler	**0.59**
	72.04	37.00	37.00	DAC37720437	Alfa Romeo, Flat, Lancia, Chrysler, Renault	**0.59**
35.00	74.00	45.00	45.00	DAC37740045	BMW, Opel, Ford	**0.79**
38.00	70.00	37.00	37.00	DAC38700037	Santro-FW	**0.56**
	70.00	38.00	38.00	DAC38700038	7100 Charade TJ7100	**0.57**
37.99	71.02	33.00	30.00	DAC38710233/30		**0.49**
38.00	72.00	34.00	34.00	DAC38720034		**0.54**
	72.00	40.00	40.00	DAC38720040	Honda 44300-SB3-961/2	**0.63**
	72.02	38.00	33.00	DAC38720236/33	Honda, Rover, Toyota 90363-30010/11	**0.56**

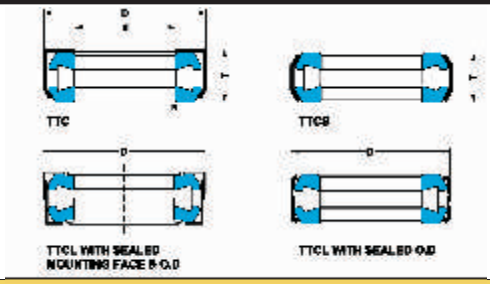
DAC Type Double Row Angular Contact Ball Bearing



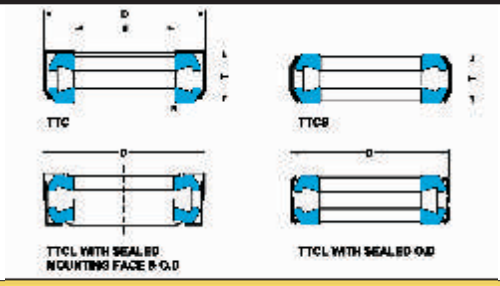
Equivalent Bearing No. In Other Brands

KOYO	FAG	NTN	NSK	SKF	SNR	IRB
				BAHB633676, BAHB-0015	GB12306S01	IR-8089
	546238			BAHB311309 BAHB0023	GB12136	IR-8055
DAC3568A 2RS	546238,544307			BAHB633528F,BAHB633295B,BAHB633976	GB10840S02	IR-8611, IR-8026
	567918B,541153A,430042C		35BWD16CA74			
DAC3568W-6						
DAC3572338-W			35BWD06A	BA2B446762B,BA2B445535AE,BAH0013	GB12094S04, GB40582	IR-8055
DAC357234A	548083	DE0763CS46P*I	35BWD064ACA38		DE0763CS46P*I	
	540763			BAHB441832AB	GB10679	IR-8028
DAC3572338-1W	544033		35BWD08A, 35BWD064ACA111			
DAC3668WCS36	562686			BAHB633669, BAH0013D	GB12862, GB40714	IR-8094
					DE0763	IR-8524
			35BWD10			
DAC3668AWCS36		DE0784	35BWD04	BAHB0087		
	805172					
DAC367234A		DE0769	36BW01BCA60			IR-8005
		6-256908			GB12807 S03, GB40706	IR-8066
				BA2B633028CB	GB12258	IR-8048
	527631			BAHB633531,BAHBC0012,BAH0094	GB12131S03	IR-8088
	562398A		37BWD01	BA2B309946AC, 309946AC 2RS	GB12095S01	IR-8513, IR-8049
	541521C		38BWD19	BAHB636193C	GB13870S01	
DAC3870BW,DAC3870DWDCS41			38BWD21CA53	BAHB686908A		
DAC3871W-1CS74,DAC3871W-2	686908A	90369-38006	38BWD09A			
DAC3872A		DE0769CS46P	38BWD04CA60			
DAC3872B12RSCS42,DAC3872W		DE0871	38BW07-10			
DAC3872W-6,DAC38728CS81	575069		38BWD12CA145			

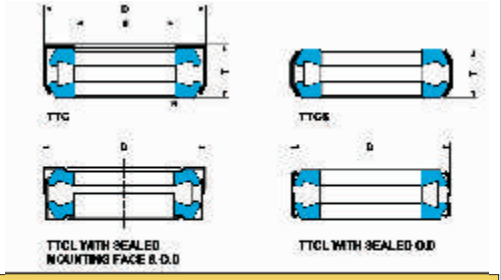
Dimension			Shaft	Steering pivot	Part Number		Fig	Mass
d	D	T	R	N(bf)	No hole in retainer	Holes in retainer		Kg.
16.129	41.275	12.700	0.8	11100	T63	T63W	1	**0.08**
0.6350	1.6250	0.5000	0.03	2500				**0.17**
19.304	41.275	12.700	0.8	11100	T77	T77W	1	**0.17**
0.7600	1.6250	0.5000	0.03	2500				**0.15**
19.304	41.275	13.487	0.8	11100	T76	T76W	1	**0.08**
0.7600	1.6250	0.5310	0.03	2500				**0.17**
20.256	39.688	14.288	1.3	10700	T86		1	**0.07**
0.7975	1.5625	0.5625	0.05	2400				**0.16**
20.879	41.275	13.487	0.8	11100	T82	T82W	1	**0.07**
0.8220	1.6250	0.5310	0.03	2500				**0.16**
20.879	42.164	13.487	0.8	13200	T83	T83W	2	**0.09**
0.8220	1.6600	0.45310	0.03	2960				**0.19**
22.479	48.021	15.088	0.8	17300	T88	T88W	1	**0.11**
0.8850	1.8906	0.5940	0.03	3800				**0.24**
22.479	48.021	15.875	0.8	17350	T89		1	**0.12**
0.8850	1.8906	0.6250	0.03	3900				**0.26**
24.054	44.958	13.487	0.8	11950	T93		1	**0.09**
0.9470	1.7700	0.5310	0.03	2690				**0.20**
24.054	48.021	15.088	0.8	17350	T94	T94W	1	**0.11**
0.9470	1.8906	0.5940	0.03	3900				**0.24**
24.130	50.800	15.875	0.8	18600	T95	T95W	1	**0.13**
0.9500	2.0000	0.6250	0.03	4200				**0.29**



Dimension			Shaft	Steering pivot	Part Number		Fig	Mass
d	D	T	R	N(bf)	No hole in retainer	Holes in retainer		Kg.
25.654	50.800	15.875	0.8	18600	T101	T101W	1	**0.13**
1.0100	2.0000	0.6250	0.03	4200				**0.29**
26.289	50.800	15.75	0.8	18600	T104	T104W	1	**0.13**
1.0350	2.0000	0.6250	0.03	4200				**0.29**
27.229	50.800	15.875	0.8	18600	T107	T107W	1	**0.12**
1.0720	2.0000	0.6250	0.03	4200				**0.26**
28.829	53.188	15.875	0.8	20000	T110	T110W	1	**0.14**
1.1350	2.0940	0.6250	0.03	4500				**0.31**
28.829	55.562	15.875	0.8	20000	T113	T113W	1	**0.15**
1.1350	2.1875	0.6250	0.03	4500				**0.33**
30.416	54.745	11.430	0.8	15500	T120		2	**0.11**
1.1975	2.1553	0.4500	0.03	3710				**0.24**
30.416	55.562	15.875	0.8	20000	T119	T119W	3	**0.15**
1.1975	2.1875	0.6250	0.03	4500				**0.33**
30.716	55.62	15.875	0.8	20000	T121		1	**0.16**
1.2093	2.1875	0.6250	0.03	4500				**0.35**
32.004	55.562	15.875	0.8	20000	T126	T126W	1	**0.14**
1.2600	2.1875	0.6250	0.03	45000				**0.31**
35.179	58.738	15.875	0.8	21400	T139	T139W	1	**0.15**
13850	2.3125	0.6250	0.03	4800				**0.33**

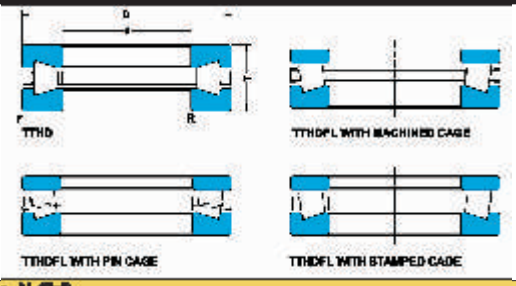


Dimension			Shaft	Steering pivot	Part Number		Fig	Mass
d	D	T	R	N(bf)	No hole in retainer	Holes in retainer		Kg.
27.10	66.675	1.9446	0.8	42200	T130		1	**0.34**
1.0670	2.6250	0.7656	0.03	9450				**0.75**
32.004	55.62	1.5875	0.8	27600	T1260	T1260W	1	**0.17**
1.2600	2.1875	0.6250	0.03	6200				**0.37**
32.004	66.675	1.8654	8.0	42200	T128		2	**0.29**
1.2600	2.6250	0.7344	0.0	9450				**0.64**
32.004	66.675	1.9446	0.8	4220	T127	T127W	1	**0.31**
1.2600	2.6250	0.7656	0.03	9450				**0.68**
35.179	59.400	1.5875	0.8	31200	T1380		4	**0.35**
1.3850	2.6250	0.7344	0.03	9450				**0.62**
35.179	66.675	1.8654	0.8	42200	T136		2	**0.28**
1.3850	2.6250	0.7344	0.03	9450				**0.62**
35.179	66.675	1.9446	0.8	42200	T138	T138W	1	**0.30**
1.380	2.6250	0.7656	0.03	9450				**0.66**
36.754	66.675	1.9446	1.5	42200	T144	T144W	1	**0.29**
1.4470	2.6250	0.7656	0.06	9450				**0.54**
38.354	72.619	2.0368	0.8	47000	T152		2	**0.35**
1.5100	2.8590	0.8019	0.03	10600				**0.77**
38.354	72.619	2.1433	0.8	47000	T151	T151W	1	**0.37**
1.5100	2.8590	0.8438	0.03	10600				**0.82**



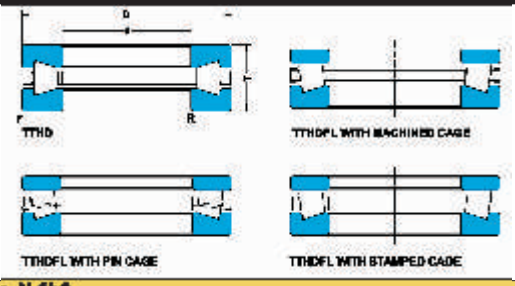
Dimension			Shaft	Steering pivot	Part Number		Fig	Mass
d	D	T	R	N(bf)	No hole in retainer	Holes in retainer		Kg.
39.950	72.619	2.1433	0.8	47000	T157	T157W	1	**0.37**
1.5730	2.8590	0.8438	0.03	10600				**0.82**
40.386	73.000	1.9000	0.8	47500	T178		1	**0.32**
1.5900	2.8740	0.7480	0.03	10700				**0.17**
41.529	72.619	2.1433	0.8	47000	T160	T163W	1	**0.35**
1.6350	2.8590	0.8438	0.03	10600				**0.77**
43.104	82.956	2.3812	0.8	64000	T169	T169W	1	**0.55**
1.6970	3.2660	0.9375	0.03	14300				**1.21**
44.704	82.956	2.3812	0.8	64000	T176	T176W	1	**0.54**
1.7600	3.2660	0.9375	0.03	14300				**1.19**
45.000	73.000	2.0000	0.8	47500	T177		1	**0.32**
1.7717	2.8740	0.7874	0.03	10700				**0.71**
45.000	74.500	2.0221	0.8	47500	T1775		3	**0.35**
1.7717	2.9331	0.7961	0.03	10700				**0.77**
45.484	73.000	2.0000	0.8	47500	T177A		1	**0.33**
1.7907	2.8740	0.7874	0.03	10700				**0.73**
46.279	80.010	1.5977	0.8	56500	T1921		1	**0.34**
1.8220	3.1500	0.6290	0.03	12700				**0.75**
46.279	82.956	2.3812	0.8	64000	T182	T182W	1	**0.52**
1.8220	3.2660	0.9375	0.03	14300				**1.15**

Clutch Bearing



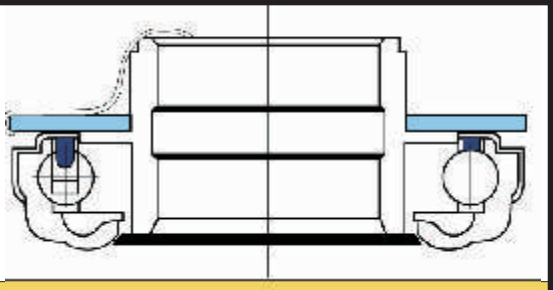
Part Number	Dimensions, mm(in) d	D	Thrust Ratings, N (lbf) Dynamic(2) T	Dynamic (2)	Static C_{ao}
T135	349,25 1,3750	762,00 3,0000	18,875 0,7431	12300 27700	**318000** **71700**
T1750	444,50 1,7500	847,34 3,3360	18,258 0,7188	162000 3500	**434000** **97700**
T200A	508,00 2,0000	109,538 4,3125	22,225 0,8750	282000 63400	**803000** **181000**
T2520	635,00 2,5000	117,475 4,6250	25,400 1,000	290000 65100	**799000** **180000**
T311	760,200 3,0000	161,925 6,3750	33,338 1,3125	586000 132000	**1760000** **395000**
411	101,600 4,000	215,900 8,5000	46,038 1,8125	974000 219000	**3030000** **682000**
T441	111,760 4,4000	223,520 8,8000	55,880 2,2000	1040000 234000	**4250000** **956000**
T451	114,300 4,5000	250,825 9,8750	53,975 2,1250	1360000 305000	**4370000** **985000**
T4921	124,993 4,9210	185,610 7,3075	25,400 1,000	360000 80900	**1250000** **28100**
T4920	124,993 4,9210	185,738 7,3125	25,400 1,0000	360000 80900	**1250000** **281000**
T520	127,000 5,0000	250,825 9,8750	55,562 2,1875	1190000 268000	**3690000** **831000**
T511	127,000 5,0000	266,700 10,5000	58,738 2,3125	1430000 322000	**4570000** **1030000**
T511A	128,588 5,0625	266,700 10,5000	58,738 2,3125	1430000 322000	**4570000** **1030000**
T611	152,400 6,0000	317,500 12,5000	69,850 2,7500	2030000 456000	**6650000** **1500000**
T651	165,100 6,5000	311,150 12,2500	88,900 3,5000	2180000 491000	**5720000** **1290000**
T660	168,275 6,6250	304,800 12,0000	69,850 2,7500	1900000 428000	**6470000** **1450000**
T661	168.278 6.6251	304.8000 12.0000	69.850 2.7500	1700000 383000	**5330000** **1200000**

Clutch Bearing



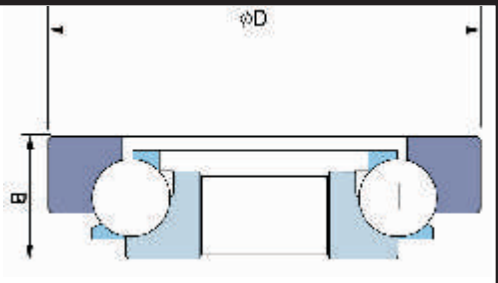
Part Number	Dimensions, mm(in) d	D	Thrust Ratings, N (lbf) Dynamic(2) T	Dynamic (2)	Static C_{ao}
T661	174.625	358.775	82.550	2390000	**7860000**
	6.8750	14.1250	3.2500	538000	**1770000**
	177.800	368.300	82.550	2680000	**8940000**
	7.0000	14.5000	3.2500	603000	**2010000**
	177.800	368.300	82.550	2990000	**10800000**
	7.0000	14.5000	3.2500	672000	**2440000**
	177.800	431.800	101.600	3960000	**13600000**
	7.0000	17.0000	4.0000	890000	**3060000**
T7519	190.000	355.600	74.219	2180000	**6940000**
	7.4803	14.0000	2.9220	489000	**1560000**
T811	203.200	419.100	92.075	3350000	**11400000**
	8.0000	16.5000	3.6250	754000	**2560000**
T811*	203.200	419.100	120.650	3350000	**11400000**
	8.0000	16.5000	4.7500	75000	**2560000**
T9020	228.600	431.800	88.773	3320000	**1100000**
	9.0000	17.0000	3.4950	745000	**2470000**
T911	228.600	482.600	104.775	4410000	**15300000**
	9.0000	19.0000	4.1250	991000	**3440000**
T9010 V	228.600	482.600	104.775	493000	**18500000**
	9.0000	19.0000	4.1250	1110000	**4170000**
T911 A	234.950	482.600	104.775	4410000	**15300000**
	9.2500	21.5000	5.0000	1360000	**4810000**
T921	234.950	546.100	127.000	6050000	**21300000**
	9.2500	21.5000	5.0000	1360000	**4810000**
T921V	234.950	546.100	127.000	6050000	**21300000**
	9.2500	21.5000	5.0000	1360000	**4810000**
T1011	254.000	539.750	117.475	5480000	**19300000**
	10.0000	21.2500	4.6250	1230000	**4650000**
T1115	279400	495.300	13.3350	4200000	**14000000**
	11.0000	19.5000	5.2500	944000	**3150000**
T1120	279400	603.250	13.6525	7000000	**25300000**
	11.0000	23.7500	5.3750	1570000	**5690000**
T1421	355600	533.400	10.1600	3250000	**12000000**
	14.000	21.0000	4.0000	731000	**2710000**
T14520	368300	603.250	12.0650	5460000	**18000000**
	14.5000	23.7500	4.7500	1230000	**4060000**

Clutch Bearing



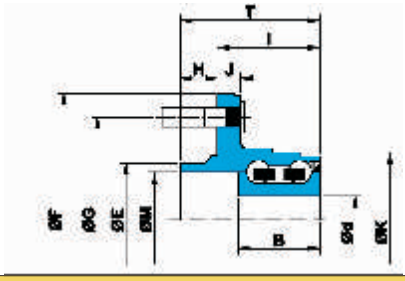
ZNL Bearings No.	Equivalent Bearings No. in other Brands				OEM No.	Application
	KOYO	NSK	NTN	NACHI		
	RCT38SL1	24TK308B	SF0816	BC12S4	9-0095-040	Isuzu
CB3557-13	CT35S	35TMK29B		35TRK-1	90043-63002	Mitsubishi
CB40636-16	RCT4064SL1	TK40-14AU3	SF0815	40TRK39-4SB	90363-40003	Toyota
CB4067-20	RCT4067A2RS	40TKD07	SF0859	40TRBC07-27SB	90363-4002	Toyota
	TCT40	TK40D07	SB0845	TOTRK30W2SB		Toyota
		48TKA3214		RCT37SA7		Isuzu
	RCT338SAT	50TKE3301				
	RCT45-1S	TK40-4B	SF0914			Isuzu
CB407519	RCT4075-1S	TK40-4A	SF0820	40TRK1		Nisaan
	RCT3360A	33TKD03/TK33-Z1	SF0743	BC7S1W2SB	30502-21000	Toyota
CB5588-196	CT55BL1		55TMK804X	55TMK804	90363-3302	Isuzu
	CT70B	TK70-1A	SF1412	70TNK-1		Hino,Mitsubishi
CB45736-18	CT45-1S	TK45-4	45TMK804X	40TNK804	345221003	Nissan,Mazda
	CT52A-1	TKS2Z-1BA	52TMK804	BC11S3	90363-4009	
	RCT45-4S	45TKD02	SF0914	45TMK-1		
				052TRBC09-7		Totota
			TK40-1B		NBN-40-B	Datsun
				BC12S11		
	RCT45-1S	45TKD02	SF0914	95TMK-1	0222-16-222/MD702241	Mazda,Mitsubishi
	RCT3360L1	TK33-1U3	SF0724/2E	BC7S1SB	90363-33001	Toyota
		TK55-1BU3			0727-16-512A	Mazda
	RCT401SA	54TKA3501				
CB38668-16		50TKA3805				
	CT24AG					
CB35250-40B		50SCRN40			31230-35070	Toyota
CB354233		50TKB3504BR			31230-35070	Toyota
CB3366-70			50TKB3301BR	50SCRN31P	31230-35090	Toyota
				50SCRN31P-1	31230-12170	Toyota
`CB285728	RCT282SA	44TKB2805				Charade
			FCR55-17-9			
			FCRB55-17-11			
		FCR54-48-3/2E				
CB3377-395	RCT331SA		FCR50-10/2E			
		47TKB3101			22810-P20=005	Honda
		47TKB3102				Honda
CB3572-41	CBU553524B					Honda
CB3155-351	RCTS31SA	55TKA3102	X10-FCR55-5/2E		22810-OLS	Honda
CB31870-355	RCT322SA	48TKA3201	FCR45-11/2E	48SCRN32k	MD706180	Mitsubishi
	RCT47SA1	58TKA3703			ME602710	Mitsubishi
		48TKA3214			8-94101-243-0	Chev LUV

Steering Bearing



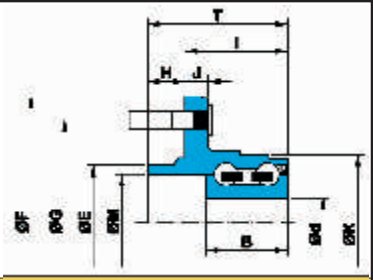
ZNL Bearing No.	Equivalent No,	Dimension in mm	
SB3811	VBT17Z-2	38.000	11.000
SB4011	VBT17Z-4	40.000	11.000
SB41115	VTAA19Z-1	41.000	11.500
SB4112	VAAT19Z-4	41.000	12.000
SB4011A	ACS0304	40.000	11.000
SB48125	ACS040412	43.000	12.500
SB3879	128802	38.000	7.900
SB4213	17VBSW02	42.000	13.000
SB3511	15BCS02	35.000	11.000
SB4713	BT-19Z-LA	47.000	13.000
SB5214	20BSW01	52.000	14.000
SB44135	VBT20Z-1	44.000	13.000
SB47135	ACS0405J-2	47.000	13.500
SB4711	ACS0405J-4	47.000	11.000
SB4011-B	VBT17Z-3	40.000	11.000

HUB Units



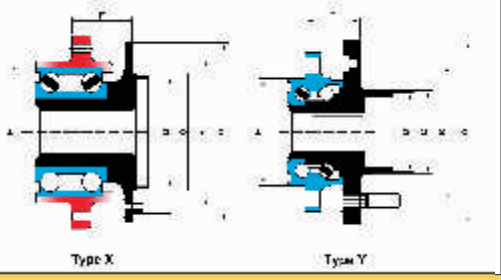
Bearing No.	Dimension											Bolt Size	Outer Ring Bolt Hole mm	Flange Bolt (Qty)
	D	F	B	T	E	M	G	K	H	I	J			
DACF1035B	25.00	133.00	43.00	73.40	60.00	54.25	108.00	71.00	19.40	54.00	12.25	M12*1.5	14.22	**5**
DACF1029	25.00	133.00	43.00	73.40	60.00	54.30	100.00	71.00	19.40	54.00	11.00	-	M12*1.5	**4**
DACF1082C	27.00	148.00	55.00	73.00	66.00	52.00	114.30	64.00	15.50	57.50	9.00	-	12.50	**4**
DACF1076D	28.00	-	42.00	-	-	61.00	97.00	66.20	-	51.80	7.50	-	10.50	**4**
DACF1112A	28.00	139.00	38.00	64.50	67.00	58.00	114.30	70.00	14.00	50.50	9.00	-	14.00	**4**
DACF1050A	28.00	140.00	48.00	70.50	67.00	59.00	114.30	63.00	14.00	50.50	9.00	M12*1.5	14.00	**4**
DACF1050B	28.00	140.80	50.50	71.00	56.00	47.80	100.00	66.60	18.90	52.10	4.50	M12*1.5	14.00	**4**
DACF1072B-1	30.00	-	42.00	-	-	63.00	99.00	68.20	-	51.80	7.50	-	10.50	**4**
DACF1083CR	30.00	117.00	37.00	61.30	58.00	52.00	98.00	71.80	17.00	44.30	10.00	M12*1.5		**4**
DACF1041C	30.00	122.00	47.00	59.50	54.00	48.00	100.00	68.00	13.50	56.00	8.00	M12*1.5	12.56	**4**
DACF1049A	30.00	126.00	59.00	79.00	56.00	50.50	100.00	65.50	14.50	62.50	10.00	M12*1.5	14.00	**5**
DACF1038A	30.00	131.00	43.00	71.30	65.00	59.00	108.00	76.00	19.00	21.00	13.50	-	M-12*1.5	**4**
DACF1102A	30.00	136.00	41.00	66.00	56.00	51.00	100.00	68.50	11.50	54.50	8.00	-	12.10	**4**
DACF1015	30.00	136.00	40.00	66.00	56.00	51.00	100.00	68.50	11.50	54.50	8.00	M12*1.5	12.10	**4**
DACF1086	30.00	140.00	50.00	70.50	67.00	59.00	114.30	68.90	14.00	56.50	9.00	M12*1.5	14.00	**4**

HUB Units



Bearing No.	Dimension											Bolt Size	Outer Ring Bolt Hole mm	Flange Bolt (Qty)
	D	F	B	T	E	M	G	K	H	I	J			
DACF1087A	30.00	125.00	50.00	70.500	56.00	50.00	100.00	68.90	14.00	56.50	10.00	M12*1.5	14.00	**4**
DACF1065A	30.00	152.00	41.00	67.50	64.00	58.00	114.30	67.00	11.50	55.50	9.00	M12*1.5	12.10	**4**
DACF1022	30.00	-	42.00	-	-	63.00	99.90	72.00	-	58.50	7.50	-	10.5	**4**
DACF1091A	30.00	-	50.00	-	66.00	58.30	99.00	68.00	10.00	44.00	10.00	-	M12*1.5	**4**
DACF1097D	30.00	-	42.00	-	-	63.00	100.00	73.60	-	51.80	7.50	-	10.50	**4**
DACF10050C	31.00	120.00	40.00	61.00	57.00	50.50	114.30	73.80	19.00	42.00	12.00	-	M12*1.5	**4**
DACF1034C	33.00	140.00	47.00	71.20	67.00	59.00	114.30	77.00	14.00	54.70	9.00	M12*1.5	14.00	**5**
DACF1081C	34.00	139.00	42.00	64.50	67.00	58.00	114.30	74.00	14.00	50.50	9.00	M12*1.5	14.00	**4**
DACF1036A	34.00	139.50	42.00	70.00	64.00	58.00	107.00	75.00	15.00	55.00	9.00	M12*1.5	12.10	**4**
DACF1031B	34.50	139.50	52.00	65.500	63.26	58.00	95.00	86.00	13.50	52.00	10.00	M12*1.5	13.10	**5**
DACF1023D	35.00	137.00	45.00	69.50	5.00	53.30	108.00	81.00	20.50	49.00	12.00	M12*1.5	13.10	**5**
DACF1082L	35.00	137.00	45.00	74.00	65.00	657.00	110.00	81.00	25.00	49.00	12.00	-	M12*1.5	**5**
DACF1063A	36.00	140.00	50.00	71.00	67.00	59.00	114.30	79.00	14.00	57.00	11.00	M12*1.5	14.00	**5**
DACF1033K	37.00	139.00	45.00	64.00	72.50	66.00	120.00	84.00	19.00	45.00	11.00	-	M12*1.5	**5**
DACF1033K-1	37.00	139.00	45.00	64.00	72.50	66.00	120.00	80.00	19.00	45.00	11.00	-	M12*1.5	**5**
DACF1033K-2	37.00	139.00	45.00	64.00	72.50	66.00	120.00	80.00	19.00	45.00	11.00	-	M12*1.5	**5**
DACF1074CR	38.00	146.50	52.00	77.00	70.00	64.00	114.30	76.80	15.00	62.00	9.00	M12*1.5	12.10	**5**
DACF1092A	40.00	-	53.00	43.00	84.00	-	106.00	84.00	16.40	26.50	10.00	-	M12*1.5	**5**

HUB Units

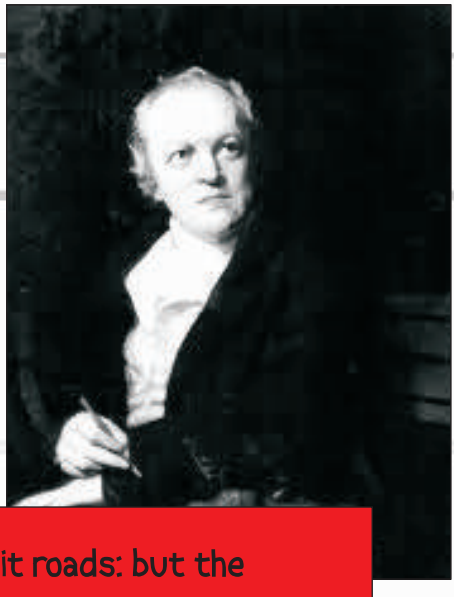


Bearing No.	Dimension In mm						Inner Flange		Bearing Unit Model
							Bolt Hole Size(Qtv)	Bolt Size(Qtv)	
	A	B	C	D	E	F	H		
DAC2F01	135.50	108.00	68.00	65.00	83.50	43.00	M12*1.75 (-4)	-	Y
DAC2F01-1	135.50	108.00	68.00	65.00	83.50	43.00	M12*1.75 (-5)	-	Y
DAC2F02	130.50	108.00	68.00	65.00	81.00	37.00	M12*1.75 (-4)		Y
DAC2F03	125.00	100.00	58.20	57.00	73.50	44.00	-	M12*1.5 (-5)	X
DAC2F04	140.00	114.30	73.30	71.30	86.40	37.50	-	M12*1.5 (-5)	Y
DAC2F05	147.00	115.00	70.60	70.14	90.00	42.00	-	M12*1.5 (-5)	Y
DAC2F06	125.00	100.00	58.30	57.00	73.50	44.40	-	M12*1.5 (-5)	Y
DAC2F07	153.50	114.30	71.90	71.43	100.13	54.20	-	-20UNF (-5)	x
DAC2F08	127.20	100.00	60.80	56.80	87.00	37.40	-	M12*1.5 (-5)	X
DAC2F09	139.00	120.00	79.00	74.00	90.00	51.00	M12*1.5 (-5)	-	Y
DAC2F10	131.00	112.00	68.00	57.00	-	70.00	M14*1.5 (-5)	-	Y
DAC2F11	130.50	108.00	68.00	65.00	83.00	37.00	M14*1.5 (-4)	-	Y
DAC2F12	130.50	108.00	68.00	65.00	83.00	37.00	M14*1.5 (-4)	-	Y
DAC2F13	125.00	100.00	55.77	57.00	71.00	42.18	-	M12*1.5 (-5)	X
DAC2F14ABS	144.50	120.65	70.63	70.14	91.98	47.28	-	M12*1.5 (-5)	Y
DAC2F16	152.00	114.30	62.00	60.00	79.30	72.00	-	M12*1.5 (-5)	Y
DAC2F17	145.00	120.65	70.63	70.14	91.98	47.28	-	M12*1.5 (-5)	Y
DAC2F17ABS	145.00	120.65	70.63	70.14	91.98	47.28	-	M12*1.5 (-5)	Y
DAC2F18	135.50	100.00	57.00	56.50	60.00	79.00	M12*1.5 (-4)	M10*1.25 (-4)	Y

THE COMMITMENT TO QUALITY...
THE COMMITMENT TO GROWTH...
Precision Bearings Pvt. Ltd.





" Improvement makes strait roads: but the crooked roads without Improvement are roads of Genius."

William Blake



PILLOW BLOCK
Bearings



UC Series

These bearings are combination of radial ball bearing, seal and housing of high grade cast iron which comes in various shapes. The OD of the bearing and the internal surface of housing are spherical, because of this the unit is self aligning.

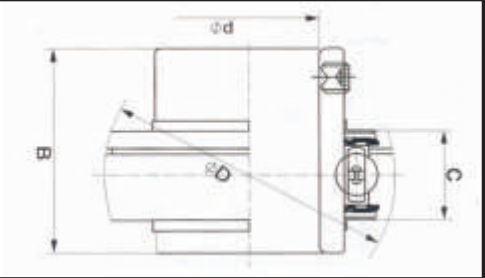
The internal construction of ball bearing for the unit is such that 62XX and 63XX series of deep groove ball bearing steel ball and retainer's are used and capable of accommodating axial load as well as radial load or composite load. The radial load carrying capacity of this bearing is higher than that of the corresponding self aligning ball bearing used for standard plummer blocks. Any misalignment of axis that aries from poor workmanship on the shaft or error in fitting will be properly adjusted.

Depending on the type, the following method of fitting to the shaft are employed.
(A) The inner ring is the fastened onto the shaft in two places by set screws.
(B) The inner ring has a tapered bore and is fitted to the shaft by means of an adopter.
(C) In the eccentric locking collar system the inner ring is fastened to the shaft by means of eccentric grooves provided at the side of the inner ring and on the collar.

ZNL maintenance true bearing unit contain a high grade lithium based groove, good the use over a long period, which is ideally suites to sealed type bearing. Alsosealed type bearings prevent any leakage of groove or penetration of dust and water from outside.

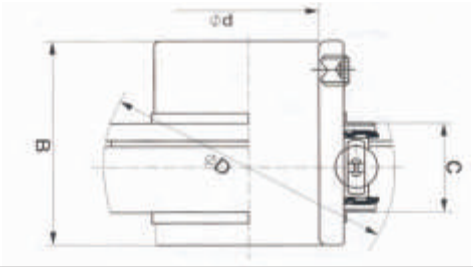
Set screws type flanged units cost housing.
-UCP2
-UCFC2
-UCFC2

UC 2XX



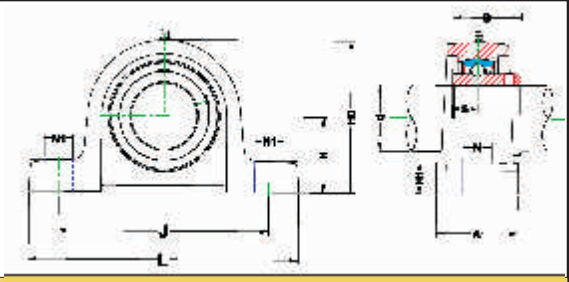
Bearing No.	Dimensions in mm				Basic Load Ratings		Wt. (Kg)
					Dynamic	Static	
	d	D	B	C	N		
UC201	12.000	47.000	31.000	17.000	9880	6200	**0.200**
UC202	15.000	47.000	31.000	17.000	9880	6200	**0.190**
UC203	17.000	47.000	31.000	17.000	9880	6200	**0.180**
UC204	20.000	47.000	31.000	17.000	9880	6200	**0.160**
UC205	25.000	52.000	34.100	17.000	10780	6980	**0.200**
UC206	30.000	62.000	38.100	19.000	14970	10040	**0.320**
UC207	35.000	72.000	42.900	20.0000	19750	13670	**0.480**
UC208	40.000	80.000	49.200	21.000	22710	15940	**0.640**
UC209	45.000	85.000	49.200	22.000	24360	17710	**0.680**
UC210	50.000	90.000	51.600	24.000	226980	19840	**0.800**
UC211	55.000	100.000	55.600	25.000	33370	25110	**1.110**
UC212	60.000	110.000	65.100	27.000	36740	27970	**1.540**
UC213	65.000	120.000	65.100	28.000	44010	34180	**1.850**
UC214	70.000	125.000	74.600	29.000	46790	37590	**2.050**
UC215	75.000	130.000	77.800	30.000	50850	41260	**2.210**
UC216	80.000	140.000	82.600	32.000	55040	45090	**2.800**
UC217	85.000	150.000	85.700	34.000	64010	53280	**3.460**
UC218	90.000	160.000	96.000	36.000	73830	60760	**4.360**

UC 3XX



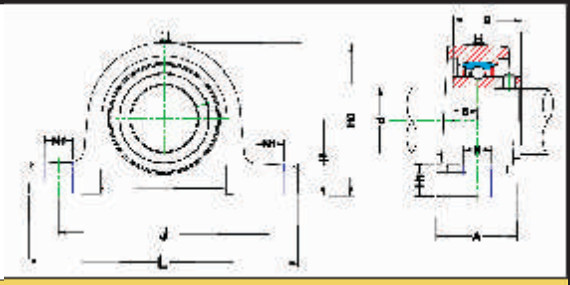
Bearing No.	Dimensions in mm				Basic Load Ratings		Wt. (Kg)
					Dynamic	Static	
	d	D	B	C	N		
UC305	25.000	62.000	38.000	20.000	17220	11930	**0.350**
UC306	30.000	72.000	43.000	23.000	20770	14170	**0.560**
UC307	35.000	80.000	48.000	25.000	25660	17920	**0.710**
UC308	40.000	90.000	52.00	27.000	31350	22380	**0.960**
UC309	45.000	100.000	57.000	30.000	40660	30000	**1.280**
UC310	50.000	110.000	61.000	32.000	47580	35710	**1.650**
UC311	55.000	120.000	66.000	34.000	55050	41910	**2.070**
UC312	60.000	130.000	71.000	36.000	62880	48600	**2.600**
UC313	65.000	140.000	75.000	38.000	72210	56680	**3.250**
UC314	70.000	150.000	78.000	40.000	80100	63480	**3.890**
UC315	75.000	160.000	82.000	42.000	87250	71670	**4.720**
UC316	80.000	170.000	86.000	44.000	94570	80350	**5.550**
UC317	85.000	180.000	96.000	46.000	102050	89520	**6.670**
UC318	90.000	190.000	96.000	48.000	110810	100760	**7.560**
UC319	95.000	200.000	103.000	50.000	120510	103750	**8.700**

UCP 2XX



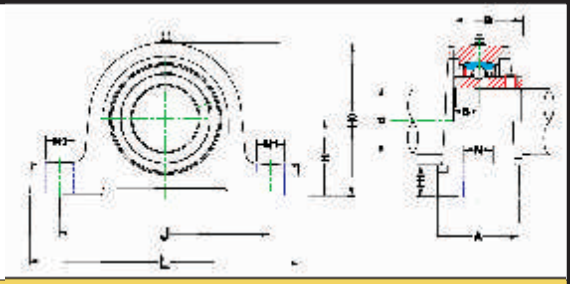
Unit No.	Shaft Dia. d		Dimension										Bolt Size	Weight
	(in)	(mm)	H	L	J	A	N	N_1	H_1	H_0	B	S	mm	Kg.
UCP201		12	30.2	127	95	38	13	19	14	60.7	31	12.7	M10	**0.76**
UCP201-8	1/2													
UCP202-9	9/16		30.2	127	95	38	13	19	14	60.7	31	12.7	M10	
UCP202		15												**0.74**
UCP202-10	5/8													
UCP203		17	30.2	127	95	38	13	19	14	60.7	31	12.7	M10	**0.72**
UCP203-11	11/16													
UCP204-12			33.3	127	95	38	13	19	14	60	31	12.7	M10	**0.70**
UCP204		20												
UCP205-14	7/8		36.5	140	105	38	13	19	15	69.5	34.1	14.3	M10	**0.70**
UCP205-15	15/16													
UCP205		25												
UCP205-16	1													
UCP206-17	1-11/16		42.0	160	121	44	17	21	16	82	38.1	15.9	M14	**1.25**
UCP206-18	1-1/8													
UCP206		30												
UCP206-19	1-3/16													
UCP206-20	1-1/4													
UCP207-20	1-1/4		47.6	167	127	48	17	21	17	92	42.9	17.5	M14	**1.55**
UCP207-21	1-5/16													
UCP207-22	1-3/8													
UCP207		35												
UCP207-23	1-7/16													
UCP208-24	1-1/2		49.2	180	137	52	17	21	18	98	49.2	19	M14	**1.90**
UCP208-25	1-9/16													
UCP208		40												
UCP209-26	1-5/8		54	180	146	54	17	21	20	106	49.2	19	M14	**2.20**
UCP209-27	1-11/16													
UCP209-28	1-3/4													
UCP209		45												

UCP 2XX



Unit No.	Shaft Dia. d		Dimension										Bolt Size	Weight
	(in)	(mm)	H	L	J	A	N	N_1	H_1	H_0	B	S	mm	Kg.
UCP210-30	1-7/8		57.2	204	159	57	19	22	21	112	51.6	19	M16	**2.75**
UCP210-31	1-15/16													
UCP210		50												
UCP210-32	2													
UCP211-32	2		63.5	217	172	60	19	22	22	125	55.6	22.2	M16	**3.30**
UCP211-34	2-1/8													
UCP211		55												
UCP211-35	2-3/16													
UCP212-36	2-1/4		69.9	236	186	68	19	25	24	137	65.1	25.4	M16	**4.70**
UCP212		60												
UCP212-38	2-3/8													
UCP212-39	2-7/16													
UCP213-40	2-1/2		76.2	262	201	70	25	29	26	149	65.1	25.4	M20	**5.60**
UCP213		65												
UCP214-44	2-3/4		79.4	266	210	72	25	29	27	155	74.6	30.2	M20	**6.60**
UCP214		70												
UCP215-47	2-15/16		82.6	274	217	74	25	30	28	162	77.8	33.3	M20	**7.30**
UCP215		75												
UCP215-48	3													
UCP216		80	88.9	292	232	78	25	30	30	174	82.6	33.3	M20	**9.00**
UCP217-52	3-1/4		95.2	310	247	83	25	30	32	186	85.7	34.1	M20	**10.80**
UCP217		85												
UCP218-56	3-1/2		101.6	326	262	88	27	33	33	198	96	39.7	M22	**13.00**
UCP218		90												
UCP220		100	115	380	305	95	30	36	40	225	108	42	M24	**16.00**

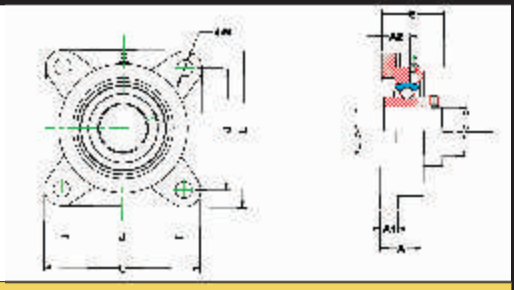
UCP 3XX



Bearing No.	Shaft d	Dimension										Bolt Size	Weight
	mm	H	L	J	A	N	N_1	H_1	H_0	B	S	mm	Kg.
UCP305	25	45	175	132	45	17	20	15	85	38	15	M14	**140**
UCP306	30	50	180	140	50	17	20	15	95	43	17	M14	**1.80**
UCP307	35	56	210	160	56	17	25	20	106	48	19	M14	**2.80**
UCP308	40	60	220	170	60	17	27	22	116	52	19	M14	**3.08**
UCP309	45	67	245	1980	67	20	30	24	1298	57	22	M16	**4.10**
UCP310	50	75	275	212	75	20	35	27	143	61	22	M16	**6.00**
UCP311	55	80	310	236	80	20	38	30	154	66	25	M16	**7.40**
UCP312	60	85	330	250	85	25	38	32	165	71	26	M20	**9.40**
UCP313	65	90	340	260	90	25	38	33	176	75	30	M20	**10.00**
UCP314	70	95	360	280	90	27	40	35	187	78	33	M22	**12.00**
UCP315	75	100	380	290	100	27	40	35	198	82	32	M22	**14.00**
UCP316	80	106	400	300	110	27	40	40	210	86	34	M22	**18.00**
UCP317	85	112	420	320	110	33	45	40	220	96	40	M27	**20.00**
UCP318	90	118	430	330	110	33	45	45	235	96	40	M27	**24.00**
UCP319	95	125	470	360	120	36	50	45	250	103	41	M30	**26.50**
UCP320	100	140	490	380	120	36	50	50	275	108	42	M30	**34.30**
UCP321	105	140	490	380	120	36	50	50	280	112	44	M30	**36.60**
UCP322	110	150	520	400	140	40	55	55	300	117	46	M33	**42.50**
UCP324	120	160	570	450	140	40	55	65	320	126	51	M33	**53.50**
UCP326	130	180	600	480	140	40	55	75	355	135	54	M33	**72.10**
UCP328	140	200	620	500	140	40	55	75	390	145	59	M33	**89.10**

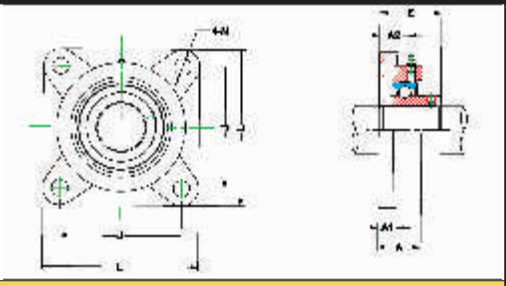
NOTE: All inch Sizes Available

UCF 2XX

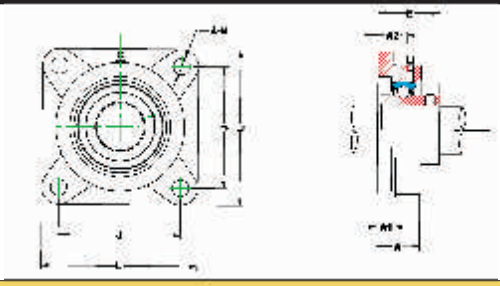


Unit No.	Shaft Dia. D		Dimension								Bolt Size	Weight
	In	mm	L	J	A2	A1	A	N	E	S	mm	Kg.
UCF201		12	86	64	15	12	25.5	12	31	12.7	M10	**0.61**
UCF201-8	1/2											
UCF202-9	9/16		86	64	15	12	25.5	12	31	12.7	M10	**0.61**
UCF202		15										
UCF202-10	5/8											
UCF203		17	86	64	158	12	25.5	12	31	12.7	M10	**0.61**
UCF203-11	11/16											
UCF204-12	3/4		86	64	15	12	5.5	12	31	12.7	M10	**0.61**
UCF204		20										
UCF205-14	7/8		95	70	16	13	27	12	34.1	14.3	M10	**0.80**
UCF205-15	15/16											
UCF205		25										
UCF205-16	1											
UCF206-17	1-11/16		108	83	18	13	31	12	38.1	15.9	M10	**1.00**
UCF206-18	1-1/8											
UCF206		30										
UCF206-19	1-3/16											
UCF206-20	1-1/4											
UCF207-20	1-1/4		117	92	19	15	34	14	42.9	17.5	M12	**1.40**
UCF207-21	1-5/16											
UCF207-22	1-3/8											
UCF207		35										
UCF207-23	1-7/16											
UCF208-24	1-1/2		130	102	21	15	36	16	49.2	19	M14	**1.80**
UCF208-25	1-9/16											
UCF208		40										
UCF209-26	1-5/8		137	105	22	16	38	16	49.2	19	M14	**2.20**
UCF209-27	1-11/16											
UCF209-28	1-3/4											
UCF209		45										

UCF 2XX



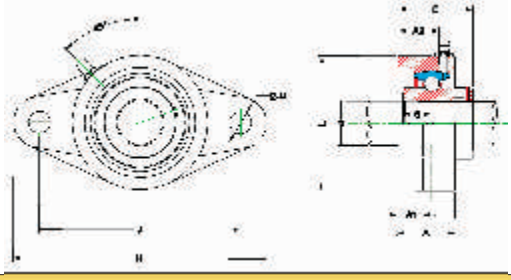
Unit No.	Shaft Dia. D		Dimension								Bolt Size	Weight
	In	mm	L	J	A2	A1	A	N	E	S	mm	Kg.
UCF210-30	1-7/8		143	111	22	16	40	16	51.6	19	M14	**2.40**
UCF210-31	1-15/16											
UCF210		50										
UCF210-32	2											
UCF211-32	2		162	130	25	18	43	19	55.6	22.2	M16	**3.80**
UCF211-34	2-1/8											
UCF211		55										
UCF211-35	2-3/16											
UCF212-36	2-1/4		175	143	29	18	48	19	65.1	25.4	M16	**4.20**
UCF212		60										
UCF212-38	2-3/8											
UCF212-39	2-7/16											
UCF213-40	2-1/2		187	149	30	22	580	19	65.1	25.4	M16	**5.30**
UCF213		65										
UCF214-44	2-3/4		193	152	31	22	54	19	74.6	30.2	M16	**5.90**
UCF214		70										
UCF215-47	2-15/16		200	159	34	22	56	19	77.8	33.3	M16	**6.30**
UCF215		75										
UCF215-48	3											
UCF216		80	20	165	34	22	58	23	82.6	33.3	M20	**7.30**
UCF217-52	3-1/4		220	175	36	24	63	23	85.7	34.1	M20	**8.90**
UCF217		85										
UCF218-56	3-1/2		235	187	40	25	68	23	96	39.7	M20	**11.60**
UCF218		90										



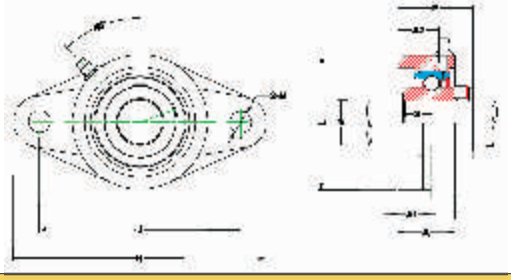
Bearing No.	Shaft Dia. d	Dimension								Bolt Size	Weight
	mm	L	J	A2	A1	A	N	E	S	mm	Kg.
UCF305	25	108	80	16	13	29	16	38	15	M14	**1.20**
UCF306	30	125	95	18	15	32	16	43	17	M14	**1.80**
UCF307	35	13	100	20	16	36	19	48	19	M16	**2.20**
UCF308	40	150	112	23	17	40	19	52	19	M16	**2.90**
UCF309	45	160	125	25	18	44	19	57	22	M16	**3.50**
UCF310	50	175	132	28	20	48	23	61	22	M20	**4.80**
UCF311	55	185	140	30	20	52	23	66	25	M20	**5.60**
UCF312	60	193	150	33	22	56	23	71	26	M20	**6.70**
UCF313	65	208	166	33	22	58	23	75	30	M20	**7.80**
UCF314	70	226	178	25	25	61	25	78	33	M22	**10.10**
UCF315	75	236	184	39	25	66	25	82	32	M22	**11.10**
UCF316	80	250	196	38	27	68	31	86	34	M27	**12.80**
UCF317	85	260	204	44	27	74	31	96	40	M27	**15.40**
UCF318	90	280	216	44	27	74	31	96	40	M30	**19.00**
UCF319	95	290	228	59	30	94	35	103	41	M30	**20.6**
UCF320	100	310	242	59	32	94	38	108	42	M33	**25.7**
UCF321	105	310	242	59	32	94	38	112	44	M33	**25.50**
UCF322	110	340	266	6	35	96	41	117	46	M36	**38**
UCF324	120	370	290	65	40	110	41	126	51	M36	**50**
UCF326	130	410	320	65	45	115	41	135	54	M36	**66**
UCF328	140	450	350	75	55	125	41	145	59	M36	**90**

NOTE: All inch Sizes Available

UCFL 2XX

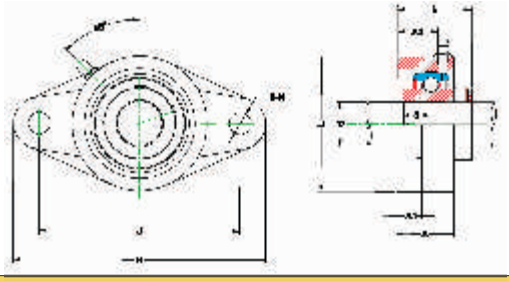


Unit No.	Shaft Dia. d		Dimension									Bolt Size	Weight
	in	mm	H	J	A2	A1	A	N	L	E	S	mm	Kg.
UCFL201		12	113	90	15	11	25.5	12	60	31	12.7	M10	0.51
UCFL201-8	1/2												
UCFL202-9	9/16		113	90	15	11	25.5	12	60	31	12.7	M10	0.51
UCFL202		15											
UCFL202-10	5/8												
UCFL203		17	113	90	15	11	25.5	12	60	31	12.7	M10	0.51
UCFL203-11	11/16												
UCFL204-12	3/4		113	90	15	11	25.5	12	60	31	12.7	M10	0.51
UCFL204		20											
UCFL205-14	7/8		130	99	16	13	27	16	68	34.1	14.3	M14	0.6
UCFL205-15	15/16												
UCFL205		25											
UCFL205-16	1												
UCFL206-17	1-11/16		148	117	18	13	31	16	80	38.1	15.9	M14	0.9
UCFL206-18	1-1/8												
UCFL206		30											
UCFL206-19	1-3/16												
UCFL206-20	1-1/4												
UCFL207-20	1-1/4		161	130	19	14	34	16	90	42.9	17.5	M14	1.2
UCFL207-21	1-5/16												
UCFL207-22	1-3/8												
UCFL207		35											
UCFL207-23	1-7/16												
UCFL208-24	1-1/2		175	144	21	14	36			49.2	18	M14	1.5
UCFL208-25	1-9/16												
UCFL208		40											
UCFL209-26	1-5/8		188	148	22	15	38	19	108	49.2	19	M16	1.9
UCFL209-27	1-11/16												
UCFL209-28	1-3/4												
UCFL209		45											



Unit No.	Shaft Dia. d		Dimension									Bolt Size	Weight
	in	mm	H	J	A2	A1	A	N	L	E	S	mm	Kg.
UCFL210-30	1-7/8		197	157	22	16	40	19	115	51.6	19	M16	2.2
UCFL210-31	1-15/16												
UCFL210		50											
UCFL210-32	2												
UCFL211-32	2		224	184	25	18	43	19	130	55.6	22.2	M16	3.0
UCFL211-34	2-1/8												
UCFL211		55											
UCFL211-35	2-3/16												
UCFL212-36	2-1/4		250	202	29	18	48	23	140	65.1	25.4	M20	4.0
UCFL212		60											
UCFL212-38	2-3/8												
UCFL212-39	2-7/16												
UCFL213-40	2-1/2		258	210	30	20	50	23	155	65.1	25.4	M20	5.0
UCFL213		85											
UCFL214-44	2-3/4		265	216	31	20	54	23	1690	74.6	30.2	M20	5.6
UCFL214		70											
UCFL215-47	2-15/16		275	225	34	22	55	23	164	77.8	33.3	M20	6.2
UCFL215		75											
UCFL215-48	3												
UCFL216		80	290	233	34	22	58	25	180	82.8	33.3	M22	7.3
UCFL217-52	3-1/4		305	248	36	22	63	25	190	85.7	34.1	M22	9.8
UCFL217		85											
UCFL218-56	3-1/2		320	265	40	23	68	25	205	96	39.7	M22	12.4
UCFL218		90											

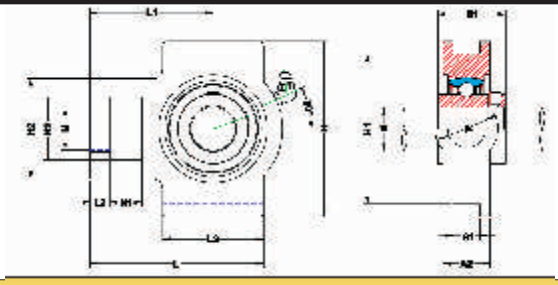
UCFL 3XX



Bearing No.	Shaft Dia. d	Dimension									Bolt Size	Weight
	mm	H	J	A2	A1	A	N	L	E	S	mm	Kg.
UCFL305	25	150	113	16	13	29	19	80	38	15	M16	**1.10**
UCFL306	30	180	134	18	15	32	23	90	43	17	M20	**1.60**
UCFL307	35	185	141	20	16	36	23	100	48	19	M20	**2.00**
UCFL308	40	200	158	23	17	40	23	112	52	19	M20	**2.60**
UCFL309	45	230	177	25	18	44	25	125	157	22	M22	**3.63**
UCFL310	50	240	187	28	19	48	25	140	61	22	M22	**4.60**
UCFL311	55	250	198	30	20	52	25	150	86	25	M22	**5.30**
UCFL312	60	270	212	33	22	56	31	160	71	26	M27	**6.40**
UCFL313	65	295	240	33	25	58	31	175	75	30	M27	**8.20**
UCFL314	70	315	250	36	28	61	35	185	78	33	M30	**10.00**
UCFL315	75	320	260	39	30	66	35	195	82	32	M30	**11.00**
UCFL316	80	355	285	38	32	68	38	210	86	34	M33	**14.30**
UCFL317	85	370	300	44	32	74	38	220	96	40	M33	**16.20**
UCFL318	90	385	315	44	36	76	38	235	96	40	M33	**19.20**
UCFL319	95	405	330	59	40	94	41	250	103	41	M36	**21.60**
UCFL320	100	440	360	59	40	94	44	270	108	42	M39	**26.50**
UCFL321	105	440	360	59	40	94	44	270	112	44	M39	**28.20**
UCFL322	110	470	390	60	42	96	44	300	117	46	M39	**33.10**
UCFL324	120	520	430	65	48	110	47	330	128	51	M42	**45.70**
UCFL326	130	550	460	65	50	115	47	360	135	54	M42	**57.50**
UCFL328	140	600	500	75	60	125	51	400	145	59	M45	**79.70**

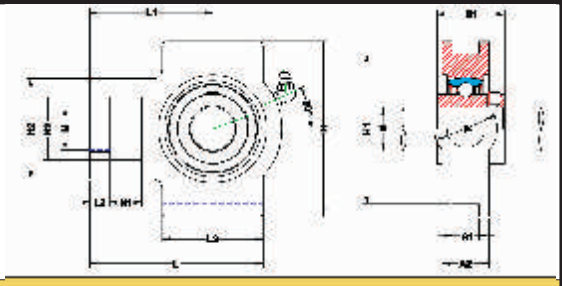
NOTE: All inch Sizes Available

UCT 2XX



Unit No.	Shaft Dia. d		Dimension															Weight
	in	mm	N_1	L_2	H_2	N_2	N	L_3	A_1	H_1	H	L	A	A_2	L_1	B	S	Kg.
UCT201		12	16	10	51	32	19	51	12	76	89	94	32	21	61	31	12.7	**0.80**
UCT201-8	1/2																	
UCT202-9	9/16		16	10	51	32	19	51	12	76	89	94	32	21	61	31	12.7	**0.79**
UCT202		15																
UCT202-10	5/8																	
UCT203		17	16	10	51	32	19	51	12	76	89	94	32	21	61	31	12.7	**0.78**
UCT203-11	11/16																	
UCT204-12	3/4		16	10	51	32	19	51	12	76	89	94	32	21	61	31	12.7	**0.72**
UCT204		20																
UCT205-14	7/8		46	10	51	32	19	51	12	76	89	97	32	24	62	34.1	14.3	**0.8**
UCT205-15	15/16																	
UCT205		25																
UCT205-16	1																	
UCT206-17	1-11/16		16	10	56	37	22	57	12	89	102	113	37	28	70	38.1	15.9	**1.26**
UCT206-18	1-1/8																	
UCT206		30																
UCT206-19	1-3/16																	
UCT206-20	1-1/4																	
UCT207-20	1-1/4		16	13	64	37	22	64	12	89	102	129	37	30	78	42.9	17.5	**1.68**
UCT207-21	1-5/16																	
UCT207-22	1-3/8																	
UCT207		35																
UCT207-23	1-7/16																	
UCT208-24	1-1/2		19	16	83	49	298	83	16	102	114	144	49	33	88	49.2	19	**2.28**
UCT208-25	1-9/16																	
UCT208		40																
UCT209-26	1-5/8		19	16	83	49	29	83	16	102	117	144	49	35	87	49.2	19	**2.52**
UCT209-27	1-11/16																	
UCT209-28	1-3/4																	
UCT209		45																

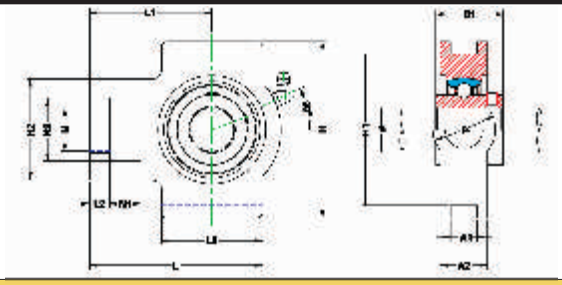
UCT 2XX



Unit No.	Shaft Dia. d		Dimension															Weight
	in	mm	N_1	L_2	H_2	N_2	N	L_3	A_1	H_1	H	L	A	A_2	L_1	B	S	Kg.
UCT210-30	1-7/8		19	16	83	49	29	86	16	102	117	149	49	37	90	51.6	19	**2.75**
UCT210-31	1-15/16																	
UCT210		50																
UCT210-32	2																	
UCT211-32	2		25	19	102	64	35	95	22	130	146	171	64	38	106	55.6	22.2	**4.1**
UCT211-34	2-1/8																	
UCT211		55																
UCT211-35	2-3/16																	
UCT212-36	2-1/4		32	19	102	64	35	102	22	130	146	194	64	42	119	65.1	25.4	**4.9**
UCT212		60																
UCT212-38	2-3/8																	
UCT212-39	2-7/16																	
UCT213-40	2-1/2		35	21	111	70	41	121	26	151	167	224	70	44	137	65.1	25.4	**6.7**
UCT213		65																
UCT214-44	2-3/4		32	21	111	70	41	121	26	151	167	232	70	48	140	74.6	30.2	**6.9**
UCT214		70																
UCT215-47	2-15/16		32	21	111	70	41	121	26	151	167	232	70	48	140	77.8	33.3	**7.4**
UCT215		75																
UCT215-48	3																	
UCT216		80	32	21	111	70	41	121	26	165	184	235	70	51	140	82.6	33.3	**8.1**
UCT217-52	3-1/4		38	29	124	73	48	157	30	173	198	260	73	54	162	85.7	34.1	**11**
UCT217		85																

UCT

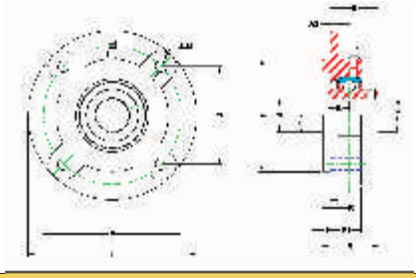
UCT 3XX



Bearing No.	Shaft Dia. d	Dimension															Weight
	mm	N_1	L_2	H_2	N_2	N	L_3	A_1	H_1	H	L	A	A_2	L_1	B	S	Kg.
UCT305	25	16	12	62	36	26	65	12	80	89	122	36	26	76	38	15	**1.41**
UCT306	30	18	14	70	41	28	74	16	90	100	137	41	28	85	43	17	**1.85**
UCT307	35	20	15	75	45	30	80	16	100	111	150	45	32	94	48	19	**2.45**
UCT308	40	22	17	83	50	32	89	18	112	124	162	50	34	100	52	19	**3.09**
UCT309	45	24	18	90	55	34	97	18	125	138	178	55	38	110	57	22	**4.08**
UCT310	50	27	20	98	61	37	106	20	140	151	191	61	40	117	61	22	**5.25**
UCT311	55	29	21	105	66	39	115	22	150	163	207	66	44	127	66	25	**6.41**
UCT312	60	31	23	113	71	41	123	22	160	178	220	71	46	135	71	26	**7.61**
UCT313	65	32	25	116	70	43	134	26	170	190	238	80	50	146	75	30	**9.22**
UCT314	70	36	25	130	85	46	140	26	180	202	252	90	52	155	78	33	**11.4**
UCT315	75	36	25	132	85	46	150	26	192	216	262	90	55	160	82	32	**12.9**
UCT316	80	42	28	150	98	53	160	30	204	230	280	102	60	174	86	34	**15.65**
UCT317	85	42	30	152	98	53	170	32	214	240	298	102	64	183	96	40	**19.34**
UCT318	90	46	30	160	106	57	175	32	228	255	312	110	66	192	96	40	**21.25**
UCT319	95	46	31	165	106	57	180	35	240	270	322	110	72	197	103	41	**24.4**
UCT320	100	48	32	175	115	59	200	35	260	290	345	120	75	210	108	42	**30.6**
UCT321	105	48	32	175	115	59	200	35	260	290	345	120	75	210	112	44	**30.2**
UCT322	110	52	38	185	125	65	215	38	285	320	385	130	80	235	117	45	**38.8**
UCT324	120	60	42	210	140	70	230	45	320	355	432	140	90	267	126	51	**54.6**
UCT326	130	65	45	220	150	75	240	510	350	385	465	150	100	285	135	54	**68.4**
UCT328	140	70	50	230	160	80	255	50	280	415	515	155	100	315	145	59	**83.2**

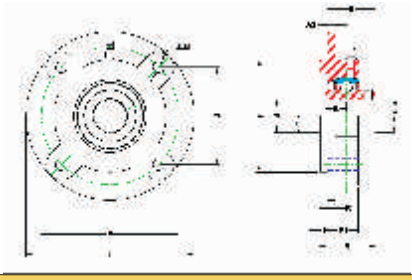
NOTE: All inch Sizes Available

UCFC 2XX



Unit No.	Shaft Dia.		Dimension												Bolt Size	Weight
	d in	mm	L	P	J	A_2	N	j	K	A_1	f	A	E	S	mm	Kg.
UCFC201		12	90	70	49.5	10	10	4	5	19	55	28.3	27.4	11.5	8	0.54
UCFC201-8	1/2															
UCFC202-9	9/16		90	70	49.5	10	10	4	5	19	55	28.3	27.4	11.5	8	0.60
UCFC202		15														
UCFC202-10	5/8															
UCFC203		17	90	70	49.5	10	10	4	5	19	55	28.3	27.4	11.5	8	0.58
UCFC203-11	11/16															
UCFC204-12	3/4		100	78	55.1	10	12	5	7	20.5	62	28.3	31	12.7	10	0.75
UCFC204		20														
UCFC205-14	7/8		115	90	63.6	10	12	6	7	21	70	29.7	34.1	14.3	10	1.00
UCFC205-15	15/16															
UCFC205		25														
UCFC205-16	1															
UCFC206-17	1-11/16		125	100	70.7	10	12	8	8	23	80	32.2	38.1	15.9	10	1.30
UCFC206-18	1-1/8															
UCFC206		30														
UCFC206-19	1-3/16															
UCFC206-20	1-1/4															
UCFC207-20	1-1/4		135	110	77.8	11	14	8	9	26	90	36.4	42.9	17.5	12	1.75
UCFC207-21	1-5/16															
UCFC207-22	1-3/8															
UCFC207		35														
UCFC207-23	1-7/16															
UCFC208-24	1-1/2		145	120	84.8	11	14	10	9	26	100	41.2	49.2	19	12	2.00
UCFC208-25	1-9/16															
UCFC208		40														
UCFC209-26	1-5/8		160	132	93.3	10	16	12	10	26	105	40.2	49.2	19	14	2.50
UCFC209-27	1-11/16															
UCFC209-28	1-3/4															
UCFC209		45														

UCFC 2XX



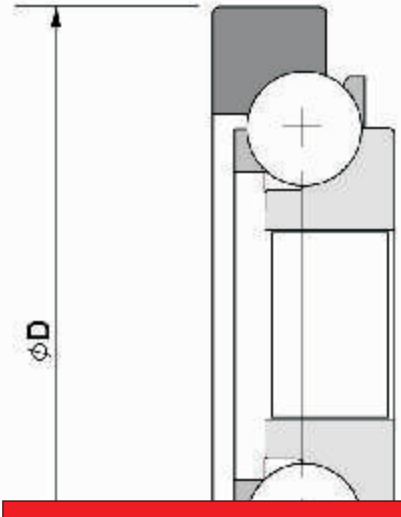
Unit No.	Shaft Dia.		Dimension												Bolt Size	Weight
	d in	mm	L	P	J	A_2	N	j	K	A_1	f	A	E	S	mm	Kg.
UCFC210-30	1-7/8		165	138	97.6	10	16	12	14	28	110	42.6	51.6	19	14	2.95
UCFC210-31	1-15/16															
UCFC210		50														
UCFC210-32	2															
UCFC211-32	2		185	150	106.1	13	19	12	13	30	125	46.4	55.6	22.2	16	4.00
UCFC211-34	2-1/8															
UCFC211		55														
UCFC211-35	2-3/16															
UCFC212-36	2-1/4		195	160	113.1	17	19	12	15	35	1358	56.7	65.1	25.4	16	4.90
UCFC212		60														
UCFC212-38	2-3/8															
UCFC212-39	2-7/16															
UCFC213-40	2-1/2		205	170	120.2	16	19	14	15	36	145	56.7	65.1	25.4	16	5.35
UCFC213		65														
UCFC214-44	2-3/4		215	177	125.1	17	19	14	16	38	150	61.4	74.6	30.2	16	6.90
UCFC214		70														
UCFC215-47	2-15/16		220	184	130.1	18	19	16	17	39	160	62.5	77.8	33.3	16	7.50
UCFC215		75														
UCFC215-48	3															
UCFC216		80	240	200	141.4	18	23	16	18	42	170	67.3	82.6	33.3	20	8.70
UCFC217-52	3-1/4		250	208	147.1	18	23	18	20	45	180	69.6	85.7	34.1	20	10.30
UCFC217		85														
UCFC218-56	3-1/2		265	2520	155.5	22	23	18	20	50	190	78.3	96.0	39.7	20	13.50
UCFC218		90														

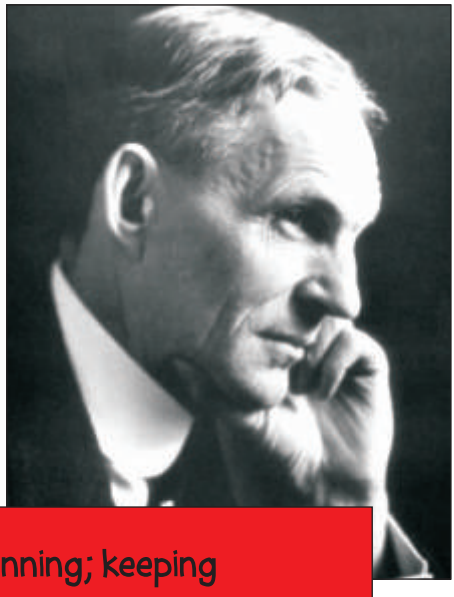
THE COMMITMENT TO QUALITY...
THE COMMITMENT TO GROWTH...
Precision Bearings Pvt. Ltd.











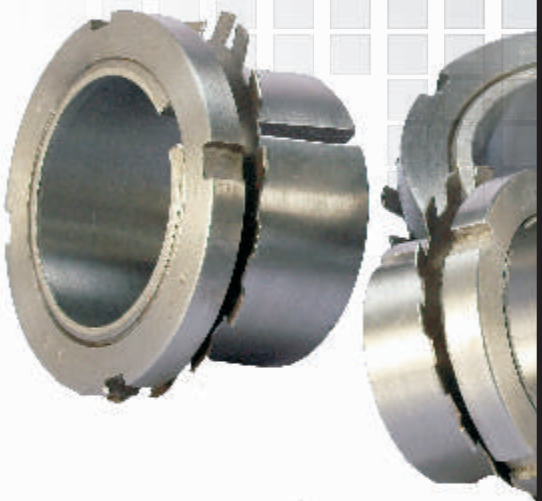
" Coming together is a beginning; keeping together is progress; working together is success."

Henry Ford

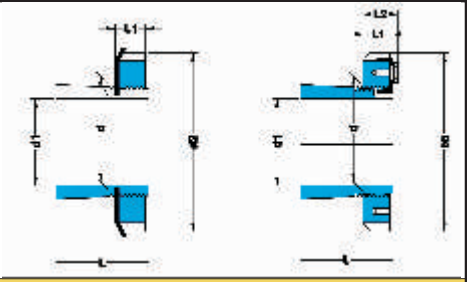


Bearing Accessories

Bearings

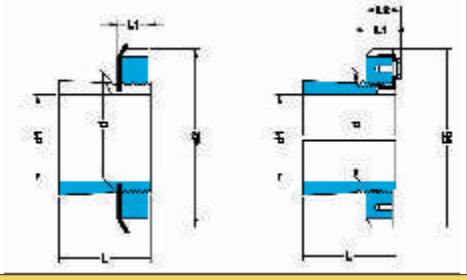


Adapter Sleeves



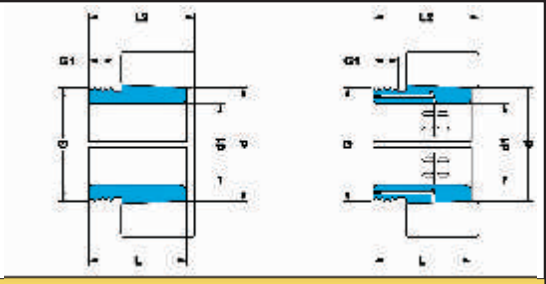
Shaft [mm]	Boundary Dimensions [mm]			Designation Adapter Sleeve. Complete	Weight
d1	d	d2	L		[Kg]
17	20	32	34	H204	**0.04**
		32	28	H304	**0.04**
		32	31	H2304	**0.05**
20	25	38	26	H205	**0.06**
		38	29	H305	**0.07**
		38	35	H2305	**0.09**
25	30	45	27	H206	**0.09**
		45	21	H306	**0.10**
		45	38	H2306	**0.11**
30	35	52	29	H207	**0.12**
		52	35	H307	**0.14**
		52	43	H2307	**0.15**
35	40	58	31	H208	**0.16**
		58	36	H308	**0.18**
		58	46	H2308	**0.22**
40	45	65	33	H209	**0.21**
		65	39	H309	**0.23**
		65	50	H2309	**0.27**
45	50	70	35	H210	**0.24**
		70	42	H310	**0.27**
		70	55	H2310	**0.34**
50	55	75	37	H211	**0.28**
		75	45	H311	**0.32**
		75	59	H2311	**0.39**
55	60	80	38	H212	**0.31**
		80	47	H312	**0.35**
		80	62	H2312	**0.45**
60	65	85	40	H213	**0.36**
	65	85	50	H313	**0.42**
	65	85	65	H2313	**0.52**
	70	92	52	H314	**0.68**
	70	92	68	H2314	**0.88**
65	75	98	43	H215	**0.66**
		98	55	H315	**0.78**
		98	73	H2315	**1.1**
70	80	105	46	H216	**0.81**
		105	59	H316	**0.95**
		105	78	H2316	**1.2**
75	85	110	50	H217	**0.94**
		110	63	H317	**1.1**
		110	82	H2317	**1.35**

Adapter Sleeves



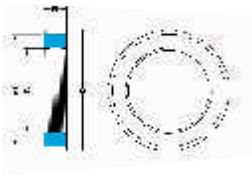
Shaft [mm]	Boundary Dimensions [mm]			Designation Adapter Sleeve. Complete	Weight
d1	d	d2	L		[Kg]
80	90	120	52	H218	**1.1**
		120	65	H318	**1.3**
		120	86	H2318	**1.6**
85	95	125	55	H219	**1.25**
		125	68	H319	**1.4**
		125	90	H2319	**1.8**
90	100	130	58	H220	**1.4**
	100	130	71	H320	**1.6**
		130	97	H2320	**2**
		130	76	H3120	**1.8**
95	105	140	60	H221	**1.6**
		140	74	H321	**1.85**
100	110	145	63	H222	**1.8**
		145	77	H322	**2.05**
		145	105	H2322	**2.75**
		145	81	H3122	**2.1**
110	120	155	112	H2324	**3**
		145	72	H3024	**1.8**
		155	88	H3124	**2.5**
115	130	165	212	H2326	**4.45**
		155	80	H3026	**2.8**
		165	92	H3126	**3.45**
125	140	180	131	H2328	**5.4**
		165	82	H3028	**3.05**
		180	97	H3128	**4.1**
135	150	195	139	H2330	**6.4**
		180	87	H3030	**3.75**
		195	111	H3130	**5.25**
140	160	210	147	H2332	**8.8**
		210	147	OH2332H	**8.8**
		190	93	H3032	**5.1**
	160	190	93	OH3032H	**5.1**
		210	119	H3132	**7.25**
		210	119	OH3132H	**7.25**
150	170	220	154	H2334	**9.9**
		220	154	OH2334H	**9.9**
		200	101	H3034	**5.8**
		200	101	OH3034H	**5.8**
		220	101	H3134	**8.1**
		220	122	OH3134H	**8.1**
160	180	230	161	H2336	**11**
		230	161	OH2336H	**11**
		210	109	H3036	**6.7**

Withdrawal Sleeves

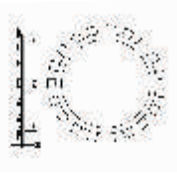


Shaft [mm] d1	Boundary Dimensions [mm] d	G	Mass	Designation
35	40	M45*1,5	0,09	AH308
		M45*1,5	0,13	AH2308
40	45	M50*1,5	0,12	AH309
		M50*1,5	0,16	AH2309
45	50	M55*2	0,13	AH*310
		M55*2	0,19	AH* 2310
50	55	M60*2	0,16	AH* 311
		M60*2	0,26	AH* 2311
55	60	M65*2	0,19	AH* 312
		M65*2	0,30	AH* 2312
60	65	M70*2	0,22	AH313G
		M75*2	0,39	AH2313
65	70	M75*2	0,24	AH314G
		M80*2	0,45	AH*2314
70	75	M80*2	0,29	AH315G
	75	M80*2	0,53	AH*2315
75	80	M90*2	0,37	AH316
		M90*2	0,57	AH* 2316
80	85	M95*2	0,43	AH* 317
		M95*2	0,65	AH* 2317
85	90	M100*2	0,46	AH* 318
		M100*2	0,57	AH* 2318
		M100*2	0,76	AH* 2318
90	95	M105*2	0,54	AH* 319
		M105*2	0,90	AH* 2319
95	100	M110*2	0,58	AH* 320
		M110*2	0,66	AH* 3120
		M110*2	0,76	AH* 3220
		M110*2	1,00	AH* 2320
105	110	M120*2	0,76	AH* 3122
		M125*2	1,05	AH* 3222
		M125*2	1,35	AH* 2322
		M115*2	0,31	AH* 2422
115	120	M130*2	0,73	AH* 3024
		M130*2	0,94	AH* 3124
		M135*2	1,30	AH* 3224
		M135*2	1,65	AH* 2324
		M125*2		AH* 24024
		M130*2		AH* 24124
125	130	M140*2	0,91	AH* 3026
		M140*2	1,10	AH* 3126
		M145*2	1,55	AH* 3226
125		M145*2	2,00	**AH*2326**
		M135*2	0,88	**AH*24026**
		M140*2	1,15	**AH*24126**
135	140	M150*2	1,00	**AH*3028**
		M150*2	130	**AH*3128**
		M155*3	1,85	**AH*3228**
		M155*3	2,35	**AH*2328**
		M145*2	0,95	**AH*2408**
		M150*2	1,30	**AH*24128**
145	150	M160*3	1,15	**AH*3030**
		M165*3	1,80	**AH*3130**
		M165*3	2,20	**AH*3230**
		M165*3	2,80	**AH*2330**
		M155*3	1,05	**AH*24030**
		M160*3	1,55	**AH*24130**
150	160	M170*3	2,05	**AH3032**
		M180*3	3,20	**AH3132**
		M180*3	4,00	**AH3232**
		M180*3	4,65	**AH2332**
		M170*3	2,30	**AH24032**
		M170*3	3,05	**AH24132**
160	170	M180*3	2,40	**AH3034**
		M190*3	3,45	**AH3134**
		M190*3	4,80	**AH3234**
		M190*3	5,25	**AH2334**
		M180*3	2,70	**AH24034**
		M180*3	3,25	**AH24132**
170	180	M190*3	2,80	**AH3036**
		M200*3	3,75	**AH2236**
		M200*3	4,25	**AH3136**
		M200*3	5,25	**AH3236**
		M200*3	6,05	**AH2336**
		M190*3	3,20	**AH24036**
		M190*3	3,75	**AH241136**
180	190	M205*4	3,40	**AH3038**
		M210*4	4,25	**AH2238**
		M210*4	4,90	**AH3138**
		M210*4	5,90	**AH3238**
		M210*4	6,70	**AH2338**
		M200*4	3,55	**AH24038**
		M200*4	4,45	**AH24138**
190	200	M215*4	3,85	**AH3040**

Lock Nuts

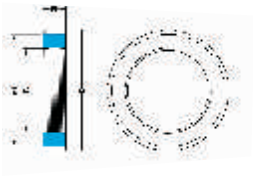


Locking Washer

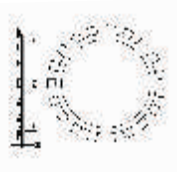


Thread	Boundary Dimensions [mm]					Mass	Designation	Locking Washer	Boundary Dimensions [mm]						Mass	Designation
G	d1	D	B	B	H	KG.			d	d1	d2	s	e	f	Kg.	
M10*075	135	18	4	3	2	0.006	KM0	MB0	10	135	21	1	3	8.5	1	**MB0**
M12*1	17	22	4	3	2	0.008	KM	MB1	12	17	25	1	3	10.5	2	**MB1**
M15*1	21	25	5	4	2	0.012	KM2	MB	15	21	28	1	4	13.5	3	**MB2**
M17*1	24	28	5	4	2	0.012	KM3	MB3	17	24	32	1	4	15.5	3	**MB3**
M20*1	26	32	6	4	2	0.020	KM4	MB4	20	6	36	1	4	18.5	4	**MB4**
M25*15	32	38	7	5	2	0.028	KM5	MB5	25	32	42	1.25	5	2.3	6	**MB5**
M30*15	38	45	7	5	2	0.038	KM6	MB6	30	38	49	1.25	5	27.5	8	**MB6**
M35*15	44	52	8	5	2	0.058	KM7	MB7	35	44	57	1.25	6	32.5	11	**MB7**
M40*15	50	58	9	6	2.5	0.078	KM8	MB8	40	5	62	1.25	6	37.5	13	**MB8**
M45*15	56	65	10	6	2.5	0.11	KM9	MB9	45	56	69	1.25	6	42.5	15	**MB9**
M50*15	61	70	11	6	2.5	0.14	KM10	MB10	50	61	74	1.25	6	47.5	16	**MB10**
M55*2	67	75	11	7	3	0.15	KM11	MB11	55	67	81	1.5	8	51.5	22	**MB11**
M60*2	73	80	11	7	3	0.16	KM12	MB12	60	73	86	1.5	8	57.5	24	**MB12**
M65*2	79	85	12	7	3	0.19	KM13	MB13	65	79	92	1.5	8	62.5	30	**MB13**
M70*2	85	92	12	8	3.5	0.22	KM14	MB14	70	85	98	1.5	8	66.5	32	**MB14**
M75*2	90	98	13	8	3.5	0.27	KM15	MB15	75	90	104	15	8	71.5	35	**MB15**
M80*2	95	105	15	8	3.5	0.36	KM16	MB16	80	95	112	1.75	10	76.5	46	**MB16**
M85*2	102	110	16	8	3.5	0.42	KM17	MB17	85	102	119	1.75	10	81.5	53	**MB17**
M90*2	108	120	16	10	4	0.51	KM18	MB18	90	108	126	1.75	10	86.5	61	**MB18**
M95*2	113	125	17	10	4	0.58	KM19	MB19	95	113	133	1.75	10	91.5	66	**MB19**

Lock Nuts



Locking Washer

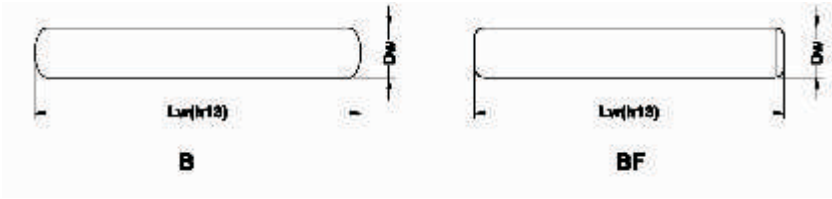


Thread	Boundary Dimensions [mm]					Mass	Designation	Locking Washer	Boundary Dimensions [mm]						Mass	Designation
G	d1	D	B	B	H	KG.			d	d1	d2	s	e	f	Kg.	
M100*2	120	130	18	10	4	0.68	KM20	MB20	100	120	142	1.75	12	96.5	77	**MB20**
M105*2	126	140	18	12	5	0.81	KM21	MB21	105	126	145	1.75	12	100.5	83	**MB21**
M110*2	133	145	19	12	5	0.89	KM22	MB22	110	133	154	1.75	12	105.5	91	**MB22**
M115*2	137	150	19	12	5	0.91	KM23	MB23	115	137	159	2	12	110.5	107	**MB23**
M120*2	135	145	20	12	5	0.69	KM24	MB24	120	138	164	2	14	115	108	**MB24**
	138	155	20	12	5	0.98	KM24	MB24	125	148	170	2	14	120	115	**MB25**
M125*2	148	160	21	12	5	1.10	KM5	MB25	130	149	175	2	14	125	115	**MB26**
M130*2	145	155	21	12	5	0.84	KML26	MB26	135	160	185	2	14	130	140	**MB27**
	149	165	21	12	5	1.20	KM26	MB26	140	160	192	2	16	135	135	**MB28**
M135*2	160	175	22	14	6	1.40	KM27	MB27	145	172	202	2	16	140	165	**MB29**
M140*2	155	165	22	12	5	0.92	KML28	MB28	150	171	205	2	16	145	180	**MB30**
	160	180	22	14	6	1.40	KM28	MB28	155	182	212	2.5	16	147.5	20	**MB31**
M145*2	171	190	24	14	6	1.85	KM29	MB29	160	182	217	2.5	18	154	215	**MB32**
M150*2	170	180	24	14	5	1.30	KM30	MB30	165	183	222	2.5	18	157.5	240	**MB33**
	171	195	24	14	6	1.85	KM30	MB30	170	193	232	2.5	18	164	240	**MB34**
M155*3	182	200	25	16	7	2.05	KM31	MB31	180	203	242	2.5	20	174	260	**MB36**
M160*3	180	190	25	14	5	1.40	KML32	MB32								
	182	210	25	16	7	2.25	KM32	MB32								
M165*3	193	210	26	16	7	2.30	KM33	MB33								
M170*3	190	200	26	16	5	1.60	KML34	MB34								
	193	220	26	16	7	2.55	KM34	MB34								

Cylindrical Roller

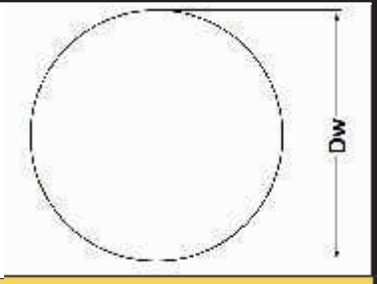
Roller Diameter Dw mm	inch	Mass Per 100Roller Kg.	Designation	Roller Diameter Dw mm	inch	Mass Per 100Roller Kg.	Designation
3	5	0.027	**RC3*5**		22	3.00	**RB12.5**
3.5	5	0.037	**RC3.5*5**	**16**	16	2.48	**RB12.7**
	8	0.060	**RC3.5*8**		24	3.73	**RB13**
4	4	0.038	**RC4*4**	**17**	17	2.97	**RB13.494**
	6	0.058	**RC4*6**		24	4.20	**RB14**
	9	0.078	**RC4*8**	**18**	18	3.57	**RB14.288**
4.5	6	0.073	**RC4.5*6**		26	5.10	**RB15**
5	5	0.075	**RC5*5**	**19**	19	4.16	**RB15.081**
	6	0.091	**RC5*6**		28	6.10	**RB15.875**
	7	0.106	**RC5*7**	**20**	20	4.85	**RB16**
	8	0.121	**RC5*8**		30	7.30	**RB16.5**
	10	0.152	**RC5*10**	**21**	21	5.60	**RB16.669**
5.5	55	0.100	**RC55*55**		30	8.0	**RB17**
	8	0.146	**RC5.5*8**	**22**	22	6.4	**RB17.462**
6	6	0.130	**RC6*6**		34	10.4	**RB18**
	8	0.178	**RC6*8**	**23**	23	7.4	**RB18.256**
	12	0.261	**RC6*12**		34	11.2	**RB19**
6.5	65	0.166	**RC6.5*65**	**24**	24	8.4	**RB19.05**
	9	0.230	**RC6.5*9**		36	12.6	**RB19.844**
7	7	0.206	**RC7*7**	**25**	25	9.5	**RB20**
	10	0.30	**RC7*10**		36	13.7	**RB20.5**
	14	0.42	**RC7*14**	**26**	26	10.7	**RB20.638**
7.5	75	0.25	**RC75*75**		40	16.4	**RB21**
	11	0.37	**RC75*11**	**28**	28	13.3	**RB22**
8	8	0.31	**RC8*8**		44	21.0	**RB22.225**
	12	0.47	**RC8*12**	**30**	30	16.3	**RB22.5**
9	9	0.44	**RC9*9**		48	26.2	**RB23**
	14	0.98	**RC9*14**	**32**	32	19.9	**RB23.812**
10	10	0.60	**RC10*10**		52	32.4	**RB24**
	14	0.85	**RC10*14**	**34**	34	23.9	**RB25**
11	11	0.81	**RC11*11**		55	38.7	**RB25.4**
	15	1.10	**RC11*15**	**36**	36	28.3	**RB26**
12	12	1.04	**RC12*12**		58	45.3	**RB26.988**
	18	1.57	**RC12*18**	**38**	38	33.3	**RB28**

Needle Roller



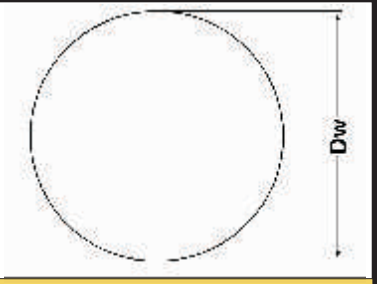
Principal Dimension Dw	Lw	Mass Weight per 100Roller	Designation Sphered end type	Flate end type	Principal Dimension Dw	Lw	Mass Weight per 100Roller	Designation Sphered end type	Flate end type
1.5	5.8	0.008	**RN1.5*5.8B**	**RN1.5*5.8BF**	**2.5**	15.8	0.06	**RN2.5*15.8B**	**RN2.5*15.8BF**
	7.8	0.011	**RN1.5*7.8B**	**RN1.5*7.8BF**		17.8	0.07	**RN2.5*17.8B**	**RN2.5*17.8BF**
	9.8	0.013	**RN1.5*9.8B**	**RN1.5*8.8BF**		19.8	0.08	**RN2.5*19.8B**	**RN2.5*19.8BF**
	11.8	0.016	**RN1.5*11.8**	**RN1.5*11.8B**		21.8	0.08	**RN2.5*21.8B**	**RN2.5*21.8BF**
	13.8	0.020	**RN1.5*13.8B**	**RN1.5*13.8B**		23.8	0.09	**RN2.5*23.8B**	**RN2.5*23.8BF**
2	7.8	0.02	**RN2*7.8B**	**RN2*7.8BF**	**3**	9.8	0.05	**RN3*19.8B**	**RN3*19.8BF**
	9.8	0.02	**RN2*9.8B**	**RN2*9.8BF**		11.8	0.07	**RN3*11.8B**	**RN3*11.8BF**
	11.8	0.03	**RN2*11.8B**	**RN2*11.8BF**		13.8	0.08	**RN3*13.8B**	**RN3*13.8BF**
	13.8	0.03	**RN2*13.8B**	**RN2*13.8BF**		15.8	0.09	**RN3*15.8B**	**RN3*15.8BF**
	15.8	0.04	**RN2*15.8B**	**RN2*15.8BF**		17.8	0.10	**RN3*17.8B**	**RN3*17.8BF**
	17.8	0.04	**RN2*17.8B**	**RN2*17.8BF**		19.8	0.11	**RN3*19.8B**	**RN3*19.8BF**
	19.8	0.05	**RN2*19.8B**	**RN2*19.8BF**		23.8	0.13	**RN3*23.8B**	**RN3*23.8BF**
	21.8	0.05	**RN2.5*21.8B**	**RN2.5*21.8BF**		27.8	0.15	**RN3*27.8B**	**RN3*27.8BF**
2.5	7.8	0.03	**RN2.5*7.8B**	**RN2.5*7.8BF**	**3.5**	29.8	0.23	**RN35*2.98B**	**RN35*29.8BF**
	9.8	0.04	**RN2.5*9.8B**	**RN2.5*9.8BF**		34.8	0.27	**RN35*3.48B**	**RN35*34.8BF**
	11.8	0.05	**RN2.5*11.8B**	**RN2.5*11.8BF**	**4**	39.8	0.40	**RN4*39.8B**	**RN4*39.8BF**
	13.8	0.05	**RN2.5*13.8B**	**RN2.5*13.8BF**	**5**	49.8	0.75	**RN5*49.8B**	**RN5*49.8BF**

Steel Ball



Diameter Dw mm	Diameter Dw in	Mass Per 1 000 Kg.	Designation	Diameter Dw mm	Diameter Dw in	Mass Per 1 00 Kg.	Designation
0.4		0.003	**RB-0.4**	**10.5**		0.476	**RB-10.5**
				11		0.547	**RB-11**
0.5		0.0005	**RB-0.5**	**11.112**	7/16	0.564	**RB-11.112**
1		0.004	**RB-1**	**11.5**		0.625	**RB-11.5**
1.5		0.014	**RB-1.5**	**11.906**	15/32	0.693	**RB-11.906**
1.588	1/16	0.016	**RB-1.588**	**12**		0.710	**RB-12**
2		0.033	**RB-2**	**12.5**		0.803	**RB-12.5**
2.381	3/32	0.055	**RB-2.381**	**12.700**	½	0.842	**RB-12.700**
2.5		0.064	**RB-2.5**	**13**		0.903	**RB-13**
3		0.111	**RB-3**	**13.494**	17/32	1.01	**RB-13.494**
3.175	1/8	0.132	**RB-3.175**	**14**		1.13	**RB-14**
3.5		0.177	**RB-3.5**	**14.288**	9/16	1.20	**RB-14.288**
3.969	5/32	0.257	**RB-3.969**	**15**		1.39	**RB-15**
4		0.263	**RB-4**	**15.081**	19/32	1.41	**RB-15.081**
4.5		0.374	**RB-4.5**	**15.875**	5/8	1.65	**RB-15.875**
4.762	3/16	0.446	**RB-4.762**	**16**		1.68	**RB-16**
5		0.514	**RB-5**	**16.5**		1.85	**RB-16.5**
5.5		0.679	**RB-5.5**	**16.669**	21/32	1.91	**RB-16.669**
5.556	7/32	0.702	**RB-5.556**	**17**		2.02	**RB-17**
6		0.882	**RB-6**	**17.462**	11/16	2.19	**RB-17.462**
6.350	¼	1.03	**RB-6.350**	**18**		2.40	**RB-18**
6.5		1.13	**RB-6.5**	**18.256**	23/32	2.50	**RB-18.256**
7		1.41	**RB-7**	**19**		2.82	**RB-19**
7.144	9/32	1.50	**RB-7.144**	**19.050**	¾	2.84	**RB-19.050**
7.5		1.74	**RB-7.5**	**19.844**	26/32	3.24	**RB-19.844**
7.938	5/16	2.06	**RB-7.938**	**20**		3.29	**RB-20**
8		2.10	**RB-8**	**20.5**		3.54	**RB-20.5**
8.5		2.52	**RB-8.5**	**20.638**	13/16	3.62	**RB-20.638**
8.731	11/32	2.66	**RB-8.731**	**21**		3.81	**RB-21**
9		3.00	**RB-9**	**22**		4.38	**RB-22**
9.525	3/8	3.55	**RB-9.525**				
10		4.11	**RB-10**				
10.319	13/32	4.43	**RB-10.319**				

Steel Ball

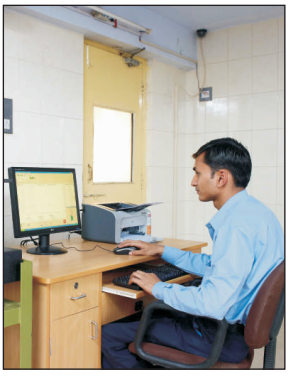


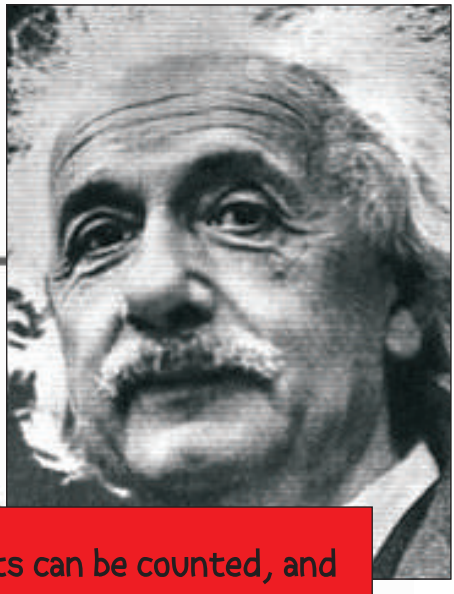
Diameter Dw mm	Diameter in	Mass Per 1 0 Kg.	Designation
22.225	7/8	0.452	RB-22.225
22.5		0.468	RB-22.5
23		0.500	RB-23
23.812	15/16	0.555	RB-23.812
24		0.568	RB-24
25		0.642	RB-25
25.400	1	0.674	RB-25.400
26		0.723	RB-26
26.988	1 1/16	0.808	RB-26.988
28		0.902	RB-28
28.575	1 1/8	0.955	RB-28.575
30		1.11	RB-30
30.162	1 3/16	1.13	RB-30.162
31.750	1 ¼	1.32	RB-31.750
32		1.35	RB-32
33		1.48	RB-33
33.338	1 5/16	1.52	RB-33.338
34		1.62	RB-34
34.925	1 3/8	1.75	RB-34.925
35		1.77	RB-35
36		1.92	RB-36
36.512	1 7/16	2.00	RB-36.512
38		2.25	RB-38
38.100	1 ½	2.27	RB-38.100
39.688	1 9/16	2.57	RB-39.688
40		2.63	RB-40
41.275	1 5/8	2.90	RB-41.275
42.862	1 11/16	3.24	RB-42.862
44.450	1 3/4	3.61	RB-44.450
45		3.74	RB-45

Diameter Dw mm	Diameter in	Mass Per 1 Kg.	Designation
46.038	1 13/16	0.403	RB-46.038
47.625	1 7/8	0.446	RB-47.625
49.212	1 15/16	0.490	RB-49.212
50		0.514	RB-50
50.800	2	0.439	RB-50.800
53.975	2 1/8	0.646	RB-53.975
55		0.679	RB-55
57.150	2 ¼	0.767	RB-57.150
60		0.882	RB-60
62.352	2 3/8	0.902	RB-62.352
63.500	2 ½	1.03	RB-63.500
65		1.13	RB-65
66.675	2 5/8	1.22	RB-66.675
69.850	2 ¾	1.40	RB-69.850
70		1.41	RB-70
73.025	2 7/8	1.60	RB-73.025
75		1.74	RB-75
76.200	3	1.82	RB-76.200
80		2.10	RB-80
82.550	3 ¼	2.31	RB-82.550
85		2.52	RB-85
88.900	3 ½	2.89	RB-88.900
90		3.00	RB-90
95		3.52	RB-95
95.250	3 1/4	3.55	RB-95.250
100		4.11	RB-100
110		5.47	RB-110
120		7.10	RB-120
127	5	8.42	RB-127
150		13.9	RB-150
200		32.9	RB-200
250		64.2	RB-250

THE COMMITMENT TO QUALITY...
THE COMMITMENT TO GROWTH...
Precision Bearings Pvt. Ltd.



"Not everything that counts can be counted, and not everything that can be counted counts."

Albert Einstein



SPECIAL PRODUCTS

LARGE DEEP GROOVE BALL BEARINGS WITH FILLING SLOTS



SPECIAL ZNL DEEP GROOVE BALL BEARINGS for heavily loaded bearing arrangements where there are slewing movement, e.g. the support bearing arrangement of converter drives. The bearings may contain separator rings or spacer to separate the balls or may be the fall compliment type.

MULTI-ROW BALL BEARINGS



MULTI-ROW BALL BEARINGS have several rows of balls held and guided in a machined brass cage. The inner and outer ring raceways have a cylindrical form so that axial displacement of the shaft relative to the housing can be accommodated within the bearing in both directions. A convex sphere outside diameter on the outer ring enables the bearing to compensate for initial alignment errors.

LARGE-SIZE ANGULAR CONTACT THRUST BALL BEARING



LARGE-SIZE ZNL ANGULAR CONTACT THRUST BALL BEARINGS were originally designed to support the rotary tables of the drilling rigs but are suitable for applications where high load carrying capacity, high axial stiffness and low friction torque are important. In contrast to conventional thrust ball bearings, angular contact thrust ball bearings can accommodate redial loads in addition to axial loads and are able to operate at high speeds. They are available as single direction thrust bearings.

Drown cup needle roller bearings



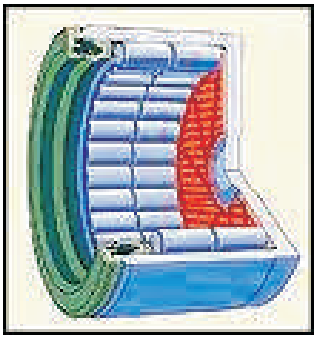
DRAWN CUP NEEDLE BEARINGS have a deep drawn thin-walled outer ring and are characterized by very low sectional height and high load carrying capacity. They are generally used when the housing bore can not be used as a raceway. They are used directly on the shaft, but can also be combined with an inner ring.
ZNL drawn cup needle roller bearings are available with either an open or closed end; with or without integral seals.

Drawn cup universal joint bearings

SPECIAL DRAWN CUP NEEDLE ROLLER BEARINGS with a closed end are available for universal joints of commercial vehicle propeller shafts.

The thin-walled, case hardened drawn cup allows the use of relatively large diameter rollers to provide high load carrying capacity while still permitting compact bearing arrangement.
ZNL universal joint bearings are available in several designs and sizes in the inside diameter range from 20 to 48 mm.

Further information will be supplied on request.



Alignment needle roller bearings



ALIGNMENT NEEDLE ROLLER BEARINGS have an outer ring with a convex sphere outside surface. A plastic seating ring with a concave sphere inside surface and encased in a drawn sheet steel sleeve is fitted over the outer ring, thus enabling the bearing to align.

Alignment needle roller bearings are therefore insensitive to errors of alignment of the shaft relative to the housing.

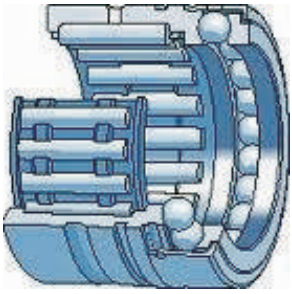
Needle roller thrust bearings



NEEDLE ROLLER THRUST BEARINGS ***can support heavy axial loads, are insensitive to shock loads and provide stiff bearing arrangements, which require a minimum of axial space. They are single direction bearings and can accommodate axial loads acting in one direction.***

ZNL needle roller thrust bearings are available as needle roller and cage thrust

Combined needle roller bearings



COMBINED NEEDLE ROLLER BEARINGS consist of a radial needle roller bearing combined with a thrust bearing and are consequently able to accommodate both radial and axial loads. They provide the means to produce locating bearing arrangements in a minimum of radial space. They are particularly suited for application where the axial loads are too heavy, speeds too high, or lubrication inadequate for simple thrust washer to be used or where other types of locating bearings occupy too much space.

ZNL combined needle roller bearings are available as

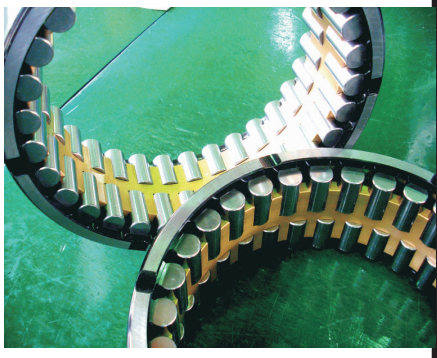
- Needle roller/angular contact ball bearings.
- Needle roller/thrust ball bearings and
- Needle roller/cylindrical roller thrust bearings.

Cam Followers



ZNL CAM FOLLOWERS are essential needle or cylindrical roller bearings, which have a solid stud instead of the inner ring. The stud is threaded so that the cam follower can be easily attached to appropriate machine components. Cam followers are filled with grease and are ready-to- mount and ready-to use units.

Double row cylindrical roller bearings



DOUBLE ROW CYLINDRICAL ROLLER BEARINGS have a low cross section, high load carrying capacity and high stiffness. They are used primarily in machine tools, rolling mill stands, plastic calendars, grinding mills and also large gearboxes.
ZNL double row cylindrical roller bearings are produced with a cylindrical or tapered bore and are available in various designs.

Multi-row cylindrical roller bearings



FOUR-ROW AND SIX-ROW CYLINDRICAL ROLLER BEARINGS are used almost exclusively for the roll necks of rolling mill stands, calendars and roller presses. They are of separable design to considerably simplify bearing mounting, maintenance and inspection.

ZNL four-row cylindrical roller bearings have a cylindrical bore and some sizes are also available with a tapered bore or as sealed bearings, with a seal on one or both sides of the

Four-row taper roller bearings

FOUR-ROW TAPER ROLLER BEARINGS are used for rolling mill bearing arrangements where rolling speeds are moderate. Because of their special attributes are produce in several different design and sizes.

The extensive ZNL range of four-row taper roller bearings includes conventional designs with intermediate rings between the outer and/or inner rings, as well as new and modified designs. ZNL four-row taper roller bearings are produced in,
.
The TQI configuration with two pairs of the roller sets arranged back-to-back,
The TQO configuration with two pairs of roller sets arranged face-to-face.

Available with either a cylindrical or tapered bore many sizes are also available with seals on one or both sides of the bearing.



Taper roller thrust bearings



TAPER ROLLER THRUST BEARINGS are enabling axially compact bearing arrangements that can accommodate very heavy axial loads. These stiff bearing arrangements are insensitive to shock loads.

ZNL produce taper roller thrust bearings as ·

- Caged or full complement single direction bearing, e.g. for kingpin bearing arrangements in commercial vehicle
- Double direction bearings for rolling mill applications and as
- Screw-down bearings for screw spindles in rolling mill application.

Split spherical roller bearings

SPLIT SPHERICAL ROLLER BEARINGS are used primarily for the bearing positions that are difficult to access such as crank shafts, or long shafts where several support positions are required. They are also used in applications where non-splits bearings would require considerable time and effort for replacement causing unacceptably long machine downtime.
ZNL split spherical roller bearings are produces to order in several designs. The designs are tailored to the particular application and, for cost reasons; they are generally based on available bearings of standard design.



Crossed taper roller bearings

Crossed Taper Roller Bearings are particularly compact double direction taper roller thrust bearings and are mainly used in tables of machining centers, milling and drilling machine as well as radar antennae and welding robots.

ZNL crossed taper roller bearings consist of an outer ring and two-piece inner ring. Tapered rollers are arranged between the rings, with every second roller places at approximately right angles to the adjacent roller. Plastic discs separate the rollers. Because of their special internal geometry the power loss at the roller end contacts is minimal and heat generation is low.



SLEWING BEARINGS are ball or cylindrical roller bearings that can accommodate axial, radial and moment loads acting either singly or in combination and in any direction. They are not mounted on a shaft or in house, the rings which are simply bolted on the seating surface are available in one of three executions:

- Without gears or
- With an internal gear or
- With an external gear.

Slewing bearings can perform both oscillating (slewing) movements as well as rotating movements.

SINGLE ROW SLEWING BALL BEARINGS

ZNL SINGLE ROW SLEWING BALL BEARINGS are four-point contact ball bearings. The balls are inserted through a filling slot which is plugged afterwards. The bearings are sealed have no preloaded and are intended for applications where demands regarding accuracy are moderate.

SINGLE ROW SLEWING ROLLER BEARINGS

ZNL SINGLE ROW SLEWING ROLLER BEARINGS are crossed cylindrical roller bearings. Every second roller is at right angles to its neighboring roller. The rollers are inserted through a filling slot which is plugged afterwards. The bearings are under preloaded and have integral lip seals.

DOUBLE ROW SLEWING BEARINGS

These slewing rings are angular contact cylindrical roller bearings. The rollers are inserted through filling slots in one of the rings; the slots are plugged afterwards. Plastic separators provide optimum roller guidance. The bearings are normally preloaded and are fitted with integral lip seals.

TRIPLE ROW SLEWING BEARINGS

TRIPLE ROW SLEWING BEARINGS are combined radial and thrust cylindrical roller bearings for very heavy loads with one - piece and one two-piece ring. The bearings are not under pre loaded and have integral lip seals. These bearings places high demands on the seating surface.

OTHER SLEWING BEARINGS

In addition to standard designs outlined above ZNL also produces several other designs, for a multitude of applications, to order. These include

- Slewing bearing as combined cylindrical roller/ball bearings,
- Slewing bearings as double row angular contact ball bearings,
- Dry sliding slewing bearings and
- Slewing bearings with integral drive.



High-precision bearings for machine tools

ZNL manufactures a wide range of precision bearings that are intended for use in machine tools applications and other applications where accuracy and high speed capabilities are important. ZNL precision bearings are available in several ISO dimension series and in a wide range of sizes. The product range includes traditional all steel bearings as well as hybrid bearings. For more information, please refer to the ZNL catalogue “High-precision bearings”.



Single row angular contact ball bearings
ZNL high-precision all-steel and hybrid angular contact ball bearings are available as normal as well as high-speed bearings in three ISO Dimension series with two different contact angles each.

ZNL offers three series of high-precision angular contact thrust ball bearings with different contact angles as all-steels or hybrid bearings. They are specially suited to application demanding accuracy and rigidity of the machine tool work spindles.

Products for aerospace application

ZNL AIRCRAFT BEARINGS



The aero engine product range includes main shaft and gearbox bearings for helicopters and jet engines. Bearings types include ball bearings and spherical, cylindrical and taper roller bearings.

The ZNL aerospace specialists Avio also offer bearing refurbishment services to airlines and aircraft engine overhaul facilities, which restore used aero engine products and services.

ZNL also manufactures especially aerospace quality steel and ceramic rolling elements that are used in highly engineered industrial and aerospace applications. The ZNL especially bearings business unit manufactures high performance custom designed bearings for technically and environmentally demanding application


ZNL


" The achievements of an organization are the results of the combined effort of each individual. "
Team ZNL