

# Needle Rollers, Cylindrical Rollers, Pin, Piston, Pivot

## Needle Rollers:



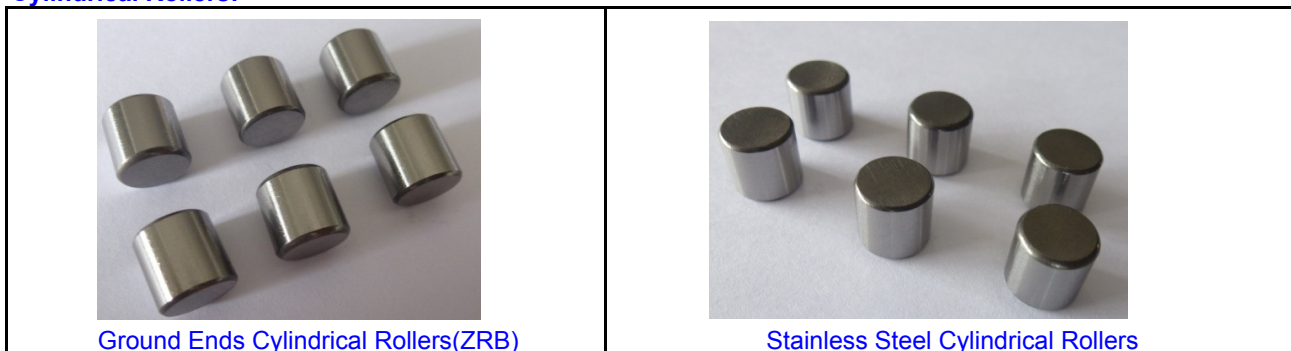
Application: Needle rollers are used: For full complement needle roller arrangements; in the automotive industry, in the electrical, toys and games, DIY and household appliances industries as well as in machine building.

### Needle Rollers Specification(um):

Grade	Lot Diameter Variation	Roundness	Roughness	Length
G2	2	$\leq 1$	$\leq 0.2$	0~20
G3	3	$\leq 1.5$		
G5	5	$\leq 2.5$		

Remark: Needle Rollers with Non-standard Dimension and Customized Drawing are also workable.

## Cylindrical Rollers:



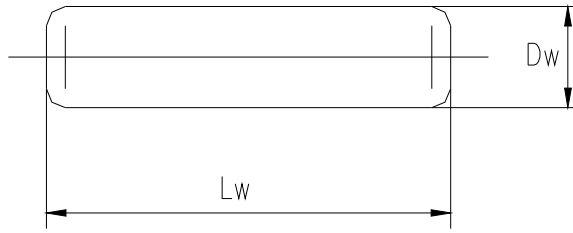
Application: Cylindrical rollers are used: where bearing arrangements are subjected to very high loads; in the automotive industry as well as in machine and gearbox building; in linear guidance systems.

### Cylindrical Rollers Specification(um):

Grade	Dw(mm) >	Dw(mm) $\leq$	Lot Diameter Variation	Roundness	Roughness	Length
G2	--	30	3	1	0.16	0~30
	30	--		1.5		
G3	--	30	4	1.5	0.25	0~30
	30	--	5	2.5		

Remark: Cylindrical Rollers with Non-standard Dimension and Customized Drawing are also workable.

# Needle Rollers, Cylindrical Rollers, Pin, Piston, Pivot

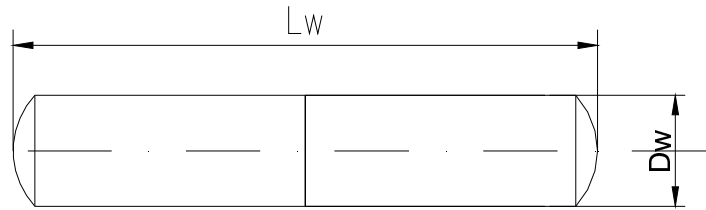


Part Number	Dw	Lw	Weight(Kg)
NRB1X5.8	1	5.8	0.036
NRB1X6.8	1	6.8	0.042
NRB1X7.8	1	7.8	0.048
NRB1X9.8	1	9.8	0.06
NRB1.5X5.8	1.5	5.8	0.081
NRB1.5X6.8	1.5	6.8	0.094
NRB1.5X7.8	1.5	7.8	0.108
NRB1.5X9.8	1.5	9.8	0.136
NRB1.5X11.8	1.5	11.8	0.164
NRB1.5X13.8	1.5	13.8	0.191
NRB2X6.8	2	6.8	0.164
NRB2X7.8	2	7.8	0.19
NRB2X9.8	2	9.8	0.24
NRB2X11.8	2	11.8	0.29
NRB2X13.8	2	13.8	0.34
NRB2X15.8	2	15.8	0.39
NRB2X17.8	2	17.8	0.44
NRB2X19.8	2	19.8	0.49
NRB2X21.8	2	21.8	0.54
NRB2.5X7.8	2.5	7.8	0.3
NRB2.5X9.8	2.5	9.8	0.38
NRB2.5X11.8	2.5	11.8	0.45
NRB2.5X13.8	2.5	13.8	0.53
NRB2.5X15.8	2.5	15.8	0.61
NRB2.5X17.8	2.5	17.8	0.69
NRB2.5X19.8	2.5	19.8	0.76
NRB2.5X21.8	2.5	21.8	0.84
NRB2.5X23.8	2.5	23.8	0.92
NRB3X9.8	3	9.8	0.54
NRB3X11.8	3	11.8	0.65
NRB3X13.8	3	13.8	0.77
NRB3X15.8	3	15.8	0.88
NRB3X17.8	3	17.8	0.99
NRB3X19.8	3	19.8	1.1
NRB3X21.8	3	21.8	1.21
NRB3X23.8	3	23.8	1.32
NRB3X25.8	3	25.8	1.43
NRB3X27.8	3	27.8	1.54
NRB3X29.8	3	29.8	1.65

Part Number	Dw	Lw	Weight(Kg)
NRB3.5X11.8	3.5	11.8	0.89
NRB3.5X13.8	3.5	13.8	1.04
NRB3.5X15.8	3.5	15.8	1.19
NRB3.5X17.8	3.5	17.8	1.34
NRB3.5X19.8	3.5	19.8	1.5
NRB3.5X21.8	3.5	21.8	1.65
NRB3.5X23.8	3.5	23.8	1.85
NRB3.5X25.8	3.5	25.8	1.95
NRB3.5X27.8	3.5	27.8	2.1
NRB3.5X29.8	3.5	29.8	2.25
NRB3.5X34.8	3.5	34.8	2.63
NRB4X11.8	4	11.8	1.16
NRB4X13.8	4	13.8	1.36
NRB4X15.8	4	15.8	1.56
NRB4X17.8	4	17.8	1.76
NRB4X19.8	4	19.8	1.95
NRB4X21.8	4	21.8	2.15
NRB4X23.8	4	23.8	2.35
NRB4X25.8	4	25.8	2.55
NRB4X27.8	4	27.8	2.74
NRB4X29.8	4	29.8	2.94
NRB4X34.8	4	34.8	3.43
NRB4X39.8	4	39.8	3.93
NRB5X15.8	5	15.8	2.44
NRB5X19.8	5	19.8	3.05
NRB5X21.8	5	21.8	3.36
NRB5X23.8	5	23.8	3.67
NRB5X25.8	5	25.8	3.98
NRB5X27.8	5	27.8	4.28
NRB5X29.8	5	29.8	4.59
NRB5X34.8	5	34.8	5.36
NRB5X39.8	5	39.8	6.13
NRB5X49.8	5	49.8	7.5
NRB6X17.8	6	17.8	3.95
NRB6X21.8	6	21.8	4.83
NRB6X23.8	6	23.8	5.28
NRB6X25.8	6	25.8	5.71
NRB6X39.8	6	39.8	8.83

\*: Weight is for 1000 pcs Needle Rollers.

# Needle Rollers, Cylindrical Rollers, Pin, Piston, Pivot

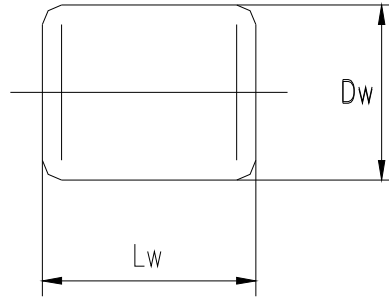


Part Number	Dw	Lw	Weight(Kg)
NRA1X5.8	1	5.8	0.036
NRA1X6.8	1	6.8	0.042
NRA1X7.8	1	7.8	0.048
NRB1X9.8	1	9.8	0.06
NRA1.5X5.8	1.5	5.8	0.081
NRA1.5X6.8	1.5	6.8	0.094
NRA1.5X7.8	1.5	7.8	0.108
NRA1.5X9.8	1.5	9.8	0.136
NRA1.5X11.8	1.5	11.8	0.164
NRA1.5X13.8	1.5	13.8	0.191
NRA2X6.8	2	6.8	0.164
NRA2X7.8	2	7.8	0.19
NRA2X9.8	2	9.8	0.24
NRA2X11.8	2	11.8	0.29
NRA2X13.8	2	13.8	0.34
NRA2X15.8	2	15.8	0.39
NRA2X17.8	2	17.8	0.44
NRA2X19.8	2	19.8	0.49
NRA2X21.8	2	21.8	0.54
NRA2.5X7.8	2.5	7.8	0.3
NRA2.5X9.8	2.5	9.8	0.38
NRA2.5X11.8	2.5	11.8	0.45
NRA2.5X13.8	2.5	13.8	0.53
NRA2.5X15.8	2.5	15.8	0.61
NRA2.5X17.8	2.5	17.8	0.69
NRA2.5X19.8	2.5	19.8	0.76
NRA2.5X21.8	2.5	21.8	0.84
NRA2.5X23.8	2.5	23.8	0.92
NRA3X9.8	3	9.8	0.54
NRA3X11.8	3	11.8	0.65
NRA3X13.8	3	13.8	0.77
NRA3X15.8	3	15.8	0.88
NRA3X17.8	3	17.8	0.99
NRA3X19.8	3	19.8	1.1
NRA3X21.8	3	21.8	1.21
NRA3X23.8	3	23.8	1.32
NRA3X25.8	3	25.8	1.43
NRA3X27.8	3	27.8	1.54
NRA3X29.8	3	29.8	1.65

Part Number	Dw	Lw	Weight(Kg)
NRA3.5X11.8	3.5	11.8	0.89
NRA3.5X13.8	3.5	13.8	1.04
NRA3.5X15.8	3.5	15.8	1.19
NRA3.5X17.8	3.5	17.8	1.34
NRA3.5X19.8	3.5	19.8	1.5
NRA3.5X21.8	3.5	21.8	1.65
NRA3.5X23.8	3.5	23.8	1.85
NRA3.5X25.8	3.5	25.8	1.95
NRA3.5X27.8	3.5	27.8	2.1
NRA3.5X29.8	3.5	29.8	2.25
NRA3.5X34.8	3.5	34.8	2.63
NRA4X11.8	4	11.8	1.16
NRA4X13.8	4	13.8	1.36
NRA4X15.8	4	15.8	1.56
NRA4X17.8	4	17.8	1.76
NRA4X19.8	4	19.8	1.95
NRA4X21.8	4	21.8	2.15
NRA4X23.8	4	23.8	2.35
NRA4X25.8	4	25.8	2.55
NRA4X27.8	4	27.8	2.74
NRA4X29.8	4	29.8	2.94
NRA4X34.8	4	34.8	3.43
NRA4X39.8	4	39.8	3.93
NRA5X15.8	5	15.8	2.44
NRA5X19.8	5	19.8	3.05
NRA5X21.8	5	21.8	3.36
NRA5X23.8	5	23.8	3.67
NRA5X25.8	5	25.8	3.98
NRA5X27.8	5	27.8	4.28
NRA5X29.8	5	29.8	4.59
NRA5X34.8	5	34.8	5.36
NRA5X39.8	5	39.8	6.13
NRA5X49.8	5	49.8	7.5
NRA6X17.8	6	17.8	3.95
NRA6X21.8	6	21.8	4.83
NRA6X23.8	6	23.8	5.28
NRA6X25.8	6	25.8	5.71
NRA6X39.8	6	39.8	8.83

\*: Weight is for 1000 pcs Needle Rollers.

# Needle Rollers, Cylindrical Rollers, Pin, Piston, Pivot



Part Number	Dw	Lw	Weight(Kg)
ZRB 3X5	3	5	0.272
ZRB 4X4	4	4	0.394
ZRB 4X6	4	6	0.58
ZRB 4X8	4	8	0.78
ZRB 5X5	5	5	0.75
ZRB 5X7	5	7	1.08
ZRB 5X8	5	8	1.21
ZRB 5X10	5	10	1.52
ZRB 5.5X5.5	5.5	5.5	1
ZRB 5.5X6	5.5	6	1.1
ZRB 5.5X8	5.5	8	1.46
ZRB 5.5X9	5.5	9	1.65
ZRB 6X6	6	6	1.3
ZRB 6X8	6	8	1.78
ZRB 6X9	6	9	2
ZRB 6X10	6	10	2.22
ZRB 6X12	6	12	2.61
ZRB 6.5X6.5	6.5	6.5	1.66
ZRB 6.5X7	6.5	7	1.79
ZRB 6.5X9	6.5	9	2.3
ZRB 6.5X10	6.5	10	2.56
ZRB 7X7	7	7	2.06
ZRB 7X10	7	10	2.96
ZRB 7X12	7	12	3.62
ZRB 7X14	7	14	4.17
ZRB 7.5X7.5	7.5	7.5	2.54
ZRB 7.5X9	7.5	9	3.12
ZRB 7.5X11	7.5	11	3.74
ZRB 8X8	8	8	3.08
ZRB 8X9	8	9	3.47
ZRB 8X12	8	12	4.65
ZRB 8X14	8	14	5.52
ZRB 9X9	9	9	4.4
ZRB 9X10	9	10	5
ZRB 9X13	9	13	6.3
ZRB 9X14	9	14	6.8
ZRB 10X10	10	10	6
ZRB 10X11	10	11	6.8
ZRB 10X14	10	14	8.5
ZRB 10X16	10	16	9.7
ZRB 11X11	11	11	8.1
ZRB 11X12	11	12	8.9
ZRB 11X15	11	15	11
ZRB 23X24	23	24	77
ZRB 23X32	23	32	103

Part Number	Dw	Lw	Weight(Kg)
ZRB 11X18	11	18	13.4
ZRB 12X12	12	12	10.4
ZRB 12X14	12	14	12.3
ZRB 12X17	12	17	14.9
ZRB 12X18	12	18	15.7
ZRB 12X21	12	21	18.3
ZRB 13X13	13	13	13.6
ZRB 13X18	13	18	18.8
ZRB 13X20	13	20	20.4
ZRB 14X14	14	14	16.6
ZRB 14X15	14	15	17.8
ZRB 14X20	14	20	23.8
ZRB 14X22	14	22	26.2
ZRB 15X15	15	15	20.4
ZRB 15X16	15	16	21.8
ZRB 15X17	15	17	23.1
ZRB 15X22	15	22	30
ZRB 15X24	15	24	32.7
ZRB 16X16	16	16	24.8
ZRB 16X17	16	17	26.8
ZRB 16X24	16	24	37.3
ZRB 16X27	16	27	42
ZRB 17X17	17	17	29.7
ZRB 17X24	17	24	42
ZRB 18X18	18	18	35.7
ZRB 18X19	18	19	37.7
ZRB 18X26	18	26	51
ZRB 18X30	18	30	59.5
ZRB 19X19	19	19	41.6
ZRB 19X20	19	20	43.7
ZRB 19X28	19	28	61
ZRB 19X32	19	32	70
ZRB 20X20	20	20	48.5
ZRB 20X35	20	35	85
ZRB 20X40	20	40	97
ZRB 21X21	21	21	56
ZRB 21X22	21	22	59
ZRB 21X30	21	30	80
ZRB 21X32	21	32	85
ZRB 22X22	22	22	64
ZRB 22X24	22	24	72
ZRB 22X34	22	34	100
ZRB 23X23	23	23	74
ZRB 48X65	48	65	907
ZRB 48X75	48	75	1050

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ZRB 23X34	23	34	112
ZRB 23X36	23	36	116
ZRB 24X24	24	24	84
ZRB 24X26	24	26	91
ZRB 24X36	24	36	126
ZRB 24X38	24	38	133
ZRB 25X25	25	25	95
ZRB 25X27	25	27	103
ZRB 25X30	25	30	114
ZRB 25X36	25	36	137
ZRB 25X40	25	40	152
ZRB 25X52	25	52	198
ZRB 26X26	26	26	107
ZRB 26X28	26	28	116
ZRB 26X40	26	40	164
ZRB 27X48	27	48	212
ZRB 28X28	28	28	133
ZRB 28X30	28	30	143
ZRB 28X40	28	40	190
ZRB 28X44	28	44	210
ZRB 30X30	30	30	163
ZRB 30X34	30	34	185
ZRB 30X48	30	48	262
ZRB 30X64	30	64	348
ZRB 32X32	32	32	199
ZRB 32X40	32	40	249
ZRB 32X52	32	52	324
ZRB 34X34	34	34	239
ZRB 34X55	34	55	387
ZRB 34X75	34	75	527
ZRB 36X36	36	36	283
ZRB 36X58	36	58	457
ZRB 38X38	38	38	333
ZRB 38X42	38	42	368
ZRB 38X60	38	60	526
ZRB 38X62	38	62	550
ZRB 40X40	40	40	389
ZRB 40X65	40	65	630
ZRB 40X70	40	70	678
ZRB 40X87	40	87	843
ZRB 42X42	42	42	450
ZRB 42X70	42	70	750
ZRB 42X75	42	75	804
ZRB 42X80	42	80	857
ZRB 42X82	42	82	878
ZRB 42X84	42	84	900
ZRB 45X45	45	45	553
ZRB 45X65	45	65	799
ZRB 45X70	45	70	860
ZRB 45X75	45	75	922
ZRB 45X98	45	98	1200
ZRB 48X48	48	48	670

ZRB 48X80	48	80	1120
ZRB 50X50	50	50	759
ZRB 50X75	50	75	1140
ZRB 50X85	50	85	1290
ZRB 50X88	50	88	1330
ZRB 50X100	50	100	1520
ZRB 50X110	50	110	1670
ZRB 52X52	52	52	853
ZRB 52X90	52	90	1480
ZRB 54X54	54	54	956
ZRB 54X80	54	80	1420
ZRB 54X85	54	85	1500
ZRB 54X90	54	90	1590
ZRB 54X95	54	95	1680
ZRB 54X120	54	120	2130
ZRB 56X56	56	56	1070
ZRB 56X70	56	70	1340
ZRB 56X90	56	90	1720
ZRB 56X112	56	112	2140
ZRB 58X100	58	100	2040
ZRB 60X60	60	60	1310
ZRB 60X90	60	90	1970
ZRB 60X95	60	95	2070
ZRB 60X100	60	100	2180
ZRB 62X62	62	62	1450
ZRB 62X80	62	80	1870
ZRB 64X64	64	64	1590
ZRB 64X70	64	70	1740
ZRB 64X75	64	75	1860
ZRB 64X100	64	100	2480
ZRB 64X105	64	105	2610
ZRB 64X128	64	128	3180
ZRB 64X135	64	135	3350
ZRB 68X68	68	68	1900
ZRB 68X75	68	75	2100
ZRB 68X110	68	110	3070
ZRB 70X70	70	70	2080
ZRB 70X110	70	110	3270
ZRB 72X100	72	100	3150
ZRB 75X75	75	75	2560
ZRB 75X80	75	80	2730
ZRB 75X110	75	110	3750
ZRB 75X115	75	115	3930
ZRB 75X120	75	120	4100
ZRB 75X125	75	125	4270
ZRB 75X155	75	155	5290
ZRB 80X80	80	80	3110
ZRB 80X85	80	85	3300
ZRB 80X90	80	90	3500
ZRB 80X115	80	115	4470
ZRB 80X120	80	120	4670
ZRB 80X130	80	130	5050
ZRB 80X160	80	160	6220