

SUPER PRECISION CYLINDRICAL ROLLER BEARINGS



**Pacific International
Bearing, Inc.**
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CYLINDRICAL ROLLER BEARINGS



Super precision cylindrical roller bearings are designated as Series N10, NN30, N19 and NNU49.

NN30 double row bearings are typically used in combination with double direction angular contact thrust bearings in applications where radial stiffness, high radial capacity and high precision support is required. They represent the ideal solution for a floating bearing location, since they are internally adjusting (floating).

For axial loads, double direction angular contact thrust bearings, Series 2344 are used in combination with Series NN30 bearings.

A single row cylindrical roller bearing (Series N10, N19) would be most commonly used as the “floating” bearing

in combination with a set of preloaded angular contact spindle bearings.

Double row cylindrical roller bearings have a high load carrying capacity because of the high number of cylindrical rollers in each row, and the exclusive optimized roller crown profile which results in the best load distribution.

The cage is of solid machined brass construction, making this bearing suitable for rugged applications.

Single row cylindrical roller bearings also have a solid brass cage and are

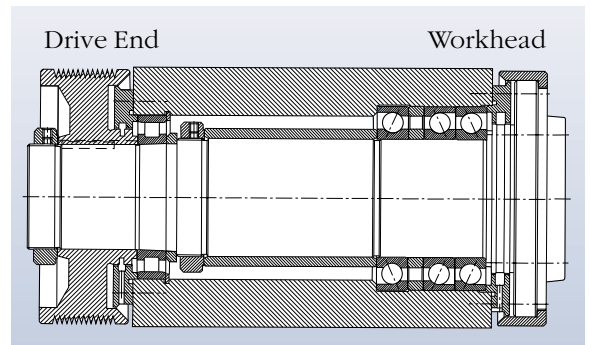


Illustration shows a CNC spindle with a single row cylindrical roller bearing used in the drive end. A triplex set of angular contact ball bearings is used in the workhead end of the spindle. The combination provides high speed and precision machining capabilities with high radial load carrying capacity.

specially designed for the demands of high speed spindles. They are available with both steel and ceramic rollers.

BARDEN/FAG BEARING NOMENCLATURE SUPER PRECISION CYLINDRICAL ROLLER BEARINGS

N 10 20 K .M1 .SP
HCN 10 20 K .M1 .SP
N 19 20 K .M1 .SP

Bearing type

N Cylindrical roller bearing, single row
Lips on inner ring, outer ring lipless
HCN Hybrid cylindrical roller bearing, single row
Ceramic rollers, lips on inner ring,
Outer ring lipless

Dimension Series

19 Light series
10 Medium series

Bore Reference Number

06 6 · 5 = 30 mm
08 8 · 5 = 40 mm

Accuracy

SP Special Precision
UP Ultra Precision

Cage

M1 Brass cage, roller-centered

Tapered Bore

K Tapered bore (taper 1:12)

NNU 49 20 SK .M .SP
NN 30 20 ASK .M .SP
NN 30 20 ASK .M .SP

Bearing Type

NNU Cylindrical roller bearing, double row
Lips on outer ring, inner ring lipless
NN Cylindrical roller bearing, double row
Lips on inner ring, outer ring lipless

Dimension Series

49 Light series
30 Medium series

Bore Reference Number

06 6 · 5 = 30 mm
08 8 · 5 = 40 mm

Accuracy

SP Special Precision
UP Ultra Precision

Cage

M Brass cage, roller-centered

Tapered Bore

K Tapered bore (taper 1:12)

External Form

S Lubricating groove and holes
on the outer ring
AS Lubricating groove and holes
on the outer ring (Series NN30)

The bearing bore is tapered (taper = 1: 12). The desired radial preload or radial clearance can be set by an axial adjustment on the conical shaft. Generally, the bearings should be mounted with zero clearance to a very slight preload.

Cylindricals generally have lower limiting speed than ball bearings. They are the limiting factor when used in conjunction with spindle bearings on the work end of a spindle.

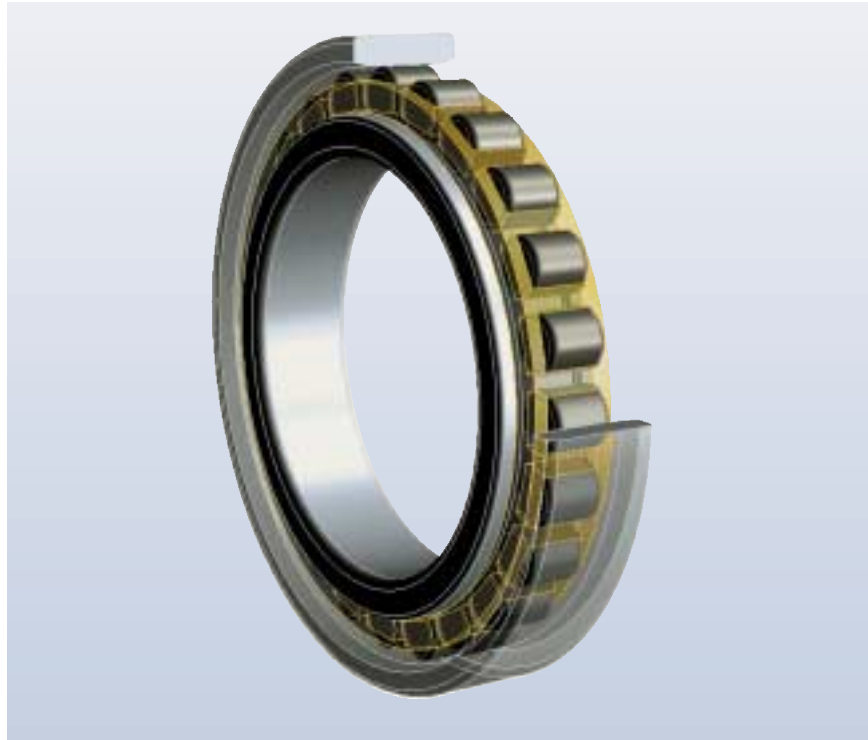
Cylindrical roller bearings can be lubricated with either grease or oil.

Double row bearings feature a lubricating groove and lubricating hole in the middle of the outer ring.

Cylindrical roller bearings have a higher rigidity than comparable size angular contact ball bearings.

Hybrid cylindrical roller bearings — which feature rollers made from ceramic (silicon nitride) material — are now part of the standard Barden product line. The use of ceramic rollers offers significantly improved performance characteristics in terms of bearing friction and wear. For example, ceramic rollers operate at lower temperatures, thus reducing the demand on the lubricant. Consequently, higher speeds are permissible and the service life can be extended to a significant degree.

The higher static and dynamic rigidity characteristics of ceramic



Hybrid cylindrical roller bearings HCN series

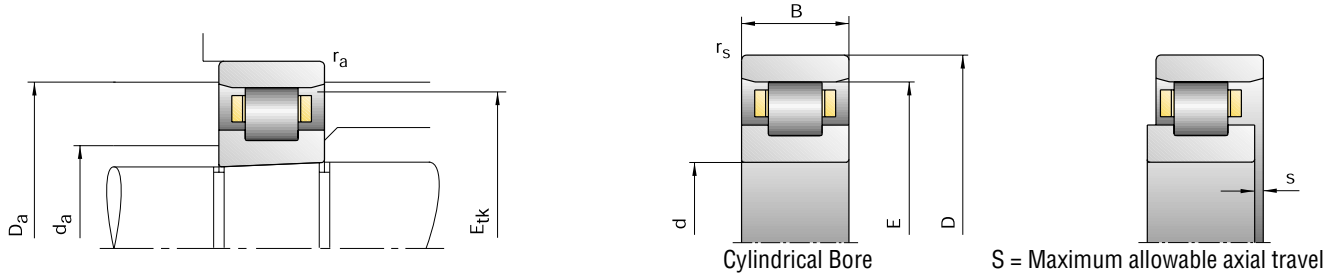
rollers, coupled with a lower thermal expansion coefficient, means preload values can be lower under elevated temperature conditions.

Because of the high surface quality of ring raceways and rollers, FAG cylindrical roller bearings are particularly suited for grease lubrication.

In an oil lubrication system, cylindrical roller bearings have lower oil consumption requirements compared to angular contact ball bearings. Care must be taken to ensure that oil circuits are kept separate if these two bearing types are to be mounted side by side.

Excess cylindrical roller bearing lubrication due to oil flow “contamination” from adjacent angular contact ball bearings may cause a sharp increase in cylindrical roller bearing temperatures.

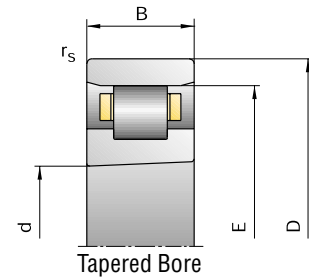
SUPER PRECISION CYLINDRICAL ROLLER BEARINGS



Barden Basic Bearing Number	Dimensions						Shaft & Shoulder Housing Dimensions			
	d	D	B	r_{smin}	E	s	d_a h12	D_a H12	r_a max	E_{tk}
	mm									
N1006K.M1.SP	30	55	13	0.60	48.5	1.9	36.5	49	0.60	47.0
HCN1006K.M1.SP	30	55	13	0.60	48.5	1.9	36.5	49	0.60	47.0
N1007K.M1.SP	35	62	14	0.60	55.0	2.0	42.0	56	0.60	53.4
HCN1007K.M1.SP	35	62	14	0.60	55.0	2.0	42.0	56	0.60	53.4
N1008K.M1.SP	40	68	15	0.60	61.0	2.1	47.0	62	0.60	59.3
HCN1008K.M1.SP	40	68	15	0.60	61.0	2.1	47.0	62	0.60	59.3
N1009K.M1.SP	45	75	16	0.60	67.5	2.2	52.5	69	0.60	65.6
HCN1009K.M1.SP	45	75	16	0.60	67.5	2.2	52.5	69	0.60	65.6
N1910K.M1.SP	50	72	12	0.60	66.5	1.8	55.5	67	0.60	65.1
N1010K.M1.SP	50	80	16	0.60	72.5	2.2	57.5	74	0.60	70.6
HCN1010K.M1.SP	50	80	16	0.60	72.5	2.2	57.5	74	0.60	70.6
N1911K.M1.SP	55	80	13	1.00	73.5	1.9	61.5	74	1.00	72.0
N1011K.M1.SP	55	90	18	1.00	80.5	2.5	64.5	82	1.00	78.5
HCN1011K.M1.SP	55	90	18	1.00	80.5	2.5	64.5	82	1.00	78.5
N1912K.M1.SP	60	85	13	1.00	78.5	1.9	66.5	79	1.00	77.0
N1012K.M1.SP	60	95	18	1.00	85.5	2.5	69.5	87	1.00	83.5
HCN1012K.M1.SP	60	95	18	1.00	85.5	2.5	69.5	87	1.00	83.5
N1913K.M1.SP	65	90	13	1.00	83.5	1.9	71.5	84	1.00	82.0
N1013K.M1.SP	65	100	18	1.00	90.5	2.5	74.5	92	1.00	88.5
HCN1013K.M1.SP	65	100	18	1.00	90.5	2.5	74.5	92	1.00	88.5
N1914K.M1.SP	70	100	16	1.00	92.0	2.3	78.0	93	1.00	90.3
N1014K.M1.SP	70	110	20	1.00	100.0	2.5	80.0	101	1.00	97.5
HCN1014K.M1.SP	70	110	20	1.00	100.0	2.5	80.0	101	1.00	97.5
N1915K.M1.SP	75	105	16	1.00	97.0	2.3	83.0	98	1.00	95.3
N1015K.M1.SP	75	115	20	1.00	105.0	2.5	85.0	106	1.00	102.5
HCN1015K.M1.SP	75	115	20	1.00	105.0	2.5	85.0	106	1.00	102.5
Designation examples:		Standard design				Cylindrical bore				
		N1014K.M1.SP				N1014M1.SP				
		N1914K.M1.SP				N1914M1.SP				

SUPER PRECISION CYLINDRICAL ROLLER BEARINGS

N19, N10, HCN10



Load Ratings		Attainable Speed Grease	Oil minimal	Radial Stiffness C_s	Weight kg	FAG Basic Bearing Number [†]
C_{dyn} kN	C_{0stat} min ⁻¹					
20.40	20.40	19000	22000	330	0.13	N1006K.M1.SP
16.00	17.00	24000	28000		0.13	HCN1006K.M1.SP
23.60	24.50	16000	18000	410	0.17	N1007K.M1.SP
19.00	20.40	20000	24000		0.17	HCN1007K.M1.SP
27.50	29.00	15000	17000	440	0.22	N1008K.M1.SP
21.60	24.50	20000	24000		0.21	HCN1008K.M1.SP
34.50	39.00	13000	15000	500	0.27	N1009K.M1.SP
28.00	33.50	17000	19000		0.27	HCN1009K.M1.SP
22.40	27.50	13000	15000	470	0.15	N1910K.M1.SP
36.00	41.50	12000	14000	580	0.30	N1010K.M1.SP
28.50	34.50	16000	18000		0.30	HCN1010K.M1.SP
25.00	31.50	12000	14000	540		0.21 N1911K.M1.SP
41.50	50.00	11000	13000	650	0.44	N1011K.M1.SP
33.50	42.50	14000	16000		0.44	HCN1011K.M1.SP
26.00	34.00	11000	13000	580	0.22	N1912K.M1.SP
44.00	55.00	10000	12000	710	0.47	N1012K.M1.SP
35.50	46.50	13000	15000		0.47	HCN1012K.M1.SP
29.00	40.00	10000	12000	680	0.24	N1913K.M1.SP
45.00	58.50	9500	11000	740	0.50	N1013K.M1.SP
36.00	48.00	12000	14000		0.50	HCN1013K.M1.SP
36.50	49.00	9500	11000	710	0.38	N1914K.M1.SP
64.00	81.50	9000	10000	820	0.69	N1014K.M1.SP
52.00	68.00	12000	14000		0.69	HCN1014K.M1.SP
38.00	53.00	9000	10000	760	0.41	N1915K.M1.SP
65.50	85.00	8500	9500	850	0.73	N1015K.M1.SP
53.00	71.00	11000	13000		0.72	HCN1015K.M1.SP

Hybrid design

HCN1014K.M1.SP

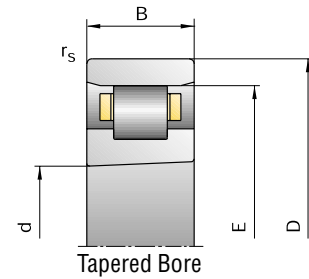
[†] FAG Basic Bearing Number is for reference only. All bearings are available exclusively from Barden, and must be ordered using the Barden Basic Bearing Number.



30
75

SUPER PRECISION CYLINDRICAL ROLLER BEARINGS

N19, N10, HCN10



Load Ratings		Attainable Speed Grease	Oil minimal	Radial Stiffness C_s	Weight kg	FAG Basic Bearing Number [†]
C_{dyn} kN	C_{0stat} min ⁻¹					
39.00	56.00	8500	9500	810	0.43	N1916K.M1.SP
76.50	98.00	7500	8500	900	0.99	N1016K.M1.SP
61.00	83.00	10000	12000		0.98	HCN1016K.M1.SP
50.00	71.00	7500	8500	880	0.61	N1917K.M1.SP
78.00	104.00	7500	8500	940	1.04	N1017K.M1.SP
63.00	86.50	10000	12000		1.04	HCN1017K.M1.SP
51.00	75.00	7500	8500	930	0.64	N1918K.M1.SP
93.00	125.00	6700	7500	1030	1.34	N1018K.M1.SP
75.00	104.00	8500	9500		1.33	HCN1018K.M1.SP
52.00	78.00	7000	8000	960	0.67	N1919K.M1.SP
96.50	129.00	6300	7000	1070	1.40	N1019K.M1.SP
76.50	108.00	8000	9000		1.39	HCN1019K.M1.SP
78.00	112.00	6300	7000	1100	0.92	N1920K.M1.SP
98.00	134.00	6000	6700	1100	1.46	N1020K.M1.SP
78.00	114.00	8000	9000		1.45	HCN1020K.M1.SP
78.00	116.00	6000	6700	1140	0.96	N1921K.M1.SP
112.00	153.00	5600	6300	1160	1.82	N1021K.M1.SP
88.00	129.00	7500	8500		1.81	HCN1021K.M1.SP
80.00	120.00	6000	6700	1180	0.99	N1922K.M1.SP
140.00	190.00	5300	6000	1240	2.30	N1022K.M1.SP
112.00	160.00	7000	8000		2.29	HCN1022K.M1.SP
95.00	143.00	5300	6000	1270	1.36	N1924K.M1.SP
150.00	208.00	5000	5600	1340	2.47	N1024K.M1.SP
118.00	176.00	6700	7500		2.46	HCN1024K.M1.SP
110.00	170.00	4800	5300	1350	1.80	N1926K.M1.SP
180.00	250.00	4300	4800	1420	3.72	N1026K.M1.SP

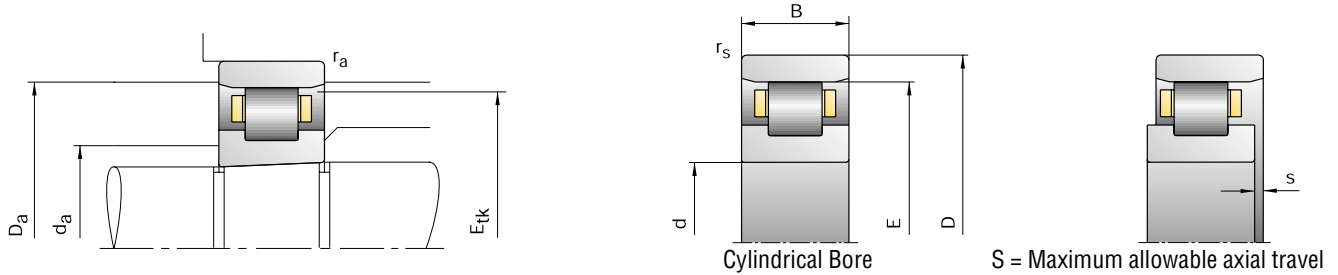


80
-
130

Hybrid design
HCN1020K.M1.SP

[†] FAG Basic Bearing Number is for reference only. All bearings are available exclusively from Barden, and must be ordered using the Barden Basic Bearing Number.

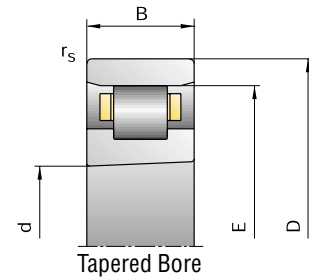
SUPER PRECISION CYLINDRICAL ROLLER BEARINGS



Barden Basic Bearing Number	Dimensions						Shaft & Shoulder Housing Dimensions			
	d	D	B	r _{smin}	E	s	d _a h12	D _a H12	r _a max	E _{tk}
mm										
N1928K.M1.SP	140	190	24	1.10	177.0	3.2	153.0	180	1.10	174.0
N1028K.M1.SP	140	210	33	1.10	192.0	4.2	158.0	194	1.10	187.8
N1930K.M1.SP	150	210	28	1.10	194.0	3.6	166.0	197	1.10	190.5
N1030K.M1.SP	150	225	35	1.50	205.5	4.4	169.5	208	1.50	201.0
N1932K.M1.SP	160	220	28	1.10	204.0	3.6	176.0	206	1.10	200.5
N1032K.M1.SP	160	240	38	1.50	220.0	4.6	180.0	222	1.50	215.0
N1934K.M1.SP	170	230	28	1.10	214.0	3.6	186.0	216	1.10	210.5
N1034K.M1.SP	170	260	42	2.10	237.0	5.0	193.0	240	2.10	231.5
N1936K.M1.SP	180	250	33	1.10	232.0	4.2	198.0	234	1.10	227.8
N1036K.M1.SP	180	280	46	2.10	255.0	5.6	205.0	258	2.10	248.8
N1938K.M1.SP	190	260	33	1.10	242.0	4.2	208.0	244	1.10	237.8
N1038K.M1.SP	190	290	46	2.10	265.0	5.6	215.0	268	2.10	258.8
N1940K.M1.SP	200	280	38	1.50	259.0	4.8	221.0	261	1.50	254.3
N1040K.M1.SP	200	310	51	2.10	281.0	6.4	229.0	284	2.10	274.5
N1944K.M1.SP	220	300	38	1.50	279.0	4.8	241.0	281	1.50	274.3
N1044K.M1.SP	220	340	56	3.00	310.0	6.6	250.0	313	3.00	302.5
N1948K.M1.SP	240	320	38	1.50	299.0	4.8	261.0	301	1.50	294.3
N1048K.M1.SP	240	360	56	3.00	330.0	6.6	270.0	333	3.00	322.5
N1952K.M1.SP	260	360	46	1.50	334.0	5.4	286.0	336	1.50	328.0
N1052K.M1.SP	260	400	65	4.00	364.0	8.1	296.0	368	4.00	355.5
N1956K.M1.SP	280	380	46	1.50	354.0	5.4	306.0	356	1.50	348.0
N1056K.M1.SP	280	420	65	4.00	384.0	8.1	316.0	388	4.00	375.5
N1960K.M1.SP	300	420	56	3.00	390.0	6.6	330.0	392	3.00	382.5
N1060K.M1.SP	300	460	74	4.00	420.0	8.7	340.0	425	4.00	410.0
Designation examples:			Standard design				Cylindrical bore			
			N1030K.M1.SP				N1030M1.SP			
			N1930K.M1.SP				N1930M1.SP			

SUPER PRECISION CYLINDRICAL ROLLER BEARINGS

N19, N10, HCN10



Load Ratings		Attainable Speed Grease	Oil minimal	Radial Stiffness C_s	Weight kg	FAG Basic Bearing Number [†]
C_{dyn} kN	C_{0stat}					
116.00	186.00	4300	4800	1480	1.92	N1928K.M1.SP
183.00	265.00	4000	4500	1480	3.94	N1028K.M1.SP
150.00	236.00	4000	4500	1590	2.95	N1930K.M1.SP
208.00	310.00	3800	4300	1630	4.75	N1030K.M1.SP
153.00	250.00	3800	4300	1690	3.10	N1932K.M1.SP
245.00	355.00	3400	3800	1680	5.79	N1032K.M1.SP
160.00	265.00	3400	3800	1780	3.26	N1934K.M1.SP
300.00	430.00	3200	3600	1860	7.77	N1034K.M1.SP
208.00	335.00	3200	3600	1880	4.81	N1936K.M1.SP
360.00	520.00	3000	3400	1960	10.20	N1036K.M1.SP
220.00	365.00	3000	3400	1990	5.05	N1938K.M1.SP
365.00	550.00	2800	3200	2040	10.60	N1038K.M1.SP
265.00	430.00	2800	3200	2110	7.07	N1940K.M1.SP
400.00	600.00	2600	3000	2130	14.00	N1040K.M1.SP
265.00	450.00	2600	3000	2170	7.64	N1944K.M1.SP
510.00	765.00	2400	2800	2360	17.90	N1044K.M1.SP
285.00	500.00	2400	2800	2430	8.24	N1948K.M1.SP
540.00	850.00	2200	2600	2560	19.30	N1048K.M1.SP
430.00	750.00	2000	2400	2840	14.00	N1952K.M1.SP
655.00	1020.00	1900	2200	2710	28.60	N1052K.M1.SP
440.00	800.00	1900	2200	3000	14.90	N1956K.M1.SP
680.00	1100.00	1800	2000	2930	30.90	N1056K.M1.SP
610.00	1060.00	1700	1900	3150	23.60	N1960K.M1.SP
900.00	1430.00	1600	1800	3200	43.70	N1060K.M1.SP

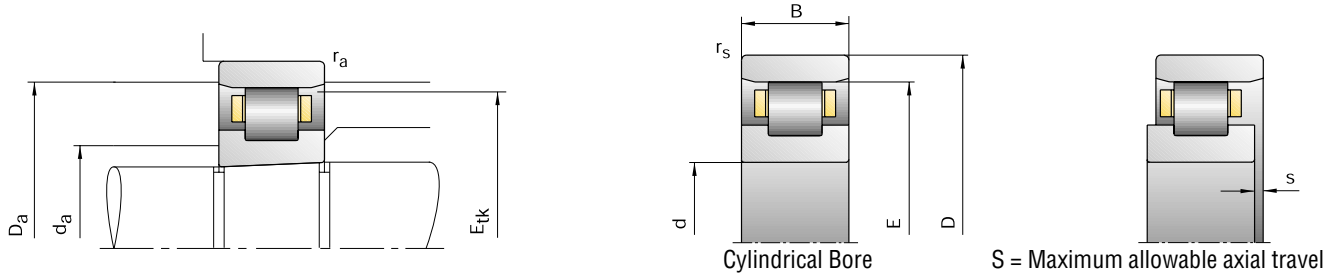


140
300

Hybrid design
HCN1030K.M1.SP

[†] FAG Basic Bearing Number is for reference only. All bearings are available exclusively from Barden, and must be ordered using the Barden Basic Bearing Number.

SUPER PRECISION CYLINDRICAL ROLLER BEARINGS



Barden Basic Bearing Number	Dimensions						Shaft & Shoulder Housing Dimensions			
	d	D	B	r _{smin}	E	s	d _a h12	D _a H12	r _a max	E _{tk}
mm										
N1964K.M1.SP	320	440	56	3.00	410.0	6.6	350.0	412	3.00	402.5
N1064K.M1.SP	320	480	74	4.00	440.0	8.7	360.0	445	4.00	430.0
N1968K.M1.SP	340	460	56	3.00	430.0	6.6	370.0	433	3.00	422.5
N1068K.M1.SP	340	520	82	5.00	475.0	9.3	385.0	480	5.00	463.8
N1972K.M1.SP	360	480	56	3.00	450.0	6.6	390.0	453	3.00	442.5
N1072K.M1.SP	360	540	82	5.00	495.0	9.3	405.0	500	5.00	483.8
N1976K.M1.SP	380	520	65	4.00	484.0	8.1	416.0	487	4.00	475.5
N1076K.M1.SP	380	560	82	5.00	515.0	9.3	425.0	520	5.00	503.8
N1980K.M1.SP	400	540	65	4.00	504.0	8.1	436.0	507	4.00	495.5
N1080K.M1.SP	400	600	90	5.00	550.0	10.4	450.0	555	5.00	537.5
N1984K.M1.SP	420	560	65	4.00	524.0	8.1	456.0	527	4.00	515.5
N1084K.M1.SP	420	620	90	5.00	570.0	10.4	470.0	575	5.00	557.5
N1988K.M1.SP	440	600	74	4.00	558.0	9.1	482.0	562	4.00	548.5
N1088K.M1.SP	440	650	94	6.00	597.0	10.8	493.0	603	6.00	584.0
N1992K.M1.SP	460	620	74	4.00	578.0	9.1	502.0	582	4.00	568.5
N1092K.M1.SP	460	680	100	6.00	624.0	11.6	516.0	630	6.00	610.5
N1996K.M1.SP	480	650	78	5.00	605.0	9.5	525.0	609	5.00	595.0
N1096K.M1.SP	480	700	100	6.00	644.0	11.6	536.0	650	6.00	630.5
N19/500K.M1.SP	500	670	78	5.00	625.0	9.5	545.0	629	5.00	615.0
N10/500K.M1.SP	500	720	100	6.00	664.0	11.6	556.0	670	6.00	650.5

Designation examples:

Standard design

Cylindrical bore

N1064K.M1.SP

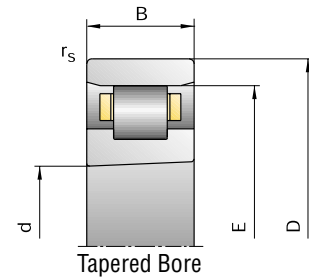
N1064M1.SP

N1964K.M1.SP

N1964M1.SP

SUPER PRECISION CYLINDRICAL ROLLER BEARINGS

N19, N10, HCN10



Load Ratings		Attainable Speed Grease	Oil minimal	Radial Stiffness C_s	Weight kg	FAG Basic Bearing Number [†]
C_{dyn} kN	C_{0stat}					
620.00	1100.00	1600	1800	3250	24.90	N1964K.M1.SP
915.00	1500.00	1500	1700	3330	45.10	N1064K.M1.SP
655.00	1200.00	1500	1700	3550	26.30	N1968K.M1.SP
1120.00	1830.00	1400	1600	3610	60.70	N1068K.M1.SP
655.00	1220.00	1400	1600	3640	27.50	N1972K.M1.SP
1140.00	1900.00	1300	1500	3750	64.40	N1072K.M1.SP
815.00	1500.00	1300	1500	3900	40.00	N1976K.M1.SP
1180.00	2000.00	1300	1500	3900	66.60	N1076K.M1.SP
815.00	1560.00	1300	1500	4010	41.70	N1980K.M1.SP
1370.00	2320.00	1200	1400	4090	88.10	N1080K.M1.SP
850.00	1630.00	1200	1400	4230	43.50	N1984K.M1.SP
1400.00	2450.00	1100	1300	4240	90.70	N1084K.M1.SP
1020.00	1960.00	1100	1300	4500	60.20	N1988K.M1.SP
1560.00	2750.00	1100	1300	4580	106.00	N1088K.M1.SP
1060.00	2080.00	1100	1300	4740	62.60	N1992K.M1.SP
1660.00	3000.00	1000	1200	4760	120.00	N1092K.M1.SP
1140.00	2240.00	1000	1200	4870	73.10	N1996K.M1.SP
1700.00	3100.00	950	1100	4840	125.00	N1096K.M1.SP
1180.00	2360.00	1000	1200	5100	75.70	N19/500K.M1.SP
1760.00	3200.00	950	1100	5100	130.00	N10/500K.M1.SP

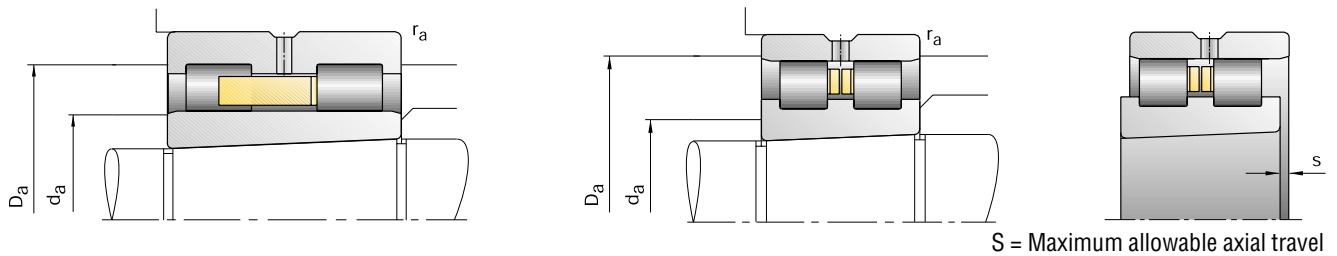


320
-
500

Hybrid design
HCN1064K.M1.SP

[†] FAG Basic Bearing Number is for reference only. All bearings are available exclusively from Barden, and must be ordered using the Barden Basic Bearing Number.

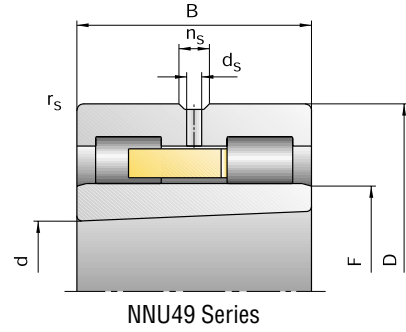
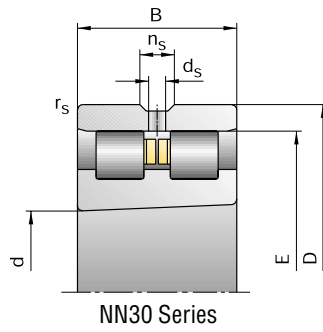
SUPER PRECISION CYLINDRICAL ROLLER BEARINGS



Barden Basic Bearing Number	Dimensions						Shaft & Shoulder Housing Dimensions				
	d	D	B	r_{smin}	E	s	d_a h12	D_a H12	r_a max	E_{tk}	
mm											
NN3006ASK.M.SP	30	55	19	1.0	48.5		4.8	3.2	38	50	1.0
NN3007ASK.M.SP	35	62	20	1.0	55.0		4.8	3.2	43	57	1.0
NN3008ASK.M.SP	40	68	21	1.0	61.0		4.8	3.2	48	63	1.0
NN3009ASK.M.SP	45	75	23	1.0	67.5		4.8	3.2	54	69	1.0
NN3010ASK.M.SP	50	80	23	1.0	72.5		4.8	3.2	59	74	1.0
NN3011ASK.M.SP	55	90	26	1.1	81.0		4.8	3.2	65	83	1.1
NN3012ASK.M.SP	60	95	26	1.1	86.1		4.8	3.2	70	88	1.1
NN3013ASK.M.SP	65	100	26	1.1	91.0		4.8	3.2	75	93	1.1
NUU4914SK.M.SP	70	100	30	1.0		80.0	4.8	3.2	79	92	1.0
NN3014ASK.M.SP	70	110	30	1.1	100.0		6.5	3.2	82	102	1.1
NUU4915SK.M.SP	75	105	30	1.0		85.0	4.8	3.2	84	97	1.0
NN3015ASK.M.SP	75	115	30	1.1	105.0		6.5	3.2	87	107	1.1
NUU4916SK.M.SP	80	110	30	1.0		90.0	4.8	3.2	89	102	1.0
NN3016ASK.M.SP	80	125	34	1.1	113.0		6.5	3.2	93	116	1.1
NUU4917SK.M.SP	85	120	35	1.1		96.5	4.8	3.2	96	111	1.1
NN3017ASK.M.SP	85	130	34	1.1	118.0		6.5	3.2	98	121	1.1
NUU4918SK.M.SP	90	125	35	1.1		101.5	4.8	3.2	101	116	1.1
NN3018ASK.M.SP	90	140	37	1.5	127.0		6.5	3.2	105	130	1.5
NUU4919SK.M.SP	95	130	35	1.1		106.5	4.8	3.2	106	121	1.1
NN3019ASK.M.SP	95	145	37	1.5	132.0		6.5	3.2	110	135	1.5
NUU4920SK.M.SP	100	140	40	1.1		113.0	6.5	3.2	112	129	1.1
NN3020ASK.M.SP	100	150	37	1.5	137.0		6.5	3.2	115	140	1.5
Designation examples:						Standard design	Cylindrical bore				
						NUU4920SK.M.SP	NUU4920S.M.SP				
						NN3020ASK.M.SP	NN3020AS.M.SP				

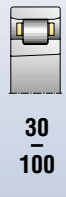
SUPER PRECISION CYLINDRICAL ROLLER BEARINGS

NNU49, NN30

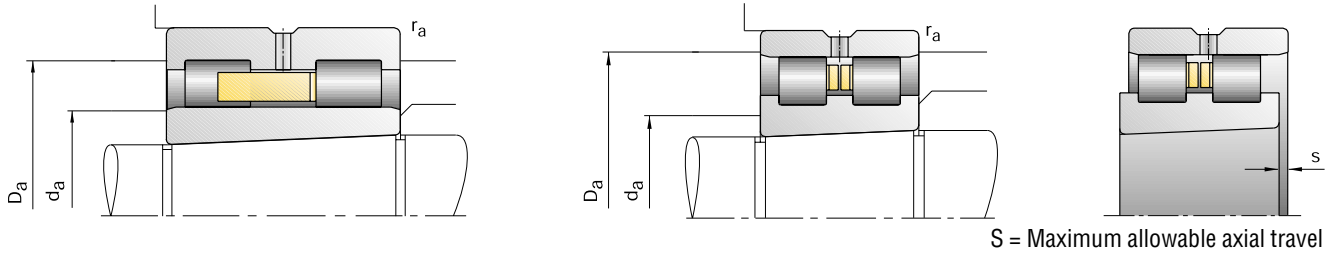


Load Ratings		Attainable Speed Grease	Oil minimal	Radial Stiffness C_s	Weight	FAG Basic Bearing Number [†]
C_{dyn}	C_{0stat}					
kN		min^{-1}			kg	
29	34	16000	19000	680	0.19	NN3006ASK.M.SP
36	44	14000	17000	790	0.25	NN3007ASK.M.SP
45	59	12000	15000	950	0.30	NN3008ASK.M.SP
54	72	11000	14000	1080	0.39	NN3009ASK.M.SP
57	80	10000	13000	1180	0.43	NN3010ASK.M.SP
72	100	9000	11000	1300	0.63	NN3011ASK.M.SP
75	110	8500	10000	1410	0.67	NN3012ASK.M.SP
77	116	8000	9500	1470	0.72	NN3013ASK.M.SP
60	104	7500	9000	1700	0.73	NNU4914SK.M.SP
98	150	7000	8500	1660	1.04	NN3014ASK.M.SP
63	114	7000	8500	1870	0.77	NNU4915SK.M.SP
100	156	6700	8000	1730	1.09	NN3015ASK.M.SP
66	122	6700	8000	1980	0.81	NNU4916SK.M.SP
120	186	6300	7500	1850	1.51	NN3016ASK.M.SP
90	166	6300	7500	2280	1.20	NNU4917SK.M.SP
125	200	6000	7000	1990	1.58	NN3017ASK.M.SP
93	176	6000	7000	2420	1.26	NNU4918SK.M.SP
140	224	5600	6700	2020	2.05	NN3018ASK.M.SP
95	186	5600	6700	2560	1.32	NNU4919SK.M.SP
143	236	5300	6300	2100	2.14	NN3019ASK.M.SP
129	255	5300	6300	3000	1.86	NNU4920SK.M.SP
146	245	5300	6300	2170	2.23	NN3020ASK.M.SP

[†] FAG Basic Bearing Number is for reference only. All bearings are available exclusively from Barden, and must be ordered using the Barden Basic Bearing Number.



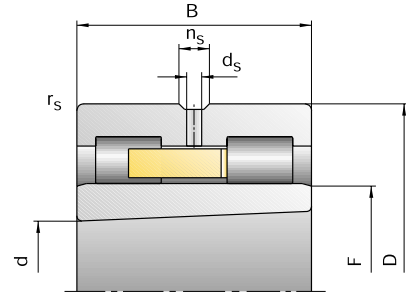
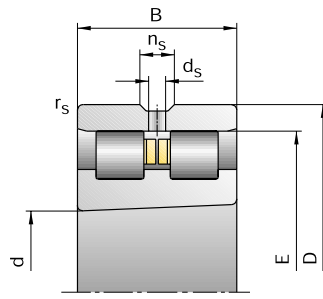
SUPER PRECISION CYLINDRICAL ROLLER BEARINGS



Barden Basic Bearing Number	Dimensions						Shaft & Shoulder Housing Dimensions					
	d	D	B	r_{smin}	E	s	d_a h12	D_a H12	r_a max	E_{tk}		
mm												
NNU4921SK.M.SP	105	145	40	1.1		118.0	2.0	6.5	3.2	117	134	1.1
NN3021ASK.M.SP	105	160	41	2.0	146.0		2.6	6.5	3.2	120	149	2.0
NNU4922SK.M.SP	110	150	40	1.1		123.0	2.0	6.5	3.2	122	139	1.1
NN3022ASK.M.SP	110	170	45	2.0	155.0		2.9	6.5	3.2	127	158	2.0
NNU4924SK.M.SP	120	165	45	1.1		134.5	2.3	6.5	3.2	133	155	1.1
NN3024ASK.M.SP	120	180	46	2.0	165.0		3.1	6.5	3.2	137	168	2.0
NNU4926SK.M.SP	130	180	50	1.5		146.0	2.7	6.5	3.2	145	166	1.5
NN3026ASK.M.SP	130	200	52	2.0	182.0		3.1	9.5	4.8	150	186	2.0
NNU4928SK.M.SP	140	190	50	1.5		156.0	1.8	6.5	3.2	155	176	1.5
NN3028ASK.M.SP	140	210	53	2.0	192.0		3.4	9.5	4.8	160	196	2.0
NNU4930SK.M.SP	150	210	60	2.0		168.5	2.7	6.5	3.2	167	197	2.0
NN3030ASK.M.SP	150	225	56	2.1	206.0		3.8	9.5	4.8	172	210	2.1
NNU4932SK.M.SP	160	220	60	2.0		178.5	2.7	6.5	3.2	177	207	2.0
NN3032ASK.M.SP	160	240	60	2.1	219.0		4.3	9.5	4.8	183	224	2.1
NNU4934SK.M.SP	170	230	60	2.0		188.5	2.7	6.5	3.2	187	217	2.0
NN3034ASK.M.SP	170	260	67	2.1	236.0		4.6	9.5	4.8	196	241	2.1
NNU4936SK.M.SP	180	250	69	2.0		202.0	3.2	9.5	4.8	200	232	2.0
NN3036ASK.M.SP	180	280	74	2.1	255.0		4.8	12.2	6.3	209	260	2.1
NNU4938SK.M.SP	190	260	69	2.0		212.0	3.2	9.5	4.8	210	242	2.0
NN3038ASK.M.SP	190	290	75	2.1	265.0		4.8	12.2	6.3	219	271	2.1
NNU4940SK.M.SP	200	280	80	2.1		225.0	4.3	12.2	6.3	223	259	2.1
NN3040ASK.M.SP	200	310	82	2.1	282.0		5.7	12.2	6.3	232	288	2.1
NNU4944SK.M.SP	220	300	80	2.1		245.0	4.3	12.2	6.3	243	279	2.1
NN3044ASK.M.SP	220	340	90	3.0	310.0		5.7	15.0	8.0	254	317	3.0
Designation examples:			Standard design				Cylindrical bore					
			NNU4930SK.M.SP				NNU4930S.M.SP					
			NN3030ASK.M.SP				NN3030AS.M.SP					

SUPER PRECISION CYLINDRICAL ROLLER BEARINGS

NNU49, NN30



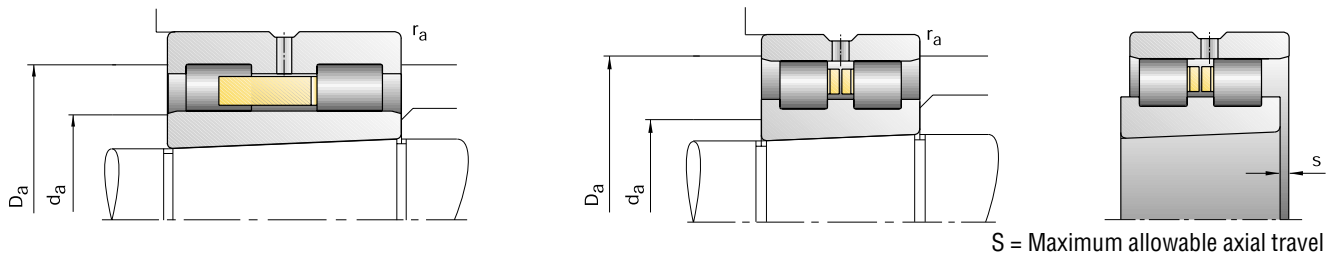
Load Ratings		Attainable Speed Grease	Oil minimal	Radial Stiffness C_s	Weight	FAG Basic Bearing Number [†]
C_{dyn}	C_{0stat}					
kN		min^{-1}			kg	
129	260	5300	6300	3080	1.93	NNU4921SK.M.SP
190	310	4800	5600	2320	2.84	NN3021ASK.M.SP
132	270	5000	6000	3170	2.01	NNU4922SK.M.SP
220	360	4500	5300	2500	3.61	NN3022ASK.M.SP
176	340	4500	5300	3200	2.71	NNU4924SK.M.SP
232	390	4300	5000	2700	3.94	NN3024ASK.M.SP
190	390	4000	4800	3600	3.73	NNU4926SK.M.SP
290	500	3800	4500	2980	5.79	NN3026ASK.M.SP
190	400	3800	4500	3700	4.04	NNU4928SK.M.SP
300	520	3600	4300	3090	6.22	NN3028ASK.M.SP
325	655	3600	4300	4280	6.10	NNU4930SK.M.SP
335	585	3400	4000	3300	7.58	NN3030ASK.M.SP
335	680	3400	4000	4420	6.41	NNU4932SK.M.SP
375	670	3200	3800	3510	9.23	NN3032ASK.M.SP
340	695	3200	3800	4560	6.73	NNU4934SK.M.SP
450	800	3000	3600	3770	12.50	NN3034ASK.M.SP
405	850	3000	3600	5160	9.96	NNU4936SK.M.SP
570	1000	2800	3400	4040	16.40	NN3036ASK.M.SP
405	880	2800	3400	5310	10.40	NNU4938SK.M.SP
585	1040	2600	3200	4190	17.30	NN3038ASK.M.SP
490	1040	2600	3200	5510	14.70	NNU4940SK.M.SP
655	1200	2400	3000	4410	22.20	NN3040ASK.M.SP
510	1140	2400	3000	6000	15.90	NNU4944SK.M.SP
800	1460	2200	2800	4770	29.10	NN3044ASK.M.SP



105
220

[†] FAG Basic Bearing Number is for reference only. All bearings are available exclusively from Barden, and must be ordered using the Barden Basic Bearing Number.

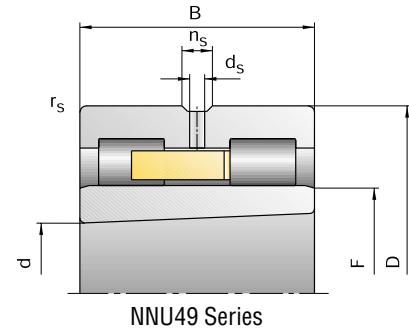
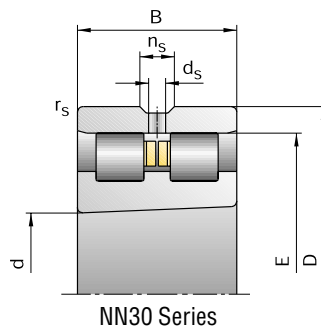
SUPER PRECISION CYLINDRICAL ROLLER BEARINGS



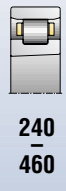
Barden Basic Bearing Number	Dimensions						Shaft & Shoulder Housing Dimensions					
	d	D	B	r_{smin}	E	s	d_a h12	D_a H12	r_a max	E_{tk}		
mm												
NNU4948SK.M.SP	240	320	80	2.1		265.0	4.3	12.2	6.3	263	299	2.1
NN3048ASK.M.SP	240	360	92	3.0	330.0		6.1	15.0	8.0	274	337	3.0
NNU4952SK.M.SP	260	360	100	2.1		292.0	5.4	15.0	8.0	289	334	2.1
NN3052ASK.M.SP	260	400	104	4.0	364.0		6.6	15.0	8.0	300	372	4.0
NNU4956SK.M.SP	280	380	100	2.1		312.0	5.4	15.0	8.0	309	354	2.1
NN3056ASK.M.SP	280	420	106	4.0	384.0		6.9	15.0	8.0	320	392	4.0
NNU4960SK.M.SP	300	420	118	3.0		339.0	6.3	17.7	9.5	336	389	3.0
NN3060ASK.M.SP	300	460	118	4.0	418.0		7.5	17.7	9.5	346	427	4.0
NNU4964SK.M.SP	320	440	118	3.0		359.0	6.3	17.7	9.5	356	409	3.0
NN3064ASK.M.SP	320	480	121	4.0	438.0		8.0	17.7	9.5	366	447	4.0
NNU4968SK.M.SP	340	460	118	3.0		379.0	6.3	17.7	9.5	376	429	3.0
NN3068ASK.M.SP	340	520	133	5.0	473.0		8.8	17.7	9.5	393	483	5.0
NNU4972SK.M.SP	360	480	118	3.0		399.0	6.3	17.7	9.5	396	449	3.0
NN3072ASK.M.SP	360	540	134	5.0	493.0		8.8	17.7	9.5	413	503	5.0
NNU4976SK.M.SP	380	520	140	4.0		426.0	7.2	17.7	9.5	423	482	4.0
NN3076ASK.M.SP	380	560	135	5.0	513.0		9.1	17.7	9.5	433	523	5.0
NNU4980SK.M.SP	400	540	140	4.0		446.0	7.2	17.7	9.5	443	502	4.0
NN3080ASK.M.SP	400	600	148	5.0	549.0		9.5	17.7	9.5	459	560	5.0
NNU4984SK.M.SP	420	560	140	4.0		466.0	7.2	17.7	9.5	463	522	4.0
NN3084ASK.M.SP	420	620	150	5.0	569.0		10.0	17.7	9.5	479	580	5.0
NNU4988SK.M.SP	440	600	160	4.0		490.0	6.8	17.7	9.5	487	558	4.0
NN3088ASK.M.SP	440	650	157	6.0	597.0		10.2	23.5	12.5	501	609	6.0
NNU4992SK.M.SP	460	620	160	4.0		510.0	6.8	17.7	9.5	507	578	4.0
NN3092ASK.M.SP	460	680	163	6.0	624.0		10.9	23.5	12.5	524	636	6.0
Designation examples:			Standard design					Cylindrical bore				
			NNU4960SK.M.SP					NNU4960S.M.SP				
			NN3060ASK.M.SP					NN3060AS.M.SP				

SUPER PRECISION CYLINDRICAL ROLLER BEARINGS

NNU49, NN30

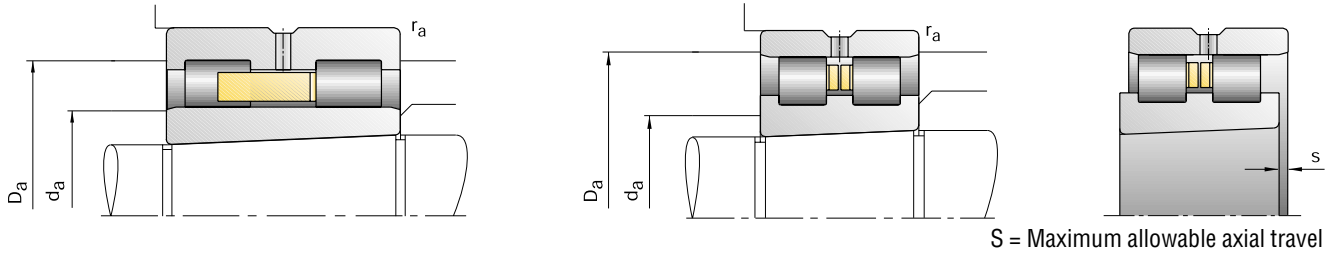


Load Ratings		Attainable Speed Grease	Oil minimal	Radial Stiffness C_s	Weight	FAG Basic Bearing Number [†]
C_{dyn}	C_{0stat}					
kN		min^{-1}			kg	
530	1200	2200	2800	6320	17.10	NNU4948SK.M.SP
850	1560	2000	2600	5140	31.60	NN3048ASK.M.SP
750	1700	2000	2600	7080	29.70	NNU4952SK.M.SP
1060	2000	1900	2400	5680	46.20	NN3052ASK.M.SP
765	1800	1900	2400	7480	31.60	NNU4956SK.M.SP
1080	2080	1800	2200	5890	49.70	NN3056ASK.M.SP
1040	2400	1700	2000	8280	49.10	NNU4960SK.M.SP
1270	2400	1600	1900	5930	68.80	NN3060ASK.M.SP
1060	2550	1600	1900	8750	51.80	NNU4964SK.M.SP
1320	2600	1600	1900	6440	74.20	NN3064ASK.M.SP
1100	2650	1500	1800	9230	54.50	NNU4968SK.M.SP
1630	3250	1400	1700	7170	99.30	NN3068ASK.M.SP
1140	2800	1500	1800	9700	57.30	NNU4972SK.M.SP
1660	3350	1400	1700	7430	104	NN3072ASK.M.SP
1430	3600	1400	1700	10970	85.80	NNU4976SK.M.SP
1700	3450	1300	1600	7690	110	NN3076ASK.M.SP
1500	3800	1300	1600	11540	89.40	NNU4980SK.M.SP
2160	4500	1200	1500	8660	143	NN3080ASK.M.SP
1530	4000	1300	1600	12120	93.20	NNU4984SK.M.SP
2120	4500	1200	1500	8660	150	NN3084ASK.M.SP
2040	5200	1200	1500	12690	129	NNU4988SK.M.SP
2450	5100	1100	1400	9240	172	NN3088ASK.M.SP
2120	5500	1100	1400	13390	134	NNU4992SK.M.SP
2600	5400	1100	1400	9430	197	NN3092ASK.M.SP



[†] FAG Basic Bearing Number is for reference only. All bearings are available exclusively from Barden, and must be ordered using the Barden Basic Bearing Number.

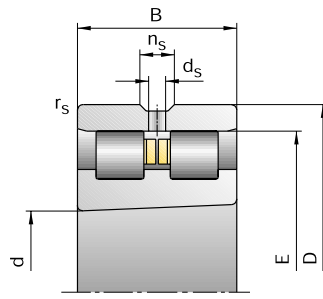
SUPER PRECISION CYLINDRICAL ROLLER BEARINGS



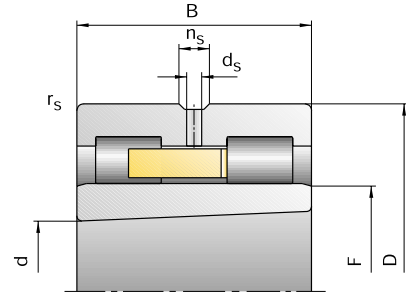
Barden Basic Bearing Number	Dimensions							Shaft & Shoulder Housing Dimensions				
	d	D	B	r_{smin}	E	s	d_a h12	D_a H12	r_a max	E_{tk}		
	mm											
NNU4996SK.M.SP	480	650	170	5.0		534.0	7.2	17.7	9.5	531	606	5.0
NN3096ASK.M.SP	480	700	165	6.0	644.0		11.2	23.5	12.5	544	656	6.0
NNU49/500SK.M.SP	500	670	170	5.0		568.0	7.2	17.7	9.5	551	626	5.0
NN30/500ASK.M.SP	500	720	167	6.0	664.0		11.7	23.5	12.5	564	677	6.0

SUPER PRECISION CYLINDRICAL ROLLER BEARINGS

NNU49, NN30



NN30 Series



NNU49 Series

Load Ratings		Attainable Speed Grease	Oil minimal	Radial Stiffness C_s	Weight kg	FAG Basic Bearing Number [†]
C_{dyn}	C_{0stat}					
kN		min^{-1}				
2360	6100	1100	1400	14110	158	NNU4996SK.M.SP
2700	5850	1000	1300	10060	206	NN3096ASK.M.SP
2320	6100	1000	1300	14110	162	NNU49/500SK.M.SP
2650	5850	1000	1300	10060	214	NN30/500ASK.M.SP



480
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500

[†] FAG Basic Bearing Number is for reference only. All bearings are available exclusively from Barden, and must be ordered using the Barden Basic Bearing Number.

