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Profile	Reference	Temp. (°C)*	Maximum load		Maximum sliding speed			Material	Dimensions (mm)	Page
			Dynamic v < 0,01 m/s	Static v = 0 m/s	Dry m/s	Grease m/s	Oil m/s			
9a Rolled bushings										
	23BK-1	-195 +250	140	250	2,5	-	5	Steel Porous bronze PTFE	3 ... 300	958 - 965
	23BK-1...F	-195 +250	140	250	2,5	-	5	Steel Porous bronze PTFE	6 ... 60	966 - 967
	23BK-2	-40 +110	120	250	0,5	2,5	-	Steel Porous bronze POM	8 ... 150	968 - 971
	23BK-3	-40 +150	80	150	-	2,5	10	Steel Bronze	10 ... 245	972 - 975
	23BK090	-100 +150	40	120	-	2	> 2	Bronze	10 ... 240	976 - 979
	23BK090...F	-100 +150	40	120	-	2	> 2	Bronze	30 ... 120	980 - 981
	23FT090	-100 +250	40	120	-	2	> 2	Bronze	16 ... 60	982 - 983

9b Massive bushings										
	23HST	-195 +250	150	250	-	0,6	0,6	Hardened Steel	20 ... 90	984 - 985

9c Composite bushings										
	23BK500-15N	-200 +130	70	200	2	5	5	Polyester fabric + polyester resin + PTFE	20 ... 120	986 - 987

1 TECHNICAL SPECIFICATIONS

For a well understanding of this catalogue, we hereby explain the most important technical specifications which we will use frequently. For a slide bearing with an internal diameter **d** and a length **L**:

- Specific load = **P** (N/mm²)

If **F** is perpendicular charge (N):

$$P = \frac{F}{d \cdot L}$$

- Sliding speed = **V** (m/s)

Bush rotation: if **n** is the rotation speed (min⁻¹)

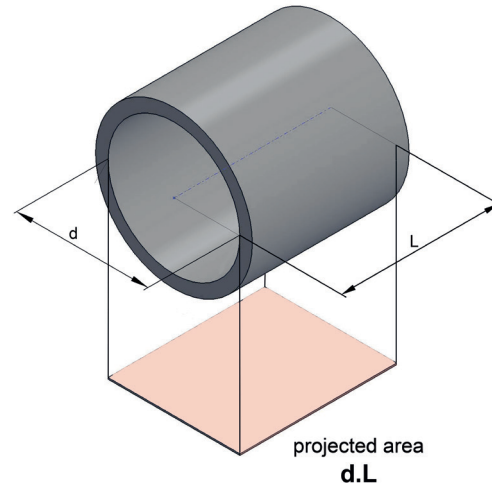
$$V = \frac{d \cdot \pi \cdot n}{60 \cdot 10^3}$$

Bush oscillation: if **n** is the oscillation frequency (min⁻¹) and **μ** the angle of oscillation:

$$V = \frac{d \cdot \pi}{60 \cdot 10^3} \cdot \frac{2\mu \cdot n}{360}$$

- **PV-factor** = **P.V** (N/mm². m/s)

The **PV factor** is the specific load multiplied by the speed. It is the most important factor to size an application.



2 CALCULATION OF THE LIFESPAN

The operating life for a slide bearing depends on the specific load, the sliding speed, the temperature and the material of the rod (surface roughness and hardness). On request, we can calculate the lifespan, which will be an approximate value.

3 PROTECTION OF THE ASSEMBLIES

To avoid any pollution of your bushing, we recommend the use of wipers **10SWP** or **10SWPM** on both sides (Fig. 956).

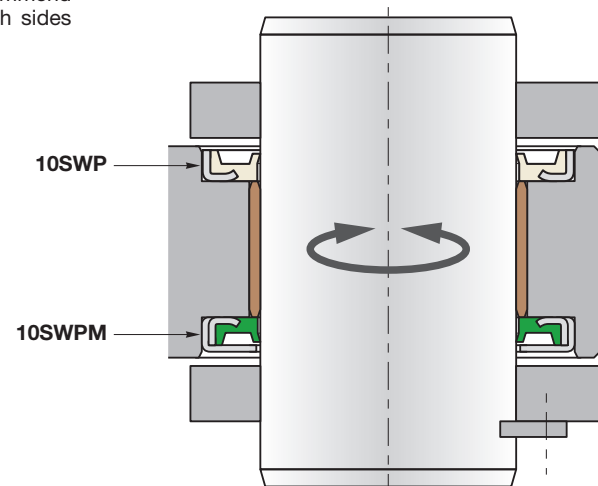


Fig. 956

4 DESIGN OF THE ASSEMBLIES

To avoid stress concentrations on the edges of the bearing, it is preferable to provide a small clearing or let the bearing protrude (Fig. 957A and Fig. 957B).

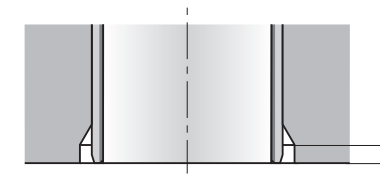


Fig. 957A

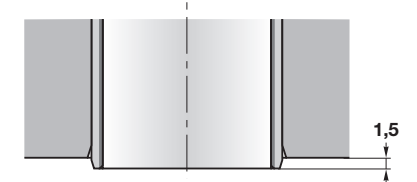


Fig. 957B

5 ASSEMBLY OF ROLLED (D ≤ 50mm), MASSIVE AND COMPOSITE BEARINGS

To assemble rolled slide bearings with an external diameter up to 50 mm, please proceed as shown by Fig. 957C. The adapted diameter at size **h** gives us the possibility to press the bearing in the housing with a depth **h**.

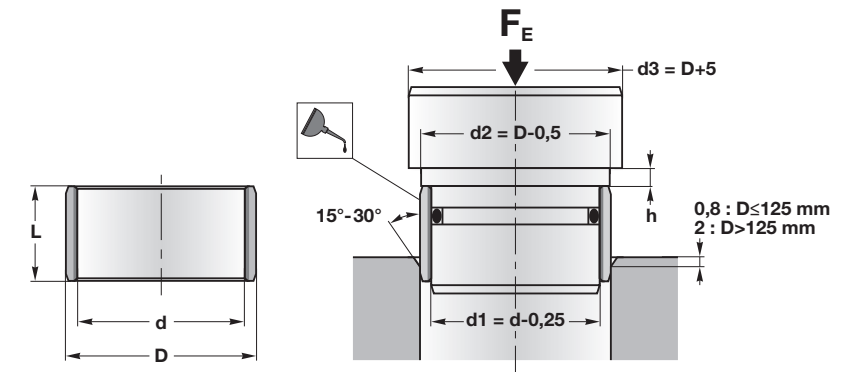


Fig. 957C

6 ASSEMBLY OF ROLLED BEARINGS (D > 50mm)

For the assembly of slide bearings with a external diameter larger than 50 mm, we recommend the use of a mounting ring as shown in Fig. 957D. On request we can calculate the force **F_E**.

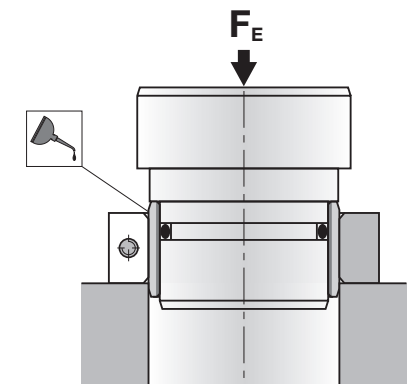


Fig. 957D

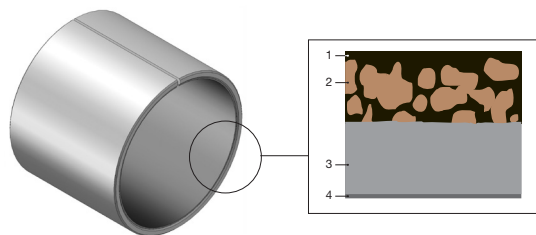


23BK-1

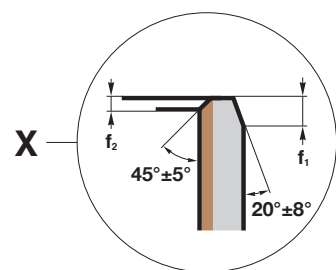
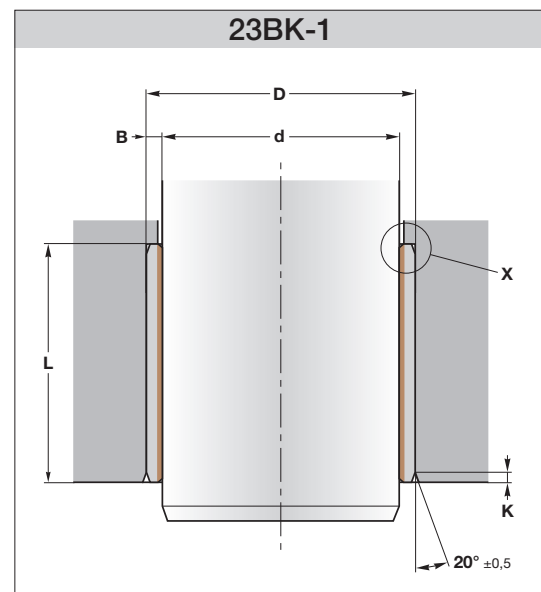
Maintenance free rolled bushings



ALL-TEC
SEALING SYSTEMS



- 1 Modified PTFE: 0,01 - 0,05 mm
- 2 Sintered bronze layer: 0,20 - 0,35 mm
- 3 Steel roll
- 4 Surface protection: ~0,002 mm



D	K
< 50	0,8 ± 0,3
50 < 150	1,5 ± 0,5
> 150	2,5 ± 1

B	f1	f2
0,75	0,5	0,25
1	0,6	0,3
1,5	0,6	0,4
2	1,2	0,4
2,5	1,8	0,6

Tolerances			
	d	D	L
d ≤ 4	h6	H6	
4 < d < 80	f7	H7	± 0,25
d ≥ 80	h8	H7	

23BK-1 are tri-layer maintenance-free bushings with a base of low carbon steel, whereupon a porous bronze layer is sintered. After rolling process completed, PTFE is impregnated into the interstices of this bronze layer.

23BK-1 self-lubricating bushings offer very good wear and low friction performance even in dry running conditions and have good physical and mechanical properties, also certain chemical properties.

They are suitable for linear, rotating and oscillating movements.

Technical specification

Temperature	- 195 to + 250°C
Friction coefficient	see table below
Maximum load	
Dynamic	140 N/mm²
Static	250 N/mm²
Maximum speed	
Dry	2,5 m/s
In hydrodynamic working	5 m/s
PV-factor	
Continuously	1,8 N/mm². m/s
Temporarily	3,6 N/mm². m/s
Shaft roughness	Ra < 0,4 µm
Shaft hardness	HB > 350

Advantages

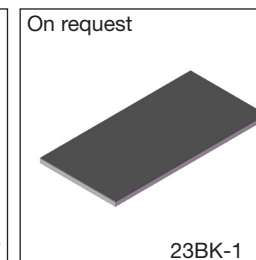
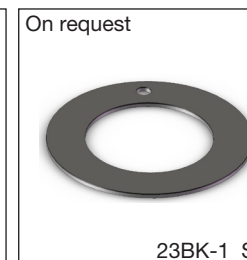
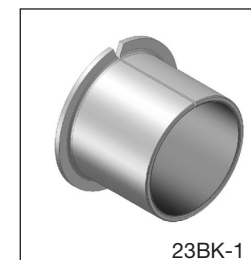
- For dry and maintenance-free applications
- Absorption of noise and vibrations
- Hydrodynamic applications possible
- High loads
- Good chemical resistance
- Low wear and friction
- No stick-slip
- High temperature range
- High sliding speed
- No water absorption
- Low clearance during operation
- Limited dimensions

Please contact us for applications approaching maximum values.

Friction coefficient	p N/mm²	v m/s
0,025	250-140	< 0,001
0,04-0,07	140-60	0,001-0,005
0,07-0,1	60-10	0,005-0,05
0,1-0,15	10-1	0,05-0,5
0,15-0,25	< 1	0,5-2

d	D	L	Reference
3	4,5	3	23BK-1 0303
	4,5	4	23BK-1 0304
	4,5	5	23BK-1 0305
	4,5	6	23BK-1 0306
4	5,5	3	23BK-1 0403
	5,5	4	23BK-1 0404
	5,5	5	23BK-1 0405
	5,5	6	23BK-1 0406
5	7	4	23BK-1 0504
	7	5	23BK-1 0505
	7	8	23BK-1 0508
	7	10	23BK-1 0510
6	8	4	23BK-1 0604
	8	5	23BK-1 0605
	8	6	23BK-1 0606
	8	7	23BK-1 0607
7	9	5	23BK-1 0705
	9	7	23BK-1 0707
	9	10	23BK-1 0710
	9	12	23BK-1 0812
8	10	4	23BK-1 0804
	10	5	23BK-1 0805
	10	6	23BK-1 0806
	10	7	23BK-1 0807
9	11	10	23BK-1 0910

d	D	L	Reference
10	12	6	23BK-1 1006
	12	7	23BK-1 1007
	12	8	23BK-1 1008
	12	10	23BK-1 1010
12	14	6	23BK-1 1206
	14	7	23BK-1 1207
	14	8	23BK-1 1208
	14	9	23BK-1 1209
13	15	8	23BK-1 1308
	15	10	23BK-1 1310
	15	15	23BK-1 1315
	15	20	23BK-1 1320
14	16	10	23BK-1 1410
	16	12	23BK-1 1412
	16	15	23BK-1 1415
	16	20	23BK-1 1420
15	17	8	23BK-1 1508
	17	10	23BK-1 1510
	17	12	23BK-1 1512
	17	15	23BK-1 1515
16	18	10	23BK-1 1610
	18	12	23BK-1 1612
	18	15	23BK-1 1615
	18	20	23BK-1 1620



We produce bushings with an external diameter from 4,5 to 305 mm;
a thickness from 0,5 mm to 3 mm and height up to 200 mm.

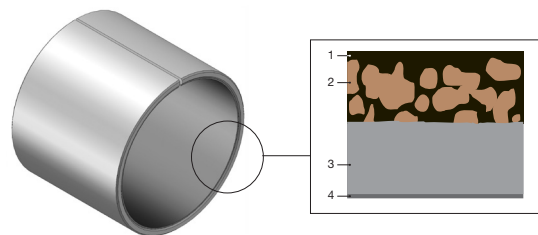


23BK-1

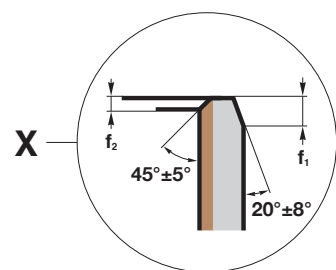
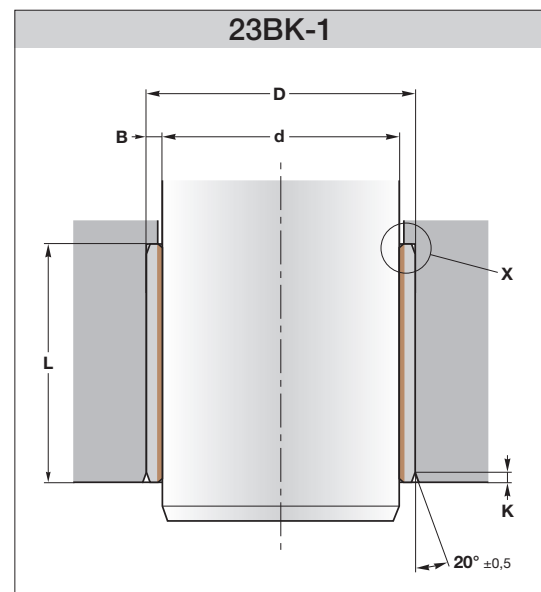
Maintenance free rolled bushings



ALL-TEC
SEALING SYSTEMS



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D	K
< 50	0,8 ± 0,3
50 < 150	1,5 ± 0,5
> 150	2,5 ± 1

B	f1	f2
0,75	0,5	0,25
1	0,6	0,3
1,5	0,6	0,4
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2,5	1,8	0,6

Tolerances			
	d	D	L
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4 < d < 80	f7	H7	± 0,25
d ≥ 80	h8	H7	

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In hydrodynamic working	5 m/s
PV-factor	
Continuously	1,8 N/mm². m/s
Temporarily	3,6 N/mm². m/s
Shaft roughness	Ra < 0,4 µm
Shaft hardness	HB > 350

Advantages

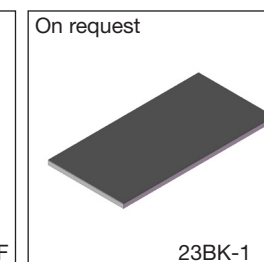
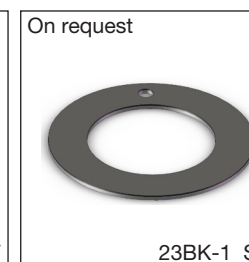
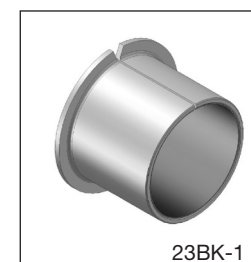
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- High sliding speed
- No water absorption
- Low clearance during operation
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Please contact us for applications approaching maximum values.

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0,07-0,1	60-10	0,005-0,05
0,1-0,15	10-1	0,05-0,5
0,15-0,25	< 1	0,5-2

d	D	L	Reference
16	18	10	23BK-1 1610
	18	12	23BK-1 1612
	18	15	23BK-1 1615
	18	20	23BK-1 1620
	18	25	23BK-1 1625
	18	30	23BK-1 1630
17	19	12	23BK-1 1712
	19	15	23BK-1 1715
18	20	10	23BK-1 1810
	20	12	23BK-1 1812
	20	14	23BK-1 1814
	20	15	23BK-1 1815
20	20	20	23BK-1 1820
	20	25	23BK-1 1825
	20	30	23BK-1 1830
	20	35	23BK-1 1835
22	22	10	23BK-1 2210
	22	12	23BK-1 2212
	22	15	23BK-1 2215
	22	20	23BK-1 2220
24	24	10	23BK-1 2410
	24	12	23BK-1 2412
	24	15	23BK-1 2415
	24	20	23BK-1 2420

d	D	L	Reference
25	28	5	23BK-1 2505
	28	10	23BK-1 2510
	28	12	23BK-1 2512
	28	15	23BK-1 2515
26	28	20	23BK-1 2520
	28	25	23BK-1 2525
	28	30	23BK-1 2530
	28	35	23BK-1 2535
28	28	40	23BK-1 2540
	28	50	23BK-1 2550
	28	60	23BK-1 2560
	28	70	23BK-1 2570
30	30	10	23BK-1 3010
	30	12	23BK-1 3012
	30	15	23BK-1 3015
	30	20	23BK-1 3020
32	32	10	23BK-1 3210
	32	12	23BK-1 3212
	32	15	23BK-1 3215
	32	20	23BK-1 3220
36	36	10	23BK-1 3610
	36	12	23BK-1 3612
	36	15	23BK-1 3615
	36	20	23BK-1 3620



We produce bushings with an external diameter from 4,5 to 305 mm;
a thickness from 0,5 mm to 3 mm and height up to 200 mm.

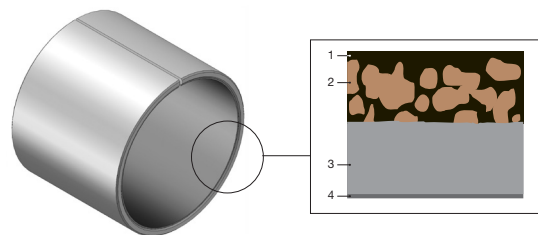


23BK-1

Maintenance free rolled bushings



ALL-TEC
SEALING SYSTEMS



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- 3 Steel roll
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23BK-1 are tri-layer maintenance-free bushings with a base of low carbon steel, whereupon a porous bronze layer is sintered. After rolling process completed, PTFE is impregnated into the interstices of this bronze layer.

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Technical specification

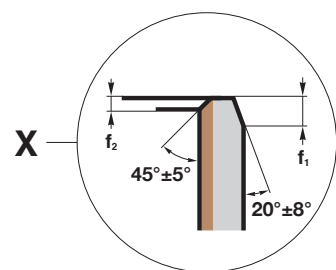
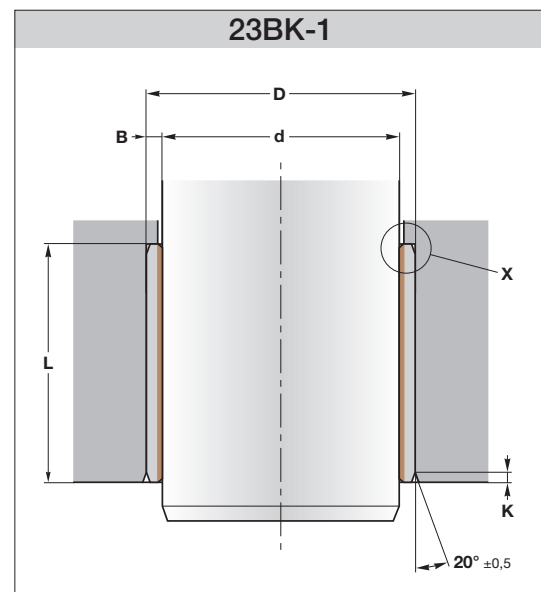
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PV-factor	
Continuously	1,8 N/mm ² . m/s
Temporarily	3,6 N/mm ² . m/s
Shaft roughness	Ra < 0,4 µm
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Advantages

- For dry and maintenance-free applications
- Absorption of noise and vibrations
- Hydrodynamic applications possible
- High loads
- Good chemical resistance
- Low wear and friction
- No stick-slip
- High temperature range
- High sliding speed
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0,07-0,1	60-10	0,005-0,05
0,1-0,15	10-1	0,05-0,5
0,15-0,25	< 1	0,5-2



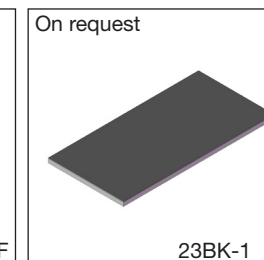
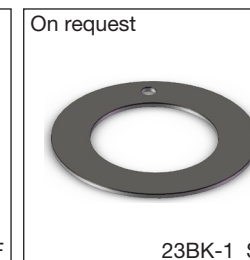
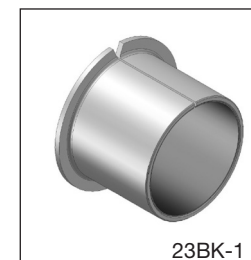
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1,5	0,6	0,4
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2,5	1,8	0,6

Tolerances			
	d	D	L
d ≤ 4	h6	H6	
4 < d < 80	f7	H7	± 0,25
d ≥ 80	h8	H7	

d	D	L	Reference
35	39	10	23BK-1 3510
	39	12	23BK-1 3512
	39	15	23BK-1 3515
	39	20	23BK-1 3520
	39	25	23BK-1 3525
	39	30	23BK-1 3530
	39	35	23BK-1 3535
	39	40	23BK-1 3540
	39	50	23BK-1 3550
	42	20	23BK-1 3820
	42	40	23BK-1 3840
	44	12	23BK-1 4012
40	44	15	23BK-1 4015
	44	20	23BK-1 4020
	44	25	23BK-1 4025
	44	30	23BK-1 4030
	44	35	23BK-1 4035
	44	40	23BK-1 4040
	44	50	23BK-1 4050
	50	20	23BK-1 4520
	50	25	23BK-1 4525
	50	30	23BK-1 4530
	50	35	23BK-1 4535
45	50	40	23BK-1 4540
	50	45	23BK-1 4545
	50	50	23BK-1 4550
	55	15	23BK-1 5015
	55	20	23BK-1 5020
	55	25	23BK-1 5025
	55	30	23BK-1 5030
	55	35	23BK-1 5035
	55	40	23BK-1 5040
	55	50	23BK-1 5050
	55	60	23BK-1 5060

d	D	L	Reference
55	60	25	23BK-1 5525
	60	30	23BK-1 5530
	60	35	23BK-1 5535
	60	40	23BK-1 5540
	60	50	23BK-1 5550
	60	55	23BK-1 5555
	60	60	23BK-1 5560
	61	40	23BK-1 5640
	65	15	23BK-1 6015
	65	20	23BK-1 6020
	65	30	23BK-1 6030
	65	35	23BK-1 6035
60	65	40	23BK-1 6040
	65	50	23BK-1 6050
	65	60	23BK-1 6060
	65	70	23BK-1 6070
	70	15	23BK-1 6515
	70	30	23BK-1 6530
	70	40	23BK-1 6540
	70	50	23BK-1 6550
	70	60	23BK-1 6560
	70	70	23BK-1 6570
	75	30	23BK-1 7030
65	75	35	23BK-1 7035
	75	40	23BK-1 7040
	75	50	23BK-1 7050
	75	60	23BK-1 7060
	75	70	23BK-1 7070
	75	80	23BK-1 7080



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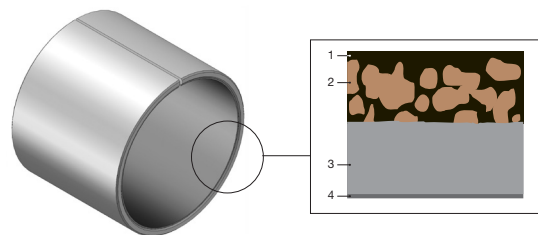


23BK-1

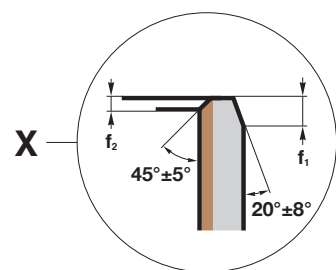
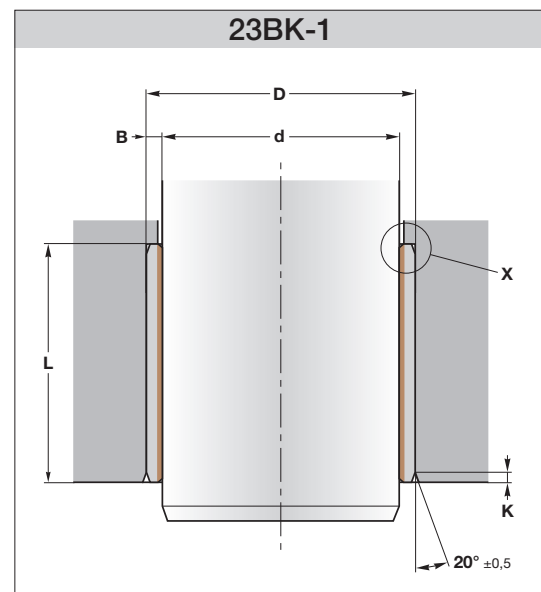
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Continuously	1,8 N/mm². m/s
Temporarily	3,6 N/mm². m/s
Shaft roughness	Ra < 0,4 µm
Shaft hardness	HB > 350

Advantages

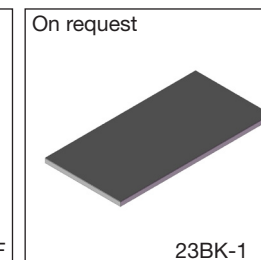
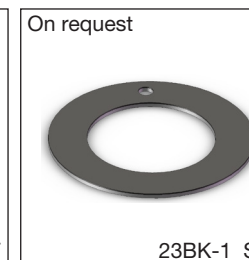
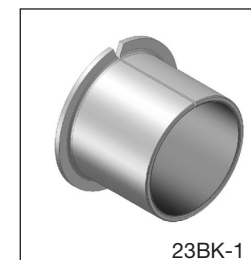
- For dry and maintenance-free applications
- Absorption of noise and vibrations
- Hydrodynamic applications possible
- High loads
- Good chemical resistance
- Low wear and friction
- No stick-slip
- High temperature range
- High sliding speed
- No water absorption
- Low clearance during operation
- Limited dimensions

Please contact us for applications approaching maximum values.

Friction coefficient	p N/mm²	v m/s
0,025	250-140	< 0,001
0,04-0,07	140-60	0,001-0,005
0,07-0,1	60-10	0,005-0,05
0,1-0,15	10-1	0,05-0,5
0,15-0,25	< 1	0,5-2

d	D	L	Reference
75	80	30	23BK-1 7530
	80	40	23BK-1 7540
	80	50	23BK-1 7550
80	80	60	23BK-1 7560
	80	80	23BK-1 7580
85	85	40	23BK-1 8040
	85	50	23BK-1 8050
	85	60	23BK-1 8060
85	85	80	23BK-1 8080
	85	100	23BK-1 80100
90	90	40	23BK-1 8540
	90	50	23BK-1 8550
	90	60	23BK-1 8560
95	95	40	23BK-1 9040
	95	50	23BK-1 9050
	95	60	23BK-1 9060
95	95	78,5	23BK-1 9078.5
	95	90	23BK-1 9090
	95	100	23BK-1 90100
95	100	30	23BK-1 9530
	100	40	23BK-1 9540
100	105	50	23BK-1 10050
	105	60	23BK-1 10060
	105	70	23BK-1 10070
105	105	95	23BK-1 10095
	110	90	23BK-1 10590
	110	115	23BK-1 105115
110	115	50	23BK-1 11050
	115	60	23BK-1 11060
	115	100	23BK-1 110100
115	115	110	23BK-1 110110
	115	115	23BK-1 110115

d	D	L	Reference
115	120	50	23BK-1 11550
120	125	35	23BK-1 12035
	125	45	23BK-1 12045
	125	50	23BK-1 12050
125	125	60	23BK-1 12060
	125	70	23BK-1 12070
	125	95	23BK-1 12095
125	125	100	23BK-1 120100
	130	100	23BK-1 125100
130	135	50	23BK-1 13050
	135	60	23BK-1 13060
	135	80	23BK-1 13080
140	135	100	23BK-1 130100
	145	50	23BK-1 14050
	145	80	23BK-1 14080
150	145	100	23BK-1 140100
	155	50	23BK-1 15050
	155	60	23BK-1 15060
160	155	80	23BK-1 15080
	155	100	23BK-1 150100
180	165	80	23BK-1 16080
	165	100	23BK-1 160100
200	185	100	23BK-1 180100
	205	100	23BK-1 200100
250	255	100	23BK-1 250100
	305	50	23BK-1 30050
	305	100	23BK-1 300100

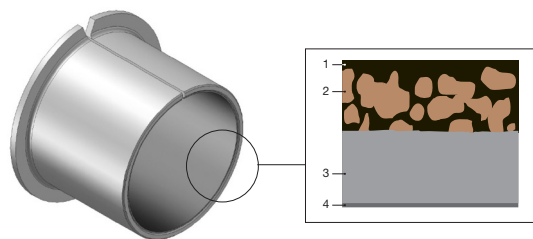


We produce bushings with an external diameter from 4,5 to 305 mm;
a thickness from 0,5 mm to 3 mm and height up to 200 mm.

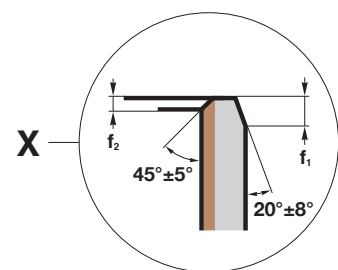
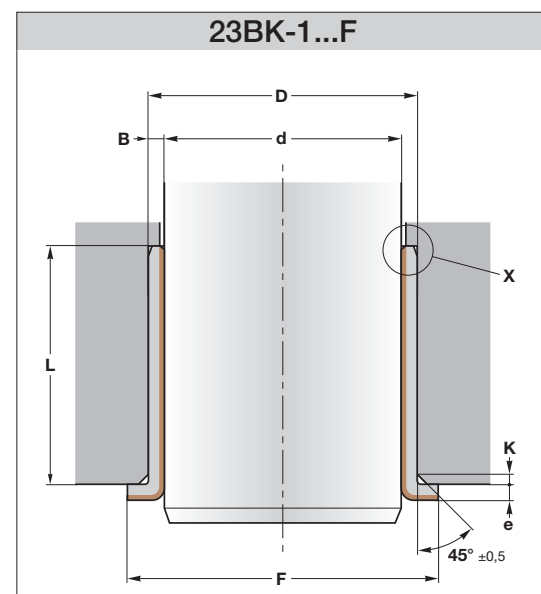


23BK-1...F

Maintenance free rolled bushings



- 1 Modified PTFE: 0,01 -0,05 mm
- 2 Sintered bronze layer: 0,20 - 0,35 mm
- 3 Steel roll
- 4 Surface protection: ~0,002 mm



D	K
< 50	0,8 ± 0,3
50 < 150	1,5 ± 0,5
> 150	2,5 ± 1

B	f1	f2
0,75	0,5	0,25
1	0,6	0,3
1,5	0,6	0,4
2	1,2	0,4
2,5	1,8	0,6

Tolerances				
d	D	L	e	F
f7	H7	± 0,25	0/-0,2	± 0,5

23BK-1...F are tri-layer maintenance-free flanged bushings with a base of low carbon steel, whereupon a porous bronze layer is sintered. After rolling process completed, PTFE is impregnated into the interstices of this bronze layer.

23BK-1...F self-lubricating flanged bushings offer very good wear and low friction performance even in dry running conditions and have good physical and mechanical properties, also certain chemical properties.

They are suitable for linear, rotating and oscillating movements.

Technical specification

Temperature	- 195 to + 250°C
Friction coefficient	see table below
Maximum load	
Dynamic	140 N/mm²
Static	250 N/mm²
Maximum speed	
Dry	2,5 m/s
In hydrodynamic working	5 m/s
PV-factor	
Continuously	1,8 N/mm². m/s
Temporarily	3,6 N/mm². m/s
Shaft roughness	Ra < 0,4 µm
Shaft hardness	HB > 350

Advantages

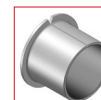
- For dry and maintenance-free applications
- Absorption of noise and vibrations
- Hydrodynamic applications possible
- High loads
- Good chemical resistance
- Low wear and friction
- No stick-slip
- High temperature range
- High sliding speed
- No water absorption
- Low clearance during operation
- Limited dimensions

Please contact us for applications approaching maximum values.

Friction coefficient	p N/mm²	v m/s
0,025	250-140	< 0,001
0,04-0,07	140-60	0,001-0,005
0,07-0,1	60-10	0,005-0,05
0,1-0,15	10-1	0,05-0,5
0,15-0,25	< 1	0,5-2

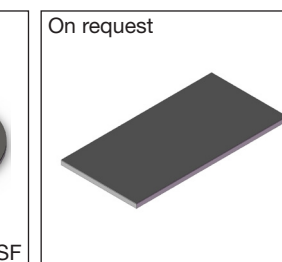
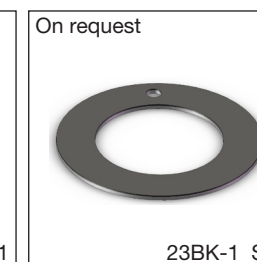
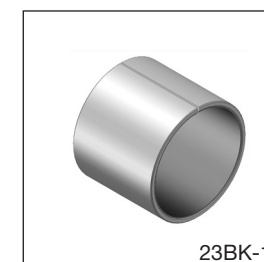


ALL-TEC
SEALING SYSTEMS



d	D	L	e	F	Reference
6	8	4	1	12	23BK-1 06040F
	8	7	1	12	23BK-1 06070F
	8	8	1	12	23BK-1 06080F
8	10	5,5	1	15	23BK-1 08055F
	10	7,5	1	15	23BK-1 08075F
	10	9,5	1	15	23BK-1 08095F
10	12	7	1	18	23BK-1 10070F
	12	9	1	18	23BK-1 10090F
	12	12	1	18	23BK-1 10120F
12	12	17	1	18	23BK-1 10170F
	14	7	1	20	23BK-1 12070F
	14	9	1	20	23BK-1 12090F
14	14	12	1	20	23BK-1 12120F
	16	12	1	22	23BK-1 14120F
	16	17	1	22	23BK-1 14170F
15	17	9	1	23	23BK-1 15090F
	17	12	1	23	23BK-1 15120F
	17	17	1	23	23BK-1 15170F
16	18	12	1	24	23BK-1 16120F
	18	17	1	24	23BK-1 16170F

d	D	L	e	F	Reference
18	20	12	1	26	23BK-1 18120F
	20	17	1	26	23BK-1 18170F
20	23	11,5	1,5	31	23BK-1 20115F
	23	16,5	1,5	31	23BK-1 20165F
	23	21,5	1,5	31	23BK-1 20215F
25	28	11,5	1,5	36	23BK-1 25115F
	28	16,5	1,5	36	23BK-1 25165F
	28	21,5	1,5	36	23BK-1 25215F
30	34	16	2	42	23BK-1 30160F
	34	26	2	42	23BK-1 30260F
35	39	16	2	47	23BK-1 35160F
	39	26	2	47	23BK-1 35260F
40	44	26	2	53	23BK-1 40260F
45	50	42,5	2,5	60	23BK-1 45425F
60	65	30	2,5	75	23BK-1 60300F



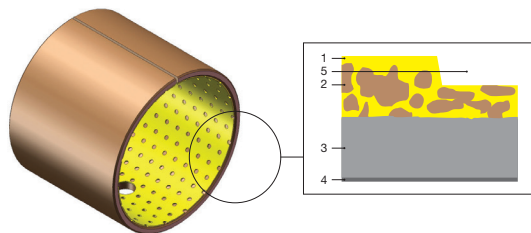


23BK-2

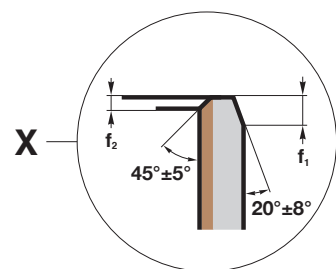
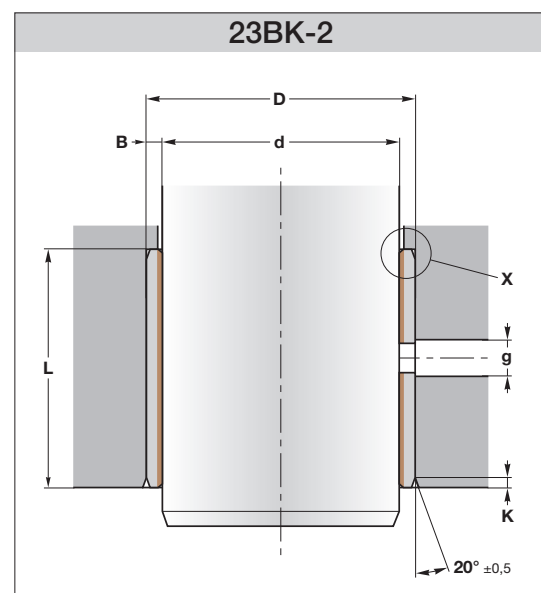
Low maintenance rolled bushings



ALL-TEC
SEALING SYSTEMS



- 1 Acetal co-polymer: 0,30 – 0,50 mm
- 2 Porous bronze layer: 0,20 – 0,35 mm
- 3 Steel roll
- 4 Surface protection: ~0,002 mm
- 5 Lubrication pockets



D	K
< 50	0,8 ±0,3
50 < 150	1,5 ±0,5
> 150	2,5 ±1

B	f1	f2
1	0,6	0,3
1,5	0,6	0,4
2	1,2	0,4
2,5	1,8	0,6

23BK-2 are tri-layer low maintenance bushings with a base of low carbon steel, whereupon a porous bronze layer is sintered. After rolling process completed, Acetalcopolymer (POM) is impregnated into the interstices of this bronze layer. Grease indents are stamped in the sliding layer.

23BK-2 needs to be greased or oiled and offer optimum performance under relatively high loads and low speeds and have good physical and mechanical properties.

They are suitable for rotating and oscillating movements.

Technical specification

Temperature	- 40 to + 110°C
Friction coefficient	0,04 to 0,2
Maximum load	
Dynamic	120 N/mm ²
Static	250 N/mm ²
Maximum speed	
Dry	0,5 m/s
In hydrodynamic working	2,5 m/s
PV-factor	
Continuously	2,8 N/mm ² . m/s
Temporarily	22 N/mm ² . m/s
Shaft roughness	Ra < 0,8 µm
Shaft hardness	HB > 150

Advantages

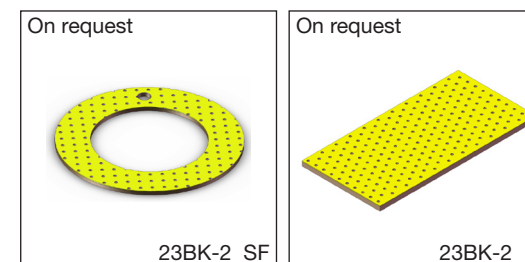
- Absorption of noise and vibrations
- Re-lubrication possible
- Hydrodynamic applications possible
- High loads
- Low wear and friction
- No water absorption
- To be used when it is difficult to bring in an oil film
- Low clearance during operation
- Limited dimensions

Please contact us for applications approaching maximum values.

Tolerances		
d	D	L
h7 - h8	H7	± 0,25

d	D	L	g	Reference
8	10	8	4	23BK-2 0808
	10	10	4	23BK-2 0810
10	12	10	4	23BK-2 1010
	12	15	4	23BK-2 1015
	12	20	4	23BK-2 1020
12	14	6	4	23BK-2 1206
	14	10	4	23BK-2 1210
	14	12	4	23BK-2 1212
	14	15	4	23BK-2 1215
14	14	16	4	23BK-2 1216
	14	20	4	23BK-2 1220
	16	15	4	23BK-2 1415
	16	20	4	23BK-2 1420
15	16	25	4	23BK-2 1425
	17	10	4	23BK-2 1510
	17	15	4	23BK-2 1515
16	17	25	4	23BK-2 1525
	18	15	4	23BK-2 1615
	18	20	4	23BK-2 1620
18	18	25	4	23BK-2 1625
	20	15	4	23BK-2 1815
	20	20	4	23BK-2 1820
20	20	25	4	23BK-2 1825
	23	10	4	23BK-2 2010
	23	15	4	23BK-2 2015
22	23	20	4	23BK-2 2020
	23	25	4	23BK-2 2025
	23	30	4	23BK-2 2030
24	25	15	6	23BK-2 2215
	25	20	6	23BK-2 2220
	25	25	6	23BK-2 2225
	25	30	6	23BK-2 2230
	25	30	6	23BK-2 2230

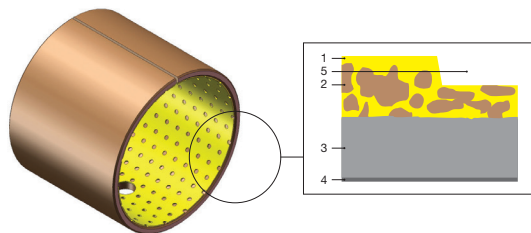
d	D	L	g	Reference
24	27	15	6	23BK-2 2415
	27	20	6	23BK-2 2420
	27	25	6	23BK-2 2425
25	27	30	6	23BK-2 2430
	28	15	6	23BK-2 2515
	28	20	6	23BK-2 2520
28	28	25	6	23BK-2 2525
	28	30	6	23BK-2 2530
	32	25	6	23BK-2 2825
30	32	30	6	23BK-2 2830
	34	15	6	23BK-2 3015
	34	20	6	23BK-2 3020
32	34	25	6	23BK-2 3025
	34	30	6	23BK-2 3030
	34	40	6	23BK-2 3040
35	36	25	6	23BK-2 3225
	36	30	6	23BK-2 3230
	36	40	6	23BK-2 3240
40	39	20	6	23BK-2 3520
	39	30	6	23BK-2 3530
	39	35	6	23BK-2 3535
45	39	40	6	23BK-2 3540
	39	50	6	23BK-2 3550
50	44	20	8	23BK-2 4020
	44	30	8	23BK-2 4030
	44	40	8	23BK-2 4040
55	44	50	8	23BK-2 4050
	50	30	8	23BK-2 4530
	50	40	8	23BK-2 4540
60	50	45	8	23BK-2 4545
	50	50	8	23BK-2 4550
	50	50	8	23BK-2 4550



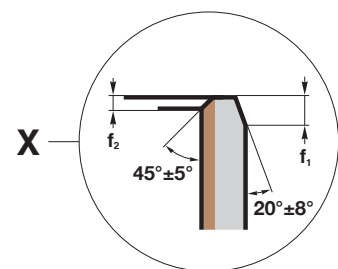
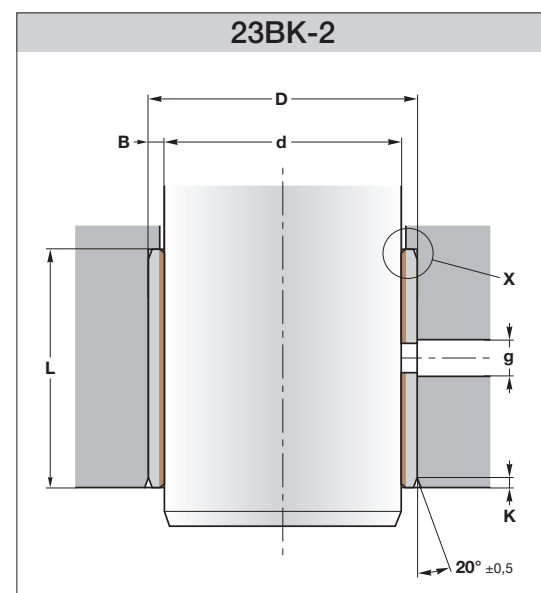


23BK-2

Low maintenance rolled bushings



- 1 Acetal co-polymer: 0,30 – 0,50 mm
- 2 Porous bronze layer: 0,20 – 0,35 mm
- 3 Steel roll
- 4 Surface protection: ~0,002 mm
- 5 Lubrication pockets



D	K
< 50	0,8 ±0,3
50 < 150	1,5 ±0,5
> 150	2,5 ±1

B	f1	f2
1	0,6	0,3
1,5	0,6	0,4
2	1,2	0,4
2,5	1,8	0,6

23BK-2 are tri-layer low maintenance bushings with a base of low carbon steel, whereupon a porous bronze layer is sintered. After rolling process completed, Acetalcopolymer (POM) is impregnated into the interstices of this bronze layer. Grease indents are stamped in the sliding layer.

23BK-2 needs to be greased or oiled and offer optimum performance under relatively high loads and low speeds and have good physical and mechanical properties.

They are suitable for rotating and oscillating movements.

Technical specification

Temperature	- 40 to + 110°C
Friction coefficient	0,04 to 0,2
Maximum load	
Dynamic	120 N/mm ²
Static	250 N/mm ²
Maximum speed	
Dry	0,5 m/s
In hydrodynamic working	2,5 m/s
PV-factor	
Continuously	2,8 N/mm ² . m/s
Temporarily	22 N/mm ² . m/s
Shaft roughness	Ra < 0,8 µm
Shaft hardness	HB > 150

Advantages

- Absorption of noise and vibrations
- Re-lubrication possible
- Hydrodynamic applications possible
- High loads
- Low wear and friction
- No water absorption
- To be used when it is difficult to bring in an oil film
- Low clearance during operation
- Limited dimensions

Please contact us for applications approaching maximum values.

Tolerances		
d	D	L
h7 - h8	H7	± 0,25

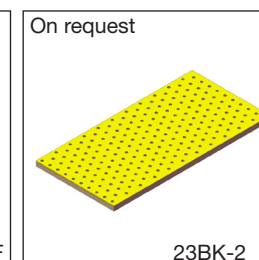
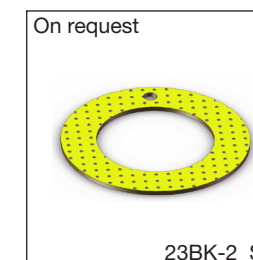


ALL-TEC
SEALING SYSTEMS



d	D	L	g	Reference
50	55	20	8	23BK-2 5020
	55	25	8	23BK-2 5025
	55	30	8	23BK-2 5030
	55	35	8	23BK-2 5035
	55	40	8	23BK-2 5040
	55	45	8	23BK-2 5045
55	55	50	8	23BK-2 5050
	55	60	8	23BK-2 5060
	60	25	8	23BK-2 5525
	60	40	8	23BK-2 5540
56	60	60	8	23BK-2 5560
	61	40	8	23BK-2 5640
	65	30	8	23BK-2 6030
60	65	40	8	23BK-2 6040
	65	50	8	23BK-2 6050
65	65	60	8	23BK-2 6060
	65	70	8	23BK-2 6070
70	70	30	8	23BK-2 6530
	70	40	8	23BK-2 6540
	70	50	8	23BK-2 6550
75	70	60	8	23BK-2 6560
	70	70	8	23BK-2 6570
	75	30	8	23BK-2 7030
75	75	40	8	23BK-2 7040
	75	45	8	23BK-2 7045
75	75	50	8	23BK-2 7050
	75	60	8	23BK-2 7060
	75	65	8	23BK-2 7065
75	75	70	8	23BK-2 7070
	75	80	8	23BK-2 7080

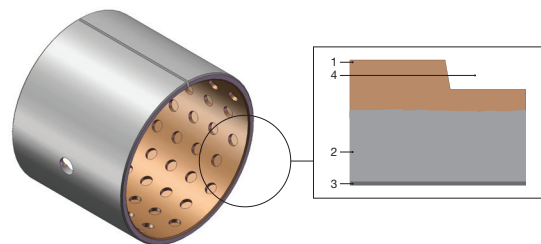
d	D	L	g	Reference
75	80	40	9,5	23BK-2 7540
	80	60	9,5	23BK-2 7560
	80	80	9,5	23BK-2 7580
80	85	40	9,5	23BK-2 8040
	85	50	9,5	23BK-2 8050
	85	60	9,5	23BK-2 8060
85	85	80	9,5	23BK-2 8080
	90	40	9,5	23BK-2 8540
	90	45	9,5	23BK-2 8545
90	90	60	9,5	23BK-2 8560
	95	40	9,5	23BK-2 9040
	95	60	9,5	23BK-2 9060
95	95	80	9,5	23BK-2 9080
	95	90	9,5	23BK-2 9090
100	100	60	9,5	23BK-2 9560
	100	70	9,5	23BK-2 9570
	100	90	9,5	23BK-2 9590
110	105	50	9,5	23BK-2 10050
	105	60	9,5	23BK-2 10060
110	115	60	9,5	23BK-2 11060
	115	80	9,5	23BK-2 11080
	115	100	9,5	23BK-2 110110
120	125	60	9,5	23BK-2 12060
	125	80	9,5	23BK-2 12080
	125	100	9,5	23BK-2 120100
130	135	60	9,5	23BK-2 13060
	135	80	9,5	23BK-2 13080
150	155	50	9,5	23BK-2 15050
	155	100	9,5	23BK-2 150100



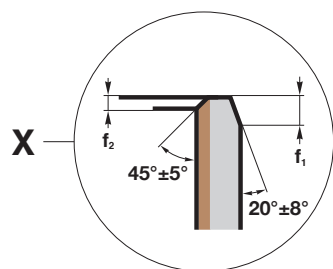
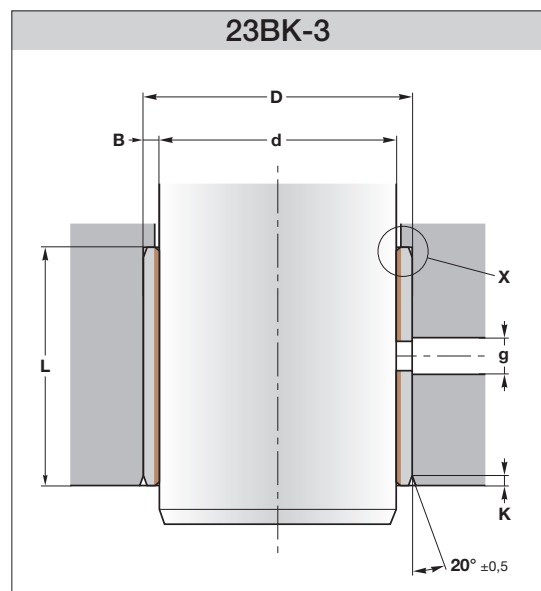


23BK-3

Bi-metallic rolled bushings



- 1 Bronze
- 2 Steel
- 3 Surface protection
- 4 Lubrication pockets



D	K
< 50	0,8 ±0,3
50 < 150	1,5 ±0,5
> 150	2,5 ±1

B	f1	f2
1	0,6	0,3
1,5	0,6	0,4
2	1,2	0,4
2,5	1,8	0,6

23BK-3 bi-metallic bushings are formed from steel strips with alloy lining material in bronze CuPb10Sn10. In the bronze alloy sliding layer are circular lubrication pockets machined allowing long-term lubrication.

23BK-3 are suitable for medium loads at mid-high speed rotation or oscillating movement.

Technical specification

Temperature	- 40 to + 150°C
Friction coefficient	0,05 to 0,15

Maximum load

Dynamic	80 N/mm²
Static	150 N/mm²

Maximum speed

With grease	2,5 m/s
With oil	10 m/s

PV-factor

With grease	2,8 N/mm². m/s
With oil	10 N/mm². m/s
Shaft roughness	Ra < 0,8 µm
Shaft hardness	HB > 400

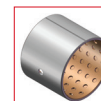
Advantages

- For low speed oscillation application
- Absorption of noise and vibrations
- Re-lubrication possible
- Hydrodynamic applications possible
- High loads
- Low wear and friction
- High sliding speed
- To be used when it is difficult to bring in an oil film
- Low clearance during operation
- Limited dimensions

Please contact us for applications approaching maximum values.



ALL-TEC
SEALING SYSTEMS



d	D	L	g	Reference
10	12	10	4	23BK-3 1010
	12	15	4	23BK-3 1015
12	14	10	4	23BK-3 1210
	14	15	4	23BK-3 1215
	14	20	4	23BK-3 1220
14	16	15	4	23BK-3 1415
	16	20	4	23BK-3 1420
	16	25	4	23BK-3 1425
15	17	15	4	23BK-3 1515
	17	20	4	23BK-3 1520
	17	25	4	23BK-3 1525
16	18	15	4	23BK-3 1615
	18	20	4	23BK-3 1620
	18	25	4	23BK-3 1625
18	21	15	4	23BK-3 1815
	21	20	4	23BK-3 1820
	21	25	4	23BK-3 1825
20	23	10	4	23BK-3 2010
	23	15	4	23BK-3 2015
	23	20	4	23BK-3 2020
	23	25	4	23BK-3 2025
	23	30	4	23BK-3 2030
22	25	15	6	23BK-3 2215
	25	20	6	23BK-3 2220
	25	25	6	23BK-3 2225
	25	30	6	23BK-3 2230
25	28	15	6	23BK-3 2515
	28	20	6	23BK-3 2520
	28	25	6	23BK-3 2525
	28	30	6	23BK-3 2530
28	32	20	6	23BK-3 2820
	32	25	6	23BK-3 2825
	32	30	6	23BK-3 2830
30	34	20	6	23BK-3 3020
	34	25	6	23BK-3 3025
	34	30	6	23BK-3 3030
	34	40	6	23BK-3 3040
32	36	20	6	23BK-3 3220

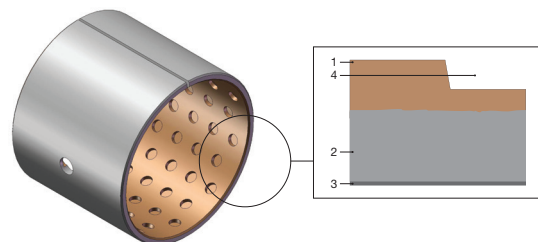
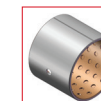
d	D	L	g	Reference
	36	25	6	23BK-3 3225
	36	30	6	23BK-3 3230
	36	40	6	23BK-3 3240
	39	15	6	23BK-3 3515
	39	20	6	23BK-3 3520
35	39	25	6	23BK-3 3525
	39	30	6	23BK-3 3530
	39	35	6	23BK-3 3535
	39	40	6	23BK-3 3540
	39	50	6	23BK-3 3550
40	44	20	8	23BK-3 4020
	44	25	8	23BK-3 4025
	44	30	8	23BK-3 4030
	44	40	8	23BK-3 4040
	44	50	8	23BK-3 4050
45	50	20	8	23BK-3 4520
	50	25	8	23BK-3 4525
	50	30	8	23BK-3 4530
	50	40	8	23BK-3 4540
	50	45	8	23BK-3 4545
	50	50	8	23BK-3 4550
	50	60	8	23BK-3 4560
	50	63	8	23BK-3 4563
	50	70	8	23BK-3 4570
50	55	30	8	23BK-3 5030
	55	40	8	23BK-3 5040
	55	50	8	23BK-3 5050
	55	60	8	23BK-3 5060
55	60	20	8	23BK-3 5520
	60	40	8	23BK-3 5540
	60	50	8	23BK-3 5550
	60	60	8	23BK-3 5560
60	65	30	8	23BK-3 6030
	65	35	8	23BK-3 6035
	65	40	8	23BK-3 6040
	65	45	8	23BK-3 6045
	65	50	8	23BK-3 6050
	65	60	8	23BK-3 6060
	65	70	8	23BK-3 6070

Tolerances

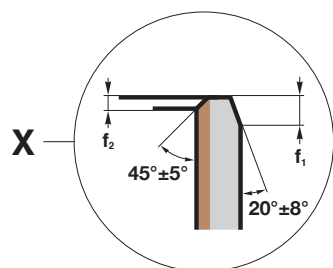
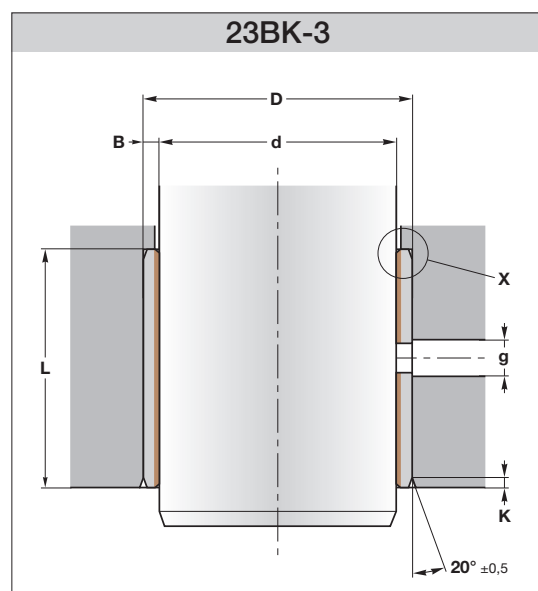
d	D	L
h7 - h8	H7	± 0,25

Dimensions and tolerances according to ISO 3547.
For prices and availability: www.all-tec-business.net

We produce bushings with an external diameter from 4,5 to 305 mm;
a thickness from 0,5 mm to 3 mm and height up to 200 mm.

**23BK-3****Bi-metallic rolled bushings****ALL-TEC®**
SEALING SYSTEMS

- 1 Bronze
- 2 Steel
- 3 Surface protection
- 4 Lubrication pockets



D	K
< 50	0,8 ±0,3
50 < 150	1,5 ±0,5
> 150	2,5 ±1

B	f1	f2
1	0,6	0,3
1,5	0,6	0,4
2	1,2	0,4
2,5	1,8	0,6

23BK-3 bi-metallic bushings are formed from steel strips with alloy lining material in bronze CuPb10Sn10. In the bronze alloy sliding layer are circular lubrication pockets machined allowing long-term lubrication.

23BK-3 are suitable for medium loads at mid-high speed rotation or oscillating movement.

Technical specification

Temperature - 40 to + 150°C
Friction coefficient 0,05 to 0,15

Maximum load

Dynamic 80 N/mm²
Static 150 N/mm²

Maximum speed

With grease 2,5 m/s
With oil 10 m/s

PV-factor

With grease 2,8 N/mm². m/s
With oil 10 N/mm². m/s
Shaft roughness Ra < 0,8 µm
Shaft hardness HB > 400

Advantages

For low speed oscillation application
Absorption of noise and vibrations
Re-lubrication possible
Hydrodynamic applications possible
High loads
Low wear and friction
High sliding speed
To be used when it is difficult to bring in an oil film
Low clearance during operation
Limited dimensions

Please contact us for applications approaching maximum values.

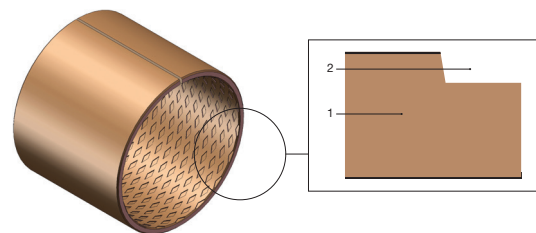
d	D	L	g	Reference
65	70	40	8	23BK-3 6540
	70	50	8	23BK-3 6550
	70	60	8	23BK-3 6560
	70	70	8	23BK-3 6570
70	75	40	8	23BK-3 7040
	75	50	8	23BK-3 7050
	75	60	8	23BK-3 7060
	75	65	8	23BK-3 7065
75	75	70	8	23BK-3 7070
	75	80	8	23BK-3 7080
	80	40	9,5	23BK-3 7540
	80	50	9,5	23BK-3 7550
80	80	60	9,5	23BK-3 7560
	80	80	9,5	23BK-3 7580
	85	40	9,5	23BK-3 8040
	85	50	9,5	23BK-3 8050
85	85	60	9,5	23BK-3 8060
	85	80	9,5	23BK-3 8080
	85	100	9,5	23BK-3 80100
	90	40	9,5	23BK-3 8540
90	90	60	9,5	23BK-3 8560
	90	80	9,5	23BK-3 8580
	90	100	9,5	23BK-3 85100
95	95	40	9,5	23BK-3 9040
	95	50	9,5	23BK-3 9050
	95	60	9,5	23BK-3 9060
	95	70	9,5	23BK-3 9070
100	95	75	9,5	23BK-3 9075
	95	80	9,5	23BK-3 9080
	95	90	9,5	23BK-3 9090
	100	60	9,5	23BK-3 9560
110	105	50	9,5	23BK-3 10050
	105	60	9,5	23BK-3 10060
	105	80	9,5	23BK-3 10080
	105	95	9,5	23BK-3 10095
115	115	60	9,5	23BK-3 11060

d	D	L	g	Reference
115	120	50	9,5	23BK-3 11550
	125	25	9,5	23BK-3 12025
	125	50	9,5	23BK-3 12050
	125	100	9,5	23BK-3 120100
130	135	60	9,5	23BK-3 13060
	135	100	9,5	23BK-3 130100
140	145	100	9,5	23BK-3 140100
	155	30	9,5	23BK-3 15030
	155	60	9,5	23BK-3 15060
	155	100	9,5	23BK-3 150100
160	165	100	9,5	23BK-3 160100
	175	60	9,5	23BK-3 17060
180	185	60	9,5	23BK-3 18060
	185	100	9,5	23BK-3 180100
245	250	50	9,5	23BK-3 24550
	250	60	9,5	23BK-3 24560



23BK090

Bronze wrapped rolled bushings

ALL-TEC®
SEALING SYSTEMS

- 1 Bronze
2 Lubrication pockets

23BK090 bronze wrapped bushings are entirely made of bronze CuSn8.

They are fitted with diamond shaped lubrication indents on the bearing surface.

The indents serve as lubricant reservoirs to rapidly build up a lubricating film at the start of movement, allowing to reduce the running friction, resulting in an excellent and prolonged operation.

These bronze bearings have been developed for **high-load applications at lower speeds** and are especially suited for oscillating movements. They are perfect for polluted working conditions such as in the construction or agricultural industries.

Technical specification

Temperature - 100 to + 150°C
Friction coefficient 0,08 to 0,25

Maximum load

Dynamic 40 N/mm²
Static 120 N/mm²

Maximum speed

With grease 2 m/s
In hydrodynamic working > 2 m/s

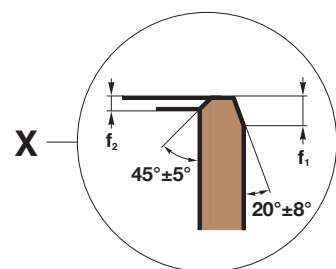
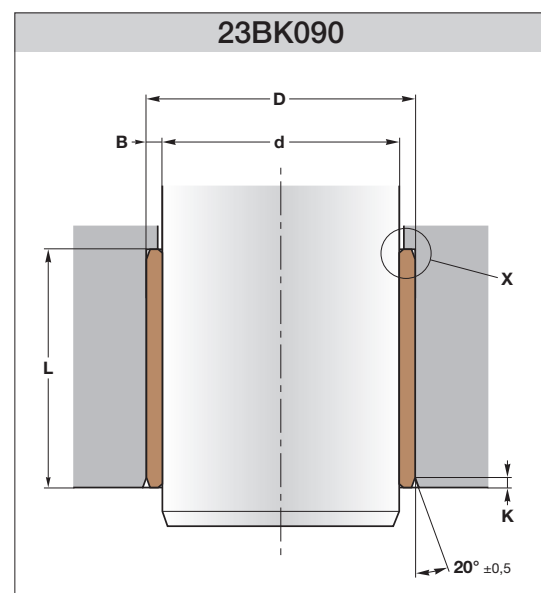
PV-factorwith

Grease 2,8 N/mm². m/s
In hydrodynamic working 10 N/mm². m/s
Shaft roughness Ra < 0,8 µm
Shaft hardness HB > 400

Advantages

Maintenance-free applications
Re-lubrication possible
Suitable for contaminated environments
Shock and vibration proof
Good wear resistance
Good corrosion resistance
Low clearance during operation
Limited dimensions

Please contact us for applications approaching maximum values.

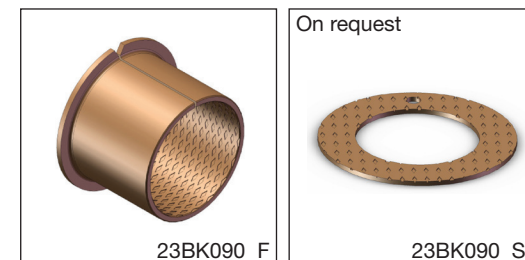


D	K
< 50	0,8 ±0,3
50 < 150	1,5 ±0,5
> 150	2,5 ±1

B	f1	f2
1	0,6	0,3
1,5	0,6	0,4
2	1,2	0,4
2,5	1,8	0,6

Tolerances		
d	D	L
h7 - h8	H7	± 0,25

d	D	L	Reference
10	12	10	23BK090 1010
	12	15	23BK090 1015
12	14	10	23BK090 1210
	14	15	23BK090 1215
14	16	15	23BK090 1415
	16	20	23BK090 1420
	16	25	23BK090 1425
15	17	15	23BK090 1515
	17	20	23BK090 1520
	17	25	23BK090 1525
16	18	15	23BK090 1615
	18	20	23BK090 1620
	18	25	23BK090 1625
18	21	15	23BK090 1815
	21	20	23BK090 1820
	21	25	23BK090 1825
20	23	10	23BK090 2010
	23	15	23BK090 2015
	23	20	23BK090 2020
	23	25	23BK090 2025
22	25	15	23BK090 2215
	25	20	23BK090 2220
25	28	15	23BK090 2515
	28	20	23BK090 2520
	28	25	23BK090 2525
28	31	15	23BK090 2815
	31	20	23BK090 2820
	31	25	23BK090 2825
30	34	20	23BK090 3020
	34	25	23BK090 3025
	34	30	23BK090 3030
32	36	20	23BK090 3220
	36	30	23BK090 3230
35	39	15	23BK090 3515
	39	20	23BK090 3520
40	44	20	23BK090 4020
	44	25	23BK090 4025
	44	30	23BK090 4030
45	50	20	23BK090 4520
	50	25	23BK090 4525
	50	30	23BK090 4530
50	55	30	23BK090 5030
	55	40	23BK090 5040
	55	50	23BK090 5050
55	60	20	23BK090 5520
	60	40	23BK090 5540
	60	50	23BK090 5550
60	66	20	23BK090 6020
	66	30	23BK090 6030
	66	40	23BK090 6040



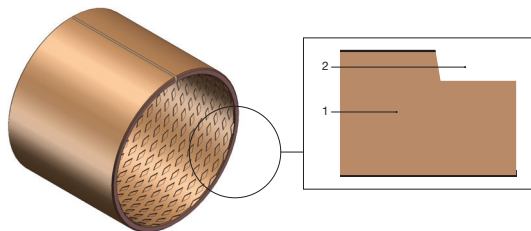


23BK090

Bronze wrapped rolled bushings



ALL-TEC
SEALING SYSTEMS



- 1 Bronze
2 Lubrication pockets

23BK090 bronze wrapped bushings are entirely made of bronze CuSn8.

They are fitted with diamond shaped lubrication indents on the bearing surface.

The indents serve as lubricant reservoirs to rapidly build up a lubricating film at the start of movement, allowing to reduce the running friction, resulting in an excellent and prolonged operation.

These bronze bearings have been developed for **high-load applications at lower speeds** and are especially suited for oscillating movements. They are perfect for polluted working conditions such as in the construction or agricultural industries.

Technical specification

Temperature - 100 to + 150°C
Friction coefficient 0,08 to 0,25

Maximum load

Dynamic 40 N/mm²
Static 120 N/mm²

Maximum speed

With grease 2 m/s
In hydrodynamic working > 2 m/s

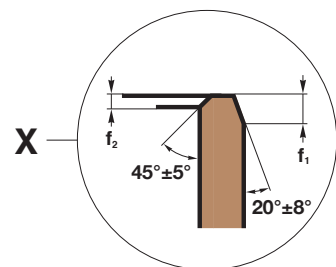
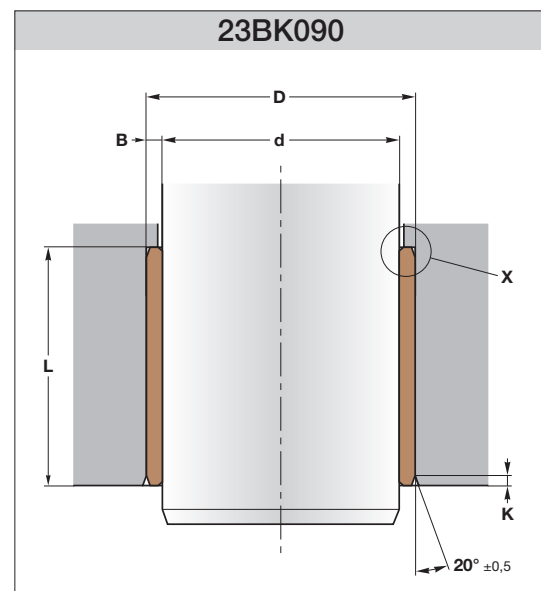
PV-factorwith

Grease 2,8 N/mm². m/s
In hydrodynamic working 10 N/mm². m/s
Shaft roughness Ra < 0,8 µm
Shaft hardness HB > 400

Advantages

Maintenance-free applications
Re-lubrication possible
Suitable for contaminated environments
Shock and vibration proof
Good wear resistance
Good corrosion resistance
Low clearance during operation
Limited dimensions

Please contact us for applications approaching maximum values.



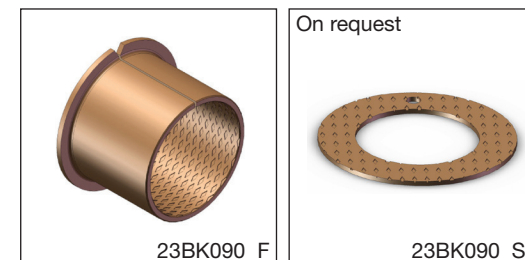
D	K
< 50	0,8 ± 0,3
50 < 150	1,5 ± 0,5
> 150	2,5 ± 1

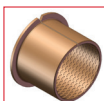
B	f1	f2
1	0,6	0,3
1,5	0,6	0,4
2	1,2	0,4
2,5	1,8	0,6

Tolerances		
d	D	L
h7 - h8	H7	± 0,25

d	D	L	Reference
58	63	30	23BK090 5830
60	65	30	23BK090 6030
	65	35	23BK090 6035
	65	40	23BK090 6040
	65	45	23BK090 6045
	65	50	23BK090 6050
	65	60	23BK090 6060
65	70	40	23BK090 6540
	70	50	23BK090 6550
	70	60	23BK090 6560
	70	70	23BK090 6570
70	75	40	23BK090 7040
	75	50	23BK090 7050
	75	60	23BK090 7060
	75	70	23BK090 7070
	75	80	23BK090 7080
75	80	40	23BK090 7540
	80	60	23BK090 7560
	80	80	23BK090 7580
80	85	40	23BK090 8040
	85	50	23BK090 8050
	85	60	23BK090 8060
	85	80	23BK090 8080
85	90	40	23BK090 8540
	90	80	23BK090 8580
90	95	40	23BK090 9040
	95	50	23BK090 9050
	95	60	23BK090 9060
	95	80	23BK090 9080
	95	90	23BK090 9090
95	100	60	23BK090 9560

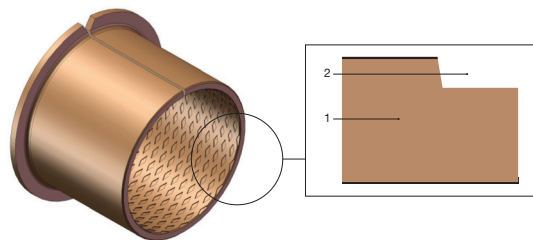
d	D	L	Reference
100	105	50	23BK090 10050
	105	60	23BK090 10060
	105	80	23BK090 10080
	105	95	23BK090 10095
110	115	60	23BK090 11060
120	125	25	23BK090 12025
	125	50	23BK090 12050
	125	100	23BK090 120100
130	135	60	23BK090 13060
	135	100	23BK090 130100
140	145	100	23BK090 140100
150	155	30	23BK090 15030
	155	60	23BK090 15060
	155	80	23BK090 15080
	155	100	23BK090 150100
160	165	100	23BK090 160100
170	175	60	23BK090 17060
180	185	60	23BK090 18060
	185	100	23BK090 180100
240	245	100	23BK090 240100





23BK090...F

Bronze wrapped rolled bushings



- 1 Bronze
2 Lubrication pockets

23BK090...F bronze wrapped flanged bushings are entirely made of bronze CuSn8.

They are fitted with diamond shaped lubrication indents on the bearing surface.

The indents serve as lubricant reservoirs to rapidly build up a lubricating film at the start of movement, allowing to reduce the running friction, resulting in an excellent and prolonged operation.

These bronze bearings have been developed for **high-load applications at lower speeds** and are especially suited for oscillating movements. They are perfect for polluted working conditions such as in the construction or agricultural industries.

Technical specification

Temperature	- 100 to + 150°C
Friction coefficient	0,08 to 0,25

Maximum load

Dynamic	40 N/mm ²
Static	120 N/mm ²

Maximum speed

With grease	2 m/s
In hydrodynamic working	> 2 m/s

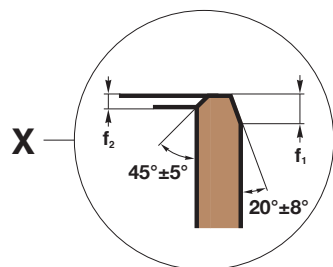
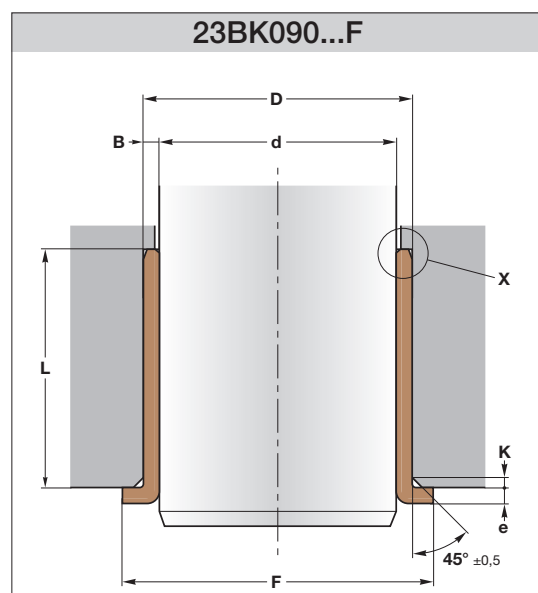
PV-factorwith

Grease	2,8 N/mm ² . m/s
In hydrodynamic working	10 N/mm ² . m/s
Shaft roughness	Ra < 0,8 µm
Shaft hardness	HB > 400

Advantages

- Maintenance-free applications
- Re-lubrication possible
- Suitable for contaminated environments
- Shock and vibration proof
- Good wear resistance
- Good corrosion resistance
- Low clearance during operation
- Limited dimensions

Please contact us for applications approaching maximum values.



D	K
< 50	0,8 ±0,3
50 < 150	1,5 ±0,5
> 150	2,5 ±1

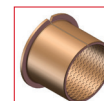
B	f1	f2
1	0,6	0,3
1,5	0,6	0,4
2	1,2	0,4
2,5	1,8	0,6

Tolerances

d	D	L	e	F
f7	H7	± 0,25	0/-0,2	± 0,5

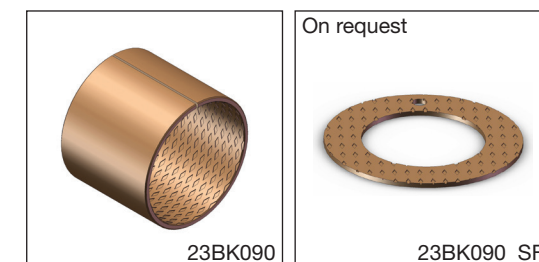


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d	D	L	e	F	Reference
30	34	30	2	45	23BK090 3030F
35	39	20	2	50	23BK090 3520F
	39	35	2	50	23BK090 3535F
40	44	40	2	55	23BK090 4040F
45	50	30	2,5	60	23BK090 4530F
	50	45	2,5	60	23BK090 4545F
50	55	30	2,5	65	23BK090 5030F
	55	50	2,5	65	23BK090 5050F
55	60	30	2,5	70	23BK090 5530F
	60	50	2,5	70	23BK090 5550F

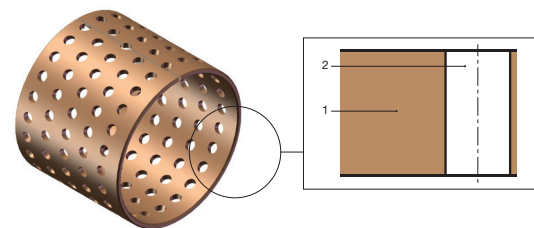
d	D	L	e	F	Reference
60	65	30	2,5	75	23BK090 6030F
65	70	30	2,5	80	23BK090 6530F
	70	60	2,5	80	23BK090 6560F
70	75	40	2,5	85	23BK090 7040F
	75	60	2,5	85	23BK090 7060F
	75	70	2,5	85	23BK090 7070F
80	85	40	2,5	100	23BK090 8040F
	85	80	2,5	100	23BK090 8080F
110	115	50	2,5	130	23BK090 11050F
120	125	50	2,5	140	23BK090 12050F
	75	70	2,5	85	23BK090 7070F





23FT090

Long term lubrication bronze bushings



1 Bronze
2 Holes

23FT090 is deriving from 23BK090. The difference between the two is that the indentations are replaced by through holes. The difference between both is, that the indentations are substituted by through-holes. These holes allow a larger capacity to collect lubricant, which build up a lubrication film at the start of movement and reduce the friction.

It is suitable for high load, lower speed application like construction, Transport, and agriculture machinery.

These bronze bearings have been developed for **high-load applications at lower speeds**. They are perfect for polluted working conditions such as in the construction or agricultural industries.

Technical specification

Temperature - 100 to + 250°C
Friction coefficient 0,08 to 0,25

Maximum load

Dynamic 40 N/mm²
Static 120 N/mm²

Maximum speed

With grease 2 m/s
In hydrodynamic working > 2 m/s

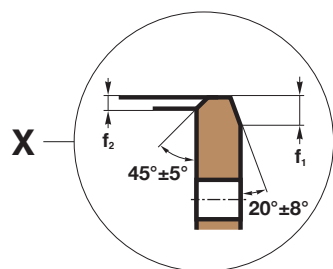
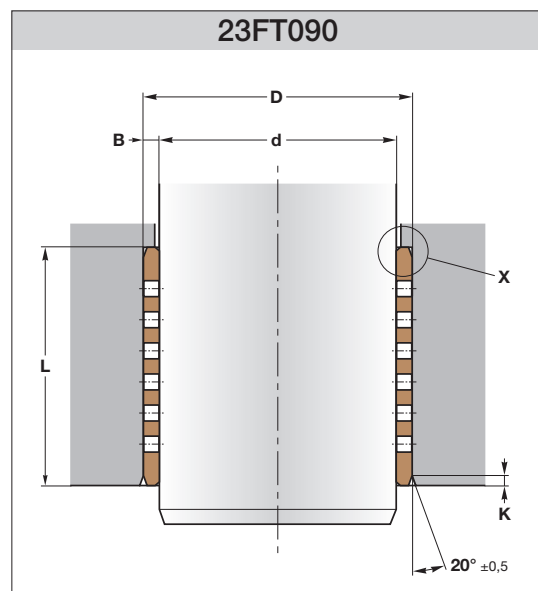
PV-factor

With grease 2,8 N/mm². m/s
In hydrodynamic working 10 N/mm². m/s
Shaft roughness Ra < 0,8 µm
Shaft hardness HB > 400

Advantages

Maintenance-free applications
Re-lubrication possible
Suitable for contaminated environments
Shock and vibration proof
Good wear resistance
Good corrosion resistance
Low clearance during operation
Limited dimensions

Please contact us for applications approaching maximum values.



D	K
< 50	0,8 ± 0,3
50 < 150	1,5 ± 0,5
> 150	2,5 ± 1

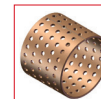
B	f1	f2
1	0,6	0,3
1,5	0,6	0,4
2	1,2	0,4
2,5	1,8	0,6

Tolerances

d	D	L
h8	H7	± 0,25

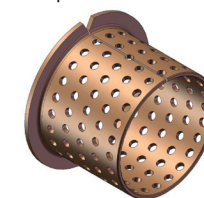


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SEALING SYSTEMS



d	D	L	Reference
16	18	15	23FT090 1615
20	23	30	23FT090 2030
30	34	15	23FT090 3015
	34	20	23FT090 3020
	34	25	23FT090 3025
	34	30	23FT090 3030
	34	40	23FT090 3040
	34	50	23FT090 3050
40	44	25	23FT090 4025
	44	30	23FT090 4030
	44	40	23FT090 4040
	44	50	23FT090 4050
60	65	40	23FT090 6040
	65	50	23FT090 6050
	65	60	23FT090 6060
	65	70	23FT090 6070

On request

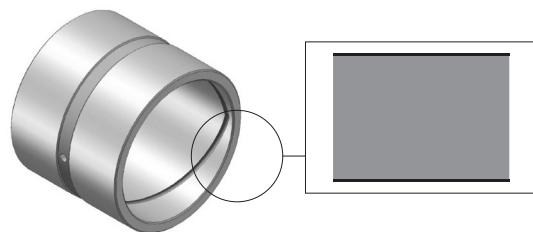


23FT090 F



23HST

Hardened steel bushings



Hardened steel

23HST is a line of steel bushings that undergo case-hardening and tempering treatment with casehardening depth of 0.8-1 mm and Hardness HRC 58-62.

The smoothness obtained by this treatment reduces the friction factor and consequently makes the bush more efficient.

The use of these bushes, after an initial greasing cycle, enables a lubrication interval of up to 550 h. max. (the interval varies based on the working conditions).

Each bush is traceable and identifiable thanks to the indelible marking on each piece, which identifies the lot.

Technical specification

Temperature - 195 to + 300°C
Friction coefficient 0,05 to 0,25

Maximum load

Dynamic 150 N/mm²
Static 250 N/mm²

Maximum speed

With grease 0,6 m/s
In hydrodynamic working 0,6 m/s

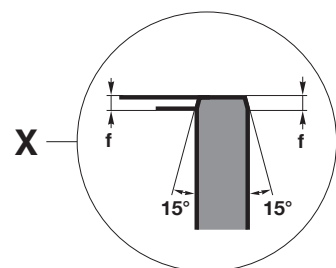
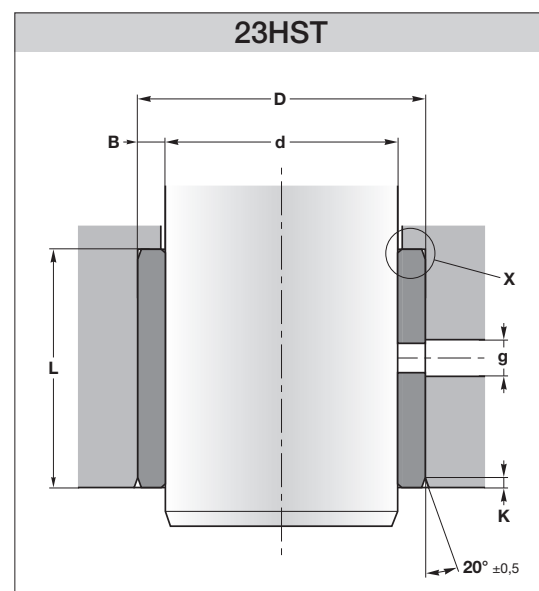
PV-factor

With grease 1,2 N/mm². m/s
In hydrodynamic working 1,2 N/mm². m/s
Shaft roughness Ra < 0,8 µm
Shaft hardness HB > 300

Advantages

Large temperature range
Re-lubrication possible
Suitable for contaminated environments
Shock and vibration proof
Good wear resistance
100 % recyclable
Low clearance during operation
Limited dimensions

Please contact us for applications approaching maximum values.



D	K
< 50	0,8 ±0,3
50 < 150	1,5 ±0,5
> 150	2,5 ±1

B	f
< 39	2
40 < 49	2,5
> 50	3

Tolerances		
d	D	L
f7 / g8	H7	j13



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SEALING SYSTEMS



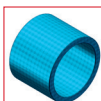
d	D	L	g	Reference
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	30	30	4	23HST 2030/30
	30	40	4	23HST 2030/40
	30	50	4	23HST 2030/50
	30	60	4	23HST 2030/60
25	35	30	4	23HST 2535/30
	35	35	4	23HST 2535/35
	35	40	4	23HST 2535/40
	35	50	4	23HST 2535/50
	35	60	4	23HST 2535/60
	35	80	4	23HST 2535/80
30	40	30	4	23HST 3040/30
	40	40	4	23HST 3040/40
	40	50	4	23HST 3040/50
	40	60	4	23HST 3040/60
	40	80	4	23HST 3040/80
	40	100	4	23HST 3040/100
35	45	30	4	23HST 3545/30
	45	35	4	23HST 3545/35
	45	40	4	23HST 3545/40
	45	50	4	23HST 3545/50
	45	60	4	23HST 3545/60
	45	80	4	23HST 3545/80
40	50	30	4	23HST 4050/30
	50	40	4	23HST 4050/40
	50	50	4	23HST 4050/50
	50	60	4	23HST 4050/60
	50	80	4	23HST 4050/80
	50	100	4	23HST 4050/100
45	55	30	4	23HST 4555/30
	55	40	4	23HST 4555/40
	55	50	4	23HST 4555/50
	55	60	4	23HST 4555/60
	55	80	4	23HST 4555/80
	55	100	4	23HST 4555/100

d	D	L	g	Reference
50	60	30	6	23HST 5060/30
	60	40	6	23HST 5060/40
	60	50	6	23HST 5060/50
	60	60	6	23HST 5060/60
	60	80	6	23HST 5060/80
	60	90	6	23HST 5060/90
55	65	40	6	23HST 5565/40
	65	50	6	23HST 5565/50
	65	60	6	23HST 5565/60
	65	80	6	23HST 5565/80
	65	100	6	23HST 5565/100
	65	120	6	23HST 5565/120
60	70	40	6	23HST 6070/40
	70	50	6	23HST 6070/50
	70	60	6	23HST 6070/60
	70	80	6	23HST 6070/80
	70	100	6	23HST 6070/100
	70	120	6	23HST 6070/120
70	80	40	6	23HST 7080/40
	80	50	6	23HST 7080/50
	80	60	6	23HST 7080/60
	80	70	6	23HST 7080/70
	80	80	6	23HST 7080/80
	80	100	6	23HST 7080/100
80	90	40	6	23HST 8090/40
	90	50	6	23HST 8090/50
	90	60	6	23HST 8090/60
	90	80	6	23HST 8090/80
	90	100	6	23HST 8090/100
	90	120	6	23HST 8090/120
90	100	40	6	23HST 90100/40
	100	50	6	23HST 90100/50
	100	60	6	23HST 90100/60
	100	80	6	23HST 90100/80
	100	100	6	23HST 90100/100
	100	120	6	23HST 90100/120

On request

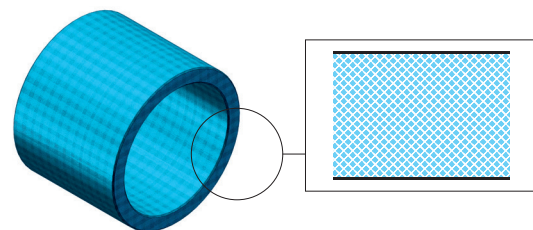


23HST F



23BK500-15N

Low friction composite bushings



Polyester fabric
Polyester resin + PTFE

23BK500-15N are composite bearings consisting of synthetic fabrics impregnated with thermosetting resins, evenly dispersed solid lubricants and other additives.

23BK500-15N bushings offer significant advantages over traditional metal bearings. All are dimensionally stable, have excellent wear resistance and outstanding low-friction characteristics, giving them unrivalled performance in dry running conditions or with boundary lubrication.

With virtually no swell in seawater, they are ideal for marine and hydropower applications.

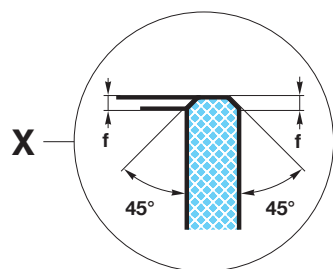
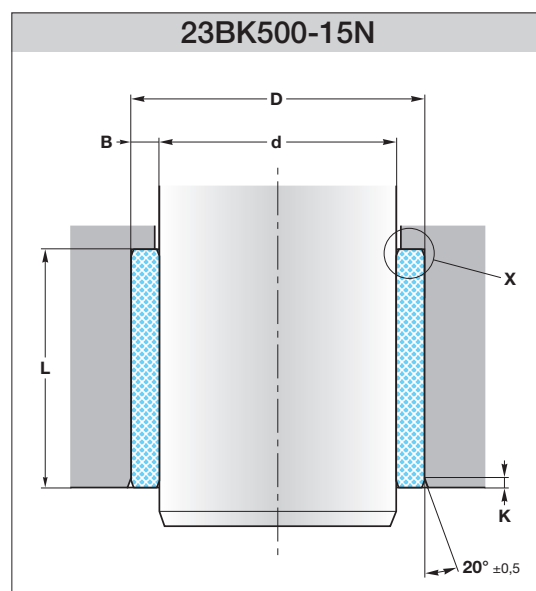
Technical specification

Temperature	- 200 to + 130°C
Friction coefficient	0,02 to 0,2
Maximum load	
Dynamic	70 N/mm ²
Static	200 N/mm ²
Maximum speed	
Dry	2 m/s
With grease	5 m/s
In hydrodynamic working	5 m/s
PV-factor	
Dry	1 N/mm ² . m/s
With grease	2,5 N/mm ² . m/s
Shaft roughness	Ra < 0,8 µm
Shaft hardness	HB > 200

Advantages

Maintenance-free operation
Light weight
Shock and vibration proof
High loads
Good friction characteristics
Low clearance during operation
Slight water absorption (< 0,1 %)
Good corrosion resistance
Good chemical resistance

Please contact us for applications approaching maximum values.



D	K
< 50	0,8 ±0,3
50 < 150	1,5 ±0,5
> 150	2,5 ±1

d	f
< 60	0,5
60 < 89,9	0,8
≥ 90	1

Tolerances		
d	D	L
f7 / g8	H7	j13

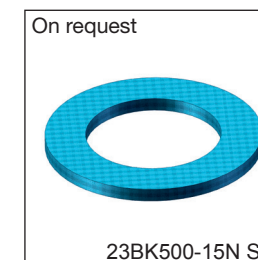


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SEALING SYSTEMS



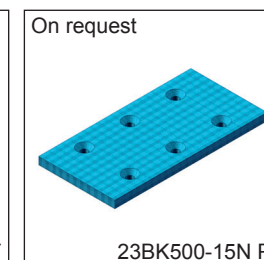
d	D	L	Reference
20	26	20	23BK500-15N 2020
	26	30	23BK500-15N 2030
25	31	30	23BK500-15N 2530
	31	40	23BK500-15N 2540
30	36	20	23BK500-15N 3020
	36	30	23BK500-15N 3030
	36	40	23BK500-15N 3040
35	41	30	23BK500-15N 3530
	41	40	23BK500-15N 3540
	41	50	23BK500-15N 3550
40	48	30	23BK500-15N 4030
	48	40	23BK500-15N 4040
	48	60	23BK500-15N 4060
45	53	30	23BK500-15N 4530
	53	40	23BK500-15N 4540
	53	60	23BK500-15N 4560
50	58	40	23BK500-15N 5040
	58	50	23BK500-15N 5050
	58	60	23BK500-15N 5060
55	63	40	23BK500-15N 5540
	63	50	23BK500-15N 5550
	63	70	23BK500-15N 5570
60	70	40	23BK500-15N 6040
	70	60	23BK500-15N 6060
	70	80	23BK500-15N 6080
65	75	50	23BK500-15N 6550
	75	60	23BK500-15N 6560
	75	80	23BK500-15N 6580
70	80	50	23BK500-15N 7050
	80	70	23BK500-15N 7070
	80	80	23BK500-15N 7080
	80	90	23BK500-15N 7090
75	85	50	23BK500-15N 7550
	85	70	23BK500-15N 7570
	85	90	23BK500-15N 7590
80	90	60	23BK500-15N 8060
	90	80	23BK500-15N 8080
	90	100	23BK500-15N 80100

d	D	L	Reference
85	95	60	23BK500-15N 8560
	95	80	23BK500-15N 8580
	95	100	23BK500-15N 85100
90	105	60	23BK500-15N 9060
	105	80	23BK500-15N 9080
	105	120	23BK500-15N 90120
95	110	60	23BK500-15N 9560
	110	100	23BK500-15N 95100
	110	120	23BK500-15N 95120
100	115	80	23BK500-15N 10080
	115	100	23BK500-15N 100100
	115	120	23BK500-15N 100120
110	125	80	23BK500-15N 11080
	125	100	23BK500-15N 110100
	125	120	23BK500-15N 110120
120	135	100	23BK500-15N 120100
	135	120	23BK500-15N 120120
	135	150	23BK500-15N 120150



On request

23BK500-15N SF



On request

23BK500-15N P