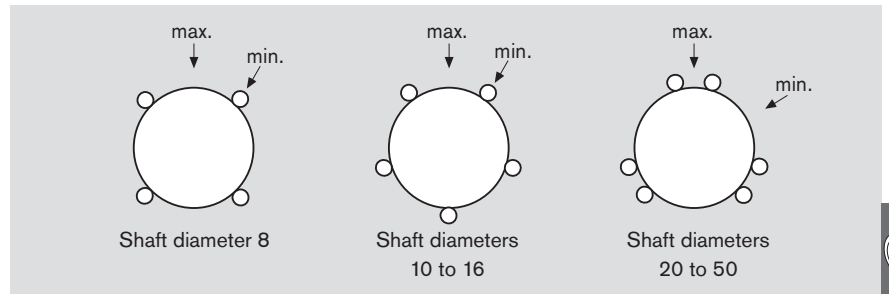


Effect of load direction on load rating

Depending on installation, the listed load ratings should be chosen at the minimum or maximum position and should be based on the calculations.

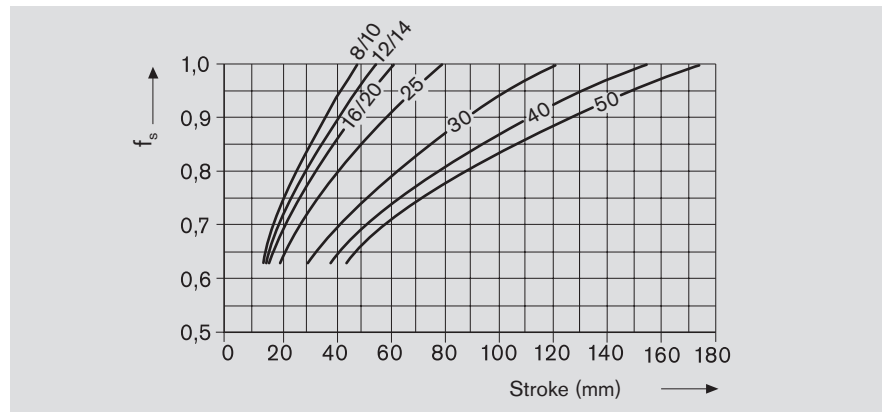
If the load direction is clearly defined and the linear bushings can be installed at the maximum position, the load ratings C_{max} (dynamic load rating) and C_{0max} (static load rating) can be used. If directed installation is not possible or the load direction is not defined, the minimum load ratings must be used.



Reduced load rating with short stroke

When short stroke is present, the service life of the shaft is less than that of the linear bushing.

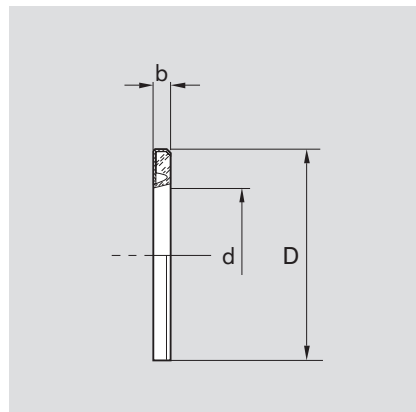
The load ratings C in the tables must therefore be multiplied by the factor f_s .



Wiper seals

Design

- Galvanized metal case
- Elastomer wiper seal



Shaft Ø d (mm)	Material number	Dimen- sions (mm)		Weight (g)
		D ¹⁾	b	
12	R1331 812 10	19	3	1.1
16	R1331 816 10	24	3	1.5
20	R1331 820 10	28	4	2.4
25	R1331 825 10	35	4	4.4
30	R1331 830 10	40	4	5.0
40	R1331 840 10	52	5	5.0
50	R1331 850 10	62	5	10.0

1) Outer diameter D is oversized by about 0.1 mm. No additional securing is needed.

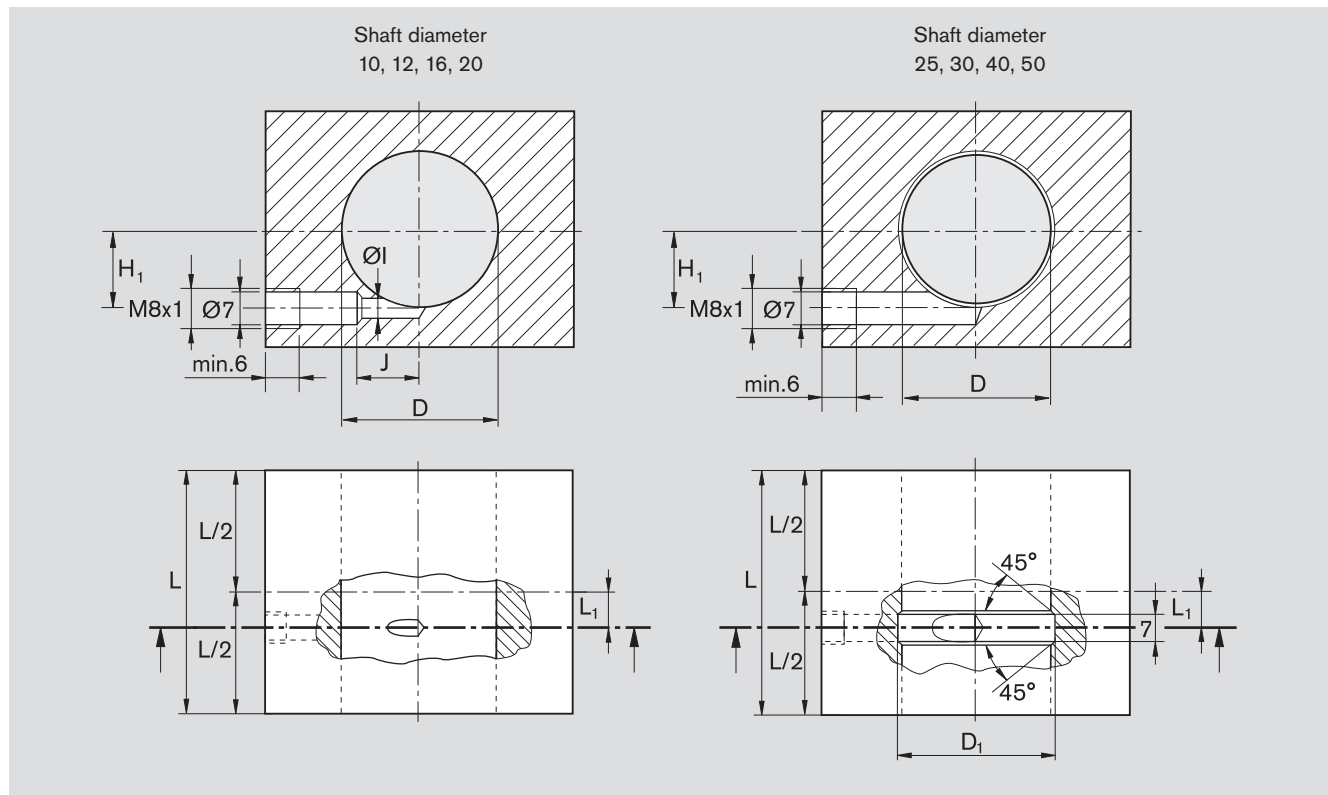
Super linear bushings **A** and **B**

Customer-built housings

Recommended tolerance for housing bore D:

- H7 Clearance, for all normal applications
 K7 Minimal clearance, for applications with alternating loads
 M7 Moderate preload, for applications with vibrations or high acceleration
 Please note the radial clearances (shaft/bore) in each of the tables.

Lubrication groove and lubricating hole for super linear bushings **A**, **B**, closed, with top wiper seals



The lubricating channels shown are designed for grease, see Section "Lubrication" on page 21.

Material number			Shaft Ø d (mm)	Lubricant qty. ¹⁾ (cm ³)		Dimensions (mm)						
Super linear bushings		Wiper seals		Prelubrica- tion	Relubrica- tion	L ₁	H ₁	L (min)	D	D ₁	Ø I	J
A	B											
R0670 010 00	R0672 010 00	R1331 610 00	10	1.3	0.4	7.5	6.0	36	19	-	3	11.5
R0670 012 00	R0672 012 00	R1331 612 00	12	1.6	0.5	9.0	8.0	39	22	-	5	13.0
R0670 016 00	R0672 016 00	R1331 616 00	16	1.6	0.5	10.0	12.0	43	26	-	5	18.0
R0670 020 00	R0672 020 00	R1331 620 00	20	3.5	1.1	13.5	15.0	54	32	-	2	15.5
R0670 025 00	R0672 025 00	R1331 625 00	25	5.5	1.7	18.5	20.0	67	40	42	-	-
R0670 030 00	R0672 030 00	R1331 630 00	30	8.0	2.4	23.5	23.5	79	47	49	-	-
R0670 040 00	R0672 040 00	R1331 640 00	40	14.0	4.2	27.5	31.0	91	62	66	-	-
R0670 050 00	R0672 050 00	R1331 650 00	50	24.0	7.2	34.5	37.5	113	75	79	-	-

1) Max. fill volume for Rexroth linear bushings **in housing**.

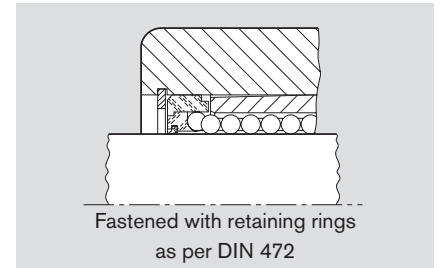
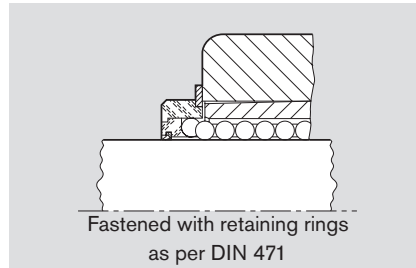
2) The specified initial lubrication and relubrication fill volumes refer to the linear sets R1035/R1036.

Customer-built housings with other lube port dimensions will affect the fill volumes for initial lubrication.

Securing

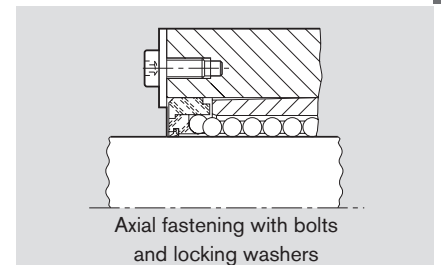
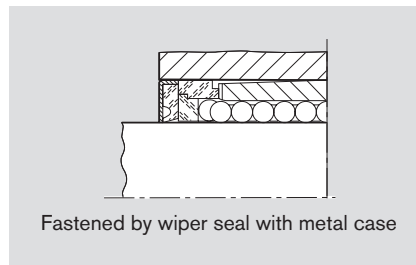
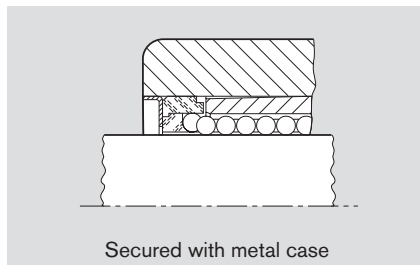
Super linear bushings, closed

- Retaining rings
- Metal case
- Wiper seal with metal case
- Special design



Shaft Ø d (mm)	DIN 471 retaining rings		DIN 472 retaining rings	
	Material number	Dimensions (mm)	Material number	Dimensions (mm)
10	R3410 763 00	19x1.2	R3410 221 00	19x1
12	R3410 714 00	22x1.2	R3410 209 00	22x1
16	R3410 715 00	27x1.2 ¹⁾	R3410 210 00	26x1.2
20	R3410 716 00	33x1.5 ¹⁾	R3410 211 00	32x1.2
25	R3410 717 00	42x1.75	R3410 212 00	40x1.75
30	R3410 718 00	48x1.75	R3410 213 00	47x1.75
40	R3410 719 00	62x2	R3410 214 00	62x2
50	R3410 720 00	75x2.5	R3410 215 00	75x2.5

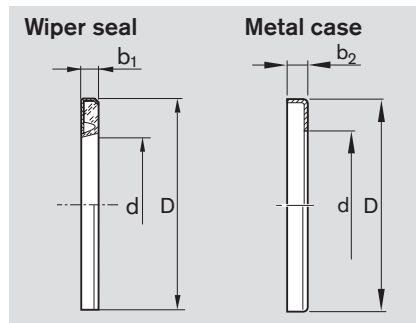
1) Not in accordance with DIN 471.



Wiper seals, closed

Design:

- Galvanized metal case
- Elastomer wiper seal



Shaft Ø d (mm)	Dimensions (mm)			Wiper seals		Metal cases	
	D ²⁾	b ₁ +0.3	b ₂ +0.5	Material number	Weight (g)	Material number	Weight (g)
10	19	3	3	R1331 610 00	1.1	R0901 184 00	0.64
12	22	3	3	R1331 612 00	1.6	R0901 074 00	0.94
16	26	3	3	R1331 616 00	2.0	R0901 075 00	1.20
20	32	4	4	R1331 620 00	4.5	R0901 076 00	3.00
25	40	4	4	R1331 625 00	6.6	R0901 077 00	4.20
30	47	5	5	R1331 630 00	9.3	R0901 078 00	5.30
40	62	5	5	R1331 640 00	17.0	R0901 079 00	9.20
50	75	6	6	R1331 650 00	24.0	R0901 115 00	13.60

Closed metal case

Material: Galvanized steel



2) Outer diameter D is oversized by about 0.1 mm. No additional securing is needed.

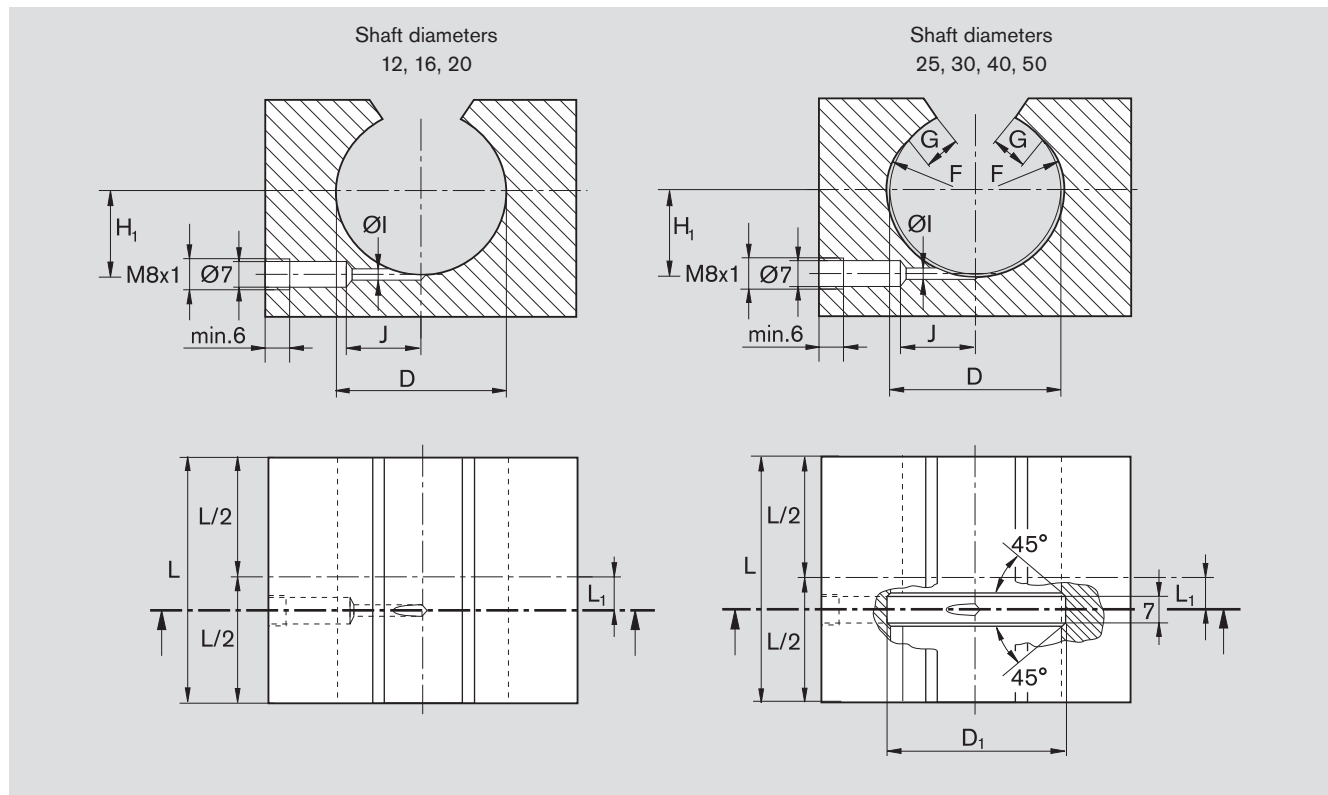
Super linear bushings **A** and **B**

Customer-built housings

Recommended tolerance for housing bore D:

H7 Clearance, for all normal applications
 K7 Minimal clearance, for applications with alternating loads
 M7 Moderate preload, for applications with vibrations or high acceleration
 Please note the radial clearances (shaft/bore) in each of the tables.

Lubrication groove and lubricating hole for super linear bushings **A**, **B**, open, with top wiper seals



The lubricating channels shown are designed for grease, see Section "Lubrication" on page 21. Secure the wiper seals along the axis.

Material number Super linear bushings		Wiper seals	Shaft Ø d (mm)	Lubricant qty. ¹⁾ (cm ³)		Dimensions (mm)								
A	B			Prelubri- cation	Relubrica- tion	L ₁	H ₁	L (min)	D	D ₁	F	G	Ø I	J
R0671 012 00	R0673 012 00	R1331 712 50	12	1.3	0.4	9.0	8.0	39	22	-	-	-	2	13
R0671 016 00	R0673 016 00	R1331 716 50	16	1.3	0.4	10.0	12.0	43	26	-	-	-	2	14
R0671 020 00	R0673 020 00	R1331 720 50	20	3.0	0.9	13.5	15.0	54	32	-	-	-	2	16
R0671 025 00	R0673 025 00	R1331 725 50	25	5.0	1.5	18.5	20.0	67	40	42	R15	4.0	7	-
R0671 030 00	R0673 030 00	R1331 730 50	30	7.0	2.1	23.5	23.5	79	47	49	R18	4.5	7	-
R0671 040 00	R0673 040 00	R1331 740 50	40	13.0	3.9	27.5	31.0	91	62	66	R23	6.0	7	-
R0671 050 00	R0673 050 00	R1331 750 50	50	22.0	6.6	34.5	37.5	113	75	79	R28	7.0	4	30

1) Max. fill volume for Rexroth linear bushings **in housing**.

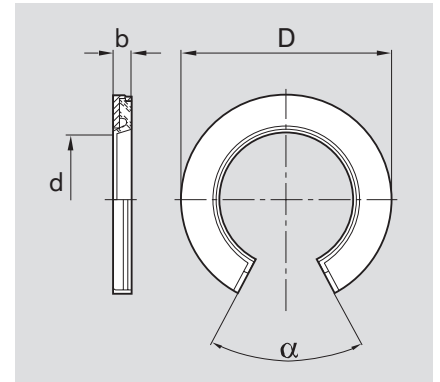
The specified initial lubrication and relubrication fill volumes refer to the linear sets R1037/R1038.

Customer-built housings with other lube port dimensions will affect the fill volumes for initial lubrication.

Wiper seals, open

Design:

- Galvanized metal case
- Elastomer wiper seal



Dimensions (mm)		b +0.1 -0.2	Angle (°) α ²⁾	Weight (g)	Material number Wiper seals
Shaft Ø d	D ¹⁾				
12	22	3	66	2.0	R1331 712 50
16	26	3	68	2.6	R1331 716 50
20	32	4	55	4.7	R1331 720 50
25	40	4	57	7.7	R1331 725 50
30	47	5	57	13.5	R1331 730 50
40	62	5	56	25.0	R1331 740 50
50	75	6	54	42.0	R1331 750 50

- 1) Outer diameter D is oversized by about 0.3 mm.
No additional securing is needed.
Additional fastening recommended for vibrations and high acceleration.
- 2) Minimum size installed; in a hole with nominal size "D".



Segmental linear bushings

Segmental linear bushings, R0668

Normal

Design

- Balls made of rolling bearing steel
- Hardened segmental steel plates
- Ball retainer and retaining rings made of PA 11

Stainless

Design

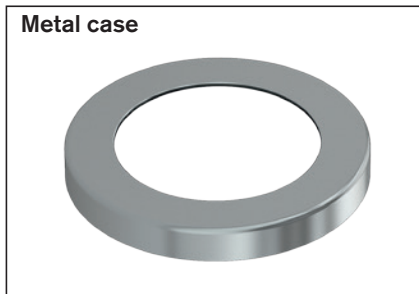
- Balls made of 1.3541 steel
- Segmental steel plates made of 1.4300 steel
- Ball retainer and retaining rings made of PA 11



Shaft Ø d (mm)	Material number		Weight (kg)
	Normal KBSE- ...	Stainless KBSE- ... -NR	
12	R0668 012 00	R0668 012 30	0.013
16	R0668 016 00	R0668 016 30	0.020
20	R0668 020 00	R0668 020 30	0.031
25	R0668 025 00	R0668 025 30	0.057
30	R0668 030 00	R0668 030 30	0.096
40	R0668 040 00	R0668 040 30	0.170



Shaft Ø d (mm)	Material number		Weight (g)
	Wiper seal for normal version ¹⁾	Wiper seal for stainless steel version ¹⁾	
12	R1331 512 00	R1331 512 30	1.1
16	R1331 516 00	R1331 516 30	2.1
20	R1331 520 00	R1331 520 30	3.5
25	R1331 525 00	R1331 525 30	4.9
30	R1331 530 00	R1331 530 30	7.1
40	R1331 540 00	R1331 540 30	10.6



Ø d (mm)	Material number		Weight (g)
	Metal case for normal version ¹⁾	Metal case for stainless steel version ¹⁾	
12	R0901 043 00	R0901 043 30	0.6
16	R0901 044 00	R0901 044 30	1.6
20	R0901 045 00	R0901 045 30	2.5
25	R0901 046 00	R0901 046 30	3.4
30	R0901 047 00	R0901 047 30	4.4
40	R0901 048 00	R0901 048 30	6.7

1) For axial securing.

Explanation of sample short product name

KB	SE		12	NR
Linear bushing	Segmental	Closed	Ø 12	Stainless steel

See page 130 for more information on short product names.

Radial linear bushings

Radial linear bushings, R0678

No wiper seal or fully sealed

Design

- Hardened and machined steel sleeve
- Ball retainer made of reinforced PA
- Balls made of rolling bearing steel
- Two retaining rings
- No wiper seal
- Fully sealed
- Separate wiper seals
- Relubricatable



Shaft Ø d (mm)	Material number		Weight (kg)
	No wiper seal KBR-...	Fully sealed KBR-...-VD	
30	R0678 030 00	R0678 230 45	0.7
40	R0678 040 00	R0678 240 45	1.4
50	R0678 050 00	R0678 250 45	2.5
60	R0678 060 00	R0678 260 45	4.9
80	R0678 080 00	R0678 280 45	10.4

Wiper seals



Shaft Ø d (mm)	Material number		Weight (kg)
	Wiper seals		
30	R1331 930 00 ¹⁾		0.050
40	R1331 940 00 ¹⁾		0.075
50	R1331 950 00 ¹⁾		0.145
60	R1331 960 00 ¹⁾		0.230
80	R1331 980 00 ¹⁾		0.400

1) Please inquire about delivery time

Explanation of sample short product name

KB	R	30	VD
Linear bushing	Radial	Ø 30	Fully sealed

See page 138 for more information on short product names.

Torque-resistant linear bushings

Torque-resistant linear bushings, R0696 0..
Type 1: One ball guide groove

Torque-resistant linear bushings, R0696 3..
Type 2: Two ball guide grooves

Design

- Ball retainer and outer sleeve made of PA or POM
- Hardened steel bearing plates
- Balls made of rolling bearing steel
- Precision steel shaft with ball guide groove
- Hardened steel set screw
- Steel lock nut



Shaft Ø d (mm)	Material number for torque-resistant linear bushing with shaft		
	Standard length as per table	Shaft length cut to size ¹	Customized shaft
	KBDR1- ... -WV- ...	KBDR1- ... -K	KBDR1- ... -SPECIAL
12	R0696 012 80	R0696 012 89	R0696 012 86
16	R0696 016 80	R0696 016 89	R0696 016 86
20	R0696 020 80	R0696 020 89	R0696 020 86
25	R0696 025 80	R0696 025 89	R0696 025 86
30	R0696 030 80	R0696 030 89	R0696 030 86
40	R0696 040 80	R0696 040 89	R0696 040 86
50	R0696 050 80	R0696 050 89	R0696 050 86

- 85 Shaft length 900 mm
- 87 Shaft length 1,200 mm
- 88 Shaft length 2,000 mm

Material number for torque-resistant linear bushing without shaft: R0696 0.. 00



Shaft Ø d (mm)	Material number for torque-resistant linear bushing with shaft		
	Standard length as per table	Shaft length cut to size ¹	Customized shaft
	KBDR2- ... -WV- ...	KBDR2- ... -K	KBDR2- ... -SPECIAL
20	R0696 320 80	R0696 320 89	R0696 320 86
25	R0696 325 80	R0696 325 89	R0696 325 86
30	R0696 330 80	R0696 330 89	R0696 330 86
40	R0696 340 80	R0696 340 89	R0696 340 86
50	R0696 350 80	R0696 350 89	R0696 350 86

- 85 Shaft length 900 mm
- 87 Shaft length 1,200 mm
- 88 Shaft length 2,000 mm

Material number for torque-resistant linear bushing without shaft: R0696 3.. 00

1) Also available with hollow shaft for shaft diameters 25 and higher: R0696 ... 69 or with ISO 683-17/EN 10088 stainless steel solid shaft: R0696 ... 79.



Shaft Ø d (mm)	Material number		Weight (g)
	Type 1	Type 2	
12	R1331 112 00	-	1.6
16	R1331 116 00	-	2.0
20	R1331 120 00	R1331 320 00	4.5
25	R1331 125 00	R1331 325 00	6.6
30	R1331 130 00	R1331 330 00	9.3
40	R1331 140 00	R1331 340 00	17.0
50	R1331 150 00	R1331 350 00	24.0

Wiper seal must be ordered separately.

Explanation of sample short product name

KB	DR	2	25	WV	2000
Linear bushing	Torque	Two ball guide grooves	Ø 25	Shaft included	2000

See page 158 for more information on short product names.

Torque-resistant compact linear bushings

Torque-resistant compact linear bushings, R0720

Design

- Ball retainer and outer sleeve made of PA or POM
 - Hardened steel bearing plates
 - Balls made of rolling bearing steel
 - Precision steel shaft with ball guide groove
 - Hardened steel set screw
 - Steel lock nut
- One ball guide groove for diameter shafts 12 and 16 mm
 - Two ball guide grooves for diameter shafts 20 mm and higher



Shaft Ø d (mm)	Material number for torque-resistant linear bushing with shaft		
	Standard length as per table KBDRC.- ... -WV- ...	Shaft length cut to size ¹ KBDRC.- ... -WV-K	Customized shaft KBDRC.- ... -SPECIAL
12	R0720 012 80	R0720 012 89	R0720 012 86
16	R0720 016 80	R0720 016 89	R0720 016 86
20	R0720 320 80	R0720 320 89	R0720 320 86
25	R0720 325 80	R0720 325 89	R0720 325 86
30	R0720 330 80	R0720 330 89	R0720 330 86
40	R0720 340 80	R0720 340 89	R0720 340 86
50	R0720 350 80	R0720 350 89	R0720 350 86

- 85 Shaft length 900 mm
- 87 Shaft length 1,200 mm
- 88 Shaft length 2,000 mm

Material number for torque-resistant compact linear bushing without shaft:

Shaft diameters 12 and 16: R0720 0.. 00

Shaft diameters 20 to 50: R0720 3.. 00

1) Also available with hollow shaft for shaft diameters 25 and higher: R0720 ... 69 or with ISO 683-17/EN 10088 stainless steel solid shaft: R0720 ... 79.



Wiper seals

Shaft Ø d (mm)	Material number Wiper seals	Weight (g)
12	R1331 112 00	1.6
16	R1331 116 00	2.0
20	R1331 320 00	4.5
25	R1331 325 00	6.6
30	R1331 330 00	9.3
40	R1331 340 00	17.0
50	R1331 350 00	24.0

Wiper seal must be ordered separately.

Explanation of sample short product name

KB	DR	C	2	20	WV	1200
Linear bushing	Torque	Compact	Two ball guide grooves	Ø 20	Shaft included	1,200 mm

See page 158 for more information on short product names.