



# Oilless Guide Elements

## Oilless Guide Elements General Description

Oilless Guide Elements with embedded solid lubricants are used in applications of linear or rotary motion in toolmaking, general machine construction and similar engineering uses. The structure of the base material provides closely spaced deposits of solid lubricant – properties and specifications as per table below.

The elements satisfy highest demands in terms of load bearing capacity at low sliding speeds, within an extensive temperature band.

The lubricant deposits are arranged in staggered geometrical patterns, thus ensuring optimal lubrication effect along the sliding motion, especially with counter bearings which are hardened and ground.

The sliding surfaces should be lightly greased with lithium grease emulsion, prior to commissioning.

On flat guideways and pillar guides, from 25 to 30 per cent of the sliding surfaces consist of lubricant deposits. Surfaces of counter bearings must have a ground finish, preferably with a lay parallel with the sliding motion.

### Choice of Element-Type

Standard:

- for general uses at temperatures up to 200°C

Special Types on request

### Advantages of Oilless Guide Elements

- good emergency sliding properties
- highest carrying capacity at low speed
- use under water or with chemical solutions
- extremely wide temperature resistance – hot and cold
- damping properties in presence of vibration

### PV value

The permissible bearing load is determined from the pressure and the PV value, which defines the bearing wear.

The PV value is the product of surface pressure (P) and running velocity (V).

The permissible bearing load is determined from the PV value.

$$PV = P \times V \text{ (N/cm}^2 \times \text{m/min.)}$$

$$P = F/A \text{ (N/cm}^2)$$

$$F = \text{max. load (N)}$$

$$A = \text{projected area of the bearing}$$

### Surface pressure, temperature, speed and lubrication

Surface pressure max. (N/cm <sup>2</sup> )	Temp. (°C)	Speed (m/min.)	PV value (N/cm <sup>2</sup> × m/min)	Lubrication
5000	80	15	10000	Initial
3000	150	60	20000	Pressure lubrication

### Oilless Guide Elements – Material Data

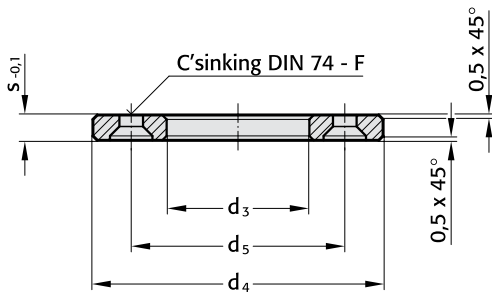
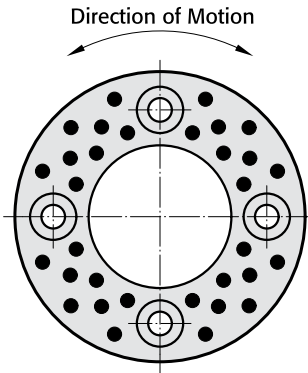
chemical composition %	CU 60–66	Brinell hardness HB 10	180–210	stroking velocity m/min	15	electric conductance	
	Al 5,0–7,5	shear strength N/mm <sup>2</sup>	560	co-efficient of friction	0,04–0,10	m/(Ω × mm <sup>2</sup> )	7–8
	Fe 2,0–4,0	yield limit		temperature conductance		alt. flexural strength	
	Mn 2,5–5,0	Rp 0,2 N/mm <sup>2</sup>	450	W/(m × K)	45–55	N/mm <sup>2</sup>	±150
	balance: Zn	elongation to fracture A5 %	8	temperature resistance °C	+300	ratio sliding surface	
specific density kg/dm <sup>3</sup>	8,2	elongation %	12	co-efficient of thermal		to lubricant	
tensile strength Rm N/mm <sup>2</sup>	770	modulus of elasticity		expansion	1,6–2,0 × 10 <sup>-5</sup> /°C	deposits (%)	25–30
		kN/mm <sup>2</sup>	105–115	co-efficient of shrinkage %	1,8–2,3		

**FIBRO**

2053.70.

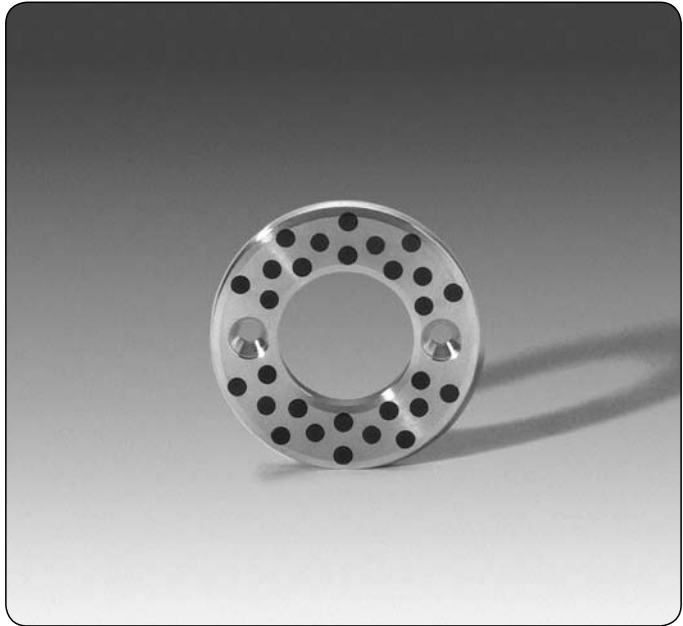
**Thrust Washers  
Bronze with Non-Liquid Lubricant**

2053.70.



**Ordering Code (example):**

Thrust Washer	=	2053.70.
d <sub>3</sub> = 20,2 mm	=	020
Order No	=	2053.70.020

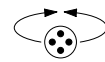


**Material:**

Bronze with Non-Liquid Lubricant, oilless lubricating.

**Note:**

For combination loads use together with Bushes 2052.70.



Direction of Motion  
Embedded non-liquid lubricant (section)

**Fixing:**

- from d<sub>3</sub> = 10,2 2 × M3
- from d<sub>3</sub> = 20,2 2 × M5
- from d<sub>3</sub> = 40,2 2 × M6
- from d<sub>3</sub> = 50,3 4 × M6
- from d<sub>3</sub> = 60,3 4 × M8
- from d<sub>3</sub> = 90,5 4 × M10

Screws not included.

2053.70.

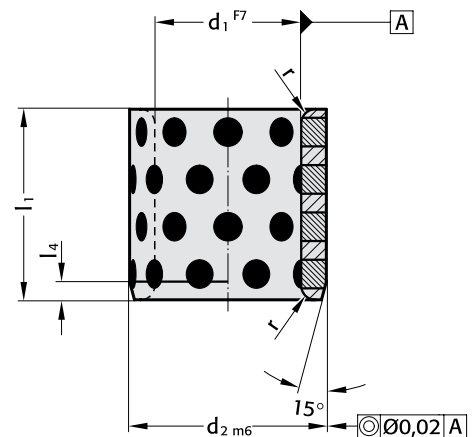
d <sub>3</sub>	10,2	12,2	13,2	14,2	15,2	16,2	18,2	20,2	25,2	30,2	35,2	40,2	45,3	50,3	55,3	60,3	65,3	70,3	75,3	80,3	90,5	100,5	120,5
d <sub>4</sub>	30	40	40	40	50	50	50	50	55	60	70	80	90	100	110	120	125	130	140	150	170	190	200
d <sub>5</sub>	20	28	28	28	28	28	35	35	40	45	50	60	67,5	75	85	90	95	100	110	120	140	160	175
s	3	3	3	3	3	3	3	5	5	5	5	7	7	8	8	8	8	10	10	10	10	10	10
F	3	3	3	3	3	3	3	5	5	5	5	6	6	6	6	8	8	8	8	8	10	10	10

**Oilless Guide Bushes  
Bronze with Non-Liquid Lubricant**

2052.70.



2052.70.



**Material:**

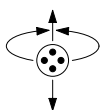
Bronze with Non-Liquid Lubricant, oilless lubricating.

**Note:**

Recommended fits for:  
press fits: H 7 bore  
contact adhesive: G 7 bore  
(if required secure with set screw).

**Notice:**

Note that press fitment reduces inside bush diameter.  
Bushes can be used with radial or axial motion.



Direction of Motion  
Embedded non-liquid  
lubricant (section)

**Ordering Code (example):**

Guide Bush	=	2052.70.
d <sub>1</sub> = 40 mm	=	040.
d <sub>2</sub> = 50 mm	=	050.
l <sub>1</sub> = 60 mm	=	060
Order No	=	2052.70.040.050.060

**2052.70.**

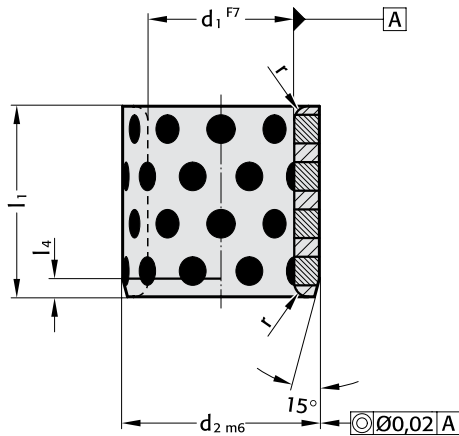
d <sub>1</sub>	8	10	12	13	14	15	16	18	19	20	24	25	28	30	31,5	32	35	38	40	45
d <sub>2</sub>	12	14/15	18	19	20	21	22	24	25	26/28/30	32	32/33/35	38	38/40/42	40	42	44/45	48	50/55	55/56/60
r	0,5	0,5	0,5	0,5	0,5	0,75	0,75	0,75	0,75	0,75	0,75	0,75	0,75	0,75	0,75	0,75	0,75	1,5	1,5	1,5
l <sub>4</sub>	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4	4	4
l <sub>1</sub>	8	●	●/-																	
10	●	●/●	●	●	●	●	●													
12	●	●/-	●		●	●	●													
15	●	●/-	●	●	●	●	●	●		-/●/-										
16			●	●		●	●	●		-/●/●		-/●/●								
20		●/-	●	●	●	●	●	●		-/●/●		-/●/●		●/●/-				-/●		●/-
25			●		●	●	●	●		-/●/●		-/●/●		●/●/-				●/●		●/●
30			●		●	●	●	●		-/●/●		-/●/●		●/●/-		●		●/●	●	●/●
35						●	●			-/●/●		-/●/●		●/●/-				●/●		●/●
37									●	-/●/●										
40							●	●		●/●/●		-/●/●		●/●/-		●	●	●/●	●	●/●
47											●	-/●/●								
50										-/●/●				●/●/●				●/●		●/●
60												-/●/●		●/●/●		●	●/●		●/●	●/●
70																			●/-	-/-/●
77																				●/-
80																				●/-

# FIBRO

2052.70.

## Oilless Guide Bushes Bronze with Non-Liquid Lubricant

2052.70.



### Material:

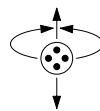
Bronze with Non-Liquid Lubricant, oilless lubricating.

### Note:

Recommended fits for:  
press fits: H 7 bore  
contact adhesive: G 7 bore  
(if required secure with set screw).

### Notice:

Note that press fitment reduces inside bush diameter.  
Bushes can be used with radial or axial motion.



Direction of Motion  
Embedded non-liquid  
lubricant (section)

2052.70.

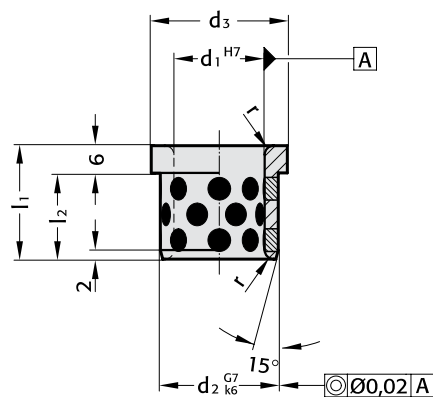
	50	55	60	63	65	70	75	80	85	90	100	110	120	125	130	140	150	160
d <sub>1</sub>	50	55	60	63	65	70	75	80	85	90	100	110	120	125	130	140	150	160
d <sub>2</sub>	60/62/65	70	74/75	75	80	85/90	90/95	96/100	100	110	120	130	140	145	150	160	170	180
r	1,5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
l <sub>4</sub>	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
l <sub>1</sub> 30	●/●/●		●/●															
35	●/●/—		●/●			●/—												
37																		
40	●/●/●	●	●/●			●/—		●/●										
47																		
50	●/●/●	●	●/●		●	●/●		●/●										
60	●/●/●	●	●/●	●	●	●/●	●/●	●/●		●	●							
70	●/●/●	●	●/●	●	●	●/●	●/●	●/●		●	●							
77																		
80	●/—/●		●/●	●	●	●/●	●/●	●/●	●	●	●	●	●					
95	●/—/—																	
100	—/—/●		—/●			●/—	●/●	●/●		●	●	●	●	●	●	●	●	●
120				●				●/●		●	●	●	●	●	●	●	●	●
130														●				
140								—/●			●		●			●		
150																	●	●

Oilless Guide Bushes with collar  
Bronze with Non-Liquid Lubricant

2085.70.



2085.70.

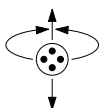


**Material:**

Bronze with Non-Liquid Lubricant,  
oilless lubricating.

**Note:**

Fit for receiving bore: G 7.  
Bushes can also be fitted with Loctite.



Direction of Motion  
Embedded non-liquid lubricant  
(section)

**Ordering Code (example):**

Guide Bush = 2085.70.  
 $d_1 = 16 \text{ mm}$  = 016.  
 $l_1 = 30 \text{ mm}$  = 030  
 Order No = 2085.70.016.030

**2085.70.**

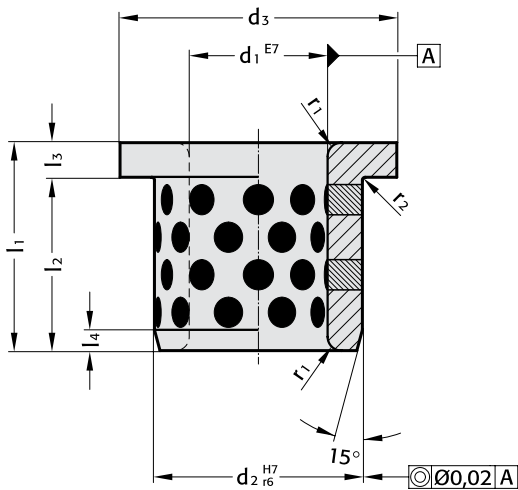
$d_1$		12	16	20	24
$d_2$		16	20	26	30
$d_3$		18	24	28	35
$r$		2	2	2	2
$l_1$	$l_2$				
20	14	●	●	●	●
25	19	●	●	●	●
30	24	●	●	●	●

**FIBRO**

2085.71.

**Oilless Guide Bushes with collar  
Bronze with Non-Liquid Lubricant**

2085.71.



**Material:**

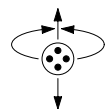
Bronze with Non-Liquid Lubricant, oilless lubricating.

**Note:**

Fit for receiving bore: H7.

**Notice:**

Bushes can be used with radial or axial motion.



Direction of Motion  
Embedded non-liquid lubricant  
(section)

**Ordering Code (example):**

Guide bush	=	2085.71.
d <sub>1</sub> = 16 mm	=	016.
l <sub>1</sub> = 25 mm	=	025
Order No	=	2085.71.016.025

**2085.71.**

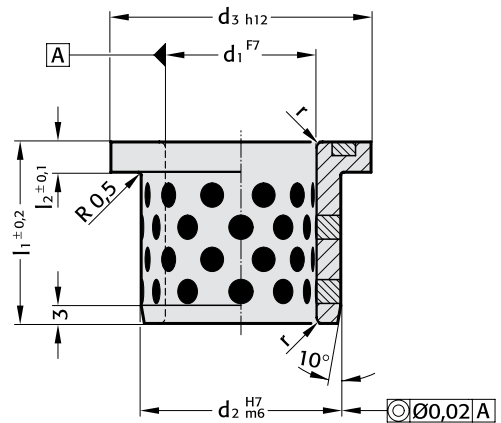
d <sub>1</sub>	10	12	13	14	15	16	20	25	30	31,5	35	40	45	50	55	60	63	70	75	80	90	100	120
d <sub>2</sub>	14	18	19	20	21	22	30	35	40	40	45	50	55	60	65	75	75	85	90	100	110	120	140
d <sub>3</sub>	22	25	26	27	28	29	40	45	50	50	60	65	70	75	80	90	85	105	110	120	130	150	170
l <sub>3</sub>	2	3	3	3	3	3	5	5	5	5	5	5	5	5	5	7,5	7,5	7,5	7,5	10	10	10	10
l <sub>4</sub>	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4
r <sub>1</sub>	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3
r <sub>2</sub>	0,4	0,4	0,4	0,4	0,5	0,5	0,5	0,5	0,5	0,6	0,6	0,6	0,6	0,6	0,6	0,7	0,7	0,7	0,7	0,7	0,8	0,8	0,8
l <sub>1</sub>	15	13	12	12	12	12	10	10															
l <sub>2</sub>	18	17	17	17	17	17	15	15	15	15	15	15											
25					22	22	20	20	20														
30					27	27	25	25	25		25	25	25	25									
35										30	30												
40							35	35	35		35	35	35	35	35	32,5							
50									45		45	45	45	45		42,5		42,5					
60													55	55	55					52,5	50	50	
67,5																			60				
80																	72,5		72,5		70	70	70
100																					90		90

**Oilless Guide Bushes with Collar  
Bronze with Non-Liquid Lubricant**

2086.70.



2086.70.



**Material:**

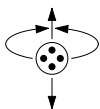
Bronze with non-liquid lubricant, oilless lubricating.

**Note:**

Fit for receiving bore: H7.

**Notice:**

Bushes can be used with radial or axial motion.



Direction of Motion  
Embedded non-liquid lubricant  
(section)

**Ordering Code (example):**

Guide Bush	=	2086.70.
$d_1 = 25 \text{ mm}$	=	025.
$l_1 = 30 \text{ mm}$	=	030
Order No	=	2086.70.025.030

**2086.70.**

$d_1$	12	16	20	25	30	40	50	60
$d_2$	18	22	28	33	38	50	62	75
$d_3$	25	30	36	43	48	60	75	90
$r$	1	1	1	1	1	2	2	3
$l_1$	15	20	25	30	35	45	55	65
$l_2$	4	5	5	5	5	5	6	7

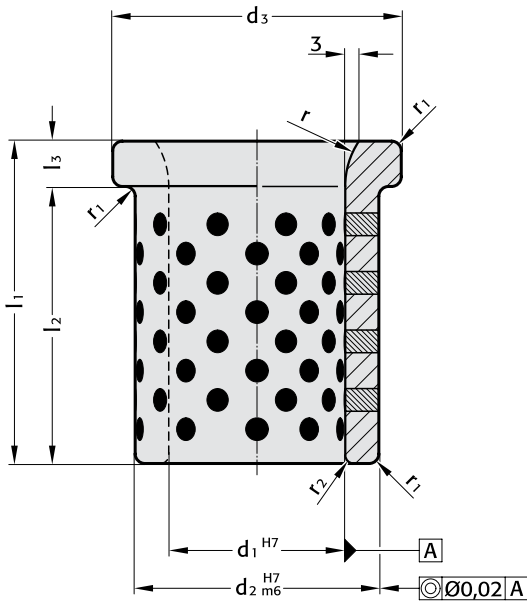


**FIBRO**

2085.72.

**Oilless Guide Bushes with Collar  
Bronze with Non-Liquid Lubricant**

2085.72.



**Ordering Code(example):**

Guide Bush	=	2085.72.
d <sub>1</sub> = 25 mm	=	025.
l <sub>1</sub> = 40 mm	=	040
Order No	=	2085.72.025.040

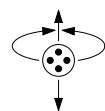


**Material:**

Bronze with non-liquid lubricant, oilless lubricating.

**Note:**

Fit for receiving bore: H7.



Direction of Motion  
Embedded non-liquid  
lubricant (section)

2085.72.

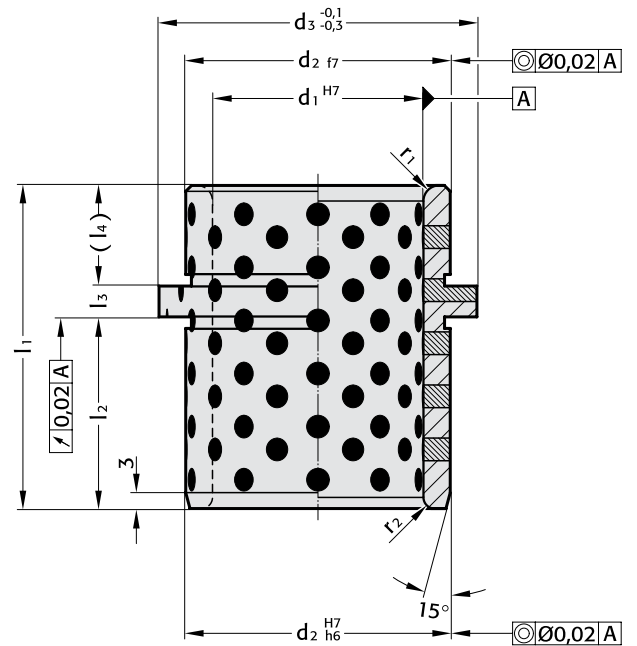
d <sub>1</sub>	25	30	40	50	60	65	80	100
d <sub>2</sub>	35	40	55	65	75	80	100	120
d <sub>3</sub>	45	50	65	75	85	90	110	130
r	10	20	20	20	20	20	20	20
r <sub>1</sub>	1	1	2	2	2	2	2	2
r <sub>2</sub>	2	2	2	2	2	2	2	3
l <sub>3</sub>	7	10	10	10	10	10	10	10
l <sub>2</sub>	33	40	60	70	70	70 110	90 130	90 130
l <sub>1</sub>	40	50	70	80	80	80 120	100 140	100 140

**Oilless Guide Bushes with centre collar  
Bronze with Non-Liquid Lubricant**

2087.73.



2087.73.

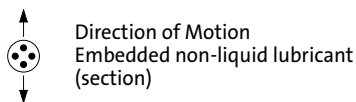


**Material:**

Bronze with non-liquid lubricant, oilless lubricating.

**Note:**

Fit for receiving bore: H7.



**Ordering Code (example):**

Guide Bush = 2087.73.  
 $d_1 = 25$  mm = 025.  
 $l_1 = 43$  mm = 043  
 Order No = 2087.73.025.043

**2087.73.**

$d_1$	25	30	40	50	60	63				
$d_2$	35	42	50	63	80	80				
$d_3$	40	47	60	72	86	90				
$r_1$	3	3	4	4	3	4				
$r_2$	2	2	2	3	3	3				
$l_4$	11,5	11,5	18,5	18,5	24,5	28,5	21,5	31,5	29,5	37,5
$l_3$	7,5	7,5	6	8	7,5	8				
$l_2$	24	24	35,5	39,5	44,5	55,5	49	55,5	62,5	62,5
$l_1$	43	43	60	64	77	92	78	95	100	108

A large, empty rectangular box with rounded corners, occupying most of the page. It is intended for drawing or writing.

**Oilless Guide Bushes with collar to DIN 9834/ISO 9448  
Bronze with Non-Liquid Lubricant  
Screw Clamps to DIN 9832**

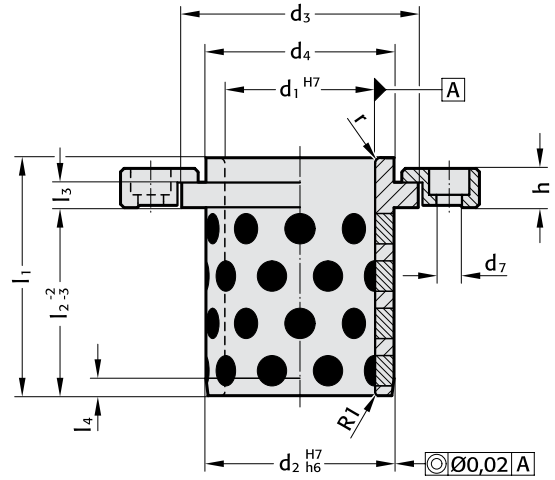
**FIBRO**

2082.70.

2072.45.

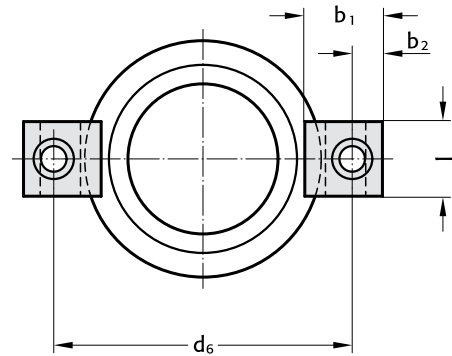


2082.70.



2072.45.

Screw clamps



**Material:**

Bronze with Non-Liquid Lubricant,  
oilless lubricating.

**Note:**

Special Guide Pillars

2022.19. to DIN 9833/ISO 9182-3,  
see page D 27 .

Fit for receiving bore: H 7.

**Screw Clamps, incl. screws**

to order separate:

up to  $d_1 = 52$     2072.45.10    (M 6×16 DIN EN ISO 4762)  
from  $d_1 = 60$     2072.45.16    (M 10×20 DIN EN ISO 4762)



Direction of Motion  
Embedded non-liquid lubricant  
(section)

**Ordering Code (example):**

Guide bush = 2082.70.

$d_1 = 40$  = 040

Order No = 2082.70.040

2082.70.

$d_1$	24/25	30/32	38/40/42*	48/50/52*	60/63	80	100	125	160
$d_2$	32	40	50	63	80	100	125	160	200
$d_3$	40	50	63	71	90	112	140	180	220
$d_4$	32	40	50	63	80	100	125	160	200
$d_6$	58	66	79	89	123	143	168	203	243
$d_7$	7	7	7	7	11,5	11,5	11,5	11,5	11,5
$l_1$	40	50	63	71	80	100	125	160	200
$l_2$	32	40	50	56	63	80	106	132	170
$l_3$	6,3	6,3	6,3	6,3	10	10	10	10	10
$l_4$	3	4	5	6,3	8	10	12,5	16	16
$l$	20	20	20	20	32	32	32	32	32
$b_1$	20	20	20	20	32	32	32	32	32
$b_2$	7,5	7,5	7,5	7,5	11	11	11	11	11
$h$	10	10	10	10	16	16	16	16	16
$r$	3	3	3	5	6	8	10	12	18

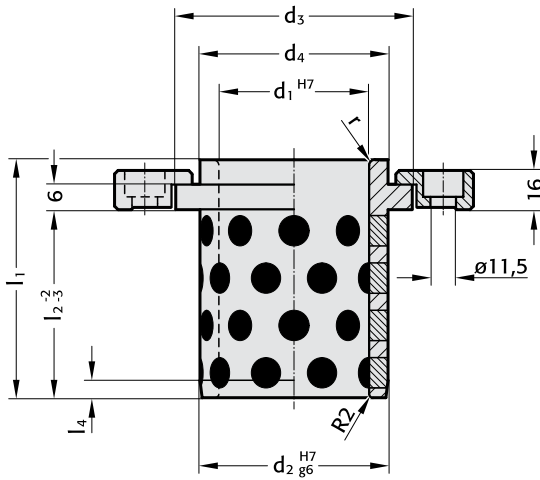
\* phasing out

# FIBRO

2082.71.  
2072.46

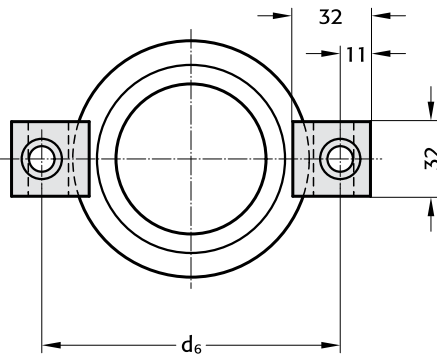
## Oilless Guide Bushes with collar to NAAMS Bronze with Non-Liquid Lubricant Screw Clamps

2082.71.



2072.46

Screw clamps



### Ordering Code (example):

Guide Bush = 2082.71.  
d<sub>1</sub> = 32 mm = 032  
Order No = 2082.71.032



### Material:

Bronze with Non-Liquid Lubricant,  
oilless lubricating.

### Note:

Special Guide Pillars

2022.25. to AFNOR, see page D 22 and  
2022.19. to DIN 9833/ISO 9182-3,  
see pages D 27.

Fit for receiving bore: H 7.

### Screw Clamps, incl. screws

to order separate:

2072.46 (M10 x 20 DIN EN ISO 4762)



Direction of Motion  
Embedded non-liquid lubricant  
(section)

2082.71.

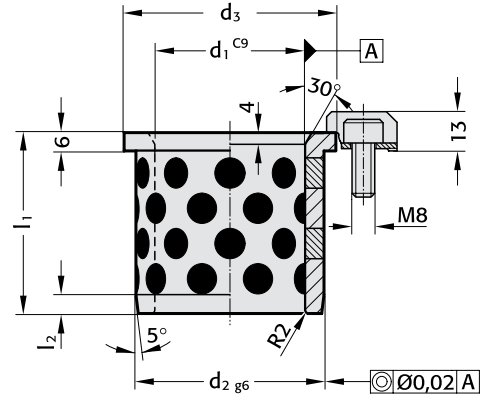
d <sub>1</sub>	25	32	40	50	63	80	100	125
d <sub>2</sub>	32	40	50	63	80	100	125	160
d <sub>3</sub>	40	50	63	71	90	112	140	180
d <sub>4</sub>	32	40	50	63	80	100	125	160
d <sub>6</sub>	75	83	93	106	123	143	168	203
l <sub>1</sub>	40	50	63	71	80	100	125	160
l <sub>2</sub>	30	40	50	56	63	80	106	132
l <sub>4</sub>	4	4	5	6	8	10	12	12
r	3	3	3	5	6	8	10	12

**Oilless Guide Bushes with collar to NAAMS**  
**Bronze with Non-Liquid Lubricant**  
**Screws Clamps to NAAMS**

**FIBRO**  
**2086.71.**  
**2072.47**



2086.71.



**Material:**

Bronze with Non-Liquid Lubricant,  
oilless lubricating.

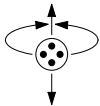
**Note:**

Fit for receiving bore H 7.

**Screw Clamps, (incl. screws)**

to order separate

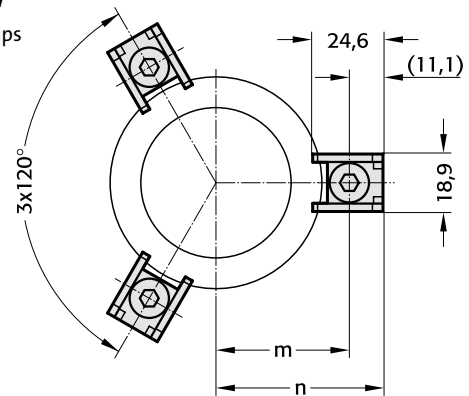
2072.47 (M8 x 20 DIN EN ISO 4762)



Direction of Motion  
Embedded non-liquid lubricant  
(section)

2072.47

Screw clamps



**Ordering Code (example):**

Guide Bush = 2086.71.

d<sub>1</sub> = 32 mm = 032

Order No = 2086.71.032

**2086.71.**

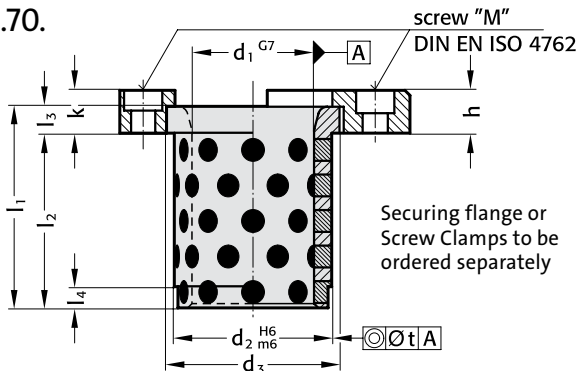
d <sub>1</sub>	25	32	40	50	63	80	100	125
d <sub>2</sub>	32	40	50	63	80	100	125	160
d <sub>3</sub>	40	50	63	71	90	112	140	180
l <sub>1</sub>	40	50	55	63	75	90	115	138
l <sub>2</sub>	4	4	5	6	8	10	12	12
m	25	34	40,5	44,5	54	65	79	99
n	36,1	45,1	51,6	55,6	65,1	76,1	90,1	110,1

# FIBRO

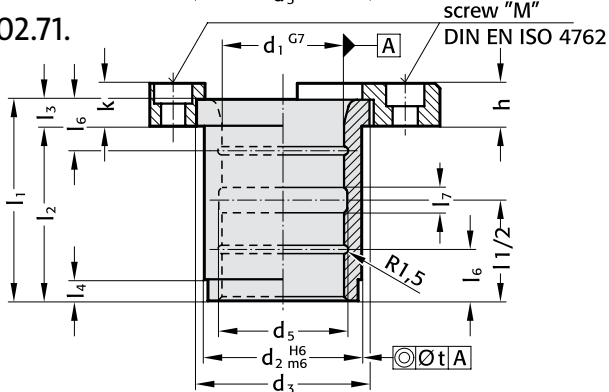
2102.70./2102.71.  
2073.45./2072.48.45.

## Guide Bushes with collar to CNOMO Bronze with or without Non-Liquid Lubricant Securing Flanges, Screw Clamps to CNOMO

2102.70.



2102.71.

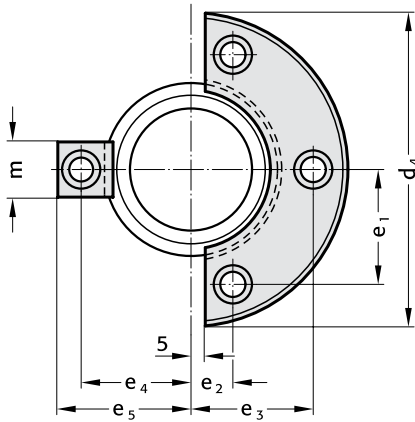


2072.48.45.

Screws Clamps  
to CNOMO

2073.45.

Securing flange



2102.70. / 2102.71.

d <sub>1</sub>	20	25	32	40	50	63	80	100
d <sub>2</sub>	28	35	44	52	63	80	100	125
d <sub>3</sub>	32	40	50	60	71	90	112	140
d <sub>5</sub>	22	27	34	42	52	65	82	102
l <sub>1</sub>	32	40	50	63	80	100	125	160
l <sub>2</sub>	28	35	44	55	70	88	109	140
l <sub>3</sub>	4	5	6	8	10	12	16	20
l <sub>4</sub>	3	5	8	8	8	10	10	10
l <sub>6</sub>	-	-	12	16	20	25	32	40
l <sub>7</sub>	5	5	5	8	10	12	16	20
t	0,01	0,01	0,01	0,02	0,02	0,02	0,02	0,02

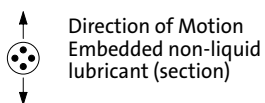
### Material:

2102.70. Bronze with Non-Liquid Lubricant, oilless lubricating.  
2102.71. Bronze.

### Note:

Special Guide Pillars 2022.25. to AFNOR – see page D 22,  
and 2022.19. to DIN 9833/ISO 9182-3 – see page D 27.

Fit for receiving bore: H6.



### Ordering Code (example):

Guide Bush = 2102.70.  
d<sub>1</sub> = 40 mm = 040  
Order No = 2102.70.040

Guide Bush = 2102.71.  
d<sub>1</sub> = 40 mm = 040  
Order No = 2102.71.040

### 2073.45. Securing flanges

incl. screws, dimensions see page D 212

d <sub>1</sub>	20	25	32	40	50	63	80	100
d <sub>4</sub>	63	72	80	100	125	140	180	200
h	10	10	12	12	16	20	25	32
e <sub>1</sub>	16	20	25	38,5	46	55	70	81
e <sub>2</sub>	18	20	21	14	17	17	20	25
e <sub>3</sub>	-	-	-	41	49	57,5	72	85
M	6	6	6	6	8	10	12	12

### 2072.48.45. Screws Clamps to CNOMO

incl. screws dimensions see page D 212

Order No	Guide Bushes Ø					
	d <sub>1</sub>	M	k	m	e <sub>4</sub>	e <sub>5</sub>
2072.48.45.12	40	6	12	18	37,5	46
	16	50	8	16	22	45
	20	63	10	20	26	55,5
	25	80	10	25	26	66,5
	32	100	10	32	26	80,5
						91,5



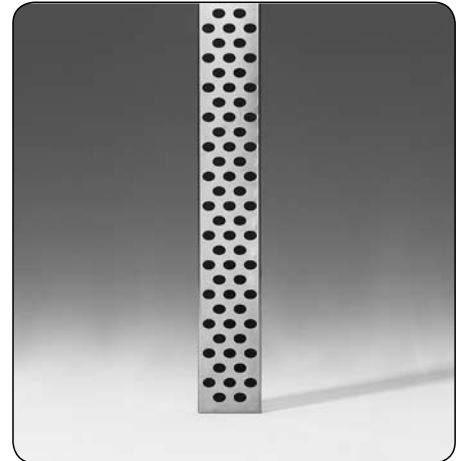
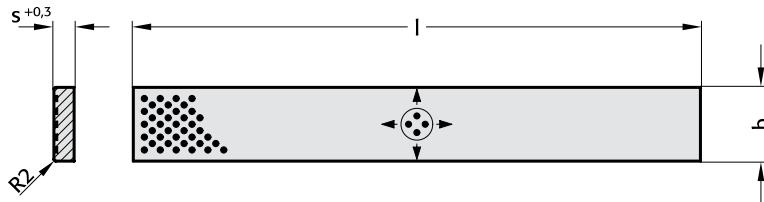


# FIBRO

2961.71.

## Flat Guide Bars Bronze with Non-Liquid Lubricant

2961.71.

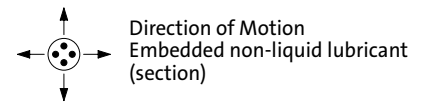


### Material:

Bronze with Non-Liquid Lubricant, oilless lubricating.

### Execution:

Sliding faces ground.



2961.71.

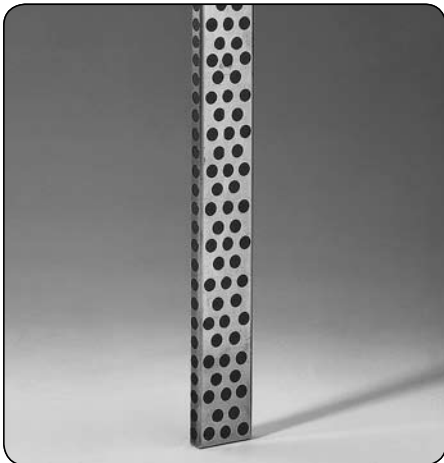
Order No	b	s	l		
			305	605	1005
2961.71.020.004.	20	4	●		
2961.71.030.004.	30	4	●		
2961.71.025.005.	25	5	●		
2961.71.040.005.	40	5	●	●	
2961.71.030.006.	30	6	●	●	
2961.71.040.006.	40	6	●	●	
2961.71.030.008.	30	8	●	●	
2961.71.040.008.	40	8	●	●	●
2961.71.030.010.	30	10	●	●	●
2961.71.035.010.	35	10	●	●	●
2961.71.040.010.	40	10	●	●	●
2961.71.050.010.	50	10	●	●	●
2961.71.080.010.	80	10	●	●	●
2961.71.030.012.	30	12	●	●	●
2961.71.040.012.	40	12		●	●
2961.71.050.012.	50	12		●	●
2961.71.060.012.	60	12		●	●
2961.71.080.012.	80	12		●	●
2961.71.040.016.	40	16		●	●
2961.71.060.016.	60	16		●	●
2961.71.080.016.	80	16		●	●
2961.71.100.016.	100	16		●	●
2961.71.050.020.	50	20		●	●
2961.71.080.020.	80	20		●	●
2961.71.100.020.	100	20		●	●
2961.71.125.020.	125	20		●	●
2961.71.080.025.	80	25		●	●
2961.71.100.025.	100	25		●	●
2961.71.125.025.	125	25		●	●
2961.71.160.025.	160	25		●	●

### Ordering Code (example):

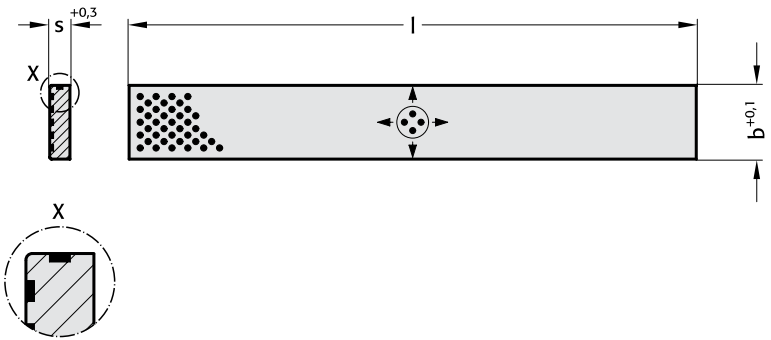
Flat Guide Bar = 2961.71.  
 b = 50 mm = 050.  
 s = 10 mm = 010.  
 l = 605 mm = 0605  
 Order No. = 2961.71.050.010.0605

**Flat Guide Bars  
Bronze with Non-Liquid Lubricant**

**2961.73.**



2961.73.

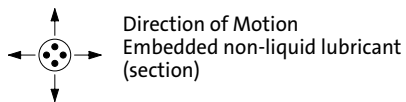


**Material:**

Bronze with Non-Liquid Lubricant, oilless lubricating.

**Execution:**

Sliding faces ground.



2961.73.

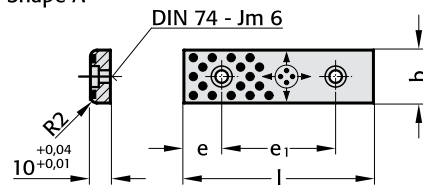
Order No	b	s	l	
			305	605
2961.73.025.005.0305	25	5	●	
2961.73.030.006.0305	30	6	●	
2961.73.040.008.0605	40	8		●
2961.73.035.010.0605	35	10		●
2961.73.050.010.0605	50	10		●
2961.73.040.012.0605	40	12		●
2961.73.080.012.0605	80	12		●
2961.73.060.016.0605	60	16		●
2961.73.080.020.0605	80	20		●
2961.73.100.020.0605	100	20		●

**Ordering Code (example):**

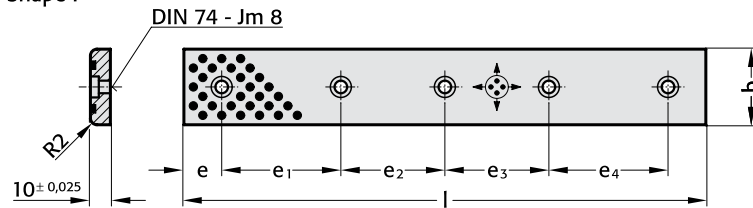
Flat Guide Bar = 2961.73.  
 b = 50 mm = 050.  
 s = 10 mm = 010.  
 l = 605 mm = 0605  
 Order No. = 2961.73.050.010.0605

2961.70.

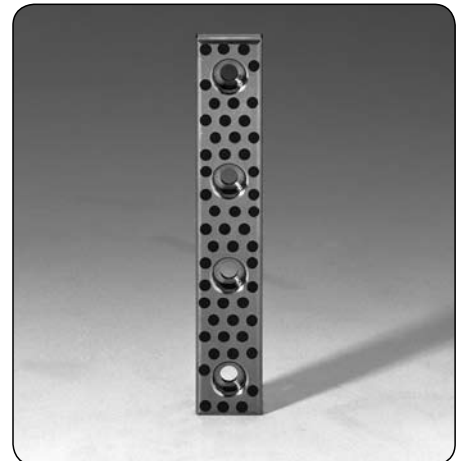
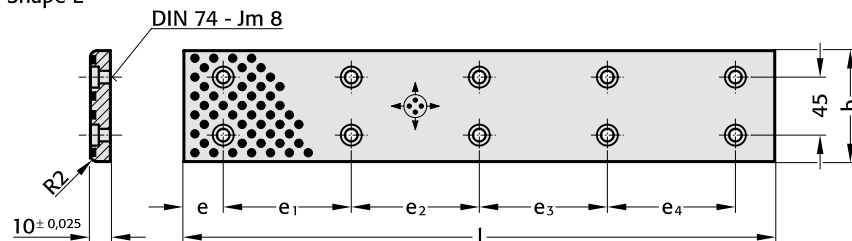
Shape A



Shape F



Shape E



**Material:**

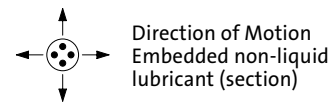
Bronze with Non-Liquid Lubricant, oilless lubricating.

**Execution:**

Sliding faces ground.

**Note:**

Screws not included.

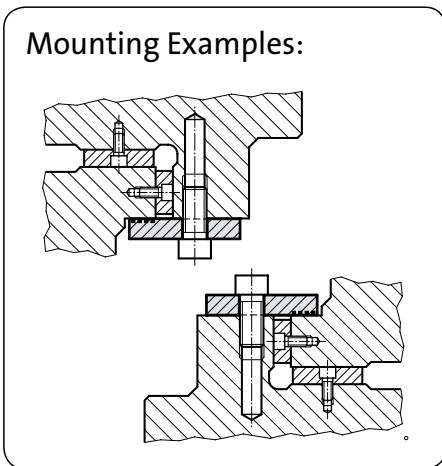
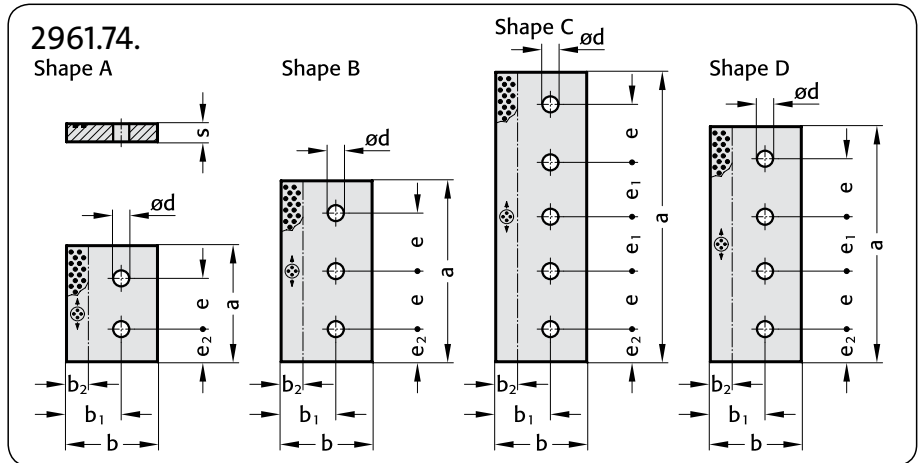
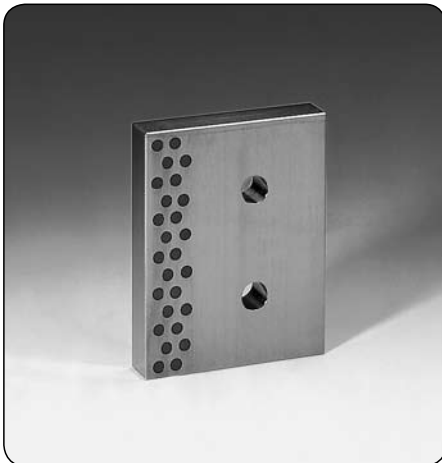


2961.70.

Order No	Shape	b	l	e	e <sub>1</sub>	e <sub>2</sub>	e <sub>3</sub>	e <sub>4</sub>	Screw DIN 7984	Number of screw holes
2961.70.018.075	A	18	75	15	45	—	—	—	M 6×20	2
2961.70.018.100			100	25	50	—	—	—		
2961.70.018.125			125	75	—	—	—	—		
2961.70.018.150			150	100	—	—	—	—		
2961.70.028.075	A	28	75	15	45	—	—	—	M 6×20	2
2961.70.028.100			100	25	50	—	—	—		
2961.70.028.125			125	75	—	—	—	—		
2961.70.028.150			150	100	—	—	—	—		
2961.70.035.100	F	35	100	20	60	—	—	—	M 8×20	2
2961.70.035.150			150	55	55	—	—	—		3
2961.70.035.200			200	55	50	55	—	—		4
2961.70.035.250			250	70	70	70	—	—		
2961.70.035.300			300	65	65	65	65	—		5
2961.70.035.350			350	80	75	75	80	—		
2961.70.038.075	A	38	75	15	45	—	—	—	M 6×20	2
2961.70.038.100			100	25	50	—	—	—		
2961.70.038.125			125	75	—	—	—	—		
2961.70.038.150			150	100	—	—	—	—		
2961.70.048.075	A	48	75	15	45	—	—	—	M 6×20	2
2961.70.048.100			100	25	50	—	—	—		
2961.70.048.125			125	75	—	—	—	—		
2961.70.048.150			150	100	—	—	—	—		
2961.70.050.100	F	50	100	20	60	—	—	—	M 8×20	2
2961.70.050.150			150	55	55	—	—	—		3
2961.70.050.200			200	55	50	55	—	—		4
2961.70.050.250			250	70	70	70	—	—		
2961.70.050.300			300	65	65	65	65	—		5
2961.70.050.350			350	80	75	75	80	—		
2961.70.050.400			400	90	90	90	90	—		
2961.70.075.150	E	75	150	20	110	—	—	—	M 8×20	4
2961.70.075.200			200	80	80	—	—	—		6
2961.70.075.250			250	105	105	—	—	—		
2961.70.075.300			300	85	90	85	—	—		8
2961.70.075.400			400	120	120	120	—	—		
2961.70.075.500			500	115	115	115	115	—		10

Retaining Plates, VDI 3357  
Bronze with Non-Liquid Lubricant

2961.74.



**Material:**  
Bronze with non-liquid lubricant, oilless lubricating.

**Note:**  
Screws not included.

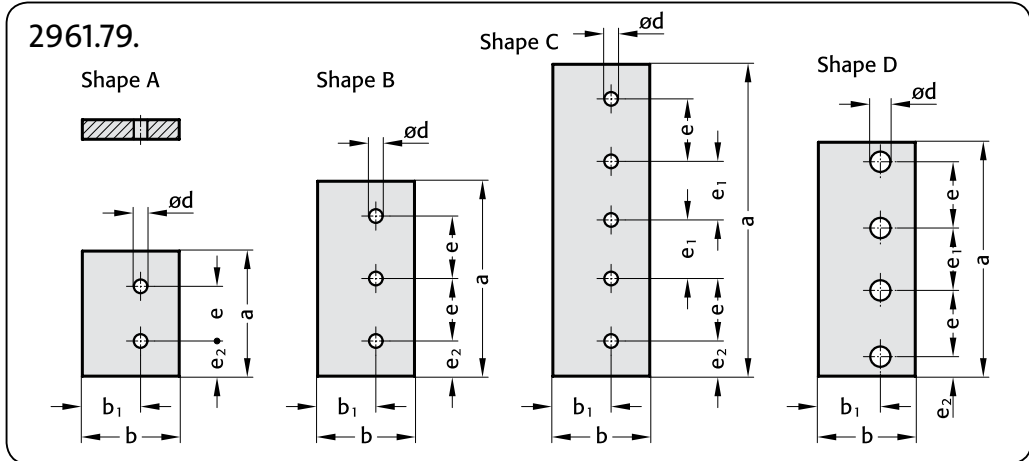
**Fixing:**  
Use socket cap screws DIN EN ISO 4762  
M10x30  
M12x40  
M16x50  
M16x60  
M20x70  
M24x70.

↑ Direction of motion  
↓ Embedded non-liquid lubricant (section)

**Ordering Code (example):**  
Retaining Plate = 2961.74.  
b = 125 mm = 125.  
s = 25 mm = 25.  
a = 160 mm = 160  
Order No = 2961.74.125.25.160

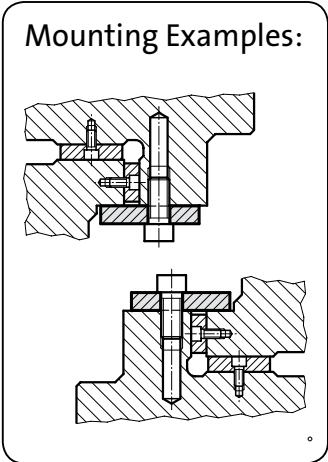
2961.74.

Order No	Shape	b	s	a	b <sub>2</sub>	b <sub>1</sub>	d	e	e <sub>1</sub>	e <sub>2</sub>	Number of screw holes		
2961.74.035.10.160	A	35	10	160	10	20	11	70	-	45	2		
200				200				110	-				
250	B			250				80	-		3		
2961.74.045.15.160	A	45	15	160	15	30	13,5	70	-		2		
200				200				110	-				
250	B			250				80	-		3		
2961.74.055.15.160	A	55	15	160	20	35	17,5	70	-		2		
200				200				110	-				
250	B			250				80	-		3		
2961.74.075.25.160	A	75	25	160	25	40	17,5	70	-		2		
200				200				110	-				
250	B			250				80	-		3		
2961.74.085.28.240	B	85	28	240	30	60	22	95	-	25	3		
300	D			300				85	80		4		
350				350				100	100				
400				400				115	120				
450	C			450				100	100		5		
2961.74.085.30.160	A	85	30	160	30	60	22	70	-	45	2		
200				200				110	-				
250	B			250				80	-		3		
300				300				105	-				
350				350				130	-				
400	C			400				80	75		5		
2961.74.100.25.160	A	100	25	160	30	60	17,5	70	-	45	2		
200				200				110	-				
250	B			250				80	-		3		
400	C			400				80	75		5		
2961.74.100.30.160	A	100	30	160	30	60	22	70	-	45	2		
200				200				110	-				
250	B			250				80	-		3		
400	C			400				80	75		5		
2961.74.125.25.160	A	125	25	160	30	75	17,5	70	-	45	2		
200				200				110	-				
250	B			250				80	-		3		
300	D			300				80	26	85	80	25	4
350				350				100	100				
400	C			400				75	17,5	80	75	45	5
400.1	D			400				80	26	115	120	25	4
450	C			450				100	100				5
500				500				110	115				
2961.74.125.30.160	A	125	30	160	30	75	22	70	-	45	2		
200				200				110	-				
250	B			250				80	-		3		
300				300				105	-				
350				350				130	-				
400	C			400				80	75			5	
450				450				80	95	50			
500				500				80	120				



2961.79.

Order No	Shape	b	s	a	b <sub>1</sub>	d	e	e <sub>1</sub>	e <sub>2</sub>	Number of screw holes
2961.79.035.10.160	A	35	10	160	20	11	70	-	45	2
200				200			110	-		
250	B			250			80	-		3
2961.79.045.15.160	A	45	15	160	30	13,5	70	-		2
200				200			110	-		
250	B			250			80	-		3
2961.79.055.15.160	A	55	15	160	35	17,5	70	-		2
200				200			110	-		
250	B			250			80	-		3
2961.79.075.25.160	A	75	25	160	40	17,5	70	-		2
200				200			110	-		
250	B			250			80	-		3
2961.79.085.28.240	B	85	28	240	60	22	95	-	25	3
300	D			300			85	80		4
350				350			100	100		
400				400			115	120		
450	C			450			100	100		5
2961.79.085.30.160	A	85	30	160	60	22	70	-	45	2
200				200			110	-		
250	B			250			80	-		3
300				300			105	-		
350				350			130	-		
400	C			400			80	75		5
2961.79.100.25.160	A	100	25	160	60	17,5	70	-	45	2
200				200			110	-		
250	B			250			80	-		3
400	C			400			80	75		5
2961.79.100.30.160	A	100	30	160	60	22	70	-	45	2
200				200			110	-		
250	B			250			80	-		3
400	C			400			80	75		5
2961.79.125.25.160	A	125	25	160	75	17,5	70	-	45	2
200				200			110	-		
250	B			250			80	-		3
300	D			300	80	26	85	80	25	4
350				350			100	100		
400	C			400	75	17,5	80	75	45	5
400.1	D			400	80	26	115	120	25	4
450	C			450			100	100		5
500				500			110	115		
2961.79.125.30.160	A	125	30	160	75	22	70	-	45	2
200				200			110	-		
250	B			250			80	-		3
300				300			105	-		
350				350			130	-		
400	C			400			80	75		5
450				450			80	95	50	
500				500			80	120		



**Material:**  
Steel, surface hardened.

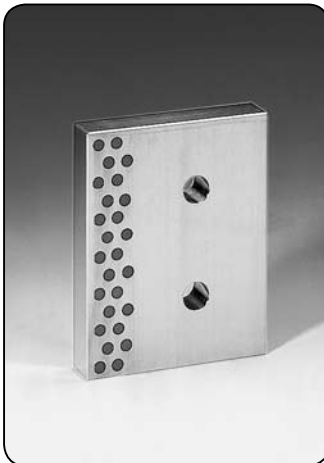
**Note:**  
Screws not included.

**Fixing:**  
Use socket cap screws  
DIN EN ISO 4762  
M10x30  
M12x40  
M16x50  
M16x60  
M20x70  
M24x70.

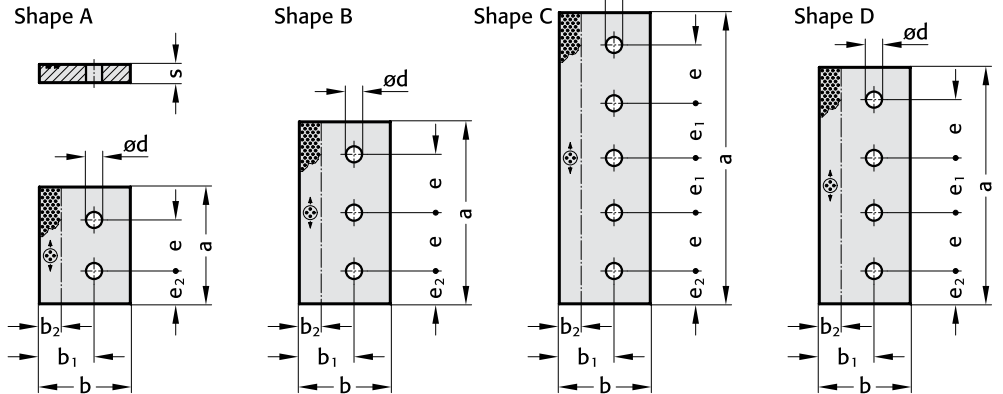
**Ordering Code (example):**  
Retaining Plate = 2961.79.  
b = 35 mm = 035.  
s = 10 mm = 10.  
a = 160 mm = 160  
Order No = 2961.79.035.10.160

Retaining Plates, VDI 3357  
Steel with Non Liquid Lubricant

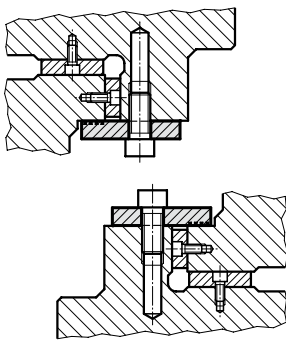
2961.81.



2961.81.



Mounting Examples:



Material:

Steel, surface hardened.  
Sliding Faces with embedded  
non-liquid lubricant.

Note:

Screws not included.

Fixing:

Use socket cap screws  
DIN EN ISO 4762  
M10x30  
M12x40  
M16x50  
M16x60  
M20x70  
M24x70.

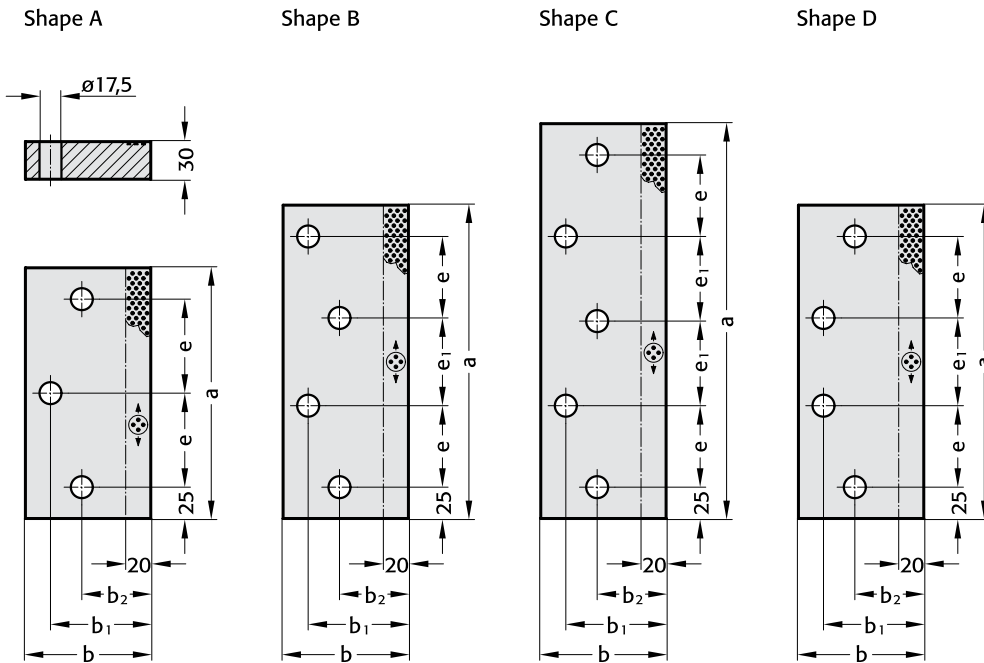


Direction of motion Embedded  
non-liquid lubricant (section)

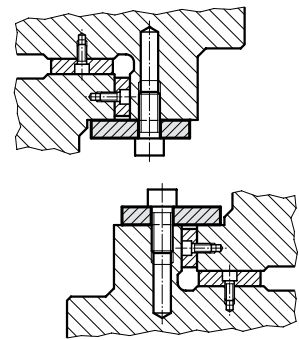
2961.81.

Order No	Shape	b	s	a	b <sub>2</sub>	b <sub>1</sub>	d	e	e <sub>1</sub>	e <sub>2</sub>	Number of screw holes
2961.81.035.10.160	A	35	10	160	10	20	11	70	-	45	2
2961.81.035.10.200	A			200				110	-		2
2961.81.035.10.250	B			250				80	-		3
2961.81.045.15.160	A	45	15	160	15	30	13,5	70	-	45	2
2961.81.045.15.200	A			200				110	-		2
2961.81.045.15.250	B			250				80	-		3
2961.81.055.15.160	A	55	15	160	20	35	17,5	70	-	45	2
2961.81.055.15.200	A			200				110	-		2
2961.81.055.15.250	B			250				80	-		3
2961.81.075.25.160	A	75	25	160	25	40	17,5	70	-	45	2
2961.81.075.25.200	A			200				110	-		2
2961.81.075.25.250	B			250				80	-		3
2961.81.085.28.240	B	85	28	240	30	60	22	95	-	25	3
2961.81.085.28.300	D			300				85	80		4
2961.81.085.28.350	D			350				100	100		4
2961.81.085.28.400	D			400				115	120		4
2961.81.085.28.450	C			450				100	100		5
2961.81.085.30.160	A	85	30	160	30	60	22	70	-	45	2
2961.81.085.30.200	A			200				110	-		2
2961.81.085.30.250	B			250				80	-		3
2961.81.085.30.300	B			300				105	-		3
2961.81.085.30.350	B			350				130	-		3
2961.81.085.30.400	C			400				80	75		5
2961.81.100.25.160	A	100	25	160	30	60	17,5	70	-	45	2
2961.81.100.25.200	A			200				110	-		2
2961.81.100.25.250	B			250				80	-		3
2961.81.100.25.400	C			400				80	75		5
2961.81.100.30.160	A	100	30	160	30	60	22	70	-	45	2
2961.81.100.30.200	A			200				110	-		2
2961.81.100.30.250	B			250				80	-		3
2961.81.100.30.400	C			400				80	75		5
2961.81.125.25.160	A	125	25	160	30	75	17,5	70	-	45	2
2961.81.125.25.200	A			200				110	-		2
2961.81.125.25.250	B			250				80	-		3
2961.81.125.25.300	D			300		80	26	85	80	25	4
2961.81.125.25.350	D			350				100	100		4
2961.81.125.25.400	C			400		75	17,5	80	75	45	5
2961.81.125.25.400.1	D			400		80	26	115	120	25	4
2961.81.125.25.450	C			450				100	100		5
2961.81.125.25.500	C			500				110	115		5
2961.81.125.30.160	A	125	30	160	30	75	22	70	-	45	2
2961.81.125.30.200	A			200				110	-		2
2961.81.125.30.250	B			250				80	-		3
2961.81.125.30.300	B			300				105	-		3
2961.81.125.30.350	B			350				130	-		3
2961.81.125.30.400	C			400				80	75		5
2961.81.125.30.450	C			450				80	95	50	5
2961.81.125.30.500	C			500				80	120		5

2961.82.



**Mounting Examples:**



2961.82.

Order No	Shape	b	a	b <sub>1</sub>	b <sub>2</sub>	e	e <sub>1</sub>	Number of screw holes
2961.82.075.200	A	75	200	55	40	75	–	3
2961.82.075.250	B	75	250			65	70	4
2961.82.075.250.1	D	75	250			65	70	4
2961.82.075.315	C	75	315			65	67,5	5
2961.82.075.350	C	75	350			75	75	5
2961.82.075.400	C	75	400			90	85	5
2961.82.075.450	C	75	450			100	100	5
2961.82.100.200	A	100	200	80	55	75	–	3
2961.82.100.250	B	100	250			65	70	4
2961.82.100.250.1	D	100	250			65	70	4
2961.82.100.315	C	100	315			65	67,5	5
2961.82.100.350	C	100	350			75	75	5
2961.82.100.400	C	100	400			90	85	5
2961.82.100.450	C	100	450			100	100	5
2961.82.125.200	A	125	200	105	65	75	–	3
2961.82.125.250	B	125	250			65	70	4
2961.82.125.250.1	D	125	250			65	70	4
2961.82.125.315	C	125	315			65	67,5	5
2961.82.125.350	C	125	350			75	75	5
2961.82.125.400	C	125	400			90	85	5
2961.82.125.450	C	125	450			100	100	5
2961.82.150.200	A	150	200	130	65	75	–	3
2961.82.150.250	B	150	250			65	70	4
2961.82.150.250.1	D	150	250			65	70	4
2961.82.150.315	C	150	315			65	67,5	5
2961.82.150.350	C	150	350			75	75	5
2961.82.150.400	C	150	400			90	85	5
2961.82.150.450	C	150	450			100	100	5

**Material:**

Steel, surface hardened.  
Sliding Faces with embedded non-liquid lubricant.

**Note:**

Screws not included.

**Fixing:**

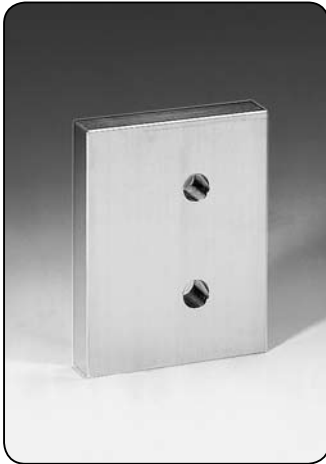
Use socket cap screws  
DIN EN ISO 4762  
M16x50.



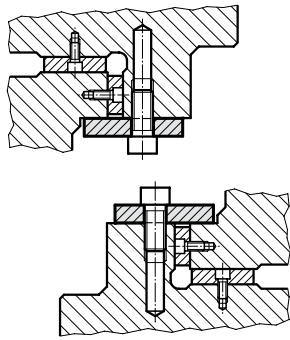
Direction of motion  
Embedded non-liquid lubricant (section)

Retaining Plates, Steel, to CNOMO  
Retaining Plates, Bronze with Non-Liquid Lubricant  
to CNOMO

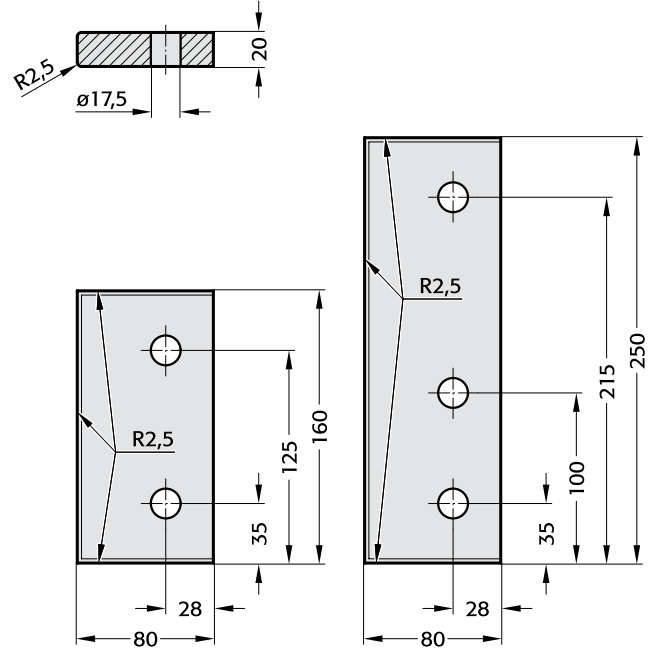
**FIBRO**  
2961.79.45.  
2961.81.45.



Mounting Example:



2961.79.45.



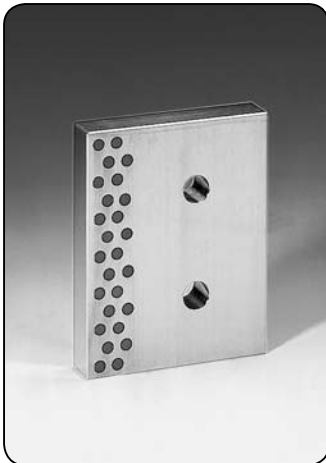
2961.79.45.

Order No	Number of screw holes
2961.79.45.085.20.160	2
2961.79.45.085.20.250	3

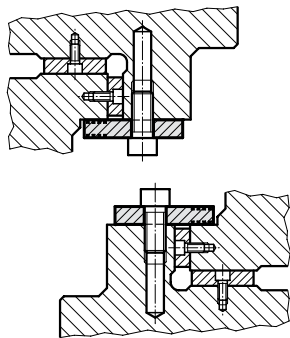
**Material:** Steel, surface hardened

**Note:** Screws not included.

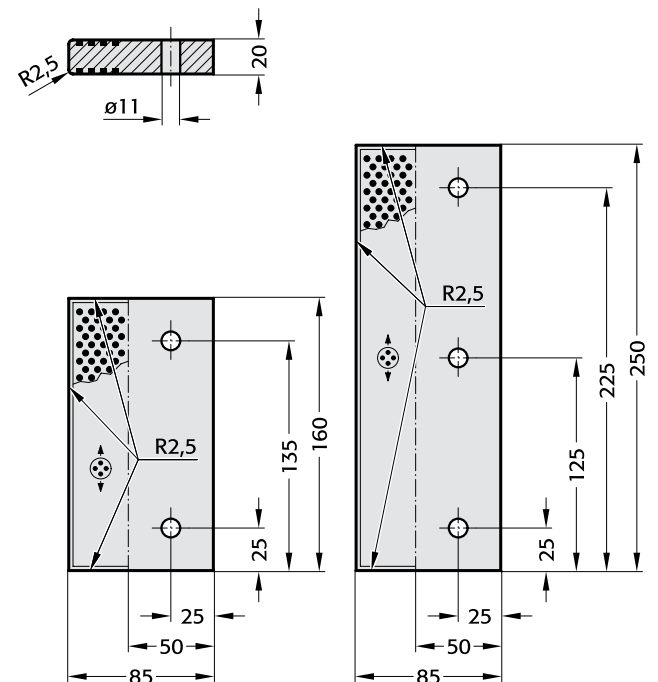
**Fixing:** Use socket cap screws DIN EN ISO 4762, M16 x 30



Mounting Example:



2961.81.45.



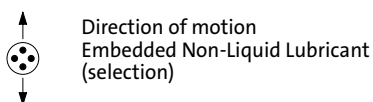
2961.81.45.

Order No	Number of screw holes
2961.81.45.085.20.160	2
2961.81.45.085.20.250	3

**Material:** Bronze with non-liquid lubricant

**Note:** Screws not included.

**Fixing:** Use socket cap screws DIN EN ISO 4762 M10 x 30

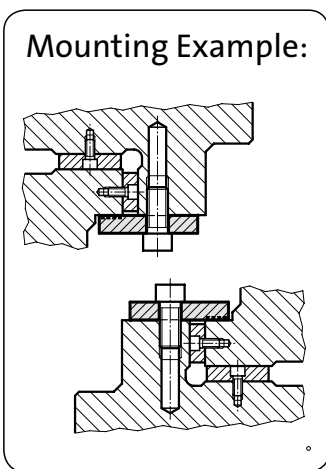




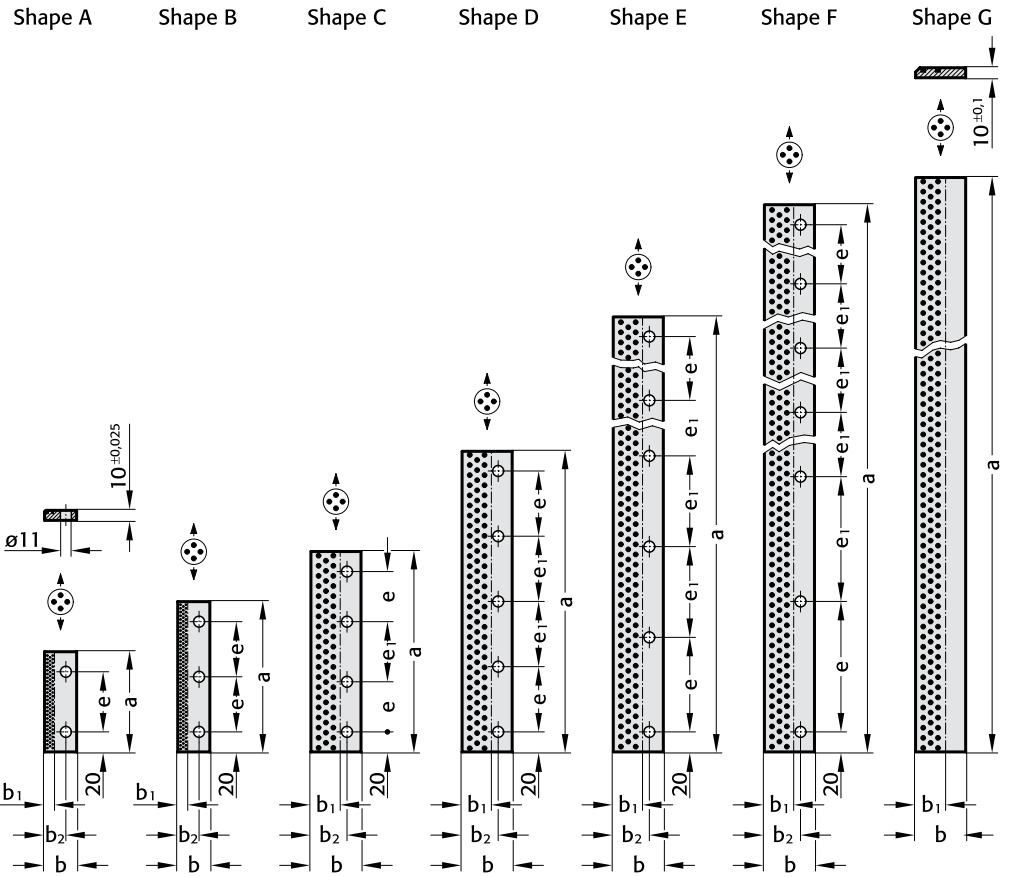


# Retaining Plates Bronze with Non-Liquid Lubricant

2961.78.



**2961.78.**



**Material:**

Bronze with non-liquid lubricant, oilless lubricating.

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws  
DIN EN ISO 4762 M10x25.



Direction of motion  
Embedded non-liquid lubricant (section)

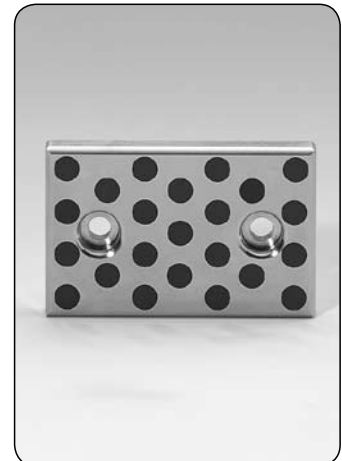
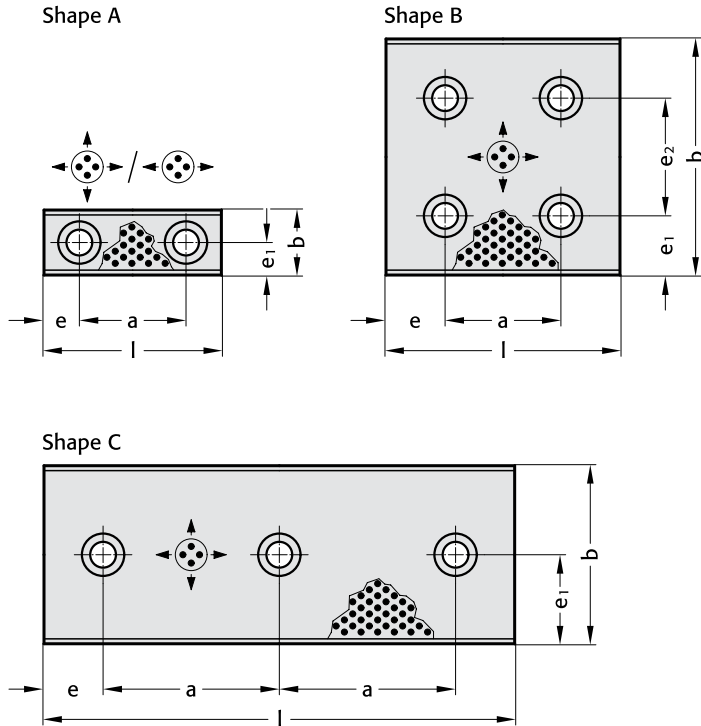
**2961.78.**

Order No	Shape	a	b	b <sub>1</sub>	b <sub>2</sub>	e	e <sub>1</sub>	Number of screw holes
2961.78.032.0100	A	100	32	10	21	60	-	2
0150	B	150				55	-	3
0160	B	160				60	-	3
2961.78.050.0200	C	200	50	30	36	50	60	4
0250	C	250				70	70	4
0300	D	300				65	65	5
0350	D	350				80	75	5
0400	D	400				90	90	5
0500	E	500				95	90	6
0600	E	600				115	110	6
0800	F	800				130	125	7
0605	G	605				-	-	-
1005	G	1005				-	-	-

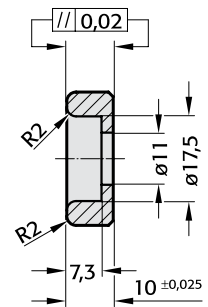
**Ordering Code (example):**

Retaining Plate = 2961.78.  
 b = 32 mm = 032.  
 l = 160 mm = 0160  
 Order No = 2961.78.032.0160

2961.75.



2961.75.



2961.75.

Order No	Shape	b	l	e	a	e <sub>1</sub>	e <sub>2</sub>	Number of screw holes
2961.75.028.075	A	28	75	15	45	14	-	2
100	A		100	25	50			
125	A		125		75			
150	A		150		100			
2961.75.038.075	A	38	75	15	45	19	-	2
100	A		100	25	50			
125	A		125		75			
150	A		150		100			
2961.75.048.075	A	48	75	15	45	24	-	2
100	A		100	25	50			
125	A		125		75			
150	A		150		100			
200	A		200	50	100			
2961.75.058.075	A	58	75	15	45	29	-	2
100	A		100	25	50			
125	A		125		75			
150	A		150		100			
200	A		200	50	100			
2961.75.075.075	A	75	75	15	45	37,5	-	2
100	A		100	25	50			
125	A		125		75			
150	A		150		100			
200	C		200		75			3
2961.75.100.100	B	100	100	25	50	25	50	4
125	B		125		75			
150	B		150		100			
200	B		200		150			
250	B		250		200			
2961.75.125.150	B	125	150	25	100	37,5	50	4
200	B		200		150			
250	B		250		200			
2961.75.150.150	B	150	150	25	100	25	100	4
200	B		200		150			

**Description:**

Flat Guide Bars find preference in large press tools with considerable lateral work forces. Bronze pads with embedded non-liquid lubricant ensure low maintenance, selflubricating service even in aduous multi-shift applications.

**Material:**

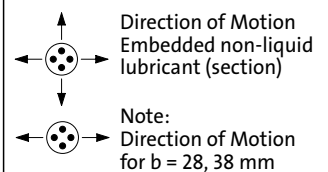
Bronze with Non-Liquid Lubricant, oilless lubricating.

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws DIN 7984 M10x20.



**Ordering Code (examples):**

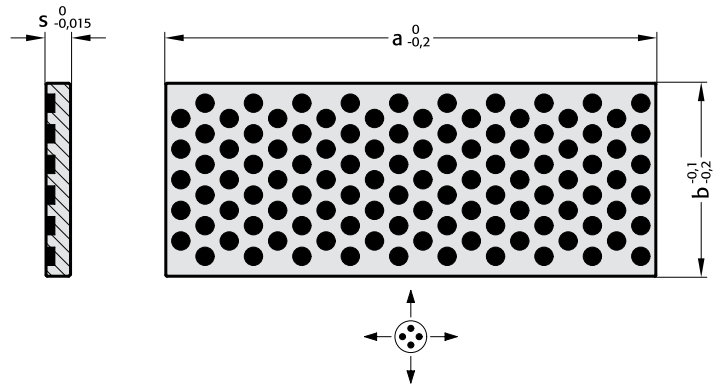
Flat Guide Bar =	2961.75.
b = 28 mm =	028.
l = 100 mm =	100
Order No =	2961.75.028.100

Flat Guide Bars  
Bronze with Non-Liquid Lubricant

2961.76.



2961.76.

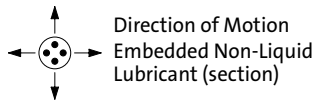


**Material:**

Bronze with Non-Liquid Lubricant, oilless lubricating.

**Execution:**

Sliding faces ground.



2961.76.

Order No	b	s	a
2961.76.025.005.050	25	5	50
2961.76.025.005.071			71
2961.76.025.005.090			90
2961.76.025.006.050	25	6	50
2961.76.025.006.063			63
2961.76.025.006.080			80
2961.76.025.006.100			100
2961.76.025.006.125			125
2961.76.040.005.050	40	5	50
2961.76.040.005.071			71
2961.76.040.005.090			90
2961.76.040.006.080	40	6	80
2961.76.040.006.100			100
2961.76.040.006.125			125
2961.76.040.006.160			160
2961.76.040.006.200			200
2961.76.063.006.080	63	6	80
2961.76.063.006.100			100
2961.76.063.006.125			125
2961.76.063.006.160			160
2961.76.063.008.125	63	8	125
2961.76.063.008.160			160
2961.76.063.008.200			200
2961.76.063.008.250			250
2961.76.063.008.315			315

**Ordering Code (example):**

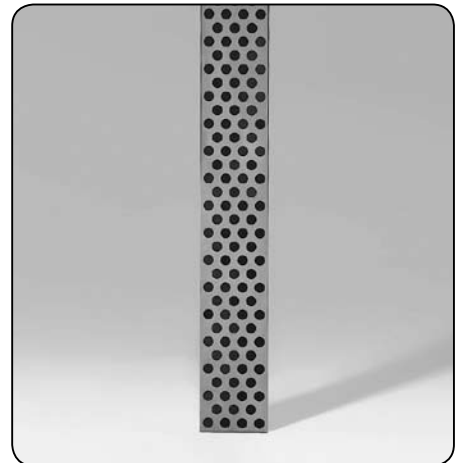
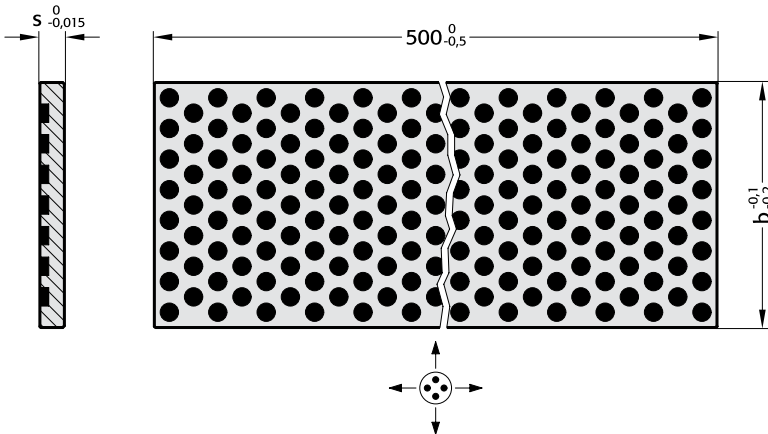
Flat Guide Bar = 2961.76.  
 b = 25 mm = 025.  
 s = 6 mm = 006.  
 a = 50 mm = 050  
 Order No = 2961.76.025.006.050

# FIBRO

2961.77.

## Flat Guide Bars Bronze with Non-Liquid Lubricant

2961.77.

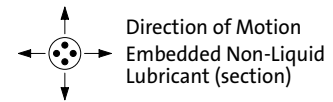


### Material:

Bronze with Non-Liquid Lubricant, oilless lubricating.

### Execution:

Sliding faces ground.



2961.77.

Order No	b	s	l
2961.77.025.006.500	25	6	500
2961.77.040.006.500	40	6	500
2961.77.063.008.500	63	8	500
2961.77.080.010.500	80	10	500

### Ordering Code (example):

Flat Guide Bar = 2961.77.

b = 25 mm = 025.

s = 6 mm = 006.

l = 500 mm = 500

Order No = 2961.77.025.006.500

# Sliding Pads small dimensions Bronze with Non-Liquid Lubricant

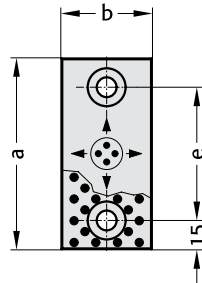
FIBRO

2960.72.

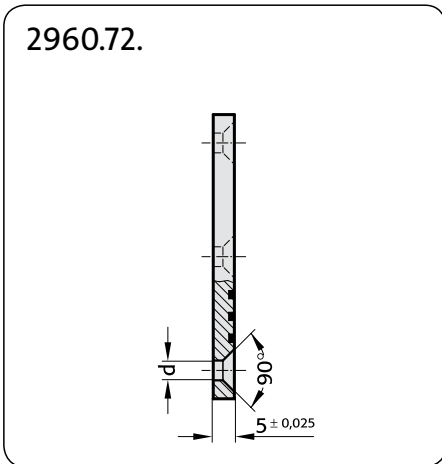
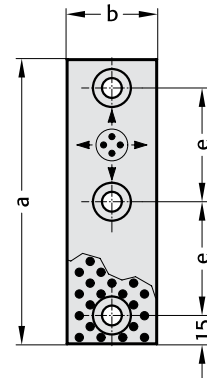


2960.72.

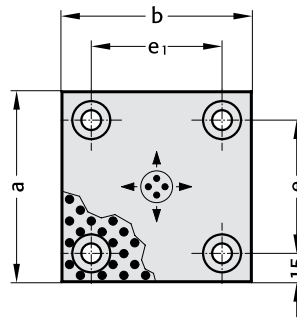
Shape A



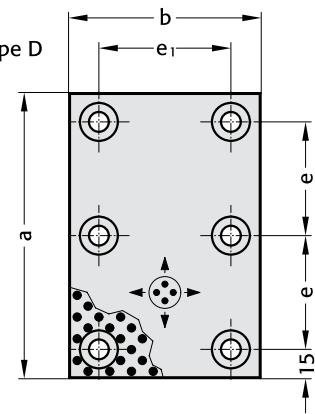
Shape B



Shape C



Shape D



## Description:

Guide pads find preference in large press tools with considerable lateral work forces. Bronze pads with embedded non-liquid lubricant ensure low maintenance, selflubricating service even in aduous multi-shift applications.

## Material:

Bronze with Non-Liquid Lubricant, oilless lubricating.

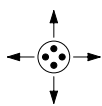
## Note:

Screws not included.

## Fixing:

Use countersunk head screw  
DIN 7991/ISO 10642

d = Ø 6,5 M 6 × 10  
d = Ø 9 M 8 × 16



Direction of Motion  
Embedded non-liquid  
lubricant (section)

2960.72.

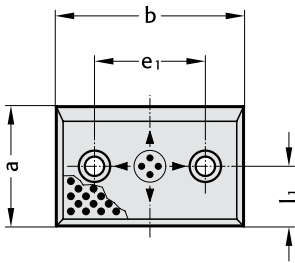
Order No	Shape	b	a	e	e <sub>1</sub>	d	Number of screw holes
2960.72.018.050	A	18	50	20	—	6,5	2
075			75	45	—		
100			100	70	—		
150	B		150	60	—		3
2960.72.028.050	A	28	50	20	—	9,0	2
075			75	45	—		
100			100	70	—		
150	B		150	60	—		3
2960.72.038.050	A	38	50	20	—		2
075			75	45	—		
100			100	70	—		
150	B		150	60	—		3
2960.72.048.075	A	48	75	45	—		2
100			100	70	—		
125			125	95	—		
150	B		150	60	—		3
2960.72.075.075	C	75	75	45	45		4
100			100	70			
125			125	95			
150	D		150	60			6
2960.72.100.100	C	100	100	70	70		4
125			125	95			
150	D		150	60			6

## Ordering Code (example):

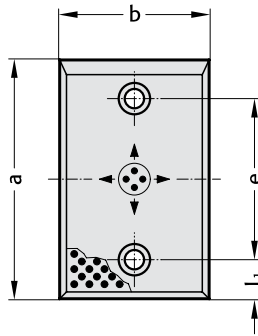
Sliding Pad = 2960.72.  
b = 18 mm = 018.  
a = 50 mm = 050  
Order No = 2960.72.018.050

2960.71.

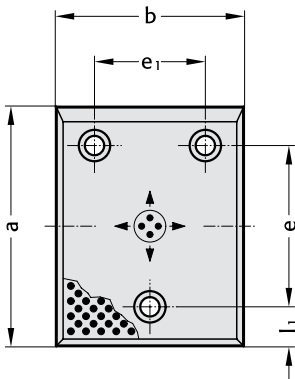
Shape D



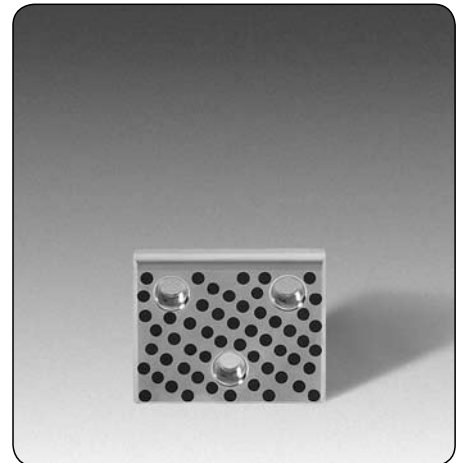
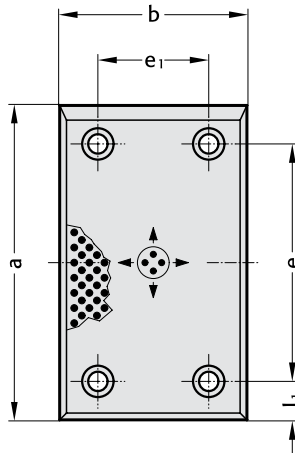
Shape B



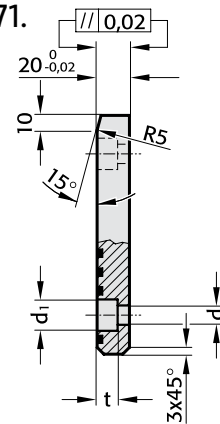
Shape G



Shape H



2960.71.



2960.71.

Order No	Shape	b	a	l <sub>1</sub>	e	e <sub>1</sub>	d	d <sub>1</sub>	t	Number of screw holes
2960.71.050.080	B	50	80	25	30	—	9	15	9	2
2960.71.050.100			100		50	—	13,5	20	13	
2960.71.050.125			125		75	—				
2960.71.050.160			160		110	—				
2960.71.050.200			200		150	—				
2960.71.080.050	D	80	50	25	—	30	9	15	9	2
2960.71.080.080	B	80	80	25	30	—	13,5	20	13	
2960.71.080.100			100		50	—				
2960.71.080.125			125		75	—				
2960.71.080.160			160		110	—				
2960.71.080.200			200		150	—				
2960.71.080.250			250	40	170	—				
2960.71.080.315			315	40	235	—				
2960.71.100.050	D	100	50	25	—	50	13,5	20	13	2
2960.71.100.080			80	40	—					
2960.71.100.100	B	100	100	25	50	—				
2960.71.100.125			125		75	—				
2960.71.100.160			160		110	—				
2960.71.100.200			200		150	—				
2960.71.100.250			250	40	170	—				
2960.71.100.315			315	40	235	—				
2960.71.125.050	D	125	50	25	—	75	13,5	20	13	2
2960.71.125.080			80	40	—					
2960.71.125.100	G	125	100	25	50	—				3
2960.71.125.125			125		75	—				
2960.71.125.160			160		110	—				
2960.71.125.200			200		150	—				
2960.71.125.250			250	40	170	—				
2960.71.125.315			315	40	235	—				
2960.71.160.050	D	160	50	25	—	110	13,5	20	13	2
2960.71.160.080			80	40	—					
2960.71.160.100	G	160	100	25	50	—				3
2960.71.160.125			125		75	—				
2960.71.160.160			160		110	—				
2960.71.160.200			200		150	—				
2960.71.160.250	H	160	250	40	170	—				4
2960.71.160.315			315	40	235	—				

**Description:**

Sliding pads find preference in large press tools with considerable lateral work forces.

Bronze pads with embedded non-liquid lubricant ensure low maintenance, selflubricating service even in arduous multi-shift applications.

**Material:**

Bronze with Non-Liquid Lubricant, oilless lubricating.

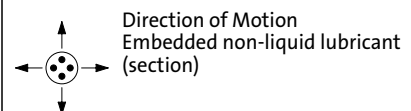
**Note:**

Screws not included.

**Fixing:**

Use socket cap screws DIN EN ISO 4762.

d = ∅9 M 8 × 25  
d = ∅13,5 M 12 × 25

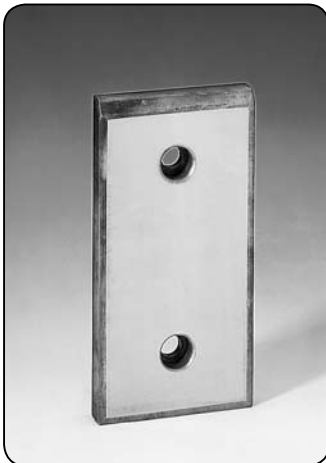


**Ordering Code (example):**

Sliding Pad	=	2960.71.
b = 50 mm	=	050.
a = 80 mm	=	080
Order No	=	2960.71.050.080

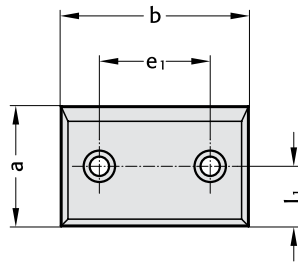
Sliding Pads, VDI 3357  
Steel

2960.87.

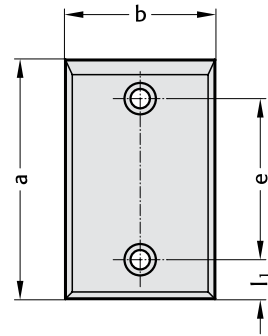


2960.87.

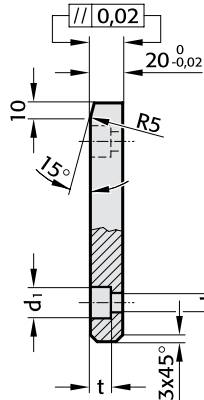
Shape D



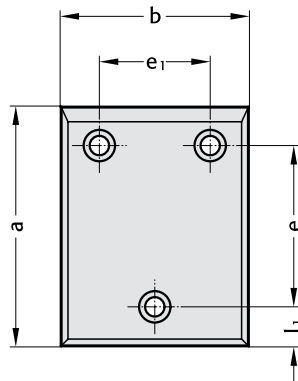
Shape B



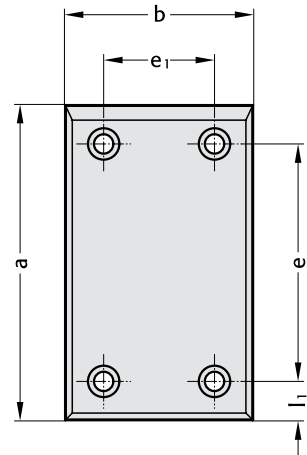
2960.87.



Shape G



Shape H



**Description:**

Sliding pads find preference in large press tools with considerable lateral work forces.

**Material:**

Steel, surface hardened.

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws  
DIN EN ISO 4762

d = Ø 9 M 8 x 25

d = Ø 13,5 M12 x 25

**Ordering Code (example):**

Sliding Pad = 2960.87.  
b = 50 mm = 050.  
a = 80 mm = 080  
Order No. = 2960.87.050.080

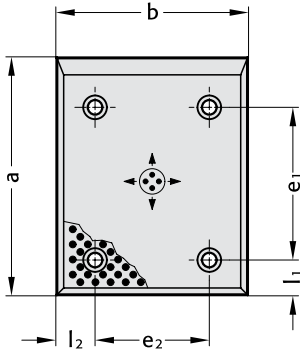
**2960.87.**

Order No	Shape	b	a	l <sub>1</sub>	e	e <sub>1</sub>	d	d <sub>1</sub>	t	Number of screw holes
2960.87.050.080	B	50	80	25	30	-	9	15	9	2
100			100		50	-	13,5	20	13	
125			125		75	-				
160			160		110	-				
200			200		150	-				
2960.87.080.050	D	80	50	25	-	30	9	15	9	2
080	B	80	80	25	30	-	13,5	20	13	
100			100		50	-				
125			125		75	-				
160			160		110	-				
200			200		150	-				
250			250	40	170	-				
315			315	40	235	-				
2960.87.100.050	D	100	50	25	-	50	13,5	20	13	2
080			80	40	-					
100	B	100	100	25	50	-				
125			125		75	-				
160			160		110	-				
200			200		150	-				
250			250	40	170	-				
315			315	40	235	-				
2960.87.125.050	D	125	50	25	-	75	13,5	20	13	2
080			80	40	-					
100	G	125	100	25	50					3
125			125		75					
160			160		110					
200			200		150					
250			250	40	170					
315			315	40	235					
2960.87.160.050	D	160	50	25	-	110	13,5	20	13	2
080			80	40	-					
100	G	160	100	25	50					3
125			125		75					
160			160		110					
200			200		150					
250			250	40	170					
315			315	40	235					
2960.87.160.050	D	160	50	25	-	110	13,5	20	13	2
080			80	40	-					
100	G	160	100	25	50					3
125			125		75					
160			160		110					
200			200		150					
250	H	160	250	40	170					4
315			315	40	235					

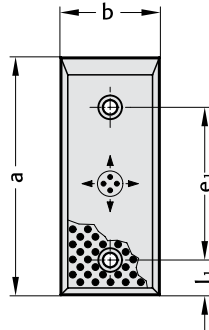


**2960.70.**

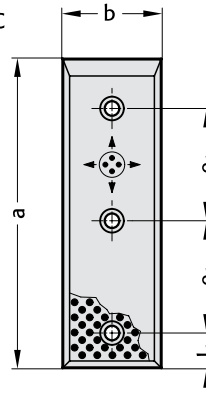
Shape A



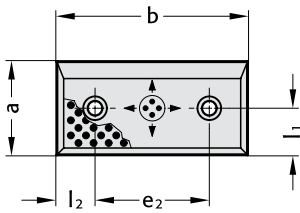
Shape B



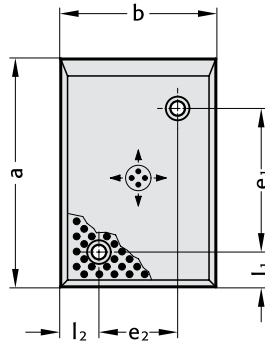
Shape C



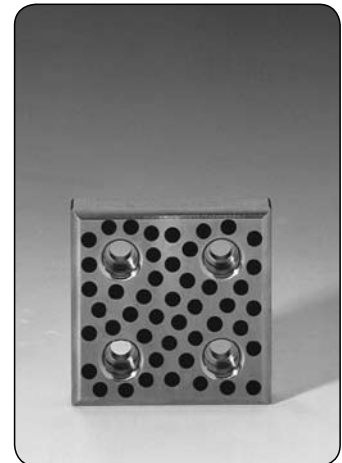
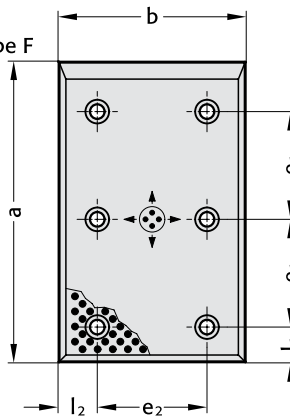
Shape D



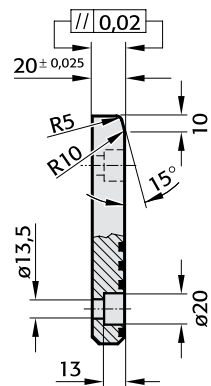
Shape E



Shape F



**2960.70.**



**2960.70.**

Order No	Shape	b	a	l <sub>1</sub>	e <sub>1</sub>	l <sub>2</sub>	e <sub>2</sub>	Order No	Shape	b	a	l <sub>1</sub>	e <sub>1</sub>	l <sub>2</sub>	e <sub>2</sub>
2960.70.															
050.080	B	50	80	20	35	25		2960.70.	D	125	50	25	-	20	85
100			100		55			080	E	80	20	35			
125			125		80			100	A	100		55			
160			160		115			125		125		80			
200			200		155			160		160		115			
250	C	250			100			200		200		155			
080.050	D	80	50	25	-	20	40	250	F	250		100			
080	E	80	20	35				315		315		132			
100			100		55			160.050	D	160	50	25	-	20	120
125			125		80			080	A	80	20	35			
160	A	160			115			100		100		55			
200			200		155			125		125		80			
250	F	250			100			160		160		115			
315			315		132			200		200		155			
100.050	D	100	50	25	-	20	60	250	F	250		100			
080	E	80	20	35				315		315		132			
100			100		55										
125	A	125			80										
160			160		115										
200			200		155										
250	F	250			100										
315			315		132										

**Description:**

Sliding pads find preference in large press tools with considerable lateral work forces. Bronze pads with embedded non-liquid lubricant ensure low maintenance, self-lubricating service even in arduous multi-shift applications.

**Material:**

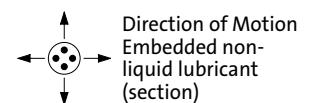
Bronze with Non-Liquid lubricant, oilless lubricating.

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws  
DIN EN ISO 4762 M12 x 25.

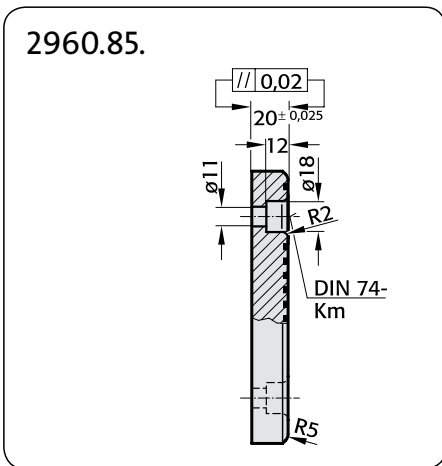
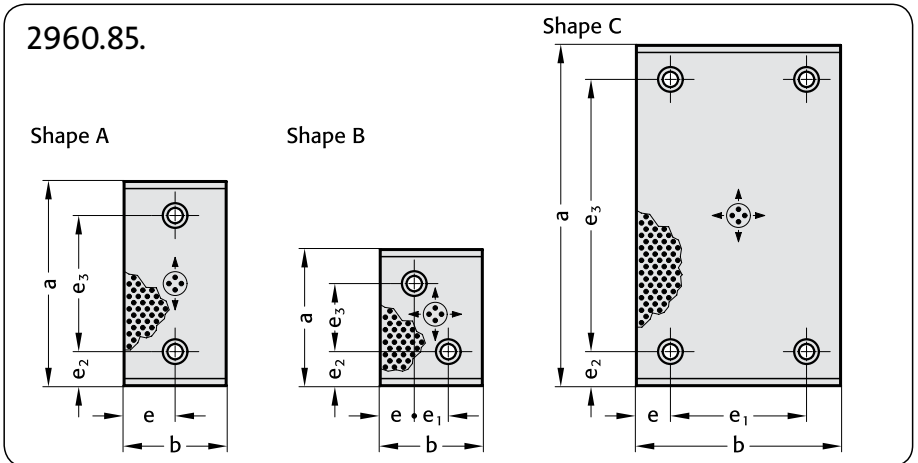


**Ordering Code (example):**

Sliding Pad = 2960.70.  
b = 50 mm = 050.  
a = 80 mm = 080  
Order No = 2960.70.050.080

Sliding Pads  
Bronze with Non-Liquid Lubricant

2960.85.



2960.85.

Order No	Shape	b	a	e	e <sub>1</sub>	e <sub>2</sub>	e <sub>3</sub>	Number of screw holes
2960.85.028.075	A	28	75	14	-	15	45	2
100	A		100			25	50	
125	A		125				75	
150	A		150				100	
2960.85.038.075	A	38	75	19	-	15	45	2
100	A		100			25	50	
125	A		125				75	
150	A		150				100	
200	A		200				150	
2960.85.048.075	A	48	75	24	-	15	45	2
100	A		100			25	50	
125	A		125				75	
150	A		150				100	
200	A		200				150	
2960.85.058.075	A	58	75	29	-	15	45	2
100	A		100			25	50	
150	A		150				100	
2960.85.075.075.1	A	75	75	37,5	-	15	45	2
2960.85.075.075	B	75	75	25	25	25	25	2
100.1	A		100	37,5	-		50	
100	B		100	25	25		50	
125	A		125	37,5	-		75	
150	A		150				100	
200	A		200				150	
2960.85.100.100	C	100	100	25	50	25	50	4
125	C		125				75	
150	C		150				100	
200	C		200				150	
250	C		250				200	
300	C		300				250	
2960.85.125.125	C	125	125	37,5	50	25	75	4
150	C		150				100	
200	C		200				150	
250	C		250				200	
300	C		300				250	
350	C		350				300	
2960.85.150.150	C	150	150	25	100	25	100	4
200	C		200				150	
250	C		250				200	
300	C		300				250	
2960.85.200.200	C	200	200	25	150	25	150	4
250	C		250				200	
300	C		300				250	

Description:

Sliding pads find preference in large press tools with considerable lateral work forces. Bronze pads with embedded non-liquid lubricant ensure low maintenance, selflubricating service even in aduous multi-shift applications.

Material:

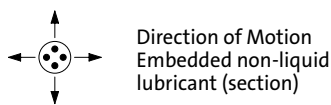
Bronze with Non-Liquid Lubricant, oilless lubricating.

Note:

Screws not included.

Fixing:

Use socket cap screws DIN EN ISO 4762 M10x25.



Ordering Code (example):

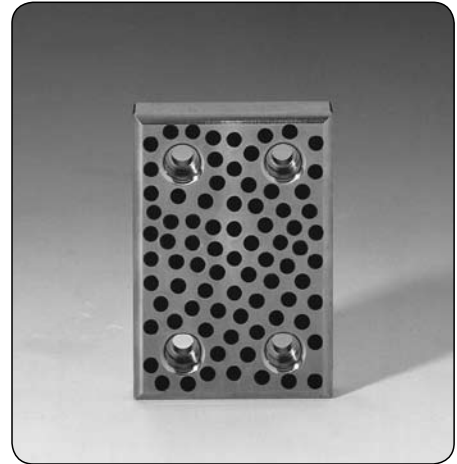
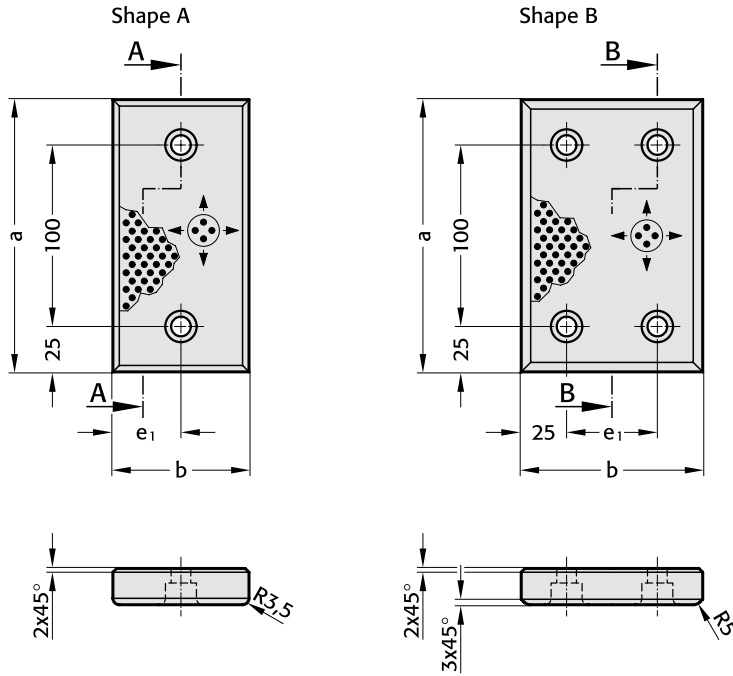
Sliding Pad	=	2960.85.
b = 48 mm	=	048.
a = 150 mm	=	150
Order No	=	2960.85.048.150

**FIBRO**

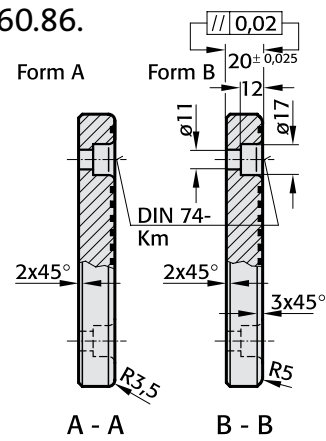
2960.86.

**Sliding Pads  
Bronze with Non-Liquid Lubricant**

2960.86.



2960.86.



2960.86.

Order No	Shape	b	a	e <sub>1</sub>	Number of screw holes
2960.86.038.150	A	38	150	19	2
075.150	A	75	150	37,5	2
100.150	B	100	150	50	4

**Description:**

Sliding pads find preference in large press tools with considerable lateral work forces. Bronze pads with embedded non-liquid lubricant ensure low maintenance, selflubricating service even in aduous multi-shift applications.

**Material:**

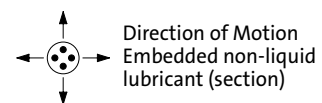
Bronze with Non-Liquid Lubricant, oilless lubricating.

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws DIN EN ISO 4762 M10x25.



**Ordering Code (example):**

Sliding Pad = 2960.86.

b = 38 mm = 038.

a = 150 mm = 150

Order No = 2960.86.038.150

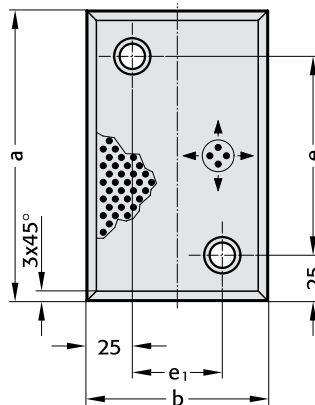
Sliding Pads  
Bronze with Non-Liquid Lubricant

2960.76.

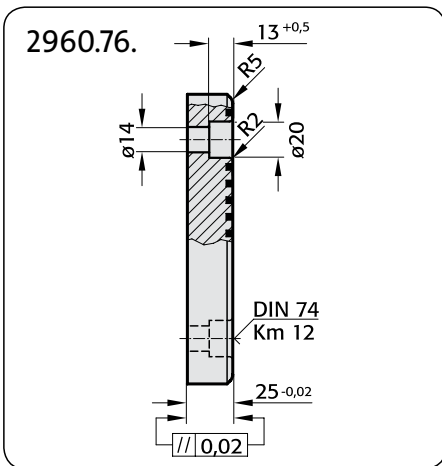
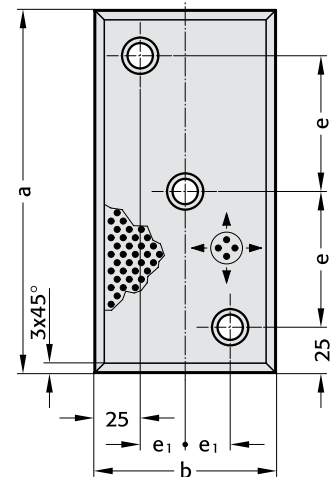


2960.76.

Shape A



Shape B



Description:

Sliding pads find preference in large press tools with considerable lateral work forces. Bronze pads with embedded non-liquid lubricant ensure low maintenance, self-lubricating service even in arduous multi-shift applications.

Material:

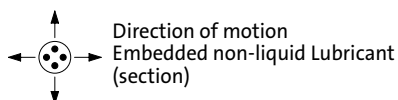
Bronze with non-liquid lubricant, oilless lubricating.

Note:

Screws not included.

Fixing:

Use socket cap screws DIN EN ISO 4762 M12x30.



Ordering Code (example):

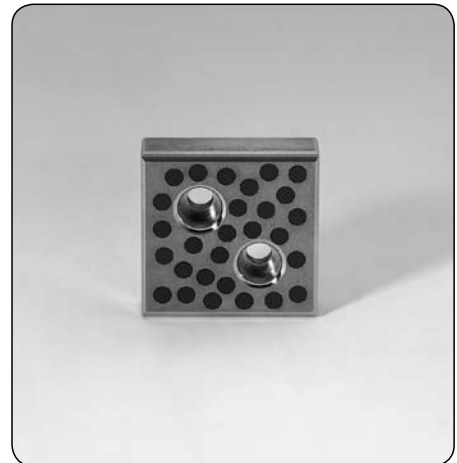
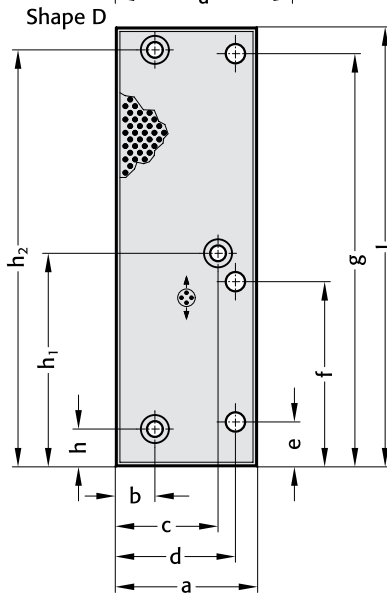
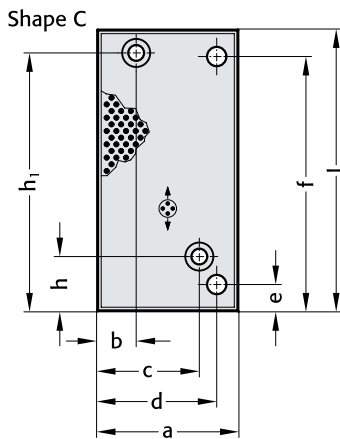
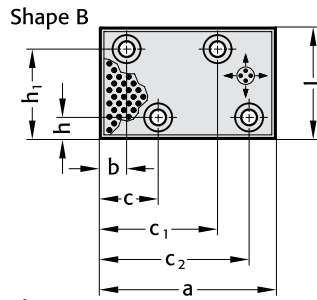
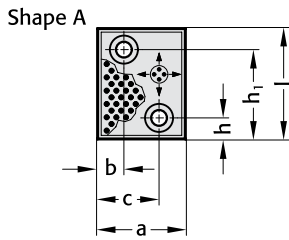
Sliding Pad	=	2960.76.
b = 80 mm	=	080.
a = 200 mm	=	200
Order No	=	2960.76.080.200

2960.76.

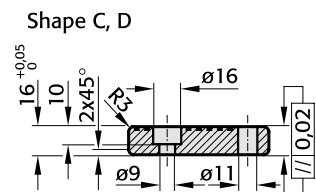
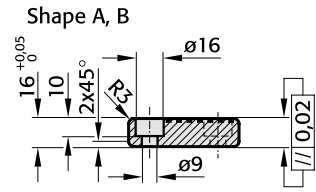
Order No	Shape	b	a	e	e <sub>1</sub>	Number of screw holes
2960.76.080.100	A	80	100	50	30	2
125	A		125	75	30	2
160	A		160	110	30	2
200	B		200	75	15	3
2960.76.100.125	A	100	125	75	50	2
160	A		160	110	50	2
200	B		200	75	25	3
2960.76.125.125	A	125	125	75	75	2

**Sliding Pads  
Bronze with Non-Liquid Lubricant to CNOMO**

2962.78.45.



2962.78.45.



**Description:**

Sliding pads find preference in large press tools with considerable lateral work forces.

Bronze pads with embedded non-liquid lubricant ensure low maintenance, self-lubricating service even in arduous multi-shift applications.

**Material:**

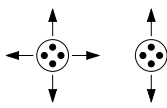
Bronze with non-liquid lubricant, oilless lubricating.

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws DIN EN ISO 4762, M8x25



Direction of motion  
Embedded non-liquid Lubricant  
(section)

**Ordering Code (example):**

Sliding pad	=	2962.78.45.
a = 50 mm	=	050.
thickness = 16 mm	=	16.
l = 63 mm	=	063
Order No	=	2962.78.45.050.16.063

2962.78.45.

Order No	Shape	a	l	b	c	c <sub>1</sub>	c <sub>2</sub>	d	e	f	g	h	h <sub>1</sub>	h <sub>2</sub>	Number of countersunk	Number of screw holes
2962.78.45.050.16.063	A	50	63	15	35	-	-	-	-	-	-	12	51	-	2	-
2962.78.45.050.16.160	C	50	160	19	31	-	-	-	-	-	-	21	147	-	2	-
2962.78.45.050.16.250	D	50	250	19	31	-	-	-	-	-	-	21	121	237	3	-
2962.78.45.080.16.160	C	80	160	22	58	-	-	68	15	145	-	31	147	-	2	2
2962.78.45.080.16.250	D	80	250	22	58	-	-	68	25	105	235	21	121	237	3	3
2962.78.45.100.16.063	B	100	63	15	33	67	85	-	-	-	-	12	51	-	4	-

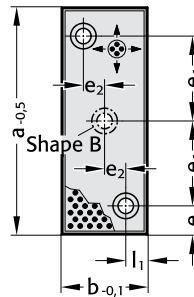
# Sliding Pads Bronze with Non-Liquid Lubricant

2962.78.

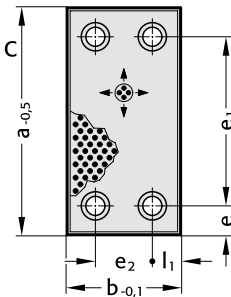


2962.78.

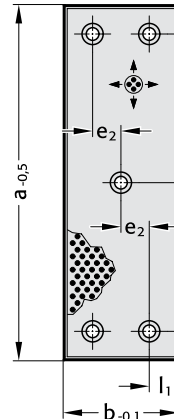
Shape A  
Shape B



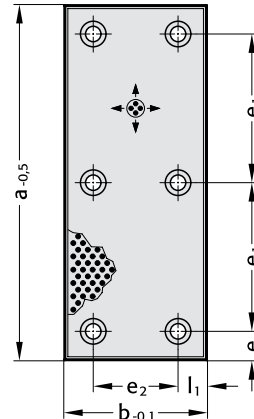
Shape C



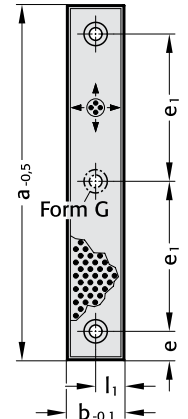
Shape D



Shape E



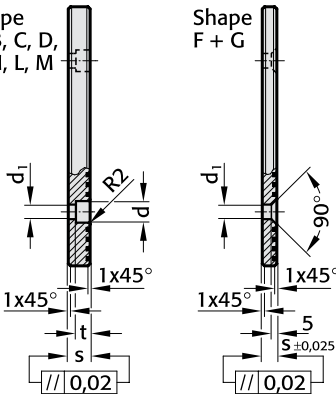
Shape F  
Shape G



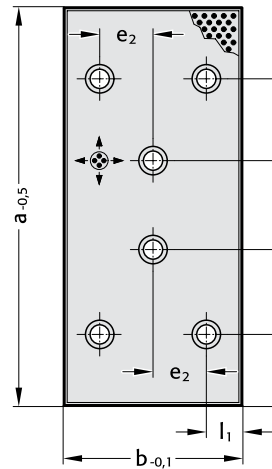
2962.78.

Shape  
A, B, C, D,  
E, H, L, M

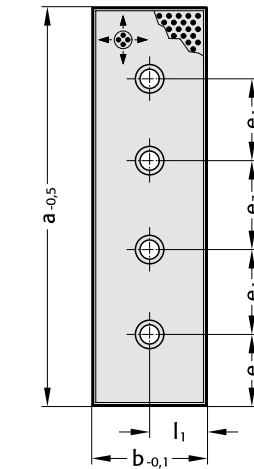
Shape  
F + G



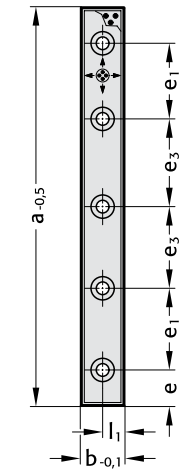
Shape H



Shape L



Shape M



## Description:

Sliding pads find preference in large press tools with considerable lateral work forces.

Bronze pads with embedded non-liquid lubricant ensure low maintenance, self-lubricating service even in arduous multi-shift applications.

## Material:

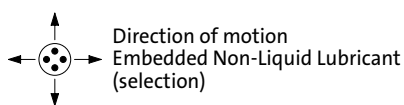
Bronze with non-liquid lubricant, oilless lubricating.

## Note:

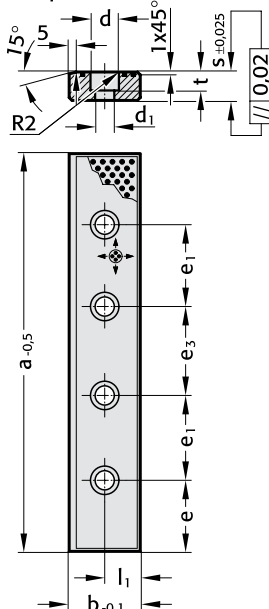
Screws not included.

## Fixing:

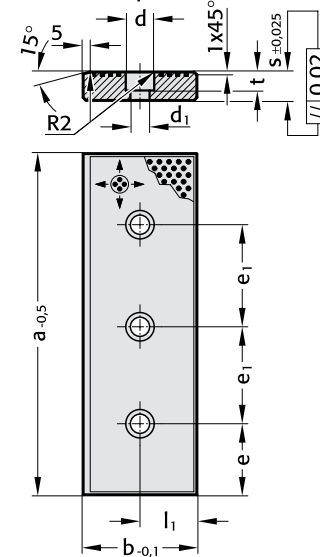
Use socket cap screws DIN EN ISO 4762, or countersunk cap screws DIN 7991/ISO 10642.



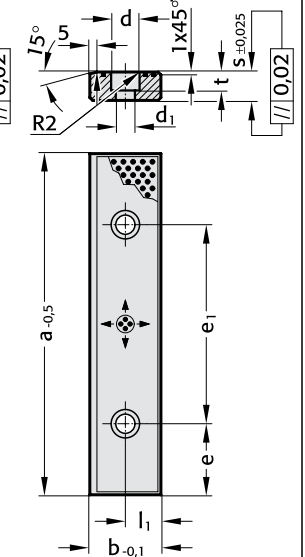
Shape I



Shape J



Shape K



# FIBRO

2962.78.

## Sliding Pads Bronze with Non-Liquid Lubricant

2962.78.

Order No	Shape	b	s	a	l <sub>1</sub>	e	e <sub>1</sub>	e <sub>2</sub>	e <sub>3</sub>	Number of screw holes	d	d <sub>1</sub>	t
2962.78.030.12.0100	A	30	12	100	15	20	60	-	-	2	15	9	9
.0160	B	30	12	160	15	20	60	-	-	3	15	9	9
.0240	B	30	12	240	15	25	95	-	-	3	15	9	9
.0250	B	30	12	250	15	20	105	-	-	3	15	9	9
.0300	L	30	12	300	15	25	85	-	80	4	15	9	9
.0350	L	30	12	350	15	25	100	-	100	4	15	9	9
.0400	L	30	12	400	15	25	115	-	120	4	15	9	9
.0450	M	30	12	450	15	25	100	-	100	5	15	9	9
.0500	M	30	12	500	15	25	110	-	115	5	15	9	9
2962.78.040.08.0100	F	40	8	100	20	20	60	-	-	2	-	9	5
.0160	G	40	8	160	20	20	60	-	-	3	-	9	5
.0250	G	40	8	250	20	20	105	-	-	3	-	9	5
2962.78.040.12.0100	A	40	12	100	20	20	60	-	-	2	15	9	9
.0160	B	40	12	160	20	20	60	-	-	3	15	9	9
.0250	B	40	12	250	20	20	105	-	-	3	15	9	9
2962.78.040.16.0100	A	40	16	100	20	20	60	-	-	2	18	11	11
.0160	B	40	16	160	20	20	60	-	-	3	18	11	11
.0250	B	40	16	250	20	20	105	-	-	3	18	11	11
2962.78.050.20.0100	A	50	20	100	15	20	60	20	-	2	20	13,5	13
.0160	B	50	20	160	15	20	60	10	-	3	20	13,5	13
.0240	A	50	20	240	25	50	140	-	-	2	20	13,5	13
.0240.1*	K	50	20	240	25	50	140	-	-	2	20	13,5	13
.0250	B	50	20	250	15	20	105	10	-	3	20	13,5	13
.0300	B	50	20	300	25	50	100	-	-	3	20	13,5	13
.0300.1*	J	50	20	300	25	50	100	-	-	3	20	13,5	13
.0350	B	50	20	350	25	50	125	-	-	3	20	13,5	13
.0350.1*	J	50	20	350	25	50	125	-	-	3	20	13,5	13
.0400.1*	J	50	20	400	25	50	150	-	-	3	20	13,5	13
.0450.1*	I	50	20	450	25	50	115	-	120	4	20	13,5	13
.0500.1*	I	50	20	500	25	50	135	-	130	4	20	13,5	13
2962.78.060.16.0100	A	60	16	100	15	20	60	30	-	2	18	11	11
.0160	B	60	16	160	15	20	60	15	-	3	18	11	11
.0250	B	60	16	250	15	20	105	15	-	3	18	11	11
2962.78.080.12.0100	A	80	12	100	20	20	60	40	-	2	15	9	9
.0160	C	80	12	160	20	20	120	40	-	4	15	9	9
.0250	D	80	12	250	20	20	105	20	-	5	15	9	9
2962.78.080.20.0100	A	80	20	100	20	20	60	40	-	2	20	13,5	13
.0160	C	80	20	160	20	20	120	40	-	4	20	13,5	13
.0250	D	80	20	250	20	20	105	20	-	5	20	13,5	13
.0300	B	80	20	300	40	50	100	-	-	3	20	13,5	13
.0300.1*	J	80	20	300	40	50	100	-	-	3	20	13,5	13
.0350	B	80	20	350	40	50	125	-	-	3	20	13,5	13
.0350.1*	J	80	20	350	40	50	125	-	-	3	20	13,5	13
.0400	B	80	20	400	40	50	150	-	-	3	20	13,5	13
.0400.1*	J	80	20	400	40	50	150	-	-	3	20	13,5	13
.0450	L	80	20	450	40	50	115	-	120	4	20	13,5	13
.0450.1*	I	80	20	450	40	50	115	-	120	4	20	13,5	13
.0500	L	80	20	500	40	50	135	-	130	4	20	13,5	13
.0500.1*	I	80	20	500	40	50	135	-	130	4	20	13,5	13
2962.78.100.16.0100	A	100	16	100	20	20	60	60	-	2	18	11	11
.0160	C	100	16	160	20	20	120	60	-	4	18	11	11
.0250	E	100	16	250	20	20	105	60	-	6	18	11	11
2962.78.125.20.0100	C	125	20	100	20	20	60	85	-	4	20	13,5	13
.0160	C	125	20	160	20	20	120	85	-	4	20	13,5	13
.0250	E	125	20	250	20	20	105	85	-	6	20	13,5	13
.0400	D	125	20	400	25	50	150	37,5	-	5	20	13,5	13
.0450	H	125	20	450	25	50	115	37,5	120	6	20	13,5	13
.0500	H	125	20	500	25	50	135	37,5	130	6	20	13,5	13

\* with Pilot Taper

### Ordering Code (example):

Sliding Pad = 2962.78.  
 b = 125 mm = 125.  
 s = 20 mm = 20.  
 a = 100 mm = 0100  
 Order No = 2962.78.125.20.0100

Sliding Pads, Steel  
to CNOMO

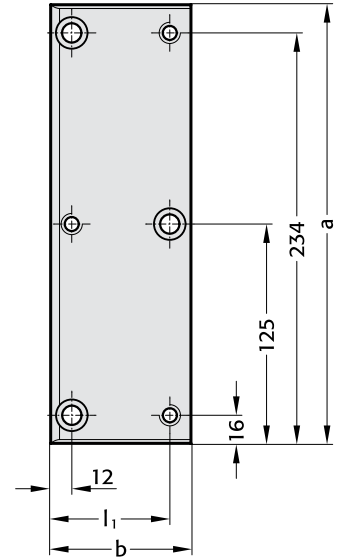
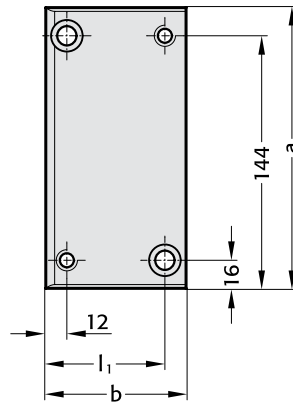
2962.84.45.



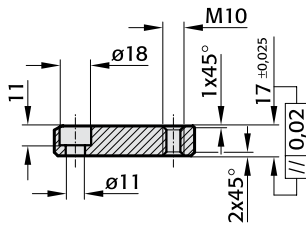
2962.84.45.

Shape B

Shape A



2962.84.45.



**Description:**

Sliding pads find preference in large press tools with considerable lateral work forces

**Material:**

Steel, surface hardened.

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws DIN EN ISO 4762  
M 10 × 30.

2962.84.45.

Order No	Shape	b	a	l <sub>1</sub>	Number of countersunk	Number of threads
2962.84.45.050.17.160	A	50	160	38	2	2
2962.84.45.050.17.250	B	50	250	38	3	3
2962.84.45.080.17.160	A	80	160	68	2	2
2962.84.45.080.17.250	B	80	250	68	3	3

**Ordering Code (example):**

Sliding Pad	=	2962.84.45.
b = 50 mm	=	050.
thickness = 17 mm	=	17.
a = 250 mm	=	250
Order No	=	2962.84.45.050.17.250





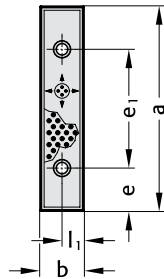
Sliding Pads  
Steel with Non-Liquid Lubricant

2962.85.

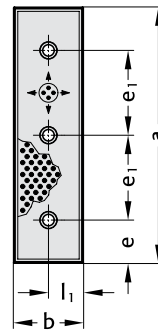


2962.85.

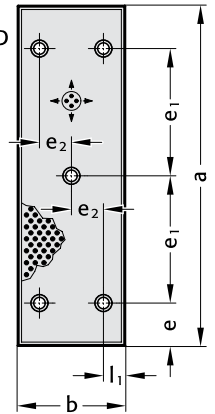
Shape A



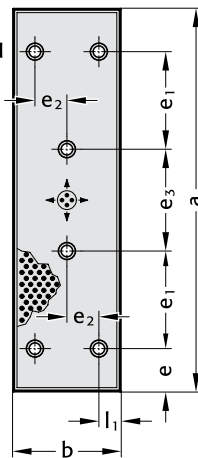
Shape B



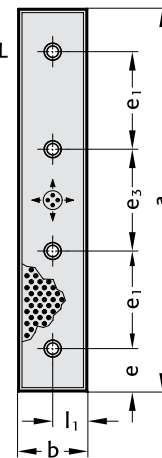
Shape D



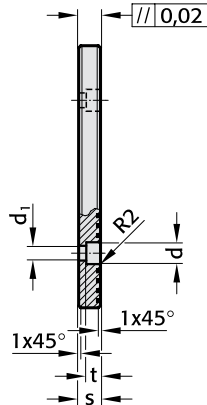
Shape H



Shape L



2962.85.



Material:

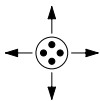
Steel, surface hardened.  
Sliding Pads with embedded  
non-liquid lubricant (non-liquid  
lubricant share 20–25%)

Note:

Screws not included.

Fixing:

Use socket cap screws  
DIN EN ISO 4762  
M12x30.



Direction of motion  
Embedded Non-Liquid  
Lubricant  
(selection)

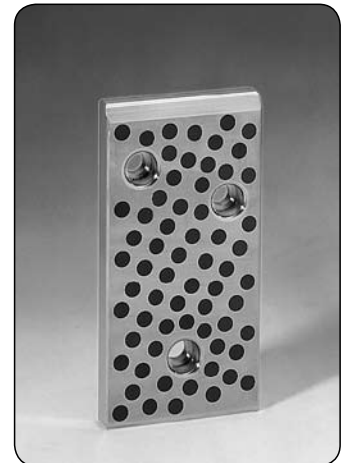
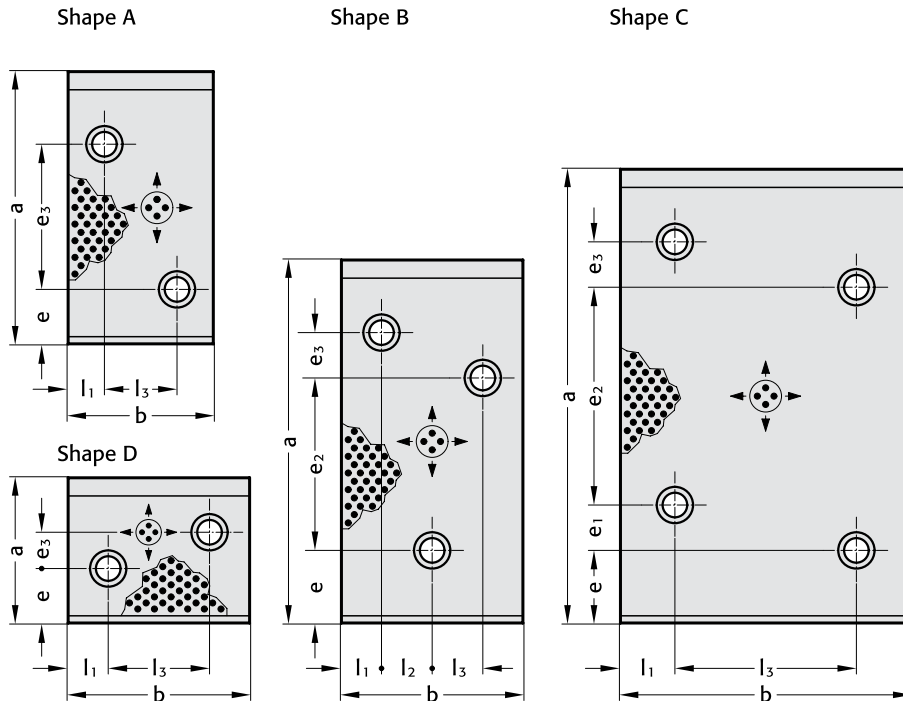
2962.85.

Order No	Shape	b	s	a	l <sub>1</sub>	e	e <sub>1</sub>	e <sub>2</sub>	e <sub>3</sub>	Number of screw holes	d	d <sub>1</sub>	t
2962.85.050.20.0240	A	50	20	240	25	50	140	–	–	2	20	13,5	13
0300	B	50	20	300	25	50	100	–	–	3	20	13,5	13
0350	B	50	20	350	25	50	125	–	–	3	20	13,5	13
2962.85.080.20.0300	B	80	20	300	40	50	100	–	–	3	20	13,5	13
0350	B	80	20	350	40	50	125	–	–	3	20	13,5	13
0400	B	80	20	400	40	50	150	–	–	3	20	13,5	13
0450	L	80	20	450	40	50	115	–	120	4	20	13,5	13
0500	L	80	20	500	40	50	135	–	130	4	20	13,5	13
2962.85.125.20.0400	D	125	20	400	25	50	150	37,5	–	5	20	13,5	13
0450	H	125	20	450	25	50	115	37,5	120	6	20	13,5	13
0500	H	125	20	500	25	50	135	37,5	130	6	20	13,5	13

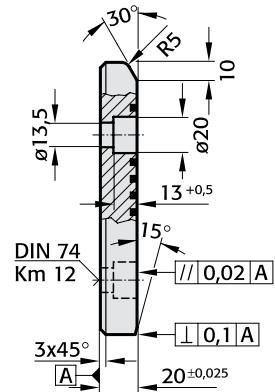
Ordering Code (example):

Sliding Pad = 2962.85.  
b = 125 mm = 125.  
s = 20 mm = 020.  
a = 400 mm = 0400  
Order No = 2962.85.125.020.0400

2960.79.



2960.79.



2960.79.

Order No	Shape	b	a	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	e	e <sub>1</sub>	e <sub>2</sub>	e <sub>3</sub>	Number of screw holes
2960.79.050.100	A	50	100	25	-	-	30	-	-	30	2
150	A	50	150	25	-	-	30	-	-	80	2
200	A	50	200	25	-	-	40	-	-	120	2
2960.79.080.100	A	80	100	20	-	40	30	-	-	30	2
150	A	80	150	20	-	40	30	-	-	80	2
200	A	80	200	20	-	40	40	-	-	120	2
250	A	80	250	20	-	40	40	-	-	170	2
315	B	80	315	20	20	20	40	-	210	25	3
2960.79.100.050	D	100	50	22	-	56	14	-	-	13	2
080	D	100	80	22	-	56	30	-	-	20	2
100	A	100	100	22	-	56	30	-	-	30	2
150	A	100	150	22	-	56	30	-	-	80	2
200	B	100	200	22	28	28	40	-	95	25	3
250	B	100	250	22	28	28	40	-	145	25	3
315	B	100	315	22	28	28	40	-	210	25	3
2960.79.125.080	D	125	80	25	-	75	30	-	-	20	2
100	A	125	100	25	-	75	30	-	-	30	2
150	A	125	150	25	-	75	30	-	-	80	2
200	B	125	200	25	37	38	40	-	95	25	3
250	B	125	250	25	37	38	40	-	145	25	3
315	C	125	315	25	-	75	40	25	185	25	4
2960.79.160.100	A	160	100	30	-	100	30	-	-	30	2
150	A	160	150	30	-	100	30	-	-	80	2
200	B	160	200	30	50	50	40	-	95	25	3
250	C	160	250	30	-	100	40	25	120	25	4
315	C	160	315	30	-	100	40	25	185	25	4

**Ordering Code (example):**

Sliding Pad	=	2960.79.
b = 160 mm	=	160.
a = 315 mm	=	315
Order No	=	2960.79.160.315

**Description:**

Sliding pads find preference in large press tools with considerable lateral work forces.

Bronze pads with embedded non-liquid lubricant ensure low maintenance, self-lubricating service even in arduous multi-shift applications.

**Material:**

Bronze with non-liquid lubricant, oilless lubricating.

**Execution:**

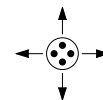
Sliding faces are ground.

**Note:**

Screws not included.

**Fixing:**

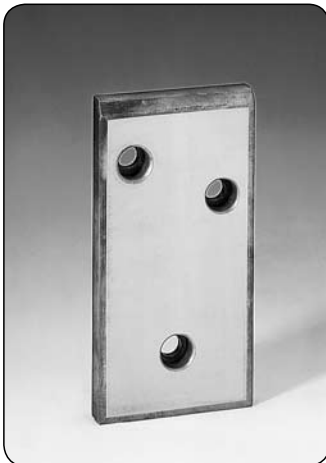
Use socket cap screws  
DIN EN ISO 4762 M12 x 30.



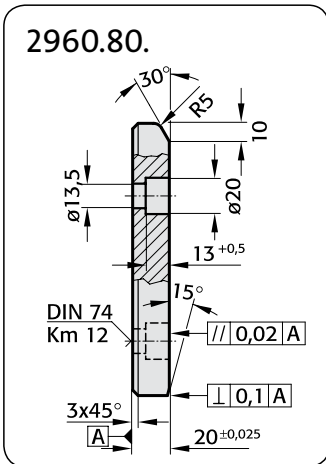
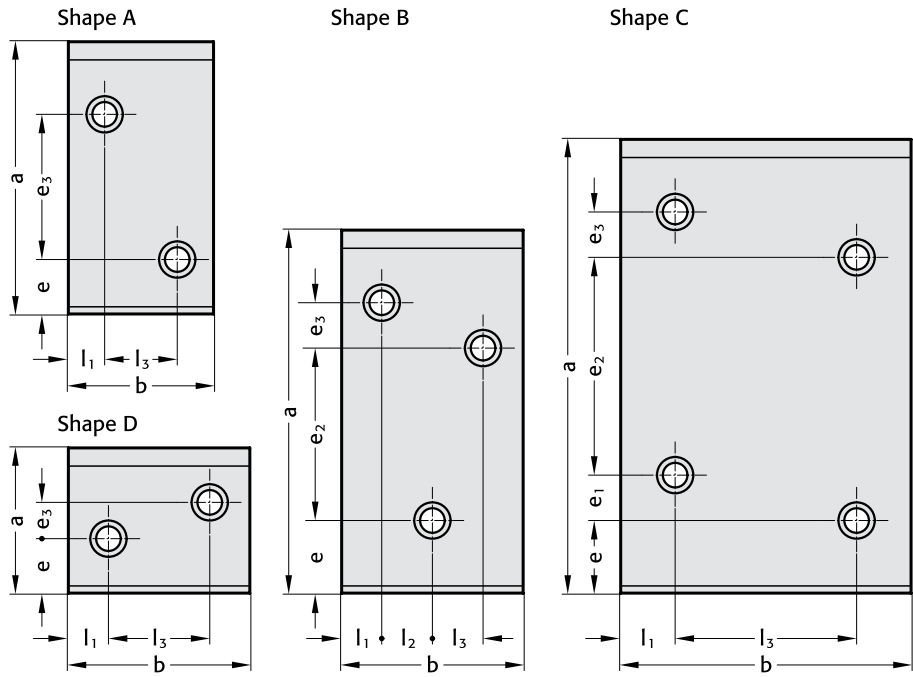
Direction of motion  
Embedded non-liquid  
lubricant (section)

Sliding Pads to NAAMS Steel

2960.80.



2960.80.



Description:

Sliding pads find preference in large press tools with considerable lateral work forces.

Material:

Steel, surface hardened

Note:

Screws not included.

Fixing:

Use socket cap screws DIN EN ISO 4762 M12x30.

2960.80.

Order No	Shape	b	a	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	e	e <sub>1</sub>	e <sub>2</sub>	e <sub>3</sub>	Number of screw holes
2960.80. 050.100	A	50	100	25	-	-	30	-	-	30	2
150	A	50	150	25	-	-	30	-	-	80	2
200	A	50	200	25	-	-	40	-	-	120	2
2960.80. 080.100	A	80	100	20	-	40	30	-	-	30	2
150	A	80	150	20	-	40	30	-	-	80	2
200	A	80	200	20	-	40	40	-	-	120	2
250	A	80	250	20	-	40	40	-	-	170	2
315	B	80	315	20	20	20	40	-	210	25	3
2960.80. 100.050	D	100	50	22	-	56	14	-	-	13	2
080	D	100	80	22	-	56	30	-	-	20	2
100	A	100	100	22	-	56	30	-	-	30	2
150	A	100	150	22	-	56	30	-	-	80	2
200	B	100	200	22	28	28	40	-	95	25	3
250	B	100	250	22	28	28	40	-	145	25	3
315	B	100	315	22	28	28	40	-	210	25	3
2960.80. 125.080	D	125	80	25	-	75	30	-	-	20	2
100	A	125	100	25	-	75	30	-	-	30	2
150	A	125	150	25	-	75	30	-	-	80	2
200	B	125	200	25	37	38	40	-	95	25	3
250	B	125	250	25	37	38	40	-	145	25	3
315	C	125	315	25	-	75	40	25	185	25	4
2960.80. 160.100	A	160	100	30	-	100	30	-	-	30	2
150	A	160	150	30	-	100	30	-	-	80	2
200	B	160	200	30	50	50	40	-	95	25	3
250	C	160	250	30	-	100	40	25	120	25	4
315	C	160	315	30	-	100	40	25	185	25	4

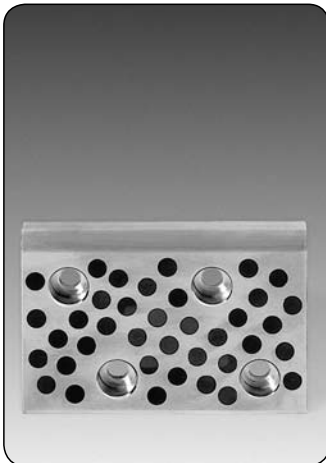
Ordering Code (example):

Sliding Pad = 2960.80.  
 b = 160 mm = 160.  
 a = 315 mm = 315  
 Order No = 2960.80.160.315



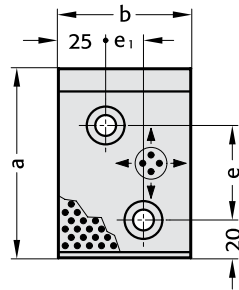
Sliding Pads AFNOR/ISO 9183-2  
Bronze with Non-Liquid Lubricant

2960.74.

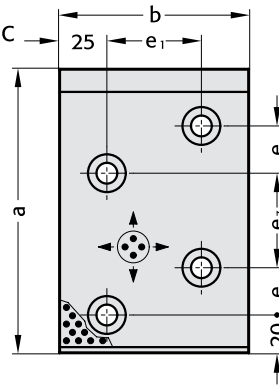


2960.74.

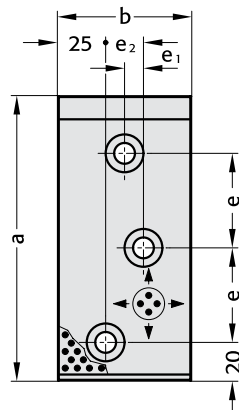
Shape A



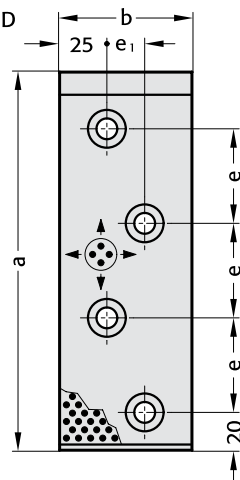
Shape C



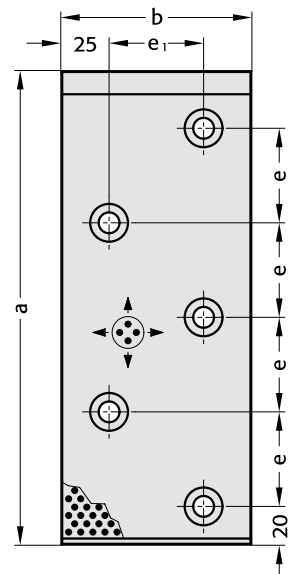
Shape B



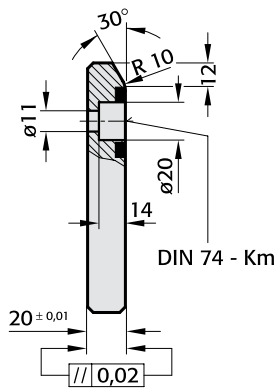
Shape D



Shape E



2960.74.



**Description:**

Sliding pads find preference in large press tools with considerable lateral work forces. Bronze with integral solid lubricant guarantees low maintenance, even if the plates are in continuous use.

**Material:**

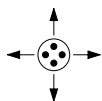
Bronze with non-liquid lubricant, oilless lubricating.

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws  
DIN EN ISO 4762 M 10x25.



Direction of motion  
Embedded non-liquid lubricant  
(section)

2960.74.

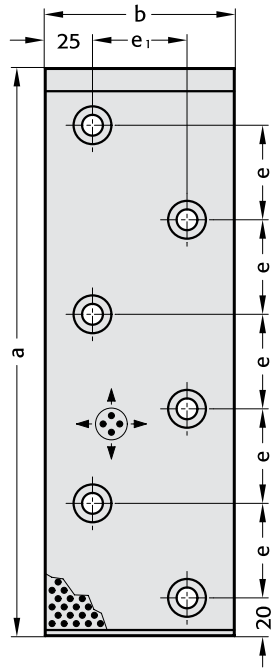
Order No	Shape	b	a	e	e <sub>1</sub>	e <sub>2</sub>	e <sub>3</sub>	Number of screw holes
2960.74.070.100	A	70	100	50	20	-	-	2
150	B	70	150		10	20	-	3
200	D	70	200		20	-	-	4
2960.74.100.150	C	100	150	25	50	-	50	4
200	D	100	200	50	50	-	-	4
250	E	100	250		50	-	-	5
2960.74.150.200	D	150	200		100	-	-	4
250	E	150	250		100	-	-	5

**Ordering Code (example):**

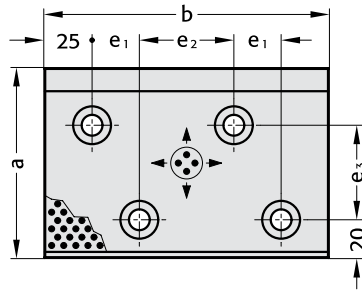
Sliding Pad = 2960.74.  
 b = 100 mm = 100.  
 a = 200 mm = 200  
 Order No = 2960.74.100.200

2960.74.

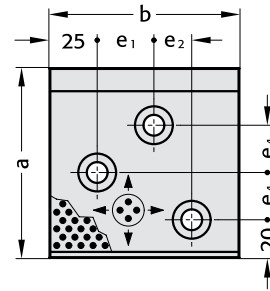
Shape F



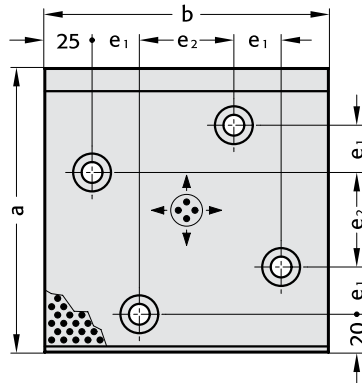
Shape G



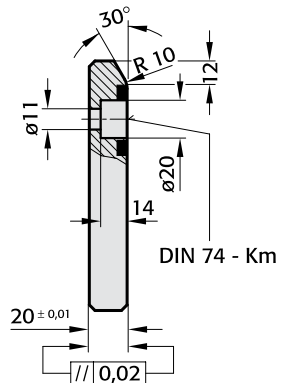
Shape I



Shape H



2960.74.



2960.74.

Order No	Shape	b	a	e <sub>1</sub>	e <sub>2</sub>	e	e <sub>3</sub>	e <sub>4</sub>	Number of screw holes
2960.74.100.100	I	100	100	30	25	—	—	20	3
300	F	100	300	50	—	50	—	—	6
2960.74.150.100	G	150	100	25	—	—	50	50	4
150	H	150	150	25	—	—	—	50	4
300	F	150	300	100	—	50	—	—	6
2960.74.200.100	G	200	100	50	—	—	50	50	4

**Description:**

Sliding pads find preference in large press tools with considerable lateral work forces.

Bronze with integral solid lubricant guarantees low maintenance, even if the plates are in continuous use.

**Material:**

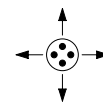
Bronze with non-liquid lubricant, oilless lubricating.

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws  
DIN EN ISO 4762 M 10x25.



Direction of motion  
Embedded non-liquid lubricant (section)

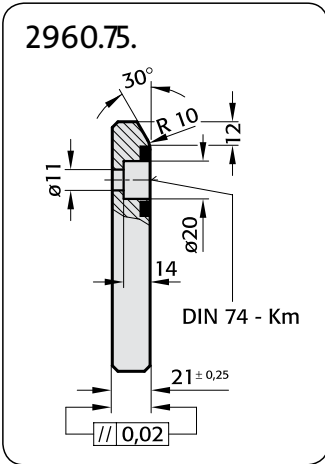
**Ordering Code (example):**

Sliding Pad = 2960.74.  
b = 150 mm = 150.  
a = 100 mm = 100  
Order No = 2960.74.150.100

Sliding Pads AFNOR/ISO 9183-2  
Special cast iron (GG25)  
with Non-Liquid Lubricant

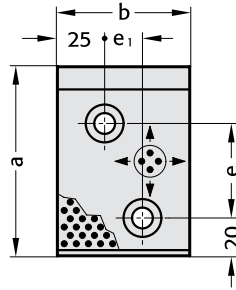
FIBRO

2960.75.

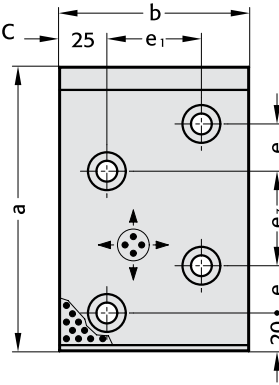


2960.75.

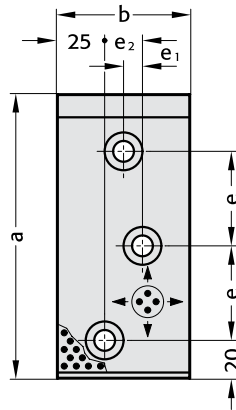
Shape A



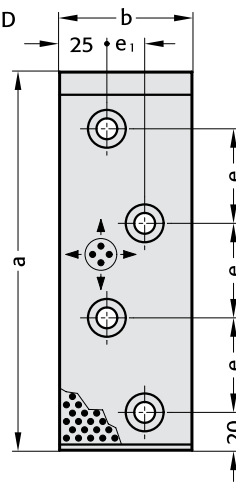
Shape C



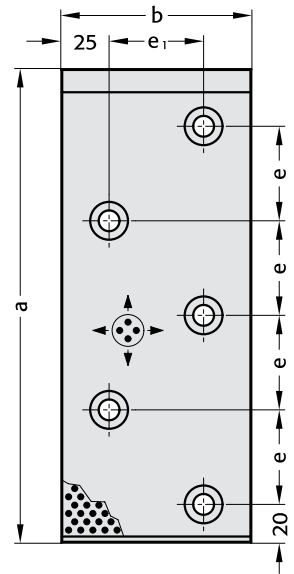
Shape B



Shape D



Shape E



Description:

Sliding pads find preference in large press tools with considerable lateral work forces.

Special cast iron with solid lubricant is a low-cost alternative, although absorption of the surface pressure is reduced by 60%.

Material:

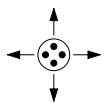
Special cast iron (GG25) with non-liquid lubricant.

Note:

Screws not included.

Fixing:

Use socket cap screws  
DIN EN ISO 4762 M10 x 25.



Direction of motion  
Embedded non-liquid  
lubricant (section)

2960.75.

Order No	Shape	b	a	e	e <sub>1</sub>	e <sub>2</sub>	e <sub>3</sub>	Number of holes
2960.75.070.100	A	70	100	50	20	-	-	2
150	B	70	150		10	20	-	3
200	D	70	200		20	-	-	4
2960.75.100.150	C	100	150	25	50	-	50	4
200	D	100	200	50	50	-	-	4
250	E	100	250		50	-	-	5
2960.75.150.200	D	150	200		100	-	-	4
250	E	150	250		100	-	-	5

Ordering Code (example):

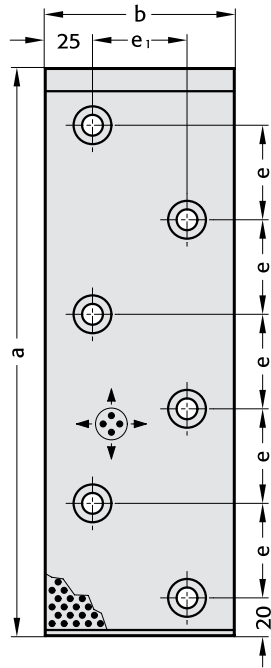
Sliding Pad = 2960.75.  
b = 100 mm = 100.  
a = 200 mm = 200  
Order No = 2960.75.100.200



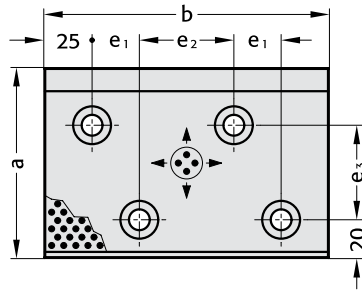
2960.75.

2960.75.

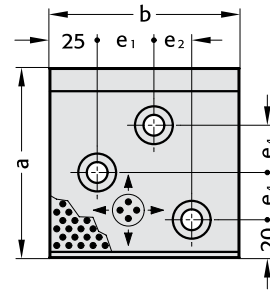
Shape F



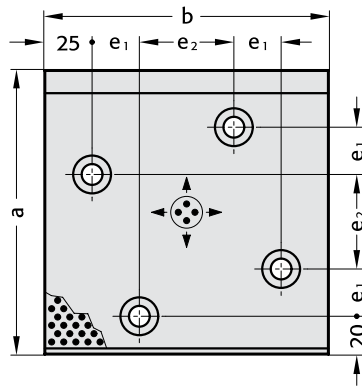
Shape G



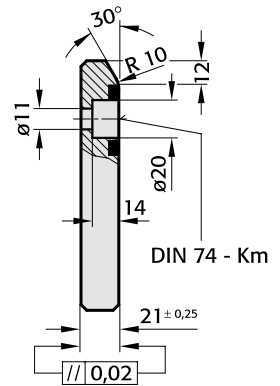
Shape I



Shape H



2960.75.



2960.75.

Order No	Shape	b	a	e <sub>1</sub>	e <sub>4</sub>	e	e <sub>3</sub>	e <sub>2</sub>	Number of holes
2960.75.100.100	I	100	100	30	25	—	—	20	3
300	F	100	300	50	—	50	—	—	6
2960.75.150.100	G	150	100	25	—	—	50	50	4
150	H	150	150	25	—	—	—	50	4
300	F	150	300	100	—	50	—	—	6
2960.75.200.100	G	200	100	50	—	—	50	50	4

**Description:**

Sliding pads find preference in large press tools with considerable lateral work forces. Special cast iron with solid lubricant is a low-cost alternative, although absorption of the surface pressure is reduced by 60%.

**Material:**

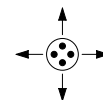
Special cast iron (GG25) with non-liquid lubricant.

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws  
DIN EN ISO 4762 M 10x25.



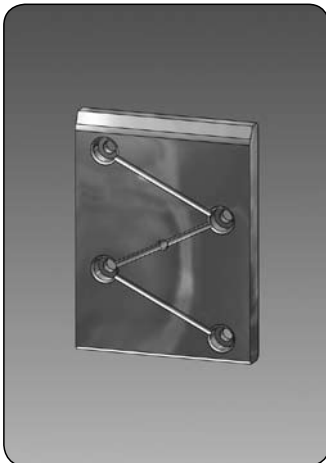
Direction of motion  
Embedded non-liquid lubricant (section)

**Ordering Code (example):**

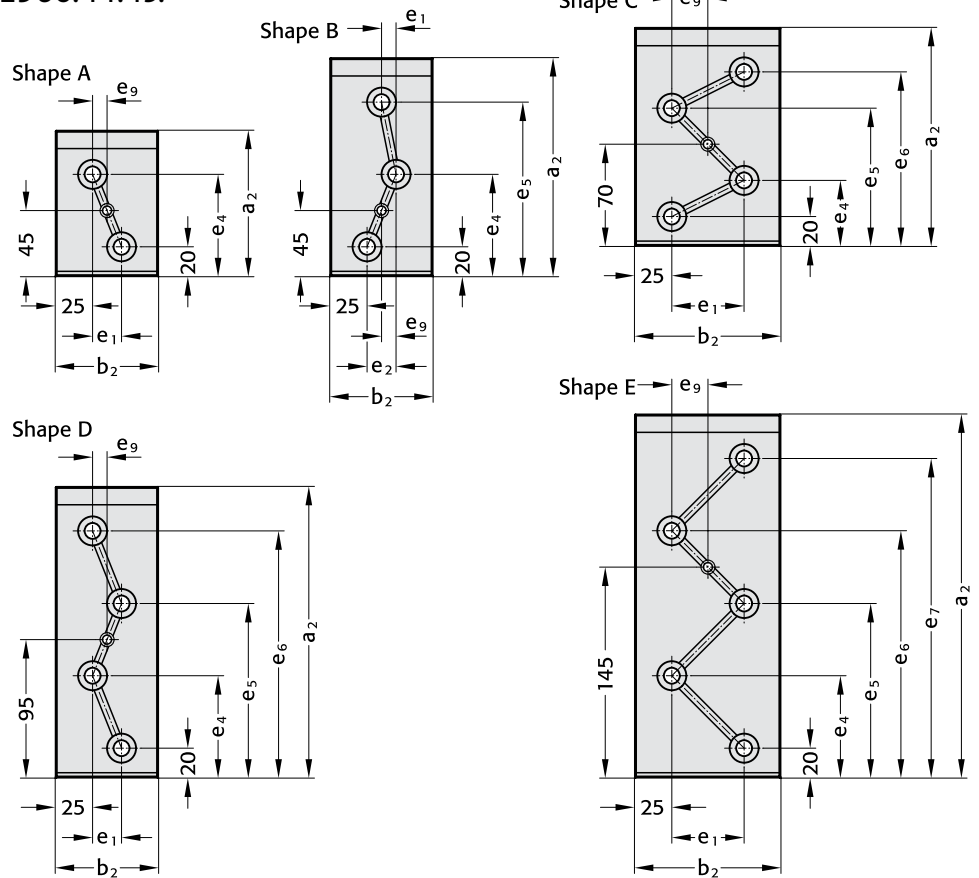
Sliding Pad	=	2960.75.
b = 150 mm	=	150.
a = 100 mm	=	100
Order No	=	2960.75.150.100

Sliding Pads to CNOMO  
Steel with oil lubricating grooves

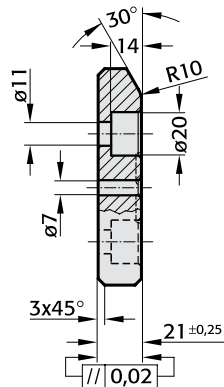
2960.44.45.



2960.44.45.



2960.44.45.



Description:

Sliding pads find preference in large press tools with considerable lateral work forces.

Material:

Steel, surface hardened

Note:

Screws not included.

Fixing:

Use socket cap screws  
DIN EN ISO 4762  
M10 x 25.

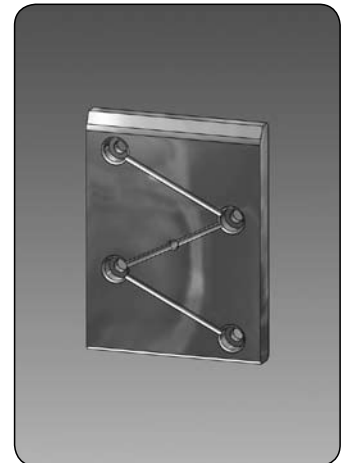
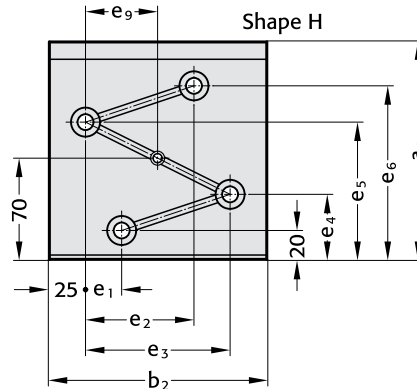
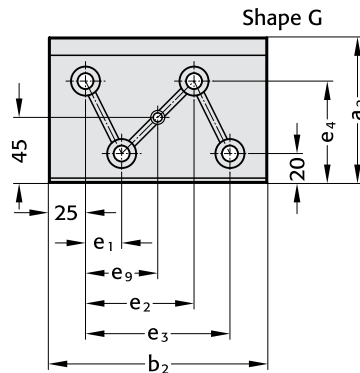
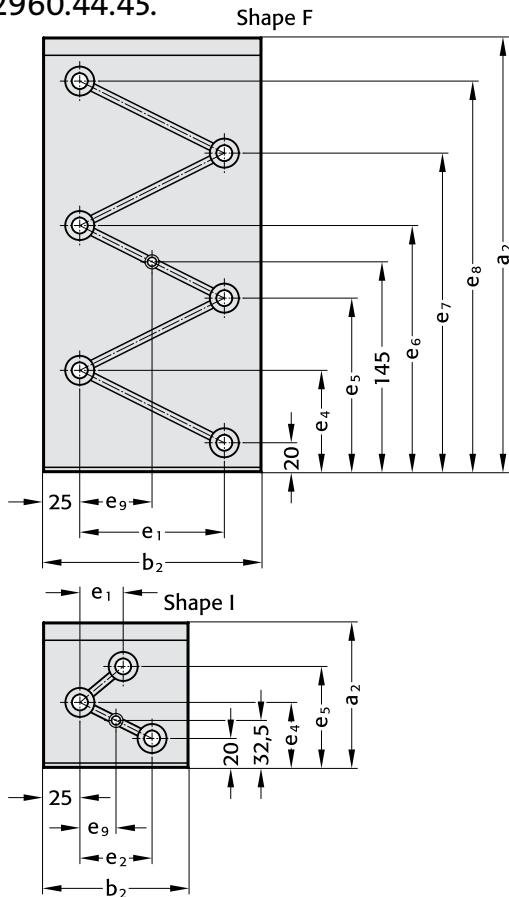
2960.44.45.

Order No	Shape	b <sub>2</sub>	a <sub>2</sub>	e <sub>1</sub>	e <sub>2</sub>	e <sub>3</sub>	e <sub>4</sub>	e <sub>5</sub>	e <sub>6</sub>	e <sub>7</sub>	e <sub>8</sub>	e <sub>9</sub>	Number of screw holes
2960.44.45.070.100	A	70	100	20	-	-	70	-	-	-	-	10	2
2960.44.45.070.150	B	70	150	10	20	-	70	120	-	-	-	10	3
2960.44.45.070.200	D	70	200	20	-	-	70	120	170	-	-	10	4
2960.44.45.100.150	C	100	150	50	-	-	45	95	120	-	-	25	4
2960.44.45.100.200	D	100	200	50	-	-	70	120	170	-	-	25	4
2960.44.45.100.250	E	100	250	50	-	-	70	120	170	220	-	25	5
2960.44.45.150.200	D	150	200	100	-	-	70	120	170	-	-	50	4
2960.44.45.150.250	E	150	250	100	-	-	70	120	170	220	-	50	5

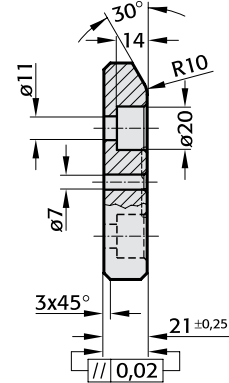
Ordering Code (example):

Sliding Pad = 2960.44.45.  
b<sub>2</sub> = 70 mm = 070.  
a<sub>2</sub> = 200 mm = 200  
Order No = 2960.44.45.070.200

2960.44.45.



2960.44.45.



2960.44.45.

Order No	Shape	b <sub>2</sub>	a <sub>2</sub>	e <sub>1</sub>	e <sub>2</sub>	e <sub>3</sub>	e <sub>4</sub>	e <sub>5</sub>	e <sub>6</sub>	e <sub>7</sub>	e <sub>8</sub>	e <sub>9</sub>	Number of screw holes
2960.44.45.100.100	I	100	100	30	50	-	45	70	-	-	-	25	3
2960.44.45.100.300	F	100	300	50	-	-	70	120	170	220	270	25	6
2960.44.45.150.100	G	150	100	25	75	100	70	-	-	-	-	50	4
2960.44.45.150.150	H	150	150	25	75	100	45	95	120	-	-	50	4
2960.44.45.150.300	F	150	300	100	-	-	70	120	170	220	270	50	6
2960.44.45.200.100	G	200	100	50	100	150	70	-	-	-	-	75	4

**Description:**

Sliding pads find preference in large press tools with considerable lateral work forces.

**Material:**

Steel, surface hardened

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws  
DIN EN ISO 4762  
M10 x 25.

**Ordering Code (example):**

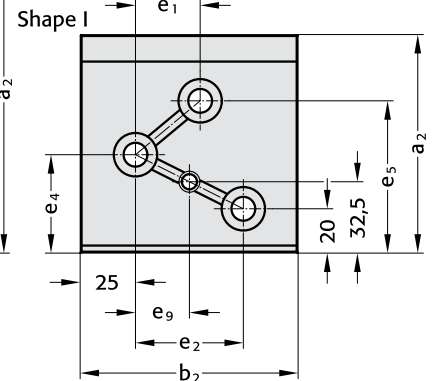
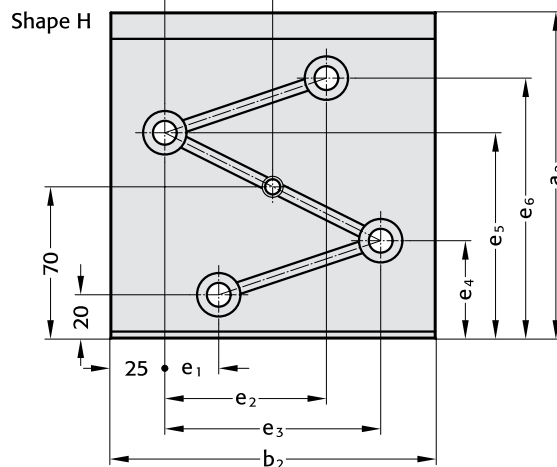
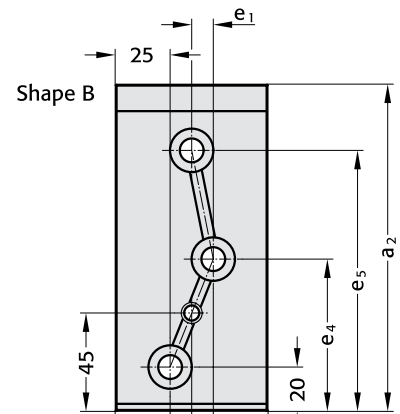
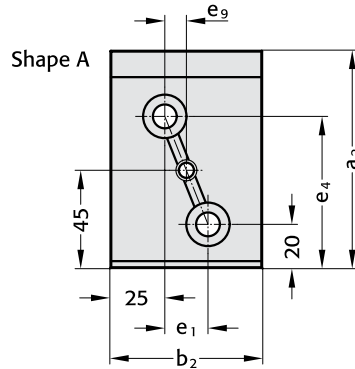
Sliding Pad = 2960.44.45.  
b<sub>2</sub> = 100 mm = 100.  
a<sub>2</sub> = 300 mm = 300  
Order No = 2960.44.45.100.300

Sliding Pads to CNOMO  
Bronze with oil lubricating grooves

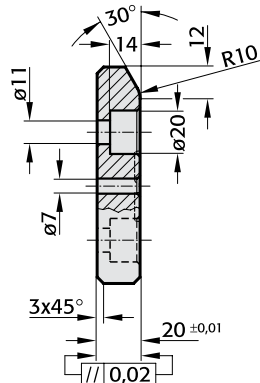
2960.54.45.



2960.54.45.



2960.54.45.



**Description:**

Sliding pads find preference in large press tools with considerable lateral work forces.

**Material:**

Bronze.

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws  
DIN EN ISO 4762  
M10 x 25.

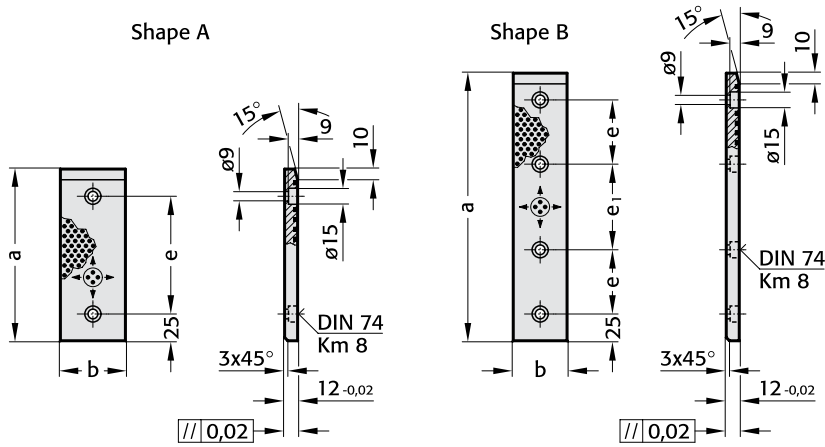
2960.54.45.

Order No.	Shape	b <sub>2</sub>	a <sub>2</sub>	e <sub>1</sub>	e <sub>2</sub>	e <sub>3</sub>	e <sub>4</sub>	e <sub>5</sub>	e <sub>6</sub>	e <sub>9</sub>	Number of screw holes
2960.54.45.070.100	A	70	100	20	—	—	70	—	—	10	2
.150	B	150	10	20	—	—	70	120	—	10	3
2960.54.45.100.100	I	100	100	30	50	—	45	70	—	25	3
2960.54.45.150.150	H	150	150	25	75	100	45	95	120	50	4

**Ordering Code (example):**

Sliding pads = 2960.54.45.  
b<sub>2</sub> = 70 mm = 070.  
a<sub>2</sub> = 100 mm = 100  
Order No = 2960.54.45.070.100

2960.81.



2960.81.

Order No	Shape	b	a	e	e <sub>1</sub>	Number of screw holes
2960.81.030.080	A	30	80	30	—	2
100			100	50	—	2
125			125	75	—	2
160			160	110	—	2
200			200	150	—	2
225			225	175	—	2
250	B		250	60	80	4
260			260	60	90	4
280			280	60	110	4
300			300	80	90	4
320			320	80	110	4
2960.81.040.080	A	40	80	30	—	2
100			100	50	—	2
125			125	75	—	2
160			160	110	—	2
200			200	150	—	2
2960.81.050.080		50	80	30	—	2
100			100	50	—	2
125			125	75	—	2
160			160	110	—	2
200			200	150	—	2
225			225	175	—	2
250	B	50	250	60	80	4
300			300	80	90	4
350			350	100	100	4
400			400	120	110	4
2960.81.060.080	A	60	80	30	—	2
100			100	50	—	2
125			125	75	—	2
160			160	110	—	2
200			200	150	—	2
225			225	175	—	2
240	B		240	60	70	4
250			250	60	80	4
260			260	60	90	4
280			280	60	110	4
2960.81.080.080	A	80	80	30	—	2
100			100	50	—	2
125			125	75	—	2
160			160	110	—	2
200			200	150	—	2
225			225	175	—	2
240	B		240	60	70	4
250			250	60	80	4
260			260	60	90	4
280			280	60	110	4
2960.81.100.240		100	240	60	70	4
260			260	60	90	4
280			280	60	110	4

**Description:**

Guide pads find preference in large press tools with considerable lateral work forces. Bronze pads with embedded non-liquid lubricant ensure low maintenance, self lubricating service even in arduous multi-shift applications.

**Material:**

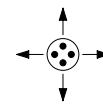
Bronze with non-liquid lubricant, oilless lubricating.

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws  
DIN EN ISO 4762 M8x25.



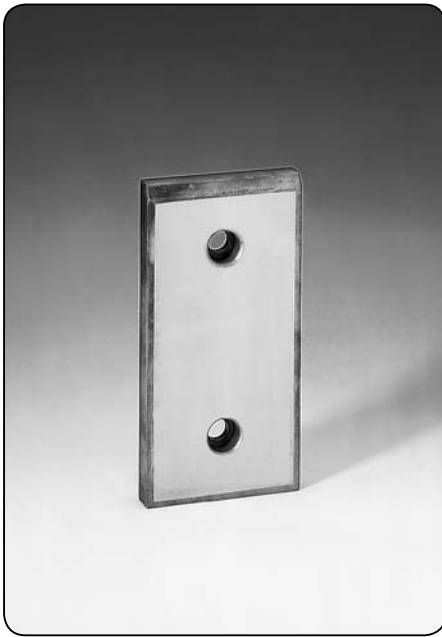
Direction of motion  
Embedded non-liquid lubricant (section)

**Ordering Code (example):**

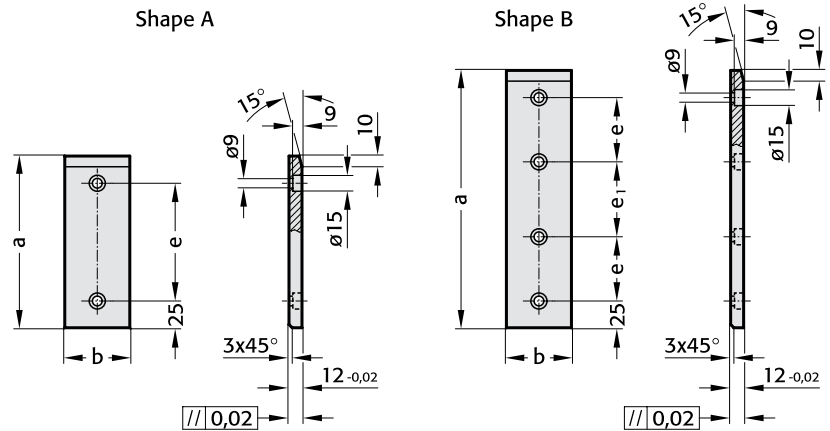
Sliding Pad	=	2960.81.
b = 30 mm	=	030.
a = 80 mm	=	080
Order No	=	2960.81.030.080

Sliding Pads, VDI 3357  
Steel

2960.88.



2960.88.



**Description:**

Sliding pads find preference in large press tools with considerable lateral work forces.

**Material:**

Steel,  
surface hardened

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws  
DIN EN ISO 4762 M8x25.

2960.88.

Order No	Shape	b	a	e	e <sub>1</sub>	Number of screw holes
2960.88.030.080	A	30	80	30	—	2
100			100	50	—	2
125			125	75	—	2
160			160	110	—	2
200			200	150	—	2
2960.88.040.080		40	80	30	—	2
100			100	50	—	2
125			125	75	—	2
160			160	110	—	2
200			200	150	—	2
2960.88.050.080		50	80	30	—	2
100			100	50	—	2
125			125	75	—	2
160			160	110	—	2
180			180	130	—	2
200			200	150	—	2
2960.88.060.080	A	60	80	30	—	2
100			100	50	—	2
125			125	75	—	2
160			160	110	—	2
200			200	150	—	2
225			225	175	—	2
240	B		240	60	70	4
250			250	60	80	4
260			260	60	90	4
280			280	60	110	4
2960.88.080.080	A	80	80	30	—	2
100			100	50	—	2
125			125	75	—	2
160			160	110	—	2
200			200	150	—	2
225			225	175	—	2
240	B		240	60	70	4
250			250	60	80	4
260			260	60	90	4
280			280	60	110	4
300			300	80	90	4
320			320	80	110	4
340			340	80	130	4
350			350	100	100	4
2960.88.100.080	A	100	80	30	—	2
100			100	50	—	2
125			125	75	—	2
160			160	110	—	2
200			200	150	—	2
225			225	175	—	2
240	B		240	60	70	4
250			250	60	80	4
260			260	60	90	4
280			280	60	110	4
300			300	80	90	4
320			320	80	110	4
340			340	80	130	4
350			350	100	100	4
2960.88.100.250		100	250	60	80	4
280			280	60	110	4
300			300	80	90	4
320			320	80	110	4
340			340	80	130	4
350			350	100	100	4

**Ordering Code (example):**

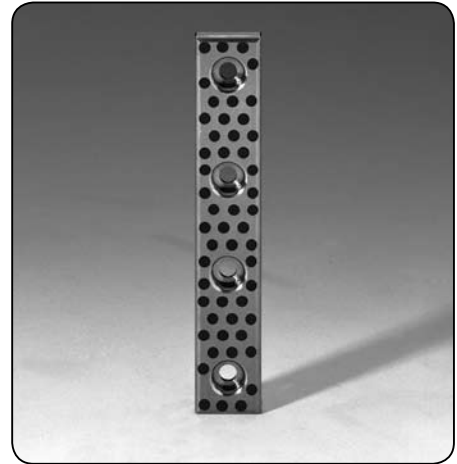
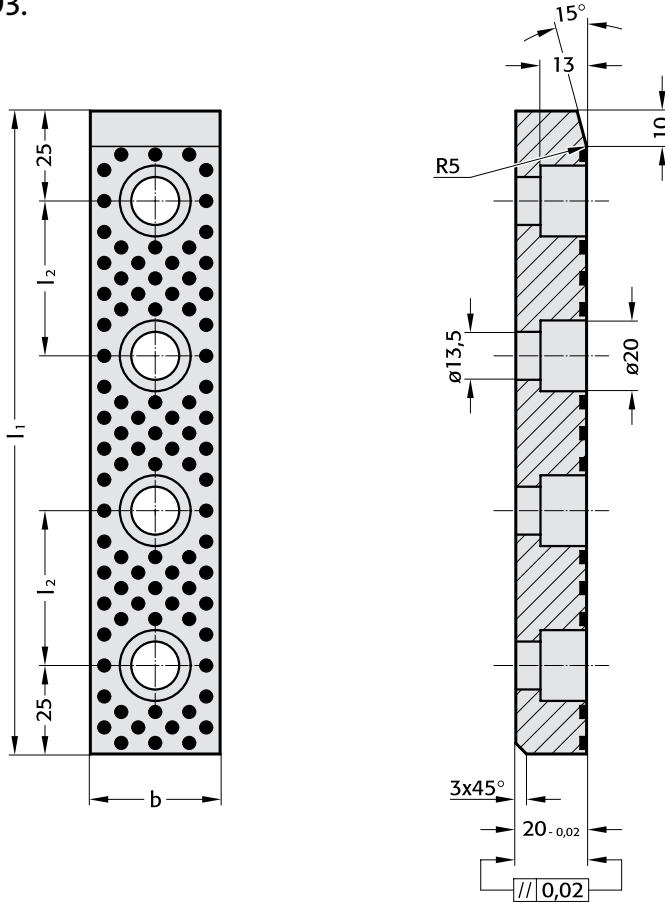
Sliding Pad	=	2960.88.
b = 30 mm	=	030.
a = 80 mm	=	080
Order No	=	2960.88.030.080

# FIBRO

2960.93.

## Sliding Pads, VDI 3357 Bronze with Non-Liquid Lubricant

2960.93.



2960.93.

Order No	b	$l_1$	$l_2$	Number of screw holes
2960.93.050.250	50	250	60	4
300		300	80	
350		350	100	
400		400	120	
450		450	140	
500		500	150	
2960.93.080.250	80	250	60	
300		300	80	
350		350	100	
400		400	120	
450		450	140	
500		500	150	
2960.93.100.450	100	450	140	
500		500	150	
2960.93.125.450	125	450	140	
500		500	150	

### Ordering Code (example):

Sliding Pad	=	2960.93.
b = 50 mm	=	050.
$l_1$ = 250 mm	=	250
Order no	=	2960.93.050.250

### Description:

Sliding pads find preference in large press tools with considerable lateral work forces.

Bronze with integral solid lubricant guarantees low maintenance, even if the plates are in continuous use.

### Material:

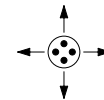
Bronze with non-liquid lubricant, oilless lubricating.

### Note:

Screws not included.

### Fixing:

Use socket cap screws  
DIN EN ISO 4762 M 12x25.

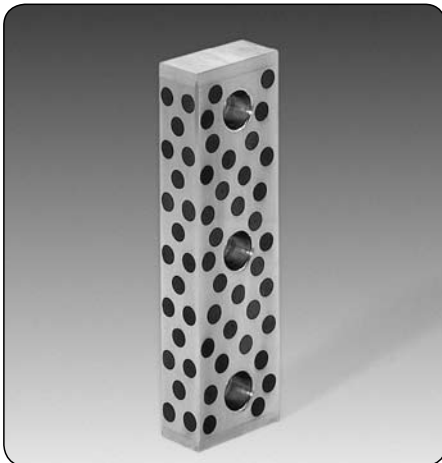


Direction of motion  
Embedded non-liquid lubricant (section)

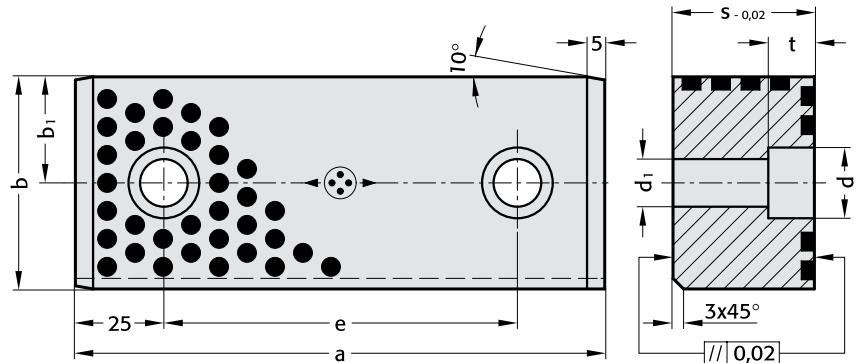
Guide Bars, VDI 3357  
with two Sliding Surfaces  
Bronze with Non-Liquid Lubricant

FIBRO

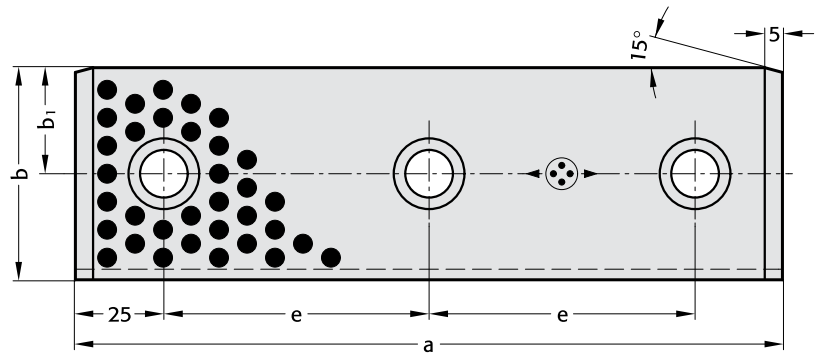
2962.75.



2962.75.  
Shape A



Shape B



Material:

Bronze with Non-Liquid Lubricant,  
oilless lubricating.

Fixing:

Use socket cap screws DIN EN ISO 4762  
M 8x20  
M10x25  
M12x35  
M12x45



Direction of Motion  
Embedded non-liquid lubricant  
(section)

2962.75.

Order No	Shape	a	b	s	b <sub>1</sub>	e	d	d <sub>1</sub>	t	Number of screw holes
2962.75.025.012.0110	A	110	25	12	12,5	60	15	9	8,5	2
0120		120				70				
2962.75.025.015.0110	A	110	25	15	12,5	60	18	11	10,5	2
0120		120				70				
2962.75.060.030.0125	A	125	60	30	30	75	20	13,5	13	2
0150		150				100				
0160		160				110				
0200	B	200				75				3
2962.75.060.040.0125	A	125	60	40	30	75	20	13,5	13	2
0150		150				100				
0160		160				110				
0200	B	200				75				3

Ordering Code (example):

Guide Bar = 2962.75.  
b = 60 mm = 060.  
s = 30 mm = 030.  
a = 200 mm = 0200  
Order No = 2962.75.060.030.0200



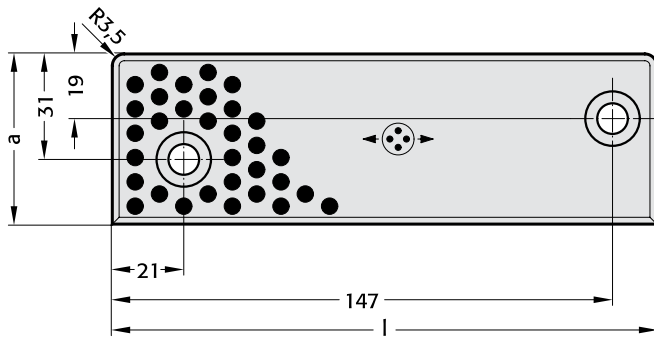
**FIBRO**

**Guide Bars with two Sliding Surfaces**  
**Bronze with Non-Liquid Lubricant**  
**to CNOMO**

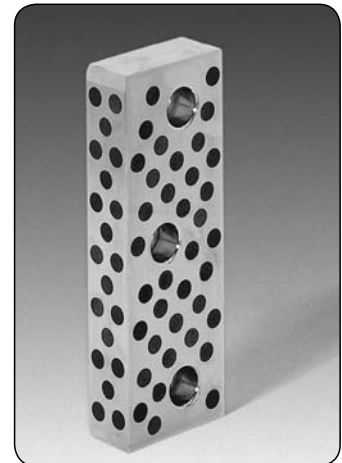
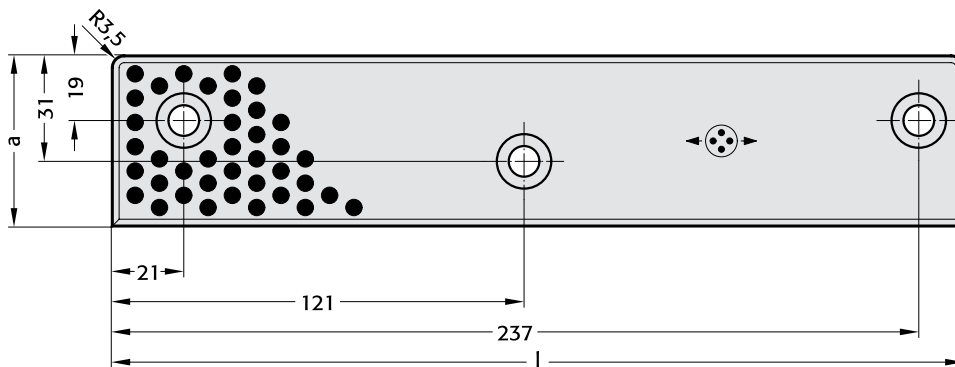
2962.75.45.

2962.75.45.

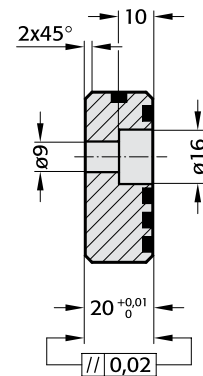
Shape A



Shape B



2962.75.45.



2962.75.45.

Order No	Shape	a	l	Number of screw holes
2962.75.45.050.20.160	A	50	160	2
2962.75.45.050.20.250	B	50	250	3

**Material:**

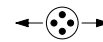
Bronze with Non-Liquid Lubricant, oilless lubricating.

**Note:**

Screws not included.

Fixing:

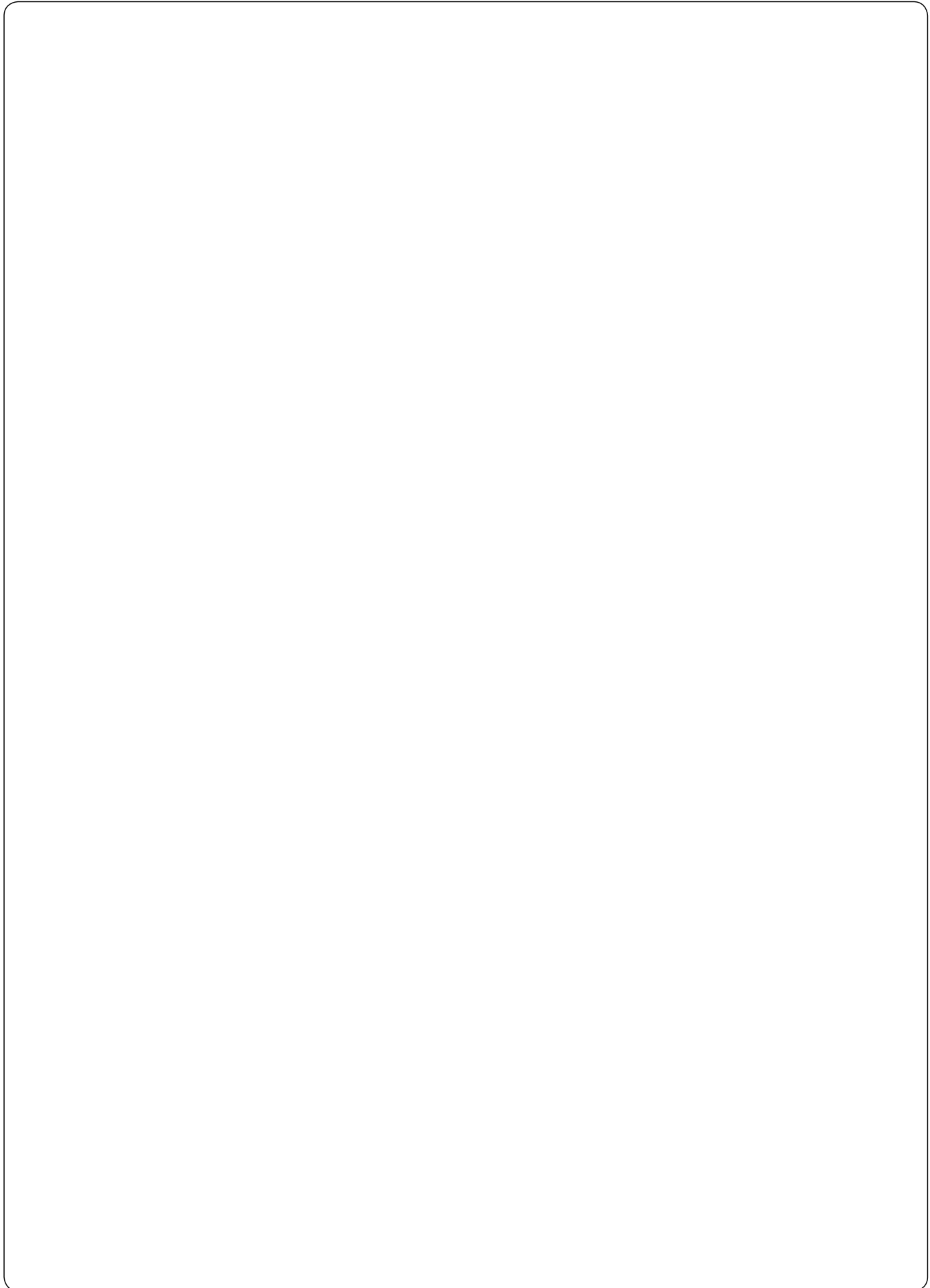
Use socket cap screws  
 DIN EN ISO 4762  
 M8x25.



Direction of motion  
 Embedded non-liquid lubricant  
 (section)

**Ordering Code (example):**

Guide Bars	=	2960.75.45.
a = 50 mm	=	050.
thickness = 20 mm	=	20.
l = 250 mm	=	250
Order No	=	2960.75.45.050.20.250

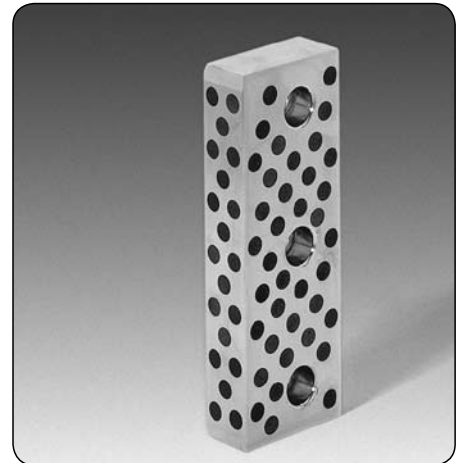
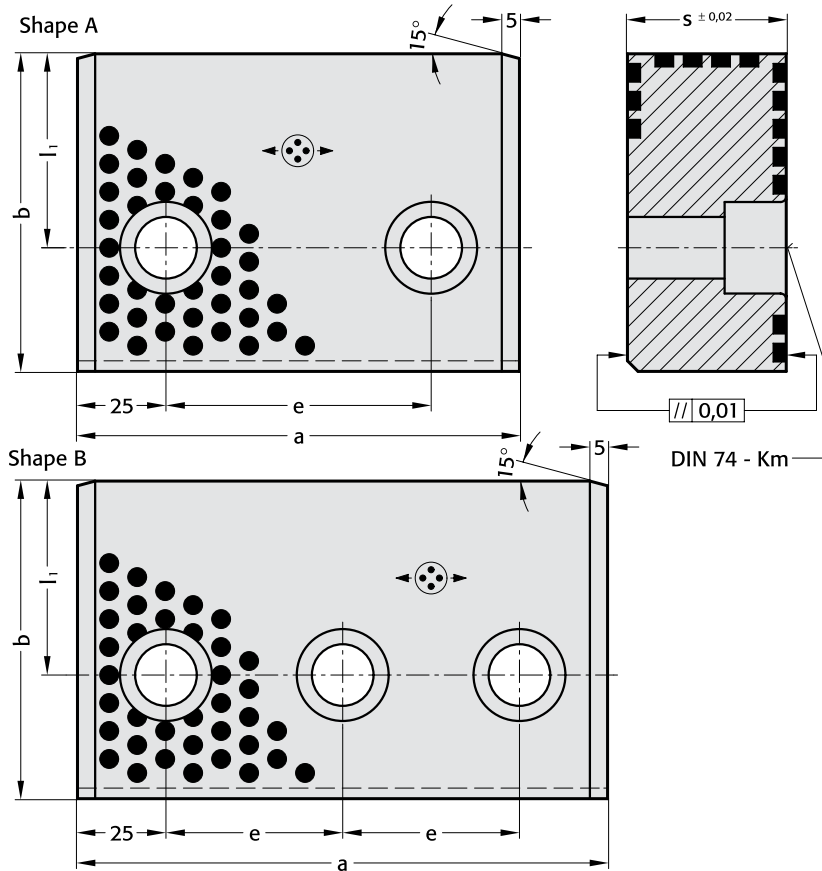


**FIBRO**

2962.76.

**Guide Bars with  
three Sliding Surfaces  
Bronze with Non-Liquid Lubricant**

2962.76.



**Material:**

Bronze with Non-Liquid Lubricant, oilless lubricating.

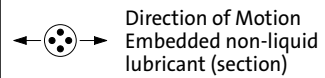
**Note:**

Screws not included.

**Fixing:**

Use socket cap screws DIN EN ISO 4762.

- 2962.76.070. M12
- 2962.76.090. M16



2962.76.

Order No	Shape	a	b	s	e	$l_1$	DIN 74 Km	Number of screw holes
2962.76.070.032.0125	A	125	70	32	75	40	12	2
0150	A	150	70	32	100	40	12	2
0200	B	200	70	32	75	40	12	3
2962.76.090.045.0125	A	125	90	45	75	55	16	2
0150	B	150	90	45	50	55	16	3
0200	B	200	90	45	75	55	16	3

**Ordering Code (example):**

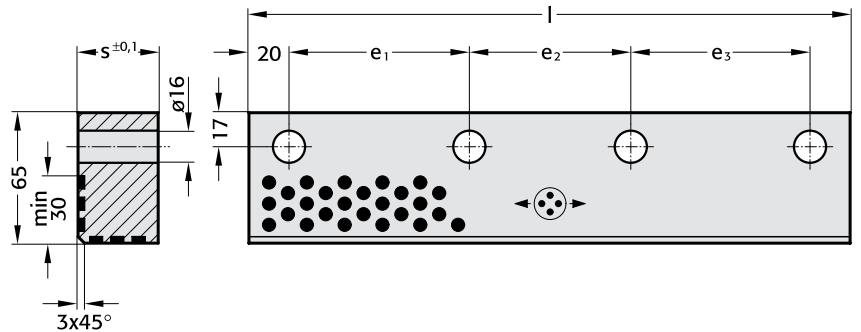
Guide Bar = 2962.76.  
 b = 70 mm = 070.  
 s = 32 mm = 032.  
 a = 200 mm = 0200  
 Order No = 2962.76.070.032.0200

Guide Bars with two Sliding Surfaces,  
Bronze with Non-Liquid Lubricant

2962.77.



2962.77.



**Material:**

Bronze with non-liquid lubricant,  
oilless lubricating.

**Note:**

Screws not included.



Direction of motion  
Embedded non-liquid lubricant  
(section)

2962.77.

Order No	b	s	l	e <sub>1</sub>	e <sub>2</sub>	e <sub>3</sub>	Number of screw holes
2962.77.065.040.0150	65	40	150	110	—	—	2
0200			200	80	80	—	3
0250			250	105	105	—	3
0300			300	90	80	90	4
0350			350	105	100	105	4
2962.77.065.065.0150	65	65	150	110	—	—	2
0200			200	80	80	—	3
0250			250	105	105	—	3
0300			300	90	80	90	4
0350			350	105	100	105	4

**Ordering Code (example):**

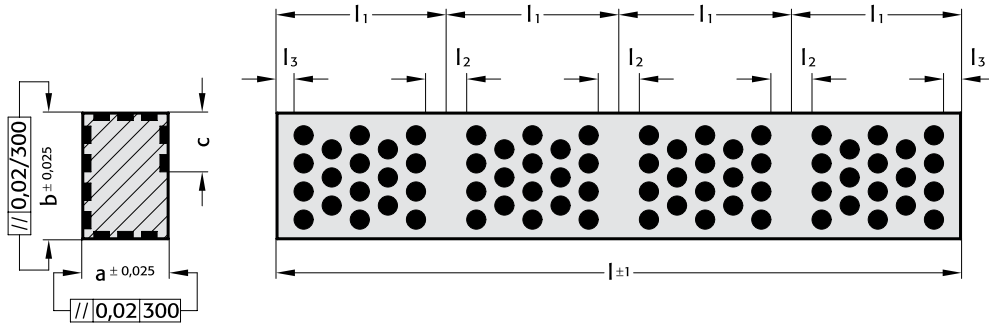
Guide Bar = 2962.77.  
 b = 65 mm = 065.  
 s = 40 mm = 040.  
 l = 250 mm = 0250  
 Order No = 2962.77.065.040.0250

**FIBRO**

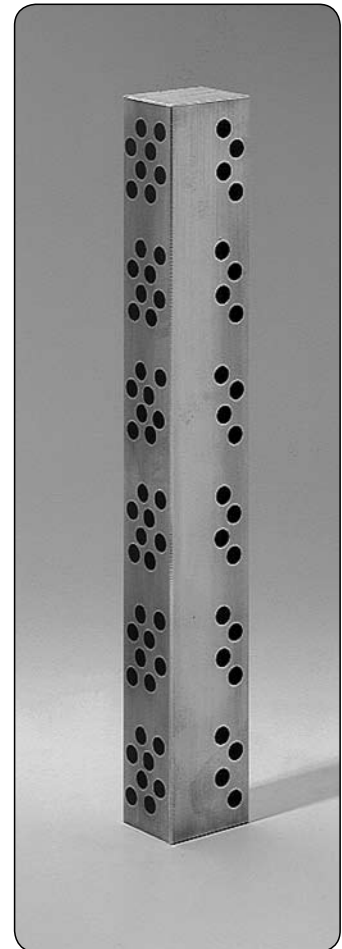
2962.74.

Guide Bars with  
four Sliding Surfaces  
Bronze with Non-Liquid Lubricant

2962.74.



Surfaces without Non-Liquid Lubricant: rotating



2962.74.

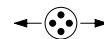
Order No	a	b	c	l	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>
2962.74.015.010.075	10,3	15,3	6	75	25	6	3
100				100			
125				125			
150				150			
175				175			
200				200			
225				225			
250				250			
275				275			
300				300			
2962.74.025.015.105	15,3	25,3	8	105	35	8	4
140				140			
175				175			
210				210			
245				245			
280				280			
315				315			
350				350			
385				385			
420				420			
455				455			
490				490			
2962.74.035.025.135	25,3	35,3	12	135	45	10	5
180				180			
225				225			
270				270			
315				315			
360				360			
405				405			
450				450			
495				495			
2962.74.045.035.165	35,3	45,3	16	165	55	12	6
220				220			
275				275			
330				330			
385				385			
440				440			
495				495			

Ordering Code (example):

Guide Bar = 2962.74.  
 b = 25,3 mm = 025.  
 a = 15,3 mm = 015.  
 l = 105 mm = 105  
 Order No = 2962.74.025.015.105

**Material:**

Bronze with Non-Liquid Lubricant, oilless lubricating.



Direction of Motion  
Embedded non-liquid lubricant (section)

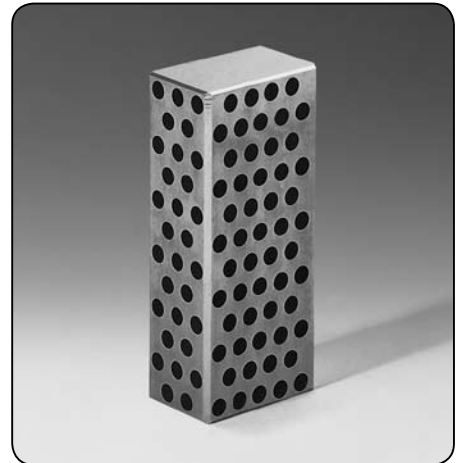
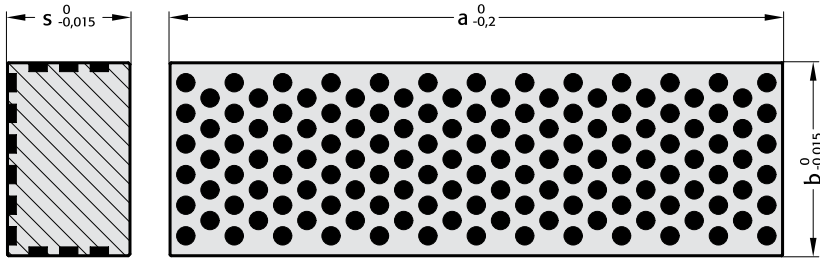


# FIBRO

2962.80.

## Guide Bars with three Sliding Surfaces Bronze with Non-Liquid Lubricant

2962.80.

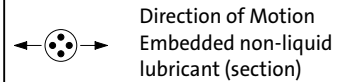


### 2962.80.

Order No	b	s	a
2962.80.025.016.080	25	16	80
100			100
125			125
2962.80.040.025.125	40	25	125
160			160
200			200
2962.80.063.040.200	63	40	200
250			250
315			315

### Material:

Bronze with Non-Liquid Lubricant, oilless lubricating



### Ordering Code (example):

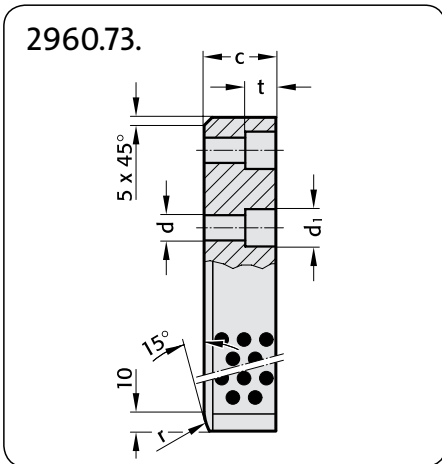
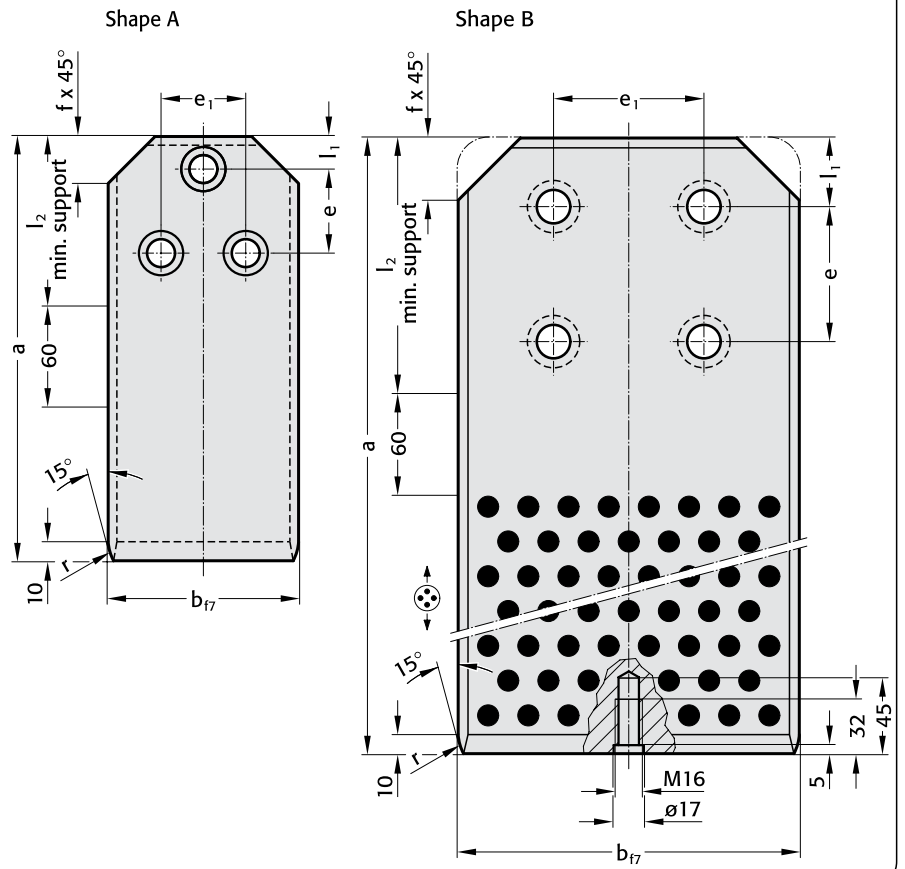
Guide Bar	=	2962.80.
b = 25 mm	=	025.
s = 16 mm	=	016.
l = 80 mm	=	080
Order No.	=	2962.80.025.016.080

Guide Brackets to VDI 3387  
Steel with Non-Liquid Lubricant

2960.73.



2960.73.



**Material:**

Steel,  
surface hardened.  
Guiding surfaces with embedded non-liquid lubricant (non-liquid lubricant share 20–25%)

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws DIN EN ISO 4762:

- 2960.73.063. M12 x 40
- 2960.73.071. M12 x 40
- 2960.73.090. M16 x 50
- 2960.73.112. M16 x 50
- 2960.73.140. M20 x 50
- 2960.73.190. M20 x 70
- 2960.73.240. M24 x 80



Direction of Motion  
Embedded non-liquid lubricant  
(section)

**Ordering code (example):**

Guide Bracket	=	2960.73.
b = 140 mm	=	140.
a = 315 mm	=	315
Order No	=	2960.73.140.315

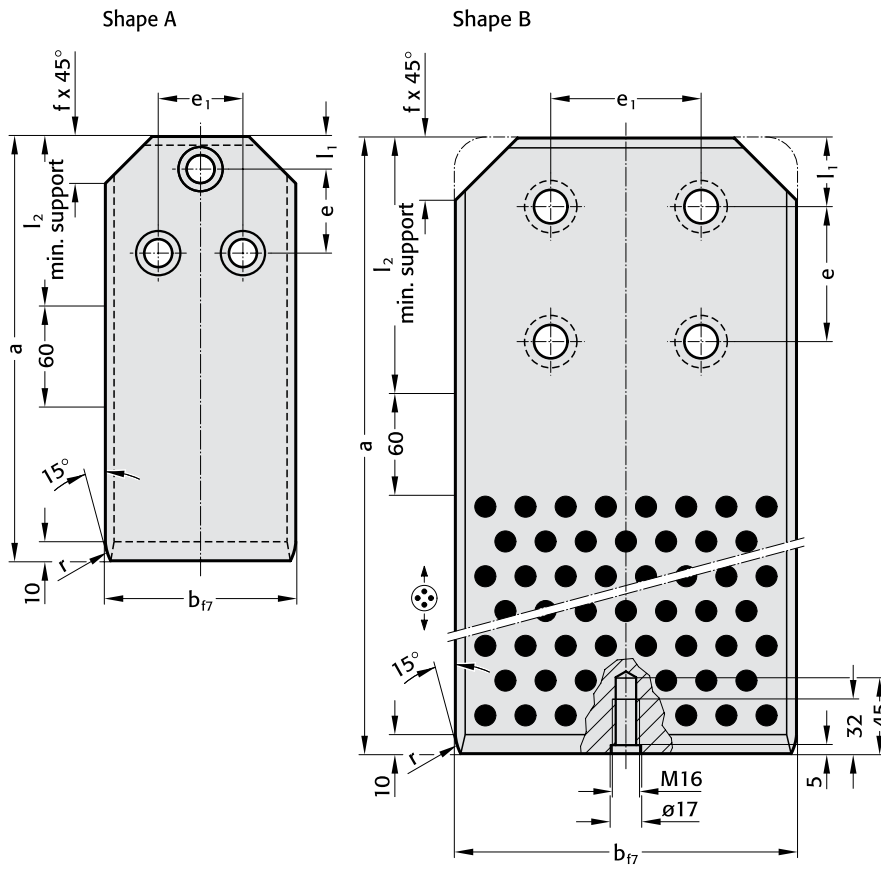
**2960.73.**

Order No	Shape	b	a	l <sub>1</sub>	l <sub>2</sub>	e	e <sub>1</sub>	d	d <sub>1</sub>	f	c	t	r	Number of screw holes
2960.73.063.	180 A	63	180	20	90	50	36	14	20	18	36	16	16	3
			200											
			224											
2960.73.071.	180 A	71	180	20	90	50	36	14	20	18	36	16	16	3
			200											
			224											
2960.73.090.	200 A	90	200	20	100	50	50	18	26	28	45	21	25	3
			224											
			250											
2960.73.112.	200 A	112	200	20	100	50	50	18	26	28	45	21	25	3
			224											
			250											
2960.73.140.	315* B	140	315	40	150	80	90	22	33	36	45	25,5	31,5	4
2960.73.190.	400*	190	400	40	150	80	90	22	33	36	56	25,5	31,5	4
2960.73.240.	500*	240	500	40	250	160	160	26	40	36	56	30,5	31,5	4
			630*											

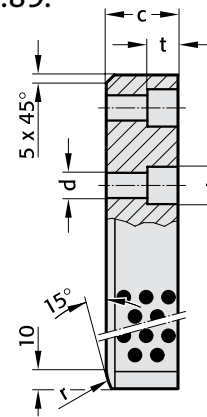
\* end face threaded bore M16



2960.89.



2960.89.



2960.89.

Order No	Shape	b	a	l <sub>1</sub>	l <sub>2</sub>	e	e <sub>1</sub>	d	d <sub>1</sub>	f	c	t	r	Number of screw holes
2960.89.063.180	A	63	180	20	90	50	36	14	20	18	36	16	16	3
		200	200											
		224	224											
2960.89.071.180	A	71	180	20	90	50	36	14	20	18	36	16	16	3
		200	200											
		224	224											
2960.89.090.200	A	90	200	20	100	50	50	18	26	28	45	21	25	3
		224	224											
		250	250											
2960.89.112.200	A	112	200	20	100	50	50	18	26	28	45	21	25	3
		224	224											
		250	250											
2960.89.140.315*	B	140	315	40	150	80	90	22	33	36	45	25,5	31,5	4
2960.89.190.400*		190	400	40	150	80	90	22	33	36	56	25,5	31,5	4
2960.89.240.500*		240	500	40	250	160	160	26	40	36	56	30,5	31,5	4
		630*	630											

\* end face threaded bore M16

**Material:**

Bronze with Non-Liquid Lubricant.

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws DIN EN ISO 4762

- 2960.89.063 M12x40
- 2960.89.071 M12x40
- 2960.89.090 M16x50
- 2960.89.112 M16x50
- 2960.89.140 M20x50
- 2960.89.190 M20x70
- 2960.89.240 M24x80.



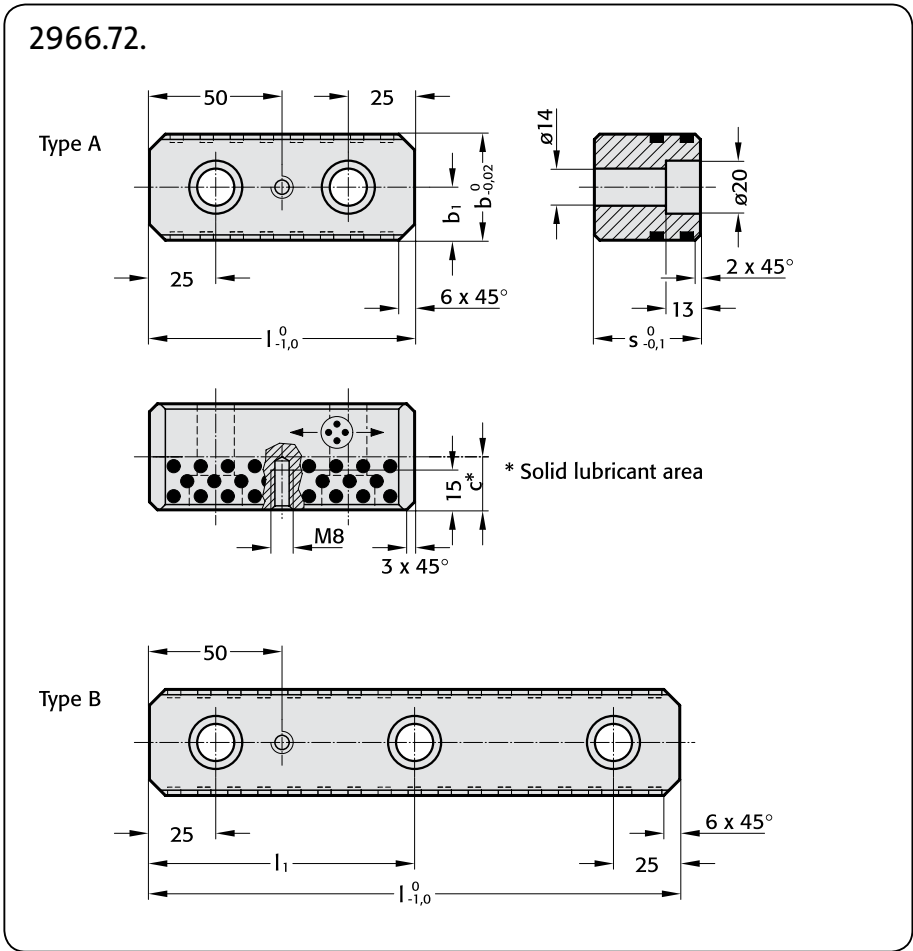
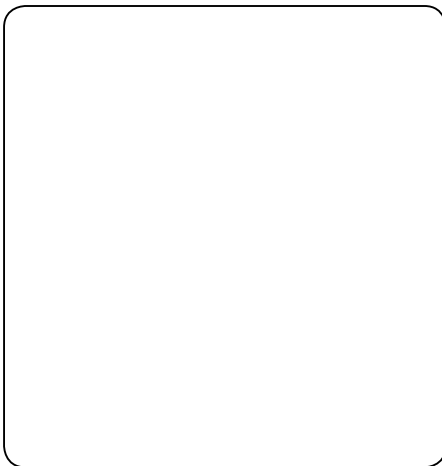
Direction of Motion  
Embedded non-liquid  
lubricant (section)

**Ordering code (example):**

Guide Bracket	=	2960.89.
b = 140 mm	=	140.
a = 315 mm	=	315
Order No	=	2960.89.140.315

Slide Centre Guides  
Bronze with Non-Liquid Lubricant

2966.72.



**Material:**

Bronze with solid lubrication  
low maintenance

**Note:**

Supplied without screws.

**Fixing:**

Machine screws DIN EN ISO 4762  
M12x50  
M12x60



Direction of Motion  
Solid lubricant inserts (section)

2966.72.

Order No	Shape	b	l	s	b <sub>1</sub>	l <sub>1</sub>	c	Number of screw holes
2966.72.030.100.030	A	30	100	30	15	-	18	2
150			150			-		
200	B		200			100		3
250			250			125		
300			300			150		
350			350			175		
2966.72.040.100.030	A	40	100	30	20	-	18	2
150			150			-		
200	B		200			100		3
250			250			125		
300			300			150		
350			350			175		
2966.72.040.100.040	A	40	100	40	20	-	20	2
150			150			-		
200	B		200			100		3
250			250			125		
300			300			150		
350			350			175		

**Ordering code (example):**

Slide centre guide	=	2966.72.
b = 30 mm	=	030.
l = 100 mm	=	100.
s = 30 mm	=	030
Order No	=	2966.72.030.100.030

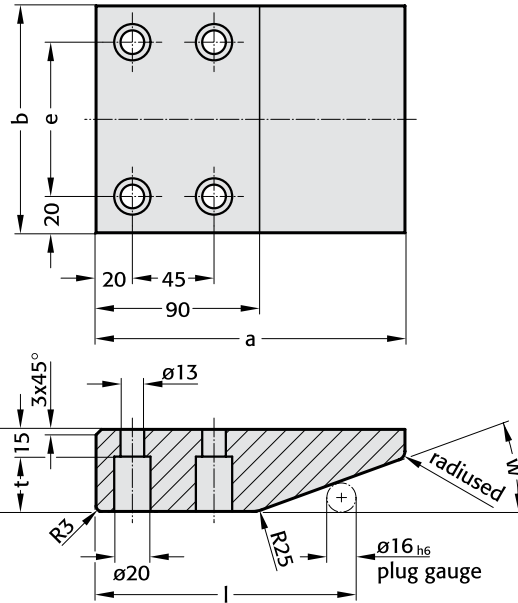
A large, empty rectangular box with rounded corners, occupying most of the page. It is intended for drawing or writing.

**Overrun Cams, VDI 3357  
for Cam Drivers and Slides, Steel**

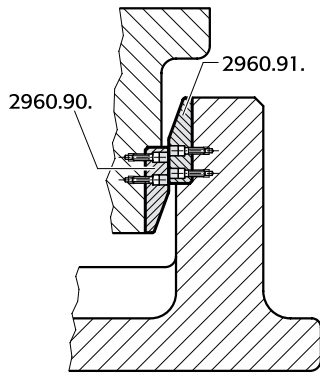
2960.90.  
2960.91.



2960.90. through-hardened  
2960.91. through-hardened and gas nitrided



**Mounting example:**



**Material:**

2960.90. Steel  
through-hardened  
or  
2960.91. Steel  
through-hardened and gas nitrided

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws DIN EN ISO 4762  
M12x40.

2960.90. through-hardened

2960.91. through-hardened and gas nitrided

Order No	b	a	s	e	t	w	l
2960.100.170.045	100	170	45	60	30	20°	143,37
125.170.045	125			85			
150.170.045	150			110			
2960.100.150.045	100	150	45	60	30	30°	127,86
170.060		170	60		45		
2960.125.150.045	125	150	45	85	30		
170.060		170	60		45		
2960.150.150.045	150	150	45	110	30		
170.060		170	60		45		

**Ordering Code (example)**

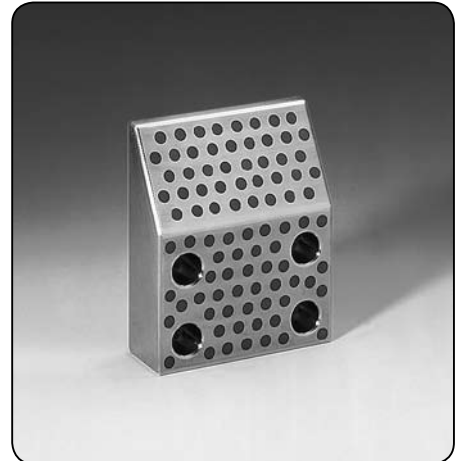
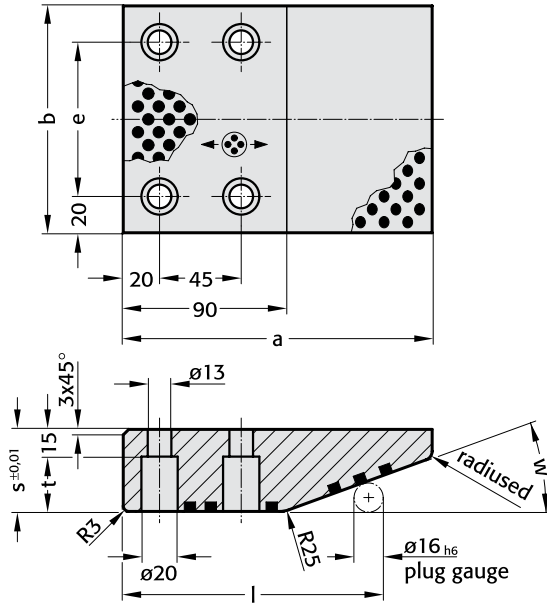
Overrun Cam	=	2960.90.
b = 100 mm	=	100.
a = 150 mm	=	150.
s = 45 mm	=	045
Order No	=	2960.90.100.150.045

**FIBRO**

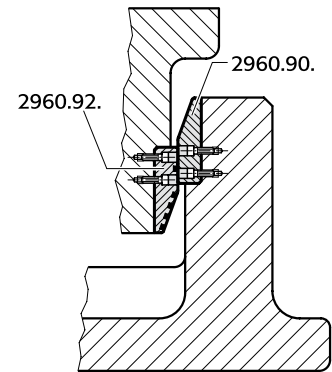
2960.92.

Overrun Cams, VDI 3357  
for Cam Drivers and Slides  
Bronze with Non-Liquid Lubricant

2960.92.



Mounting example:



2960.92.

Order No	b	a	s	e	t	w	l
2960.92.100.170.045	100	170	45	60	30	20°	143,37
125.170.045	125			85			
150.170.045	150			110			
2960.92.100.150.045	100	150	45	60	30	30°	127,86
170.060		170	60		45		
2960.92.125.150.045	125	150	45	85	30		
170.060		170	60		45		
2960.92.150.150.045	150	150	45	110	30		
170.060		170	60		45		

Material:

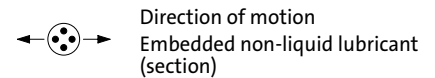
Bronze with non-liquid lubricant,  
oilless lubricating.

Note:

Screws not included.

Fixing:

Use socket cap screws DIN EN ISO 4762  
M12x40.

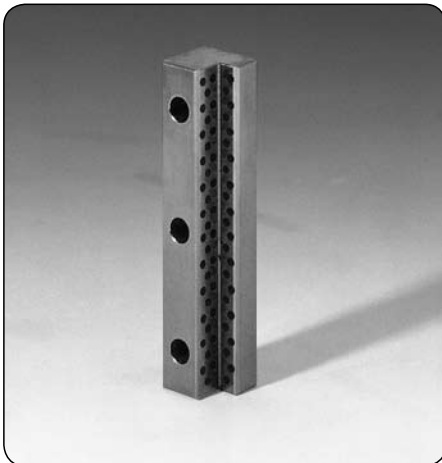


Ordering Code (example)

Overrun Cam	=	2960.92.
b = 100 mm	=	100.
a = 150 mm	=	150.
s = 45 mm	=	045
Order No	=	2960.92.100.150.045

Angled Guide Gibs  
Bronze with Non-Liquid Lubricant

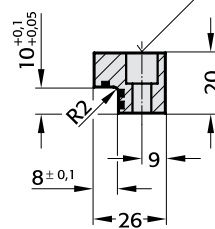
2962.70.



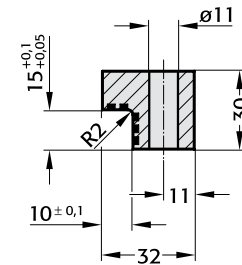
2962.70.

Shape C

Km 8 x 9,6 DIN 74 deep

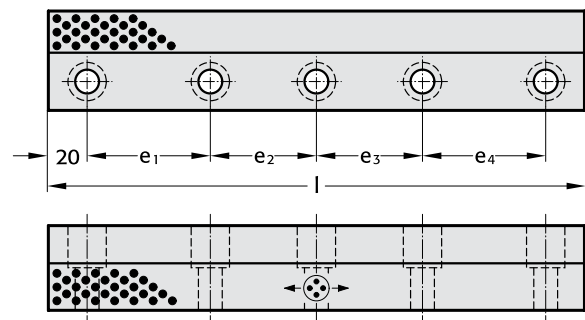
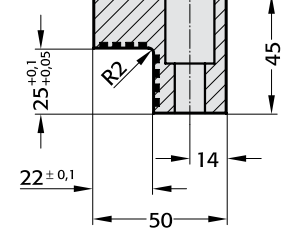


Shape A



Shape B

Km 10 x 25 DIN 74 deep



Material:

Bronze with Non-Liquid Lubricant,  
oilless lubricating.

Note:

Screws not included.



Direction of Motion  
Embedded non-liquid lubricant  
(section)

2962.70.

Order No	Shape	l	e <sub>1</sub>	e <sub>2</sub>	e <sub>3</sub>	e <sub>4</sub>	Number of screw holes
2962.70.026.100	C	100	60	-	-	-	2
150		150	55	55	-	-	3
200		200	55	50	55	-	4
2962.70.032.100	A	100	60	-	-	-	2
150		150	55	55	-	-	3
200		200	55	50	55	-	4
250		250	70	70	70	-	4
2962.70.050.200	B	200	55	50	55	-	4
250		250	70	70	70	-	4
300		300	65	65	65	65	5
350		350	80	75	75	80	5

Ordering Code (example):

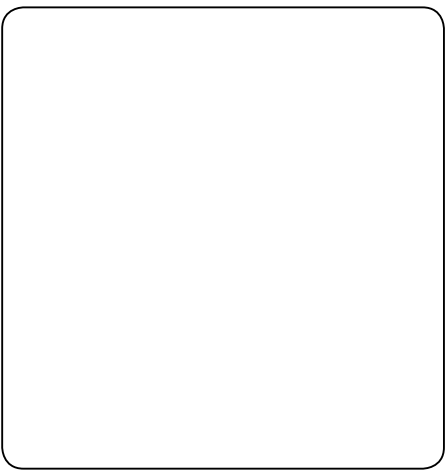
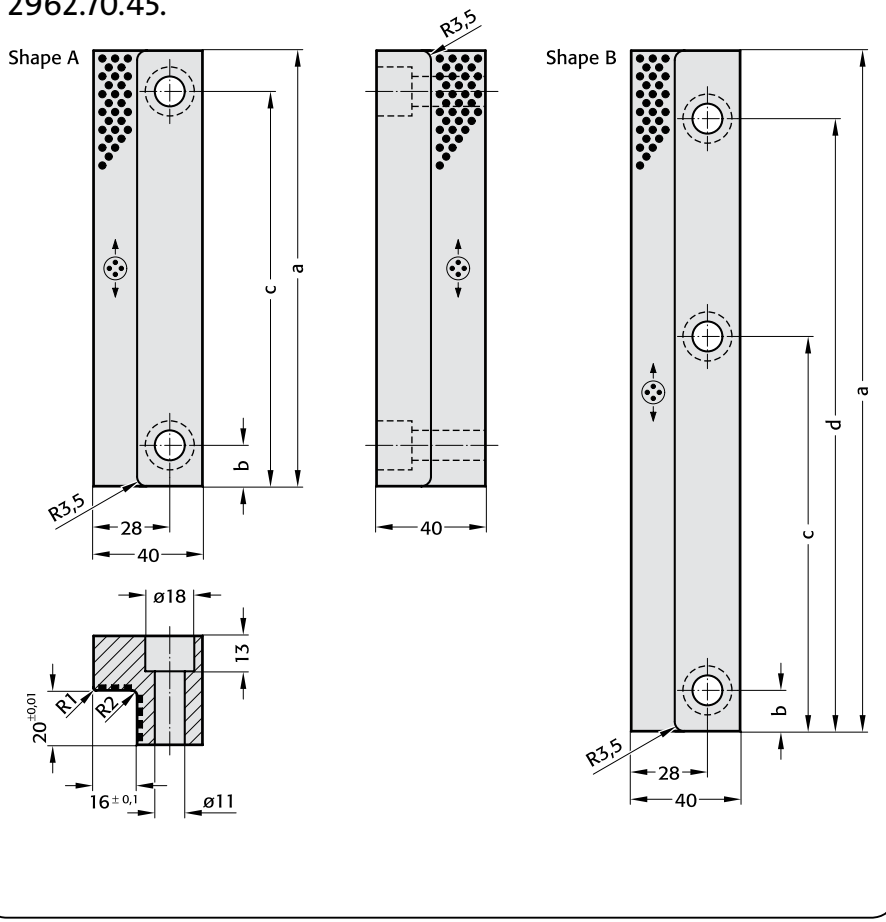
Angled Guide Gib	=	2962.70.
Shape A	=	032.
l = 150 mm	=	150
Order No	=	2962.70.032.150

**FIBRO**

2962.70.45.

**Angled Guide Gibs  
Bronze with Non-Liquid Lubricant  
to CNOMO**

2962.70.45.



2962.70.45.

Order No	Shape	a	b	c	d	Number of screw holes
2962.70.45.040.160	A	160	15	145	-	2
2962.70.45.040.250	B	250	15	145	225	3

**Material:**

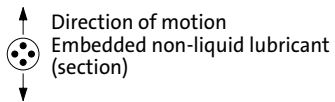
Bronze with non-liquid lubricant, oilless lubricating.

**Note:**

Screws not included.

**Fixing:**

Use socket cap screws DIN EN ISO 4762 M10x40.

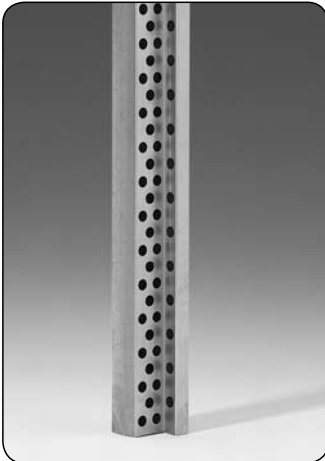


**Ordering Code (example):**

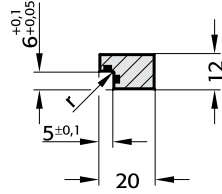
Angled Guide Gib	=	2962.70.
to CNOMO	=	45.
thickness = 40 mm	=	040.
a = 160 mm	=	160
Order No	=	2962.70.45.040.160

Angled Guide Gibs  
Bronze with Non-Liquid Lubricant

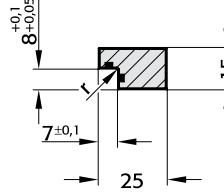
2962.71.



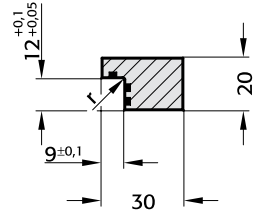
2962.71.020.012.



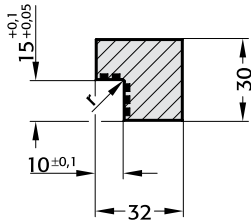
2962.71.025.015.



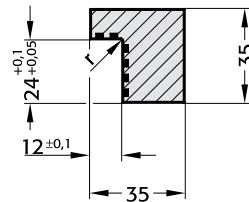
2962.71.030.020.



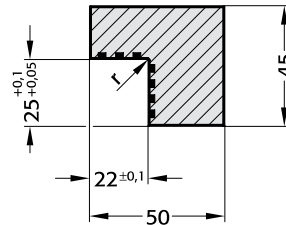
2962.71.032.030.



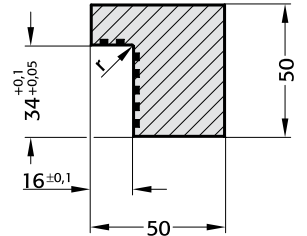
2962.71.035.035.



2962.71.050.045.



2962.71.050.050.



Material:

Bronze with Non-Liquid Lubricant, oilless lubricating.

2962.71.

Order No	length		
	305	605	1005
2962.71.020.012.	●		
025.015.	●		
030.020.	●		
032.030.		●	●
035.035.		●	●
050.045.		●	●
050.050.		●	●

Ordering Code (example):

Angled Guide Gib = 2962.71.  
width = 32 mm = 032.  
height = 30 mm = 030.  
length = 605 mm = 0605  
Order No = 2962.71.032.030.0605

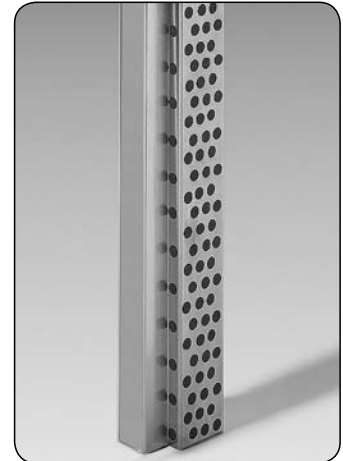
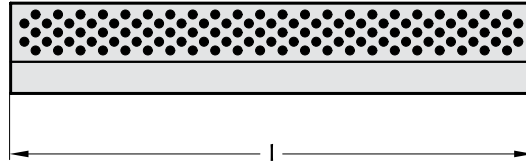
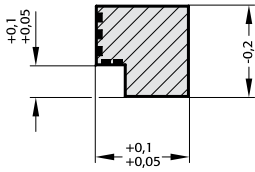


# FIBRO

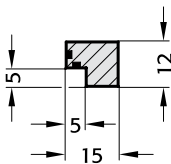
2962.72.

## Angled Guide Gibs Bronze with Non-Liquid Lubricant

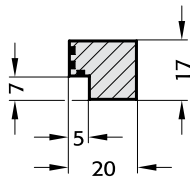
2962.72.



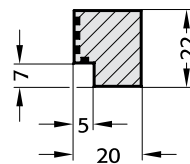
2962.72.015.012.



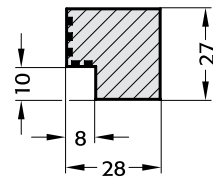
2962.72.020.017.



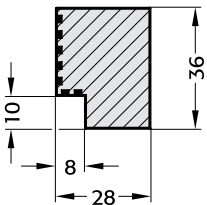
2962.72.020.022.



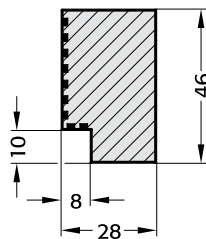
2962.72.028.027.



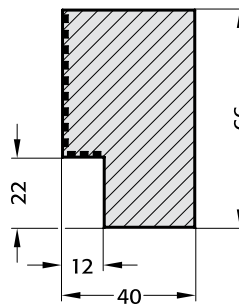
2962.72.028.036.



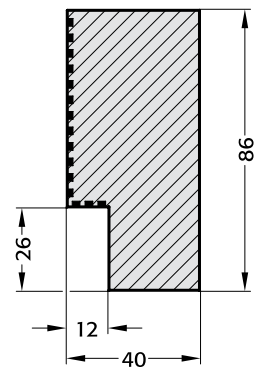
2962.72.028.046.



2962.72.040.066.



2962.72.040.086.

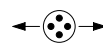


2962.72.

Order No	205	320	605
2962.72.015.012.	•		
020.017.	•	•	
020.022.	•	•	
028.027.	•	•	•
028.036.	•	•	•
028.046.	•	•	•
040.066.	•	•	•
040.086.	•	•	•

### Material:

Bronze with Non-Liquid Lubricant,  
oilless lubricating.



Direction of Motion  
Embedded non-liquid lubricant (section)

### Ordering Code (example):

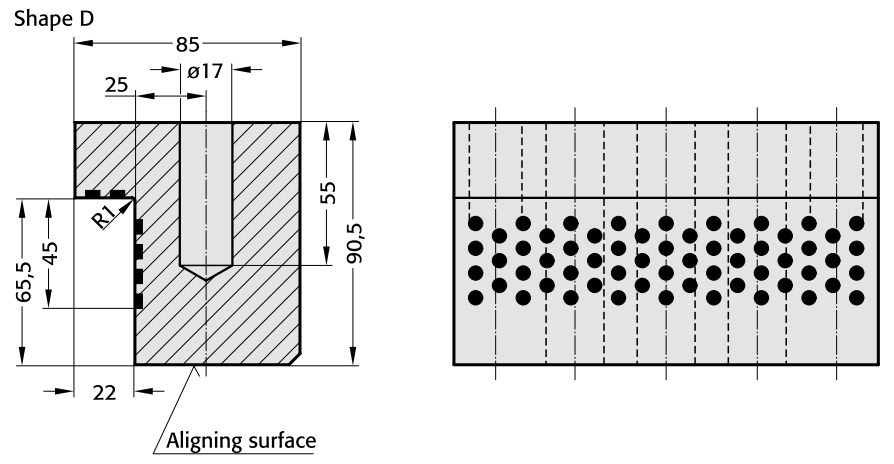
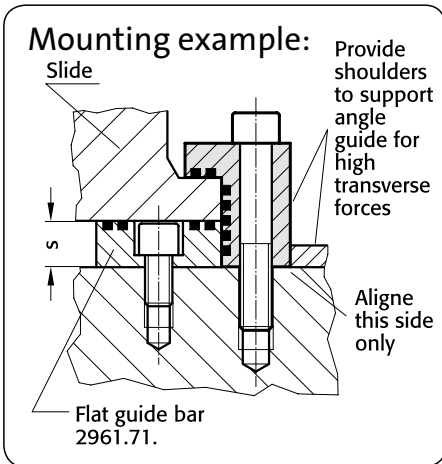
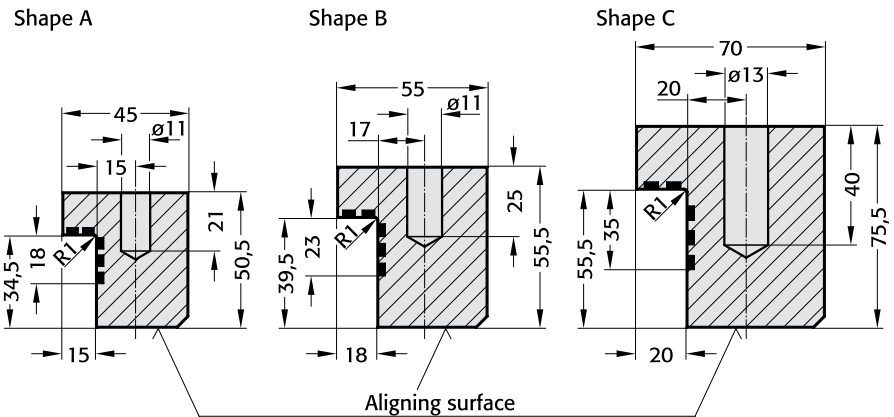
Angled Guide Gib = 2962.72.020.022.  
l = 205 mm = 0205  
Order No = 2962.72.020.022.0205

# Angled Guide Gibs Bronze with Non-Liquid Lubricant

2962.73.



## 2962.73.



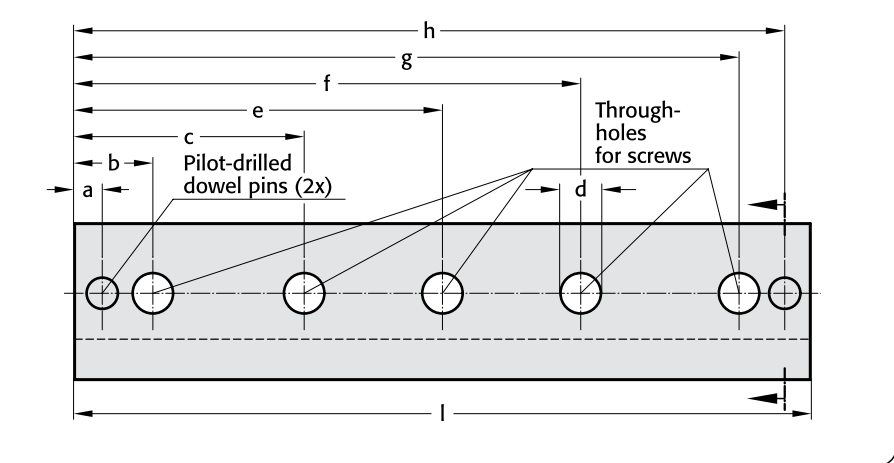
**Material:**  
Bronze with Non-Liquid Lubricant, oilless lubricating.

**Note:**  
Screws not included.

**Fixing:**  
Use socket cap screws DIN EN ISO 4762 and dowel pins DIN 7979.

**Ordering Code (example):**

Angled Guide Gib	=	2962.73.
Shape A	=	045.
l = 100 mm	=	100
Order No	=	2962.70.045.100



Order No	Shape	l	a	b	c	e	f	g	h	d	Screws		Parallel pins		s
											Size	Number	Size	Number	
2962.73.045.100	A	100	10	27,5	-	-	-	72,5	90	13	M12 × 80	2	10 × 60	2	16
2962.73.045.160		160						132,5	150						
2962.73.055.100	B	100						72,5	90						
2962.73.055.160		160						132,5	150						
2962.73.070.160	C	160	12,5	35				125	147,5	17	M16 × 100		12 × 70		20
2962.73.070.200		200						165	187,5						
2962.73.070.250		250				125	200	215	237,5			3			
2962.73.070.400		400			125	200	275	365	387,5			5			
2962.73.085.160	D	160	15	42,5				117,5	145	21	M20 × 120	2	16 × 70		
2962.73.085.200		200						157,5	185						
2962.73.085.250		250				125	200	207,5	235			3			
2962.73.085.400		400			125	200	275	357,5	385			5			

# FIBRO

2962.81.

## Angled Guide Gibs Bronze with Non-Liquid Lubricant

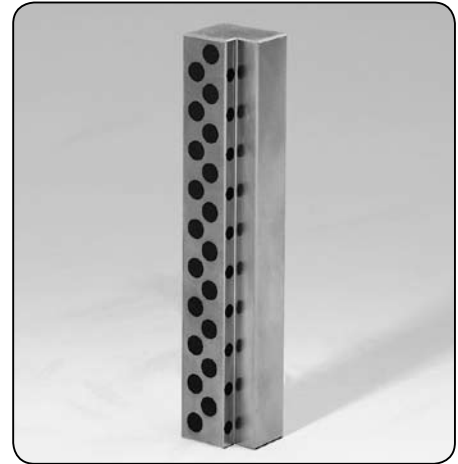
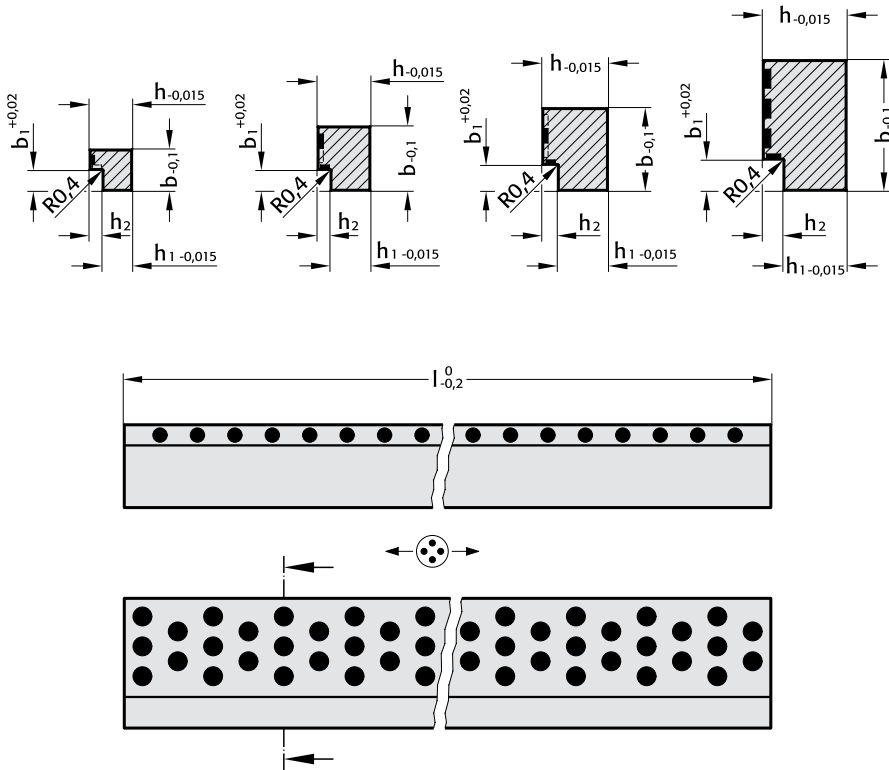
2962.81.

Shape A

Shape B

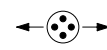
Shape C

Shape D



### Material:

Bronze with Non-Liquid Lubricant,  
oilless lubricating.



Direction of Motion  
Embedded Non-Liquid Lubricant  
(section)

2962.81.

Order No	Shape	h	b	l	$h_1$	$h_2$	$b_1$
2962.81.016.115.040	A	16	11,5	40	12	4	6
050	A			50			
063	A			63			
080	A			80			
2962.81.016.155.050	A	16	15,5	50	11	5	8
063	A			63			
080	A			80			
100	A			100			
2962.81.020.195.063	B	20	19,5	63	15	5	8
080	B			80			
100	B			100			
125	B			125			
2962.81.020.245.080	B	20	24,5	80	15	5	8
100	B			100			
125	B			125			
160	B			160			
2962.81.025.315.100	C	25	31,5	100	19	6	10
125	C			125			
160	C			160			
200	C			200			
2962.81.025.395.125	D	25	39,5	125	19	6	10
160	D			160			
200	D			200			
250	D			250			
2962.81.032.495.160	D	32	49,5	160	24	8	12
200	D			200			
250	D			250			
315	D			315			

### Ordering Code (example):

Angled Guide Gib = 2962.81.  
 $h = 16\text{ mm}$  = 016.  
 $b = 11,5\text{ mm}$  = 115.  
 $l = 40\text{ mm}$  = 040  
 Order No = 2962.81.016.115.040

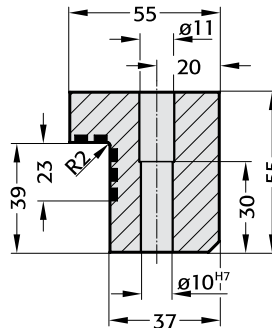
Angled Guide Gibs VDI 3357  
Bronze with Non-Liquid Lubricant

2962.82.

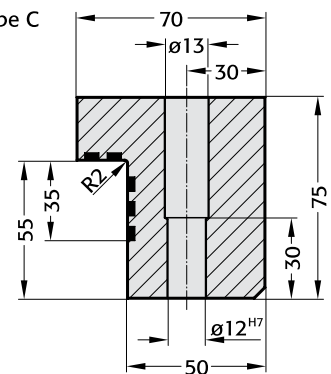


2962.82.

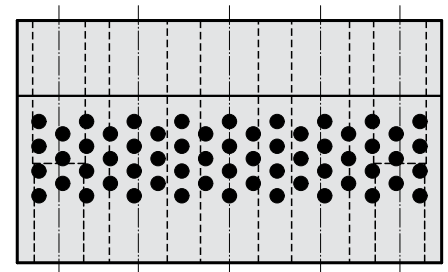
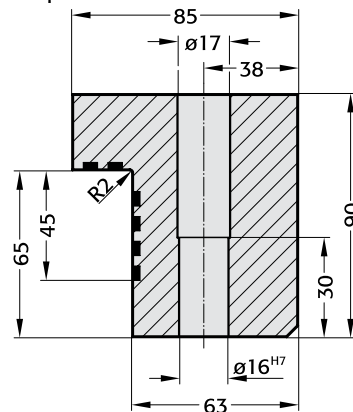
Shape B



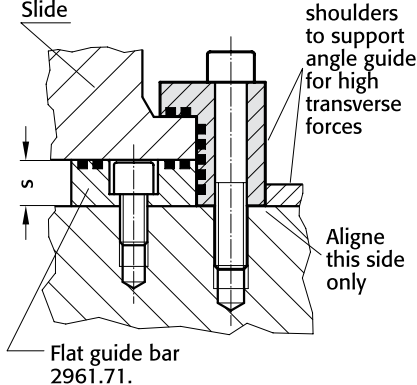
Shape C



Shape D



Mounting example:



Material:

Bronze with Non-Liquid Lubricant, oilless lubricating.

Note:

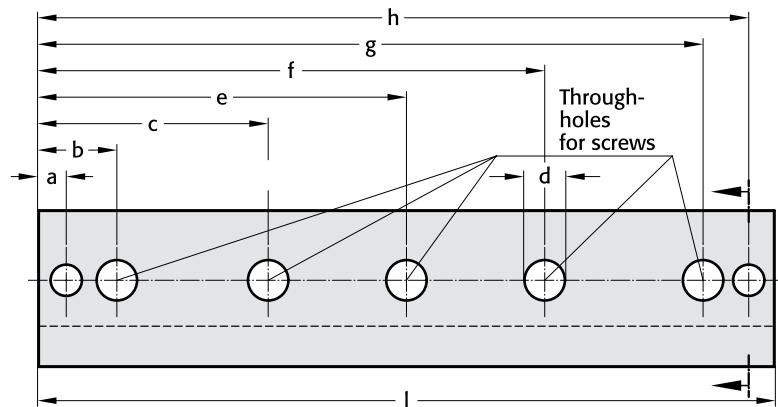
Screws and pins not included.

Fixing:

Use socket cap screws DIN EN ISO 4762 and dowel pins DIN 7979.

Ordering code (example):

Angled Guide Gib	=	2962.82.
Shape B	=	055.
l = 100 mm	=	100
Order No	=	2962.82.055.100



2962.82.

Order No	Shape	l	a	b	c	e	f	g	h	d	Screws		Parallel pins		s
											Size	Number	Size	Number	
2962.82.055.100	B	100	10	27,5	-	-	-	72,5	90	13,5	M12 × 80	2	10 × 60	2	16
160		160						132,5	150						
2962.82.070.160	C	160	12,5	35	-	-	-	125	147,5	17,5	M16 × 100		12 × 70		20
200		200						165	187,5						
250		250				125		215	237,5			3			
400		400			125	200	275	365	387,5			5			
2962.82.085.160	D	160	15	42,5	-	-	-	117,5	145	22	M20 × 120	2	16 × 70		
200		200						157,5	185						
250		250				125		207,5	235			3			
400		400			125	200	275	357,5	385			5			

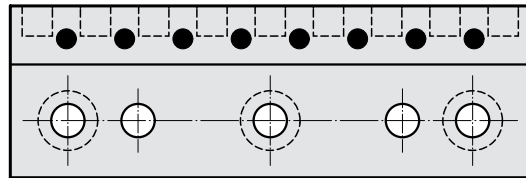
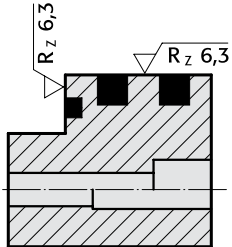
**FIBRO**

2962.83.

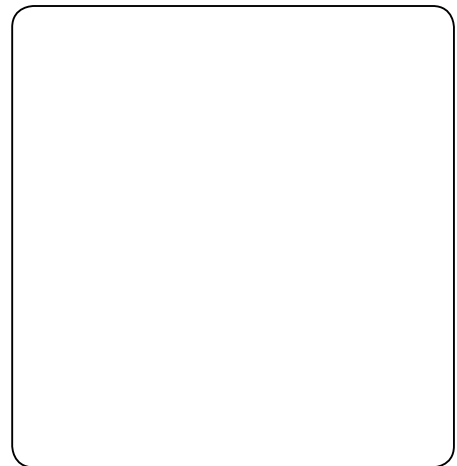
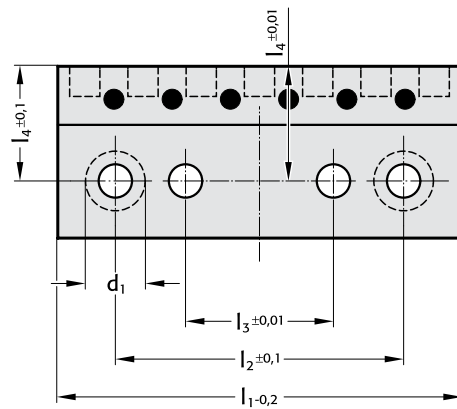
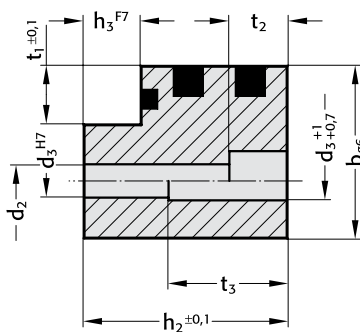
**Angled Guide Gibs  
Bronze with Non-Liquid Lubricant**

2962.83.

Shape B



Shape A



2962.83.

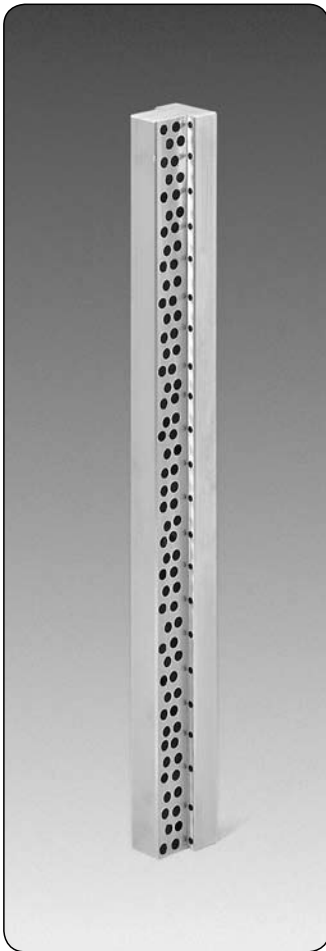
Order No	Shape	b	h1	l1	l2	l3	l4	d1	d2	d3	t1	t2	t3	h2	h3	Number of screw holes
2962.83.016.012.050	A	16	12	50	34	14	9,5	10	5,5	5	5	5,7	-	11	4	2
016.012.071	A			71	55	35										2
016.012.090	B			90	74	54										3
2962.83.020.020.080	A	20	20	80	64	40	12	11	6,6	6	5	6,8	9,5	19	5	2
020.020.100	A			100	84	60										2
020.020.125	B			125	109	85										3
2962.83.025.032.100	A	25	32	100	80	50	15,5	15	9	8	6	9	19	31	6	2
025.032.125	A			125	105	75										2
025.032.160	B			160	140	110										3
2962.83.030.050.125	A	30	50	125	95	55	18	18	11	10	7	11	34	49	8	2
030.050.160	A			160	130	90										2
030.050.200	B			200	170	130										3

**Ordering-code (example):**

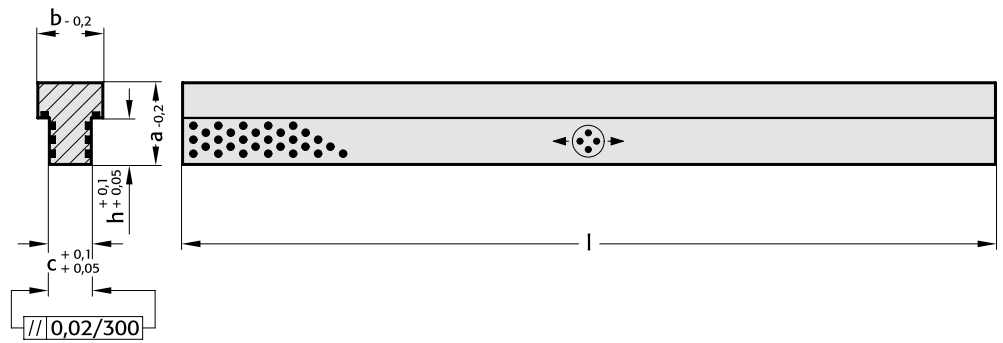
Angled Guide Gib = 2962.83.  
 b = 16 mm = 016.  
 h1 = 12 mm = 012.  
 l1 = 50 mm = 050  
 Order No = 2962.83.016.012.050

**T-Guide Bars  
Bronze with Non-Liquid Lubricant**

**2964.77.  
2964.78.**

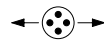


**2964.77.**



**Material:**

Bronze with Non-Liquid Lubricant, oilless lubricating.



Direction of Motion  
Embedded non-liquid  
lubricant (section)

**2964.77.**

Order No	a	b	c	h	l
2964.77.012.018.0350	12	18	8	5	350
2964.77.025.022.0350	25	22	12	15	350
2964.77.035.028.0350	35	28	18	20	350

**Ordering Code (example):**

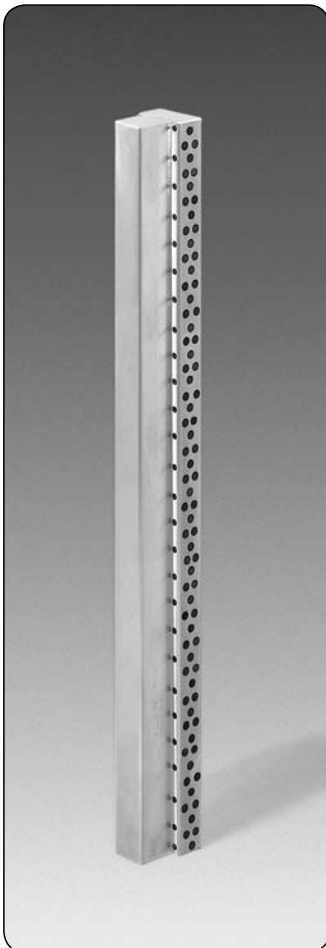
T-Guide Bar = 2964.77.

a = 12 mm = 012.

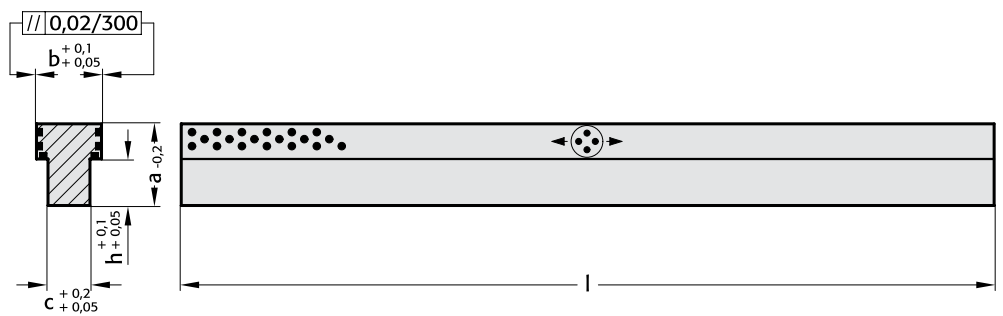
b = 18 mm = 018.

l = 350 mm = 0350

Order No = 2964.77.012.018.0350



**2964.78.**



**Material:**

Bronze with Non-Liquid Lubricant, oilless lubricating.



Direction of Motion  
Embedded non-liquid  
lubricant (section)

**2964.78.**

Order No	a	b	c	h	l
2964.78.012.018.0350	12	18	8	5	350
2964.78.025.022.0350	25	22	12	15	350
2964.78.035.028.0350	35	28	18	20	350

**Ordering Code (example):**

T-Guide Bar = 2964.78.

a = 12 mm = 012.

b = 18 mm = 018.

l = 350 mm = 0350

Order No = 2964.78.012.018.0350

A large, empty rectangular box with rounded corners, occupying most of the page. It is intended for drawing or writing.

Sliding Blocks to NAAMS  
Bronze with Non-Liquid Lubricant  
Prismatic Guides, Steel

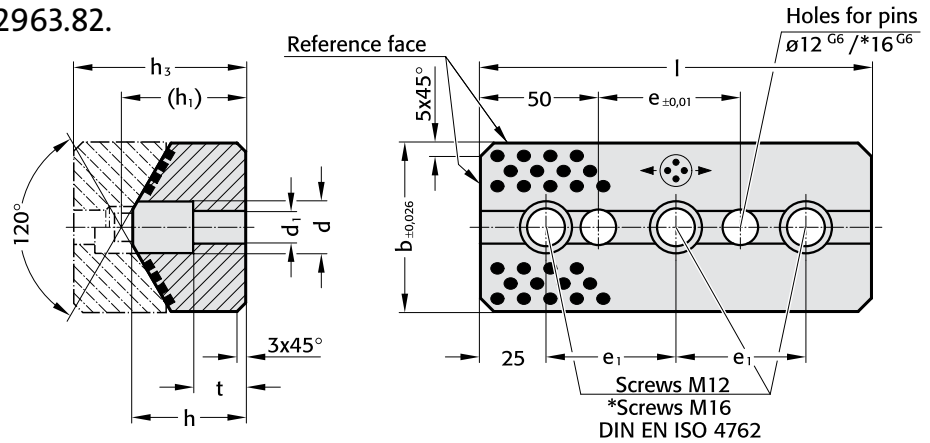
FIBRO

2963.82.

2963.83.



2963.82.



Material:

Bronze with Non-Liquid Lubricant, oilless lubricating.

Execution:

Sliding faces ground.

Note:

Screws and pins not included.

Ordering Code (example):

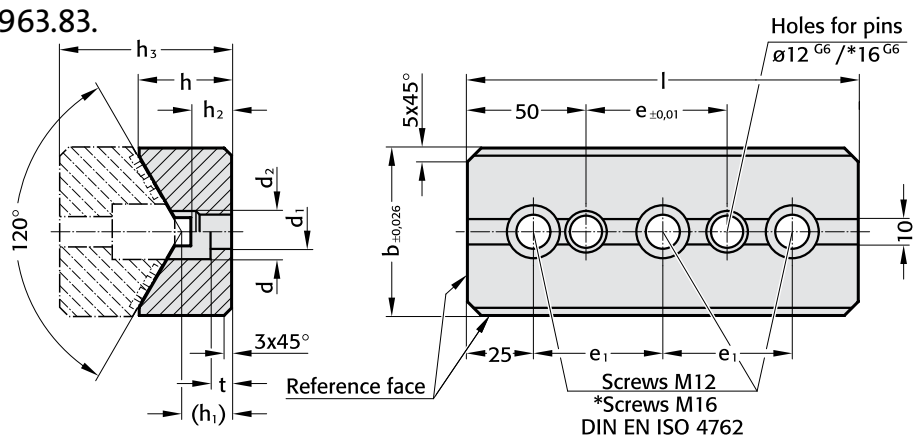
Sliding Block	=	2963.82.
b = 65 mm	=	065.
h = 39 mm	=	039.
l = 200 mm	=	0200
Order No	=	2963.82.065.039.0200

2963.82.

Order No	b	h	(h <sub>1</sub> )	h <sub>3</sub>	l	e	e <sub>1</sub>	d	d <sub>1</sub>	t	Number of screw holes
2963.82.065.039.0150	65	39	(42)	65	150	50	100	20	13,5	13	2
0200					200	100	150				2
0250					250	150	100				3
0300					300	200	125				3
2963.82.075.039.0150	75	39	(42)	65	150	50	100	20	13,5	13	2
0200					200	100	150				2
0250					250	150	100				3
0300					300	200	125				3
2963.82.125.052.0150*	125	52	(57)	85	150	50	100	26	17,5	15	2
0200*					200	100	150				2
0250*					250	150	100				3
0300*					300	200	125				3



2963.83.



Material:

Steel  
Sliding faces surface hardened.

Note:

Screws and pins not included.

Ordering Code (example):

Prismatic Guide	=	2963.83.
b = 65 mm	=	065.
h = 40 mm	=	040.
l = 200 mm	=	0200
Order No	=	2963.83.065.040.0200

2963.83.

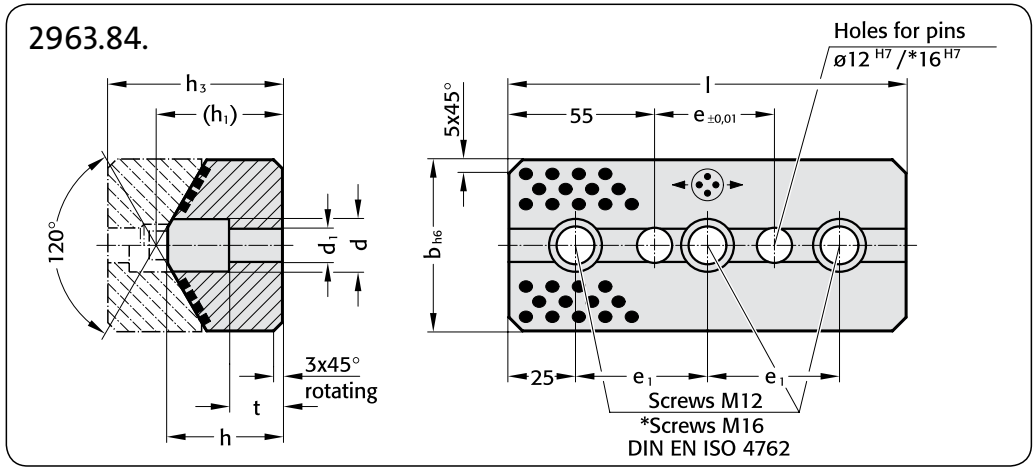
Order No	b	h	(h <sub>1</sub> )	h <sub>2</sub>	h <sub>3</sub>	l	e	e <sub>1</sub>	d	d <sub>1</sub>	d <sub>2</sub>	t	Number of screw holes
2963.83.065.040.0150	65	40	(23)	21	65	150	50	100	20	13,5	14	10	2
0200						200	100	150					2
0250						250	150	100					3
0300						300	200	125					3
2963.83.075.040.0150	75	40	(23)	21	65	150	50	100	20	13,5	14	10	2
0200						200	100	150					2
0250						250	150	100					3
0300						300	200	125					3
2963.83.125.060.0150*	125	60	(28)	27	85	150	50	100	26	17,5	18	15	2
0200*						200	100	150					2
0250*						250	150	100					3
0300*						300	200	125					3



# FIBRO

2963.84.  
2963.85.

## Sliding Blocks, VDI 3357 Bronze with Non-Liquid Lubricant, Prismatic Guides, Steel



2963.84.

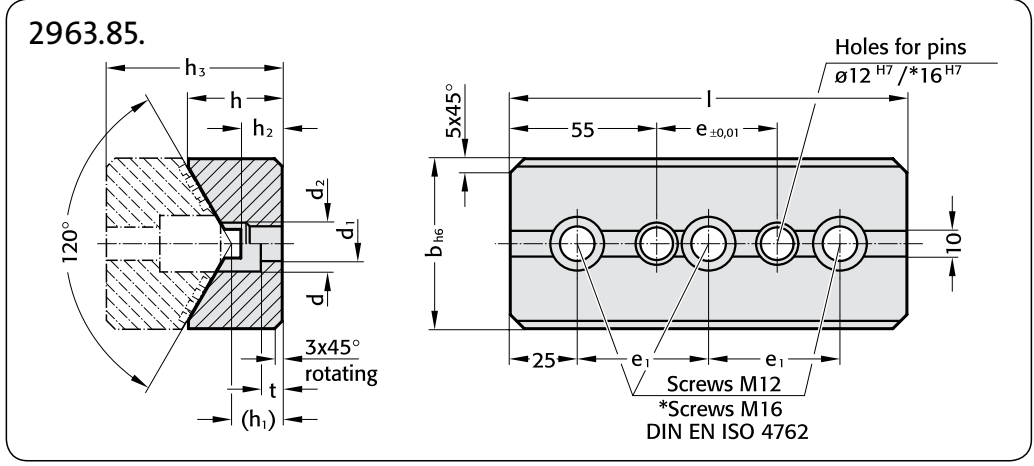
Order No	b	h	(h <sub>1</sub> )	h <sub>3</sub>	l	e	e <sub>1</sub>	d	d <sub>1</sub>	t	Number of screw holes
2963.84.065.044.0150	65	44	(47)	65	150	45	100	20	13,5	20	2
0200					200	95	150				2
0250					250	145	100				3
0300					300	195	125				3
2963.84.125.047.0150*	125	47	(52)	85	150	45	100	26	17,5	15	2
0200*					200	95	150				2
0250*					250	145	100				3
0300*					300	195	125				3
2963.84.125.052.0150*		52	(57)		150	45	100				2
0200*					200	95	150				2
0250*					250	145	100				3
0300*					300	195	125				3

**Material:**  
Bronze with Non-Liquid Lubricant, oilless lubricating.

**Note:**  
Screws and pins not included.

**Ordering Code (example):**

Sliding Block = 2963.84.  
 b = 65 mm = 065.  
 h = 44 mm = 044.  
 l = 200 mm = 0200  
 Order No = 2963.84.065.044.0200



2963.85.

Order No	b	h	(h <sub>1</sub> )	h <sub>2</sub>	h <sub>3</sub>	l	e	e <sub>1</sub>	d	d <sub>1</sub>	d <sub>2</sub>	t	Number of screw holes
2963.85.065.035.0150	65	35	(18)	17	65	150	45	100	20	13,5	14	8	2
0200						200	95	150					2
0250						250	145	100					3
0300						300	195	125					3
2963.85.125.060.0150*	125	60	(33)	32	85	150	45	100	26	17,5	18	15	2
0200*						200	95	150					2
0250*						250	145	100					3
0300*						300	195	125					3
2963.85.125.060.0150.1*			(28)	27		150	45	100					2
0200.1*						200	95	150					2
0250.1*						250	145	100					3
0300.1*						300	195	125					3

**Material:**  
Steel  
Sliding faces surface hardened.

**Note:**  
Screws and pins not included.

**Ordering Code (example)**

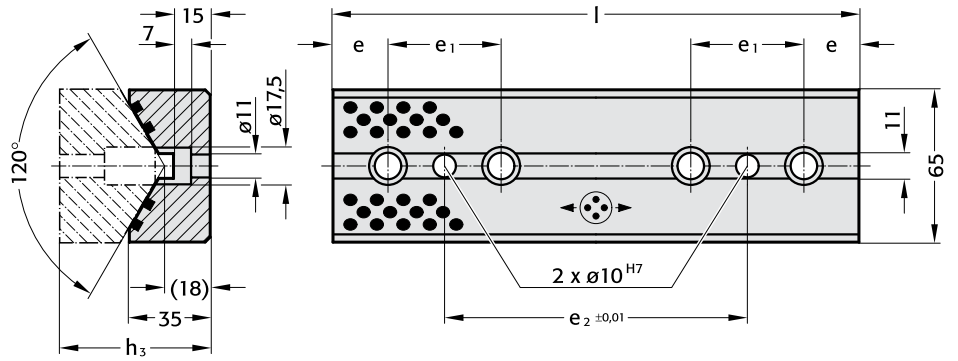
Prismatic Guide = 2963.85.  
 b = 65 mm = 065.  
 h = 35 mm = 035.  
 l = 200 mm = 0200  
 Order No = 2963.85.065.035.0200

**Prismatic Guides**  
**Bronze with Non-Liquid Lubricant**  
**Sliding Blocks, Steel**

**FIBRO**  
**2963.70.**  
**2963.71.**



**2963.70.**

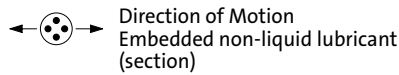


**Material:**

Bronze with Non-Liquid Lubricant,  
 oilless lubricating.

**Note:**

Screws and pins not included.



**2963.70.**

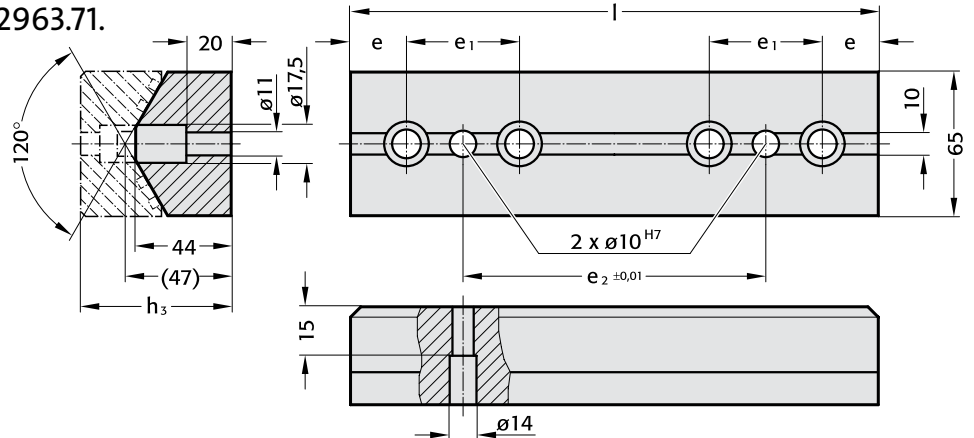
Order No	e	e <sub>1</sub>	e <sub>2</sub>	h <sub>3</sub>	l	Number of screw holes
2963.70.065.035.0100	20	60	20	65	100	2
0150	25	50	50	150	150	3
0200			100	200	200	4
0250			150	250	250	5
0300			200	300	300	6

**Ordering Code (example):**

Prismatic Guide	=	2963.70.
width	= 65 mm =	065.
thickness	= 35 mm =	035.
l	= 250 mm =	0250
Order No	=	2963.70.065.035.0250



**2963.71.**



**Material:**

Steel  
 Sliding faces surface hardened

**Note:**

Screws and pins not included.

**2963.71.**

Order No	e	e <sub>1</sub>	e <sub>2</sub>	h <sub>3</sub>	l	Number of screw holes
2963.71.065.044.0100	20	60	20	65	100	2
0150	25	50	50	150	150	3
0200			100	200	200	4
0250			150	250	250	5
0300			200	300	300	6

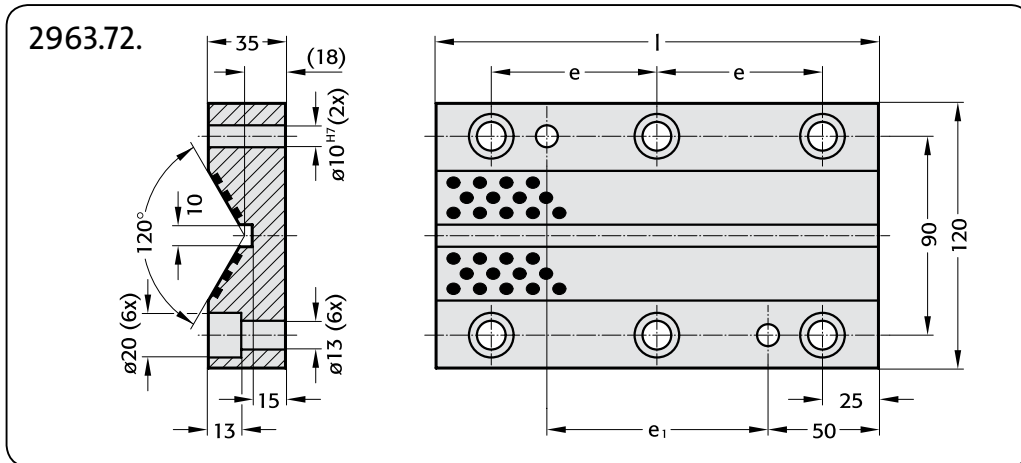
**Ordering Code (example):**

Sliding block	=	2963.71.
width	= 65 mm =	065.
thickness	= 44 mm =	044.
l	= 300 mm =	0300
Order No	=	2963.71.065.044.0300

# FIBRO

2963.72.  
2963.73.

## Prismatic Guides Bronze with Non-Liquid Lubricant Sliding Blocks, Steel



2963.72.

Order No	l	e	e <sub>1</sub>	Number of screw holes
2963.72.120.035.0150	150	50	50	6
0200	200	75	100	6
0250	250	100	150	6
0300	300	125	200	6

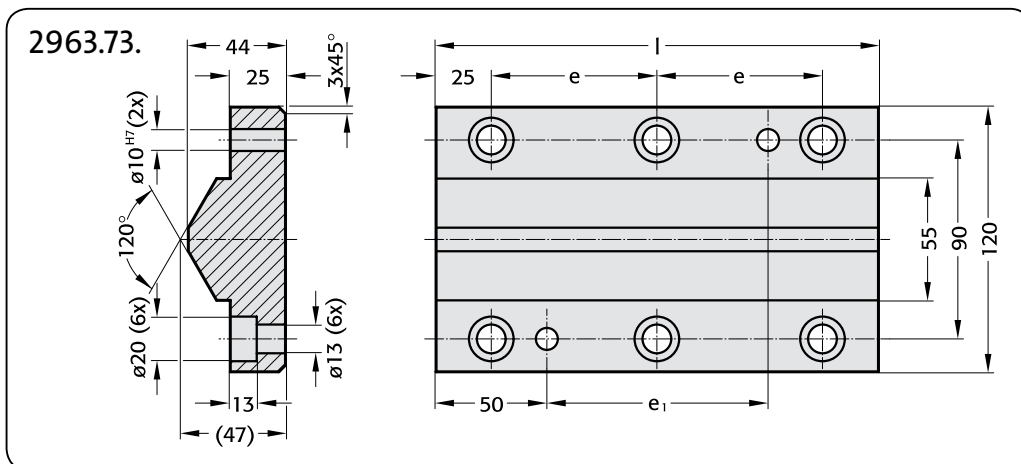
Ordering Code (example):

Prismatic Guide	=	2963.72.
Width	= 120 mm =	120.
Thickness	= 35 mm =	035.
l	= 150 mm =	0150
Order No	=	2963.72.120.035.0150

**Material:**  
Bronze with non-liquid lubricant, oilless lubricating.

**Note:**  
Screws and pins not included.

← ⊙ → Direction of Motion  
Embedded non-liquid lubricant (section)



2963.73.

Order No	l	e	e <sub>1</sub>	Number of screw holes
2963.73.120.044.0150	150	50	50	6
0200	200	75	100	6
0250	250	100	150	6
0300	300	125	200	6

Ordering Code (example):

Sliding Block	=	2963.73.
Width	= 120 mm =	120.
Thickness	= 44 mm =	044.
l	= 150 mm =	0150
Order No	=	2963.73.120.044.0150

**Material:**  
Steel  
Sliding faces surface hardened.

**Note:**  
Screws and pins not included.

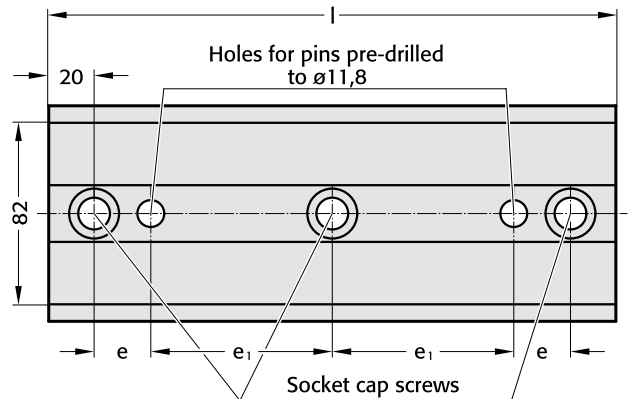
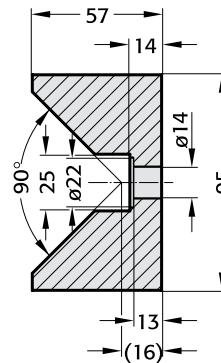
Prismatic Guides  
Steel

2963.81.



2963.81.

Shape A



Material:

Steel  
Sliding faces surface hardened.

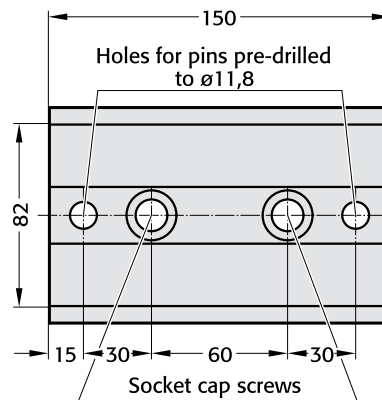
Note:

Screws and pins not included.

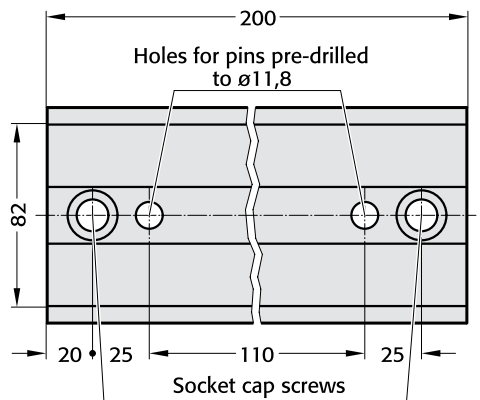
Fixing:

Use socket cap screws M12  
DIN EN ISO 4762.

Shape B



Shape C



2963.81.

Order No	Shape	l	e	e <sub>1</sub>	Number of screw holes
2963.81.095.057.0150	B	150	30	-	2
0200	C	200	25	-	2
0250	A	250	25	80	3
0300	A	300	30	100	3

Ordering Code (example):

Prismatic Guide = 2963.81.  
Width = 95 mm = 095.  
Thickness = 57 mm = 057.  
l = 250 mm = 0250  
Order No = 2963.81.095.057.0250

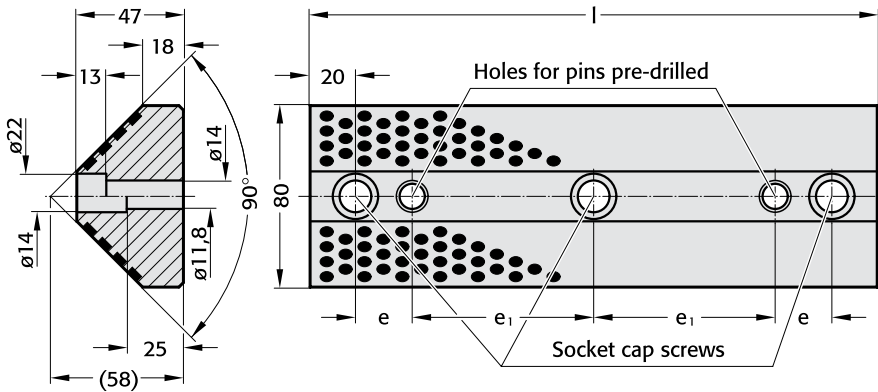
**FIBRO**

2963.80.

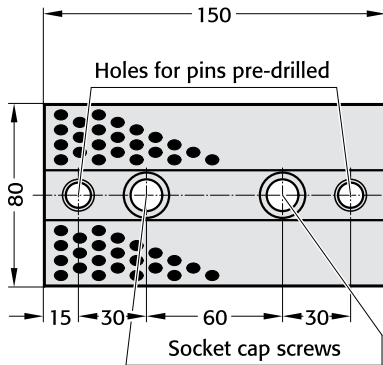
**Sliding Blocks  
Bronze with Non-Liquid Lubricant**

2963.80.

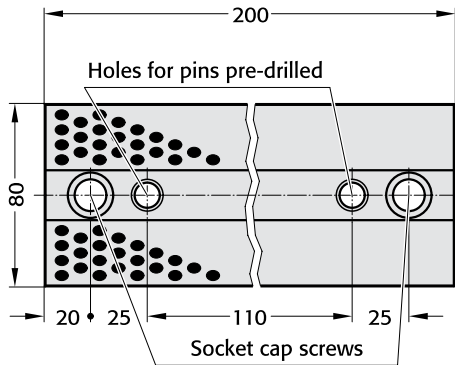
Shape A



Shape B



Shape C



**Material:**

Bronze with non-liquid lubricant, oilless lubricating.

**Note:**

Screws and pins not included.

**Fixing:**

Use socket cap screws M12  
DIN EN ISO 4762.

2963.80.

Order No	Shape	l	e	e <sub>1</sub>	Number of screw holes
2963.80.080.047.0150	B	150	30	-	2
0200	C	200	25	-	2
0250	A	250	25	80	3
0300	A	300	30	100	3

**Ordering Code (example):**

Sliding Block = 2963.80.  
 Width = 80 mm = 080.  
 Thickness = 47 mm = 047.  
 l = 250 mm = 0250  
 Order No = 2963.80.080.047.0250

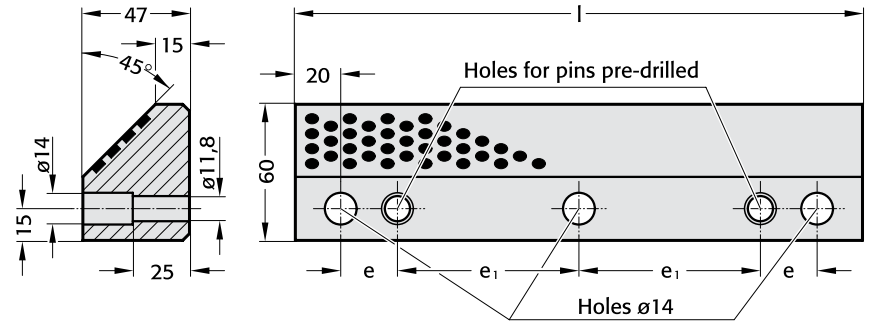
Single-sided Prismatic Guides  
Bronze with Non-Liquid Lubricant

2965.81.

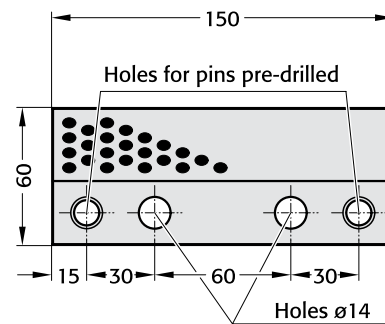


2965.81.

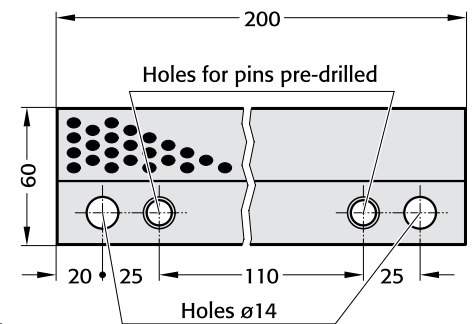
Shape A



Shape B



Shape C



Material:

Bronze with non-liquid lubricant, oilless lubricating.

Note:

Single-sided prismatic sliding blocks 2965.83. see opposite page  
Screws and pins not included.

2965.81.

Order No	Shape	l	e	e <sub>1</sub>	Number of screw holes
2965.81.060.047.0150	B	150	30	-	2
0200	C	200	25	-	2
0250	A	250	25	80	3
0300	A	300	30	100	3

Ordering Code (example):

Single-sided Prismatic Guide = 2965.81.  
Width = 60 mm = 060.  
Thickness = 47 mm = 047.  
l = 250 mm = 0250  
Order No = 2965.81.060.047.0250

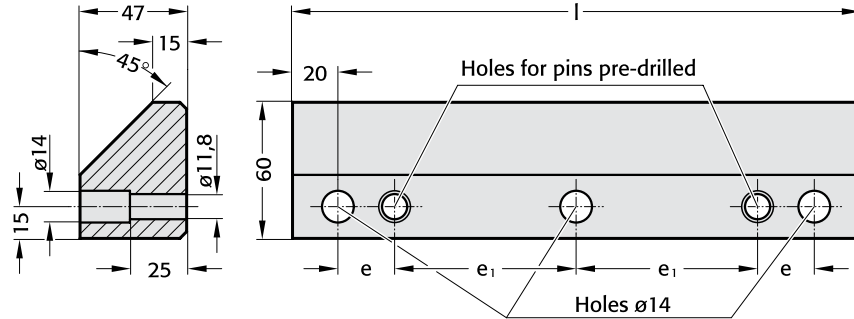
# FIBRO

2965.83.

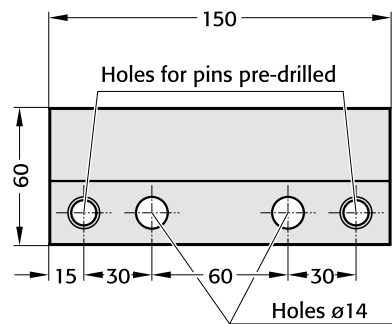
## Single-sided Prismatic Sliding Blocks Steel

2965.83.

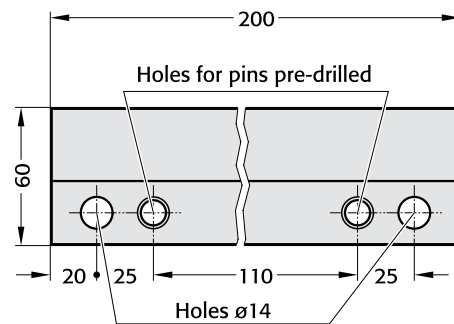
Shape A



Shape B



Shape C



### Material:

Steel  
Sliding faces surface hardened

### Note:

Single-sided prismatic guides 2965.81. see opposite page  
Screws and pins not included.

2965.83.

Order No	Shape	l	e	e <sub>1</sub>	Number of screw holes
2965.83.060.047.0150	B	150	30	—	2
0200	C	200	25	—	2
0250	A	250	25	80	3
0300	A	300	30	100	3

### Ordering Code (example):

Single-sided Prismatic Sliding Block = 2965.83.  
Width = 60 mm = 060.  
Thickness = 47 mm = 047.  
l = 250 mm = 0250  
Order No = 2965.83.060.047.0250

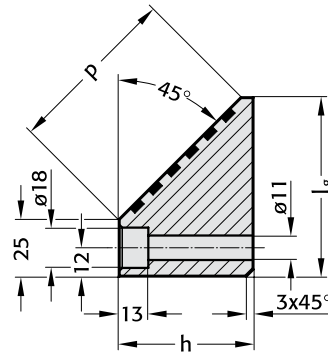
# Single-sided Prismatic Guides Bronze with Non-Liquid Lubricant to CNOMO Standard

**FIBRO**

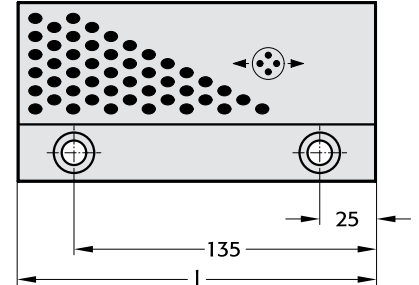
2965.80.45.



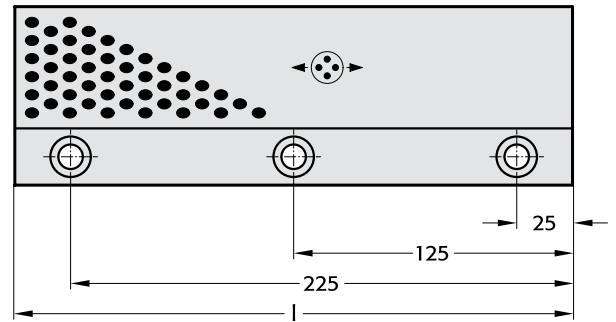
2965.80.45.



Shape A



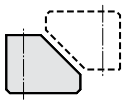
Shape B



## Material:

Bronze with non-liquid lubricant, oilless lubricating.

## Note:



Single-sided prismatic sliding blocks 2965.82.45. see opposite page

Screws not included.

## Fixing:

Use socket cap screws M10  
DIN EN ISO 4762.

2965.80.45.

Order No	Shape	$lg$	$h$	$l$	$p$	Number of screw holes
2965.80.45.060.045.160	A	60	45	160	50	2
2965.80.45.060.045.250	B	60	45	250	50	3
2965.80.45.080.060.160	A	80	60	160	80	2
2965.80.45.080.060.250	B	80	60	250	80	3

## Ordering Code (example):

Single-sided Prismatic Guides = 2965.80.45.

$lg$  = 60 mm = 060.

$h$  = 40 mm = 045.

$l$  = 160 mm = 160

Order No = 2965.80.45.060.045.160

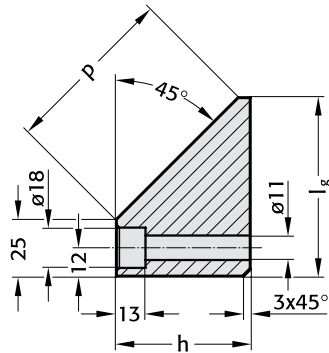


**FIBRO**

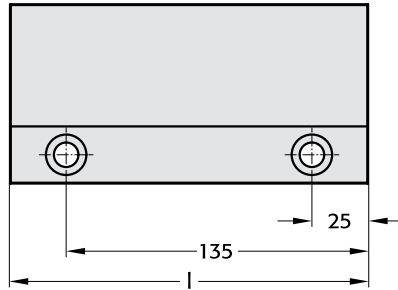
2965.82.45.

Single-sided Prismatic Sliding Blocks  
Steel to CNOMO Standard

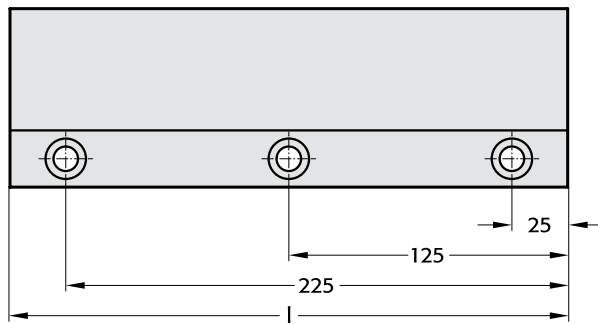
2965.82.45.



Shape A



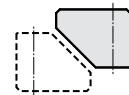
Shape B



**Material:**

Steel  
Sliding faces surface hardened

**Note:**



Single-sided prismatic guides 2965.80.45. see opposite page

Screws not included.

**Fixing:**

Use socket cap screws M10  
DIN EN ISO 4762.

2965.82.45.

Order No	Shape	lg	h	l	p	Number of screw holes
2965.82.45.060.045.160	A	60	45	160	50	2
2965.82.45.060.045.250	B	60	45	250	50	3
2965.82.45.080.060.160	A	80	60	160	80	2
2965.82.45.080.060.250	B	80	60	250	80	3

**Ordering Code (example):**

Single-sided Prismatic Sliding Block = 2965.82.45.  
 lg = 60 mm = 060.  
 h = 47 mm = 045.  
 l = 250 mm = 160  
 Order No = 2965.82.45.060.045.160

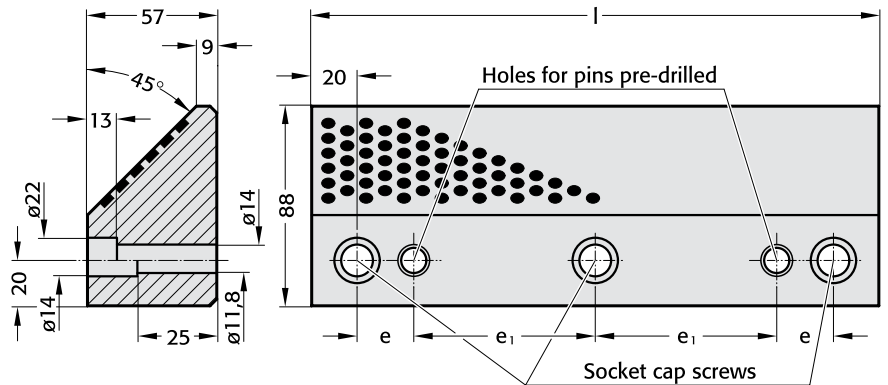
Single-sided Prismatic Guides  
Bronze with Non-Liquid Lubricant

2965.80.

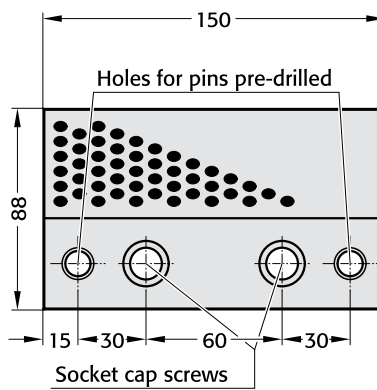


2965.80.

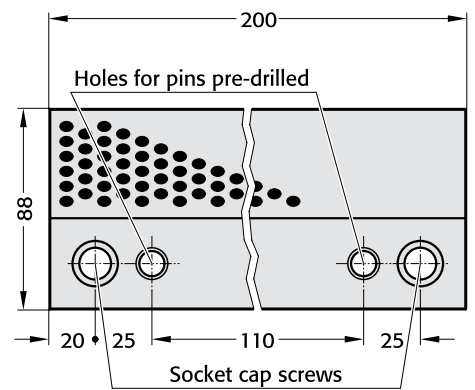
Shape A



Shape B



Shape C



Material:

Bronze with non-liquid lubricant, oilless lubricating.

Note:

Single-sided prismatic sliding blocks 2965.82. see opposite page

Screws and pins not included.

Fixing:

Use socket cap screws M12  
DIN EN ISO 4762.

2965.80.

Order No	Shape	l	e	e <sub>1</sub>	Number of screw holes
2965.80.088.057.0150	B	150	30	-	2
0200	C	200	25	-	2
0250	A	250	25	80	3
0300	A	300	30	100	3

Ordering Code (example):

Single-sided Prismatic Guide = 2965.80.  
Width = 88 mm = 088.  
Thickness = 57 mm = 057.  
l = 250 mm = 0250  
Order No = 2965.80.088.057.0250

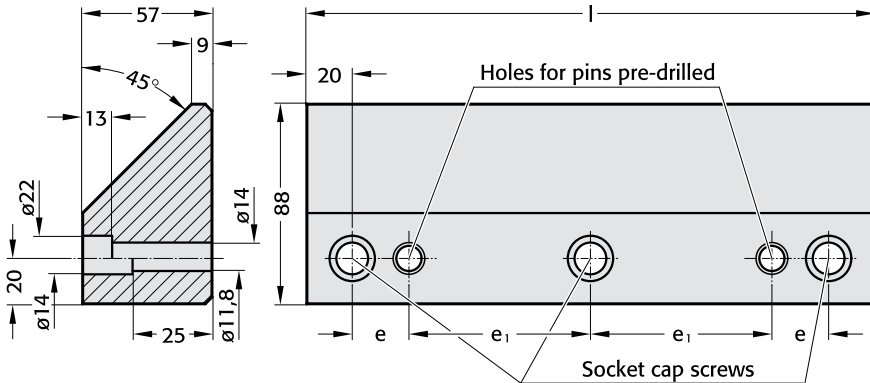
**FIBRO**

2965.82.

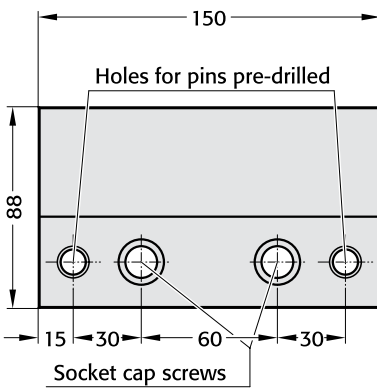
**Single-sided Prismatic Sliding Blocks  
Steel**

2965.82.

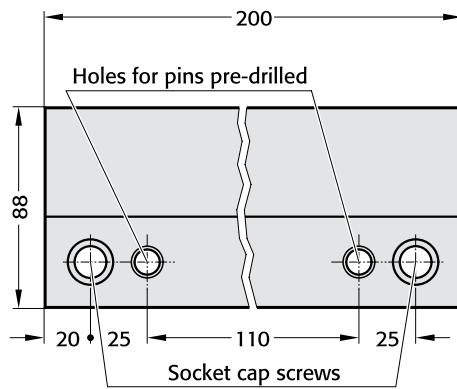
Shape A



Shape B



Shape C



**Material:**

Steel  
Sliding faces surface hardened.

**Note:**

Single-sided prismatic guides 2965.80. see opposite page  
Screws and pins not included.

**Fixing:**

Use socket cap screws M12  
DIN EN ISO 4762.

2965.82.

Order No	Shape	l	e	e <sub>1</sub>	Number of screw holes
2965.82.088.057.0150	B	150	30	–	2
0200	C	200	25	–	2
0250	A	250	25	80	3
0300	A	300	30	100	3

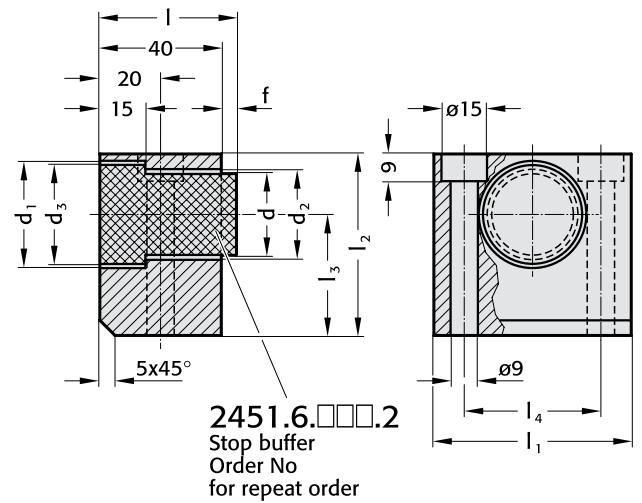
**Ordering Code (example) :**

Single-sided Prismatic Sliding Block = 2965.82.  
Width = 88 mm = 088.  
Thickness = 57 mm = 057.  
l = 250 mm = 0250  
Order No = 2965.82.088.057.0250

Slide stop  
Stop buffer



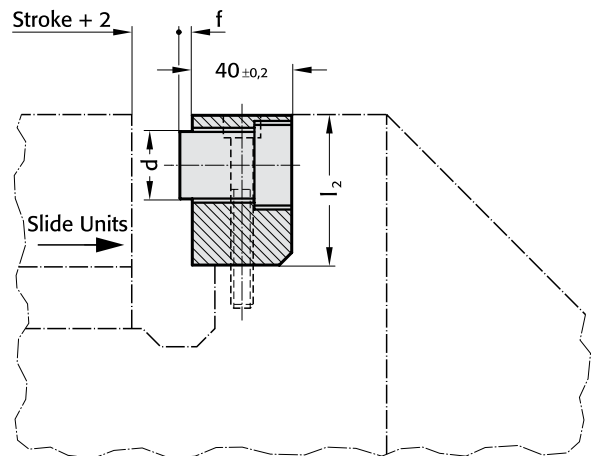
2451.6.



2451.6.

Order No	d	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	f	spring force in N
2451.6.027	27	35	30	34	45	65	60	40	45	5	5200
2451.6.036	36	45	40	44	45	75	70	45	55	5	9800

Installation example:



**Material:**

Location block: Steel  
Stop buffer: FIBROFLEX,  
90 Shore A-hardness = 6.

**Note:**

Screws not included.

**Fixing:**

Use socket cap screw to DIN EN ISO 4762 M8 x 80.

**Ordering Code (example):**

Slide stop	= 2451.
Shore A , hardness 90	= 6.
d = 27 mm	= 027
Order No	= 2451.6.027

**Ordering Code (example):**

Slide stop buffer	= 2451. .2
Shore A , hardness 90	= 6.
d = 27 mm	= 027.
Order No	= 2451.6.027.2

A large, empty rectangular box with rounded corners, occupying most of the page. It is intended for drawing or writing.

# Mounting Examples Oilless Guide Elements

Pos. 1  
 2960.70. Sliding Pads ISO  
 2960.71. Sliding Pads VDI  
 2960.72. Sliding Pads, small dimensions  
 2960.74. Sliding Pads AFNOR  
 2960.76. Sliding Pads  
 2960.79. Sliding Pads to NAAMS

2960.70.  
 2960.71.  
 2960.72.  
 2960.74.  
 2960.76.  
 2960.79.

2960.70.  
 2960.71.  
 2960.72.  
 2960.74.  
 2960.76.  
 2960.79.

Pos. 1  
 2960.70. Sliding Pads ISO  
 2960.71. Sliding Pads VDI  
 2960.72. Sliding Pads, small dimensions  
 2960.74. Sliding Pads AFNOR  
 2960.76. Sliding Pads  
 2960.79. Sliding Pads to NAAMS  
 2960.87. Sliding Pads VDI

2960.70.  
 2960.71.  
 2960.72.  
 2960.74.  
 2960.76.  
 2960.79.  
 2960.87.

2960.70.  
 2960.71.  
 2960.72.  
 2960.74.  
 2960.76.  
 2960.79.  
 2960.87.

Pos. 2  
 2960.73. Guide Brackets VDI

Pos. 1  
 2960.70. Sliding Pads ISO  
 2960.71. Sliding Pads VDI  
 2960.72. Sliding Pads, small dimensions  
 2960.74. Sliding Pads AFNOR  
 2960.76. Sliding Pads  
 2960.79. Sliding Pads to NAAMS  
 2960.87. Sliding Pads VDI

2960.70.  
 2960.71.  
 2960.72.  
 2960.74.  
 2960.76.  
 2960.79.

2960.70.  
 2960.71.  
 2960.72.  
 2960.74.  
 2960.76.  
 2960.79.  
 2960.87.

2102.70.  
 2073.45.

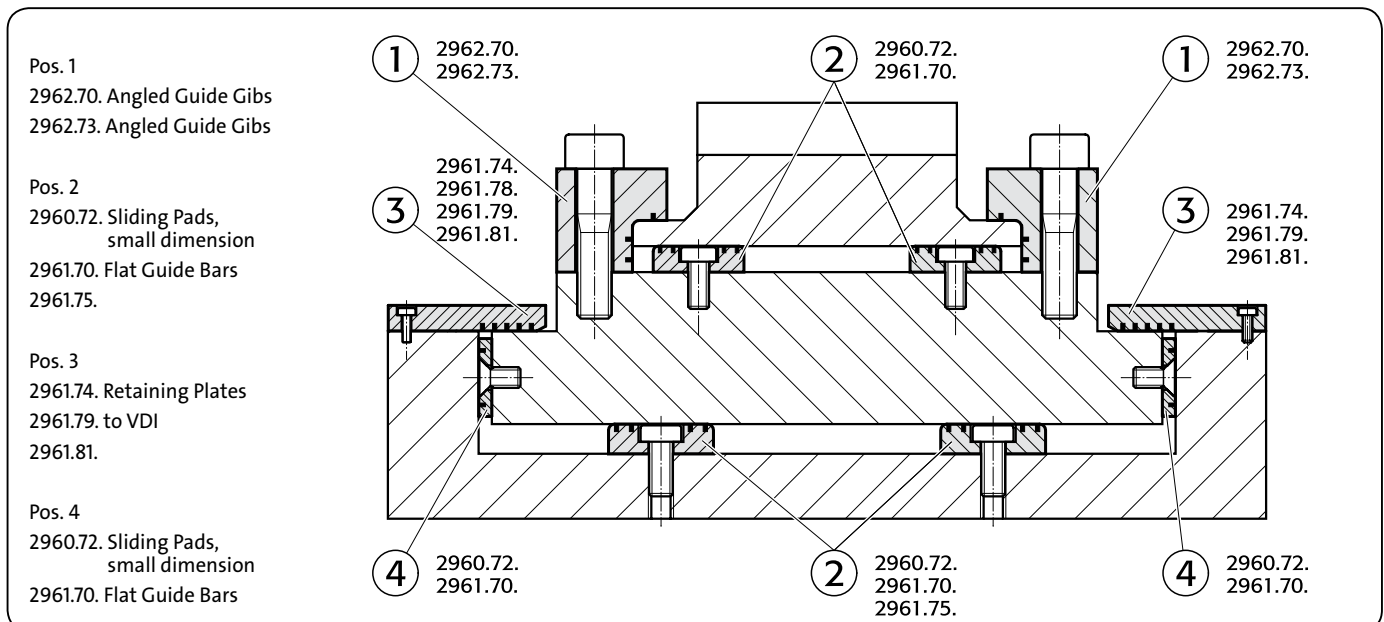
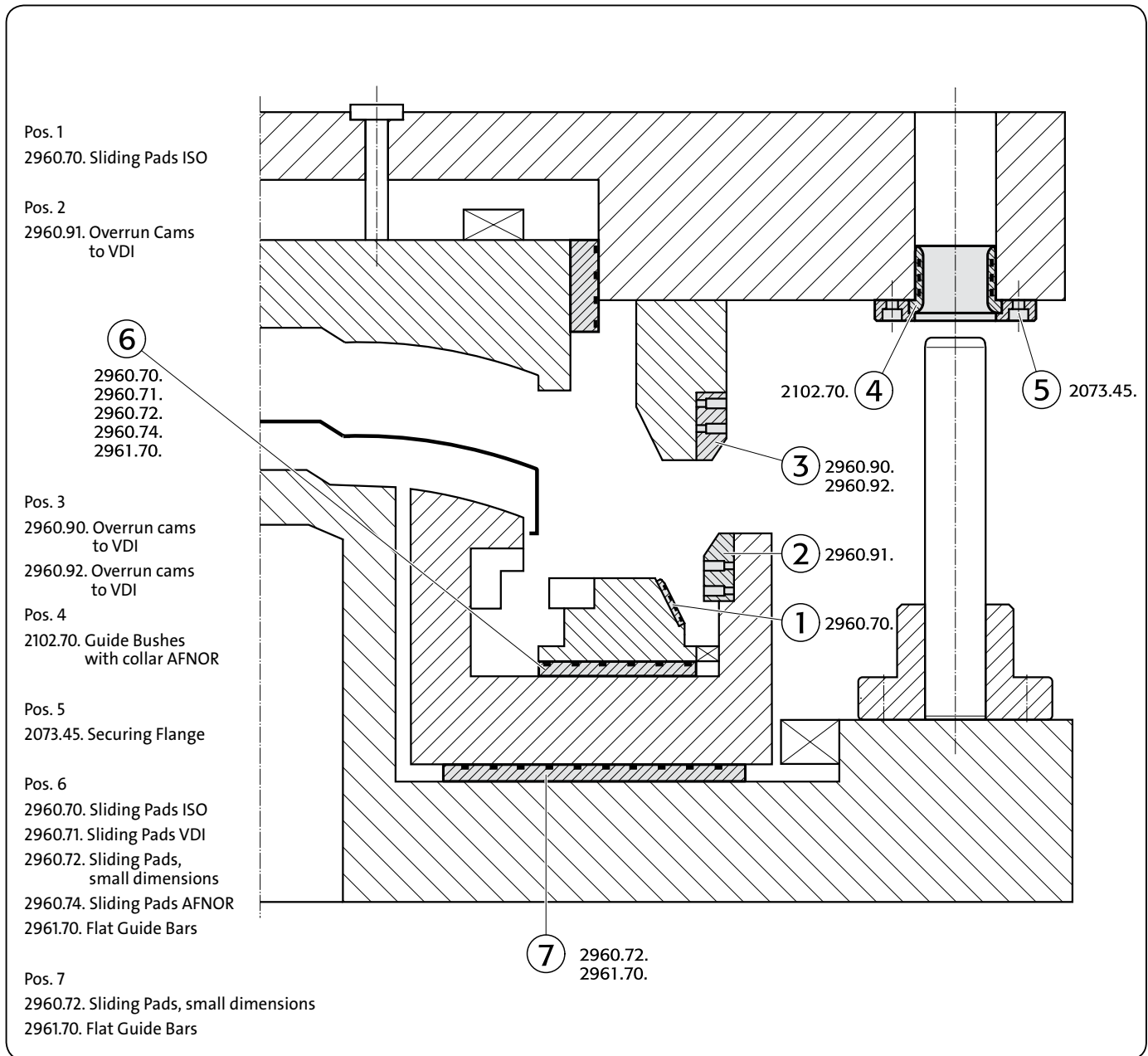
Pos. 2  
 2052.70. Oilless Guide Bushes

Pos. 3  
 2102.70. Guide Bushes with collar AFNOR

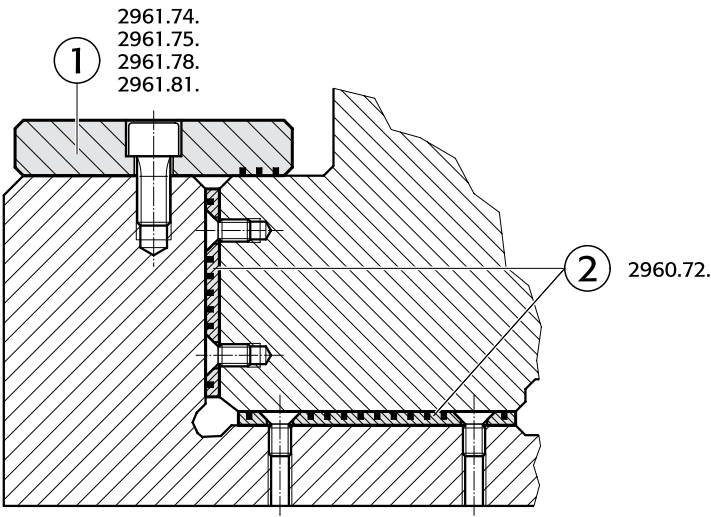
Pos. 4  
 2073.45. Securing Flange

2052.70.

## Mounting Examples Oilless Guide Elements



# Mounting Examples Oilless Guide Elements



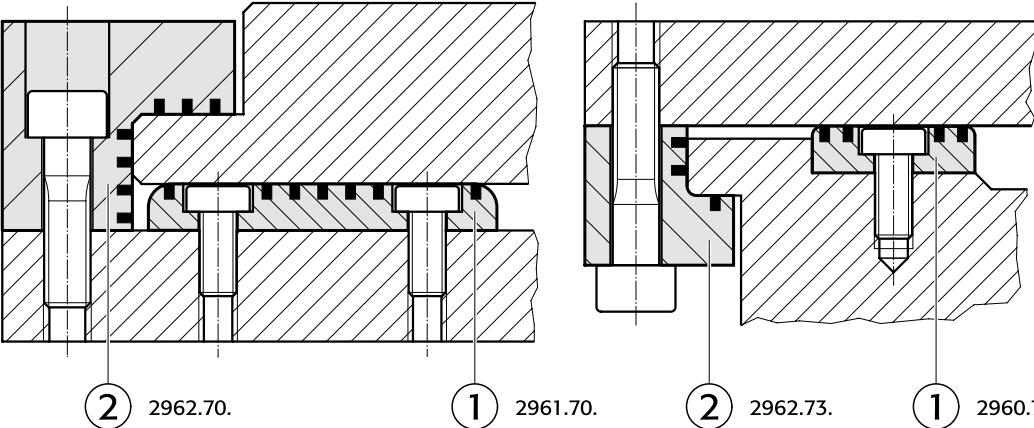
2961.74.  
2961.75.  
2961.78.  
2961.81.

1

2 2960.72.

Pos. 1  
2961.74. Retaining Plates to VDI

Pos. 2  
2960.72. Sliding Pads, small dimensions



Pos. 1  
2961.70. Flat Guide Bars  
2960.72. Sliding Pads, small dimensions

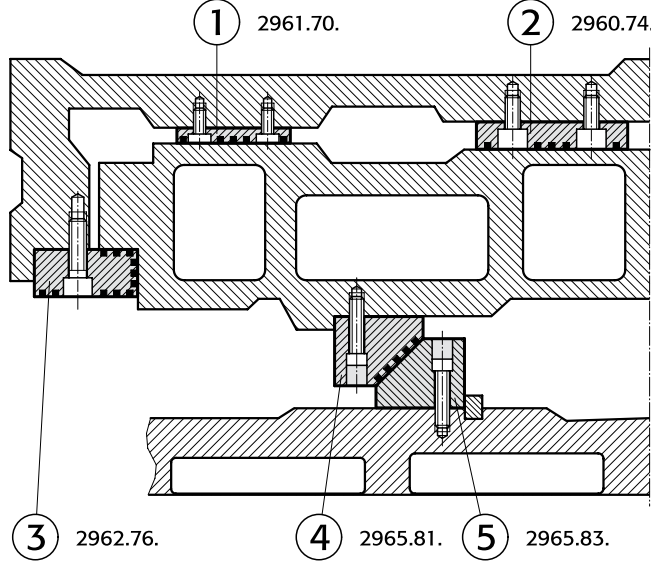
2 2962.70.

1 2961.70.

2 2962.73.

1 2960.72.

Pos. 2  
2962.70. Angled Guide Gibs  
2962.73. Angled Guide Gibs



1 2961.70.

2 2960.74.

Pos. 1  
2961.70. Flat Guide Bars

Pos. 2  
2960.74. Sliding Pads AFNOR

Pos. 3  
2962.76. Guide Bars with three sliding surfaces

Pos. 4  
2965.81. Single-sided prismatic Guides (Bronze)

Pos. 5  
2965.83. Single-sided Prismatic Sliding Blocks (Steel)

3 2962.76.

4 2965.81.

5 2965.83.



# Mounting Examples Oilless Guide Elements

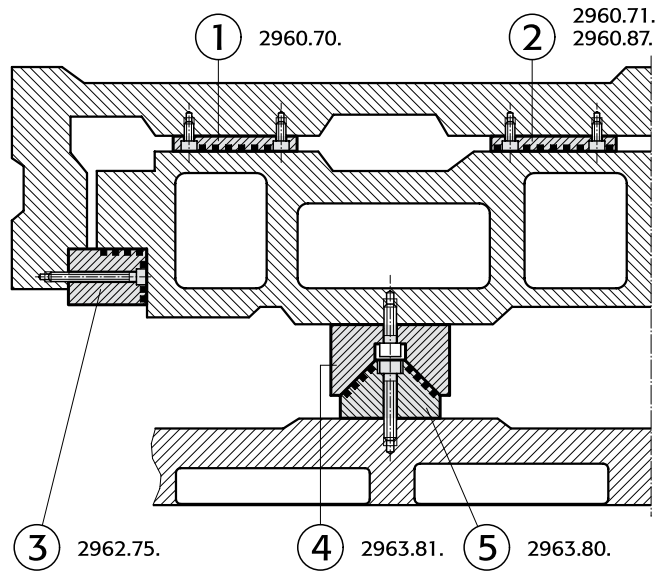
Pos. 1  
2960.70. Sliding Pads ISO

Pos. 2  
2960.71. Sliding Pads VDI  
2960.87.

Pos. 3  
2962.75. Guide Bars with two  
sliding surfaces

Pos. 4  
2963.81. Prismatic Guides

Pos. 5  
2963.80. Sliding Blocks

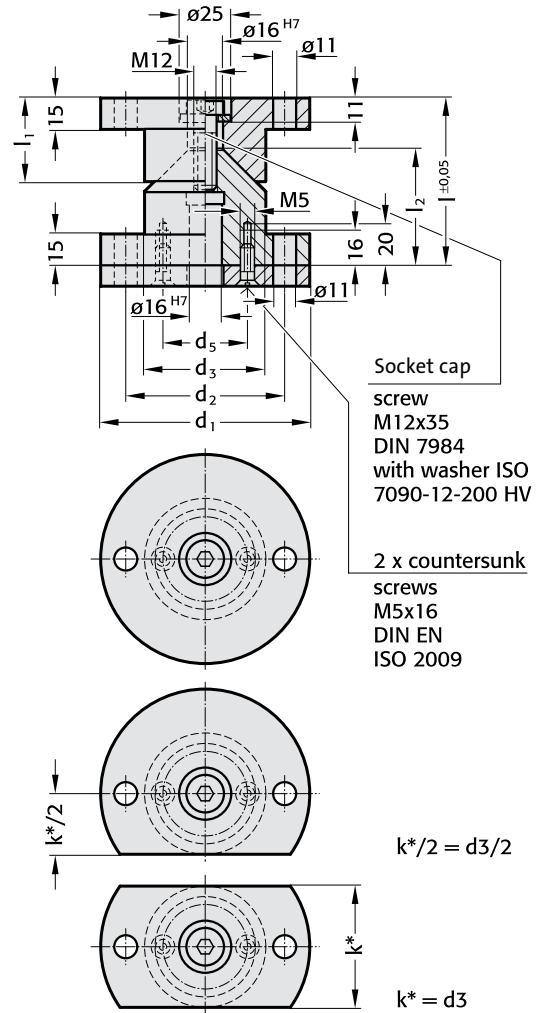


Centring Units with Adjusting Washer

2441.11.0.



2441.11.0.



**Material:**

Centring Units: 16 Mn Cr 5  
nitrited  
600<sup>+50</sup> HV 50

Adjusting Washers: C 45 or similar

**Note:**

Centring unit complete with adjusting washer.  
Screws included.

**2441.11.0.**

Centring unit with adjusting washer.

**2441.11.0.**   .1

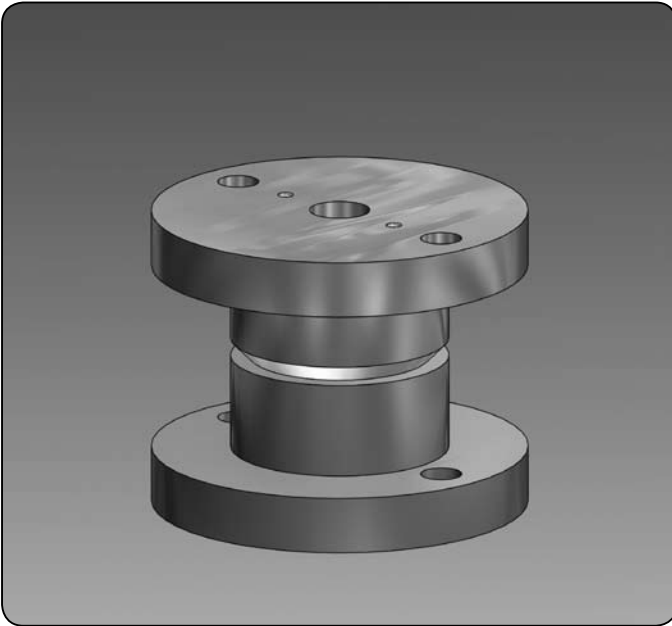
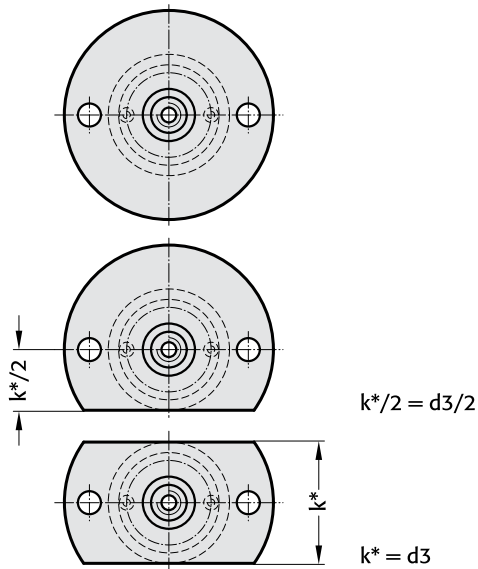
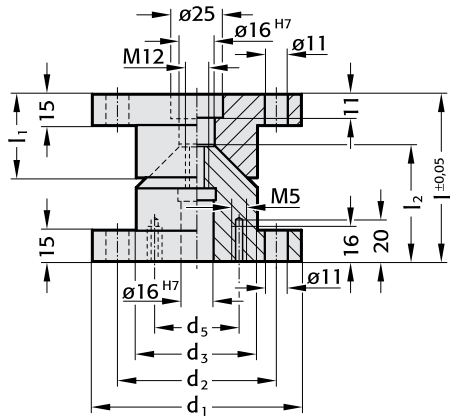
Centring unit with one flat side with adjusting washer.

**2441.11.0.**   .2

Centring unit with two flat sides with adjusting washer.

Order No	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l	l <sub>1</sub>	l <sub>2</sub>	d <sub>5</sub>
2441.11.0.100	100	76	58	80	40	55	40,5
120	120	96	78	90	50	65	50,5
100.1	100	76	58	80	40	55	40,5
120.1	120	96	78	90	50	65	50,5
100.2	100	76	58	80	40	55	40,5
120.2	120	96	78	90	50	65	50,5

2441.11.



**Material:**

16 Mn Cr 5  
nitrided  
600<sup>+50</sup> HV 50

**Note:**

Adjusting washer to be ordered separately.  
Screws not included.

**2441.11.**

Centring unit without adjusting washer.

**2441.11.**     .1

Centring unit with one flat side without adjusting washer.

**2441.11.**     .2

Centring unit with two flat sides without adjusting washer

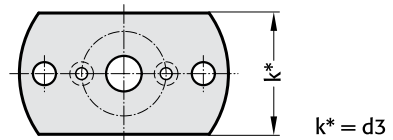
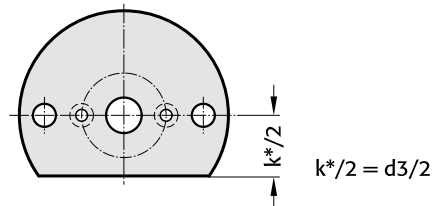
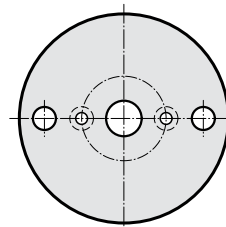
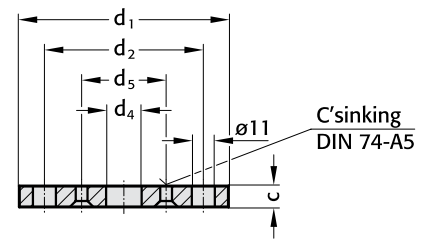
Order No	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l	l <sub>1</sub>	l <sub>2</sub>	d <sub>5</sub>
2441.11.100	100	76	58	80	40	55	40,5
120	120	96	78	90	50	65	50,5
100.1	100	76	58	80	40	55	40,5
120.1	120	96	78	90	50	65	50,5
100.2	100	76	58	80	40	55	40,5
120.2	120	96	78	90	50	65	50,5

Adjusting Washers

2441.11.3.



2441.11.3.



Material:

C45 or similar

2441.11.3.  
Adjusting washer without flat side.

2441.11.3.  .1  
Adjusting washer with one flat side.

2441.11.3.  .2  
Adjusting washer with two flat sides.

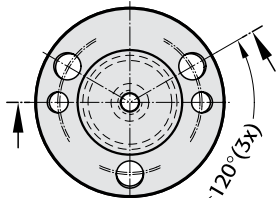
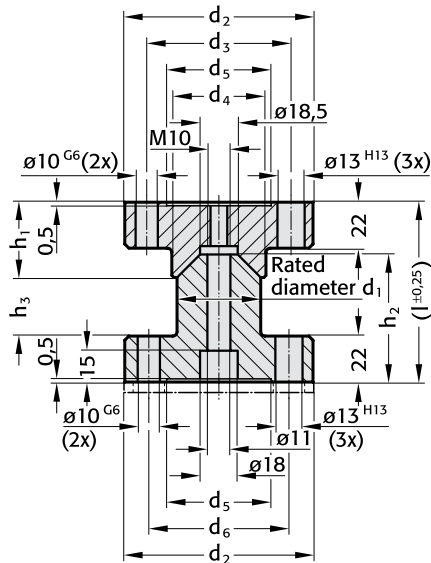
Order No	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	c	d <sub>5</sub>
2441.11.3.100	100	76	58	17	10	40,5
105	105	76	58	18	5,5	40,5
120	120	96	78	17	10	50,5
125	125	96	78	18	5,5	50,5
2441.11.3.100.1	100	76	58	17	10	40,5
120.1	120	96	78	17	10	50,5
2441.11.3.100.2	100	76	58	17	10	40,5
120.2	120	96	78	17	10	50,5

# FIBRO

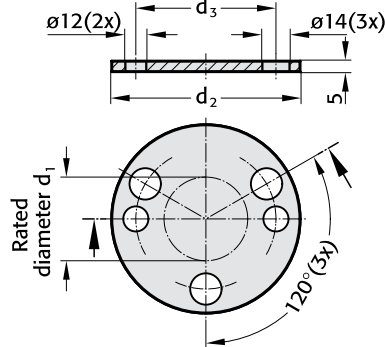
2441.13.45.  
2441.13.3.45.

## Centring Units to CNOMO Adjusting Washers to CNOMO

2441.13.45.



2441.13.3.45.



### Material:

Centring unit: X153CrMoV12 (1.2379)  
hardened 58 ± 2 HRC

Adjusting washer: Cf 70 (1.1249)

### Note:

Order No 2441.13.0.45. centring unit to CNOMO standard with adjusting washer.

Screws and pins not included.

### 2441.13.45. Centring Units

Order No	Nenn-Ød <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	d <sub>6</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	(l)
2441.13.45.040	40	90	69	45	50	67	36	61	28	(86)
060	60	110	89	65	70	89	46	61	18	(86)

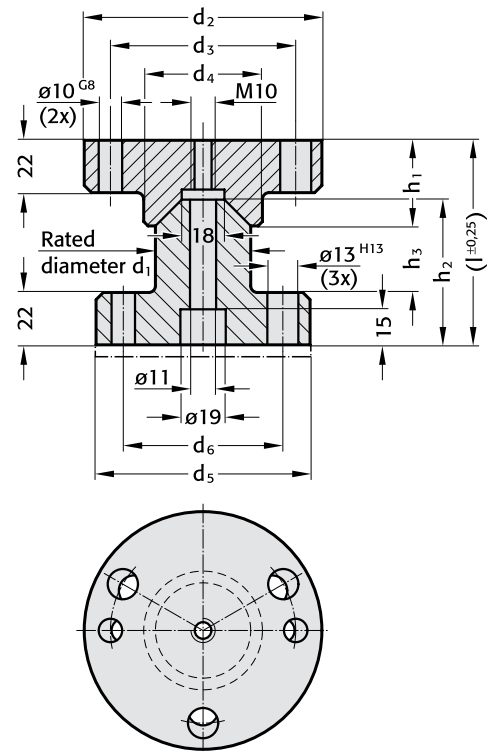
### 2441.13.3.45. Adjusting Washers

Order No	Nenn-Ød <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>
2441.13.3.45.040	40	90	67
060	60	110	89

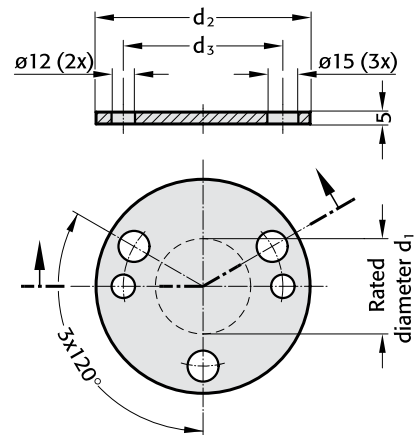
**Centring Units to CNOMO  
Adjusting Washers**



2441.13.



2441.13.3.



**Material:**

Centring unit: 16 Mn Cr 5  
nitriert  
600+50 HV 50  
Adjusting washer 100 Cr 6

**Note:**

2441.13.3. Adjusting Washer, order separately.  
Screws and pins not included.

**2441.13. Centring Units**

Order no	Nominal diameter $d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$d_6$	$h_1$	$h_2$	$h_3$	(l)
2441.13.040	40	100	79	50	90	67	36	61	28	(86)
060	60	125	104	70	110	89	46	61	18	(86)

**2441.13.3. Adjusting washers**

Order no	Nominal diameter $d_1$	$d_2$	$d_3$
2441.13.3.040	40	90	67
060	60	110	89

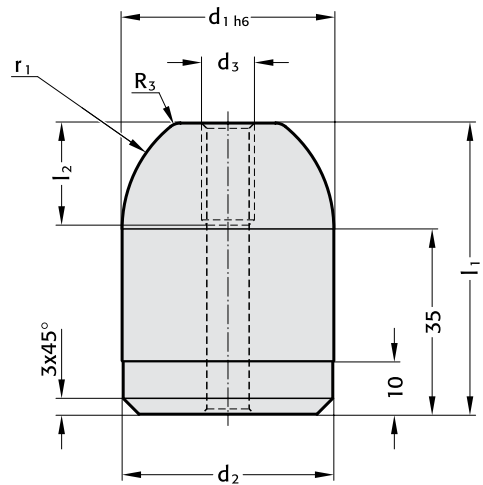
A large, empty rectangular box with rounded corners, occupying most of the page. It is intended for drawing or writing.

Centring pin to VW standard

2445.10.



2445.10.



Description:

Using locating holes components, assemblies and tools can be repeatedly centred with high precision on processing machines, measuring equipment and tool components.

Material:

Steel, hardened

Note:

Supplied without screws

Fixing:

Use DIN EN ISO 4762 socket cap screws.

M6x60

M8x70

2445.10.

Order No	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	r <sub>1</sub>
2445.10.022	22	21,95	M 8	45	16	15
032	32	31,95	M10	50	20	20
040	40	39,95	M10	55	20	25
050	50	49,95	M10	55	20	25

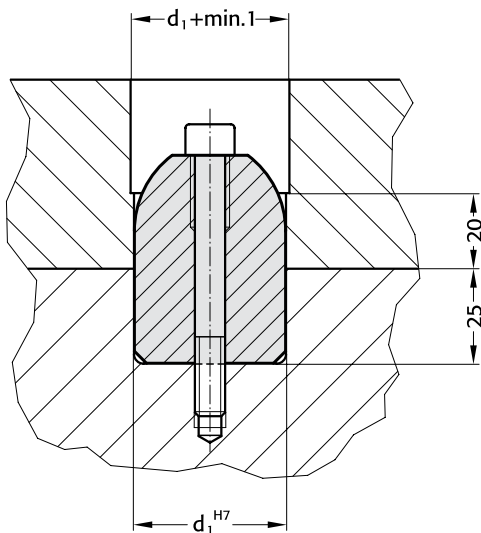
Ordering Code (example):

Centring pin to VW standard = 2445.10.

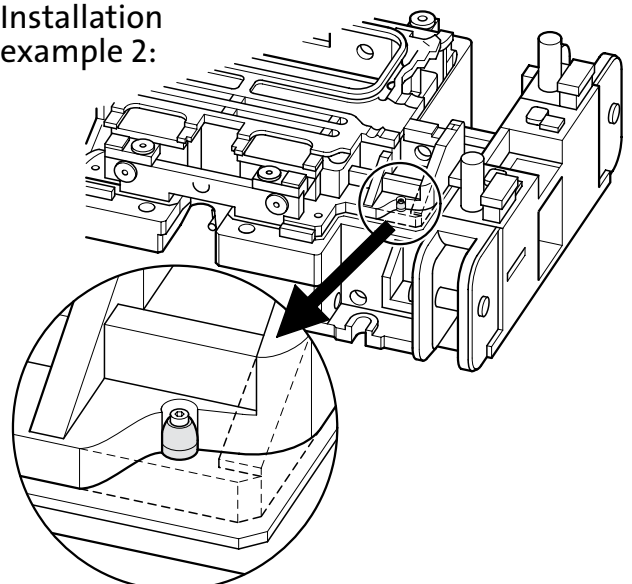
d<sub>1</sub> = 22 mm = 022

Order no = 2445.10.022

Installation example 1:

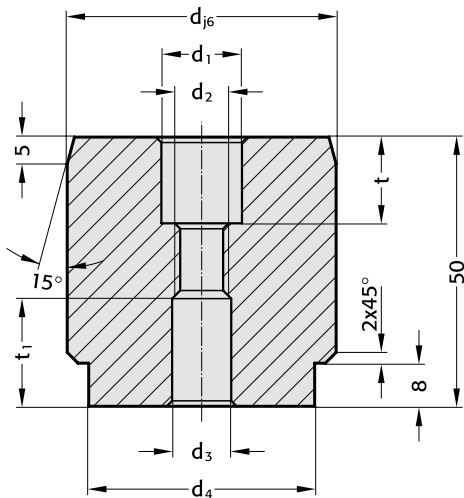


Installation example 2:





2445.11.



2445.11.

Order No	d	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	t	t <sub>1</sub>
2445.11.022	22	11	M 8	9	16	13	16
025	25	11	M 8	9	18	13	16
032	32	11	M 8	9	25	13	16
040	40	15	M10	11	32	16	20
050	50	15	M10	11	42	16	20

**Ordering Code (example):**

Centring pin to Daimler	=	2445.11.
d <sub>1</sub> = 22 mm	=	022
Order no	=	2445.11.022

**Description:**

Using locating holes components, assemblies and tools can be repeatedly centred with high precision on processing machines, measuring equipment and tool components.

**Material:**

Steel, hardened

**Note:**

Supplied without screws

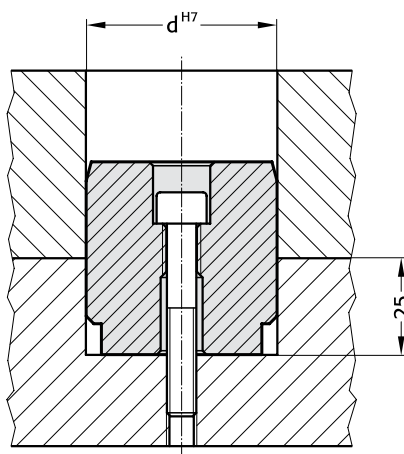
**Fixing:**

Use DIN EN ISO 4762 socket cap screws.

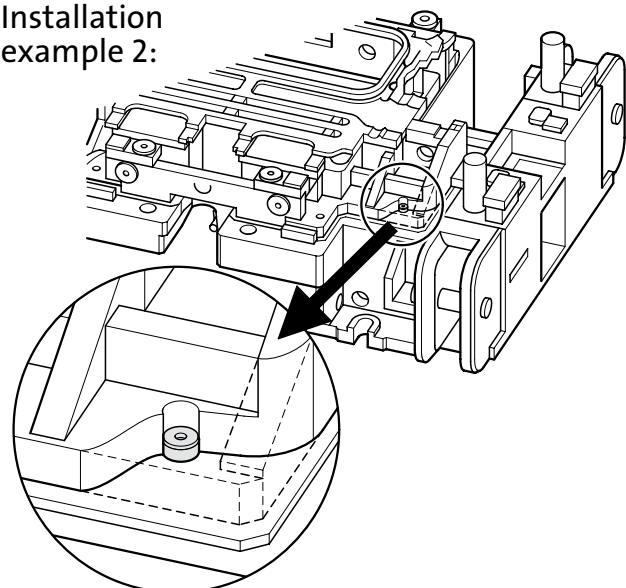
M6x50

M8x50

**Installation example 1:**



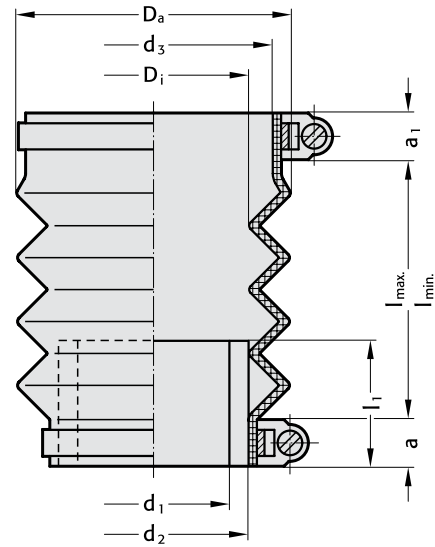
**Installation example 2:**



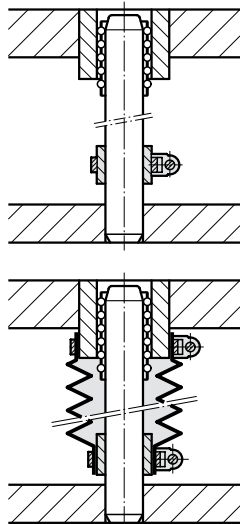
**Concertina Shrouds  
Spacer Bushes**



206.91.

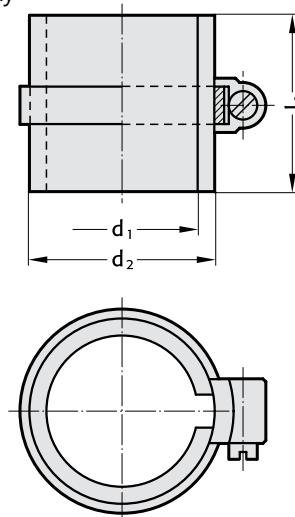


**Mounting Examples**



206.93.

Spacer Bushes only



206.91.

Concertina Shrouds for Guide Bushes 2051. and 2061.

d <sub>1</sub>	19	20	24	25	30	32	38	40	48	50	60	63
d <sub>2</sub>	25		30		40		50		60		70	
d <sub>3</sub>	32		38		48		58		68		79	
D <sub>i</sub>	30		30		46		55		62		75	
D <sub>a</sub>	51		56		72		87		86		100	
a	13		13		20		12		12		12	
a <sub>1</sub>	16		13		20		12		12		10	
l <sub>1</sub>	20		30		30		40		40		40	
l <sub>min.</sub>	30		25		20		44		25		30	
l <sub>max.</sub>	170		130		100		119		110		130	

206.93. Spacer Bushes only

d <sub>1</sub>	15	16	19	20	24	25	30	32	38	40	48	50	60	63
d <sub>2</sub>	20		25		30		40		50		60		70	
l <sub>1</sub>	20		20		30		30		40		40		40	

**Ordering Code (example):**

Spacer Bush	=	206.93.
d <sub>1</sub> = 25 mm	=	025
Order No	=	206.93.025

206.91.

Concertina Shrouds for Guide Bushes 2081.

d <sub>1</sub>	19	20	24	25	30	32	38	40	48	50	60	63
d <sub>2</sub>	25		30		40		50		60		70	
d <sub>3</sub>	40		45		54		66		80		95	
D <sub>i</sub>	32		32		45		52		62		75	
D <sub>a</sub>	54		56		63		96		84		104	
a	10		10		10		12		12		10	
a <sub>1</sub>	10		10		10		12		12		10	
l <sub>1</sub>	20		30		30		40		40		40	
l <sub>min.</sub>	37		35		35		25		45		35	
l <sub>max.</sub>	145		110		110		225		165		185	

Concertina Shrouds are supplied complete with spacer bush and two hose clamps.  
Special sizes on request.

**Ordering Code (example):**

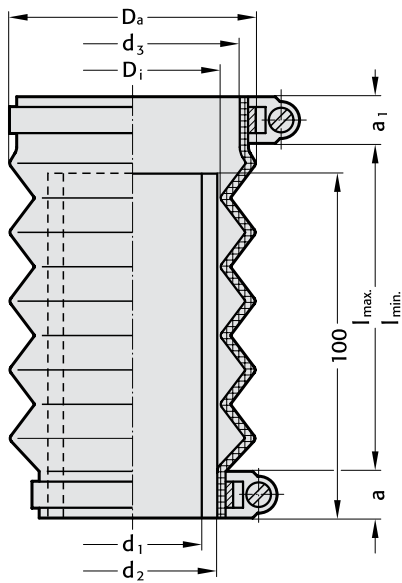
Concertina Shroud	=	206.91.
d <sub>1</sub> = 24 mm	=	024.
d <sub>3</sub> = 45 mm	=	045
Order No	=	206.91.024.045

# FIBRO

206.92.  
206.94.

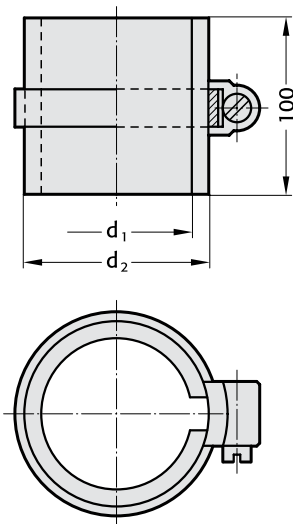
## Concertina Shrouds Spacer Tubes

206.92.

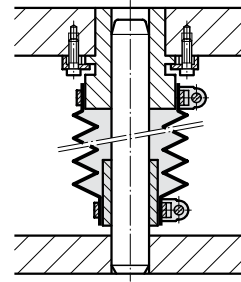


206.94.

Spacer Tubes only



### Mounting Examples



206.92.

Concertina Shrouds for Guide Bushes 2051. and 2061.

$d_1$	19	20	24	25	30	32	38	40	48	50	60	63
$d_2$	25	30	40	50	60	70						
$d_3$	32	38	48	58	68	79						
$D_i$	30	30	46	55	62	75						
$D_a$	51	56	72	87	86	100						
$a$	13	13	20	12	12	12						
$a_1$	16	13	20	12	12	10						
$l_{min.}$	30	25	20	44	25	30						
$l_{max.}$	170	130	100	119	110	130						

206.92.

Concertina Shrouds for Guide Bushes 2081.

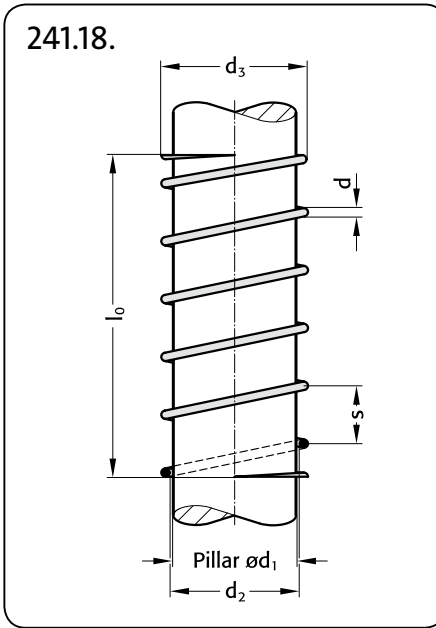
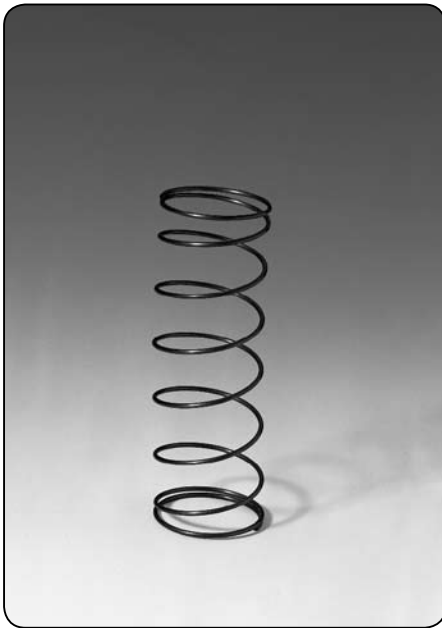
$d_1$	19	20	24	25	30	32	38	40	48	50	60	63
$d_2$	25	30	40	50	60	70						
$d_3$	40	45	54	66	80	95						
$D_i$	32	32	45	52	62	75						
$D_a$	54	56	63	96	84	104						
$a$	10	10	10	12	12	10						
$a_1$	10	10	10	12	12	10						
$l_{min.}$	37	35	35	25	45	35						
$l_{max.}$	145	110	110	225	165	185						

Concertina Shrouds are supplied complete with spacer tube and two hose clamps.  
Special sizes on request.

### Ordering Code (example):

Concertina Shroud	=	206.92.
$d_1 = 24$ mm	=	024.
$d_3 = 38$ mm	=	038
Order No	=	206.92.024.045

**Helical Springs for  
Ball Cage Retention**



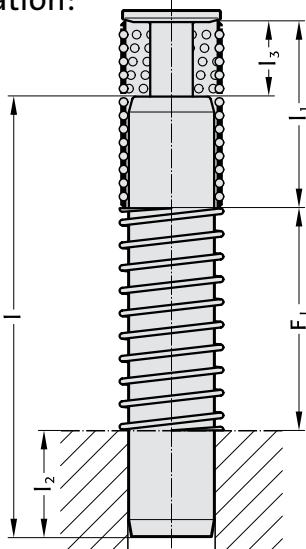
**241.18.**

Pillar-Ød <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	s	d	l <sub>0</sub> (10 mm gradation)
19/20	20,5	22,5	14	1,0	40-140
24/25	25,5	27,9	14	1,2	40-180
30/32	32,5	35,7	16	1,6	50-230
38	38,5	42,5	18	2,0	60-230
40	40,5	45,1	20	2,3	60-230
48/50	50,5	55,7	20	2,6	70-280
60	60,5	66,9	20	3,2	80-250
63	63,5	69,9	20	3,2	80-250

**Ordering Code (example):**

Helical Spring	=	241.18.
Internal spring Ød <sub>2</sub> = 20,5 mm	=	205.
l <sub>0</sub> = 60 mm	=	060
Order No	=	241.18.205.060

**Calculation:**



Formula for selecting spring 241.18.:

$$F_L = [1 - (l_2 + (l_1 - l_3))] \times 1,1$$

Formula for calculating the block length L<sub>BL</sub> of the selected spring:

$$L_{BL} = \frac{l_0 \times d}{s} + 2 \times d$$

F<sub>L</sub> = Length of compressed spring

l = Length of guide column

(Customer specified)

l<sub>1</sub> = Cage length

(Customer specified)

l<sub>2</sub> = Compression length of guide column

(Customer specified)

l<sub>3</sub> = Ball cage retainer size

(Customer specified)

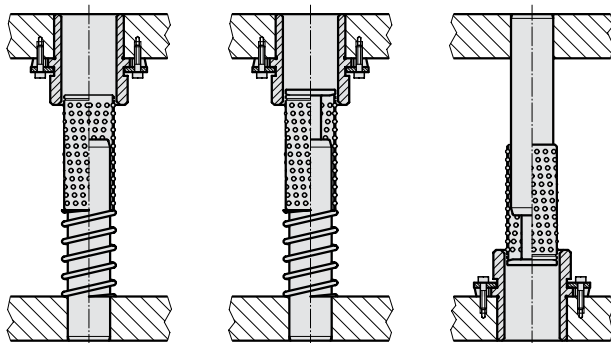
1.1 = Safety factor

l<sub>0</sub> = Length of uncompressed spring

d = Spring wire diameter

s = Pitch

**Mounting examples:**

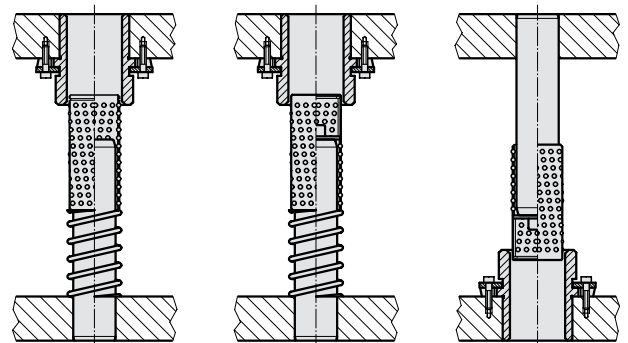


Without ball cage retainer

With ball cage retainer  
202.91.

With ball cage retainer  
202.91.

**Mounting examples:**



Without ball cage retainer

With ball cage retainer  
202.92.1.

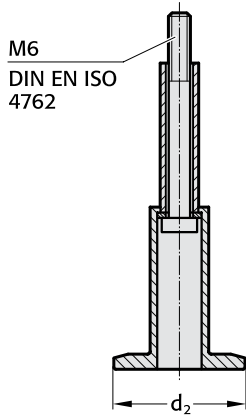
With ball cage retainer  
202.92.1.

# FIBRO

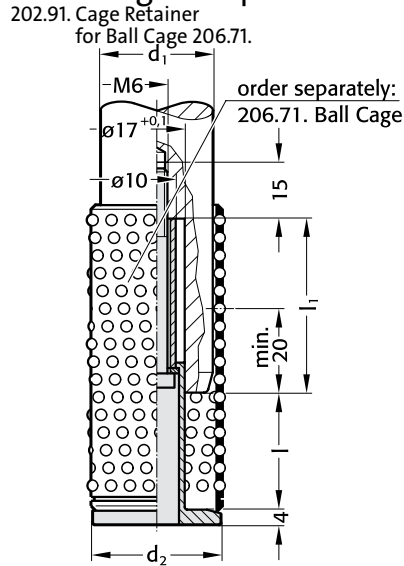
202.91.  
202.92.1.

Cage Retainer for Ball Cage 206.71.  
Cage Retainer for Ball Cage 206.75.

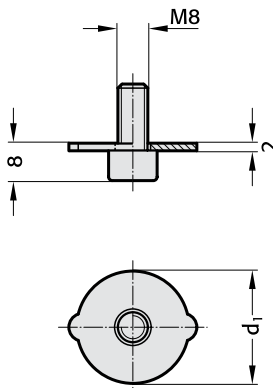
## 202.91. Cage Retainer



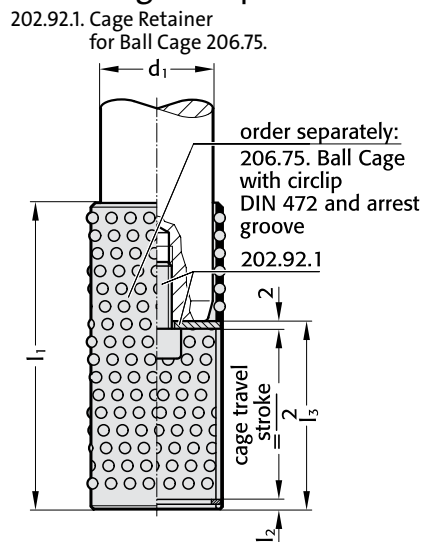
## Mounting Example



## 202.92.1. Cage Retainer



## Mounting Example



## 202.91. Cage Retainer for Ball Cage 206.71.

Cage Retainer	$d_1$	38 40	48 50	60	63
	$d_2$	44	54	64	67
Size	$l_1$				
1	31 46	●	●	●	●
2	41 56	●	●	●	●
3	51 66	●	●	●	●
4	61 76	●	●	●	●
5	73 89	●	●	●	●

The following guide pillars can be equipped with this cage retainer:

Guide pillars without cage retainer	become guide pillars with cage retainer
202.19.	202.17.
202.21.	202.55.
2021.46.	2021.44.
2021.50.	2021.58.

## 202.92.1. Cage Retainer for Ball Cage 206.75.

$d_1$	$l_1$	$l_2$	$l_3$	$d_1$	$l_1$	$l_2$	$l_3$
19/20	56	2,6	31	38/40	80	3,5	51
	72		41		95		61
	80		51		105		61
24/25	56	2,6	31		120		73
	72		41	48/50	80	4,3	51
	80		51		95		61
30/32	70	2,6	41		120		73
	80		51	60/63	95	4,3	61
	95		61		120		73
	105		61		140		83

The following guide pillars can be equipped with this cage retainer:

202.22.	2021.46.
23.	
24.	

## Ordering Code (example):

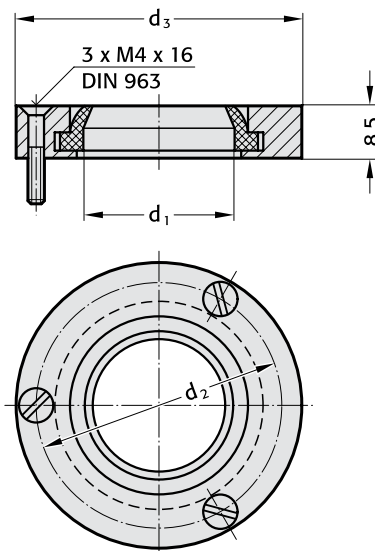
Cage Retainer	= 202.91.
Pillar $\phi d_1 = 40$ mm	= 040.
Size 3	= 3
Order No	= 202.91.040.3
Guide pillar and ball cage to be ordered separately.	

Cage Retainer	= 202.92.1.
Pillar $\phi d_1 = 40$ mm	= 040
Order No	= 202.92.1.040
Guide pillar and ball cage to be ordered separately.	

# Pillar Wipers



206.95.  
2061.95.



## Description:

FIBRO Pillar Wipers protect against premature wear caused by the ingress of dirt into the die set guides.

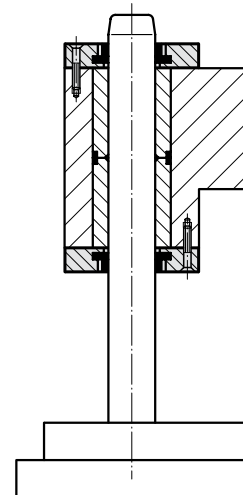
Outside diameters match boss dias. on FIBRO Die Sets (Cast Iron).

They can be fitted onto the bolster, or into a counterbore – flush with the bolster surface.

## Note:

Pillar Wipers come complete with 3 countersunk head screws M 4 × 16 DIN 963.

## Mounting Example:



### 206.95.

d <sub>1</sub>	24 25	30 32	38 40	48 50	60 63
d <sub>2</sub>	45	55	65	78	92
d <sub>3</sub>	55	65	75	94	110

### 2061.95.

d <sub>1</sub>	24 25
d <sub>2</sub>	50
d <sub>3</sub>	60

## Ordering Code (example):

Pillar Wiper	=	206.95.
d <sub>1</sub> = 25 mm	=	025
Order No	=	206.95.025

## Ordering Code (example):

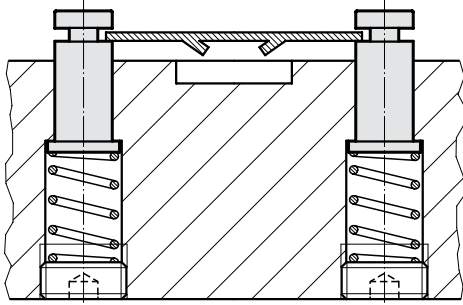
Pillar Wiper	=	2061.95.
d <sub>1</sub> = 25 mm	=	025
Order No	=	2061.95.025

# FIBRO

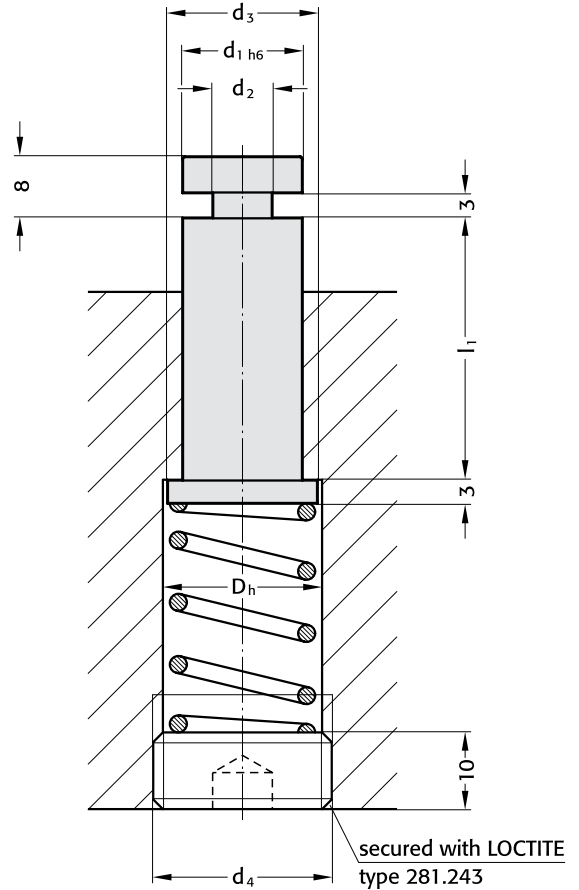
244.00.2.

## Lifter Pins for Press Tool Strips

### Mounting Example:



244.00.2.



### Description:

Combination progression dies with certain forming stages can be equipped advantageously with springloaded lifter pins. FIBRO Lifter Pins 244.00.2., available in four sizes, can be used to assume the double function of lifting and guiding the strip. The amount of lift is a function of the counterbore-depth.

### Execution:

Case-hardened and ground.

Material: No 1.7131

For ordering code of screw plugs see page F 73.

For ordering code of helical spring see spring range, pages F 10–F 49.

244.00.2.

$d_{1h6}$	8	10	13	16
$d_2$	5	6	7	8
$d_3$	10	12	16	20
$D_h$	10,5	12,5	16,5	20,5
$d_4$	M 12 x 1,5	M 14 x 1,5	M 18 x 1,5	M 22 x 1,5
$l_1$				
20	●			
25	●	●	●	
32	●	●	●	●
40	●	●	●	●
50		●	●	●

### Ordering Code (example):

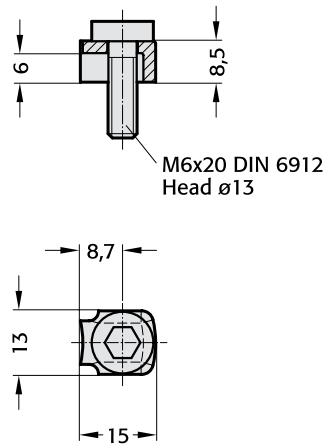
Lifter Pin = 244.00.2.  
 $d_1 = 8 \text{ mm} = 08$ .  
 $l_1 = 32 \text{ mm} = 032$   
 Order No = 244.00.2.08.032

**Screw Clamps  
for guide elements**

**207.45 2072.45.  
2072.46**



**207.45**



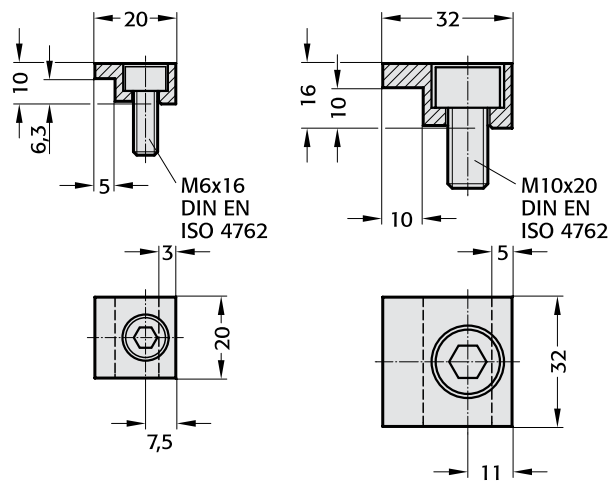
**207.45  
Screw Clamp**

- incl. screw
- steel punched bent component
- clamping height 6-6,3 mm
- M6 screw



**2072.45.10**

**2072.45.16**

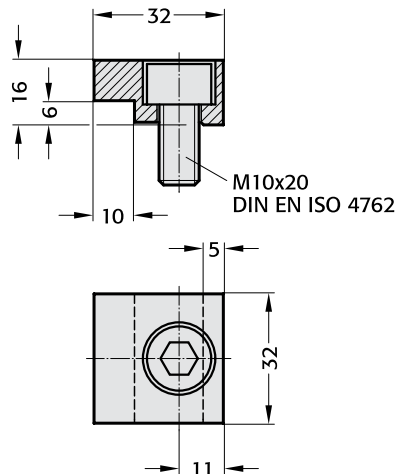


**2072.45.  
Screw Clamps**

- incl. screw
- 2072.45.10
- steel, milled
- clamping height 6-6,3 mm
- M6 screw
- 2072.45.16
- steel, milled
- clamping height 10 mm
- M10 screw



**2072.46**



**2072.46  
Screw Clamp**

- incl. screw
- steel, milled
- clamping height 6-6,3 mm
- M10 screw



# FIBRO

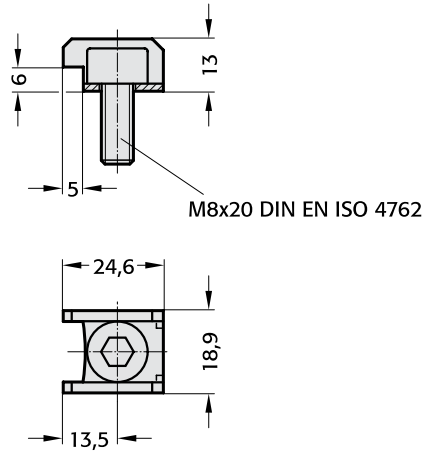
2071.45  
2072.47

## Screw Clamps for guide elements

### 2072.47 Screw Clamp

- incl. screw, NAAMS
- steel punched bent component
- clamping height 6-6,3 mm
- M8 screw

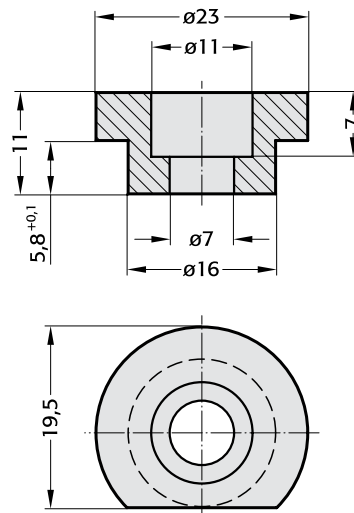
2072.47



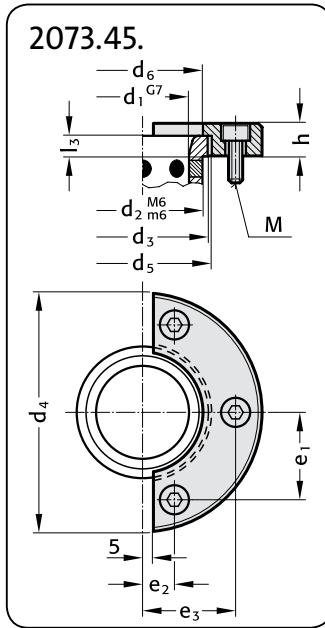
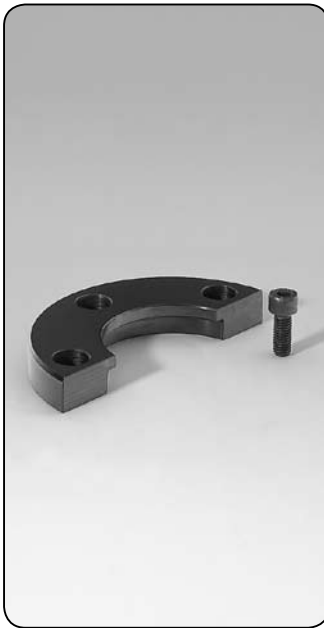
### 2071.45 Screw Clamp

- incl. screw
- clamping height 6 mm
- M6 screw

2071.45



**Securing flanges to CNOMO  
Screw Clamps to CNOMO**



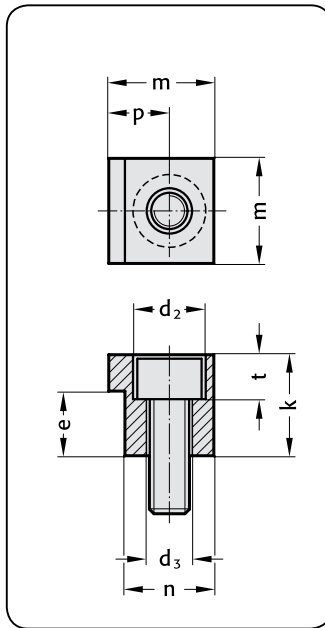
**2073.45. Securing flanges, incl. screws**

- steel, turned
- clamping height 4, 5, 6, 8, 10, 12, 16, 20 mm
- screws M6, M8, M10, M12

Order No

2073.45

	.020	.025	.032	.040	.050	.063	.080	.100
d <sub>1</sub>	20	25	32	40	50	63	80	100
d <sub>2</sub>	28	35	44	52	63	80	100	125
d <sub>3</sub>	32	40	50	60	71	90	112	140
d <sub>4</sub>	63	72	80	100	125	140	180	200
d <sub>5</sub>	33	41	51	61	72	91	113	141
d <sub>6</sub>	25	32	40	50	63	80	100	125
h	10	10	12	12	16	20	25	32
l <sub>3</sub>	4	5	6	8	10	12	16	20
e <sub>1</sub>	16	20	25	38,5	46	55	70	81
e <sub>2</sub>	18	20	21	14	17	17	20	25
e <sub>3</sub>	-	-	-	41	49	57,5	72	85
M	6×16	6×16	6×16	6×16	8×20	10×25	12×30	12×30



**2072.48.45. Screw Clamps, CNOMO**

incl. screw DIN EN ISO 4762

- steel, milled
- clamping height 8, 10, 12, 16, 20 mm
- screw M6, M8, M10

Order No	k	e	d <sub>2</sub>	d <sub>3</sub>	t	m	p	n	d <sub>1</sub> *	M
2072.48.45.12	12	8	11	6.6	6.8	18	9.5	15.5	40	6×16
2072.48.45.16	16	10	15	9	9	22	12	19	50	8×20
2072.48.45.20	20	12	18	11	11	26	15	21	63	10×25
2072.48.45.25	25	16	18	11	11	26	15	21	80	10×30
2072.48.45.32	32	20	18	11	11	26	15	21	100	10×35

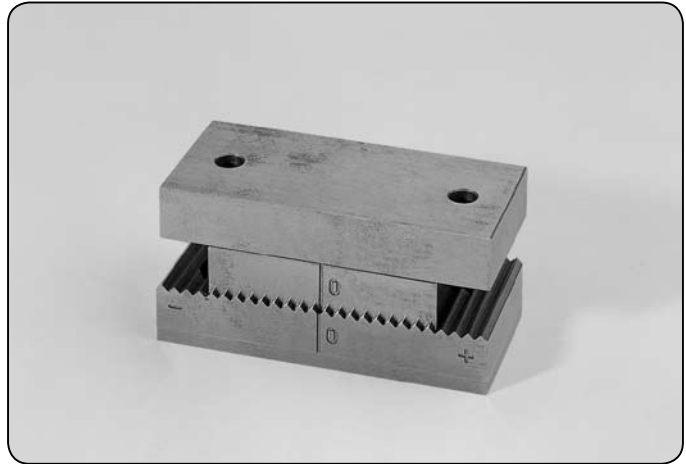
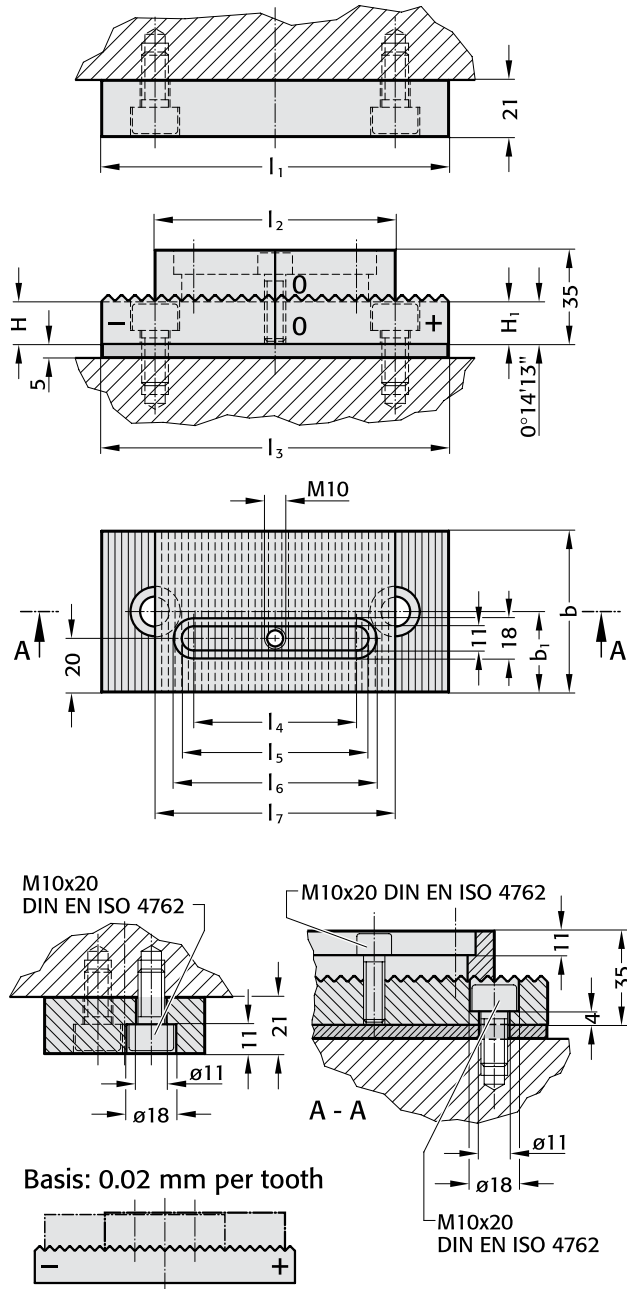
\*d<sub>1</sub> = ∅ Guide Bush

# FIBRO

2444.12  
2444.13

## Spacer Plates, toothed with adjusting plate to BMW standard

2444.12 / 2444.13



### Material:

Spacer Plates: X 210 Cr 12 (1.2080), hardened 58+2 HRC  
Adjusting plate: X 153 CrMoV 12 (1.2379)

### Description:

For spacing out sheet metal retainers in tools for external skin parts

### Note:

Supplied without screws

„0“ = basic setting in the middle (grinding-in)  
„+“ = adjustment to the right - plus  
„-“ = adjustment to the left - minus

### NB: Hole pattern

The bolsters are reversible.

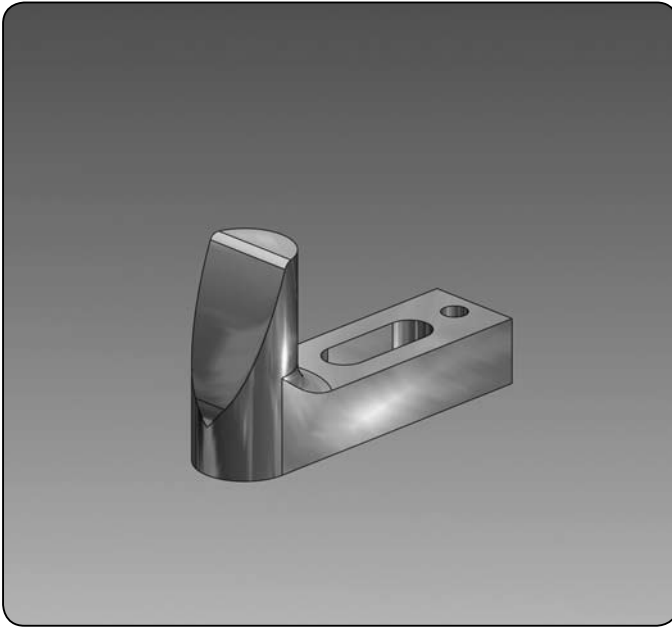
### Adjustment range:

2444.12  
12 increments each of 0.02 mm means an adjusting range of 0.24 mm with a minimum support area of 80 x 60 mm.

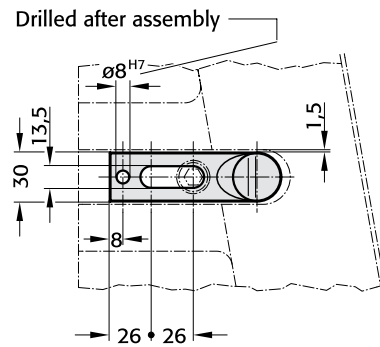
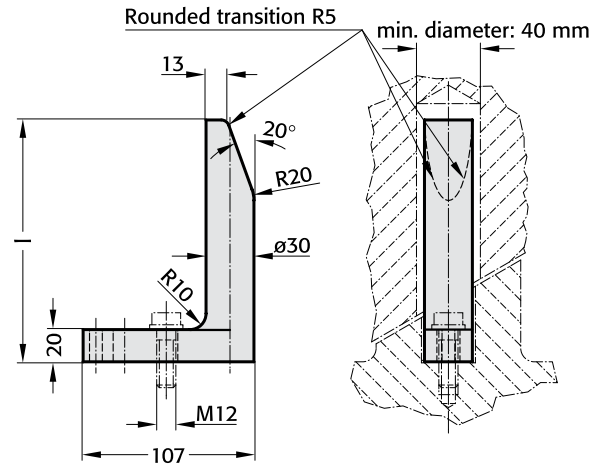
2444.13  
14 increments each of 0.02 mm means an adjusting range of 0.28 mm with a minimum support area of 100 x 80 mm.

2444.12/2444.13

	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$	$l_6$	$l_7$	$b$	$b_1$	$H$	$H_1$
2444.12	130	90	130	61	72	79	90	60	30	15,5	16,04
2444.13	160	110	160	71	82	89	120	80	40	15,5	16,16



2443.10.



2443.10.

Order No	l
2443.10.065	65
090	90
120	120
150	150
180	180
250	250

Ordering Code (example):

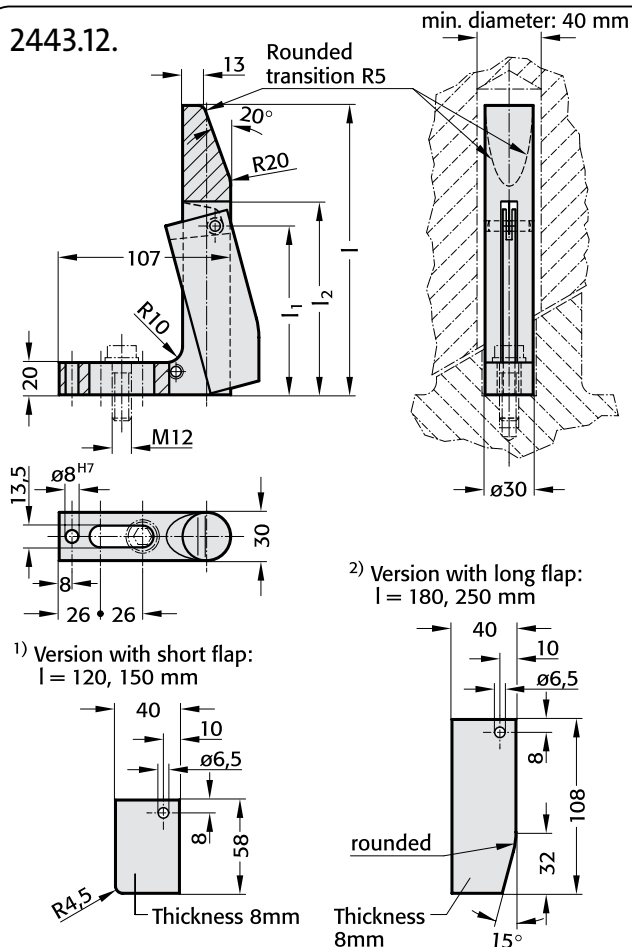
Guide	=	2443.10.
l = 120 mm	=	120
Order No	=	2443.10.120

# FIBRO

2443.12.

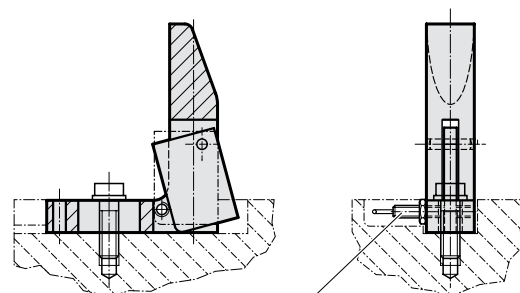
## Guide with part position control and spring

2443.12.



### Installation example:

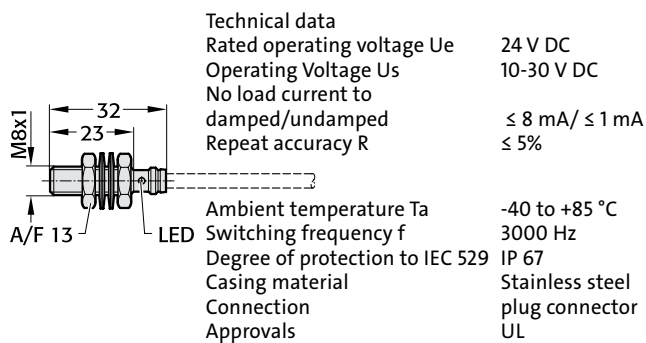
Plate guide for large tools



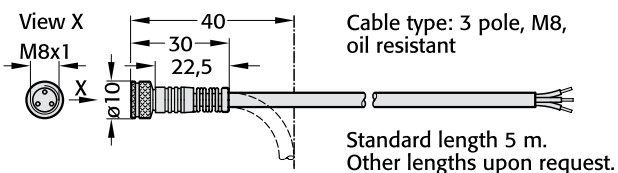
Order separately:

- 2018.00.60.08.032 Inductive proximity switch
- 2018.00.60.23.01.5 Cable - straight
- 2018.00.60.23.02.5 Cable, 90° connector

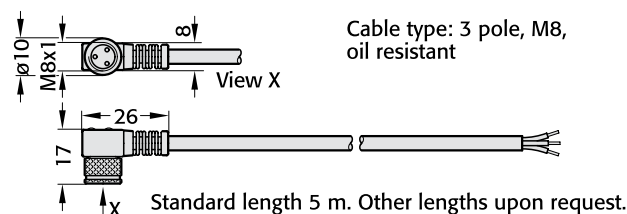
2018.00.60.08.032 inductive proximity switch



2018.00.60.23.01.5 Cable – straight



2018.00.60.23.02.5 Cable, 90° connector



2443.12.

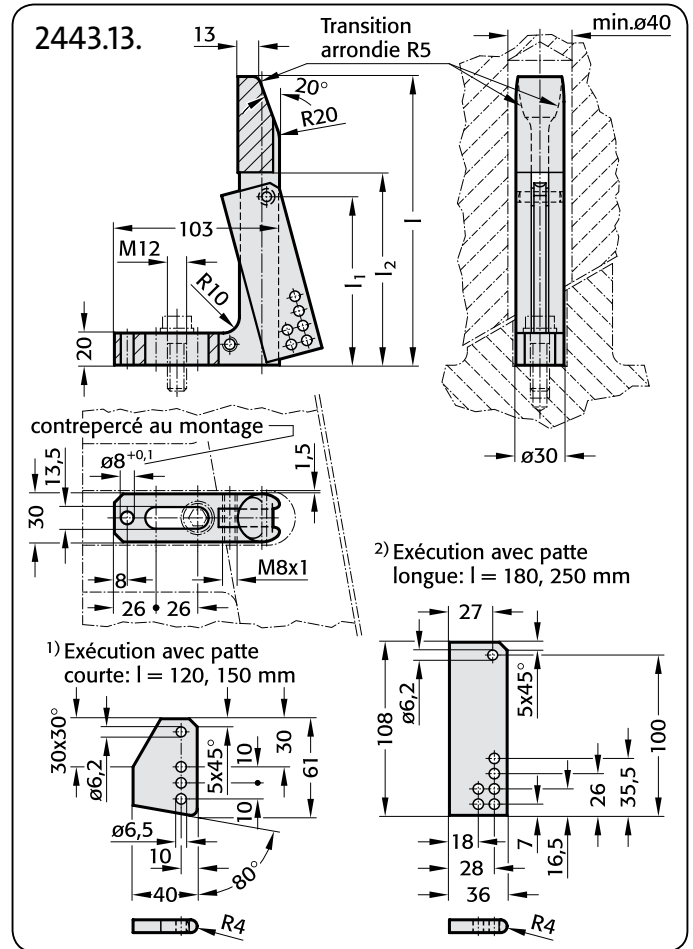
Order No	l	l <sub>1</sub>	l <sub>2</sub>
2443.12.120	120 <sup>1)</sup>	55	70
150	150 <sup>1)</sup>	55	70
180	180 <sup>2)</sup>	105	120
250	250 <sup>2)</sup>	105	120

### Ordering Code (example):

Guide with part position control	= 2443.12.
l = 120 mm	= 120
Order No	= 2443.12.120

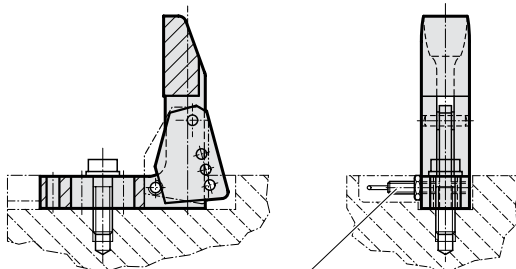
Guide with part position control to VDI

2443.13.



Installation example:

Plate guide for large tools



Order separately:  
 2018.00.60.08.032 Inductive proximity switch  
 2018.00.60.23.01.5 Cable - straight  
 2018.00.60.23.02.5 Cable, 90° connector

2443.13.

Order No	l	l <sub>1</sub>	l <sub>2</sub>
2443.13.120	120 <sup>1)</sup>	55	70
150	150 <sup>1)</sup>	55	70
180	180 <sup>2)</sup>	105	120
250	250 <sup>2)</sup>	105	120

Ordering Code (example):

Guide with part position control	= 2443.13.
l = 120 mm	= 120
Order No	= 2443.13.120

2018.00.60.08.032 inductive proximity switch

Technical data

Rated operating voltage U <sub>e</sub>	24 V DC
Operating Voltage U <sub>s</sub>	10-30 V DC
No load current to damped/undamped	≤ 8 mA / ≤ 1 mA
Repeat accuracy R	≤ 5%

Ambient temperature T<sub>a</sub> -40 to +85 °C  
 Switching frequency f 3000 Hz  
 Degree of protection to IEC 529 IP 67  
 Casing material Stainless steel  
 Connection plug connector  
 Approvals UL

2018.00.60.23.01.5 Cable-straight

Cable type: 3 pole, M8, oil resistant

Standard length 5 m. Other lengths upon request.

2018.00.60.23.02.5 Cable, 90° connector

Cable type: 3 pole, M8, oil resistant

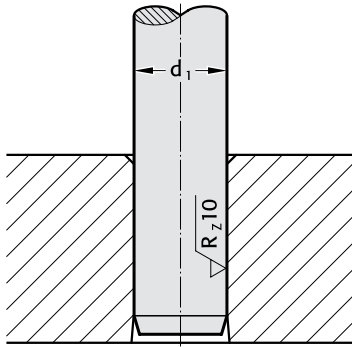
Standard length 5 m. Other lengths upon request.

A large, empty rectangular box with rounded corners, occupying most of the page. It is intended for drawing or writing.

# Assembly of Guide Elements – Dimensional Requirements and Tolerances

## Guide Pillars DIN 9825

(Press fit)



202.19.

22.

23.

24.

202.19./22./23./24.

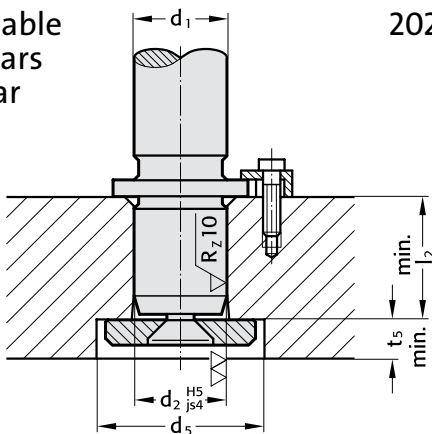
Pillar $\varnothing$ $d_1$	Pillar $\varnothing$ $d_1^*$	Retaining Bore $d_1$
3	30/32	in grey castiron: $d_1$ -0,025
4	38/40	-0,035
5	48/50	in steel: $d_1$ -0,015
6	60/63	-0,025
8	80	recommended values
10		based on experiences
11/12		
15/16		
19/20		
24/25		

pillars of  $d_1 = 50$  mm and larger are best fitted subsequent to subzero cooling in dry ice.

## Demountable Guide Pillars with Collar

DIN 9825

(Slip fit)



2021.46.

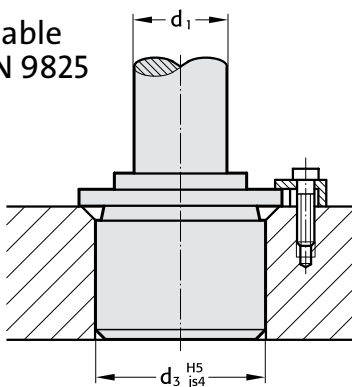
2021.46.

Pillar $\varnothing$ $d_1$	Retaining Bore $d_2^{H5}$	$d_5^{+1}$	$l_2$	$t_s$
15/16	15/16 <sup>+0,008</sup>	24	20,5	6,5
19/20	19/20 <sup>+0,009</sup>	27	23,5	
24/25	24/25 <sup>+0,009</sup>	34	30,5	
30/32	30/32 <sup>+0,011</sup>	42	37,5	
38/40	38/40 <sup>+0,011</sup>	52	37,5	
48/50	48/50 <sup>+0,013</sup>	62	47,5	
60/63	60/63 <sup>+0,013</sup>	72	47,5	
80	80 <sup>+0,013</sup>	95	60,5	12,5

for best results and higher accuracy it is recommended to use the actual pillar journal for final gauging/sizing of retaining bores!

## Liner Bushes for Demountable Pillars DIN 9825

(Slip fit)



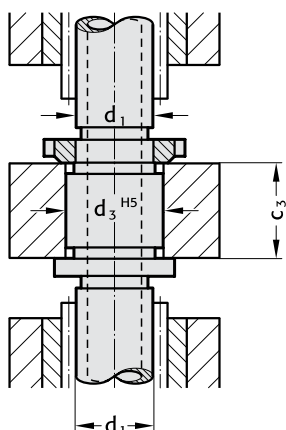
2021.39.

2021.39.

Pillar $\varnothing$ $d_1$	Retaining Bore $d_3^{H5}$
19/20	32 <sup>+0,011</sup>
24/25	40 <sup>+0,011</sup>
30/32	48 <sup>+0,011</sup>
38/40	58 <sup>+0,013</sup>
48/50	70 <sup>+0,013</sup>
60/63	85 <sup>+0,015</sup>

for best results and higher accuracy it is recommended to use the actual bush journal for final gauging/sizing of retaining bores!

## Stripper Mounted Pillars with Collar



202.60.

202.60.

Pillar $\varnothing$ $d_1$	Retaining Bore $d_3^{H5}$	Thickness of Stripper $c_3^{-1}$
19	25 <sup>+0,009</sup>	33
25	30 <sup>+0,009</sup>	33
32	36 <sup>+0,011</sup>	38
40	46 <sup>+0,011</sup>	38

for best results and higher accuracy it is recommended to use the actual pillar journal for final gauging/sizing of retaining bores!

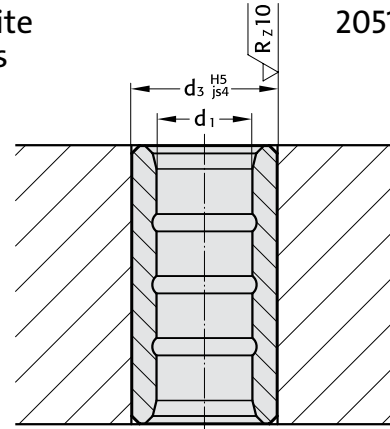


**2051.32.**

Pillar $\varnothing$ $d_1$	Retaining Bore $d_3^{H5}$
8	13,7 <sup>+0,008</sup>
11/12	22 <sup>+0,009</sup>
15/16	28 <sup>+0,009</sup>
19/20	32 <sup>+0,011</sup>
24/25	40 <sup>+0,011</sup>
30/32	48 <sup>+0,011</sup>
38/40	58 <sup>+0,013</sup>
48/50	70 <sup>+0,013</sup>
60/63	85 <sup>+0,015</sup>
80	95,7 <sup>+0,015</sup>

**Sintered Ferrite  
Guide Bushes**

slip-fit bonding\*



**2051.32.**

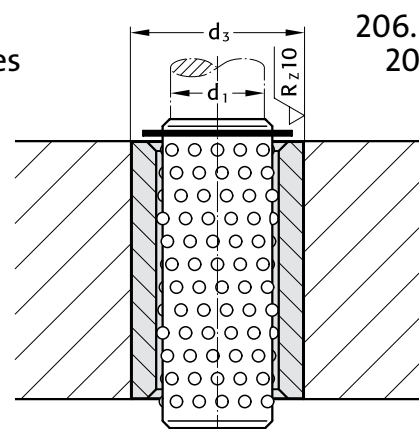
**206.54.**

**2061.**

Pillar $\varnothing$ $d_1$	Retaining Bore $d_3^{H6}$	Pillar $\varnothing$ $d_1$	Retaining Bore $d_3^{H5}$
3	7 <sup>+0,009</sup>	8	18 <sup>+0,008</sup>
4	8 <sup>+0,009</sup>	10	22 <sup>+0,009</sup>
5	10 <sup>+0,009</sup>	11/12	22 <sup>+0,009</sup>
6	11 <sup>+0,011</sup>	15/16	28 <sup>+0,009</sup>
8	14 <sup>+0,011</sup>	19/20	32 <sup>+0,011</sup>
		24/25	40 <sup>+0,011</sup>
		30/32	48 <sup>+0,011</sup>
		38/40	58 <sup>+0,013</sup>
		48/50	70 <sup>+0,013</sup>
		60/63	85 <sup>+0,015</sup>
		80	105 <sup>+0,015</sup>

**Ball Bearing  
Guide Bushes  
for push fit**

slip-fit bonding\*



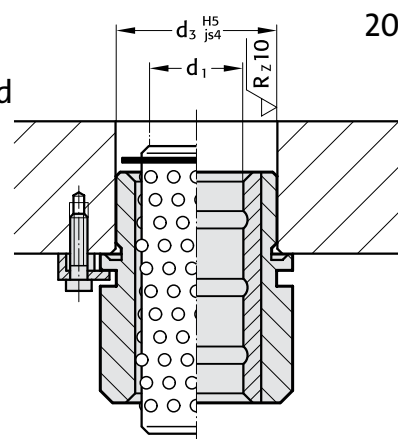
**206.54.  
2061.**

**2081.**

Pillar $\varnothing$ $d_1$	Retaining Bore $d_3^{H5}$
19/20	32 <sup>+0,011</sup>
24/25	40 <sup>+0,011</sup>
30/32	48 <sup>+0,011</sup>
38/40	58 <sup>+0,013</sup>
48/50	70 <sup>+0,013</sup>
60/63	85 <sup>+0,015</sup>

**Guide bushes  
Headed  
(Carbonitrided  
or bronze-  
coated  
sintered  
types or  
ball bearing  
type)**

(Slip fit)



**2081.**

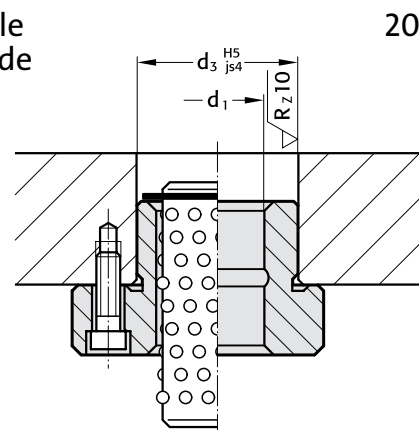
for best results and higher accuracy it is recommended to use the actual bush journal for final gauging/sizing of retaining bores!

**2091.**

Pillar $\varnothing$ $d_1$	Retaining Bore $d_3^{H5}$
12	26 <sup>+0,009</sup>
15/16	28 <sup>+0,009</sup>
19/20	32 <sup>+0,011</sup>
24/25	40 <sup>+0,011</sup>
30/32	48 <sup>+0,011</sup>
38/40	58 <sup>+0,013</sup>
48/50	70 <sup>+0,013</sup>
60/63	85 <sup>+0,015</sup>
80	105 <sup>+0,015</sup>

**Demountable  
Flanged Guide  
Bushes (Ball  
Bearing  
Types and  
Sintered  
Ferrite  
Types)**

(Slip fit)



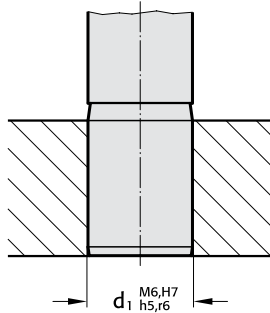
**2091.**

for best results and higher accuracy it is recommended to use the actual bush journal for final gauging/sizing of retaining bores!

# Assembly of Guide Elements – Dimensional Requirements and Tolerances

Guide Pillars  
DIN 9833/ISO 9182-3  
AFNOR  
WDX

2022.19.  
2022.25.  
2022.29.



$h_5$  = Transition fit  
 $r_6$  = Press fit

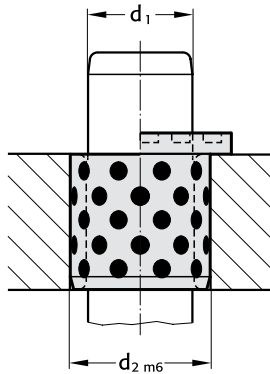
2022.19./2022.25./2022.29.

pillar $\varnothing$ $d_{1, h5, r6}$	bore $d_1^{H7}$	bore $d_1^{M6}$
25	+0,021 0	-0,004 -0,017
32	+0,025 0	-0,004 -0,020
40	0	-0,004 -0,020
50	0	-0,005 -0,024
63	+0,03 0	-0,005 -0,024
80	+0,035 0	-0,006 -0,028
100	+0,040 0	-0,006 -0,028
125	0	-0,006 -0,028
160	0	-0,006 -0,028

pillars of  $d_1 = 50$  and over should be frozen in dry ice before fitting.

Guide Bushes/  
Guide Bushes  
with collar  
Bronze with  
non-liquid  
lubricant

2052.70.  
2086.70.  
2085.72.



Slip-fit bonding\*:  
bore  $d_2 = G 7$   
Transition fit:  
bore  $d_2 = H 7$

2052.70./2086.70/2085.72

pillar $\varnothing$ $d_1$	bore $d_2$	LOCTITE bonding: limits $d_2^{G7}$	Transition fit limits $d_2^{H7}$
8	12	+0,024	+0,018
10	14/15	+0,006	0
12	18		
13	19		
14	20		
15	21	+0,028	+0,021
16	22	+0,007	0
18	24		
20	28/30		
25	33/35		
28	38		
30	38/40		
31,5	40	+0,034	+0,025
32	42	+0,009	0
35	44/45		
38	48		
40	50		
40	55		
45	55/56/60		
50	60/62/65		
55	70	+0,04	+0,03
60	74/75	+0,01	0
63	75		
65	80		
70	85/90		
75	90/95		
80	96/100	+0,047	+0,035
85	100	+0,012	0
90	110		
100	120		
110	130		
120	140		
125	145		
130	150	+0,054	+0,04
140	160	+0,014	0
150	170		
160	180		

## \*Slip-Fit Bonding:

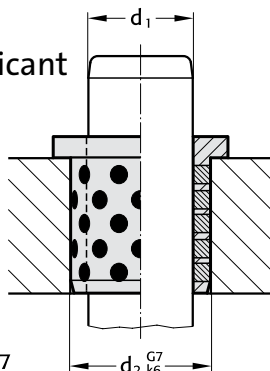
The glue-line gap must not be smaller than 0,005 mm, or the adhesive will be wiped off the contact surfaces upon fitment. This would result in an unreliable bond.

The available component tolerances do not always result in the minimum glue-line gap.

This fact has to be born in mind when machining receiving bores, or alternatively corrections can be made on the assembly bench.

Guide Bushes  
with collar  
Bronze with  
non-liquid  
lubricant

2085.70.



Receiving bore  $d_2 = G 7$

2085.70.

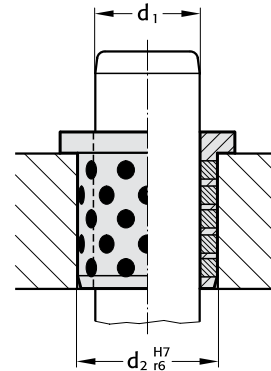
pillar $\varnothing$ $d_1$	bore $d_2^{G7}$	limits $d_2^{G7}$
12	16	+0,024 +0,006
16	20	+0,028
20	26	+0,007
24	30	

**2085.71.**

pillar $\varnothing$ $d_1$	bore $d_2$	limits $d_2^{H7}$	pillar $\varnothing$ $d_1$	bore $d_2$	limits $d_2^{H7}$
10	14	+0,018	45	55	
12	18	0	50	60	
13	19		55	65	+0,03
14	20		60	75	0
15	21	+0,021	63	75	
16	22	+0	70	85	
20	30		75	90	
25	35		80	100	+0,035
30	40		90	110	0
31,5	40	+0,025	100	120	
35	45	+0			
40	50		120	140	+0,04
					0

**Guide Bushes  
with collar  
Bronze with  
non-liquid  
lubricant**

**2085.71.**



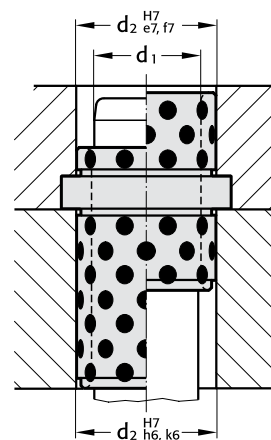
Press fit

**2087.70./2087.71./2087.73.**

pillar $\varnothing$ $d_1$	bore $d_2^{H7}$	limits $d_2^{H7}$
9/10	14	+0,018 +0
14/15	20	
18/20	26	+0,021 +0
22/24	30	
30/32	42	+0,025 +0
40/42	54	+0,03 0

**Guide Bushes  
with centre  
collar/  
Guide Bushes  
with collar  
Bronze with  
non-liquid  
lubricant**

**2087.70.  
2087.71.  
2087.73.**



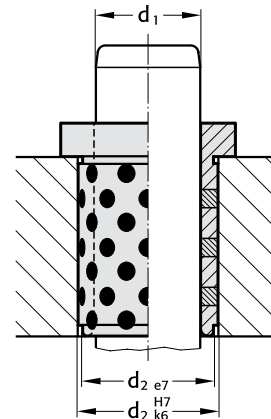
h6 = Slip fit  
k6 = Transition fit

**2087.72.**

pillar $\varnothing$ $d_1$	bore $d_2^{H7}$	limits $d_2^{H7}$
9/10	14	+0,018 0
12	18	
14/15	20	
16	22	+0,021 0
18/20	26	
22/24	30	
25	32	
30/32	42	+0,025 0
40/42	54	+0,030 0

**Guide Bushes  
with collar  
Bronze with  
non-liquid  
lubricant**

**2087.72.**



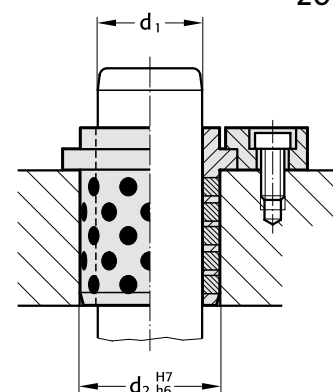
Transition fit

**2082.70.**

pillar $\varnothing$ $d_1$	bore $d_2^{H7}$	limits $d_2^{H7}$
24/25	32/35	
30/32	40/42	+0,025 0
38/40/42	50	
48/50/52	63	+0,03 0
60/63	80	
80	100	+0,035 0
100	125	+0,040 0
125	160	
160	200	+0,046 0

**Guide Bushes  
with collar  
DIN 9834/  
ISO 9448  
Bronze with  
non-liquid  
lubricant**

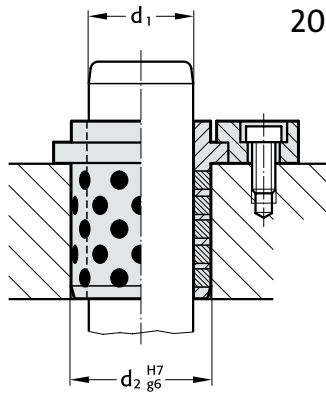
**2082.70.**



Slip fit

# Assembly of Guide Elements – Dimensional Requirements and Tolerances

Guide Bushes  
with collar  
to NAAMS  
Bronze with  
non-liquid  
lubricant



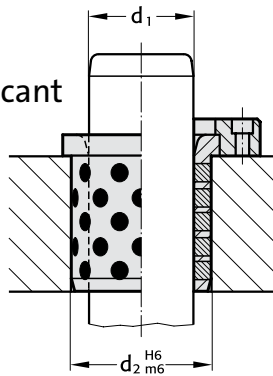
2082.71.  
2086.71.

Slip fit

2082.71./2086.71.

pillar Ø $d_1$	bore $d_2^{H7}$	limits $d_2^{H7}$
25/32/40	32/40/50	+0,025 0
50/63	63/80	+0,03 0
80	100	+0,035 0
100/125	125/160	+0,04 0

Guide Bushes  
with collar  
Bronze with  
non-liquid lubricant



2102.70.

Transition fit

2102.70.

pillar Ø $d_1$	bore $d_2^{H6}$	limits $d_2^{H6}$
25	35	+0,016 0
32	44	
40	52	
50	63	+0,019 0
63	80	
80	100	+0,022 0
100	125	+0,025 0