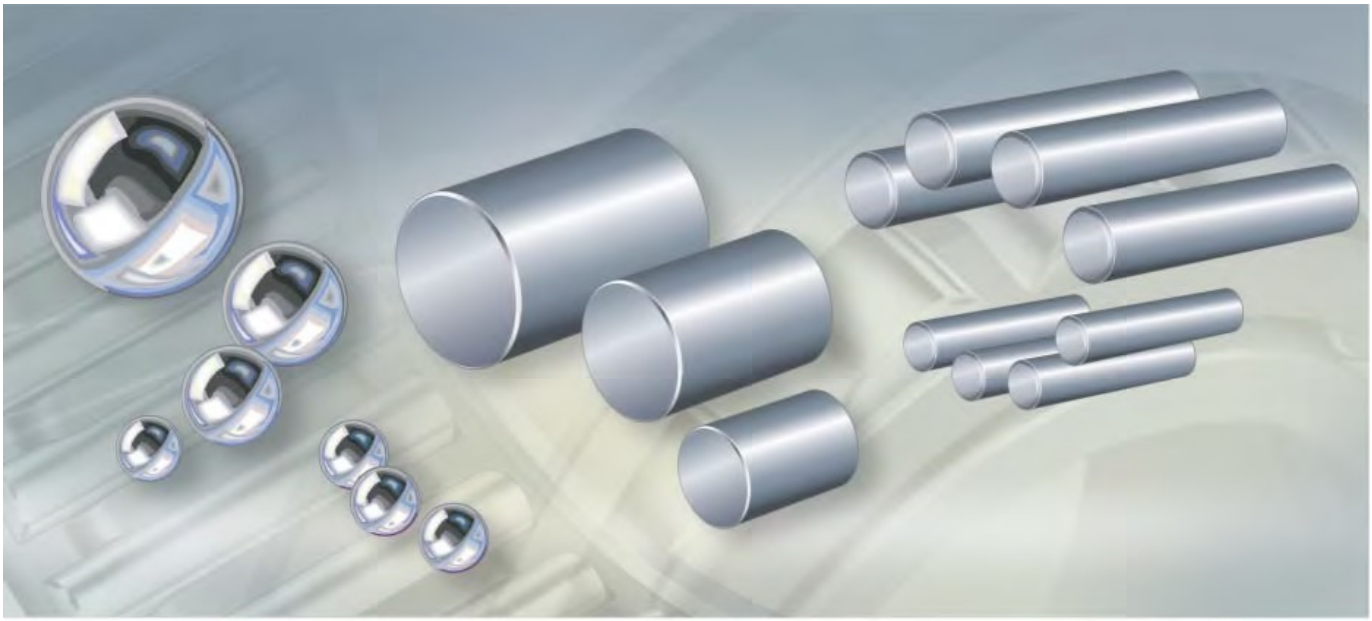


Rolling elements

Steel balls
Cylindrical rollers
Needle rollers

Rolling elements

Balls conform to DIN 5 401-1/ISO 3 290.
They are made from through hardened rolling bearing steel and have a surface hardness of at least 740 HV10.

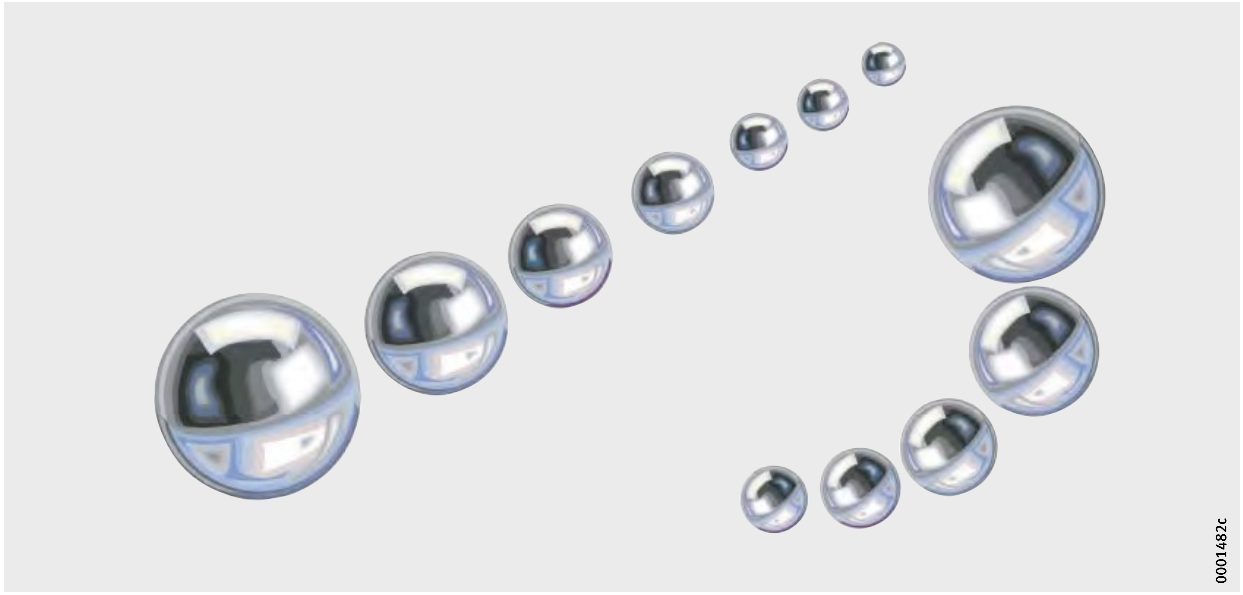
Steel balls are used where moderate to high speeds occur and moderate to high axial forces and radial forces must be supported.

Cylindrical rollers conform to DIN 5 402-1.
They are made from through hardened rolling bearing steel and have a surface hardness of at least 670 HV.
The rollers are designed with profiled ends and a cylindrical portion.

Cylindrical rollers are used where bearing arrangements are subjected to very high loads.

Needle rollers conform to DIN 5 402-3/ISO 3 096, type B with flat end faces.
They are made from through hardened rolling bearing steel, have a surface hardness of at least 670 HV and are designed with profiled ends.

Needle rollers are used where the radial design envelope is restricted and the loads are lower than those in bearing arrangements with cylindrical rollers.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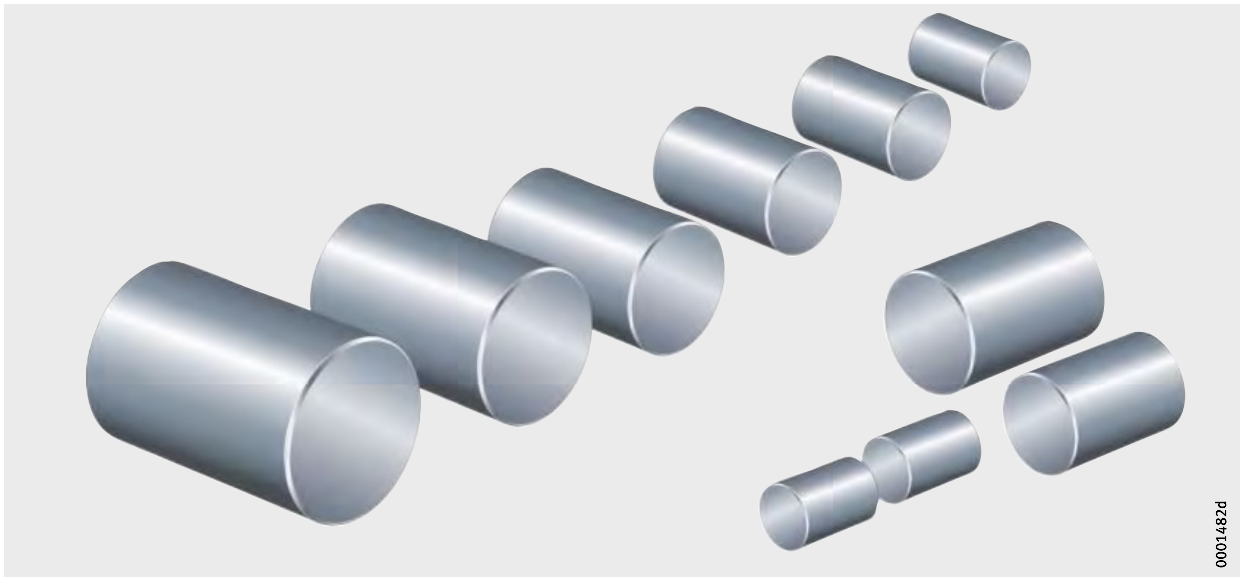
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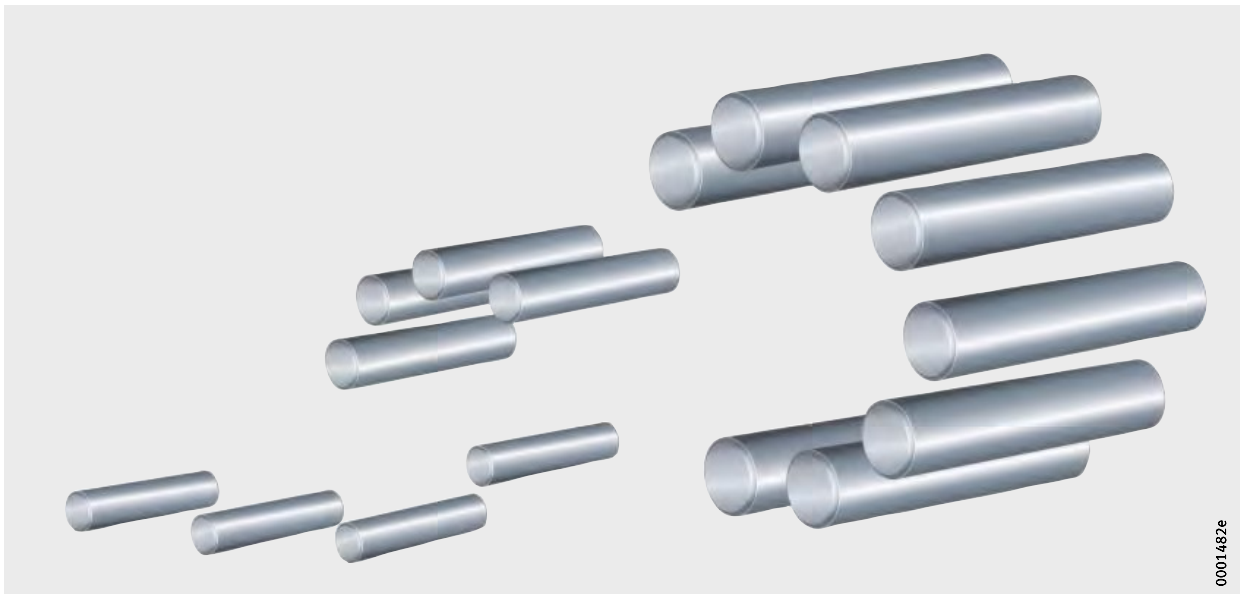
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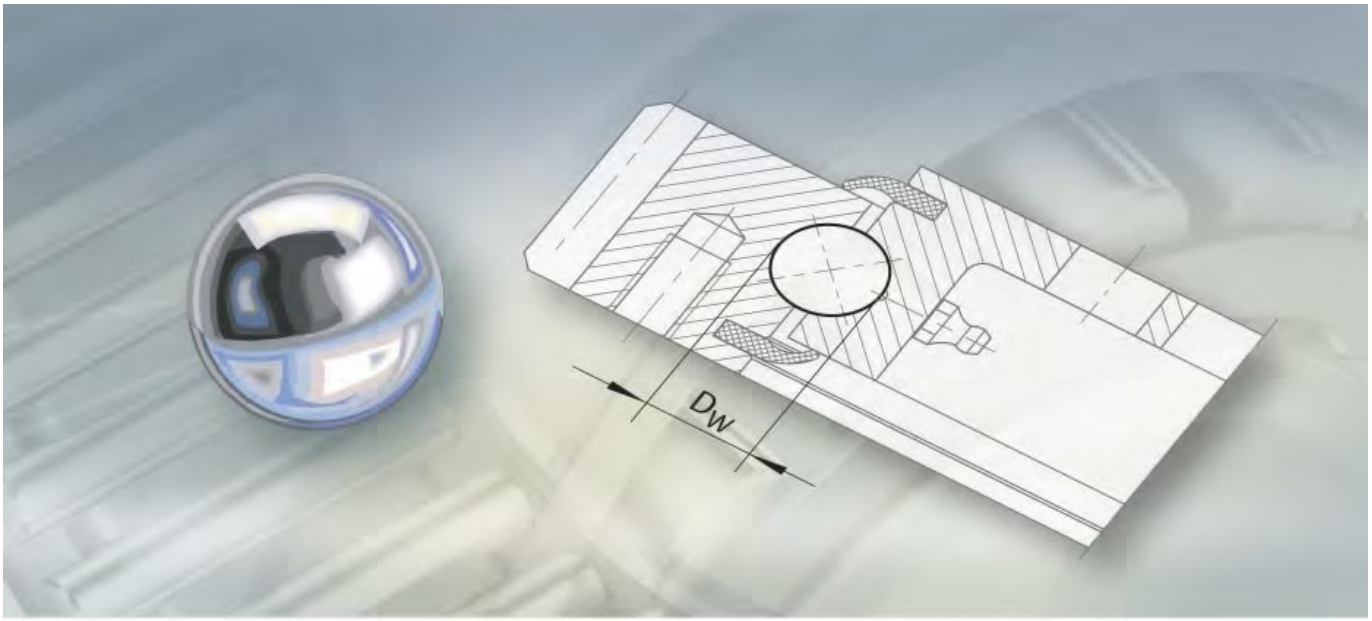
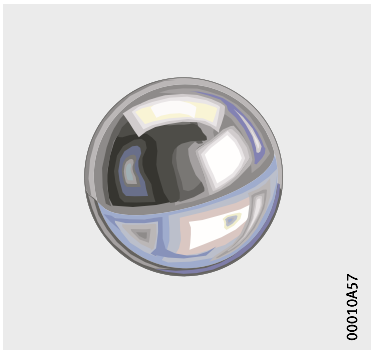


Steel balls

Steel balls

Steel balls

KUG



Steel balls

Features

Steel balls are the basic elements of ball bearings. They are made from through hardened rolling bearing steel in accordance with DIN 17 230 and have a hardness of at least 740 HV10.
The dimensions and tolerances conform to DIN 5 401/ISO 3 290.

Classes and sorts

The balls are available in the grades G5, G10, G16, G20, G28, G40. The largest and smallest deviation and the geometrical tolerance are defined as a function of the diameter.
The suffixes correspond to the class designations.

Balls manufactured under identical conditions (batches) are sorted within a class into ball sorts with a very small diameter tolerance according to the mean batch diameter D_{wmL}.

Each sort is packed separately and the mean deviation is marked on the packaging.

One pack contains balls of one sort only.

In a delivery of balls of the same nominal dimension and class comprising several packs, the sort may differ from one pack to another.

Preferred sort range in grades G10 to G40: +6 to −6.

Designation of sorts

The sort designation is printed on the packaging:

- N for zero
- P for a positive value (stating the value)
- M for a negative value (stating the value).

Balls of only one sort should be used in one bearing arrangement.

Mass

The mass in the dimension tables is calculated on the basis of $\rho = 7{,}85\ kg/dm^3$ (DIN 5 401).

Special designs

Balls are available by agreement in other sizes and made from other materials, such as special steels and ceramic.

Steel balls

Applications

Balls are used:

- in rolling bearings where moderate to high speeds occur and moderate to high axial forces and radial forces must be supported, for example in deep groove ball bearings, slewing rings, rotor bearings and linear guidance systems
- in the automotive industry, in machine building, in the electrical, DIY and household appliances industries as well as in toys and games
- in constant velocity joints and as valve balls.

Suffixes

Suffixes for available grades: see table.

Available designs

Suffix	Description	Design
G5	Grade G5	Standard
G10	Grade G10	
G16	Grade G16	
G20	Grade G20	
G28	Grade G28	
G40	Grade G40	
–	Made from special steels or ceramic	Special design, available by agreement

Accuracy

The dimensional and geometrical tolerances conform to DIN 5 401/ISO 3 290.

Grades and tolerances

Grade	Diameter	Ball tolerance in batch	
		Dimensional and geometrical tolerance	Roughness
	D_w mm	V_{Dws}; t_{Dws} µm	R_a µm DIN
	incl.	max.	max.
G5	12,7	0,13	0,014
G10	25,4	0,25	0,02
G16	38,1	0,35	0,025
G20	50,8	0,5	0,032
G28	50,8	0,7	0,05
G40	100	1	0,06

Grades, tolerances, sort limits

Grade	Tolerance		Sort limit	
	of one batch	Sort interval	µm	
	V_{DwL} µm	l_G µm		
	max.		lower	upper
G5	0,25	1	−5	+5
G10	0,5	1	−9	+9
G16	0,8	1	−10	+10
G20	1	2	−10	+10
G28	1,4	2	−12	+12
G40	2	4	−16	+16

D_w mm
Nominal ball diameter

V_{Dws} µm
Variation of ball diameter;
difference between the largest and smallest individual diameter D_{ws} of one ball

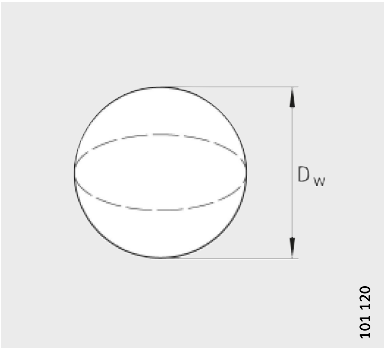
t_{Dws} µm
Deviation from spherical form

R_a µm
Mean roughness value to DIN 4 768

V_{DwL} µm
Variation of ball diameters in one batch;
difference between the largest and smallest mean diameter D_{wm} in one batch (G3)

l_G µm
Sort interval;
the amount into which the permissible deviation of the balls is uniformly divided.

Steel balls



KUG

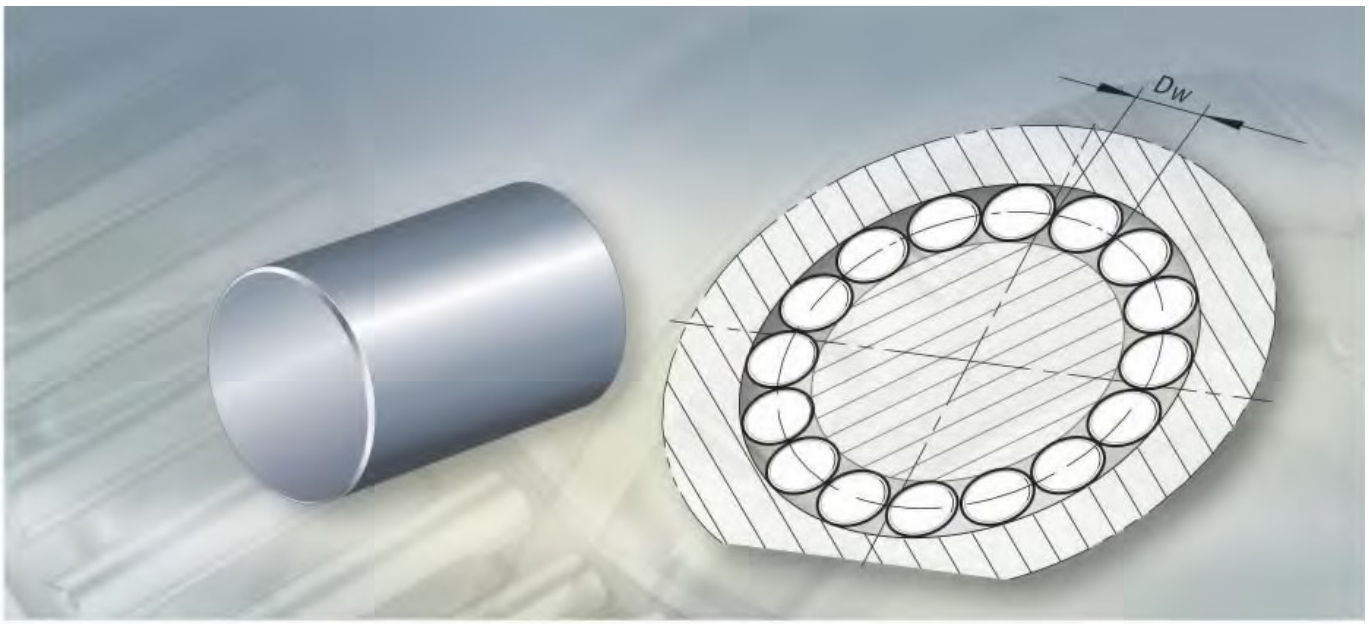
Dimension table · Dimensions in mm and *inch*

Designation	Mass[1] m ≈kg	Dimensions D_w mm	inch
KUG-2	0,033	**2**	–
KUG-2,381	0,055	**2,381**	$^3/_{32}$
KUG-2,5	0,064	**2,5**	–
KUG-2,778	0,088	**2,778**	$^7/_{32}$
KUG-2,778	0,088	**2,778**	–
KUG-3	0,111	**3**	–
KUG-3,175	0,132	**3,175**	$^1/_8$
KUG-3,5	0,176	**3,5**	–
KUG-3,969	0,257	**3,969**	$^5/_{32}$
KUG-4	0,263	**4**	–
KUG-4,5	0,375	**4,5**	–
KUG-4,762	0,444	**4,762**	$^3/_{16}$
KUG-5	0,514	**5**	–
KUG-5,5	0,684	**5**	–
KUG-5,556	0,705	**5,556**	$^7/_{32}$
KUG-5,953	0,867	**5,953**	$^{15}/_{64}$
KUG-6	0,888	**6**	–
KUG-6,35	1,05	**6,350**	$^1/_4$
KUG-6,5	1,13	**6,5**	–
KUG-6,747	1,26	**6,747**	$^{17}/_{64}$
KUG-7	1,41	**7**	–
KUG-7,144	1,5	**7,144**	$^9/_{32}$
KUG-7,5	1,73	**7,5**	–
KUG-7,938	2,06	**7,938**	$^5/_{16}$
KUG-8	2,1	**8**	–
KUG-8,731	2,74	**8,731**	$^{11}/_{32}$
KUG-9	3	**9**	–
KUG-9,525	3,55	**9,525**	$^3/_8$

[1] In each case for 1 000 pieces.

Dimension table (continued) · Dimensions in mm and *inch*

Designation	Mass[1] m ≈kg	Dimensions D_w mm	inch
KUG-10	4,11	**10**	–
KUG-10,319	4,52	**10,319**	$^{13}/_{32}$
KUG-10,5	4,76	**10,5**	–
KUG-11	5,47	**11**	–
KUG-11,112	5,64	**11,112**	$^7/_{16}$
KUG-11,5	6,25	**11,5**	–
KUG-11,906	6,94	**11,906**	$^{15}/_{32}$
KUG-12	7,1	**12**	–
KUG-12,5	8,03	**12,5**	–
KUG-12,7	8,42	**12,7**	$^1/_2$
KUG-13	9,03	**13**	–
KUG-13,494	10,1	**13,494**	$^{17}/_{32}$
KUG-14	11,3	**14**	–
KUG-14,288	12	**14,288**	$^9/_{16}$
KUG-15,081	14,1	**15,081**	$^{19}/_{32}$
KUG-15,875	16,4	**15,875**	$^5/_8$
KUG-16	16,8	**16**	–
KUG-16,669	19	**16,669**	$^{21}/_{32}$
KUG-17,462	21,9	**17,462**	$^{11}/_{16}$
KUG-17,691	22,8	**17,691**	–
KUG-18	24	**18**	–
KUG-18,256	25	**18,256**	$^{23}/_{32}$
KUG-19,05	28,4	**19,05**	$^3/_4$
KUG-19,844	32,1	**19,844**	$^{25}/_{32}$
KUG-20	32,9	**20**	–
KUG-20,638	36,1	**20,638**	$^{13}/_{16}$
KUG-21,431	40,5	**21,431**	$^{27}/_{32}$
KUG-22,225	45,1	**22,225**	$^7/_8$
KUG-23	50	**23**	–

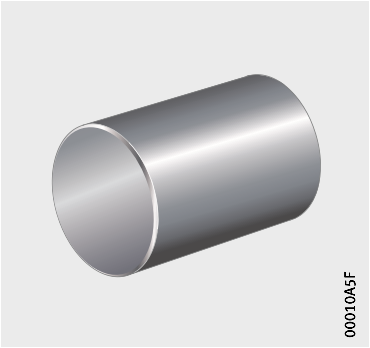


Cylindrical rollers

Cylindrical rollers

Cylindrical rollers

ZRB



Cylindrical rollers

Features

Cylindrical rollers are the basic elements of cylindrical roller bearings. They are made from through hardened rolling bearing steel in accordance with ISO 683-17 and have a hardness of at least 670 HV. The dimensions and tolerances conform to DIN 5 402-1.

Depending on the application, the profile has either a standard or logarithmic curve. The profile, in conjunction with the profiling of the raceways, prevents edge stresses.

Sorts

Cylindrical rollers are divided into sorts with very small diameter and length tolerances. Each sort is packed separately and the mean deviation is marked on the packaging.

One pack contains cylindrical rollers of one sort only.
In a delivery comprising several packs, the sort may differ from one pack to another.

Designation of sorts

The sort designation is printed on the packaging:

- 0 for zero
- + for a positive value (stating the value)
- – for a negative value (stating the value).

Cylindrical rollers of only one sort should be used in one bearing arrangement.

Mass

The mass in the dimension tables is calculated on the basis of DIN 5 402.

Special designs

Cylindrical rollers are available by agreement in other diameters and in grade G1.

Applications

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.

Accuracy

The standard grade conforms to GN to DIN 5 402-1.

Chamfer dimensions of cylindrical rollers

Diameter D_w mm		Chamfer dimension		
		$r_{1\,min}$, $r_{2\,min}$ [1] mm	$r_{1\,max}$ mm	$r_{2\,max}$ mm
over	incl.			
–	4	0,2	0,4	0,7
4	8	0,2	0,6	0,7
8	12	0,3	0,7	1
12	16	0,4	0,8	1,2
16	20	0,4	1	1,2
20	26	0,8	1,1	1,3
26	34	0,6	1,4	1,4
34	42	0,7	1,7	1,7
42	56	0,9	2,1	2,1
56	64	1,2	2,4	2,4
64	75	1,4	2,6	2,6
75	80	1,8	3,2	3,2

[1] See dimension tables.

Length tolerance of cylindrical rollers

Length L_w mm		Deviation		Sort interval l_G µm	Mean deviations Sort range and sort classifications µm					Variation of roller length of one sort L_{WA} µm
		upper µm	lower µm							
over	incl.									max.
–	48	+10	–22	6	+6	0	–6	–12	–18	8
48	–	+15	–35	10	+10	0	–10	–20	–30	10

Diameter tolerances of cylindrical rollers

Diameter D_w mm		Diameter tolerance of one sort V_{DwA} µm	Roundness tolerance t_{Dw} µm	Sort interval l_G µm
over	incl.	max.	max.	
–	13,99	2	1	1
13,99	26	2	1	1
26	48	3	1,2	1,5
48	75	3	2	1,5
75	100	5	2,5	2,5

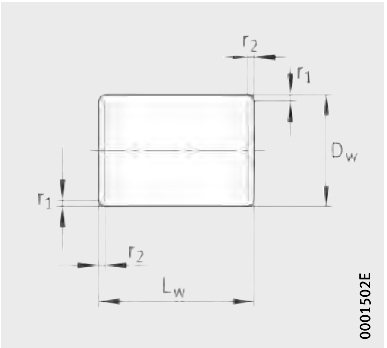
Diameter tolerances of cylindrical rollers continued

Diameter D_w mm		Mean value of individual preferred sorts µm			
over	incl.				
–	13,99	–	–	–	–
13,99	26	+4	+3	+2	+1
26	48	–	+4,5	+3	+1,5
48	75	–	+4,5	+3	+1,5
75	100	–	–	+5	+2,5

Diameter tolerances of cylindrical rollers continued

Diameter D_w mm		Mean value of individual preferred sorts µm						
over	incl.							
–	13,99	0	–1	–2	–3	–4	–5	–6
13,99	26	0	–1	–2	–3	–4	–	–
26	48	0	–1,5	–3	–4,5	–	–	–
48	75	0	–1,5	–3	–4,5	–	–	–
75	100	0	–2,5	–5	–	–	–	–

Cylindrical rollers



ZRB

Dimension table · Dimensions in mm

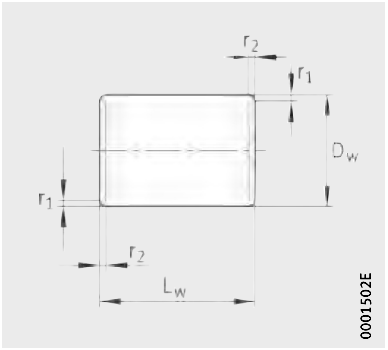
Designation	Mass[1] m ≈kg	Dimensions D_w	L_w
ZRB3X5	0,272	**3**	5
ZRB4X4	0,394	**4**	4
ZRB4X6	0,58	**4**	6
ZRB4X8	0,78	**4**	8
ZRB5X5	0,75	**5**	5
ZRB5X7	1,08	**5**	7
ZRB5X8	1,21	**5**	8
ZRB5X10	1,52	**5**	10
ZRB5,5X5,5	1	**5,5**	5,5
ZRB5,5X6	1,10	**5,5**	6
ZRB5,5X8	1,46	**5,5**	8
ZRB5,5X9	1,65	**5,5**	9
ZRB6X6	1,3	**6**	6
ZRB6X8	1,78	**6**	8
ZRB6X9	2	**6**	9
ZRB6X10	2,22	**6**	10
ZRB6X12	2,61	**6**	12
ZRB6,5X6,5	1,66	**6,5**	6,5
ZRB6,5X7	1,79	**6,5**	7
ZRB6,5X9	2,3	**6,5**	9
ZRB6,5X10	2,56	**6,5**	10
ZRB7X7	2,06	**7**	7
ZRB7X10	2,96	**7**	10
ZRB7X12	3,62	**7**	12
ZRB7X14	4,17	**7**	14
ZRB7,5X7,5	2,54	**7,5**	7,5
ZRB7,5X9	3,12	**7,5**	9
ZRB7,5X11	3,74	**7,5**	11
ZRB8X8	3,08	**8**	8
ZRB8X9	3,47	**8**	9
ZRB8X12	4,65	**8**	12
ZRB8X14	5,52	**8**	14

[1] In each case for 1000 pieces.

Dimension table (continued) · Dimensions in mm

Designation	Mass[1] m ≈kg	Dimensions D_w	L_w
ZRB9X9	4,4	**9**	9
ZRB9X10	5	**9**	10
ZRB9X13	6,3	**9**	13
ZRB9X14	6,8	**9**	14
ZRB10X10	6	**10**	10
ZRB10X11	6,8	**10**	11
ZRB10X14	8,5	**10**	14
ZRB10X16	9,7	**10**	16
ZRB11X11	8,1	**11**	11
ZRB11X12	8,9	**11**	12
ZRB11X15	11	**11**	15
ZRB11X18	13,4	**11**	18
ZRB12X12	10,4	**12**	12
ZRB12X14	12,3	**12**	14
ZRB12X17	14,9	**12**	17
ZRB12X18	15,7	**12**	18
ZRB12X21	18,3	**12**	21
ZRB13X13	13,6	**13**	13
ZRB13X18	18,8	**13**	18
ZRB13X20	20,4	**13**	20
ZRB14X14	16,6	**14**	14
ZRB14X15	17,8	**14**	15
ZRB14X20	23,8	**14**	20
ZRB14X22	26,2	**14**	22
ZRB15X15	20,4	**15**	15
ZRB15X16	21,8	**15**	16
ZRB15X17	23,1	**15**	17
ZRB15X22	30	**15**	22
ZRB15X24	32,7	**15**	24
ZRB16X16	24,8	**16**	16
ZRB16X17	26,8	**16**	17
ZRB16X24	37,3	**16**	24
ZRB16X27	42	**16**	27
ZRB17X17	29,7	**17**	17
ZRB17X24	42	**17**	24

Cylindrical rollers



ZRB

Dimension table (continued) · Dimensions in mm

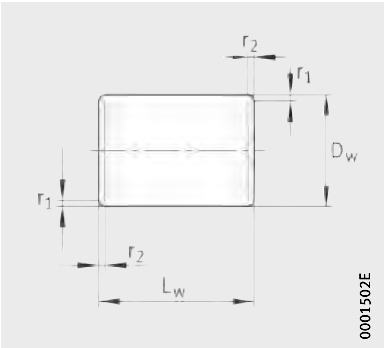
Designation	Mass[1] m ≈kg	Dimensions D_w	L_w
ZRB18X18	35,7	**18**	18
ZRB18X19	37,7	**18**	19
ZRB18X26	51	**18**	26
ZRB18X30	59,5	**18**	30
ZRB19X19	41,6	**19**	19
ZRB19X20	43,7	**19**	20
ZRB19X28	61	**19**	28
ZRB19X32	70	**19**	32
ZRB20X20	48,5	**20**	20
ZRB20X35	85	**20**	35
ZRB20X40	97	**20**	40
ZRB21X21	56	**21**	21
ZRB21X22	59	**21**	22
ZRB21X30	80	**21**	30
ZRB21X32	85	**21**	32
ZRB22X22	64	**22**	22
ZRB22X24	72	**22**	24
ZRB22X34	100	**22**	34
ZRB23X23	74	**23**	23
ZRB23X24	77	**23**	24
ZRB23X32	103	**23**	32
ZRB23X34	112	**23**	34
ZRB23X36	116	**23**	36
ZRB24X24	84	**24**	24
ZRB24X26	91	**24**	26
ZRB24X36	126	**24**	36
ZRB24X38	133	**24**	38
ZRB25X25	95	**25**	25
ZRB25X27	103	**25**	27
ZRB25X30	114	**25**	30
ZRB25X36	137	**25**	36
ZRB25X40	152	**25**	40
ZRB25X52	198	**25**	52

[1] In each case for 1 000 pieces.

Dimension table (continued) · Dimensions in mm

Designation	Mass[1] m ≈kg	Dimensions D_w	L_w
ZRB26X26	107	**26**	26
ZRB26X28	116	**26**	28
ZRB26X40	164	**26**	40
ZRB27X48	212	**27**	48
ZRB28X28	133	**28**	28
ZRB28X30	143	**28**	30
ZRB28X40	190	**28**	40
ZRB28X44	210	**28**	44
ZRB30X30	163	**30**	30
ZRB30X34	185	**30**	34
ZRB30X48	262	**30**	48
ZRB30X64	348	**30**	64
ZRB32X32	199	**32**	32
ZRB32X40	249	**32**	40
ZRB32X52	324	**32**	52
ZRB34X34	239	**34**	34
ZRB34X55	387	**34**	55
ZRB34X75	527	**34**	75
ZRB36X36	283	**36**	36
ZRB36X58	457	**36**	58
ZRB38X38	333	**38**	38
ZRB38X42	368	**38**	42
ZRB38X60	526	**38**	60
ZRB38X62	550	**38**	62
ZRB40X40	389	**40**	40
ZRB40X65	630	**40**	65
ZRB40X70	678	**40**	70
ZRB40X87	843	**40**	87
ZRB42X42	450	**42**	42
ZRB42X70	750	**42**	70
ZRB42X75	804	**42**	75
ZRB42X80	857	**42**	80
ZRB42X82	878	**42**	82
ZRB42X84	900	**42**	84

Cylindrical rollers



ZRB

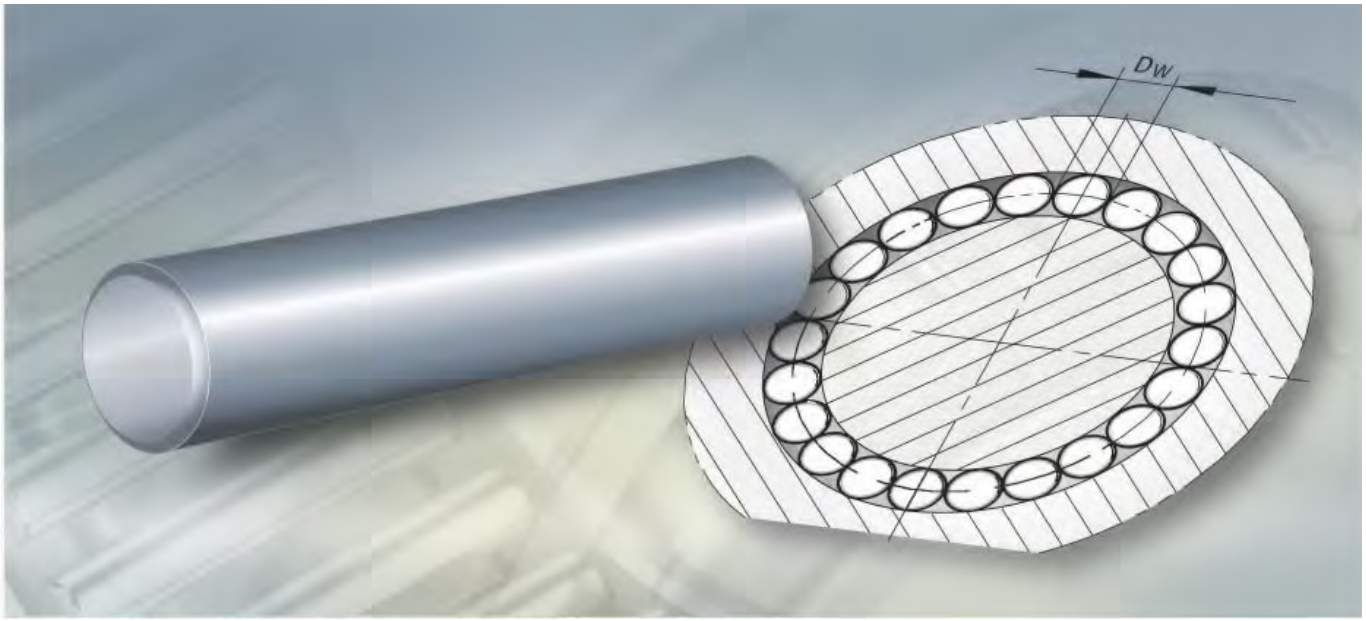
Dimension table (continued) · Dimensions in mm

Designation	Mass[1]	Dimensions	
	m	D_w	L_w
	≈kg		
ZRB45X45	553	**45**	45
ZRB45X65	799	**45**	65
ZRB45X70	860	**45**	70
ZRB45X75	922	**45**	75
ZRB45X98	1 200	**45**	98
ZRB48X48	670	**48**	48
ZRB48X65	907	**48**	65
ZRB48X75	1 050	**48**	75
ZRB48X80	1 120	**48**	80
ZRB50X50	759	**50**	50
ZRB50X75	1 140	**50**	75
ZRB50X85	1 290	**50**	85
ZRB50X88	1 330	**50**	88
ZRB50X100	1 520	**50**	100
ZRB50X110	1 670	**50**	110
ZRB52X52	853	**52**	52
ZRB52X90	1 480	**52**	90
ZRB54X54	956	**54**	54
ZRB54X80	1 420	**54**	80
ZRB54X85	1 500	**54**	85
ZRB54X90	1 590	**54**	90
ZRB54X95	1 680	**54**	95
ZRB54X120	2 130	**54**	120
ZRB56X56	1 070	**56**	56
ZRB56X70	1 340	**56**	70
ZRB56X90	1 720	**56**	90
ZRB56X112	2 140	**56**	112
ZRB58X100	2 040	**58**	100
ZRB60X60	1 310	**60**	60
ZRB60X90	1 970	**60**	90
ZRB60X95	2 070	**60**	95
ZRB60X100	2 180	**60**	100
ZRB62X62	1 450	**62**	62
ZRB62X80	1 870	**62**	80

[1] In each case for 1 000 pieces.

Dimension table (continued) · Dimensions in mm

Designation	Mass[1]	Dimensions	
	m	D_w	L_w
	≈kg		
ZRB64X64	1 590	**64**	64
ZRB64X70	1 740	**64**	70
ZRB64X75	1 860	**64**	75
ZRB64X100	2 480	**64**	100
ZRB64X105	2 610	**64**	105
ZRB64X128	3 180	**64**	128
ZRB64X135	3 350	**64**	135
ZRB68X68	1 900	**68**	68
ZRB68X75	2 100	**68**	75
ZRB68X110	3 070	**68**	110
ZRB70X70	2 080	**70**	70
ZRB70X110	3 270	**70**	110
ZRB72X100	3 150	**72**	100
ZRB75X75	2 560	**75**	75
ZRB75X80	2 730	**75**	80
ZRB75X110	3 750	**75**	110
ZRB75X115	3 930	**75**	115
ZRB75X120	4 100	**75**	120
ZRB75X125	4 270	**75**	125
ZRB75X155	5 290	**75**	155
ZRB80X80	3 110	**80**	80
ZRB80X85	3 300	**80**	85
ZRB80X90	3 500	**80**	90
ZRB80X115	4 470	**80**	115
ZRB80X120	4 670	**80**	120
ZRB80X130	5 050	**80**	130
ZRB80X160	6 220	**80**	160

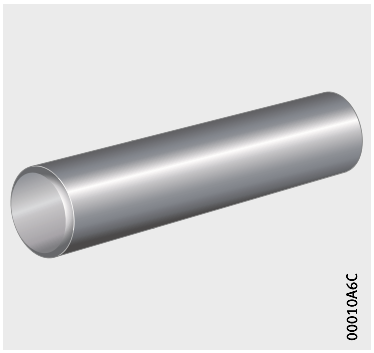


Needle rollers

Needle rollers

Needle rollers

NRB



Needle rollers

Features

Needle rollers are the basic elements of needle roller bearings. They are made from through hardened rolling bearing steel 100Cr6 to DIN 17 230, have a hardness of at least 670 HV and conform to DIN 5 402-3/ISO 3 096-B with flat end faces.

The ends of the needle rollers are profiled. Due to this profiling, the outside surfaces have a curved transition to the end faces. This reduces the edge stresses at the ends of the rolling elements.

Needle rollers are available in the diameter range from 1 mm to 6 mm, in lengths from 2 mm to 43,8 mm and in grade G2.

Sorts

Needle rollers are divided into sorts with very small diameter tolerances. Each sort is packed separately and the mean deviation is marked on the packaging.

One pack contains needle rollers of one sort only. In a delivery comprising several packs, the sort may differ from one pack to another.

Needle rollers of only one sort should be used in one bearing arrangement.

Special designs are available by agreement.

Applications

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.

Accuracy

The dimensional and geometrical accuracy conforms to DIN 5 402-3/ISO 3 096.

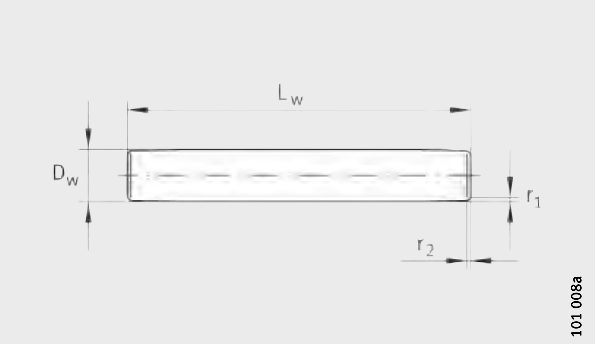
Dimensional and geometrical accuracy, sorts, roughness

Grade	Deviations and tolerances for diameter D_w [1]							Length tolerance
	Deviation µm	Tolerance of one sort µm max.	Sorts [2] µm			Roundness t_{Dw} µm max.	Roughness R_a µm max.	
G2	0 – 10	2	**0 –2**	**–1 –3**	**–2 –4**	1	0,1	h13
			–3 –5	**–4 –6**	**–5 –7**			
			–6 –8	–7 –9	–8 –10			

[1] The tolerance values apply at the centre of the needle rollers.

[2] Preferred sorts are printed bold.

Needle rollers



NRB

Dimension table · Dimensions in mm

Designation	Mass[1]	Dimensions				
	m	D_w	L_w	r_1 r_2[2]	r_1	r_2[2]
	≈kg			min.	max.	max.
NRB1X7,8-G2	0,048	**1**	7,8	0,1	0,4	0,6
NRB1,5X5,8-G2	0,081	**1,5**	5,8	0,1	0,4	0,6
NRB1,5X6,8-G2	0,094	**1,5**	6,8	0,1	0,4	0,6
NRB1,5X7,8-G2	0,108	**1,5**	7,8	0,1	0,4	0,6
NRB1,5X9,8-G2	0,136	**1,5**	9,8	0,1	0,4	0,6
NRB1,5X11,8-G2	0,164	**1,5**	11,8	0,1	0,4	0,6
NRB1,5X13,8-G2	0,191	**1,5**	13,8	0,1	0,4	0,6
NRB2X6,3-G2	0,16	**2**	6,3	0,2	0,6	0,8
NRB2X7,8-G2	0,19	**2**	7,8	0,2	0,6	0,8
NRB2X9,8-G2	0,24	**2**	9,8	0,2	0,6	0,8
NRB2X11,8-G2	0,29	**2**	11,8	0,2	0,6	0,8
NRB2X13,8-G2	0,34	**2**	13,8	0,2	0,6	0,8
NRB2X15,8-G2	0,39	**2**	15,8	0,2	0,6	0,8
NRB2X17,8-G2	0,44	**2**	17,8	0,2	0,6	0,8
NRB2X19,8-G2	0,49	**2**	19,8	0,2	0,6	0,8
NRB2X21,8-G2	0,54	**2**	21,8	0,2	0,6	0,8
NRB2,5X7,8-G2	0,3	**2,5**	7,8	0,2	0,6	0,8
NRB2,5X9,8-G2	0,38	**2,5**	9,8	0,2	0,6	0,8
NRB2,5X11,8-G2	0,45	**2,5**	11,8	0,2	0,6	0,8
NRB2,5X13,8-G2	0,53	**2,5**	13,8	0,2	0,6	0,8
NRB2,5X15,8-G2	0,61	**2,5**	15,8	0,2	0,6	0,8
NRB2,5X17,8-G2	0,69	**2,5**	17,8	0,2	0,6	0,8
NRB2,5X19,8-G2	0,76	**2,5**	19,8	0,2	0,6	0,8
NRB2,5X21,8-G2	0,84	**2,5**	21,8	0,2	0,6	0,8
NRB2,5X23,8-G2	0,92	**2,5**	23,8	0,2	0,6	0,8
NRB3X9,8-G2	0,54	**3**	9,8	0,2	0,6	0,8
NRB3X11,8-G2	0,65	**3**	11,8	0,2	0,6	0,8
NRB3X13,8-G2	0,77	**3**	13,8	0,2	0,6	0,8
NRB3X15,8-G2	0,88	**3**	15,8	0,2	0,6	0,8
NRB3X17,8-G2	0,99	**3**	17,8	0,2	0,6	0,8
NRB3X19,8-G2	1,1	**3**	19,8	0,2	0,6	0,8
NRB3X21,8-G2	1,21	**3**	21,8	0,2	0,6	0,8
NRB3X23,8-G2	1,32	**3**	23,8	0,2	0,6	0,8

1) In each case for 1000 pieces.

2) Mean values;
the transition to the profiled outside surface can only be estimated.

Dimension table · Dimensions in mm

Designation	Mass[1]	Dimensions				
	m	D_w	L_w	r_1 r_2[2]	r_1	r_2[2]
	≈kg			min.	max.	max.
NRB3,5X11,8-G2	0,89	**3,5**	11,8	0,3	0,8	1
NRB3,5X13,8-G2	1,04	**3,5**	13,8	0,3	0,8	1
NRB3,5X15,8-G2	1,19	**3,5**	15,8	0,3	0,8	1
NRB3,5X17,8-G2	1,34	**3,5**	17,8	0,3	0,8	1
NRB3,5X19,8-G2	1,5	**3,5**	19,8	0,3	0,8	1
NRB3,5X21,8-G2	1,65	**3,5**	21,8	0,3	0,8	1
NRB3,5X29,8-G2	2,25	**3,5**	29,8	0,3	0,8	1
NRB3,5X34,8-G2	2,63	**3,5**	34,8	0,3	0,8	1
NRB4X11,8-G2	1,16	**4**	11,8	0,3	0,8	1
NRB4X13,8-G2	1,36	**4**	13,8	0,3	0,8	1
NRB4X15,8-G2	1,56	**4**	15,8	0,3	0,8	1
NRB4X17,8-G2	1,76	**4**	17,8	0,3	0,8	1
NRB4X19,8-G2	1,95	**4**	19,8	0,3	0,8	1
NRB4X21,8-G2	2,15	**4**	21,8	0,3	0,8	1
NRB4X23,8-G2	2,35	**4**	23,8	0,3	0,8	1
NRB4X25,8-G2	2,55	**4**	25,8	0,3	0,8	1
NRB4X27,8-G2	2,74	**4**	27,8	0,3	0,8	1
NRB4X29,8-G2	2,94	**4**	29,8	0,3	0,8	1
NRB4X34,8-G2	3,43	**4**	34,8	0,3	0,8	1
NRB4X39,8-G2	3,93	**4**	39,8	0,3	0,8	1
NRB5X15,8-G2	2,44	**5**	15,8	0,3	0,8	1
NRB5X19,8-G2	3,05	**5**	19,8	0,3	0,8	1
NRB5X21,8-G2	3,36	**5**	21,8	0,3	0,8	1
NRB5X23,8-G2	3,67	**5**	23,8	0,3	0,8	1
NRB5X25,8-G2	3,98	**5**	25,8	0,3	0,8	1
NRB5X27,8-G2	4,28	**5**	27,8	0,3	0,8	1
NRB5X29,8-G2	4,59	**5**	29,8	0,3	0,8	1
NRB5X34,8-G2	5,36	**5**	34,8	0,3	0,8	1
NRB5X39,8-G2	6,13	**5**	39,8	0,3	0,8	1
NRB6X17,8-G2	3,95	**6**	17,8	0,3	0,8	1