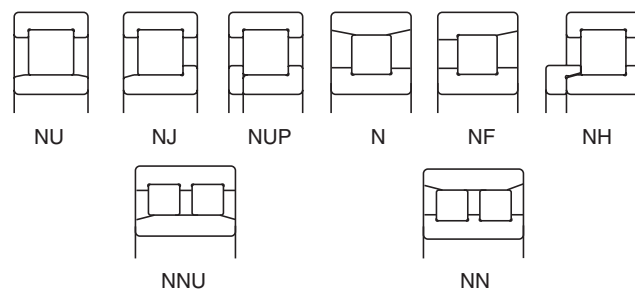


DESIGN, TYPES, AND FEATURES

Cylindrical roller bearings are classified into the following types depending on whether or not they have ribs on their rings:



Types NU, N, NNU, and NN are suitable as free-end bearings. Types NJ and NF can sustain limited axial loads in one direction. Types NH and NUP can be used as fixed-end bearings.

The NH type consists of NJ-type cylindrical roller bearings and HJ-type L-shaped thrust collars (see Pages C156 and C157).

The inner ring loose rib of the NUP type should be mounted so that the marked side is on the outside.

Features of Single-Row Cylindrical Roller Bearings

Cage Spec.	Material	Steel	Steel	Polyamide 66 resin	L-PPS resin	Brass	
		Pressed		Molded		Machined	
Designation		W	EW	ET	ET7	M	EM
Features	High Load Capacity	○	◎	◎	◎	△	◎
	High-Speed	△	○	○	○	○	◎
	High-Temperature	○	○	△	○	○	○
	Vibration	×	×	×	×	△	○

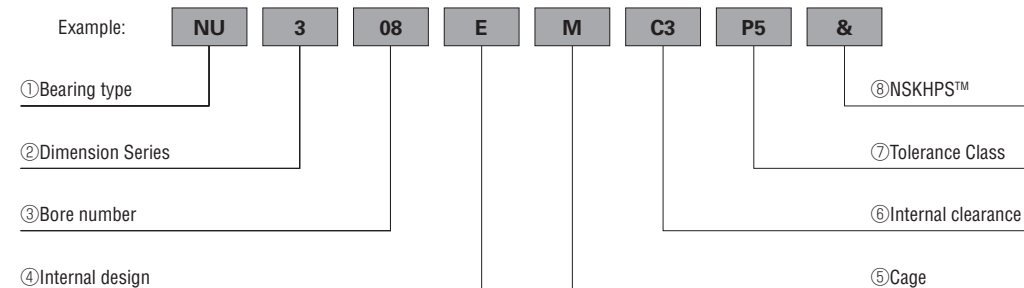
◎ Excellent ○ Good △ Fair × Poor

If a cage is nonstandard for a given bearing number the number of rollers may vary; in such a case, the load rating will differ from that listed in the bearing tables.

Many NN double-row bearings have tapered bores, and they are primarily used in the main spindles of machine tools. Cages are made of either molded polyphenylenesulfide (PPS) or machined brass.

Formulation of Bearing Designations

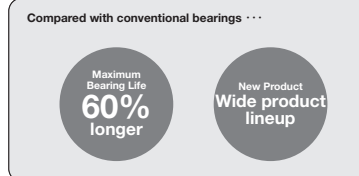
Single-Row Cylindrical Roller Bearing



- ① Bearing type
NU : Single-row cylindrical roller bearings
(Outer ring with both ribs + Inner ring without rib)
Please refer to page C124 for detailed information.
- ② Dimension Series
10 : 10 Series, 22 : 22 Series, 3 : 03 Series, 23 : 23 Series, 4 : 04 Series,
- ③ Bore number
Less than 03, Bearing bore 01 : 12mm, 02 : 15mm, 03 : 17mm
Over 04, Bearing bore Bore number X 5 (mm)
- ④ Internal design
E : High load capacity
- ⑤ Cage
W : Pressed-steel Cage, M : Machined Brass Cage, No designation : Machined-brass cage (in Series 10)
T : Polyamide 66 resin cage, T7 : L-PPS resin cage
- ⑥ Internal clearance
For All Radial Brgs.
Omitted : CN clearance, C3 : Clearance greater than CN, C4 : Clearance greater than C3, CG : Special Clearance
For Non-Interchangeable Cylindrical Roller Bearings
CC : Normal Clearance, CC3 : Clearance greater than CC, CC4 : Clearance greater than CC3, CCG : Special Clearance
- ⑦ Tolerance class
Omitted : ISO Normal, P6 : ISO Class 6,
P5 : ISO Class 5, P4 : ISO Class 4
- ⑧ NSKHPS™
& : NSKHPS™ Designation
Tolerance Class : ISO Normal

NSKHPS™ Cylindrical Roller Bearings

Features

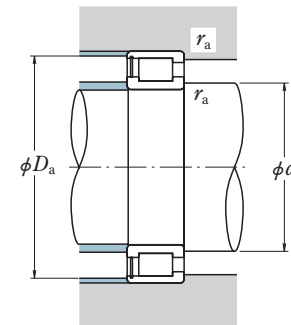
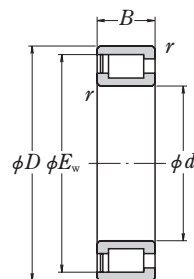


- Improved reliability
Up to 60% longer life than that of conventional bearings by optimization of the bearing's internal design and improvement of processing technology.
- Wide product lineup
NSK offers a wide lineup of NSKHPS bearings with four types of cages for wide range of sizes, offering a high degree of versatility for various general-purpose applications.
 - Pressed-steel cage with high cost performance
 - Highly reliable machined-brass cage
 - Polyamide-resin cage that excels in heat and chemical resistance

FULL COMPLEMENT CYLINDRICAL ROLLER BEARINGS

NCF Type, Single-Row

Bore Diameter 100 – 260 mm



Boundary Dimensions (mm)					Basic Load Ratings (kN)		Bearing Designation
d	D	B	r min.	E_w	C_r	C_{0r}	
100	140	24	1.1	130.5	132	209	NCF2920V NCF3020V
	150	37	1.5	139.7	209	310	
110	150	24	1.1	141	138	229	NCF2922V NCF3022V
	170	45	2	156.3	278	405	
120	165	27	1.1	154	177	305	NCF2924V NCF3024V
	180	46	2	167.58	293	440	
130	180	30	1.5	166.5	210	370	NCF2926V NCF3026V
	200	52	2	183.81	415	615	
140	190	30	1.5	179.4	227	395	NCF2928V NCF3028V
	210	53	2	197.82	435	680	
150	210	36	2	195	289	505	NCF2930V NCF3030V
	225	56	2.1	206.82	460	710	
160	220	36	2	207	310	535	NCF2932V NCF3032V
	240	60	2.1	224.8	520	810	
170	215	22	1.5	203.5	149	272	NCF1834V NCF2934V NCF3034V
	230	36	2	218	320	570	
	260	67	2.1	242.87	675	1 070	
180	225	22	1.5	215	154	290	NCF1836V NCF2936V NCF3036V
	250	42	2	231.5	390	695	
	280	74	2.1	260.3	785	1 260	
190	240	24	1.5	228.7	178	335	NCF1838V NCF2938V NCF3038V
	260	42	2	243.6	435	785	
	290	75	2.1	269.9	805	1 320	
200	250	24	1.5	237	182	350	NCF1840V NCF2940V NCF3040V
	280	48	2.1	261	530	955	
	310	82	2.1	287.8	910	1 510	
220	270	24	2	257.7	191	385	NCF1844V NCF2944V NCF3044V
	300	48	2.1	282	555	1 050	
	340	90	3	312.3	1 100	1 820	
240	300	28	2	283	236	470	NCF1848V NCF2948V NCF3048V
	320	48	2.1	303	580	1 140	
	360	92	3	335.25	1 160	1 990	
260	320	28	2	307	247	510	NCF1852V NCF2952V NCF3052V
	360	60	2.1	333.2	750	1 460	
	400	104	4	376.1	1 570	2 600	

Abutment and Fillet Dimensions (mm)			Mass (kg)
d_a	D_a	r_a max.	
109	131	1	1.0
111	140	1.5	2.1
119	142	1	1.1
122	157	2	3.3
130	155	1	1.7
132	168	2	3.6
141	168	1.5	2.2
142	187	2	5.6
151	180	1.5	2.3
152	198	2	5.9
163	196	2	3.7
165	209	2	7.1
173	208	2	3.8
175	225	2	8.6
182	204	1.5	1.8
183	219	2	4.1
185	244	2	11.9
192	216	1.5	1.8
193	236	2	6.0
195	263	2	15.8
202	229	1.5	2.4
203	245	2	6.5
206	273	2	16.7
213	238	1.5	2.5
216	263	2	8.9
216	293	2	21.4
234	258	2	2.7
236	283	2	9.6
238	320	2.5	28.2
254	285	2	4.2
257	304	2	10.4
259	340	2.5	31.2
275	308	2	4.5
277	342	2	18.1
282	377	3	45.3

Remark Full complement cylindrical roller bearings are designed for specific applications; when using them, please contact NSK.