



HDB-850 系列

金属烧结轴承
Bronze-Wrapped Bushings

850 Series / A - Steel Cast Copper

850 系列 / A - 钢铸铜

1720-A

Composite self-lubricating guide bush
复合型自润滑导套



P.58

1760-A

Flanged composite self-lubricating guide bush, ISO 9448-6
带法兰复合型自润滑导套, ISO 9448-6



P.59

1770-A

Flanged composite self-lubricating guide bush, ISO 9448-6
带法兰复合型自润滑导套, ISO 9448-6



P.60

2710-A

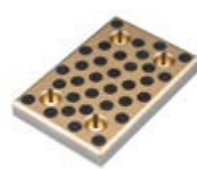
Composite self-lubricating guide plate, VDI 3357
复合型自润滑导板, VDI 3357



P.61

2720-A

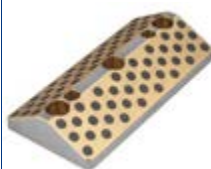
Composite self-lubricating guide plate (Japanese standard)
复合型自润滑导板 (日本标准)



P.62

2781-A

Slider, VDI 3357
滑块, VDI 3357



P.66

850 Series / B - Copper Powder + Graphite Sintering

850 系列 / B - 铜粉 + 石墨烧结

1720-B

Composite self-lubricating guide bush
复合型自润滑导套



P.58

1760-B

Flanged composite self-lubricating guide bush, ISO 9448-6
带法兰复合型自润滑导套, ISO 9448-6



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1770-B

Flanged composite self-lubricating guide bush, ISO 9448-6
带法兰复合型自润滑导套, ISO 9448-6



P.60

2710-B

Composite self-lubricating guide plate, VDI 3357
复合型自润滑导板, VDI 3357



P.61

2720-B

Composite self-lubricating guide plate (Japanese standard)
复合型自润滑导板 (日本标准)



P.62

2721-B

Composite self-lubricating guide plate
复合型自润滑导板



P.63

2722-B

Composite self-lubricating guide plate
复合型自润滑导板



P.64

2780-B

Compound type, wedge type V self-lubricating guide plate
复合型, 斜楔 V 型自润滑导板



P.65

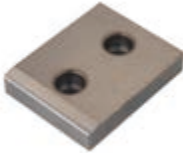
2781-B

Compound type, wedge type V self-lubricating guide plate
复合型, 斜楔 V 型自润滑导板



P.66

850 Series /C - Iron nickel Powder + Graphite Sintering
850 系列 / C - 铁镍粉 + 石墨烧结

1820-C Composite self-lubricating guide bush 复合型自润滑导套  P.58	1860-C FFlanged composite self-lubricating guide bush, ISO 9448-6 带法兰复合型自润滑导套, ISO 9448-6  P.59	1870-C Flanged composite self-lubricating guide bush, ISO 9448-6 带法兰复合型自润滑导套, ISO 9448-6  P.60	2810-C Composite self-lubricating guide plate, VDI 3357 复合型自润滑导板, VDI 3357  P.61	2720-C Composite self-lubricating guide plate (Japanese standard) 复合型自润滑导板 (日本标准)  P.62
2821-C Composite self-lubricating guide plate 复合型自润滑导板  P.63	2822-C Composite self-lubricating guide plate 复合型自润滑导板  P.64	2880-C Compound type, wedge type V self-lubricating guide plate 复合型, 斜楔 V 型自润滑导板  P.65	2881-C Compound type, wedge type V self-lubricating guide plate 复合型, 斜楔 V 型自润滑导板  P.66	

850-C材料组织 Material Structure



1. Graphite-containing iron-nickel sintered layer
2. Steel substrate
1. 含石墨的铁镍烧结层
2. 钢基板

Introduced products 产品简介

HDB-850 系列是在钢背上铸造或烧结而成的复合材料，一般复合厚度0.3-2mm。通过不同的材料组合从而达到不同的承载力和摩擦系数。

The HDB-850 series is a composite material that is cast or sintered on a steel back and is generally compounded to a thickness of 0.3 to 2 mm. Different bearing capacities and friction coefficients are achieved by different material combinations.

850-A Features 850-A特性

- Casting copper alloy on carbon steel surface, the manufacturing process makes the copper and steel joint surface reach complete metallurgical bonding
- At the same time, it has the wear resistance of copper alloy and the high mechanical strength of steel.
- Reduce material costs while also improving its carrying capacity
- Self-lubricating effect can be achieved after inlaying graphite.
- 碳钢表面浇铸铜合金，制造工艺使铜和钢结合面达到完全的冶金结合
- 同时具备了铜合金的耐磨性和钢的高机械强度性能
- 降低材料成本，同时也提高了其承载能力
- 镶嵌石墨后可达到自润滑效果。

850-B, C Features 850-B、C特性

- The copper-iron alloy is used as the main raw material, and contains low-friction materials such as graphite and molybdenum disulfide, which are processed by high-temperature sintering technology.
- The diffused solid lubricant is evenly distributed, and there is no creep phenomenon under microscopic movement. Suitable for small stroke micro-motion conditions.
- The solid lubricant is released to the surface of the pair of parts in time when friction occurs, and it can stably provide a solid lubricating transfer film for its surface.
- More wear resistance and high temperature resistance than traditional powder metallurgy
- The metal substrate can be made of copper, carbon steel and stainless steel to adapt to different working conditions.
- 以铜铁合金为主要原材料，内含石墨、二硫化钼等低摩擦材料，采用高温烧结技术加工而成
- 弥散型固体润滑剂分布均匀，微观移动下不会出现爬行现象。适合小行程微动工况。
- 固体润滑剂在摩擦发生时会被及时地释放到对偶件表面，可以稳定地为其表面提供固体润滑转移膜，
- 相比传统的粉末冶金更具有耐磨性和耐高温性能
- 金属基板可采用铜、碳钢和不锈钢，从而适应不同的工况。

技术参数 Technical Data

参数 Data				A	B	C
max. P	干摩擦 /dry	动载荷 dynamic	N/mm ²	100	45	50
	-	静载荷 / 微小运动, static		250	100	120
max. v	干摩擦 /dry		m/s	0.5	0.7	0.6
	定期注油 /geschmiert			1	1.4	1.6
Pv max.	干摩擦 /dry		N/mm ² ·m/s	1.65	1.4	1.5
	定期注油 /geschmiert			3.25	2.3	2.5
工况温度 / service temperature range			°C	-100+300	-100+380	-100+400
密度 / Density			kg/dm ³	7.9	6.2	6.2
抗拉强度 / 结合强度 Tensile strength			N/mm ²	430	150	150
硬度 / hardness			HB	≥210	≥40	≥45

1720-A
1720-B
1820-C

Composite self-lubricating guide bush 复合型自润滑导套



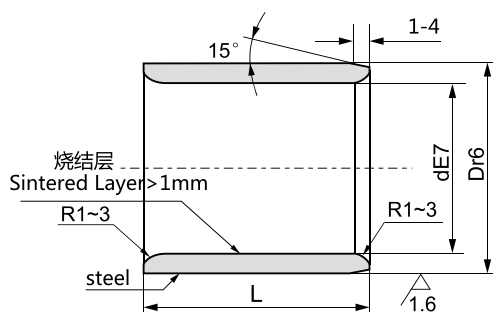
1720-A



1720-B



1820-C

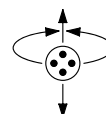


Material: 材料:

1720-A: 钢铸黄铜 + 固体润滑剂 (镶嵌型) Steel cast brass + solid lubricant (set type)

1720-B: 钢烧结铜合金 + 固体润滑剂 (弥散型) Steel sintered copper alloy + solid lubricant (dispersion type)

1820-C: 钢烧结铁镍合金 + 固体润滑剂 (弥散型) Steel sintered iron-nickel alloy + solid lubricant (dispersion type)



1721-A/1720-B/1820-C. Composite self-lubricating guide bush

1721-A/1720-B/1820-C. 复合型自润滑导套

d	20	25	25	28	30	30	35	35	40	45	45	50	50	50	55	60	60	65	70	70	75	75	80	80	90	100						
D	+0.073 +0.040										+0.089 +0.050										+0.106 +0.060										+0.126 +0.072	
	30	33	35	38	38	40	44	45	50	55	60	60	62	65	70	74	75	80	85	90	90	95	96	100	110	120						
	+0.049 +0.028	+0.059 +0.034										+0.071 +0.041					+0.073 +0.043					+0.086 +0.051					+0.089 +0.054					
10																																
12		●			●																											
15	●	●	●		●	●			●																							
16	●	●	●																													
19																																
20	●	●	●	●	●	●	●	●	●			●																				
25	●	●	●	●	●	●	●	●	●																							
30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●													
35	●	●	●		●	●	●	●	●	●	●	●				●	●		●													
40	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				●	●								
50	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●						
60		●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●						
70									●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
80									●		●	●		●		●	●	●	●	●	●	●	●	●	●	●						
90																			●	●	●	●	●	●	●	●						
100														●			●		●		●	●	●	●	●	●						
120																							●	●	●	●						

Order 订购 Catalog No. 目录号 . d . D . L — 材质

1720 . 020 . 030 . 015 — A
1720 . 020 . 030 . 015 — B
1820 . 020 . 030 . 015 — C

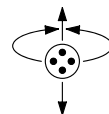
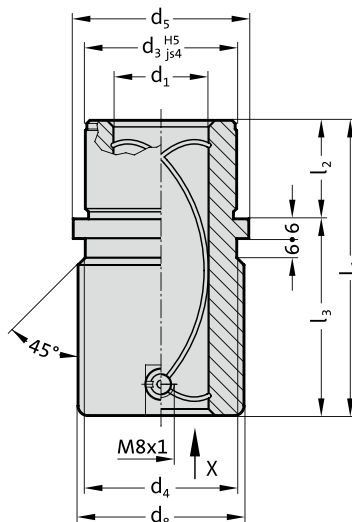
1760-A



1760-B



1860-C



Material 材料:

1760-A: 钢铸锡青铜
Steel cast tin bronze

1760-B: 钢烧结铜合金 + 固体润滑剂 (弥撒型)
Steel sintered copper alloy + solid lubricant
(mass type)

1860-C: 钢烧结铁镍合金 + 固体润滑剂 (弥撒型)
Steel sintered iron-nickel alloy + solid lubricant (mass type)

Description 说明:

外径表面高频处理 OD surface high frequency processing

硬度 Hardness: 500+100 HV 10.

1760-A./1760-B./1860-C. Flanged composite self-lubricating guide bush, ISO 9448-6
1760-A./1760-B./1860-C. 带法兰复合型自润滑导套, ISO 9448-6

d ₁	19 20	24 25	30 32	38 40	48 50	60 63	80
允许偏差	+0.012 +0.003	+0.012 +0.003	+0.015 +0.004	+0.015 +0.004	+0.015 +0.004	+0.018 +0.005	+0.018 +0.005
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 ₈	39	46	53	63	77	92	115
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



Order 订购

Catalog No. 目录号

 d_1

I

材质

1760
1760
1860

-
-
-

- 059
- 059
- 059

A
B
C

1770-A
1770-B
1870-C

Flanged composite self-lubricating guide bush, ISO 9448-6
带法兰复合型自润滑导套，ISO 9448-6



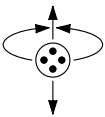
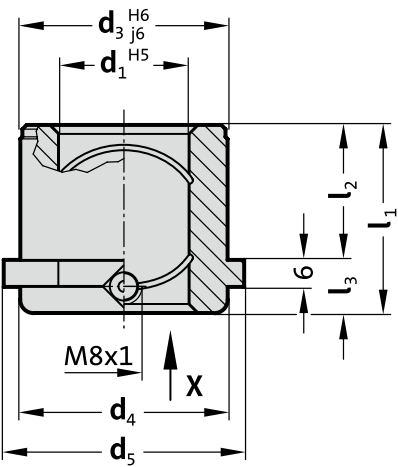
1770-A



1770-B



1870-C



Material 材料:

1770-A: 钢铸锡青铜
Steel cast tin bronze

1770-B: 钢烧结铜合金 + 固体润滑剂 (弥撒型)
Steel sintered copper alloy + solid lubricant (mass type)

1870-C: 钢烧结铁镍合金 + 固体润滑剂 (弥撒型)
Steel sintered iron-nickel alloy + solid lubricant (mass type)

Description 说明:

外径表面高频处理 OD surface high frequency processing

硬度 Hardness: 500+100 HV 10.

1770-A./1770-B./1870-C. Flanged composite self-lubricating guide bush, ISO 9448-6
1770-A./1770-B./1870-C. 带法兰复合型自润滑导套，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
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



Order 订购

Catalog No. 目录号

d₁

l₁

材质

1770

019

035

A

1770

019

035

B

1870

019

035

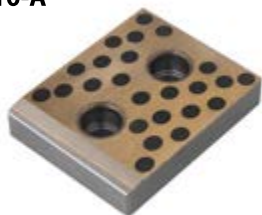
C

2710-A
2710-B
2810-C

Composite self-lubricating guide plate, VDI 3357 复合型自润滑导板, VDI 3357



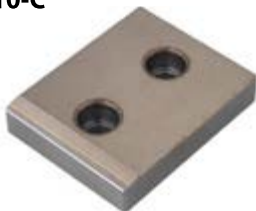
2710-A



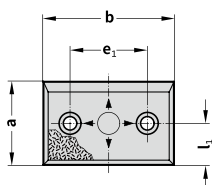
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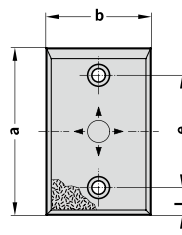
2810-C



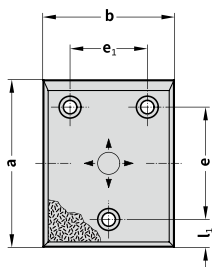
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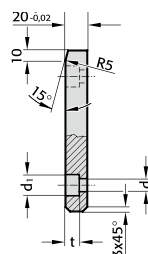
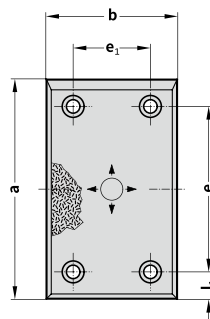
B



G



H



Material: 材料:

2710-A: 钢铸高力黄铜 + 固体润滑剂 (镶嵌型) Steel cast CuZn25Al5Fe3Mn3 + solid lubricant (set type)

2710-B: 钢烧结铜合金 + 固体润滑剂 (弥散型) Steel sintered copper alloy + solid lubricant (dispersion type)

2810-C: 钢烧结铁镍合金 + 固体润滑剂 (弥散型) Steel sintered iron-nickel alloy + solid lubricant (dispersion type)

2710-A/2710-B/2810-C. Composite self-lubricating guide plate, VDI 3357

2710-A/2710-B/2810-C. 复合型自润滑导板, VDI 3357

形状	b	a	l1	e	e1	d	d1	t	螺栓孔数量
B	50	80	25	30	-	9	15	9	2
B	50	100	25	50	-	13.5	20	13	2
B	50	125	25	75	-	13.5	202	13	2
B	50	160	25	110	-	13.5	20	13	2
B	50	200	25	150	-	13.5	20	13	2
D	80	50	25	-	30	9	15	9	2
B	80	80	25	30	-	13.5	20	13	2
B	80	100	25	50	-	13.5	20	13	2
B	80	125	25	75	-	13.5	20	13	2
B	80	160	25	110	-	13.5	20	13	2
B	80	200	25	150	-	13.5	20	13	2
B	80	250	40	170	-	13.5	20	13	2
B	80	315	40	235	-	13.5	20	13	2
D	100	50	25	-	50	13.5	20	13	2
D	100	80	40	-	50	13.5	20	13	2
B	100	100	25	50	-	13.5	20	13	2
B	100	125	25	75	-	13.5	20	13	2
B	100	160	25	110	-	13.5	20	13	2
B	100	200	25	150	-	13.5	20	13	2

2710-A/2710-B/2810-C. Composite self-lubricating guide plate, VDI 3357

2710-A/2710-B/2810-C. 复合型自润滑导板, VDI 3357

形状	b	a	l1	e	e1	d	d1	t	螺栓孔数量
B	100	250	40	170	-	13.5	20	13	2
B	100	315	40	235	-	13.5	20	13	2
D	125	50	25	-	75	13.5	20	13	2
D	125	80	40	-	75	13.5	20	13	2
G	125	100	25	50	75	13.5	20	13	3
G	125	125	25	75	75	13.5	20	13	3
G	125	160	25	110	75	13.5	20	13	3
G	125	200	25	150	75	13.5	20	13	3
G	125	250	40	170	75	13.5	20	13	3
G	125	315	40	235	75	13.5	20	13	3
D	160	50	25	-	110	13.5	20	13	3
D	160	80	40	-	110	13.5	20	13	3
G	160	100	25	50	110	13.5	20	13	3
G	160	125	25	75	110	13.5	20	13	3
G	160	160	25	110	110	13.5	20	13	3
G	160	200	25	150	110	13.5	20	13	3
H	160	250	40	170	110	13.5	20	13	4
H	160	315	40	235	110	13.5	20	13	4



Order 订购

Catalog No. 目录号

b

a

材质

2710

50

80

A

2710

50

80

B

2810

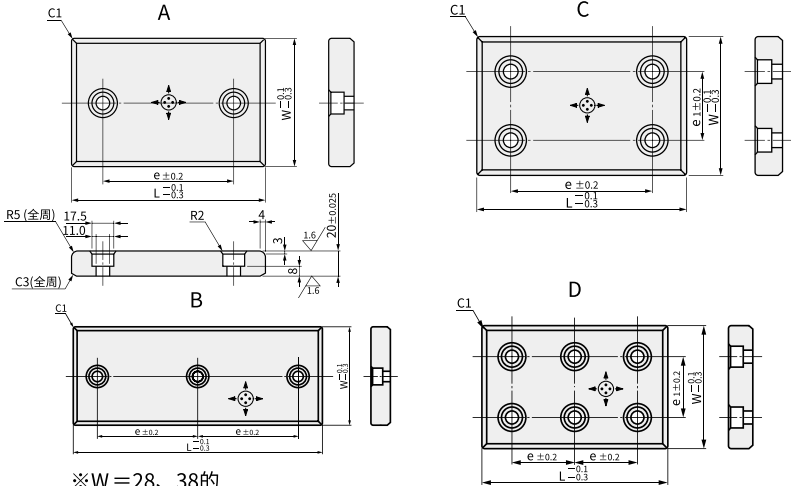
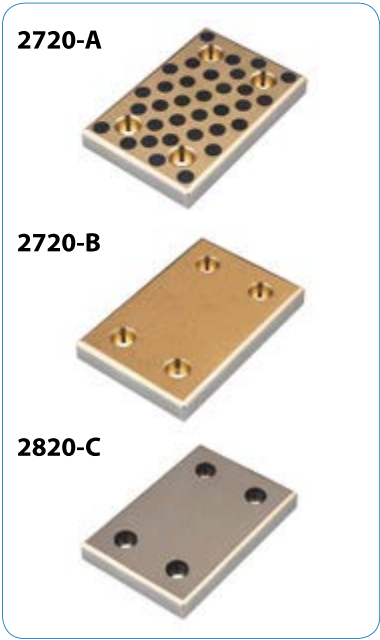
50

80

C

2720-A
2720-B
2820-C

Composite self-lubricating guide plate (Japanese standard)
复合型自润滑导板（日本标准）



※W = 28、38的
纵向R为R2。

Material 材料： 2720-A：钢铸高力黄铜 + 固体润滑剂（镶嵌型）Steel cast CuZn25Al5Fe3Mn3 + solid lubricant (set type)
2720-B：钢烧结铜合金 + 固体润滑剂（弥散型）Steel sintered copper alloy + solid lubricant (dispersion type)
2820-C：钢烧结铁镍合金 + 固体润滑剂（弥散型）Steel sintered iron-nickel alloy + solid lubricant (dispersion type)

Composite self-lubricating guide plate (Japanese standard)
复合型自润滑导板（日本标准）

e	Catalog No.	W	NO.(L)	形状
45	2214	28	75	A
50			100	A
75			120	A
100			150	A
150			200	A
200			250	A
125		38	300	B
45			75	A
50			100	A
75			125	A
100			150	A
150			200	A
200			250	A
125		48	300	B
45			75	A
50			100	A
75			150	A
100			150	A
150			200	A
200		58	250	A
125			300	B
45			75	A
50			100	A
75			125	A
100			150	A
150		75	200	A
200			250	A
100			300	B
125			300-H	B

Composite self-lubricating guide plate (Japanese standard)
复合型自润滑导板（日本标准）

e	e1	Catalog No.	W	NO.(L)	形状
50	50	2214	100	100	C
75				125	C
100				150	C
150				200	C
200				250	C
200				300	C
125	50		125	300-H	D
75				125	C
100				150	C
150				200	C
200				250	C
200				300	C
200	75		125	350	C
75				125-H	C
100				150-H	C
150				200-H	C
200				250-H	C
125				300-H	D
200	100		150	350-H	C
100				150	C
150				200	C
200				250	C
250				300	C
125				300-H	D
150	150		200	200	C
200				250	C
250				300	C
125		300-H		D	



Order 订购

Catalog No. 目录号 . W . L . 厚度 材质

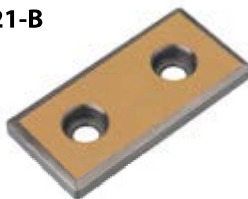
2720 028 . 075 . 020 - A
2720 028 . 075 . 020 - B
2820 028 . 075 . 020 - C

2721-B 2821-C

Composite self-lubricating guide plate 复合型自润滑导板



2721-B



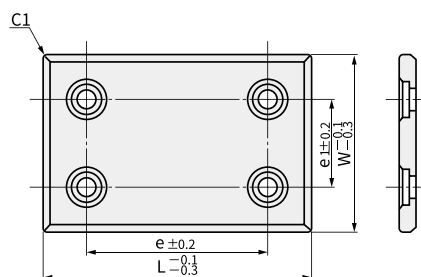
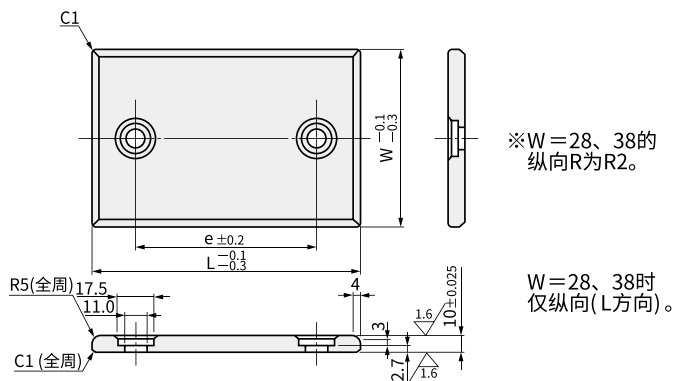
2821-C



Material: 材料:

2721-B: 钢烧结铜合金 + 固体润滑剂 (弥散型) Steel sintered copper alloy + solid lubricant (dispersion type)

2821-C: 钢烧结铁镍合金 + 固体润滑剂 (弥散型) Steel sintered iron-nickel alloy + solid lubricant (dispersion type)



2721-B/2821-C. Composite self-lubricating guide plate
2721-B/2821-C. 复合型自润滑导板

e	W	L	螺栓孔数量
45	28	75	2
50		100	2
75		125	2
100		150	2
45	38	75	2
50		100	2
75		125	2
100		150	2
45	48	15	2
50		100	2
75		125	2
100		150	2
150	58	200	2
45		75	2
50		100	2
75		125	2
100	75	150	2
125		175	2
150		200	2

2721-B/2821-C. Composite self-lubricating guide plate
2721-B/2821-C. 复合型自润滑导板

e	e1	W	L	螺栓孔数量
50	50	100	100	4
75			125	4
100			150	4
150			200	4
200	50	125	250	4
100			150	4
150			200	4
200			250	4
100	100	150	150	4
150			200	4



Order 订购

Catalog No. 目录号

2721
2821

W

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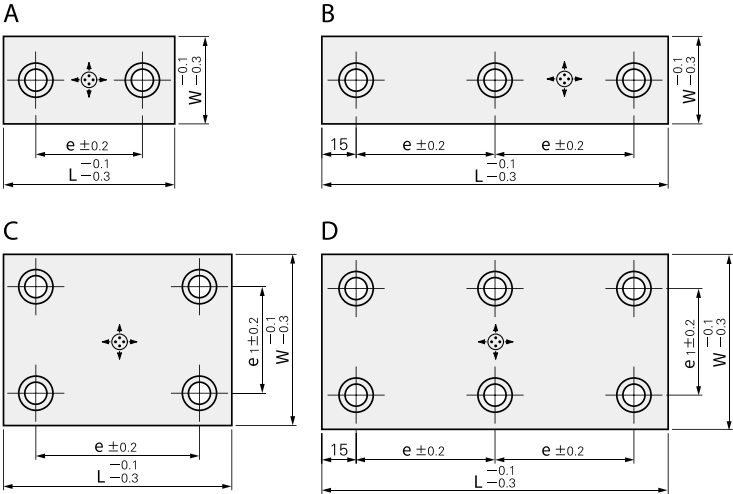
010
010

材质

B
C

2722-B
2822-C

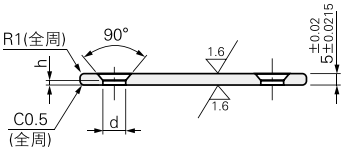
Composite self-lubricating guide plate
复合型自润滑导板



Material: 材料:

2722-B: 钢烧结铜合金 + 固体润滑剂 (弥散型) Steel sintered copper alloy + solid lubricant (dispersion type)

2822-C: 钢烧结铁镍合金 + 固体润滑剂 (弥散型) Steel sintered iron-nickel alloy + solid lubricant (dispersion type)



2722-B/2800-C. Composite self-lubricating guide plate
2722-B/2800-C. 复合型自润滑导板

e	e1	d	h	W	L	螺栓孔数量	安装螺栓
20	-	6.5	1.0	18	50	A	M6
45	-	6.5	1.0	18	75	A	M6
70	-	6.5	1.0	18	100	A	M6
60	-	6.5	1.0	18	150	B	M6
20	-	10	0.8	28	50	A	M8
45	-	10	0.8	28	75	A	M8
70	-	10	0.8	28	100	A	M8
60	-	10	0.8	28	150	B	M8
20	-	10	0.8	38	50	A	M8
45	-	10	0.8	38	75	A	M8
70	-	10	0.8	38	100	A	M8
60	-	10	0.8	38	150	B	M8
45	-	10	0.8	48	75	A	M8
70	-	10	0.8	48	100	A	M8
90	-	10	0.8	48	120	A	M8
60	-	10	0.8	48	150	B	M8
45	45	10	0.8	75	75	C	M8
70	45	10	0.8	75	100	C	M8
95	45	10	0.8	75	125	C	M8
60	45	10	0.8	75	150	D	M8
70	70	10	0.8	100	100	C	M8
95	70	10	0.8	100	123	C	M8
60	70	10	0.8	100	150	D	M8

Order 订购

Catalog No. 目录号

2722

2822

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2780-B 2880-C

Compound type, wedge type V self-lubricating guide plate
复合型，斜楔 V 型自润滑导板



2780-B



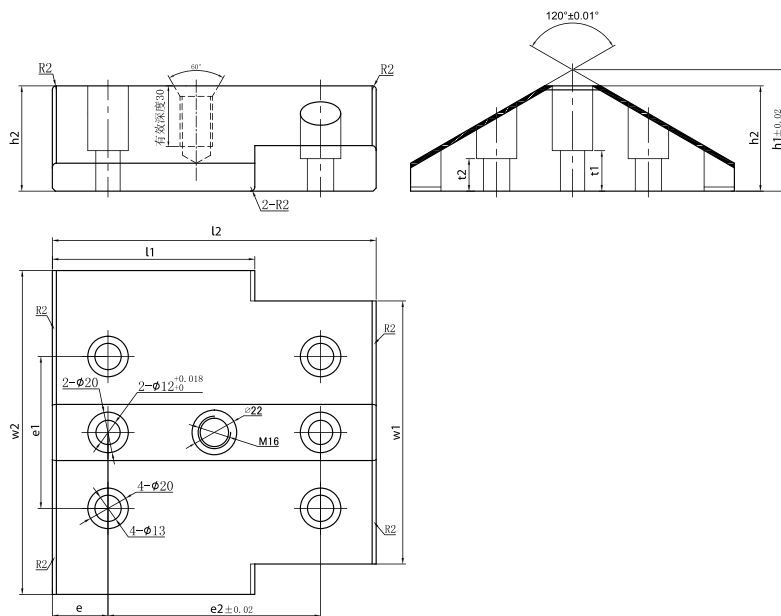
2880-C



Material: 材料:

2780-B: 钢烧结铜合金 + 固体润滑剂 (弥散型) Steel sintered copper alloy + solid lubricant (dispersion type)

2880-C: 钢烧结铁镍合金 + 固体润滑剂 (弥散型) Steel sintered iron-nickel alloy + solid lubricant (dispersion type)



2780-B/2880-C Compound type, wedge type V self-lubricating guide plate

2780-B/2880-C 复合型，斜楔 V 型自润滑导板

e1	e	w1	w2	e2	l1	l2	h1	h2	t1	t2
75	27.5	130	160	105	100	160	60	52	20	16
60	30	95	120	105	100	165	50	44	25	11



Order 订购

Catalog No. 目录号

2780

2880

w2

120

120

l2

165

165

h2

044

044

材质

B

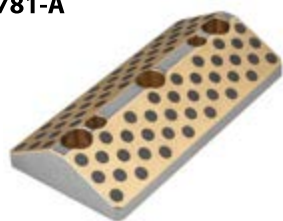
C

2781-A
2781-B
2881-C

Compound type, wedge type V self-lubricating guide plate, VDI3357
复合型，斜楔 V 型自润滑导板，VDI3357



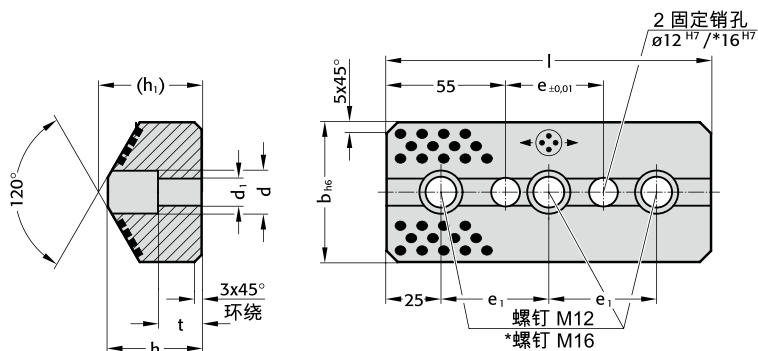
2781-A



2781-B



2881-C



Material: 材料：

2781-A: 钢铸黄铜 + 固体润滑剂（镶嵌型）Steel cast brass + solid lubricant (set type)

2781-B: 钢烧结铜合金 + 固体润滑剂（弥散型）Steel sintered copper alloy + solid lubricant (dispersion type)

2881-C: 钢烧结铁镍合金 + 固体润滑剂（弥散型）Steel sintered iron-nickel alloy + solid lubricant (dispersion type)

2781-A./2871-B./2881-C Compound type, wedge type V self-lubricating guide plate, VDI3357

2781-A./2871-B./2881-C 复合型，斜楔 V 型自润滑导板，VDI3357

b	h	(h1)	l	e	e ₁	d	d1	t	螺栓孔数量
65	44	(47)	150	45	100	20	13.5	20	2
65	44	(47)	200	95	150	20	13.5	20	2
65	44	(47)	250	145	100	20	13.5	20	3
65	44	(47)	300	195	125	20	13.5	20	3
125	47	(52)	150	45	100	26	17.5	15	2
125	47	(52)	200	95	150	26	17.5	15	2
125	47	(52)	250	145	100	26	17.5	15	3
125	47	(52)	300	195	125	26	17.5	15	3
125	52	(57)	150	45	100	26	17.5	15	2
125	52	(57)	200	95	150	26	17.5	15	2
125	52	(57)	250	145	100	26	17.5	15	3
125	52	(57)	300	195	125	26	17.5	15	3

Order 订购	Catalog No. 目录号	b	l	h	材质
	2781	065	150	044	A
	2781	065	150	044	B
	2881	065	150	044	C