

导向元件按照 ISO/DIN/AGATHON标准设计

- 用于模具，仪器和机械结构
- 微型滚珠导向, d1直径3-12mm
- 滑动和滚珠导向用于轴向及径向移动, d1直径 12-63mm
- 滚针导向用于轴向移动, 高强度和高载荷, d1直径 15-63mm
- 衬套保持架系统, 可移动式或者固定式, 导柱轴承
- 为每一次的应用提供最好的表现

Guide elements according to ISO/DIN/AGATHON Standards

- For the tool, apparatus and machine construction
- Miniature ball guides, d1 3 to 12mm
- Slide and ball guides for axial and radial movements, d1 12 to 63mm
- Roller guides for axial movements, high stiffness and load, d1 15 to 63mm
- Cage retainer systems, movable or fixed, pillar bearing
- For each application the best execution



导向元件三件套图片显示

微型滚珠导向, d1直径3-12mm



Image directory, grouped

Miniature guide elements, d1 3 to 12mm

导向元件按照ISO/DIN/AGATHON标准设计, d1直径 12-63mm

导柱直接压入

Guide elements ISO/DIN/AGATHON Standards, d1 12 to 63mm

Guide pillars straight to press-in



"快卸型"导柱

"Quick-change" guide pillars



导柱固定在导向板上 (弯曲方程 / 3.22)

Guide pillars for fixing on the guide plate
(Bending equations / 3.22)



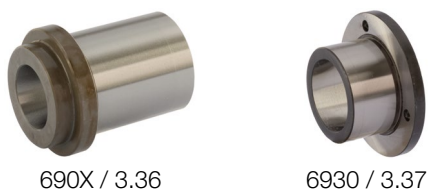
衬套保持架系统, 可移动式 and 固定式

Cage retaining systems, movable and fixed



为导柱特别设计的带锥度的导套

Retaining bushes with taper for guide pillars



滑动导套

Slide guide bushes



701X / 3.38



702X / 3.40



716X / 3.42

滚珠衬套

Ball cages



7611 / 3.48



7621 / 3.51



7631 / 3.52

滚针衬套

Roller cages



7660 / 3.54



7663 / 3.57

自润式导套

Antifriction guide bushes

导套

Guide bushes



780X / 3.58



781X / 3.60



7820 / 3.61

法兰型导套

Guide bush with flange



730X / 3.44

帽沿式导套

Headed guide bushes



7840 / 3.63



785X / 3.64

导柱轴承（装配供货）

Pillar bearings



755 / 3.46



756 / 3.47

附件

Accessories



8001 / 3.66



8002 / 3.67

已停产导向元件

Discontinued guide elements



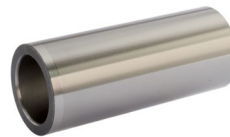
650 / 3.70



761 / 3.71



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导向元件按照ISO/DIN/AGATHON标准设计

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微型滚珠导向元件按照 AGATHON-标准

- 对于小型工具，测量系统，设备和机器
- 滚针直径 3 到12mm
- 自由运动
- 平稳、顺滑运行
- 高精度
- 取决于预加载, 成组使用

Miniature ball guide elements according to AGATHON Standards

- For small tools, measuring systems, devices and machines
- Pillar diameter 3 to 12 mm
- Free of play
- Smooth-running
- Precise
- Depending on the preload, paired



直线导柱

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度:
≤ ø6 700...800HV10
> ø6 62+2HRC
整体淬火
- 直径公差
d1= ISO h3
超精磨

安装建议:

- 安装定位孔精度 ISO N5

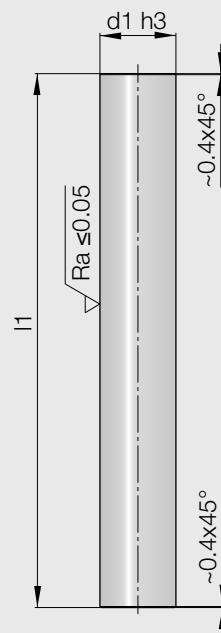
Guide pillar straight

Technical data:

- Material: 1.3505 (100Cr6)
- Hardness:
≤ ø6 700...800HV10
> ø6 62+2HRC
through hardened
- Diameter tolerance
d1= ISO h3
superfinish ground

Assembly advice:

- Assembly in location bore
ISO N5



订单示例:

导柱
d1= 5, l1= 60
6500.005.060

Order example:

Guide pillar
d1= 5, l1= 60
6500.005.060

编号	Art.-Nr.	d1	l1
6500.003.030		*3	30
6500.003.040			40
6500.003.050			50
<i>6500.003.060</i>			60
<i>6500.003.080</i>			80
6500.003.100			100
6500.004.030		*4	30
6500.004.040			40
6500.004.050			50
<i>6500.004.060</i>			60
<i>6500.004.080</i>			80
6500.004.100			100

编号	Art.-Nr.	d1	l1
6500.005.030		*5	30
6500.005.040			40
6500.005.050			50
6500.005.060			60
6500.005.080			80
6500.005.100			100
6500.006.040		*6	40
6500.006.050			50
6500.006.060			60
6500.006.080			80
6500.006.100			100
6500.006.120			120

编号	Art.-Nr.	d1	l1
6500.008.040		*8	40
6500.008.050			50
6500.008.060			60
6500.008.080			80
6500.008.100			100
6500.008.120			120
6500.008.140			140
6500.010.050		*10	50
6500.010.060			60
6500.010.080			80
6500.010.100			100
6500.010.120			120
6500.010.140			140
6500.010.160			160

编号	Art.-Nr.	d1	l1
6501.012.060		12	*60
6501.012.080			80
6501.012.100			100
6501.012.120			*120
6501.012.140			140
6501.012.160			*160
6501.012.180			*180

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
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* = ISO/DIN标准以外推荐尺寸
* = Size resp. length outside ISO/DIN

黄铜滚珠衬套

技术参数:

- 衬套材料: 2.0401 (CuZn-39Pb3)
- 滚珠材料: 1.3505 (100Cr6)
- 滚珠 ISO3290, 等级 G10
- K = 滚珠编号
- C = 载荷N/滚珠衬套 (标准值)

使用:

- 特殊尺寸/材料, 可按客户要求定制
- 不锈钢滚珠衬套, 可选。

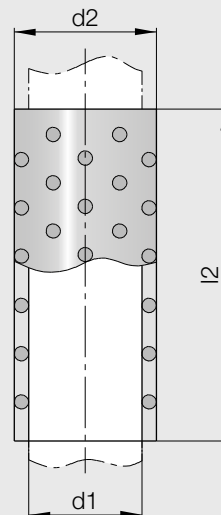
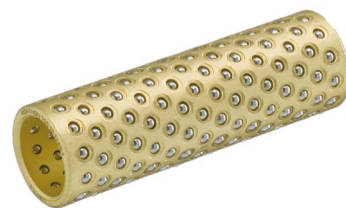
Ball cage in brass

Technical data:

- Cage material: 2.0401 (CuZn39Pb3)
- Ball material: 1.3505 (100Cr6)
- Ball ISO3290, grade G10
- K = No. of balls
- C = Load in N per ball cage (standard value)

Execution:

- Special sizes/materials on request
- Cages with balls in stainless material are available on request



订单示例:

黄铜滚珠衬套
d1= 5, l2= 20
7650.005.020

Order example:

Ball cage in brass
d1= 5, l2= 20
7650.005.020

编号	Art.-Nr.	d1	d2	l2	K	C
7650.003.010		*3	5	10	24	14
7650.003.015				15	36	21
7650.003.020				20	54	31
7650.004.010		*4	6	10	24	16
7650.004.015				15	36	24
7650.004.020				20	54	36
7650.005.010		*5	7	10	32	28
7650.005.015				15	48	42
7650.005.020				20	72	64
7650.005.025				25	88	78
7650.006.015		*6	9	15	48	88
7650.006.020				20	56	103
7650.006.025				25	72	132
7650.006.030				30	88	161

编号	Art.-Nr.	d1	d2	l2	K	C
7650.008.020		*8	11	20	56	114
7650.008.025				25	64	130
7650.008.030				30	72	146
7650.008.036				36	88	179
7650.008.041				41	104	211
7650.010.021		*10	14	21	48	170
7650.010.025				25	56	198
7650.010.030				30	72	254
7650.010.036				36	88	311
7650.010.042				42	104	367
7650.010.051				51	128	452
7651.012.020		12	16	20	72	350
7651.012.028				28	108	525
7651.012.036				36	132	641
7651.012.042				42	156	758
7651.012.051				51	192	933

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* = Size resp. length outside ISO/DIN

带胶水槽的直线导套

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
- 直径公差
d3= ISO js4
- 倒角 f8 便于中心定位

安装建议:

- 定位孔加胶水 ISO H5/JS4
- 用Loctite 648胶水固定
- **不要压入导套**, 这将会引起内径收缩, 以及额外的机加工。

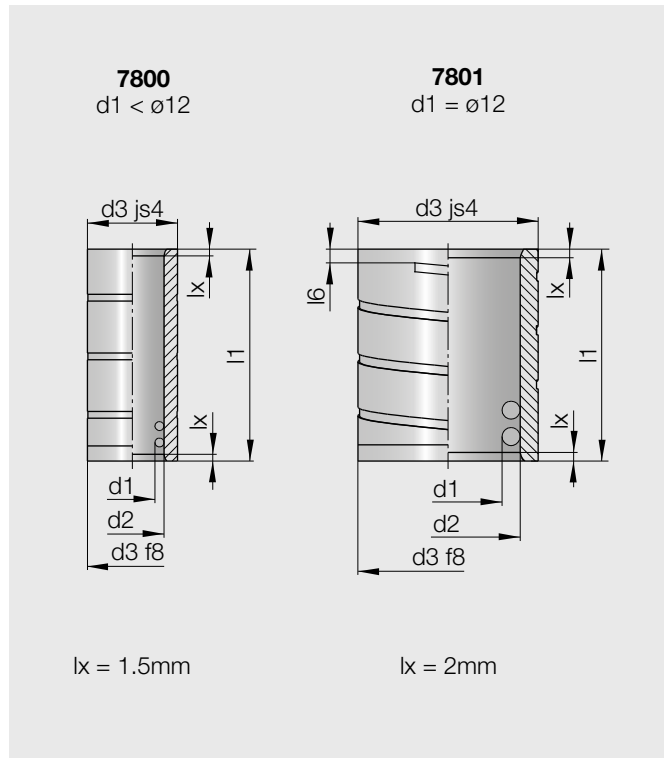
Guide bush straight with glue grooves

Technical data:

- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
- Diameter tolerance
d3= ISO js4
- Chamfer f8 as assembly centering aid

Assembly advices:

- Glue into location bore ISO H5/JS4
- Secure with Loctite 648
- **Do not press-in** the guide bush. This may cause a contraction of the inside diameter, and additional machining is necessary



订单示例:

导套
d1= 5, l1= 20
7800.005.020

Order example:

Guide bush
d1= 5, l1= 20
7800.005.020

编号	Art.-Nr.	d1	d2	d3	l1	l6
7800.003.010		*3	5	8	10	-
7800.003.020					20	-
7800.004.015		*4	6	8	15	-
7800.004.020					20	-
7800.005.010		*5	7	10	10	-
7800.005.015					15	-
7800.005.020					20	-
7800.005.025					25	-
7800.006.015		*6	9	12	15	-
7800.006.020					20	-
7800.006.025					25	-
7800.006.030					30	-

编号	Art.-Nr.	d1	d2	d3	l1	l6
7800.008.020		*8	11	15	20	-
7800.008.025					25	-
7800.008.030					30	-
7800.008.035					35	-
7800.008.040					40	-
7800.010.020		*10	14	20	20	-
7800.010.025					25	-
7800.010.030					30	-
7800.010.035					35	-
7800.010.040					40	-
7800.010.045					45	-
7801.012.023		12	16	22	23	4
7801.012.030					30	4
7801.012.037					37	5
7801.012.047					*47	7

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
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滑动，滚珠和滚针导向元件

- 导柱直径 12 到63mm
- 采用自润烧结铁和表面镀铜的钢材料制成的滑动导套，适用于长行程及低滑动公差的应用。
- 采用铝，黄铜和塑料制成的滚珠衬套，提供自由运动解决方案。
- 螺旋滚珠衬套，采用独立双螺旋排列设计，便于载荷平滑进入，或适用于高径向速度的应用。
- 采用不同轮廓形状滚针的滚针衬套，适用于高负载及高强度要求的应用。

Slide, ball and roller guide elements

- Pillar diameter 12 to 63 mm
- Self-lubricating sintered iron - and bronze plated steel sliding bushes for long strokes and low sliding clearance
- Ball cages made of aluminum, brass and plastic for free of play solutions
- Balls spiral-shaped, respectively double spiral-shaped arranged, for smooth entry into preload or high radial speed
- Roller cages with different profile rollers for high load and stiffness



直线导柱

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
≤ Ø12 整体淬火
> Ø12 感应淬火,
深度1.5+1mm
- 直径公差
d1= ISO h3
超精磨
- 倒角 f8 便于中心定位

安装建议:

- 压入定位孔 ISO N5

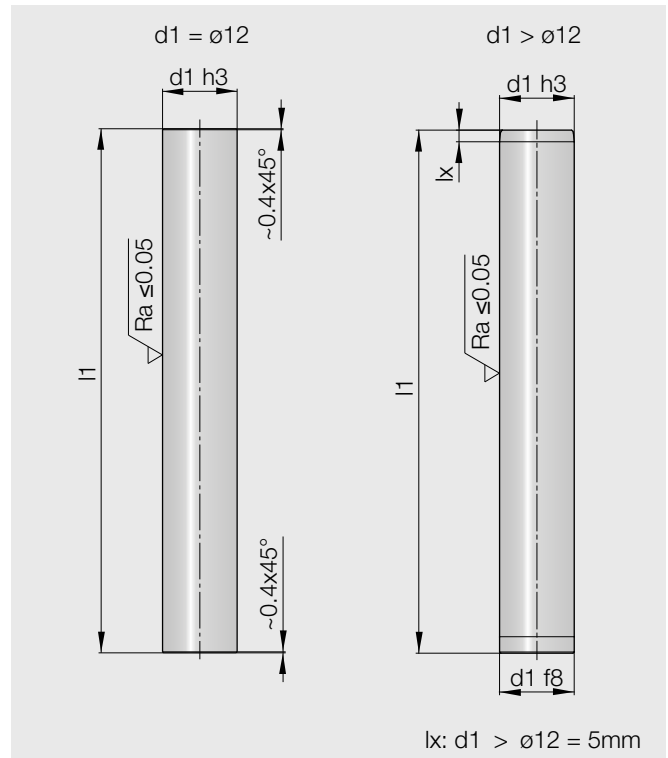
Guide pillar straight

Technical data:

- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
≤ Ø12 through hardened
> Ø12 induction hardened,
depth 1.5+1mm
- Diameter tolerance
d1= ISO h3
superfinish ground
- Chamfer f8 as assembly
centering aid

Assembly advice:

- Press-in in location bore
ISO N5



订单示例:

导柱
d1= 25, l1= 200
6501.025.200

Order example:

Guide pillar
d1= 25, l1= 200
6501.025.200

编号	Art.-Nr.	d1	l1
6501.012.060		12	*60
6501.012.080			80
6501.012.100			100
6501.012.120			*120
6501.012.140			140
6501.012.160			*160
6501.012.180			*180
6501.015.090		15	90
6501.015.100			100
6501.015.112			112
6501.015.125			125
6501.015.140			140
6501.015.160			160
6501.015.180			180

编号	Art.-Nr.	d1	l1
6501.016.090		16	90
6501.016.100			100
6501.016.112			112
6501.016.125			125
6501.016.140			140
6501.016.160			160
6501.016.180			180
6501.019.112		19	112
6501.019.125			125
6501.019.140			140
6501.019.160			160
6501.019.180			180
6501.019.200			200
6501.019.224			224

编号	Art.-Nr.	d1	l1
6501.020.112		20	112
6501.020.125			125
6501.020.140			140
6501.020.160			160
6501.020.180			180
6501.020.200			200
6501.020.224			224
6501.024.125		24	125
6501.024.140			140
6501.024.160			160
6501.024.180			180
6501.024.200			200
6501.024.224			224
6501.024.250			250
6501.024.280			280

编号	Art.-Nr.	d1	l1
6501.025.125		25	125
6501.025.140			140
6501.025.160			160
6501.025.180			180
6501.025.200			200
6501.025.224			224
6501.025.250			250
6501.025.280			280
6501.030.125		30	125
6501.030.140			140
6501.030.160			160
6501.030.180			180
6501.030.200			200
6501.030.224			224
6501.030.250			250
6501.030.280			280
6501.030.315			315

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
可按要求供货 / *Italic = upon request*

* = ISO/DIN标准以外推荐尺寸
* = Size resp. length outside ISO/DIN

推荐尺寸 (粗体显示) / **Bold = preferred dimensions** * = ISO/DIN标准以外推荐尺寸
 可按要求供货 / *Italic = upon request* * = Size resp. length outside ISO/DIN

带衬套保持架安装孔的直线导柱

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
感应淬火, 深度1.5+1mm
- 直径公差
d1= ISO h3
超精磨
- 倒角 f8 便于中心定位

安装建议:

- 安装定位孔精度 ISO N5

其他要求:

- 衬套保持架参见 标准 6640

Guide pillar straight with bore for cage retainer

Technical data:

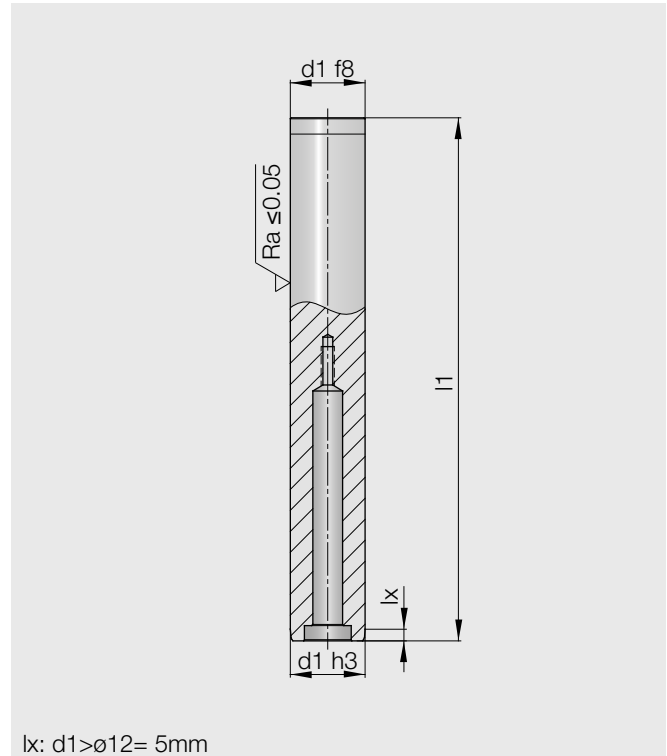
- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
induction hardened, depth 1.5+1mm
- Diameter tolerance
d1= ISO h3
superfinish ground
- Chamfer f8 as assembly centering aid

Assembly advice:

- Assembly in location bore ISO N5

Miscellaneous:

- Cage retainer see Standard 6640



订单示例:

带衬套保持架安装孔的直线导柱

d1= 40, l1= 200
6509.040.200

Order example:

Guide pillar with bore for cage retainer

d1= 40, l1= 200
6509.040.200

编号	Art.-Nr.	d1	l1
6509.032.140		32	140
6509.032.160			160
6509.032.180			180
6509.032.200			200
6509.032.224			224
6509.032.250			250
6509.032.280			280
6509.032.315			315
6509.040.160		40	160
6509.040.180			180
6509.040.200			200
6509.040.224			224
6509.040.250			250
6509.040.280			280
6509.040.315			315
6509.040.400			400

编号	Art.-Nr.	d1	l1
6509.050.180		50	180
6509.050.200			200
6509.050.224			224
6509.050.250			250
6509.050.280			280
6509.050.315			315
6509.050.355			355
6509.050.400			400
6509.050.500			500
6509.063.280		63	280
6509.063.315			315
6509.063.355			355
6509.063.400			400
6509.063.500			500

编号	Art.-Nr.	d1	l1

编号	Art.-Nr.	d1	l1

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**

可按要求供货 / *Italic = upon request*

带锥度的导柱

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
感应淬火, 深度1.5+1mm
- 直径公差
d1= ISO h3
超精磨

安装建议:

标准 6531

- $\varnothing$ 25, 40 限位导套标准 6901
- $\varnothing$ 20, 30, 32, 50, 63 限位导套标准 6902

标准 6532

- $\varnothing$ 25, 40 限位导套标准 6902
- $\varnothing$ 50, 63 限位导套标准 6904

限位导套 690X, 参见章节 3.36

采购导柱包括以下附件:

- 螺丝和垫圈

订单示例:

导柱

d1= 25, l1= 160
短锥面, l2= 35
6531.025.160
长锥面, l2= 45
6532.025.160

Guide pillar with taper

Technical data:

- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
induction hardened, depth 1.5+1mm
- Diameter tolerance
d1= ISO h3
superfinish ground

Assembly advices:

Standard 6531

- $\varnothing$ 25 and 40 in retaining bush Standard 6901
- $\varnothing$ 20, 30, 32, 50 and 63 in retaining bush Standard 6902

Standard 6532

- $\varnothing$ 25 and 40 in retaining bush Standard 6902
- $\varnothing$ 50 and 63 in retaining bush Standard 6904

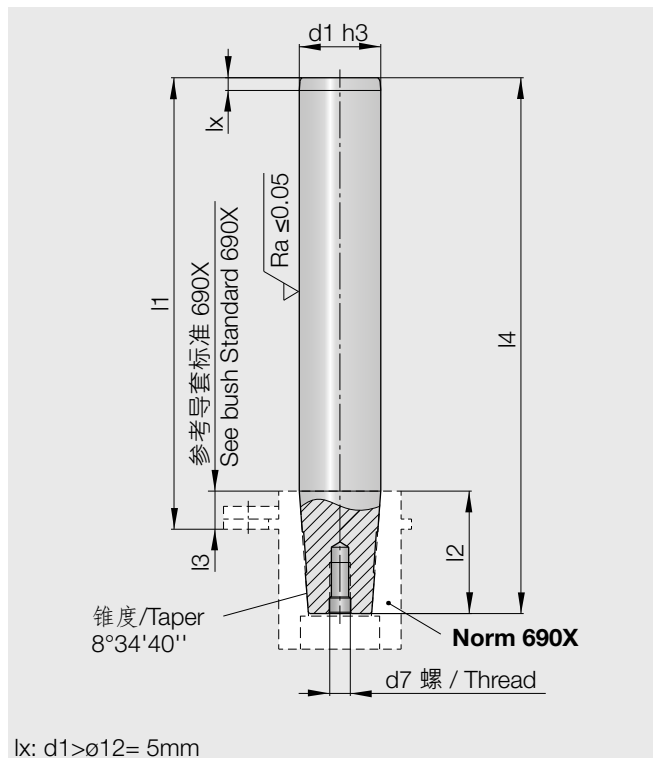
Retaining bushes 690X, see page 3.36

Extent of supply incl.:

- Screw and washer

Order example:

Guide pillar
d1= 25, l1= 160
short taper, l2= 35
6531.025.160
long taper, l2= 45
6532.025.160



编号	Art.-Nr.	d1	d7	l1	l2	l4
6531.020.112		20	M6x17	112	38	138
6531.020.125				125		151
6531.020.140				140		166
6531.025.100		*25	M8x20	100	35	123
6531.025.125				125		148
6531.025.140				140		163
6531.025.160				160		183
6531.025.180				180		203
6532.025.125		*25	M8x20	125	45	158
6532.025.140				140		173
6532.025.160				160		193

编号	Art.-Nr.	d1	d7	l1	l2	l4
6531.030.125		30	M8x20	125	48	158
6531.030.140				140		173
6531.030.160				160		193
6531.030.180				180		213
6531.030.200				200		233
6531.030.224				224		257
6531.032.125		*32	M8x20	125	48	158
6531.032.140				140		173
6531.032.160				160		193
6531.032.180				180		213
6531.032.200				200		233
6531.032.224				224		257

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**

可按要求供货 / *Italic = upon request*

* = 类似 AFNOR

* = similar to AFNOR

[illegible]

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
 可按要求供货 / *Italic = upon request*

* = 类似 AFNOR
* = similar to AFNOR

带母螺纹的直线导柱

技术参数:

- 材料: 1.3505 (100Cr6), 1.7131 (16MnCr5)
- 硬度: 62+2HRC
≤ ø12mm 1.7131, 表面硬化 0.5-0.8mm
≥ ø15mm 1.3505, 感应淬火, 深度1.5+1mm
- 直径公差
d1= ISO h3
超精磨
- 倒角 f8 便于中心定位

安装建议:

- 安装定位孔精度 ISO M5

其他要求:

- 固定式衬套保持架, 参见标准 8003

Guide pillar straight with female thread

Technical data:

- Material: 1.3505 (100Cr6), 1.7131 (16MnCr5)
- Hardness: 62+2HRC
≤ ø12mm 1.7131, case hardened 0.5-0.8mm
≥ ø15mm 1.3505, induction hardened, depth 1.5+1mm
- Diameter tolerance
d1= ISO h3
superfinish ground
- Chamfer f8 as assembly centering aid

Assembly advice:

- Assembly in location bore ISO M5

Miscellaneous:

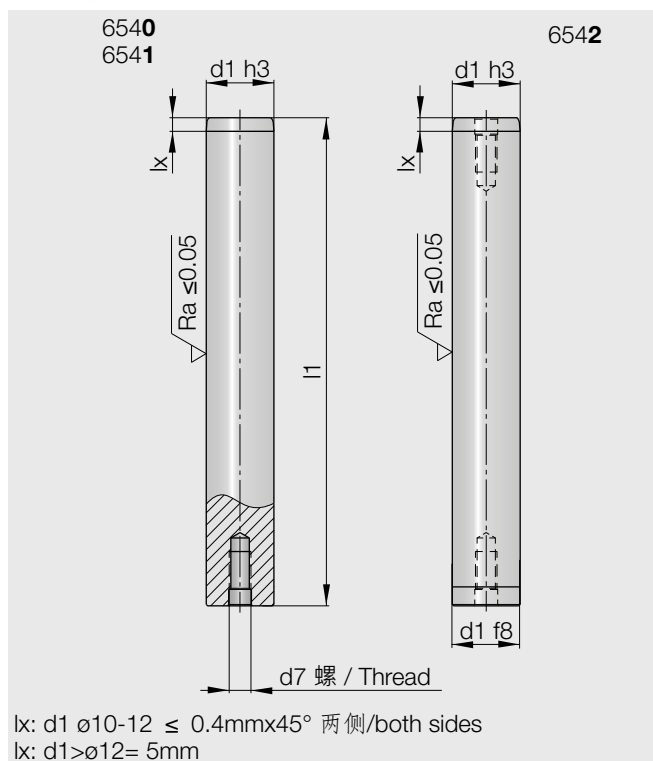
- Cage retainer fixed, see Standard 8003

订单示例:

导柱
d1= 32, l1= 160
压入端母螺纹
6541.032.160
两端都有母螺纹
6542.032.160

Order example:

Guide pillar
d1= 32, l1= 160
female thread on press-in side
6541.032.160
female thread on both sides
6542.032.160



编号	Art.-Nr.	d1	d7	l1
6540.010.100		*10	M5x13	100
6541.012.100		*12	M6x17	100
6541.012.140				140
6541.015.090		*15	M6x17	90
6541.015.100				100
6541.015.112				112
6541.015.125				125
6541.015.140				140
6541.015.160				160
6541.015.180				180

编号	Art.-Nr.	d1	d7	l1
6541.016.090		*16	M6x17	90
6541.016.100				100
6541.016.112				112
6541.016.125				125
6541.016.140				140
6541.016.160				160
6541.016.180				180
654_019.112		19	M8x20	112
6542.019.125				125
6542.019.140				140
6542.019.160				160
654_019.180				180
654_019.200				200
654_019.224				224

编号	Art.-Nr.	d1	d7	l1
6542.020.112		20	M8x20	112
6542.020.125				125
6542.020.140				140
6542.020.160				160
6542.020.180				180
654_020.200				200
6542.020.224				224
6542.024.125		24	M8x20	125
6542.024.140				140
6540.024.150				150
6542.024.160				160
654_024.180				180
6542.024.200				200
654_024.224				224
654_024.250				250
654_024.280				280

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
可按要求供货 / *Italic = upon request*

* = ISO/DIN标准以外推荐尺寸
* = Size resp. length outside ISO/DIN

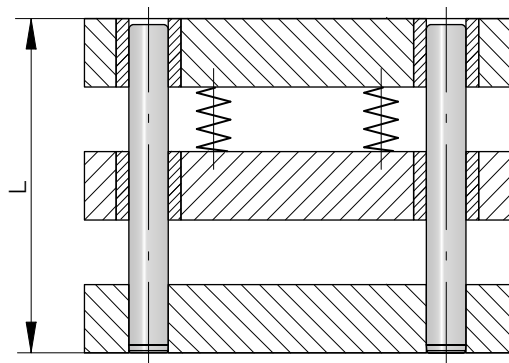
推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
 可按要求供货 / *Italic = upon request*

* = ISO/DIN标准以外推荐尺寸
* = Size resp. length outside ISO/DIN

十字型导柱的优势

带有导向板模具的弯曲方程

经典解决方案:

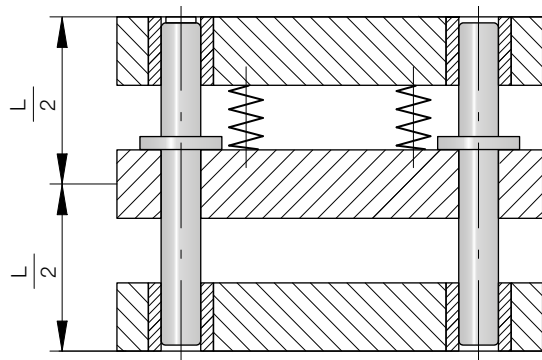


优势:

- 较低的标准件价格

十字型导柱的解决方案:

(导柱安装在导向板上)



定位孔定位时的角度误差对力矩载荷有轻微影响—>传统的解决方案的变形量大约8 倍的阿格顿方案的变形量(参考0点).

优势:

- 同样的导柱直径有更高的载荷
- 更高的精度
- 冲压元件的更少磨损
- 更长的模具使用寿命
- 紧凑的模具结构

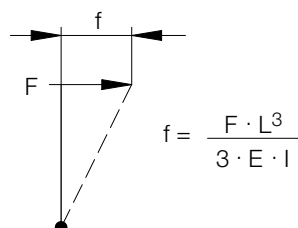
导柱弯曲定义:

E: 杨氏模量
 $E_{\text{steel}} = 208000 \text{ [N/mm}^2\text{]}$
 I: 截面模量
 $I = \pi \cdot d^4 / 64 \text{ [mm}^4\text{]}$
 F: 径向力 [N]
 d: 导柱直径 [mm]
 f: 变形量 [mm]

Benefits of guide pillars with center flange

Bending equations for tools with guide plate

Classical solution:

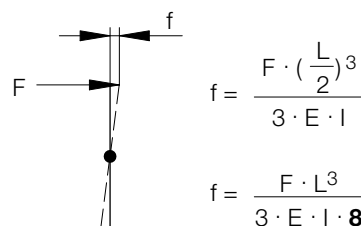


Advantage:

- Lower cost price of the elements

Solution with guide pillar with center flange:

(guide pillar attached to guide plate)



Angle error of the bore and moment loads have a slighter effect --> 8 times less. (Reference to 0-point).

Advantages:

- Higher load for the same pillar diameter
- Higher precision
- Less wear of the cutting elements
- Longer service life of the tools
- Compact tool construction

Definition for pillar bending:

E: Young's modulus
 $E_{\text{steel}} = 208000 \text{ [N/mm}^2\text{]}$
 I: Section modulus
 $I = \pi \cdot d^4 / 64 \text{ [mm}^4\text{]}$
 F: Radial force in [N]
 d: Pillar diameter in [mm]
 f: Deflection in [mm]

十字型导柱

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
感应淬火, 深度 1.5+1mm
- 直径公差
d1= ISO h3
超精磨
d2= ISO js4
- 倒角 f8 便于中心定位

安装建议:

- 安装定位孔精度 ISO K5

其他要求:

- 12 和 13 可按要求变短
- 可按要求定制其他尺寸
- 无螺丝
- 弯曲方程, 见章节 3.22

订单示例:

带定位十字型导柱
d1= 25, l1= 170
6560.025.170

Guide pillar with center flange

Technical data:

- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
induction hardened, depth 1.5+1mm
- Diameter tolerance
d1= ISO h3
superfinish ground
d2= ISO js4
- Chamfer f8 as assembly centering aid

Assembly advice:

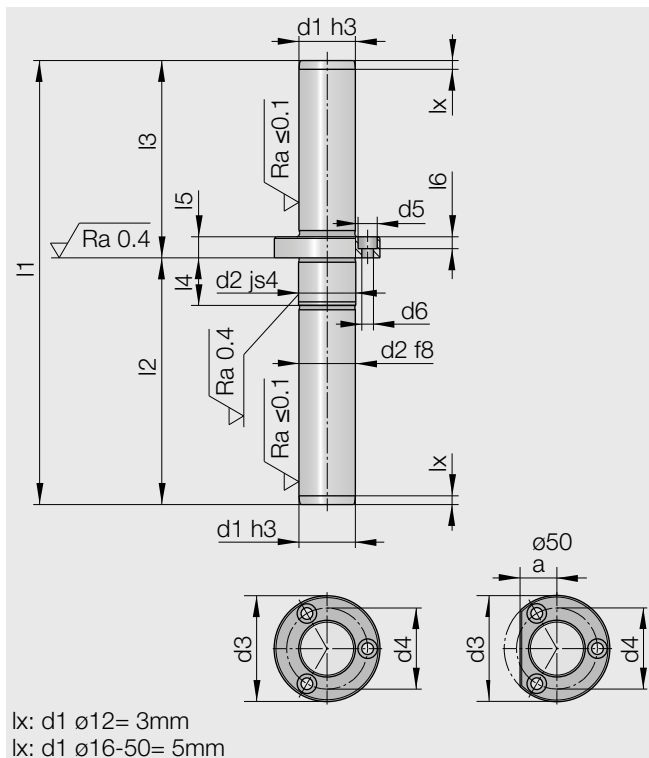
- Assembly in location bore ISO K5

Miscellaneous:

- l2 and l3 can be shortened on request
- Further dimensions on request
- Without screws
- Bending equations, see page 3.22

Order example:

Guide pillar with center flange
d1= 25, l1= 170
6560.025.170



编号	Art.-Nr.	d1	d2	d3	d4	d5	d6	l1	l2	l3	l4	l5	l6	a
6560.012.090		12	13	28	20	6	3.4	90	50	40	12	6	3.4	-
6560.012.120								120	60	60				-
6560.016.132		16	18	38	28	8	4.5	132	70	62	16	8	4.6	-
6560.016.152								152	90	62				-
6560.016.180								180	90	90				-
6560.019.160		19	22	42	32	8	4.5	160	90	70	20	8	4.6	-
6560.019.180								180	110	70				-
6560.019.210								210	110	100				-
6560.025.170		25	26	53	40	11	6.6	170	85	85	25	12	6.8	-
6560.025.200				48	38	8	4.5	200	100	100	22	8	4.6	-
6568.025.200				53	40	11	6.6	200	100	100	25	12	6.8	-
6560.025.212								212	140	72				-
6568.025.230				48	38	8	4.5	230	120	110	22	8	4.6	-
6560.025.254				53	40	11	6.6	254	140	114	25	12	6.8	-
6560.025.275								275	160	115				-

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**

可按要求供货 / *Italic = upon request*

可按要求供货 / *Italic = upon request*

法兰型导柱

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
感应淬火, 深度1.5+1mm
- 直径公差
d1= ISO h3
超精磨
d2= ISO js4
- 倒角 f8 便于中心定位

安装建议:

- 安装定位孔精度 ISO K5

采购导柱包括以下附件:

- 3 个锁紧压块
编号 8001.000.001
- 3 颗固定螺丝
编号 070.00.580

其他要求:

- 可按要求提供安装板
- 可按要求6578型适配于衬套
保持架8003

订单示例:

法兰型导柱
d1= 32, l1= 180
6571.032.180

Guide pillar with flange

Technical data:

- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
induction hardened, depth 1.5+1mm
- Diameter tolerance
d1= ISO h3
superfinish ground
d2= ISO js4
- Chamfer f8 as assembly centering aid

Assembly advice:

- Assembly in location bore ISO K5

Extent of supply incl.:

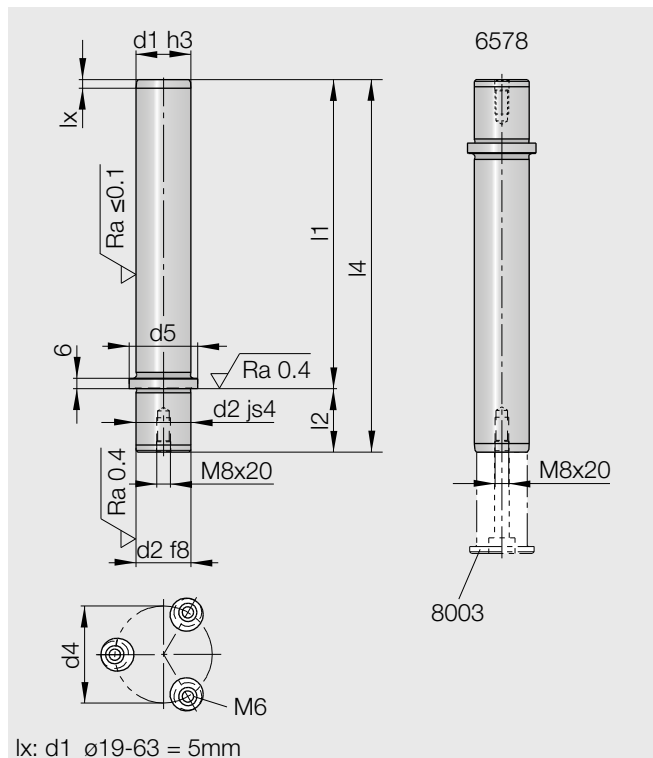
- 3 clamps
Art. No. 8001.000.001
- 3 screws
Art. No. 070.00.580

Miscellaneous:

- Mounting plates on request
- 6578 for cage retainer fixed 8003, on request

Order example:

Guide pillar with flange
d1= 32, l1= 180
6571.032.180



编号	Art.-Nr.	d1	d2	d4	d5	l1	l2	l4
6571.019.100		19	19	42	25	100	23	123
6571.019.112						112		135
6571.019.125						125		148
6571.019.140						140		163
6571.019.160						160		183
6571.019.180						180		203
6571.020.100		20	20	42	25	100	23	123
6571.020.112						112		135
6571.020.125						125		148
6571.020.140						140		163
6571.020.160						160		183
6571.020.180						180		203

编号	Art.-Nr.	d1	d2	d4	d5	l1	l2	l4
6571.024.100		24	24	48	32	100	30	130
6571.024.112						112		142
6571.024.125						125		155
6571.024.140						140		170
6571.024.160						160		190
6571.024.180						180		210
6571.024.200						200		230
6571.024.224						224		254
6571.025.100		25	25	48	32	100	30	130
6571.025.112						112		142
6571.025.125						125		155
6571.025.140						140		170
6571.025.160						160		190
6571.025.180						180		210
6571.025.200						200		230
6571.025.224						224		254

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**

可按要求供货 / *Italic = upon request*

编号	Art.-Nr.	d1	d2	d4	d5	l1	l2	l4
6571.030.112		30	30	56	40	112	37	149
6571.030.125						125		162
6571.030.140						140		177
6571.030.160						160		197
6571.030.180						180		217
6571.030.200						200		237
6571.030.224						224		261
6571.030.250						250		287
6571.030.280						280		317
6571.032.112		32	32	56	40	112	37	149
6571.032.125						125		162
6571.032.140						140		177
6571.032.160						160		197
6571.032.180						180		217
6571.032.200						200		237
6571.032.224						224		261
6571.032.250						250		287
6571.032.280						280		317
6571.038.125		38	38	66	50	125	37	162
6571.038.140						140		177
6571.038.160						160		197
6571.038.180						180		217
6571.038.200						200		237
6571.038.224						224		261
6571.038.250						250		287
6571.038.280						280		317
6571.040.125		40	40	66	50	125	37	162
6571.040.140						140		177
6571.040.160						160		197
6571.040.180						180		217
6571.040.200						200		237
6571.040.224						224		261
6571.040.250						250		287
6571.040.280						280		317

帶中心锥度和环形螺母的导柱

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
- 感应淬火, 深度1.5+1mm
- 直径公差
- d1= ISO h3
- 超精磨

安装建议:

- ## ■ 安装限位导套标准 6930

采购导柱包括以下附件:

- ### ■ 螺母和垫圈

Diverses:

- 12 和 13 可按要求变短
- 可按要求定制
- 弯曲方程, 见章节 3.22

订单示例:

带定位锥和环形螺母的导柱

d1= 25, l1= 244
6580, 025, 244

Guide pillar with center taper and ring nut

Technical data:

- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
induction hardened, depth
1.5+1mm
- Diameter tolerance
d1= ISO h3
superfinish ground

Assembly advice:

- Assembly in retaining bush
Standard 6930

Extent of supply incl.:

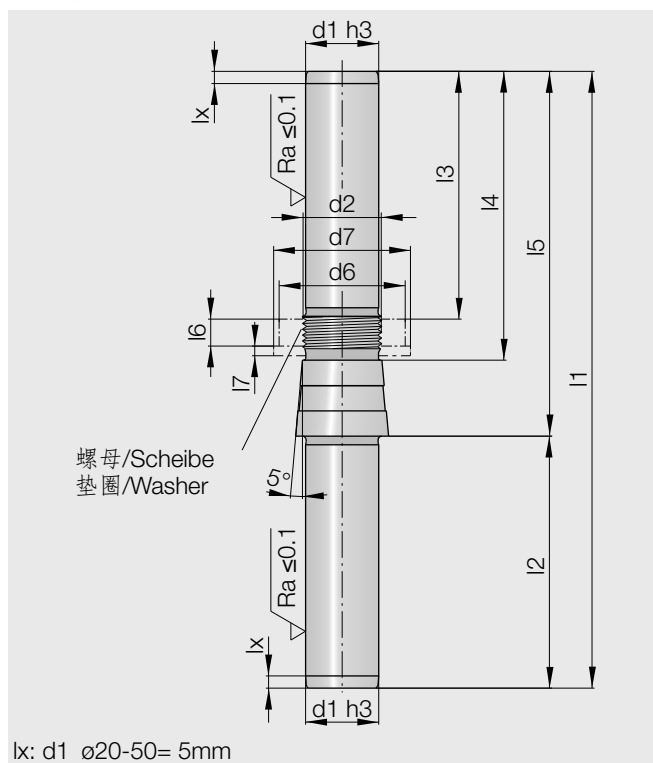
- Nut and washer

Miscellaneous:

- I2 and I3 can be shortened on request
- Further dimensions on request
- Bending equations, see page 3.22

Order example:

Guide pillar with center taper
and ring nut
d1= 25, l1= 244
6580.025.244

[illegible]

推荐尺寸 (粗体显示) / Bold = preferred dimensions

可按要求供货 / *Italic = upon request*

移动型衬套保持系统 (专利)

技术参数:

- 保持系统用于衬套保持器

安装建议:

- 用于铝质或黄铜滚珠衬套
- 衬套尺寸和 C 值可以根据页码 3.31 到 3.35 上的解释定义
- 固定在导柱上的内六角螺丝应该涂 Loctite 243
- 最高工作环境温度 80° C

其他要求:

- 装配到标准导柱 6509 和 6579 上

订单示例:

用于 $\varnothing 32\text{mm}$ 导柱的衬套保持器

d1 = 32, C = 30
6640.032.030

*d1 (xxx): $\varnothing 32\text{mm} = 032$
 $\varnothing 40\text{mm} = 040$
 $\varnothing 50\text{mm} = 050$
 $\varnothing 63\text{mm} = 063$

Movable cage retaining system (patented)

Technical data:

- With retaining system for the cage retainer

Assembly advices:

- For ball cages in aluminum or brass
- Cage design and C value can be determined from the explanations on page 3.31 to 3.35
- The hexagon socket screw should be secured in the guide pillar with Loctite 243
- For a max. ambient temperature of 80°C

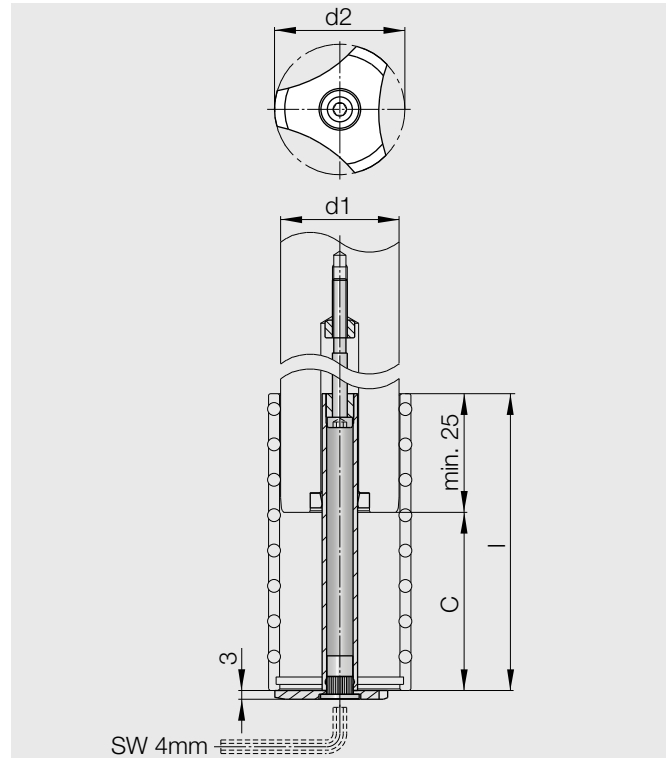
Miscellaneous:

- For assembly into pillars of Standards 6509 and 6579

Order example:

Cage retainer for guide pillar $\varnothing 32\text{mm}$
d1 = 32, C = 30
6640.032.030

*d1 (xxx): $\varnothing 32\text{mm} = 032$
 $\varnothing 40\text{mm} = 040$
 $\varnothing 50\text{mm} = 050$
 $\varnothing 63\text{mm} = 063$



编号 Art.-Nr.	*d1	d2	C	I (衬套长度 / Cage length)
6640.xxx.015	32/40/50/63	d1+4	15	minimum 40
6640.xxx.030	32/40/50/63		30	minimum 55
6640.xxx.040	32/40/50/63		40	minimum 65
6640.xxx.050	32/40/50/63		50	minimum 75
6640.xxx.060	32/40/50/63		60	minimum 85
6640.xxx.070	32/40/50/63		70	minimum 95

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**

可按要求供货 / *Italic = upon request*

CRS描述

CRS 盘采用凹形设计，这样在（工作台上）翻转模具上模板不会损坏CRS系。在倾斜上模板之前，简单定位CRS盘，就是将其中一个凹面与你要倾斜的方向一致。

CRS 被机械锁死在它的最高（接近最高）处。这样使得模具的上模板可以靠在导柱上，而不是悬挂在衬套底部，那样衬套很容易被模具重量损坏。该保持机构在CRS行程的最后3mm位置处触发。因此，CRS 必须预留出6-10mm的安全距离（S），所以在工作行程内，它不会完全进入导柱（已经考虑再加工）。

CRS 在其自身重量下不会伸出。因此，当模具移入或移出压机时，它不会滑落进压机的T形槽或者卡住。模具搬运也容易，因为CRS不会黏住模座底部。

通过CRS 螺丝上的调节环，来获得所需要的安装长度。CRS 必须锁紧直到它停在调节环上。螺丝应该涂 Loctite 螺纹紧固剂以防止松动。

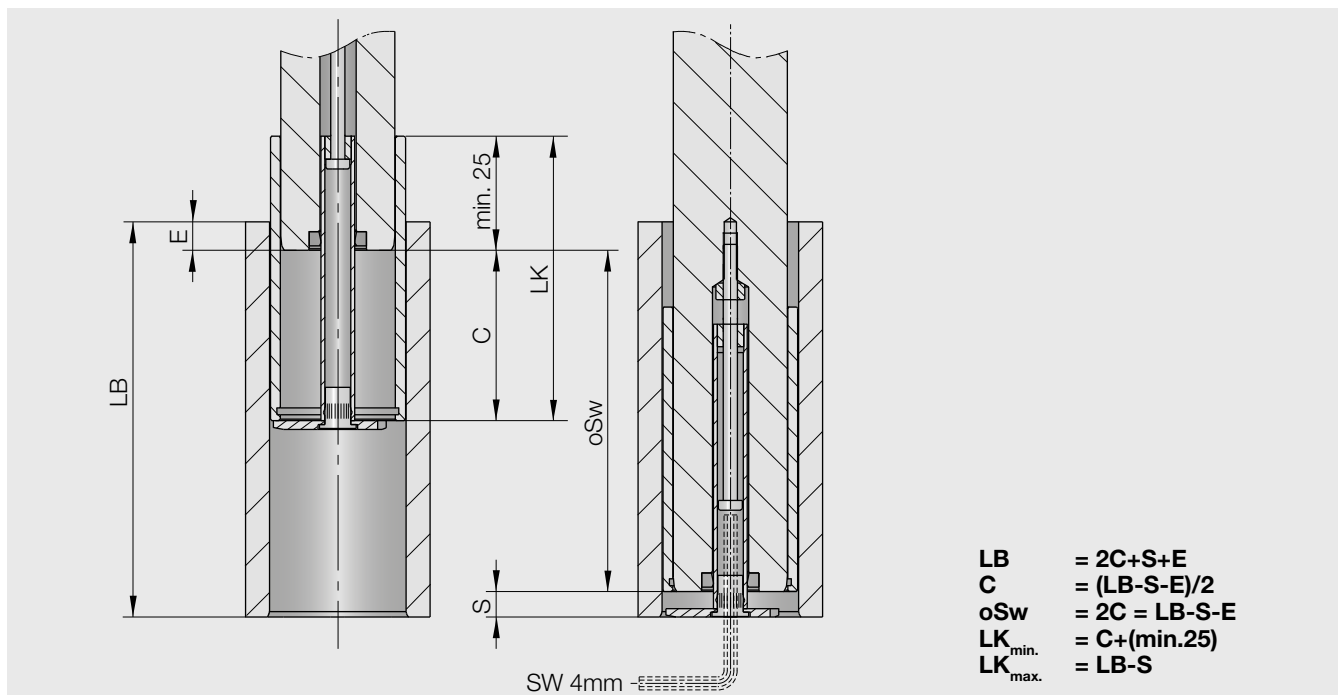
Description of CRS

With the recesses on the CRS disc, the flipping of the tool upper plate (on the bench) can be made possible without damaging the CRS. Before tilting the plate, simply position the disc so that one of the recesses is pointing in the same direction you will tilt.

The CRS is mechanically locked in its uppermost (closed) position. This allows the tool upper plate to lean on the pillars without the cages hanging off the end of them, where they could be damaged by the tool weight. This holding mechanism engages in the last 3mm of the CRS stroke. **Therefore, the CRS has to be laid out with a security distance (S) of 6-10mm, so that in the working stroke it does not completely move into the pillar (take the regrinding into consideration)**

The CRS will not extend under its own weight. Therefore, it will not fall into press T-slots, or get jammed when the tool is slid into or out of the press. Transporting the tool will be easier, because the CRS will not stick out of the bottom of the die shoe.

The adjusting ring on the CRS screw establishes the installation length. The CRS must be tightened until it stops on the adjusting ring. The screw should be secured with Loctite to facilitate retention.



选定元件用于CRS-应用

LB = 导套长度
LK = 衬套长度
C = CRS的最大伸出长度（见表格）
oSw = 预载荷下导柱的最大行程
E = 导柱和导套的导入长度 = 7mm
S = 安全距离6-10mm

Determination of the elements for CRS application

LB = Length of bushing
LK = Length of cage
C = Run-out length of the CRS (see table)
oSw = max. stroke of pillar in the preload
E = Run-in geometry pillar and bushing = 7mm
S = Safety distance 6-10mm

滚珠衬套选型索引

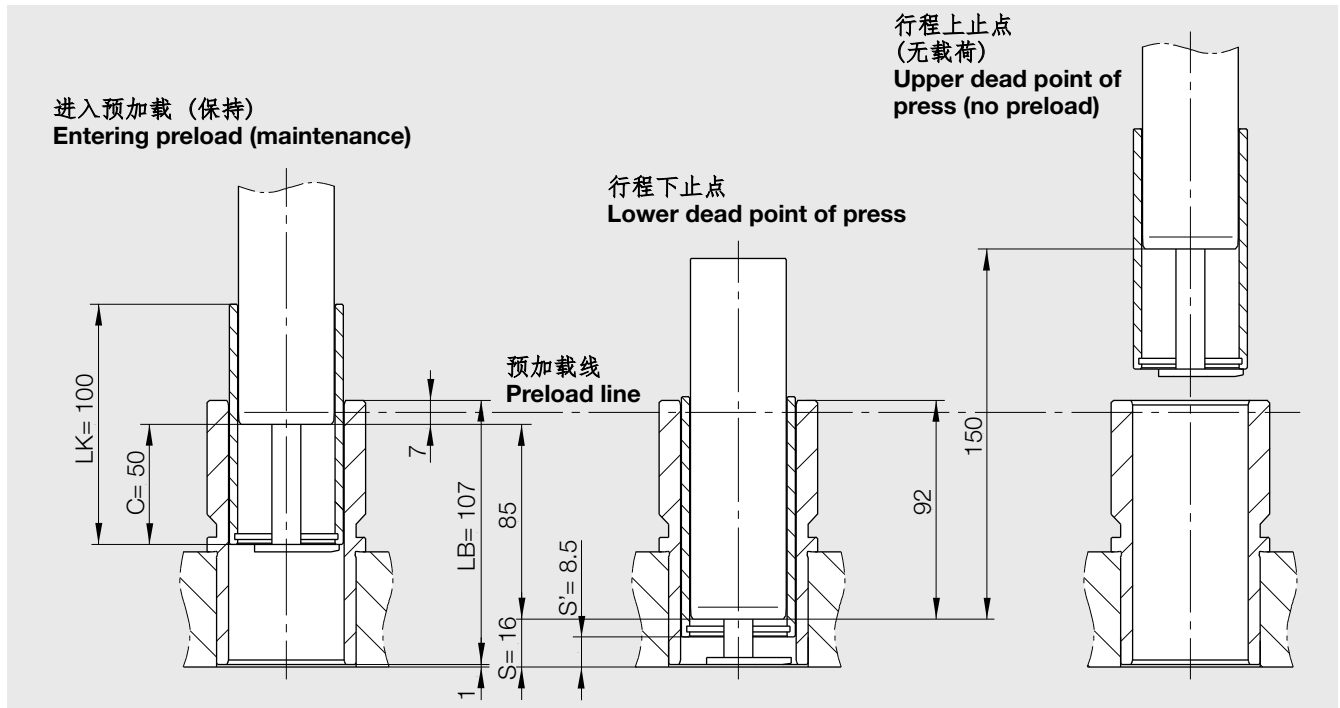
示例:

每次行程衬套都要退出预加载: 采用标准件 7611!

Determining the ball cage

Example:

Cage completely exits the preload with each stroke:
Use cage Standard 7611!

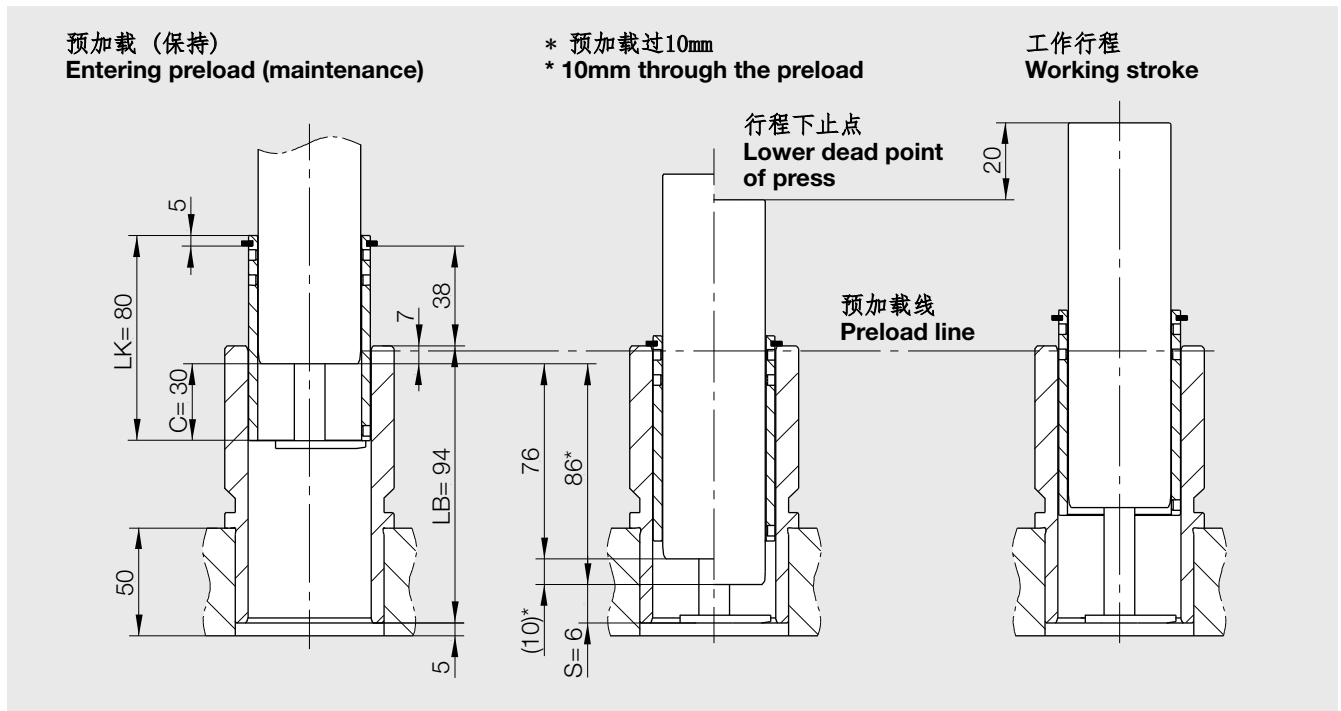


示例:

衬套只在预加载的情况下使用：采用标准衬套 7631（带外部挡圈）。此挡圈可以防止衬套爬行。
此标准衬套7631仅适用于每次行程衬套不需要退去导套！

Example:

Cage moves out of the preload only for revision, etc.:
Use cage Standard 7631 (with external circlip). The circlip prevents the cage from creeping
Only use this cage Standard if the cage does not exit the bush with each stroke!



导向元件选型示例:

在检查模具状态时(不是每次行程), 需要完全打开模具。例如: 仅仅在检查模具时, 衬套需要退去导套。

每分钟行程:	200
工作行程:	20mm
上下模板厚度:	各50mm
导柱直径:	40mm
最大开模高度:	350mm
最小合模高度:	190mm

此解决方案可用到下列标准件:
6509, 7852, 7631, 6640

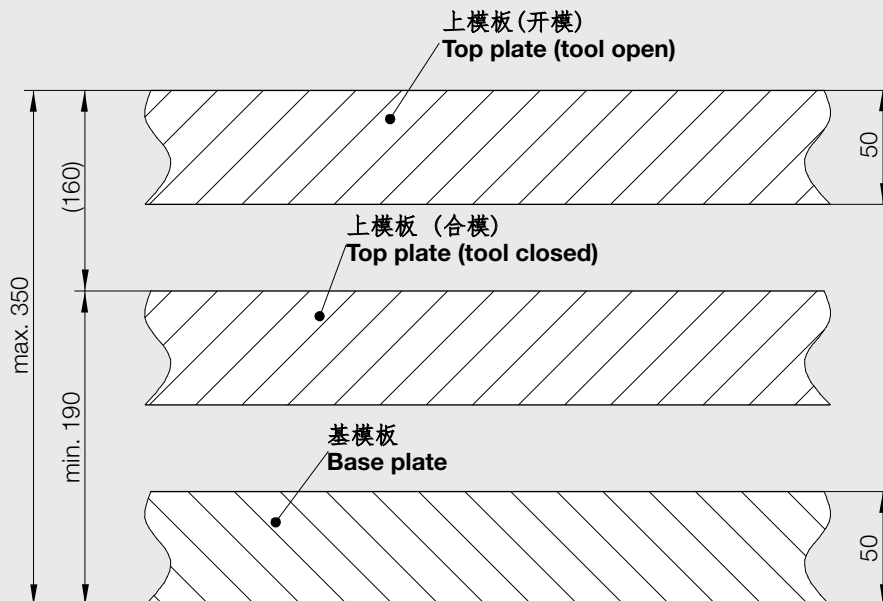
Determination of the guide elements by means of an example:

The tool is being **completely opened in case of an "inspection"**. I.e. the cage exits the bushing only when the tool needs "inspection" (not with each stroke).

Stroke per min:	200
Working stroke:	20mm
Plate thickness lower+upper part:	50mm each
Pillar diameter:	40mm
max. open height of the tool:	350mm
min. shut height of the tool:	190mm

The solution should be executed with the following Standards: **6509, 7852, 7631, 6640**

模板 / 起始位置 Plates / Home position



建议的解决方案:

1. 选择导柱

最小的合模高度 - 安全距离 (S= 6-10mm) → 选择合适的最大行程!

$$190\text{mm} - 8\text{mm} = 182\text{mm}$$

→ 导柱编号: 6509.040.180

d1= 40mm, l1= 180mm

2. 选择导套

标准7852, 模板厚度= 50mm,

导柱直径=40mm

→ 导套编号: 7852.040.110

l1= 110mm, l2= 47mm, l3= 63mm (伸出)

Approach / proposal for a solution:

1st step: Determine the pillar

min. shut height - safety distance (S= 6-10mm) → choose rather maximum distance!

$$190\text{mm} - 8\text{mm} = 182\text{mm}$$

→ Pillar Art. No. 6509.040.180

d1= 40mm, l1= 180mm

2nd step: Determine the bushing

Standard 7852, plate thickness= 50mm,

pillar diameter= 40mm

→ Bushing Art. No. 7852.040.110

l1= 110mm, l2= 47mm, l3= 63mm (jutting out)

3. 选择衬套保持架 (CRS)

$$C = \frac{LB - S - E}{2} = \frac{110 - 10 - 7}{2} = 46.5\text{mm}$$

→ 衬套保持架编号 6640.040.040
d1= 40mm, C= 40mm

3rd step: Determine the cage retainer (CRS)

$$C = \frac{LB - S - E}{2} = \frac{110 - 10 - 7}{2} = 46.5\text{mm}$$

→ Cage retainer Art. No. 6640.040.040
d1= 40mm, C= 40mm

4. 选择滚珠衬套

每次行程, 衬套不需要退出. 防止衬套爬行!

标准 7631 (上部卡簧)

$$Lk_{\min.} = C + \min. 25\text{mm} \\ = 40\text{mm} + 25\text{mm} = 65\text{mm}$$

$$Lk_{\max.} = LB - S \quad (S = 6-10\text{mm}) \\ = 110\text{mm} - 6\text{mm} = 104\text{mm} / 100\text{mm} \\ + 13 \text{ (5mm)} = 109\text{mm} / 105\text{mm}$$

→ 滚珠衬套编号: 7631.040.100
d1= 40mm, l2= 100mm
滚珠衬套编号: 7631.040.115
d1= 40mm, l2= 115mm (太长了!)
采用较长的衬套保持系统 (CRS) 安全距离需要缩短 6mm!

4th step: Determine the ball cage

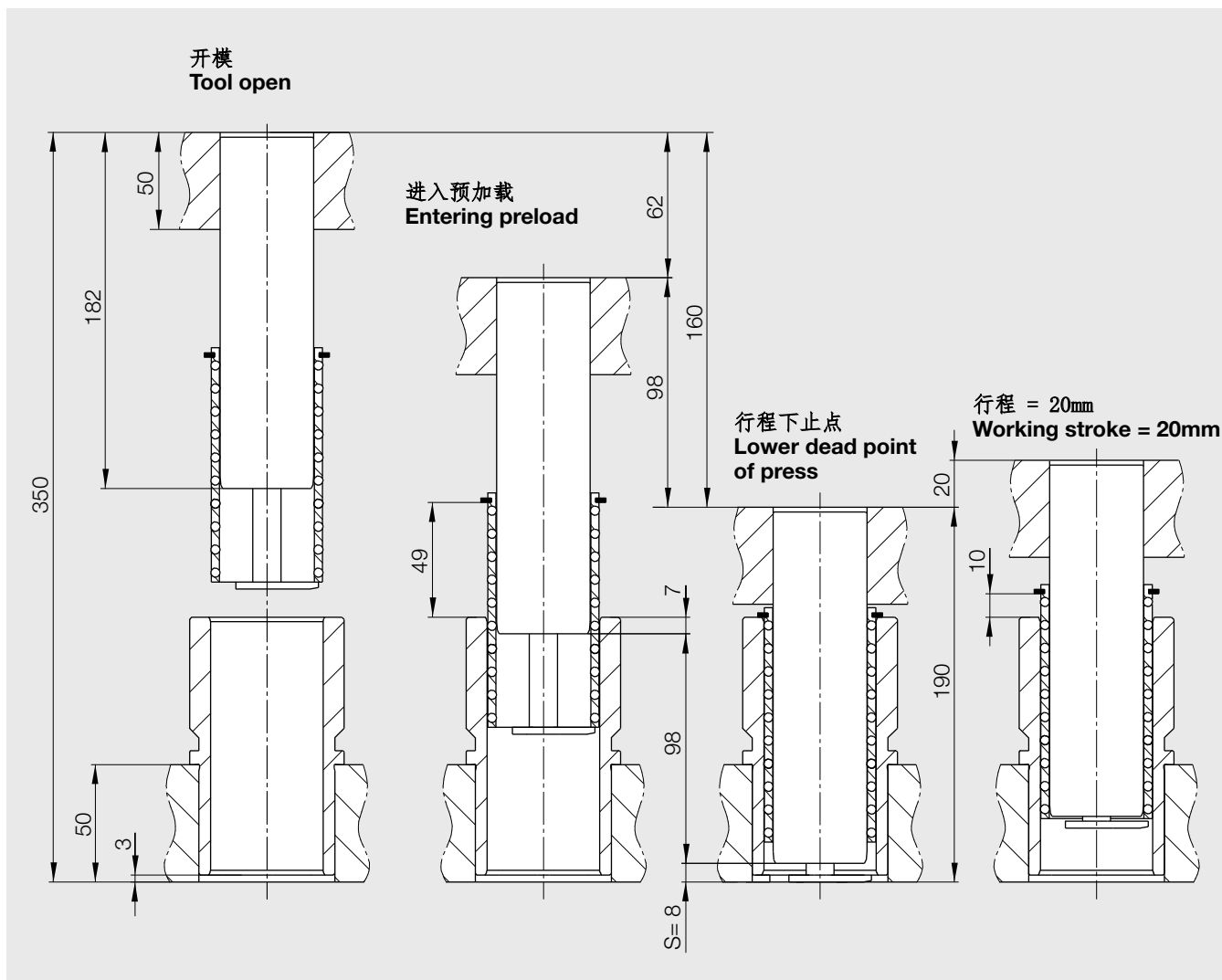
Cage does not exit with each stroke. **Prevent creeping of the cage!**

Standard 7631 (with circlip on upper part)

$$Lk_{\min.} = C + \min. 25\text{mm} \\ = 40\text{mm} + 25\text{mm} = 65\text{mm}$$

$$Lk_{\max.} = LB - S \quad (S = 6-10\text{mm}) \\ = 110\text{mm} - 6\text{mm} = 104\text{mm} / 100\text{mm} \\ + 13 \text{ (5mm)} = 109\text{mm} / 105\text{mm}$$

→ Ball cage Art. No. 7631.040.100
d1= 40mm, l2= 100mm
Ball cage Art. No. 7631.040.115
d1= 40mm, l2= 115mm (is too long!)
With the longer cage retainer (CRS) the safety distance will fall short by 6mm!



保持导套标准件 6531/6532

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
- 直径公差
d3= ISO js4 (仅适用于装配直径)
- 倒角 f8 便于中心定位

安装建议:

- 安装定位孔精度 ISO H5

使用:

- 6901 = 12 短
- 6902 = 12 长
- 6904 = 12 阿格顿定制

采购导柱包括以下附件:

- 3 个锁紧压块
编号 8001.000.001
- 3 颗固定螺丝
编号 070.00.580

其他要求:

- 注意锥面长度!

订单示例:

保持导套
d1= 25, l2= 37
6901.025.037

Retaining bush for
Standards 6531/6532

Technical data:

- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
- Diameter tolerance
d3= ISO js4 (only assembly diameter)
- Chamfer f8 as assembly centering aid

Assembly advice:

- Assembly in location bore ISO H5

Execution:

- 6901 = l2 short
- 6902 = l2 long
- 6904 = l2 AAG spec

Extent of supply incl.:

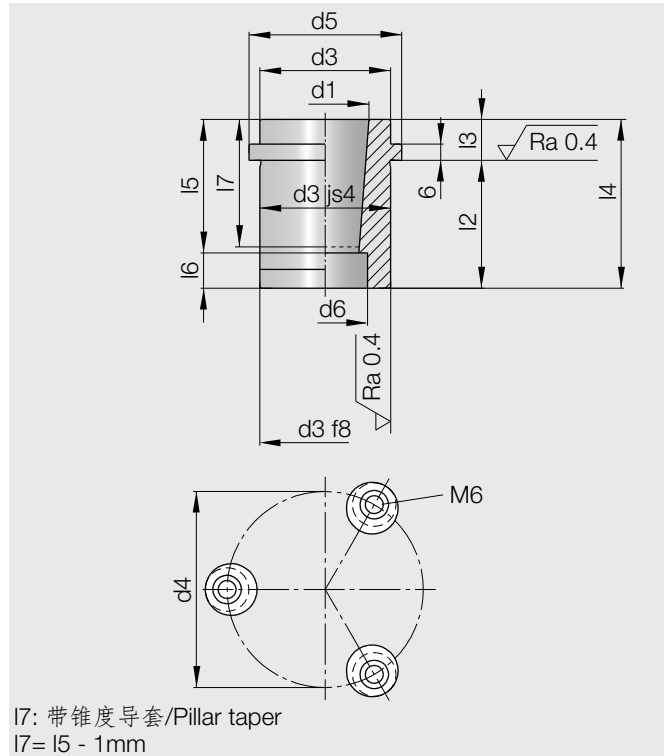
- 3 clamps
Art. No. 8001.000.001
- 3 screws
Art. No. 070.00.580

Miscellaneous:

- Observe the taper length!

Order example:

Retaining bush
d1= 25, l2= 37
6901.025.037



编号	Art.-Nr.	d1	d3	d4	d5	d6	l2	l3	l4	l5	l6	l7
6902.020.037		20	32	56	40	21	37	12	49	39	10	38
6901.025.037		25	40	64	48	26	37	12	49	36	13	35
6902.025.047							47	12	59	46	13	45
6902.030.047		30	48	72	56	31	47	15	62	49	13	48
6902.032.047		32	48	72	56	31	47	15	62	49	13	48
6901.040.047		40	58	82	66	41	47	15	62	49	13	48
6902.040.060							60	15	75	62	13	61
6902.050.060		50	70	96	80	51	60	18	78	62	16	61
6904.050.077							*77	18	95	79	16	78
6902.063.077		63	85	111	95	64	77	18	95	76	19	75
6904.063.095							*95	*22	117	98	19	97

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
可按要求供货 / *Italic = upon request*

* = ISO/DIN标准以外推荐尺寸
* = Size resp. length outside ISO/DIN

保持导套标准件6580

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
- 直径公差
d3= ISO js4
- 倒角 f8 便于中心定位

安装建议:

- 安装定位孔精度 ISO H5

采购导柱包括以下附件:

- ### ■ 3 颗固定螺丝

Retaining bush for Standard 6580

Technical data:

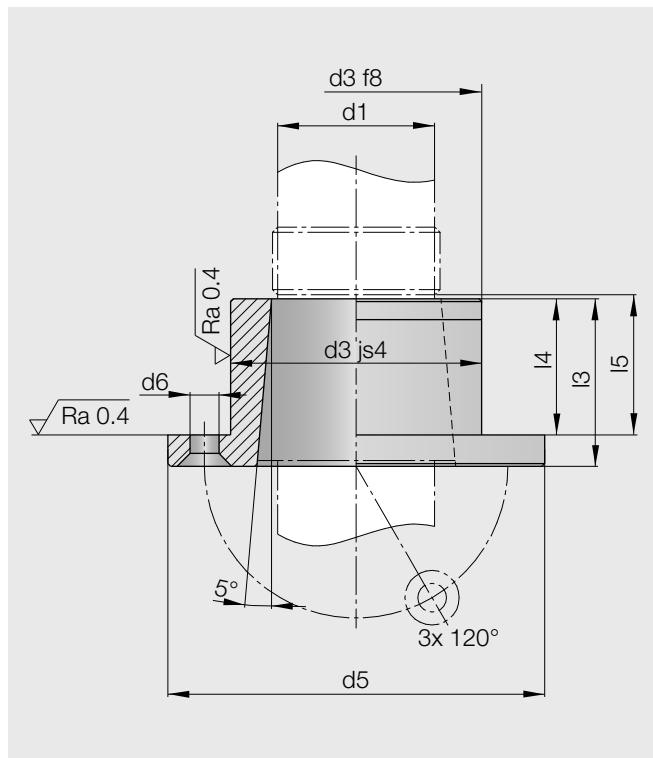
- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
- Diameter tolerance
d3= ISO js4
- Chamfer f8 as assembly
centering aid

Assembly advice:

- Assembly in location bore ISO H5

Extent of supply incl.:

- 3 screws



订单示例:

保持导套
d1= 25, 13= 26
6930.025.026

Order example:

Retaining bush
d1= 25, l3= 26
6930.025.026

[illegible]

推荐尺寸 (粗体显示) / **Bold** = preferred dimensions

可按要求供货 / *Italic = upon request*

直线型滑动导套，青铜镀层

技术参数:

- 镀层厚度 ~0.4mm
- 材料: 1.1221 (C60E)
- 钢质导套硬度:
60 ±2HRC
- 直径公差
d3= ISO js4
- 倒角 f8 便于中心定位

安装建议:

- 安装定位孔精度 ISO H5/JS4
- 涂Loctite 648 螺纹紧固剂
- 装配前仅清洁外圆面。
- **不要压入导套**，这将会引起内径收缩，以及额外的机加工。
- 压入方式或者按要求采用稍大一点的公差

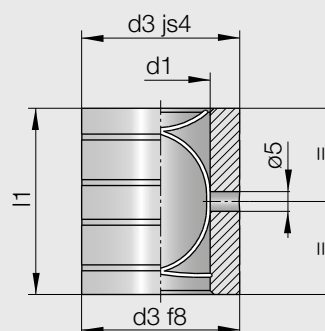
Slide guide bush straight, bronze plated

Technical data:

- Layer thickness ~0.4mm
- Material: 1.1221 (C60E)
- Hardness of steel bush:
60 ±2HRC
- Diameter tolerance
d3= ISO js4
- Chamfer f8 as assembly centering aid

Assembly advices:

- Assembly in location bore ISO H5/JS4
- Secure with Loctite 648
- Before assembly clean only the outside diameter
- **Do not press-in** the guide bush. This will cause a contraction of the inside diameter, and additional machining will be necessary
- Press-in type or with larger sliding clearance on request



订单示例:

导套
d1= 30, l1= 47
7011.030.047

Order example:

Guide bush
d1= 30, l1= 47
7011.030.047

编号 Art.-Nr.	d1	d3	l1
7011.015.023	15 ^{+0.009} / _{+0.003}	28	23
7011.015.030			30
7011.015.037			37
7011.015.047			47
7011.016.023	16 ^{+0.009} / _{+0.003}	28	23
7011.016.030			30
7011.016.037			37
7011.016.047			47
7011.019.023	19 ^{+0.010} / _{+0.004}	32	23
7011.019.030			30
7011.019.037			37
7014.019.052			*52
7011.019.060			60

编号 Art.-Nr.	d1	d3	l1
7011.020.023	20 ^{+0.010} / _{+0.004}	32	23
7011.020.030			30
7011.020.037			37
7014.020.052			*52
7011.020.060			60
7011.024.030	24 ^{+0.010} / _{+0.004}	40	30
7011.024.047			47
7011.024.077			77
7011.025.030	25 ^{+0.010} / _{+0.004}	40	30
7011.025.047			47
7011.025.077			77

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
可按要求供货 / *Italic = upon request*

* = ISO/DIN标准以外推荐尺寸
* = Size resp. length outside ISO/DIN

[illegible]

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
 可按要求供货 / *Italic = upon request*

* = ISO/DIN标准以外推荐尺寸
* = Size resp. length outside ISO/DIN

直线型滑动导套，自润滑

技术参数:

- 材料: 烧结铸铁
- 硬度: 100 ±10HRB
- 直径公差
d3= ISO js4
- 倒角 f8 便于中心定位
- 浸渍油工作温度: -12° C
到+90° C (其他工作温度需要特殊的润滑油)

安装建议:

- 安装定位孔精度 ISO H5/JS4
- 涂Loctite 648 螺纹紧固剂
- 装配前仅清洁外圆面。
- **不要压入导套**, 这将会引起内径收缩。
- 不得返工

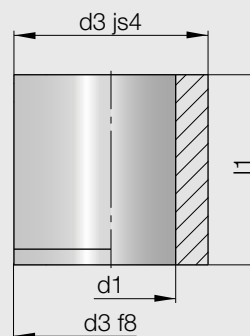
Slide guide bush straight, self lubricating

Technical data:

- Material: Sintered iron
- Hardness: 100 ±10HRB
- Diameter tolerance
d3= ISO js4
- Chamfer f8 as assembly centering aid
- Operating temperature of impregnation oil: -12°C to +90°C (special lubricants are necessary for other temperatures)

Assembly advices:

- Assembly in location bore ISO H5/JS4
- Secure with Loctite 648
- Before assembly clean/ wash only the outside diameter
- **Do not press-in** the guide bush. This will cause a contraction of the inside diameter
- Do not execute any rework



订单示例:

导套
d1= 30, l1= 47
7021.030.047

Order example:

Guide bush
d1= 30, l1= 47
7021.030.047

编号 Art.-Nr.	d1	d3	l1
7020.010.015	*10 ^{+0.005} / _{+0.002}	20	15
7020.010.023			23
7021.012.023	12 ^{+0.005} / _{+0.002}	22	23
7021.012.030			30
7021.015.023	15 ^{+0.006} / _{+0.003}	28	23
7021.015.030			30
7021.015.037			37
7021.016.023	16 ^{+0.006} / _{+0.003}	28	23
7021.016.030			30
7021.016.037			37
7021.019.023	19 ^{+0.006} / _{+0.003}	32	23
7021.019.030			30
7021.019.037			37

编号 Art.-Nr.	d1	d3	l1
7021.020.023	20 ^{+0.006} / _{+0.003}	32	23
7021.020.030			30
7021.020.037			37
7021.024.030	24 ^{+0.006} / _{+0.003}	40	30
7021.024.047			47
7021.025.030	25 ^{+0.006} / _{+0.003}	40	30
7021.025.047			47
7021.030.037	30 ^{+0.006} / _{+0.003}	48	37
7021.030.047			47
7021.032.037	32 ^{+0.006} / _{+0.003}	48	37
7021.032.047			47

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
可按要求供货 / *Italic = upon request*

* = ISO/DIN标准以外推荐尺寸
* = Size resp. length outside ISO/DIN

[illegible]

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
 可按要求供货 / *Italic = upon request*

* = ISO/DIN标准以外推荐尺寸
* = Size resp. length outside ISO/DIN

帽沿式滑动导套，青铜镀层

技术参数:

- 镀层厚度 ~0.4mm
- 材料: 1.1221 (C60E)
- 钢质导套硬度:
60±2HRC
- 直径公差
d3= ISO js4 (仅为装配直径)
- 倒角 f8 便于中心定位

安装建议:

- 安装定位孔精度 ISO H5

使用:

7161 = 12 短 ISO/DIN
7162 = 12 适中 ISO/DIN
7164 = 特殊, 12 适中, d3按照 ISO/DIN 版本, 要求稍大化滑动公差

采购导柱包括以下附件:

- 3 个锁紧压块
编号 8001.000.001
- 3 颗固定螺丝
编号 070.00.580
- 1 个加油嘴
编号 060.10.010

订单示例:

帽沿式导套
d1= 30, l1= 69, l2= 37
7162.030.069

Headed slide-guide bush,
bronze plated

Technical data:

- Layer thickness ~0.4mm
- Material: 1.1221 (C60E)
- Hardness of steel bush:
60±2HRC
- Diameter tolerance
d3= ISO js4 (only assembly diameter)
- Chamfer f8 as assembly centering aid

Assembly advice:

- Assembly in location bore ISO H5

Execution:

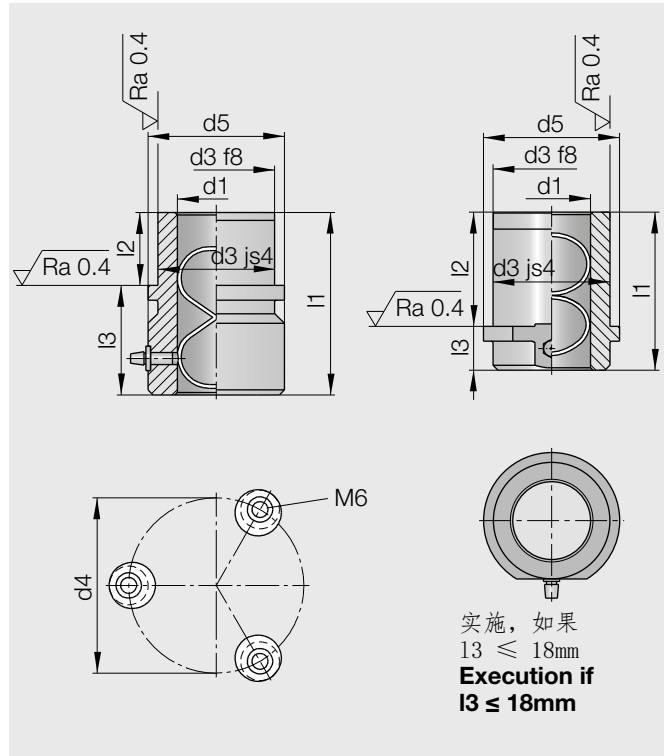
7161 = l2 short ISO/DIN
7162 = l2 medium ISO/DIN
7164 = special, l2 medium, d3 according to ISO/DIN
Version with larger sliding clearance on request

Extent of supply incl.:

- 3 clamps
Art. No. 8001.000.001
- 3 screws
Art. No. 070.00.580
- 1 lubrication nipple
Art. No. 060.10.010

Order example:

Headed guide bush
d1= 30, l1= 69, l2= 37
7162.030.069



编号	Art.-Nr.	d1	d3	d4	d5	l1	l2	l3
7161.019.035	19	$+0.010$ $+0.004$	32	56	40	35	23	12
7161.019.043						43	23	20
7161.020.035	20	$+0.010$ $+0.004$	32	56	40	35	23	12
7161.020.043						43	23	20
7161.024.035	24	$+0.010$ $+0.004$	40	64	48	35	23	12
7161.024.059						59	23	36
7162.024.055						55	30	25
7161.025.035	25	$+0.010$ $+0.004$	40	64	48	35	23	12
7161.025.059						59	23	36
7162.025.055						55	30	25
7161.030.042	30	$+0.010$ $+0.004$	48	72	56	42	30	12
7161.030.075						75	30	45
7162.030.069						69	37	32

编号	Art.-Nr.	d1	d3	d4	d5	l1	l2	l3
7161.032.042	32	$+0.010$ $+0.004$	48	72	56	42	30	12
7161.032.075						75	30	45
7162.032.069						69	37	32
7164.032.065						*65	*47	*18
7161.038.052	38	$+0.012$ $+0.006$	58	82	66	52	37	15
7161.038.082						82	37	45
7162.038.079						79	47	32
7162.038.110						110	47	63
7161.040.052	40	$+0.012$ $+0.006$	58	82	66	52	37	15
7161.040.082						82	37	45
7162.040.079						79	47	32
7162.040.110						110	47	63

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
可按要求供货 / *Italic = upon request*

* = ISO/DIN标准以外推荐尺寸
* = Size resp. length outside ISO/DIN

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
 可按要求供货 / *Italic = upon request*

* = ISO/DIN标准以外推荐尺寸
* = Size resp. length outside ISO/DIN

法兰型导套

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
- 直径公差
d3= ISO js4
- 倒角 f8 便于中心定位

安装建议:

- 安装定位孔精度 ISO H5

使用:

- 7301** = 12 短 ISO/DIN
- 7302** = 12 适中 ISO/DIN
- 7303** = 12 长 ISO/DIN
- 7304** = AAG 定制, 12 适中, 装直径 ISO/DIN

订单示例:

法兰型导套
d1= 19, l1= 45, l2= 30
7302.019.045

Guide bush with flange

Technical data:

- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
- Diameter tolerance
d3= ISO js4
- Chamfer f8 as assembly centering aid

Assembly advice:

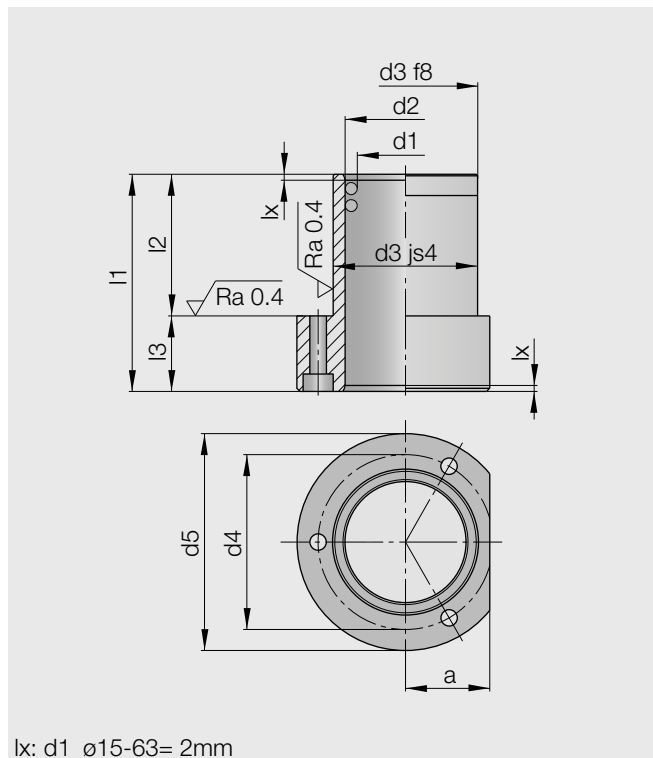
- Assembly in location bore ISO H5

Execution:

- 7301** = l2 short ISO/DIN
- 7302** = l2 medium ISO/DIN
- 7303** = l2 long ISO/DIN
- 7304** = AAG special, l2 medium, assembly diameter ISO/DIN

Order example:

Guide bush with flange
d1= 19, l1= 45, l2= 30
7302.019.045



编号	Art.-Nr.	d1	d2	d3	d4	d5	l1	l2	l3	a	筒形螺钉 / Cyl. screw
7301.015.029		15	21	28	35	45	29	23	6	15	M4
7302.015.036							36	30	6		
7302.015.045							*45	30	*15		
7301.016.029		16	22	28	35	45	29	23	6	15	M4
7302.016.036							36	30	6		
7302.016.045							*45	30	*15		
7301.019.038		19	25	32	40	50	38	23	15	18	M4
7302.019.045							45	30	15		
7303.019.052							52	37	15		
7301.020.038		20	26	32	40	50	38	23	15	18	M4
7302.020.045							45	30	15		
7303.020.052							52	37	15		
7303.020.067							*67	37	*30		

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
可按要求供货 / *Italic = upon request*

* = ISO/DIN标准以外推荐尺寸
* = Size resp. length outside ISO/DIN

编号 Art.-Nr.	d1	d2	d3	d4	d5	l1	l2	l3	a	筒形螺钉 / Cyl. screw
7301.024.038	24	30	40	50	63	38	23	15	23	M5
7302.024.055						55	30	25		
7303.024.062						62	37	25		
7304.024.072						*72	*47	25		
7301.025.038	25	31	40	50	63	38	23	15	23	M5
7302.025.055						55	30	25		
7303.025.062						62	37	25		
7304.025.072						*72	*47	25		
7301.030.045	30	38	48	58	72	45	30	15	28	M5
7302.030.062						62	37	25		
7303.030.072						72	47	25		
7301.032.045	32	40	48	58	72	45	30	15	28	M5
7302.032.062						62	37	25		
7303.032.072						72	47	25		
7301.038.055	38	46	58	70	85	55	30	25	33	M6
7302.038.067						67	37	30		
7303.038.077						77	47	30		
7304.038.102						*102	*60	42		
7301.040.055	40	48	58	70	85	55	30	25	33	M6
7302.040.067						67	37	30		
7303.040.077						77	47	30		
7304.040.102						*102	*60	42		
7301.048.062	48	56	70	86	104	62	37	25	38	M8
<i>7302.048.089</i>						89	47	42		
7303.048.102						102	60	42		
7301.050.062	50	58	70	86	104	62	37	25	38	M8
7302.050.089						89	47	42		
7303.050.102						102	60	42		
7301.060.089	60	68	85	100	120	89	47	42	46	M8
7302.060.102						102	60	42		
7301.063.089	63	71	85	100	120	89	47	42	46	M8
7302.063.102						102	60	42		

推荐尺寸（粗体显示）/ **Bold = preferred dimensions**
可按要求供货 / *Italic = upon request*

* = ISO/DIN标准以外推荐尺寸
* = Size resp. length outside ISO/DIN

导柱轴承用于定制装配

技术参数:

- 材料: GG25
- 上下安装板带矩形法兰

使用:

- 每一块安装板上加工一个基准面
- 下层的安装板用于安装导柱: 755.xx.008

其他要求:

- 根据需求: 上层的安装板可以提供滚珠式导轨或滚针式导轨
- 导柱参见标准件650X (必须单独订购)

Pillar bearing for fitted assembly

Technical data:

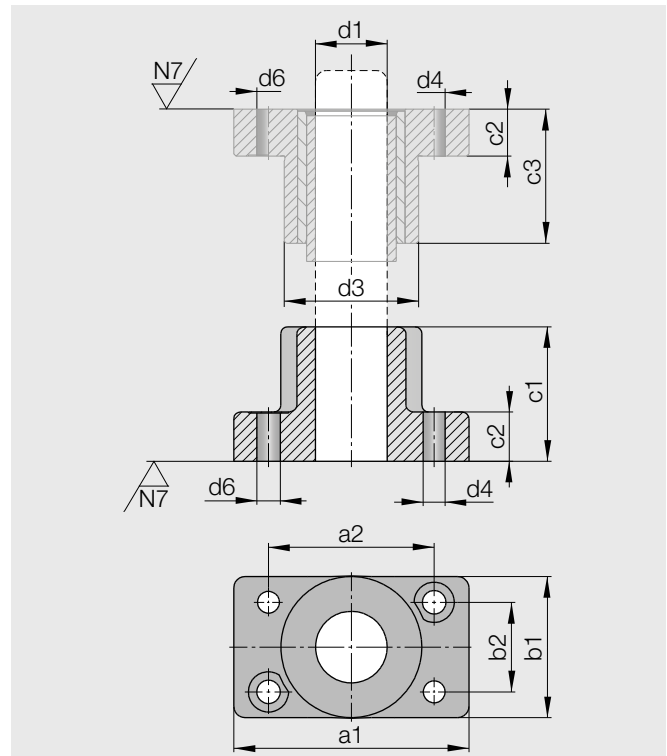
- Material: GG25
- Lower and upper plates with rectangular flange

Execution:

- One locating surface machined per plate
- Lower plate for guide pillar: 755.xx.008

Miscellaneous:

- Upper plate can be supplied with: ball / roller guide on request
- Guide pillar see Standard 650X (must be ordered separately)



订单示例:

滚针轴承
d1= 30
755.30.008 + 例如:
6501.030.200 取决于导柱长度

Order example:

Pillar bearing
d1= 30
755.30.008 + e.g.
6501.030.200 depending on pillar length

编号 Art.-Nr.	d1	d3	d4	d6	a1	a2	b1	b2	c1	c2	c3
755.24.008	24	55	9.8	10.5	95	68	55	35	55	20	55
755.25.008	25										
755.30.008	30	63	9.8	10.5	105	74	63	40	60	22	60
755.32.008	32	63	9.8	10.5	105	74	63	40	60	22	60
755.40.008	40	73	11.8	13.0	118	84	73	48	75	25	75
755.40.108											100
755.50.008	50	90	11.8	13.0	145	98	90	64	80	30	80
755.60.008	60	110	15.7	17.0	175	122	110	76	100	40	100
755.63.008	63	110	15.7	17.0	175	122	110	76	100	40	100
755.63.128											120

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**

可按要求供货 / *Italic = upon request*

导柱轴承安装在安装板上

技术参数:

- 材料: GG25
- 上下安装板带矩形法兰

使用:

- 每一块安装板上加工两个基准面
- 下层的安装板用于安装导柱: 756.xx.008

其他要求:

- 根据需求: 上层的安装板可以提供滚珠式导轨或滚针式导轨
- 导柱参见标准件650X (必须单独订购)

Pillar bearing for installation in plate

Technical data:

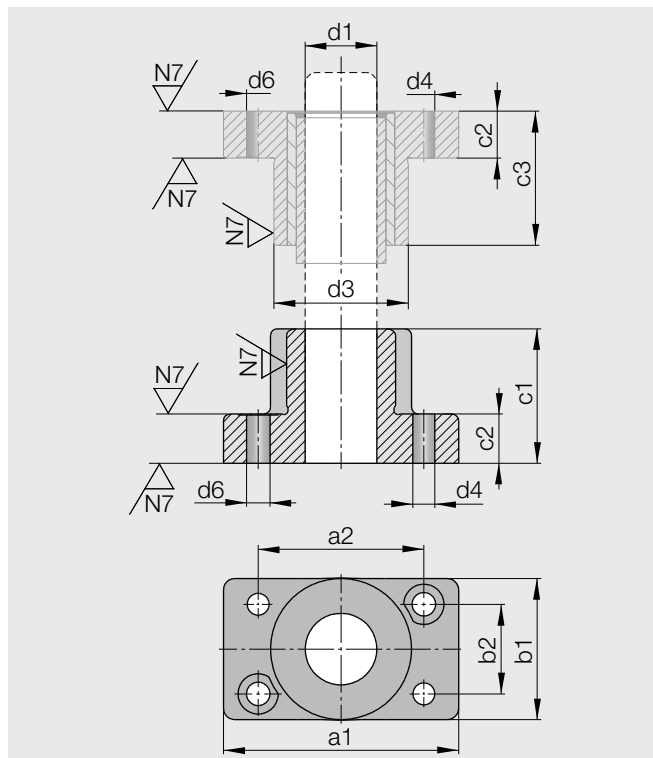
- Material: GG25
- Lower and upper plates with rectangular flange

Execution:

- Two locating surfaces machined per plate
- Lower plate for guide pillar: 756.xx.008

Miscellaneous:

- Upper plate can be supplied with: ball / roller bearing on request
- Guide pillar see Standard 650X (must be ordered separately)



订单示例:

导柱直径
d1= 30
756.30.008 + 例如:
6501.030.200 取决于
导柱长度

Order example:

Pillar bearing
d1= 30
756.30.008 + e.g.
6501.030.200 depending on
pillar length

编号 Art.-Nr.	d1	d3	d4	d6	a1	a2	b1	b2	c1	c2	c3
756.25.008	25	52	9.8	10.5	95	68	55	35	55	18	55
756.30.008	30	60	9.8	10.5	105	74	63	40	60	20	60
756.32.008	32	60	9.8	10.5	105	74	63	40	60	20	60
756.40.008	40	70	11.8	13.0	118	84	73	48	75	22	75
756.40.108											100
756.50.008	50	87	11.8	13.0	145	98	90	64	80	27	80
756.60.008	60	107	15.7	17.0	175	122	110	76	100	37	100
756.63.008	63	107	15.7	17.0	175	122	110	76	100	37	100

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**

可按要求供货 / *Italic = upon request*

铝质防脱落滚珠衬套
(专利标志)

技术参数:

- 衬套材料: 3.1645 (AlCuMgPb)
- 滚珠材料: 1.3505 (100Cr6)
- 滚珠遵循 ISO3290, G10等级
- K = 滚珠编号
- C = 每个滚珠衬套的承载力 N(标准值)

其他要求:

- 根据要求可定制特殊材质或特殊尺寸的滚珠衬套
- 可能的尺寸:
d1 可达 500mm
l2 可达 775mm (取决于d1)
- 不锈钢材质的滚珠衬套, 可根据需求定制。
- 当采用CRS时, 必须移除防脱落单元。

订单示例:

铝质滚珠衬套
d1= 30, l2= 65
7611.030.065

Ball cage in aluminum with
anti-skid unit
(staking patented)

Technical data:

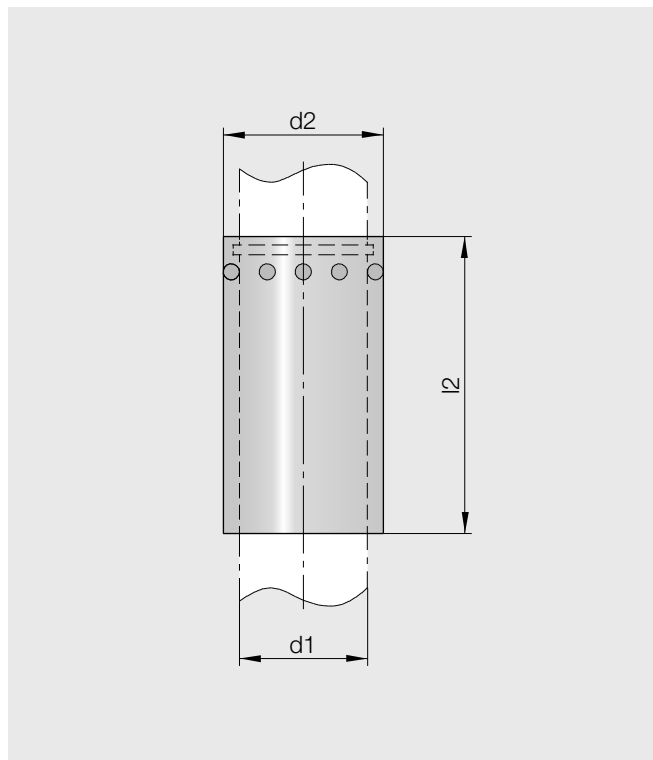
- Cage material: 3.1645 (AlCuMgPb)
- Ball material: 1.3505 (100Cr6)
- Ball in accordance with ISO3290, grade G10
- K = No. of balls
- C = Load in N per ball cage (standard value)

Miscellaneous:

- Ball cages in special material or special sizes on request
- Possible dimensions:
d1 up to 500mm
l2 up to 775mm (depending on d1)
- Cages with balls in stainless material are available on request
- When using CRS the anti-skid must be removed

Order example:

Ball cage in aluminum
d1= 30, l2= 65
7611.030.065



编号	Art.-Nr.	d1	d2	l2	K	C
7611.012.020		12	16	20	72	350
7611.012.028				28	108	525
7611.012.036				36	132	641
7611.012.042				42	156	758
7611.012.051				51	192	933
7611.015.030		15	21	30	72	744
7611.015.035				35	84	868
7611.015.042				42	108	1116
7611.015.052				52	132	1364
7611.015.065				65	180	1860
7611.016.024		16	22	24	48	506
7611.016.035				35	84	886
7611.016.042				42	108	1140
7611.016.052				52	132	1393
7611.016.065				65	180	1899

编号	Art.-Nr.	d1	d2	l2	K	C
7611.019.030		19	25	30	96	1252
7611.019.035				35	112	1460
7611.019.043				43	144	1877
7611.019.050				50	176	2295
7611.019.057				57	208	2711
7611.019.065				65	240	3129
7611.019.072				72	272	3546
7611.019.082				82	304	3964
7611.020.030		20	26	30	96	1271
7611.020.035				35	112	1482
7611.020.043				43	144	1906
7611.020.050				50	176	2330
7611.020.057				57	208	2753
7611.020.065				65	240	3177
7611.020.072				72	272	3600
7611.020.082				82	304	4024

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**

可按要求供货 / *Italic = upon request*

编号	Art.-Nr.	d1	d2	l2	K	C
7611.024.043		24	30	43	162	2381
7611.024.052				52	198	2910
7611.024.060				60	252	3703
7611.024.067				67	270	3968
7611.024.077				77	324	4761
7611.024.084				84	360	5290
7611.024.100				100	432	6348
7611.024.108				108	468	6877
7611.025.035		25	31	35	126	1868
7611.025.043				43	162	2402
7611.025.052				52	198	2936
7611.025.060				60	252	3736
7611.025.067				67	270	4003
7611.025.077				77	324	4804
7611.025.084				84	360	5338
7611.025.100				100	432	6405
7611.025.108				108	468	6939
7611.030.045		30	38	45	144	3707
7611.030.052				52	162	4170
7611.030.065				65	216	5560
7611.030.074				74	252	6487
7611.030.080				80	270	6950
7611.030.090				90	306	7877
7611.030.100				100	342	8804
7611.030.121				121	414	10657
7611.032.045		32	40	45	144	3762
7611.032.052				52	162	4232
7611.032.065				65	216	5643
7611.032.074				74	252	6583
7611.032.080				80	270	7054
7611.032.090				90	306	7994
7611.032.100				100	342	8935
7611.032.110				110	378	9875
7611.032.121				121	414	10816
7611.038.060		38	46	60	220	6268
<i>7611.038.065</i>				65	240	6838
7611.038.080				80	300	8547
7611.038.085				85	320	9117
7611.038.100				100	380	10827
7611.038.125				125	480	13676

编号	Art.-Nr.	d1	d2	l2	K	C
7611.040.055		40	48	55	200	5753
7611.040.060				60	220	6328
7611.040.065				65	240	6903
7611.040.075				75	280	8054
7611.040.080				80	300	8629
7611.040.085				85	320	9205
7611.040.100				100	380	10930
7611.040.115				115	440	12656
7611.040.125				125	480	13807
7611.040.134				134	520	14957
7611.040.150				150	580	16683
7611.048.067		48	56	67	288	9273
7611.048.082				82	360	11591
<i>7611.048.094</i>				94	432	13910
7611.048.100				100	456	14682
<i>7611.048.110</i>				110	504	16228
7611.048.125				125	576	18546
7611.048.136				136	624	20092
7611.050.067		50	58	67	288	9330
7611.050.082				82	360	11663
7611.050.094				94	432	13996
7611.050.100				100	456	14773
7611.050.110				110	504	16328
7611.050.125				125	576	18661
7611.050.136				136	624	20216
7611.050.147				147	672	21771
<i>7611.060.100</i>		60	68	100	608	22616
7611.060.125				125	768	28568
7611.060.155				155	960	35710
<i>7611.060.190</i>				190	1184	44042
<i>7611.063.085</i>		63	71	85	512	19159
7611.063.100				100	608	22751
7611.063.125				125	768	28738
7611.063.155				155	960	35923
7611.063.190				190	1184	44305

推荐尺寸（粗体显示）/ **Bold = preferred dimensions**
可按要求供货 / *Italic = upon request*

带卡簧的黄铜滚珠衬套(拥有专利)

技术参数:

- 衬套材料: 2.0401 (CuZn-39Pb3)
- 滚珠材料: 1.3505 (100Cr6)
- 根据 ISO3290, G10等级

- K = 滚珠编号
- C = 每个滚珠衬套的承载力 N(标准值)

使用:

- S根据要求尺寸可定制。
- 带不锈钢材质的滚珠的衬套可根据要求定制。

其他要求:

- 直径范围:
d1 可达 500mm
l2 可达 775mm (取决于 d1)

订单示例:

黄铜滚珠衬套
d1= 12, l2= 20
7631.012.020

Ball cage in brass with circlip (staking patented)

Technical data:

- Cage material: 2.0401 (CuZn39Pb3)
- Ball material: 1.3505 (100Cr6)
- Ball ISO3290, grade G10

- K = No. of balls
- C = Load in N per ball cage (standard value)

Execution:

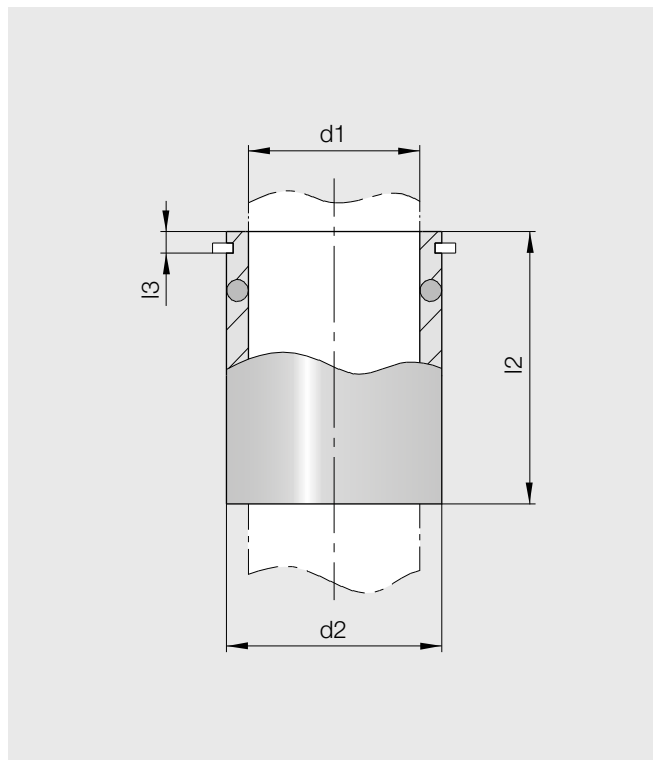
- Special sizes on request
- Cages with balls in stainless material are available on request

Miscellaneous:

- Possible dimensions:
d1 up to 500mm
l2 up to 775mm (depending on d1)

Order example:

Ball cage in brass
d1= 12, l2= 20
7631.012.020



编号	Art.-Nr.	d1	d2	l2	l3	K	C
7631.012.020		12	16	20	2.5	72	350
7631.012.028				28		108	525
7631.012.036				36		132	641
7631.012.042				42		156	758
7631.012.051				51		192	933
7631.015.024		15	21	24	3	48	496
7631.015.035				35		84	868
7631.015.042				42		108	1116
7631.015.052				52		132	1364
7631.015.065				65		180	1860
7631.016.024		16	22	24	3	48	506
7631.016.035				35		84	886
7631.016.042				42		108	1140
7631.016.052				52		132	1393
7631.016.065				65		180	1899
7631.016.072				72		204	2152

编号	Art.-Nr.	d1	d2	l2	l3	K	C
7631.019.035		19	25	35	3	112	1460
7631.019.043				43		144	1877
7631.019.050				50		176	2295
7631.019.057				57		208	2711
7631.019.065				65		240	3129
7631.019.082				82		304	3964
7631.020.035		20	26	35	3	112	1482
7631.020.043				43		144	1906
7631.020.050				50		176	2330
7631.020.057				57		208	2753
7631.020.065				65		240	3177
7631.020.072				72		272	3600
7631.020.082				82		304	4024

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**

可按要求供货 / *Italic = upon request*

编号	Art.-Nr.	d1	d2	l2	l3	K	C
7631.024.043		24	30	43	3.5	162	2381
7631.024.052				52		198	2910
7631.024.060				60		252	3703
7631.024.067				67		270	3968
7631.024.077				77		324	4761
7631.024.084				84		360	5290
7631.024.100				100		432	6348
7631.025.043		25	31	43	3.5	162	2402
7631.025.052				52		198	2936
7631.025.060				60		252	3736
7631.025.067				67		270	4003
7631.025.077				77		324	4804
7631.025.084				84		360	5338
7631.025.100				100		432	6405
7631.030.052		30	38	52	4	162	4170
7631.030.065				65		216	5560
7631.030.074				74		252	6487
7631.030.080				80		270	6950
7631.030.100				100		342	8804
7631.030.121				121		414	10657
7631.032.052		32	40	52	4	162	4232
7631.032.065				65		216	5643
7631.032.074				74		252	6583
7631.032.080				80		270	7054
7631.032.090				90		306	7994
7631.032.100				100		342	8935
7631.032.121				121		414	10816
7631.038.060		38	46	60	4	220	6268
7631.038.065				65		240	6838
7631.038.080				80		300	8547
7631.038.085				85		320	9117
7631.038.100				100		380	10827
7631.038.115				115		440	12536
7631.038.125				125		480	13676

编号	Art.-Nr.	d1	d2	l2	l3	K	C
7631.040.060		40	48	60	4	220	6328
7631.040.065				65		240	6903
7631.040.075				75		280	8054
7631.040.080				80		300	8629
7631.040.085				85		320	9205
7631.040.100				100		380	10930
7631.040.115				115		440	12656
7631.040.125				125		480	13807
7631.040.134				134		520	14957
7631.048.067		48	56	67	4.5	288	9273
7631.048.082				82		360	11591
7631.048.094				94		432	13910
7631.048.100				100		456	14682
7631.048.110				110		504	16228
7631.048.125				125		576	18546
7631.048.136				136		624	20092
7631.050.050		50	58	50	4.5	216	6997
7631.050.067				67		288	9330
7631.050.082				82		360	11663
7631.050.094				94		432	13996
7631.050.100				100		456	14773
7631.050.110				110		504	16328
7631.050.125				125		576	18661
7631.050.136				136		624	20216
7631.050.147				147		672	21771
7631.050.165				165		768	24881
7631.060.100		60	68	100	5.5	608	22616
7631.060.125				125		768	28568
7631.060.155				155		960	35710
7631.063.100		63	71	100	5.5	608	22751
7631.063.125				125		768	28738
7631.063.155				155		960	35923
7631.063.167				167		1024	38318
7631.063.190				190		1184	44305

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
 可按要求供货 / *Italic = upon request*

带防脱落单元的铝质滚针衬套

Roller cage in aluminum
with anti-skid unit

技术参数:

- 衬套材料: 3.1645 (AlCuMgPb)
- 滚针材料: 1.3505 (100Cr6)
- R = 滚针编号
- C = 每个滚针衬套的承载力 N(标准值)
- l3 不含滚针宽度的值

使用:

- 获得专利的滚针放置孔技术和保持方法, 有效控制滚针的运动, 从而获得最小的摩擦力。

应用建议:

- 导柱, 导套和衬套要成组使用。

其他要求:

- 可按要求定制特殊尺寸的滚针衬套
- 用于水平运动应用的带轮廓滚针的滚针衬套, 参见标准件 7663
- 当使用 CRS 时, 必须去除防脱落单元

订单示例:

铝质滚针衬套
d1= 20, l2= 73
7660.020.073

Technical data:

- Cage material: 3.1645 (AlCuMgPb)
- Roller material: 1.3505 (100Cr6)
- R = No. of rollers
- C = Load in N per roller cage (standard value)
- l3 not fitted with rollers

Execution:

- Patented retaining pocket and staking method for controlled roller play and minimum friction.

Application advice:

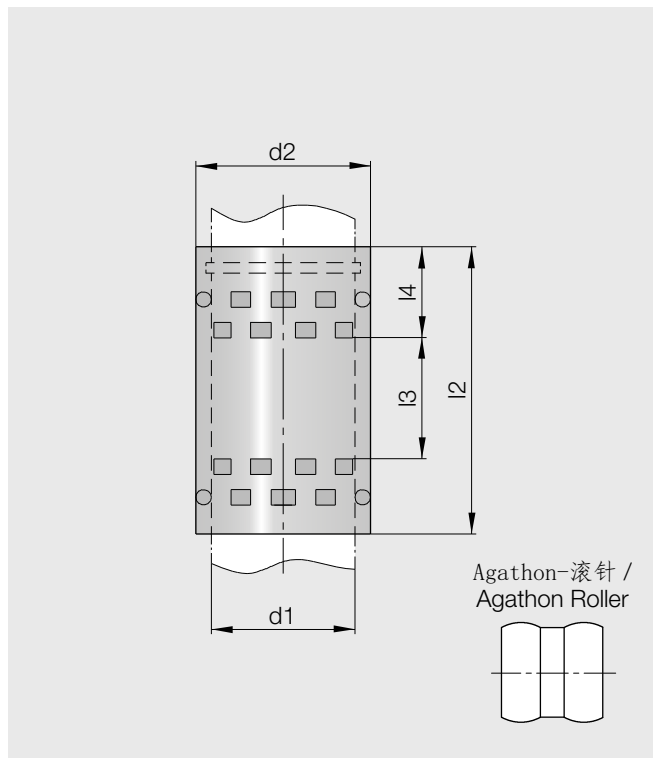
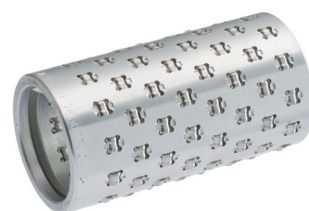
- Paired guide elements are delivered

Miscellaneous:

- Roller cages in special sizes on request
- Roller cages with profile rollers for horizontal applications, see Standard 7663
- When using CRS the anti-skid must be removed

Order example:

Roller cage in aluminum
d1= 20, l2= 73
7660.020.073



编号	Art.-Nr.	d1	d2	l2	l3	l4	R	C
7660.015.041		15	21	41	-	-	32	2900
7660.015.049				49	-	-	40	3600
7660.016.041		16	22	41	-	-	32	3000
7660.016.049				49	-	-	40	3800
7660.019.049		19	25	49	-	-	40	4100
7660.019.057				57	-	-	48	4900
7660.019.064				64	-	-	56	5700
7660.019.073				73	-	-	64	6515
7660.020.049		20	26	49	-	-	40	4200
7660.020.057				57	-	-	48	5000
7660.020.064				64	-	-	56	5900
7660.020.073				73	-	-	64	6700

编号	Art.-Nr.	d1	d2	l2	l3	l4	R	C
7660.024.057		24	30	57	-	-	48	5400
7660.024.073				73	-	-	64	7200
7660.024.081				81	-	-	72	8100
7660.024.095				95	11	44.5	80	9000
7660.025.049		25	31	49	-	-	40	4500
7660.025.057				57	-	-	48	5500
7660.025.073				73	-	-	64	7300
7660.025.081				81	-	-	72	8200
7660.025.095				95	11	44.5	80	9100
7660.030.057		30	38	57	-	-	72	8700
7660.030.065				65	-	-	84	10200
7660.030.075				75	-	-	96	11600
7660.030.080				80	8	37	96	11600
7660.030.085				85	13	37	96	11600
7660.030.100				100	13	45	120	14600

推荐尺寸 (粗体显示) / Bold = preferred dimensions

可按要求供货 / Italic = upon request

编号	Art.-Nr.	d1	d2	I2	I3	I4	R	C
7660.032.057		32	40	57	-	-	72	8900
7660.032.065				65	-	-	84	10400
7660.032.075				75	-	-	96	11900
7660.032.080				80	8	37	96	11900
7660.032.085				85	13	37	96	11900
7660.032.100				100	13	45	120	14900
7660.038.059		38	46	59	-	-	72	9300
7660.038.065				65	-	-	84	10800
7660.038.075				75	-	-	96	12400
7660.038.085				85	13	37	96	12400
7660.038.100				100	13	45	120	15500
7660.038.115				115	11	53	144	18700
7660.040.059		40	48	59	-	-	72	9400
7660.040.075				75	-	-	96	12600
7660.040.085				85	13	37	96	12600
7660.040.100				100	13	45	120	15700
7660.040.115				115	11	53	144	18900
7660.048.065		48	56	65	-	-	112	15200
7660.048.090				90	18	37	128	17500
7660.048.095				95	7	45	160	21800
7660.048.100				100	12	45	160	21800
7660.048.110				110	6	53	192	26100
7660.048.120				120	16	53	192	26100
7660.048.140				140	20	61	224	30500
7660.050.065		50	58	65	-	-	112	15300
7660.050.090				90	18	37	128	17600
7660.050.095				95	7	45	160	22000
7660.050.100				100	12	45	160	22000
7660.050.110				110	6	53	192	26300
7660.050.120				120	16	53	192	26300
7660.050.140				140	20	61	224	30700
7660.050.180				180	60	61	224	30700
7660.060.100		60	68	100	12	45	160	22600
7660.060.140				140	20	61	224	31700

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推荐尺寸 (粗体显示) / **Bold** = preferred dimensions
 可按要求供货 / *Italic* = upon request

不同型号的滚针设计

标准件 7660
Agathon-滚针



Different rollers

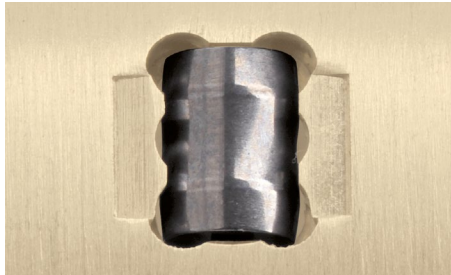
Standard 7660
Agathon roller



标准件 7663
特殊轮廓滚针



Standard 7663
Profile roller



选型标准:

- 承载
- 行程速度
- 加速度
- 行程限制

Selection criteria

- Load
- Stroke speed
- Acceleration
- Stroke limitation

带卡簧的黄铜滚针衬套

技术参数:

- 衬套材料: 2.0401 (CuZn-39Pb3)
- 滚针材料: 1.3505 (100Cr6)
- R = 滚针编号
- C = 每个滚针衬套承载N(标准值)
- 与滚针完全配合

使用:

- 获得专利的滚针放置孔技术和保持方法, 有效控制滚针的运动, 从而获得最小的摩擦力。

应用建议:

- 导柱, 导套和衬套要成套使用。
- 轮廓滚针衬套用于高负载, 水平运动应用。
- 行程速度限制(最大 40m/Min.)

其他要求:

- 根据要求定制特殊尺寸的滚针衬套

订单示例:

黄铜滚针衬套
d1= 25, l2= 95
7663.025.095

Roller cage in brass with circlip

Technical data:

- Cage material: 2.0401 (CuZn39Pb3)
- Roller material: 1.3505 (100Cr6)
- R = No. of rollers
- C = Load in N per roller cage (standard value)
- Entirely fitted with rollers

Execution:

- Patented retaining pocket and staking method for controlled roller play and minimum friction.

Application advices:

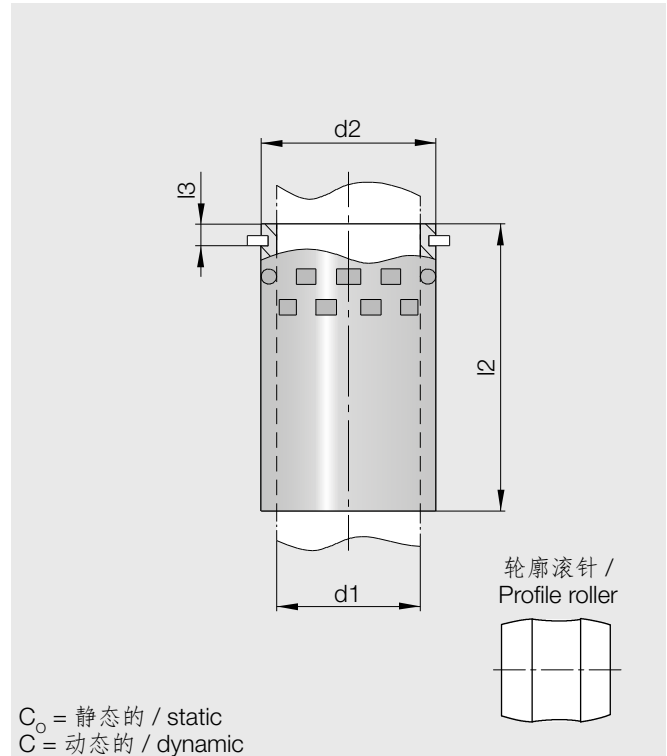
- Paired guide elements are delivered
- Profile roller horizontal applications resp. high loads
- Limited stroke speed (up to approx. 40m/min)

Miscellaneous:

- Roller cages in special sizes on request

Order example:

Roller cage in brass
d1= 25, l2= 95
7663.025.095



编号 Art.-Nr.	d1	d2	l2	l3	R	C ₀	C
7663.025.095	25	31	95	3.5	100	22500	14500
7663.032.075	32	40	75	4	84	24150	15400
7663.032.085			85		96	27600	17600
7663.032.105			105		132	37950	24200
7663.040.100	40	48	100	4	128	37600	24000
7663.040.115			115		144	42300	27000
7663.040.165			165		240	70500	45000
7663.050.140	50	58	140	4	234	68900	44200
7663.050.185			185		324	95400	61200

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**

可按要求供货 / *Italic = upon request*

带胶水槽的直线导套

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
- 直径公差
d3= ISO js4
- 倒角 f8 便于中心定位

安装建议:

- 涂胶水至定位孔ISO H5/JS4
- 涂Loctite 648 紧固剂
- **不要压入导套**, 这将会引起内径收缩, 以及额外的机加工。
- 按要求的方式压入

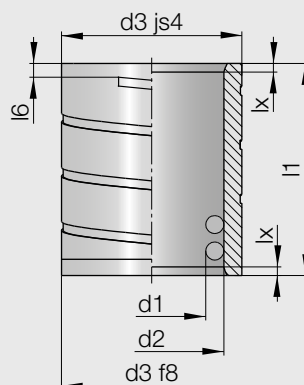
Guide bush straight with glue grooves

Technical data:

- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
- Diameter tolerance
d3= ISO js4
- Chamfer f8 as assembly centering aid

Assembly advices:

- Glue into location bore ISO H5/JS4
- Secure with Loctite 648
- **Do not press-in** the guide bush. This will cause a contraction of the inside diameter, and additional machining will be necessary
- Press-in type on request



lx = 2mm

订单示例:

导套
d1= 12, l1= 23
7801.012.023

Order example:

Guide bush
d1= 12, l1= 23
7801.012.023

编号	Art.-Nr.	d1	d2	d3	l1	l6
7801.012.023		12	16	22	23	4
7801.012.030					30	4
7801.012.037					37	5
7801.012.047					*47	7
7801.015.023		15	21	28	23	4
7801.015.030					30	4
7801.015.037					37	5
7801.015.047					47	7
7801.015.060					60	7
7801.016.023		16	22	28	23	4
7801.016.030					30	4
7801.016.037					37	5
7801.016.047					47	7
7801.016.060					60	7

编号	Art.-Nr.	d1	d2	d3	l1	l6
7801.019.023		19	25	32	23	4
7801.019.030					30	4
7801.019.037					37	5
7801.019.047					47	7
7804.019.054					*54	7
7801.019.060					60	7
7804.019.069					*69	7
7801.019.077					77	7
7801.020.023		20	26	32	23	4
7801.020.030					30	4
7801.020.037					37	5
7801.020.047					47	7
7804.020.054					*54	7
7801.020.060					60	7
7804.020.069					*69	7
7801.020.077					77	7

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**

可按要求供货 / *Italic = upon request*

* = ISO/DIN标准以外推荐尺寸

* = Size resp. length outside ISO/DIN

编号	Art.-Nr.	d1	d2	d3	l1	l6
7801.024.030		24	30	40	30	5
7801.024.037					37	5
7801.024.047					47	7
7801.024.060					60	7
7804.024.069					*69	7
7801.024.077					77	7
7801.024.095					*95	7
7801.025.030		25	31	40	30	5
7801.025.037					37	5
7801.025.047					47	7
7801.025.060					60	7
7804.025.069					*69	7
7801.025.077					77	7
7801.025.095					*95	7
7801.030.037		30	38	48	37	7
7801.030.047					47	7
7801.030.060					60	7
7801.030.077					77	7
7804.030.087					*87	7
7801.030.095					95	7
7801.032.037		32	40	48	37	7
7801.032.047					47	7
7801.032.060					60	7
7801.032.077					77	7
7804.032.087					*87	7
7801.032.095					95	7
7801.038.060		38	46	58	60	7
7801.038.077					77	7
7804.038.087					*87	7
7801.038.095					95	7
7801.038.120					120	7
7801.040.060		40	48	58	60	7
7801.040.077					77	7
7804.040.087					*87	7
7801.040.095					95	7
7801.040.120					120	7

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推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
 可按要求供货 / *Italic = upon request*

* = ISO/DIN标准以外推荐尺寸
* = Size resp. length outside ISO/DIN

带胶水槽和卡簧的直线导套

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
- 直径公差
d3= ISO js4
- 倒角 f8 便于中心定位

安装建议:

- 涂胶水至定位孔ISO H5/JS4
- 涂Loctite 648 紧固剂
- **不要压入导套**, 这将会引起内径收缩, 以及额外的机加。
- 按要求的方式压入

订单示例:

- 导套
d1= 20, l1= 60
- 带 1 个卡簧
7811.020.060
 - 带 2 个卡簧
7812.020.060

Guide bush straight with glue grooves and circlip

Technical data:

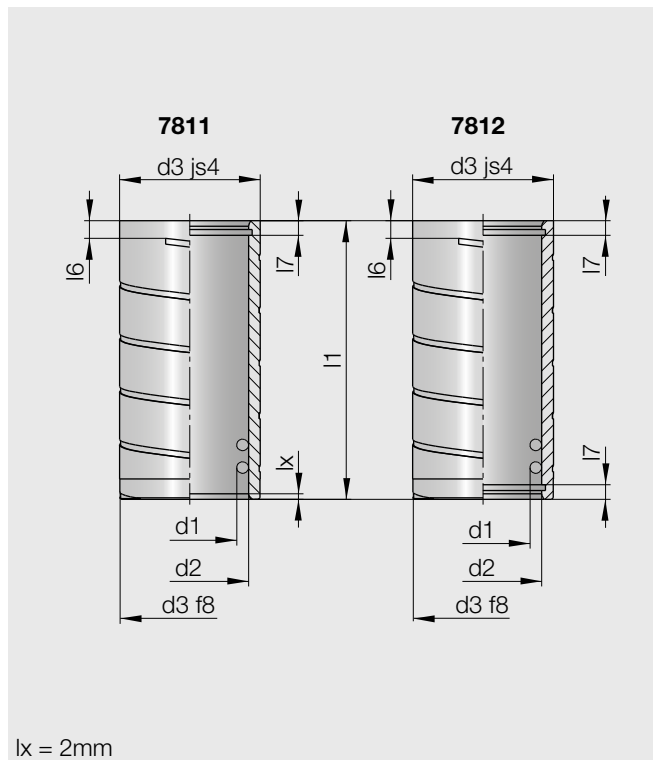
- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
- Diameter tolerance
d3= ISO js4
- Chamfer f8 as assembly centering aid

Assembly advices:

- Glue into location bore ISO H5/JS4
- Secure with Loctite 648
- **Do not press-in** the guide bush. This will cause a contraction of the inside diameter, and additional machining will be necessary
- Press-in type on request

Order example:

- Guide bush
d1= 20, l1= 60
- with 1 circlip
7811.020.060
 - with 2 circlips
7812.020.060



编号	Art.-Nr.	d1	d2	d3	l1	l6	l7
7811.015.060		15	21	28	60	7	4
7811.016.060		16	22	28	60	7	4
7811.019.060		19	25	32	60	7	4
7811.020.060		20	26	32	60	7	4
7811.024.095		24	30	40	95	7	4
7811.025.095		25	31	40	95	7	4
7811.030.095		30	38	48	95	7	5
7811.032.095		32	40	48	95	7	5

编号	Art.-Nr.	d1	d2	d3	l1	l6	l7
7812.015.060		15	21	28	60	7	4
7812.016.060		16	22	28	60	7	4
7812.019.060		19	25	32	60	7	4
7812.020.060		20	26	32	60	7	4
7812.024.095		24	30	40	95	7	4
7812.025.095		25	31	40	95	7	4
7812.030.095		30	38	48	95	7	5
7812.032.095		32	40	48	95	7	5

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**

可按要求供货 / *Italic = upon request*

直线型导套，厚壁

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
- 直径公差
d3= ISO n5
- 倒角 f8 便于中心定位

安装建议:

- 涂胶水至相应的定位孔，厚度大约 0.01mm
- **不要压入导套**，这将会引起内径收缩，以及额外的机加工。
- 按要求的方式压入

Guide bush straight, thick wall

Technical data:

- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
- Diameter tolerance
d3= ISO n5
- Chamfer f8 as assembly centering aid

Assembly advices:

- Glue into corresponding location bore with approx. 0.01mm play
- **Do not press-in** the guide bush. This will cause a contraction of the inside diameter, and additional machining will be necessary
- Press-in type on request

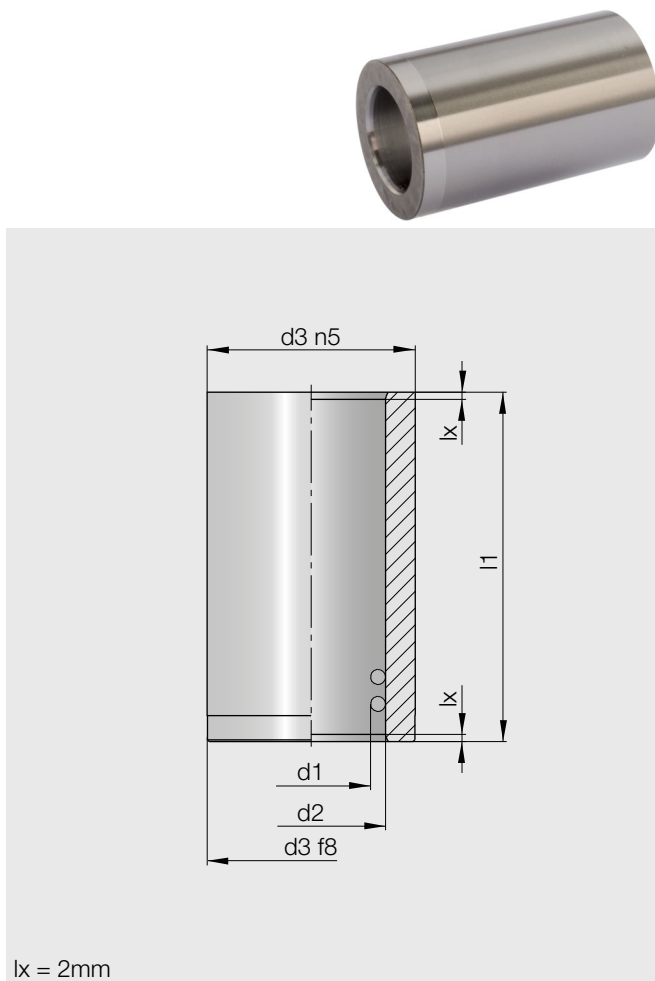
订单示例:

导套
d1= 40, l1= 79
7820.040.079

Order example:

Guide bush
d1= 40, l1= 79
7820.040.079

编号 Art.-Nr.	d1	d2	d3	l1
7820.025.079	25	31	48	79
7820.025.094				94
7820.030.079	30	38	56	79
7820.030.094				94
7820.030.109				109
7820.032.079	32	40	56	79
7820.032.094				94
7820.032.109				109
7820.032.129				129
7820.032.149				149
7820.038.109	38	46	65	109



编号 Art.-Nr.	d1	d2	d3	l1
7820.040.079	40	48	65	79
7820.040.094				94
7820.040.109				109
7820.040.129				129
7820.040.149				149
7820.050.109	50	58	75	109
7820.050.129				129
7820.050.149				149
7820.050.169				169
7820.060.149	60	68	90	149
7820.063.149	63	71	90	149
7820.063.169				169
7820.063.189				189

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
可按要求供货 / *Italic = upon request*

帽沿式导套，薄壁

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
- 直径公差
d3= ISO js4
- 倒角 f8 便于中心定位

安装建议:

- 安装定位孔精度 ISO H5

采购导柱包括以下附件:

- 3 个锁紧压块
编号 8001.000.001
- 3 颗固定螺丝
编号 070.00.580

订单示例:

帽沿式导套
d1= 20, l1= 42
7840.020.042

Headed guide bush,
thin wall

Technical data:

- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
- Diameter tolerance
d3= ISO js4
- Chamfer f8 as assembly
centering aid

Assembly advice:

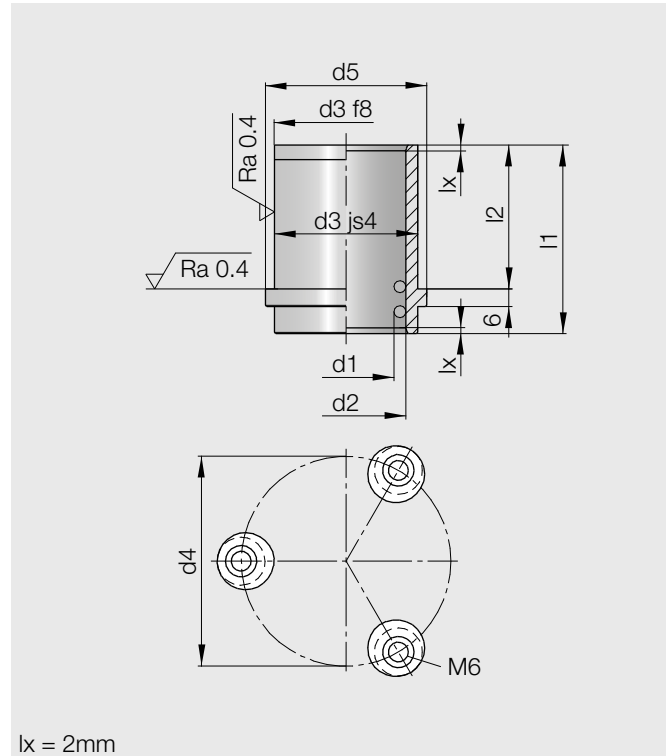
- Assembly in location bore
ISO H5

Extent of supply incl.:

- 3 clamps
Art. No. 8001.000.001
- 3 screws
Art. No. 070.00.580

Order example:

Headed guide bush
d1= 20, l1= 42
7840.020.042



编号 Art.-Nr.	d1	d2	d3	d4	d5	l1	l2
7840.020.042	20	26	33	55	39	42	30
7840.020.050						50	38
7840.025.050	25	31	38	60	44	50	38
7840.025.060						60	48
7840.032.063	32	40	48	70	54	63	48
7840.032.076						76	61
7840.040.063	40	48	56	78	62	63	48
7840.040.076						76	61

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**

可按要求供货 / *Italic = upon request*

帽沿式导套

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
- 直径公差
d3= ISO js4 (仅为装配直径)
- 倒角 f8 便于中心定位

安装建议:

- 安装定位孔精度 ISO H5

使用:

- 7851 = 12 短 ISO/DIN
- 7852 = 12 适中 ISO/DIN
- 7854 = 特殊., 12 适中,
安装精度- øISO/DIN
- 7855 = 特殊., 12 长,
安装精度- øISO/DIN
- 7856 = 特殊., 12 特长,
安装精度- øISO/DIN

采购导柱包括以下附件:

- 3 个锁紧压块
编号 8001.000.001
- 3 颗固定螺丝
编号 070.00.580

订单示例:

帽沿式导套
d1= 19, l1= 59, l2= 23
7851.019.059

Headed guide bush

Technical data:

- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
- Diameter tolerance
d3= ISO js4 (only assembly diameter)
- Chamfer f8 as assembly centering aid

Assembly advice:

- Assembly in location bore ISO H5

Execution:

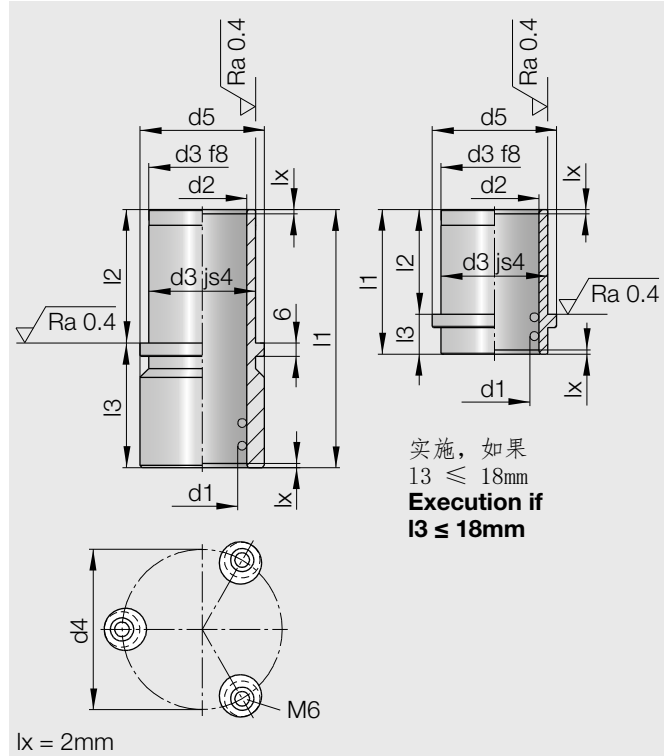
- 7851 = l2 short ISO/DIN
- 7852 = l2 medium ISO/DIN
- 7854 = spec., l2 medium,
assembly-ø ISO/DIN
- 7855 = spec., l2 long, assembly-ø ISO/DIN
- 7856 = spec., l2 extra long,
assembly-ø ISO/DIN

Extent of supply incl.:

- 3 clamps
Art. No. 8001.000.001
- 3 screws
Art. No. 070.00.580

Order example:

Headed guide bush
d1= 19, l1= 59, l2= 23
7851.019.059



编号	Art.-Nr.	d1	d2	d3	d4	d5	l1	l2	l3
7851.019.035		19	25	32	56	40	35	23	12
7851.019.043							43	23	20
7851.019.059							59	23	36
7855.019.069							*69	*37	*32
7851.020.035		20	26	32	56	40	35	23	12
7851.020.043							43	23	20
7851.020.059							59	23	36
7854.020.042							*42	*30	*12
7854.020.075							*75	*30	*45
7855.020.069							*69	*37	*32
7851.024.035		24	30	40	64	48	35	23	12
7851.024.059							59	23	36
7851.024.079							79	23	56
7852.024.055							55	30	25
7852.024.080							80	30	50

编号	Art.-Nr.	d1	d2	d3	d4	d5	l1	l2	l3
7851.025.035		25	31	40	64	48	35	23	12
7851.025.059							59	23	36
7851.025.079							79	23	56
7852.025.055							55	30	25
7852.025.080							80	30	50
7854.025.052							*52	*37	*15
7854.025.069							*69	*37	*32
7855.025.065							*65	*47	*18
7855.025.097							*97	*47	*50
7856.025.080							*80	*60	*20
7856.025.096							*96	*60	*36

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**

可按要求供货 / *Italic = upon request*

* = ISO/DIN标准以外推荐尺寸

* = Size resp. length outside ISO/DIN

推荐尺寸 (粗体显示) / **Bold** = preferred dimensions
 可按要求供货 / *Italic* = upon request

* = ISO/DIN标准以外推荐尺寸
* = Size resp. length outside ISO/DIN

锁紧压块

技术参数:

- 材料: 1.0718 (9SMnPb28)
- 特立弗热处理工艺
- 偏心旋转设计

采购包括以下附件.:

- 无安装螺丝 (编号: 070.00.580, M6x16), 如果需要此螺丝, 必须单独采购

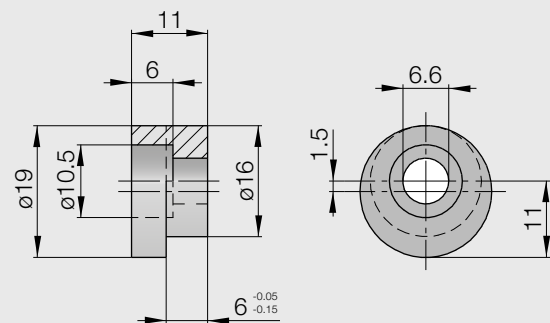
Clamps

Technical data:

- Material: 1.0718 (9SMn-Pb28)
- Tenifer processed
- Eccentrically turned

Extent of supply:

- Without screw (Art. No. 070.00.580, M6x16), must be ordered separately if necessary



订单示例:

锁紧压块
8001.000.001

Order example:

Clamps
8001.000.001

[illegible]

推荐尺寸 (粗体显示) / **Bold** = preferred dimensions

可按要求供货 / *Italic* = upon request

定位套管

技术参数:

■ 材料: PA (Polyamid)

安装建议:

■ 适合所有的从 $\varnothing 15$ 到 50mm 的导柱

采购包括以下附件.:

■ 定位套管含管夹

Locating sleeve

Technical data:

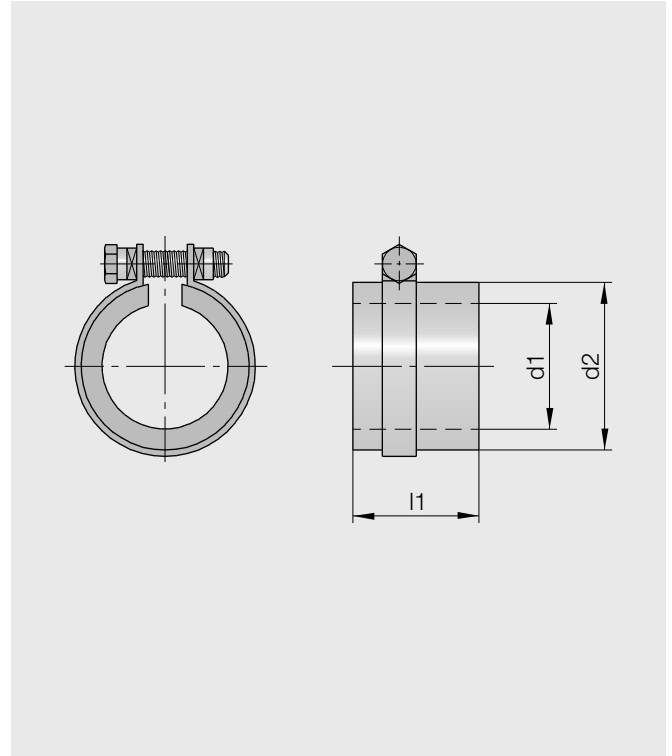
■ Material: PA (Polyamid)

Assembly advice:

■ Suitable to all guide pillars from $\varnothing 15$ to 50mm

Extend of supply:

■ Locating sleeve incl. hose clip



订单示例:

定位套
d1= 15, l1= 20
8002.015.020

Order example:

Locating sleeve
d1= 15, l1= 20
8002.015.020

编号 Art.-Nr.	d1	d2	l1
8002.015.020	15	20	20
8002.016.020	16		
8002.019.020	19	25	20
8002.020.020	20		
8002.024.030	24	30	30
8002.025.030	25		
8002.030.030	30	40	30
8002.032.030	32		
8002.038.040	38	50	40
8002.040.040	40		
8002.048.040	48	60	40
8002.050.040	50		

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**

可按要求供货 / *Italic = upon request*

固定式衬套保持器

技术参数:

■ 材料: 1. 0718 (9SMnPb28)

安装建议:

■ 应用在标准件 6541, 6542 和 6578

■ 该衬套保持架可以用于滚珠衬套和滚针衬套。C 的尺寸接近所选衬套长度的一半(如有需要, 请转换成尺寸值)

■ 用于模具的上模架。该衬套保持架阻止衬套从导柱上滑落, 并且保证导套能够完全脱离导柱和衬套。

Cage retainer fixed

Technical data:

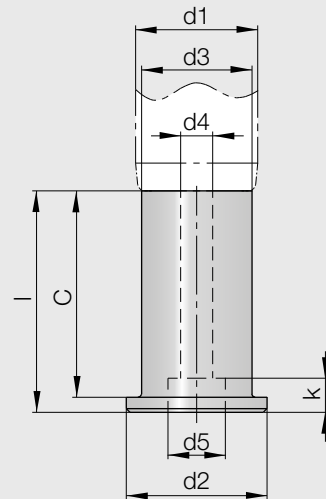
■ Material: 1.0718 (9SMnPb28)

Assembly advices:

■ Application with pillar Standards 6541, 6542 and 6578

■ The cage retainer can be used for ball and roller cages. The value C should be approx. half the length of the chosen cage length (if necessary turn to size)

■ Used in all die-sets with pillar fixed in the upper plate. The cage retainer stops the cage from falling down and enables a complete disengagement of the guide bush



订单示例:

衬套保持器
d1= 30
8003.030.054

Order example:

Cage retainer fixed
d1= 30
8003.030.054

编号 Art.-Nr.	d1	d2	d3	d4	d5	l	C	k
8003.016.030	16	21.5	15	6.4	11	33	30	9
8003.019.037	19	24.5	18	8.4	15	40	37	9
8003.020.037	20	25.5	19	8.4	15	40	37	9
8003.024.045	24	29.5	23	8.4	15	48	45	9
8003.025.045	25	30.5	24	8.4	15	48	45	9
8003.030.054	30	37.0	29	8.4	15	58	54	9
8003.032.054	32	39.0	31	8.4	15	58	54	9
8003.038.064	38	45.0	37	8.4	15	68	64	9
8003.040.064	40	47.0	39	8.4	15	68	64	9
8003.050.064	50	57.0	49	8.4	15	68	64	9
8003.063.075	63	72.0	62	8.4	15	80	75	9

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**

可按要求供货 / *Italic = upon request*

滚针导向元件

- 导柱直径17, 18 及21mm
- 用于更换, 而非新的设计

Ball guide elements

- Pillar diameter 17, 18 and 21 mm
- For revisions, not to be used for new designs



直线导柱

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
感应淬火, 深度1.5+1mm
- 直径公差
d1= ISO h3
超精磨
- 倒角 f8 便于中心定位

安装建议:

- 安装定位孔精度 ISO N5

其他要求:

- 导柱 d1 = 18mm, 参见模具结构程序, 章节 4.30

Guide pillar straight

Technical data:

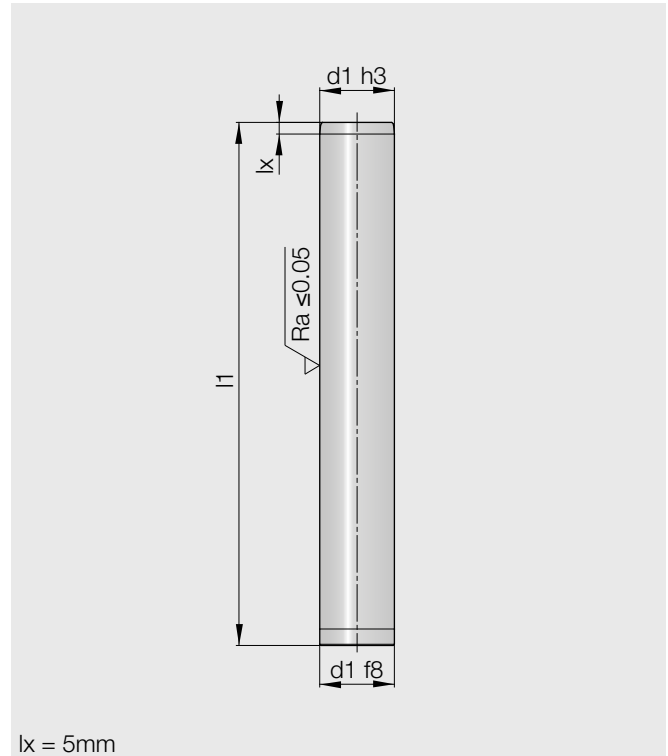
- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
induction hardened, depth 1.5+1mm
- Diameter tolerance
d1= ISO h3
superfinish ground
- Chamfer f8 as assembly centering aid

Assembly advice:

- Assembly in location bore ISO N5

Miscellaneous:

- Pillars with d1 = 18mm, see also the mold construction program, page 4.30



不可用于新的设计!

Not to be used for new designs!

订单示例:

导柱
d1= 17, l1= 200
650.17.200

Order example:

Guide pillar
d1= 17, l1= 200
650.17.200

编号 Art.-Nr.	d1	l1
650.17.200	17	200
650.18.120	18	125
650.18.200		200
650.21.150	21	150
650.21.220		200

编号 Art.-Nr.	d1	l1

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
可按要求供货 / *Italic = upon request*

铝质防脱落滚珠衬套

技术参数:

- 衬套材料: 3.1645 (AlC-uMgPb)
- 滚珠材料: 1.3505 (100Cr6)
- K = 滚珠编号
- C = 每个滚珠衬套的承载力 N(标准值)

Ball cage in aluminum with anti-skid unit

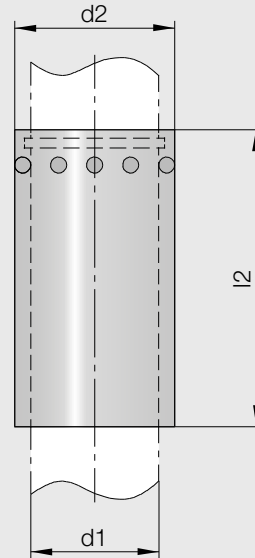
Technical data:

- Material cage: 3.1645 (AlCuMgPb)
- Material ball: 1.3505 (100Cr6)
- K = No. of balls
- C = Load in N per ball cage (standard value)



不可用于新的设计!

Not to be used for new designs!



订单示例:

铝质滚珠衬套
d1= 17, 11= 57
761. 17. 570

Order example:

Ball cage in aluminum
d1= 17, l1= 57
761.17.570

[illegible][illegible]

推荐尺寸 (粗体显示) / **Bold** = preferred dimensions

可按要求供货 / *Italic* = upon request

帶卡簧的黃銅滾珠衬套

技术参数:

- 衬套材料: 2.0401 (CuZn-39Pb3)
- 滚珠材料: 1.3505 (100Cr6)
- K = 滚珠编号
- C = 每个滚珠衬套的承载力 N(标准值)

Ball cage in brass with circlip

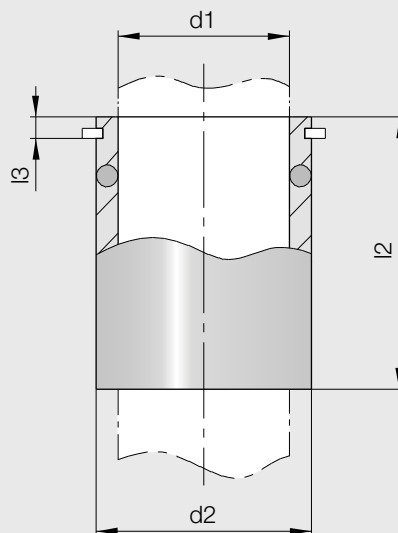
Technical data:

- Cage material: 2.0401
(CuZn39Pb3)
- Ball material: 1.3505
(100Cr6)
- K = No. of balls
- C = Load in N per ball cage
(standard value)



不可用于新的设计!

Not to be used for new designs!



订单示例:

黄铜滚珠衬套
d1= 17, 11= 60
763. 17. 600

Order example:

Ball cage in brass
d1= 17, l1= 60
763.17.600

[illegible][illegible]

推荐尺寸 (粗体显示) / **Bold** = preferred dimensions

可按要求供货 / *Italic = upon request*

直线导套

技术参数:

- 材料: 1.3505 (100Cr6)
- 硬度: 62+2HRC
- 直径公差
d3= ISO n5
- 倒角 f8 便于中心定位

安装建议:

- 安装孔涂胶水, 胶水厚度大约 0.01mm
- 不要压入导套, 这将会引起内径收缩, 以及额外的机加工。
- 按要求方式压入

不可用于新的设计!

订单示例:

导套
d2= 23, l1= 64
780.23.640

Guide bush straight

Technical data:

- Material: 1.3505 (100Cr6)
- Hardness: 62+2HRC
- Diameter tolerance
d3= ISO n5
- Chamfer f8 as assembly centering aid

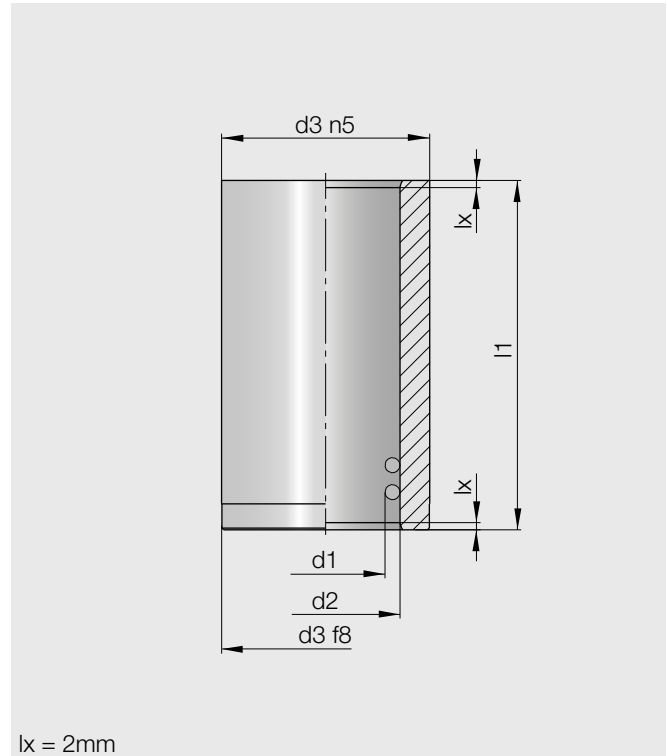
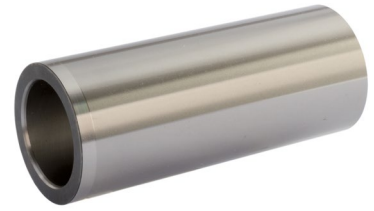
Assembly advices:

- Glue into location bore. Location bore with approx. 0.01mm play
- **Do not press-in** the guide bush. This will cause a contraction of the inside diameter, and additional machining will be necessary
- Press-in type on request

Not to be used for new designs!

Order example:

Guide bush
d2= 23, l1= 64
780.23.640



编号	Art.-Nr.	d1	d2	d3	l1
780.23.640		17	23	30	64
780.24.440		18	24	30	44
780.24.640					64
780.27.590		21	27	33	59
780.27.690					69

编号	Art.-Nr.	d1	d2	d3	l1

推荐尺寸 (粗体显示) / **Bold = preferred dimensions**
可按要求供货 / *Italic = upon request*

