12.4 CYLINDRICAL ROLLER BEARINGS

Cylindrical roller bearings are manufactured in many designs, dimensions and sizes. The most common designs are single row cylindrical roller bearings with cage. Single row cylindrical roller bearings are capable of transferring big radial loads and, in some design cases, they are capable of capturing even axial load. Cylindrical roller bearings can operate at high revolutions. The full complement design is capable of transferring big radial loads but at lower rpm.

Majority of design versions is separable which allows easier assembly and disassembly in location. In majority of cases the mutual axial displacement of the outer and inner ring is used when the axial shift of the shaft against the body is aligned inside the bearing without reducing the service life of the bearing. Axial displacement is mostly caused by thermal expansion of the shaft.

Use of cylindrical roller bearings requires good alignment of both rings. Modification of raceways of rings and cylindrical rollers allow only small tilting in case of misalignment without reducing the service life of the bearing. Multirow cylindrical roller bearings have to comply with even more stringent alignment requirements.

KL manufactures the following types of cylindrical roller bearings:

- single row cylindrical roller bearings
- double row cylindrical roller bearings
- single row full complement cylindrical roller bearings
- double row full complement cylindrical roller bearings
- multi row cylindrical roller bearings

ZKL further offers special cylindrical roller bearings that are described in more details in chapter Special cylindrical roller bearings:

- single row cylindrical roller bearings and bearing units for railway applications
- electrically insulated cylindrical roller bearings
- single row and multirow bearings for heavy industry
- split cylindrical roller bearings.

Where the space for bearing is limited significantly, cylindrical roller bearing can be used without the inner or outer ring. Rolling elements are guided directly on the shaft or in the body. This location requires that the contact shaft or body surfaces correspond with the structural design of the bearing ring.

SINGLE ROW CYLINDRICAL ROLLER BEARINGS

Design

Single row cylindrical roller bearings with cage are among the mostly used cylindrical roller bearings. These bearings are made in several design versions that are either axially free (do not transfer axial load), or able to capture axial loads in one or both directions.

Single row cylindrical roller bearings are made in dimensional rows same as those of ball bearings, transfer significantly higher radial load than cylindrical roller bearings and are able to work even at extremely high revolution frequencies. Out of the line contact bearings they achieve the highest limit revolution frequencies which are given by minimum slippage of rolling elements.

Ring with guide flanges along with cage and cylindrical rollers can be separated from the other ring which simplifies the assembly and disassembly of the bearing mostly in locations where the inner and outer ring of the bearing has to be pressed at loading conditions.

Bearings in E version have basic dynamic load rating 30 % higher in average than bearings in basic version. This is allowed due to the optimised inner design of the bearing.

Basic version

Single row cylindrical roller bearings are made in several design versions that differ in the number and location of guide flanges.

NU design

Inner bearing ring has guide flanges on both sides; the inner ring is without flanges (fig. 12.4.1). NU version bearing is axially free; it allows axial displacement of shaft against body in both directions.

N design

Inner bearing ring has guide flanges on both sides; the outer ring is without flanges (fig. 12.4.2). N version bearing is axially free; it allows axial displacement of shaft against body in both directions.

NJ design

Outer bearing ring has guide flanges on both sides; the inner ring has one guide flange (fig. 12.4.3). NJ design bearing is axially guiding in one direction; in one direction the bearing captures axial load whilst in the other direction it allows axial displacement of shaft against body.

NUP design

Outer bearing ring has guide flanges on both sides; the inner ring has one fixed guide flange and one free flange which consists of free angle ring (fig. 12.4.4). NUP bearing is axially guiding in both directions, it captures axial load in both directions.

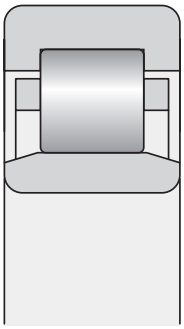


Fig. 12.4.1

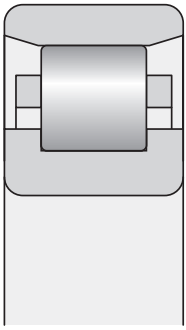


Fig. 12.4.2

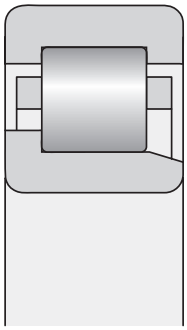


Fig. 12.4.3

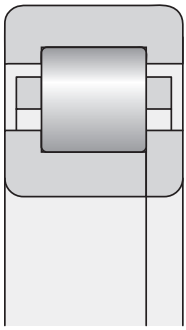


Fig. 12.4.4

Angle rings

NJ and NU version bearings can be used in combinations with HJ angle rings. This enables transfer of double direction axial load in NJ bearings and single direction axial load in NU bearings.

NUP version bearing with shortened inner ring bearing surface should be in case of big radial load interchanged with NJ + HJ bearing. This arrangement has standard width of inner ring that ensures more stable support. Angle rings are made of the same steel as the bearing rings.

The designation and dimensions of angle rings are stated in the table section of the catalogue. Designation of ZKL bearing assembly pair consists of the designation of the bearing and the angle ring as follows: NJ214 + HJ214.

Also associated designation of assemblies that consist of the below examples can be encountered:

NJ214 + HJ214 = NH214

NU208 + HJ208 = NUJ208

Bearing NJ + HJ (NH)

It is a bearing in NJ version along with angle ring HJ (fig. 12.4.5). NH bearing is axially guiding in both directions; the bearing captures axial load in both directions.

NU + HJ (NUJ) design

It is a bearing in NU version along with angle ring HJ (fig. 12.4.6). NUJ bearing is axially guiding in one direction; in one direction the bearing captures axial load whilst in the other direction is allows axial displacement of shaft against body.

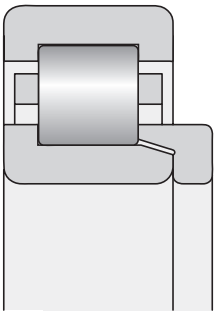


Fig. 12.4.5

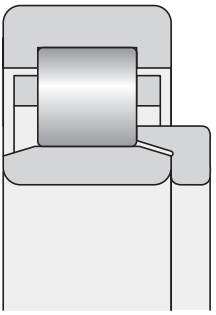


Fig. 12.4.6

Special design

Availability of special design bearings shall be consulted with ZKL.

Bearings without inner or outer ring

Where the space for bearing location is limited, ZKL supplies NU single row cylindrical roller bearings without inner ring marked R NU (fig. 12.4.7), or N single row cylindrical roller bearings without outer ring marked R N (fig. 12.4.8). The raceway is formed directly with hardened and ground surface of shaft or body; these surfaces must comply with stringent requirements, similarly as the raceways of bearing rings. Therefore use of through-hardening steels, cementation steels or steels for high-frequency hardening is recommended in these cases, accordingly with ISO 683-17.

Tolerance of journal dimension is usually „g6" for normal radial clearance, „f6" for increased radial clearance and „h5" for reduced radial clearance. Journal raceway roundness and cylindricality deviations in this case must not exceed those of deviations applicable to the IT3 accuracy level. Maximum surface roughness for this surface should be Ra = 0.2 μm and Ra = 0.4 μm for less exacting locations. Similar tolerances apply to raceway that forms a part of the body.

Basic bearing capacity values C_r a C_{or} stated in the table section apply to the R NU and R N bearings provided that the hardness on the raceway surface will range within 58 to 64 HRC. With reducing hardness values also the load bearing capacity values C_r drop. For instance, bearings with 48 HRC ring hardness have half the

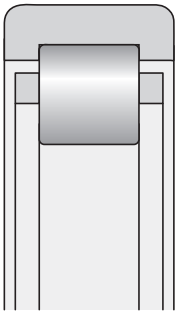


Fig. 12.4.7

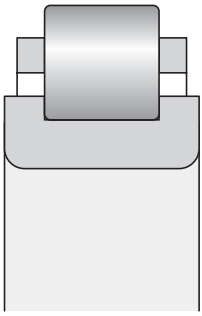


Fig. 12.4.8

value of dynamic load bearing rating. The minimum depth of through hardening of the raceway after abrasion depends on the diameter of rollers and load size, and should be 1 to 3 mm. In big static loading, through hardening to the depth of 0.1 of the roller diameter is recommended. The above stated requirements apply to recommended bearing materials. If other materials are used, the resistance to fatigue damage will reduce.

Bearings with snap ring groove

To ensure simple protection against axial displacement in the location element single row cylindrical roller bearings with a groove for snap ring on outer ring are made. Bearings with snap ring groove have additional designation N (fig. 12.4.9)

Dimensions of the groove for snap ring comply with the standard ISO 464. The standard also states dimensions of relevant snap rings.

Bearings with snap ring grooves

If assembly of outer ring with clearance is required and spinning of outer ring in body has to be prevented, bearing with snap ring grooves on one face of outer ring can be supplies. Bearing provided with one snap ring groove is identified with additional designation N1; bearing with two grooves by 180° is identified with additional designation N2. fig. 12.4.10)

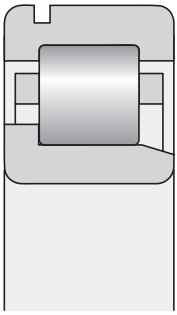


Fig. 12.4.9

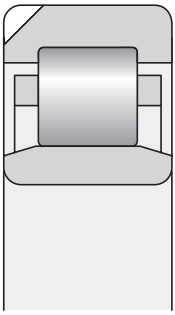


Fig. 12.4.10

General information

Main dimensions

Main dimensions comply with the standard ISO 15 and are stated for individual bearings in the table section of the publication. Main dimensions of angle rings HJ comply with the standard ISO 246 and are also stated in the table section of the catalogue.

Tolerances

Bearings are usually made in normal accuracy level P0 which is not presented. Also bearings in higher accuracy level P6, P5 and P4 are supplied.

The limit values of bearing dimension and run accuracy are stated in tables 7.2 to 7.8, and comply with the standard ISO 492. Tolerances of higher accuracy bearings SP and UP are stated in tables 7.9 to 7.11.

Radial clearance

Commonly produced single row cylindrical roller bearings feature normal axial clearance that is not identified. Special locations require bearings with reduced C2 radial clearance, or with increased radial clearance C3, C4 and C5. Values of radial clearances comply with the standard ISO 5753 and are stated in chart 7.19. The values in the table apply to bearing in non-assembled state and without load.

In some cases bearings with non-standard radial clearance range can be supplied. We recommend that these supplies are discussed with the technical and consultancy services of ZKL.

Misalignment

Mutual misalignment of rings of single row roller bearings is very small. Admissible values of misalignment are stated in table 12.4.1.

Table 12.4.1

Bearing type	Load	
	small ($F_r < 0{,}1\ C_{or}$)	big ($F_r \geq 0{,}1\ C_{or}$)
NU10, NU2, NU3, NU4	2´ to 3´	5´ to 7´
NU29, NU22, NU23	1´ to 3´	3´ to 4´
Version NJ, NUP, N [1)]	1´ to 2´	3´ to 4´

[1)] lower values of pair of digits apply for bearings of width series 2 and higher

The stated values apply to axially free bearings. At the same time it has to apply that the shaft axis and body axis position do not change. Bigger misalignment than is that stated in the table leads to significant reduction of service life and increased noise level of the bearing. The misalignment values recommended for axially guiding bearings are even lower to avoid unequal loading of guiding flanges which would lead to more significant wear or damage to the flange. Also bearings axialy guiding in both direction are very inclinable to

misalignment. In case of bigger misalignment axial clearance in bearing can get defined and rollers gripped by flanges which may cause occurrence of axial stress.

If there is a risk of bigger misalignment angles in roller bearing locations, we recommend that the ZKL technical and consultancy services are contacted.

Sliding axial movement

Axially free (NU, N) and single direction axially guiding (NJ) roller bearings are to certain extent capable of alignment of the shaft axial displacement against the body without reducing the service life of the bearing, Axial displacement is mostly caused by thermal expansion of the shaft. The values of maximum axial shift „s" of one ring towards the other as shown in the figure 12.4.11 are stated in the table section hereof.

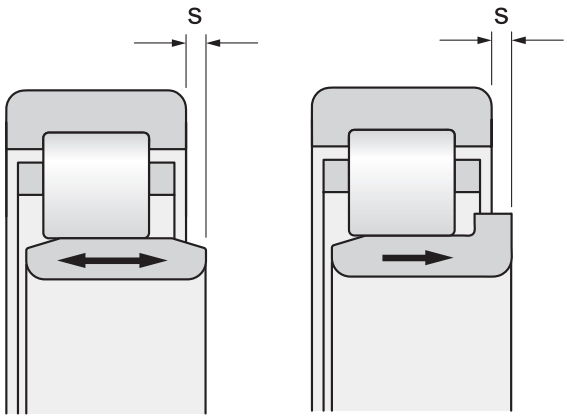


Fig. 12.4.11

Running temperatures

As standard, roller bearings rings are made for use in environment with temperature up to 120 °C. Upon request, cylindrical roller bearings with dimension stabilisation for operation at higher temperatures can be supplied.

Cages

Design of cylindrical roller bearing cages:

- Cage pressed from steel plate, guided on rolling elements, additional designation J (is not presented)
- Two-piece massive steel cage guided on rolling elements, additional designation F
- Two-piece massive brass cage on rolling elements, additional designation M, guided on outer ring has additional designation MA, and the one guided on inner ring has additional designation MB
- Massive cage of polyamide or similar plastic, stiffened by glass fibres, guided on rolling elements, additional designation TNG

Special locations require bearings with cages provided with surface treatment, delivery of which must be discussed in advance with the supplier.

Minimum load

Cyllindrical roller bearings must be exposed to certain minimum load, especially when operated at high revolutions and rapid load changes. In these cases, inertial effects of cage with rolling elements become mostly apparent which are indicated mainly by slippage or the rolling elements in the bearing.

Minimum radial load recommended for ZKL cylindrical roller bearings is such that equals to 2% of the dynamic load bearing capacity of the bearing.

Axial dynamic load rating

Bearings with flanges on both sides can, besides radial load, transfer also limited axial load. Considering the fact that the allowed load of bearings in axial direction depends on a number of factors that cannot be captured in a single calculation, the following relations have indicative character only.

In this case, axial load bearing capacity is not limited by material fatigue but by the load bearing capacity of the grease film in the contact surface between the roller face and guide flange, lubrication conditions, service temperature and possibilities of cooling of the bearing. In usual service conditions when the temperature difference between the bearing and ambient area does not exceed 60 °C at specific heat passage of 0.5 $mWmm^{-2}°C^{-1}$, at minimum value of viscosity rate 2, the maximum admissible axial load can be calculated with sufficient accuracy from the below equation:

for lubrication with oil

$$F_{a\,max} = \frac{0.5\ C_{or} \cdot 10^4}{n\ (d + D)} - 0.05\ F_r \qquad [kN]$$

for lubrication with greace

$$F_{a\,max} = \frac{0.35\ C_{or} \cdot 10^4}{n\ (d + D)} - 0.03\ F_r \qquad [kN]$$

$F_{a\,max}$ .... maximum admissible axial load [kN]

C_{or} ..... basic radial static load rating [kN]

F_r ..... radial load of bearings [kN]

n ..... rotational frequency $[min^{-1}]$

d ..... bearing bore diameter [mm]

D ..... outer diameter of bearing [mm]

The $F_{a\,max}$ values calculated according to the above stated equations apply on condition of acting of constant axial force. In case of interrupted load or impact load the admissible axial load can grow by two or three times towards the calculated value.

At acting axial load cylindrical roller bearings operate reliably only if the bearings are loaded radially at the same time. The relation $F_a/F_r \leq 0.5$ has to be maintained.

Equivalent dynamic load of bearing

Axially free N and NU type bearings are capable of transferring radial load only; the following applies to these bearings:

$$P = F_r$$

Axially guiding NJ, NUP, NH and NUJ type bearings are capable of transferring both radial and axial load; the following applies to these bearings:

$$P = F_r \qquad \text{pro } F_a/F_r \leq e$$

$$P = 0.92\ F_r + Y\ F_a \qquad \text{pro } F_a/F_r > e$$

the arithmetic coefficient e ..... = 0.2 for bearings of series 10, 18, 19, 2, 3 and 4

..... = 0.3 for bearings of other series

and axial load coefficient Y ..... = 0.6 for bearings of series 10, 18, 19, 2, 3 and 4

..... = 0.4 for bearings of other series

Equivalent static load of bearing

$$P_0 = F_r$$

Additional designations

Supplementary characters before basic designation

L .....separate detachable ring of bearing

R .....Separable bearing without detachable ring

K .....Cage with rolling elements

T .....Case hardening steel

X .....Stainless steel

Supplementary characters behind the basic designation:

Radial clearance: Normal radial clearance is usually not presented in the bearing's designation.

C2 Radial clearance smaller than normal

C3 Radial clearance bigger than normal

C4 Radial clearance bigger than C3

C5 Radial clearance bigger than C4

R Radial clearance in non-standardised range (range in µm)

Construction design:

E Optimised inner design with higher load rating

N Snap ring groove on the outer ring

NR Snap ring groove on the outer ring and inserted snap ring

N1 One snap ring groove on the outer ring face

N2 Two snap ring grooves by 180° on one outer ring face

Material of the cage:

J Cage pressed from steel plate, guided on rolling elements

F Massive steel cage guided on rolling elements

M Massive brass cage guided on rolling elements

L Massive light metal cage guided on rolling elements

TN Massive cage of polyamide or similar plastic guided on rolling elements

TNG Massive cage of polyamide or similar plastic, reinforced by glass fibres, guided on rolling elements

Cage design (stated characters are always used in combination with cage material characters).

A Cage guided on outer ring

B Cage guided on inner ring

P Compact window cage

S Cage with lubrication slots

R Silver-plated cage

Dimension stabilisation:

S0 For service temperature to 150 °C

S1 For service temperature to 200 °C

S2 For service temperature to 250 °C

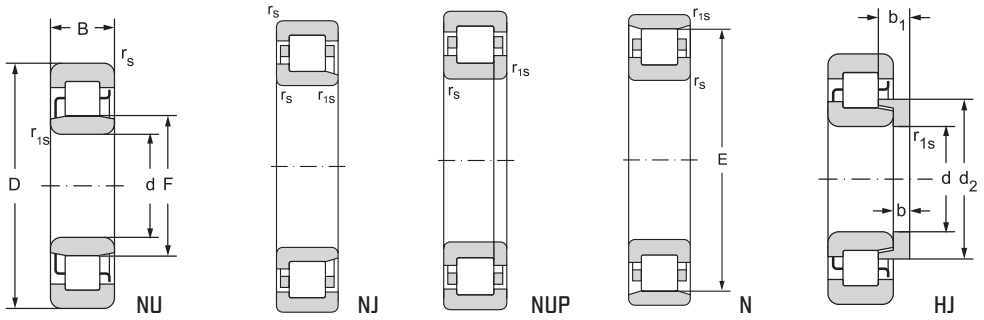






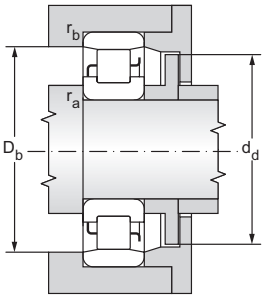


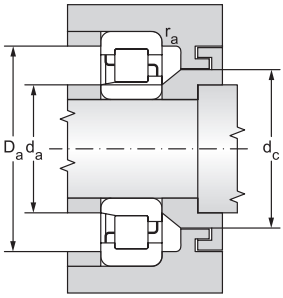


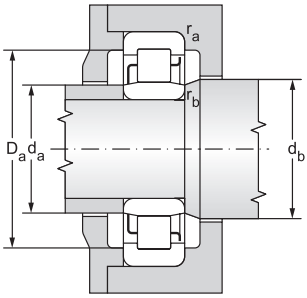



12.4.1

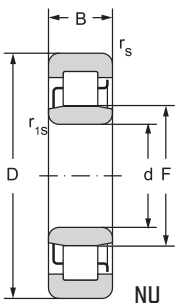
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
20	47	14,00	1,0	0,6	27		30,0	3,0	6,75	1,4	**NU204**		HJ204	13,9	10,2
	47	14,00	1,0	0,6	27		30,0	3,0	6,75	1,4	**NJ204**		HJ204	13,9	10,2
	47	14,00	1,0	0,6	27					1,4	**NUP204**			13,9	10,2
	47	14,00	1,0	0,6		40,0				1,4	**N204**			13,9	10,2
25	52	15,00	1,0	0,6	32		35,0	3,0	7,25	1,5	**NU205**		HJ205	15,8	12,6
	52	15,00	1,0	0,6	32		35,0	3,0	7,25	1,5	**NJ205**		HJ205	15,8	12,6
	52	15,00	1,0	0,6	32					1,5	**NUP205**			15,8	12,6
	52	15,00	1,0	0,6		45,0				1,5	**N205**			15,8	12,6
	52	15,00	1,0	0,6	31,5		34,9	3,0	6,00	1,4	**NU205E**	TNG	HJ205E	29,3	25,6
	52	15,00	1,0	0,6	31,5		34,9	3,0	6,00	1,4	**NJ205E**	TNG	HJ205E	29,3	25,6
	52	15,00	1,0	0,6	31,5					1,4	**NUP205E**	TNG		29,3	25,6
	52	15,00	1,0	0,6		46,5				1,4	**N205ETNG**			29,3	25,6
	52	18,00	1,0	0,6	32					1,6	**NU2205**			22,4	19,6
	52	18,00	1,0	0,6	32					1,6	**NJ2205**			22,4	19,6
	52	18,00	1,0	0,6	32					1,6	**NUP2205**			22,4	19,6
	62	17,00	1,1	1,1	35		39,3	4,0	8,00	1,4	**NU305**		HJ305	27,6	21,5
	62	17,00	1,1	1,1	35		39,3	4,0	8,00	1,4	**NJ305**		HJ305	27,6	21,5
	62	17,00	1,1	1,1	35					1,4	**NUP305**			27,6	21,5
	62	17,00	1,1	1,1		53,0				1,4	**N305**			27,6	21,5
	62	17,00	1,1	1,1	34		38,3	4,0	7,00	1,4	**NU305EMAS**	TNG	HJ305E	43,0	36,2
	62	17,00	1,1	1,1	34		38,3	4,0	7,00	1,4	**NJ305EMAS**	TNG	HJ305E	43,0	36,2
	62	17,00	1,1	1,1	34					1,4	**NUP305EMAS**	TNG		43,0	36,2
	62	17,00	1,1	1,1	34	54,0				1,4	**N305ETNG**			43,0	36,2
	80	21,00	1,5	1,5	38,8					1,4	**NU405**			43,8	34,1
	80	21,00	1,5	1,5	38,8					1,4	**NJ405**			43,8	34,1



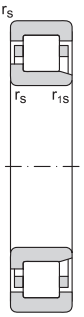




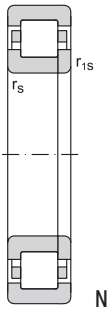
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
1,24	14000	17000	20	25	25,5	29,0	32	-	42	-	1,0	0,6	0,11	0,0100
1,24	14000	17000		25	25,5	29,0	32	-	42	-	1,0	0,6	0,11	0,0100
1,24	14000	17000		25	25,5	29,0	32	-	42	-	1,0	0,6	0,11	
1,24	14000	17000		25	25,5	29,0	32	39	42	42	1,0	0,6	0,11	
1,54	12600	15000	25	30	30,5	34,0	37	-	47	-	1,0	0,6	0,13	0,020
1,54	12600	15000		30	30,5	34,0	37	-	47	-	1,0	0,6	0,13	0,020
1,54	12600	15000		30	30,5	34,0	37	-	47	-	1,0	0,6	0,13	
1,54	12600	15000		30	30,5	34,0	37	43	47	47	1,0	0,6	0,13	
3,12	12600	15000		30	30,0	34,0	37	-	47	-	1,0	0,6	0,13	0,020
3,12	12600	15000		30	30,0	34,0	37	-	47	-	1,0	0,6	0,13	0,020
3,12	12600	15000		30	30,0	34,0	37	-	47	-	1,0	0,6	0,13	
3,12	12600	15000		30	30,0	34,0	37	44	47	47	1,0	0,6	0,13	
2,39	12600	15000		30	30,5	34,0	37	-	47	-	1,0	0,6	0,16	
2,39	12600	15000		30	30,5	34,0	37	-	47	-	1,0	0,6	0,16	
2,39	12600	15000		30	30,5	34,0	37	-	47	-	1,0	0,6	0,16	
2,62	10000	12000		31	33,0	37,0	40	-	55	-	1,0	1,0	0,24	0,030
2,62	10000	12000		31	33,0	37,0	40	-	55	-	1,0	1,0	0,24	0,030
2,62	10000	12000		31	33,0	37,0	40	-	55	-	1,0	1,0	0,24	
2,62	10000	12000		31	33,0	37,0	40	51	55	55	1,0	1,0	0,24	
4,41	10000	12000		31	32,0	37,0	40	-	55	-	1,0	1,0	0,26	0,030
4,41	10000	12000		31	32,0	37,0	40	-	55	-	1,0	1,0	0,26	0,030
4,41	10000	12000		31	32,0	37,0	40	-	55	-	1,0	1,0	0,26	
4,41	10000	12000		31	32,0	36,0	39	52	55	55	1,0	1,0	0,24	
4,16	8400	10000		32	38,0	39,0	40	-	73	-	1,0	1,0	0,57	
4,16	8400	10000		32	38,0	39,0	40	-	73	-	1,0	1,0	0,57	



NU



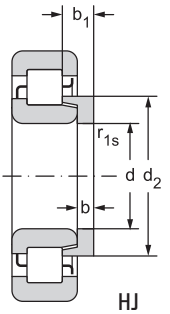
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NUP



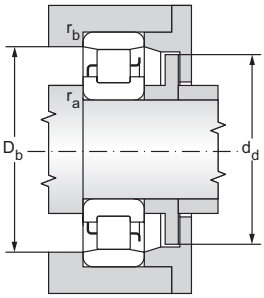
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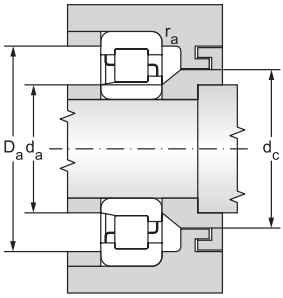


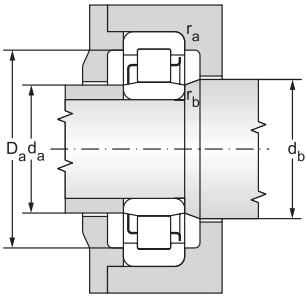
HJ

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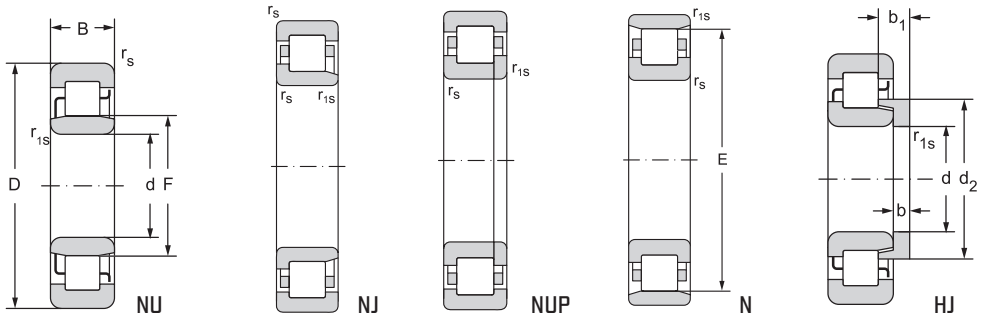
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
30	62	16,00	1,0	0,6	38,5		42,2	4,0	8,25	1,5	**NU206**		HJ206	21,5	17,8
	62	16,00	1,0	0,6	38,5		42,2	4,0	8,25	1,5	**NJ206**		HJ206	21,5	17,8
	62	16,00	1,0	0,6	38,5					1,5	**NUP206**			21,5	17,8
	62	16,00	1,0	0,6		53,5				1,5	**N206**			21,5	17,8
	62	16,00	1,0	0,6	37,5		41,4	4,0	7,00	1,4	**NU206ETNG**		HJ206E	39,1	35,5
	62	16,00	1,0	0,6	37,5		41,4	4,0	7,00	1,4	**NJ206ETNG**		HJ206E	39,1	35,5
	62	16,00	1,0	0,6	37,5					1,4	**NUP206ETNG**			39,1	35,5
	62	16,00	1,0	0,6		55,5				1,4	**N206ETNG**			39,1	35,5
	62	20,00	1,0	0,6	38,5					1,6	**NU2206**			31,6	29,3
	62	20,00	1,0	0,6	38,5					1,6	**NJ2206**			31,6	29,3
	62	20,00	1,0	0,6	38,5					1,6	**NUP2206**			31,6	29,3
	72	19,00	1,1	1,1	42		46,6	5,0	9,50	1,4	**NU306**		HJ306	36,2	31,0
	72	19,00	1,1	1,1	42		46,6	5,0	9,50	1,4	**NJ306**		HJ306	36,2	31,0
	72	19,00	1,1	1,1	42					1,4	**NUP306**			36,2	31,0
	72	19,00	1,1	1,1		62,0				1,4	**N306**			36,2	31,0
	72	19,00	1,1	1,1	40,5		45,1	5,0	8,50	1,4	**NU306E**	TNG	HJ306E	53,1	46,4
	72	19,00	1,1	1,1	40,5		45,1	5,0	8,50	1,4	**NJ306E**	TNG	HJ306E	53,1	46,4
	72	19,00	1,1	1,1	40,5					1,4	**NUP306E**	TNG		53,1	46,4
	72	19,00	1,1	1,1		62,5				1,4	**N306ETNG**			53,1	46,4
	90	23,00	1,5	1,5	45		51,4	7,0	11,50	1,5	**NU406**		HJ406	59,6	48,2
	90	23,00	1,5	1,5	45		51,4	7,0	11,50	1,5	**NJ406**		HJ406	59,6	48,2
	90	23,00	1,5	1,5	45					1,5	**NUP406**			59,6	48,2
32	65	21,00	1,0	0,6	38,5					1,6	**NU22/32ETNG**			51,1	50,1





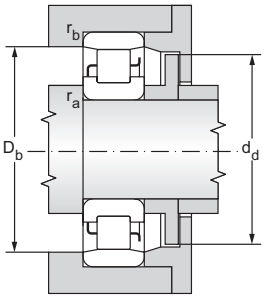


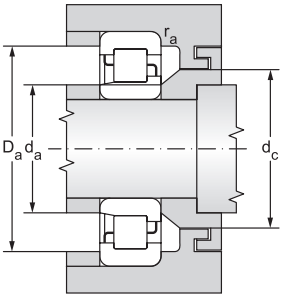
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
2,17	10600	12600	30	35	37,0	40,0	44	-	57	-	1,0	0,6	0,20	0,030
2,17	10600	12600		35	37,0	40,0	44	-	57	-	1,0	0,6	0,20	0,030
2,17	10600	12600		35	37,0	40,0	44	-	57	-	1,0	0,6	0,20	
2,17	10600	12600		35	37,0	40,0	44	52	57	56	1,0	0,6	0,20	
4,33	10600	12600		35	37,0	40,0	43	-	57	-	1,0	0,6	0,20	0,030
4,33	10600	12600		35	37,0	40,0	43	-	57	-	1,0	0,6	0,20	0,030
4,33	10600	12600		35	37,0	40,0	43	-	57	-	1,0	0,6	0,20	
4,33	10600	12600		35	37,0	40,0	43	54	57	57	1,0	0,6	0,20	
3,57	10600	12600		35	37,0	40,0	44	-	57	-	1,0	0,6	0,26	
3,57	10600	12600		35	37,0	40,0	44	-	57	-	1,0	0,6	0,26	
3,57	10600	12600		35	37,0	40,0	44	-	57	-	1,0	0,6	0,26	
3,78	8900	10600		36	39,0	44,0	48	-	65	-	1,0	1,0	0,36	0,040
3,78	8900	10600		36	39,0	44,0	48	-	65	-	1,0	1,0	0,36	0,040
3,78	8900	10600		36	39,0	44,0	48	-	65	-	1,0	1,0	0,36	
3,78	8900	10600		36	39,0	44,0	48	60	65	64	1,0	1,0	0,36	
5,66	8400	10000		36	37,5	43,0	47	-	65	-	1,0	1,0	0,36	0,040
5,66	8400	10000		36	37,5	43,0	47	-	65	-	1,0	1,0	0,36	0,040
5,66	8400	10000		36	37,5	43,0	47	-	65	-	1,0	1,0	0,36	
5,66	8400	10000		36	37,5	43,0	47	60	65	64	1,0	1,0	0,36	
5,88	7100	8400		39	41,0	47,0	53	-	80	-	1,5	1,5	0,75	0,080
5,88	7100	8400		39	41,0	47,0	53	-	80	-	1,5	1,5	0,75	0,080
5,88	7100	8400		39	41,0	47,0	53	-	80	-	1,5	1,5	0,75	
6,11	10000	12000	32	35	37,0	39,0	43	-	60	-	1,0	1,0	0,31	

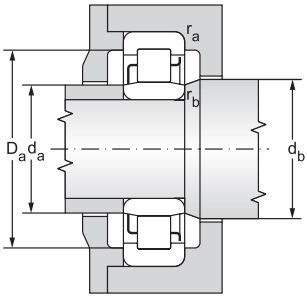


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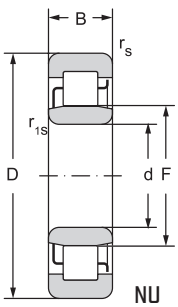
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
35	72	17,00	1,1	0,6	43,8		48,1	4,0	8,00	1,5	**NU207**		HJ207	31,6	27,1
	72	17,00	1,1	0,6	43,8		48,1	4,0	8,00	1,5	**NJ207**		HJ207	31,6	27,1
	72	17,00	1,1	0,6	43,8					1,5	**NUP207**			31,6	27,1
	72	17,00	1,1	0,6		61,8				1,5	**N207**			31,6	27,1
	72	17,00	1,1	0,6	44		48,3	4,0	7,00	1,4	**NU207E**	TNG	HJ207E	51,1	48,2
	72	17,00	1,1	0,6	44		48,3	4,0	7,00	1,4	**NJ207E**	TNG	HJ207E	51,1	48,2
	72	17,00	1,1	0,6	44					1,4	**NUP207E**	TNG		51,1	48,2
	72	17,00	1,1	0,6		64,0				1,4	**N207ETNG**			51,1	48,2
	72	23,00	1,1	0,6	43,8					1,6	**NU2207**			48,2	47,3
	72	23,00	1,1	0,6	43,8					1,6	**NJ2207**			48,2	47,3
	72	23,00	1,1	0,6	43,8					1,6	**NUP2207**			48,2	47,3
	72	23,00	1,1	0,6	44					1,6	**NU2207ETNG**			64,3	64,3
	72	23,00	1,1	0,6	44					1,6	**NJ2207ETNG**			64,3	64,3
	72	23,00	1,1	0,6	44					1,6	**NUP2207ETNG**			64,3	64,3
	80	21,00	1,5	1,1	46,2		51,2	6,0	11,00	1,4	**NU307**		HJ307	43,0	36,2
	80	21,00	1,5	1,1	46,2		51,2	6,0	11,00	1,4	**NJ307**		HJ307	43,0	36,2
	80	21,00	1,5	1,1	46,2					1,4	**NUP307**			43,0	36,2
	80	21,00	1,5	1,1		68,2				1,4	**N307**			43,0	36,2
	80	21,00	1,5	1,1	46,2		51,2	6,0	9,50	1,4	**NU307E**		HJ307E	66,8	61,9
	80	21,00	1,5	1,1	46,2		51,2	6,0	9,50	1,4	**NJ307E**		HJ307E	66,8	61,9
	80	21,00	1,5	1,1	46,2					1,4	**NUP307E**			66,8	61,9
	80	31,00	1,5	1,1	46,2					2,7	**NU2307EMAS**			92,6	92,6
	80	31,00	1,5	1,1	46,2					2,7	**NJ2307EMAS**			92,6	92,6
	80	31,00	1,5	1,1	46,2					2,7	**NUP2307EMAS**			92,6	92,6
	100	25,00	1,5	1,5	53		59,9	8,0	13,00	1,5	**NU407**		HJ407	75,0	64,3
	100	25,00	1,5	1,5	53		59,9	8,0	13,00	1,5	**NJ407**		HJ407	75,0	64,3
	100	25,00	1,5	1,5	53					1,5	**NUP407**			75,0	64,3
	100	25,00	1,5	1,5		83,0				1,5	**N407**			75,0	64,3



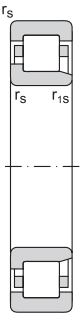




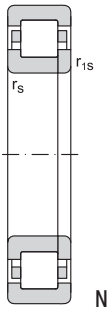
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
3,30	9400	11000	35	42	42,0	46,0	50	-	65	-	1,0	0,6	0,29	0,040
3,30	9400	11000		42	42,0	46,0	50	-	65	-	1,0	0,6	0,29	0,040
3,30	9400	11000		42	42,0	46,0	50	-	65	-	1,0	0,6	0,29	
3,30	9400	11000		42	42,0	46,0	50	60	65	64	1,0	0,6	0,29	
5,88	8900	10600		42	42,0	46,0	50	-	65	-	1,0	0,6	0,29	0,040
5,88	8900	10600		42	42,0	46,0	50	-	65	-	1,0	0,6	0,29	0,040
5,88	8900	10600		42	42,0	46,0	50	-	65	-	1,0	0,6	0,29	
5,88	8900	10600		42	42,0	46,0	50	62	65	65	1,0	0,6	0,29	
5,77	9400	11000		42	42,0	46,0	50	-	65	-	1,0	0,6	0,40	
5,77	9400	11000		42	42,0	46,0	50	-	65	-	1,0	0,6	0,40	
5,77	9400	11000		42	42,0	46,0	50	-	65	-	1,0	0,6	0,40	
7,84	8900	10600		42	42,0	46,0	50	-	65	-	1,0	0,6	0,39	
7,84	8900	10600		42	42,0	46,0	50	-	65	-	1,0	0,6	0,39	
7,84	8900	10600		42	42,0	46,0	50	-	65	-	1,0	0,6	0,39	
4,41	7900	9400		42	44,0	48,0	53	-	71	-	1,5	1,0	0,48	0,060
4,41	7900	9400		42	44,0	48,0	53	-	71	-	1,5	1,0	0,48	0,060
4,41	7900	9400		42	44,0	48,0	53	-	71	-	1,5	1,0	0,48	
4,41	7900	9400		42	44,0	48,0	53	66	71	71	1,5	1,0	0,48	
7,55	7500	8900		42	44,0	48,0	53	-	71	-	1,5	1,0	0,47	0,060
7,55	7500	8900		42	44,0	48,0	53	-	71	-	1,5	1,0	0,47	0,060
7,55	7500	8900		42	44,0	48,0	53	-	71	-	1,5	1,0	0,47	
11,29	7100	8400		42	44,0	48,0	53	-	71	-	1,5	1,0	0,75	
11,29	7100	8400		42	44,0	48,0	53	-	71	-	1,5	1,0	0,75	
11,29	7100	8400		42	44,0	48,0	53	-	71	-	1,5	1,0	0,75	
7,84	6300	7500		44	52,0	55,0	62	-	90	-	1,5	1,5	1,00	0,13
7,84	6300	7500		44	52,0	55,0	62	-	90	-	1,5	1,5	1,00	0,13
7,84	6300	7500		44	52,0	55,0	62	-	90	-	1,5	1,5	1,00	
7,84	6300	7500		44	52,0	55,0	62	81	90	86	1,5	1,5	1,00	



NU



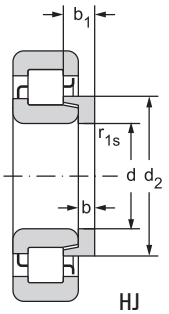
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NUP



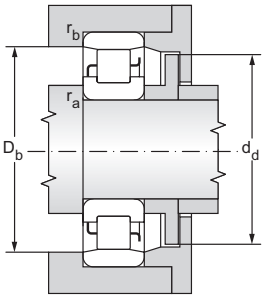
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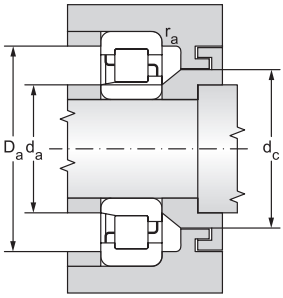


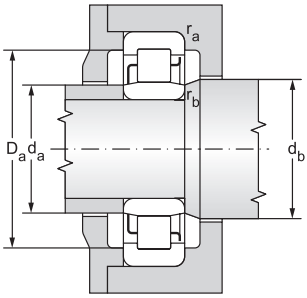
HJ

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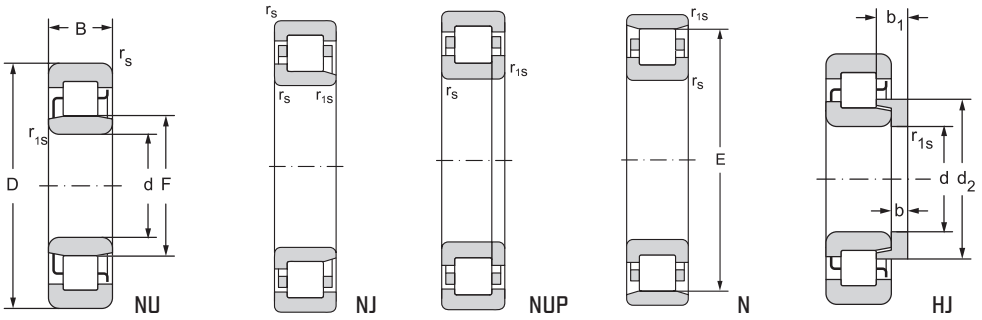
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
40	80	18,00	1,1	1,1	50		54,6	5,0	9,00	1,5	**NU208**		HJ208	42,2	37,6
	80	18,00	1,1	1,1	50		54,6	5,0	9,00	1,5	**NJ208**		HJ208	42,2	37,6
	80	18,00	1,1	1,1	50					1,5	**NUP208**			42,2	37,6
	80	18,00	1,1	1,1		70,0				1,5	**N208**			42,2	37,6
	80	18,00	1,1	1,1	49,5		54,1	5,0	8,50	1,4	**NU208E**		HJ208E	54,1	50,1
	80	18,00	1,1	1,1	49,5		54,1	5,0	8,50	1,4	**NJ208E**		HJ208E	54,1	50,1
	80	18,00	1,1	1,1	49,5					1,4	**NUP208E**			54,1	50,1
	80	23,00	1,1	1,1	50					1,6	**NU2208**			57,3	56,2
	80	23,00	1,1	1,1	50					1,6	**NJ2208**			57,3	56,2
	80	23,00	1,1	1,1	50					1,6	**NUP2208**			57,3	56,2
	80	30,16	1,0	1,5	49,3					3,0	**NU5208M**			57,0	98,1
	90	23,00	1,5	1,5	53,5		59,0	7,0	12,50	1,4	**NU308**		HJ308	55,2	48,2
	90	23,00	1,5	1,5	53,5		59,0	7,0	12,50	1,4	**NJ308**		HJ308	55,2	48,2
	90	23,00	1,5	1,5	53,5					1,4	**NUP308**			55,2	48,2
	90	23,00	1,5	1,5		77,5				1,4	**N308**			55,2	48,2
	90	23,00	1,5	1,5	52		57,7	7,0	11,00	1,4	**NU308E**	TNG	HJ308E	84,1	77,9
	90	23,00	1,5	1,5	52		57,7	7,0	11,00	1,4	**NJ308E**	TNG	HJ308E	84,1	77,9
	90	23,00	1,5	1,5	52					1,4	**NUP308E**	TNG		84,1	77,9
	90	23,00	1,5	1,5		80,0				1,4	**N308ETNG**			84,1	77,9
	90	33,00	1,5	1,5	52					2,9	**NU2308EMAS**			119,0	123,0
	90	33,00	1,5	1,5	52					2,9	**NJ2308EMAS**			119,0	123,0
	90	33,00	1,5	1,5	52					2,9	**NUP2308EMAS**			119,0	123,0
	110	27,00	2,0	2,0	58		65,8	8,0	13,00	1,5	**NU408**		HJ408	92,6	79,4
	110	27,00	2,0	2,0	58		65,8	8,0	13,00	1,5	**NJ408**		HJ408	92,6	79,4
	110	27,00	2,0	2,0	58					1,5	**NUP408**			92,6	79,4
	110	27,00	2,0	2,0		92,0				1,5	**N408**			92,6	79,4





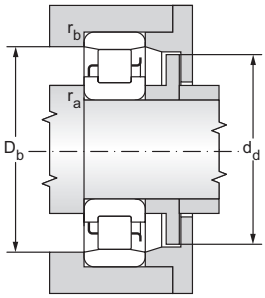


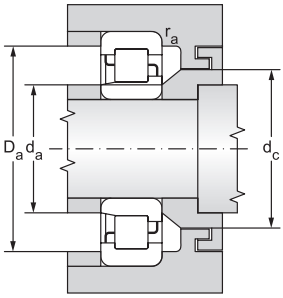
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
4,59	7900	9400	40	47	48,0	52,0	56	-	73	-	1,0	1,0	0,37	0,050
4,59	7900	9400		47	48,0	52,0	56	-	73	-	1,0	1,0	0,37	0,050
4,59	7900	9400		47	48,0	52,0	56	-	73	-	1,0	1,0	0,0000	
4,59	7900	9400		47	48,0	52,0	56	68	73	72	1,0	1,0	0,0000	
6,11	7900	9400		47	47,0	51,0	56	-	73	-	1,0	1,0	0,38	0,050
6,11	7900	9400		47	47,0	51,0	56	-	73	-	1,0	1,0	0,38	0,050
6,11	7900	9400		47	47,0	51,0	56	-	73	-	1,0	1,0	0,38	
6,85	7900	9400		47	48,0	52,0	56	-	73	-	1,0	1,0	0,74	
6,85	7900	9400		47	48,0	52,0	56	-	73	-	1,0	1,0	0,74	
6,85	7900	9400		47	48,0	52,0	56	-	73	-	1,0	1,0	0,74	
11,96	7500	8900		48	–	51,5		-	72	-	1,5	1,5	0,74	
5,88	7100	8400		47	51,0	55,0	61	-	81	-	1,5	1,5	0,66	0,090
5,88	7100	8400		47	51,0	55,0	61	-	81	-	1,5	1,5	0,66	0,090
5,88	7100	8400		47	51,0	55,0	61	-	81	-	1,5	1,5	0,66	
5,88	7100	8400		47	51,0	55,0	61	75	81	81	1,5	1,5	0,66	
9,50	6700	7900		47	50,0	54,0	60	-	81	-	1,5	1,5	0,67	0,080
9,50	6700	7900		47	50,0	54,0	60	-	81	-	1,5	1,5	0,67	0,080
9,50	6700	7900		47	50,0	54,0	60	-	81	-	1,5	1,5	0,67	
9,50	6700	7900		47	50,0	54,0	60	77	81	81	1,5	1,5	0,83	
15,00	6300	7500		47	50,0	54,0	60	-	81	-	1,5	1,5	1,00	
15,00	6300	7500		47	50,0	54,0	60	-	81	-	1,5	1,5	1,00	
15,00	6300	7500		47	50,0	54,0	60	-	81	-	1,5	1,5	1,00	
9,68	5600	6700		50	55,0	60,0	68	-	97	-	2,0	2,0	1,30	0,14
9,68	5600	6700		50	55,0	60,0	68	-	97	-	2,0	2,0	1,30	0,14
9,68	5600	6700		50	55,0	60,0	68	-	97	-	2,0	2,0	1,30	
9,68	5600	6700		50	55,0	60,0	68	90	97	95	2,0	2,0	1,30	

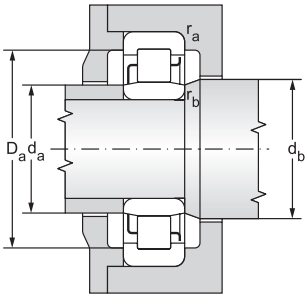


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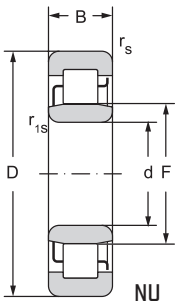
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
45	85	19,00	1,1	1,1	55		59,6	5,0	9,50	1,5	**NU209**		HJ209	43,8	41,1
	85	19,00	1,1	1,1	55		59,6	5,0	9,50	1,5	**NJ209**		HJ209	43,8	41,1
	85	19,00	1,1	1,1	55					1,5	**NUP209**			43,8	41,1
	85	19,00	1,1	1,1		75,0				1,5	**N209**			43,8	41,1
	85	19,00	1,1	1,1	54,5		59,1	5,0	8,50	1,4	**NU209E**	TNG	HJ209E	61,9	60,7
	85	19,00	1,1	1,1	54,5		59,1	5,0	8,50	1,4	**NJ209E**	TNG	HJ209E	61,9	60,7
	85	19,00	1,1	1,1	54,5					1,4	**NUP209E**	TNG		61,9	60,7
	85	19,00	1,1	1,1		76,5				1,4	**N209ETNG**			61,9	60,7
	85	23,00	1,1	1,1	54,5					1,6	**NU2209E**	TNG		76,4	79,4
	85	23,00	1,1	1,1	54,5					1,6	**NJ2209E**	TNG		76,4	79,4
	85	23,00	1,1	1,1	54,5					1,6	**NUP2209E**	TNG		76,4	79,4
	85	30,16	1,0	1,5	55,52					4,0	**NU5209M**			89,1	117,7
	100	25,00	1,5	1,5	58,5		65,0	7,0	12,50	1,4	**NU309**		HJ309	70,8	61,9
	100	25,00	1,5	1,5	58,5		65,0	7,0	12,50	1,4	**NJ309**		HJ309	70,8	61,9
	100	25,00	1,5	1,5	58,5					1,4	**NUP309**			70,8	61,9
	100	25,00	1,5	1,5		86,5				1,4	**N309**			70,8	61,9
	100	25,00	1,5	1,5	58,5		64,6	7,0	11,50	1,4	**NU309E**		HJ309E	102,0	98,0
	100	25,00	1,5	1,5	58,5		64,6	7,0	11,50	1,4	**NJ309E**		HJ309E	102,0	98,0
	100	25,00	1,5	1,5	58,5					1,4	**NUP309E**			102,0	98,0
	100	36,00	1,5	1,5	58,5					2,9	**NU2309E**			139,0	147,0
	100	36,00	1,5	1,5	58,5					2,9	**NJ2309E**			139,0	147,0
	100	36,00	1,5	1,5	58,5					2,9	**NUP2309E**			139,0	147,0
	120	29,00	2,0	2,0	64,5		72,8	8,0	13,50	1,5	**NU409**		HJ409	104,0	90,9
	120	29,00	2,0	2,0	64,5		72,8	8,0	13,50	1,5	**NJ409**		HJ409	104,0	90,9
	120	29,00	2,0	2,0	64,5					1,5	**NUP409**			104,0	90,9
	120	29,00	2,0	2,0		100,5				1,5	**N409**			104,0	90,9



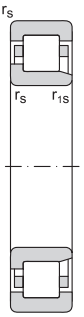




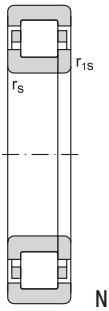
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
5,01	7500	8900	45	52	53,0	57,0	61	-	78	-	1,0	1,0	0,43	0,050
5,01	7500	8900		52	53,0	57,0	61	-	78	-	1,0	1,0	0,43	0,050
5,01	7500	8900		52	53,0	57,0	61	-	78	-	1,0	1,0	0,43	
5,01	7500	8900		52	53,0	57,0	61	74	78	78	1,0	1,0	0,43	
7,40	7500	8900		52	53,0	57,0	61	-	78	-	1,0	1,0	0,45	0,050
7,40	7500	8900		52	53,0	57,0	61	-	78	-	1,0	1,0	0,45	0,050
7,40	7500	8900		52	53,0	57,0	61	-	78	-	1,0	1,0	0,45	
7,40	7500	8900		52	53,0	57,0	61	74	78	78	1,0	1,0	0,43	
9,68	7100	8400		52	53,0	57,0	61	-	78	-	1,0	1,0	0,55	
9,68	7100	8400		52	53,0	57,0	61	-	78	-	1,0	1,0	0,55	
9,68	7100	8400		53	53,0	57,0	61	-	76	-	1,5	1,0	0,55	
14,35	6700	7900		53	-	57,0	-	-	76	-	1,5	1,0	0,80	
7,55	6300	7500		52	56,0	60,0	66	-	91	-	1,5	1,5	0,87	0,100
7,55	6300	7500		52	56,0	60,0	66	-	91	-	1,5	1,5	0,87	0,100
7,55	6300	7500		52	56,0	60,0	66	-	91	-	1,5	1,5	0,87	
7,55	6300	7500		52	56,0	60,0	66	84	91	90	1,5	1,5	0,87	
11,95	6000	7100		52	56,0	60,0	66	-	91	-	1,5	1,5	0,89	0,100
11,95	6000	7100		52	56,0	60,0	66	-	91	-	1,5	1,5	0,89	0,100
11,95	6000	7100		52	56,0	60,0	66	-	91	-	1,5	1,5	0,89	
17,93	5600	6700		52	56,0	60,0	66	-	91	-	1,5	1,5	1,36	
17,93	5600	6700		52	56,0	60,0	66	-	91	-	1,5	1,5	1,36	
17,93	5600	6700		52	56,0	60,0	66	-	91	-	1,5	1,5	1,36	
11,09	5300	6300		55	62,7	66,0	75	-	107	-	2,0	2,0	1,65	0,18
11,09	5300	6300		55	62,7	66,0	75	-	107	-	2,0	2,0	1,65	0,18
11,09	5300	6300		55	62,7	66,0	75	-	107	-	2,0	2,0	1,65	
11,09	5300	6300		55	62,7	66,0	75	99	107	103	2,0	2,0	1,65	



NU



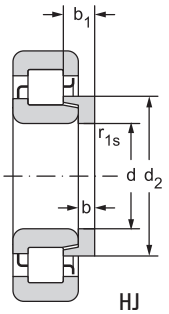
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NUP



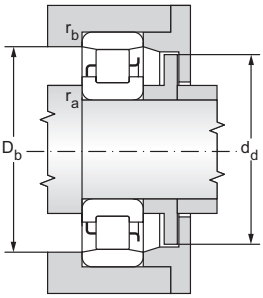
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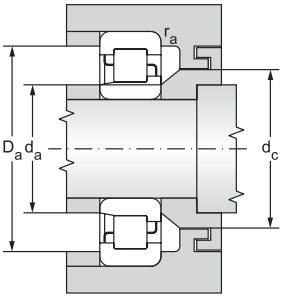


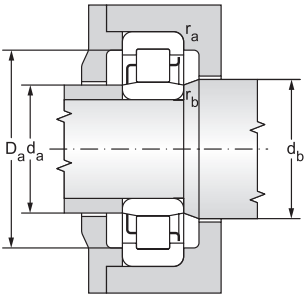
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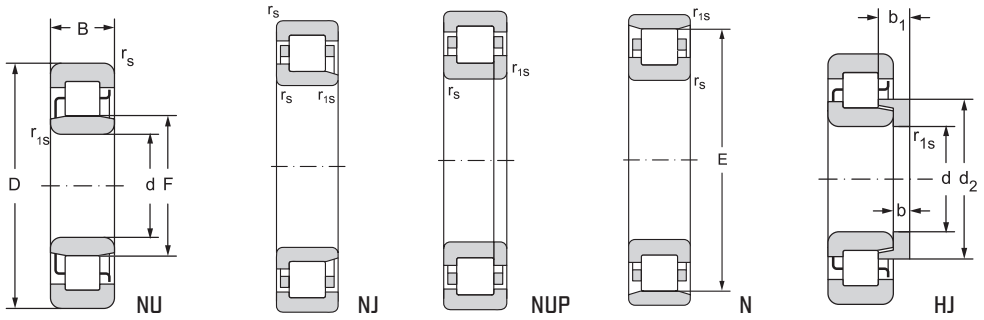
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
50	90	20,00	1,1	1,1	59,5		64,6	5,0	9,00	1,6	**NU210E**		HJ210E	64,3	65,6
	90	20,00	1,1	1,1	59,5		64,6	5,0	9,00	1,6	**NJ210E**		HJ210E	64,3	65,6
	90	20,00	1,1	1,1	59,5					1,6	**NUP210E**			64,3	65,6
	90	23,00	1,1	1,1	60,4					1,6	**NU2210**			63,1	66,8
	90	23,00	1,1	1,1	60,4					1,6	**NJ2210**			63,1	66,8
	90	23,00	1,1	1,1	60,4					1,6	**NUP2210**			63,1	66,8
	90	23,00	1,1	1,1	59,5					1,6	**NU2210E**			84,1	90,9
	90	23,00	1,1	1,1	59,5					1,6	**NJ2210E**			84,1	90,9
	90	23,00	1,1	1,1	59,5					1,6	**NUP2210E**			84,1	90,9
	90	30,16	1,0	1,5	60,46					4,5	**NU5210M**			92,6	128,0
	110	27,00	2,0	2,0	65		71,9	8,0	14,00	1,5	**NU310**		HJ310	87,4	79,4
	110	27,00	2,0	2,0	65		71,9	8,0	14,00	1,5	**NJ310**		HJ310	87,4	79,4
	110	27,00	2,0	2,0	65					1,5	**NUP310**			87,4	79,4
	110	27,00	2,0	2,0		95,0				1,5	**N310**			87,4	79,4
	110	27,00	2,0	2,0	65		71,4	8,0	13,00	1,5	**NU310ETNG**		HJ310E	117,0	114,0
	110	27,00	2,0	2,0	65		71,4	8,0	13,00	1,5	**NJ310ETNG**		HJ310E	117,0	114,0
	110	27,00	2,0	2,0	65					1,5	**NUP310ETNG**			117,0	114,0
	110	27,00	2,0	2,0		97,0				1,5	**N310ETNG**			117,0	114,0
	110	40,00	2,0	2,0	65					3,0	**NU2310**			123,0	126,0
	110	40,00	2,0	2,0	65					3,0	**NJ2310**			123,0	126,0
	110	40,00	2,0	2,0	65					3,0	**NUP2310**			123,0	126,0
	110	40,00	2,0	2,0	65					3,0	**NU2310EMAS**			168,0	178,0
	110	40,00	2,0	2,0	65					3,0	**NJ2310EMAS**			168,0	178,0
	110	40,00	2,0	2,0	65					3,0	**NUP2310EMAS**			168,0	178,0
	130	31,00	2,1	2,1	70,8		80,0	9,0	14,50	2,0	**NU410**		HJ410	139,0	114,0
	130	31,00	2,1	2,1	70,8		80,0	9,0	14,50	2,0	**NJ410**		HJ410	139,0	114,0
	130	31,00	2,1	2,1	70,8					2,0	**NUP410**			139,0	114,0
	130	31,00	2,1	2,1		110,8				2,0	**N410**			139,0	114,0





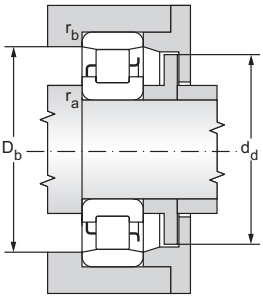


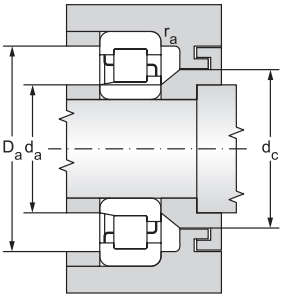
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
8,00	6700	7900	50	57	57,0	61,0	66	-	83	-	1,0	1,0	0,49	0,060
8,00	6700	7900		57	57,0	61,0	66	-	83	-	1,0	1,0	0,49	0,060
8,00	6700	7900		57	57,0	61,0	66	-	83	-	1,0	1,0	0,49	
8,15	7100	8400		57	58,0	62,0	66	-	83	-	1,0	1,0	0,58	
8,15	7100	8400		57	58,0	62,0	66	-	83	-	1,0	1,0	0,58	
8,15	7100	8400		57	58,0	62,0	66	-	83	-	1,0	1,0	0,58	
11,09	6700	7900		57	57,0	61,0	66	-	83	-	1,0	1,0	0,59	
11,09	6700	7900		57	57,0	61,0	66	-	83	-	1,0	1,0	0,59	
11,09	6700	7900		57	57,0	61,0	66	-	83	-	1,0	1,0	0,59	
15,61	6300	7500		58	-	62,0	-	-	81	-	1,5	1,0	0,88	
9,68	5600	6700		60	63,0	67,0	74	-	100	-	2,0	2,0	1,15	0,15
9,68	5600	6700		60	63,0	67,0	74	-	100	-	2,0	2,0	1,15	0,15
9,68	5600	6700		60	63,0	67,0	74	-	100	-	2,0	2,0	1,15	
9,68	5600	6700		60	63,0	67,0	74	93	100	99	2,0	2,0	1,15	
13,90	5300	6300		60	63,0	67,0	74	-	100	-	2,0	2,0	1,13	0,14
13,90	5300	6300		60	63,0	67,0	74	-	100	-	2,0	2,0	1,13	0,14
13,90	5300	6300		60	63,0	67,0	74	-	100	-	2,0	2,0	1,13	
13,90	5300	6300		60	63,0	67,0	74	95	100	100	2,0	2,0	1,13	
15,37	5600	6700		60	63,0	67,0	74	-	100	-	2,0	2,0	0,17	
15,37	5600	6700		60	63,0	67,0	74	-	100	-	2,0	2,0	0,17	
15,37	5600	6700		60	63,0	67,0	74	-	100	-	2,0	2,0	0,17	
21,71	5000	6000		60	63,0	67,0	74	-	100	-	2,0	2,0	1,83	
21,71	5000	6000		60	63,0	67,0	74	-	100	-	2,0	2,0	1,83	
21,71	5000	6000		60	63,0	67,0	74	-	100	-	2,0	2,0	1,83	
13,90	4700	5600		63	68,0	73,0	82	-	116	-	2,0	2,0	2,00	0,23
13,90	4700	5600		63	68,0	73,0	82	-	116	-	2,0	2,0	2,00	0,23
13,90	4700	5600		63	68,0	73,0	82	-	116	-	2,0	2,0	2,00	
13,90	4700	5600		63	68,0	73,0	82	109	116	114	2,0	2,0	2,00	

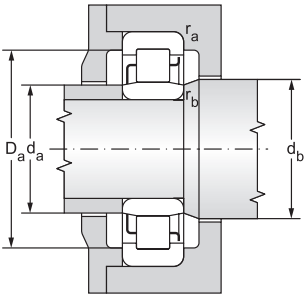


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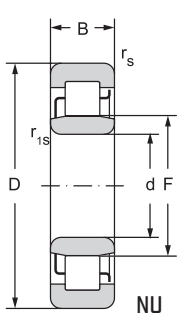
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
55	100	21,00	1,5	1,1	66,5		71,5	6,0	11,00	1,6	**NU211**		HJ211	56,2	56,2
	100	21,00	1,5	1,1	66,5		71,5	6,0	11,00	1,6	**NJ211**		HJ211	56,2	56,2
	100	21,00	1,5	1,1	66,5					1,6	**NUP211**			56,2	56,2
	100	21,00	1,5	1,1		88,5				1,6	**N211**			56,2	56,2
	100	21,00	1,5	1,1	66		71,0	6,0	9,50	1,6	**NU211E**		HJ211E	85,8	90,9
	100	21,00	1,5	1,1	66		71,0	6,0	9,50	1,6	**NJ211E**		HJ211E	85,8	90,9
	100	21,00	1,5	1,1	66					1,6	**NUP211E**			85,8	90,9
	100	25,00	1,5	1,1	66,5					1,6	**NU2211**			76,4	82,5
	100	25,00	1,5	1,1	66,5					1,6	**NJ2211**			76,4	82,5
	100	25,00	1,5	1,1	66,5					1,6	**NUP2211**			76,4	82,5
	100	33,34	1,5	2,1	66,9					4,5	**NU5211M**			119,0	171,0
	120	29,00	2,0	2,0	70,5		78,4	9,0	15,00	1,5	**NU311**		HJ311	108,0	100,0
	120	29,00	2,0	2,0	70,5		78,4	9,0	15,00	1,5	**NJ311**		HJ311	108,0	100,0
	120	29,00	2,0	2,0	70,5					1,5	**NUP311**			108,0	100,0
	120	29,00	2,0	2,0		104,5				1,5	**N311**			108,0	100,0
	120	29,00	2,0	2,0	70,5		77,7	9,0	14,00	1,5	**NU311E**		HJ311E	136,0	128,0
	120	29,00	2,0	2,0	70,5		77,7	9,0	14,00	1,5	**NJ311E**		HJ311E	136,0	128,0
	120	29,00	2,0	2,0	70,5					1,5	**NUP311E**			136,0	128,0
	140	33,00	2,1	2,1	77,2		86,4	10,0	16,60	3,0	**NU411**		HJ411	139,0	128,0
	140	33,00	2,1	2,1	77,2		86,4	10,0	16,60	3,0	**NJ411**		HJ411	139,0	128,0
	140	33,00	2,1	2,1	77,2					3,0	**NUP411**			139,0	128,0
	140	33,00	2,1	2,1		117,2				3,0	**N411**			139,0	128,0



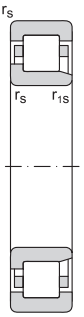




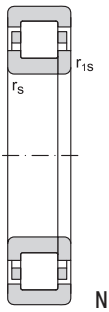
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}						mm						kg	
6,85	6300	7500	55	62	65,0	68,0	73	-	91	-	1,5	1,0	0,64	0,080
6,85	6300	7500		62	65,0	68,0	73	-	91	-	1,5	1,0	0,64	0,080
6,85	6300	7500		62	65,0	68,0	73	-	91	-	1,5	1,0	0,64	
6,85	6300	7500		62	65,0	68,0	73	86	91	91	1,5	1,0	0,64	
11,09	6300	7500		62	64,5	68,0	73	-	91	-	1,5	1,0	0,66	0,080
11,09	6300	7500		62	64,5	68,0	73	-	91	-	1,5	1,0	0,66	0,080
11,09	6300	7500		62	64,5	68,0	73	-	91	-	1,5	1,0	0,66	
10,06	6300	7500		62	65,0	68,0	73	-	91	-	1,5	1,0	0,78	
10,06	6300	7500		62	65,0	68,0	73	-	91	-	1,5	1,0	0,78	
10,06	6300	7500		62	65,0	68,0	73	-	91	-	1,5	1,0	0,78	
20,85	5600	6700		64	-	69,0	-	-	90	-	2,0	1,5	1,20	
12,20	5300	6300		65	67,0	72,0	80	-	110	-	2,0	2,0	1,45	0,19
12,20	5300	6300		65	67,0	72,0	80	-	110	-	2,0	2,0	1,45	0,19
12,20	5300	6300		65	67,0	72,0	80	-	110	-	2,0	2,0	1,45	
12,20	5300	6300		65	67,0	72,0	80	102	110	108	2,0	2,0	1,45	
15,61	4700	5600		65	67,0	72,0	80	-	110	-	2,0	2,0	1,38	0,18
15,61	4700	5600		65	67,0	72,0	80	-	110	-	2,0	2,0	1,38	0,18
15,61	4700	5600		65	67,0	72,0	80	-	110	-	2,0	2,0	1,38	
15,61	4500	5300		68	71,0	79,0	88	-	126	-	2,0	2,0	2,50	0,30
15,61	4500	5300		68	71,0	79,0	88	-	126	-	2,0	2,0	2,50	0,30
15,61	4500	5300		68	71,0	79,0	88	-	126	-	2,0	2,0	2,50	
15,61	4500	5300		68	71,0	79,0	88	115	126	120	2,0	2,0	2,50	



NU



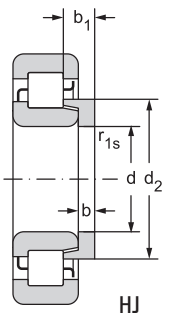
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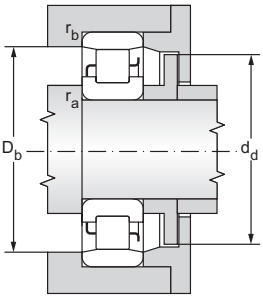
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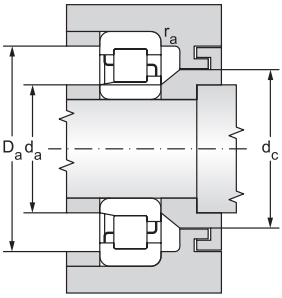


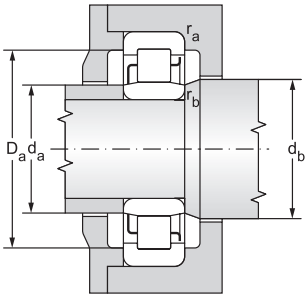
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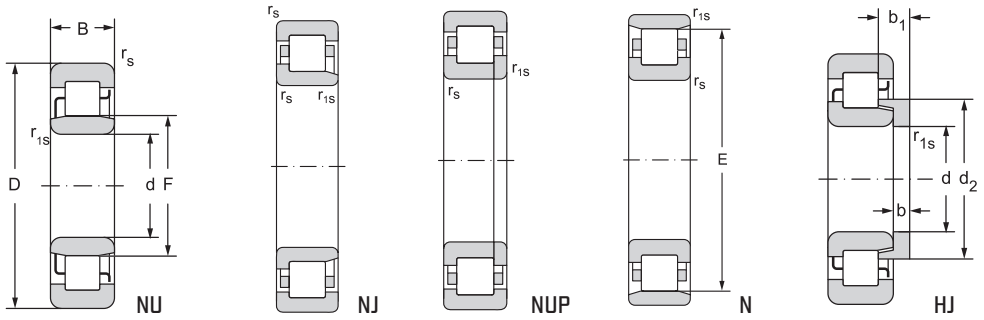
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
60	110	22,00	1,5	1,5	73,5		79,0	6,0	11,00	1,6	**NU212**		HJ212	66,8	68,1
	110	22,00	1,5	1,5	73,5		79,0	6,0	11,00	1,6	**NJ212**		HJ212	66,8	68,1
	110	22,00	1,5	1,5	73,5					1,6	**NUP212**			66,8	68,1
	110	22,00	1,5	1,5		97,5				1,6	**N212**			66,8	68,1
	110	28,00	1,5	1,5	73,5					1,6	**NU2212**			98,1	112,0
	110	28,00	1,5	1,5	73,5					1,6	**NJ2212**			98,1	112,0
	110	28,00	1,5	1,5	73,5					1,6	**NUP2212**			98,1	112,0
	110	36,50	1,5	2,0	72,38					4,5	**NU5212M**			150,0	211,0
	130	31,00	2,1	2,1	77		85,3	9,0	15,50	1,5	**NU312**		HJ312	121,0	114,0
	130	31,00	2,1	2,1	77		85,3	9,0	15,50	1,5	**NJ312**		HJ312	121,0	114,0
	130	31,00	2,1	2,1	77					1,5	**NUP312**			121,0	114,0
	130	31,00	2,1	2,1		113,0				1,5	**N312**			121,0	114,0
	130	46,00	2,1	2,1	77					4,5	**NU2312**			168,0	174,0
	130	46,00	2,1	2,1	77					4,5	**NJ2312**			168,0	174,0
	130	46,00	2,1	2,1	77					4,5	**NUP2312**			168,0	174,0
	150	35,00	2,1	2,1	83		93,1	10,0	16,50	2,0	**NU412**		HJ412	168,0	158,0
	150	35,00	2,1	2,1	83		93,1	10,0	16,50	2,0	**NJ412**		HJ412	168,0	158,0
	150	35,00	2,1	2,1	83					2,0	**NUP412**			168,0	158,0
	150	35,00	2,1	2,1		127,0				2,0	**N412**			168,0	158,0
65	120	23,00	1,5	1,5	79,6		85,6	6,0	11,00	1,6	**NU213**		HJ213	79,4	82,5
	120	23,00	1,5	1,5	79,6		85,6	6,0	11,00	1,6	**NJ213**		HJ213	79,4	82,5
	120	23,00	1,5	1,5	79,6					1,6	**NUP213**			79,4	82,5
	120	23,00	1,5	1,5		105,6				1,6	**N213**			79,4	82,5
	120	31,00	1,5	1,5	79,6					1,6	**NU2213**			117,0	136,0
	120	31,00	1,5	1,5	79,6					1,6	**NJ2213**			117,0	136,0
	120	31,00	1,5	1,5	79,6					1,6	**NUP2213**			117,0	136,0
	120	38,10	1,7	1,7	80,42					4,5	**NU5213M**			139,0	196,0
	140	33,00	2,1	2,1	83,5		92,2	10,0	17,00	1,5	**NU313**		HJ313	131,0	128,0
	140	33,00	2,1	2,1	83,5		92,2	10,0	17,00	1,5	**NJ313**		HJ313	131,0	128,0
	140	33,00	2,1	2,1	83,5					1,5	**NUP313**			131,0	128,0
	140	33,00	2,1	2,1		121,5				1,5	**N313**			131,0	128,0
	140	33,00	2,1	2,1	82,5		90,7	10,0	15,50	1,5	**NU313E**		HJ313E	181,0	178,0
	140	33,00	2,1	2,1	82,5		90,7	10,0	15,50	1,5	**NJ313E**		HJ313E	181,0	178,0
	140	33,00	2,1	2,1	82,5					1,5	**NUP313E**			181,0	178,0
	140	48,00	2,1	2,1	83,5					4,5	**NU2313**			192,0	203,0
	140	48,00	2,1	2,1	83,5					4,5	**NJ2313**			192,0	203,0
	140	48,00	2,1	2,1	83,5					4,5	**NUP2313**			192,0	203,0
	160	37,00	2,1	2,1	89,3		99,9	11,0	18,00	2,0	**NU413MAS**	M	HJ413	181,0	174,0
	160	37,00	2,1	2,1	89,3		99,9	11,0	18,00	2,0	**NJ413MAS**	M	HJ413	181,0	174,0
	160	37,00	2,1	2,1	89,3					2,0	**NUP413MAS**	M		181,0	174,0





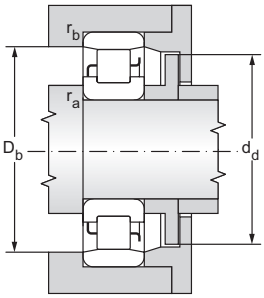


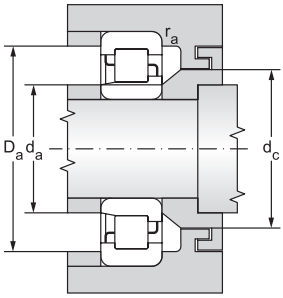
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
8,30	5600	6700	60	67	71,0	75,0	80	-	101	-	1,5	1,5	0,82	0,11
8,30	5600	6700		67	71,0	75,0	80	-	101	-	1,5	1,5	0,82	0,11
8,30	5600	6700		67	71,0	75,0	80	-	101	-	1,5	1,5	0,82	
8,30	5600	6700		67	71,0	75,0	80	95	101	101	1,5	1,5	0,82	
13,66	5600	6700		69	69,5	74,0	79	-	101	-	1,5	1,5	1,05	
13,66	5600	6700		69	69,5	74,0	79	-	101	-	1,5	1,5	1,05	
13,66	5600	6700		69	69,5	74,0	79	-	101	-	1,5	1,5	1,05	
25,73	5300	6300		69	-	74,0	-	-	99	-	2,0	1,5	1,59	
13,90	4700	5600		72	75,0	79,0	87	-	118	-	2,0	2,0	1,85	0,22
13,90	4700	5600		72	75,0	79,0	87	-	118	-	2,0	2,0	1,85	0,22
13,90	4700	5600		72	75,0	79,0	87	-	118	-	2,0	2,0	1,85	
13,90	4700	5600		72	75,0	79,0	87	110	118	117	2,0	2,0	1,85	
21,22	4700	5600		72	75,0	79,0	87	-	118	-	2,0	2,0	2,70	
21,22	4700	5600		72	75,0	79,0	87	-	118	-	2,0	2,0	2,70	
21,22	4700	5600		72	75,0	79,0	87	-	118	-	2,0	2,0	2,70	
18,99	4200	5000		73	77,0	85,0	95	-	136	-	2,0	2,0	3,00	0,34
18,99	4200	5000		73	77,0	85,0	95	-	136	-	2,0	2,0	3,00	0,34
18,99	4200	5000		73	77,0	85,0	95	-	136	-	2,0	2,0	3,00	
18,99	4200	5000		73	77,0	85,0	95	124	136	130	2,0	2,0	3,00	
10,06	5300	6300	65	72	77,0	81,0	87	-	111	-	1,5	1,5	1,05	0,13
10,06	5300	6300		72	77,0	81,0	87	-	111	-	1,5	1,5	1,05	0,13
10,06	5300	6300		72	77,0	81,0	87	-	111	-	1,5	1,5	1,05	
10,06	5300	6300		72	77,0	81,0	87	103	111	110	1,5	1,5	1,05	
16,59	5300	6300		72	77,0	81,0	87	-	111	-	1,5	1,5	1,45	
16,59	5300	6300		72	77,0	81,0	87	-	111	-	1,5	1,5	1,45	
16,59	5300	6300		72	77,0	81,0	87	-	111	-	1,5	1,5	1,45	
23,90	4700	5600		77	-	83,0	-	-	108	-	1,5	1,5	1,88	
15,49	4500	5300		76	78,0	85,0	94	-	128	-	2,0	2,0	2,25	0,29
15,49	4500	5300		76	78,0	85,0	94	-	128	-	2,0	2,0	2,25	0,29
15,49	4500	5300		76	78,0	85,0	94	-	128	-	2,0	2,0	2,25	
15,49	4500	5300		76	78,0	85,0	94	119	128	126	2,0	2,0	2,25	
21,55	4200	5000		76	77,0	84,0	93	-	128	-	2,0	2,0	2,35	0,27
21,55	4200	5000		76	77,0	84,0	93	-	128	-	2,0	2,0	2,35	0,27
21,55	4200	5000		76	77,0	84,0	93	-	128	-	2,0	2,0	2,35	
24,57	4500	5300		76	78,0	85,0	94	-	128	-	2,0	2,0	3,25	
24,57	4500	5300		76	78,0	85,0	94	-	128	-	2,0	2,0	3,25	
24,57	4500	5300		76	78,0	85,0	94	-	128	-	2,0	2,0	3,25	
20,48	3800	4500		78	83,0	91,0	101	-	146	-	2,0	2,0	3,60	0,43
20,48	3800	4500		78	83,0	91,0	101	-	146	-	2,0	2,0	3,60	0,43
20,48	3800	4500		78	83,0	91,0	101	-	146	-	2,0	2,0	3,60	

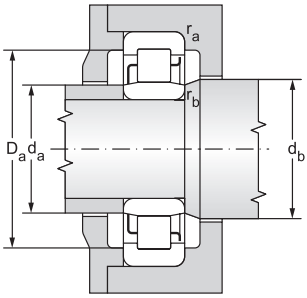


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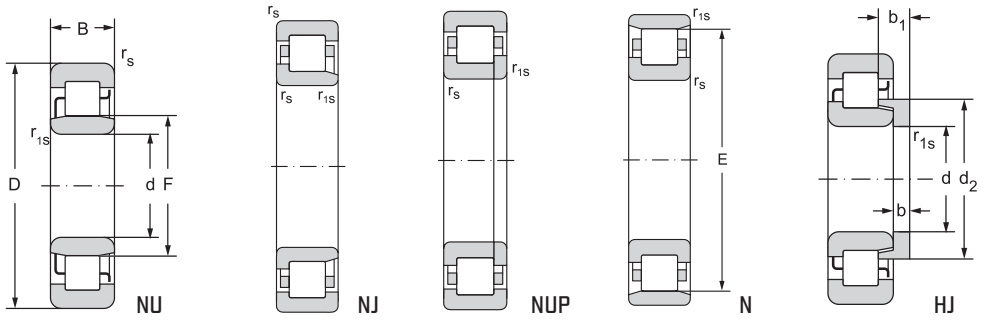
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
70	125	24,00	1,5	1,5	84,5		90,5	7,0	12,50	1,6	**NU214**		HJ214	79,4	82,5
	125	24,00	1,5	1,5	84,5		90,5	7,0	12,50	1,6	**NJ214**		HJ214	79,4	82,5
	125	24,00	1,5	1,5	84,5					1,6	**NUP214**			79,4	82,5
	125	24,00	1,5	1,5		110,5				1,6	**N214**			79,4	82,5
	125	31,00	1,5	1,5	84,5					1,6	**NU2214**			117,0	139,0
	125	31,00	1,5	1,5	84,5					1,6	**NJ2214**			117,0	139,0
	125	31,00	1,5	1,5	84,5					1,6	**NUP2214**			117,0	139,0
	125	39,69	1,5	2,2	84,84					4,5	**NU5214M**			178,0	261,0
	150	35,00	2,1	2,1	90		99,2	10,0	17,50	1,5	**NU314**		HJ314	147,0	144,0
	150	35,00	2,1	2,1	90		99,2	10,0	17,50	1,5	**NJ314**		HJ314	147,0	144,0
	150	35,00	2,1	2,1	90					1,5	**NUP314**			147,0	144,0
	150	35,00	2,1	2,1		130,0				1,5	**N314**			147,0	144,0
	150	51,00	2,1	2,1	90					4,1	**NU2314**			215,0	233,0
	150	51,00	2,1	2,1	90					4,1	**NJ2314**			215,0	233,0
	150	51,00	2,1	2,1	90					4,1	**NUP2314**			215,0	233,0
	150	51,00	2,1	2,1	89					4,1	**NU2314EMAS**			282,0	310,0
	150	51,00	2,1	2,1	89					4,1	**NJ2314EMAS**			282,0	310,0
	150	51,00	2,1	2,1	89					4,1	**NUP2314EMAS**			282,0	310,0
	180	42,00	3,0	3,0	100		112,0	12,0	20,00	2,0	**NU414**		HJ414	224,0	215,0
	180	42,00	3,0	3,0	100		112,0	12,0	20,00	2,0	**NJ414**		HJ414	224,0	215,0
	180	42,00	3,0	3,0	100					2,0	**NUP414**			224,0	215,0
	180	42,00	3,0	3,0		152,0				2,0	**N414**			224,0	215,0





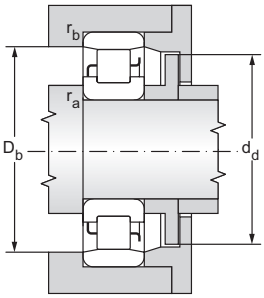


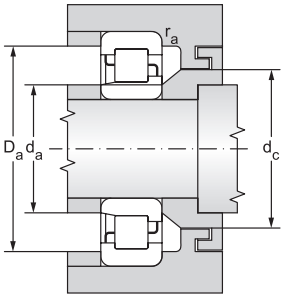
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
10,06	5600	6700	70	77	82,0	86,0	92	-	116	-	1,5	1,5	1,15	0,16
10,06	5600	6700		77	82,0	86,0	92	-	116	-	1,5	1,5	1,15	0,16
10,06	5600	6700		77	82,0	86,0	92	-	116	-	1,5	1,5	1,15	
10,06	5600	6700		77	82,0	86,0	92	108	116	115	1,5	1,5	1,15	
16,95	5000	6000		77	82,0	86,0	92	-	116	-	1,5	1,5	1,50	
16,95	5000	6000		77	82,0	86,0	92	-	116	-	1,5	1,5	1,50	
16,95	5000	6000		77	82,0	86,0	92	-	116	-	1,5	1,5	1,50	
31,83	4700	5600		81,5	-	87,0	-	-	112	-	2,0	1,5	2,22	
17,07	4200	5000		81	85,0	92,0	101	-	138	-	2,0	2,0	2,75	0,34
19,14	4200	5000		81	85,0	92,0	101	-	138	-	2,0	2,0	2,75	0,34
19,14	4200	5000		81	85,0	92,0	101	-	138	-	2,0	2,0	2,75	
19,14	4200	5000		81	85,0	92,0	101	127	138	135	2,0	2,0	2,75	
27,61	4200	5000		81	85,0	92,0	101	-	138	-	2,0	2,0	5,25	
27,61	4200	5000		81	85,0	92,0	101	-	138	-	2,0	2,0	5,25	
27,61	4200	5000		81	85,0	92,0	101	-	138	-	2,0	2,0	5,25	
36,74	3800	4500		81	84,0	91,0	100	-	138	-	2,0	2,0	4,21	
36,74	3800	4500		81	84,0	91,0	100	-	138	-	2,0	2,0	4,21	
36,74	3800	4500		81	84,0	91,0	100	-	138	-	2,0	2,0	4,21	
24,52	3300	4000		85	93,0	102,0	114	-	164	-	2,5	2,5	5,25	0,61
24,52	3300	4000		85	93,0	102,0	114	-	164	-	2,5	2,5	5,25	0,61
24,52	3300	4000		85	93,0	102,0	114	-	164	-	2,5	2,5	5,25	
24,52	3300	4000		85	93,0	102,0	114	149	164	156	2,5	2,5	5,25	

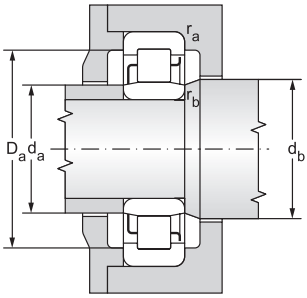


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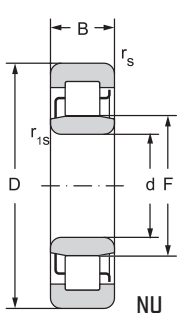
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
75	130	25,00	1,5	1,5	88,5		94,9	7,0	12,50	1,6	**NU215**		HJ215	96,2	96,2
	130	25,00	1,5	1,5	88,5		94,9	7,0	12,50	1,6	**NJ215**		HJ215	96,2	96,2
	130	25,00	1,5	1,5	88,5					1,6	**NUP215**			96,2	96,2
	130	25,00	1,5	1,5		116,5				1,6	**N215**			96,2	96,2
	130	25,00	1,5	1,5	88,5		94,6	7,0	11,00	1,6	**NU215E**		HJ215E	131,0	147,0
	130	25,00	1,5	1,5	88,5		94,6	7,0	11,00	1,6	**NJ215E**		HJ215E	131,0	147,0
	130	25,00	1,5	1,5	88,5					1,6	**NUP215E**			131,0	147,0
	130	31,00	1,5	1,5	88,5					2,1	**NU2215E**			162,0	196,0
	130	31,00	1,5	1,5	88,5					2,1	**NJ2215E**			162,0	196,0
	130	31,00	1,5	1,5	88,5					2,1	**NUP2215E**			162,0	196,0
	130	41,28	1,5	1,5	89,014					4,5	**NU5215M**			196,0	299,0
	160	37,00	2,1	2,1	95,5		105,6	11,0	18,50	1,5	**NU315**		HJ315	178,0	178,0
	160	37,00	2,1	2,1	95,5		105,6	11,0	18,50	1,5	**NJ315**		HJ315	178,0	178,0
	160	37,00	2,1	2,1	95,5					1,5	**NUP315**			178,0	178,0
	160	37,00	2,1	2,1		139,5				1,5	**N315**			178,0	178,0
	160	55,00	2,1	2,1	95,5					4,5	**NU2315**			266,0	287,0
	160	55,00	2,1	2,1	95,5					4,5	**NJ2315**			266,0	287,0
	160	55,00	2,1	2,1	95,5					4,5	**NUP2315**			266,0	287,0
	190	45,00	3,0	2,0	104,5		117,0	13,0	21,50	2,0	**NU415**		HJ415	261,0	251,0
	190	45,00	3,0	2,0	104,5		117,0	13,0	21,50	2,0	**NJ415**		HJ415	261,0	251,0
	190	45,00	3,0	2,0	104,5					2,0	**NUP415**			261,0	251,0
	190	45,00	3,0	2,0		160,5				2,0	**N415**			261,0	251,0



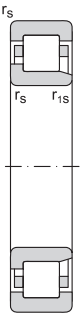




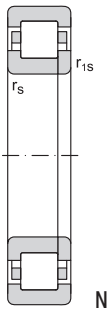
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}						mm						kg	
11,65	4700	5600	75	82	85,0	90,0	96	-	121	-	1,5	1,5	1,25	0,17
11,65	4700	5600		82	85,0	90,0	96	-	121	-	1,5	1,5	1,25	0,17
11,65	4700	5600		82	85,0	90,0	96	-	121	-	1,5	1,5	1,25	
11,65	4700	5600		82	85,0	90,0	96	114	121	120	1,5	1,5	1,25	
17,79	4500	5300		82	85,0	90,0	96	-	121	-	1,5	1,5	1,30	0,16
17,79	4500	5300		82	85,0	90,0	96	-	121	-	1,5	1,5	1,30	0,16
17,79	4500	5300		82	85,0	90,0	96	-	121	-	1,5	1,5	1,30	
23,73	4500	5300		82	85,0	90,0	96	-	121	-	1,5	1,5	1,65	
23,73	4500	5300		82	85,0	90,0	96	-	121	-	1,5	1,5	1,65	
23,73	4500	5300		82	85,0	90,0	96	-	121	-	1,5	1,5	1,65	
36,19	4500	5300		85,5	-	91,0	-	-	117	-	2,0	1,5	2,41	
20,68	3800	4500		86	93,0	97,0	107	-	148	-	2,0	2,0	3,25	0,40
20,68	3800	4500		86	93,0	97,0	107	-	148	-	2,0	2,0	3,25	0,40
20,68	3800	4500		86	93,0	97,0	107	-	148	-	2,0	2,0	3,25	
20,68	3800	4500		86	93,0	97,0	107	137	148	145	2,0	2,0	3,25	
33,35	3800	4500		86	93,0	97,0	107	-	148	-	2,0	2,0	4,85	
33,35	3800	4500		86	93,0	97,0	107	-	148	-	2,0	2,0	4,85	
33,35	3800	4500		86	93,0	97,0	107	-	148	-	2,0	2,0	4,85	
28,13	3200	3800		90	98,0	107,0	119	-	174	-	2,5	2,5	6,25	0,80
28,13	3200	3800		90	98,0	107,0	119	-	174	-	2,5	2,5	6,25	0,80
28,13	3200	3800		90	98,0	107,0	119	-	174	-	2,5	2,5	6,25	
28,13	3200	3800		90	98,0	107,0	119	158	174	164	2,5	2,5	6,25	



NU



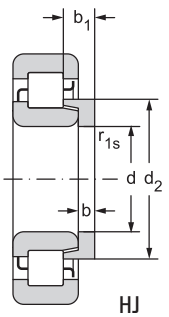
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NUP



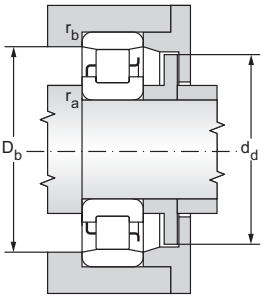
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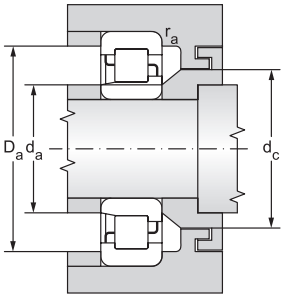


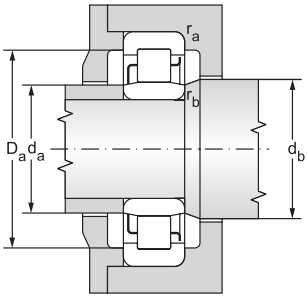
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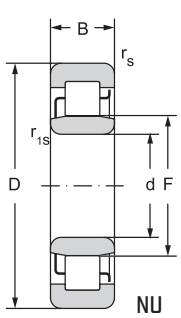
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
80	125	22,00	1,1	1,0	91,5					1,2	**NU1016**			66,8	76,4
	140	26,00	2,0	2,0	95,3		102,2	8,0	13,50	2,0	**NU216**		HJ216	106,0	114,0
	140	26,00	2,0	2,0	95,3		102,2	8,0	13,50	2,0	**NJ216**		HJ216	106,0	114,0
	140	26,00	2,0	2,0	95,3					2,0	**NUP216**			106,0	114,0
	140	26,00	2,0	2,0		125,3				2,0	**N216**			106,0	114,0
	140	33,00	2,0	2,0	95,3					2,5	**NU2216**			147,0	178,0
	140	33,00	2,0	2,0	95,3					2,5	**NJ2216**			147,0	178,0
	140	33,00	2,0	2,0	95,3					2,5	**NUP2216**			147,0	178,0
	140	33,00	2,0	2,0	95,3					2,5	**NU2216E**			196,0	246,0
	140	33,00	2,0	2,0	95,3					2,5	**NJ2216E**			196,0	246,0
	140	33,00	2,0	2,0	95,3					2,5	**NUP2216E**			196,0	246,0
	140	44,45	2,1	2,1	95,28					5,0	**NU5216M**			185,0	282,0
	170	39,00	2,1	2,1	103		113,1	11,0	19,50	1,5	**NU316**		HJ316	192,0	192,0
	170	39,00	2,1	2,1	103		113,1	11,0	19,50	1,5	**NJ316**		HJ316	192,0	192,0
	170	39,00	2,1	2,1	103					1,5	**NUP316**			192,0	192,0
	170	39,00	2,1	2,1		147,0				1,5	**N316**			192,0	192,0
	200	48,00	3,0	3,0	110		123,8	13,0	22,00	2,0	**NU416M**		HJ416	299,0	293,0
	200	48,00	3,0	3,0	110		123,8	13,0	22,00	2,0	**NJ416M**		HJ416	299,0	293,0
	200	48,00	3,0	3,0	110					2,0	**NUP416M**			299,0	293,0
	200	48,00	3,0	3,0		170,0				2,0	**N416M**			299,0	293,0
85	150	28,00	2,0	2,0	101,8		109,2	8,0	14,00	2,0	**NU217**		HJ217	121,0	131,0
	150	28,00	2,0	2,0	101,8		109,2	8,0	14,00	2,0	**NJ217**		HJ217	121,0	131,0
	150	28,00	2,0	2,0	101,8					2,0	**NUP217**			121,0	131,0
	150	28,00	2,0	2,0		133,8				2,0	**N217**			121,0	131,0
	150	36,00	2,0	2,0	100,5					2,0	**NU2217E**			220,0	261,0
	150	36,00	2,0	2,0	100,5					2,0	**NJ2217E**			220,0	261,0
	150	36,00	2,0	2,0	100,5					2,0	**NUP2217E**			220,0	261,0
	150	49,21	2,1	2,1	102					5,5	**NU5217M**			211,0	316,0
	180	41,00	3,0	3,0	108		119,0	12,0	20,50	2,0	**NU317**		HJ317	215,0	215,0
	180	41,00	3,0	3,0	108		119,0	12,0	20,50	2,0	**NJ317**		HJ317	215,0	215,0
	180	41,00	3,0	3,0	108					2,0	**NUP317**			215,0	215,0
	180	41,00	3,0	3,0		156,0				2,0	**N317**			215,0	215,0
	210	52,00	4,0	4,0	113		127,7	14,0	24,00	2,5	**NU417M**	MAS	HJ417	362,0	362,0
	210	52,00	4,0	4,0	113		127,7	14,0	24,00	2,5	**NJ417M**	MAS	HJ417	362,0	362,0
	210	52,00	4,0	4,0	113					2,5	**NUP417**			362,0	362,0



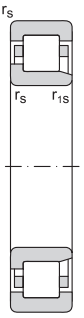




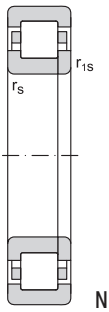
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
9,25	5000	6000	80	85	90,0	94,0	-	-	118	-	1,0	1,0	0,99	
13,51	4500	5300		90	92,0	97,0	104	-	130	-	2,0	2,0	1,50	0,21
13,51	4500	5300		90	92,0	97,0	104	-	130	-	2,0	2,0	1,50	0,21
13,51	4500	5300		90	92,0	97,0	104	-	130	-	2,0	2,0	1,50	
13,51	4500	5300		90	92,0	97,0	104	125	130	130	2,0	2,0	1,50	
21,10	4500	5300		90	92,0	97,0	104	-	130	-	2,0	2,0	1,95	
21,10	4500	5300		90	92,0	97,0	104	-	130	-	2,0	2,0	1,95	
21,10	4500	5300		90	92,0	97,0	104	-	130	-	2,0	2,0	1,95	
29,15	4200	5000		90	92,0	97,0	104	-	130	-	2,0	2,0	2,05	
29,15	4200	5000		90	92,0	97,0	104	-	130	-	2,0	2,0	2,05	
29,15	4200	5000		90	92,0	97,0	104	-	130	-	2,0	2,0	2,05	
33,42	4200	5000		91,5	-	98,0	-	-	126	-	2,0	2,0	2,91	
21,90	3500	4200		99	97,0	105,0	116	-	158	-	2,0	2,0	3,90	0,49
21,90	3500	4200		99	97,0	105,0	116	-	158	-	2,0	2,0	3,90	0,49
21,90	3500	4200		99	97,0	105,0	116	-	158	-	2,0	2,0	3,90	
21,90	3500	4200		99	97,0	105,0	116	144	158	153	2,0	2,0	3,90	
32,30	3000	3500		95	105,0	112,0	125	-	184	-	2,5	2,5	7,30	0,80
32,30	3000	3500		95	105,0	112,0	125	-	184	-	2,5	2,5	7,30	0,80
32,30	3000	3500		95	105,0	112,0	125	-	184	-	2,5	2,5	7,30	
32,30	3000	3500		95	105,0	112,0	125	167	184	174	2,5	2,5	7,30	
15,22	4200	5000	85	95	99,0	104,0	111	-	140	-	2,0	2,0	1,90	0,25
15,22	4200	5000		95	99,0	104,0	111	-	140	-	2,0	2,0	1,90	0,25
15,22	4200	5000		95	99,0	104,0	111	-	140	-	2,0	2,0	1,90	0,25
15,22	4200	5000		95	99,0	104,0	111	131	140	138	2,0	2,0	1,90	0,25
30,33	3800	4500		95	98,0	103,0	110	-	140	–	2,0	2,0	2,52	
30,33	3800	4500		95	98,0	103,0	110	-	140	–	2,0	2,0	2,52	
30,33	3800	4500		95	98,0	103,0	110	-	140	–	2,0	2,0	2,52	
36,72	3800	4500		98	-	105,0	-	-	135	-	2,0	2,0	3,69	
24,10	3300	4000		98	103,0	110,0	121	174	166	162	2,5	2,5	4,50	0,57
24,10	3300	4000		98	103,0	110,0	121	174	166	162	2,5	2,5	4,50	0,57
24,10	3300	4000		98	103,0	110,0	121	174	166	162	2,5	2,5	4,50	
24,10	3300	4000		98	103,0	110,0	121	174	166	162	2,5	2,5	4,50	
39,29	3000	3500		105	108,0	115,0	129	-	190	-	3,0	3,0	8,70	0,89
39,29	3000	3500		105	108,0	115,0	129	-	190	-	3,0	3,0	8,70	0,89
39,29	3000	3500		105	108,0	115,0	129	-	190	-	3,0	3,0	8,70	



NU



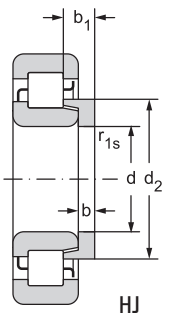
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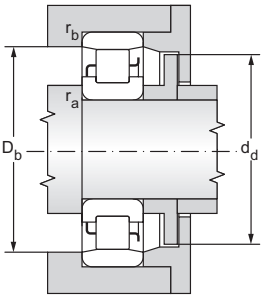
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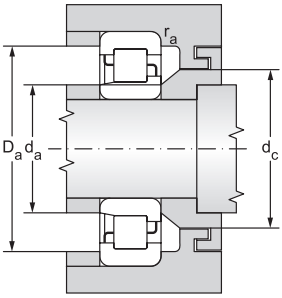


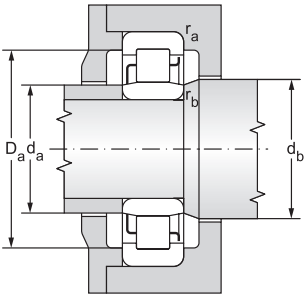
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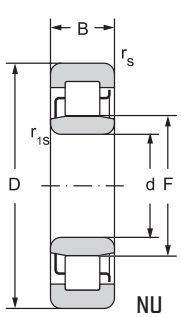
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
90	160	30,00	2,0	2,0	107		115,3	9,0	15,00	2,0	**NU218**		HJ218	147,0	158,0
	160	30,00	2,0	2,0	107		115,3	9,0	15,00	2,0	**NJ218**		HJ218	147,0	158,0
	160	30,00	2,0	2,0	107					2,0	**NUP218**			147,0	158,0
	160	30,00	2,0	2,0		143,0				2,0	**N218**			147,0	158,0
	160	40,00	2,0	2,0	107					2,0	**NJ2218EM**	F		241,0	313,0
	160	52,40	2,1	3,0	107,218					6,0	**NU5218M**			237,0	355,0
	190	43,00	3,0	3,0	115		126,5	12,0	21,00	2,0	**NU318**		HJ318	233,0	242,0
	190	43,00	3,0	3,0	115		126,5	12,0	21,00	2,0	**NJ318**		HJ318	233,0	242,0
	190	43,00	3,0	3,0	115					2,0	**NUP318**			233,0	242,0
	190	43,00	3,0	3,0		165,0				2,0	**N318**			233,0	242,0
	190	43,00	3,0	3,0	113,5		124,2	12,0	18,50	2,0	**NU318EM**		HJ318E	316,0	329,0
	190	43,00	3,0	3,0	113,5		124,2	12,0	18,50	2,0	**NJ318EM**		HJ318E	316,0	329,0
	190	43,00	3,0	3,0	113,5					2,0	**NUP318EM**			316,0	329,0
	225	54,00	4,0	4,0	123,5		139,1	14,0	24,00	2,5	**NU418M**	MAS	HJ418	391,0	406,0
	225	54,00	4,0	4,0	123,5		139,1	14,0	24,00	2,5	**NJ418M**	MAS	HJ418	391,0	406,0
	225	54,00	4,0	4,0	123,5					2,5	**NUP418M**	MAS		391,0	406,0
95	170	32,00	2,1	2,1	113,5		122,2	9,0	15,50	2,0	**NU219**		HJ219	162,0	181,0
	170	32,00	2,1	2,1	113,5		122,2	9,0	15,50	2,0	**NJ219**		HJ219	162,0	181,0
	170	32,00	2,1	2,1	113,5					2,0	**NUP219**			162,0	181,0
	170	32,00	2,1	2,1		151,5				2,0	**N219**			162,0	181,0
	170	43,00	2,1	2,1	113,5					3,0	**NU2219**			233,0	282,0
	170	43,00	2,1	2,1	113,5					3,0	**NJ2219**			233,0	282,0
	170	43,00	2,1	2,1	113,5					3,0	**NUP2219**			233,0	282,0
	170	55,56	2,5	3,0	113,52					6,0	**NU5219M**			335,0	511,0
	200	45,00	3,0	3,0	121,5					2,0	**NU319**			256,0	266,0
	200	45,00	3,0	3,0	121,5					2,0	**NJ319**			256,0	266,0
	200	45,00	3,0	3,0	121,5					2,0	**NUP319**			256,0	266,0
	200	45,00	3,0	3,0		173,5				2,0	**N319**			256,0	266,0
	200	45,00	3,0	3,0	121,5					1,9	**NU319EM**			329,0	362,0
	200	45,00	3,0	3,0	121,5					1,9	**NJ319EM**			329,0	362,0
	200	45,00	3,0	3,0	121,5					1,9	**NUP319EM**			329,0	362,0
	240	55,00	4,0	4,0	133,5					2,5	**NU419M**			430,0	447,0
	240	55,00	4,0	4,0	133,5					2,5	**NJ419M**			430,0	447,0
	240	55,00	4,0	4,0	133,5					2,5	**NUP419M**			430,0	447,0



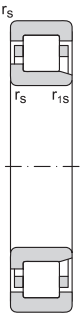




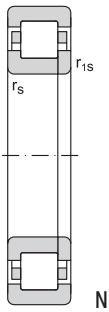
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
18,02	4000	4700	90	100	105,0	109,0	117	-	150	-	2,0	2,0	2,30	0,31
18,02	4000	4700		100	105,0	109,0	117	-	150	-	2,0	2,0	2,30	0,31
18,02	4000	4700		100	105,0	109,0	117	-	150	-	2,0	2,0	2,30	
18,02	4000	4700		100	105,0	109,0	117	140	150	147	2,0	2,0	2,30	
35,70	3800	4500		100	105,0	109,0	-	-	150	-	2,0	2,0	3,60	
40,49	3500	4200		103	-	110,0	-	-	144	-	2,5	2,0	4,48	
26,68	3200	3800		103	111,0	117,0	128	-	176	-	2,5	2,5	5,40	0,65
26,68	3200	3800		103	111,0	117,0	128	-	176	-	2,5	2,5	5,40	0,65
26,68	3200	3800		103	111,0	117,0	128	-	176	-	2,5	2,5	5,40	
26,68	3200	3800		103	111,0	117,0	128	162	176	172	2,5	2,5	5,40	
36,27	3000	3500		103	110,0	116,0	127	-	176	-	2,5	2,5	5,50	0,60
36,27	3000	3500		103	110,0	116,0	127	-	176	-	2,5	2,5	5,50	0,60
36,27	3000	3500		103	110,0	116,0	127	-	176	-	2,5	2,5	5,50	
43,20	2700	3200		110	117,0	125,0	140	-	205	-	3,0	3,0	11,7	1,05
43,20	2700	3200		110	117,0	125,0	140	-	205	-	3,0	3,0	11,7	1,05
43,20	2700	3200		110	117,0	125,0	140	-	205	-	3,0	3,0	11,7	
20,29	3800	4500	95	107	111,0	116,0	124	-	158	-	2,0	2,0	2,80	0,35
20,29	3800	4500		107	111,0	116,0	124	-	158	-	2,0	2,0	2,80	0,35
20,29	3800	4500		107	111,0	116,0	124	-	158	-	2,0	2,0	2,80	
20,29	3800	4500		107	111,0	116,0	124	149	158	155	2,0	2,0	2,80	
31,61	3800	4500		107	111,0	116,0	124	-	158	-	2,0	2,0	3,85	
31,61	3800	4500		107	111,0	116,0	124	-	158	-	2,0	2,0	3,85	
31,61	3800	4500		107	111,0	116,0	124	-	158	-	2,0	2,0	3,85	
57,27	3300	4000		110	-	117,0	-	-	153	-	2,5	2,0	5,65	
28,87	3200	3800		109	119,0	124,0	135	-	186	-	2,5	2,5	6,20	
28,87	3200	3800		109	119,0	124,0	135	-	186	-	2,5	2,5	6,20	
28,87	3200	3800		109	119,0	124,0	135	-	186	-	2,5	2,5	6,20	
28,87	3200	3800		109	119,0	124,0	135	170	186	178	2,5	2,5	6,20	
39,29	2800	3300		109	119,0	124,0	135	-	186	-	2,5	2,5	6,50	
39,29	2800	3300		109	119,0	124,0	135	-	186	-	2,5	2,5	6,50	
39,29	2800	3300		109	119,0	124,0	135	-	186	-	2,5	2,5	6,50	
46,70	2500	3000		115	125,0	136,0	151	-	220	-	3,0	3,0	13,5	
46,70	2500	3000		115	125,0	136,0	151	-	220	-	3,0	3,0	13,5	
46,70	2500	3000		115	125,0	136,0	151	-	220	-	3,0	3,0	13,5	



NU



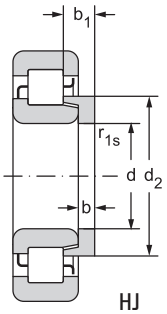
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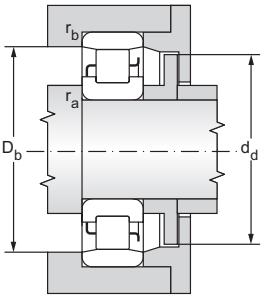
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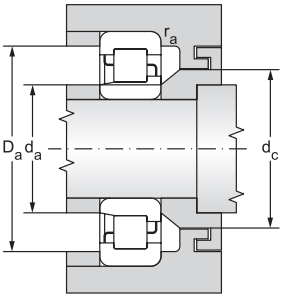


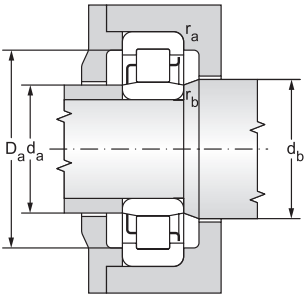
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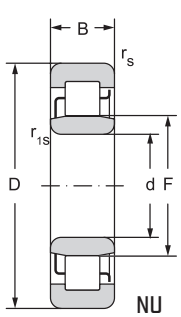
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
100	180	34,00	2,1	2,1	120		129,2	10,0	17,00	2,0	**NU220**		HJ220	178,0	203,0
	180	34,00	2,1	2,1	120		129,2	10,0	17,00	2,0	**NJ220**		HJ220	178,0	203,0
	180	34,00	2,1	2,1	120					2,0	**NUP220**			178,0	203,0
	180	34,00	2,1	2,1		160,0				2,0	**N220**			178,0	203,0
	180	46,00	2,1	2,1	120					3,0	**NU2220M**			261,0	322,0
	180	46,00	2,1	2,1	120					3,0	**NJ2220M**			261,0	322,0
	180	46,00	2,1	2,1	120					3,0	**NUP2220M**			261,0	322,0
	180	60,32	2,1	2,1	121,005					7,0	**NU5220M**			304,0	473,0
	215	47,00	3,0	3,0	129,5		142,4	13,0	22,50	2,0	**NU320**		HJ320	299,0	310,0
	215	47,00	3,0	3,0	129,5		142,4	13,0	22,50	2,0	**NJ320**		HJ320	299,0	310,0
	215	47,00	3,0	3,0	129,5					2,0	**NUP320**			299,0	310,0
	215	47,00	3,0	3,0		185,5				2,0	**N320**			299,0	310,0
	215	73,00	3,0	3,0	127,5					4,9	**NU2320EMAS**	M		596,0	694,0
	215	73,00	3,0	3,0	127,5					4,9	**NJ2320EMAS**	M		596,0	694,0
	215	73,00	3,0	3,0	127,5					4,9	**NUP2320EMAS**	M		596,0	694,0
	250	58,00	4,0	4,0	139		155,9	16,0	27,00	2,5	**NU420M**		HJ420	473,0	501,0
	250	58,00	4,0	4,0	139		155,9	16,0	27,00	2,5	**NJ420M**		HJ420	473,0	501,0
	250	58,00	4,0	4,0	139					2,5	**NUP420M**			473,0	501,0
105	190	36,00	2,1	2,1	126,8		136,5	10,0	17,50	2,0	**NU221**		HJ221	200,0	224,0
	190	36,00	2,1	2,1	126,8		136,5	10,0	17,50	2,0	**NJ221**		HJ221	200,0	224,0
	190	36,00	2,1	2,1	126,8					2,0	**NUP221**			200,0	224,0
	190	36,00	2,1	2,1		168,8				2,0	**N221**			200,0	224,0
	190	65,10	2,1	2,1	126,52					7,0	**NU5221M**			362,0	573,0
	225	49,00	3,0	3,0	135		148,8	13,0	22,50	4,5	**NU321**		HJ321	341,0	362,0
	225	49,00	3,0	3,0	135		148,8	13,0	22,50	4,5	**NJ321**		HJ321	341,0	362,0
	225	49,00	3,0	3,0	135					4,5	**NUP321**			341,0	362,0
	225	49,00	3,0	3,0		195,0				4,5	**N321**			341,0	362,0
	260	60,00	4,0	4,0	144,5		162,0	16,0	27,00	2,5	**NU421M**		HJ421	531,0	562,0
	260	60,00	4,0	4,0	144,5		162,0	16,0	27,00	2,5	**NJ421M**		HJ421	531,0	562,0
	260	60,00	4,0	4,0	144,5					2,5	**NUP421M**			531,0	562,0



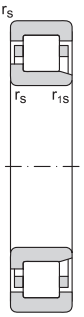




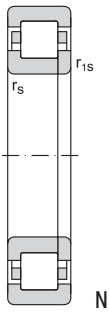
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
22,38	3500	4200	100	112	117,0	122,0	131	-	168	-	2,0	2,0	3,40	0,45
22,38	3500	4200		112	117,0	122,0	131	-	168	-	2,0	2,0	3,40	0,45
22,38	3500	4200		112	117,0	122,0	-	-	168	-	2,0	2,0	3,40	
22,38	3500	4200		112	117,0	122,0	-	157	168	165	2,0	2,0	3,40	
35,50	3500	4200		112	117,0	122,0	-	-	168	-	2,0	2,0	4,65	
35,50	3500	4200		112	117,0	122,0	-	-	168	-	2,0	2,0	4,65	
35,50	3500	4200		112	117,0	122,0	-	-	168	-	2,0	2,0	4,65	
52,14	3200	3800		116,5	-	124,0	-	-	162	-	2,0	2,0	6,49	
32,99	2800	3300		113	125,0	132,0	145	-	201	-	2,0	2,0	7,70	0,91
32,99	2800	3300		113	125,0	132,0	145	-	201	-	2,0	2,0	7,70	0,91
32,99	2800	3300		113	125,0	132,0	-	-	201	-	2,0	2,0	7,70	
32,99	2800	3300		113	125,0	132,0	-	182	201	190	2,0	2,0	7,70	
73,85	2500	3000		113	123,0	130,0	-	-	201	-	2,5	2,5	12,5	
73,85	2500	3000		113	123,0	130,0	-	-	201	-	2,5	2,5	12,5	
73,85	2500	3000		113	123,0	130,0	-	-	201	-	2,5	2,5	12,5	
51,66	2400	2800		120	130,0	141,0	158	-	230	-	3,0	3,0	14,0	1,55
51,66	2400	2800		120	130,0	141,0	158	-	230	-	3,0	3,0	14,0	1,55
51,66	2400	2800		120	130,0	141,0	-	-	230	-	3,0	3,0	14,0	
24,31	3300	4000	105	117	122,0	129,0	138	-	178	-	2,0	2,0	4,00	0,51
24,31	3300	4000		117	122,0	129,0	138	-	178	-	2,0	2,0	4,00	0,51
24,31	3300	4000		117	122,0	129,0	-	-	178	-	2,0	2,0	4,00	
24,31	3300	4000		117	122,0	129,0	-	166	178	175	2,0	2,0	4,00	
62,19	3000	3500		121,5	-	130,0	-	-	171	-	2,0	2,0	7,94	
37,99	2700	3200		119	132,0	137,0	150	-	211	-	2,5	2,5	8,75	1,00
37,99	2700	3200		119	132,0	137,0	150	-	211	-	2,5	2,5	8,75	1,00
37,99	2700	3200		119	132,0	137,0	-	-	211	-	2,5	2,5	8,75	
37,99	2700	3200		119	132,0	137,0	-	192	211	199	2,5	2,5	8,75	
57,22	2200	2700		125	135,0	147,0	164	-	240	-	3,0	3,0	19,0	1,65
57,22	2200	2700		125	135,0	147,0	164	-	240	-	3,0	3,0	19,0	1,65
57,22	2200	2700		125	135,0	147,0	-	-	240	-	3,0	3,0	19,0	



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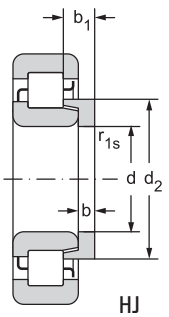
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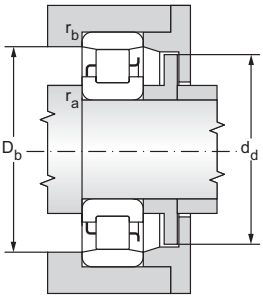
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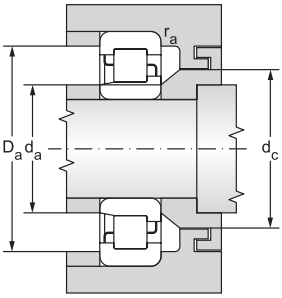


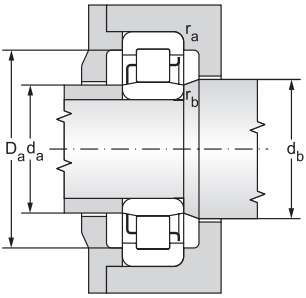
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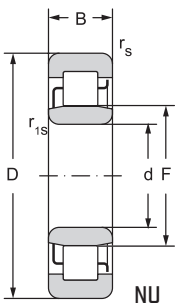
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
110	200	38,00	2,1	2,1	132,5		143,1	11,0	18,50	2,5	**NU222**		HJ222	237,0	271,0
	200	38,00	2,1	2,1	132,5		143,1	11,0	18,50	2,5	**NJ222**		HJ222	237,0	271,0
	200	38,00	2,1	2,1	132,5					2,5	**NUP222**			237,0	271,0
	200	38,00	2,1	2,1		178,5				2,5	**N222**			237,0	271,0
	200	53,00	2,1	2,1	132,5					5,0	**NU2222M**			341,0	422,0
	200	53,00	2,1	2,1	132,5					5,0	**NJ2222M**			341,0	422,0
	200	53,00	2,1	2,1	132,5					5,0	**NUP2222M**			341,0	422,0
	200	69,85	2,1	4,0	132,951					7,0	**NU5222M**			464,0	736,0
	240	50,00	3,0	3,0	143		157,5	14,0	23,00	2,7	**NU322**		HJ322	391,0	414,0
	240	50,00	3,0	3,0	143		157,5	14,0	23,00	2,7	**NJ322**		HJ322	391,0	414,0
	240	50,00	3,0	3,0	143					2,7	**NUP322**			391,0	414,0
	240	50,00	3,0	3,0		207,0				2,7	**N322**			391,0	414,0
	240	50,00	3,0	3,0	143					2,9	**NU322EM**			447,0	492,0
	240	50,00	3,0	3,0	143					2,9	**NJ322EM**			447,0	492,0
	240	50,00	3,0	3,0	143					2,9	**NUP322EM**			447,0	492,0
	280	65,00	4,0	4,0	155		173,4	17,0	29,50	2,7	**NU422M**		HJ422	584,0	631,0
	280	65,00	4,0	4,0	155		173,4	17,0	29,50	2,7	**NJ422M**		HJ422	584,0	631,0
	280	65,00	4,0	4,0	155					2,7	**NUP422M**			584,0	631,0
120	180	28,00	2,0	1,1	135					2,0	**NU1024**			131,0	168,0
	215	40,00	2,1	2,1	143,5		154,5	11,0	19,00	2,5	**NU224**		HJ224	261,0	299,0
	215	40,00	2,1	2,1	143,5		154,5	11,0	19,00	2,5	**NJ224**		HJ224	261,0	299,0
	215	40,00	2,1	2,1	143,5					2,5	**NUP224**			261,0	299,0
	215	40,00	2,1	2,1		191,5				2,5	**N224**			261,0	299,0
	215	58,00	2,1	2,1	143,5					5,4	**NU2224M**			369,0	473,0
	215	58,00	2,1	2,1	143,5					5,4	**NJ2224M**			369,0	473,0
	215	58,00	2,1	2,1	143,5					5,4	**NUP2224M**			369,0	473,0
	215	76,20	2,1	2,1	145,14					7,0	**NU5224M**			482,0	794,0
	260	55,00	3,0	3,0	154		170,5	14,0	23,50	2,7	**NU324**		HJ324	447,0	473,0
	260	55,00	3,0	3,0	154		170,5	14,0	23,50	2,7	**NJ324**		HJ324	447,0	473,0
	260	55,00	3,0	3,0	154					2,7	**NUP324**			447,0	473,0
	260	86,00	3,0	3,0	154					6,4	**NU2324EMAS**	M		810,0	981,0
	260	86,00	3,0	3,0	154					6,4	**NJ2324EMAS**	M		810,0	981,0
	260	86,00	3,0	3,0	154					6,4	**NUP2324EMAS**	M		810,0	981,0
	310	72,00	5,0	6,0	170		188,0	17,0	30,50	2,7	**NU424M**		HJ424	736,0	810,0
	310	72,00	5,0	6,0	170		188,0	17,0	30,50	2,7	**NJ424M**		HJ424	736,0	810,0
	310	72,00	5,0	6,0	170					2,7	**NUP424M**			736,0	810,0



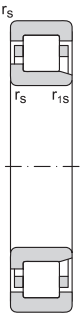




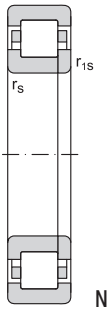
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
28,98	3200	3800	110	122	125,0	135,0	145	-	188	-	2,0	2,0	4,65	0,62
28,98	3200	3800		122	125,0	135,0	145	-	188	-	2,0	2,0	4,65	0,62
28,98	3200	3800		122	125,0	135,0	-	-	188	-	2,0	2,0	4,65	
28,98	3200	3800		122	125,0	135,0	-	175	188	182	2,0	2,0	4,65	
45,12	3200	3800		122	125,0	135,0	-	-	188	-	2,0	2,0	6,95	
45,12	3200	3800		122	125,0	135,0	-	-	188	-	2,0	2,0	6,95	
45,12	3200	3800		122	125,0	135,0	-	-	188	-	2,0	2,0	6,95	
78,70	3000	3500		128	-	137,0	-	-	180	-	3,0	2,0	10,00	
42,68	2500	3000		124	135,0	145,0	160	-	226	-	2,5	2,5	10,5	1,17
42,68	2500	3000		124	135,0	145,0	160	-	226	-	2,5	2,5	10,5	1,17
42,68	2500	3000		124	135,0	145,0	-	-	226	-	2,5	2,5	10,5	
42,68	2500	3000		124	135,0	145,0	-	204	226	211	2,5	2,5	10,5	
50,73	2400	2800		124	135,0	145,0	-	-	226	-	2,5	2,5	11,0	
50,73	2400	2800		124	135,0	145,0	-	-	226	-	2,5	2,5	11,0	
50,73	2400	2800		124	135,0	145,0	-	-	226	-	2,5	2,5	11,0	
62,98	2100	2500		130	140,0	157,0	175	-	260	-	3,0	3,0	20,0	2,16
62,98	2100	2500		130	140,0	157,0	175	-	260	-	3,0	3,0	20,0	2,16
62,98	2100	2500		130	140,0	157,0	-	-	260	-	3,0	3,0	20,0	
18,14	3300	4000	120	128	131,0	138,0	-	-	171	-	2,0	1,0	2,45	
31,24	3000	3500		132	138,0	146,0	157	-	203	-	2,0	2,0	5,65	0,72
31,24	3000	3500		132	138,0	146,0	157	-	203	-	2,0	2,0	5,65	0,72
31,24	3000	3500		132	138,0	146,0	-	-	203	-	2,0	2,0	5,65	
31,24	3000	3500		132	138,0	146,0	-	188	203	196	2,0	2,0	5,65	
49,41	3000	3500		132	138,0	146,0	-	-	203	-	2,0	2,0	8,55	
49,41	3000	3500		132	138,0	146,0	-	-	203	-	2,0	2,0	8,55	
49,41	3000	3500		132	138,0	146,0	-	-	203	-	2,0	2,0	8,55	
82,95	2700	3200		140	-	149,0	-	-	194	-	2,0	2,0	11,8	
47,58	2400	2800		134	145,0	156,0	172	-	246	-	2,5	2,5	13,0	1,40
47,58	2400	2800		134	145,0	156,0	172	-	246	-	2,5	2,5	13,0	1,40
47,58	2400	2800		134	145,0	156,0	-	-	246	-	2,5	2,5	13,0	
98,68	2100	2500		134	145,0	156,0	-	-	246	-	2,5	2,5	24,5	
98,68	2100	2500		134	145,0	156,0	-	-	246	-	2,5	2,5	24,5	
98,68	2100	2500		134	145,0	156,0	-	-	246	-	2,5	2,5	24,5	
78,51	1900	2200		144	155,0	172,0	192	-	286	-	4,0	4,0	28,0	2,60
78,51	1900	2200		144	155,0	172,0	192	-	286	-	4,0	4,0	28,0	2,60
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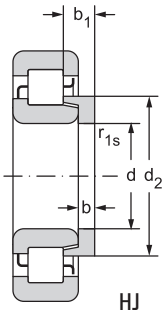
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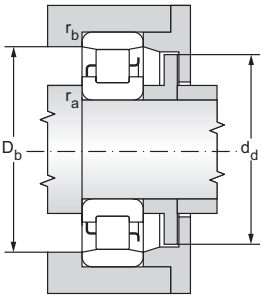
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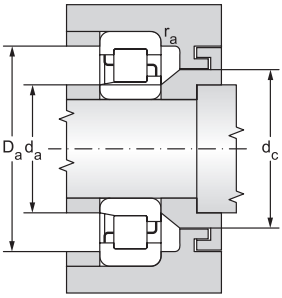


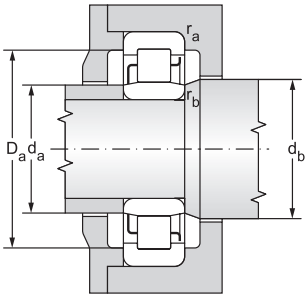
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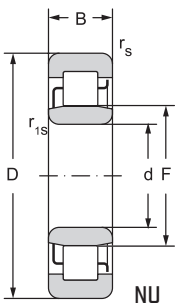
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
130	200	33,00	2,0	1,1	148					2,0	NU1026			162,0	203,0
	230	40,00	3,0	3,0	156		167,0	11,0	19,00	2,5	NU226		HJ226	271,0	322,0
	230	40,00	3,0	3,0	156		167,0	11,0	19,00	2,5	NJ226		HJ226	271,0	322,0
	230	40,00	3,0	3,0	156					2,5	NUP226			271,0	322,0
	230	40,00	3,0	3,0		204,0				2,5	N226			271,0	322,0
	230	79,38	4,0	4,0	155					8,0	NU5226M			511,0	841,0
	280	58,00	4,0	4,0	167		182,3	14,0	23,00	2,9	NU326EM		HJ326E	619,0	694,0
	280	58,00	4,0	4,0	167		182,3	14,0	23,00	2,9	NJ326EM		HJ326E	619,0	694,0
	280	58,00	4,0	4,0	167					2,9	NUP326EM			619,0	694,0
140	250	42,00	3,0	3,0	169		181,0	11,0	19,00	2,5	NU228		HJ228	310,0	369,0
	250	42,00	3,0	3,0	169		181,0	11,0	19,00	2,5	NJ228		HJ228	310,0	369,0
	250	42,00	3,0	3,0	169					2,5	NUP228			310,0	369,0
	250	42,00	3,0	3,0		221,0				2,5	N228			310,0	369,0
	250	82,55	4,0	4,0	168,46					10,0	NU5228M			596,0	981,0
	300	62,00	4,0	4,0	180		198,4	15,0	26,00	2,7	NU328M		HJ328	619,0	708,0
	300	62,00	4,0	4,0	180		198,4	15,0	26,00	2,7	NJ328M		HJ328	619,0	708,0
	300	62,00	4,0	4,0	180					2,7	NUP328M			619,0	708,0
150	225	35,00	2,1	1,5	169,5					2,0	NU1030M			192,0	251,0
	270	45,00	3,0	3,0	182		194,7	12,0	20,50	2,4	NU230M		HJ230	369,0	455,0
	270	45,00	3,0	3,0	182		194,7	12,0	20,50	2,4	NJ230M		HJ230	369,0	455,0
	270	45,00	3,0	3,0	182					2,4	NUP230M			369,0	455,0
	270	45,00	3,0	3,0	182		193,7	12,0	19,50	2,4	NU230EM		HJ230E	447,0	552,0
	270	45,00	3,0	3,0	182		193,7	12,0	19,50	2,4	NJ230EM		HJ230E	447,0	552,0
	270	45,00	3,0	3,0	182					2,4	NUP230EM			447,0	552,0
	270	88,90	2,3	2,3	181,544					10,0	NU5230M			736,0	1260,0
	320	65,00	4,0	4,0	193		212,3	15,0	26,50	2,7	NU330M		HJ330	681,0	779,0
	320	65,00	4,0	4,0	193		212,3	15,0	26,50	2,7	NJ330M		HJ330	681,0	779,0
	320	65,00	4,0	4,0	193					2,7	NUP330M			681,0	779,0
160	240	38,00	2,1	2,1	180		188,0	10,0	19,00	5,2	NU1032M		HJ1032	229,0	325,0
	240	38,00	2,1	2,1	180		188,0	10,0	19,00	5,2	NJ1032M		HJ1032	229,0	325,0
	290	48,00	3,0	3,0	195		207,4	12,0	20,00	2,5	NU232M		HJ232	511,0	631,0
	290	48,00	3,0	3,0	195		207,4	12,0	20,00	2,5	NJ232M		HJ232	511,0	631,0
	290	48,00	3,0	3,0	195					2,5	NUP232M			511,0	631,0
	290	98,42	2,5	6,3	193,634					10,0	NU5232M			764,0	1310,0
	340	68,00	4,0	4,0	204		221,0	15,0	25,00	4,0	NU332EM	MA	HJ332E	900,0	1080,0
	340	68,00	4,0	4,0	204		221,0	15,0	25,00	4,0	NJ332EM	MA	HJ332E	900,0	1080,0



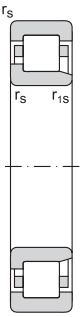




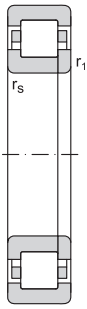
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
21,30	3200	3800	130	138	143,0	151,0	-	-	191	-	2,0	1,0	3,75	
32,92	2700	3200		144	150,0	158,0	169	-	216	-	2,5	2,5	6,50	0,84
32,92	2700	3200		144	150,0	158,0	169	-	216	-	2,5	2,5	6,50	0,84
32,92	2700	3200		144	150,0	158,0	-	-	216	-	2,5	2,5	6,50	
32,92	2700	3200		144	150,0	158,0	-	201	216	208	2,5	2,5	6,50	
85,98	2500	3000		149	-	159,0	-	-	207	-	3,0	2,0	13,8	
68,24	2000	2400		148	155,0	169,0	186	-	262	-	3,0	3,0	17,0	1,65
68,24	2000	2400		148	155,0	169,0	186	-	262	-	3,0	3,0	17,0	1,65
68,24	2000	2400		148	155,0	169,0	-	-	262	-	3,0	3,0	17,0	
36,83	2500	3000	140	154	160,0	171,0	182	-	236	-	2,5	2,5	8,25	1,00
36,83	2500	3000		154	160,0	171,0	182	-	236	-	2,5	2,5	8,25	1,00
36,83	2500	3000		154	160,0	171,0	-	-	236	-	2,5	2,5	8,25	
36,83	2500	3000		154	160,0	171,0	-	218	236	255	2,5	2,5	8,25	
97,91	2200	2700		162	-	173,0	-	-	225	-	3,0	3,0	17,1	
68,15	2000	2400		158	166,0	182,0	198	-	282	-	3,0	3,0	20,0	2,05
68,15	2000	2400		158	166,0	182,0	198	-	282	-	3,0	3,0	20,0	2,05
68,15	2000	2400		158	166,0	182,0	-	-	282	-	3,0	3,0	20,0	
25,35	2700	3200	150	159	165,0	173,0	-	-	213	-	2,0	1,5	4,85	
44,42	2200	2700		164	170,0	184,0	196	-	256	-	2,5	2,5	10,5	1,35
44,42	2200	2700		164	170,0	184,0	196	-	256	-	2,5	2,5	10,5	1,35
44,42	2200	2700		164	170,0	184,0	-	-	256	-	2,5	2,5	10,5	
53,88	2200	2700		164	170,0	184,0	196	-	256	-	2,5	2,5	11,0	1,30
53,88	2200	2700		164	170,0	184,0	196	-	256	-	2,5	2,5	11,0	1,30
53,88	2200	2700		164	170,0	184,0	-	-	256	-	2,5	2,5	11,0	
123,00	2000	2400		174	-	187,0	-	-	243	-	5,0	2,0	22,9	
73,52	1900	2200		168	185,0	195,0	213	-	302	-	3,0	3,0	27,0	2,37
73,52	1900	2200		168	185,0	195,0	213	-	302	-	3,0	3,0	27,0	2,37
73,52	1900	2200		168	185,0	195,0	-	-	302	-	3,0	3,0	27,0	
32,19	2500	3000	160	167	177,0	191,0	-	-	230	-	2,0	2,0	6,10	0,65
32,19	2500	3000		167	177,0	191,0	-	-	230	-	2,0	2,0	6,10	0,65
60,33	2000	2400		174	180,0	197,0	210	-	276	-	2,5	2,5	14,7	1,50
60,33	2000	2400		174	180,0	197,0	210	-	276	-	2,5	2,5	14,7	1,50
60,33	2000	2400		174	180,0	197,0	-	-	276	-	2,5	2,5	14,7	
125,26	1900	2200		186	-	199,0	-	-	261	-	5,0	2,0	28,9	
100,05	1700	2000		177	200,0	225,0	-	-	323	-	3,0	3,0	32,2	2,55
100,05	1700	2000		177	200,0	225,0	-	-	323	-	3,0	3,0	32,2	2,55



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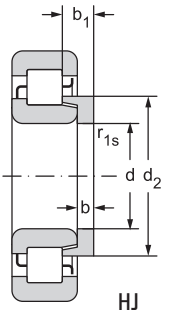
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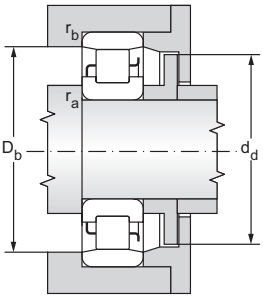
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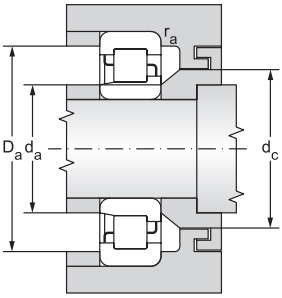


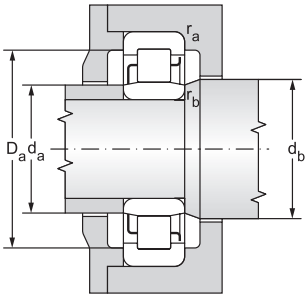
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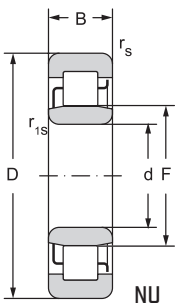
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
170	260	42,00	2,1	2,1	193					3,0	**NU1034M**			276,0	376,0
	310	52,00	4,0	4,0	207		228,8	12,0	20,00	2,9	**NU234M**		HJ234	607,0	750,0
	310	52,00	4,0	4,0	207		228,8	12,0	20,00	2,9	**NJ234M**		HJ234	607,0	750,0
	310	52,00	4,0	4,0	207					2,9	**NUP234M**			607,0	750,0
	310	104,77	3,2	6,3	205,483					10,0	**NU5234M**			891,0	1470,0
	360	72,00	4,0	4,0	218					4,6	**NU334EM**	MA		950,0	1180,0
	360	72,00	4,0	4,0	218					4,6	**NJ334EM**	MA		950,0	1180,0
180	280	46,00	2,1	2,1	205					3,6	**NU1036M**			329,0	447,0
	280	46,00	2,1	2,1	205					3,6	**NJ1036M**			329,0	447,0
	320	52,00	4,0	4,0	217		230,8	12,0	20,00	2,9	**NU236M**		HJ236	631,0	794,0
	320	52,00	4,0	4,0	217		230,8	12,0	20,00	2,9	**NJ236M**		HJ236	631,0	794,0
	320	52,00	4,0	4,0	217					2,9	**NUP236M**			631,0	794,0
	320	86,00	4,0	4,0	218		230,5	12,0	29,00	6,9	**NU2236M**		HJ2236	736,0	1060,0
	320	86,00	4,0	4,0	218		230,5	12,0	29,00	6,9	**NJ2236M**		HJ2236	736,0	1060,0
	320	86,00	4,0	4,0	218					6,9	**NUP2236M**			736,0	1060,0
	380	75,00	4,0	4,0	231					4,6	**NU336EM**	MA		1020,0	1290,0
	380	75,00	4,0	4,0	231					4,6	**NJ336EM**	MA		1020,0	1290,0
190	290	46,00	2,1	2,1	215		225,0	12,0	22,50	6,1	**NU1038M**		HJ1038	350,0	500,0
	290	46,00	2,1	2,1	215		225,0	12,0	22,50	6,1	**NJ1038M**		HJ1038	350,0	500,0
	340	55,00	4,0	4,0	230		244,0	13,0	21,50	3,0	**NU238EM**	MA	HJ238E	770,0	965,0
	340	55,00	4,0	4,0	230		244,0	13,0	21,50	3,0	**NJ238EM**	MA	HJ238E	770,0	965,0
	340	92,00	4,0	4,0	228					5,0	**NU2238EM**			1220,0	1600,0
	400	78,00	5,0	5,0	245		264,0	18,0	29,00	4,3	**NU338EM**	MA	HJ338E	1140,0	1500,0
	400	78,00	5,0	5,0	245		264,0	18,0	29,00	4,3	**NJ338EM**	MA	HJ338E	1140,0	1500,0
200	310	51,00	2,1	2,1	229					4,2	**NU1040M**	MA		383,0	531,0
	360	58,00	4,0	4,0	243		258,2	14,0	23,00	2,9	**NU240EM**	MA	HJ240E	779,0	1000,0
	360	58,00	4,0	4,0	243		258,2	14,0	23,00	2,9	**NJ240EM**	MA	HJ240E	779,0	1000,0
	360	58,00	4,0	4,0	243					2,9	**NUP240EM**	MA		779,0	1000,0
	360	98,00	4,0	4,0	241					5,1	**NU2240EM**	MA		1360,0	1800,0
	360	98,00	4,0	4,0	241					5,1	**NJ2240EM**	MA		1360,0	1800,0
	420	80,00	5,0	5,0	258					6,0	**NU340EM**	MA		1230,0	1630,0
	420	138,00	5,0	5,0	253					9,4	**NU2340EMA**			1980,0	2800,0
	420	138,00	5,0	5,0	253					9,4	**NJ2340EMA**			1980,0	2800,0



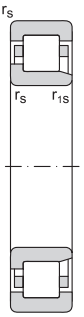




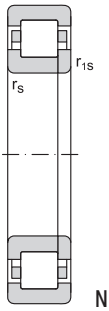
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
36,45	2200	2700	170	179	190,0	197,0	-	-	248	-	2,0	2,0	7,90	
70,34	1900	2200		188	195,0	211,0	223	-	293	-	3,0	3,0	16,6	1,70
70,34	1900	2200		188	195,0	211,0	223	-	293	-	3,0	3,0	16,6	1,70
70,34	1900	2200		188	195,0	211,0	-	-	293	-	3,0	3,0	16,6	
137,86	1800	2100		197	-	211,0	-	-	279	-	5,0	3,0	35,5	
107,42	1460	1700		187	214,0	221,0	-	-	343	-	3,0	3,0	37,5	
107,42	1460	1700		187	214,0	221,0	-	-	343	-	3,0	3,0	37,5	
42,46	2100	2500	180	189	196,0	209,0	-	-	268	-	2,0	2,0	10,5	
42,46	2100	2500		189	196,0	209,0	-	-	268	-	2,0	2,0	10,5	
73,56	1800	2100		198	207,0	220,0	233	-	302	-	3,0	3,0	19,5	1,80
73,56	1800	2100		198	207,0	220,0	233	-	302	-	3,0	3,0	19,5	1,80
73,56	1800	2100		198	207,0	220,0	-	-	302	-	3,0	3,0	19,5	
98,20	1800	2100		198	208,0	221,0	233	-	302	-	3,0	3,0	31,2	1,90
98,20	1800	2100		198	208,0	221,0	233	-	302	-	3,0	3,0	31,2	1,90
98,20	1800	2100		198	208,0	221,0	-	-	302	-	3,0	3,0	31,2	
115,51	1370	1600		197	225,0	235,0	-	-	363	-	3,0	3,0	45,0	
115,51	1370	1600		197	225,0	235,0	-	-	363	-	3,0	3,0	45,0	
46,89	2180	2600	190	200	212,0	228,0	-	-	280	-	2,0	2,0	11,0	1,35
46,89	2180	2600		200	212,0	228,0	-	-	280	-	2,0	2,0	11,0	1,35
87,85	1700	2000		207	226,0	248,0	-	-	323	-	3,0	3,0	24,5	2,10
87,85	1700	2000		207	226,0	248,0	-	-	323	-	3,0	3,0	24,5	2,10
145,66	1700	2000		207	222,0	232,0	-	-	323	-	3,0	3,0	39,0	
132,23	1290	1500		210	240,0	249,0	-	-	380	-	4,0	4,0	50,0	4,30
132,23	1290	1500		210	240,0	249,0	-	-	380	-	4,0	4,0	50,0	4,30
48,90	1900	2200	200	212	220,0	233,0	-	-	298	-	2,0	2,0	14,0	
89,54	1500	1800		218	227,0	246,0	261	-	342	-	3,0	3,0	28,4	2,70
89,54	1500	1800		218	227,0	246,0	261	-	342	-	3,0	3,0	28,4	2,70
89,54	1500	1800		218	227,0	246,0	-	-	342	-	3,0	3,0	28,4	
161,18	1610	1900		217	235,0	245,0	-	-	343	-	3,0	3,0	46,0	
161,18	1610	1900		217	235,0	245,0	-	-	343	-	3,0	3,0	46,0	
141,57	1200	1400		220	254,0	262,0	-	-	400	-	4,0	4,0	57,5	
243,18	1200	1400		220	249,0	280,0	-	-	400	-	4,0	4,0	97,0	
243,18	1200	1400		220	249,0	280,0	-	-	400	-	4,0	4,0	97,0	



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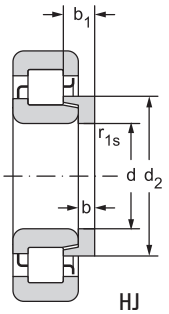
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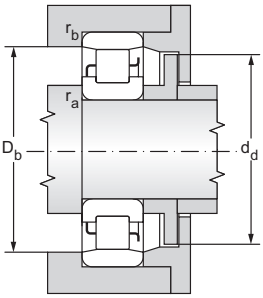
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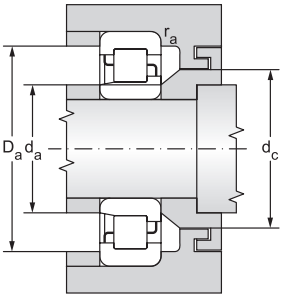


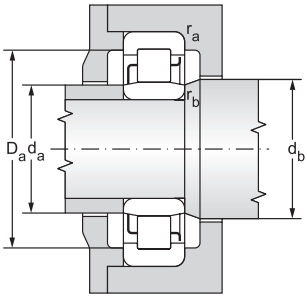
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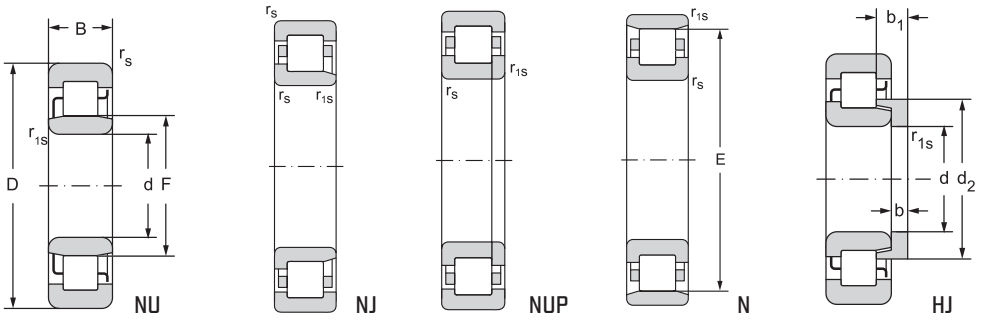
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
220	300	48,00	2,1	2,1	242					3,0	NU2944M	MA		460,0	830,0
	340	56,00	3,0	3,0	250					4,1	NU1044M	MA		514,0	775,0
	340	56,00	3,0	3,0	250					4,1	NJ1044M			514,0	775,0
	400	65,00	4,0	4,0	268		284,0	15,0	25,00	4,0	NU244EM	MA	HJ244E	1050,0	1290,0
	400	65,00	4,0	4,0	268		284,0	15,0	25,00	4,0	NJ244EM	MA	HJ244E	1050,0	1290,0
	400	108,00	4,0	4,0	259					7,9	NU2244EMA			1630,0	2350,0
	460	88,00	5,0	5,0	284					5,2	NU344M			1240,0	1650,0
	460	88,00	5,0	5,0	284					5,2	NJ344M			1240,0	1650,0
	460	145,00	5,0	5,0	275					10,4	NU2344EM	MA		2350,0	3420,0
240	360	56,00	3,0	3,0	270					4,1	NU1048MA			531,0	764,0
	440	72,00	4,0	4,0	295		315,0	16,0	25,90	4,0	NU248MA		HJ248	944,0	1280,0
	440	72,00	4,0	4,0	295		315,0	16,0	25,90	4,0	NJ248MA		HJ248	944,0	1280,0
	440	120,00	4,0	4,0	295					4,3	NU2248MA			1460,0	2360,0
	440	120,00	4,0	4,0	295					4,3	NJ2248MA			1460,0	2360,0
	500	95,00	5,0	5,0	310		335,0	22,0	39,50	5,6	NU348M	MA	HJ348	1450,0	2000,0
	500	95,00	5,0	5,0	310		335,0	22,0	39,50	5,6	NJ348M	MA	HJ348	1450,0	2000,0
	500	155,00	5,0	5,0	299					6,4	NU2348EMA			2600,0	3600,0
260	400	65,00	4,0	4,0	296					2,0	NU1052M	MA, F		642,0	996,0
	400	65,00	4,0	4,0	296					2,0	NJ1052M	MA, F		642,0	996,0
	400	65,00	4,0	4,0	296					2,0	NUP1052M	MA, F		642,0	996,0
	480	80,00	5,0	5,0	320		340,0	18,0	33,00	3,4	NU252MA		HJ252	1160,0	1700,0
	480	80,00	5,0	5,0	320		340,0	18,0	33,00	3,4	NJ252MA		HJ252	1160,0	1700,0
	480	130,00	5,0	5,0	320					4,3	NU2252MA			1760,0	2900,0
	480	130,00	5,0	5,0	320					4,3	NJ2252MA			1760,0	2900,0
	540	102,00	6,0	6,0	337					4,2	NU352EMA			1900,0	2680,0
	540	165,00	6,0	6,0	319					1,8	NU2352EMA			3100,0	4400,0
280	420	65,00	4,0	4,0	316					5,0	NU1056MA			681,0	1020,0
	500	80,00	5,0	5,0	340					3,8	NU256MA			1120,0	1670,0
	500	80,00	5,0	5,0	340					3,8	NJ256MA			1120,0	1670,0
	500	130,00	5,0	5,0	330					10,0	NU2256EMA			2190,0	3410,0
	580	175,00	6,0	6,0	362					6,6	NU2356MA			2700,0	4300,0
300	460	74,00	5,0	5,0	340					4,5	NU1060MA	M, F		885,0	1400,0
	460	74,00	5,0	5,0	340					4,5	NJ1060MA	M, F		885,0	1400,0
	540	85,00	5,0	5,0	364					4,8	NU260M	MA		1430,0	2150,0
	540	140,00	5,0	5,0	364					5,6	NU2260MA			2100,0	3470,0
	620	185,00	7,5	7,5	371					11,0	NU2360EMA			4000,0	5800,0





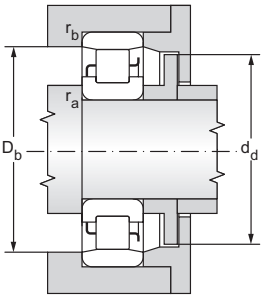


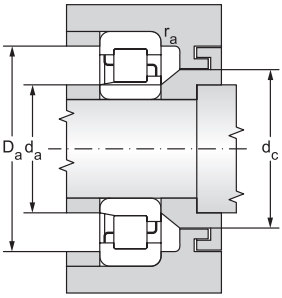
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
75,99	2040	2400	220	231	236,0	242,0	-	-	289	-	2,0	2,0	10,00	
69,40	1700	2000		234	240,0	254,0	-	-	326	-	2,5	2,5	18,5	
69,40	1700	2000		234	240,0	254,0	-	-	326	-	2,5	2,5	18,5	
112,04	1360	1600		237	264,0	288,0	-	-	383	-	3,0	3,0	38,2	3,25
112,04	1360	1600		237	264,0	288,0	-	-	383	-	3,0	3,0	38,2	3,25
204,10	1360	1600		237	255,0	264,0	-	-	383	-	3,0	3,0	62,5	
139,39	1290	1500		240	277,0	311,0	-	-	440	-	4,0	4,0	74,0	
139,39	1290	1500		240	277,0	311,0	-	-	440	-	4,0	4,0	74,0	
288,91	1100	1300		240	268,0	280,0	-	-	440	-	4,0	4,0	120	
67,01	1600	1900	240	254	260,0	275,0	-	-	346	-	2,5	2,5	20,0	
108,13	1300	1600		258	293,0	298,0	316	-	422	-	3,0	3,0	50,5	4,68
108,13	1300	1600		258	293,0	298,0	316	-	422	-	3,0	3,0	50,5	4,68
199,37	1270	1500		257	284,0	299,0	-	-	423	-	3,0	3,0	84,0	
199,37	1270	1500		257	284,0	299,0	-	-	423	-	3,0	3,0	84,0	
164,72	1120	1300		260	302,0	339,0	337	-	480	-	4,0	4,0	99,0	8,90
164,72	1120	1300		260	302,0	339,0	337	-	480	-	4,0	4,0	99,0	8,90
296,50	1010	1200		260	293,0	305,0	-	-	480	-	4,0	4,0	155	
84,90	1400	1700	260	278	280,0	300,0	-	-	382	-	3,0	3,0	29,0	
84,90	1400	1700		278	280,0	300,0	-	-	382	-	3,0	3,0	29,0	
84,90	1400	1700		278	280,0	300,0	-	-	382	-	3,0	3,0	29,0	
140,01	1190	1400		280	313,0	344,0	-	-	460	-	4,0	4,0	70,0	6,20
140,01	1190	1400		280	313,0	344,0	-	-	460	-	4,0	4,0	70,0	6,20
238,85	1100	1400		280	309,0	324,0	-	-	460	-	4,0	4,0	90,0	
238,85	1100	1400		280	309,0	324,0	-	-	460	-	4,0	4,0	90,0	
215,63	920	1100		286	330,0	341,0	-	-	514	-	5,0	5,0	125	
354,01	920	1100		286	310,0	323,0	-	-	514	-	5,0	5,0	190	
85,42	1300	1600	280	296	311,0	320,0	-	-	404	-	3,0	3,0	32,5	
135,39	1190	1400		300	333,0	364,0	-	-	480	-	4,0	4,0	73,0	
135,39	1190	1400		300	333,0	364,0	-	-	480	-	4,0	4,0	73,0	
276,45	950	1200		300	322,0	334,0	-	-	480	-	4,0	4,0	120	
338,54	850	1000		306	347,0	366,0	-	-	554	-	5,0	5,0	230	
114,39	1200	1400	300	318	325,0	344,0	360	-	442	-	3,0	3,0	43,6	
114,39	1200	1400		318	325,0	344,0	360	-	442	-	3,0	3,0	43,6	
170,47	1100	1300		320	358,0	368,0	-	-	520	-	4,0	4,0	90,0	
275,13	1020	1200		320	352,0	368,0	-	-	520	-	4,0	4,0	147	
447,49	800	950		332	365,0	375,0	-	-	588	-	6,0	6,0	270	

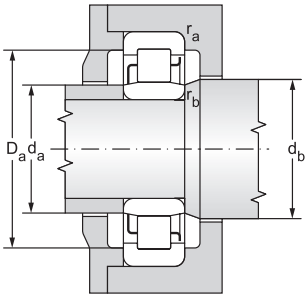


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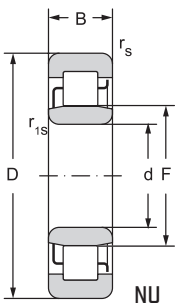
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
320	480	74,00	4,0	4,0	360		376,0	19,0	36,00	5,0	**NU1064MA**		HJ1064	909,0	1390,0
	480	74,00	4,0	4,0	360		376,0	19,0	36,00	5,0	**NJ1064MA**		HJ1064	909,0	1390,0
	580	92,00	5,0	5,0	390					5,3	**NU264MA**			1600,0	2450,0
	580	150,00	5,0	5,0	380					5,9	**NU2264EMA**			3200,0	5000,0
	580	150,00	5,0	5,0	380					5,9	**NJ2264EMA**			3200,0	5000,0
340	460	72,00	3,0	3,0	373					8,5	**NU2968M**			820,0	1700,0
	460	72,00	3,0	3,0	367					3,8	**NJ2968EMA**			1020,0	2020,0
	520	82,00	5,0	5,0	385		403,0	21,0	39,50	6,5	**NU1068MA**		HJ1068	1100,0	1780,0
	520	82,00	5,0	5,0	385		403,0	21,0	39,50	6,5	**NJ1068MA**		HJ1068	1100,0	1780,0
	620	165,00	6,0	6,0	416					8,0	**NU2268MA**			2600,0	4500,0
360	540	82,00	6,0	6,0	480		423,0	21,0	39,50	5,0	**NU1072MA**		HJ1072	1076,0	1753,0
	540	82,00	6,0	6,0	480		423,0	21,0	39,50	5,0	**NJ1072MA**		HJ1072	1076,0	1753,0
	650	170,00	6,0	6,0	437					16,7	**NU2272MA**			2920,0	4900,0
	750	224,00	7,5	7,5	465					10,0	**NU2372EMA**			5000,0	8100,0
380	560	82,00	5,0	5,0	425					6,0	**NU1076MA**			1166,0	1982,0
	560	82,00	5,0	5,0	425					6,0	**NJ1076MA**			1166,0	1982,0
	680	175,00	6,0	6,0	451					8,3	**NU2276EMA**			3900,0	6400,0
400	540	82,00	4,0	4,0	438					7,6	**NU2980MA****			1150,0	2450,0
	600	90,00	5,0	5,0	450		470,0	19,6	42,60	5,0	**NU1080MA****		HJ1080	1470,0	2330,0
	600	90,00	5,0	5,0	450		470,0	19,6	42,60	5,0	**NJ1080MA****		HJ1080	1470,0	2330,0
	600	148,00	5,0	5,0	450					5,0	**NU3080MA****			2255,0	4900,0
	720	185,00	6,0	6,0	480					16,0	**NU2280MA****			3410,0	5960,0
420	560	82,00	4,0	4,0	458					2,4	**NU2984MA****			1200,0	2550,0
	620	90,00	5,0	5,0	470		490,0	23,0	43,00	14,0	**NU1084MA****		HJ1084	1420,0	2450,0
	620	150,00	5,0	5,0	458,2					13,0	**NU3084EMA****			2900,0	5400,0
440	600	95,00	4,0	4,0	481,5					3,5	**NU2988EM****			1720,0	3600,0
	650	94,00	6,0	6,0	493		512,0	24,0	45,00	14,7	**NU1088MA****		HJ1088	1500,0	2600,0
460	620	95,00	4,0	4,0	495					4,0	**NU2992EMA****			1700,0	3600,0
	680	100,00	6,0	6,0	516		537,0	25,0	48,00	15,9	**NU1092MA****		HJ1092	1650,0	2850,0
	680	163,00	6,0	6,0	499					7,2	**NU3092EMA****			3400,0	6300,0
	830	212,00	7,5	7,5	554					16,5	**NU2292MA****			5100,0	8600,0



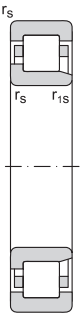




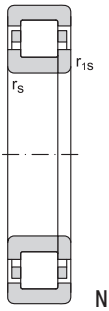
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
111,84	1100	1300	320	336	355,0	364,0	-	-	464	-	3,0	3,0	48,5	5,65
111,84	1100	1300		336	355,0	364,0	-	-	464	-	3,0	3,0	48,5	5,65
190,28	1020	1200		340	383,0	394,0	-	-	560	-	4,0	4,0	115	
388,32	850	1000		340	377,0	410,0	-	-	560	-	4,0	4,0	190	
388,32	850	1000		340	377,0	410,0	-	-	560	-	4,0	4,0	190	
136,78	1190	1400	340	353	369,0	377,0	-	-	447	-	2,5	2,5	36,0	
162,52	1190	1400		353	363,0	381,0	-	-	447	-	2,5	2,5	37,0	
140,14	1090	1300		358	380,0	408,0	-	-	502	-	4,0	4,0	68,0	7,40
140,14	1090	1300		358	380,0	408,0	-	-	502	-	4,0	4,0	68,0	7,40
342,79	850	1000		366	401,0	421,0	-	-	594	-	5,0	5,0	220	
136,15	950	1100	360	382	390,0	410,0	427	-	518	-	4,0	4,0	67,5	10,00
136,15	950	1100		382	390,0	410,0	427	-	518	-	4,0	4,0	67,5	10,00
367,62	800	950		386	428,0	442,0	-	-	624	-	5,0	5,0	250	
590,72	720	850		392	453,0	470,0	-	-	718	-	6,0	6,0	510	
151,94	850	1000	380	400	420,0	430,0	-	-	540	-	4,0	4,0	71,0	
151,94	850	1000		400	420,0	430,0	-	-	540	-	4,0	4,0	71,0	
473,24	720	850		406	445,0	457,0	-	-	654	-	5,0	5,0	275	
187,81	1020	1200	400	415	434,0	442,0	-	-	525	-	3,0	3,0	54,5	
175,33	840	1000		422	435,0	455,0	-	-	578	-	4,0	4,0	89,0	10,5
175,33	840	1000		422	435,0	455,0	-	-	578	-	4,0	4,0	89,0	10,5
368,72	760	910		422	435,0	455,0	-	-	578	-	4,0	4,0	151	
433,49	710	840		426	460,0	485,0	-	-	694	-	5,0	5,0	350	
193,05	930	1100	420	435	452,0	463,0	-	-	545	-	3,0	3,0	59,0	
182,20	930	1100		438	466,0	475,0	-	-	602	-	4,0	4,0	96,0	10,00
401,59	760	900		438	450,0	478,0	-	-	602	-	4,0	4,0	160	
267,72	930	1100	440	455	477,0	500,0	-	-	585	-	3,0	3,0	84,0	
190,65	840	1000		463	488,0	498,0	-	-	627	-	5,0	5,0	105	11,5
264,71	850	1000	460	475	490,0	515,0	-	-	605	-	3,0	3,0	89,0	
206,19	800	950		483	511,0	521,0	-	-	657	-	5,0	5,0	115	14,0
455,79	680	800		483	491,0	504,0	-	-	657	-	5,0	5,0	210	
599,54	600	700		492	542,0	559,0	-	-	798	-	6,0	6,0	530	



NU



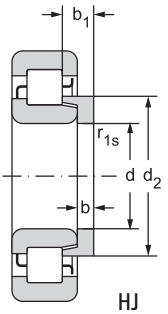
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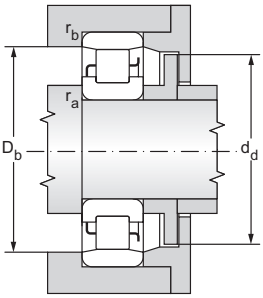
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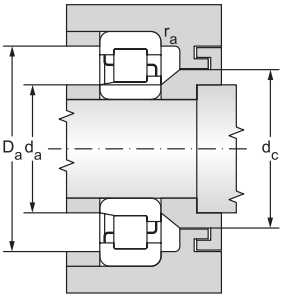


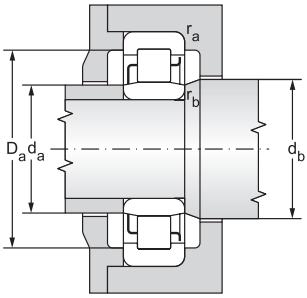
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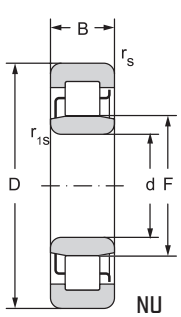
Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
480	700	100,00	6,0	6,0	536		557,0	25,0	48,00	15,9	**NU1096MA****		HJ1096	1680,0	3000,0
500	720	100,00	6,0	6,0	556		577,0	25,0	48,00	11,2	**NU10/500MA****		HJ10/500	1720,0	3100,0
	720	167,00	6,0	6,0	540,8					8,6	**NU30/500EMA****	FA		4000,0	8000,0
	920	185,00	7,5	7,5	603,1					13,9	**NU12/500MA****			5300,0	8500,0
530	710	106,00	5,0	5,0	573					3,3	**NU29/530EMA****			2380,0	5000,0
	780	112,00	6,0	6,0	593					10,4	**NU10/530MA****			2290,0	4050,0
560	750	112,00	5,0	5,0	608					4,5	**NU29/560EMA****			2460,0	5400,0
	820	115,00	6,0	6,0	625		648,0	27,5	53,00	12,3	**NU10/560MA****		HJ10/560	2300,0	4200,0
	820	115,00	6,0	6,0	625		648,0	27,5	53,00	12,3	**NJ10/560MA****		HJ10/560	2300,0	4200,0
	1030	206,00	9,5	9,5	668					10,3	**NU12/560MA****			7200,0	11200,0
600	800	118,00	5,0	5,0	650					12,0	**NU29/600MA****			2230,0	4853,0
	800	118,00	5,0	5,0	650					12,0	**NUP29/600MA****			2230,0	4853,0
	830	150,00	4,7	4,7	659					7,0	**NU39/600MA****			2860,0	6200,0
	870	118,00	6,0	6,0	667		695,0	31,0	55,00	14,0	**NU10/600MA****		HJ10/600	2750,0	5100,0
	1090	155,00	9,5	9,5	749					3,0	**NU2/600EMA****			5600,0	9800,0
630	850	128,00	6,0	6,0	683					7,1	**NU29/630EMA****			3300,0	7200,0
	850	128,00	6,0	6,0	683					7,1	**NJ29/630EMA****			3300,0	7200,0
	850	128,00	6,0	6,0	683					7,1	**NUP29/630EMA****			3300,0	7200,0
	920	128,00	7,5	7,5	702					6,2	**NU10/630MA****			3400,0	6200,0
	920	128,00	7,5	7,5	702					6,2	**NUP10/630MA****			3400,0	6200,0
	1150	230,00	12,0	12,0	751					13,5	**NU12/630EMA****			8500,0	13600,0
670	980	136,00	7,5	7,5	747					7,9	**NU10/670EMA****			3700,0	6800,0
710	950	140,00	6,0	6,0	766					10,0	**NU29/710EMA****			3740,0	8250,0
	950	140,00	6,0	6,0	766					10,0	**NUP29/710EMA****			3740,0	8250,0
	1030	140,00	7,5	7,5	778					17,0	**NU10/710EMA****			4600,0	8500,0
750	1090	150,00	7,5	7,5	830					12,8	**NU10/750EMA****			4700,0	8800,0
	1090	195,00	7,5	7,5	832					12,8	**NU20/750EMA****			7000,0	14500,0



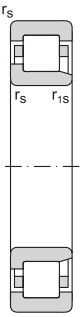




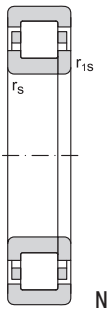
Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
214,81	750	900	480	503	531,0	541,0	-	-	677	-	5,0	5,0	130	14,5
219,76	750	900	500	523	550,0	561,0	-	-	697	-	5,0	5,0	135	15,0
567,12	640	750		523	532,0	546,0	-	-	697	-	5,0	5,0	225	
575,74	570	670		532	593,0	610,0	-	-	888	-	6,0	6,0	585	
352,73	720	850	530	548	566,0	578,0	-	-	692	-	4,0	4,0	120	
281,04	670	800		553	585,0	598,0	-	-	757	-	5,0	5,0	190	
374,72	680	800	560	578	600,0	613,0	-	-	732	-	4,0	4,0	145	
286,93	630	750		583	617,0	655,0	-	-	797	-	5,0	5,0	210	21,0
286,93	630	750		583	617,0	655,0	-	-	797	-	5,0	5,0	210	21,0
733,32	470	560		600	657,0	674,0	-	-	990	-	8,0	8,0	805	
330,12	560	700	600	614	644,0	654,0	675	-	750	-	4,0	4,0	173	
330,12	560	700		614	644,0	654,0	675	-	750	-	4,0	4,0	173	
419,07	500	600		614	645,0	660,0	680	-	790	-	4,7	4,7	262	
341,88	590	700		623	658,0	672,0	-	-	847	-	5,0	5,0	245	27,5
630,02	410	480		640	743,0	755,0	-	-	1050	-	8,0	8,0	710	
481,67	590	700	630	653	678,0	709,0	-	-	827	-	5,0	5,0	230	
481,67	590	700		653	678,0	709,0	-	-	827	-	5,0	5,0	230	
481,67	590	700		653	678,0	709,0	-	-	827	-	5,0	5,0	230	
409,06	530	630		658	691,0	707,0	-	-	892	-	6,0	6,0	285	
409,06	530	630		658	691,0	707,0	-	-	892	-	6,0	6,0	285	
860,81	380	450		678	735,0	757,0	-	-	1102	-	10,0	10,0	1100	
440,31	500	600	670	698	737,0	753,0	-	-	952	-	6,0	6,0	350	
533,23	510	600	710	733	760,0	796,0	-	-	927	-	5,0	5,0	300	
533,23	510	600		733	760,0	796,0	-	-	927	-	5,0	5,0	300	
541,69	470	560		738	769,0	788,0	-	-	1002	-	6,0	6,0	415	
551,48	360	430	750	778	823,0	840,0	-	-	1062	-	6,0	6,0	490	
908,69	360	430		778	823,0	838,0	-	-	1062	-	6,0	6,0	635	



NU



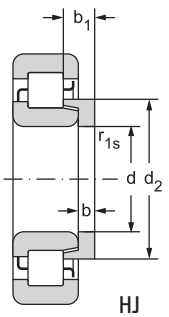
NJ



NUP



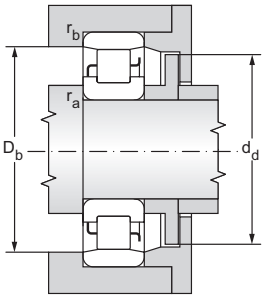
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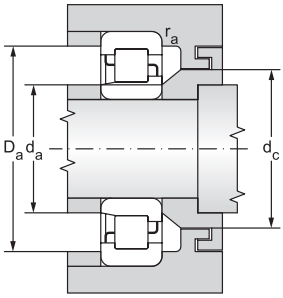


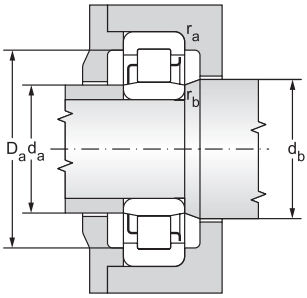
HJ

12.4.1

Main dimensions											Bearing designation	Other cages	Angle ring designation	Basic load rating	
														dynamic	static
d	D	B	r_s	r_{1s}	F	E	d_2	b	b_1	$s_{1)}$				C_r	C_{or}
			min	min			max								
mm														kN	
800	1150	155,00	7,5	7,5	883					13,0	NU10/800EMA**			5500,0	10500,0
	1150	200,00	7,5	7,5	882					12,0	NU20/800EMA**			7000,0	14500,0
850	1120	155,00	8,0	8,0	925					15,0	NU29/850MA**			3760,0	8740,0
	1120	155,00	8,0	8,0	925					15,0	NUP29/850MA**			3760,0	8740,0
900	1180	165,00	8,0	8,0	982					17,0	NU29/900MA**			4220,0	9810,0
	1180	165,00	8,0	8,0	982					17,0	NUP29/900MA**			4220,0	9810,0
950	1250	175,00	10,0	10,0	1032					17,0	NU29/950MA**			4577,0	11452,0
	1250	175,00	10,0	10,0	1032					17,0	NUP29/950MA**			4577,0	11452,0
1000	1320	185,00	10,0	10,0	1090					17,0	NU29/1000MA**			4920,0	11600,0
	1320	185,00	10,0	10,0	1090					17,0	NUP29/1000MA**			4920,0	11600,0
1060	1400	195,00	10,0	10,0	1155					20,0	NU29/1060MA**			5410,0	12800,0
	1400	195,00	10,0	10,0	1155					20,0	NUP29/1060MA**			5410,0	12800,0
	1400	250,00	7,5	7,5	1146					17,5	NU39/1060EMA**			9100,0	23900,0
1180	1540	206,00	10,0	10,0	1280					21,0	NU29/1180MA**			6310,0	15300,0
	1540	206,00	10,0	10,0	1280					21,0	NUP29/1180MA**			6310,0	15300,0







Fatique load limit	Limiting speed for lubrication with		Abutment and fillet dimensions										Weight	
P_u	grease	oil	d	d_a	d_a	d_b	d_c	d_d	D_a	D_b	r_a	r_b	~	
				min	max	min	min	max	max	min	max	max	of bearing	Ang.r.
kN	min^{-1}		mm										kg	
646,66	400	480	800	828	869,0	889,0	-	-	1122	-	6,0	6,0	560	
893,00	340	400		828	868,0	888,0	-	-	1122	-	6,0	6,0	715	
536,62	380	450	850	878	920,0	930,0	952	-	1092	-	5,0	5,0	430	
536,62	380	450		878	920,0	930,0	952	-	1092	-	5,0	5,0	430	
592,58	300	400	900	928	977,0	987,0	1011	-	1152	-	5,0	5,0	500	
592,58	300	400		928	977,0	987,0	1011	-	1152	-	5,0	5,0	500	
680,22	300	370	950	978	1027,0	1041,0	1066	-	1220	-	5,0	5,0	597	
680,22	300	370		978	1027,0	1041,0	1066	-	1220	-	5,0	5,0	597	
678,12	300	350	1000	1036	1085,0	1095,0	1122	-	1284	-	6,0	6,0	720	
678,12	300	350		1036	1085,0	1095,0	1122	-	1284	-	6,0	6,0	720	
735,23	280	330	1060	1096	1150,0	1160,0	1189	-	1364	-	6,0	6,0	850	
735,23	280	330		1096	1150,0	1160,0	1189	-	1364	-	6,0	6,0	850	
1 372,82	220	260		1098	1140,0	1150,0	-	-	1372	-	6,0	6,0	1080	
852,74	250	300	1180	1216	1275,0	1285,0	1316	-	1504	-	6,0	6,0	1050	
852,74	250	300		1216	1275,0	1285,0	1316	-	1504	-	6,0	6,0	1050	