



04

SOLID COLLAR NEEDLE ROLLER BEARING

The solid collar needle roller bearing has compact structure, small radial size and large load carrying capacity. It is suitable for the parts of which the radial overall size is limited. It is also widely applied to the situation where the shaft or housing has the swinging motion. In general, the needle roller bearing only withstands the radial load, not the axial load. When the shaft has axial load, it can be used in combination with other bearings.

However, it does not limit the axial shift of shaft or housing. The limiting rotational speed of needle roller bearing is lower. In high rotational speed of main machine, the needle roller bearing with cage shall be chosen as far as possible.

In comparison with other types of needle roller bearings, under the situation of same radial size, the needle roller bearing has the large load carrying capacity and high rigidity but has high friction torque.

This kind of bearing has many series with different structure and size. It is requested that the hardness, processing accuracy and surface roughness of shaft journal surface and rolling surface of outer housing be same as those of the collar of bearing. As for the needle roller with G2 class, the diameter varies within $2\mu\text{m}$ in group. Except the full complement needle roller bearings, they have the rigid cages, which can correctly guide the parallel axis line of needle roller.

MODEL RNA, NK, NA, NKI NEEDLE ROLLER BEARINGS WITHOUT AND WITH INNER RING



The needle roller bearing without inner ring is suitable for the parts of which the radial size is limited.

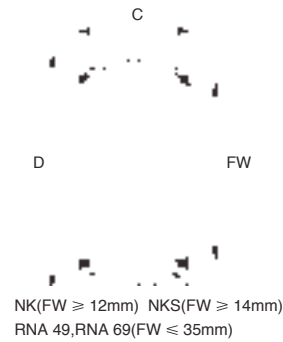
Because of no inner ring, the surface of shaft journal fitted with it is acted directly as rolling surface. It is requested that the surface hardness be no less than HRC60, surface roughness, no more than $0.63\mu\text{m}$. This kind of bearing does not limit the axial shift of shaft and housing and has high limiting rotational speed.

The inner ring has no shoulder in this bearing. For this purpose, the inner ring, outer ring, complete set of needles and cage can be mounted respectively. This bearing does not limit the axial shift of shaft and outer housing. Since the cage separates the needles so as to reduce friction. It can be used for the parts with high rotational speed.

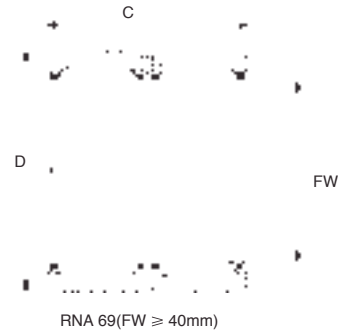
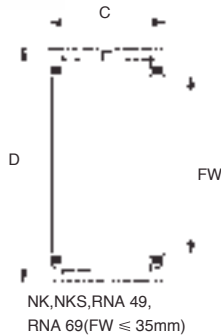


NEEDLE ROLLER BEARINGS WITHOUT INNER RING

**NK RNA
NKS**



Shaft Diameter	Bearing Designation		Mass	Boundary Dimensions			Basic Load Rating		Limiting Speed
	Current Code	Original Code		Approx	Fw	D	C	Dynamic	
mm			g	mm			N		rpm
5	NK5/10TN		2.9	5	10	10	2100	1400	36780
	NK05/08			5	10	8			
	NK05/10TN-OH			5	10	12	2350	1920	39000
	NK05/12TN		3.7	5	10	12	3000	2650	39000
6	NK06/10			6	12	10	2600	2200	37000
	NK06/10TN			6	12	10	2600	2200	37000
	NK06/12TN		5.7	6	12	12	3350	3150	37000
	RNA6X13X8TN			6	13	8			
7	NK07/10		6.9	7	14	10	2850	2650	34000
	NK07/12		8.2	7	14	12	3650	3600	34000
7.8	RNA7.8169			7.8	16	9			
8	NK8L 12TN		8.3	8	15	12	3950	4100	32000
	NK08/12		8.7	8	15	12	3950	4100	32000
	NK08/16		12	8	15	16	5100	5800	32000
	NK08/16TN			8	15	16	5100	5800	32000
	RNA8X19X9			8	19	9			
	RNA8X14X8			8	14	8			
	RNA496			8	15	10			
RNA8X15X10TN			8	15	10				
9	NK09/12		10.3	9	16	12			
10	NK10/12TN	462409K	10	10	17	12	4750	5300	29000
		5624097	16.6	10	17	15	4860	7100	29000
	NK10/10			10	17	10			
	NK10/12			10	17	12			
	NK10/16			10	17	16	6200	7800	29000
	NK10/16TN			10	17	16	6200	7800	29000
12	NKS10			10	19	13	5800	6000	29000
	NK12/12TN	644097	11.8	12	19	12	6000	6400	27000
		5624098	15.4	12	19	15	6400	7100	27000
14	NK12/16		16.8	12	19	16	8200	9800	27000
	NK14/16	4624900K	20.8	14	22	16	10100	11500	25000
	NKS14		27	14	25	16	1400	13800	24000
	RNA4900	4624900	24.4	14	22	13	8500	9000	25000
	RNA6900	6634900	29.1	14	22	22	12800	15600	25000
	NK14/12			14	22	12			
15	NK14/20			14	22	20	12800	15600	25000
	NK15/12	644800K	18.5	15	23	12	8600	11000	21000
	RNA152815		31.7	15	28	15	13600	17200	24000
	7948/15	16.1	15	22	12	8200	9800	8500	



Shaft Diameter	Bearing Designation		Mass	Boundary Dimensions			Basic Load Rating		Limiting Speed	
	Current Code	Original Code		Approx	Fw	D	C	Dynamic		Static
mm			g	mm			N		rpm	
15	NK15/16	644302	18.2	15	25	12	10600	13500	17000	
	NK15/20		21.8	15	23	16	10700	12700	24000	
	NK152312		26.7	15	23	20	13600	17200	24000	
	NK152512			15	23	12				
				15	25	12				
16	NK16/16	624701	20.8	16	24	16	11300	13900	23000	
	NK16/20		23.9	16	24	20	10400	16800	23000	
	RNA4901		4624901	16.6	16	24	13	6400	8900	15500
	RNA6901		6634901	28.7	16	24	22	14000	18600	15500
	NKS16			30	16	28	16	14900	15000	20000
	NK162516			16	16	25	16			
	NK162616			16	16	26	16			
17	NK17/16	644903K	21.5	17	25	16	9000	13500	14000	
	NK17/20	RNA172520	30	17	25	20	15000	20000	23000	
18	NK18/20		30.5	18	26	20	15500	19800	22000	
	NK18/16			18	26	16	12500	16200	22000	
19	NK19/16			19	27	16	13000	17000	22000	
20	NK20/16	644802	25.7	20	28	16	10500	13800	21000	
	NK20/20	624802	29.3	20	28	20	11500	21800	21000	
	NK202616		20.8	20	26	16	9600	10800	21000	
	NK202620			20	26	20	9600	10800	21000	
	NKS20		46.8	20	32	20	20000	23000	20000	
	NK203312SX		29.1	20	33	12	13000	18000	11000	
		6624101	24.3	20	28	25	13000	17500	11000	
	RNA4902	4624902	20.5	20	28	13	11000	12900	12000	
	RNA6902	6634902	35.4	20	28	23	10800	12800	12000	
	RNA5902			20	32	16	13000	25000	12000	
				20	28	18				
21	NK21/12			21	29	12				
	NK21/16			21	29	16	13500	18700	21000	
	NK21/20			21	29	20				
22	NK22/16	NK223016	29.2	22	30	16	13500	18000	11500	
		NK223516	34.6	22	35	16	18600	20800	11500	
	NKS22		60.2	22	35	20	21500	25000	17000	
	RNA4903	4644903	20.7	22	30	13	12000	16800	16300	
	RNA5903			22	30	18				
	RNA6903	6634903	39.8	22	30	23	14000	19900	16300	
		624703	53	22	35	25	24500	28000	14100	
	634704L	42.5	22	30	30	17700	27000	16500		

NEEDLE ROLLER BEARINGS WITHOUT INNER RING

NK RNA NKS

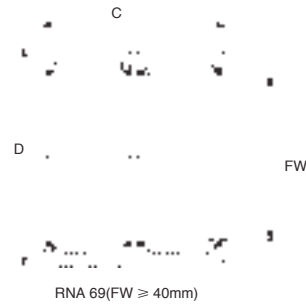


NK,NKS,RNA 49,
RNA 69(FW ≤ 35mm)



RNA 69(FW ≥ 40mm)

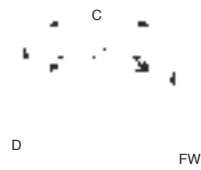
Shaft Diameter	Bearing Designation		Mass	Boundary Dimensions			Basic Load Rating		Limiting Speed
	Current Code	Original Code		Approx	Fw	D	C	Dynamic	
			mm	g	mm			N	
22	NK22/20	644704	27.4	22	28	16	10500	15000	16500
		NK223516	49.4	22	35	16	18600	20800	16500
				22	30	20			
23		634704KA	37.5	23	30	30	18600	29000	15000
24	NK24/16			24	32	16			
	NK24 × 33.5 × 7.5			24	33.5	7.5			
25	NK25/16	624904	30	25	33	16	12900	20400	15000
	NK25/20	644804	38.4	25	33	20	16800	28500	15000
	RNA4904	4644904	50.8	25	37	17	11900	16500	15000
	RNA6904	6634904	97.7	25	37	30	26000	43000	15000
	NKS25		65	25	38	20	25800	31000	16300
		624704	100.1	25	35	25	14900	22400	16500
	NK25/30	644804K	63	25	33	30	18800	30500	165000
	NK253326			25	33	26			
	NK253422			25	34	22			
	NK253425			25	34	25			
	NK253820			25	38	20			
NK253825			25	38	25				
NK254517.5			25	45	17.5				
26	NK26/16		30	26	34	16	15000	23000	16300
	NK26/20		40	26	34	20	17000	30000	16300
27	NK27 × 40 × 25			27	40	25			
28	RNA283833		99.8	28	38	33	33000	57000	12000
		F3833	99.8	28	38	33	33000	57000	12000
	NKS28		80	28	42	20	25900	33500	15000
	NK28/20		53	28	37	20	22000	34000	16500
	NK28/30			28	37	30	33000	57000	12000
	RNA69/22	63549/22		28	39	30			
29	NK29/20			29	38	20	21900	34000	15000
	NK29/30			29	38	30	32500	57000	15000
30	NK30/20	644805	57.9	30	40	20	20600	32000	15000
	NK30/30		95	30	40	30	31500	50000	15000
	RNA4905	4624905	57	30	42	17	23600	31500	14000
	RNA6905	6634905	106.5	30	42	30	39000	59000	14000
		624905	68	30	42	20	20000	32000	15000
	NK304013			30	40	13			
	NK304430			30	44	30			
	NK304630			30	46	30			
NK305017			30	50	17				



Shaft Diameter	Bearing Designation		Mass	Boundary Dimensions			Basic Load Rating		Limiting Speed
	Current Code	Original Code		Approx	Fw	D	C	Dynamic	
			mm	g	mm			N	
30	NK30			30	45	17	32000	40000	14000
	RNA305225			30	52	25			
30.5	NK30.5 × 50 × 16			30.5	50	16			
	NK30.5 × 50 × 17			30.5	50	17			
31	NK31.75 × 44.45 × 31.75			31.75	44.45	22			
32	NK32/20	624705	75.4	32	42	20	22600	33500	15000
	RNA49/28	46449/28K	80	32	45	17	17400	30000	13000
	NAS32		100	32	47	22	31000	40000	13000
	RNA69/28		125	32	45	30	39500	61300	13000
		644906	42	32	38	11	10750	30500	12000
		644706	193	32	50	35	40500	63000	12000
		NKS32	100	32	47	22	31000	40000	12000
		NK32/30			32	42	30	33500	60000
34	NK345034			34	50	34			
	NK345035			34	50	35			
35	NK35/20	644806	70	35	45	20	13800	26900	12000
	RNA4906	4624906	62.8	35	47	17			
	RNA6906	6634906	116	35	47	30			
		644907	161	35	51				
	NK354512			35	45	12			
	NK354830			35	48	30			
	NK355034			35	50	34			
	NK355236			35	52	36			
	RNA354527			35	45	27			
	RNA5906		108	35	47	23			
RNA355730			35	57	30				
RNA355734			35	57	34				
36	NK365225			36	52	25			
37		624706	154	37	52	22	28500	45500	9000
	NK37/20			37	47	20	24900	43500	12000
	NK37/30			37	47	30	37000	73000	12000
38	NK38/20			38	48	20	25500	45000	12000
	NK38/30			38	48	30	38000	76000	12000
40	NK40/20		78.9	40	50	20	26500	43000	11000
	NK40/30		120	40	50	30	37500	79000	11000
	NK404815			40	48	15			
	NK405530			40	55	30			
	NKS40			40	55	22	38000	54000	11000

NEEDLE ROLLER BEARINGS WITHOUT INNER RING

**NK RNA
NKS**

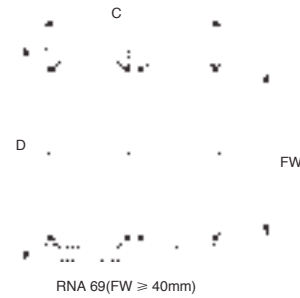


NK,NKS, RNA 49,
RNA 69(FW ≤ 35mm)



RNA 69(FW ≥ 40mm)

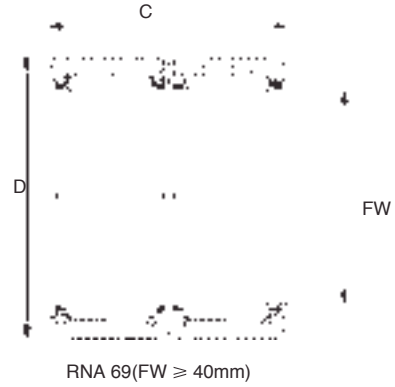
Shaft Diameter	Bearing Designation		Mass	Boundary Dimensions			Basic Load Rating		Limiting Speed
	Current Code	Original Code		Approx	Fw	D	C	Dynamic	
			mm	g	mm			N	
40	RNA49/32	66349/32	147	40	52	20	25500	68500	8500
	RNA69/32			40	52	36			
	RNA405422			40	54	22			
	RNA40X55X20			40	55	20			
42	NK42/20	4624907	83	42	52	20	23900	45000	10000
	NK42/30		125	42	52	30	27000	49000	10000
	RNA4907		99.3	42	55	20	19800	41500	8700
	RNA5907	6634907 644708	160	42	55	36	26000	60500	8700
	RNA6907		148	42	65	22	31500	51000	8700
	RNA425622		42	56	22				
43	NK43/20		84	43	53	20	25700	75000	10000
	NK43/30		126	43	53	30	39000	75000	10000
45	NK45/20	644808 624708 46449/38	81.5	45	55	20	19800	46500	7650
			75.3	45	55	22	20500	49600	7650
			80	45	58	20	21600	50500	7650
	NK45/30			45	55	30	41000	88000	7650
	NKS45			45	60	22	40500	60000	7650
	RNA456227K			45	62	27			
47	NK47/20			47	57	20	28500	56000	7650
	NK47/30			47	57	30	43000	94000	7650
48	RNA4908	4644908	132	48	62	22	31000	63000	8120
	RNA5908		225	48	62	30	31000	63000	8120
	RNA6908	6634908	238	48	62	40	64000	112000	8120
50	RNA50/25	624708K	167	50	62	25	28000	67000	8140
	RNA50/35		236	50	62	35	32000	70100	8140
			328	50	65	34	40000	62000	8140
	NK50/14	644810	257	50	64	14	32000	70100	8140
	NK50/15			50	65	15	40000	62000	8140
	NK50/27YA			50	67	27			
	NKS50			50	65	22			
NK506825	50	68	25						
52	RNA4909	4624909	163	52	68	22	37000	69500	7600
	RNA5909		232	52	68	30			
	RNA6909	6634909	308	52	68	40	61500	123500	7600
55	NK55/25	624709	167	55	68	25	30600	60800	7600
			210	55	68	25	36000	68000	7600
	NK55/30			55	68	30	48000	63000	7600
	NK55/35			55	68	35	55000	74000	7600



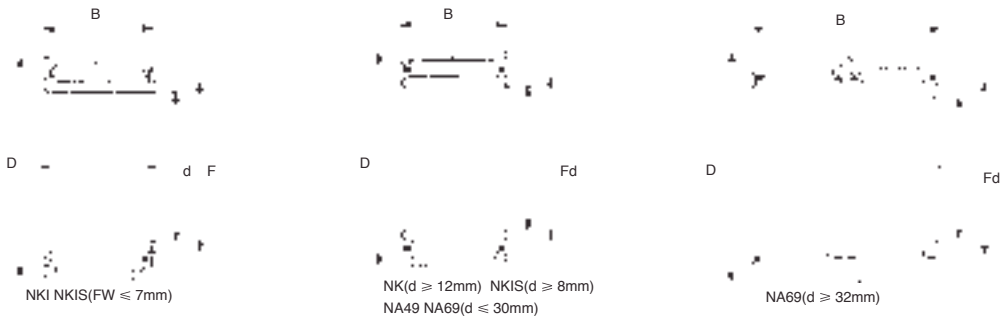
Shaft Diameter	Bearing Designation		Mass	Boundary Dimensions			Basic Load Rating		Limiting Speed
	Current Code	Original Code		Approx	Fw	D	C	Dynamic	
mm				g	mm			N	
55	NKS55			55	72	22	45000	74000	7600
58	RNA4910	4644910	161	58	72	22	41000	72000	7500
	RNA6910	6634910	296	58	72	40	68000	135000	7500
60	NK60/25		154	60	72	25	39000	86000	7000
	NK60/35			60	72	35	56000	130000	7000
	NKS60			60	80	28	63000	98000	7000
63	RNA4911	4644911	241	63	80	25	50600	96580	7000
	RNA6911	6634911	430	63	80	45	82560	172000	7000
65	NK65/25			65	78	25	44000	98000	7000
	NK65/35			65	78	35	59000	142000	7000
	NKS65			65	85	28	67000	108000	7000
68	RNA4912	4644912	257	68	85	25	52800	91050	7000
	RNA5912		408	68	85	34			
	RNA6912	6634912	436	68	85	45	88500	186000	7000
	NK68/25			68	82	25	43500	89000	7000
70	NK70/25			70	85	25	44500	92000	6500
	NK70/35			70	85	35	63000	144000	6500
72	RNA4913	4644913	300	72	90	25	57500	110500	6500
	RNA6913	6634913	571	72	90	45	87600	194500	6500
75	NK75/25		315	75	92	25	54000	104000	6000
	NK75/35		445	75	92	35	77000	162000	6000
80	RNA4914	4644914	400	80	100	30	79000	154000	5500
	RNA6914	6634914	815	80	100	54	121000	263000	5500
	NK80/25			80	95	25			
	NK80/35			80	95	35			
85	RNA4915	4644915	472	85	105	30	82000	158000	5500
	RNA5915		745	85	105	40			
	RNA6915	6634915	923	85	105	54	128000	272000	5500
	NK85/25			85	105	25	69000	123000	5500
	NK85/35			85	105	35	98000	193000	5500
90	RNA4916	4644916	496	90	110	30	81000	170500	5000
	RNA6916	6634916	978	90	110	54	130500	280600	5000
	NK90/35			90	110	30	103000	20800	5000
95	NK95/26			95	115	26	73000	137000	4800
	NK95/36			95	115	36	107000	223000	4800
96		SG-421	496	96	115	29	73000	137000	4600
100	RNA4917	4644917	608	100	120	35	98000	207000	4600
	RNA6917	6634917	1112	100	120	63	161000	337000	4600
	NK100/30			100	120	30			

NEEDLE ROLLER BEARINGS WITHOUT INNER RING

**NK RNA
NKS**



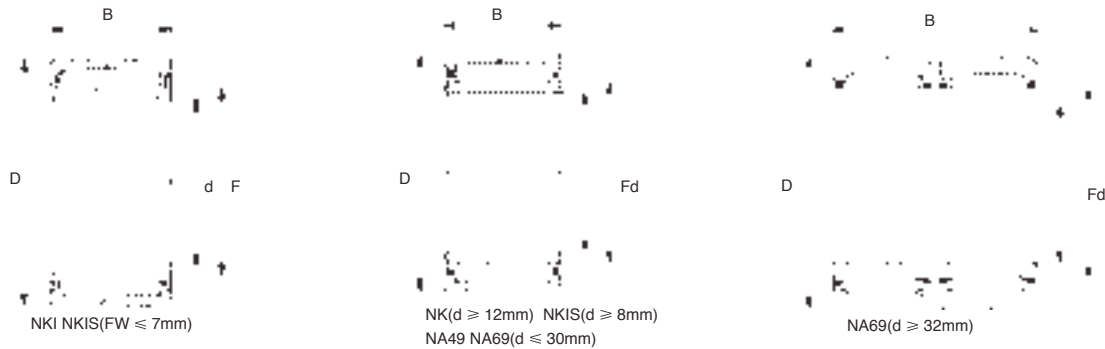
Shaft Diameter	Bearing Designation		Mass	Boundary Dimensions			Basic Load Rating		Limiting Speed
	Current Code	Original Code		Approx	Fw	D	C	Dynamic	
			mm	g	mm			N	
100	NK100/36			100	120	36	111000	237000	4600
105	RNA4918	4644918	713	105	125	35	98500	239000	4000
	RNA6918	6634918	1250	105	125	63	174000	38000	4000
	NK105/26			105	125	26	78000	155000	4000
	NK105/36			105	125	36	114000	250000	4000
110	RNA4919	4644919	685	110	130	35	112000	245000	3870
	RNA6919	6634919	1325	110	130	63	196000	400000	3870
	NK110/30			110	130	30	98000	21000	4200
	NK110/40			110	130	40	127000	29000	4200
115	RNA4920	4624920	1006	115	140	40	120000	264000	3700
	NK115/12			115	140	12			
	NK115/15			115	140	15			
120	NK120/40			120	140	40			
125	RNA4922	6634922	1200	125	150	40	124000	270000	3300
135	RNA4924	4644924	1760	135	165	45	174000	386000	2900
160	RNA4928	4644928	2350	160	190	50	200000	460000	2900



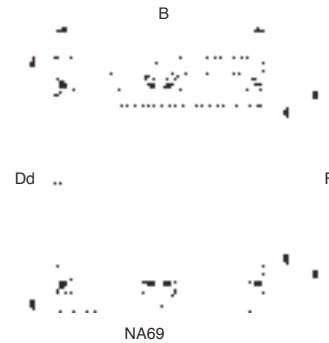
Shaft Diameter	Bearing Designation		Mass	Boundary Dimensions				Basic Load Rating		Limiting Speed
	Current Code	Original Code		Approx	d	Fw	D	B	Dynamic	
mm			g	mm				N		rpm
5	NA495		7	5		13	10	2670	2350	34000
	NA495TN		7	5		13	10	2670	2350	34000
6	NA496		9	6		15	10	3150	3000	32000
7	NA497		12	7		17	10	3600	3650	30000
8	NKI 8/16			8	14	25	16	12400	11300	21500
	NA498		16	8		19	11	4300	3950	28000
9	NKI 9/12		16.6	9	12	19	12	6200	7000	21700
	NA499		17	9		20	11	4850	4900	26000
	NKI 9/16		21.9	9		19	16			
10	NKI 10/16		27.3	10	14	22	16	9800	10500	19650
	NA4900	4524900	21	10	14	22	13	8000	9000	23700
	NA6900	6534900	38.4	10	14	22	22	9000	11000	23700
12	NA4901	4524901	25.1	12	16	24	13	9000	10800	20000
	NKI 12/20		39	12	16	24	20	14000	18400	21000
	NA6901	6534901	44.5	12	16	24	22	6000	21600	20000
	NKIS12		58	12	18	30	16	16000	17000	20000
	NA12X32X15V			12		32	15			
15	NKI 15/16		38	15	19	27	16	8800	12800	19100
	NKI 15/20		45.7	15	19	27	20	12300	19000	19100
	NA4902	4924902	32	15	20	28	13	6400	9000	18000
	NA6902	6534902	61.6	15	20	28	23	13100	20900	18000
	NKIS15		90	15	22	35	20	23500	24000	17000
	NA5902		52	15	20	28	18			
	NA153212 74802			15		32	12			
			15		36	25.4				
16	NKIS16			16		28	16	13000	17400	22000
	NA16X36X24			16		36	24			
17	NKI 17/16		41.1	17	21	29	16	13000	18200	20000
	NA4903	4544903	32.8	17	22	30	13	7000	10000	17000
	NA6903	6534903	68.2	17	22	30	23	14400	24900	17000
	NA5903		56	17	22	30	18	15200	21700	18000
	NA17			17		37	20			
20	NKI 20/16		48.5	20	24	32	16	10800	17000	16700
	NA4904	4524904	70.2	20	25	37	17	21000	25000	17000
	NKIS20		119	20	28	42	20	28000	35500	15000
	NA6904	6254904		20	25	37	30	36000	51000	17000
	NA5904			20	25	37	23			
22	NKI 22/16		50	22	26	34	16	15300	23600	17000
	NA49/22		76	22	28	39	17	22000	29500	15000

NEEDLE ROLLER BEARINGS WITH INNER RING

**NK RNA
NKS**



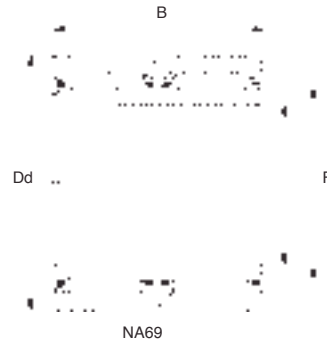
Shaft Diameter	Bearing Designation		Mass	Boundary Dimensions				Basic Load Rating		Limiting Speed	
	Current Code	Original Code		Approx	d	Fw	D	B	Dynamic		Static
			mm	g	mm				N		rpm
22	NA69/22		130	22	28	39	30	37500	55000	15000	
	NA223934			22	28	39	34				
23	NA2020			23		42	22				
25	NKI 25/30	4524905 6534905 F-208277	115	25	29	38	30	31500	56000	14000	
	NA4905		76	25	30	42	17	23600	31500	14000	
	NA6905		138	25	30	42	30	29000	59000	14000	
	NKIS25		160	25	32	47	22	32000	55000	13000	
	NKI 25/20				25	29	38	20	21900	34000	15000
	NA5905		139	25	30	42	23	30500	43000	13000	
28	NA49/28	45449/28	98	28	32	45	17	24000	33500	14000	
	NA69/28		170	28	32	45	30	40500	63000	14000	
	NKI 28/20			28	32	42	20	23000	37500	14000	
30	NA4906	4544906 6534906	115	30	35	47	17	25000	35500	13000	
	NA5906		152	30	35	47	23				
	NA6906			30	35	47	30	43500	71000	13000	
	NKI 30/20			30	35	45	20	24000	42500	13000	
	NKI 30/30			30	35	45	30	36500	69000	13000	
32	NK132/20	TAFI324720		32	37	47	20	24900	43900	12000	
				32	37	47	20	24900	43500	12000	
	NA49/32		150	32	40	52	20	24900	43500	12000	
	NA69/32		272	32	40	52	36	100000	100000	11000	
35	NKI 35/30	4524907 6534907	165	35	40	50	30	39000	79000	11000	
	NA4907		151	35	42	55	20	19800	41500	11000	
	NA6907		301	35	42	55	36	26000	60500	11000	
	NKIS35		220	35	43	58	22	33000	56000	9500	
	NA5907		256	35	42	55	27				
40	NKI 40/20	4544908	124	40	45	55	20	22000	48000	10000	
	NKI 40/30		184	40	45	55	30	35000	86000	10000	
	NA4908		240	40	48	62	22	42000	65000	8500	
	NA6908		401	40	48	62	40	64000	112000	8500	
	NA5908		348	40	48	62	30	53000	92500	8500	
42	NKI 42/20		138	40	47	57	20	26000	52500	9500	
45	NKI 45/25	4544909 6534909	218	42	50	62	25	36000	70000	8500	
	NKI 45/35		289	42	50	62	35	41500	102000	8500	
	NA4909		260	45	50	68	22	37000	96500	8000	
	NA6909		479	45	50	68	40	61500	123500	8000	
	NKIS45		306	45	55	72	22	43000	71000	7500	
	NA5909		396	45	50	68	30				



Shaft Diameter	Bearing Designation		Mass	Boundary Dimensions				Basic Load Rating		Limiting Speed	
	Current Code	Original Code		Approx	d	Fw	D	B	Dynamic		Static
mm			g	mm				N		rpm	
50	NKI 50/25	TAFI506825	262	50	55	68	25	32000	78000	7500	
	NA4910	4544910	264	50	58	72	22	41000	72000	7500	
	NA5910			50	58	72	30				
	NA6910	6534910	457	50	58	72	40	68000	135000	7500	
	NKIS50			510	50	60	80	28	60000	95000	7500
	NKI 50/35	TAFI506835		50	55	68	35	53000	118000	7500	
55	NKI 55/35		357	55	60	72	35	48000	126800	7500	
	NA4911	4544911	386	55	63	80	25	50600	96580	7500	
	NA5911			55	63	80	34				
	NA6911	6534911	790	55	63	80	45	82560	172000	7500	
60	NKI 60/25		388	60	68	82	25	35500	85000	7000	
	NA4912	4544912	412	60	68	85	25	52800	110500	6500	
	NA5912		614	60	68	85	34				
	NA6912	6534612	798	60	68	85	45	88500	186000	6500	
	NKIS60		550	60	70	90	28	65000	110000	6500	
65	NA4913	4544913	435	65	72	90	25	57500	110500	6500	
	NA6913	6534913	821	65	72	90	45	87600	194500	6500	
	NKI 65/25			65	73	90	25	53000	100000	6500	
	NKI 65/35			65	73	90	35	75000	156000	6500	
70	NA4914	4544914	712	70	80	100	30	79000	154000	5500	
	NA6914	6534914	1326	70	80	100	54	121000	263000	5500	
	NKI 70/35			70	80	95	35	78000	184000	5500	
75	NA4915	4544915	765	75	85	105	30	82000	158000	5500	
	NA5915		1130	75	85	105	40				
	NA6915	6534915	1429	75	85	105	54	128000	272000	5500	
80	NA4916	4544916	870	80	90	110	30	81000	170500	5500	
	NA6916	6534916	1510	80	90	110	54	130500	280600	5000	
	NKI 80/35			80	90	110	35	103000	208000	5000	
85	NKI 85/26			85	95	115	26	73000	137000	4800	
	NKI 85/36		1040	85	95	115	36	107000	223000	4800	
	NA4917	4544917	1250	85	100	120	35	111000	237000	4600	
	NA6917	6534917	2200	85	100	120	63	166000	400000	4600	
90	NKI 90/26			90	100	120	26	26000	146000	4600	
	NA4918	4544918	1312	90	105	125	35	114000	250000	4600	
	NA6918	6534918	2310	90	105	125	63	172000	425000	4600	
95	NA4919	4544919	1371	95	110	130	35	116000	260000	4200	
	NA6919	6534919	2500	95	110	130	63	174000	440000	4200	
	NKI 95/26			95	105	125	26	78000	115000	4200	
	NKI 95/36			95	105	125	36	114000	250000	4200	

NEEDLE ROLLER BEARINGS WITH INNER RING

**NKI NA
NKIS**



Shaft Diameter	Bearing Designation		Mass	Boundary Dimensions				Basic Load Rating		Limiting Speed
	Current Code	Original Code		Approx	d	Fw	D	B	Dynamic	
			mm	g	mm				N	
100	NA4920	4544920	1900	100	115	140	40	12000	274000	4000
	NKI100/30			100	110	130	30	98000	210000	4000
110	NA4922	4544922	2070	110	125	150	40	132000	290000	3700
	NA4822			110	120	140	30	94000	216000	3900
120	NA4924	4544924	2860	120	135	165	45	181000	890000	3400
	NA4824			120	130	150	30	99000	239000	3600
130	NA4926	4544926	3900	130	150	180	50	223000	470000	3100
	NA4826			130	145	165	35	118000	310000	3200
140	NA4928	4544928	4150	140	160	190	50	209000	500000	2900
	NA4828			140	155	175	35	120000	325000	3000
150	NA4830		2720	150	165	190	40	152000	400000	2800
160	NA4832		2890	160	175	200	40	160000	435000	2700
170	NA4834		3960	170	185	215	45	185000	510000	2500
180	NA4836		4200	180	195	225	45	194000	550000	2400
190	NA4838		5600	190	210	240	50	227000	690000	2300
200	NA4840		5840	200	220	250	50	230000	720000	2200
220	NA4844		6380	220	240	270	50	243000	790000	2000
240	NA4848		10000	240	265	300	60	355000	1080000	1800
260	NA4852	4524852	11300	260	285	320	60	37000	1160000	1700

SEAL RING NEEDLE ROLLER BEARINGS WITH INNER RING OR WITHOUT INNER RING



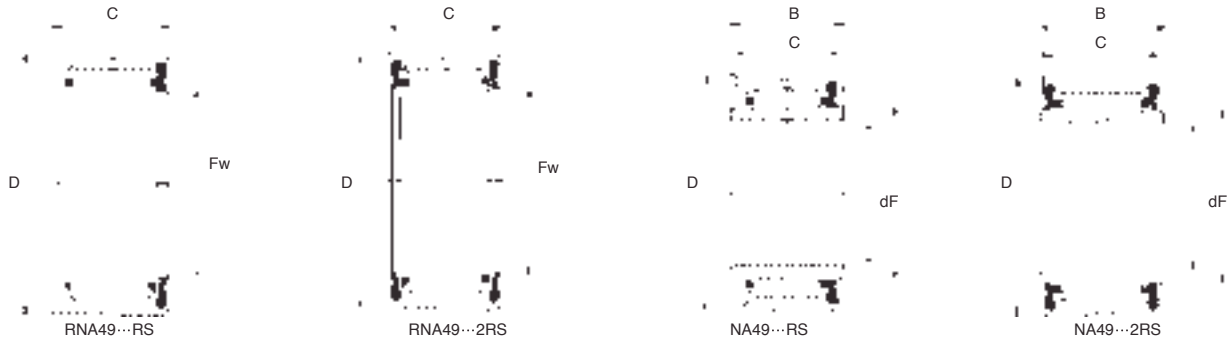
including the models of RNA...RS, RNA...2RS, NK...RS,
NK...2RS; NA...RS, NA...2RS; NKI...RS, NKI...2RS

The seal ring needle roller with inner ring or without inner
ring is the solid collar needle roller bearing

equipped with single side or double side synthetic rubber seal
ring to ensure long-term lubricating function.



SEAL RING NEEDLE ROLLER BEARINGS WITH RNA RS INNER RING OR WITHOUT INNER RING RNA RS NA 2RS



Shaft Diameter mm	Bearing Designation		Mass Approx g	Boundary Dimensions mm					Basic Load Rating N		Limiting Speed Oil rpm
	Current Code	Original Code		d	F W F	D	C	B	Dynamic	Static	
	without IR							N		rpm	
14	RNA4900RS	RNA4900-2RS	16		14	22	13		4560	4660	13000
16	RNA4901RS	RNA4901-2RS	18		16	24	13		4950	5800	12000
20	RNA4902RS	RNA4902-2RS	21.5		20	28	13		5980	9500	10000
22	RNA4903RS	RNA4903-2RS	23		22	30	13		6050	10100	9000
25	RNA4904RS	RNA4904-2RS	56		25	37	17		14900	17500	7500
30	RNA4905RS	RNA4905-2RS	60		30	42	17		16300	21500	6500
35	RNA4906RS	RNA4906-2RS	69		35	47	17		20050	24900	5500
42	RNA4907RS	RNA4907-2RS	107		42	55	20		22500	37000	4800
48	RNA4908RS	RNA4908-2RS	154		48	62	22		33050	50900	4200
52	RNA4909RS	RNA4909-2RS	157		52	68	22		34800	56800	3900
58	RNA4910RS	RNA4910-2RS	160		58	72	22		37800	61500	3500
10	NA4900RS	NA4900-2RS	24.5	10	14	22	13	14	4560	4660	13000
12	NA4901RS	NA4901-2RS	27.5	12	16	24	13	14	4950	5800	12000
15	NA4902RS	NA4902-2RS	37	15	20	28	13	14	5980	9500	10000
17	NA4903RS	NA4903-2RS	40	17	22	30	13	14	6050	10100	9000
20	NA4904RS	NA4904-2RS	80	20	25	37	17	18	14900	17500	7500
25	NA4905RS	NA4905-2RS	89.5	25	30	42	17	18	16300	21500	6500
30	NA4906RS	NA4906-2RS	104	30	35	47	17	18	20050	24900	5500
35	NA4907RS	NA4907-2RS	175	35	42	55	20	21	22500	37000	4800
40	NA4908RS	NA4908-2RS	252	40	48	62	22	23	33050	50900	4200
45	NA4909RS	NA4909-2RS	290	45	52	68	22	23	34800	56800	3900
50	NA4910RS	NA4910-2RS	295	50	58	72	22	23	37800	61500	3500
55	NA4911RS	NA4911-2RS		55		80	24	25			
60	NA4912RS	NA4912-2RS		60		85	25	26			
70	NA4914RS	NA4914-2RS		70		100	31	32			
12	NA6901-2RS	RNA6901-2RS		12	16	24	22	23			
17	NA6903-2RS	RNA6903-2RS		17	22	30	23	24			
20	NA6904-2RS	RNA6904-2RS		20	25	37	30	31			
25	NA6905-2RS	RNA6905-2RS		25	30	42	30	31			
40	NA6908-2RS	RNA6908-2RS		40	48	62	40	41			

MODEL RNAO AND NAO NEEDLE ROLLER WITHOUT SHOULDER AND INNER RING



Because of no inner ring, this needle roller bearing is suitable for parts of which the radial size is limited. The surface of shaft journal fitted with it is acted directly as rolling surface. It is requested that the surface hardness of shaft journal be no less than HRC60 and the surface roughness Ra value, no more than 0.63 μ m. This kind of bearing does not limit the axial shift of shaft and

housing. The outer ring and inner ring have no shoulder. For this purpose, inner ring, outer ring, complete set of needles and cage can be mounted respectively. This bearing does not limit the axial shift of shaft and outer housing. Since the cage separates the needles so as to reduce friction. It can be used for the parts with high rotational speed.

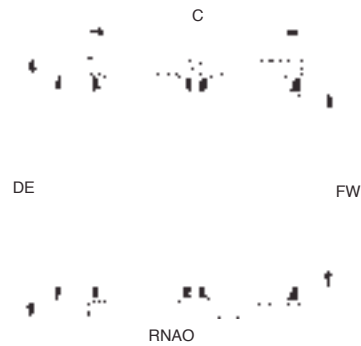


NEEDLE ROLLER WITHOUT SHOULDER AND INNER RING

RNAO



Shaft Diameter	Bearing Designation	Mass Approx	Boundary Dimensions			Basic Load Rating		Limiting Speed
			FW	D	C	Dynamic	Static	Oil
			mm			N		rpm
5	RNAO5 × 10 × 8	2.8	5	10	8	2050	1720	27800
6	RNAO6 × 13 × 8TN	6	6	13	8	2300	1880	30000
	RNAO6 × 12 × 8TN	6	6	12	8	2600	2280	32000
7	RNAO7 × 14 × 8TN	5	7	14	8	2250	1950	31000
	RNAO7 × 14 × 8	7	7	14	8	2850	2650	31000
8	RNAO8 × 15 × 10TN	7.8	8	15	10	3050	3920	28000
	RNAO8 × 19 × 9		8	19	9			
10	RNAO10 × 17 × 10FN	9.1	10	17	10	3960	4500	20000
12	RNAO12 × 19 × 13.5TN	14	12	19	13.5	5400	7500	22000
	RNAO12 × 22 × 12TN	17.9	12	22	12	8950	8000	23000
15	RNAO15 × 23 × 13	18.5	15	23	13	6500	8900	21100
16	RNAO16 × 24 × 13	19.8	16	24	13	6200	8400	21100
	○ RNAO16 × 24 × 20	29.7	16	24	20	10200	14800	21100
	RNAO16 × 28 × 12	29.7	16	28	12	9500	10500	18000
17	RNAO17 × 25 × 13	21	17	25	13	9400	11600	18000
	RNAO17 × 35 × 10		17	35	10			
18	○ RNAO18 × 30 × 24	65	18	30	24	12100	16500	17600
	RNAO18 × 30 × 24K	69	18	30	24	21900	30000	20000
20	RNAO20 × 28 × 13	24.5	20	28	13	7800	9600	16000
	○ RNAO20 × 28 × 26	48.1	20	28	26	10080	20500	16000
	RNAO20 × 32 × 12	36.6	20	32	12	10100	14100	16000
21	RNAO21 × 29 × 30		21	29	30			
22	RNAO22 × 35 × 16	58	22	35	16	10000	15500	16000
	RNAO22 × 30 × 13	27	22	30	13	10400	15900	14000
	RNAO22 × 30 × 26		22	30	26			
25	RNAO25 × 35 × 17	49	25	35	17	10900	22000	15020
	○ RNAO25 × 35 × 26	67.8	25	35	26	12400	25000	15020
	RNAO25 × 37 × 16	59.2	25	37	16	15000	20900	12000
	○ RNAO25 × 37 × 32	108	25	37	32	25000	38900	12000
	RNAO25 × 35 × 16		25	35	16			
26	RNAO26 × 39 × 13	59	26	39	13	87600	10200	15000
28	RNAO28 × 40 × 16		28	40	16			
30	RNAO30 × 40 × 17	59	30	40	17	12600	24000	10500
	○ RNAO30 × 40 × 26	92	30	40	26	16000	32000	10500
	RNAO30 × 42 × 16	49.9	30	42	16	13000	23200	10500
	○ RNAO30 × 42 × 32	126	30	42	32	29500	47000	10500
35	RNAO35 × 45 × 13	50	35	45	13	10200	22000	10000
	○ RNAO35 × 45 × 17	60	35	45	17	17800	24500	10000
	RNAO35 × 45 × 26	88	35	45	26	20500	40000	10000



Shaft Diameter	Bearing Designation	Mass Approx	Boundary Dimensions			Basic Load Rating		Limiting Speed Oil
			FW	D	C	Dynamic	Static	
mm		g	mm			N		rpm
35	RNAO35 × 47 × 16	75	35	47	16	20400	31500	10000
	RNAO35 × 47 × 18	86	35	47	18	22500	35000	10000
	○ RNAO35 × 47 × 32	149	35	47	32	32000	55000	10000
	RNAO35 × 47 × 17		35	47	17			
37	RNAO37 × 52 × 18	115	37	52	18	18900	35500	8800
	RNAO37 × 47 × 13		37	47	13			
40	RNAO40 × 50 × 17	72	40	20	17	15400	29880	8800
	○ RNAO40 × 50 × 34	151	40	20	34	25100	57200	11000
	RNAO40 × 55 × 20	144	40	55	20	26300	46100	10000
	○ RNAO40 × 55 × 40	268	40	55	40	54700	87000	10000
42	RNAO42 × 57 × 20	132	42	57	20	26700	43700	10000
45	RNAO45 × 55 × 17	82.5	45	55	17	18000	36000	9000
	○ RNAO45 × 62 × 40	368	45	62	40	42200	85050	9000
50	RNAO50 × 62 × 20	140	50	62	20	20600	46860	7500
	RNAO50 × 65 × 20	162	50	65	20	23200	40540	7000
	○ RNAO50 × 65 × 40	321	50	65	40	39000	80600	7000
55	RNAO55 × 68 × 20	157	55	68	20	22400	52000	6500
60	RNAO60 × 78 × 20	253	60	78	20	28500	65300	5500
	○ RNAO60 × 78 × 40	368	60	78	40	45000	99000	5500
65	RNAO65 × 85 × 30	394	65	85	30	37000	90900	4900
	○ RNAO65 × 85 × 60	464	65	85	60	57000	123000	6500
70	RNAO70 × 90 × 30	488	70	90	20	40000	105000	5100
	○ RNAO70 × 90 × 60		70	90	60			
75	RNAO75 × 95 × 60		75	95	60			
80	RNAO80 × 100 × 30	527	80	100	30	52000	139000	4900
	○ RNAO80 × 95 × 56		80	95	56	52000	139000	4800
	RNAO80 × 100 × 60		80	100	60			
85	RNAO85 × 105 × 25	449	85	105	25	48600	106000	4900
90	RNAO90 × 105 × 26	323	90	105	26	42500	129000	4900
	RNAO90 × 110 × 30	600	90	110	30	58000	129000	4900
100	RNAO100 × 120 × 30	671	100	120	30	58100	152000	4900
130	RNAO130 × 150 × 24		130	150	24	50000	158000	3100

NOTE: O DOUBLE ROW

SEAL RING NEEDLE ROLLER BEARINGS WITH NAO INNER RING OR WITHOUT INNER RING



Shaft Diameter	Bearing Designation	Mass	Boundary Dimensions					Basic Load Rating		Limiting Speed
			Approx	d	D	B	F	E	Dynamic	Static
		g	mm					N		rpm
6	NAO6 × 17 × 10TN	13	6	17	10	10	13	3950	5000	17080
8	NAO8 × 19 × 10		8	19	10	12	15			
9	NAO9 × 22 × 12TN	22	9	22	12	12	18	8800	7900	12090
12	NAO12 × 24 × 13	29	12	24	13	16	20	8000	16000	15020
	NAO12 × 24 × 20	43	12	24	20	16	20	10300	16800	20000
	NAO12 × 28 × 12	38.6	12	28	12	16	22	9850	10500	19000
15	NAO15 × 28 × 13	27.8	15	28	13	20	24	7800	10300	20600
	NAO15 × 32 × 12	48.1	15	32	12	20	26	10400	14020	20000
17	NAO17 × 30 × 13	39	17	30	13	22	26	9860	15000	20000
	NAO17 × 35 × 16	70	17	35	16	22	29	16800	20050	10090
20	NAO20 × 35 × 17	72	20	35	17	25	29	12600	20200	16000
	NAO20 × 37 × 16	81	20	37	16	25	32	10000	18000	12700
25	NAO25 × 40 × 17	78.9	25	40	17	30	35	10600	24000	10500
	NAO25 × 42 × 16	83	25	42	16	30	37	13100	23500	10500
	NAO25 × 42 × 32	189	25	42	32	30	37	26500	47000	10500
30	NAO30 × 45 × 13	73	30	45	13	35	40	11200	25000	11200
	NAO30 × 45 × 17	100	30	45	17	35	40	12800	28500	11200
	NAO30 × 45 × 26	150	30	45	26	35	40	17500	32900	11200
	NAO30 × 47 × 16	99.8	30	47	16	35	42	14400	17500	11200
	NAO30 × 47 × 18	109	30	47	18	35	42	20000	33000	11200
	NAO30 × 52 × 18	172	30	52	18	37	44	18000	25500	10900
35	NAO35 × 50 × 17	103	35	50	17	40	45	20800	40500	10900
	NAO35 × 55 × 20	175	35	55	20	40	47	28500	41000	10000
	NAO35 × 57 × 20.5	206	35	57	20.5	42	50	26000	49000	10000
40	NAO40 × 55 × 17	118	40	55	17	45	50	12500	36000	9000
	NAO40 × 65 × 20	269	40	65	20	50	58	35000	61200	8000
50	NAO50 × 68 × 20	219	50	68	20	55	60	24500	62000	7500
	NAO50 × 78 × 20	400	50	78	20	60	68	33500	65000	6500
55	NAO55 × 72 × 20		55	72	20	60	65			
65	NAO65 × 95 × 30		65	95	30	75	83			
70	NAO70 × 100 × 30	829	70	100	30	80	88	52600	129000	4000
75	NAO75 × 105 × 25	676	75	105	25	85	93	42000	106000	39000
80	NAO80 × 110 × 30	892	80	110	30	90	98	49000	112000	4200
90	NAO90 × 120 × 30	1004	90	120	30	100	108	51000	128000	3900

MODEL NAV, RNAV FULL COMPLEMENT NEEDLE ROLLER BEARING WITH OR WITHOUT INNER RING

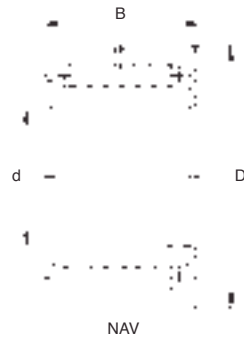


As for the full complement needle roller bearing with inner ring, the outer ring has the oil hole. The lubricating oil can be fed in from the oil hole. The outer ring has the double shoulders. As for the full complement needle roller bearing without inner ring, since the inner ring has no shoulder and cage, the inner ring, outer ring, complete set of needles can be mounted respectively. It is suitable for parts of which the radial size is limited.

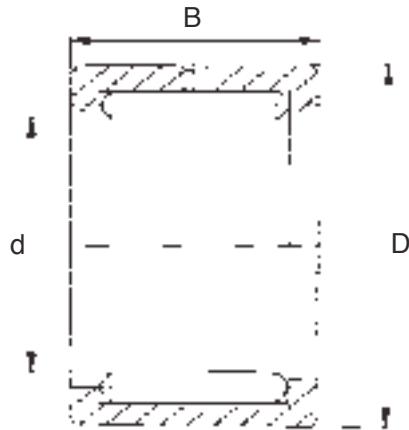
The surface of shaft journal fitted with it is acted directly as rolling surface. It is requested that the surface hardness be no less than HRC60, surface roughness, no more than $0.63\mu\text{m}$. This kind of full complement bearing, with inner ring or without inner ring, does not limit the axial shift of shaft and housing. Since this kind of bearing has no cage, the needles rotate without correct guiding, they rub heavily against each other and the bearing has the low limiting rotational speed.

FULL COMPLEMENT NEEDLE ROLLER BEARINGS WITH INNER RING

NAV



Shaft Diameter	Bearing Designation		Approx	Boundary Dimensions			Basic Load Rating		Limiting Speed
	Current Code	Original Code		d	D	C	Dynamic	Static	Oil
				mm			N		rpm
15	NAV4902	4074902E	76 100	15	28	13	10800 8900	29800 11200	4500 4400
	NAV4002	4074102		15	32	17			
		74802		15	36	24.5			
17	NAV4903	4074903E	98 126	17	30	13	12000 8700	17000 10800	3400 4200
	NAV4003	4074103		17	35	18			
		74703		17	35	24.5			
20	NAV4904	4074904E	175	20	37	17	14500	29600	3000
	NAV4004	4074104		20	42	22			
	NAV203620.5			20	36	20.5			
	NAV204			20	47	14			
24	NAV24668.1			24	66	8.1			
25	NAV4905	4074905E	201	25	42	17	23000	34600	2600
	NAV4005	4074105		25	47	22			
	NAV205			25	52	15			
30	NAV4906	4074906E	311	30	47	17	25800	46900	2000
	NAV4006	4074106		30	55	25			
35	NAV4907	4074907E	418	35	55	20	33000	59900	1800
	NAV4007	4074107		35	62	27			
40	NAV4908	4074908E	498	40	62	22	35900	67000	1700
	NAV4008	4074108		40	68	28			
45	NAV4909	4074909E	637	45	68	22	41000	74000	1500
	NAV4009	4074109		45	75	30			
50	NAV4910	4074910E	702	50	72	22	42800	88900	1400
	NAV4010	4074110		50	80	30			
55	NAV4911	4074911	1030	55	90	35	48900	109000	1300
60	NAV4912	4074912E	1125	60	85	25	50700	116000	1100
	NAV4012	4074112		60	95	35			
65	NAV4013	4074113	1200	65	100	35	59800	126000	1000
70	NAV4914	4074914E	1700	70	100	30	72400	155000	950
	NAV4014	4074114		70	110	40			
75	NAV4015	4074115	1810	75	115	40	7280	1800	900
80	NAV4916	4074916E	2470	80	110	30	76000	195000	850
	NAV4016	4074116		80	125	45			
85	NAV4017	4074117	2580	85	130	45	74000	192000	800
90	NAV4918	4074918E	1507	90	125	35			
95	NAV4919	4074919E	1537	95	130	35			
100	NAV4920	4074920E	2240	100	140	40			
160	NAV4832	4074832		160	200	40			
190	NAV190 × 245 × 42			190	245	42			



RNAV

Shaft Diameter	Bearing Designation		Mass	Boundary Dimensions			Basic Load Rating		Limiting Speed
	Current Code	Original Code		Approx	FW	D	C	Dynamic	
			mm	g	mm			N	
20	RNAV4902	4084902E		20	28	13	10800	29800	4500
21.87	RNAV4002	4084102	45	21.87	32	17			
22	RNAV4903	4084903E		22	30	13			
24.3	RNAV4003	4084103	62	24.3	35	18	17900	37900	4300
25	RNAV4904	4084904E		25	37	17			
28.7	RNAV4004	4084104	114	28.7	42	22	28150	60900	3900
30	RNAV4905	4084905E		30	42	17			
33.5	RNAV4005	4084105	129	33.5	47	22	33800	70800	3700
35	RNAV4906	4084906E		35	47	17			
40.1	RNAV4006	4084106	193	40.1	55	25	49900	96500	3500
42	RNAV4907	4084907E		42	55	20			
45.9	RNAV4007	4084107	259	45.9	62	27	47600	122800	3100
48	RNAV4908	4084908E		48	62	22			
51.6	RNAV4008	4084108	304	51.6	68	28	49900	137900	2700
52	RNAV4909	4084909E		52	68	22			
57.4	RNAV4009	4084109	390	57.4	75	30	52500	153500	2600
58	RNAV4910	4084910E		58	72	22			
62.1	RNAV4010	4084110	426	62.1	80	30	55700	166000	2500
69.8	RNAV4011	4084111	645	69.8	90	35	68500	225800	2300
68	RNAV4912	4084912E		68	85	25			
74.6	RNAV4012	4084112	677	74.6	95	35	75400	239000	2100
80.3	RNAV4013	4084113	692	80.3	100	35	79500	256900	1900
80	RNAV4914	4084914E		80	100	30			
88	RNAV4014	4084114	950	88	110	40	98800	354900	1700
93.7	RNAV4015	4084115	1000	92.7	115	45	101800	372900	1600
90	RNAV4916	4084916E		90	110	30			
100.3	RNAV4016	4084116	1400	100.3	125	45	102900	373500	1500
104.8	RNAV4017	4084117	1540	104.8	130	45	103800	374800	1400
105	RNAV4918	4084918E		105	125	35			
110	RNAV4919	4084919E		110	130	35			
115	RNAV4920	4084920E		115	140	40			