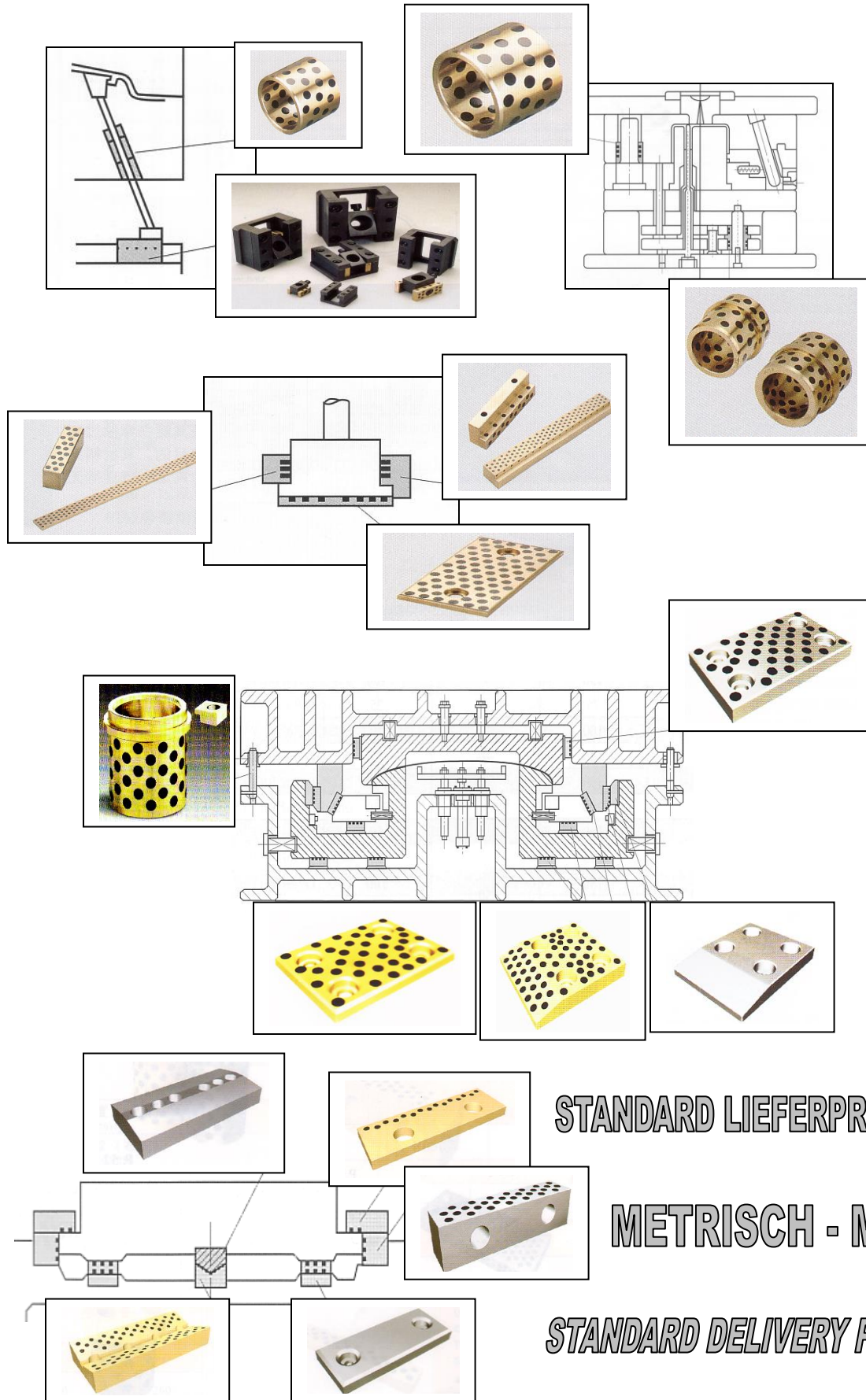


# M F - WARTUNGSFREIE GLEITELEMENTE

# AUSTROTECH

M  
A  
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C  
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-  
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D  
I  
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L  
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M  
E  
N  
T  
S



STANDARD LIEFERPROGRAMM

METRISCH - METRIC

STANDARD DELIVERY PROGRAM

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## **TECHNICAL INFORMATION - A**

### **ADVANTAGES, OUR MF-SLIDING ELEMENTS OFFER -**

- ◆ MAINTENANCE-FREE
- ◆ WEAR RESISTANT
- ◆ CORROSION RESISTANT
- ◆ LOW FRICTIONAL RESISTANT
- ◆ ENVIRONMENTALLY FRIENDLY
- ◆ LONG LASTING
- ◆ INSENSITIVE AGAINST IMPACT STRESS
- ◆ RESISTANT AGAINST TEMPERATURES OF UP TO APPROX. 750° F
- ◆ STICK FREE SLIDING
- ◆ ESPECIALLY SUITABLE FOR OSCILLATING SLIDING MOTIONS

### **10 MOST PREFERRED APPLICATIONS FOR MF-SLIDING ELEMENTS -**

- ◆ AUTOMOTIVE INDUSTRY - STAMPING TOOLS & DIES
- ◆ INJECTION & BLOW MOLDING - MACHINES & TOOLS
- ◆ STEEL & ROLLING MILLS
- ◆ HEAVY DUTY INDUSTRY
- ◆ WELDING INDUSTRY
- ◆ MECHANICAL MACHINE INDUSTRY
- ◆ SHIPS & WEIR PLANTS
- ◆ PACKAGING INDUSTRY
- ◆ BUILDING & STONE INDUSTRY
- ◆ LIFT & CONVEYING INDUSTRY

## **TECHNISCHE INFORMATIONEN - A**

### **VORTEILE, DIE IHNEN UNSERE MF-GLEITELEMENTE BIETEN -**

- ◆ WARTUNGSFREI
- ◆ VERSCHLEISSFEST
- ◆ KORROSIONSBESTÄNDIG
- ◆ NIEDRIGER REIBUNGSWIDERSTAND
- ◆ UMWELTFREUNDLICH
- ◆ LANGE LEBENSDAUER
- ◆ UNEMPFINDLICH GEGENÜBER STOSS-BEANSPRUCHUNGEN
- ◆ BESTÄNDIG GEGEN TEMPERATUREN BIS CA. 400° C
- ◆ STICK-FREIES GLEITEN
- ◆ BESONDERS GEEIGNET FÜR OSZILLIERENDE GLEITBEWEGUNGEN

### **10 BEVORZUGTE HAUPT-EINSATZGEBIETE FÜR MF-GLEITELEMENTE -**

- ◆ AUTOMOBILINDUSTRIE - WERKZEUGE & PRESSEN
- ◆ SPRITZGUSS- UND BLASFORMMASCHINEN & WERKZEUGE
- ◆ STAHL- UND WALZWERKE
- ◆ SCHWERMASCHINEN
- ◆ SCHWEISSTECHNIK
- ◆ ALLGEMEINER MASCHINENBAU
- ◆ SCHIFF-, WEHR-, WASSERANLAGENBAU
- ◆ VERPACKUNGSINDUSTRIE
- ◆ BAU- UND STEININDUSTRIE
- ◆ HEBE- UND FÖRDERTECHNIK

## APPLICATION GUIDE LINES

- ◆ *Self-Lubricating Sliding Elements are preferable used and recommended where sliding speeds do not exceed approx. 1.5 f/s. For higher sliding speeds, additional lubrication is recommended*
- ◆ *The difference in hardness between the Self-Lubricating Sliding Element and the mating material should be approx. 100 HB (15 RC). Optimum conditions are achieved when hardened and precision ground mating materials are used*
- ◆ *To achieve best possible lubrication, the amount of solid lubricant (graphite) in proportion to the total sliding area should be between 25% and 35 % and arranged in an overlapped pattern*
- ◆ *All sliding elements should after installation or after cleaning be treated with commercial available lithium grease*

### Other

- ◆ *When ordering standard parts from this catalog, only the "Part-Number - (AT1X0XXX)" has to be provided to us.*

#### Please note:

*All details about screws and dowel pins are only for information and not included in the delivery*

- ◆ *In addition to the in this catalog shown standard sliding elements we are able to manufacture almost any special design after especially your specific requirements*
- ◆ *All sliding elements are also available in bronze or steel without solid lubricant - graphite*

**Our sliding elements are manufactured from an  
\*DIN EN 9001:2000 – ISO TS16949:2002\*  
certified supplier**

## ANWENDUNGSHINWEISE

- ◆ *Wartungsfreie Gleitelemente sind vorzugsweise dort einsetzbar, wo Gleitgeschwindigkeiten bis zu ca. 0.5m/s vorliegen. Für höhere Gleitgeschwindigkeiten empfehlen wir zusätzliche Schmierung*
- ◆ *Die Härte­differenz zwischen den Wartungsfreien Gleitelementen und dem Gegenwerkstoff sollte ca. 100 HB betragen. Optimale Bedingungen werden mit gehärteten und geschliffenen Gegenwerkstoffen erzielt*
- ◆ *Zur Erzielung einer optimalen Schmierung sollte der Festschmierstoffanteil (Graphite) zwischen 25% und 35 % liegen und überlappt angeordnet sein*
- ◆ *Nach Einbau oder nach jeder Reinigung sollten die Gleitelemente mit einem handelsüblichen lithiumverseiften Schmiermittel behandelt werden*

### Sonstiges

- ◆ *Bei Bestellung von Standard Gleitelementen aus diesem Katalog muß nur die "Teil Nr. - (AT1X0XXX)" angegeben werden.*

#### Bitte beachten:

*Alle Angaben über Schrauben und Paßstifte dienen nur zur Information und sind nicht Bestandteil der Lieferung*

- ◆ *Zusätzlich zu den in diesem Katalog aufgeführten Produkten sind wir in der Lage, fast jedes Design nach Ihren speziellen Wünschen für Sie zu fertigen*
- ◆ *Alle Gleitelemente sind auch in Bronze oder Stahl ohne Festschmierstoff - Graphit erhältlich*

**Die von uns angebotenen Gleitelemente werden von einem  
\*DIN EN 9001:2000 – ISO TS16949:2002\*  
zertifizierten Hersteller produziert**

## AVAILABLE MATERIAL TYPES - A ERHÄLTICHE MATERIALTYPEN

<i>Grade / Sorte</i>	<i>Base Material / Grundwerkstoff</i>
<i>Material B</i>	<i>Bronze with Solid Lubricant (graphite) Bronze mit Festschmierstoff (Graphit) ASTM B30-92/C86300 DIN1709/G-CuZn25Al5 / 2.0598.01</i>
<i>Material S1</i>	<i>Steel hardened <u>with</u> solid lubricant (graphite) Stahl gehärtet <u>mit</u> Festschmierstoff (Graphit)</i>
<i>Material S2</i>	<i>Steel hardened <u>without</u> solid lubricant (graphite) Stahl gehärtet <u>ohne</u> Festschmierstoff (Graphit)</i>

<i>Grade / Sorte</i>	<i>Material Description / Materialbeschreibung</i>
<i>Material B</i>	<p><i>Structural material with high load capacity, very good wear and abrasion resistance. For static structural parts subject to high stress – bearings for high load and slow rotation, high stressed slow rotating worm wheel rims, internal parts for high pressure steel reinforcements, for use in injection molding machines strain rods and toggles. Good corrosion resistance and casting properties. The use of hardened mating material is recommended.</i></p> <p>Konstruktionswerkstoff mit sehr hoher statischer Belastbarkeit für sehr hoch belastete Konstruktionsteile wie z. B. - Lager für hohe Belastungen und geringer Umdrehungszahl, hochbeanspruchte langsamlaufende Schneckenradkränze, für Kniehebellager und andere Führungsteile in Spritzgussmaschinen und anderem. Gehärtete Gegenflächen sind empfehlenswert.</p>
<i>Material S1</i>	<p><i>Steel hardened <u>with</u> solid lubricant (graphite) for applications where sliding requirements are secondary</i></p> <p>Stahl gehärtet (ca 60 HRC) <u>mit</u> Festschmierstoff (Graphit) für untergeordnete Anforderungen an die Gleiteigenschaften</p>
<i>Material S2</i>	<p><i>Steel hardened <u>without</u> solid lubricant (graphite)</i></p> <p>Stahl gehärtet (ca 60 HRC) <u>ohne</u> Festschmierstoff (Graphit)</p>

### PLEASE NOTE - BITTE BEACHTEN

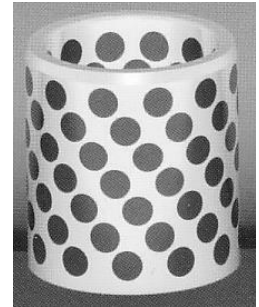
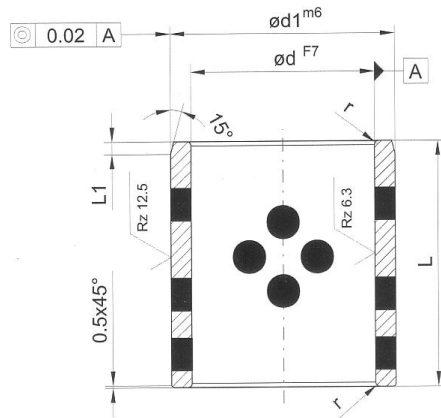
**ALL SLIDING ELEMENTS SHOWN IN THIS CATALOG ARE ALSO AVAILABLE WITHOUT SOLID LUBRICANT (GRAPHITE) IN "SOLID BRONZE"**

Alle Gleitelemente in diesem Katalog können auch ohne Festschmierstoff (Graphit) in „VOLLBRONZE“ geliefert werden

All measurements in this catalog without a tolerance specification  
Alle Maße in diesem Katalog ohne Toleranzangabe

# STRAIGHT BUSHINGS B-1

## FÜHRUNGSBÜCHSEN



Slide direction: Radial & axial  
Gleitrichtung

$\varnothing d$ - ID	8	8	10	10	12	12	13	14	15	16
$\varnothing d_1$	11	12	14	15	16	18	19	20	21	20
$L_1$	1	1	1	1	2	2	2	2	2	2
r	1	1	1	1	1	1	1	1	1	1

L -0,2	Material B - Part No. Teil Nr.									
8		AT 190604	AT 150937							
10		AT 150356	AT 150294	AT 190605	AT 150588	AT 150424	AT 150425	AT 170011	AT 170055	
12		AT 140444	AT 150423		AT 140445	AT 190606		AT 170018	AT 170075	
14	AT 140572									
15	AT 170004	AT 150573	AT 140764			AT 140996			AT 150275	
16						AT 170000	AT 150355	AT 170025		AT 140446
18										
20			AT 150293		AT 130832	AT 170001	AT 150400	AT 170037	AT 170086	AT 150076
25						AT 170002		AT 140752	AT 150536	AT 150207
28										AT 140094
30						AT 170003		AT 170048	AT 170087	
35										
40										
50										
60										

$\varnothing d$ - ID	16	18	19	20	20	25	22	25	25
$\varnothing d_1$	22	24	26	28	30	30	32	33	35
$L_1$	2	2	2	2	2	3	3	3	3
r	1	1	1	1	1	2	2	2	2

L -0,2	Material B - Part No. Teil Nr.								
8									
10	AT 170088			AT 170098					
12	AT 140762	AT 170089		AT 170099			AT 160800	AT 160804	AT 160805
14									
15	AT 130900	AT 150213	AT 160812	AT 150232			AT 160801		
16	AT 190607	AT 140387		AT 170010	AT 140389			AT 170016	AT 140606
18		AT 150450							
20	AT 170005	AT 150466	AT 160813	AT 190608	AT 150422	AT 130153	AT 160802	AT 170017	AT 140170
25	AT 170006	AT 150468		AT 170012	AT 150163		AT 160803	AT 190609	AT 140730
28									
30	AT 170007	AT 150636		AT 170013	AT 150935			AT 170019	AT 140395
35	AT 170008	AT 150740		AT 170014	AT 150617			AT 170020	AT 140390
40	AT 170009	AT 140388		AT 170015	AT 140144			AT 170021	AT 140399
50				AT 150276	AT 150712			AT 170022	AT 150345
60								AT 130858	AT 150362

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)  
 ID 20 – 55 mm page B-1b / Innendurchmesser 20 – 55 mm Seite B-1a  
 ID 60 – 160 mm page B-1c / Innendurchmesser 60 – 160 mm Seite B-1b

# STRAIGHT BUSHINGS FÜHRUNGSBÜCHSEN

B-1a

ø d - ID	20	30	30	30	31	32	35	35	38
ø d <sub>1</sub>	26	38	40	45	40	42	44	45	48
L <sub>1</sub>	3	3	3	3	3	3	3	3	3
r	2	2	2	2	2	2	2	2	2

L -0,2	Material B - Part No. Teil Nr.								
12									
15	AT 150590	AT 160806							
16									
20	AT 150710	AT 170023	AT 150421					AT 160809	
25	AT 140644	AT 170024	AT 140311				AT 140391	AT 140825	
30	AT 150206	AT 190610	AT 140542		AT 140582	AT 130460	AT 170030	AT 140103	AT 160810
35		AT 170026	AT 140121				AT 170031	AT 140166	
40		AT 170027	AT 140104	AT 150377	AT 140517	AT 160808	AT 170032	AT 140952	AT 160811
45		AT 140070						AT 140756	
50		AT 170028	AT 150176				AT 170033	AT 150138	
60		AT 170029	AT 140919				AT 170034	AT 150175	
70									
80									
100								AT 140597	
110									

ø d - ID	40	40	45	45	45	50	50	50	55
ø d <sub>1</sub>	50	55	55	56	60	60	62	65	70
L <sub>1</sub>	3	3	3	3	3	3	3	3	3
r	2	2	2	2	2	2	2	2	2

L -0,2	Material B - Part No. Teil Nr.								
12				AT 130996					
15									
16									
20	AT 160814								
25	AT 150212	AT 140592							
30	AT 170035	AT 140680	AT 140601	AT 170040	AT 140609	AT 140731	AT 170045	AT 140614	
35	AT 170036	AT 140599	AT 140610	AT 170041		AT 140615	AT 170046		
40	AT 190611	AT 140396	AT 150230	AT 170042	AT 140612	AT 140266	AT 170047	AT 140617	AT 140622
45									
50	AT 170038	AT 140397	AT 140613	AT 170043	AT 150501	AT 140732	AT 190612	AT 150929	AT 140625
60	AT 170039	AT 150237	AT 140063	AT 170044	AT 150570	AT 150465	AT 170049	AT 150957	AT 140308
70					AT 160816	AT 140621	AT 170050	AT 150928	AT 140626
80	AT 160815				AT 160817	AT 150464	AT 150113	AT 160845	
100								AT 160819	
110			AT 140099						

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# STRAIGHT BUSHINGS B-1b FÜHRUNGSBÜCHSEN

<b>ø d - ID</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>63</b>	<b>65</b>	<b>70</b>	<b>70</b>	<b>75</b>	<b>75</b>	<b>80</b>
<b>ø d<sub>1</sub></b>	70	74	75	75	80	85	90	90	95	96
<b>L<sub>1</sub></b>	4	4	4	4	4	4	4	4	4	4
<b>r</b>	3	3	3	3	3	3	3	3	3	3
<b>L -0,2</b>	<b>Material B - Part No. Teil Nr.</b>									
<b>30</b>		AT 170051	AT 140627							
<b>35</b>		AT 170052	AT 150074			AT 170058				
<b>40</b>		AT 170053	AT 140628			AT 170059	AT 130236			AT 170065
<b>45</b>		AT 150372								
<b>50</b>	AT 130092	AT 170054	AT 140631		AT 160821	AT 170060	AT 160823			AT 170066
<b>60</b>		AT 190613	AT 150467	AT 140632	AT 140959	AT 170061	AT 140634	AT 160824	AT 160828	AT 170067
<b>70</b>		AT 170056	AT 150840	AT 150139	AT 140633	AT 170062	AT 140639	AT 160825	AT 160829	AT 170068
<b>80</b>		AT 170057	AT 150307	AT 160820	AT 160822	AT 170063	AT 140643	AT 160826	AT 160830	AT 190614
<b>100</b>			AT 150697			AT 170064		AT 160827	AT 160831	AT 170070
<b>120</b>										AT 170071
<b>130</b>										
<b>140</b>	AT 160832									
<b>150</b>										

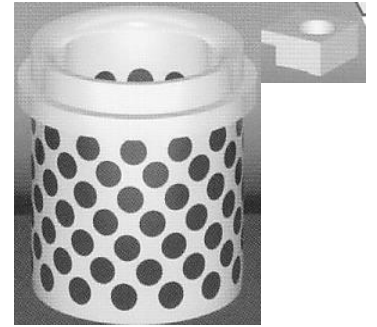
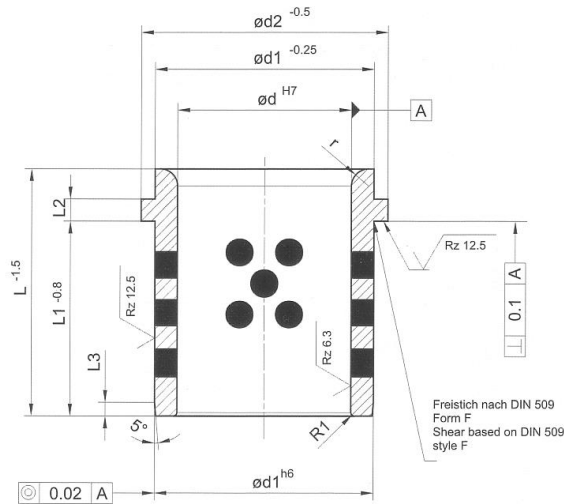
<b>ø d - ID</b>	<b>80</b>	<b>90</b>	<b>100</b>	<b>110</b>	<b>120</b>	<b>125</b>	<b>130</b>	<b>140</b>	<b>150</b>	<b>160</b>
<b>ø d<sub>1</sub></b>	100	110	120	130	140	145	150	160	170	180
<b>L<sub>1</sub></b>	4	4	4	4	4	4	4	4	4	4
<b>r</b>	3	3	3	3	3	3	3	3	3	3
<b>L -0,2</b>	<b>Material B - Part No. Teil Nr.</b>									
<b>30</b>										
<b>35</b>										
<b>40</b>	AT 150569									
<b>45</b>										
<b>50</b>	AT 140648	AT 160833								
<b>60</b>	AT 150930	AT 140649	AT 170072							
<b>70</b>	AT 150931	AT 140650	AT 170073							
<b>80</b>	AT 150967	AT 150087	AT 170074	AT 170077	AT 170080					
<b>100</b>	AT 140010	AT 140651	AT 190615	AT 170078	AT 170081	AT 160836	AT 170083	AT 160838	AT 160840	AT 160842
<b>120</b>	AT 150393	AT 140656	AT 170076	AT 170079	AT 170082	AT 160837	AT 170084			
<b>130</b>							AT 170085			
<b>140</b>			AT 160834		AT 160835			AT 160839		
<b>150</b>									AT 160841	AT 160843

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)



# GUIDE PIN BUSHINGS & CLAMPS B-2

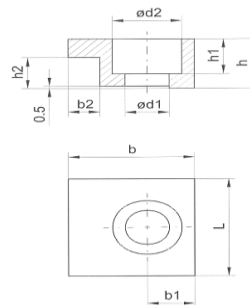
## FÜHRUNGSBÜCHSEN & KLAMMERN



Slide direction: ↑  
Gleitrichtung ↓

Material B Part No./ Teil Nr.	$\varnothing d$ - ID	L	$\varnothing d_1$	$\varnothing d_2$	$L_1$	$L_2$	$L_3$	r	Accompanying clamp part no./ Zugehörige Klammer Nr.
AT 180798	25	32	32	40	22	6,3	4	3	AT 190798
AT 180799		40			30				
AT 180797					32				
AT 180800	32	50	40	50	40				
AT 180801	40	63	50	63	50		5		
AT 180802	50	71	63	71	56		6,3	5	
AT 180803	63	80	80	90	63	10	8	6	AT 190799
AT 180804	80	100	100	112	80		10	8	
AT 180808	100	125	125	140	100		12,5	10	
AT 180805					106				
AT 180806	125	160	160	180	132		16	12	
AT 180807	160	200	200	220	170	18			

### CLAMPS / Klammern



Clamp Part No./ Klammer Nr.	b $h_9$	L 0 -0,4	h $h_{11}$	$b_1$	$b_2$ +0,3 0	$h_1$ +0,2 0	$h_2$ 0 -0,3	$\varnothing d_1$ +0,2 0	$\varnothing d_2$ +0,2 0
AT 190798	20	20	10	7,5	5	7	6,3	7	11
AT 190799	32	32	16	11	10	11,5	10	11,5	17,5
AT 190784	25	20	12	10	5	8,5	6,3	9	15
AT 190785	32	25	16	11	10	11,5	6,3	11	18

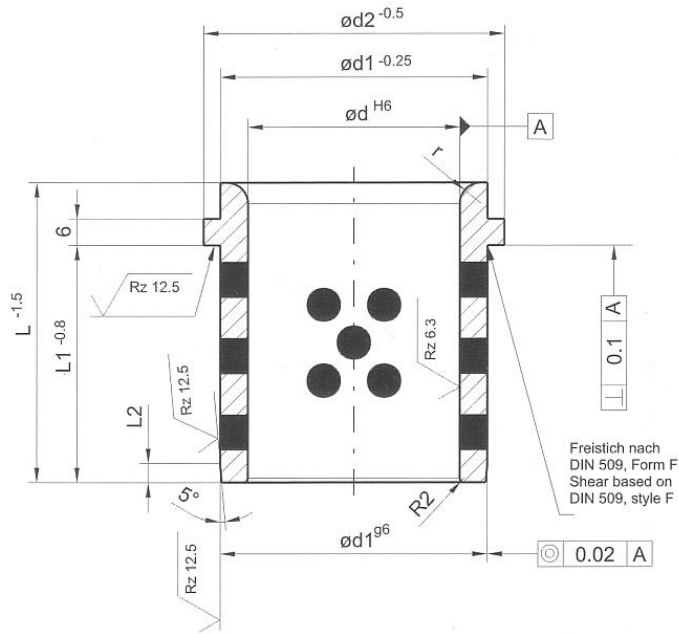
Type of Steel C 45 K or St 37-2 / Stahlsorte C45 K oder St 37-2

Clamp identical with DIN 9832 / Klammer identisch mit DIN 9832

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# GUIDE PIN BUSHINGS & CLAMPS - NAAMS B-3

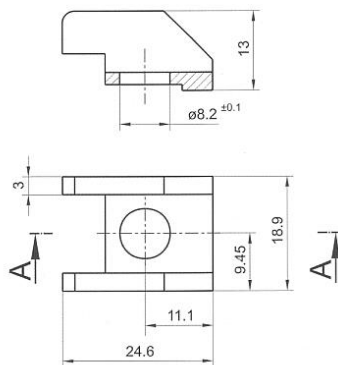
## FÜHRUNGSBÜCHSEN & KLAMMERN – NAAMS



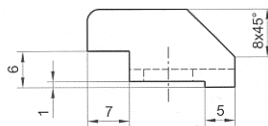
Material B Part No./ Teil Nr.	$\varnothing d$ - ID	L	$\varnothing d_1$	$\varnothing d_2$	$L_1$	$L_2$	r	Accompanying clamp part no./ Zugehörige Klammer Nr.
AT 180809	25	40	32	40	30	4	3	AT 190786 or AT 190787 (NAAMS)
AT 180810	32	50	40	50	40	4		
AT 180811	40	63	50	63	50	5		
AT 180812	50	71	63	71	56	6		
AT 180813	63	80	80	90	63	8		
AT 180814	80	100	100	112	80	10		
AT 180815	100	125	125	140	106	12		
AT 180817	115	140	140	155	120	12		
AT 180816	125	160	160	180	132	12	12	

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

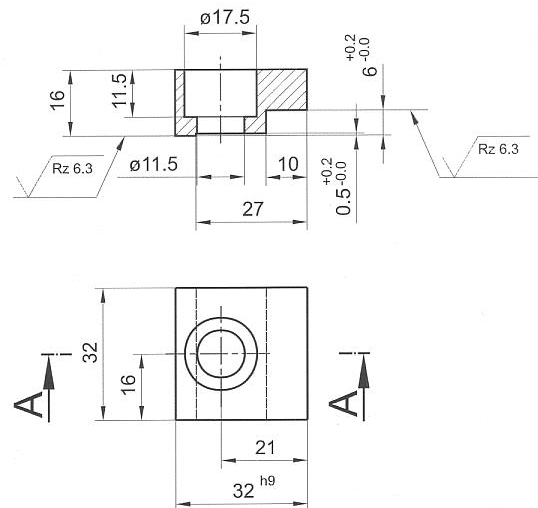
**Part No. AT 190787**  
Teil Nr. AT190787



**Type of steel C 45K or St 37-2**  
Stahlsorte C 45 K oder St37-2

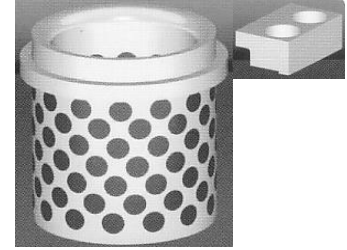
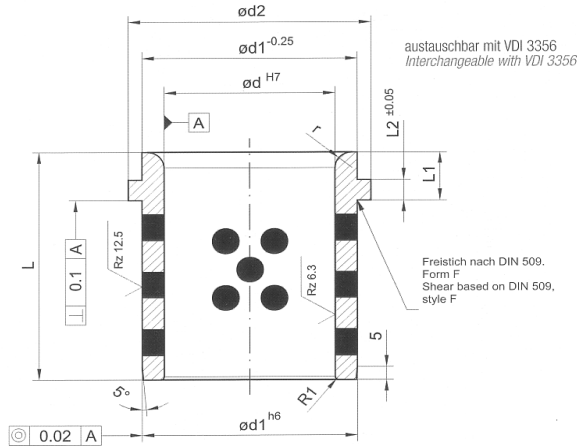


**Part No. AT 190786**  
Teil Nr. AT 190786



# GUIDE PIN BUSHINGS & CLAMPS B-4

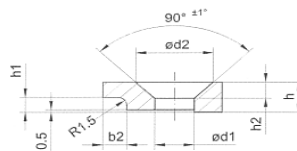
## FÜHRUNGSBÜCHSEN & KLAMMERN



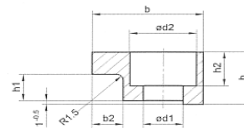
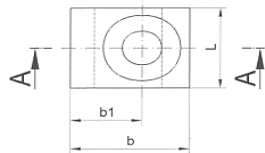
Material B Part No./ Teil Nr.	ø d - ID	L	ø d <sub>1</sub>	ø d <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	r	Accompanying clamp part no./ Zugehörige Klammer Nr.
AT 180299	23	40	32	40	6	3	5	AT 190780
AT 180300	25							
AT 180301	32	50	40	50	10	5	6	AT 190781
AT 180302	40	63	50	63	13	8		AT 190782
AT 180303	42							
AT 180304	50	72	63	75	14	10	8	AT 190783
AT 180305	52							
AT 180306	63	80	80	95	17	16	10	AT 190783
AT 180307	65							
AT 180308	80	100	100	120	20	16	10	AT 190794
AT 180309	82							
AT 180310	100	125	125	150	25	30	13	AT 190794
AT 180311	125	160	160	190				

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

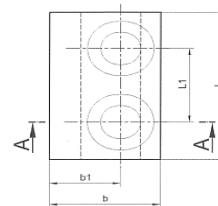
### CLAMPS / Klammern



Form A/Style A  
Schnitt A-A/View A-A



Form B/Style B  
Schnitt A-A/View A-A

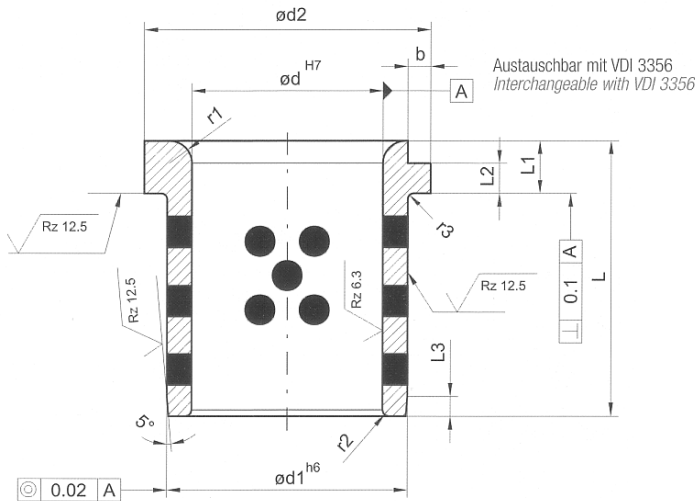


Clamp Part No./ Klammer Nr.	Bushing -inside ø / Büchsen innen ø	b	l -0,4	h h <sub>11</sub>	L <sub>1</sub> -0,1	L <sub>2</sub>	L <sub>3</sub> +0,4	L <sub>4</sub>	L <sub>5</sub>	ø d <sub>1</sub> H <sub>13</sub>	ø d <sub>2</sub> H <sub>13</sub>	Screws/ Zylinder- schraube	Style/ Form
AT 190780	25	20	16	6	3	4	3,2	-	12	6,6	13	1 x M6	A
AT 190781	32		20	10	5	5	6,8		12,5				
AT 190782	40-50	25	40	14	8	7	9	20	16	9	15	2 x M8	B
AT 190783	63-80	32	50	16	10	9	11	25	20,5	11	18	2 x M10	
AT 190794	100-125	40	60	25	16	14	13	30	27	14	20	2 x M12	

Clamp material: St 37 or C 45 K / Werkstoff für Klammern- ST 37 oder C45 K

# GUIDE PIN BUSHINGS & CLAMPS B-5

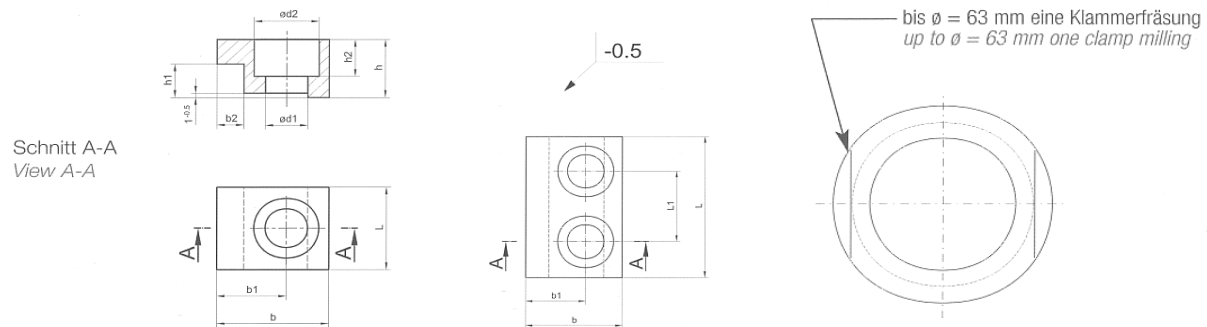
## FÜHRUNGSBÜCHSEN & KLAMMERN



Material B Part No./ Teil Nr.	$\varnothing d - ID$	L	$\varnothing d_1$ h6	$\varnothing d_2$ -0,8	$L_1$ +0,5 +0,3	$L_2$ -0,1	$L_3$ -0,4	b $\pm 0,25$	$r_1$	$r_2$	$r_3$ -0,4	Accompanying clamp part no./ Zugehörige Klammer Nr.				
AT 190000	16	25	25	32	10	5	2	3	3	1	1	AT 190790				
AT 190001	20	32					3		4							
AT 190002	25		4	3,5												
AT 190003	32	50	40	50	13	8	6	4	5	1,6	1,6	AT 190791				
AT 190004	40	63	50	63			5	6								
AT 190005	50	72	63	75	14	10	8	6	6	2	2	AT 190792				
AT 190006	63	80	80	95	17			8	8	2,5	2,5					
AT 190007	80	100	100	120	20			10	8	2,5	2,5					
AT 190008	100	125	125	150	25	16	10	13	10	3,2	3,2	AT 190794				
AT 190009	125	160	160	190	30				16	10	13		4	4		
AT 190010	140	180	180	210							12		16	18	5	6
AT 190011	160	200	200	240											12	

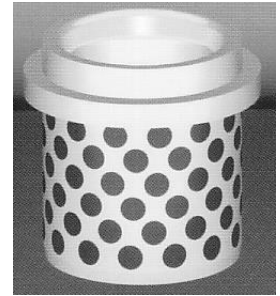
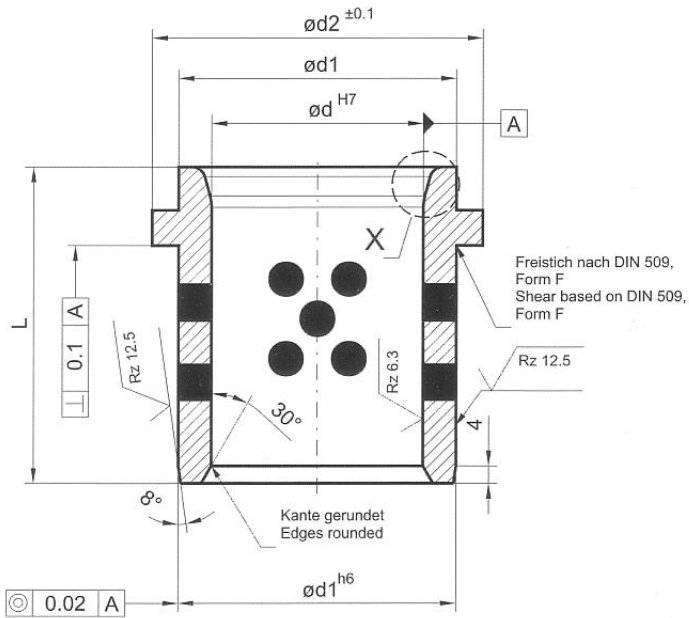
Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

### CLAMPS / Klammern

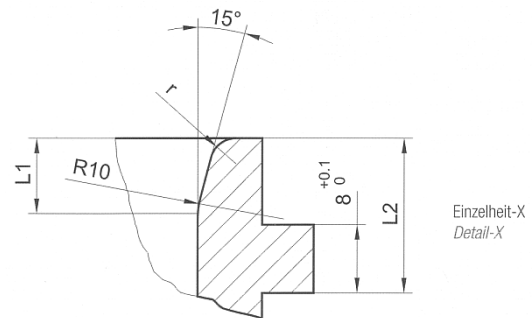


Clamp part no./ Klammer Nr.	Bushing inside $\varnothing$ / Büchsen innen $\varnothing$	B h9	L -0,4	h h11	b1 +0,2	b2 +0,3	h1 +0,1	h2 +0,2	L1 +0,2	$\varnothing d_1$ +0,2	$\varnothing d_2$ +0,2	Cheese head screw DIN 912 / Zylinderschraube
AT 190790	16-32	20	20	10	12,5	5	5	7	-	7	11	1 x M6
AT 190791	40		12	8			20	2 x M6				
AT 190792	50	25	40	14	15,5	6	8	9	9,5	14,5	2 x M8	
AT 190793	63-80	28	50	16	18	8	10	11,5	25	11,5	17,5	2 x M10
AT 190794	100-160	40	60	25	27	14	16	13,5	30	14	20	2 x M12

Clamp material: St37 or C 45K / Werkstoff für Klammern: St 37 oder C45K



Slide direction: ↑  
Gleitrichtung ↓

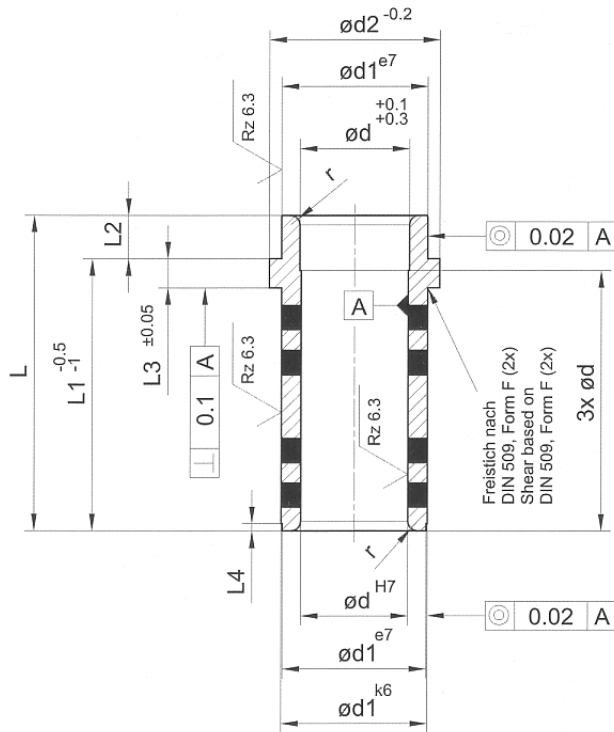


Material B Part No./ Teil Nr.	$\varnothing d$ - ID	L	$\varnothing d_1$	$\varnothing d_2$	$L_1$	$L_2$	r	Accompanying clamp part no./ Zugehörige Klammer Nr.	
AT 170700	25	40	32	40	-	12	3	-	
AT 170701	30	50	45	55					
AT 170702	32	63	55	65					
AT 170703	38	72	63	75		8			
AT 170704	40	80	80	95	10	18	4	AT 150327	
AT 170705	48								
AT 170706	50								
AT 170707	60								
AT 170708	63	100	100	120	10	18	4	AT 150327	
AT 170709	78								
AT 170710	80								
AT 170711	98								
AT 170712	100	125	125	145					

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# GUIDE PIN BUSHINGS FÜHRUNGSBÜCHSEN

B-7



Slide direction: ↑  
Gleitrichtung ↓

$\varnothing d$ - ID	9	10	14	15	18	20
$\varnothing d_1$	14	14	20	20	26	26
$\varnothing d_2$	18	18	25	25	31	31
$L_2$	3	3	9	9	9	9
$L_3$	3	3	6	6	6	6
$L_4$	2	2	3	3	3	3
r	1	1	1,5	1,5	1,5	1,5

L	L <sub>1</sub>	Material B - Part No. Teil Nr.					
15	12	AT 170874	AT 170400				
20	17	AT 170875	AT 170401				
25	22	AT 170876	AT 170879				
30	27	AT 170877	AT 170880				
39	36	AT 170878	AT 170881				
26	17			AT 170402	AT 170406	AT 170410	AT 170415
31	22			AT 170403	AT 170407	AT 170411	AT 170416
36	27			AT 170404	AT 170408	AT 170412	AT 170417
45	36			AT 170405	AT 170409	AT 170413	AT 170418
55	46			AT 170882	AT 170884	AT 170414	AT 170419
65	56			AT 170883	AT 170885	AT 170886	AT 170420
75	66					AT 170887	AT 170888
85	76					AT 140541	AT 140548

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

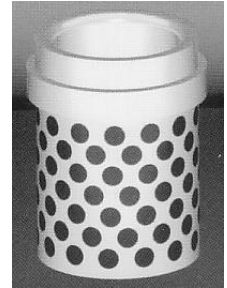
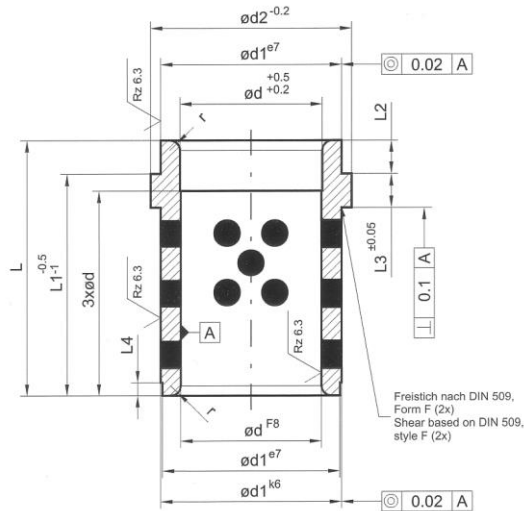
# GUIDE PIN BUSHINGS FÜHRUNGSBÜCHSEN

B-7a

ø d - ID	22	24	30	32	40	42
ø d <sub>1</sub>	30	30	42	42	54	54
ø d <sub>2</sub>	35	35	47	47	60	60
L <sub>2</sub>	9	9	9	9	12	12
L <sub>3</sub>	6	6	6	6	10	10
L <sub>4</sub>	3	3	3	3	4	4
r	2	2	2	2	3	3

L	L <sub>1</sub>	Material B - Part No. Teil Nr.					
		26	17	AT 170421	AT 170427		
31	22	AT 170422	AT 170428				
36	27	AT 170423	AT 170429	AT 170434	AT 170440		
45	36	AT 170424	AT 170430	AT 170435	AT 170441		
55	46	AT 170425	AT 170431	AT 170436	AT 170442		
65	56	AT 170426	AT 170432	AT 170437	AT 170443		
68	56					AT 170446	AT 170450
75	66	AT 170889	AT 170433	AT 170894	AT 170897		
78	66					AT 170992	AT 170996
85	76	AT 170890	AT 170892	AT 170438	AT 170444		
88	76					AT 170447	AT 170451
95	86	AT 170891	AT 170893	AT 170439	AT 170445		
98	86					AT 170993	AT 170997
105	96			AT 170895	AT 170898		
108	96					AT 170448	AT 170452
125	116			AT 170896	AT 170899		
128	116					AT 170449	AT 170453
148	136					AT 170994	AT 170998
168	156					AT 170995	AT 170999

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)



Slide direction:  
Gleitrichtung ↑ ↓

ø d - ID	9	10	14	15	18	20
ø d <sub>1</sub>	14	14	20	20	26	26
ø d <sub>2</sub>	16	16	26	26	31	31
L <sub>2</sub>	5	5	6	6	8	8
L <sub>3</sub>	3	3	6	6	6	6
L <sub>4</sub>	2	2	3	3	3	3
r	1	1	1,5	1,5	1,5	1,5

L	L <sub>1</sub>	Material B - Part No. Teil Nr.					
17	12	AT 170213	AT 170216				
22	17	AT 170460	AT 170464				
23	17			AT 170468	AT 170474		
25	17					AT 170223	AT 170225
27	22	AT 170461	AT 170465				
28	22			AT 170469	AT 170475		
30	22					AT 170480	AT 170486
32	27	AT 170462	AT 170466				
33	27			AT 170470	AT 170476		
35	27					AT 170481	AT 170487
41	36	AT 170463	AT 170467				
42	36			AT 170471	AT 170477		
44	36					AT 170482	AT 170488
51	46	AT 170214	AT 170217				
52	46			AT 170472	AT 170478		
54	46					AT 170483	AT 170489
61	56	AT 170215	AT 170218				
62	56			AT 170473	AT 170479		
64	56					AT 170484	AT 170490
72	66			AT 170219	AT 170221		
74	66					AT 170485	AT 170491
82	76			AT 170220	AT 170222		
84	76					AT 170224	AT 170226

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)  
ID 22 – 42 mm page B-8a / Innendurchmesser 22 – 42 mm Seite B-8a



# GUIDE PIN BUSHINGS FÜHRUNGSBÜCHSEN

B-8a

ø d - ID	22	24	30	32	40	42
ø d <sub>1</sub>	30	30	42	42	54	54
ø d <sub>2</sub>	35	35	47	47	60	60
L <sub>2</sub>	8	8	8	8	10	10
L <sub>3</sub>	6	6	6	6	10	10
L <sub>4</sub>	3	3	3	3	4	4
r	2	2	2	2	3	3

L	L <sub>1</sub>	Material B - Part No. Teil Nr.					
30	22	AT 170492	AT 170499				
35	27	AT 170493	AT 170970	AT 170976	AT 170984		
44	36	AT 170494	AT 170971	AT 170977	AT 170985		
54	46	AT 170495	AT 170972	AT 170978	AT 170986		
56	46					AT 170295	AT 170362
64	56	AT 170496	AT 170973	AT 170979	AT 170987		
66	56					AT 170296	AT 170363
74	66	AT 170497	AT 170974	AT 170980	AT 170988		
76	66					AT 170297	AT 170364
84	76	AT 170498	AT 170975	AT 170981	AT 170989		
86	76					AT 170298	AT 170365
94	86	AT 170227	AT 170288	AT 170982	AT 170990		
96	86					AT 170299	AT 170366
104	96	AT 170228	AT 170289	AT 170983	AT 170991		
106	96					AT 170300	AT 170367
124	116	AT 170229	AT 170290	AT 170291	AT 170293		
126	116					AT 170358	AT 170368
144	136			AT 170292	AT 170294		
146	136					AT 170359	AT 170369
166	156					AT 170360	AT 170398
206	196					AT 170361	AT 170399

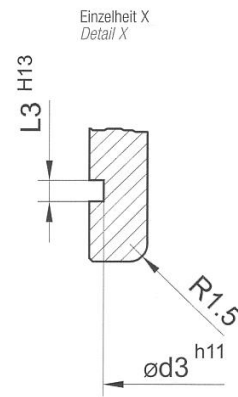
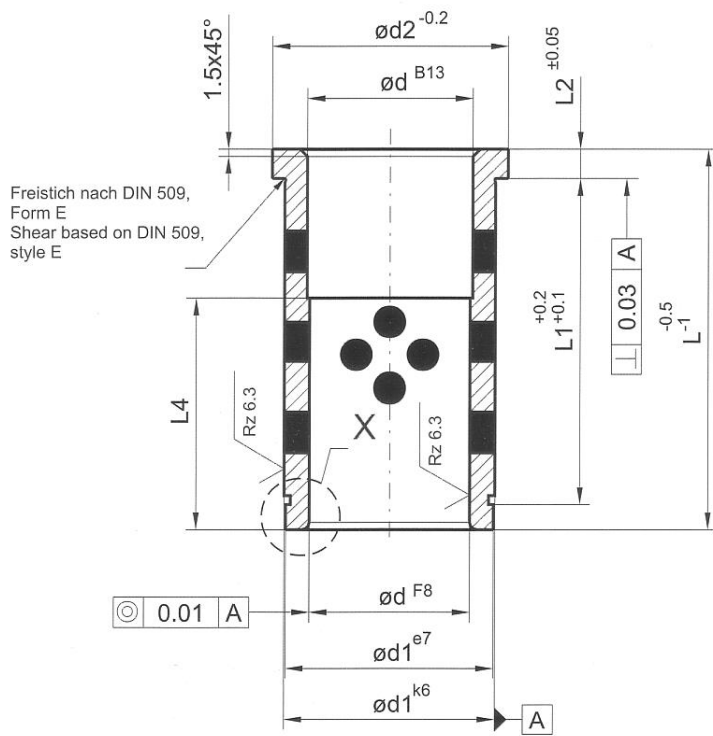
Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# SHOULDER BUSHINGS BUNDBÜCHSEN

B-9



Slide direction: ↑  
Gleitrichtung ↓



ID 9 – 18 mm page B-9a / Innendurchmesser 9 – 18 mm Seite B-9a  
ID 20 – 42 mm page B9-b / Innendurchmesser 20 – 42 mm Seite B-9b

# SHOULDER BUSHINGS BUNDBÜCHSEN

B-9a

ø d - ID	9	10	12	14	15	16	18
ø d <sub>1</sub>	14	14	18	20	20	22	26
ø d <sub>2</sub>	16	16	23	25	25	27	31
ø d <sub>3</sub>	13,4	13,4	17	19	19	21	24,9
L <sub>2</sub>	3	3	6	6	6	6	6
L <sub>3</sub>	1,1	1,1	1,3	1,3	1,3	1,3	1,3
L <sub>4</sub>	20	20	24	30	30	32	40

L	L <sub>1</sub>	Material B - Part No. Teil Nr.						
12	6,60	AT 160040	AT 160048					
17	8,30			AT 160056	AT 160063	AT 160070		AT 160083
17	11,60	AT 160041	AT 160049					
22	12,60							
22	13,30			AT 160057	AT 160064	AT 160071	AT 160077	AT 160084
22	16,60	AT 160042	AT 160050					
27	15,85							
27	17,60							
27	18,30			AT 160058	AT 160065	AT 160072	AT 160078	AT 160085
27	21,60	AT 160043	AT 160051					
36	24,85							
36	26,60							
36	27,30			AT 160059	AT 160066	AT 160073	AT 160079	AT 160086
36	30,60	AT 160044	AT 160052					
46	30,15							
46	34,85							
46	36,60							
46	37,30			AT 160060	AT 160067	AT 160074	AT 160080	AT 160087
46	40,60	AT 160045	AT 160053					
56	40,15							
56	44,85							
56	46,60							
56	47,30			AT 160061	AT 160068	AT 160075	AT 160081	AT 160088
56	50,60	AT 160046	AT 160054					
66	50,15							
66	54,85							
66	56,60							
66	57,30							AT 160089
76	60,15							
76	64,85							
76	66,60							
76	67,30							AT 160090

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# SHOULDER BUSHINGS BUNDBÜCHSEN

B-9b

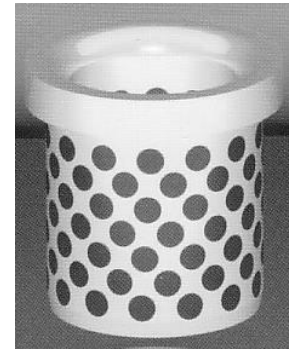
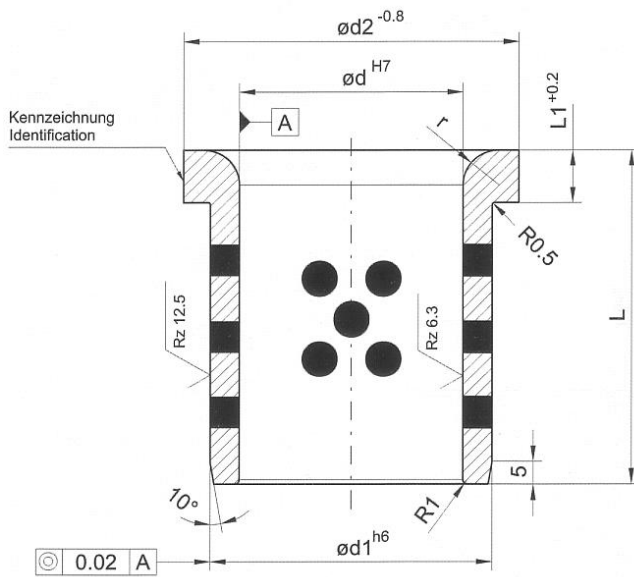
ø d - ID	20	22	24	30	32	40	42
ø d <sub>1</sub>	26	30	30	42	42	54	54
ø d <sub>2</sub>	31	35	35	47	47	60	60
ø d <sub>3</sub>	24,9	28,6	28,6	39,5	39,5	49	49
L <sub>2</sub>	6	6	6	6	6	10	10
L <sub>3</sub>	1,3	1,6	1,6	1,85	1,85	2,15	2,15
L <sub>4</sub>	40	48	48	64	64	80	80

L	L <sub>1</sub>	Material B - Part No. Teil Nr.					
17	8,30	AT 160092					
22	12,60		AT 160101	AT 160111			
22	13,30	AT 160093					
27	15,85				AT 160121	AT 160170	
27	17,60		AT 160102	AT 160112			
27	18,30	AT 160094					
36	24,85				AT 160122	AT 160171	
36	26,60		AT 160103	AT 160113			
36	27,30	AT 160095					
46	30,15					AT 160180	AT 160189
46	34,85				AT 160123	AT 160172	
46	36,60		AT 160104	AT 160114			
46	37,30	AT 160096					
56	40,15					AT 160181	AT 160190
56	44,85				AT 160124	AT 160173	
56	46,60		AT 160105	AT 160115			
56	47,30	AT 160097					
66	50,15					AT 160182	AT 160191
66	54,85				AT 160125	AT 160174	
66	56,60		AT 160106	AT 160116			
66	57,30	AT 160098					
76	60,15					AT 160183	AT 160192
76	64,85				AT 160126	AT 160175	
76	66,60		AT 160107	AT 160117			
76	67,30	AT 160099					
86	70,15					AT 160184	AT 160193
86	74,85				AT 160127	AT 160176	
86	76,60		AT 160108	AT 160118			
96	80,15					AT 160185	AT 160194
96	84,85				AT 160128	AT 160177	
96	86,60		AT 160109	AT 160119			
116	100,15					AT 160186	AT 160195
116	104,85				AT 160129	AT 160178	
136	120,15					AT 160187	AT 160196

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# SHOULDER BUSHINGS BUNDBÜCHSEN

B-10



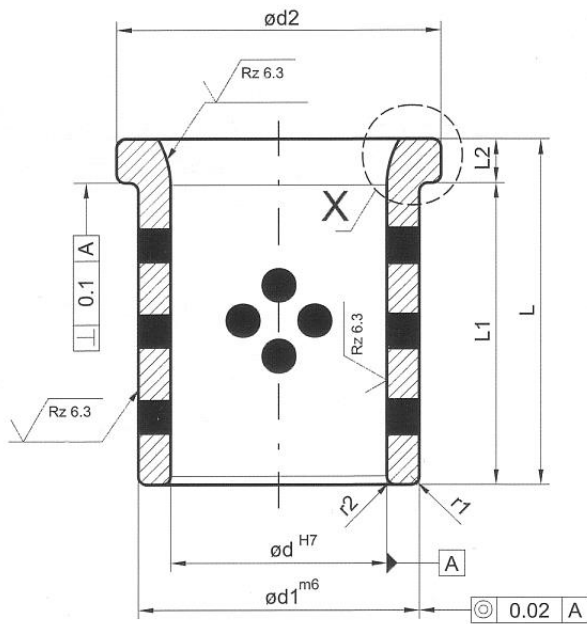
Slide direction: ↑  
Gleitrichtung ↓

Material B Part No./ Teil Nr.	$\varnothing d$ - ID	L	$\varnothing d_1$	$\varnothing d_2$	$L_1$	r
AT 190300	20	35	28	36	8	2
AT 190301	32	55	40	50		6
AT 190302	40	70	50	60		
AT 190303	42		75	63	75	12
AT 190304	50					
AT 190305	52					
AT 190306	63	80	80	90		
AT 190307	80	100	100	110		
AT 190308	100	125	125	135		

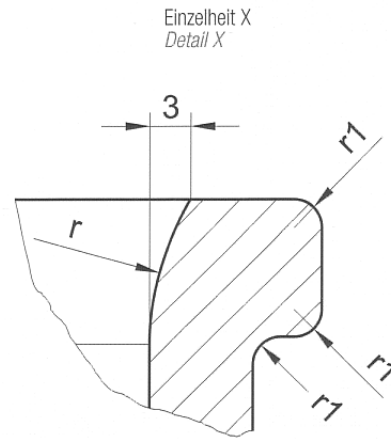
Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# SHOULDER BUSHINGS BUNDBÜCHSEN

B-11



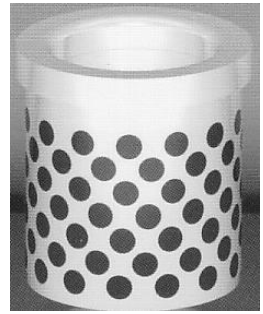
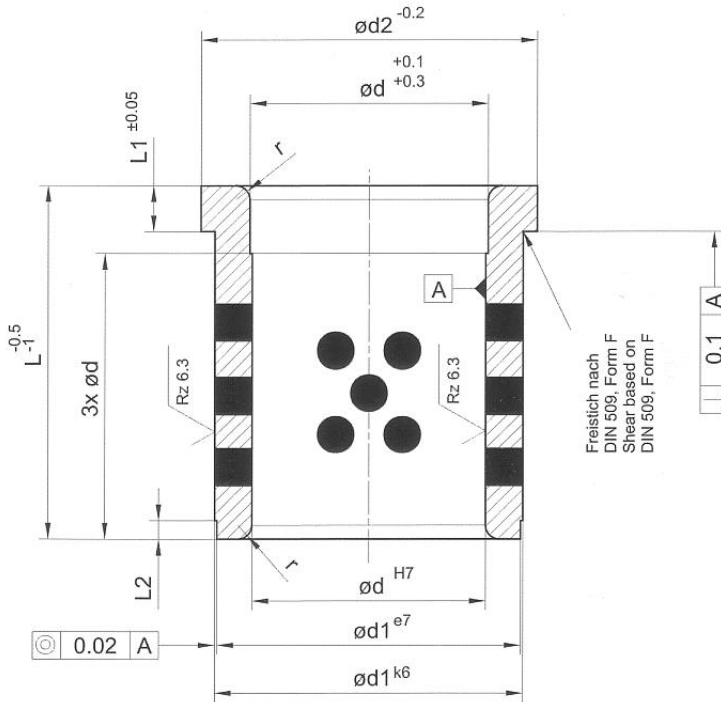
Slide direction: Radial & axial  
Gleitrichtung



Material B Part No./ Teil Nr.	$\varnothing d$ - ID	L	$\varnothing d_1$	$\varnothing d_2$	$L_1$	$L_2$	r	$r_1$	$r_2$
AT 170100	25	40	35	45	33	7	10	1	2
AT 170101	30	50	40	50	40	10	20		
AT 170102	40	70	55	65	60				
AT 170103	50	80	65	75	70				
AT 170104	60		75	85					
AT 170105	65	120	80	90	110			2	
AT 170106	80	100	100	110	90				
AT 170107		140			130				
AT 170108		100			90	3			
AT 170109	140	130							
AT 170110	100	140	120	130	130				

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# SHOULDER BUSHINGS B-12 BUNDBÜCHSEN



Slide direction: ↑  
Gleitrichtung ↓

$\varnothing d$ - ID	9	10	12	14	15	16	18	20
$\varnothing d_1$	14	14	18	20	20	22	26	26
$\varnothing d_2$	16	16	23	25	25	27	31	31
$L_1$	3	3	6	6	6	6	6	6
$L_2$	2	2	3	3	3	3	3	3
$r$	1	1	1,5	1,5	1,5	1,5	1,5	1,5

L	Material B - Part No. Teil Nr.							
12	AT 170830	AT 170900						
17	AT 170831	AT 170901	AT 170902	AT 170903	AT 170907	AT 170911	AT 170915	AT 170920
22	AT 170832	AT 170835	AT 170838	AT 170904	AT 170908	AT 170912	AT 170916	AT 170921
27	AT 170833	AT 170836	AT 170839	AT 170905	AT 170909	AT 170913	AT 170917	AT 170922
36	AT 170834	AT 170837	AT 170840	AT 170906	AT 170910	AT 170914	AT 170918	AT 170923
46				AT 170841	AT 170843	AT 170845	AT 170919	AT 170924
56				AT 170842	AT 170844	AT 170846	AT 170847	AT 170925
66							AT 170848	AT 170849

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# SHOULDER BUSHINGS B-12a BUNDBÜCHSEN

$\varnothing d - ID$	22	24	30	32	40	42	50	60
$\varnothing d_1$	30	30	42	42	54	54	66	80
$\varnothing d_2$	35	35	47	47	60	60	72	86
$L_1$	6	6	6	6	10	10	10	20
$L_2$	3	3	3	3	4	4	4	4
$r$	2	2	2	2	3	3	3	3

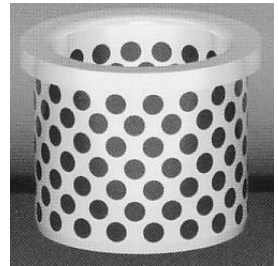
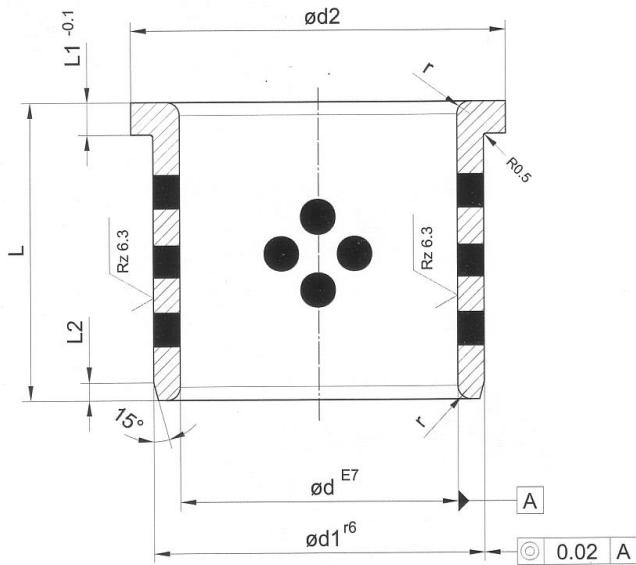
L	Material B - Part No. Teil Nr.							
17	AT 170926	AT 170932						
22	AT 170927	AT 170933						
27	AT 170928	AT 170934	AT 170939	AT 170945				
36	AT 170929	AT 170935	AT 170940	AT 170946				
46	AT 170930	AT 170936	AT 170941	AT 170947				
56	AT 170931	AT 170937	AT 170942	AT 170948	AT 170951	AT 170955		
66	AT 170850	AT 170938	AT 170855	AT 170858	AT 170861	AT 170865		
76	AT 170851	AT 170853	AT 170943	AT 170949	AT 170952	AT 170956	AT 170959	
86	AT 170852	AT 170854	AT 170856	AT 170859	AT 170862	AT 170866	AT 170869	
96			AT 170944	AT 170950	AT 170953	AT 170957	AT 170960	AT 170963
116			AT 170857	AT 170860	AT 170954	AT 170958	AT 170961	AT 170964
136					AT 170863	AT 170867	AT 170962	AT 170965
156					AT 170864	AT 170868	AT 170870	AT 170872
196							AT 170871	AT 170873

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)



# SHOULDER BUSHINGS BUNDBÜCHSEN

B-13



Slide direction: Radial & axial  
Gleitrichtung

$\varnothing d$ - ID	10	12	13	14	15	16	20	25
$\varnothing d_1$	14	18	19	20	21	22	30	35
$\varnothing d_2$	22	25	26	27	28	29	40	45
$L_1$	2	3	3	3	3	3	5	5
$L_2$	2	3	3	3	3	3	3	3
$r$	1	1	1,5	1,5	1,5	1,5	1,5	2
$L$	<b>Material B - Part No. Teil Nr.</b>							
15	AT 170500	AT 170502	AT 170504	AT 170506	AT 170508	AT 170511	AT 170514	
20	AT 170501	AT 170503	AT 170505	AT 170507	AT 170509	AT 170512	AT 170515	AT 170518
25					AT 170510	AT 170513		AT 170519
30						AT 130458	AT 170516	AT 170520
35								AT 140925
40							AT 170517	AT 170521

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# SHOULDER BUSHINGS B-13a BUNDBÜCHSEN

$\varnothing d$ - ID	30	31,5	35	40	45	50	55	60
$\varnothing d_1$	40	40	45	50	55	60	65	75
$\varnothing d_2$	50	50	60	65	70	75	80	90
$L_1$	5	5	5	5	5	5	5	7,5
$L_2$	3	3	4	4	4	4	4	4
r	2	2	2	2	2	2	2	3

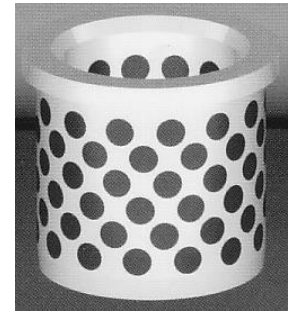
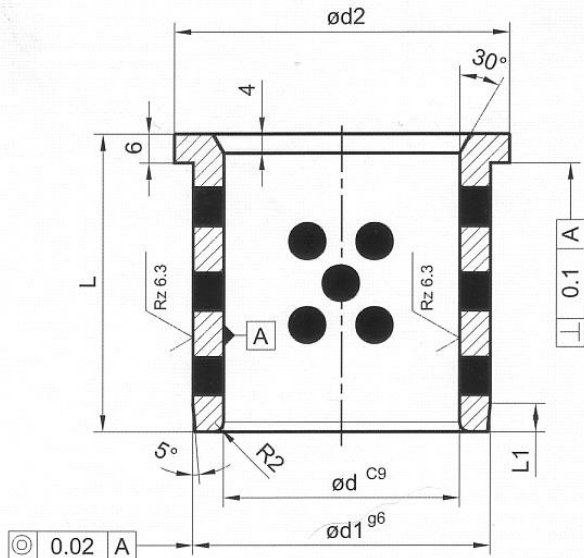
L	<i>Material B - Part No.</i> Teil Nr.							
30	AT 170522		AT 170527	AT 170530	AT 170533	AT 170536		
35	AT 170523	AT 170526						
40	AT 170524		AT 170528	AT 170531	AT 170534	AT 170537	AT 170539	AT 170541
50	AT 170525		AT 170529	AT 170532	AT 170097			AT 170542
60					AT 170535	AT 170538	AT 170540	
80								AT 170543

$\varnothing d$ - ID	63	70	75	80	90	100	120
$\varnothing d_1$	75	85	90	100	110	120	140
$\varnothing d_2$	85	105	110	120	130	150	170
$L_1$	7,5	7,5	7,5	10	10	10	10
$L_2$	4	4	4	5	5	5	5
r	3	3	3	3	3	3	3

L	<i>Material B - Part No.</i> Teil Nr.						
50		AT 170545					
60			AT 170547	AT 170548	AT 170091		
67,5	AT 170544						
80		AT 170546		AT 170549	AT 170092	AT 170093	AT 170095
100				AT 170090		AT 170094	AT 170096

*Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)*

# SHOULDER BUSHINGS - NAAMS B-14 BUNDBÜCHSEN - NAAMS



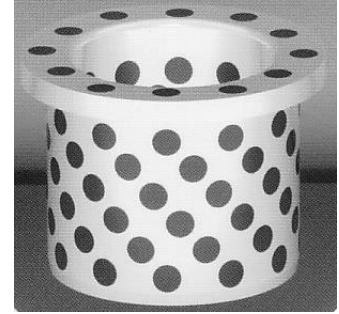
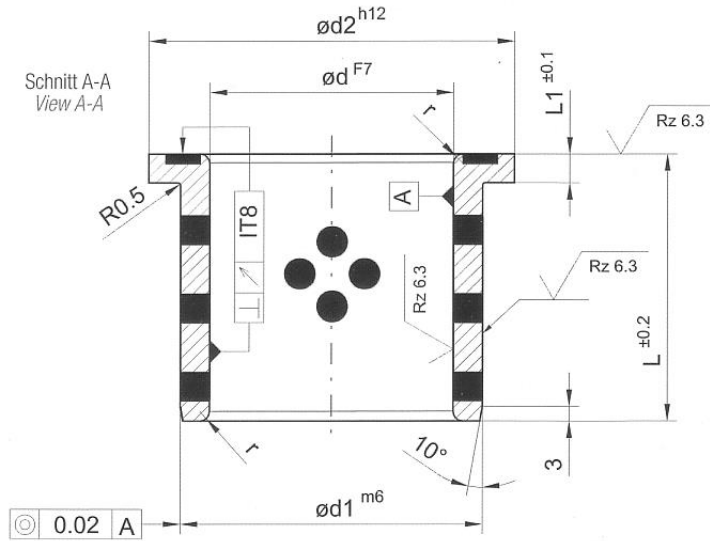
Slide direction: ↑  
Gleitrichtung ↓

Material B Part No./ Teil Nr.	$\varnothing d$ - ID	L	$\varnothing d_1$	$\varnothing d_2$	$L_1$
AT 180869	25	40	32	40	4
AT 180870	32	50	40	50	4
AT 180871	40	55	50	63	5
AT 180872	50	63	63	71	6
AT 180873	63	75	80	90	8
AT 180874	80	90	100	112	10
AT 180875	100	115	125	140	12
AT 180876	125	150	160	180	12

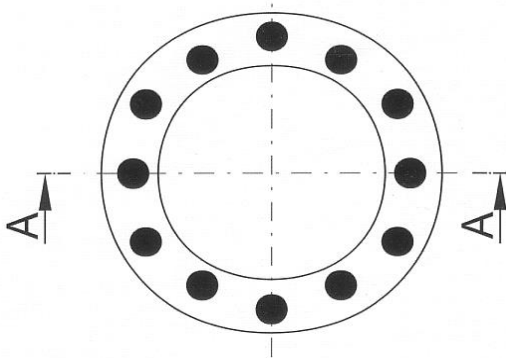
Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# SHOULDER BUSHINGS BUNDBÜCHSEN

B-15



Slide direction: Radial & axial  
Gleitrichtung

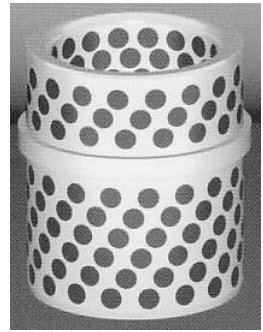
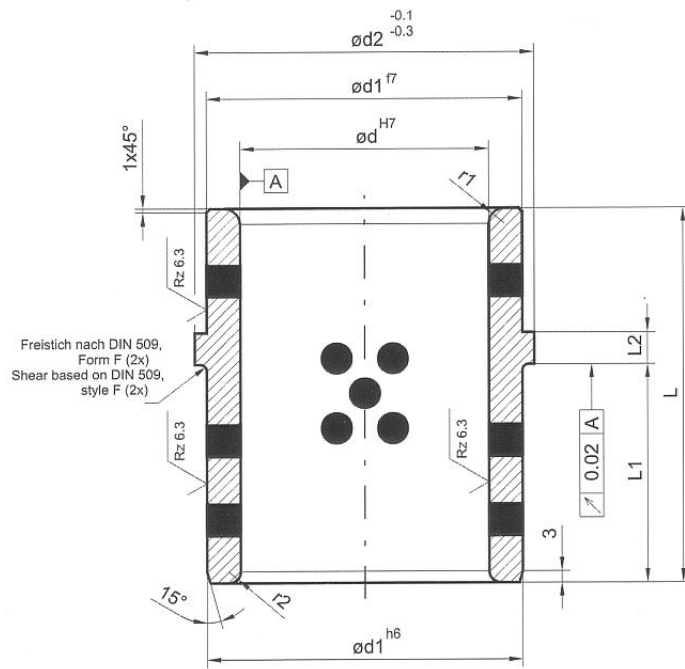


Material B Part No./ Teil Nr.	$\varnothing d$ - ID	L	$\varnothing d_1$	$\varnothing d_2$	$L_1$	r
AT 190691	12	15	18	25	4	1
AT 160692	16	20	22	30	5	
AT 190693	20	25	28	36		
AT 190694	25	30	33	43		
AT 190695	30	35	38	48		
AT 190696	40	45	50	60		6
AT 160697	50	50	60	68		
AT 190699		55	62	75	6	
AT 190698	60	60	75	83	7,5	3
AT 190690		65		90	7	

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# EJECTOR CORE BUSHINGS FÜHRUNGSBÜCHSEN

B-16



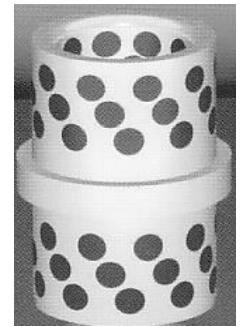
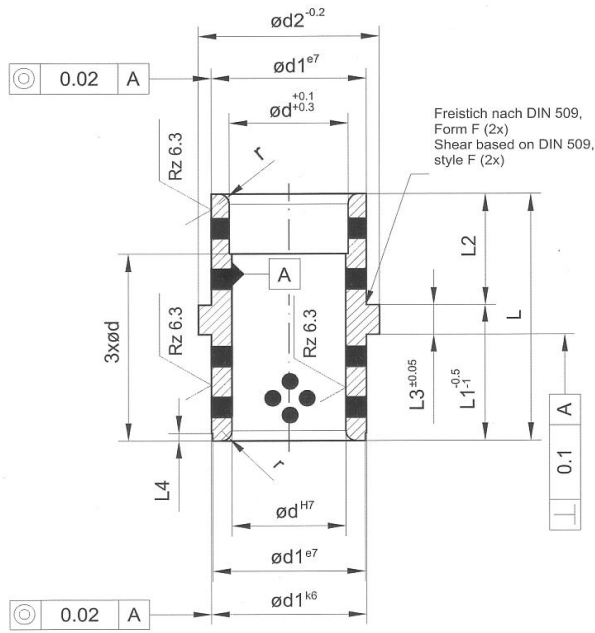
Slide direction: ↑  
Gleitrichtung ↓

Material B Part No./ Teil Nr.	$\varnothing d$ - ID	L	$\varnothing d_1$	$\varnothing d_2$	$L_1$	$L_2$	$r_1$	$r_2$
AT 170115	25	43	35	40	24	7,5	3	2
AT 170116	30		42	47				
AT 170117	40	60	50	60	35,5	6		
AT 170118		64			39,5			
AT 170119	50	77	63	72	44,5	8		
AT 170120		92			55,5			
AT 170121	60	78	80	86	49	7,5	3	3
AT 170122	63	95		90	55,5	8	4	
AT 170123		100			62,5			
AT 170124		108						

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# EJECTOR CORE BUSHINGS FÜHRUNGSBÜCHSEN

B-17



Slide direction: ↑  
Gleitrichtung ↓

ø d - ID	9	10	14	15	15	18	20
ø d <sub>1</sub>	14	14	20	20	20	26	26
ø d <sub>2</sub>	16	16	25	25	25	31	31
L <sub>2</sub>	6	9	9	9	17	17	17
L <sub>3</sub>	3	3	6	6	6	6	6
L <sub>4</sub>	2	2	3	3	3	3	3
r	1	1	1,5	1,5	1,5	1,5	1,5

L	L <sub>1</sub>	Material B - Part No. Teil Nr.					
15	9	AT 170966					
26	17		AT 170967	AT 170402	AT 170406		
39	22					AT 170968	AT 170454
49	27						
63	36						
73	46						

ø d - ID	20	22	24	24	30	32
ø d <sub>1</sub>	26	30	30	30	42	42
ø d <sub>2</sub>	31	35	35	35	47	47
L <sub>2</sub>	22	22	22	27	27	27
L <sub>3</sub>	6	6	6	6	6	6
L <sub>4</sub>	3	3	3	3	3	3
r	1,5	2	2	2	2	2

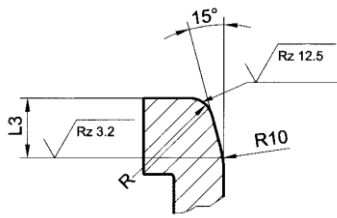
L	L <sub>1</sub>	Material B - Part No. Teil Nr.					
15	9						
26	17						
39	22						
49	27	AT 170969	AT 170456	AT 170457			
63	36				AT 170714	AT 170458	AT 170459
73	46						AT 170715

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

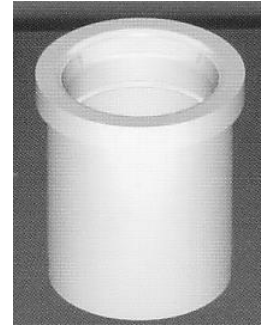
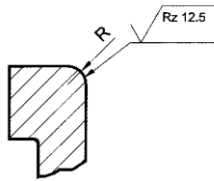
# PAD BUSHINGS FÜHRUNGSBÜCHSEN

B-18

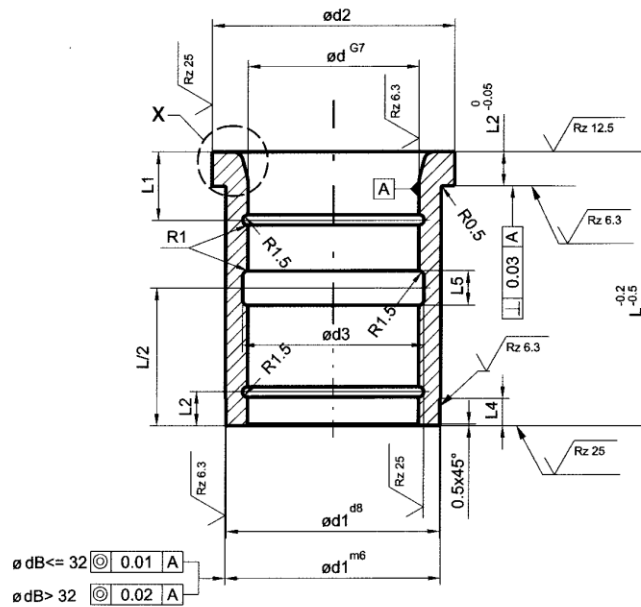
Einzelheit-X für A > 40  
Detail-X to A > 40



Einzelheit-X für A ≤ 40  
Detail-X to A ≤ 40



Slide direction: Radial & axial  
Gleitrichtung

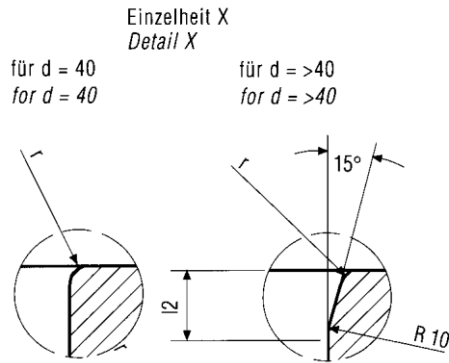


Material B (CuZn25Al5) Part No./ Teil Nr.	Ø d	L	Ø d1	Ø d2	Ø d3	L1	L2	L3	L4	L5	r
AT180820	20	32	28	32	22	-	4	-	3	-	2
AT180821	25	40	35	40	27	-	5	-	5	5	2
AT180822	32	50	44	50	34	12	6	-	-	-	-
AT180823	40	63	52	60	42	16	8	-	8	8	-
AT180824	50	80	63	71	52	20	10	8	-	10	3
AT180825	63	100	80	90	65	25	12	-	-	12	-
AT180826	80	125	100	112	82	32	16	10	10	16	4
AT180827	100	160	125	140	102	40	20	-	-	20	4

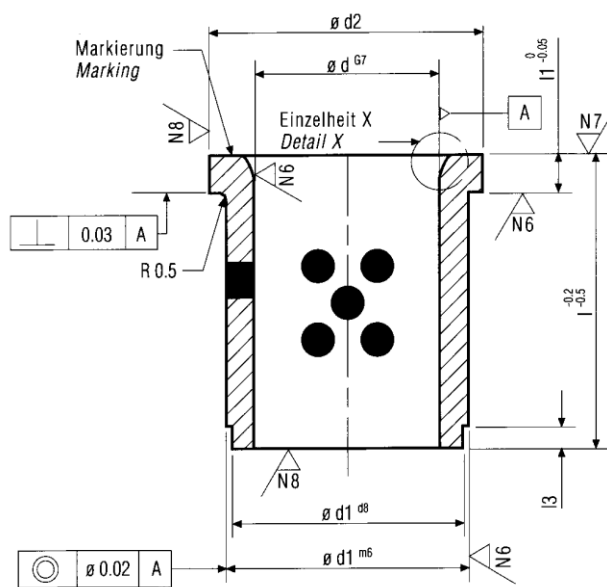
CuZn25Al5 (Material B) – without solid lubricant / Material B – ohne Festschmierstoff

# PAD BUSHINGS FÜHRUNGSBÜCHSEN

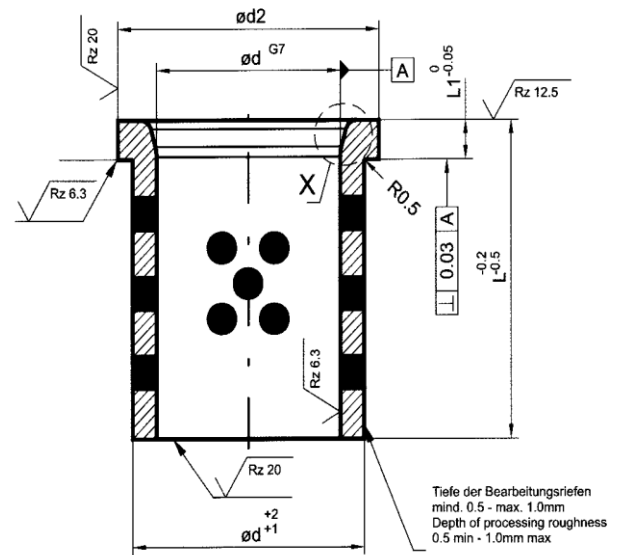
B-19



Slide direction: ↑  
Gleitrichtung ↓



**A-Guide bushing for press fit**  
A-Führungsbüchse zum Einpressen



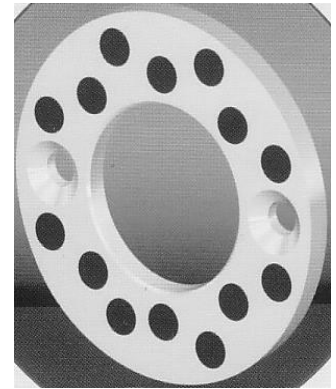
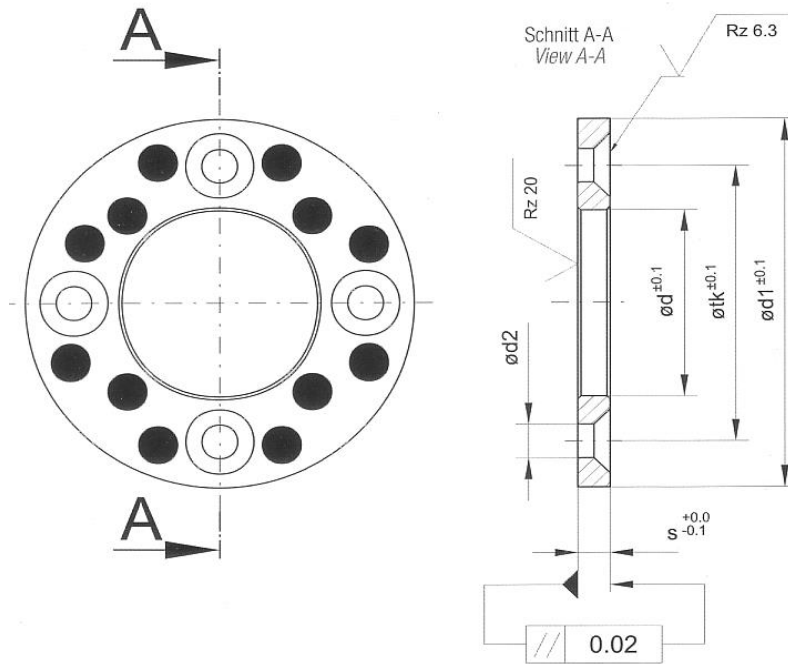
**B-Guide bushing for use with cast filler between bore hole and bushing**  
B-Führungsbüchse zum Eingießen

Material B Part No./ Teil Nr.	Style/ Type	$\varnothing d$	L	$\varnothing d_1$	$\varnothing d_2$	L1	L2	L3	r
AT180700	A	40	63	52	60	8	-	8	3
AT180701		50	80	63	71	10	8	8	
AT180702		63	100	80	90	12	10	10	4
AT180703		80	125	100	112	16		4	
AT180704		100	160	125	140	20	4		
AT180714	B	40	63	52	60	8	-	-	3
AT180715		50	80	63	71	10	8		
AT180716		63	100	80	90	12	10	-	4
AT180717		80	125	100	112	16			
AT180718		100	160	125	140	20	4		

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)



# WASHER B-20 ANLAUFSCHLEIBEN



Slide direction: Radial  
Gleitrichtung

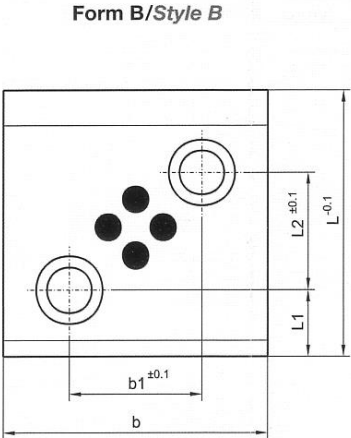
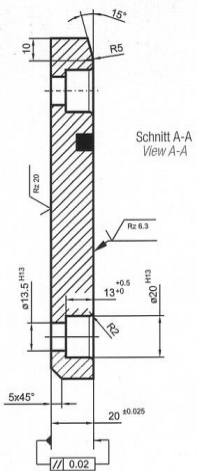
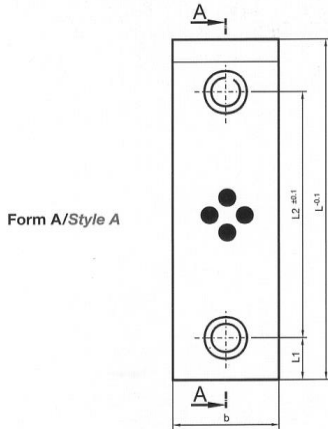
Material B Part No./ Teil Nr.	$\varnothing d$	s	$\varnothing d_1$	$\varnothing d_2$	tk	Countersunk screw/ Senkschrauben	
						DIN 7991	Quantity/ Stückzahl
AT 190616	12,2	3	40	-	-	-	-
AT 190617	16,2		50				
AT 190618	20,2	5	55	5,5	35	M5	2
AT 190619	25,2				40		
AT 190620	30,2				45		
AT 190621	35,2				50		
AT 190622	40,2	7	80	6,6	60	M6	4
AT 190623	45,3				67,5		
AT 190624	50,3	8	100	9	75	M8	
AT 190625	60,3				90		
AT 190626	70,3				100		
AT 190627	80,3	10	150	11	120	M10	
AT 190628	90,5				140		
AT 190629	100,5				160		
AT 190600	120,5				175		

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

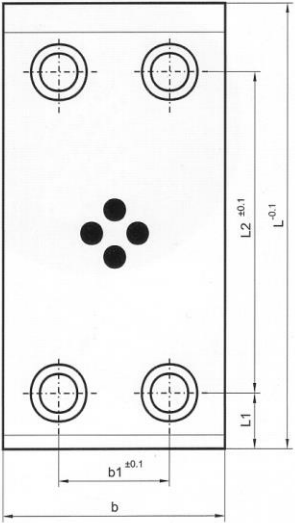
# WEAR PLATES C-1 GLEITPLATTEN



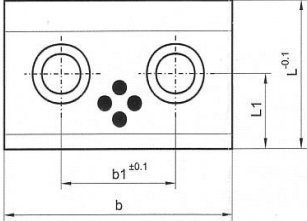
Slide direction:  
Gleitrichtung



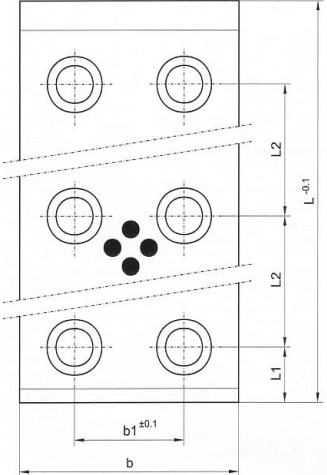
**Form C/Style C**



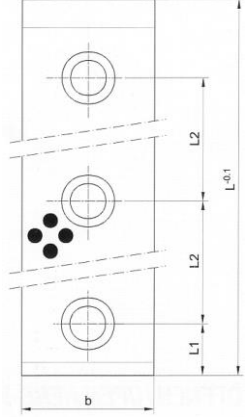
**Form D/Style D**



**Form E/Style E**



**Form F/Style F**



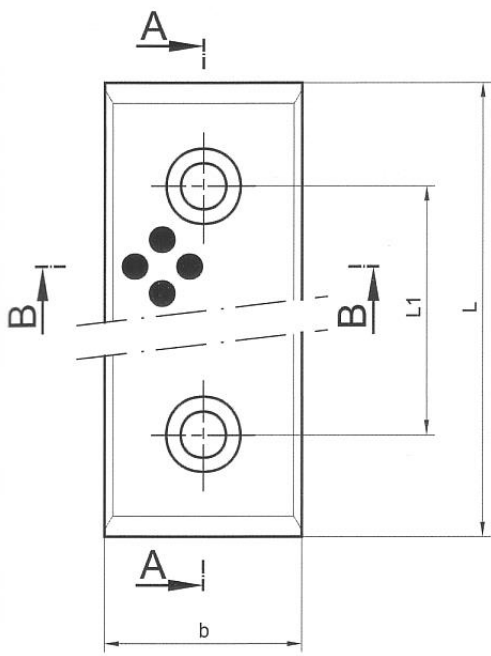
## WEAR PLATES C-1b GLEITPLATTEN

<b>Material B Part No./ Teil Nr.</b>	<b>Width x Length b x L</b>	<b>L<sub>1</sub></b>	<b>L<sub>2</sub> ±0,1</b>	<b>b<sub>1</sub> ±0,1</b>	<b>Style/ Form</b>
AT 180030	50 x 80	20	35	-	A
AT 180330	50 x 100		55		
AT 180331	50 x 125		80		
AT 180332	50 x 160		115		
AT 180333	50 x 200		155		
AT 180480	50 x 250		100		F
AT 180484	80 x 50	25	-	40	D
AT 180031	80 x 80	20	35		B
AT 180334	80 x 100		55		
AT 180335	80 x 125		80		
AT 180336	80 x 160		115		
AT 180337	80 x 200		155		
AT 180352	80 x 250		100		
AT 180481	80 x 315		132		
AT 180338	100 x 50	25	-	60	D
AT 180339	100 x 80	20	35		B
AT 180340	100 x 100		55		
AT 180341	100 x 125		80		
AT 180342	100 x 160		115		
AT 180343	100 x 200		155		
AT 180353	100 x 250		100		
AT 180482	100 x 315		132		
AT 180485	125 x 50	25	-	85	D
AT 180344	125 x 80	20	35		B
AT 180345	125 x 100		55		
AT 180346	125 x 125		80		
AT 180347	125 x 160		115		
AT 180044	125 x 200		155		
AT 180354	125 x 250		100		
AT 180483	125 x 315		132		
AT 180486	160 x 50	25	-	120	D
AT 180359	160 x 80	20	35		C
AT 180348	160 x 100		55		
AT 180349	160 x 125		80		
AT 180350	160 x 160		115		
AT 180351	160 x 200		155		
AT 180355	160 x 250		100		
AT 180356	160 x 315		132		
AT 180357	200 x 160	20	115	160	C
AT 180358	200 x 200		155		

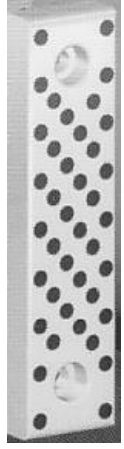
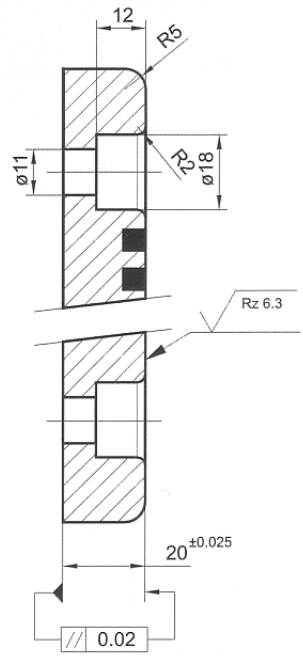
*Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)*

# WEAR PLATES C-2 GLEITPLATTEN

Form A/Style A



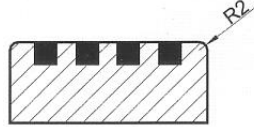
Schnitt A-A  
View A-A



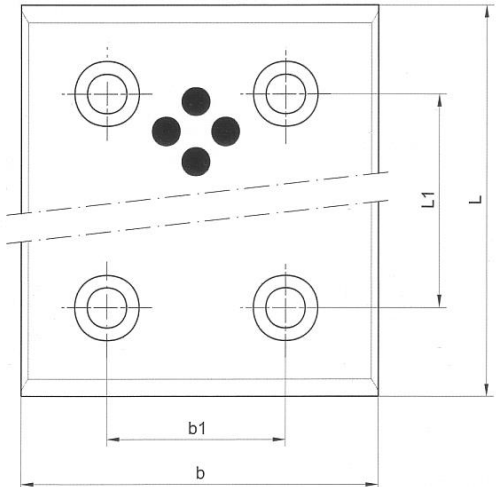
Slide direction:  
Gleitrichtung



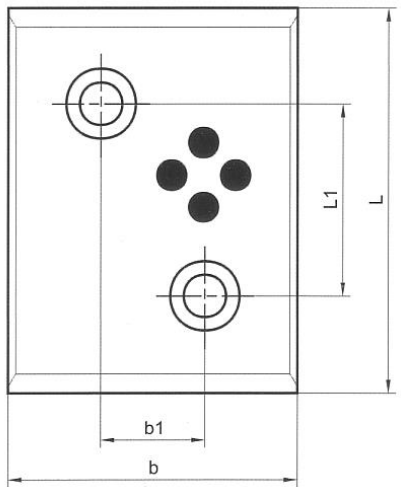
Schnitt B-B  
View B-B



Form B/Style B



Form C/Style C

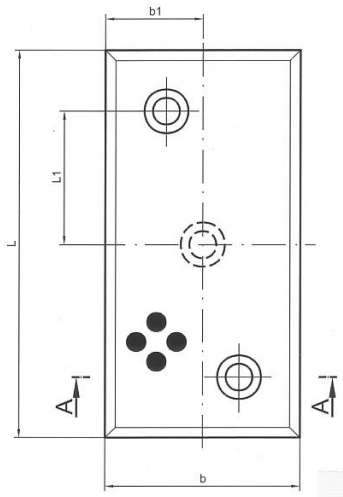
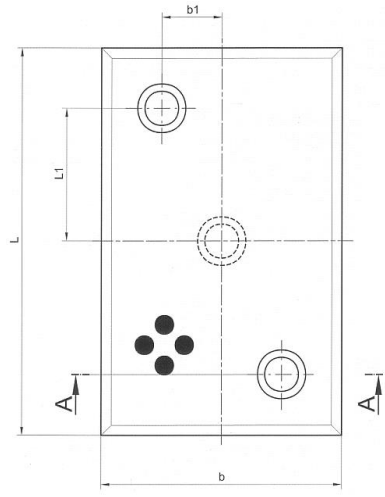
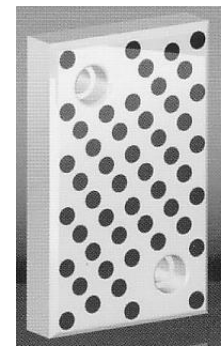
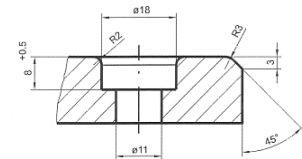
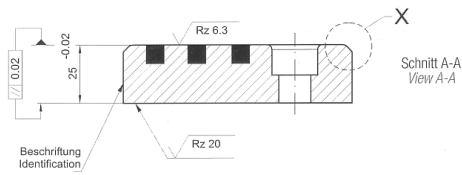


# WEAR PLATES C-2a GLEITPLATTEN

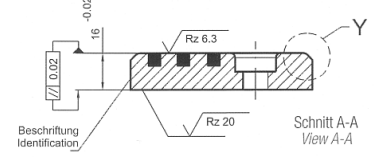
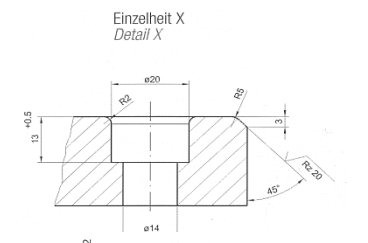
Material B Part No./ Teil Nr.	Width x Length b x L	b1	L1	Style/ Form		
AT 170180	28 X 75	-	45	A		
AT 170181	28 X 100		50			
AT 170184	28 X 125		75			
AT 170182	28 X 150		100			
AT 170183	38 X 75		45			
AT 180930	38 X 100		50			
AT 130269	38 X 125		75			
AT 180931	38 X 150		100			
AT 170185	38 X 200		150			
AT 170150	48 X 75		45			
AT 170151	48 X 100		50			
AT 170152	48 X 125		75			
AT 170153	48 X 150		100			
AT 140371	48 X 200		150			
AT 170189	58 x 75		45			
AT 170190	58 x 100		50			
AT 170191	58 x 150		100			
AT 170155	75 x 75		45			
AT 180932	75 x 100		25		50	C
AT 170157	75 x 100		-		50	A
AT 170156	75 x 125	75				
AT 180933	75 x 150	100				
AT 170158	75 x 200	150				
AT 180934	100 x 100	50	50	B		
AT 170160	100 x 125		75			
AT 180935	100 x 150		100			
AT 170162	100 x 200		150			
AT 170163	100 x 250		200			
AT 140799	100 x 300		250			
AT 150291	125 x 125		75			
AT 170164	125 x 150		100			
AT 170165	125 x 200		150			
AT 170166	125 x 250		200			
AT 140805	125 x 300		250			
AT 170159	125 x 350		300			
AT 170167	150 x 150	100	100			
AT 170168	150 x 200		150			
AT 170169	150 x 250		200			
AT 170192	150 x 300		250			
AT 170193	200 x 200	150	150			
AT 170194	200 x 250		200			
AT 170195	200 x 300		250			

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# WEAR PLATES C-3 GLEITPLATTEN



Slide direction: Gleitrichtung



Material B Part No./ Teil Nr.	b x L x s	L1	b1	Cheese head screws / Zylinderkopfschrauben
				M12 - Quantity / Anzahl
AT 190030	80 x 100 x 25	25	15	2
AT 190031	80 x 125 x 25	37,5		
AT 190032	80 x 160 x 25	55		
AT190033	80 x 200 x 25	75	25	3
AT 190034	100 x 125 x 25	37,5	25	2
AT 190035	100 x 160 x 25	55		
AT 190036	100 x 200 x 25	75		
AT 190037	125 x 125 x 25	37,5	37,5	2

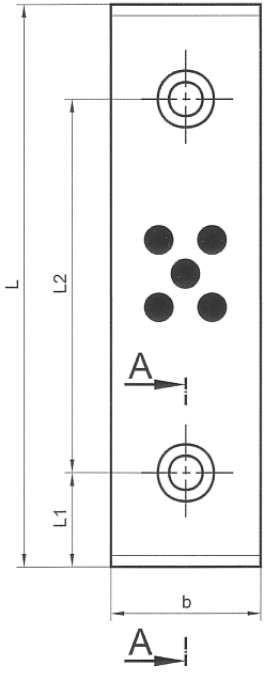
Material B Part No./ Teil Nr.	b x L x s	L1	b1	Cheese head screws / Zylinderkopfschrauben
				M10 - Quantity / Anzahl
AT 190038	60 x 100 x 16	25	12,5	2
AT 190039	60 x 125 x 16	37,5		
AT 190040	60 x 160 x 16	55		
AT 190041	60 x 200 x 16	75	15	3
AT 190042	80 x 100 x 16	25	15	2
AT 190043	80 x 125 x 16	37,5		
AT 190044	80 x 160 x 16	55		
AT 190045	80 x 200 x 16	75	15	3

b x L x s = width x length x thickness

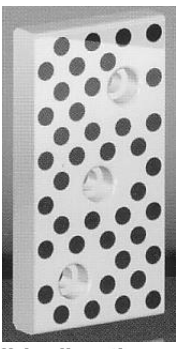
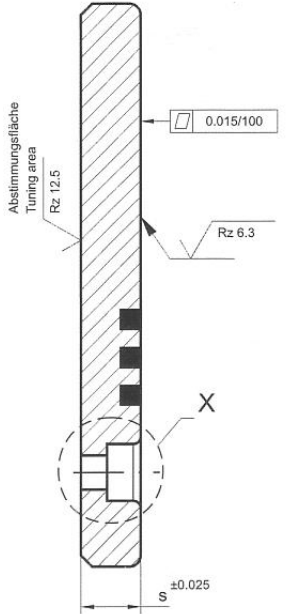
Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# WEAR PLATES C-4 GLEITPLATTEN

Form A/Style A

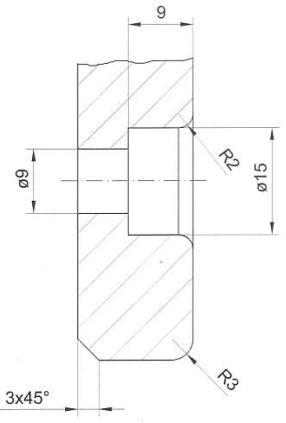


Schnitt A-A  
View A-A

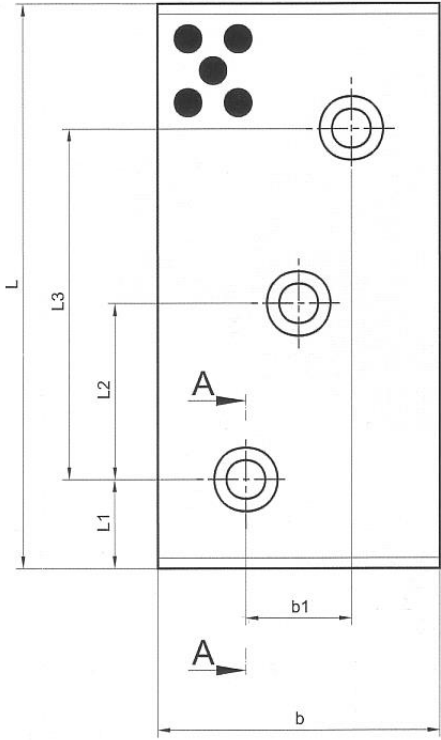


Slide direction:  
Gleitrichtung

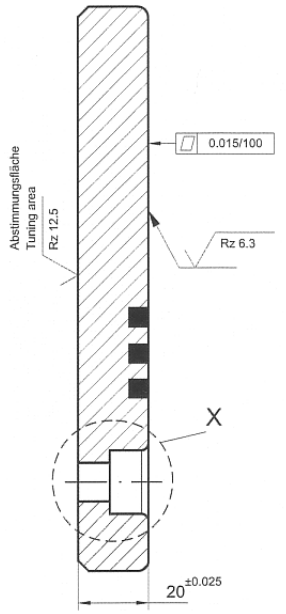
Einzelheit X  
Detail X



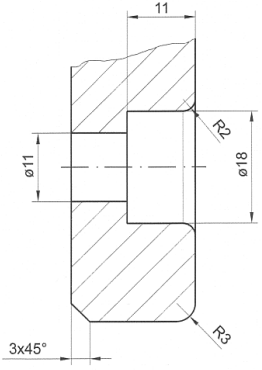
Form B/Style B



Schnitt A-A  
View A-A



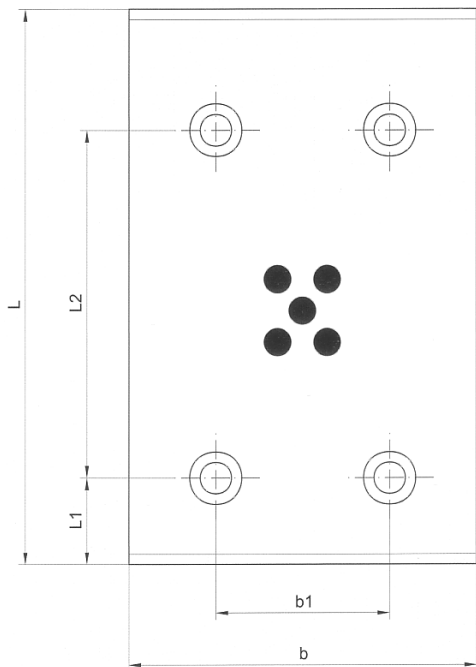
Einzelheit X  
Detail X



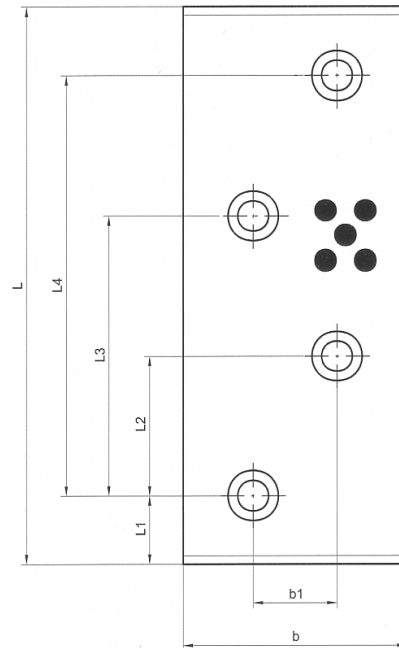
# WEAR PLATES GLEITPLATTEN

C-4a

Form C/Style C



Form D/Style D



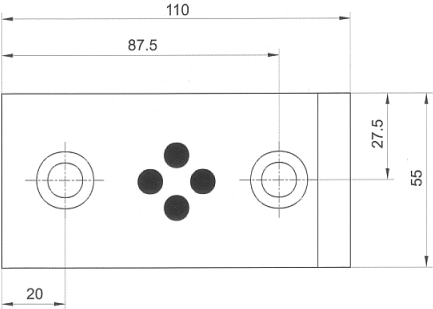
$b \times L \times s$  = width x length x thickness

Material B Part No./ Teil Nr.	b x L x s	b1	L1	L2	L3	L4	Chees head screws/ Zylinderkopfschrauben		Style / Form		
							DIN 912	Quantity / Anzahl			
AT 190647	40 x 75 x 16	-	15	45	-	-	M8	2	A		
AT 190648	40 x 100 x 16		50								
AT 190649	40 x 125 x 16		25	75							
AT 190650	40 x 150 x 16		100								
AT 190651	60 x 75 x 20	-	15	45	-	-	M10	2	A		
AT 190652	60 x 100 x 20		50								
AT 190653	60 x 125 x 20		25	75							
AT 190654	60 x 150 x 20		100								
AT 190637	80 x 75 x 20	30	25	25	-	-	M10	2	B		
AT 190638	80 x 100 x 20			50							
AT 190639	80 x 125 x 20			75							
AT 190640	80 x 160 x 20			50						100	150
AT 190641	80 x 200 x 20			4							
AT 190642	100 x 75 x 20	50	25	25	-	-	M10	4	C		
AT 190643	100 x 100 x 20			50							
AT 190644	100 x 125 x 20			75							
AT 190645	100 x 160 x 20			100							
AT 190646	100 x 200 x 20			150							

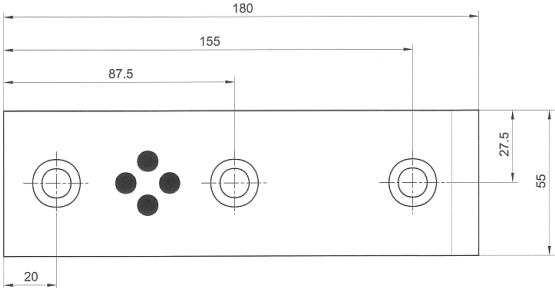
Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)



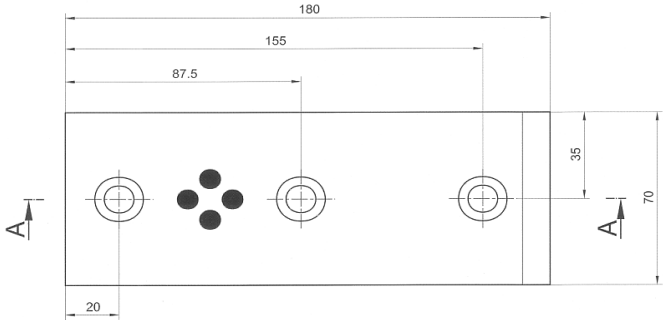
Form A/Style A



Form B/Style B

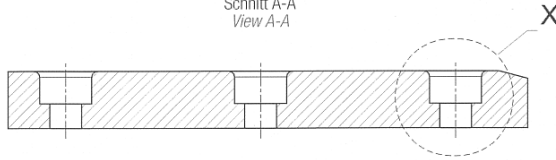


Form C/Style C

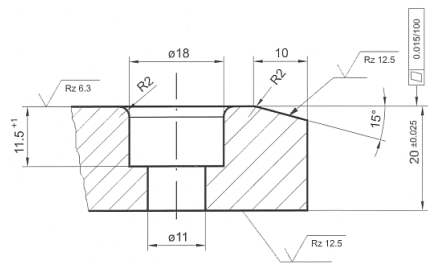


Slide direction:  
Gleitrichtung

Schnitt A-A  
View A-A

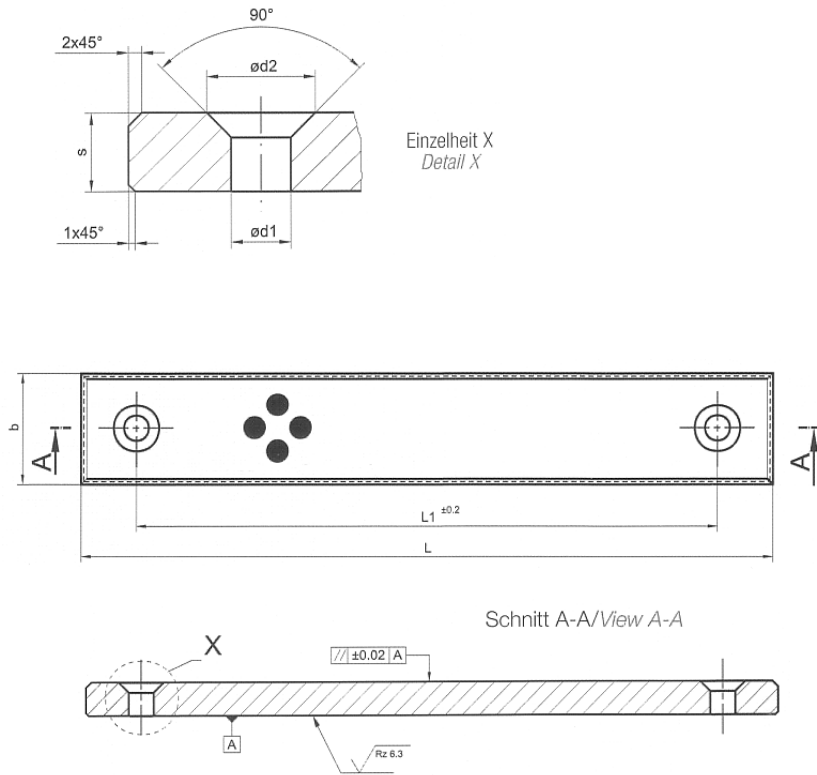


Einzelheit X  
Detail X



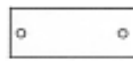
Material B Part No./ Teil Nr.	Width x length b x L	Style / Form
AT 190655	55 x 110	A
AT 190656	55 x 180	B
AT 190657	70 x 180	C

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

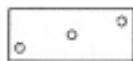


Slide direction:  
Gleitrichtung

**MOUNTING HOLE STYLES / Befestigungslochbilder**



**Style A**



**Style D**



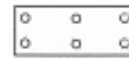
**Style F**



**Style B**



**Style E**



**Style G**



**Style C**

# WEAR PLATES GLEITPLATTEN

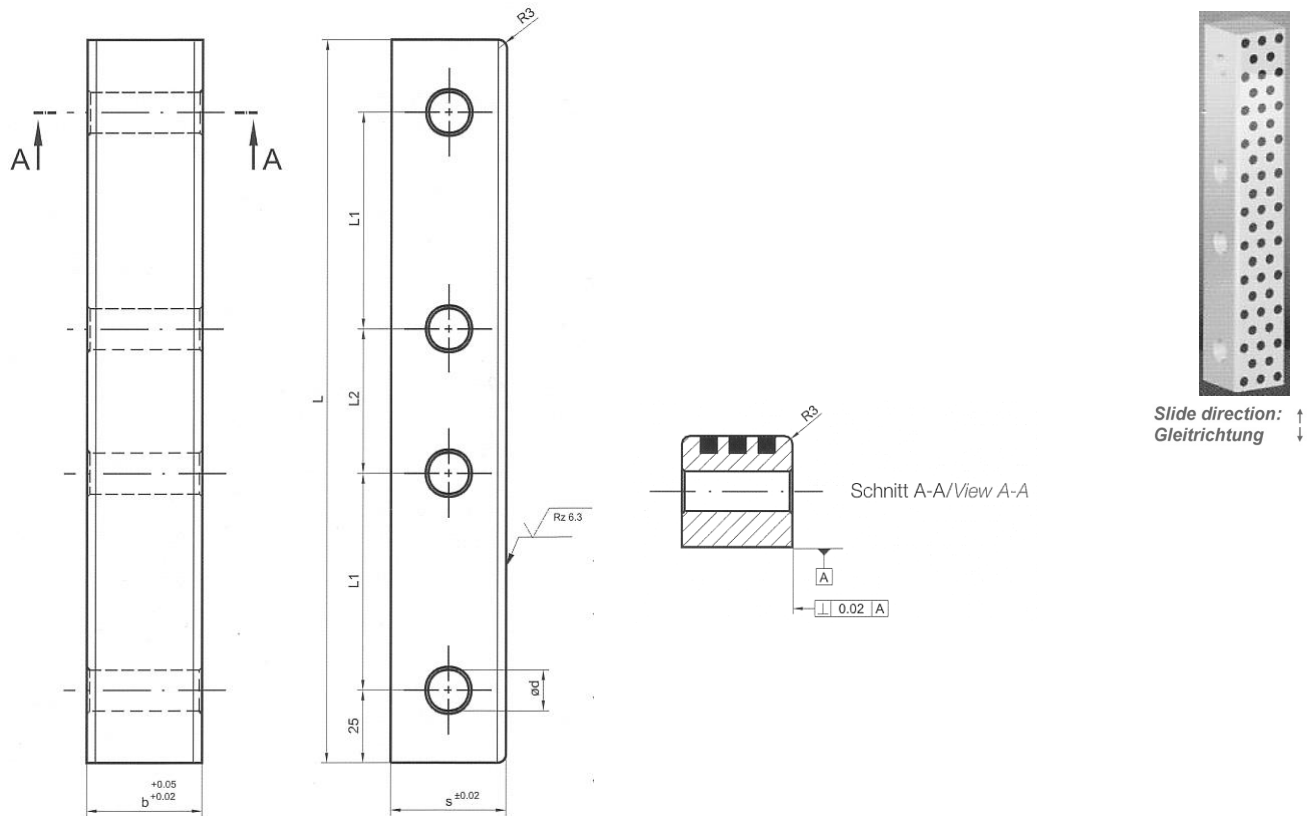
C-6a

<b>Material B Part No./ Teil Nr.</b>	<b>b -0,1</b>	<b>L -0,5</b>	<b>s ±0,025</b>	<b>b1</b>	<b>L1 ±0,2</b>	<b>Style/ Form</b>	<b>d1</b>	<b>d2</b>	<b>Cheese head screws DIN 912/ Zylinderkopfschrauben</b>
AT 180070	125	100	20	85	60	E	13,5	20	M12 x 25
AT 180071		160			120	E			
AT 180172		250			210	G			
AT 180073	100	100	16	60	60	B	11	18	M10 x 20
AT 180074		160			120	E			
AT 180075		250			210	G			
AT 180076	80	100	12	40	60	B	9	15	M8 x 20
AT 180077		160			120	F			
AT 180078		250			210	F			
AT 180079	80	100	20	40	60	B	13,5	20	M12 x 25
AT 180080		160			120	E			
AT 180081		250			210	F			
AT 180082	60	100	16	30	60	B	11	18	M10 x 20
AT 180069		160			120	B			
AT 180083		160			120	D			
AT 180084		250			210	D			
AT 180085	50	100	20	20	60	B	13,5	20	M12 x 25
AT 180086		160			120	D			
AT 180087		250			210	D			
AT 180088	40	100	8	-	60	A	9	16,4	Countersunk screw DIN 7991 Senkkopfschraube M8 x 15
AT 180089		160			120	C			
AT 180090		250			210	C			
AT 180091	40	100	12	-	60	A	9	16,4	M8 x 20
AT 180092		160			120	C			
AT 180093		250			210	C			
AT 180094	40	100	16	-	60	A	11	20,4	M10 x 20
AT 180095		160			120	C			
AT 180096		250			210	C			
AT 180097	30	100	12	-	60	A	9	16,4	M8 x 20
AT 180098		160			120	C			
AT 180099		250			210	C			

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# WEAR PLATES GLEITPLATTEN

C-7



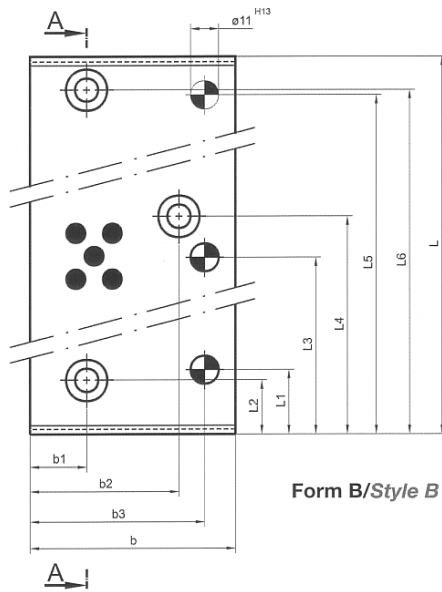
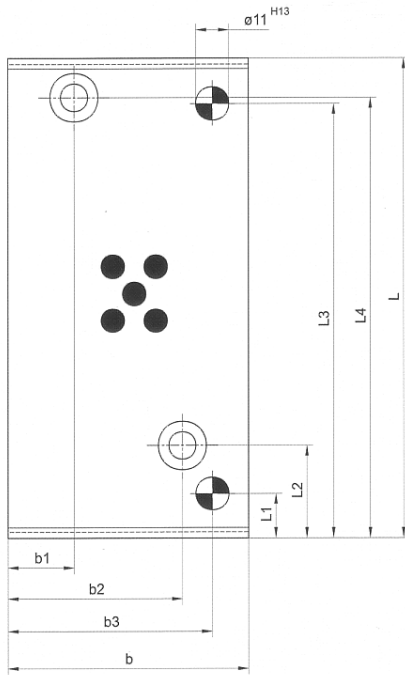
Material B Part No./ Teil Nr.	Material S3 Part No./ Teil Nr.	Material S1 Part No./ Teil Nr.	B x L x s	L1	L2	ø d	Quantity screws/ Anzahl Schrauben
AT 190550	AT 190570	AT 301540	30 x 150 x 40	50	-	14	3
AT 190551	AT 190571	AT 302040	30 x 200 x 40	75	50		4
AT 190552	AT 190572	AT 302540	30 x 250 x 40	50	-		3
AT 190553	AT 190573	AT 180141	40 x 150 x 40	75	50		4
AT 190554	AT 190574	AT 402040	40 x 200 x 40	50	-		3
AT 190555	AT 190575	AT 402540	40 x 250 x 40	75	50		4
AT 190556	AT 190576	AT 451550	45 x 150 x 50	50	-	18	3
AT 190557	AT 190577	AT 452050	45 x 200 x 50	75	50		4
AT 190558	AT 190578	AT 452550	45 x 250 x 50	50	-		3
AT 190559	AT 190579	AT 180142	55 x 150 x 50	75	50		4
AT 190560	AT 190580	AT 180144	55 x 200 x 50	50	-		3
AT 190561	AT 190581	AT 180146	55 x 250 x 50	75	50		4
AT 190562	AT 190582	AT 601550	60 x 150 x 50	50	-		3
AT 190563	AT 190583	AT 602050	60 x 200 x 50	75	50		4
AT 190564	AT 190584	AT 602550	60 x 250 x 50	50	-		3
AT 190565	AT 190585	AT 180143	70 x 150 x 50	75	50		4
AT 190566	AT 190586	AT 180145	70 x 200 x 50	50	-	3	
AT 190567	AT 190587	AT 702550	70 x 250 x 50	75	50	4	

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

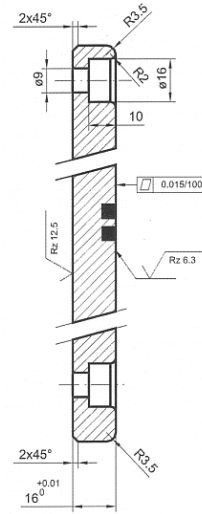
Material S1 – Steel hardened with solid lubricant (graphite) / Stahl gehärtet mit Festschmierstoff (Graphit)

Material S3 – GG-Gray Cast Iron with solid lubricant (graphite) / GG-Grauguß mit Festschmierstoff (Graphit)

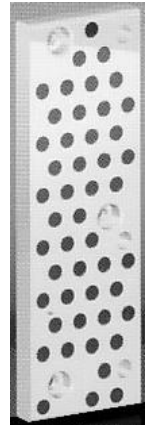
Form A/Style A



Form B/Style B



Schnitt A-A  
View A-A

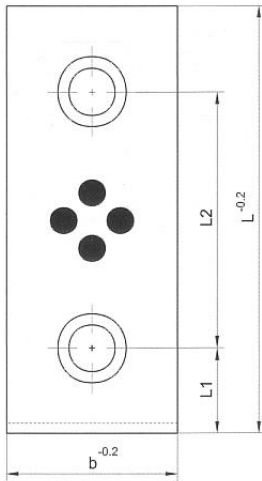


Slide direction:  
Gleitrichtung

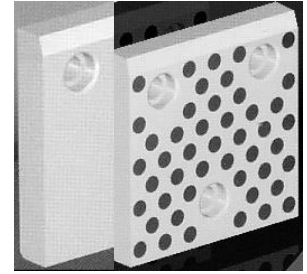
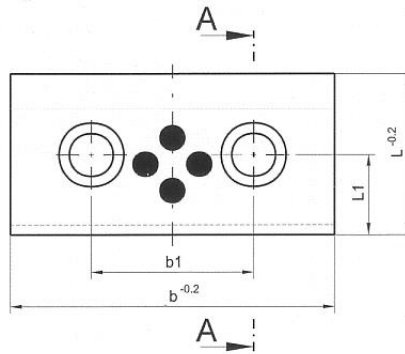
Material B Part No./ Teil Nr.	B x L	b1	b2	b3	L1	L2	L3	L4	L5	L6	Style/ Form	Dowel Hole / Pass-stift Bohrung Ø 11H13
AT 180752	50 x 160	19	31	-	-	21	-	147	-	-	A	-
AT 180754	50 x 250							121		237	B	-
AT 180753	80 x 160	22	58	68	15	31	145	147	235	-	A	2
AT 180755	80 x 250				25	21	105	121		237	B	3

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

**Form A/Style A**

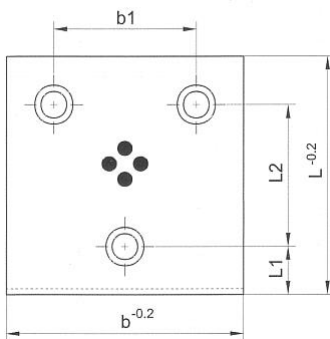


**Form B/Style B**

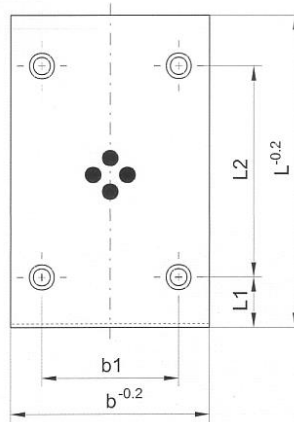


Slide direction: ↑  
 Gleitrichtung: ↑

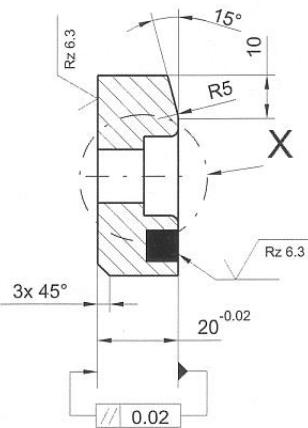
**Form C/Style C**



**Form D/Style D**



Schnitt A-A  
 View A-A



Senkung für Countersunk bore hole	ø d	ø D	t
M8 x 25	9	15	9
M12 x 25	13,5	20	13

# WEAR PLATES – VDI 3357 GLEITPLATTEN – VDI 3357

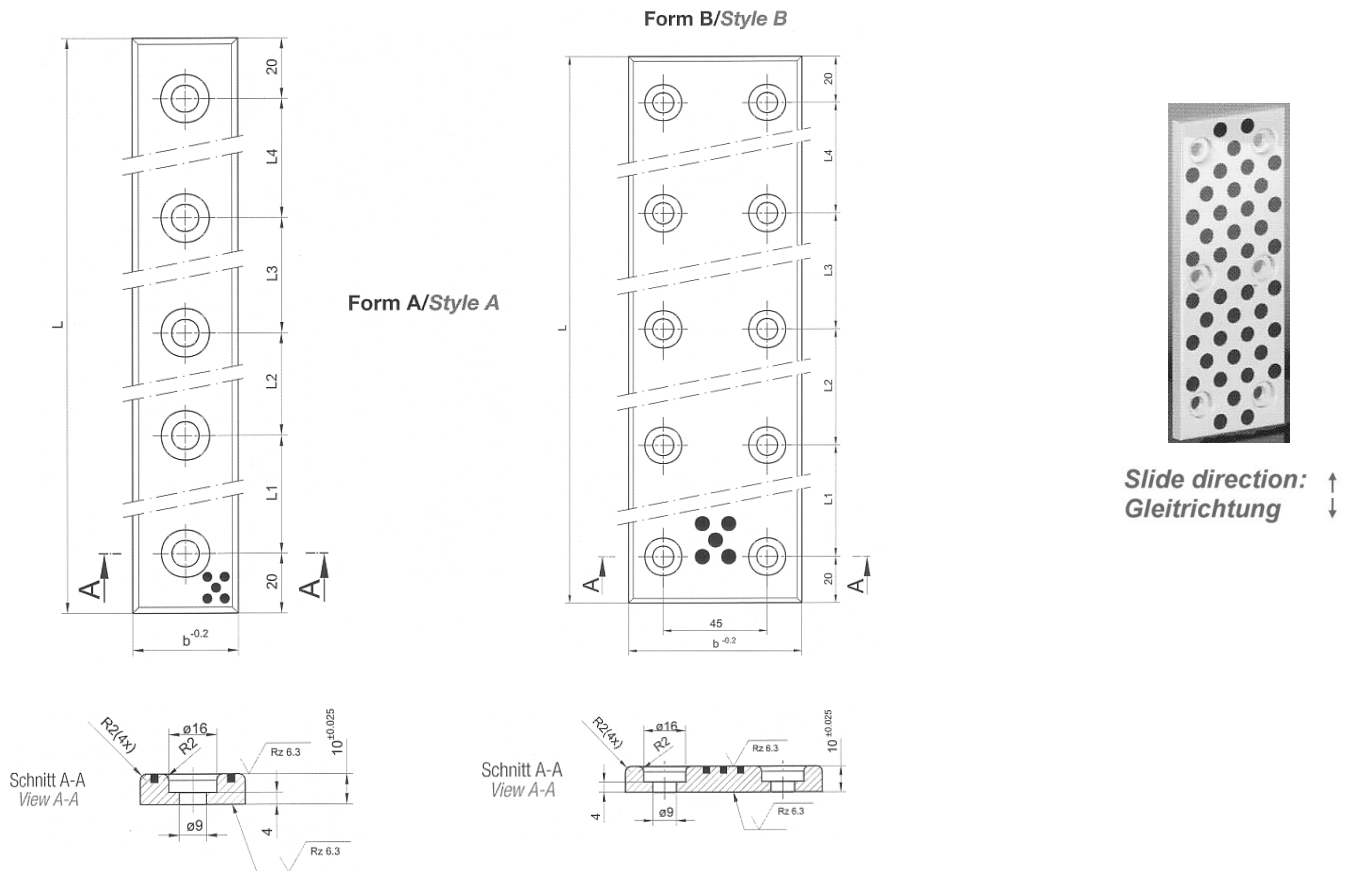
C-9a

Material B Part No./ Teil Nr.	Material S3 Part No./ Teil Nr.	Material S2 Part No./ Teil Nr.	b x L	b <sub>1</sub> ±0,1	L <sub>1</sub> ±0,1	L <sub>2</sub> ±0,1	Style	Cheese head screws/ Zylinderkopfschrauben		
								DIN 912	Quantity/ Anzahl	
AT 190800	AT 190910	AT 190896	50 x 80	-	25	30	A	M8 x 25	2	
AT 190801	AT 190850	AT 190873	50 x 100			50				
AT 190802	AT 190911	AT 190897	50 x 125			75				
AT 190803	AT 190851	AT 190874	50 x 160			110				
AT 190804	AT 190852	AT 190875	50 x 200			150				
AT 190805	AT 190912	AT 190898	80 x 50	30	25	-	B	M8 x 25		
AT 190806	AT 190913	AT 190899	80 x 80	-		30	A	M12 x 25		
AT 190807	AT 190853	AT 190876	80 x 100			50				
AT 190808	AT 190914	AT 190900	80 x 125			75				
AT 190809	AT 190854	AT 190877	80 x 160			110				
AT 190810	AT 190855	AT 190878	80 x 200			150				
AT 190829	AT 190856	AT 190879	80 x 250	40		170	A			
AT 190830	AT 190857	AT 190880	80 x 315			235				
AT 190811	AT 190915	AT 190901	100 x 50	50		25			B	M12 x 25
AT 190812	AT 190916	AT 190902	100 x 80			40				
AT 190813	AT 190858	AT 190881	100 x 100	-	25	50			A	
AT 190814	AT 190917	AT 190903	100 x 125			75				
AT 190815	AT 190859	AT 190882	100 x 160			110				
AT 190816	AT 190860	AT 190883	100 x 200			150				
AT 190831	AT 190861	AT 190884	100 x 250			40		170		
AT 190832	AT 190862	AT 190885	100 x 315	235						
AT 190817	AT 190918	AT 190904	125 x 50	75	25	B	M12 x 25			
AT 190818	AT 190919	AT 190905	125 x 80		40					
AT 190819	AT 190863	AT 190886	125 x 100		25	50		C		
AT 190820	AT 190920	AT 190906	125 x 125			75				
AT 190821	AT 190864	AT 190887	125 x 160			110				
AT 190822	AT 190865	AT 190888	125 x 200			150				
AT 190833	AT 190866	AT 190889	125 x 250			40			170	
AT 190834	AT 190867	AT 190890	125 x 315		235					
AT 190823	AT 190921	AT 190907	160 x 50		110	25		B	M12 x 25	
AT 190824	AT 190922	AT 190908	160 x 80			40				
AT 190825	AT 190868	AT 190891	160 x 100	25		50	C			
AT 190826	AT 190923	AT 190909	160 x 125			75				
AT 190827	AT 190869	AT 190892	160 x 160			110				
AT 190828	AT 190870	AT 190893	160 x 200			150				
AT 190835	AT 190871	AT 190894	160 x 250			40		170		
AT 190836	AT 190872	AT 190895	160 x 315	235			D	4		

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

Material S2 – Steel hardened without solid lubricant (graphite) / Stahl gehärtet ohne Festschmierstoff (Graphit)

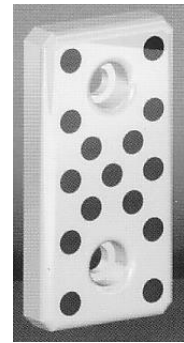
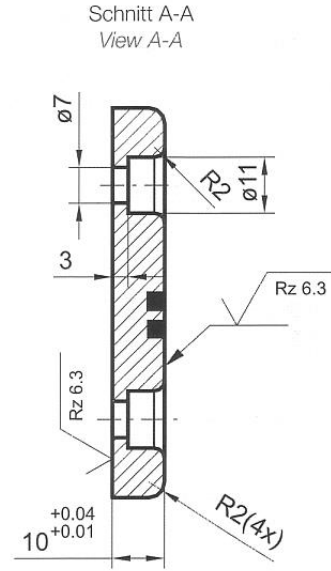
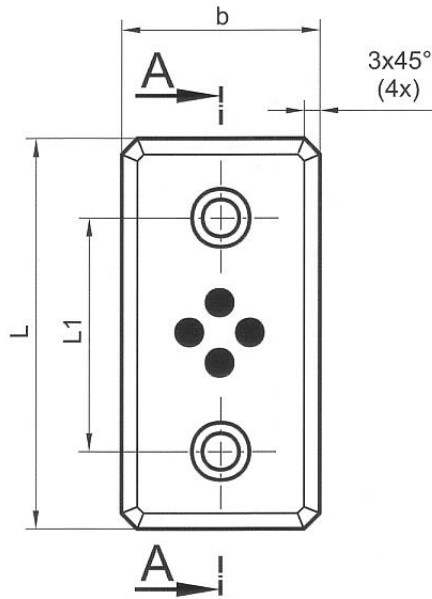
Material S3 – Gray Cast Iron with solid lubricant (graphite) / Grauguß mit Festschmierstoff (Graphit)



Material B Part No./ Teil Nr.	b x L	L1 ±0,2	L2 ±0,2	L3 ±0,2	L4 ±0,3	Style/ Form	Quantity screws/ Anzahl Schrauben
AT 170340	35 x 100	60	-	-	-	A	2
AT 170341	35 x 150	55	55	-	-		3
AT 170342	35 x 200	55	50	55	-		4
AT 170343	35 x 250	70	70	70	-		5
AT 170344	35 x 300	65	65	65	65		2
AT 170345	35 x 350	80	75	75	80		3
AT 170346	50 x 100	60	-	-	-		4
AT 170347	50 x 150	55	55	-	-		5
AT 170348	50 x 200	55	50	55	-		6
AT 170349	50 x 250	70	70	70	-		8
AT 170350	50 x 300	65	65	65	65	10	
AT 170351	50 x 350	80	75	75	80		
AT 170352	75 x 150	110	-	-	-	B	4
AT 170353	75 x 200	80	80	-	-		6
AT 170354	75 x 250	105	105	-	-		8
AT 170355	75 x 300	85	90	85	-		10
AT 170356	75 x 400	120	120	120	-		
AT 170357	75 x 500	115	115	115	115		

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)





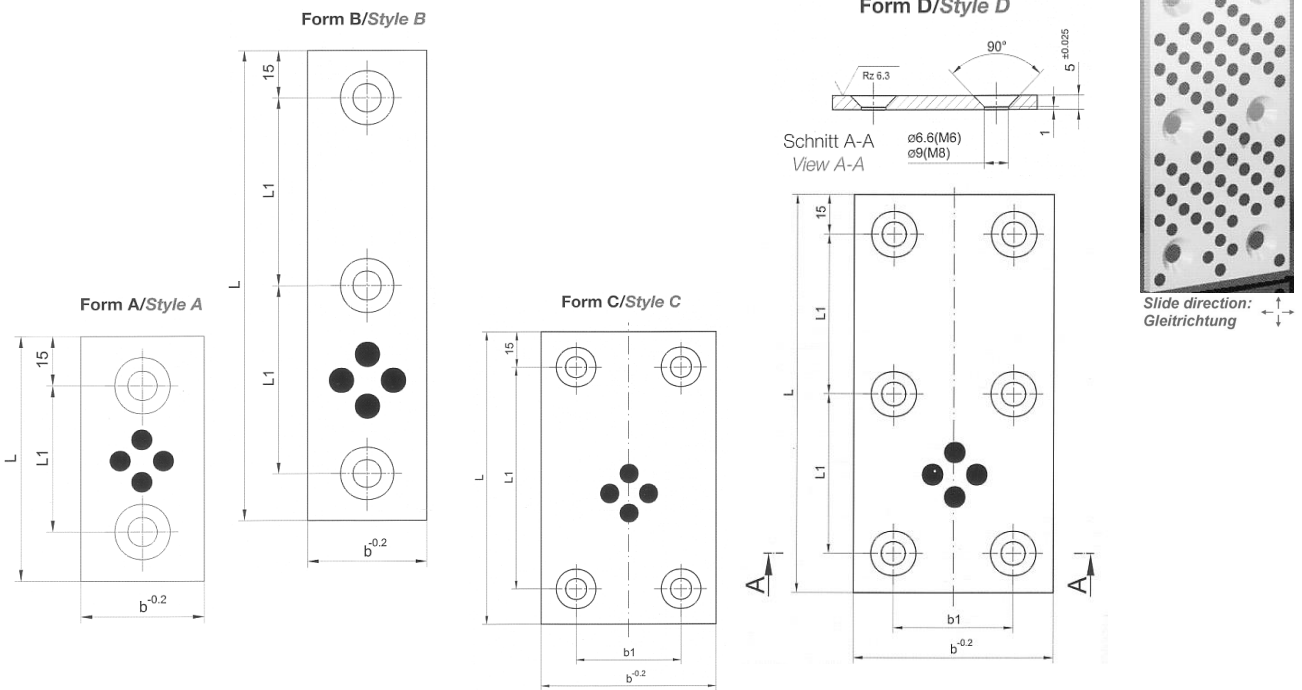
Slide direction:  
Gleitrichtung

<b>Material B Part No./ Teil Nr.</b>	<b>b x L</b>	<b>L1 ±0,2</b>
AT 170200	18 x 75	45
AT 170201	18 x 100	50
AT 170198	18 x 125	75
AT 170202	18 x 150	100
AT 170203	28 x 75	45
AT 170204	28 x 100	50
AT 170197	28 x 125	75
AT 170205	28 x 150	100
AT 170206	38 x 75	45
AT 170207	38 x 100	50
AT 170199	38 x 125	75
AT 170208	38 x 150	100
AT 170209	48 x 75	45
AT 170210	48 x 100	50
AT 170211	48 x 125	75
AT 170212	48 x 150	100

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

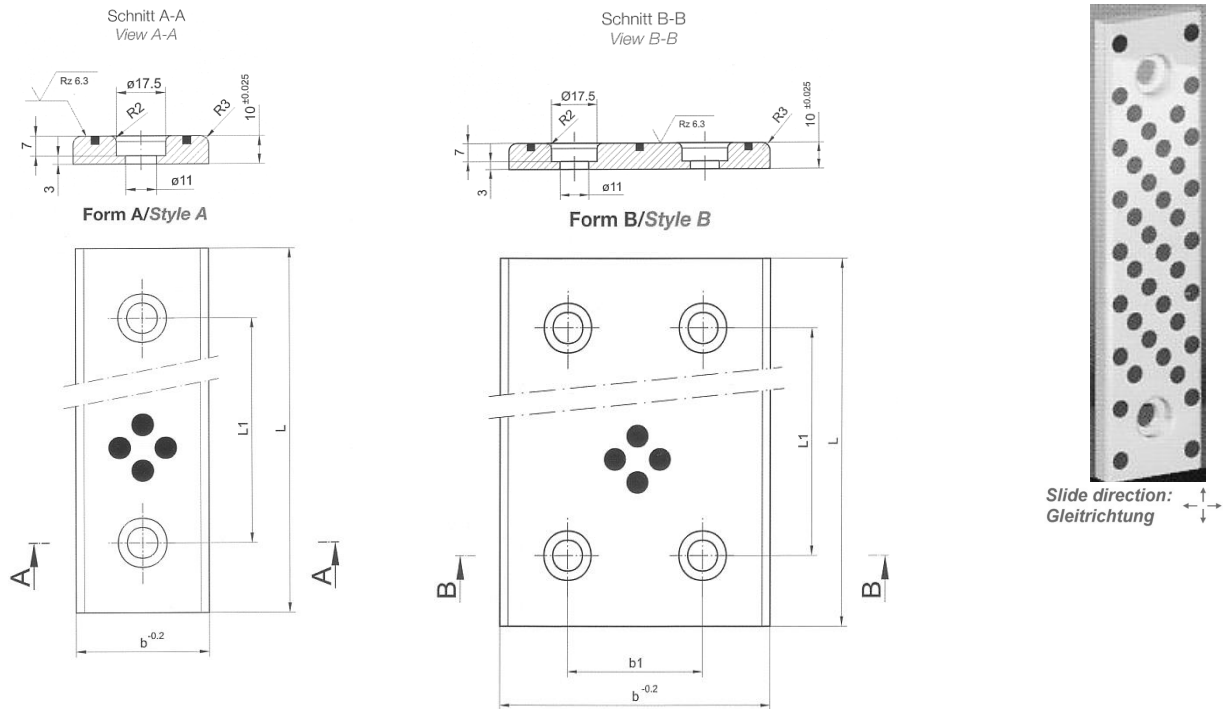
# WEAR PLATES GLEITPLATTEN

C-1



Material B Part No./ Teil Nr.	b x L	b1 ±0,1	L1 ±0,1	Style/ Form	Screws/ Schrauben
AT 180540	18 x 50	-	20	A	M6
AT 180541	18 x 75		45		
AT 180542	18 x 100		70		
AT 180543	18 x 150		60	B	
AT 180544	28 x 50	-	20	A	M8
AT 180545	28 x 75		45		
AT 180546	28 x 100		70		
AT 180547	28 x 150		60	B	
AT 180548	38 x 50	-	20	A	M8
AT 180549	38 x 75		45		
AT 180550	38 x 100		70		
AT 180551	38 x 150		60	B	
AT 180552	48 x 75	-	45	A	M8
AT 180553	48 x 100		70		
AT 180554	48 x 125		95		
AT 180555	48 x 150		60	B	
AT 180556	75 x 75	45	45	C	M8
AT 180557	75 x 100		70		
AT 180558	75 x 125		95		
AT 180559	75 x 150		60	D	
AT 180560	100 x 100	70	70	C	M8
AT 180561	100 x 125		95		
AT 180562	100 x 150		60	D	

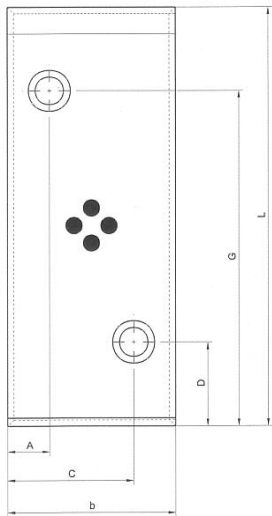
Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)



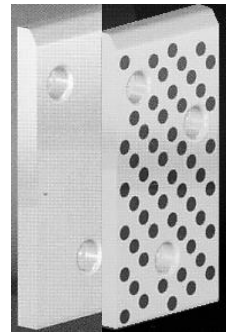
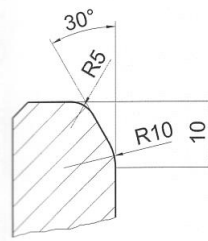
<b>Material B Part No./ Teil Nr.</b>	<b>b x L</b>	<b>b1 ±0,1</b>	<b>L1 ±0,1</b>	<b>Style/ Form</b>
AT 150493	28 x 75	-	45	A
AT 130606	28 x 100		50	
AT 150274	28 x 125		75	
AT 140781	28 x 150		100	
AT 140369	38 x 75	-	45	A
AT 140368	38 x 100		50	
AT 180867	38 x 125		75	
AT 180861	38 x 150		100	
AT 140795	48 x 75	-	45	A
AT 140796	48 x 100		50	
AT 130344	48 x 125		75	
AT 130021	48 x 150		100	
AT 130229	48 x 200		150	
AT 130228	75 x 75	-	45	A
AT 140800	75 x 100		50	
AT 150313	75 x 125		75	
AT 130020	75 x 150		100	
AT 130141	75 x 200		150	
AT 130337	100 x 100	50	50	B
AT 130345	100 x 125		75	
AT 150190	100 x 150		100	
AT 130031	100 x 200		150	
AT 180862	100 x 250		200	
AT 150312	125 x 150	50	100	B
AT 180863	125 x 200		150	
AT 180864	125 x 250		200	
AT 130035	150 x 150	100	100	B
AT 180865	150 x 200		150	
AT 180866	150 x 250		200	

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

Form A/Style A

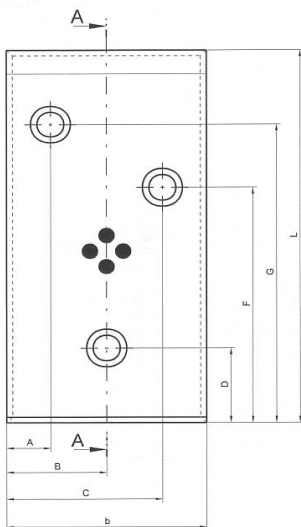


Einzelheit X  
Detail X

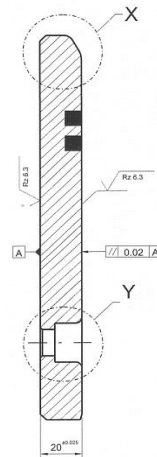


Slide direction:  
Gleitrichtung

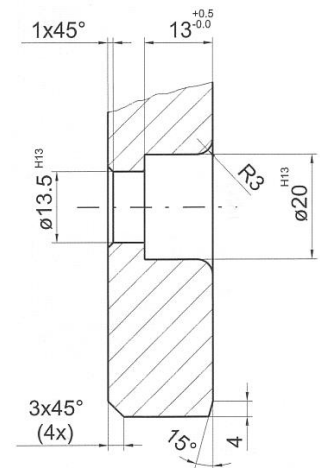
Form B/Style B



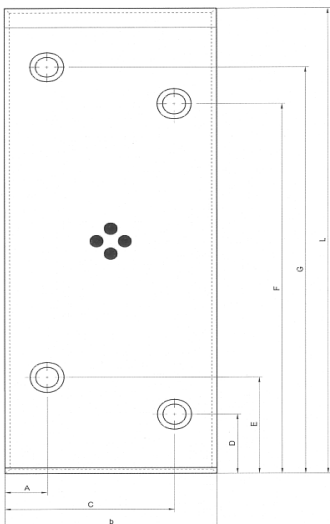
Schnitt A-A  
View A-A



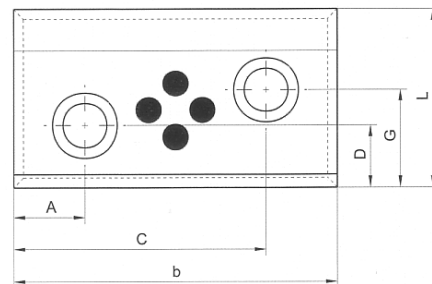
Einzelheit Y  
Detail Y



Form C/Style C



Form D/Style D



**WEAR PLATES - NAAMS  
GLEITPLATTEN - NAAMS**

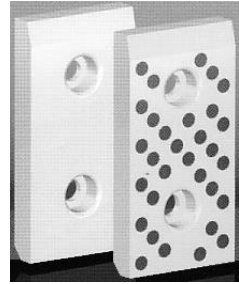
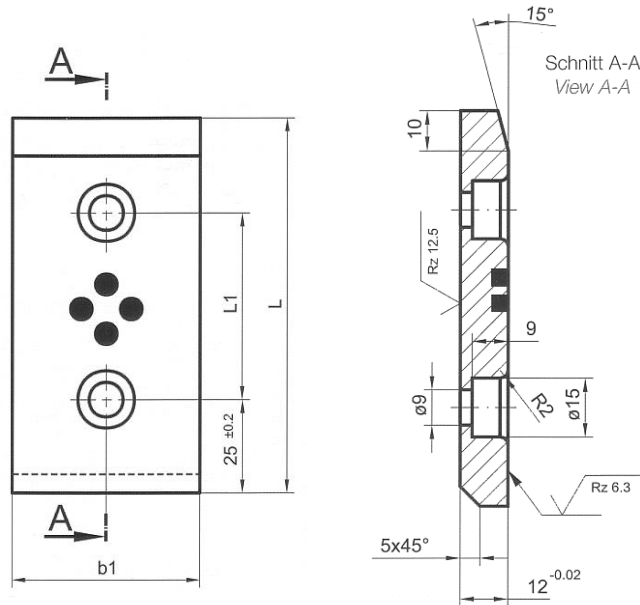
**C-14a**

<b>Material B Part No./ Teil Nr.</b>	<b>Material S1 Part No./ Teil Nr.</b>	<b>Material S2 Part No./ Teil Nr.</b>	<b>b x L</b>	<b>A ±0,12</b>	<b>B ±0,12</b>	<b>C ±0,12</b>	<b>D ±0,12</b>	<b>E ±0,12</b>	<b>F ±0,12</b>	<b>G ±0,12</b>	<b>Style/ Form</b>	
AT 160600	AT 160650	AT 160675	50 x 100	25	-	25	30	-	-	60	A	
AT 160601	AT 160651	AT 160676	50 x 150				110					
AT 160602	AT 160652	AT 160677	50 x 200				160					
AT 160603	AT 160653	AT 160678	80 x 100	20	-	60	30		-	60	A	
AT 160604	AT 160654	AT 160679	80 x 150				110					
AT 160605	AT 160655	AT 160680	80 x 200				160					
AT 160606	AT 160656	AT 160681	80 x 250				210					
AT 160607	AT 160657	AT 160682	80 x 315		40		40		250	275	B	
AT 150306	-	AT 130314	100 x 50	22	-	78	14		-	-	27	D
AT 150346	-	AT 160699	100 x 80				50					
AT 160608	AT 160658	AT 160683	100 x 100				30				60	A
AT 160609	AT 160659	AT 160684	100 x 150				110					
AT 160610	AT 160660	AT 160685	100 x 200				135	160			B	
AT 160611	AT 160661	AT 160686	100 x 250				50	185				210
AT 160612	AT 160662	AT 160687	100 x 315				250	275				
AT 150350	-	AT 160698	125 x 80	25	-	100	30	65	250	50	D	
AT 160613	AT 160663	AT 160688	125 x 100				60			A		
AT 160614	AT 160664	AT 160689	125 x 150				110					
AT 160615	AT 160665	AT 160690	125 x 200				135			160	B	
AT 160616	AT 160666	AT 160691	125 x 250				62			185		210
AT 160617	AT 160667	AT 160692	125 x 315				-			250	275	C
AT 160618	AT 160668	AT 160693	160 x 100	30	-	130	30	-	-	60	A	
AT 160619	AT 160669	AT 160694	160 x 150				110					
AT 160620	AT 160670	AT 160695	160 x 200				135			160	B	
AT 160621	AT 160671	AT 160696	160 x 250				80			185		210
AT 160622	AT 160672	AT 160697	160 x 315				-			250	275	C
												40

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

Material S1 – Steel hardened with solid lubricant (graphite) / Stahl gehärtet mit Festschmierstoff (Graphit)

Material S2 – Steel hardened without solid lubricant (graphite) / Stahl gehärtet ohne Festschmierstoff (Graphit)

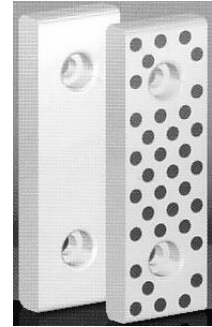
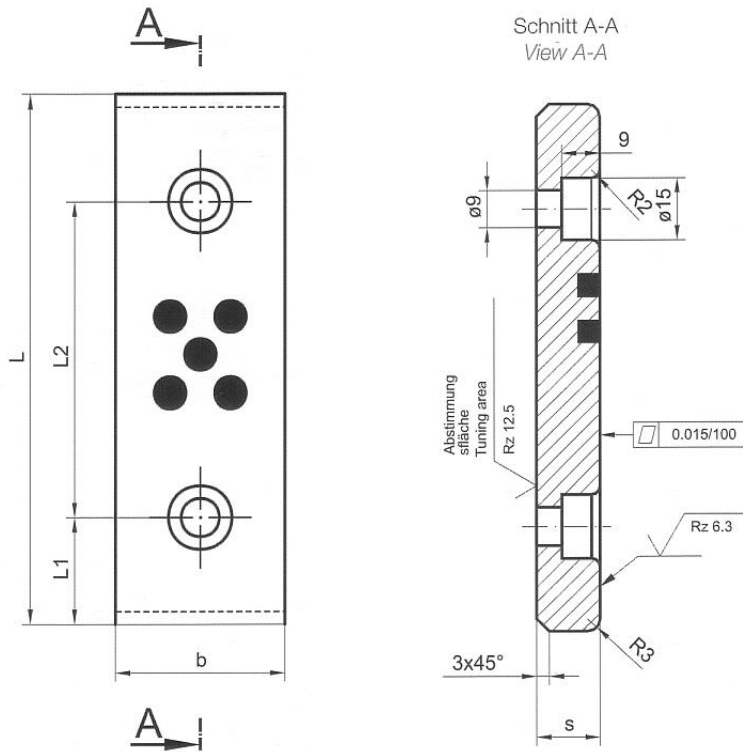


Slide direction:  
Gleitrichtung

Material B - Part No./ Teil Nr.	Material S2 - Part No./ Teil Nr.	L x b	L1
AT 180210	AT 180250	80 x 30	30
AT 180211	AT 180251	100 x 30	50
AT 180212	AT 180252	125 x 30	75
AT 180213	AT 180253	160 x 30	110
AT 180214	AT 180254	200 x 30	150
AT 180220	AT 180255	80 x 40	30
AT 180221	AT 180256	100 x 40	50
AT 180222	AT 180257	125 x 40	75
AT 180223	AT 180258	160 x 40	110
AT 180224	AT 180259	200 x 40	150
AT 180240	AT 180260	80 x 50	30
AT 180226	AT 180261	100 x 50	50
AT 180241	AT 180262	125 x 50	75
AT 180228	AT 180263	160 x 50	110
AT 180229	AT 180264	200 x 50	150
AT 180230	AT 180265	80 x 60	30
AT 180231	AT 180266	100 x 60	50
AT 180232	AT 180267	125 x 60	75
AT 180233	AT 180268	160 x 60	110
AT 180234	AT 180269	200 x 60	150
AT 180215	AT 180270	80 x 80	30
AT 180239	AT 180271	100 x 80	50
AT 180217	AT 180272	125 x 80	75
AT 180235	AT 180273	160 x 80	110
AT 180219	AT 180274	200 x 80	150

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

Material S2 – Steel hardened without solid lubricant (graphite) / Stahl gehärtet ohne Festschmierstoff (Graphit)



Slide direction: ↑  
Gleitrichtung ↓

s: see footnotes below  
s: siehe unten

Material B Part No.*/ Teil Nr.	Material S2 Part No.**/ Teil Nr.	b x L	L1	L2	Cheese head screws/ Zylinderkopfschrauben			
					DIN 912	Quantity/ Anzahl		
AT 190718	-	40 x 75	25	15	M8	2		
-	AT 190760	40 x 80		45				
AT 1904719	AT 190761	40 x 100		30				
AT 190720	AT 190762	40 x 125		50				
AT 190721	-	40 x 150		75				
-	AT 190763	40 x 160		100				
AT 190722	-	60 x 75	25	15			M8	2
-	AT 190764	60 x 80		45				
AT 190723	AT 190765	60 x 100		30				
AT 190724	AT 190766	60 x 125		50				
AT 190725	-	60 x 150		75				
-	AT 190767	60 x 160		100				
-	-	-		110				

\* Material B s=15±0,025

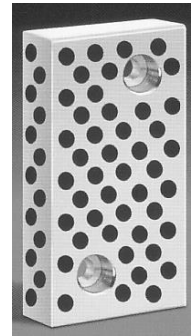
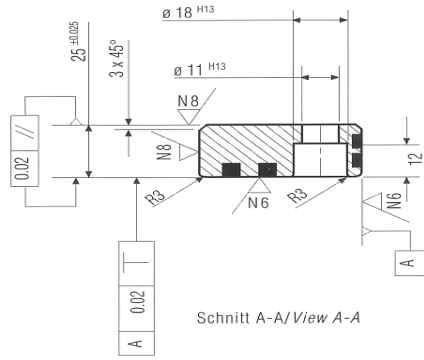
\*\* Material S2 s=15,1±0,025

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

Material S2 – Steel hardened without solid lubricant (graphite) / Stahl gehärtet ohne Festschmierstoff (Graphit)

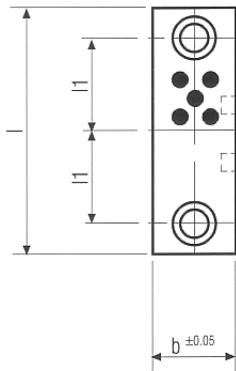
# GUIDE STRIPS with 2 SLIDING AREAS C-17

## FÜHRUNGSLAISTEN mit 2 GLEITFLÄCHEN

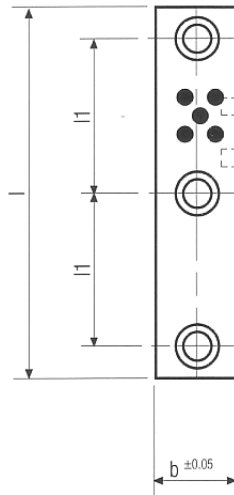


Slide direction:  
Gleitrichtung ↓

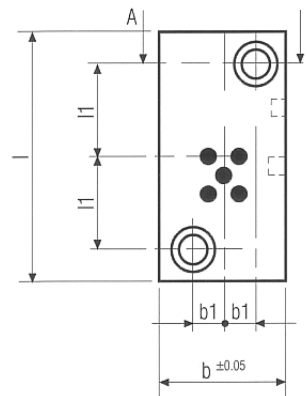
Style A / Form A



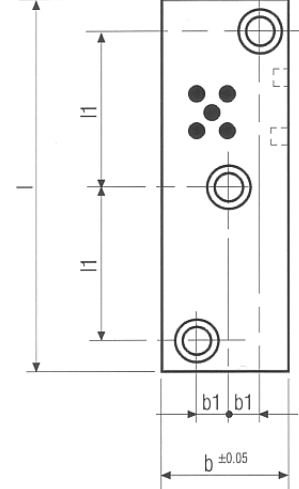
Style B / Form B



Style C / Form C



Style D / Form D



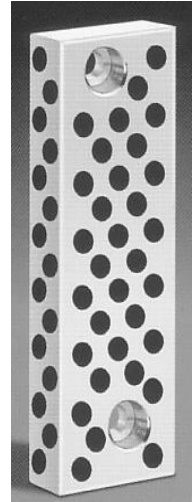
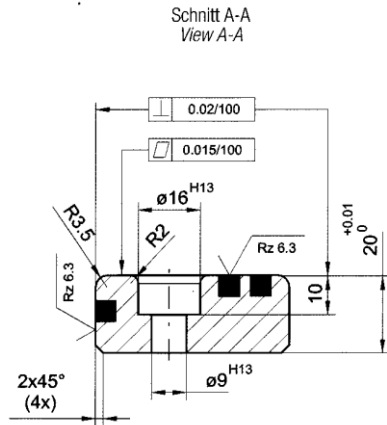
Material B Part No./ Teil Nr.	b x L	L1 +/- 0,2	Style/ Form	Quantity countersunk screws/ Anzahl Zyl.-Schrauben
AT180400	50 x 150	100	A	2
AT180401	50 x 200	150	A	2
AT180402	50 x 250	100	B	3
AT180406	75 x 150	100	C	2
AT180407	75 x 200	75	D	3
AT180408	75 x 250	100	D	3

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

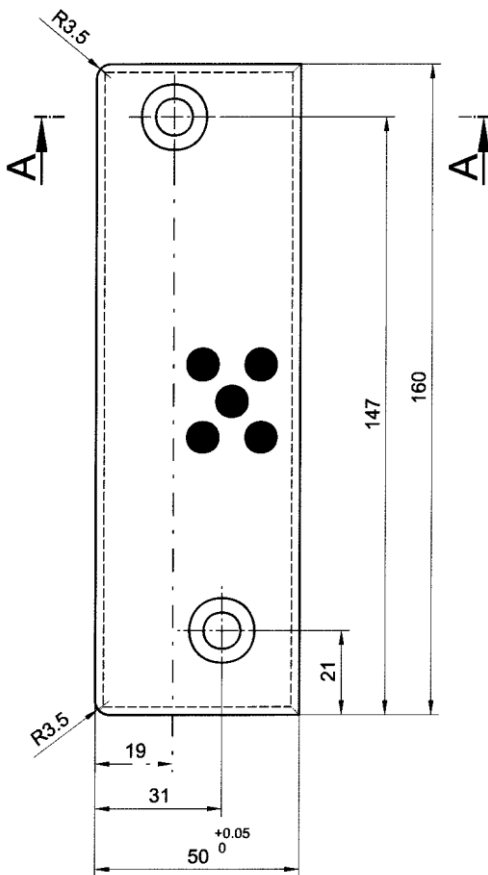


# GUIDE STRIPS with 2 SLIDING AREAS C-18

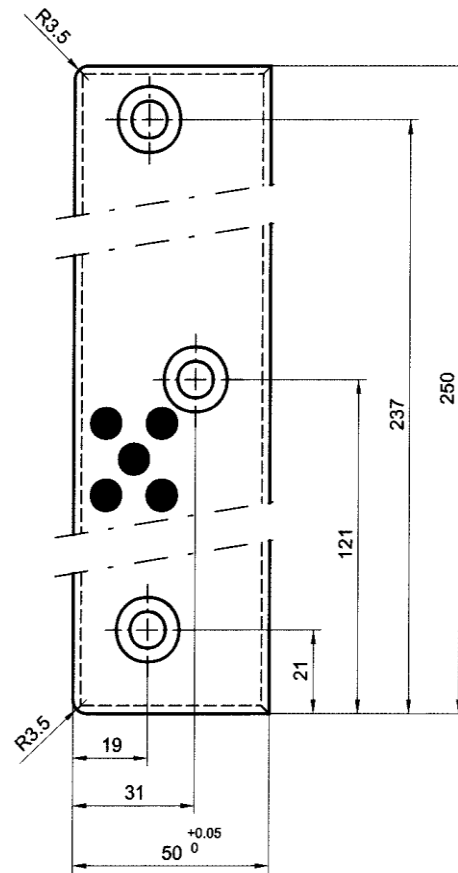
## FÜHRUNGSLEISTE mit 2 GLEITFLÄCHEN



Slide direction: ↑  
Gleitrichtung ↓



Part No. AT180750  
Teil Nr. AT180750

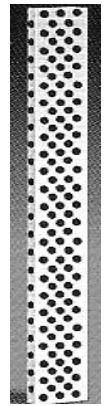
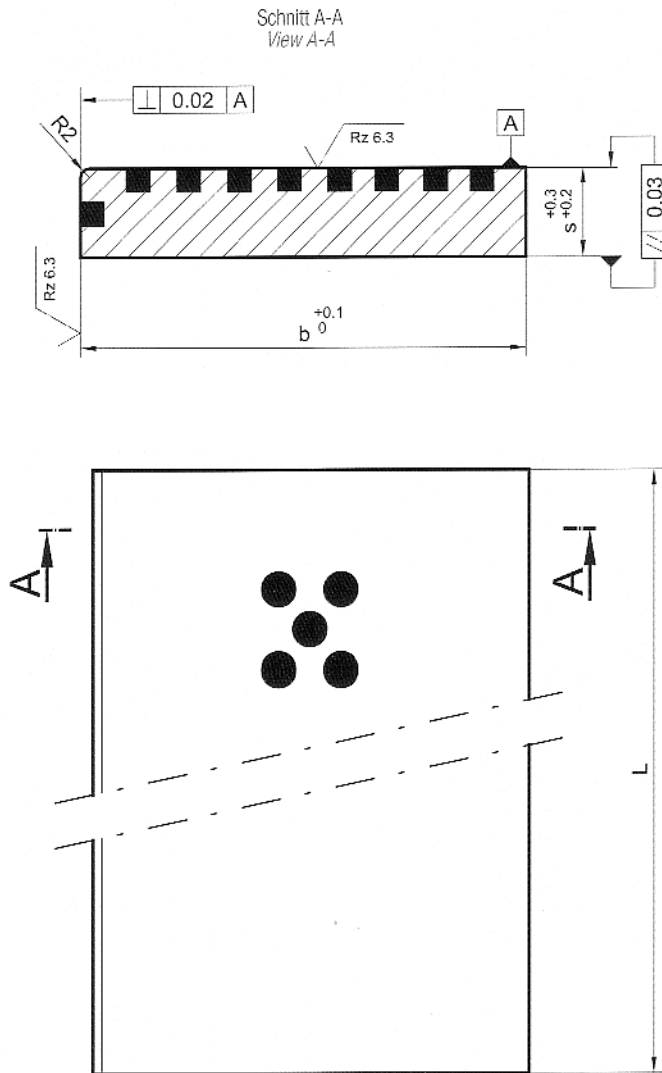


Part No. AT180751  
Teil Nr. AT180751

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# GUIDE STRIPS with 2 SLIDING AREAS C-19

## FÜHRUNGSLEISTE mit 2 GLEITFLÄCHEN



Slide direction  
Gleitrichtung

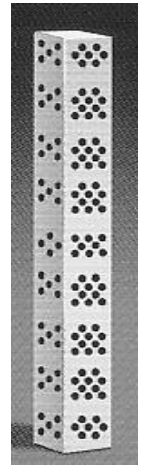
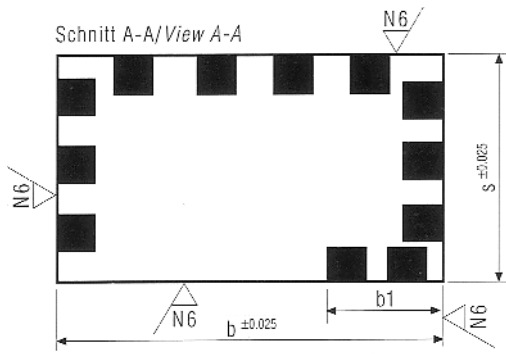


Material B Part No./ Teil Nr.	Length / Länge	b	s
AT 170650	305	25	5
AT 170651	305	30	6
AT 170652	1005	40	8
AT 170653		35	10
AT 170654		50	10
AT 170655		40	12
AT 170656		80	12
AT 170657		60	16
AT 170660		50	20
AT 170661		60	
AT 170658		80	
AT 170659		100	

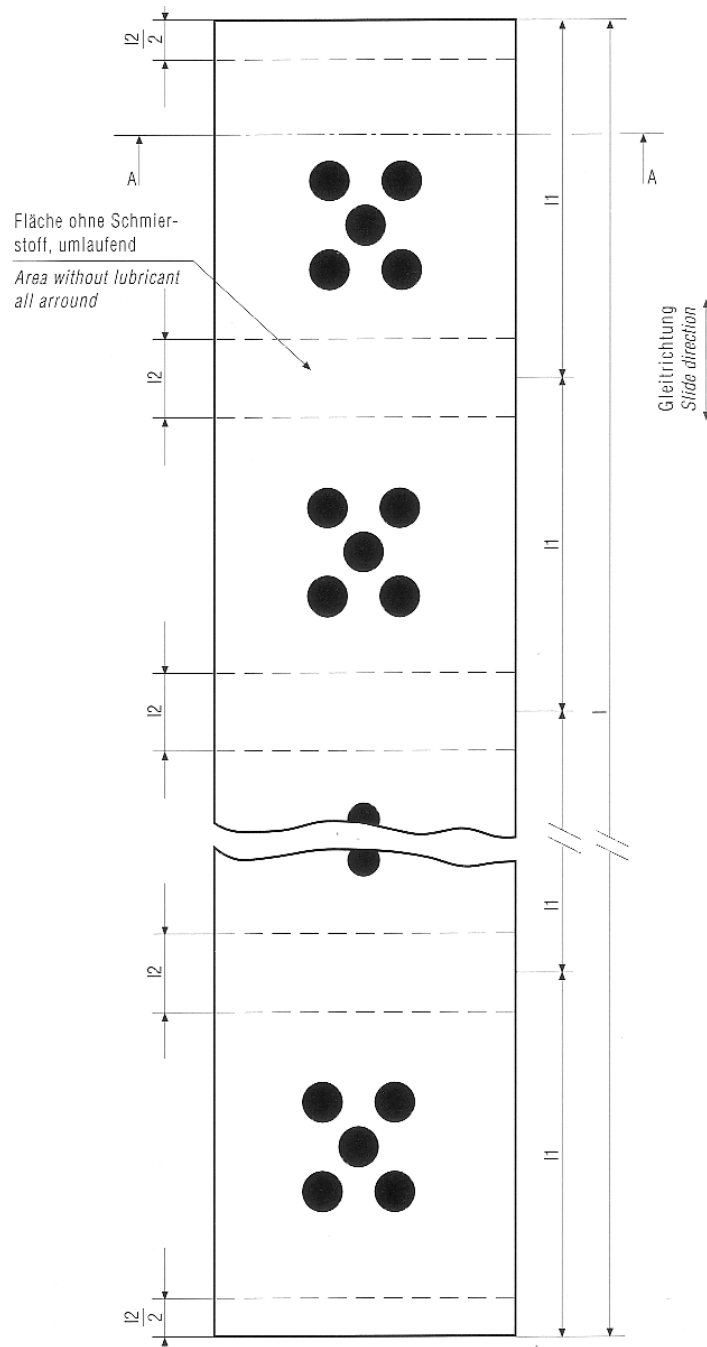
Without mounting holes / Ohne Befestigungsbohrungen

# GUIDE STRIPS with 4 SLIDING AREAS C-20

## FÜHRUNGSLEISTE mit 4 GLEITFLÄCHEN



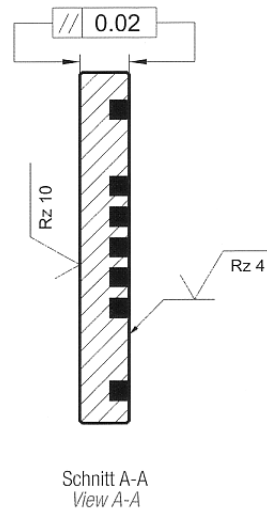
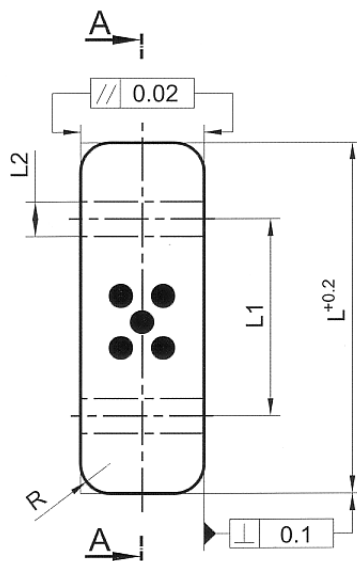
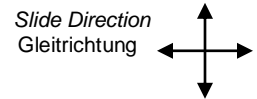
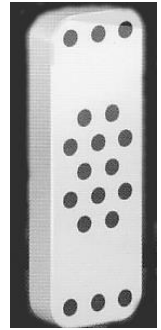
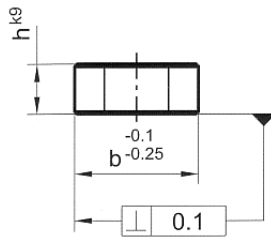
Slide direction  
Gleitrichtung



**GUIDE STRIPS with 4 SLIDING AREAS C-20a**  
**FÜHRUNGSLEISTE mit 4 GLEITFLÄCHEN**

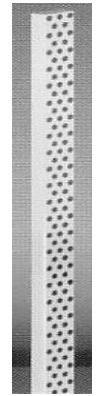
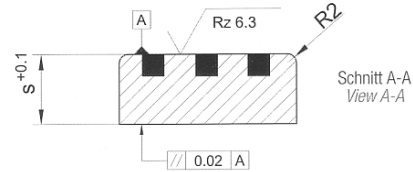
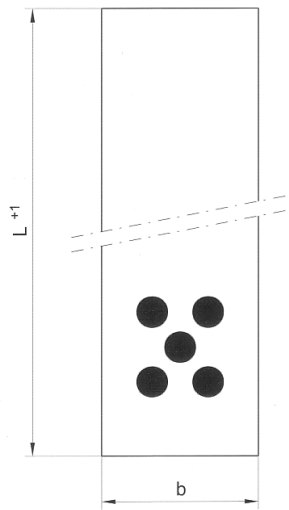
<b>Material B Part No./ Teil Nr.</b>	<b>b x s x l -2</b>	<b>b1</b>	<b>l1</b>	<b>l2</b>
AT 170243	15,3 x 10,3 x 75	6	25	6
AT 170244	15,3 x 10,3 x 100			
AT 170245	15,3 x 10,3 x 125			
AT 170246	15,3 x 10,3 x 150			
AT 170247	15,3 x 10,3 x 175			
AT 170248	15,3 x 10,3 x 200			
AT 170249	15,3 x 10,3 x 225			
AT 170250	15,3 x 10,3 x 250			
AT 170251	15,3 x 10,3 x 275			
AT 170310	15,3 x 10,3 x 300			
AT 170370	25,3 x 15,3 x 105	8	35	8
AT 170371	25,3 x 15,3 x 140			
AT 170372	25,3 x 15,3 x 175			
AT 170373	25,3 x 15,3 x 210			
AT 170374	25,3 x 15,3 x 245			
AT 170375	25,3 x 15,3 x 280			
AT 170376	25,3 x 15,3 x 315			
AT 170377	25,3 x 15,3 x 350			
AT 170378	25,3 x 15,3 x 385			
AT 170379	25,3 x 15,3 x 420			
AT 170380	25,3 x 15,3 x 455			
AT 170381	25,3 x 15,3 x 490			
AT 170382	35,3 x 25,3 x 135	12	45	10
AT 170383	35,3 x 25,3 x 180			
AT 170384	35,3 x 25,3 x 225			
AT 170385	35,3 x 25,3 x 270			
AT 170386	35,3 x 25,3 x 315			
AT 170387	35,3 x 25,3 x 360			
AT 170388	35,3 x 25,3 x 405			
AT 170389	35,3 x 25,3 x 450			
AT 170390	35,3 x 25,3 x 495			
AT 170391	45,3 x 35,3 x 165			
AT 170392	45,3 x 35,3 x 220			
AT 170393	45,3 x 35,3 x 275			
AT 170394	45,3 x 35,3 x 330			
AT 170395	45,3 x 35,3 x 385			
AT 170396	45,3 x 35,3 x 440			
AT 170397	45,3 x 35,3 x 495			

# WEAR PLATES C-21 GLEITPLATTEN



Material B Part No./ Teil Nr.	b	L	h	L1	L2	R
AT 160700	16	40	8	15	6	3
AT 160701	18	50	8	28	6	4
AT160702	20	63	10	32	7	5
AT160703	25	71		40		6
AT160704	28	80		50		7

$L2$  – Mounting area without solid lubricant /  $L2$  – Befestigungszone ohne Festschmierstoff



Slide direction: ↑  
Gleitrichtung ↓

## WITHOUT MOUNTING HOLES / Ohne Befestigungsbohrungen

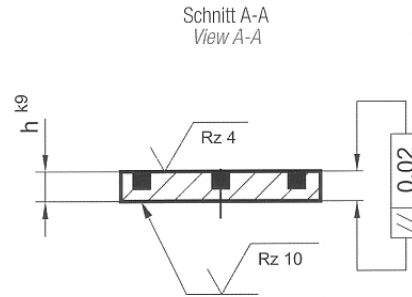
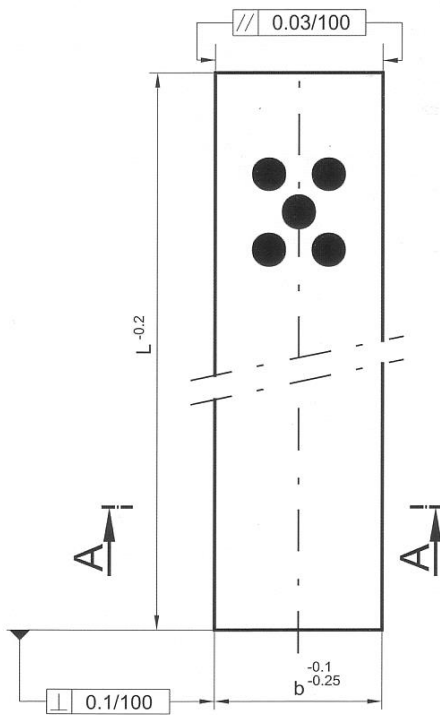
Material B Part No./ Teil Nr.	b x s	L
AT 190700	20 x 4	305
AT 170634	20 x 10	605
AT 190701	25 x 5	305
AT 170266		500
AT 170620		605
AT 170814		1005
AT 170267	30 x 6	500
AT 170621		605
AT 170810		1005
AT 170600	30 x 8	500
AT 170622		605
AT 170811		1005
AT 170604		500
AT 170623	35 x 10	605
AT 150379		1005
AT 170268		500
AT 170624	40 x 8	605
AT 170800		1005
AT 170601		500
AT 170625	40 x 10	605
AT 170801		1005
AT 170269		500
AT 170626		605
AT 170802	40 x 12	1005
AT 170270		500
AT 170813		605
AT 170610		1005
AT 170612	50 x 8	1005
AT 170602	50 x 10	500
AT 170627		605
AT 170803		1005
AT 170603		500
AT 170628	50 x 12	605
AT 170804		1005

Material B Part No./ Teil Nr.	b x s	L
AT 170823	50 x 20	1005
AT 130226	60 x 8	605
AT 170608		1005
AT 150839	60 x 10	605
AT 170822		1005
AT 170629		605
AT 170805	60 x 12	1005
AT 170605		500
AT 170630	60 x 16	605
AT 170806		1005
AT 170633	60 x 20	500
AT 170812		1005
AT 130232		605
AT 130238	75 x 12	1005
AT 130977		500
AT 140678	80 x 12	605
AT 170820		1005
AT 170606		500
AT 170631	80 x 16	605
AT 170807		1005
AT 170607		500
AT 170632	80 x 20	605
AT 170808		1005
AT 140197	100 x 10	500
AT 170611		1005
AT 170609	100 x 12	1005
AT 140737	100 x 20	500
AT 170821		1005
AT 170824	125 x 20	1005
AT 170825	160 x 20	1005

Any length up to 1.005mm is available / Jeder Zuschnitt bis zu einer Länge von 1.005 mm lieferbar  
Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# WEAR STRIPS FLACHLEISTEN

D-2

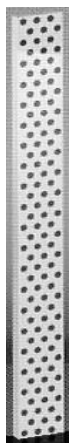
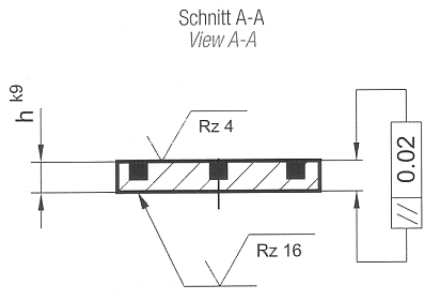
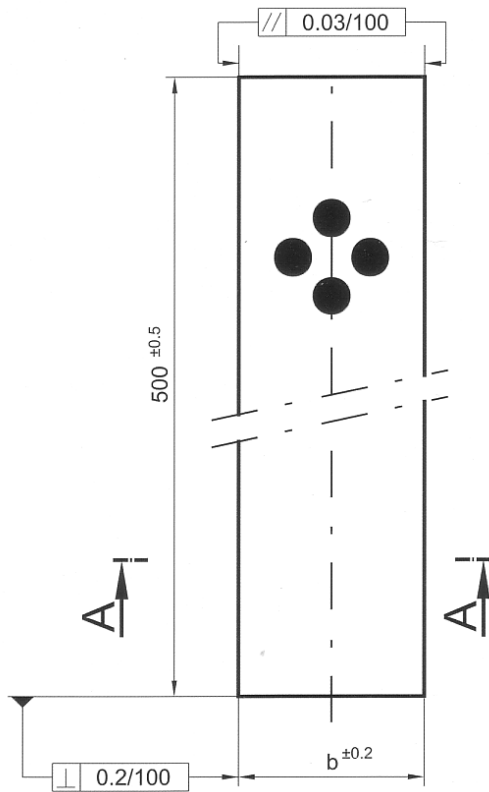


Slide direction: ↑  
Gleitrichtung ↓

## WITHOUT MOUNTING HOLES Ohne Befestigungsbohrungen

Material B Part No./ Teil Nr.	b	h	L
AT 160710	25	5	50
AT 160711			71
AT 160712			90
AT 160713	40	5	50
AT 160714			71
AT 160715			90
AT 160716			80
AT 160717			100
AT 160718			125
AT 160719	63	6	160
AT 160720			200
AT 160721			80
AT 160722			100
AT 160723			125
AT 160724			160

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)



Slide direction:  
Gleitrichtung

**WITHOUT MOUNTING HOLES  
Ohne Befestigungsbohrungen**

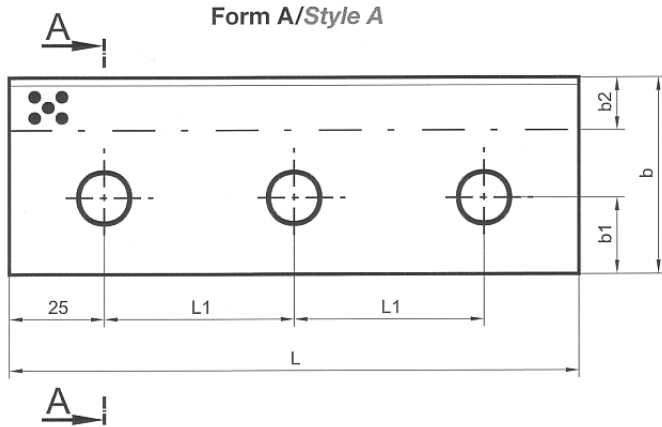
<i>Material B</i> Part No./ Teil Nr.	<b>b</b>	<b>h</b>
AT 160705	32	8
AT 160706	50	10
AT 160707	80	12

*Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)*

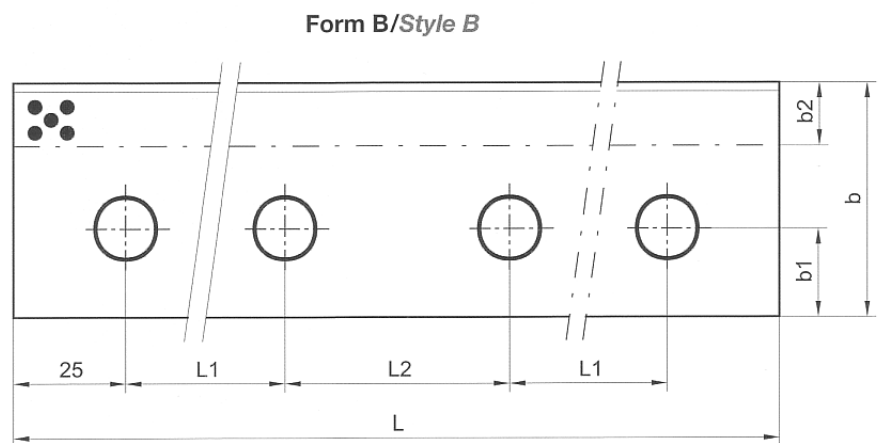
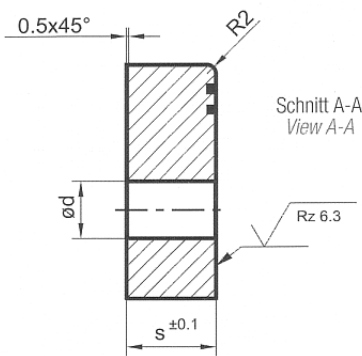
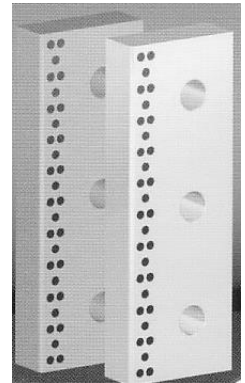


# KEEPER PLATES DECKPLATTEN

E-1



Slide direction:  
Gleitrichtung

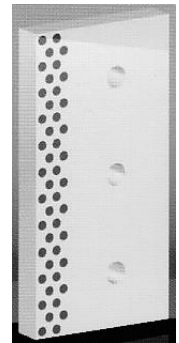
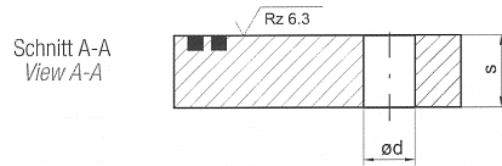


Material B Part No./ Teil Nr.	b x L x s	b1	b2	L1	L2	ø d	Quantity Screws/ Anzahl Schrauben
AT 170138	52 x 150 x 20	20	12	50	-	13	3
AT 170139	52 x 200 x 20			75	-		4
AT 170140	52 x 250 x 20			75	50		4
AT 170141	72 x 150 x 30	25	22	50	-	18	3
AT 170142	72 x 200 x 30			75	-		4
AT 170143	72 x 250 x 30			75	50		4
AT 170144	77 x 150 x 35		27	27	50	-	3
AT 170145	77 x 200 x 35				75	-	4
AT 170146	77 x 250 x 35				75	50	4
AT 170147	82 x 150 x 40		32	32	50	-	3
AT 170148	82 x 200 x 40				75	-	4
AT 170149	82 x 250 x 40				75	50	4
AT 170186	105 x 150 x 40				50	-	3
AT 170187	105 x 200 x 40				50	-	4
AT 170188	105 x 250 x 40				75	50	4

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

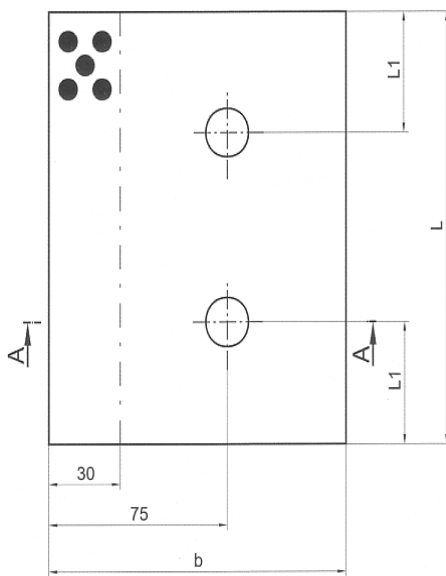
# KEEPER PLATES DECKPLATTEN

E-2

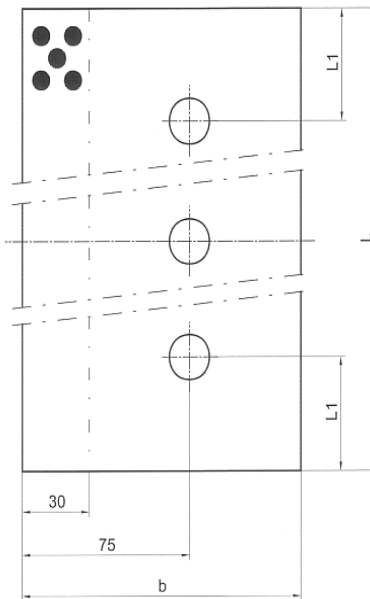


Slide direction:  
Gleitrichtung ↑ ↓

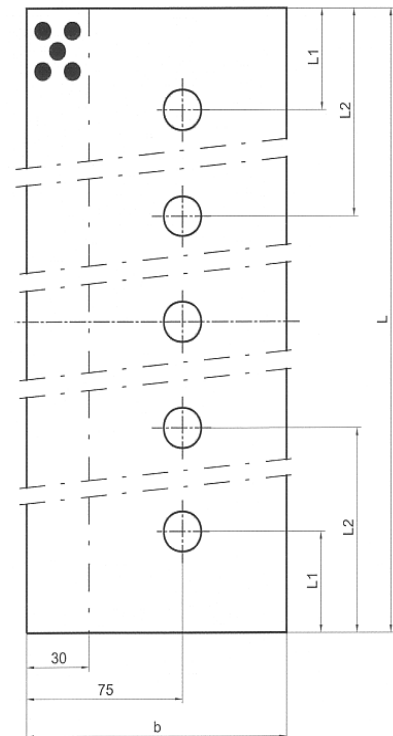
Form A/Style A



Form B/Style B



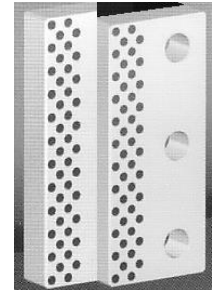
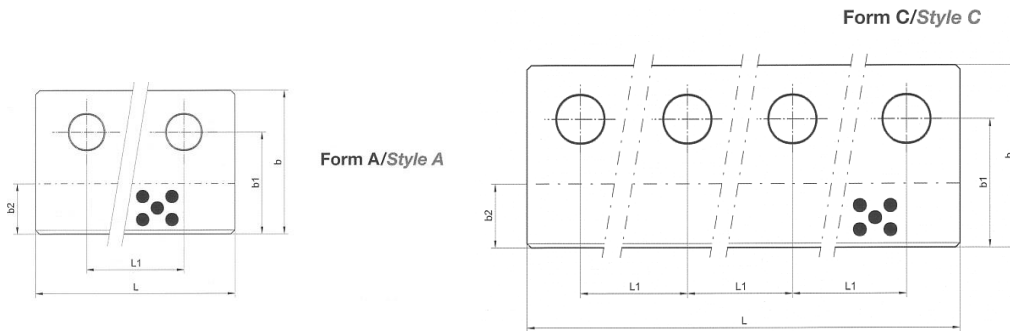
Form C/Style C



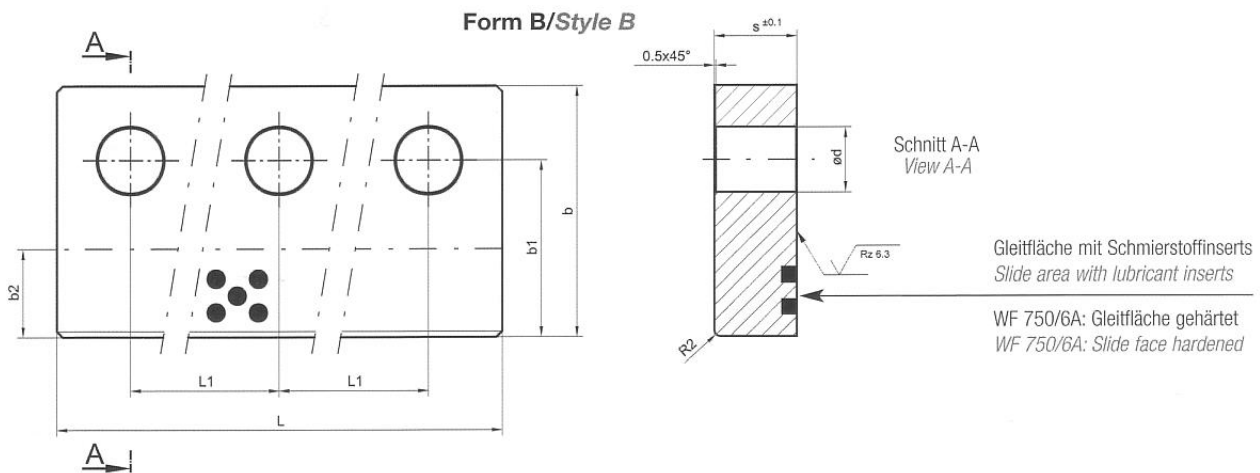
Material B Part No./ Teil Nr.	L x b	s	L1	L2	d	Style/ Form	Cheese head screws quantity/ Zylinderkopfschrauben Anzahl
AT 190083	160 x 125	25	45	-	18	A	2 x M 16
AT 190084	200 x 125			-		C	3 x M 16
AT 190085	250 x 125			125			5 x M 16
AT 190086	400 x 125		-	-	-	Without hole Ohne Bohrung	
AT 190359	1005 x 125	30	45	-	22	A	2 x M20
AT 140021	160 x 125			-		C	3 x M 20
AT 140020	200 x 125			125			5 x M20
AT 190087	250 x 125			-		-	-
AT 140019	400 x 125		-	-	-	Without hole Ohne Bohrung	
AT 190357	1005 x 125	-	-	-	Without hole Ohne Bohrung		

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

Material S1 – Steel hardened with solid lubricant (graphite) / Stahl gehärtet mit Festschmierstoff (Graphit)



Slide direction: ↑  
Gleitrichtung ↓



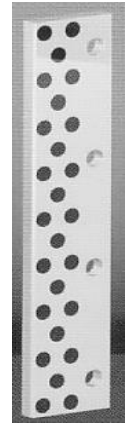
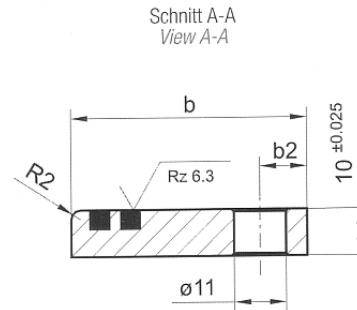
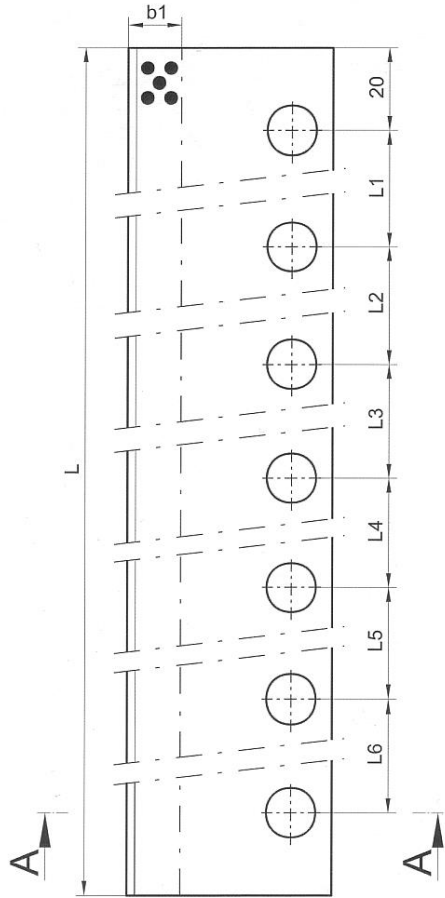
Material B Part No./ Teil Nr.	Material S1 Part No./ Teil Nr.	b x L	s	b1	b2	L1	ø d	Style/ Form	Quantity Screws/ Anzahl Schrauben
AT 170176	AT 180160	70 x 160	25	50	25	110	18	A	2
AT 170170	AT 180170	70 x 200			75	B		3	
AT 170171	AT 180168	70 x 240							90
AT 170178	-	70 x 605		-	-	Without hole Ohne Bohrung			
AT 170172	AT 180171	85 x 200	28	60	30	75	22	B	3
AT 170173	AT 180172	85 x 240				90			
AT 170174	AT 180180	85 x 300				80		C	4
AT 170175	AT 180181	85 x 350				90			
AT 170177	-	85 x 605		-		-	Without hole Ohne Bohrung		
AT 190358	-	85 x 1005		-		-			
-	AT 180182	100 x 200		70		22	75	B	3
-	AT 180183	100 x 240	90						
-	AT 180184	100 x 300	80		C		4		
-	AT 130997	100 x 350	90						

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

Material S1 – Steel hardened with solid lubricant (graphite) / Stahl gehärtet mit Festschmierstoff (Graphit)

# KEEPER PLATES DECKPLATTEN

E-4

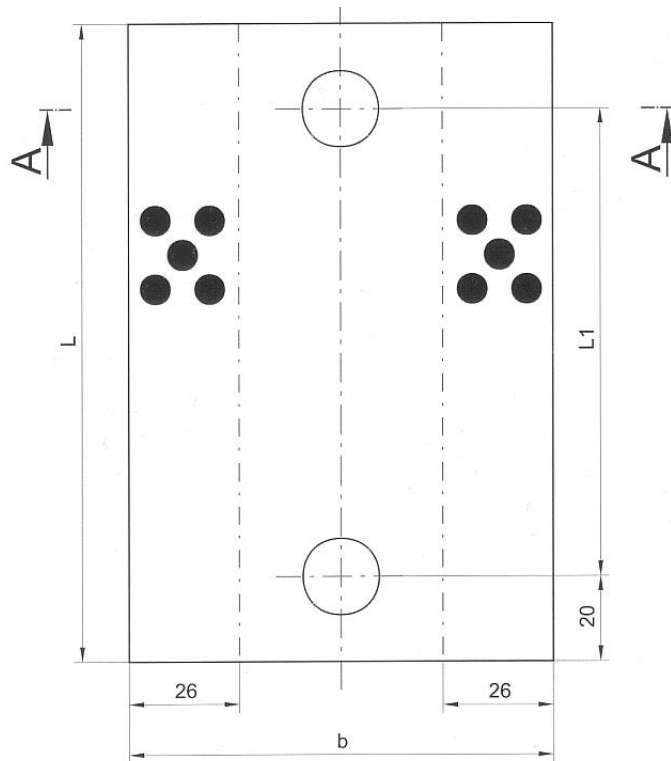
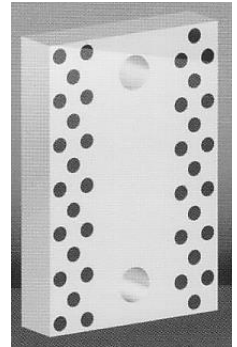
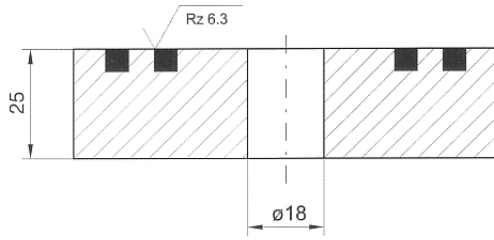


Slide direction: ↑  
Gleitrichtung ↓

Material B Part No./ Teil Nr.	b x L	L1	L2	L3	L4	L5	L6	b1	b2	Quantity Screws/ Anzahl Schrauben
AT 180970	32 x 100	60	-	-	-	-	-	10	11	2
AT 180971	32 x 150	55	55							3
AT 180969	32 x 160	60	60							4
AT 180972	50 x 200	50	50	50	65	95	30	14	5	
AT 180973	50 x 250	70	70	70					6	
AT 180974	50 x 300	65	65	65	80	115	130	30	14	7
AT 140084	50 x 350	80	75	75	90					8
AT 140908	50 x 400	90	90	90	90	115	130	30	14	9
AT 150326	50 x 500	95	95	95	95	125				10
AT 140086	50 x 600	115	110	110	110	115	130	30	14	11
AT 150719	50 x 800	130	125	125	125	125				12
AT 170179	50 x 605	Thickness tolerance $\pm 0,1$ Dickentoleranz $\pm 0,1$						30	14	without hole/ ohne Loch
AT 1701809	50 x 1005									

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

Schnitt A-A/View A-A

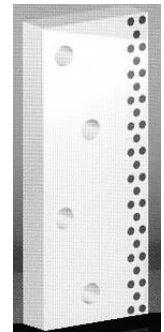
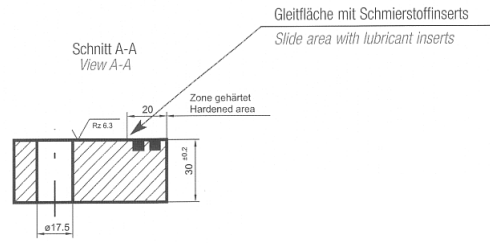
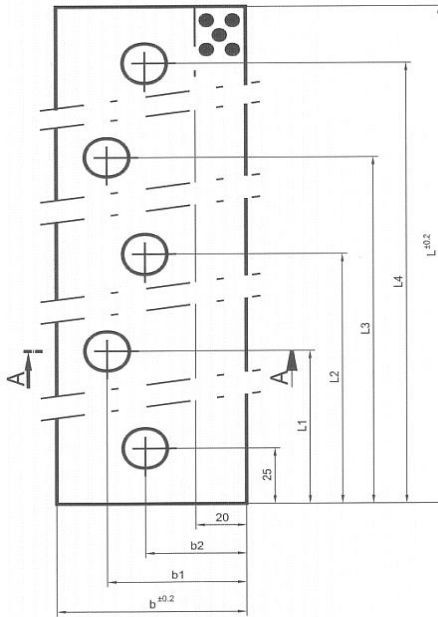


<b>Material B Part No./ Teil Nr.</b>	<b>b x L</b>	<b>L1</b>
AT 180380	100 x 100	60
AT 180381	100 x 150	110

*Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)*

# KEEPER PLATES - NAAMS DECKPLATTEN - NAAMS

E-6



Slide direction: ↑  
Gleitrichtung ↓

Material S1 Style A Part No./ Teil Nr.	Material S1 Style B Part No./ Teil Nr.	b x L	b1 ± 0,1	b2 ± 0,1	L1 ± 0,1	L2 ± 0,1	L3 ± 0,1	L4 ± 0,1	Cheese head screws - Qty/ Zylinderkopf- schrauben - Anzahl Style A
AT 160540	AT 150142	75 x 200	55	40	100	-	-	175	3
AT 160541	AT 150129	75 x 250			90	-	160	22	4
AT 160542	AT 150140	75 x 315			100	158	225	290	5
AT 160543	AT 150373	75 x 350			115	200	285	375	
AT 160544	AT 150141	75 x 400			125	225	325	425	
AT 160545	AT 150354	75 x 450							
AT 160150	AT 160131	100 x 200	80	55	100	-	-	175	3
AT 160151	AT 160132	100 x 250			90	-	160	22	4
AT 160152	AT 160133	100 x 315			100	158	225	290	5
AT 160153	AT 160134	100 x 350			115	200	285	375	
AT 160544	AT 160135	100 x 400			125	225	325	425	
AT 160545	AT 160136	100 x 450							
AT 160156	AT 160137	125 x 200	105	65	100	-	-	175	3
AT 160157	AT 160138	125 x 250			90	-	160	22	4
AT 160158	AT 160139	125 x 315			100	158	225	290	5
AT 160159	AT 160140	125 x 350			115	200	285	375	
AT 160160	AT 160141	125 x 400			125	225	325	425	
AT 160161	AT 160142	125 x 450							
AT 160162	AT 160143	150 x 200	130	65	100	-	-	175	3
AT 160163	AT 160144	150 x 250			90	-	160	22	4
AT 160164	AT 160145	150 x 315			100	158	225	290	5
AT 160165	AT 160146	150 x 350			115	200	285	375	
AT 160166	AT 160147	150 x 400			125	225	325	425	
AT 160167	AT 160148	150 x 450							

Style A: with mounting holes – mit Befestigungsbohrungen

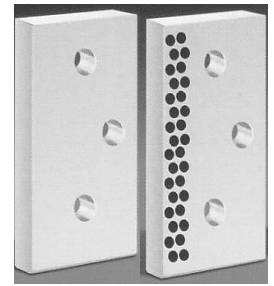
Style B: without mounting holes – ohne Befestigungsbohrungen

Material S1 – Steel hardened with solid lubricant (graphite) / Stahl gehärtet mit Festschmierstoff (Graphit)

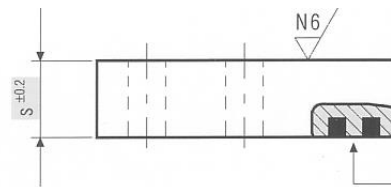
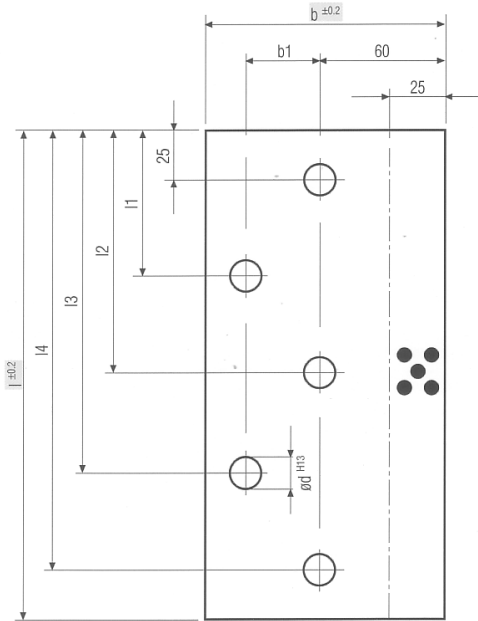
Material S2 – Steel hardened without solid lubricant (graphite) / Stahl gehärtet ohne Festschmierstoff (Graphit)

# CAM GIB PLATES DECKPLATTEN

E-7



Slide direction:  
Gleitrichtung



Material S1 Style A/ Form A Part No./ Teil Nr.	Material S2 Style B/ Form B Part No./ Teil Nr.	b x l x s	b1 +/-0,1	l1 +/-0,1	l2 +/-0,1	l3 +/-0,1	l4 +/-0,1	Ød H13	Quantity mounting holes/ Anzahl Befestigungslöcher
AT180452	AT180456	100 x 160 x 20	20	80,0	135	-	-	14	3
AT180453	AT180457	100 x 200 x 20		100,0	175				
AT180454	AT180458	100 x 250 x 20		125,0	225				
AT180455	AT180459	100 x 300 x 20		87,5	150	212,5	275		5
AT180384	AT180394	125 x 160 x 30	40	80,0	135	-	-	18	3
AT180385	AT180395	125 x 250 x 30		125,0	225	-	-		3
AT180386	AT180396	125 x 300 x 30		87,5	150	212,5	275		5
AT180387	AT180397	125 x 350 x 30		100,0	175	250,0	325		
AT180388	AT180398	125 x 400 x 30		112,5	200	287,0	375		

Style A / Form A: Steel hardened with solid lubricant (graphite) / Stahl gehärtet mit Festschmierstoff (Graphit)  
Style B / Form B: Steel hardened without solid lubricant / Stahl gehärtet ohne Festschmierstoff

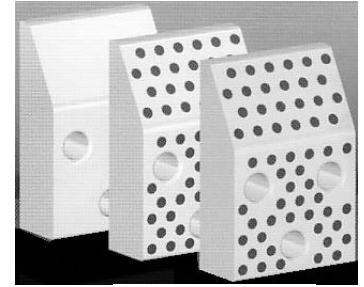
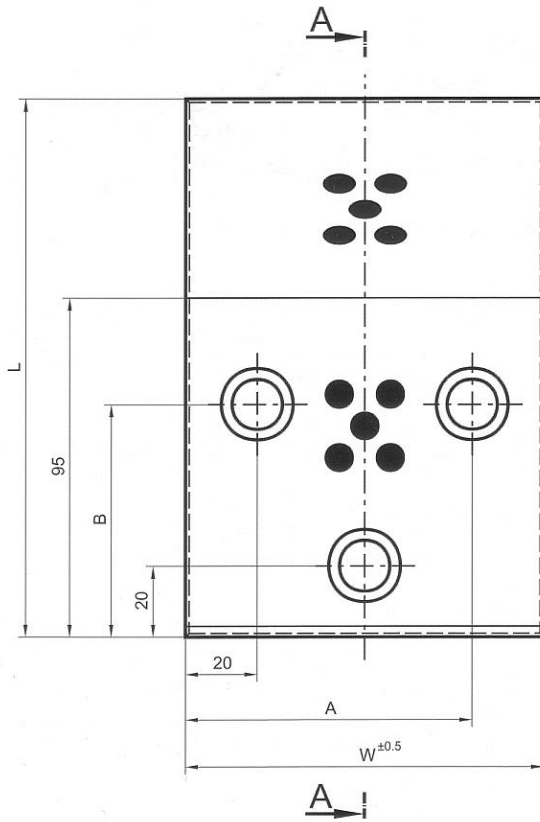
Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

Material S1 – Steel hardened with solid lubricant (graphite) / Stahl gehärtet mit Festschmierstoff (Graphit)

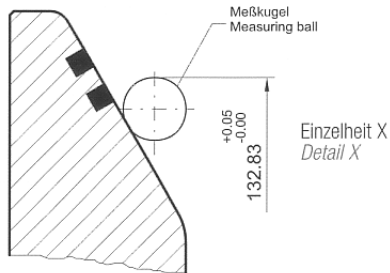
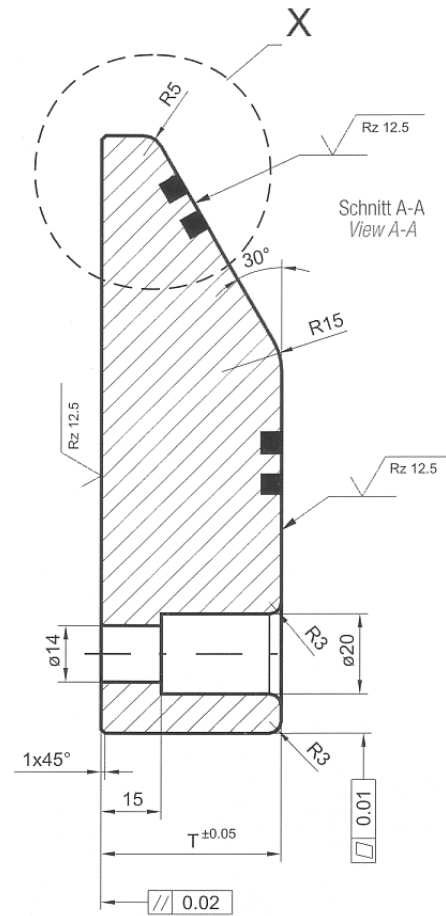
Material S2 – Steel hardened without solid lubricant (graphite) / Stahl gehärtet ohne Festschmierstoff (Graphit)

# CAM DWELL WEAR PLATES - NAAMS ÜBERLAUFKEILE - NAAMS

F-1



Slide direction:  
Gleitrichtung



Material B Part No./ Teil Nr.	Material S1 Part No./ Teil Nr.	Material S2 Part No./ Teil Nr.	W x L x T	A	B
AT 180472	AT 180460	AT 180466	100 x 125 x 30	80	70
AT 180473	AT 180461	AT 180467	125 x 125 x 30	105	
AT 190323	AT 190326	AT 190320	160 x 125 x 30	140	
AT 180474	AT 180462	AT 180468	100 x 125 x 45	80	65
AT 180475	AT 180463	AT 180469	125 x 150 x 45	105	
AT 190324	AT 190327	AT 190321	160 x 150 x 45	140	
AT 180476	AT 180464	AT 180470	100 x 170 x 60	80	
AT 180477	AT 180465	AT 180471	125 x 170 x 60	105	
AT 190325	AT 190328	AT 190322	160 x 170 x 60	140	

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

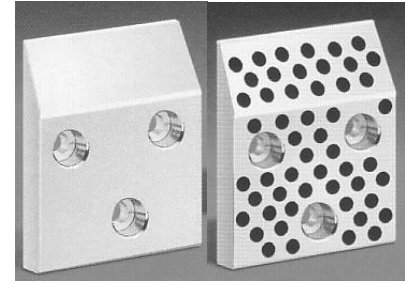
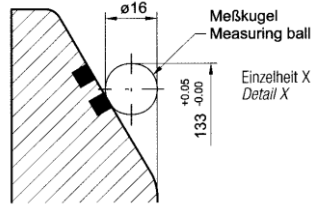
Material S1 – Steel hardened with solid lubricant (graphite) / Stahl gehärtet mit Festschmierstoff (Graphit)

Material S2 – Steel hardened without solid lubricant (graphite) / Stahl gehärtet ohne Festschmierstoff (Graphit)

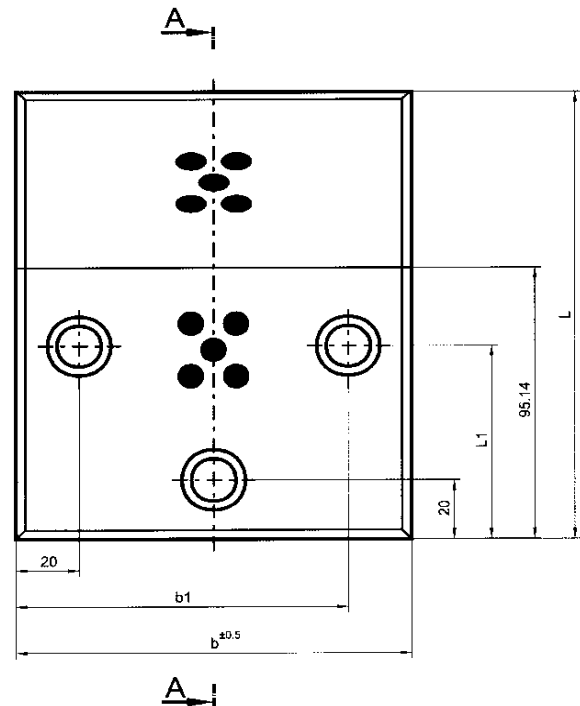
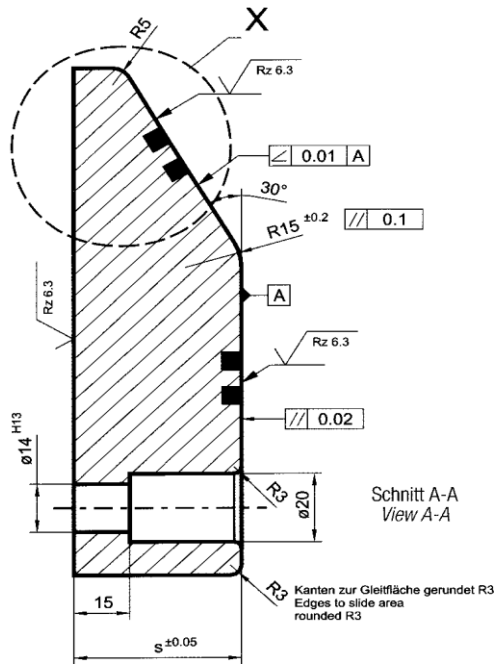


# CAM DWELL WEAR PLATES ÜBERLAUFKEILE

F-2



Slide direction:  
Gleitrichtung



Material B Part No./ Teil Nr.	Material S1 Part No./ Teil Nr.	Material S2 Part No./ Teil Nr.	b x l	s	b1	L1
AT190342	AT190390	AT190348	100 x 125	30	80	70
AT190343	AT190391	AT190349	125 x 125	30	105	70
AT190344	AT190392	AT190350	100 x 150	45	80	65
AT190345	AT190393	AT190351	125 x 150	45	105	65
AT190346	AT190394	AT190352	100 x 170	60	80	65
AT190347	AT190395	AT190353	125 x 170	60	105	65

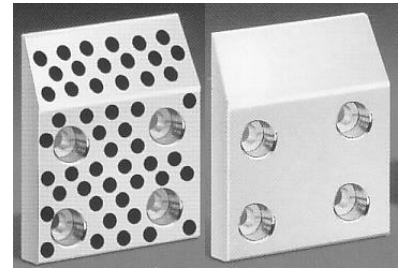
Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

Material S1 – Steel hardened with solid lubricant (graphite) / Stahl gehärtet mit Festschmierstoff (Graphit)

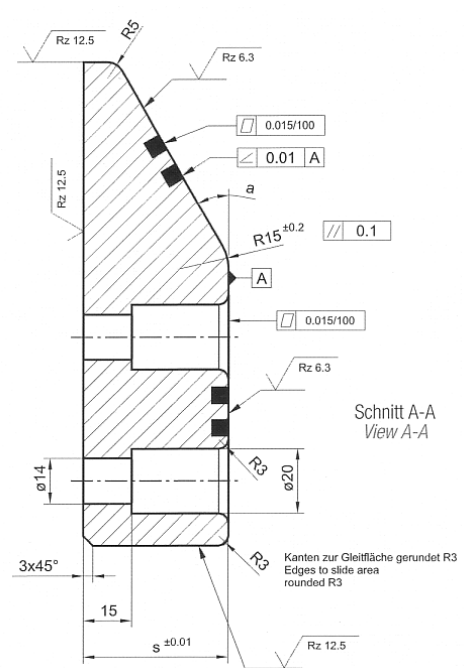
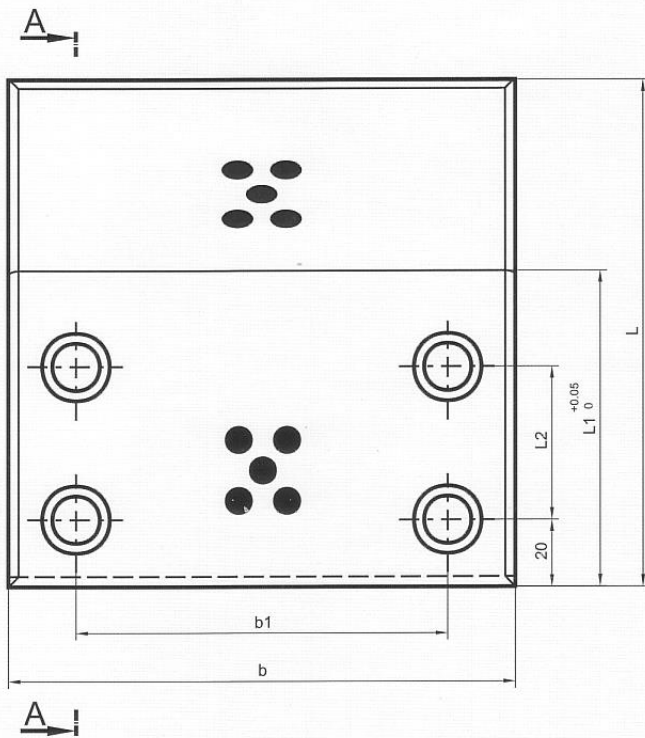
Material S2 – Steel hardened without solid lubricant (graphite) / Stahl gehärtet ohne Festschmierstoff (Graphit)

# CAM DWELL WEAR PLATES ÜBERLAUFKEILE

F-3



Slide direction:  
Gleitrichtung



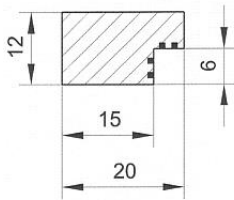
Material B Part No./ Teil Nr.	Material S2 Part No./ Teil Nr.	b x l x s	B1	L1	L2
AT180488	AT180492	75 x 130 x 30	40	95	50
AT180489	AT180493	75 x 150 x 45		90	45
AT180490	AT180494	75 x 170 x 60		90	45
AT180491	AT180495	75 x 200 x 60		120	75
AT180420	AT180410	100 x 130 x 30	60	95	50
AT180421	AT180411	100 x 150 x 45		90	45
AT180422	AT180412	100 x 170 x 60		90	45
AT180427	AT180500	100 x 200 x 60		120	75
AT180423	AT180413	125 x 130 x 30	85	95	50
AT180424	AT180414	125 x 150 x 45		90	45
AT180425	AT180415	125 x 170 x 60		90	45
AT180301	AT180501	125 x 200 x 60		120	75
AT180426	AT180416	150 x 130 x 30	110	95	50
AT180814	AT180417	150 x 150 x 45		90	45
AT180798	AT180418	150 x 170 x 60		90	45
AT180428	AT180502	150 x 200 x 60		120	75

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

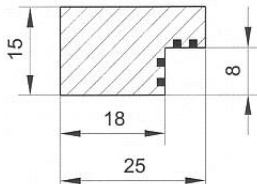
Material S2 – Steel hardened without solid lubricant (graphite) / Stahl gehärtet ohne Festschmierstoff (Graphit)

# L-GIBS G-1 WINKELLEISTEN

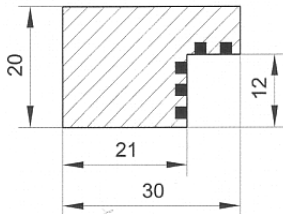
Form A/Style A



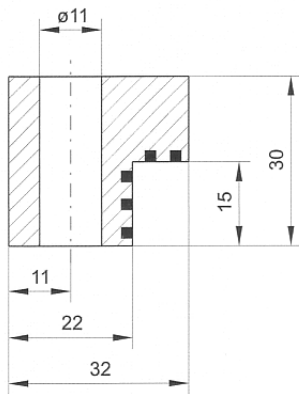
Form B/Style B



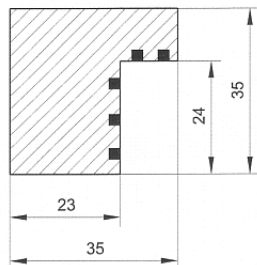
Form C/Style C



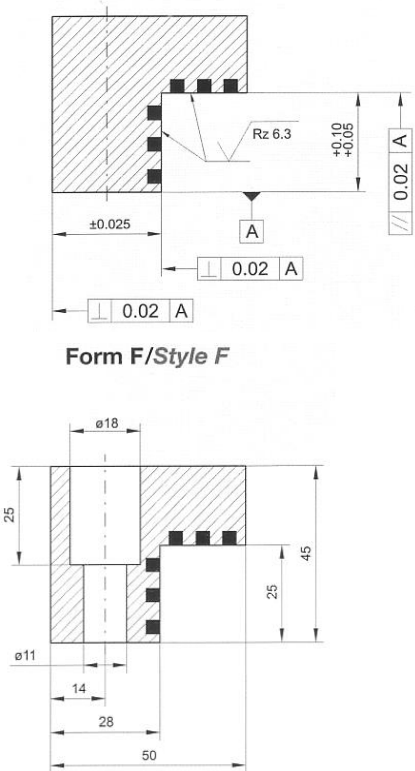
Form D/Style D



Form E/Style E

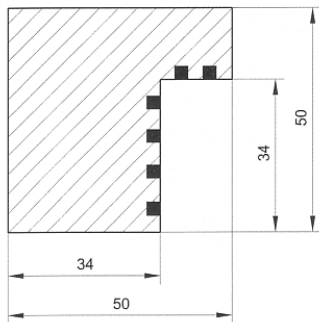


Toleranzen/Tolerances

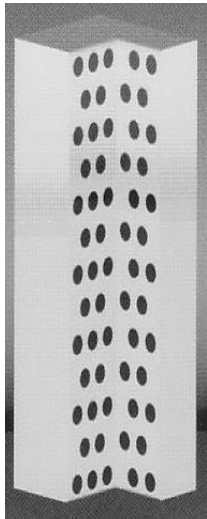
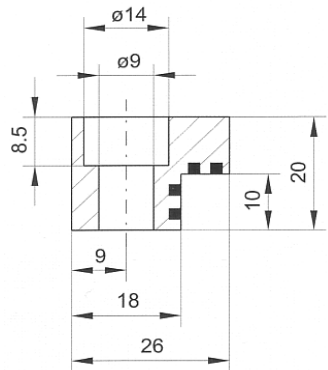


Form F/Style F

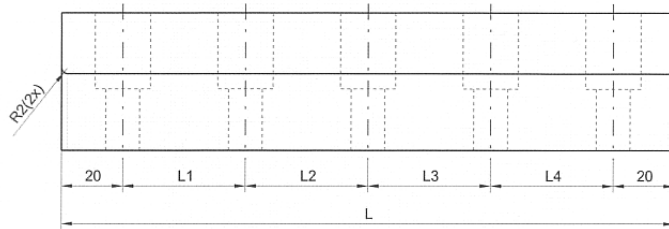
Form G/Style G



Form H/Style H



Slide direction: ↑  
Gleitrichtung: ↓



**L-GIBS WITH MOUNTING HOLES / Mit Befestigungsbohrungen**

Material B Part No./ Teil Nr.	L	L1	L2	L3	L4	Style/ Form	Cheese head Screws/ Zylinderkopfschrauben	
							DIN 912	Qty / Anzahl
AT 190500	100	60	-	-	-	H	M8	2
AT 190501	150	55	55	-	-			3
AT 190502	200		50	55	-			4
AT 190503	100	60	-	-	-	D	M10	2
AT 190504	150	55	55	-	-			3
AT 190505	200		50	55	-			4
AT 190506	250	70	70	70	-			
AT 190507	200	55	50	55	-	F	M10	4
AT 190508	250	70	70	70	-			
AT 190509	300	65	65	65	65			
AT 190510	350	80	75	75	80	-	-	5

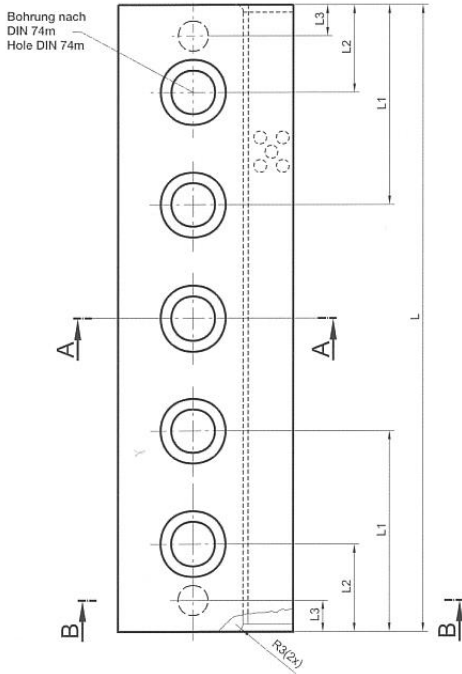
**L-GIBS WITHOUT MOUNTING HOLES / Ohne Befestigungsbohrungen**

Material B Part No./ Teil Nr.	Style Form	Length/ Länge	Material B Part No./ Teil Nr.	Length/ Länge	Material B Part No./ Teil Nr.	Length/ Länge
AT 190470	A	500	AT 190480	605	-	1005
AT 190471	B		AT 190481			
AT 190472	C		AT 190482			
AT 190473	D		AT 190483			
AT 190474	E		AT 190484			
AT 190475	F		AT 190485			
AT 190476	G		AT 190486			
AT 190477	H		AT 190487			
					AT 190491	
					AT 190492	
					AT 190493	
					AT 190494	
					AT 190495	
					AT 190496	
					AT 190497	

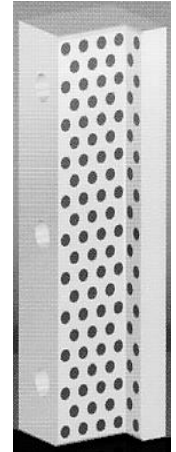
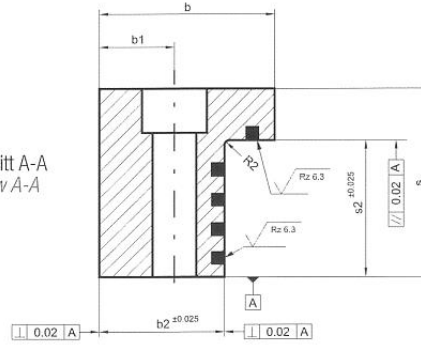
Any length up to 1.005 mm is available / Jeder Zuschnitt bis zu 1.005 mm erhältlich

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# L-GIBS G-2 WINKELLEISTEN

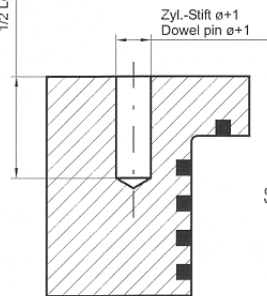


Schnitt A-A  
View A-A



Slide direction:  
Gleitrichtung

1/2 Zyl.-Stiftlänge  
1/2 Length of dowel pin

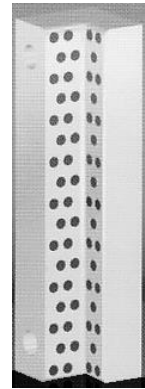
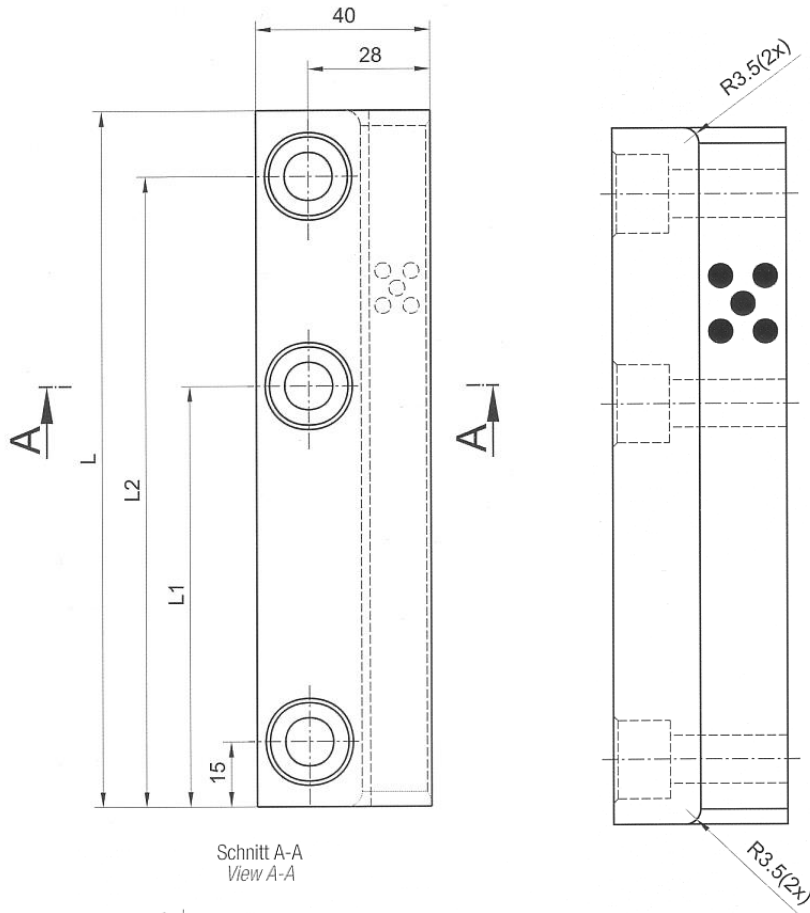


Schnitt B-B  
View B-B

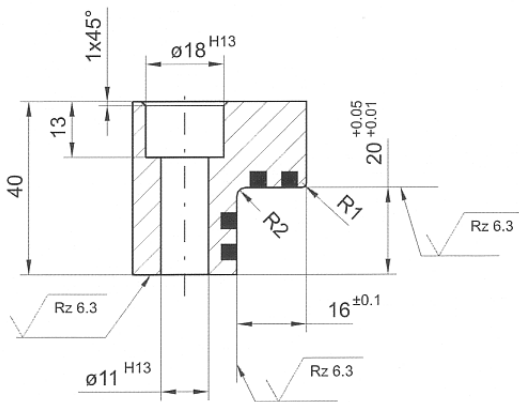
Material B Part No./ Teil Nr.	b	L	s	b1	b2	L1	L2	L3	s1	s2	Cheese head screws/ Zylinderkopf schrauben		Dowel pin/ Pass-Stift	
											DIN 912	Qty/ Anzahl	DIN 7979	Qty/ Anzahl
AT 190050	45	100	50,5	15	30	-	27,5	10	16	34,5	M12	2	10 x 60	2
AT 190049		125						-						
AT 190051		160						10						
AT 190052	55	100	55,5	20	37	-	27,5	10	16	39,5	M12	2	10 x 60	2
AT 190053		160												
AT 190054	70	160	75,5	30	50	-	35	12,5	20	55,5	M16	2	12 x 70	2
AT 190055		200										3		
AT 190056		250										5		
AT 190063		400										125		
AT 190057	85	160	90,5	38	63	-	42,5	15	20	65,5	M20	2	16 x 70	2
AT 190058		200										3		
AT 190059		250										5		
AT 190064		400										125		
AT 190060	100	160	100,5	45	75	-	45	15	20	75,5	M24	2	16 x 70	2
AT 190061		200										3		
AT 190062		250												

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

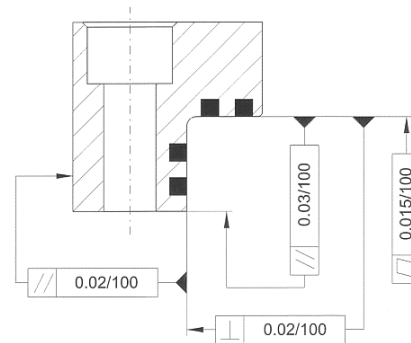
# L-GIBS G-3 WINKELLEISTEN



Slide direction:  
Gleitrichtung



Toleranzen  
Tolerances



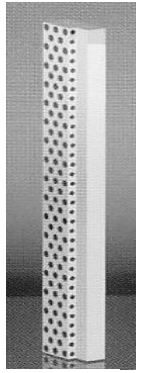
Material B Part No./ Teil Nr.	L	L1	L2	Cheese head screws quantity/ Zylinderkopfschrauben Anzahl
AT 180965	160	145	-	2
AT 180966	250		225	3

Measurements without a tolerance  $\pm 0,25$

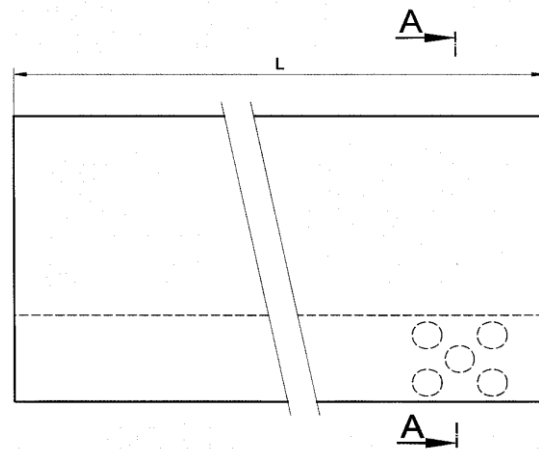
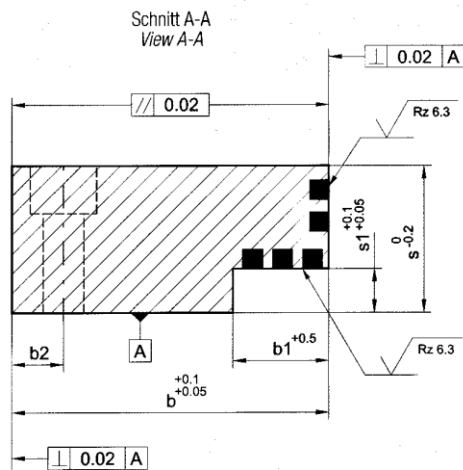
Masse ohne Toleranzangabe  $\pm 0.25$

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

# L-GIBS G-4 WINKELLEISTEN



Slide direction: ↑  
Gleitrichtung ↓



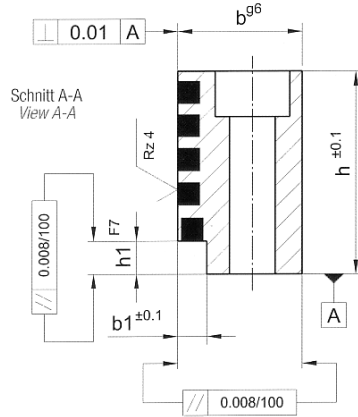
Material B Part No./ Teil Nr.	b x s	Length/ Länge	b1	b2	s1	Recommended screw size/ Empfohlene Schraubengröße		
AT 170689	15 x 12	205	5	6	5	M6		
AT 170690	20 x 17	605		7,5	7			
AT 170691	20 x 22			8	11		10	
AT 170692	28 x 27		12			14		22
AT 170693	28 x 36							
AT 170694	28 x 46		26					
AT 170695	40 x 66			26				
AT 170696	40 x 86	26						

L-Gibs will be delivered without mounting holes / Die Winkelleisten werden ohne Befestigungslöcher geliefert

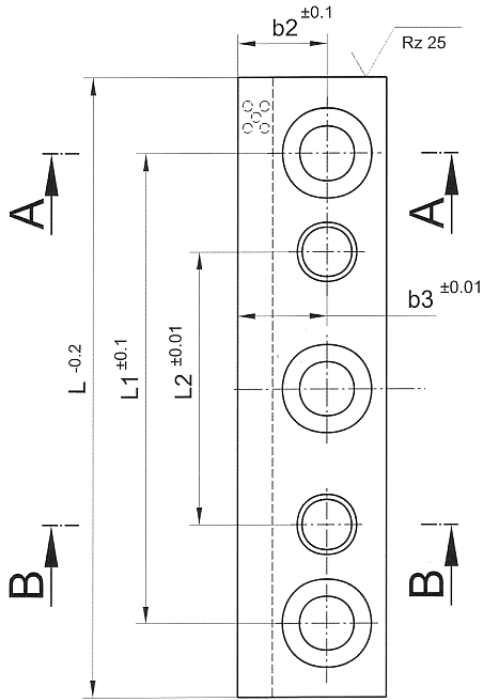
Any length up to 605 mm (except part no. AT170689) is available / Alle Längen bis 605 mm (außer AT170689) lieferbar

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

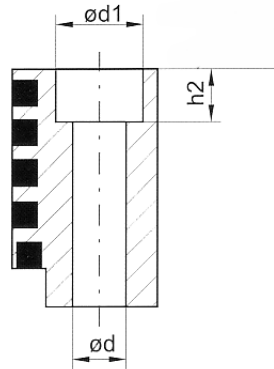
# L-GIBS G-5 WINKELLEISTEN



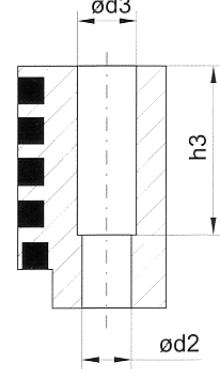
Slide direction  
Gleitrichtung



Schnitt A-A  
View A-A



Schnitt B-B  
View B-B

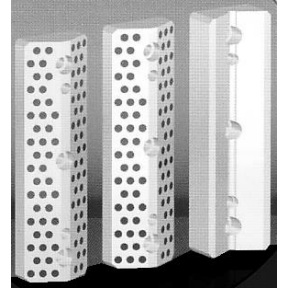
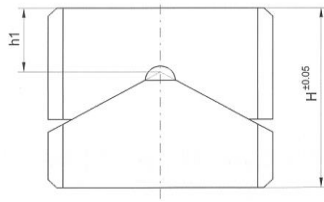


Material B Part No./ Teil Nr.	b	L	h	b1	b2	b3	L1	L2	h1	h2	h3	Ø d	Ø d1	Ø d2	Ø d3	Screws / Schrauben
AT 160730	16	50	11	5	9,5	9,5	34	14	4,0	5,7	-	5,5	10,0	5,0	-	2
AT 160731		71					55	35								2
AT 160732		90					74	54								3
AT 160733	20	80	19	5	12,0	12,0	64	40	5,0	6,8	9,5	6,6	11,0	6,0	7,0	2
AT 160734		100					84	60								2
AT 160735		125					109	85								3
AT 160736	25	100	31	6	15,5	15,5	80	50	6,0	9,0	19,0	9,0	15,0	8,0	9,0	2
AT 160737		125					105	75								2
AT 160738		160					140	110								3
AT 160739	30	125	49	7	18,0	18,0	95	55	8,0	11,0	34,0	11,0	18,0	10,0	12,0	2
AT 160740		160					130	90								2
AT 160741		200					170	130								3



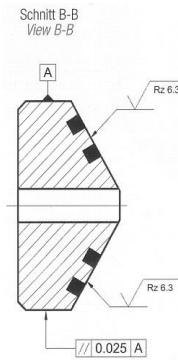
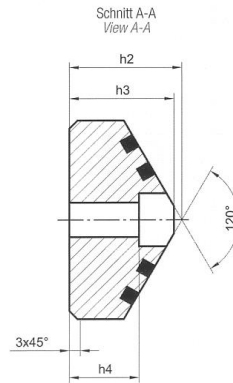
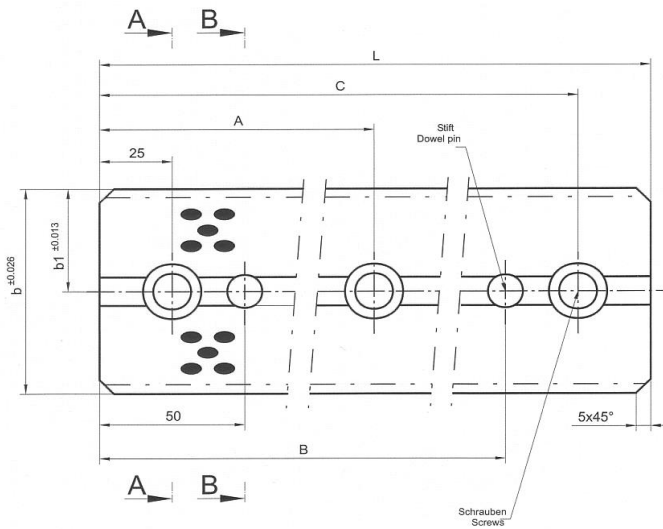
# V-BLOCKS – NAAMS H-1 PRISMENFÜHRUNGEN - NAAMS

ZUSAMMENGEBAUTER ZUSTAND  
ASSEMBLED CONDITION

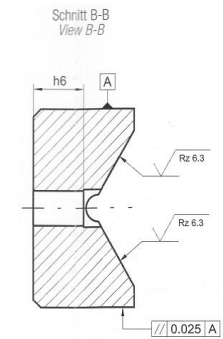
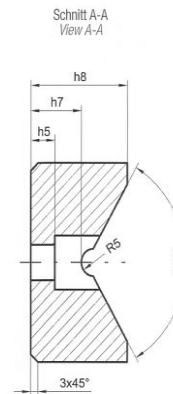
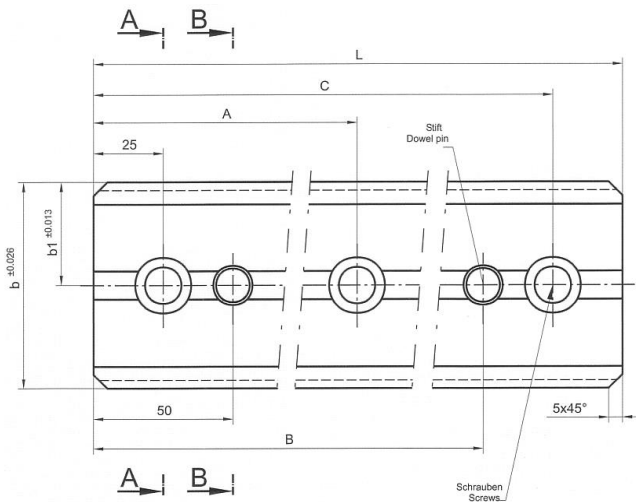


Slide direction: ↑  
Gleitrichtung ↓

## MALE "V" BLOCK



## FEMALE "U" BLOCK



**V-BLOCKS - NAAMS**      **H-1b**  
**PRISMENFÜHRUNGEN - NAAMS**

Male "V" Block Material B Part No./ Teil Nr.	Male "V" Block Material S1 Part No./ Teil Nr.	Female "U" Block Material S2† Part No./ Teil Nr.	L -0,1 -0,3	b ±0,026	b1 ±0,013	A ±0,12	B ±0,01	C ±0,12	H	h1 ±0,025	h2 ±0,025
AT 160034	AT 160032	AT 160030	150	75	37,5	-	100	125	65	23	42
AT 160035	AT 160033	AT 160031	200			150	175				
AT 160022	AT 160020	AT 160018	250			125	200	225			
AT 160023	AT 160021	AT 160019	300			150	250	275			
AT 160038	AT 160028	AT 160039	150	125	62,5	-	100	125	85	28	57
AT 160036	AT 160029	AT 160037	200			150	175				
AT 150255	AT 160025	AT 150253	250			125	200	225			
AT 160027	AT 160026	AT 160024	300			150	250	275			

Male "V" Block Material B Part No. Teil Nr.	Male "V" Block Material S1 Part No. Teil Nr.	Female "U" Block Material S2† Part No. Teil Nr.	h3	h4	h5	h6	h7	h8	Screws/ Schrauben	Dowel Pins/ Pass-Stifte
AT 160034	AT 160032	AT 160030	39	13	10	20	21	40	M12 (2x)	φ 12
AT 160035	AT 160033	AT 160031							M12 (3x)	
AT 160022	AT 160020	AT 160018								
AT 160023	AT 160021	AT 160019								
AT 160038	AT 160028	AT 160039	52	15	15	27	60	M16 (2x)	φ 16	
AT 160036	AT 160029	AT 160037						M16 (3x)		
AT 150255	AT 160025	AT 150253								
AT 160027	AT 160026	AT 160024								

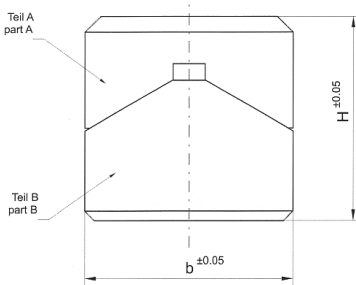
†S2 Material hardened to 55<sup>+5</sup> HRC / Material gehärtet auf 55<sup>+5</sup> HRC

Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

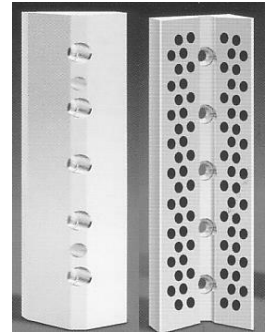
Material S1 – Steel hardened with solid lubricant (graphite) / Stahl gehärtet mit Festschmierstoff (Graphit)

Material S2 – Steel hardened without solid lubricant (graphite) / Stahl gehärtet ohne Festschmierstoff (Graphit)

# U & V - DRIVES H-2 PRISMENFÜHRUNGEN

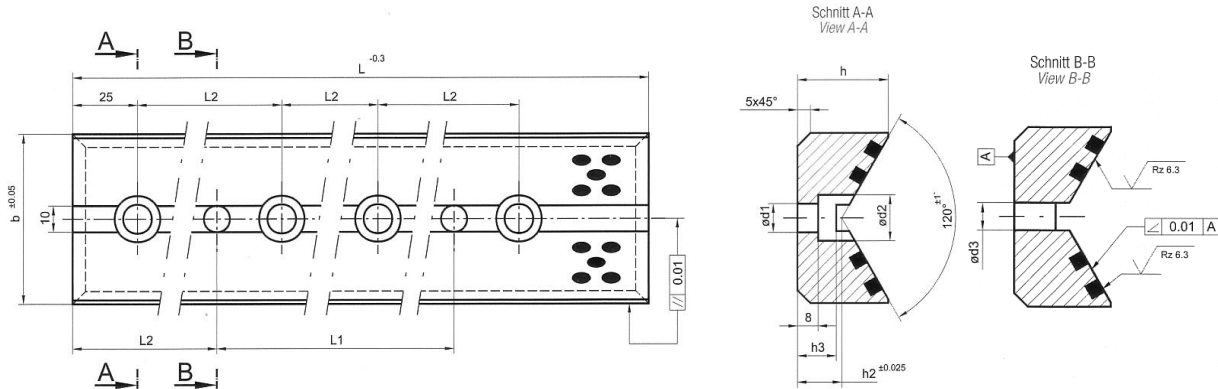


**ASSEMBLED CONDITION / ZUSAMMENGEBAUTER ZUSTAND**

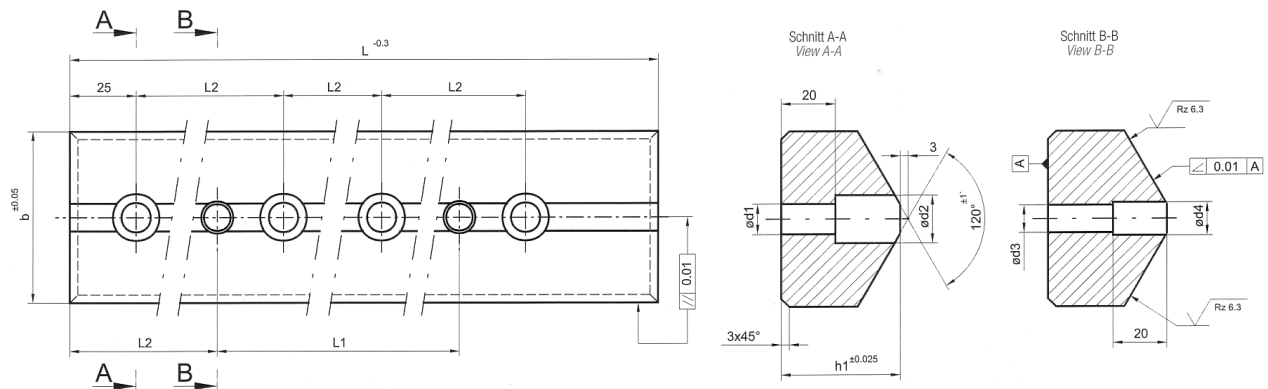


Slide direction: ↑  
Gleitrichtung ↓

**PART A / TEIL A - Material B with solid lubricant / Material B mit Festschmierstoff**



**PART B / TEIL B - Material S2 steel hardened / Material S2 Stahl gehärtet**

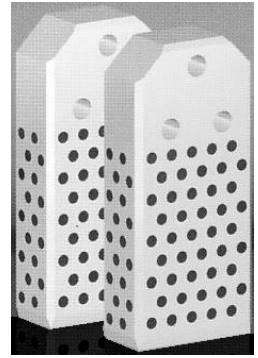


Material B Part A/ Teil A Part No./ Teil Nr.	Material S2 Part B/ Teil B Part No./ Teil Nr.	b	L	h	L1 +/- 0,01	L2 +/- 0,1	h1 theor.	h2 theor.	h3	H	Ød1	Ød2	Ød3 H7	Ød4	Quantity cheese head screws/ Anzahl Zylinderschrauben
AT170280	AT170281	65	150	35	50	50	47	18	15	65	11	17,5	10	12	3
AT190461	AT190465		200		75	75									4
AT190462	AT190466		250		130	65									4
AT190463	AT190467	300	150	75	4										
AT190090	AT190095	125	150	60	50	50	52	33	30	85	17,5	26	16	18	3
AT190091	AT190096		200		75	75									4
AT190092	AT190097		250		130	65									4
AT190093	AT190098		300		150	75									4

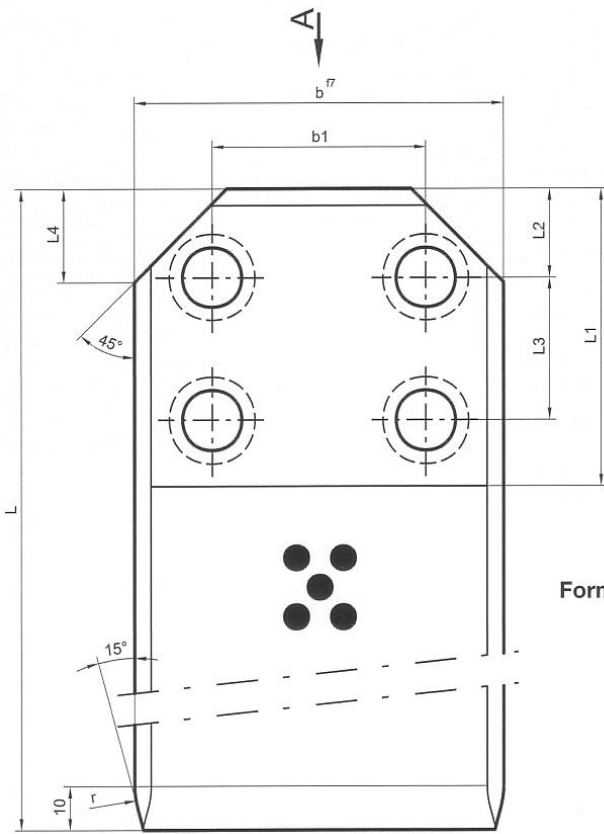
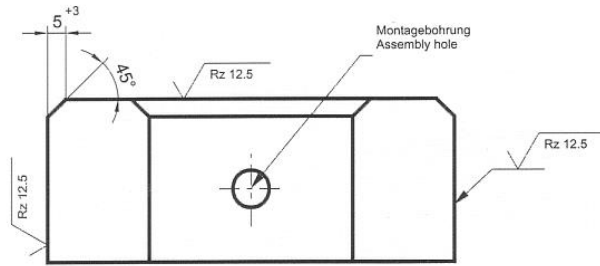
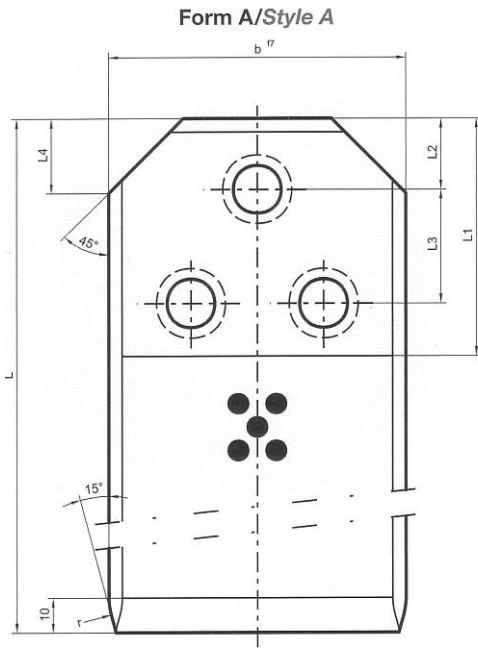
Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

Material S2 – Steel hardened without solid lubricant / Stahl gehärtet ohne Festschmierstoff

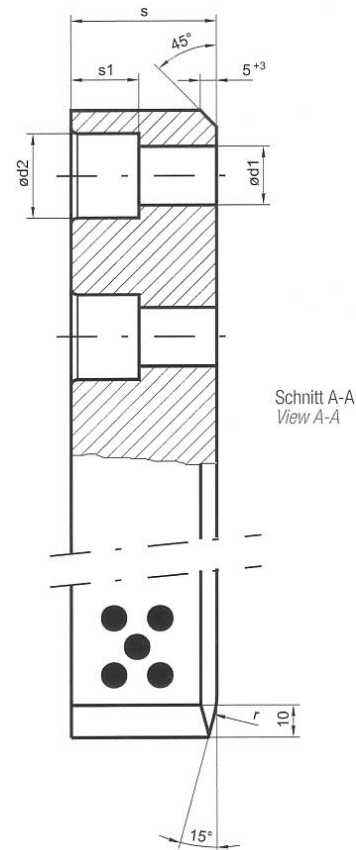
# DIE HEELS I-1 LASCHENFÜHRUNGEN



Slide direction:  
Gleitrichtung



Form B/Style B



Schnitt A-A  
View A-A

# DIE HEELS I-1a LASCHENFÜHRUNGEN

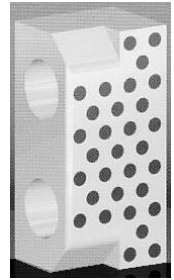
Material B Part No./ Teil Nr.	Material S1 <sup>†</sup> Part No./ Teil Nr	b	L	s	b1	L1	L2	L3 ±0,2	L4	r	s1	ø d1/d2	Qty Screws / Anzahl Schrauben	Assembly Hole / Montage Bohrung
AT 190150	AT 190196	63	180	25	36	90	20	50	18	16	16	14/20	3	-
AT 190151	AT 190197		200											
AT 190152	AT 190198		224											
AT 190153	AT 190199		180	36										
AT 190154	AT 190200		200											
AT 190155	AT 190201		224											
AT 190156	AT 190202	71	180	25	36	90	20	50	18	16	16	14/20	3	-
AT 190157	AT 190203		200											
AT 190158	AT 190204		224											
AT 190159	AT 190205		180	36										
AT 190160	AT 190206		200											
AT 190161	AT 190207		224											
AT 190162	AT 190208	90	200	36	50	100	20	50	28	25	21	18/26	3	-
AT 190163	AT 190209		224											
AT 190164	AT 190210		250											
AT 190165	AT 190211		200	45										
AT 190166	AT 190212		224											
AT 190167	AT 190213		250											
AT 190168	AT 190214	112	200	36	50	100	20	50	28	25	21	18/26	3	-
AT 190169	AT 190215		224											
AT 190170	AT 190216		250											
AT 190171	AT 190217		200	45										
AT 190172	AT 190218		224											
AT 190173	AT 190219		250											
AT 190174	AT 190220	140	315	45	90	150	40	80	36	31,5	25,5	22/33	4	-
AT 190242	AT 140023		355											
AT 190175	AT 190221		400											
AT 190176	AT 190222		315	56										
AT 190177	AT 190223		400											
AT 190178	AT 190224	190	315	45	90	150	40	80	36	31,5	25,5	22/33	4	M16 x 37
AT 190179	AT 190225		400											
AT 190180	AT 190226		315	56										
AT 190181	AT 190227		400											
AT 190182	AT 190228		315	71										
AT 190183	AT 190229		400											
AT 190184	AT 190230	240	500	56	160	250	40	160	36	31,5	30,5	26/40	4	M16 x 37
AT 190185	AT 190231		630											
AT 190186	AT 190232		500	71										
AT 190187	AT 190233		630											
AT 190188	AT 190234		500	90										
AT 190189	AT 190235		630											
AT 190190	AT 190236	290	500	56	160	250	40	160	36	31,5	30,5	26/40	4	M16 x 37
AT 190191	AT 190237		630											
AT 190192	AT 190238		500	71										
AT 190193	AT 190239		630											
AT 190194	AT 190240		500	90										
AT 190195	AT 190241		630											

S1 Material hardened to 55<sup>+5</sup> HRC with solid lubricant / Material gehärtet auf 55<sup>+5</sup> HRC mit Festschmierstoff

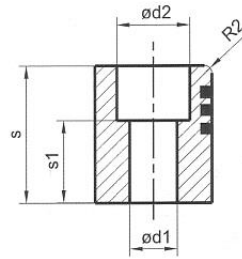
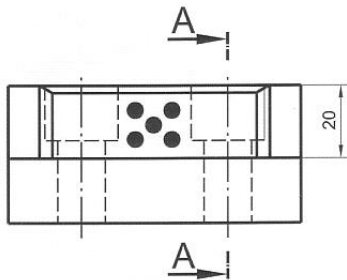
Material B – Bronze with solid lubricant (graphite) / Bronze mit Festschmierstoff (Graphit)

Material S1 – Steel hardened with solid lubricant (graphite) / Stahl gehärtet mit Festschmierstoff (Graphit)

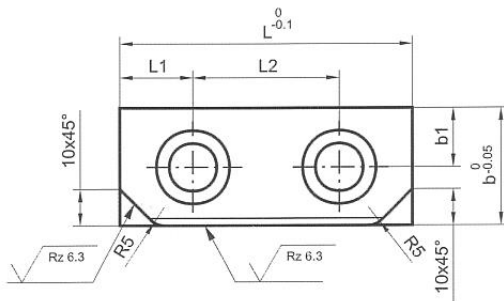
# GUIDE BLOCKS J-1 FÜHRUNGSBLÖCKE



Slide direction:  
Gleitrichtung



Schnitt A-A  
View A-A

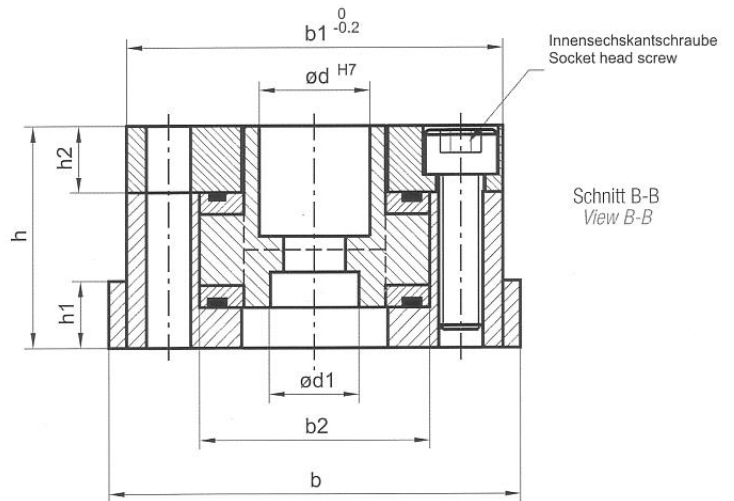
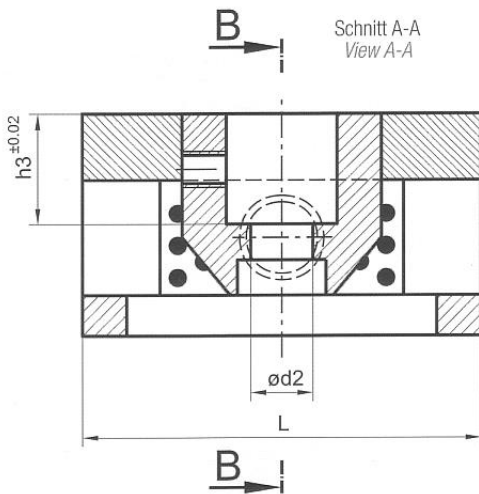
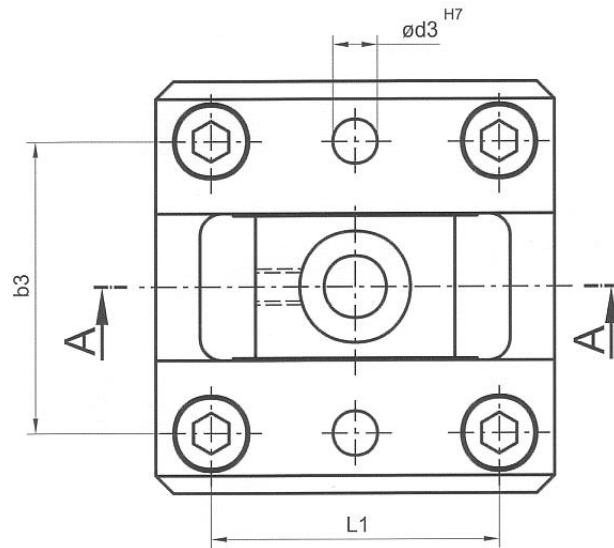
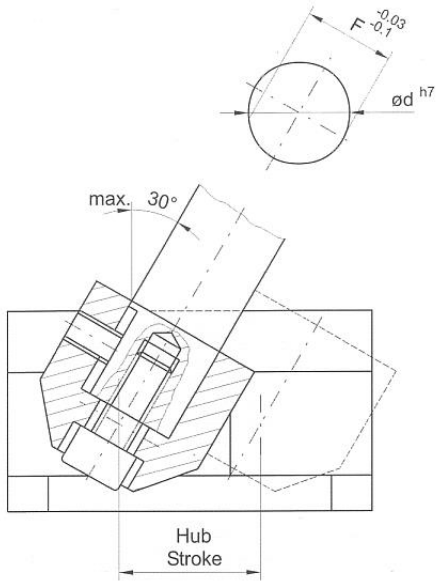


<b>Material B Part No. / Teil Nr.</b>	<b>b x L x s</b>	<b>L1</b>	<b>L2</b>	<b>b1</b>	<b>s1</b>	<b>ø d1</b>	<b>ø d2</b>
AT 140357	25 x 60 x 30	15	30	11	18	11	17,5
AT 150972	32 x 60 x 38	15	30	16	23	13	20
AT 150633	32 x 80 x 38	20	40	16	23	13	20

Material B – Bronze with solid lubricant / Bronze mit Festschmierstoff

# INCLINED EJECTOR CORE UNITS BOLZENFÜHRUNGEN

K-1



Part No. / Teil Nr.	b	L	h	b1	b2	b3	L1	h1	h2	h3	ød	ød1	ød2	ød3	F	Stroke/ Hub
AT 190980	33	32	22	30	19	24	20	5	7	8	8	8	4,5	3	7	10
AT 190981	45	45	27	40	25	32	30		8	10	10	10	5,5	4	9	18
AT 190982	57	50	32	51	31	39	35	7	10	12	12	11	7	6	11	20
AT 190983	65	65	36	58	38	46	40	8		16	16	14	9		9	14,5
AT 190984	80	80	42	72	44	56	55	11	12	20	20	17	11	8	18	30
AT 190985	93	90	50	85	52	66	65	15	15	25	25	20	14	10	22,5	35
AT 190986	101	100	55	93	60	74	70			30	30				27	40
AT 190987	120	120	62	110	70	85	80		18	35	35	32	45			
AT 190988	130	135	70	120	80	95	90			40	40	36	50			
AT 190989	140	150	80	130	90	105	110		20	45	45	40	55			

Measurements without a tolerance specification - DIN 7168 medium  
Masse ohne Toleranzangabe DIN 7168 mittel