

















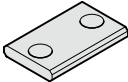


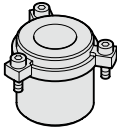
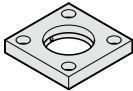
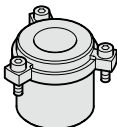





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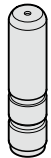
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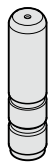
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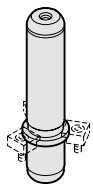
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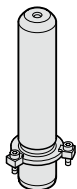
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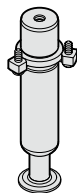
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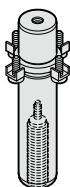
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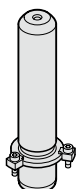
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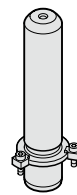
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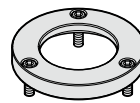
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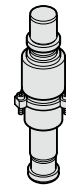
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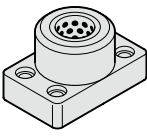

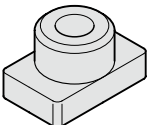
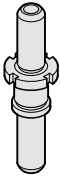
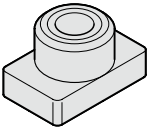
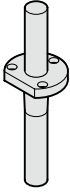
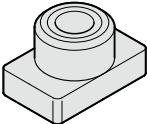

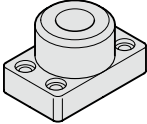

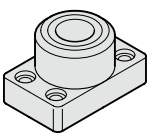
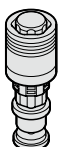
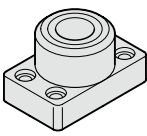
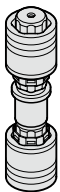
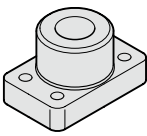


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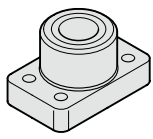


206.41. **D80**
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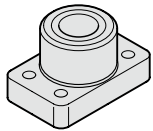
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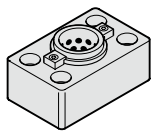
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Guide bearing, low build height, sintered guide



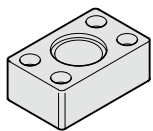
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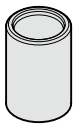
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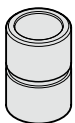
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Retention bearing for guide pillars for large tools



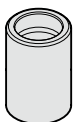
2051.32. **D104**

Guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-2



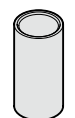
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Guide bush ECO-LINE, bronzeplated, ISO 9448-2



2051.72. **D106**

Guide bush ECO-LINE, Bronze with solid lubrication rings, ISO 9448-2



206.49. **D108**

Guide bush for ball bearing, AFNOR



2061.47. **D109**

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206.71. **D110**

Ball cage with circlip groove, Brass



2060.61. **D111**

Ball cage with circlip groove, Aluminium



2060.41. **D112**

Ball cage with circlip groove, plastic



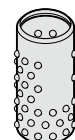
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Ball cage with assembly aid, Brass



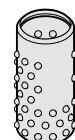
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Ball cage with assembly aid, Aluminium



206.75. **D116**

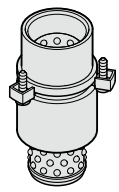
Ball cage with circlip and fastening ring groove, Brass



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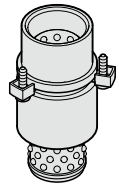
Ball cage with circlip and fastening ring groove, Aluminium

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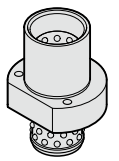
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Headed guide bush with ball cage retainer



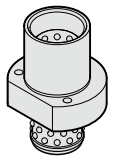
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Headed guide bush with ball cage retainer



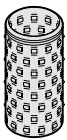
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2091.68. **D121**

Flanged guide bush with ball cage retainer



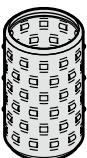
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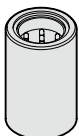
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Circlip DIN 471



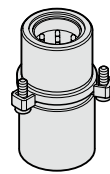
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Roller cage with assembly aid, Brass



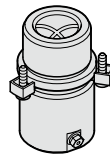
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Recirculating ball bush ~ISO9448-3



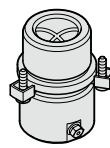
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Recirculating ball bush with collar ~ISO9448-7



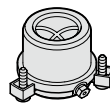
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Headed guide bush, bronze coated, ISO 9448-6



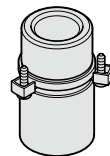
2081.84. **D128**

Headed guide bush, bronze coated, ISO 9448-6



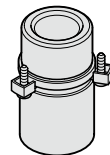
2081.85. **D129**

Headed guide bush, bronze coated, ISO 9448-6



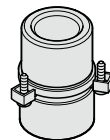
2081.31. **D130**

Headed guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-6



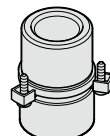
2081.32. **D131**

Headed guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-6



2081.33. **D132**

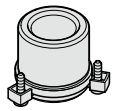
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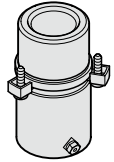
Headed guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-6

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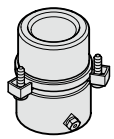
2081.35. **D134**

Headed guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-6



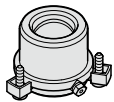
2081.91. **D135**

Headed guide bush ECO-LINE, bronzeplated, ISO 9448-6



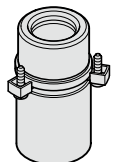
2081.94. **D136**

Headed guide bush ECO-LINE, bronzeplated, ISO 9448-6



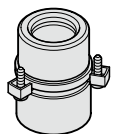
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Headed guide bush ECO-LINE, bronzeplated, ISO 9448-6



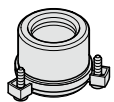
2081.71. **D138**

Headed guide bush ECO-LINE, Bronze with solid lubricant rings, ISO 9448-6



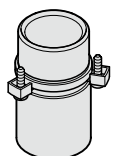
2081.74. **D139**

Headed guide bush ECO-LINE, Bronze with solid lubricant rings, ISO 9448-6



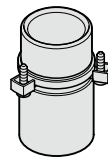
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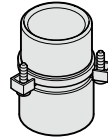
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Headed guide bush for ball bearing, ISO 9448-7



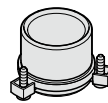
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Headed guide bush for ball bearing, ISO 9448-7



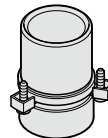
2081.46. **D143**

Headed guide bush for ball bearing, ISO 9448-7



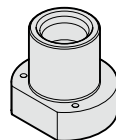
2081.47. **D144**

Headed guide bush for ball bearing, ISO 9448-7



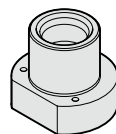
2081.49. **D145**

Headed guide bush for ball bearing, ISO 9448-7



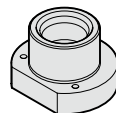
2091.31. **D146**

Flanged guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-4



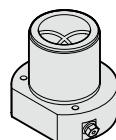
2091.32. **D147**

Flanged guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-4



2091.34. **D148**

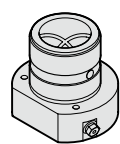
Flanged guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-4



2091.91. **D149**

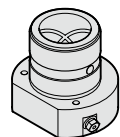
Flanged guide bush ECO-LINE, bronzeplated, ISO 9448-4

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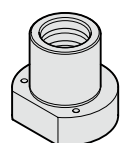
2091.92. **D150**

Flanged guide bush ECO-LINE,
bronzeplated, ISO 9448-4



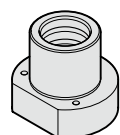
2091.94. **D151**

Flanged guide bush ECO-LINE,
bronzeplated, ISO 9448-4



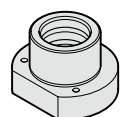
2091.71. **D152**

Flanged guide bush ECO-LINE,
Bronze with solid lubricant rings,
ISO 9448-4



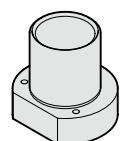
2091.72. **D153**

Flanged guide bush ECO-LINE,
Bronze with solid lubricant rings,
ISO 9448-4



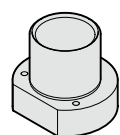
2091.74. **D154**

Flanged guide bush ECO-LINE,
Bronze with solid lubricant rings,
ISO 9448-4



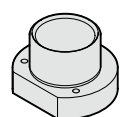
2091.44. **D155**

Flanged guide bush for ball bearing,
ISO 9448-5



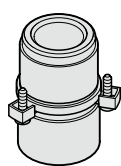
2091.45. **D156**

Flanged guide bush for ball bearing,
ISO 9448-5



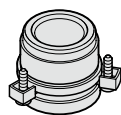
2091.46. **D157**

Flanged guide bush for ball bearing,
ISO 9448-5



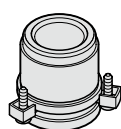
210.31. **D158**

Headed guide bush, sintered ferrite
carbonitrided with long-term
lubrication, ~AFNOR



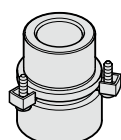
210.34. **D159**

Headed guide bush, sintered ferrite
carbonitrided with long-term
lubrication, ~AFNOR



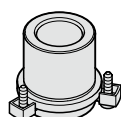
210.35. **D160**

Headed guide bush, sintered ferrite
carbonitrided with long-term
lubrication, ~AFNOR



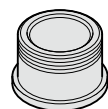
210.44. **D162-163**

Headed guide bush for ball bearing,
~AFNOR



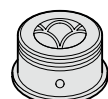
210.46. **D164-165**

Headed guide bush for ball bearing,
~AFNOR



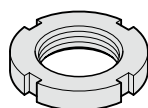
210.45. **D166**

Guide bush with collar, for ball
bearing, ~AFNOR



210.85. **D167**

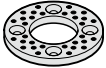






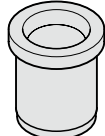

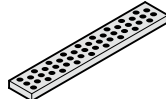

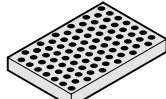

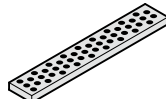
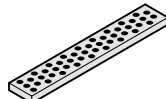
Guide bush with collar, bronze
coated, ~AFNOR



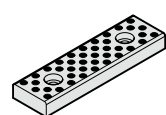
207.48. **D168**

Slotted nut

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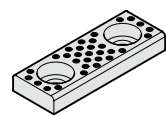
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	Oilless guide elements						
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	Thrust washer, Bronze with solid lubricant				Guide bush with collar, Bronze with solid lubricant, NAAMS		
	2052.70.	D172-173			2086.71.	D180	
	Guide bush, Bronze with solid lubricant				Guide bush with collar, Bronze with solid lubricant, NAAMS		
	2085.70.	D174			2102.70.	D181	
	Guide bush with collar, Bronze with solid lubricant				Guide bush with collar, Bronze with solid lubricant, CNOMO		
	2085.71.	D175			2102.71.	D182	
	Guide bush with collar, Bronze with solid lubricant				Guide bush with collar, Bronze, CNOMO		
	2086.70.	D176			2961.71.	D183	
	Guide bush with collar, Bronze with solid lubricant				Flat guide bar, Bronze with solid lubricant		
	2085.72.	D177			2961.76.	D184	
	Guide bush with collar, Bronze with solid lubricant				Flat guide bar, Bronze with solid lubricant		
	2082.70.	D178			2961.77.	D185	
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					2961.73.	D186	
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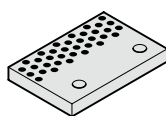
2961.70. **D187**

Flat guide bar, Bronze with solid lubricant



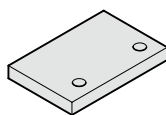
2961.75. **D188**

Flat guide bar, Bronze with solid lubricant



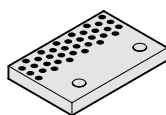
2961.74. **D189**

Retaining plate, Bronze with solid lubricant, VDI 3357



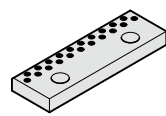
2961.79. **D190**

Retaining plate, Steel, VDI 3357



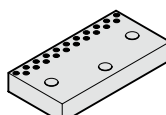
2961.81. **D191**

Retaining plate, Steel with solid lubricant, VDI 3357



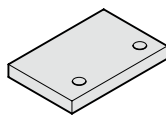
2961.78. **D192**

Retaining plate, Bronze with solid lubricant



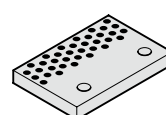
2961.82. **D193**

Retaining plate, Steel with solid lubricant, NAAMS



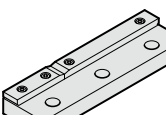
2961.79.45. **D194**

Retaining plate, Steel, CNOMO



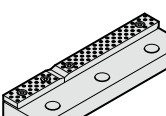
2961.81.45. **D195**

Retaining plate, Bronze with solid lubricant, CNOMO



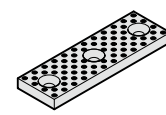
2961.30.55. **D196-197**

Retaining plate with sliding pad, Steel / Steel with sinterlayer, according to VW



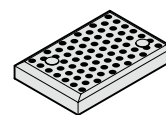
2961.74.55. **D198-199**

Retaining plate with sliding pad, Steel / Bronze with solid lubricant, according to VW



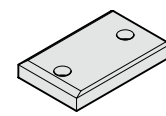
2960.72. **D200**

Sliding pad, small dimension, Bronze with solid lubricant



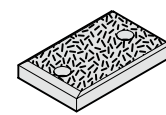
2960.71. **D202-203**

Sliding pad, Bronze with solid lubricant, VDI 3357 / ISO 9183-1



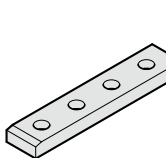
2960.87. **D204-205**

Sliding pad, Steel, VDI 3357



2960.30. **D206-207**

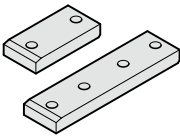
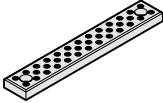
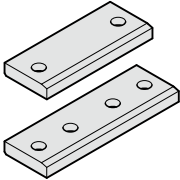
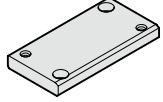
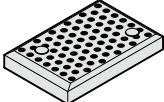
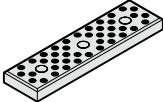
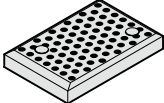
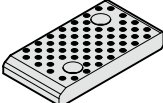
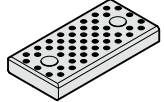
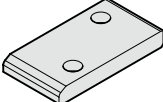
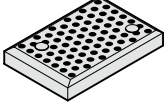
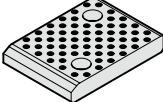
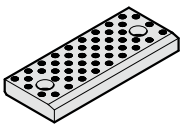
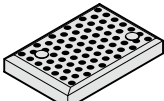
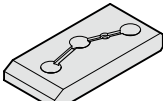
Sliding pad, Steel with sinterlayer, VDI 3357



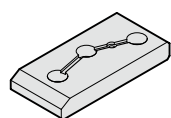
2960.31. **D208**

Sliding pad, Steel with sinterlayer, VDI 3357

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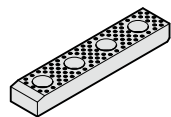
	2960.32. Sliding pad, Steel with sinterlayer, VDI 3357	D209		2962.78. Sliding pad, Bronze with solid lubricant	D220-221
	2960.33. Sliding pad, Steel with sinterlayer, VDI 3357	D210		2962.84.45. Sliding pad, Steel, CNOMO	D222
	2960.70. Sliding pad, Bronze with solid lubricant	D212-213		2962.85. Sliding pad, Steel with solid lubricant	D223
	2960.85. Sliding pad, Bronze with solid lubricant	D214		2960.79. Sliding pad, Bronze with solid lubricant, NAAMS	D224
	2960.86. Sliding pad, Bronze with solid lubricant	D215		2960.80. Sliding pad, Steel, NAAMS	D225
	2960.76. Sliding pad, Bronze with solid lubricant	D216		2960.74. Sliding pad, Bronze with solid lubricant, AFNOR/ISO 9183-2	D226-227
	2960.77. Sliding pad, Bronze with solid lubricant, VDI 3357	D217			
	2962.78.45. Sliding pad, Bronze with solid lubricant, CNOMO	D218		2960.44.45. Sliding pad, Steel with oil groove, CNOMO	D230-231

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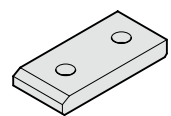
2960.54.45. **D232**

Sliding pad, Bronze with oil groove, CNOMO



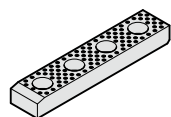
2960.81. **D234-235**

Sliding pad, Bronze with solid lubricant, VDI 3357



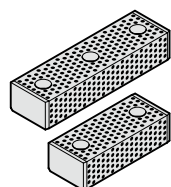
2960.88. **D236-237**

Sliding pad, Steel, VDI 3357



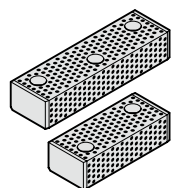
2960.93. **D238**

Sliding pad, Bronze with solid lubricant, VDI 3357



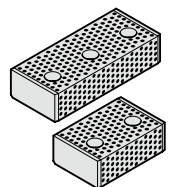
2962.75. **D239**

Guide bar with two sliding surfaces, Bronze with solid lubricant, VDI 3357



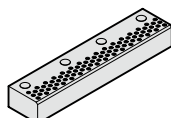
2962.75.45. **D240**

Guide bar with two sliding surfaces, Bronze with solid lubricant, CNOMO



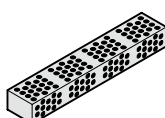
2962.76. **D241**

Guide bar with three sliding surfaces, Bronze with solid lubricant



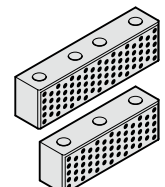
2962.77. **D242**

Guide bar with two sliding surfaces, Bronze with solid lubricant



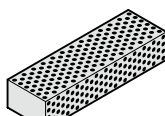
2962.74. **D243**

Guide bar with four sliding surfaces, Bronze with solid lubricant



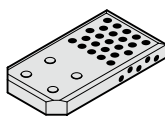
2962.79. **D244**

Guide bar with one sliding surfaces, Bronze with solid lubricant



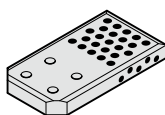
2962.80. **D245**

Guide bar with three sliding surfaces, Bronze with solid lubricant



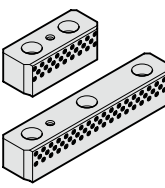
2960.73. **D246**

Guide bracket, Steel with solid lubricant, VDI 3387



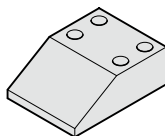
2960.89. **D247**

Guide bracket, Bronze with solid lubricant, VDI 3387



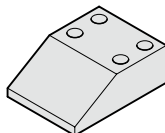
2966.72. **D248**

Slide centre guide, Bronze with solid lubricant



2960.90. **D249**

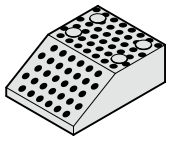
Overrun Cam, Steel hardened, VDI 3357



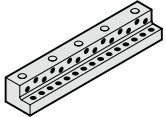
2960.91. **D250**

Overrun Cam, Steel hardened and gas nitrided, VDI 3357

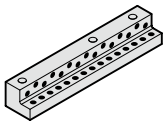
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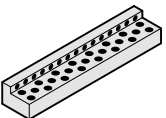
2960.92. **D251**
 Overrun Cam, Bronze with solid lubricant, VDI 3357



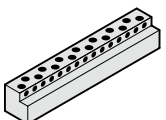
2962.70. **D252**
 Angled guide gib, Bronze with solid lubricant



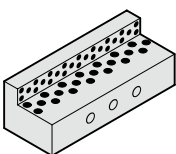
2962.70.45. **D253**
 Angled guide gib, Bronze with solid lubricant, CNOMO



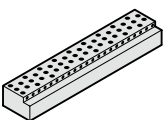
2962.71. **D254**
 Angled guide gib, Bronze with solid lubricant



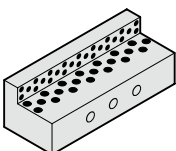
2962.72. **D255**
 Angled guide gib, Bronze with solid lubricant



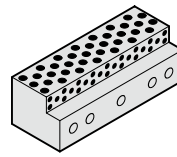
2962.73. **D256**
 Angled guide gib, Bronze with solid lubricant, VDI 3357



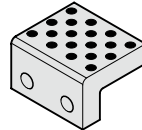
2962.81. **D257**
 Angled guide gib, Bronze with solid lubricant



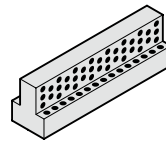
2962.82. **D258**
 Angled guide gib, Bronze with solid lubricant



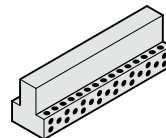
2962.83. **D259**
 Angled guide gib, Bronze with solid lubricant



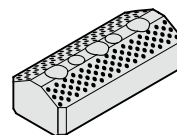
2962.86. **D260**
 Angled guide gib, Bronze with solid lubricant



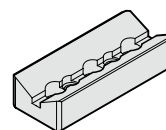
2964.77. **D261**
 T-Guide bar, Bronze with solid lubricant



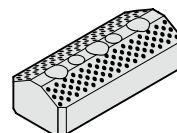
2964.78. **D261**
 T-Guide bar, Bronze with solid lubricant



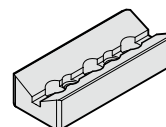
2963.82. **D262**
 Sliding block, Bronze with solid lubricant, NAAMS



2963.83. **D262**
 Prismatic guide, Steel, NAAMS

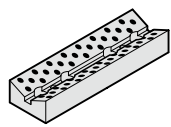


2963.84. **D263**
 Sliding block, Bronze with solid lubricant, VDI 3357



2963.85. **D263**
 Prismatic guide, Steel, VDI 3357

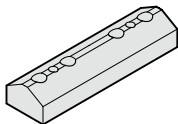
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2963.70.

D264

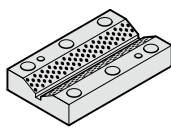
Prismatic guide, Bronze with solid lubricant



2963.71.

D264

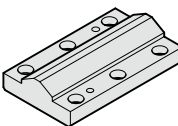
Sliding block, Steel



2963.72.

D265

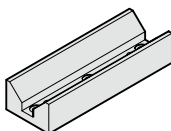
Prismatic guide, Bronze with solid lubricant



2963.73.

D265

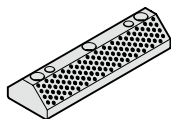
Sliding block, Steel



2963.81.

D266

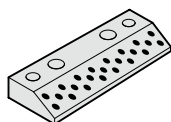
Prismatic guide, Steel



2963.80.

D267

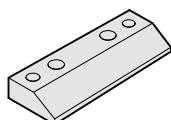
Sliding block, Bronze with solid lubricant



2965.81.

D268

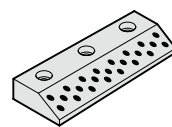
Single-sided prismatic guide, Bronze with solid lubricant



2965.83.

D269

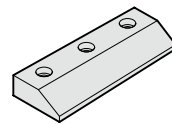
Single-sided prismatic sliding block, Steel



2965.80.45.

D270

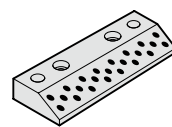
Single-sided prismatic guide, Bronze with solid lubricant, CNOMO



2965.82.45.

D271

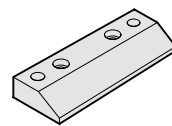
Single-sided prismatic sliding block, Steel, CNOMO



2965.80.

D272

Single-sided prismatic guide, Bronze with solid lubricant



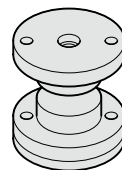
2965.82.

D273

Single-sided prismatic sliding block, Steel

D274-277

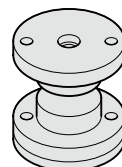
Oilless guide elements - Mounting examples



2441.11.0.

D278

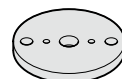
Centering unit with adjusting washer



2441.11.

D279

Centering unit

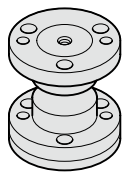


2441.11.3.

D280

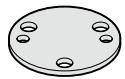
Adjusting washer

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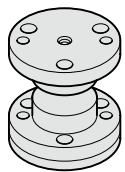
2441.13.45. **D281**

Centering unit, CNOMO



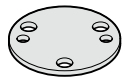
2441.13.3.45. **D282**

Adjusting washer, CNOMO



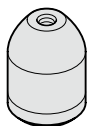
2441.13. **D283**

Centering unit, CNOMO



2441.13.3. **D284**

Adjusting washer, CNOMO



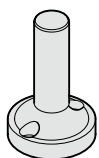
2445.10. **D285**

Centering pin



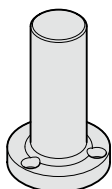
2445.11. **D286**

Centering pin to Mercedes-Benz Standard



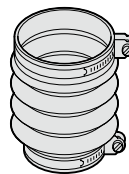
2446.10.55. **D287**

Pressure bolt with base, according to VW



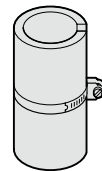
2446.11.55. **D288**

Air pin, according to VW standard



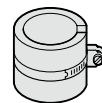
206.91. **D289**

Concertina shroud with spacer bush



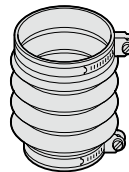
206.94. **D290**

Spacer tube



206.93. **D290**

Spacer bush



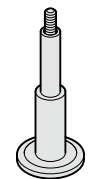
206.92. **D291**

Concertina shroud with spacer tube



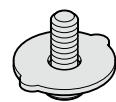
241.18. **D292**

Helical spring for ball cage retention



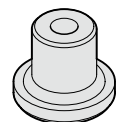
202.91. **D293**

Cage retainer



202.92.1. **D294**

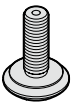
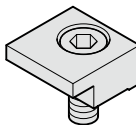
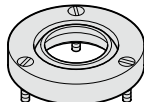
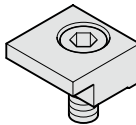
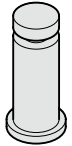
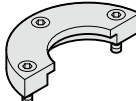
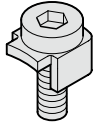
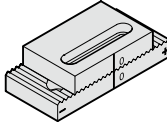
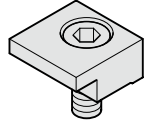
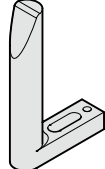
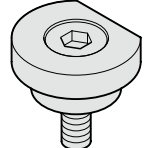
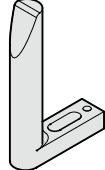
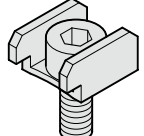
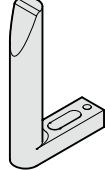
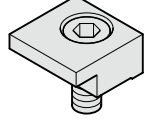
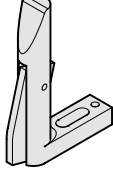
Cage retainer



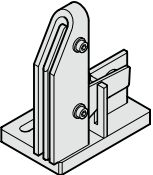
202.93. **D295**

Cage retainer

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	207.45 Screw clamp with screw	D300		2444.12 / 2444.13 Spacer plate toothed, with adjusting plate	D304
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	2071.45 Screw clamp with screw	D301		2443.10.20. Guide to Mercedes-Benz Standard - unhardened	D306
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	Cable - straight			
	2443.14.00.60.23.02.	D315		
	Cable, 90° connector			

BALL CAGE, SMALL DIMENSION GUIDE BUSH FOR BALL BEARING, SMALL DIMENSION



Material:

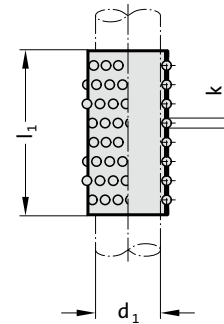
Cage: Brass

Balls: Steel hardened (DIN 5401)

Ordering Code (example):

Ball cage, small dimension	=	206.51.
Diameter of conduit d_1	5 mm =	005.
Length l_1	30 mm =	030
Order No	=	206.51. 005. 030

206.51.



206.51. Ball cage, small dimension

d_1	3	4	5	6	8
k	1	1	1	1	1
Total number of balls					
l_1					
10	24	30	36	42	
15	40	50	60	70	70
20	56	65	78	78	84
25		80	102	102	112
30		105	126	126	126
35		120	144	144	
40					175



Material:

Roller bearing steel 100 Cr 6

Hardness: hardened to 60 + 4 HRC

Remarks: available in stainless steel on request

Execution:

Guide bush bores d_2 fine-honed to IT3

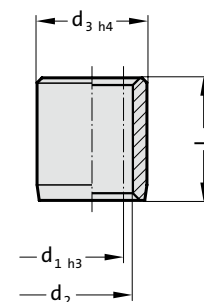
Note:

☞ Assembly guide lines / Dimensional requirements and tolerances at the end of chapter D.

Ordering Code (example):

Guide bush for ball bearing, small dimension	=	206.54.
Diameter of conduit d_1	5 mm =	005.
Length l_1	10 mm =	010
Order No	=	206.54. 005. 010

206.54.

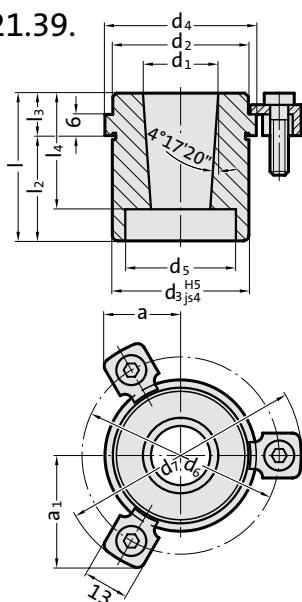


206.54. Guide bush for ball bearing, small dimension

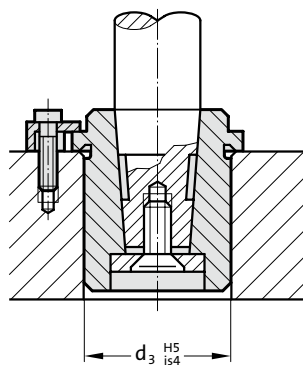
d_1	3	4	5	6	8
d_2	5	6	7	8	10
d_3	7	8	10	11	14
l_1					
10	●	●	●		
15	●	●	●	●	●
20	●	●	●	●	●
25		●	●	●	●
30			●	●	●
35				●	●
40					●

RETAINING BUSH FOR GUIDE PILLAR CONICAL 2021.50., DIN 9825/ISO 9182-4

2021.39.



Mounting example



Material:

16 MnCr5,
case hardened 58 ± 2 HRC
Hardness penetration: ≥ 0,8 mm

Execution:

Retaining bore, outside diameter and shoulder precision ground.

Note:

Outside diameter d_3 same as that of guide bushes 2081. and 2091.
The attachment is with 3 Screw clamp, from $\varnothing d_1 = 38$ with 4 Screw clamp, which are included in delivery (Order No: 207.45 - Screw clamp incl. socket cap screw DIN 6912, Head $\varnothing 13$).
🔧 Assembly guide lines / Dimensional requirements and tolerances at the end of chapter D.

2021.39. Retaining bush for guide pillar conical 2021.50., DIN 9825/ISO 9182-4

d_1	19 20	24 25	30 32	38 40	48 50	60 63
d_2	32	40	48	58	70	85
d_3	32	40	48	58	70	85
d_4	40	48	56	66	80	95
d_5	23	26	33	41	51	64
d_6	53	60	67	77	91	106
d_7	65.7	72.7	79.7	89.7	103.7	118.7
a	20.9	22.65	24.4	35.3	40.2	45.5
a_1	30.3	33.4	36.4	35.3	40.2	45.5
l	42 49	49 59	52 62	62 75	65 78	78 95
l_2	30 37	37 47	37 47	47 60	47 60	60 77
l_3	12	12	15	15	18	18
l_4	39	36	49	49	59	70

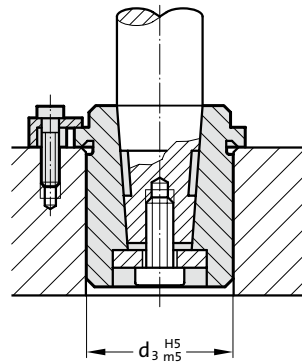
Ordering Code (example):

Retaining bush for guide pillar conical 2021.50.,			
DIN 9825/ISO 9182-4		= 2021.39.	
Nominal diameter d_1	38 mm	=	038.
Installation length l_2	47 mm	=	047
Order No		=	2021.39. 038. 047

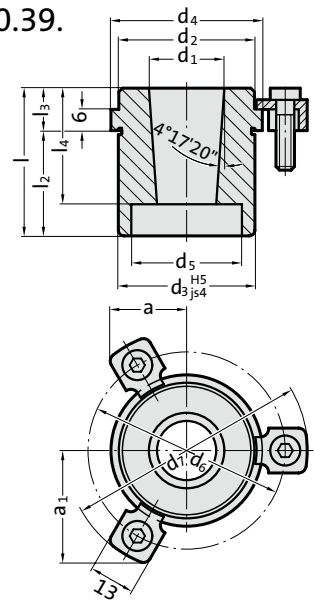
RETAINING BUSH FOR GUIDE PILLAR CONICAL 2021.50.,~AFNOR



Mounting example



210.39.



Material:

16 MnCr5,
case hardened 58 ± 2 HRC
Hardness penetration: $\geq 0,8$ mm

Execution:

Retaining bore, outside diameter and shoulder precision ground.

Note:

Outside diameter d_3 same as that of guide bush 210.

The attachment is with 3 Screw clamp, from $\phi d_1 = 38$ with 4 Screw clamp, which are included in delivery (Order No: 207.45 - Screw clamp incl. socket cap screw DIN 6912, Head $\phi 13$).

Assembly guide lines / Dimensional requirements and tolerances at the end of chapter D.

210.39. Retaining bush for guide pillar conical 2021.50.,~AFNOR

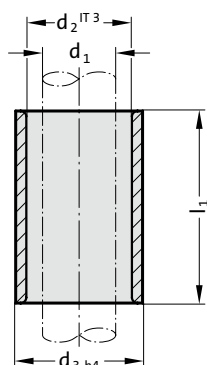
d_1	16	20	25	32	40	50	63
d_2	29	32	41	51	65	84	100
d_3	28	32	40	50	63	80	90
d_4	32	36	45	56	70	90	110
d_5	19	23	26	33	41	51	64
d_6	45	49	57	67	81	101	121
d_7	57.7	61.7	69.7	79.7	93.7	113.7	133.7
a	18.9	19.9	21.9	24.4	36	43	50.1
a_1	26.9	28.6	32.1	36.4	36	43	50.1
l	40	50	50 60	63 76	63 76	79 96	98 118
l_2	30	38	38 48	48 61	48 61	61 78	78 98
l_3	10	12	12	15	15	18	20
l_4	30	40	3747	5063	5063	6380	7999

Ordering Code (example):

Retaining bush for guide pillar conical 2021.50.,~AFNOR	= 210.39.
Nominal diameter d_1	40 mm = 040.
Installation length l_2	48 mm = 048
Order No	= 210.39. 040. 048

GUIDE BUSH FOR BALL BEARING, FOR HIGHEST STROKING SPEED GUIDE BUSH FOR BALL BEARING, ISO 9448-3

2062.44.012.



2062.44.012. Guide bush for ball bearing, for highest stroking speed

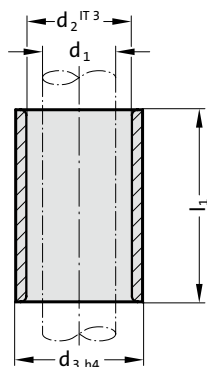
Order No	d_1	d_2	d_3	l_1	For ball \varnothing
2062.44.012.016.032	12	16	20	32	2
2062.44.012.017.032	12	17	20	32	2.5

Material:
Tool steel, hardened 62 ± 2 HRC

Execution:
Bearing surfaces honed,
outside diameter precision ground.

Note:
For use with ball cage 206.41. and guide pillar 202.61.

2061.44.015.



2061.44. Guide bush for ball bearing, ISO 9448-3

Order No	d_1	d_2	d_3	l_1
2061.44.015.023.10	15	21	28	23
2061.44.015.023.20	15	21	28	23
2061.44.015.030.10	15	21	28	30
2061.44.015.030.20	15	21	28	30
2061.44.015.037.10	15	21	28	37
2061.44.015.037.20	15	21	28	37
2061.44.015.047.10	15	21	28	47
2061.44.015.047.20	15	21	28	47
2061.44.015.060.10	15	21	28	60
2061.44.015.060.20	15	21	28	60

Material:
Tool steel, hardened 62 ± 2 HRC

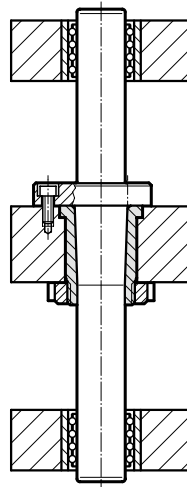
Execution:
Bearing surfaces honed,
outside diameter precision ground.

Note:
For use with ball cage 206.41. and guide pillar 202.61.
Tolerance range:
yellow = .10
green = .20

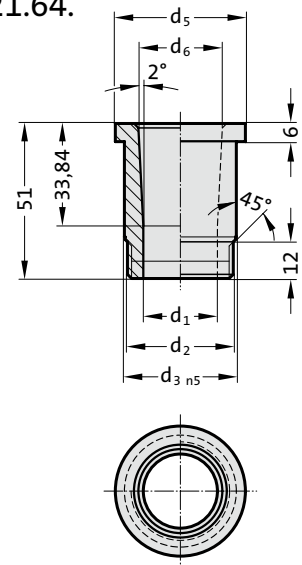
RETAINING BUSH FOR GUIDE PILLAR CONICAL 2020.64.



Mounting example



2021.64.



Material:

16 MnCr5

Surface hardness: 60 ± 2 HRC, Hardness penetration 0,8–1 mm

Execution:

Thread not hardened

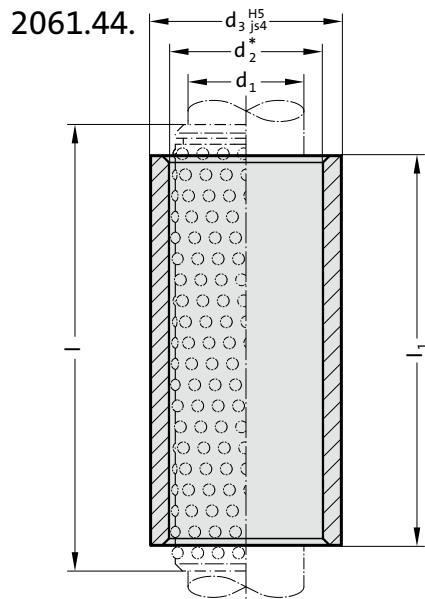
Fixing:

2073.48.□□15 order separately.

2021.64. Retaining bush for guide pillar conical 2020.64.

Order No	d ₁	d ₂	d ₃	d ₅	d ₆
2021.64.025	25.5	M35x1,5	37	43	27.86
2021.64.032	32.5	M40x1,5	44	50	34.86

GUIDE BUSH FOR BALL BEARING, ISO 9448-3



Material:

Tool steel, hardened 62 ± 2 HRC

Execution:

Bearing surfaces honed,
outside diameter precision ground.

Slip-Fit Bonding:

The position of the bearing is given by push fit holes tolerance H5. The adhesive (order no. 281.648) provides optimum push retention whilst offering the following **advantages**:

- high accuracy and stiffness
- no problems to find position when changing bushings

We do not recommend to press fit for the same reasons mentioned above.

Note:

- ☞ Notes on ball bearing type guides at the beginning of chapter D.
- *☞ Preloading see pairing classification at the beginning of chapter D
- ☞ Matching guide combinations, see selection matrix at the beginning of chapter D.
- ☞ Assembly guide lines / Dimensional requirements and tolerances at the end of chapter D.

Tolerance range:

- yellow = .10
- green = .20
- red = .30

2061.44. Guide bush for ball bearing, ISO 9448-3

d ₁	8	10	11	12	15	16	19	20	24	25	30	32	38	40	48	50	60	63	80	
d ₂	11	14	15	16	21	22	25	26	30	31	38	40	46	48	56	58	68	71	92	
d ₃	18	22	22	22	28	28	32	32	40	40	48	48	58	58	70	70	85	85	105	
l ₁ / l*																				
23 / 45					●	●	●	●	●	●										
23 / 39		●	●	●																
30 / 45					●	●	●	●	●	●	●	●	●	●						
30 / 39	●	●	●	●																
37 / 39		●	●	●																
37 / 45					●	●	●	●	●	●										
37 / 50															●	●	●	●	●	●
47 / 56					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
47 / 65														●	●	●	●	●	●	●
60 / 80														●	●	●	●	●	●	●
60 / 72					●	●	●	●	●	●										
60 / 70											●	●								
60 / 95																			●	●
77 / 95							●	●	●	●	●	●	●	●	●	●	●	●	●	●
95 / 120											●	●	●	●	●	●	●	●	●	●
120 / 140													●	●	●	●	●	●	●	●

*l = Nominal ordering length of ball cage - preferred length

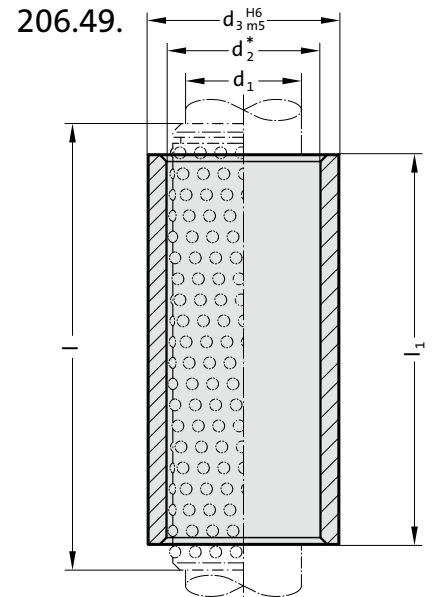
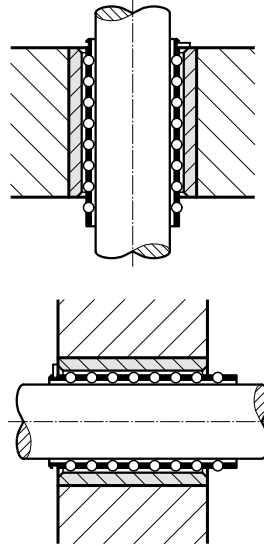
Ordering Code (example):

Guide bush for ball bearing, ISO 9448-3	=	2061.44.
Diameter of conduit d ₁	25 mm =	025.
Installation length l ₁	23 mm =	023.
Classification TOL	yellow =	10
Order No	=	2061.44. 025.023. 10

GUIDE BUSH FOR BALL BEARING, AFNOR



Mounting example



Material:

Tool steel, hardened 62 ± 2 HRC

Execution:

Bearing surfaces honed, outside diameter precision ground.

Slip-Fit Bonding:

The position of the bearing is given by push fit holes tolerance H6. The adhesive (order no. 281.648) provides optimum push retention whilst offering the following **advantages:**

- high accuracy and stiffness
- no problems to find position when changing bushings

We do not recommend to press fit for the same reasons mentioned above.

Note:

- ☞ Notes on ball bearing type guides at the beginning of chapter D.
 - *☞ Preloading see pairing classification at the beginning of chapter D
 - ☞ Matching guide combinations, see selection matrix at the beginning of chapter D.
 - ☞ Assembly guide lines / Dimensional requirements and tolerances at the end of chapter D.
- Tolerance range:
 yellow = .10
 green = .20
 red = .30

206.49. Guide bush for ball bearing, AFNOR

d ₁	16	20	25	32	40	50
d ₂	22	26	31	40	48	58
d ₃	28	32	40	50	63	80
l ₁ / l*						
35 / 45	●	●				
40 / 45	●	●	●			
45 / 56				●		
50 / 56	●	●	●			
55 / 63					●	
60 / 71	●	●	●	●		
70 / 80		●	●	●	●	●
80 / 95		●	●	●	●	●
90 / 105				●	●	●
90 / 95			●			
100 / 120				●	●	●
120 / 140					●	●

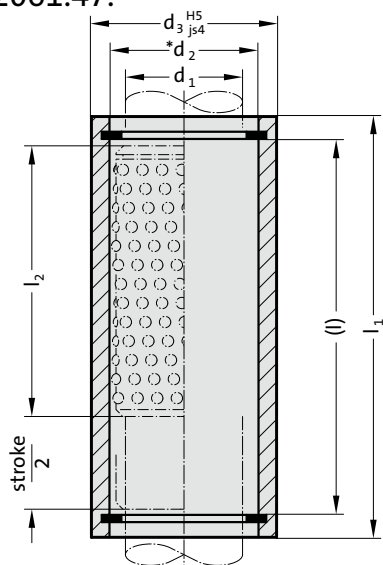
*l = Nominal ordering length of ball cage - preferred length

Ordering Code (example):

Guide bush for ball bearing, AFNOR	=	206.49.
Diameter of conduit d ₁	32 mm =	032.
Installation length l ₁	45 mm =	045.
Classification TOL	yellow =	10
Order No	=	206.49. 032. 045. 10

GUIDE BUSH FOR BALL BEARING, WITH STROKE LIMITATION

2061.47.



Material:

Tool steel, hardened 62 ± 2 HRC

Execution:

Bearing surfaces honed,
outside diameter precision ground.

Slip-Fit Bonding:

The position of the bearing is given by push fit holes tolerance H5. The adhesive (order no. 281.648) provides optimum push retention whilst offering the following **advantages:**

- high accuracy and stiffness
- no problems to find position when changing bushings

We do not recommend to press fit for the same reasons mentioned above.

Note:

- ☞ Notes on ball bearing type guides at the beginning of chapter D.
- *☞ Preloading see pairing classification at the beginning of chapter D
- ☞ Matching guide combinations, see selection matrix at the beginning of chapter D.
- ☞ Assembly guide lines / Dimensional requirements and tolerances at the end of chapter D.

Tolerance range:

- yellow = .10
- green = .20
- red = .30

2061.47. Guide bush for ball bearing, with stroke limitation

d_1	15 16	19 20	24 25	30 32	38 40	48 50	60	63
d_2	21	25	30	38	46	56	68	71
d_3	28	32	40	48	58	70	85	85
(l)	55.6	72	70.8	88.2	113.2	112.2	112.2	107.2
l_1 / l_2^*								
60 / 44	●							
77 / 44		●	●					
95 / 50				●				
120 / 65					●			
120 / 80						●		
120 / 95							●	●

* l_2 = Manufacturing length of ball cage

Ordering Code (example):

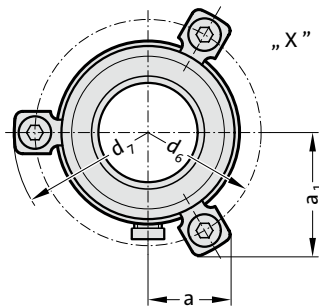
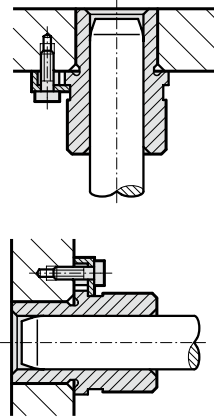
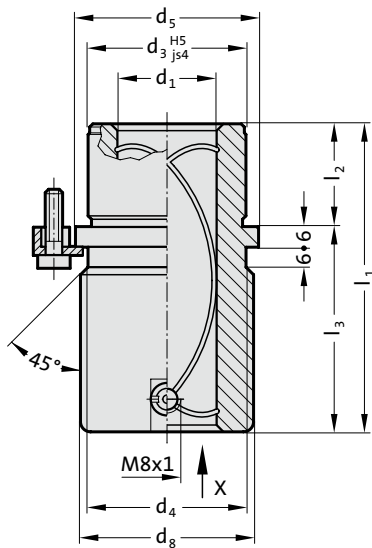
Guide bush for ball bearing, with stroke limitation	=	2061.47.
Diameter of conduit d_1	32 mm =	032.
Installation length l_1	95 mm =	095.
Classification TOL	yellow =	10
Order No	=	2061.47. 032.095. 10

HEADED GUIDE BUSH, BRONZE COATED, ISO 9448-6

2081.81.



Mounting example



Material:

1.0503

$\varnothing d_3$ and d_8 induction hardened to 500+100 HV 10.

Execution:

Bronze coated internal bore.

Outside diameter fine-ground.

Note:

The attachment is with 3 Screw clamp, from $\varnothing d_1 = 38$ with 4 Screw clamp, which are included in delivery (Order No: 207.45 - Screw clamp incl. socket cap screw DIN 6912, Head $\varnothing 13$).

Lubrication via funnel lubricating nipple with thread DIN 3405-A M8x1.

Notes on sliding type guides at the beginning of chapter D.

Matching guide combinations, see selection matrix at the beginning of chapter D.

Assembly guide lines / Dimensional requirements and tolerances at the end of chapter D.

2081.81. Headed guide bush, bronze coated, ISO 9448-6

d_1	19 20	24 25	30 32	38 40	48 50	60 63	80
Tolerance	+0.003/+0.012	+0.003/+0.012	+0.004/+0.015	+0.004/+0.015	+0.004/+0.015	+0.005/+0.018	+0.005/+0.018
d_3	32	40	48	58	70	85	105
d_4	32	40	48	58	70	85	105
d_5	40	48	56	66	80	95	118
d_6	52	60	67	77	91	106	129
d_7	64.7	72.7	79.7	89.7	103.7	118.7	141
d_8	39	46	53	63	77	92	115
a	20.9	22.7	24.4	35.3	40.2	45.5	54.5
a_1	30.3	33.4	36.4	35.3	40.2	45.5	54.5
l_1	59	79	93	108	127	150	150
l_2	23	23	30	37	47	60	60
l_3	36	56	63	71	80	90	90

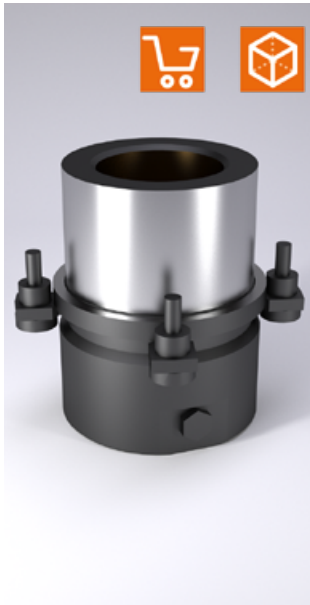
Ordering Code (example):

Headed guide bush, bronze coated, ISO 9448-6 = 2081.81.

Diameter of conduit d_1 38 mm = 038

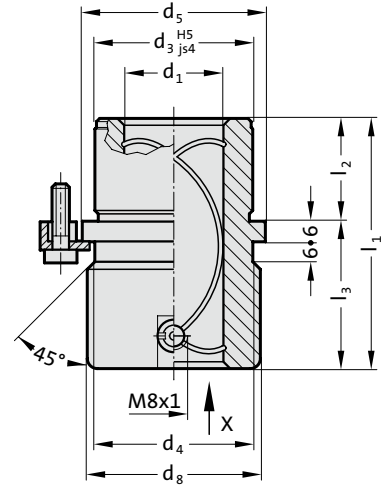
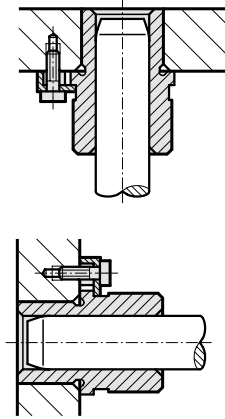
Order No = 2081.81. 038

HEADED GUIDE BUSH, BRONZE COATED, ISO 9448-6



Mounting example

2081.84.



Material:

1.0503

ø d₃ and d₈ induction hardened to 500+100 HV 10.

Execution:

Bronze coated internal bore.

Outside diameter fine-ground.

Note:

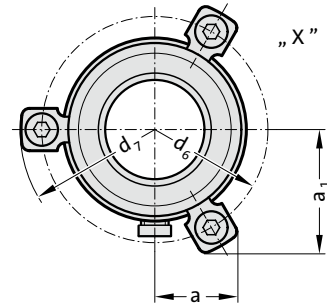
The attachment is with 3 Screw clamp, from ø d₁ = 38 with 4 Screw clamp, which are included in delivery (Order No: 207.45 - Screw clamp incl. socket cap screw DIN 6912, Head ø 13).

Lubrication via funnel lubricating nipple with thread DIN 3405-A M8x1.

☞ Notes on sliding type guides at the beginning of chapter D.

☞ Matching guide combinations, see selection matrix at the beginning of chapter D.

☞ Assembly guide lines / Dimensional requirements and tolerances at the end of chapter D.



2081.84. Headed guide bush, bronze coated, ISO 9448-6

d ₁	19 20	24 25	30 32	38 40	48 50	60 63	80
Tolerance	+0.003/+0.012	+0.003/+0.012	+0.004/+0.015	+0.004/+0.015	+0.004/+0.015	+0.005/+0.018	+0.005/+0.018
d ₃	32	40	48	58	70	85	105
d ₄	32	40	48	58	70	85	105
d ₅	40	48	56	66	80	95	118
d ₆	52	60	67	77	91	106	129
d ₇	65.7	72.7	79.7	89.7	103.7	118.7	141
d ₈	39	46	53	63	77	92	115
a	20.9	22.7	24.4	35.3	40.2	45.5	54.5
a ₁	30.3	33.4	36.4	35.3	40.2	45.5	54.5
l ₁	43	59	75	82	97	116	120
l ₂	23	23	30	37	47	60	60
l ₃	20	36	45	45	50	56	60

Ordering Code (example):

Headed guide bush, bronze coated, ISO 9448-6 = 2081.84.

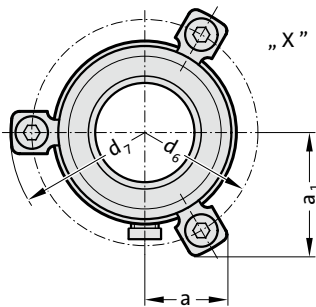
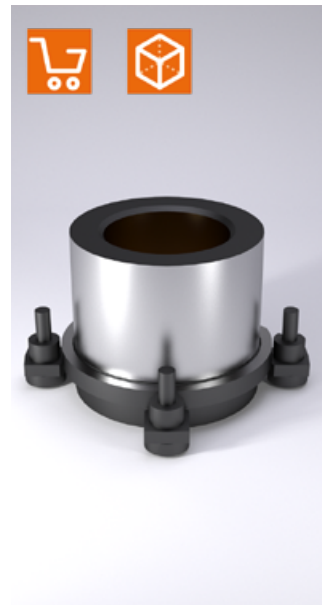
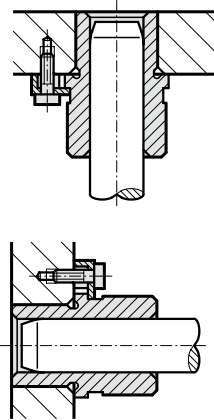
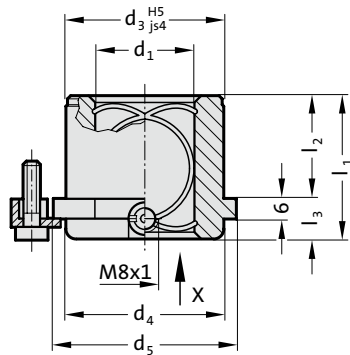
Diameter of conduit d₁ 38 mm = 038

Order No = 2081.84. 038

HEADED GUIDE BUSH, BRONZE COATED, ISO 9448-6

2081.85.

Mounting example



Material:

1.0503

ø d₃ and d₆ induction hardened to 500+100 HV 10.

Execution:

Bronze coated internal bore.

Outside diameter fine-ground.

Note:

The attachment is with 3 Screw clamp, from ø d₁ = 38 with 4 Screw clamp, which are included in delivery (Order No: 207.45 - Screw clamp incl. socket cap screw DIN 6912, Head ø 13).

Lubrication via funnel lubricating nipple with thread DIN 3405-A M8x1.

☞ Notes on sliding type guides at the beginning of chapter D.

☞ Matching guide combinations, see selection matrix at the beginning of chapter D.

☞ Assembly guide lines / Dimensional requirements and tolerances at the end of chapter D.

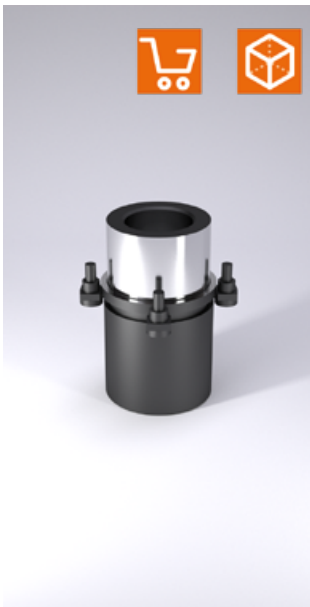
2081.85. Headed guide bush, bronze coated, ISO 9448-6

d ₁	19 20	24 25	30 32	38 40	48 50	60 63	80
Tolerance	+0.003/+0.012	+0.003/+0.012	+0.004/+0.015	+0.004/+0.015	+0.004/+0.015	+0.005/+0.018	+0.005/+0.018
d ₃	32	40	48	58	70	85	105
d ₄	32	40	48	58	70	85	105
d ₅	40	48	56	66	80	95	118
d ₆	52	60	67	77	91	106	129
d ₇	65.7	72.7	79.7	89.7	103.7	118.7	141
a	20.9	22.7	24.4	35.3	40.2	45.5	54.4
a ₁	30.3	33.4	36.4	35.3	40.2	45.5	54.4
l ₁	35	35	42	52	65	80	80
l ₂	23	23	30	37	47	60	60
l ₃	12	12	12	15	18	20	20

Ordering Code (example):

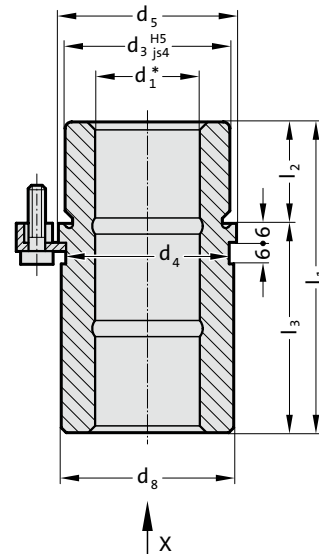
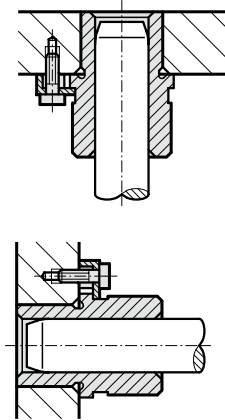
Headed guide bush, bronze coated, ISO 9448-6 = 2081.85.
 Diameter of conduit d₁ 38 mm = 038
 Order No = 2081.85. 038

HEADED GUIDE BUSH, SINTERED FERRITE CARBONITRIDED WITH LONG-TERM LUBRICATION, ISO 9448-6



Mounting example

2081.31.



Material:

Sintered ferrite of high purity, carbonitrided, long-term lubrication

Execution:

Bearing surfaces and outside diameter precision ground.

Note:

The attachment is with 3 Screw clamp, from $\phi d_1 = 38$ with 4 Screw clamp, which are included in delivery (Order No: 207.45 - Screw clamp incl. socket cap screw DIN 6912, Head $\phi 13$).

☞ Notes on sliding type guides at the beginning of chapter D.

*☞ Bearing clearance see pairing classification at the beginning of chapter D.

☞ Matching guide combinations, see selection matrix at the beginning of chapter D.

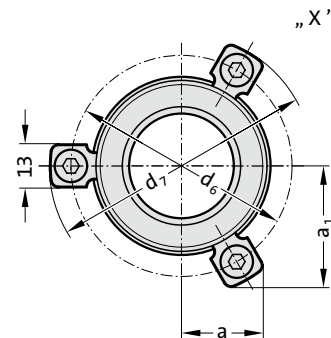
☞ Assembly guide lines / Dimensional requirements and tolerances at the end of chapter D.

Tolerance range:

yellow = .10

green = .20

red = .30



2081.31. Headed guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-6

d_1	19 20	24 25	30 32	38 40	48 50	60 63
d_3	32	40	48	58	70	85
d_4	32	40	48	58	70	85
d_5	40	48	56	66	80	95
d_6	52	60	67	77	91	106
d_7	64.7	72.7	79.7	89.7	103.7	118.7
d_8	39	46	53	63	77	92
a	20.7	22.65	24.4	35.3	40.2	45.5
a_1	30	33.4	36.4	35.3	40.2	45.5
l_1	59	79	93	108	127	150
l_2	23	23	30	37	47	60
l_3	36	56	63	71	80	90

Ordering Code (example):

Headed guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-6

= 2081.31.

Diameter of conduit d_1

38 mm = 038.

Classification TOL

yellow = 10

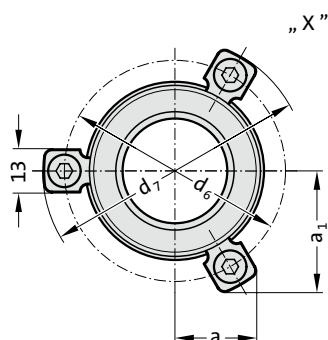
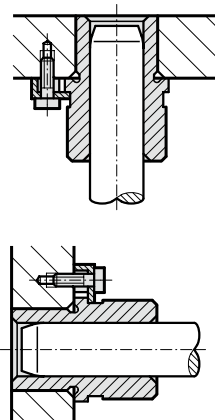
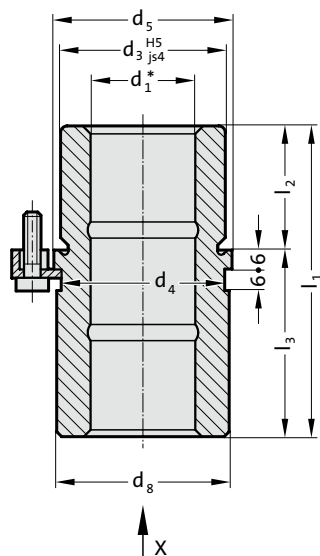
Order No

= 2081.31. 038. 10

HEADED GUIDE BUSH, SINTERED FERRITE CARBONITRIDED WITH LONG-TERM LUBRICATION, ISO 9448-6

2081.32.

Mounting example



Material:

Sintered ferrite of high purity, carbonitrided, long-term lubrication

Execution:

Bearing surfaces and outside diameter precision ground.

Note:

The attachment is with 3 Screw clamp, from $\varnothing d_1 = 38$ with 4 Screw clamp, which are included in delivery (Order No: 207.45 - Screw clamp incl. socket cap screw DIN 6912, Head $\varnothing 13$).

☞ Notes on sliding type guides at the beginning of chapter D.

*☞ Bearing clearance see pairing classification at the beginning of chapter D.

☞ Matching guide combinations, see selection matrix at the beginning of chapter D.

☞ Assembly guide lines / Dimensional requirements and tolerances at the end of chapter D.

Tolerance range:

yellow = .10

green = .20

red = .30

2081.32. Headed guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-6

d ₁	24 25	30 32	38 40	48 50
d ₃	40	48	58	70
d ₄	40	48	58	70
d ₅	48	56	66	80
d ₆	60	67	77	91
d ₇	72.7	79.7	89.7	103.7
d ₈	46	53	63	77
a	22.65	24.4	35.3	40.2
a ₁	33.4	36.4	35.3	40.2
l ₁	80	93	110	131
l ₂	30	37	47	60
l ₃	50	56	63	71

Ordering Code (example):

Headed guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-6

= 2081.32.

Diameter of conduit d₁ 38 mm = 038.

Classification TOL yellow = 10

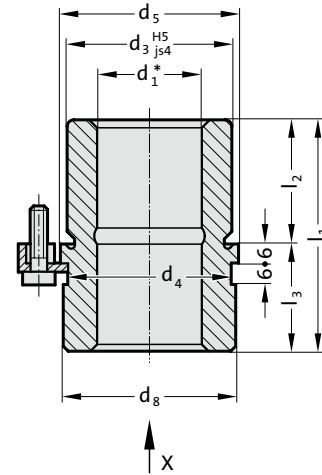
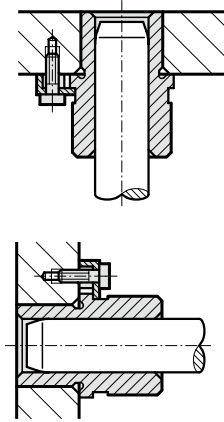
Order No = 2081.32. 038. 10

HEADED GUIDE BUSH, SINTERED FERRITE CARBONITRIDED WITH LONG-TERM LUBRICATION, ISO 9448-6



Mounting example

2081.33.



Material:

Sintered ferrite of high purity, carbonitrided, long-term lubrication

Execution:

Bearing surfaces and outside diameter precision ground.

Note:

The attachment is with 3 Screw clamp, from $\varnothing d_1 = 38$ with 4 Screw clamp, which are included in delivery (Order No: 207.45 - Screw clamp incl. socket cap screw DIN 6912, Head $\varnothing 13$).

☞ Notes on sliding type guides at the beginning of chapter D.

*☞ Bearing clearance see pairing classification at the beginning of chapter D.

☞ Matching guide combinations, see selection matrix at the beginning of chapter D.

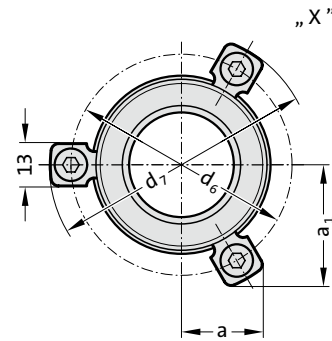
☞ Assembly guide lines / Dimensional requirements and tolerances at the end of chapter D.

Tolerance range:

yellow = .10

green = .20

red = .30



2081.33. Headed guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-6

d_1	24 25	30 32	38 40	48 50
d_3	40	48	58	70
d_4	40	48	58	70
d_5	48	56	66	80
d_6	60	67	77	91
d_7	72.7	79.7	89.7	103.7
d_8	46	53	63	77
a	22.65	24.4	35.3	40.2
a_1	33.4	36.4	35.3	40.2
l_1	55	69	79	96
l_2	30	37	47	60
l_3	25	32	32	36

Ordering Code (example):

Headed guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-6

= 2081.33.

Diameter of conduit d_1

38 mm = 038.

Classification TOL

yellow = 10

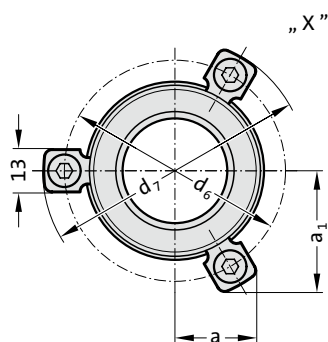
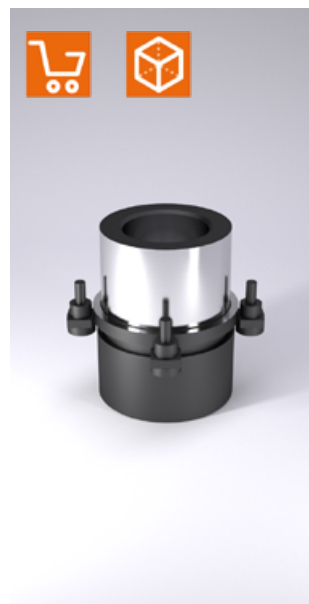
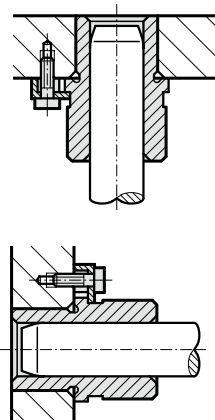
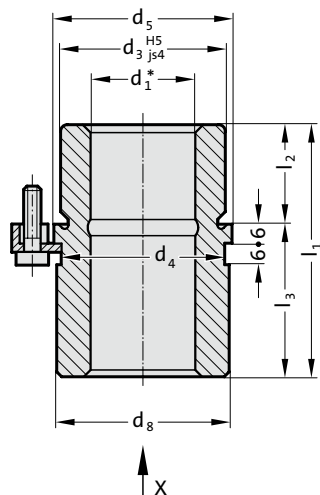
Order No

= 2081.33. 038. 10

HEADED GUIDE BUSH, SINTERED FERRITE CARBONITRIDED WITH LONG-TERM LUBRICATION, ISO 9448-6

2081.34.

Mounting example



Material:

Sintered ferrite of high purity, carbonitrided, long-term lubrication

Execution:

Bearing surfaces and outside diameter precision ground.

Note:

The attachment is with 3 Screw clamp, from $\varnothing d_1 = 38$ with 4 Screw clamp, which are included in delivery (Order No: 207.45 - Screw clamp incl. socket cap screw DIN 6912, Head $\varnothing 13$).

☞ Notes on sliding type guides at the beginning of chapter D.

*☞ Bearing clearance see pairing classification at the beginning of chapter D.

☞ Matching guide combinations, see selection matrix at the beginning of chapter D.

☞ Assembly guide lines / Dimensional requirements and tolerances at the end of chapter D.

Tolerance range:

yellow = .10

green = .20

red = .30

2081.34. Headed guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-6

d_1	19 20	24 25	30 32	38 40	48 50	60 63
d_3	32	40	48	58	70	85
d_4	32	40	48	58	70	85
d_5	40	48	56	66	80	95
d_6	52	60	67	77	91	106
d_7	64.7	72.7	79.7	89.7	103.7	118.7
d_8	39	46	53	63	77	92
a	20.7	22.65	24.4	35.3	40.2	45.5
a_1	30	33.4	36.4	35.3	40.2	45.5
l_1	43	59	75	82	97	116
l_2	23	23	30	37	47	60
l_3	20	36	45	45	50	56

Ordering Code (example):

Headed guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-6

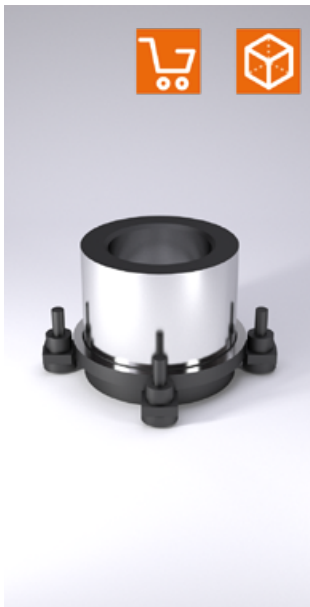
= 2081.34.

Diameter of conduit d_1 38 mm = 038.

Classification TOL yellow = 10

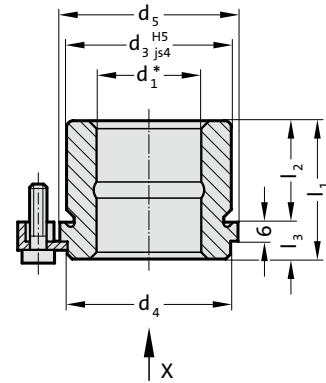
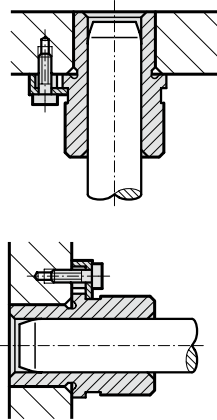
Order No = 2081.34. 038. 10

HEADED GUIDE BUSH, SINTERED FERRITE CARBONITRIDED WITH LONG-TERM LUBRICATION, ISO 9448-6



Mounting example

2081.35.



Material:

Sintered ferrite of high purity, carbonitrided, long-term lubrication

Execution:

Bearing surfaces and outside diameter precision ground.

Note:

The attachment is with 3 Screw clamp, from $\varnothing d_1 = 38$ with 4 Screw clamp, which are included in delivery (Order No: 207.45 - Screw clamp incl. socket cap screw DIN 6912, Head $\varnothing 13$).

☞ Notes on sliding type guides at the beginning of chapter D.

*☞ Bearing clearance see pairing classification at the beginning of chapter D.

☞ Matching guide combinations, see selection matrix at the beginning of chapter D.

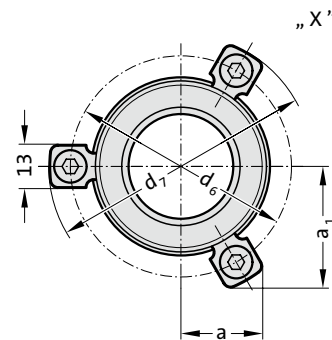
☞ Assembly guide lines / Dimensional requirements and tolerances at the end of chapter D.

Tolerance range:

yellow = .10

green = .20

red = .30



2081.35. Headed guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-6

d_1	19 20	24 25	30 32	38 40	48 50	60 63
d_3	32	40	48	58	70	85
d_4	32	40	48	58	70	85
d_5	40	48	56	66	80	95
d_6	52	60	67	77	91	106
d_7	64.7	72.7	79.7	89.7	103.7	118.7
a	20.7	22.65	24.4	35.3	40.2	45.5
a_1	30	33.4	36.4	35.3	40.2	45.5
l_1	35	35	42	52	65	80
l_2	23	23	30	37	47	60
l_3	12	12	12	15	18	20

Ordering Code (example):

Headed guide bush, sintered ferrite carbonitrided with long-term lubrication, ISO 9448-6

= 2081.35.

Diameter of conduit d_1

38 mm = 038.

Classification TOL

yellow = 10

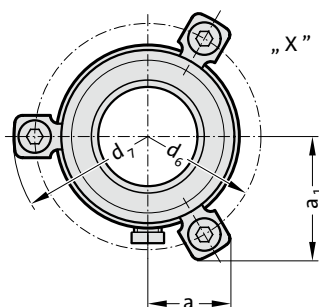
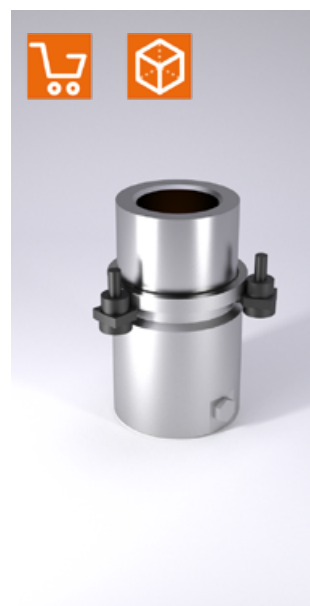
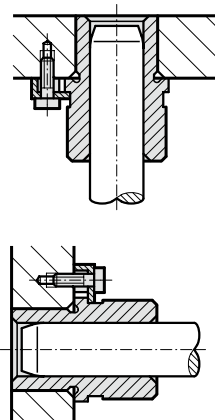
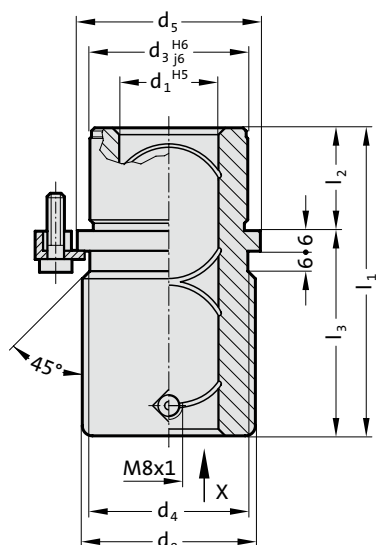
Order No

= 2081.35.038.10

HEADED GUIDE BUSH ECO-LINE, BRONZEPLATED, ISO 9448-6

2081.91.

Mounting example



Material:

Steel, d₃ induction hardened

Execution:

Bronze coated internal bore.

Outside diameter fine-ground.

Note:

The attachment is with 3 Screw clamp, from $\varnothing d_1 = 38$ with 4 Screw clamp, which are included in delivery (Order No: 207.45 - Screw clamp incl. socket cap screw DIN 6912, Head $\varnothing 13$).

Lubrication via funnel lubricating nipple with thread DIN 3405-A M8x1.

Notes on sliding type guides at the beginning of chapter D.

Matching guide combinations, see selection matrix at the beginning of chapter D.

Assembly guide lines / Dimensional requirements and tolerances at the end of chapter D.

2081.91. Headed guide bush ECO-LINE, bronzeplated, ISO 9448-6

d ₁	19 20	24 25	30 32	38 40	48 50	60 63	80
d ₃	32	40	48	58	70	85	105
d ₄	32	40	48	58	70	85	105
d ₅	40	48	56	66	80	95	118
d ₆	52	60	67	77	91	106	129
d ₇	64.7	72.7	79.7	89.7	103.7	118.7	141
d ₈	39	46	53	63	77	92	115
a	20.7	22.7	24.4	35.3	40.2	45.5	54.5
a ₁	30.3	33.4	36.4	35.3	40.2	45.5	54.5
l ₁	59	79	93	108	127	150	150
l ₂	23	23	30	37	47	60	60
l ₃	36	56	63	71	80	90	90

Ordering Code (example):

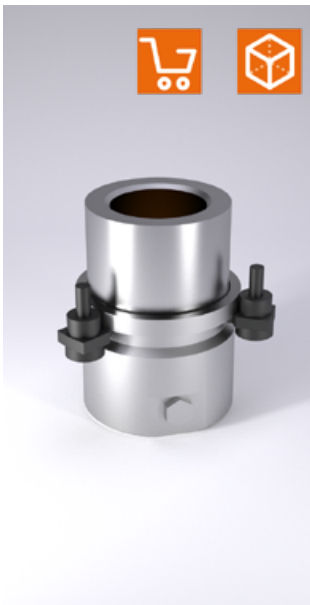
Headed guide bush ECO-LINE,
bronzeplated, ISO 9448-6

= 2081.91.

Diameter of conduit d₁ 38 mm = 038

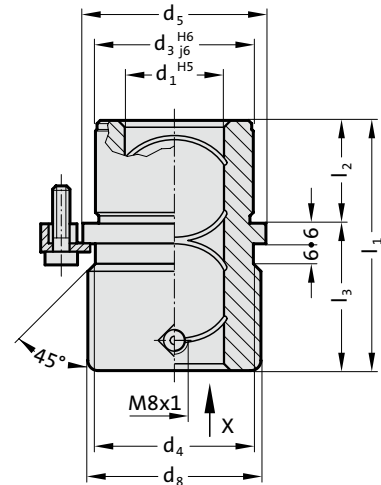
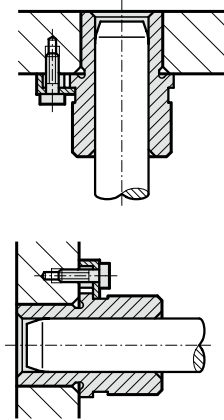
Order No = 2081.91. 038

HEADED GUIDE BUSH ECO-LINE, BRONZEPLATED, ISO 9448-6



Mounting example

2081.94.



Material:

Steel, d₃ induction hardened

Execution:

Bronze coated internal bore.
Outside diameter fine-ground.

Note:

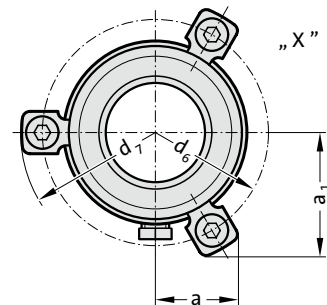
The attachment is with 3 Screw clamp, from $\varnothing d_1 = 38$ with 4 Screw clamp, which are included in delivery (Order No: 207.45 - Screw clamp incl. socket cap screw DIN 6912, Head $\varnothing 13$).

Lubrication via funnel lubricating nipple with thread DIN 3405-A M8x1.

☞ Notes on sliding type guides at the beginning of chapter D.

☞ Matching guide combinations, see selection matrix at the beginning of chapter D.

☞ Assembly guide lines / Dimensional requirements and tolerances at the end of chapter D.



2081.94. Headed guide bush ECO-LINE, bronzeplated, ISO 9448-6

d ₁	19 20	24 25	30 32	38 40	48 50	60 63	80
d ₃	32	40	48	58	70	85	105
d ₄	32	40	48	58	70	85	105
d ₅	40	48	56	66	80	95	118
d ₆	52	60	67	77	91	106	129
d ₇	64.7	72.7	79.7	89.7	103.7	118.7	141
d ₈	39	46	53	63	77	92	115
a	20.7	22.7	24.4	35.3	40.2	45.5	54.5
a ₁	30.3	33.4	36.4	35.3	40.2	45.5	54.5
l ₁	43	59	75	82	97	116	120
l ₂	23	23	30	37	47	60	60
l ₃	20	36	45	45	50	56	60

Ordering Code (example):

Headed guide bush ECO-LINE,
bronzeplated, ISO 9448-6 = 2081.94.
Diameter of conduit d₁ 38 mm = 038
Order No = 2081.94. 038