



Quality Creates Value



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WD CRB 1706

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WD Bearings for Industrial Planetary Gearboxes

WD BEARING GROUP

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Summary

Morden industrial planetary gearbox is developing with the trend of smaller envelop but increasing power level. This places high requirements on the rolling bearing used. WD is able to provide full complementary cylindrical roller bearings with higher quality for high power level gear boxes. This type of bearing is featured with heavy loading capacity, long lifespan, high reliability, low friction and noise in running, compact structure as well as simple installation.

Bearing Structure

For high load carrying capacity, the bearings are full complementary designed and can be divided into single row and double row according to the rolling elements. According to installation requirement, the snap rings can be located between or aside the two rows of rollers. Mating snap rings and spacers can be provided.

A plastic protection ring will be used for bearings without outer ring for customer's simple installation as well as protecting the bearing from damage during transportation.

Bearing Capacities

The logarithmic curved rollers are used to increase the load carrying capacity and lifetime. There are two high strength ribs in inner ring, so the bearing can afford some axial loading and realise the axially bidirectional guidance through snap ring and spacer. In assembly, the mating shaft should be with high-enough abutment shoulder, which is perpendicular to the bearing axes, and to avoid bearing axial creep.

No pre-lubrication is applied for the bearings, so either oiling or greasing can be applied during usage in accordance with request.

Special surface treatment such as phosphating or black oxide is available to improve the run-in capability, which makes these bearings particularly suitable for the slippery applications

For continuously working condition, the min. radial load applied should conform to $Cor/P < 60$. The limiting speed must not be exceeded even under favourable operating and cooling condition.

Bearing Fit Design

Fit

The inner ring is interference fitted with shaft due to the circumferential load on the inner ring.

	bearing ID d mm		Load	shaft tolerance	
	over	incl.		normal	precise
circumferential load on inner ring	60	200	low	j6	j5
			normal	k6	k5
			high	k6	k5
	200	500	low	k6	k5
			normal	m6	m5
			high	n6	n5
			low	m6	m5
			normal	m6	m5
			high	p6	/

Geometrical tolerance of bearing seating surfaces.

shaft diameter d mm		diameter tolerance μm		roundness tolerance μm	parallelism tolerance μm	axial runout tolerance of abutment shoulders μm
over	incl.	normal	precise			
	18	11	8	2.5	5	5
18	30	13	9	3	6	6
30	50	16	11	3.5	7	7
50	80	19	13	4	8	8
80	120	22	15	5	10	10
120	180	25	18	6	12	12
180	250	29	20	7	14	14
housing bore D mm		diameter tolerance μm		roundness tolerance μm	parallelism tolerance μm	axial runout tolerance of abutment shoulders μm
over	incl.	normal	precise			
18	30	21	13	4.5	9	9
30	50	25	16	5.5	11	11
50	80	30	19	6.5	13	13
80	120	35	22	7.5	15	15
120	180	40	25	9	18	18
180	250	46	29	10	20	20

Raceway

In rolling bearings without outer rings, the mating gear inner diameter is used as outer raceway. The raceway must be hardened and precision machined. The axial washer and abutment shoulders also should be precision machined and resistant to wear.

Through hardening steels such as 100Cr6/GCr15 and case hardening steels such as 16MnCr5, 16NiMo6 /20CrMnTi, 20CrMo are suitable as materials.

The raceway hardness must be hard than HRC58 (HV650), otherwise the load carrying capacity will decrease. The basic dynamic loading C_r and static loading C_r can be adjusted by reducing the hardness factor, for details please contact WD engineers.

The wall thickness between the raceway and tooth base should be at least 2.5 times the modulus.

The raceway must be ground, the roundness, parallelism and roughness R_a refer to below. The load carrying capacity will decrease if R_a is out of tolerance.

raceway diameter mm		roundness tolerance μm	parallelism tolerance μm	Mean roughness R_a μm	
over	incl.			normal	precise
10	18	4	4	0.2	0.1
18	30	5	5	0.2	0.1
30	50	6	7	0.2	0.1
50	80	7	9	0.2	0.1
80	120	8	11	0.3	0.15
120	150	9	13	0.4	0.2
150	180	13	14	0.4	0.2
180	250	15	15	0.4	0.2

Bearing Accuracy & Clearance

Accuracy

The dimensional and running tolerances of the bearings correspond to tolerance class PN to DIN 620.

	bearing ID d mm		envelop circle diameter E_w mm	
	over	incl.	upper	lower
Tolerance of		40	0	-0.010
envelop circle	40	65	0	-0.015
diameter	65	120	0	-0.020
E_w	120	200	0	-0.025
	200	250	0	-0.030

Radial internal clearance

The bearings without an outer ring, the planetary gear fulfils the function of the outer raceway. So the bore of planetary gearbox is together determined by selected radial clearance (C2,C0,C3 C4) and envelop circle diameter E_w .

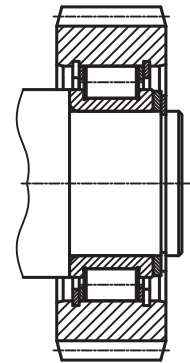
bore diameter d mm		bore tolerance for planetary gearbox μm		C2 radially clearance μm		bore tolerance for planetary gearbox μm		C0 radially clearance μm	
over	incl.	upper	lower	min	max	upper	lower	min	max
	30	+15	0	0	25	+35	+20	20	45
30	40	+20	+5	5	30	+40	+25	25	50
40	50	+20	+5	5	35	+40	+25	25	50
50	65	+25	+10	10	40	+40	+55	40	70
65	80	+25	+10	10	45	+40	+55	40	75
80	100	+30	+15	15	50	+65	+50	50	85
100	120	+35	+15	15	55	+70	+50	50	90
120	140	+35	+15	15	60	+80	+60	60	105
140	160	+45	+20	20	70	+95	+70	70	120
160	180	+50	+25	25	75	+100	+75	75	125
180	200	+65	+35	35	90	+120	+90	90	145
200	225	+75	+45	45	105	+135	+105	105	165
180	200	+80	+45	45	110	+145	+110	110	175

Design Cases

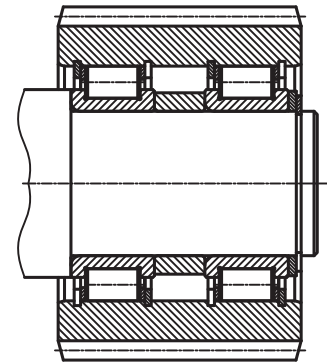
bore diameter d mm		bore tolerance for planetary gearbox μm		C3 radiall clearance μm		bore tolerance for planetary gearbox μm		C4 radiall clearance μm	
over	incl.	upper	lower	min	max	upper	lower	min	max
	30	+50	+35	35	60	+65	+50	50	75
30	40	+60	+45	45	70	+75	+60	60	85
40	50	+65	+50	50	80	+85	+70	70	100
50	65	+75	+60	60	90	+95	+80	80	110
65	80	+80	+65	65	100	+105	+90	90	125
80	100	+90	+75	75	110	+120	+105	105	140
100	120	+105	+85	85	125	+145	+125	125	165
120	140	+120	+100	100	145	+165	+145	145	190
140	160	+140	+115	115	165	+190	+165	165	215
160	180	+145	+120	120	170	+195	+170	170	220
180	200	+170	+140	140	195	+225	+195	195	250
200	225	+190	+160	160	220	+250	+220	220	280
180	200	+205	+170	170	235	+270	+235	235	300

e.g: For RNN50V-9, the bearing Ew is -0.015mm , if the selected clearance is C0 (30-60 μm), then the bore toleracen of planetary gearbox is (+30/+45 μm)

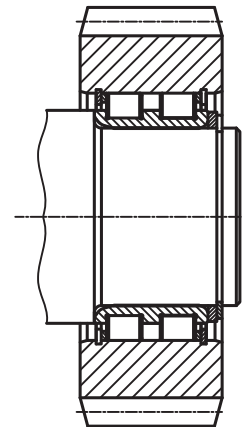
Single row



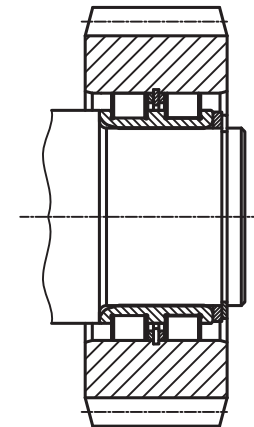
Two single row



double row with
snap ring on both ends

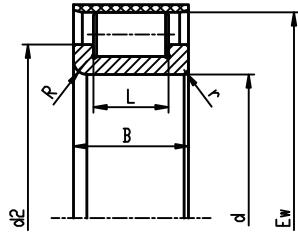


double row with
snap ring in the middle



Product Catalog

Single Row A type Cylindrical Roller Bearings without Outer Ring



Designation	without snap ring and washer					
	ID d mm	envelop circle dia. Ew mm	width B mm	inner OD d2 mm	roller width L mm	Rmin mm
RN19V-1	19	33.829	19	28.00	15	2.00
RN20V-5	20	36.810	16	28.60	9	2.60
RN20V-6	20	40.700	19	31.40	12	0.60
RN20V-7	20	36.810	16	29.00	9	0.60
RN20V-8	20	41.470	18	30.30	12	1.00
RN24V-3	24	40.167	24	34.20	19.8	2.50
RN25V-3	25	46.520	18	35.80	12	3.00
RN25V-6	25	46.520	22	35.20	16	0.60
RN25V-7	25	42.510	16	34.60	9	0.60
RN25V-8	25	46.520	18	35.30	12	1.00
RN25V-9	25	53.717	24	36.70	15	1.10
RN25V-10	25	53.550	28	37.40	19	0.60
RN30V-3	30	54.001	31	44.48	25	3.00
RN30V-4	30	55.190	20	42.50	14	1.00

rmin mm	without snap ring and washer				
	Cr KN	Cor KN	limit speed n _G rpm	ref. P/N 1	ref. P/N 2
0.30	37.8	46.5	10800	2522	
0.70	27.5	27.9	10500	2165	
0.60	40.0	41.0	9800	2725	
0.60	30.5	26.5	10500		RSL183004-A
1.00	45.5	37.0	9700		RSL182204-A
0.30	54.6	78.9	9000	2523	
0.50	45.0	48.1	8400	2678	
0.60	57.5	63.5	8400	2785	
0.60	35.0	32.5	8900		RSL183005-A
1.00	51.0	44.5	8400		RSL182205-A
1.10	63.0	57.0	7600		RSL182305-A
0.60	76.3	77.5	7600	2726	
0.30	91.6	133.2	7000	2524	
1.00	60.8	66.3	7000	2677	

Designation	ID d mm	without snap ring and washer					Rmin mm
		envelop circle dia. Ew mm	width B mm	inner OD d2 mm	roller width L mm		
RN30V-7	30	49.600	19	40.00	10	1.00	
RN30V-8	30	55.190	20	42.00	14	1.00	
RN30V-9	30	62.300	27	43.50	18	1.10	
RN35V-1	35	63.970	23	47.50	15	1.10	
RN35V-2	35	73.020	35	49.70	26	1.10	
RN35V-7	35	55.520	20	45.00	11	1.00	
RN35V-8	35	63.970	23	47.00	15	1.10	
RN35V-9	35	72.680	31	51.00	20	1.50	
RN40V-7	40	61.740	21	50.50	12	1.00	
RN40V-8	40	70.940	23	54.00	15	1.10	
RN40V-9	40	83.124	33	58.00	24	1.50	
RN45V-7	45	66.850	23	55.50	12	1.00	
RN45V-8	45	74.430	23	57.50	15	1.10	
RN45V-9	45	88.322	36	61.50	24	1.50	
RN50V-1	50	72.000	31	62.00	24	4.00	
RN50V-2	50	81.700	34	66.60	26	1.50	
RN50V-3	50	109.270	50	70.90	36	1.00	
RN50V-7	50	72.330	23	59.00	14	1.00	
RN50V-8	50	81.400	23	64.40	15	1.10	
RN50V-9	50	98.718	40	68.50	28	2.00	
RN55V-1	55	88.810	25	70.80	18	1.50	
RN55V-7	55	83.540	26	68.50	17	1.10	
RN55V-8	55	88.810	25	70.00	18	1.50	
RN55V-9	55	109.110	43	76.00	30	2.00	

rmin mm	Cr KN	Cor KN	limit speed n _e rpm	without snap ring and washer	
				ref. P/N 1	ref. P/N 2
1.00	45.0	43.0	7600		RSL183006-A
1.00	70.0	64.0	7000		RSL182206-A
1.10	87.0	85.0	6400		RSL182306-A
1.10	76.0	80.5	6100	2676	
1.10	136.7	145.6	5400	2707	
1.00	55.0	55.0	6700		RSL183007-A
1.10	88.0	78.0	6100		RSL182207-A
1.50	113.0	112.0	5500		RSL182307-A
1.00	66.0	68.0	6000		RSL183008-A
1.10	97.0	91.0	5400		RSL182208-A
1.50	152.0	155.0	4850		RSL182308-A
1.00	70.0	76.0	5500		RSL183009-A
1.10	101.0	98.0	5100		RSL182209-A
1.50	162.0	165.0	4450		RSL182309-A
0.30	112.0	172.5	5100	2645	
1.50	147.8	204.4	4600	2704	
1.00	270.0	287.0	3700	2790	
1.00	88.0	96.0	5100		RSL183010-A
1.10	109.0	111.0	4600		RSL182210-A
2.00	205.0	215.0	4050		RSL182310-A
1.50	120.2	151.5	4200	2679	
1.10	120.0	136.0	4400		RSL183011-A
1.50	140.0	148.0	4200		RSL182211-A
2.00	242.0	255.0	3700		RSL182311-A

Designation	ID d mm	without snap ring and washer				
		envelop circle dia. Ew mm	width B mm	inner OD d2 mm	roller width L mm	Rmin mm
RN60V-1	60	86.740	26	72.00	17	1.10
RN60V-2	60	99.170	28	77.20	20	1.50
RN60V-7	60	86.740	26	71.70	17	1.10
RN60V-8	60	99.170	28	76.80	20	1.50
RN60V-9	60	115.620	46	82.50	30	2.10
RN65V-1	65	93.090	26	78.50	17	1.10
RN65V-2	65	120.970	60	85.80	44	1.50
RN65V-7	65	93.090	26	78.00	17	1.10
RN65V-8	65	106.250	31	82.30	22	1.50
RN65V-9	65	126.690	48	90.00	34	2.10
RN70V-1	70	100.280	30	81.50	18	1.10
RN70V-7	70	100.280	30	81.50	18	1.10
RN70V-8	70	111.010	31	87.00	22	1.50
RN70V-9	70	132.140	51	94.00	36	2.10
RN75V-1	75	107.900	30	89.20	18	1.10
RN75V-2	75	107.900	30	89.20	18	3.50
RN75V-7	75	107.900	30	89.00	18	1.10
RN75V-8	75	115.780	31	92.00	22	1.50
RN75V-9	75	143.220	55	102.00	40	2.10
RN80V-7	80	116.990	34	95.00	20	1.10
RN80V-8	80	125.810	33	98.50	24	2.00
RN80V-9	80	154.240	58	110.00	44	2.10
RN85V-1	85	121.440	34	100.00	20	1.10
RN85V-2	85	133.210	36	104.50	26	2.00

rmin mm	Cr KN	Cor KN	without snap ring and washer		
			limit speed n _G rpm	ref. P/N 1	ref. P/N 2
1.10	106.5	146.9	4200	2626	
1.50	148.0	184.0	3800	2813	
1.10	123.0	145.0	4200		RSL183012-A
1.50	169.0	176.0	3800		RSL182212-A
2.10	260.0	280.0	3400		RSL182312-A
1.10	112.1	161.0	3900	2646	
1.50	370.0	447.0	3100	2727	
1.10	130.0	159.0	3900		RSL183013-A
1.50	198.0	210.0	3550		RSL182213-A
2.10	315.0	355.0	3100		RSL182313-A
1.10	132.1	178.4	3650	2627	
1.10	153.0	176.0	3650		RSL183014-A
1.50	181.0	223.0	3350		RSL182214-A
2.10	345.0	390.0	3000		RSL182314-A
1.10	140.0	196.0	3400	2578	
1.50	140.0	196.0	3400	2684	
1.10	162.0	194.0	3400		RSL183015-A
1.50	187.0	236.0	3200		RSL182215-A
2.10	410.0	475.0	2750		RSL182315-A
1.10	173.0	224.0	3150		RSL183016-A
2.00	223.0	280.0	3000		RSL182216-A
2.10	480.0	560.0	2550		RSL182316-A
1.10	173.5	241.5	3000	2661	
2.00	247.7	328.8	2800	2675	

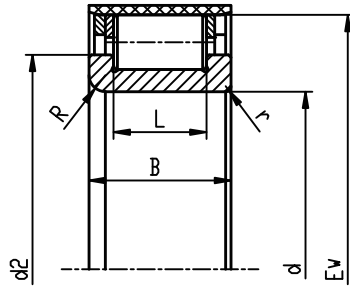
Designation	ID d mm	without snap ring and washer				
		envelop circle dia. Ew mm	width B mm	inner OD d2 mm	roller width L mm	Rmin mm
RN85V-7	85	121.440	34	99.50	20	1.10
RN85V-8	85	133.210	36	104.50	26	2.00
RN85V-9	85	163.010	60	118.50	44	3.00
RN90V-1	90	130.110	37	106.80	22	1.50
RN90V-2	90	176.210	80	122.00	55	2.00
RN90V-7	90	130.110	37	106.50	22	1.50
RN90V-8	90	140.610	40	110.00	28	2.00
RN90V-9	90	165.260	64	117.50	48	3.00
RN95V-9	95	174.660	67	126.60	48	3.00
RN100V-1	100	139.650	37	116.40	22	1.50
RN100V-7	100	139.650	37	116.00	22	1.50
RN100V-8	100	162.810	46	127.50	34	2.10
RN100V-9	100	187.303	73	133.00	55	3.00
RN110V-7	110	156.130	45	127.50	26	2.00
RN110V-8	110	177.000	53	137.00	36	2.10
RN110V-9	110	218.270	80	151.50	56	3.00
RN120V-7	120	167.580	46	139.00	26	2.00
RN120V-8	120	192.320	58	151.00	40	2.10
RN120V-9	120	231.386	86	164.50	64	3.00
RN130V-2	130	207.120	64	162.30	44	3.00
RN130V-7	130	183.810	52	149.00	34	2.00
RN130V-8	130	207.120	61	162.30	44	3.00
RN130V-9	130	247.900	93	176.00	68	4.00
RN140V-1	140	264.447	102	186.00	70	4.00

rmin mm	Cr KN	Cor KN	without snap ring and washer		
			limit speed n _G rpm	ref. P/N 1	ref. P/N 2
1.10	178.0	235.0	3000		RSL183017-A
2.00	255.0	320.0	2800		RSL182217-A
3.00	510.0	620.0	2400		RSL182317-A
1.50	208.0	286.0	2800	2628	
2.00	638.0	785.0	2200	2791	
1.50	207.0	280.0	2800		RSL183018-A
2.00	285.0	365.0	2650		RSL182218-A
3.00	560.0	660.0	2400		RSL182318-A
3.00	580.0	720.0	2240		RSL182319-A
1.50	212.6	314.0	2600	2653	
1.50	218.0	305.0	2600		RSL183020-A
2.10	390.0	51.0	2300		RSL182220-A
3.00	710.0	860.0	2110		RSL182320-A
2.00	285.0	395.0	2350		RSL183022-A
2.10	450.0	580.0	2130		RSL182222-A
3.00	840.0	970.0	1840		RSL182322-A
2.00	300.0	435.0	2170		RSL183024-A
2.10	530.0	720.0	1950		RSL182224-A
3.00	1000.0	1230.0	1710		RSL182324-A
3.00	620.0	875.0	1810	2768	
2.00	430.0	610.0	2000		RSL183026-A
3.00	620.0	850.0	1810		RSL182226-A
4.00	1120.0	1400.0	1600		RSL182326-A
4.00	1190.0	1555.0	1400	2680	

Designation	ID d mm	without snap ring and washer				
		envelop circle dia. Ew mm	width B mm	inner OD d2 mm	roller width L mm	Rmin mm
RN140V-7	140	197.820	53	163.00	34	2.00
RN140V-8	140	221.920	67	174.00	48	3.00
RN140V-9	140	264.447	102	187.50	72	4.00
RN150V-7	150	206.800	56	170.50	34	2.10
RN150V-8	150	236.710	73	185.50	52	3.00
RN150V-9	150	286.490	108	203.30	80	4.00

rmin mm	Cr KN	Cor KN	without snap ring and washer		
			limit speed n _s rpm	ref. P/N 1	ref. P/N 2
2.00	455.0	670.0	1840		RSL183028-A
3.00	720.0	1000.0	1690		RSL182228-A
4.00	1260.0	1580.0	1500		RSL182328-A
2.10	475.0	700.0	1760		RSL183030-A
3.00	830.0	1180.0	1580		RSL182230-A
4.00	1490.0	1900.0	1380		RSL182330-A

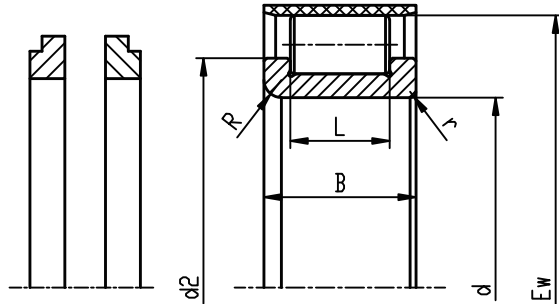
Single Row B type Cylindrical Roller Bearings without Outer Ring



Designation	ID d mm	two snap rings and two washers				
		envelop circle dia. Ew mm	width B mm	inner OD d2 mm	roller width L mm	Rmin mm
RN17V-1	17	28.360	19	23.70	13	2.00
RN18V-1	18	30.470	20	25.00	13	2.00
RN18V-2	18	30.520	13	25.15	8	2.00
RN20V-1	20	33.830	18	27.80	10	2.60
RN20V-2	20	33.850	20	28.60	13	2.50
RN20V-3	20	33.900	16	28.60	10	2.60
RN22V-1	22	34.720	23	29.80	16	2.50
RN24V-1	24	38.610	23	32.50	16	2.50
RN24V-2	24	38.610	25	32.50	18	2.50
RN25V-2	25	42.510	16	34.80	9	2.50
RN25V-4	25	46.520	18	35.80	12	3.00
RN27V-1	27	41.800	25	35.80	18	2.50
RN30V-1	30	49.600	19	40.30	10	3.50
RN38V-1	38	54.690	20	49.50	12	4.00

rmin mm	Cr KN	Cor KN	limit speed n _G rpm	two snap rings and two washers	
				ref. P/N 1	ref. P/N 2
0.30	27.0	33.0	11500	2662	
0.30	28.5	33.6	11000	2663	
0.50	19.9	21.2	11000	2181	
0.30	27.0	30.1	10500	2654	
0.30	31.9	37.3	10500	2664	
0.70	27.0	30.0	10500	2486	
0.30	37.0	54.0	9900	2665	
0.30	42.7	56.6	9000	2666	
0.30	47.2	64.5	9000	2775	
0.50	31.2	34.4	8900	2404	
0.50	45.0	48.1	8400	2193	
0.30	50.0	71.7	8700	2667	
0.50	40.2	44.9	7600	2405	
1.00	46.8	67.4	6500	2503	

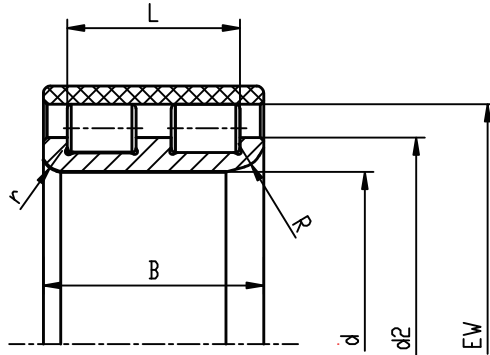
Single Row C type Cylindrical Roller Bearings without Outer Ring



Designation	ID d mm	two stepped snap rings				
		envelop circle dia. Ew mm	width B mm	inner OD d2 mm	roller width L mm	Rmin mm
RN15V-1	15	27.116	14	22.20	8	1.80
RN20V-4	20	35.500	14	29.50	8	1.50
RN25V-1	25	42.510	12	34.80	6	2.60
RN25V-5	25	46.520	18	35.80	12	3.00
RN30V-2	30	50.740	14	40.15	7.5	3.00

min mm	Cr KN	Cor KN	limit speed n _G rpm	two stepped snap rings	
				ref. P/N 1	ref. P/N 2
0.30	18.0	19.4	12000	2671	
0.20	23.2	25.2	10500	2512	
0.30	21.9	21.8	8900	2625-2794	
0.50	45.0	48.1	8400	2767-2795	
0.30	32.6	32.9	7600	2529	

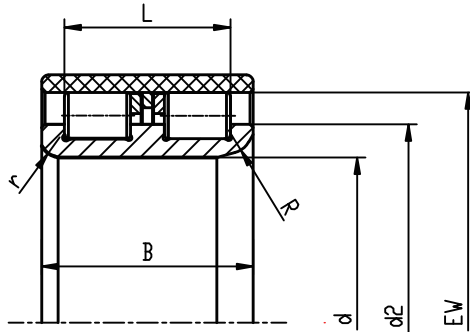
Double Row A type Cylindrical Roller Bearings without Outer Ring



Designation	ID d mm	without snap ring and washer				
		envelop circle dia. Ew mm	width B mm	inner OD d2 mm	roller width L mm	Rmin mm
RNN35V-4	35	55.52	36	45	28	0.6
RNN50V-3	50	69.58	40	60.3	33.3	3
RNN50V-7	50	72	31	62	24	4
RNN60V-1	60	83.83	46	71	39.8	2.5

rmin mm	Cr KN	Cor KN	limit speed n _G rpm	without snap ring and washer	
				ref. P/N 1	ref. P/N 2
0.6	83.6	113.6	6700	2470	
0.3	118	202	5300	2719	
0.3	111.8	172.5	5100	2645	
0.3	171.7	289.8	4400	2820	

Double Row B type Cylindrical Roller Bearings without Outer Ring



Designation	ID d mm	1 snap ring and 2 washers				
		envelop circle dia. Ew mm	width B mm	inner OD d2 mm	roller width L mm	Rmin mm
RNN18V-1	18	32.3	20.5	25.9	14.9	2
RNN20V-9	20	36.81	30	29	23	0.6
RNN22V-1	22	36.2	30	30.8	23	2.5
RNN22V-2	22	38.75	22.5	31	17.3	2
RNN24V-1	24	40.25	26	34.3	20	2.5
RNN24V-2	24	40.25	34	34.3	24	2
RNN25V-1	25	40.25	26	34.3	20	2.5
RNN25V-2	25	40.25	32	34.3	24	3
RNN25V-9	25	42.51	30	34.5	23	0.6
RNN28V-1	28	43.35	26.5	37.3	20	3
RNN28V-2	28	44.45	34	36.5	27.6	2.5
RNN30V-1	30	46.4	32	38.7	27.6	2
RNN30V-2	30	48.25	40	40.6	32	2.5
RNN30V-3	30	49.6	24	40	18	3

1 snap ring and 2 washers					
rmin mm	Cr KN	Cor KN	limit speed n _G rpm	ref. P/N 1	ref. P/N 2
0.3	24.1	25.7	10800	2699	
0.6	46.5	52	10500		RSL185004
0.7	47.5	68.8	9800	2435	
0.3	34.6	38.1	9700	2535	
0.3	44	59.8	9000	2400	
2	53.3	76.4	9000	2597	
0.3	44	59.8	8900	2686	
0.3	53.3	76.4	8900	2613	
0.6	53	64	8900		RSL185005
0.3	46.6	66.1	8500	2519	
0.3	70.8	99.8	8500	2776	
0.3	73.2	105.7	7600	2594	
2.5	85.8	131.6	7600	2687	
0.3	50.8	60.6	7600	2178	

Designation	ID d mm	1 snap ring and 2 washers					Rmin mm
		envelop circle dia. Ew mm	width B mm	inner OD d2 mm	roller width L mm		
RNN30V-4	30	49.6	25	40	18.9	3	
RNN30V-6	30	49.6	26	40	20	3	
RNN30V-7	30	49.6	30	40	24	2.6	
RNN30V-9	30	49.6	34	40	26	1	
RNN32V-2	32	46.6	28	41	22	3	
RNN32V-3	32	48.24	34	41	27.6	2.5	
RNN32V-4	32	51.75	25	42.5	19.9	3	
RNN32V-5	32	51.75	29	42.5	24	3	
RNN35V-1	35	49.8	28	43.9	22	3	
RNN35V-2	35	50.2	29	42.5	23.6	2.5	
RNN35V-3	35	52.09	26.5	44.5	20.9	2.5	
RNN35V-5	35	55.52	36	45	28	0.6	
RNN35V-6	35	55.52	36	45	28	2.5	
RNN35V-7	35	59.19	27	48.2	21.33	3	
RNN35V-8	35	64.3	26.5	52.9	20.9	2.5	
RNN35V-9	35	55.52	36	45	28	1	
RNN38V-1	38	52.95	28	47	22	3	
RNN38V-2	38	52.95	29.5	47.5	21.9	3.2	
RNN38V-3	38	52.95	29.5	47.5	21.9	3.7	
RNN38V-4	38	54.69	29.5	49.2	21.6	4	
RNN38V-5	38	54.69	29.5	49.5	20.7	4	
RNN38V-6	38	57.91	38	48	32	3	
RNN40V-1	40	57.81	34	50	28	3.2	
RNN40V-2	40	57.81	34	50	28	3.2	

rmin mm	Cr KN	Cor KN	limit speed n _e rpm	1 snap ring and 2 washers	
				ref. P/N 1	ref. P/N 2
0.3	50.8	60.6	7600	2651	
0.3	57.1	70.4	7600	2198	
0.3	69.1	90	7600	2683	
1	69	84	7600		RSL185006
0.3	54.3	82.5	7600	2183-2439	
0.3	76	112	7500	2668	
0.3	59.1	74.7	7400	2496	
0.3	71.5	95.5	7400	2579	
0.3	56.8	89.7	7400	2434	
0.3	66.7	96.6	7400	2634	
0.3	56.6	79.4	7000	2488-2723	
0.6	83.6	113.6	6700	2520	
0.3	83.6	113.6	6700	2706	
0.3	68.4	85.5	6500	2721	
0.3	72.9	95.7	6000	2528	
1	83	107	6700		RSL185007
0.3	59.2	97	6500	2164	
0.1	59.2	97	6500	2504	
0.1	59.2	97	6500	2806	
0.1	63	99	6500	2458	
0.1	56.9	86.7	6500	2464	
0.3	106	156	6300	2669	
0.3	86.1	141.2	6200	2168	
0.3	96	141	6200	2827	

Designation	ID d mm	1 snap ring and 2 washers				
		envelop circle dia. Ew mm	width B mm	inner OD d2 mm	roller width L mm	Rmin mm
RNN40V-4	40	61.74	28	50.2	20.9	3
RNN40V-5	40	61.74	32	50.2	24.9	3
RNN40V-6	40	61.74	35.5	50.2	27.6	2.6
RNN40V-9	40	61.74	38	50.5	30	1
RNN42V-1	42	60.75	37	51.5	30.9	3
RNN42V-2	42	60.75	37	51.5	31.6	3
RNN44V-1	44	61.6	34	53.9	28	3.2
RNN44V-2	44	62.97	37	53.4	30.9	2.5
RNN45V-1	45	61.55	32	53.8	24.9	3
RNN45V-2	45	61.55	36	53.9	28.9	3
RNN45V-3	45	65.02	34	54.5	27.3	3
RNN45V-4	45	66.85	37.5	55.8	28.6	3.5
RNN45V-5	45	66.85	37.5	55.8	28.6	3.5
RNN45V-9	45	66.85	40	55.5	30	1
RNN46V-1	46	69.5	45	56.5	37.3	3.2
RNN50V-1	50	67.28	32	61	25.8	3.2
RNN50V-2	50	67.36	40	60.4	32.6	4
RNN50V-4	50	69.67	32	60.3	24.9	3
RNN50V-5	50	69.67	37.5	60.3	31.4	2.5
RNN50V-6	50	69.67	42.5	65/60.3	33.4	6
RNN50V-8	50	72.05	37	61.8	28.5	4
RNN50V-9	50	72.33	40	59.5	33	1
RNN50V-10	50	72.33	39	59	32.5	3.2
RNN50V-11	50	72.33	40	59	33.1	1.1

rmin mm	Cr KN	Cor KN	limit speed n _e rpm	1 snap ring and 2 washers	
				ref. P/N 1	ref. P/N 2
0.3	70.6	90.6	6000	2179	
0.3	85.4	115.8	6000	2180	
0.3	100	140	6000	2650	
1	100	133	6000	RSL185008	
0.3	100.7	156.9	6000	2412	
0.3	107.2	169.7	6000	2777	
0.3	90.1	153	5800	2592	
0.3	103.5	164.4	5800	2401	
0.3	77.3	125.7	5800	2559	
0.3	90	153	5800	2425	
0.3	94.3	140.4	5600	2647	
0.3	105.8	156.7	5500	2419-2722	
0.3	123	157	5500	2828	
1	106	148	5500		RSL185009
0.3	145	207	5300	2807	
0.3	75.7	145.2	5300	2530	
1	109	201	5300	2720	
0.3	89.1	141	5300	2492	
0.3	111.2	186.9	5300	2609	
0.3	118	202	5300	2590	
0.1	111.7	172.5	5100	2466	
1	134	188	5100		RSL185010
0.3	130.9	194.3	5100	2518	
1.1	130.9	194.3	5100	2432-2596	

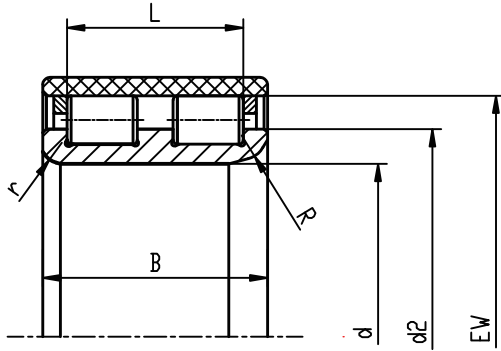
Designation	ID d mm	1 snap ring and 2 washers					Rmin mm
		envelop circle dia. Ew mm	width B mm	inner OD d2 mm	roller width L mm		
RNN50V-12	50	75.25	40	62	32.5	2.5	
RNN50V-13	50	81.45	32	65	26.1	3	
RNN55V-1	55	76.94	40	66	31.1	3	
RNN55V-2	55	77.07	41	66	33.8	3	
RNN55V-3	55	83.54	47	68.5	40.1	3.5	
RNN55V-4	55	85.07	41	66	33.8	3	
RNN55V-5	55	88.85	52	72.5	42.1	6.2	
RNN55V-9	55	83.54	46	68.5	39	1.1	
RNN60V-2	60	83.83	46	71	39.8	2.5	
RNN60V-3	60	83.83	47	71	39.8	2.5	
RNN60V-4	60	83.83	50	71	39.8	6.3	
RNN60V-5	60	83.83	65	71	53.8	6.3	
RNN60V-6	60	89.8	52	72.6	42.6	4	
RNN60V-9	60	86.74	46	71.5	39	1.1	
RNN65V-1	65	89.8	48	78.5	40.6	4	
RNN65V-3	65	93.1	58	78.5	49.6	3.5	
RNN65V-9	65	93.09	46	78.8	39	1.1	
RNN70V-1	70	95.29	54	82.2	43.6	4	
RNN70V-2	70	100.28	54	81.5	42	1.1	
RNN70V-9	70	100.28	54	81.5	42	1.1	
RNN75V-1	75	115.78	62	92.5	53	3.5	
RNN75V-9	75	107.9	54	89	42	1.1	
RNN80V-1	80	111.76	62	93	52	4	
RNN80V-2	80	112.75	60	93.1	50	1.1	

rmin mm	Cr KN	Cor KN	limit speed n _G rpm	1 snap ring and 2 washers	
				ref. P/N 1	ref. P/N 2
1	135	204.6	5000	2649	
0.3	124.2	163.4	4600	2798	
0.3	125	205	4900	2698	
0.3	133.4	221.8	4800	2593	
1.1	177.5	279.8	4500	2509-2685-2819	
0.3	161	218	4400	2731	
0.5	206	303	4300	2558-2674	
1.1	182	275	4500		RSL185011
0.3	171.7	289.8	4400	2532-2724	
0.3	171.7	289.8	4400	2495-2566	
0.3	171.7	289.9	4400	2821	
0.3	219.9	398.8	4400	2805	
0.3	206.1	311	4100	2799	
1.1	187	285	4200		RSL185012
0.3	173.5	329.3	4000	2656	
0.3	237.6	422.7	3900	2527	
1.1	197	315	3900		RSL185013
1	197	362	3750	2700-2702	
1.1	226	357	3650	2507	
1.1	233	350	3650		RSL185014
1.5	317	491	3200	2735	
1.1	245	385	3400		RSL185015
1	290	505	3250	2703	
1.1	274	449	3200	2610	

Designation	ID d mm	1 snap ring and 2 washers				
		envelop circle dia. Ew mm	width B mm	inner OD d2 mm	roller width L mm	Rmin mm
RNN80V-3	80	122.1	70	96	60	4.2
RNN80V-9	80	116.99	60	95	47	1.1
RNN85V-1	85	121.4	70	100	60	1.1
RNN85V-2	85	121.44	60	100	49	4
RNN85V-3	85	121.44	68	99.6	56	5.5
RNN85V-9	85	121.44	60	99.5	47	1.1
RNN90V-1	90	130.11	72	106.8	58.7	5
RNN90V-9	90	130.11	67	106.5	52	1.5
RNN100V-1	100	139.65	67	116.2	52	5
RNN100V-9	100	139.65	67	116	52	1.5
RNN110V-2	110	156.13	80	127.9	62	6
RNN110V-9	110	156.13	80	128	62	2
RNN120V-9	120	167.58	80	139	62	2
RNN130V-9	130	183.81	95	149	78	2
RNN140V-1	140	197.82	95	163	81	5
RNN140V-9	140	197.82	95	163	78	2
RNN150V-9	150	206.8	100	170.5	80	2.1
RSL185030	150	206.8	100	170.5	80	2.1

rmin mm	Cr KN	Cor KN	1 snap ring and 2 washers		
			limit speed n _e rpm	ref. P/N 1	ref. P/N 2
0.3	377	583	3050	2657	
1.1	290	440	3150		RSL185016
1.1	369	638	3000	2633	
1	297.2	483.4	3000	2682	
2	322	535	3000	2815	
1.1	300	465	3000		RSL185017
1.5	346	573	2800	2734	
1.5	350	550	2800		RSL185018
1.1	420	628	2600	2814	
1.5	370	600	2600		RSL185020
1	480	813	2350	2736	
2	485	770	2350		RSL185022
2	510	950	2170		RSL185024
2	730	1210	2000		RSL185026
2	757	1372	1840	2681	
2	780	1340	1840		RSL185028
2.1	810	1390	1760		RSL185030
2.1	810	1390	1760		

Double Row C type Cylindrical Roller Bearings without Outer Ring



Designation	ID d mm	2 washers envelop circle dia. Ew mm	width B mm	inner OD d2 mm	roller width L mm	Rmin mm
RNN30V-5	30	49.6	26	38.6	20	3
RNN32V-1	32	46.6	25	41	20.5	3
RNN40V-3	40	60.68	31	51.4	25.6	3.2
RNN40V-7	40	75.63	78	56	61.1	1.1
RNN45V-6	45	83.88	85	64.2	64.7	1.1
RNN55V-6	55	94.76	100	73.4	76.7	1.1
RNN65V-2	65	93.09	46	78.5	39	4
RNN65V-4	65	109.66	110	83	83.7	1.5
RNN75V-2	75	127.55	120	98.7	90.6	2
RNN80V-4	80	141.92	130	106.7	100.6	2
RNN95V-1	95	155.87	150	120.6	118.6	2
RNN130V-1	130	183.81	95	149	78	5

rmin mm	Cr KN	Cor KN	2 washers limit speed n _G rpm	ref. P/N 1	ref. P/N 2
0.3	57	70.3	7600	2510	
0.3	54.3	82.5	7600	2508	
0.3	80.8	118.1	6000	2729	
1.1	243.2	337.2	5500	2567	
1.1	268	393.9	4500	2619	
1.1	321.5	491.3	4000	2620	
1.1	192.3	322	3900	2652-2783	
1.5	442.1	677	3500	2617	
2	534	870	2900	2640	
2	716	1140	2700	2641	
2	832	1426	2400	2642	
0.3	717.3	1246.6	2000	2655	

Applications

WD bearings can be used in the design of multiple-planetary gear drive. Generally speaking, the single row design will apply for high speed but small loading, and for low speed with heavy loading, double row design will be used.

Such kind of full complementary cylindrical roller bearings are widely used in industrial gearboxes, planetary gearbox with spur gear drive, gear drive for crawler excavators, driving wheel of bulldozer, pitch and yaw gearbox, off-highway axle, hydraulic drive unit and so on.

Main gearbox for wind turbines



Gearbox for construction machinery



Planetary gearbox with gear driving

