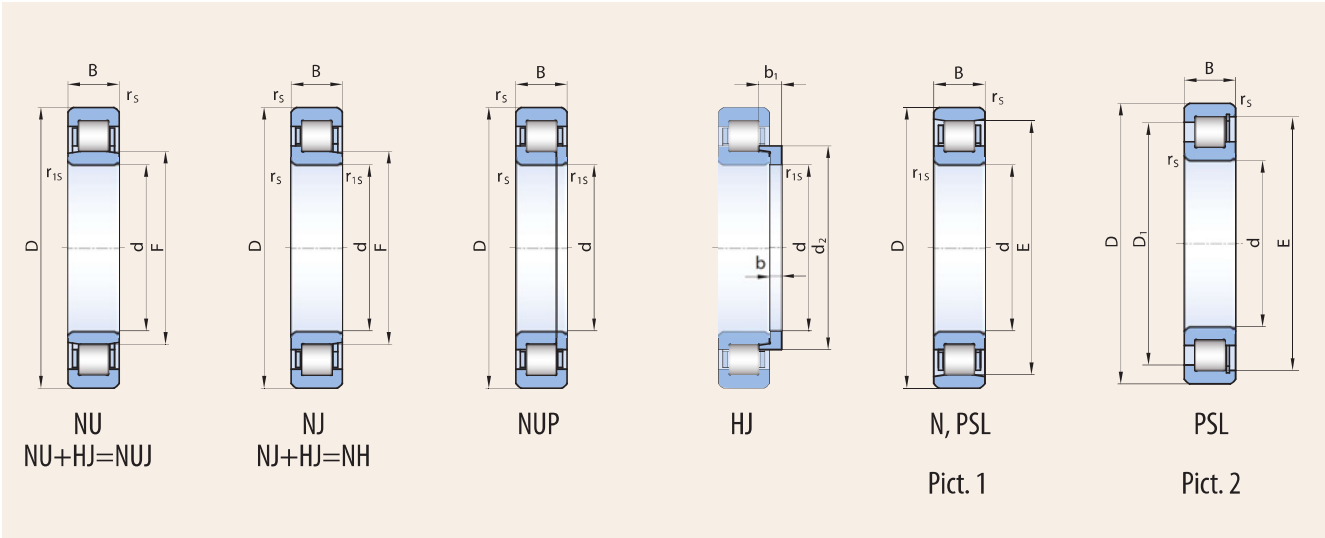




CYLINDRICAL ROLLER BEARINGS

single row

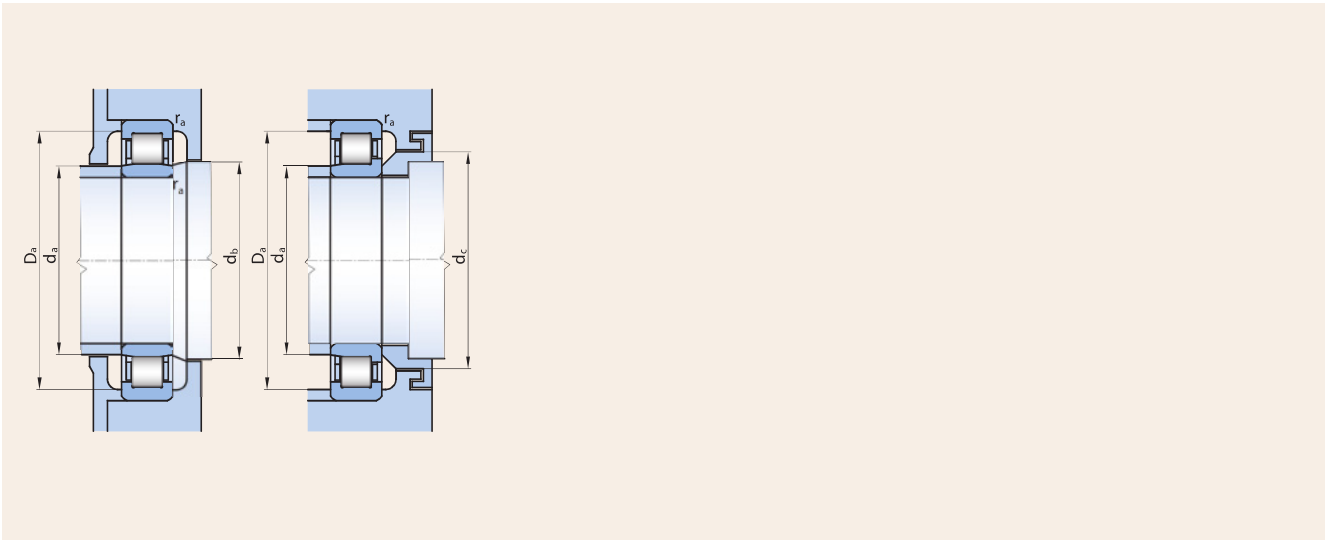


Dimensions											Basic Load Ratings		Limited Speed for Lubrication		Bearing Designation	
d	D	B	r _s min	r _{1s} max	F	E	S ¹⁾	d ₂ max	b	b ₁	C _r dyn.	C _{0r} stat.	with grease oil		PSL	
[mm]											[kN]		[min ⁻¹]			
170	215	22	2	2		204.15	1.35				146	265	1200	1700	NCF1834V	Pict.2
170	250	30	2.5	2	229						261	369	2400	2800	PSL410-27	N, Pict.1
200	250	24	1.5	1.5		237.5	2				180	335	1000	1400	NCF1840V	Pict.2
200	310	51	2.1	2.1	229		4.2				383	531	1900	2200	NU1040	
220	340	56	3	3	250		4.1				501	694	1700	2000	NU1044	
240	300	28	2	2	257						257	584	1731	2019	NCF1848V	Pict.2
240	360	56	3	3	270		4.1				531	764	1600	1900	NU1048	
240	440	72	4	4	295		4	315	16	29.5	944	1280	1300	1600	NU248 NUJ248 NJ248 NH248	
260	400	65	4	4	296		2				643	962	1400	1700	NU1052 NUP1052	
260	480	130	5	5	320		4.3				1760	2900	1100	1400	NU2252	
280	350	33	2	2		334	2.5				332	675	850	1300	NCF1856V	Pict.2
280	420	65	4	4	316		5				681	1020	1300	1600	NU1056	
280	420	180	4	4	314						1340	2510	1200	1400	PSL412-312	
300	460	74	4	4	340		4.5	357.6	19	36	891	1310	1200	1400	NU1060 NUJ1060 NJ1060 NH1060	
300	460	74	4	4	340						891	1310	1200	1400	PSL412-305	NU
320	400	38	2.1	1.5	344						420	970	730	1110	NCF1864V C3	Pict.2
320	480	74	4	4	360		5				909	1390	1100	1300	NU1064	
340	420	38	2.1	2.1	361						345	710	1148	1340	NJ1868MA C3	NJ
360	440	38	2.1	2.1		419	4.5 ²⁾				426	930	550	800	PSL412-301	Pict.2
360	540	82	5	5	480		5	423	21	39.5	1076	1753	950	1100	NU1072 NH1072	
380	480	46	2.1	2.1		453	6 ²⁾				573	1228	300	600	PSL412-202	Pict.2
380	560	82	5	5	425		6				1166	1982	850	1000	NU1076	
400	500	46	2.1	2.1		476	4				695	1600	400	700	NCF1880V	Pict.2
400	500	46	2.1	2.1		476	6 ²⁾				590	1298	290	580	PSL412-203	Pict.2
400	600	90	5	5	450		5	470	19.6	42.6	1470	2330	840	1000	NU1080 NU1080K NUJ1080	
400	600	148	5	5	450		5				2255	4900	760	910	NU3080	
400	720	185	6	6	480		16				3410	5960	710	840	NU2280	
440	540	46	2.1	2.1	468						535	1240	790	920	NJ1888MA	
440	540	46	1.5	2.1	466.1						707	1680	852	994	NCF1888V C3	Pict.2
440	540	60	2.1	2.1	464		7				833	1945	850	995	NU2888EMAS	
530	650	56	3	3		624	5				1005	2295	250	350	NCF18/530V	Pict.2
600	730	78	3	3	635	-	-	-	-	-	1270	3210	581	678	NJ28/600MAS	
600	800	118	5	5	650		12				2230	4853	560	700	NU29/600 NUP29/600	
630	780	88	4	4	671						1820	5000	550	642	NCF28/630V	Pict.2
647.7	774.7	101.6	4	4		746.2					2020	5340	495	580	PSL412-307	NP

1) Permissible axial displacement from the central position

2) Permissible axial displacement in axially free direction

3) Contact PSL for information on bearing design



Weight		Abutment and Fillet Dimensions						
Bearing	loose rib/ring	d	d _a min	d _a max	d _b min	d _c min	D _a max	r _a max
[kg]		[mm]						
1.8		170	170	181	-		204	2
5.41		170	178	185	-		237	2
2.5		200	207	215	-		243	1.5
14		200	212	220	233		298	2
18.5		220	234	240	254		326	2.5
4.6		240	251	254	260		289	2
20		240	254	260	275		346	2.5
50.5	4.68	240	258	293	298	346	422	3
29		260	278	280	300		382	3
90		260	280	309	324		460	4
6.9		280	290	304	-		340	2
32.5		280	296	311	320		404	3
60.8		280	290	294	-		407	3
44	5.63	300	318	325	344	360	442	3
43.6		300	318	325	-		442	3
10.8		320	329	340	348		387	1.5
48.5		320	336	355	364		464	3
12.1		340	349	358	364		410	2
12		360	371	384	-		428	2
67.5	10	360	382	390	410		518	4
19.2		380	392	403	-		468	2
71		380	400	420	430		540	4
20		400	411	428	-		492	2
20		400	411	428	-		492	2
89	10.5	400	422	435	455		578	4
150.5		400	422	435	455		578	4
350		400	426	460	485		694	5
22		440	455	465	473		512	2
22.1		440	454	463	469.2		531	1.5
31.8		440	454	460	468		527	2
37.5		530	543	567	-		636	2.5
73.4	-	600	616	630	640	-	714	2.5
173		600	614	644	654	675	750	4
93.6		630	648	663	679		761	3
98.4		647.7	661	675	-		760	3

The single row cylindrical roller bearings are suitable for accommodation of heavy radial loads operating under high rotational speed. The single row cylindrical roller bearings are separable. They are manufactured in several basic designs: axially firm which (NUP, NH) can carry a certain axial load in both directions, axially loose (NU) which allows the mutual displacement of the rings in both directions and in the design (NJ, NUJ) which carries the axial load in one direction.

Suffixes

- .A – Cage guided on the outer ring (it is connected with the designation of the cage material)
- C3,C4,C5 – Radial clearance greater than normal
- F – Machined steel cage guided by rollers
- K – Tapered bore, taper 1:12
- M – Machined brass cage guided by rollers
- ..P – Machined window-type cage
- P6 – Higher tolerance class than standard
- R... – Radial clearance in non-standard range
- ..S – Cage with lubricating grooves
- S0 – Stabilization of dimensions for operating temperature up to 150 °C
- V – Full complement roller bearing (without cage)

Cages

The single row cylindrical roller bearings usually have in the basic design cages as indicated in the table (the symbol for material and cage design are not indicated):

Bearing type	Cage type
NU,NUJ,NJ,NH10..	F,M,MA,MAPS
NU,NUJ,NJ,NH2..	F,M,MA
NU22..	MA
NU,NUP29..	F,M
NU30..	M

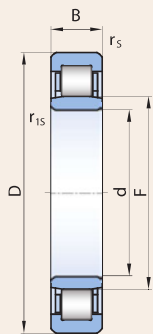
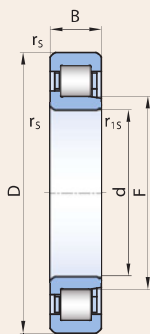
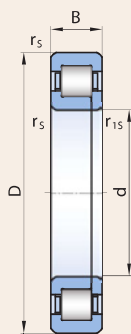
Radial equivalent load:

- dynamic: $P_r = F_r$ [kN]
- static: $P_{0r} = F_{0r}$ [kN]

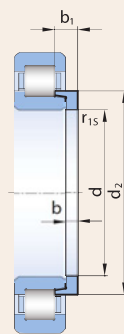


CYLINDRICAL ROLLER BEARINGS

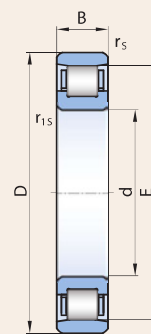
single row


$$\begin{array}{c} \text{NU} \\ \text{NU} + \text{HJ} = \text{NUJ} \end{array}$$

$$\text{NJ} + \text{HJ} = \text{NH}$$


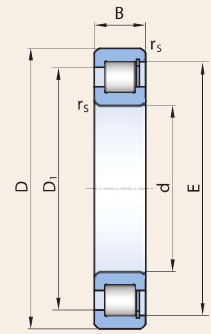
NUP



HJ



N, PSL



PSL

Pict. 1

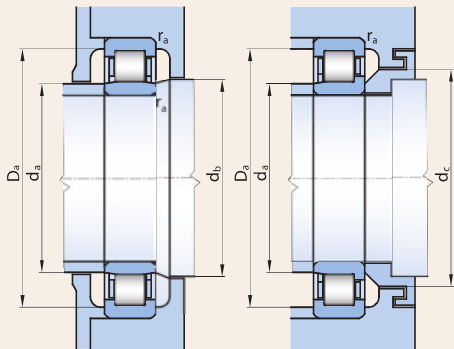
Pict. 2

[illegible]

1) Permissible axial displacement from the central position

3) Contact PSL for information on bearing design

- 1) Permissible axial displacement from the central position
- 2) Permissible axial displacement in axially free direction

[illegible]

Permissible axial load:

As the axial load capacity is dependent on many factors it is not possible to express it by means of a simple calculation. Under the presumption of standard operation conditions it is possible to calculate the maximum permissible axial load ($F_{a \max}$) with sufficient accuracy. In an opposite case the relations are only informative.

$$F_{a \max} = \frac{0,5C_{0r} \cdot 10^4}{n(d+D)} - 0,05 F_r \quad \text{for oil lubrication} \quad [\text{kN}]$$

$$F_{a \max} = \frac{0,35 C_{Or} \cdot 10^4}{n(d+D)} - 0,03 F_r \quad \text{for grease lubrication} \quad [\text{kN}]$$

$F_{a \max}$	- Maximum permissible axial load	[kN]
C_{0r}	- Radial basic static load rating	[kN]
F_r	- Radial bearing load	[kN]
n	- Rotational speed	[min ⁻¹]
d	- Bearing bore diameter	[mm]
D	- Bearing outside diameter	[mm]

The simultaneous acting of the radial force with the axial load on the bearing is necessary for reliable function of the bearing. The ratio of these loads F_a/F_r cannot be greater than 0.4.