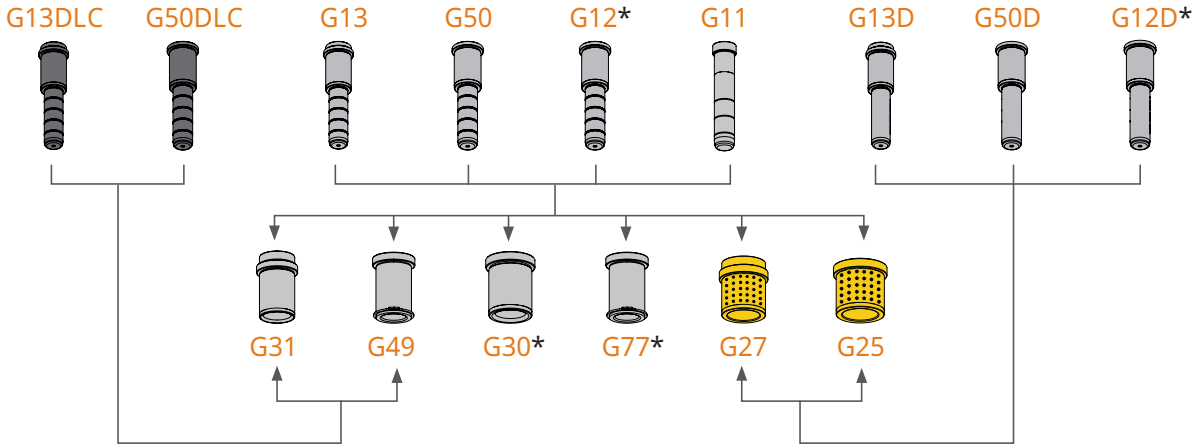


QUICK OVERVIEW of GÜVENAL GUIDING SYSTEMS for MOULD-MAKING

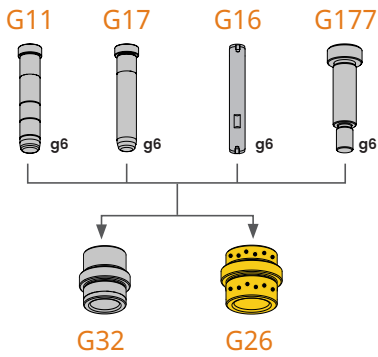


STANDARD GUIDING SYSTEMS

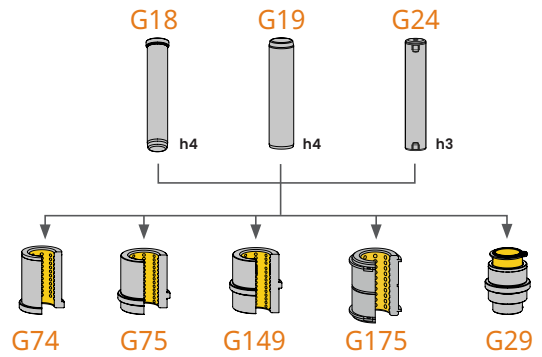


EJECTOR SET GUIDING SYSTEMS

Sliding Guides



Roller Guides



NEW GENERATION of GÜVENAL LINEAR BALL BEARING SYSTEMS

The Güvenal Linear Ball Bearing Bushes have replaced the older ball guide system, which consisted of a bushing and ball cage. These bushes offer significant advantages, including a compact installation size, high load capacity, and unlimited stroke lengths without any movement of the cage. One of the most common applications of the Linear Ball Bearing Bushes is the guidance of ejector plates. The compact design also enables a variety of alternative uses. The circumferential ball tracks, including the moving balls inside the bushing, nearly eliminate the risk of the guide pillar seizing.

Next-Generation "FreeLub"

Graphite deposits within the channels ensure continuous lubrication of the balls. The sealed system prevents both the loss of internal lubricants and the entry of external contaminants. The components are designed to withstand continuous operating temperatures of up to 200°C. The new "FreeLub" types (G74, G75 & G175) come with several improvements. The ball channels have been modified with a slight incline to enhance guidance. Additionally, the newly grouped and divided double contact channels allow up to 25% more load capacity compared to previous models.



SLIDING GUIDE SYSTEMS

From self-lubricating bushes to steel bushes, find the ideal guide pillars and sliding bushes to ensure optimal guidance for your ejector set.



ROLLER GUIDE SYSTEMS

Seeking an ejector set guide for high stroke speeds and maximum precision? Explore our smooth-operating ball guides, which offer minimal play due to optimal preload. Additionally, the point contact between the balls and the pillars results in reduced wear.

3+1 Configuration - Three Large and One Small Guide Pillar Principle

Guide pillars are used to align the two mould halves during closing. Typically placed on the nozzle side, they are often installed according to the 3 + 1 specification, which consists of three larger diameter pillars and one smaller diameter pillar to prevent incorrect assembly. The choice of pillars depends on the mould and specific application. Deciding whether to use versions with or without a centring collar or a fitting diameter is typically based on experience. Additionally, Güvenal offers DLC-coated pillars as standard, providing improved performance, particularly for dry running applications.



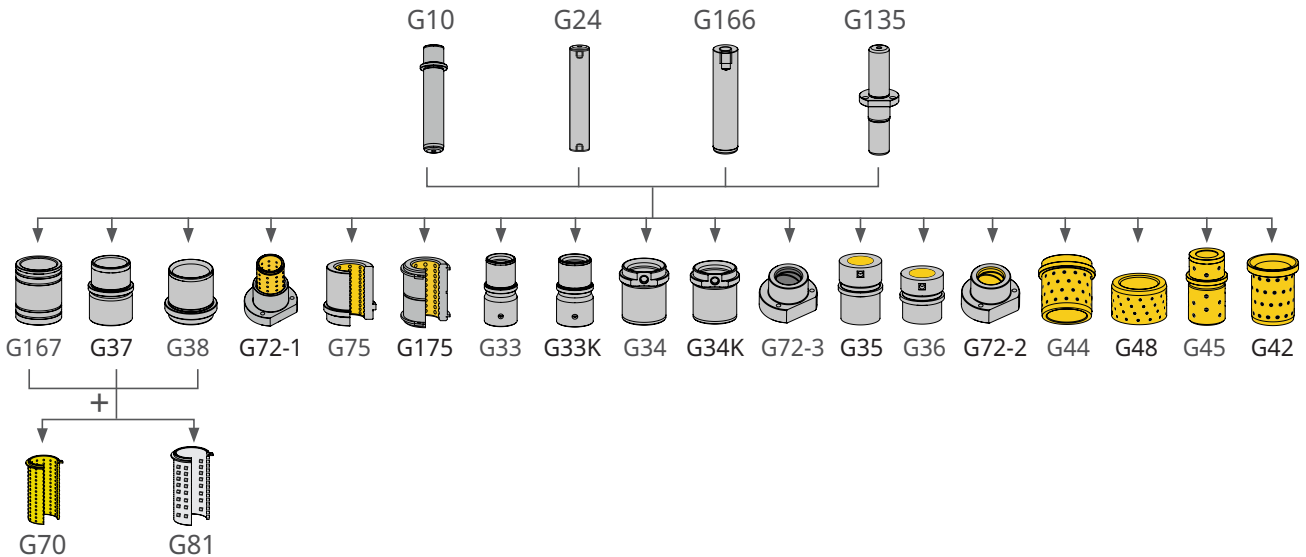


ENGLISH

<

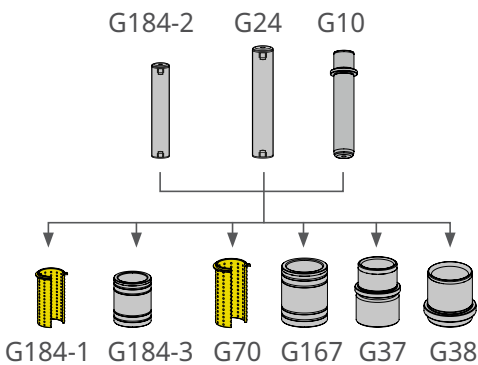
QUICK OVERVIEW of GÜVENAL GUIDING SYSTEMS for DIE-MAKING

STANDARD GUIDING SYSTEMS



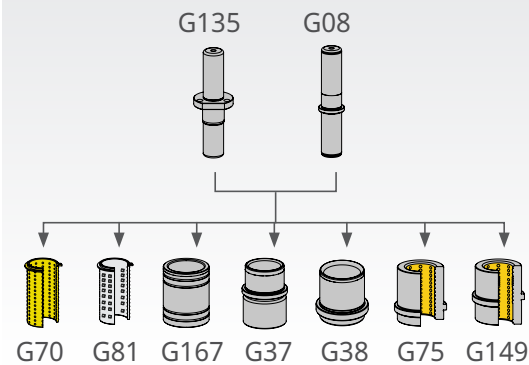
Compact Guiding Systems

Ø= 4 - 19



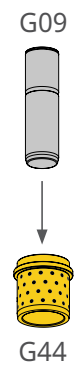
Module Guiding Systems

Ø= 20 - 50



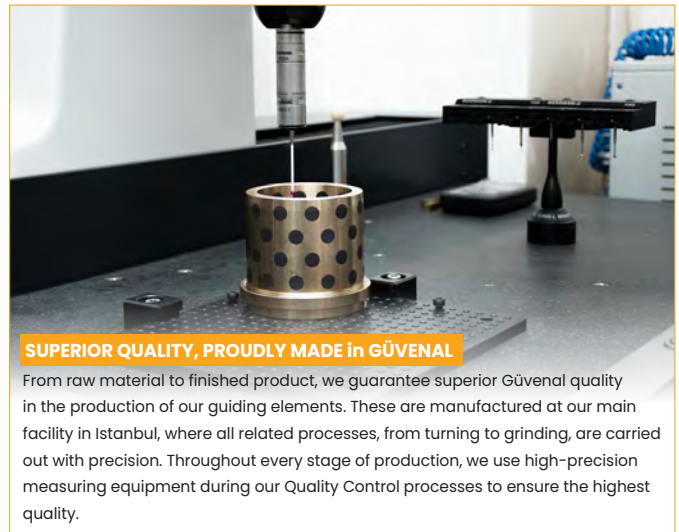
Guiding for Large Dies

Ø= 25 - 160



GÜVENAL GUIDE PILLARS: TOLERANCES and SURFACE QUALITY

Guide Pillar	Tolerance		Surface of the guide
	Installation	Guide	
G10	j6	h3	high precision ground + superfinis
G24	h3	h3	high precision ground + superfinis
G166			
G09	r6	f6	ground
G08	js4	h3	high precision-ground + superfinis
G135			



GUIDE BUSH TYPES COMPARISON for DIE-MAKING



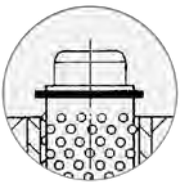
PRECISION BALL GUIDES



Ball Guides are ideal for axial, radial, and combined movements with normal loads and limited stroke lengths. Their versatility covers a broad range of applications, from die tool and injection mould manufacturing to machine and device construction. This guide system is free from backlash, providing high stability due to pre-tensioned balls. Its design allows for high-speed performance thanks to low rolling friction. The material used for the guide bushings ensures strong guide stability. When paired with hardened precision balls and matching guide pillars, this setup delivers smooth and accurate guidance. The ball cages, made of brass, house a large number of balls, offering a high dynamic load index, which is crucial for extended service life. The precision-ground running surface guarantees superior quality, ensuring tight dimensional and shape tolerances with minimal surface roughness.

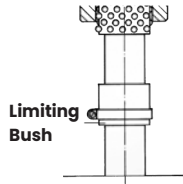
Key Features: + High-speed operations. + Maximum precision requirement. + Applications with high radial offset tolerance.
+ For thin sheet-metals. + Play-free guidance with optimal preload. + Smooth motion from the rolling action of the balls.
+ Facilitates easy die closure.

Limitations: - May be overloaded under high shear forces due to point contact. - Stroke/path length is limited.



Standard with Locking Circlip:

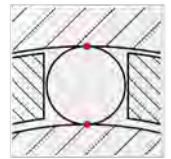
As per DIN 471, the locking circlip prevents the cage from slipping through the guide bushing during tool disassembly. During operation, it helps prevent any potential "shifting" of the cage.



Limiting Bush

Optional – G168:

The Limiting Bush (G168) prevents the cage from shifting. It is positioned over the guide pillar and securely fastened.



Ball Point

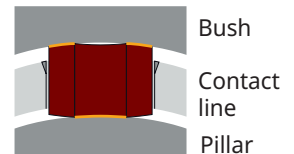
PRECISION ROLLER GUIDES



Precision Roller Guides create a linear contact with the guide bush and guide pillar, resulting in a significantly higher load-carrying capacity for each roller compared to a ball-cage of the same diameter. The profile rollers are arranged in a spiral pattern along the axis, ensuring each roller moves along its own unique path. The cages are designed with grooves to accommodate a DIN 471 circlip.

Key Features: + Ideal for high-speed operations + Suitable for applications requiring maximum precision + Offers greater stiffness compared to ball cages + Well-suited for Fine Blanking due to its ability to withstand high shear forces + Suitable for IML Injection Moulds + Reduced wear due to the axial offset of the rollers + Optimized inlet geometry ensures smooth roller entry + Play-free guidance achieved through optimal preload.

Limitations: - Can be used for axial motions only - Stroke/path length is limited.
- More expensive than the ball guides.



Bush

Contact line

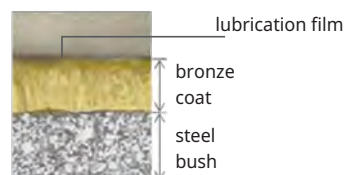
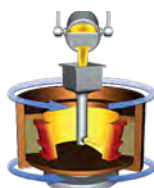
Pillar

BRONZE COATED SLIDING GUIDES



For long strokes and possible extension of the pillar out of the bush, with a limited sliding speed of 30 m/min (i.e. low to medium stroke frequencies). This guide type features a steel body with a bronze-coated running surface, including a helical oil groove and a lubricating nipple for continuous lubrication. The steel body offers high stability under side and edge loads, thanks to its high tensile strength. The 0.25 to 0.30mm bronze layer ensures optimal running-in, minimal play, and excellent emergency running properties. Continuous lubrication with grease is required for reliable operation. The precision-ground surface offers high dimensional and shape accuracy with minimal roughness.

Key Features: + Ideal for thick sheet-metals due to the high shear forces. + Long lifespan and high load capacity – the use of premium materials and high-precision machining ensures the top quality of the guides. + Stroke/path is not limited / suitable with all large strokes extension of the pillar is possible. + The circumferential oil groove ensures perfect lubrication – also in case of short strokes.



Lubrication film

bronze coat

steel bush



GUIDE BUSH TYPES COMPARISON for DIE-MAKING

STEEL SLIDING GUIDES



Steel sliding guides are designed for long axial or combined oscillating movements (axial/radial) and as locking systems. They are robust, durable, and capable of handling high loads while offering good wear resistance across various conditions. The sliding speed is limited to 30 m/min. Güvenal's high-precision slide guides consist of a guide pillar and corresponding guide bush, with tight manufacturing tolerances ensuring minimal clearance for high-precision guidance. The circumferential oil groove provides optimal lubrication, even with short strokes. After initial lubrication, it gradually enters the sliding zone during operation, with the lubricating rings covering 25-35% of the total guiding surface. **Key Features:** + Suitable for high shear forces. + Ideal for short stroke rates.

Limitations: - Steel may generate higher friction compared to other materials.



SOLID BRONZE SLIDING GUIDES with GRAPHITE INSERTS



These bushes offer excellent wear and friction resistance, reducing the need for external lubrication. They are ideal for low-speed applications with moderate loads. The graphite contact surface covers 25% to 35% of the total working area. Our maintenance-free sliding elements, used in dies / moulds and machines for linear and rotary movements, provide long-term reliability. The base material is enhanced with solid lubricant depots, ensuring lubrication after a one-time initial application. These sliding elements remain maintenance-free for extended periods. The range of applications for this product is vast, and we can also offer customized designs according to your specific requirements.

Key Features: + Suitable for large sheet-metal thickness. + Ideal for moderate stroke rates. + Effective for medium shear forces. + Optimal self-lubrication through graphite inserts. + No stroke/path limitations – pillar extension is possible. **Limitations:** - Continuous wear of the solid lubricant.

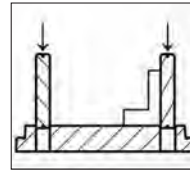


Selecting the Optimal Guide Bush Type for Your Application

Requirements	Guide Bush Type				
	Ball Guides	Roller Guides	Bronze Coated	Steel S. Guides	Bronze + Graphite
Load capacity / heavy loads	+	++	+++	+++	+++
Impact load / vibration	-	+	++	++	++
High stroke speed	+++	+++	-	-	-
Large stroke - path	+	+	+++	++	+++
Smooth movement / low friction	+++	++	+	+	+
Wear resistance	+++	+++	+	++	++
Accuracy	+++	+++	+	+	+
Small cutting clearance	+++	++	+	+	+
Dust and contamination resistance	-	-	+	+	++

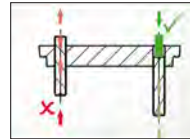
+++ = excellent ++ = good + = sufficient - = not good

Instructions



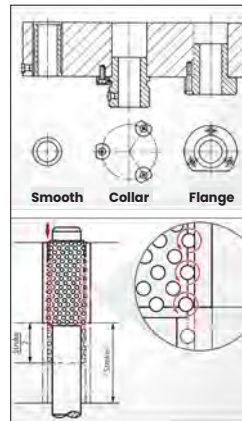
Installation Instructions for Guide Pillars:

1. Clean the boreholes in both the top and bottom parts thoroughly.
2. Apply oil (not grease) to the boreholes.
3. Insert the guide pillars into the top part.
4. Place plane-parallel ground bars between the upper and lower parts.
5. Drive the pillars approximately 3 mm into the bottom part.
6. Use a hydraulic press or manual spindle press to insert the pillars.



Disassembly of Guide Pillars:

To avoid surface damage to both the guide pillars and mounting bores, never eject the pillars via the running surface.



Installation Instructions for Guide Bushes:

Do not press the bushes as this may deform the internal diameter. For security, smooth bushes should be secured in the mounting bore using Loctite 648 adhesive. Ensure adhesive surfaces are completely free of grease. For flange bushes and guide bushings with collars, press the collar and flange surfaces (rectangularly ground to fit the guide bore) firmly against the plate using clamps or screws. Ensure guides are lubricated with a proper lubricating film. Frame plates must be aligned parallel to each other. When assembling roller guides, ensure that the rollers or balls perform a rolling motion, not sliding.

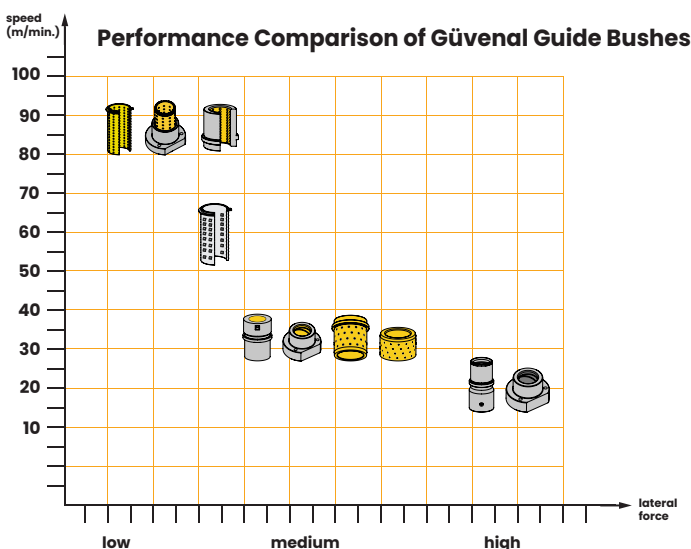


Tolerance and Hardness Data for Guide Units

Please refer to the Technical Data section at the end of the catalogue for the Tolerances and Hardness Tables of Guide Units.

Alternatively, visit the "Document Centre" →

"Technical Support Centre" section at www.guvenal.net



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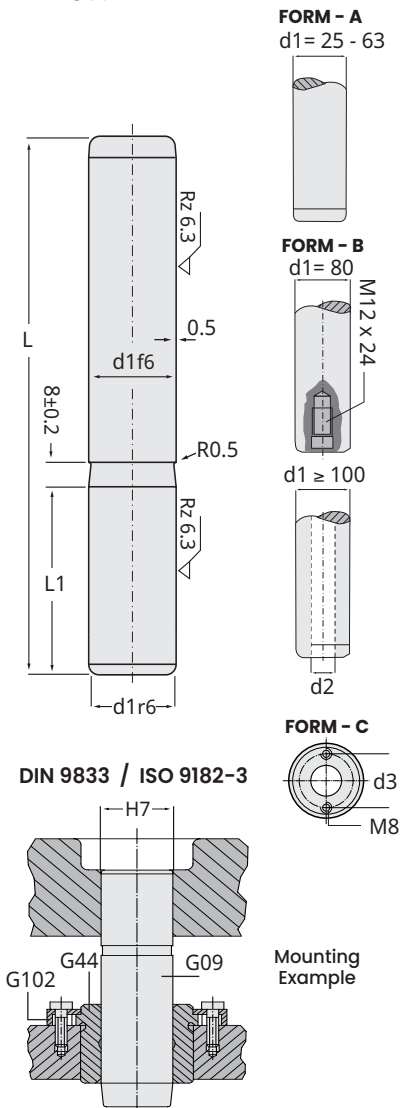
18

Guiding Components



Code: **G09**

Guide Pillar for Large Dies
DIN 9833



DIN 9833 / ISO 9182-3

Mounting
Example

Heavy Duty Type for Dies

Practises: Ground surface is holeless up to $\varnothing d = 80$ and $\varnothing 80 = M12 \times 24$ mm has one lifting hole. From $\varnothing d100$, it has hollow ($d2$) and have 2 pieces $M8 \times 24$ mm lifting holes.

Note: Hole tolerance should be H7.

It is recommended to use guide pillar only with self-lubricating guide bushes.

Compatible Bushes:

Self-lubricating bronze guide bushes.

d1	L	d2 Hole	d3	L1	Form
25	125	-	-	40	A
	140				
	160				
	180				
	200				
	224				
32	140	-	-	45	A
	160				
	180				
	200				
	224				
	250				
40	140	-	-	56	A
	160				
	180				
	200				
	224				
	250				
	280				
	315				
50	160	-	-	70	A
	180				
	200				
	224				
	250				
	280				
	315				
	355				
	400				
	560				
63	180	-	-	80	A
	200				
	224				
	250				
	280				
	315				
	355				
	400				

d1	L	d2 Hole	d3	L1	Form
80	200	-	-	100	B
	224				
	250				
	280				
	315				
	355				
100	400	50	72	125	C
	450				
	500				
	560				
	630				
	720				
125	315	65	90	140	C
	355				
	400				
	450				
	500				
	560				
160	400	95	132	180	C
	450				
	500				
	560				

Operating Components:

Self-lubricating guide bushes are recommended.



Order: **G09**. d1 x L

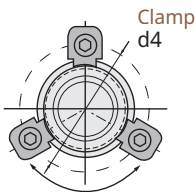
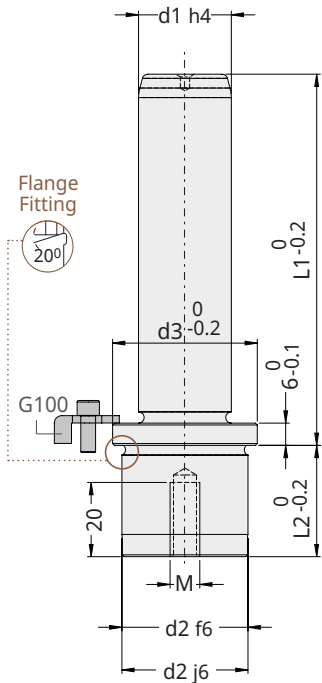


Material: 1.1213 (CF53)
Hardness: 58 - 62 HRC



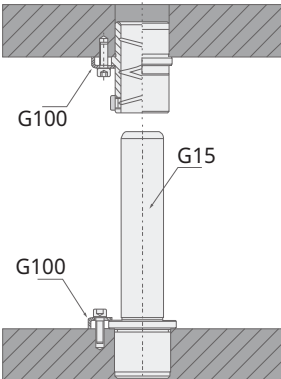
Code: **G15**

Guide Pillar, Thickbacked



Mounting Example

External diameter of bush and rear positioning diameter of the G15 guide pillar are same.



d1	L1	d2	d3	L2	d4 Clamp	M
20	100	28	34	23	46.2	M8
	125					
	140					
	160					
	180					
	200					
25	100	34	39	30	51.4	M8
	125					
	140					
	160					
	180					
	200					
30	220	39	44	37	56.6	M8
	240					
	125					
	140					
	160					
	180					
30	200	39	44	37	56.6	M8
	220					
	240					
	260					
	315					

Flange Fitting: It is perpendicular angle locating on to die plate surface.

Operating Components: G100
G33- G34 - G35 - G36 - G40 - G42



Order: **G15**. d1 x L1

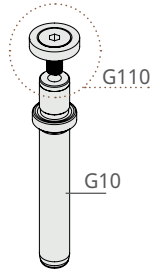


Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC



Advantageous Product:

It is used as guiding component at dies and blow moulds.
Pillar mounting diameter and bush mounting diameter have the same tolerance value. In machining of guide pillar / bush holes on dies with the advantage of using same cutting tool (drill / reamer) for both guide pillar & bushes hole.
Thus, the necessity of using different cutting tools will disappear.

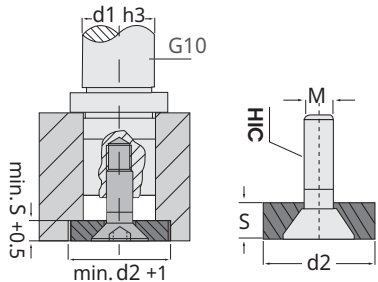


Mounting Flange

Code: **G110**

Guide pillar fixation & Support washer

- Reliable product used for guide pillar with centre collar mountings min. d3 + 1
- It can also be used to support for ejector plates in injection moulds / etc.



d2	d1 Pillar Diameter	S Flange	M Screw
22	Ø 15 / 16	5.5	M8 x 20
25	Ø 19 / 20		
32	Ø 24 / 25		
40	Ø 32 / 30	7.5	
50	Ø 38 / 40	9.5	
60	Ø 48 / 50		
73	Ø 60 / 63		
93	Ø 80	12	M12 x 20



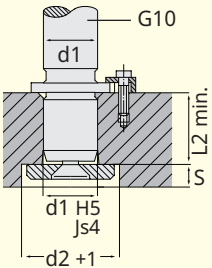
Order: **G110**. d2

Technical Info

Mounting Dimensions and Tolerances of Demountable Die Guide Pillars

Dimensions Given:
Recommended (suggestion) for G10 Guide pillar.

Mounting System:
Soft tight fitting system has been selected and determined for G10 Guide pillar.



d1	d1 H5	d2 + 1	L2	S
15 / 16	+0.008	22	14.5	5.5
19 / 20	+0.009	25	17.5	5.5
24 / 25	+0.009	32	24.5	5.5
30 / 32	+0.011	40	29.5	7.5
38 / 40	+0.011	50	27.5	9.5
48 / 50	+0.013	60	37.5	9.5
60 / 63	+0.013	80	37.5	9.5
80	+0.013	95	48	12

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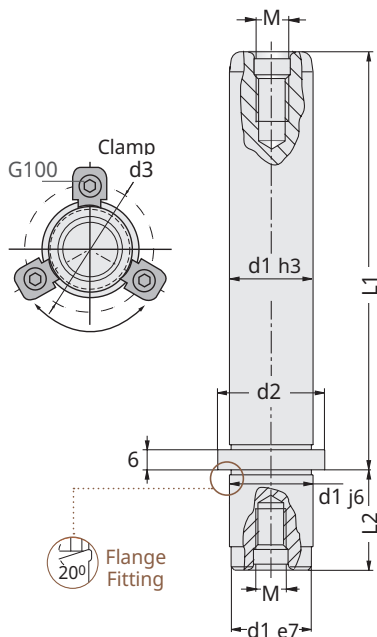
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Guiding Components

Code: **G10**

Guide Pillar with Centre Collar DIN 9825 / ISO 9182-5



Flange Fitting: It is perpendicular angle locating on to die plate surface.

Technical Info

It can be inserted directly to the holes which opened on the die plate. During mounting please avoid tight fitting. It can be positioned via soft-tight fitting to the holes and clamps or mounting flange with suitable tolerances or also with chemicals.

* Refer to the mounting measurement tolerance table on the **Page 63** for correct fitting of guide pillar to the die plate.

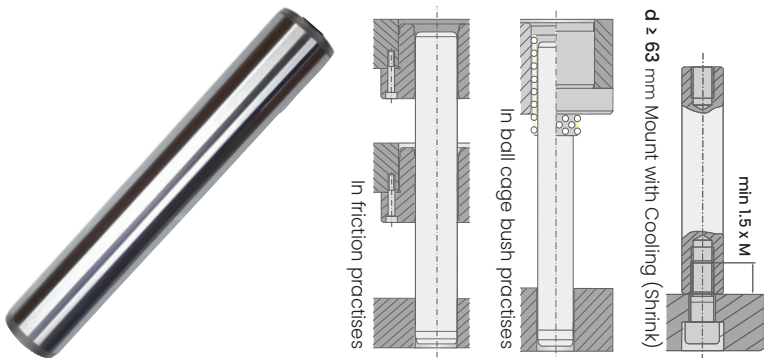
Please do not use two products without oil grooved together. One of the products should be with oil grooved.

Die Producers: Should pay attention to choose products suitable to the tolerances / standards in guide pillar & bush selection.

*To prevent incorrect closing of dies, three pieces main dimension and one piece auxiliary dimension can be used:
(15 - 19 - 24 - 32 - 38 - 48 - 60)*

For precision and safe mounting: G10 mounting flange.

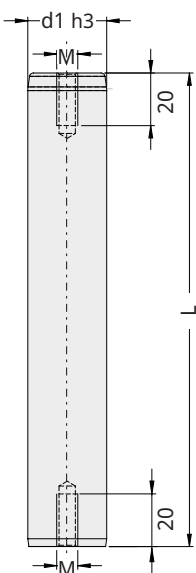
d1	L1	L2	d2	d3 Clamp	M
15 16	100	20	22	33	M8
	112				
	125				
	140				
	160				
	180				
	200				
	220				
	250				
	300				
19 20	100	23	25	36.4	M8
	112				
	125				
	140				
	160				
	180				
	200				
	220				
	250				
	300				
	320				
	24 25				
112					
125					
140					
160					
180					
200					
224					
250					
320					
350					
32 30		112	37	40	52.4
	125				
	140				
	160				
	180				
	200				
	224				
	250				
	280				
	315				
	350				
	400				



Guide Pillar, Plain & Threaded
DIN 9825 / ISO 9182

Code: **G24**

d1	L	M	d1	L	M
NEW	90	-	38	125	M8
10	100			140	
12	112			160	
	125			180	
	140			200	
15	90	M8	40	224	M8
	100			250	
	112			280	
	125			315	
	140			355	
16	160	M8	48	400	M12
	180			140	
	200			160	
	224			180	
	250			200	
19	100	M8	50	224	M12
	112			250	
	125			280	
	140			315	
	160			355	
20	180	M8	60	400	M12
	200			200	
	224			224	
	250			250	
	280			280	
24	100	M8	63	315	M12
	112			355	
	125			400	
	140			250	M16
	160			280	
25	180	M8	80	315	
	200			355	
	224			400	
	250			450	
	280			500	
30	112	M8			
	125				
	140				
	160				
	180				
32	200	M8			
	224				
	250				
	280				
	315				



Technical Info

Section (d), two different products are to avoid incorrect closing of die during mounting, three pieces main dimension and one piece auxiliary should be used:
(d= 15 - 19 - 24 - 32 - 38 - 48 - 60 mm).
If extreme lateral forces are occurred at dies, in these cases self-lubricating wear plates should be used with pillars.



Order: **G24**. d1 x L



Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC

Operating Components:

All sliding systems also can be used with ball cage bush.



3D CAD
FILES
GÜVENAL



Download
www.guvenal.net

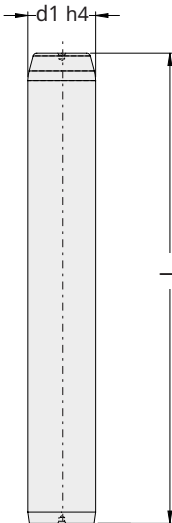
3D CAD - Formats: CATIA, STEP, IGES 3D, X_T



Guide Pillar
DIN 9825 / ISO 9182

Code: **G19**

d1	L
12	100
	125
18	125
	160
30	160
	240



* In-die auxiliary guide pillar

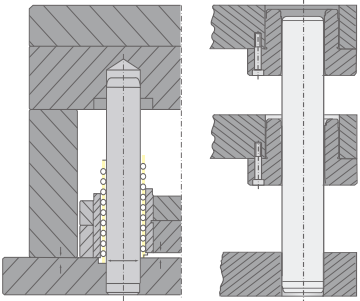
* Guide pillars for ejector plate in injection moulds



Order: **G19**. d1 x L



Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC



Technical Info

It is used as auxiliary guiding component in dies or progressive die plates. It can be used with all sliding system or ball cage bush tools. When precision and iterative high speeds are required in injection mould ejector plates, it is suitable to use together with ball cage tools and also with sliding and self-lubricating guide bush components.

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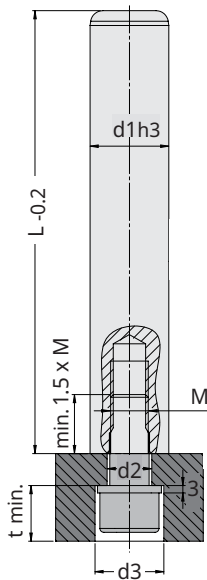
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Code: **G166**

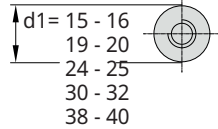
Guide Pillar - Bolted Type DIN 9825 / ISO 9182 - 2

G166 is supplied with a screw and washer.

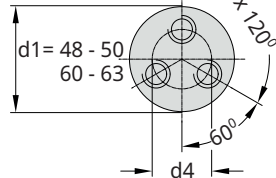


Hole pattern for pillar fastening:

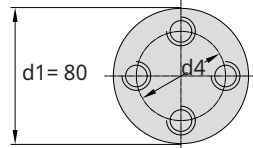
FORM - A



FORM - B



FORM - C



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3D CAD - Formats: CATIA, STEP, IGES 3D, X_T

d1	d2	d3	d4	t min.	M	L	Screw	Form
15 16	9	17	-	12	M8	90	M8 x 35	A
						100		
						112		
						125		
						140		
						160		
						180		
						200		
19 20	11	20	-	14	M10	100	M10 x 40	A
						112		
						125		
						140		
						160		
						180		
						200		
						224		
						250		
						280		
						315		
24 25	14	22	-	16	M12	100	M12 x 40	A
						112		
						125		
						140		
						160		
						180		
						200		
						224		
						250		
						280		
						315		
30 32	18	28	-	20.5	M16	125	M16 x 40	A
						140		
						160		
						180		
						200		
						224		
						250		
						280		
						315		
						355		



Technical Info

Section (d), two different products are to avoid incorrect closing of die during mounting, three pieces main dimension and one piece auxiliary should be used:
(d= 15 - 19 - 24 - 32 - 38 - 48 - 60 mm).

If extreme lateral forces are occurred at dies, in these cases self-lubricating wear plates should be used with pillars.

d1	d2	d3	d4	t min.	M	L	Screw	Form
38 40	18	28	-	20.5	M16	160	M16 x 40	A
						180		
						200		
						224		
						250		
						280		
						315		
48 50	14	22	28	16	M12	180	M12 x 50	B
						200		
						224		
						250		
						280		
						315		
						355		
60 63	18	28	34	20.5	M16	250	M16 x 60	B
						280		
						315		
						355		
						400		
						450		
						500		
80	18	28	54	20.5	M16	280	M16 x 60	C
						315		
						355		
						400		
						450		
						500		
						550		
						600		



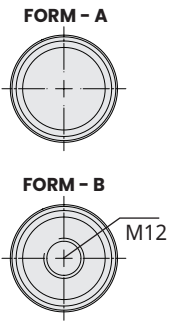
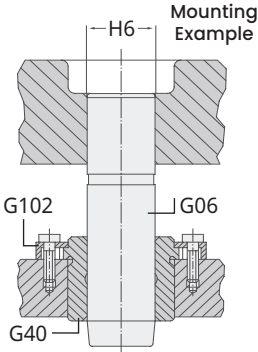
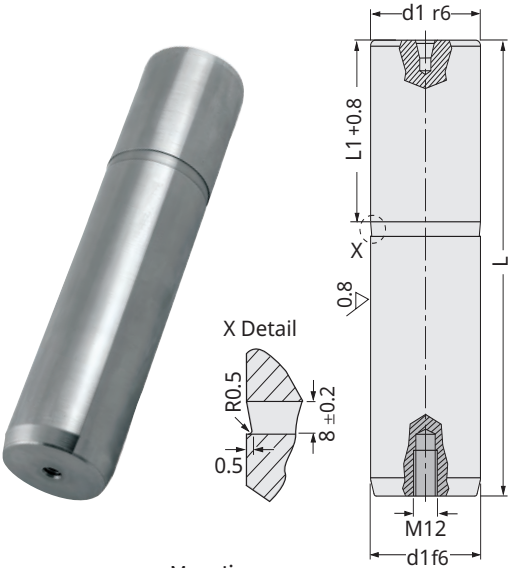
Order: **G166**. d1 x L



Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC

Operating Components:

All sliding systems also can be used with ball cage bush.



Guide Pillar / DIN 9833

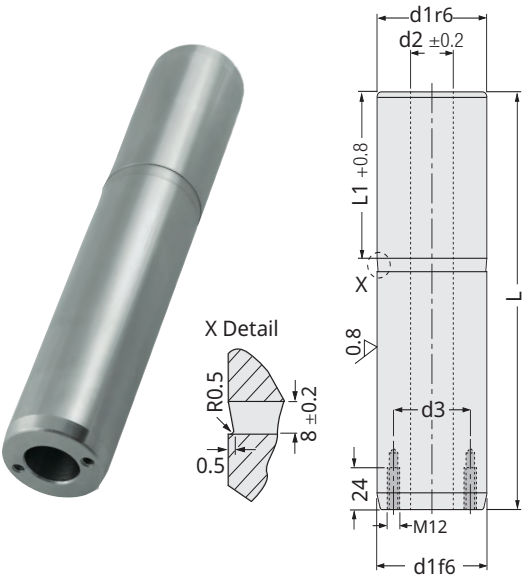
Code: **G06**

d1	L	L1	Form
32	160	45	A
	180		
	200		
40	200	56	A
	224		
	240		
50	224	70	A
	250		
	280		
63	250	80	A
	280		
	315		

d1	L	L1	Form
80	224	100	A
	250		
	280		
	315		
	355		
100	315	125	A
	355		
	400		
125	355	140	A
	400		
	450		
	500		
	550		

Order: **G06**. d1 x L

Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC



Guide Pillar / DIN 9833

Code: **G07**

d1	L	d2	d3	L1
80	250	40	58	100
	280			
	315			
	355			
100	315	50	72	125
	355			
	400			
125	355	65	90	140
	400			
	450			
	500			
	550			

Order: **G07**. d1 x L

Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC

Customised Guide Units
Upon request, Güvenal manufactures highly complex and precise guide elements based on customer specifications and provides measurement protocols if needed. This includes both the reworking of catalogue products and the production of entirely new items.



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3D CAD - Formats: CATIA, STEP, IGES 3D, X_T

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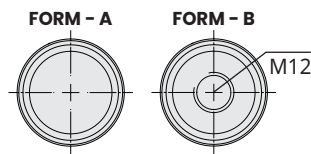
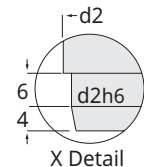
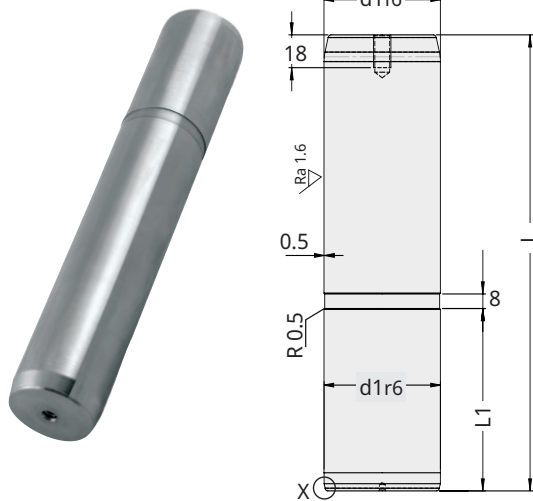
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Guiding Components

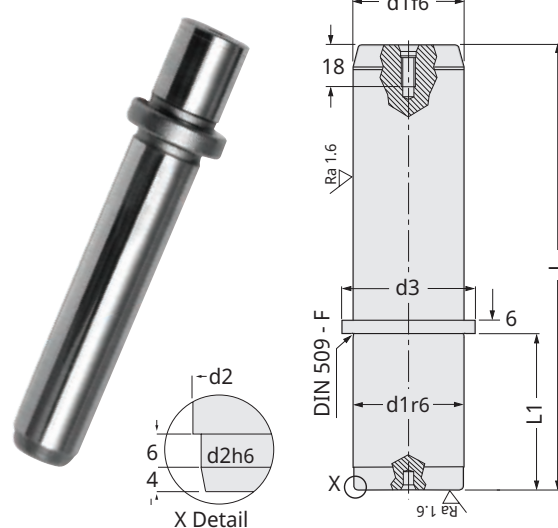


Guide Pillar Reference: WDX

Code: **G02**

d1	L	L1	Form
25	140	40	A
	160		
	180		
32	140	45	A
	160		
	180		
	200		
40	160	56	A
	180		
	200		
	224		
	250		
50	160	70	A
	180		
	200		
	224		
	250		
	280		
	315		

d1	L	L1	Form
63	220	80	A
	224		
	250		
	280		
	315		
80	250	100	B
	280		
	315		
	355		
	400		
100	315	125	B
	355		
	400		
	500		
	500		



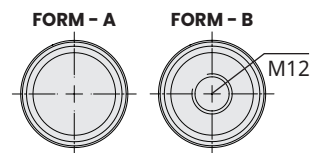
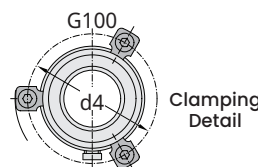
Guide Pillar with Centre Collar

Code: **G01**

Reference: WDX

d1	L	d3	L1	Form
25	140	33	40	A
	160			
	180			
32	140	40	45	A
	160			
	180			
	200			
40	160	50	56	A
	180			
	200			
	224			
	250			
50	160	60	70	A
	180			
	200			
	224			
	250			
	315			

d1	L	d3	L1	Form
63	220	80	80	A
	224			
	250			
	280			
	315			
80	355	90	100	B
	400			
	250			
	280			
	315			
100	355	110	125	B
	400			
	500			
	315			
	355			



d1	25	32	40	50	63	80	100
d4	45.2	52.4	62.8	73	93.2	103.4	123.4



Order:
G02. d1 x L



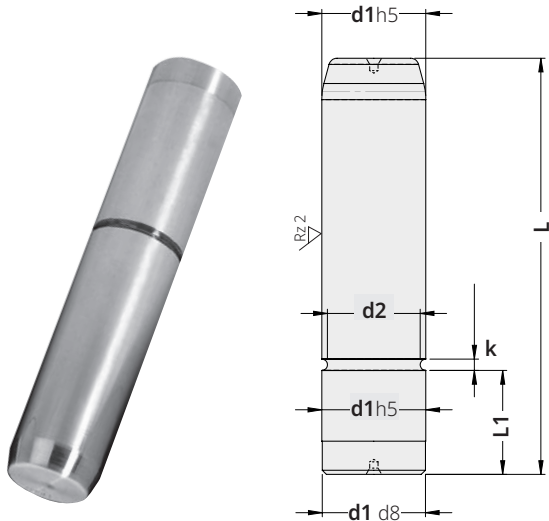
Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC



Order:
G01. d1 x L



Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC



Guide Pillar Reference: CNOMO Code: **G03**

Order Code	d1	L	d2	L1	k
G03 25100	25	100	22.3	25	2.7
G03 25125		125			
G03 25140		140			
G03 25160		160			
G03 25180		180			
G03 25200	32	200	27.8	32	4.2
G03 25224		224			
G03 32125		125			
G03 32140		140			
G03 32160		160			
G03 32180	40	180	35.8	63	4.2
G03 32200		200			
G03 32224		224			
G03 32250		250			
G03 40180		180			
G03 40200		200			
G03 40224		224			
G03 40250		250			
G03 40280		280			
G03 40315		315			

 **Material:** 1.1213 (Cf53) / **Hardness:** 58 - 62 HRC

Order Code	d1	L	d2	L1	k
G0350220	50	200	45.8	80	4.2
G0350200		220			
G0350224		224			
G0350250		250			
G0350280		280			
G0350315		315			
G0350355		355			
G0350400		400			
G0363250	63	250	56.8	100	6.2
G0363280		280			
G0363315		315			
G0363355		355			
G0363400		400			
G0380315	80	315	73.8	125	6.2
G0380355		355			
G0380400		400			
G0380450		450			
G0380500		500			
G03100355	100	355	93.8	160	6.2
G03100400		400			
G03100450		450			
G03100500		500			



For the compatibility chart of Guide Pillars and Bushes, please refer to the "Guiding Components – Technical Information" section at the beginning of Category 2.

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Guiding Components

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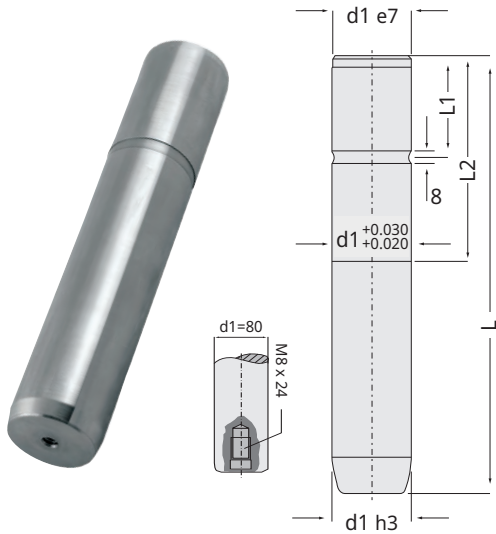
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Guiding Components



Code: **G20**

Guide Pillar for Cast Block Bush

G20 Guide pillar type using with G80 rectangular flange cast bush. In progressive form dies, it is reduced disassembly / assembly period of guide pillar & bush. No need to opening of guide pillar & bush holes in die is required. It reduces labor cost and also saves time by shortening production period of die. These are die components consisting of guide bush set inserted into lower and upper case.

d1	L	L1	L2	d1	L	L1	L2
40	180	37	77	63	240	60	120
	220				280		
	260				315		
	300				355		
	355				400		
	400				450		
50	200	47	95	80	240	60	120
	240				280		
	280				315		
	315				355		
	355				400		
	400				450		
	450				500		



Order: **G20**. d1 x L
Cast Bush: **G79**. d1

Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC



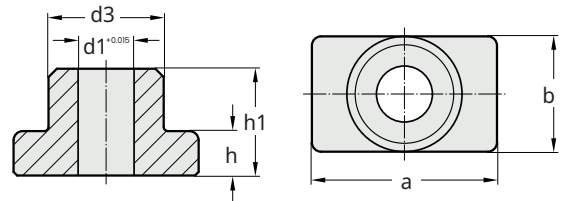
IMPORTANT:

Check perpendicularity of guide pillars after mounting.



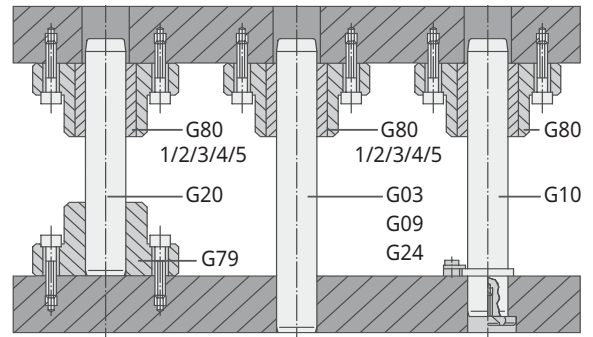
Code: **G79**

Flange Cast Bush - Rectangular



d1	d3	a	b	h	h1
40	80	130	80	30	77
50	96	160	96	35	95
63	110	180	110	35	120
80	130	215	130	40	120

Note: Other guide pillars conforming to rectangular flange cast bush connection. It can be used with **G03 - G09 - G24 - G10 - G20** in dies.



Flange Cast Bush Rectangular
Inner has been honed to $\varnothing d1 + 0.015$

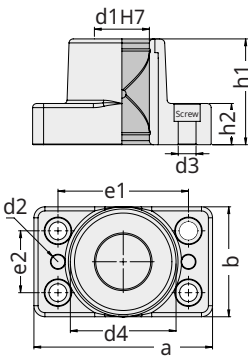
Dimension details of rectangular flange cast bush are same as other bushes (G80..)

Order: **G79**. d1

d1	a	b	h1	h2	d2	d3	d4	e1	e2	Screw
40	130	80	77	30	10	13	70	95	45	12
50	160	96	95	35	10	15	83	118	55	14
63	180	110	120	35	12	17	94	132	62	16
80	215	130	120	40	14	21	112	160	75	20

Order: **G80-1. d1**

Set Upon request
G20 + G79 + G80.1



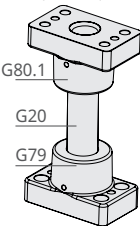
Flange Cast Bush Rectangular

Code: **G80 - 1**



Steel Type

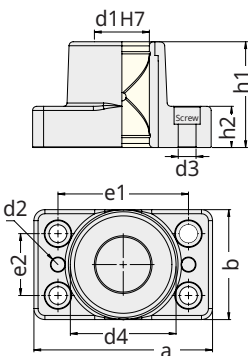
Set upon request



d1	a	b	h1	h2	d2	d3	d4	e1	e2	Screw
40	130	80	77	30	10	13	70	95	45	12
50	160	96	95	35	10	15	83	118	55	14
63	180	110	120	35	12	17	94	132	62	16
80	215	130	120	40	14	21	112	160	75	20

Order: **G80-2. d1**

Set Upon request
G20 + G79 + G80.2



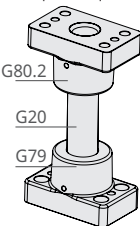
Flange Cast Bush Rectangular

Code: **G80 - 2**



Bronze Type

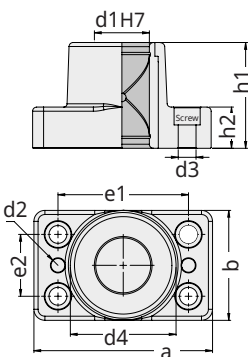
Set upon request



d1	a	b	h1	h2	d2	d3	d4	e1	e2	Screw
40	130	80	77	30	10	13	70	95	45	12
50	160	96	95	35	10	15	83	118	55	14
63	180	110	120	35	12	17	94	132	62	16
80	215	130	120	40	14	21	112	160	75	20

Order: **G80-3. d1**

Set Upon request
G20 + G79 + G80.3



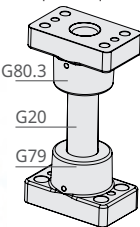
Flange Cast Bush Rectangular

Code: **G80 - 3**



Cast Type

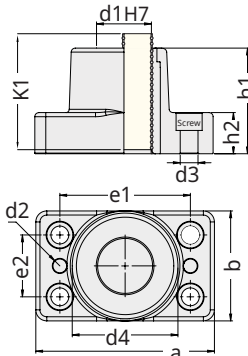
Set upon request



d1	a	b	h1	h2	d2	d3	d4	e1	e2	K1	Screw
40	130	80	77	30	10	13	70	95	45	80	12
50	160	96	95	35	10	15	83	118	55	105	14
63	180	110	120	35	12	17	94	132	62	140	16
80	215	130	120	40	14	21	112	160	75	140	20

Order: **G80-4. d1**

Set Upon request
G20 + G79 + G80.4 + G70



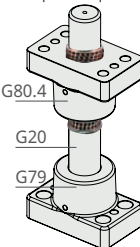
Flange Cast Bush Rectangular

Code: **G80 - 4**



Ball Cage Type

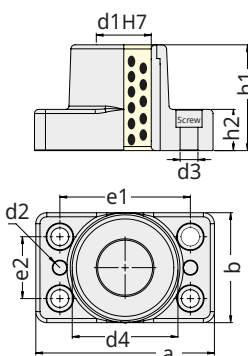
Set upon request



d1	a	b	h1	h2	d2	d3	d4	e1	e2	Screw
40	130	80	77	30	10	13	70	95	45	12
50	160	96	95	35	10	15	83	118	55	14
63	180	110	120	35	12	17	94	132	62	16
80	215	130	120	40	14	21	112	160	75	20

Order: **G80-5. d1**

Set Upon request
G20 + G79 + G80.5



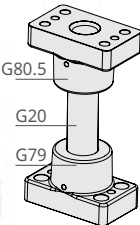
Flange Cast Bush Rectangular

Code: **G80 - 5**



Self-Lubricating Type

Set upon request



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Guiding Components

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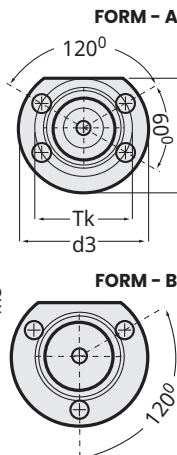
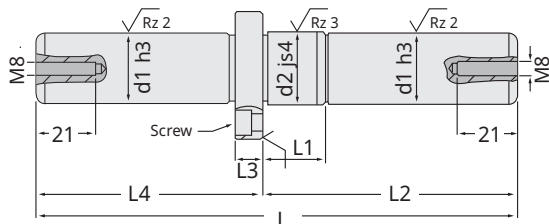
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Code: **G135**

Guide Pillar with Centre Flange

(Screw clamping guide pillar with centre collar)



d1	L	L1	L2	L4	L3	d2	d3	b	Tk	Screw	Form
20	150	22	80	70	10	22	44	39	33	M5 4 pcs.	A
	160		90	70							
	180		90	90							
	200		90	110							
25	170	22	90	80	10	26	50	45	38	M5 3 pcs.	B
	190		110	80							
	210		120	90							
	190		90	100							
	200		100	100							
	260		160	100							
30	220	27	100	120	10	32	58	53	46	M5 3 pcs.	B
	190		100	90							
	200		110	90							
	260		160	100							
	220		110	110							
	230		120	110							
	250		120	130							
32	260	27	130	130	10	34	60	55	48	M5 3 pcs.	B
	190		100	90							
	200		110	90							
	260		160	100							
	220		110	110							
	230		120	110							
	250		120	130							
40	260	27	130	130	12	42	70	65	56	M6 3 pcs.	B
	210		110	100							
	220		120	100							
	240		120	120							
	250		130	120							
50	270	36	130	140	15	52	80	75	66	M6 3 pcs.	B
	250		120	130							
	260		110	150							
	270		120	150							



Order: **G135**. d1 x L2 x L



Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC

Guide Pillar with Centre Flange

It can be used in standard pillar systems with many bearing bush connections. No clamping is necessary for the mounting position. It is fixed with hexagon socket head cap screws. The feature of centre flange: The protruding parts near the plate is prevented and a partial empty area is obtained in die mounting. It can be directly mounted in slots drilled on die plate. Shrink fit punchdown should not be done during mounting. It can be inserted with compatible tolerances with medium / shrink fit (bushes) and positioned with screws.

Compatible Bushes



G70



G151



G38



G37



G74



G75



G34



G33



G36



G35



G40

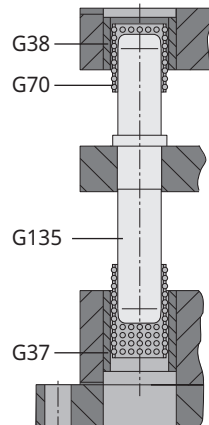
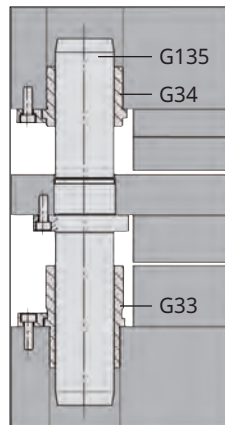


G41



Guide Pillar with Centre Flange (Ball cage bearing unit)

Dies which are designed with this ball cage bush have high speed and rigid connection. Hole tolerance for shrink fit is N5. Fixing place of die guide pillar affects securing lateral load resistance of die bushings. In dies with guide plates or having guide pillar mounted to die from bottom or top, if the distance (L) applying power is equal, bending and rotary values of guide pillars are equal. By securing die guide pillar to the guide plate there will be important improvements at bending values of pillars. Until the distance (L / 2) between application point of power and fastening surface reduces to half, load lifting capacity is increased 8 times.

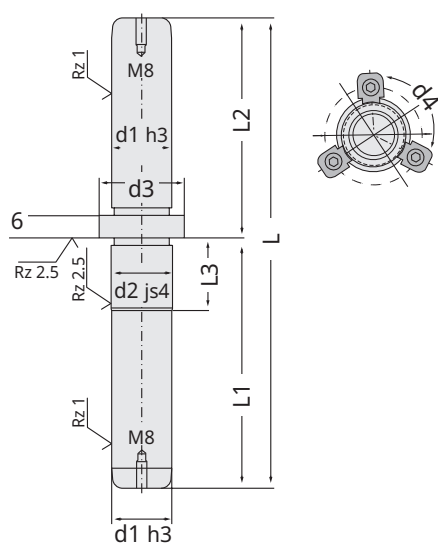


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Guiding Components

Code: **G08**

Guide Pillar with Centre Fixing



Compatible Bushes



d1	L	L1	L2	L3	d2	d3	d4
20	160	90	70	19	21	26	37.6
	170	100					
	180		110				
	190	90					
	200						
	210						
25	180	100	80	22	26	32	44
	190	110					
	200		120				
	210	100					
	220						
	230						
30	180	100	80	25	31	38	50.4
	190	110					
	200		120				
	210	100					
	220						
	230	130					
	240		140				
	250						
40	200	110	90	27	41	50	62.8
	210	120					
	220		130				
	230	110					
	240						
	250						

Order: **G08**. d1 x L

Material: 1.1213 (Cf53)
Hardness: 58 – 62 HRC

Hole tolerance for shrink fit is N5. Fixing place of die guide pillar affects securing lateral load resistance of die bushings. In dies with guide plates or having guide pillar mounted to die from bottom or top, if the distance (L) applying power is equal, bending and rotary values of guide pillars are equal. By securing die guide pillar to the guide plate, there will be important improvements at bending values of pillars. Until the distance (L / 2) between application point of power and fastening surface reduces to half load lifting capacity is increased 8 times.

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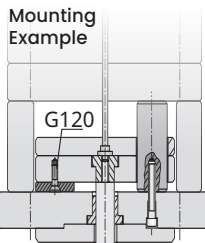
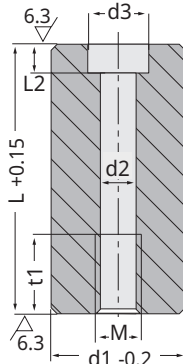
Guiding Components



Support Pillar for Injection Mould
(Ejector plate / thrust wedge)

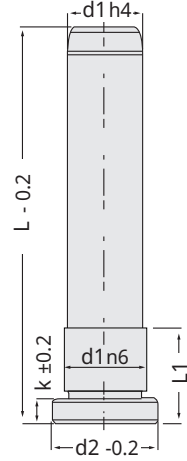
Code: **G21**

d1	L	d2	d3	L2	t1	M
32	47	6.5	11	7.5	15	M8
	57					
	67					
	77					
	87					
40	97					
	47	8.5	15	10	20	M10
	57					
	67					
	77					
50	87					
	97					
	117					
	47	8.5	15	10	20	M10
	57					
63	67					
	77					
	87					
	97					
	117					
80	137	10.5	18	12	25	M12
	157					
	57					
	67					
	77					
	87					
	97					
	117					
	137					
	157					



In injection moulds;
The thrust wedge that can be used in order to avoid dent load between support plate (H4) and bottom joint plate (H5A) also can be provided working of ejector plates more rigidly and sensitively. In order to avoid clicking (gap) **G110 mounting flange** can be used.

Order: **G21. d1 x L**



Guide Pillar for Ball Cage

Code: **G18**

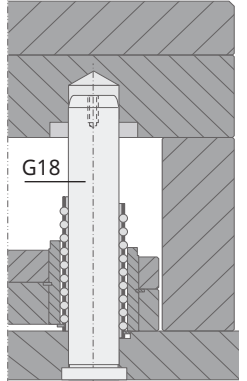
It is used in ejector plates of injection moulds and ejector plates with ball cage bush working precision and serially. In addition, it is compatible to work with intermediate plate of progressive dies / dies as auxiliary centering component.

d1	L	L1	d2	k
10	80	12	13	4
	100			
	120			
12	80	17	16	4
	100			
	120			
18	120	22	22	6
	140			
	160			
20	120	22	24	6
	140			
	160			
25	200	27	28	6
	240			
	280			
30	160	36	36	6
	200			
	240			
40	180	45	48	10
	200			
	240			

Compatible Bushes



Mounting Example



Order: **G18. d1 x L**

Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC

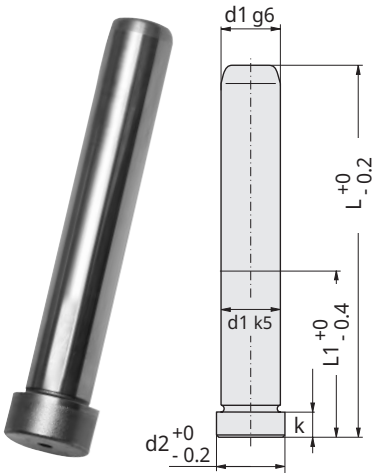
G18 - Areas of Usage:

- * In ejector plates, ball cage bush precision ejector systems.
- * It is used in dies as intermediate centering components.

3D CAD FILES
GÜVENAL

Download
www.guvenal.net

3D CAD - Formats:
CATIA, STEP, IGES 3D, X_T



Guide Pillar
(without oil groove)

Code: **G17**

d1	L	L1	d2	k
10	40	13	12	3
	60			
	80			
	100	15		
	120			
12	40	18	16	6
	60			
	80			
	100			
	120	22		
	140			
	160			
14	60	22	18	8
	80			
	100			
	120			
	140	26		
	160			
	180			

d1	L	L1	d2	k
16	40	16	20	8
	60	24		
	80			
	100			
	120			
	140	26		
	160			
	180			
	200			
18	60	26	22	8
	80			
	100			
	120			
	140	28		
	160			
	180			
	200			
	240			
20	60	28	24	8
	80			
	100			
	120			
	140	32		
	160			
	180			
	200			
	240			
22	80	37	26	15
	100			
	120			
	140	43		
	160			
	180			
	200			
	220			
	240			
	300			

d1	L	L1	d2	k
24	80	39	28	15
	100			
	120			
	140	45		
	160			
	180			
	200			
	220			
	240			
	300			
25	80	35	28	15
	100			
	120			
	140			
	160	44		
	180			
	200			
	220			
	240			
	300			
30	100	45	36	15
	120			
	140			
	160			
	180	53		
	200			
	220			
	240			
	300			
	40			
180				
200				
220		63		
240				
280				
300				
320				
360				
50			160	65
	200			
	240			
	300			
	360			

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Guiding Components

Order: **G17**. d1 x L

Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC

Operating Components: with all lubricated type bushes in injection moulds /dies.



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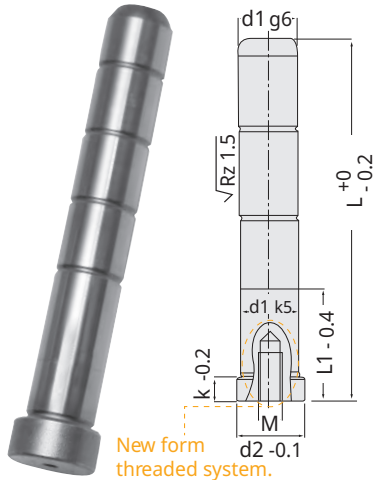
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Guiding Components



Guide Pillar (with oil groove)

Code: **G11**

It can be fixed by thread in cap direction. By disassembling mould / die without dismantling, it provides process iteration advantage. The corners at oil grooves are chamfered (it reduces friction).

d1	L	L1	d2	k	M
10	40	13	12	3	-
	60				
	80				
	100	15			
	120				
12	40	18	16	6	-
	60				
	80				
	100				
	120	22			
	140				
	160				
14	60	22	18	8	-
	80				
	100				
	120				
	140	26			
	160				
	180				

d1	L	L1	d2	k	M
16	40	16	20	8	6
	60	24			
	80				
	100				
	120				
	140	26			
	160				
	180				
	200				
	220				
	250				
	300				
18	60	26	22	8	8
	80				
	100				
	120				
	140	28			
	160				
	180				
	200				
	240				
	20				
80					
100					
120					
140					
160		32			
180					
200					
220					
240					
250					
300					
320					
22			80	37	26
	100				
	120				
	140	43			
	160				
	180				
	200				
	220				
	240				
	300				

d1	L	L1	d2	k	M
24	80	39	28	15	8
	100				
	120				
	140	45			
	160				
	180				
	200				
	220				
	240				
	300				
25	80	35	29	10	8
	100				
	120				
	140				
	160	44			
	180				
	200				
	220				
	250				
	300				
	320				
	350				
30	100	45	36	15	8
	120				
	140				
	160				
	180	53			
	200				
	220				
	240				
	300				
	360				
400					
40	160	55	48	15	8
	180				
	200				
	220	63			
	240				
	280				
	300				
	320				
	360				
50	160	65	58	15	8
	200				
	240				
	300	73			
	360				

IMPORTANT!

Injection Mould: Our guide pillars & bushes cover standard mould systems. But, guide pillar & bushes with different tolerances should be selected for aluminum injection moulds (high temperature / pressure). It should be requested from our company (production with special materials).

ATTENTION !

Please do not use two products together that have no oil grooves. One of these products should be oil grooved.



Order: **G11**. d1 x L



Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC

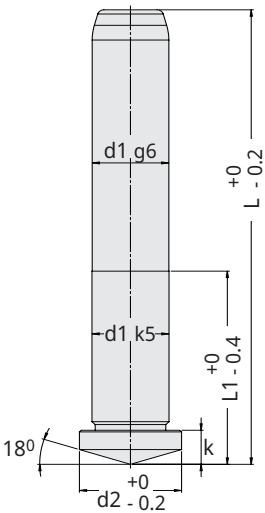
Operating Components:

With all unlubricated steel bushes in injection moulds or dies.

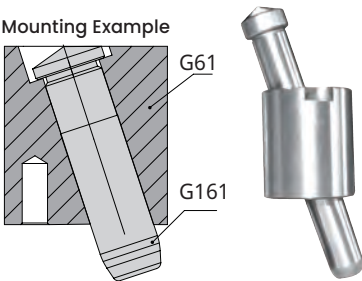


Angled Guide Pillar **Code: G161**

- Compatible Guide Bush: "G61"
- No reworking necessary before mounting.



Mounting Example



Order: **G161**. d1 x L

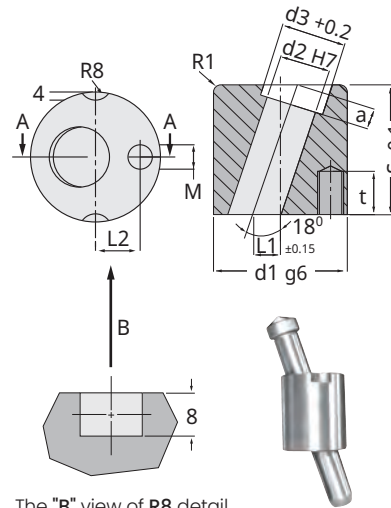


Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC

d1	L	L1	d2	k
12	60	34	16	6
	80			
	100			
	120			
	140			
	160			
14	60	34	18	8
	80			
	100			
	120			
	140			
	160			
16	60	43	20	8
	80			
	100			
	120			
	140			
	160			
20	60	43	24	8
	80			
	100			
	120			
	140			
	160			
25	60	52	28	15
	80			
	100			
	120			
	140			
	160			
30	60	60	36	15
	80			
	100			
	120			
	140			
	160			



Angled Guide Bush **Code: G61**
(Core pillar holder)



The "B" view of R8 detail.

d2	s	d1	a	d3	L1	L2	M	t
12	36	32	6	17	7	10	M6	11
14	36	36	8	19	7	12	M8	16
16	46	40	8	21	8.5	13.5	M8	16
20	46	45	8	25	8.5	15	M8	16
25	56	50	15	29	10	16	M8	16
30	66	63	15	37	12	21	M10	20



Order: **G61**. d2



Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC



This unit eliminates angular perforation requirement. To insert this unit, only a hole is perforated at the front of the mould.
Angled guide bush can be used with **G161, G14 or G17** guide pillar.

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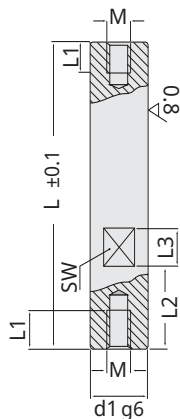
15

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Guiding Components



Ejector Rod

Code: **G16**

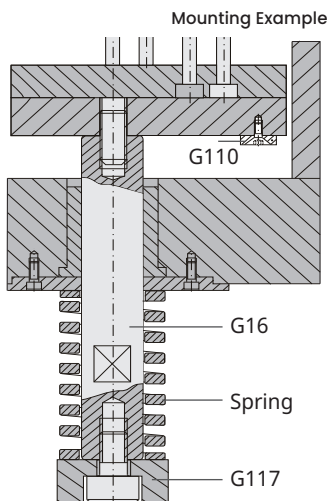
d1	L	M	L1	L2	L3	SW
10	60	M6	10	21	10	8
	70					
	80					
	100					
	140					
14	60	M8	13	21	10	10
	80					
	100					
	120					
	140					
16	180					
	60	M10	16	21	10	12
	70					
	80					
	100					
	120					
	140					
	200					
18	100	M10	20	30	10	14
	120					
	140					
	160					
	180					
	200					
	220					
	240					



Order: **G16**. d1 x L

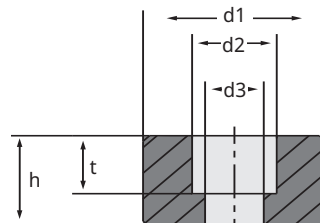
Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 – 62 HRC

d1	L	M	L1	L2	L3	SW
20	120	M12	24	40	16	14
	140					
	160					
	180					
	200					
24	240	M12	24	40	16	17
	120					
	140					
	160					
	180					
34	200	M16	34	50	16	24
	240					
	260					
	280					
	300					
	320					
	340					



Code: **G117**

Mounting Washer for Ejector Rod



Hex-Socket Head Cap Screw

d1	h	t	d2	d3
15	10	8.4	11	6.6
22	14	11	14.5	9
36	20	13.5	17.5	11
46	25	15.5	20	14
56	32	21	26	18



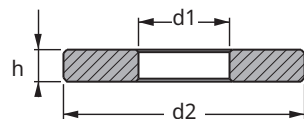
Order: **G117**. d1 x h



Code: **G114**

Thick Mounting Washer

Mould inner mounting washer / thick



Form	d1	d2	h	weight
M6	6.4	17	3	6 gr.
M8	8.4	23	4	10 gr.
M10	10.5	28	4	16 gr.
M12	13	35	5	32 gr.
M14	15	40	5	40 gr.
M16	17	45	6	60 gr.
M18	19	45	6	60 gr.
M20	21	50	6	75 gr.



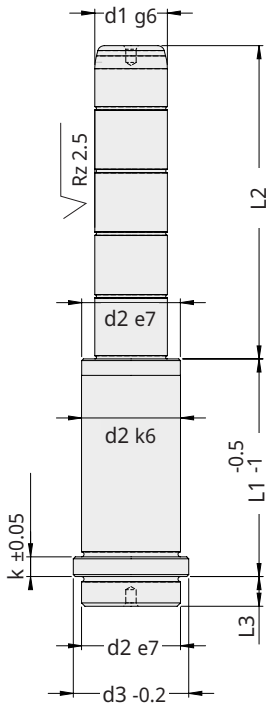
Order: **G114**. Form



Code: **G13D**
(without oil groove)
Upon request

Code: **G13**

Guide Pillar with Centring Collar
(with oil groove & without oil groove)



Code: **G13** (with oil groove)
Guide Pillar with Centring Collar



Code: **G13D** (without oil groove)
Guide Pillar with Centring Collar

d1	L1	L2	L3	d2	d3	k
15	17	35	9	20	25	6
		55				
		75				
		95				
15	22	30	9	20	25	6
		50				
		70				
		90				
		110				
		125				
15	27	30	9	20	25	6
		45				
		65				
		85				
		105				
		125				
		145				
15	36	35	9	20	25	6
		55				
		75				
		95				
		115				
		125				
		145				
15	46	35	9	20	25	6
		45				
		65				
		85				
		105				
		125				
		145				
15	56	35	9	20	25	6
		55				
		75				
		95				
		135				

d1	L1	L2	L3	d2	d3	k
15	66	55	9	20	25	6
		65				
		85				
		95				
15	76	105	9	20	25	6
		125				
		35				
		55				
		75				
15	86	95	9	20	25	6
		125				
		55				
		75				
15	96	95	9	20	25	6
		75				
		55				
15	116	75	9	20	25	6
		95				
		55				
18	17	35	9	26	31	6
		55				
		75				
18	22	120	9	26	31	6
		95				
		85				
		65				
18	27	115	9	26	31	6
		95				
		85				
		65				
		45				
18	27	35	9	26	31	6
		45				
		65				
		85				
		105				
		125				
		165				
		225				
		245				

Compatible Bushes



Note:

To avoid wrong closing of mould holder plates, 2 different products are used.

Main dimensions: 14 - 20 - 24 - 30 - 40
other auxiliary dimensions:
15 - 18 - 22 - 32 - 42.

To avoid wrong closing of mould holder plates, can be used at 3 main dimensions guide pillar and 1 auxiliary dimension guide pillars. Our mould pillars were polished with surface polishing machine at final stage of production. The products with oil groove are available in our stocks.



Order: **G13**. d1 x L1 x L2
(with oil groove)



Order: **G13D**. d1 x L1 x L2
(without oil groove)



Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC



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next page →

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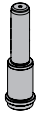
17

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Guiding Components



Code: G13 (with oil groove)
Guide Pillar with Centring Collar



Code: G13D (without oil groove)
Guide Pillar with Centring Collar

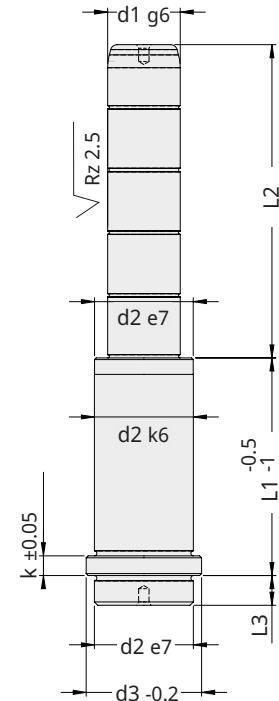
d1	L1	L2	L3	d2	d3	k
32 30	56	45	9	42	47	6
		55				
		75				
		95				
		115				
		135				
		155				
		175				
		245				
32 30	66	45	9	42	47	6
		55				
		75				
		95				
		115				
		135				
		155				
		175				
		245				
32 30	76	55	9	42	47	6
		75				
		95				
		115				
		135				
		155				
		225				
		245				
		295				
32 30	86	55	9	42	47	6
		75				
		95				
		115				
		135				
		155				
		225				
		245				
		295				
32 30	96	55	9	42	47	6
		75				
		95				
		115				
		135				
		155				
		205				
		245				
		295				
32 30	106	75	9	42	47	6
		95				
		115				
		125				
		145				
		165				
		245				
		295				
		345				

d1	L1	L2	L3	d2	d3	k
32 30	116	75	9	42	47	6
		95				
		115				
		135				
		155				
32 30	136	95	9	42	47	6
		115				
		135				
		155				
		175				
32 30	156	115	9	42	47	6
		155				
		175				
32 30	196	155	9	42	47	6
		195				
		215				
42 40	46	95	12	54	60	10
		165				
42 40	56	75	12	54	60	10
		115				
		155				
		195				
42 40	66	75	12	54	60	10
		135				
42 40	76	75	12	54	60	10
		115				
		175				
42 40	86	75	12	54	60	10
		135				
42 40	96	75	12	54	60	10
		115				
		155				
42 40	116	95	12	54	60	10
		135				
		195				
42 40	136	95	12	54	60	10
		135				
		215				
42 40	156	115	12	54	60	10
		155				
		215				
42 40	196	155	12	54	60	10
		195				
		235				
42 40	246	165	12	54	60	10
		245				



Code: G13D
(without oil groove)
Upon request

Code: G13
Guide Pillar with Centring Collar
(with oil groove & without oil groove)



Order: **G13**. d1 x L1 x L2
(with oil groove)



Order: **G13D**. d1 x L1 x L2
(without oil groove)



Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC



Note: To avoid wrong closing of mould holder plates, 2 different products are used.

Main dimensions: 14 - 20 - 24 - 30 - 40 other **auxiliary dimensions:** 15 - 18 - 22 - 32 - 42. To avoid wrong closing of mould holder plates, can be used at 3 main dimensions guide pillar and 1 auxiliary dimension guide pillars. Our mould pillars were polished with surface polishing machine at final stage of production. The products with oil groove are available in our stocks.



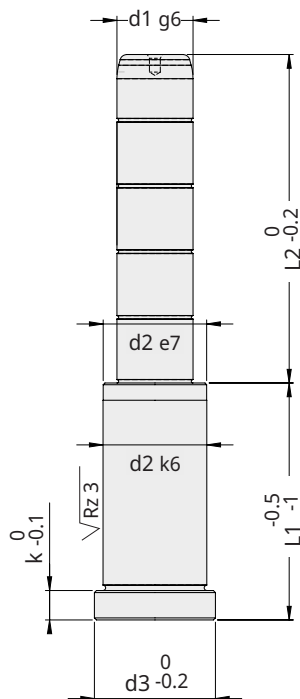
for Turkish Mould
Standard



Code: **G12D**
(without oil groove)
Upon request

Code: **G12**

Guide Pillar – Shouldered
(with oil groove & without oil groove)



Order: **G12**. d1 x L1 x L2
(with oil groove)



Order: **G12D**. d1 x L1 x L2
(without oil groove)



Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC



Continued on the
next page →

d1	L1	L2	d2	d3	k
12	26	26	16	19	4
		36			
		46			
		56			
12	36	26	16	19	4
		36			
		46			
		56			
12	46	26	16	19	4
		36			
		46			
		56			
14	26	26	20	25	6
		36			
		46			
		56			
14	36	26	20	25	6
		36			
		46			
		56			
14	46	26	20	25	6
		36			
		46			
		56			
14	56	26	20	25	6
		36			
		46			
		66			
16	26	26	24	28	6
		36			
		46			
		56			
16	36	26	24	28	6
		36			
		46			
		56			
16	46	26	24	28	6
		36			
		46			
		56			
16	56	26	24	28	6
		36			
		46			
		66			
16	66	26	24	28	6
		36			
		46			
		56			
16	76	26	24	28	6
		36			
		46			
		56			
16	86	26	24	28	6
		36			
		46			
		56			
16	96	26	24	28	6
		36			
		46			
		56			
16	106	26	24	28	6
		36			
		46			
		56			
16	116	26	24	28	6
		36			
		46			
		56			
16	126	26	24	28	6
		36			
		46			
		56			

d1	L1	L2	d2	d3	k
16	56	26	24	28	6
		36			
		46			
		56			
16	66	26	24	28	6
		36			
		46			
		56			
16	76	26	24	28	6
		36			
		46			
		56			
16	86	26	24	28	6
		36			
		46			
		56			
16	96	26	24	28	6
		36			
		46			
		56			
16	106	26	24	28	6
		36			
		46			
		56			
16	116	26	24	28	6
		36			
		46			
		56			
16	126	26	24	28	6
		36			
		46			
		56			

d1	L1	L2	d2	d3	k
18	56	26	26	31	6
		36			
		46			
		56			
18	66	26	26	31	6
		36			
		46			
		56			
18	76	26	26	31	6
		36			
		46			
		56			
18	86	26	26	31	6
		36			
		46			
		56			
18	96	26	26	31	6
		36			
		46			
		56			
18	106	26	26	31	6
		36			
		46			
		56			
18	116	26	26	31	6
		36			
		46			
		56			
18	126	26	26	31	6
		36			
		46			
		56			

Compatible Bushes



IMPORTANT !

Injection Mould: Our guide pillars & bushes cover standard mould systems. But, guide pillar & bushes with different tolerances should be selected for aluminum injection moulds (high temperature / pressure). It should be requested from our company (production with special materials).



Code: **G12** (with oil groove)
Guide Pillar – Shouldered



Code: **G12D** (without oil groove)
Guide Pillar – Shouldered



for Turkish Mould
Standard

d1	L1	L2	d2	d3	k
20	66	26	28	32	6
		36			
		46			
		56			
		66			
		76			
20	76	96	28	32	6
		116			
		26			
		36			
		46			
		56			
20	86	66	28	32	6
		76			
		86			
		106			
		126			
		26			
20	96	36	28	32	6
		46			
		56			
		66			
		76			
		86			
20	96	106	28	32	6
		126			
		26			
		36			
		46			
		56			
25	26	66	34	38	8
		76			
		96			
		26			
		36			
		46			
25	36	56	34	38	8
		66			
		76			
		86			
		106			
		26			
25	46	36	34	38	8
		46			
		56			
		66			
		76			
		96			
25	56	116	34	38	8
		26			
		36			
		46			
		56			
		66			
25	66	76	34	38	8
		86			
		96			
		116			
		26			
		36			
25	76	46	34	38	8
		56			
		66			
		86			
		106			
		126			
25	86	96	34	38	8
		116			
		26			
		36			
		46			
		56			
25	96	66	34	38	8
		76			
		86			
		106			
		126			
		146			
25	106	116	34	38	8
		26			
		36			
		46			
		56			
		66			
25	116	76	34	38	8
		86			
		96			
		116			
		136			
		156			
25	126	126	34	38	8
		146			
		166			
		186			
		206			
		226			
25	136	176	34	38	8
		196			
		216			
		236			
		256			
		276			
25	146	226	34	38	8
		246			
		266			
		286			
		306			
		326			
25	156	276	34	38	8
		296			
		316			
		336			
		356			
		376			
25	166	326	34	38	8
		346			
		366			
		386			
		406			
		426			
25	176	376	34	38	8
		396			
		416			
		436			
		456			
		476			
25	186	426	34	38	8
		446			
		466			
		486			
		506			
		526			
25	196	476	34	38	8
		496			
		516			
		536			
		556			
		576			
25	206	526	34	38	8
		546			
		566			
		586			
		606			
		626			
25	216	576	34	38	8
		596			
		616			
		636			
		656			
		676			
25	226	626	34	38	8
		646			
		666			
		686			
		706			
		726			
25	236	676	34	38	8
		696			
		716			
		736			
		756			
		776			
25	246	726	34	38	8
		746			
		766			
		786			
		806			
		826			
25	256	776	34	38	8
		796			
		816			
		836			
		856			
		876			
25	266	826	34	38	8
		846			
		866			
		886			
		906			
		926			
25	276	876	34	38	8
		896			
		916			
		936			
		956			
		976			
25	286	926	34	38	8
		946			
		966			
		986			
		1006			
		1026			
25	296	976	34	38	8
		996			
		1016			
		1036			
		1056			
		1076			
25	306	1026	34	38	8
		1046			
		1066			
		1086			
		1106			
		1126			
25	316	1076	34	38	8
		1096			
		1116			
		1136			
		1156			
		1176			
25	326	1126	34	38	8
		1146			
		1166			
		1186			
		1206			
		1226			
25	336	1176	34	38	8
		1196			
		1216			
		1236			
		1256			
		1276			
25	346	1226	34	38	8
		1246			
		1266			
		1286			
		1306			
		1326			
25	356	1276	34	38	8
		1296			
		1316			
		1336			
		1356			
		1376			
25	366	1326	34	38	8
		1346			
		1366			
		1386			
		1406			
		1426			
25	376	1376	34	38	8
		1396			
		1416			
		1436			
		1456			
		1476			
25	386	1426	34	38	8
		1446			
		1466			
		1486			
		1506			
		1526			
25	396	1476	34	38	8
		1496			
		1516			
		1536			
		1556			
		1576			
25	406	1526	34	38	8
		1546			
		1566			
		1586			
		1606			
		1626			
25	416	1576	34	38	8
		1596			
		1616			
		1636			
		1656			
		1676			
25	426	1626	34	38	8
		1646			
		1666			
		1686			
		1706			
		1726			
25	436	1676	34	38	8
		1696			
		1716			
		1736			
		1756			
		1776			
25	446	1726	34	38	8
		1746			
		1766			
		1786			
		1806			
		1826			
25	456	1776	34	38	8
		1796			
		1816			
		1836			
		1856			
		1876			
25	466	1826	34	38	8
		1846			
		1866			
		1886			
		1906			
		1926			
25	476	1876	34	38	8
		1896			
		1916			
		1936			
		1956			
		1976			
25	486	1926	34	38	8
		1946			
		1966			
		1986			
		2006			
		2026			
25	496	1976	34	38	8
		1996			
		2016			
		2036			
		2056			
		2076			
25	506	2026	34	38	8
		2046			
		2066			
		2086			
		2106			
		2126			
25	516	2076	34	38	8
		2096			
		2116			
		2136			
		2156			
		2176			
25	526	2126	34	38	8
		2146			
		2166			
		2186			
		2206			
		2226			
25	536	2176	34	38	8
		2196			
		2216			
		2236			
		2256			
		2276			
25	546	2226	34	38	8
		2246			
		2266			
		2286			
		2306			
		2326			
25	556	2276	34	38	8
		2296			
		2316			
		2336			
		2356			
		2376			
25	566	2326	34	38	8
		2346			
		2366			
		2386			
		2406			
		2426			
25	576	2376	34	38	8
		2396			
		2416			
		2436			
		2456			
		2476			
25	586	2426	34	38	8
		2446			
		2466			
		2486			
		2506			
		2526			
25	596	2476	34	38	8
		2496			
		2516			
		2536			
		2556			
		2576			
25	606	2526	34	38	8
		2546			
		2566			
		2586			
		2606			
		2626			
25	616	2576	34	38	8
		2596			
		2616			
		2636			
		2656			
		2676			
25	626	2626	34	38	8
		2646			
		2666			
		2686			
		2706			
		2726			
25	636	2676	34	38	8
		2696			
		2716			
		2736			
		2756			
		2776			
25	646	2726	34	38	8
		2746			
		2766			
		2786			
		2806			
		2826			
25	656	2776	34	38	8
		2796			
		2816			
		2836			
		2856			
		2876			
25	666	2826	34	38	8
		2846			
		2866			
		2886			
		2906			
		2926			
25	676	2876	34	38	8
		2896			
		2916			
		2936			
		2956			
		2976			
25	686	2926	34	38	8
		2946			
		2966			
		2986			
		3006			
		3026			
25	696	2976	34	38	8
		2996			
		3016			
		3036			
		3056			
		3076			
25	706	3026	34	38	8
		3046			
		3066			
		3086			
		3106			
		3126			
25	716	3076	34	38	8
		3096			
		3116			
		3136			
		3156			
		3176			
25	726	3126	34	38	8
		3146			
		3166			
		3186			
		3206			
		3226			
25	736	3176	34	38	8
		3196			
		3216			
		3236			
		3256			
		3276			
25	746	3226	34	38	8
		3246			
		3266			
		3286			
		3306			
		3326			
25	756	3276	34	38	8
		3296			
		3316			
		3336			
		3356			
		3376			
25	766	3326	34	38	8
		3346			
		3366			
		3386			
		3406			
		3426			
25	776	3376	34	38	8
		3396			
		3416			
		3436			
		3456			
		3476			
25	786	3426	34	38	8
		3446			
		3466			
		3486			
		3506			
		3526			
25	796	3476	34	38	8
		3496			
		3516			
		3536			
		3556			
		3576			
25	806	3526	34	38	8
		3546			
		3566			
		3586			
		3606			
		3626			
25	816	3576	34	38	8
		3596			
		3616			
		3636			
		3656			
		3676			
25	826	3626	34	38	8
		3646			
		3666			
		3686			
		3706			
		3726			
25	836	3676	34	38	8
		3696			
		3716			
		3736			
		3756			
		3776			
25	846	3726	34	38	8
		3746			
		3766			
		3786			
		3806			
		3826			
25	856	3776	34	38	8
		3796			
		3816			
		3836			
		3856			
		3876			
25	866	3826	34	38	8
		3846			
		3866			
		3886			
		3906			
		3926			
25	876	3876	34	38	8
		3896			
		3916			
		3936			
		3956			
		3976			
25	886	3926	34	38	8
		3946			
		3966			
		3986			
		4006			
		4026			
25	896	3976	34	38	8
		3996			
		4016			
		4036			
		4056			
		4076			
25	906	4026	34	38	8
		4046			
		4066			
		4086			
		4106			
		4126			
25	916	4076	34	38	8
		4096			
		4116			
		4136			
		4156			
		4176			
25	926	4126	34	38	8
		4146			
		4166			
		4186			
		4206			
		4226			
25	936	4176	34	38	8
		4196			
		4216			
		4236			
		4256			
		4276			
25	946	4226	34	38	8
		4246			
		4266			
		4286			
		4306			
		4326			
25	956	4276	34	38	8
		4296			

The tolerances and working space of our products are determined according to **DIN 7161**.

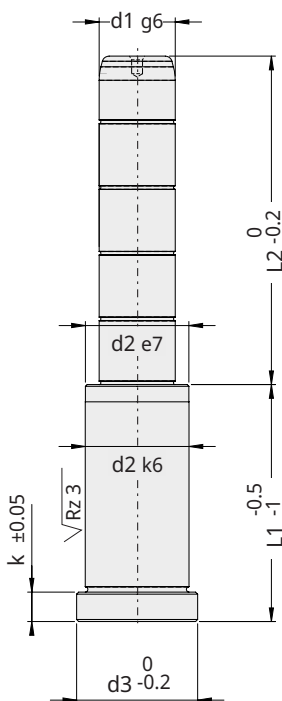


Code: **G50D**

(without oil groove)
Upon request

Code: **G50**

Guide Pillar – Shouldered
(with oil groove & without oil groove)



Order: **G50**. d1 x L1 x L2
(with oil groove)



Order: **G50D**. d1 x L1 x L2
(without oil groove)



Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC



Continued on the
next page →

d1	L1	L2	d2	d3	k
14	17	35	20	25	6
		55			
		75			
		95			
14	22	20	20	25	6
		35			
		40			
		45			
		50			
		55			
		65			
		70			
		90			
14	27	110	20	25	6
		20			
		35			
		40			
		45			
		55			
		65			
		85			
		105			
14	36	20	20	25	6
		35			
		40			
		45			
		55			
		65			
		75			
		95			
		105			
14	46	20	20	25	6
		35			
		45			
		65			
		85			
		105			
		20			
		35			
		55			
14	56	75	20	25	6
		95			
		55			
		65			
		95			
		20			
		35			
		55			
		95			
14	66	55	20	25	6
		65			
		95			
		115			
14	76	20	20	25	6
		35			
		55			
		95			
14	86	20	20	25	6
		35			
		55			
		95			
14	96	20	20	25	6
		35			
		55			
		95			
14	116	20	20	25	6
		35			
		55			
		95			

d1	L1	L2	d2	d3	k
15	17	35	20	25	6
		55			
		75			
		95			
15	22	20	20	25	6
		35			
		40			
		45			
		50			
		55			
		65			
		70			
		90			
15	27	110	20	25	6
		20			
		35			
		40			
		45			
		55			
		65			
		85			
		105			
15	36	20	20	25	6
		35			
		40			
		45			
		55			
		65			
		75			
		95			
		105			
15	46	20	20	25	6
		35			
		45			
		65			
		85			
		105			
		20			
		35			
		55			
15	56	75	20	25	6
		95			
		55			
		65			
		95			
		20			
		35			
		55			
		95			
15	66	55	20	25	6
		65			
		95			
		115			
15	76	20	20	25	6
		35			
		55			
		95			
15	86	20	20	25	6
		35			
		55			
		95			
15	96	20	20	25	6
		35			
		55			
		95			
15	116	20	20	25	6
		35			
		55			
		95			

d1	L1	L2	d2	d3	k
18	17	35	26	31	6
		55			
		75			
		95			
18	22	20	26	31	6
		35			
		40			
		45			
		50			
		55			
		60			
		65			
		70			
		80			
18	27	85	26	31	6
		115			
		20			
		35			
		40			
		45			
		50			
		55			
		60			
		65			
18	36	70	26	31	6
		80			
		85			
		105			
		125			
		20			
		35			
		40			
		45			
		50			
18	46	55	26	31	6
		60			
		65			
		70			
		75			
		80			
		95			
		115			
		135			
		18			
45					
65					
85					
105					
135					
18	46	165	26	31	6



Code: **G50** (with oil groove)
Guide Pillar – Shouldered



Code: **G50D** (without oil groove)
Guide Pillar – Shouldered



Continued on the next page →

d1	L1	L2	d2	d3	k
18	56	20	26	31	6
		35			
		55			
		75			
		95			
18	66	55	26	31	6
		75			
		95			
18	76	55	26	31	6
		75			
		95			
18	86	55	26	31	6
		75			
		95			
18	96	55	26	31	6
		75			
		95			
18	116	115	26	31	6
18	136	135	26	31	6
20	17	35	26	31	6
		55			
		75			
		95			
20	22	20	26	31	6
		35			
		40			
		45			
		50			
		55			
		60			
		65			
		70			
		80			
		85			
		115			
20	27	20	26	31	6
		35			
		40			
		45			
		50			
		55			
		60			
		65			
		70			
		80			
		85			
		105			
20	36	20	26	31	6
		35			
		40			
		45			
		50			
		55			
		60			
		65			
		70			
		75			
		80			
		95			

d1	L1	L2	d2	d3	k
20	46	20	26	31	6
		45			
		65			
		85			
		105			
		135			
20	56	20	26	31	6
		35			
		55			
		75			
		95			
		165			
20	66	55	26	31	6
		75			
		95			
		135			
		165			
		20			
20	76	35	26	31	6
		55			
		75			
		95			
20	86	55	26	31	6
		75			
		95			
		165			
20	96	55	26	31	6
		75			
		95			
		165			
20	116	115	26	31	6
		135			
20	136	135	26	31	6
		165			
22	17	35	30	35	6
		55			
		75			
		105			
22	22	35	30	35	6
		55			
		75			
		105			
22	27	25	30	35	6
		45			
		50			
		60			
22	36	25	30	35	6
		45			
		50			
		55			
		60			
		65			
		70			
		75			
		80			
		85			
		105			
		125			

d1	L1	L2	d2	d3	k
22	46	25	30	35	6
		45			
		50			
		60			
		65			
		70			
		80			
		85			
		105			
		125			
		165			
		20			
22	56	25	30	35	6
		45			
		55			
		75			
		95			
		115			
22	66	55	30	35	6
		75			
		95			
		165			
22	76	25	30	35	6
		45			
		55			
		75			
		95			
		115			
22	86	55	30	35	6
		75			
		95			
22	96	55	30	35	6
		75			
		95			
22	116	115	30	35	6
		135			
		155			
22	136	135	30	35	6
		155			
		165			
24	17	35	30	35	6
		55			
		75			
		105			
24	22	35	30	35	6
		55			
		75			
		105			
24	27	25	30	35	6
		45			
		50			
		55			
		60			
		65			
		70			
		75			
		80			
		85			
		105			
		125			

d1	L1	L2	d2	d3	k
24	36	25	30	35	6
		45			
		50			
		55			
		60			
		70			
		75			
		80			
		95			
		115			
		135			
		165			
24	46	25	30	35	6
		45			
		50			
		60			
		65			
		70			
		80			
		85			
		105			
		125			
		165			
		20			

The tolerances and working space of our products are determined according to DIN 7161.



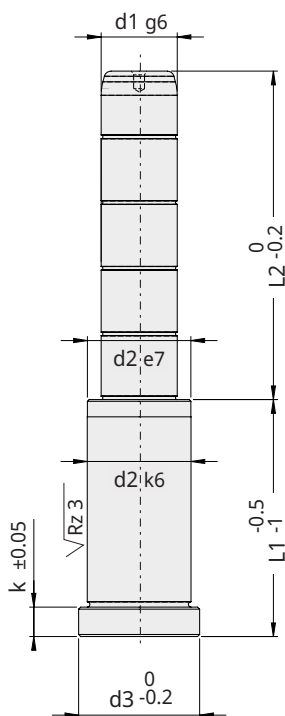
Code: **G50D**

(without oil groove)
Upon request

Code: **G50**

Guide Pillar – Shouldered

(with oil groove & without oil groove)



Order: **G50**. d1 x L1 x L2
(with oil groove)



Order: **G50D**. d1 x L1 x L2
(without oil groove)



Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC

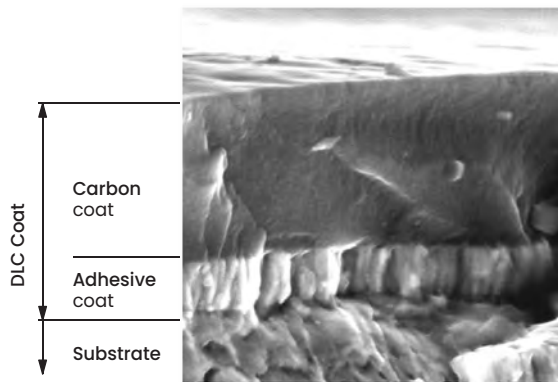
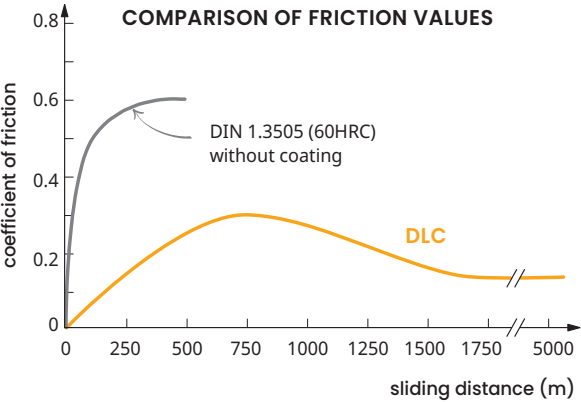


To be continued on the
previous page

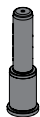
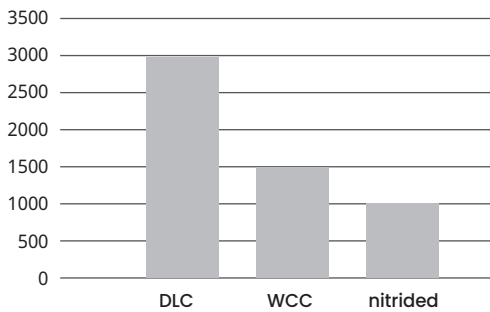
d1	L1	L2	d2	d3	k
30	22	35	42	47	6
		75			
		130			
30	27	45	42	47	6
		65			
		105			
		165			
30	36	55	42	47	6
		75			
		95			
		115			
		155			
30	46	45	42	47	6
		65			
		85			
		105			
		125			
30	56	165	42	47	6
		55			
		75			
		95			
		115			
30	66	135	42	47	6
		175			
		55			
		75			
		95			
30	76	115	42	47	6
		135			
		155			
		55			
		75			
30	86	95	42	47	6
		115			
		155			
		55			
		75			
30	96	95	42	47	6
		115			
		155			
		55			
		75			
30	116	95	42	47	6
		115			
		155			
		55			
		75			
30	136	115	42	47	6
		155			
		55			
		75			
		95			
30	156	115	42	47	6
		155			
		55			
		75			
		95			
30	176	135	42	47	6
		175			
		155			
		55			
		75			
30	196	155	42	47	6
		195			
		35			
		75			
		130			

d1	L1	L2	d2	d3	k
32	27	45	42	47	6
		65			
		105			
		165			
32	36	55	42	47	6
		75			
		95			
		115			
		155			
32	46	45	42	47	6
		65			
		85			
		105			
		125			
32	56	165	42	47	6
		55			
		75			
		95			
		115			
32	66	135	42	47	6
		175			
		55			
		75			
		95			
32	76	115	42	47	6
		135			
		155			
		55			
		75			
32	86	95	42	47	6
		115			
		155			
		55			
		75			
32	96	95	42	47	6
		115			
		155			
		55			
		75			
32	116	95	42	47	6
		115			
		155			
		55			
		75			
32	136	115	42	47	6
		155			
		55			
		75			
		95			
32	156	115	42	47	6
		155			
		55			
		75			
		95			
32	176	135	42	47	6
		175			
		155			
		55			
		75			
32	196	155	42	47	6
		195			
		35			
		75			
		135			

d1	L1	L2	d2	d3	k
40	76	75	54	60	10
		115			
		175			
40	86	75	54	60	10
		135			
40	96	75	54	60	10
		115			
		155			
40	116	95	54	60	10
		135			
		195			
40	136	95	54	60	10
		135			
		215			
40	156	115	54	60	10
		155			
		215			
40	176	135	54	60	10
		155			
		175			
40	196	155	54	60	10
		195			
		235			
42	36	75	54	60	10
		135			
42	46	95	54	60	10
		165			
42	56	75	54	60	10
		115			
		155			
42	66	195	54	60	10
		75			
42	76	135	54	60	10
		175			
42	86	75	54	60	10
		135			
42	96	75	54	60	10
		115			
		155			
42	116	95	54	60	10
		135			
		195			
42	136	95	54	60	10
		135			
		215			
42	156	115	54	60	10
		155			
		215			
42	176	135	54	60	10
		155			
		175			
42	196	155	54	60	10
		195			
		235			
50	96	115	66	72	10
	116	135			
	136	135			
	156	155			
	196	175			
60	96	115	80	86	10
	116	135			
	136	135			
	156	155			
	196	175			
	246	195			



Surface hardness HV



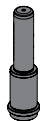
Code: **G50DLC** (DLC Coated)

Guide Pillar – Shouldered



Code: **G13DLC** (DLC Coated)

Guide Pillar with Centring Collar



Customised Guide Units

Upon request, Güvenal manufactures highly complex and precise guide elements based on customer specifications and provides measurement protocols if needed. This includes both the reworking of catalogue products and the production of entirely new items.

NEW

DLC Coated Guide Pillars



Code: **G13DLC**

Code: **G50DLC**

What is DLC ?

DLC means: Diamond like carbon.

The DLC coating is a sliding coating applied using the PACVD (Plasma-Enhanced Chemical Vapor Deposition) process. The coating is deposited through a physical and chemical reaction at approximately 180°C, with carbon-containing carrier gases introduced simultaneously. Due to the low coating temperature, DLC is also ideal for materials with a low tempering temperature. It combines excellent hardness with superior tribological properties in terms of friction, anti-adhesion, wear, and lubrication.

DLC coating is especially beneficial for applications involving motion or friction in mould making, such as ejection, guiding, and centering. With the DLC coating, it is possible to operate completely lubricant-free..

Advantages:

- Lubricant-free operation
- Extended maintenance intervals
- Very high abrasion resistance
- No seizing, even when running dry
- Good corrosion resistance

Technical Data:

Coating hardness: 2400 – 3000 HV

Coating thickness: ~ 1.5 – 2 µm

Coating temperature: 180°C

Temperature resistance: 350°C



DLC coated high-quality standard components to ensure a longer service life for your moulds.

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Guiding Components

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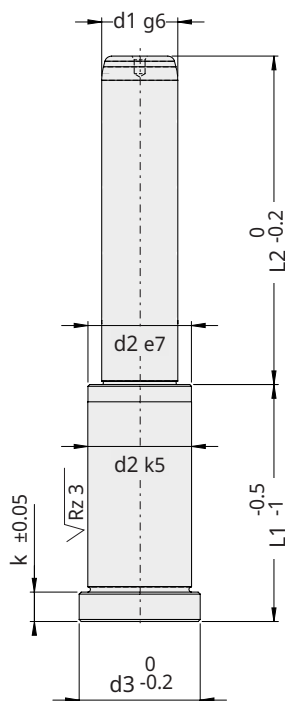
18

NEW



Guide Pillar - Shouldered

Code: **G50DLC** (DLC Coated)



Order:
G50DLC. d1 x L1 x L2



Material: 1.7131
Hardness: 60 HRC

Technical Data:

Coating hardness: 2400 - 3000 HV
Coating thickness: ~ 1.5 µm
Coating temperature: 180°C
Temperature resistance: 350°C

DLC coated high-quality standard components to ensure a longer service life for your moulds.

d1	L1	L2	d2	d3	k
14	22	35	20	25	6
		55			
		70			
		90			
14	27	35	20	25	6
		55			
		85			
		105			
14	36	35	20	25	6
		55			
		75			
		95			
14	46	35	20	25	6
		65			
		85			
		105			
14	56	55	20	25	6
		75			
14	66	55	20	25	6
		65			
		95			
18	27	35	26	31	6
		55			
		65			
		70			
		80			
		85			
		105			
		125			
18	36	35	26	31	6
		55			
		75			
		95			
		115			
		135			
		45			
		65			
18	46	85	26	31	6
		105			
		125			
		105			
18	56	55	26	31	6
		75			
		95			
		105			
18	66	55	26	31	6
		75			
		95			
		105			

d1	L1	L2	d2	d3	k
18	76	55	26	31	6
		75			
		95			
22	36	25	30	35	6
		45			
		55			
		75			
		95			
22	46	115	30	35	6
		135			
		165			
		25			
		45			
22	56	55	30	35	6
		75			
		95			
		115			
		165			
22	66	55	30	35	6
		75			
		95			
22	76	55	30	35	6
		75			
		95			
		115			
22	86	55	30	35	6
		75			
22	96	55	30	35	6
		75			
30	46	105	42	47	6
		125			
		165			
		25			
		45			

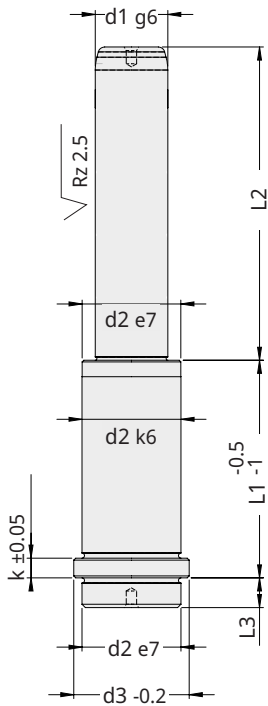
d1	L1	L2	d2	d3	k
30	56	55	42	47	6
		75			
		95			
		115			
30	66	135	42	47	6
		175			
		55			
		75			
30	76	95	42	47	6
		115			
		135			
		175			
30	86	55	42	47	6
		75			
		95			
		115			
30	96	55	42	47	6
		75			
		95			
		115			
30	116	115	42	47	6
		155			
30	136	95	42	47	6
		115			
30	156	115	42	47	6
		155			
40	96	75	54	60	10
		115			
40	116	135	54	60	10
		155			
40	136	95	54	60	10
		135			
40	156	115	54	60	10
		155			
40	196	195	54	60	10
		235			

NEW



Guide Pillar with Centring Collar

Code: **G13DLC** (DLC Coated)



Order:
G13DLC. d1 x L1 x L2

Material: 1.7131
Hardness: 60 HRC

Continued on the
next page →

Technical Data:
Coating hardness: 2400 - 3000 HV
Coating thickness: ~ 1.5 µm
Coating temperature: 180°C
Temperature resistance: 350°C

d1	L1	L2	L3	d2	d3	k
14	22	30	9	20	25	6
		50				
		70				
		90				
14	27	30	9	20	25	6
		45				
		65				
		85				
14	36	105	9	20	25	6
		35				
		55				
		75				
14	46	95	9	20	25	6
		115				
		35				
		45				
14	56	65	9	20	25	6
		85				
		105				
		125				
14	66	35	9	20	25	6
		55				
		75				
		95				
14	76	125	9	20	25	6
		55				
		75				
		95				
20	22	35	9	26	31	6
		45				
		65				
		85				
20	27	35	9	26	31	6
		45				
		65				
		85				
20	36	105	9	26	31	6
		125				
		35				
		55				
20	46	35	9	26	31	6
		55				
		75				
		95				
20	56	115	9	26	31	6
		135				
		35				
		45				
20	66	35	9	26	31	6
		55				
		75				
		95				
20	76	105	9	26	31	6
		125				
		35				
		45				
20	86	35	9	26	31	6
		55				
		75				
		95				
20	96	125	9	26	31	6
		145				
		35				
		45				
24	27	65	9	30	35	6
		85				
		105				
		125				
24	36	165	9	30	35	6
		205				
		35				
		45				
24	46	65	9	30	35	6
		85				
		105				
		125				
24	56	165	9	30	35	6
		205				
		35				
		45				
24	66	65	9	30	35	6
		85				
		105				
		125				
24	76	135	9	30	35	6
		155				
		35				
		45				

d1	L1	L2	L3	d2	d3	k
20	56	35	9	26	31	6
		55				
		75				
		95				
20	66	115	9	26	31	6
		135				
		35				
		55				
20	76	65	9	26	31	6
		85				
		105				
		125				
20	86	145	9	26	31	6
		165				
		35				
		45				
20	96	65	9	26	31	6
		85				
		105				
		125				
24	27	165	9	30	35	6
		205				
		35				
		45				
24	36	65	9	30	35	6
		85				
		105				
		125				
24	46	165	9	30	35	6
		205				
		35				
		45				
24	56	65	9	30	35	6
		85				
		105				
		125				
24	66	135	9	30	35	6
		155				
		35				
		45				

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Guiding Components

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Coating hardness: 2400 - 3000 HV
Coating thickness: ~ 1.5 µm

Coating temperature: 180°C
Temperature resistance: 350°C



Code: **G13DLC**

(DLC Coated)

Guide Pillar with Centring Collar

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Guiding Components

d1	L1	L2	L3	d2	d3	k
22	76	55	9	30	35	6
		75				
		95				
		115				
		135				
		155				
		55				
		75				
		95				
		115				
22	86	135	9	30	35	6
		155				
		195				
		55				
		75				
		95				
		115				
		135				
		155				
		195				
22	96	55	9	30	35	6
		75				
		95				
		115				
		135				
		155				
		195				
		55				
		75				
		95				
22	116	115	9	30	35	6
		135				
		155				
		195				
		55				
		75				
		95				
		115				
		135				
		155				
22	136	75	9	30	35	6
		95				
		115				
		55				
		75				
		95				
		115				
		135				
		155				
		195				
30	36	55	9	42	47	6
		75				
		95				
		115				
		135				
		155				
		195				
		55				
		75				
		95				
30	46	115	9	42	47	6
		135				
		155				
		195				
		235				
		55				
		75				
		95				
		115				
		135				
30	56	155	9	42	47	6
		195				
		235				
		55				
		75				

d1	L1	L2	L3	d2	d3	k
30	66	55	9	42	47	6
		75				
		95				
		115				
		135				
		155				
		195				
		235				
		55				
		75				
30	76	95	9	42	47	6
		115				
		135				
		155				
		195				
		235				
		55				
		75				
		95				
		115				
30	86	135	9	42	47	6
		155				
		195				
		235				
		55				
		75				
		95				
		115				
		135				
		155				
30	96	195	9	42	47	6
		235				
		55				
		75				
		95				
		115				
		135				
		155				
		195				
		235				
30	116	75	9	42	47	6
		95				
		115				
		135				
		155				
		195				
		235				
		55				
		75				
		95				
30	136	115	9	42	47	6
		135				
		155				
		195				
		235				
		55				
		75				
		95				
		115				
		135				
30	156	155	9	42	47	6
		195				
		235				
		55				
		75				
		95				
		115				
		135				
		155				
		195				
30	176	115	9	42	47	6
		135				
		155				
		195				
		235				
		55				
		75				
		95				
		115				
		135				

d1	L1	L2	L3	d2	d3	k
30	196	115	9	42	47	6
		155				
		195				
40	66	75	12	54	59	10
		95				
		115				
		155				
40	76	75	12	54	59	10
		95				
		115				
		155				
		195				
40	86	75	12	54	59	10
		95				
		115				
		155				
40	96	95	12	54	59	10
		115				
		155				
		195				
		235				
40	116	95	12	54	59	10
		115				
		155				
		195				
		235				
40	136	95	12	54	59	10
		115				
		155				
		195				
		235				
40	156	95	12	54	59	10
		115				
		155				
		195				
40	176	115	12	54	59	10
		155				
		195				
40	196	155	12	54	59	10
		195				
		235				

NEW



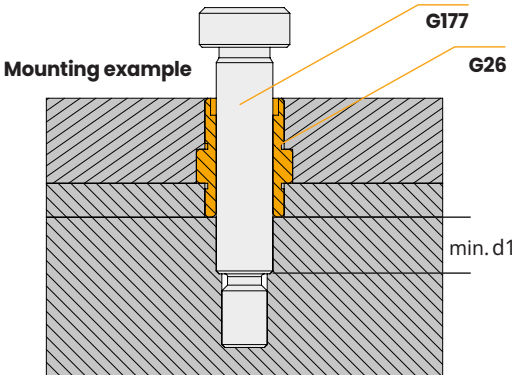
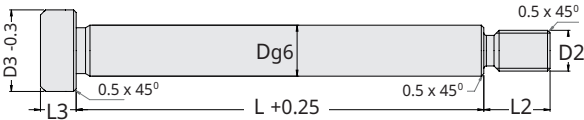
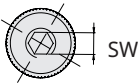
Tolerance
g6

Guiding Shoulder Screw

Code: **G177**

* Can be used as a guide bolt with stopper.

* **g6** tolerance



Order Code	D	L	D2	L2	D3	L3	SW
G177.10.25	10	25	M8	13	16	7	5
G177.10.30		30					
G177.10.40		40					
G177.10.50		50					
G177.10.60		60					
G177.10.70		70					
G177.10.80		80					
G177.10.90		90					
G177.10.100		100					
G177.12.25	12	25	M10	16	18	9	6
G177.12.30		30					
G177.12.40		40					
G177.12.50		50					
G177.12.60		60					
G177.12.70		70					
G177.12.80		80					
G177.12.90		90					
G177.12.100		100					
G177.12.120		120					
G177.14.30	14	30	M10	16	21	9	6
G177.14.40		40					
G177.14.50		50					
G177.14.60		60					
G177.14.70		70					
G177.14.80		80					
G177.14.90		90					
G177.14.100		100					
G177.14.120		120					
G177.14.140		140					
G177.18.40	18	40	M12	18	27	11	8
G177.18.50		50					
G177.18.60		60					
G177.18.70		70					
G177.18.80		80					
G177.18.90		90					
G177.18.100		100					
G177.18.120		120					
G177.18.140		140					

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Guiding Components

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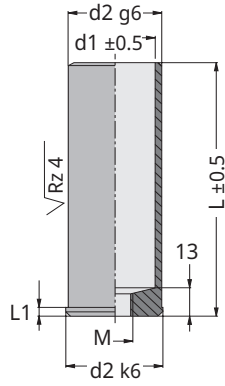
15

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Guiding Components



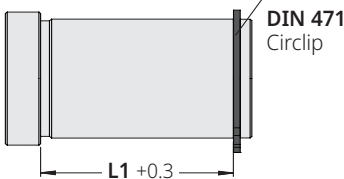
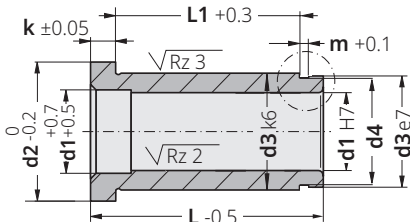
Centring Bush

Code: **G28**

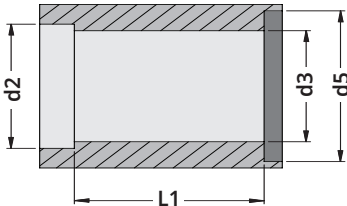
d1	L	d2	M	L1
20	30	16	M8	2.5
	40			
	60			
	80			
	100			
	120			
	140			
	160			
26	30	21	M10	2.5
	40			
	60			
	80			
	100			
	120			
	140			
	160			
30	180	25	M12	2.5
	40			
	60			
	80			
	100			
	120			
	140			
	160			
	180			
	200			
240				



Guide Bush - Headed (with circlip slotted) **Code: G49**



Mounting Dimensions



Order: **G49**. d1 x L

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

Compatible Pillars

G13

G50

G11

For general usage in injection mould guide systems - it prevents the bush protrude in free rotating plates (**H6** centre fixing).

d1	L	d3	d2	k	L1	m	d4	d5	Circlip
12	27	18	25	6	18	1.3	17	27	18
	36				27				
	46				37				
	56				47				
14	27	20	25	6	18	1.3	19	30	20
	36				27				
	46				37				
	56				47				
	66				57				
	76				67				
	86				77				
	96				87				
16	116				107				
	27	22	27	6	18	1.3	21	32	22
	36				27				
	46				37				
	56				47				
	66				57				
18	76				67				
	86				77				
	96				87				
	116				107				
	136				127				
20	27	26	31	6	18	1.3	25	36	26
	36				27				
	46				37				
	56				47				
	66				57				
	76				67				
	86				77				
	96				87				
	116				107				
	136				127				
22	27	30	35	6	17	1.6	29	41	30
	36				26				
	46				36				
	56				46				
	66				56				
	76				66				
	86				76				
	96				86				
	116				106				
	136				126				
24	156				146				
	27	36	42	6	15	1.8	40	44	42
	36				24				
	46				34				
	56				44				
	66				54				
30	76				64				
	86				74				
	96				84				
	116				104				
	136				124				
	156				144				
	176				164				
	196				184				
40	27	54	60	10	19	2.1	51	67	54
	36				29				
	46				39				
	56				49				
	66				59				
	76				69				
	86				79				
	96				89				
	116				99				
	136				119				
50	156				139				
	176				159				
	196				179				
	246				229				
	27	66	72	10	58	2.6	62	79	65
	36				78				
	46				98				
	56				118				
	66				138				
	76				158				
60	86				178				
	96				198				
	116				218				
	136				238				
	156				258				
	176				278				
	196				298				
	216				318				



The **G49** is delivered with the circlip included - no need to order the circlip separately.

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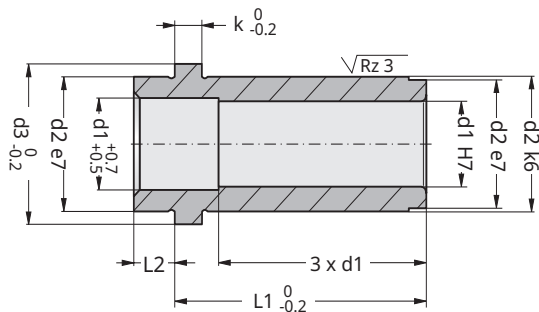
18

Guiding Components



Code: **G31**

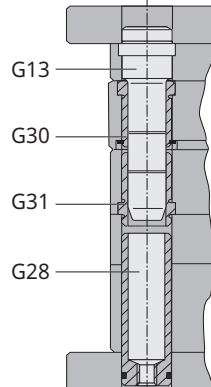
Guide Bush with Centring Collar



d1	L1	d2	d3	k	L2
14	17	20	25	6	9
	22				
	27				
	36				
	46				
	56				
	66				
	76				
	86				
	96				
15	116				
	17	26	31	6	9
	22				
	27				
	36				
	46				
	56				
	66				
	76				
	86				
	96				
20	106				
	116				
	136				

d1	L1	d2	d3	k	L2
22	17	30	35	6	9
	22				
	27				
	36				
	46				
	56				
	66				
	76				
	86				
	96				
24	106				
	116				
	136				
	156				
	27	42	47	6	9
	36				
	46				
	56				
	66				
	76				
	86				
	96				
	106				
	116				
30	126				
	136				
	156				
	196				
32	46	54	60	10	12
	56				
	66				
	76				
	86				
	96				
	116				
	136				
	156				
	196				
40	246				
	46	54	60	10	12
	56				
	66				
	76				
	86				
	96				
	116				
	136				
	156				
	196				
42	246				

Mounting Example



3D CAD
FILES
GUVENAL



Download
www.guvenal.net

3D CAD - Formats: CATIA, STEP, IGES 3D, X_T

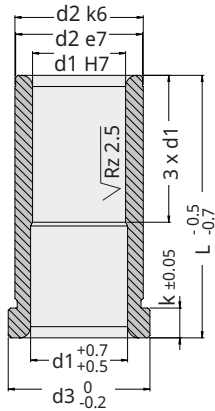


Order: **G31**. d1 x L1



Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC





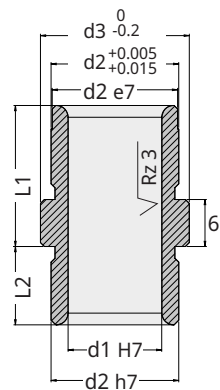
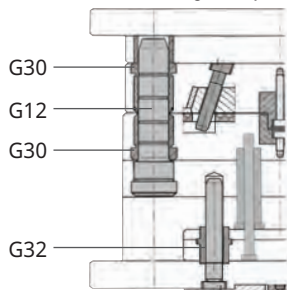
Guide Bush - Headed

Code: **G30**

d1	L	d2	d3	k
10	17	14	16	3
	27			
	36			
	46			
	56			
12	26	16	19	4
	36			
	46			
	56			
	66			
14	26	20	25	6
	36			
	46			
	56			
	66			
16	26	24	28	6
	36			
	46			
	56			
	66			
18	26	26	31	6
	36			
	46			
	56			
	66			
20	26	28	32	6
	36			
	46			
	56			
	66			

d1	L	d2	d3	k
25	26	34	38	8
	36			
	46			
	56			
	66			
30	76	39	43	10
	86			
	96			
	106			
	116			
40	46	54	58	10
	56			
	66			
	76			
	86			
	96			
	106			
	116			
	126			
	136			
	146			

Mounting Example

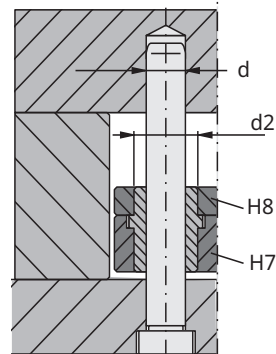


Code: **G32**

Guide Bush with Centre Collar

d1	L1	d2	d3	L2
12	16	16	19	12
14	16	20	25	12
16	16	24	28	12
18	16	26	31	12
20	16	28	32	12
24	21	34	38	16
25	21	34	38	16
30	21	39	43	16

Mounting Example



G32 Bushes ensuring the movements of ejector plates in injection moulds be rigid and precise.



Order: **G32**. d1 x L1



Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC



Order: **G30**. d1 x L



Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

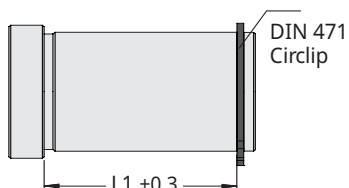
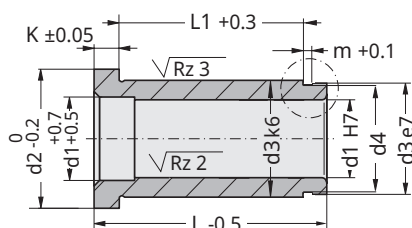


for Turkish Mould
Standard

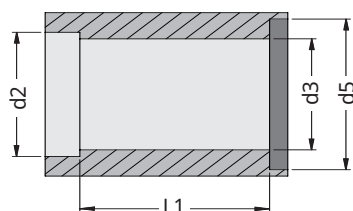


Guide Bush - Headed
(with circlip slotted)

Code: **G77**



Mounting Dimensions



Order: **G77**. d1 x L



Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

Compatible Pillars



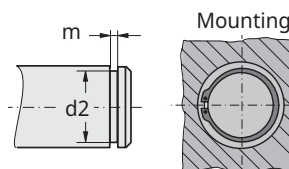
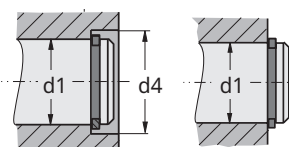
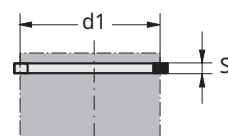
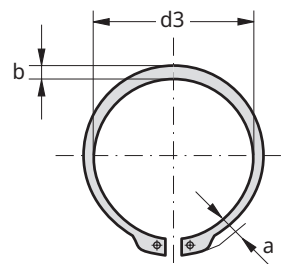
For general usage in injection mould guide systems - it prevents the bush protrude in free rotating plates (H6 centre fixing).

d1	L	d3	d2	k	L1	m	d4	d5	Circlip
12	26				16				
	36				26				
	46	16	19	4	36	1.1	15.2	25	16
	56				46				
	66				56				
14	26				16				
	36				26				
	46	20	25	6	36	1.3	19	30	20
	56				46				
	66				56				
	76				66				
16	26				16				
	36				26				
	46	24	28	6	36	1.3	22.9	34	24
	56				46				
	66				56				
	76				66				
	86				76				
20	26				16				
	36				26				
	46				36				
	56	28	32	6	46	1.6	26.6	38	28
	66				56				
	76				66				
	86				76				
	96				86				
25	26				14				
	36				24				
	46				34				
	56				44				
	66	34	38	8	54	1.6	32.3	45	34
	76				64				
	86				74				
	96				84				
	106				94				
30	36				21				
	46				31				
	56				41				
	66				51				
	76	39	43	10	61	1.8	37	51	39
	86				71				
	96				81				
	106				91				
	116				101				
40	46				28				
	56				38				
	66				48				
	76				58				
	86				68				
	96	54	58	10	78	2.1	51	67	54
	106				88				
	116				98				
	126				108				
	136				118				
	146				128				



External Circlip

Code: **DIN471**



d1	S	a	b	d2	d3	d4	m
16	1	3.5	2.2	15.2	14.7	24.4	1.1
20		4	2.6	19	18.5	29	
21		4.1	2.7	20	19.5	30.2	
22		4.2	2.8	21	20.5	31.4	
24	1.2	4.4	3	22.9	22.2	33.8	1.3
25		4.4	3	23.9	23.2	34.8	
26		4.5	3.1	24.9	24.2	36.1	
28		4.7	3.2	26.6	25.9	38.4	
29		4.8	3.4	27.6	26.9	39.6	
30	1.5	5	3.5	28.6	27.9	41	1.6
34		5.4	3.8	32.3	31.5	45.8	
37		5.7	4.1	35	34.2	49.4	
39	1.75	5.8	4.2	37	35.2	50.6	1.85
45		6.7	4.7	42.5	41.5	59.4	
50	2	6.9	5.1	47	45.8	64.8	2.15
54		7.1	5.3	51	49.8	70	



Order:
DIN471. d1 x S

"Special Series for Injection Moulds"

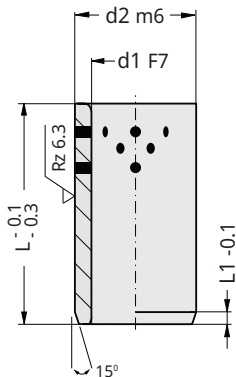


Guide Bush - Plain
Self-Lubricating

Code: **G48**

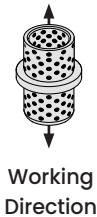
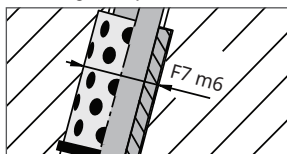
* Hole tolerance for shrink fit: H7

d1	d2	L	L1
8	12	8	2
		10	
		15	
10	14	10	2
		12	
		15	
12	18	20	2
		25	
		30	
		35	
		40	
		45	
15	22	50	2
		55	
		60	
		65	
16	24	70	4
		75	
		80	
18	28	85	4
		90	
		95	
20	30	100	4
		105	
		110	
24	33	115	4
		120	
		125	
25	35	130	4
		135	
		140	
35	38	145	4
		150	
		155	
30	40	160	4
		165	
		170	
40	45	175	4
		180	
		185	
38	50	190	4
		195	
		200	
42	55	205	4
		210	
		215	
45	60	220	4
		225	
		230	



d1	d2	L	L1
48	60	30	4
		40	
		50	
50	62	60	4
		70	
		80	
60	74	100	4
		110	
		120	
80	96	130	4
		140	
		150	
100	120	160	4
		170	
		180	
120	140	190	4
		200	
		210	
150	170	220	4
		230	
		240	
160	180	250	4
		260	
		270	

Mounting Example

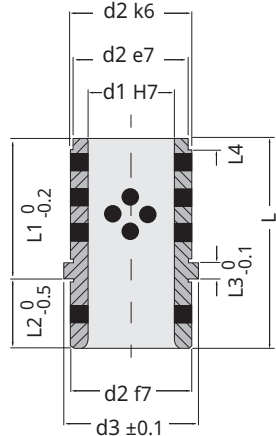


Guide Bush with Centre Collar
Self-Lubricating

Code: **G26**



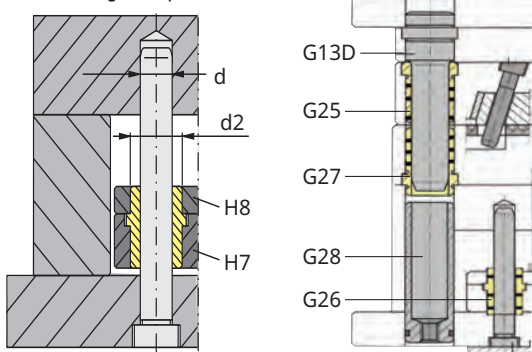
Positioning :
Pls. do not make
direct fitting.
Precision assembly
recommended
with bronze / brass.



d1	L	d2	d3	L1	L2	L3	L4
10	21	14	17	12	9	6	2
12	26	16	19	17	9	6	2
14	26	20	25	17	9	6	2
16	26	20	25	17	9	6	2
20	39	26	31	22	17	6	2
22	49	30	35	27	22	6	4
25	49	30	35	27	22	6	2
30	63	42	47	36	27	6	2
40	63	50	60	36	27	8	6
50	92	63	72	55	37	8	6

Especially, it can be used in pillar systems of the ejector plates in injection moulds with Guide Pillar without oil groove (G17) Guide bushes are self-lubricating systems.
Heat Resistance: 150° C. It can even work in humid environments.

Mounting Example



Order:
G48. d1 x d2 x L



Material:
Bronze + graphite inserts



Order:
G26. d1 x L



Material:
Bronze + graphite inserts

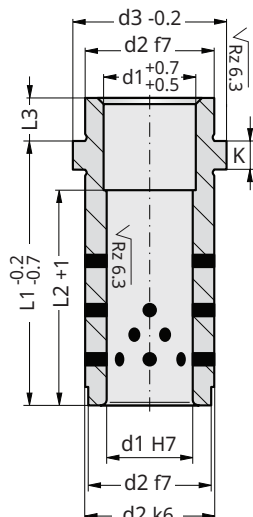
"Special Series for Injection Moulds"



Working
Direction

Guide Bush with Collar
Self-Lubricating

Code: **G27**



G27 products used in injection moulds with **G13D** guide pillars (without oil groove). Higher stability is achieved with centering of the mould in length. This way, a long-term and precision working environment with other equipment (ejector - core etc.) **H7** tolerance is recommended in guide pillar / bush systems. It is compatible with the sudden movements during working. These products are not affected by vibration / impacts.

Heat resistance: 150⁰ c.

d1	L1	d2	d3	K	L3
14	17	20	25	6	6
	22				
	27				
	36				
15	46				
	56				
	L2: > 2 - 3 x d1				
16	17	20	25	6	8
	22				
	27				
	36				
	46				
	56				
	66				
76					
L2: > 2 - 3 x d1					
20	17	26	31	6	8
	22				
	27				
	36				
	46				
	56				
	66				
76					
18	86				
	96				
	L2: > 2 - 3 x d1				

d1	L1	d2	d3	K	L3
25	22	30	35	6	8
	27				
	36				
	46				
22	56				
	66				
24	76				
	86				
	96				
	116	L2: > 2 - 3 x d1			
30	27	42	47	6	8
	36				
	46				
	56				
32	66				
	76				
	86				
	96				
	116				
	136	L2: > 2 - 3 x d1			
40	46	54	60	10	12
	56				
	66				
	76				
42	86				
	96				
	116				
	136				
	156				
	196	L2: > 2 - 3 x d1			

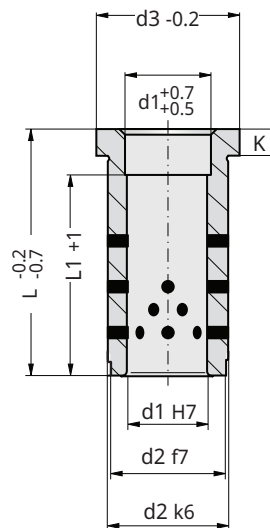
Sliding bushing systems provide higher stability.
These products are lubricated once as a thin layer and this reduces negative effects.



Working
Direction

Guide Bush Headed
Self-Lubricating

Code: **G25**



G25 products used in injection moulds with **G12D** and **G50D** guide pillars (without oil groove).

H7 tolerance is recommended in guide bush systems. It is compatible with the sudden movements during working. These products are not affected by vibration / impacts.

Heat resistance: 150⁰ c.
It can even work in humid environments.

d1	L	d2	d3	K	
12	16	18	22	4	
	21				
	27				
	36				
L1: 2 - 3 x d1					
16	27	22	27	6	
	36				
	46				
	56				
15	L1: 2 - 3 x d1				
	20	26	31	6	
					27
					36
46					
18	56	L1: 2 - 3 x d1			
	66	L1: 2 - 3 x d1			
	76	L1: 2 - 3 x d1			
	96	L1: 2 - 3 x d1			
25	36	30	35	6	
	46				
	56				
	66				
22	76	L1: 2 - 3 x d1			
	86	L1: 2 - 3 x d1			
	96	L1: 2 - 3 x d1			
	24	L1: 2 - 3 x d1			
L1: 2 - 3 x d1					
L1: 2 - 3 x d1					
L1: 2 - 3 x d1					

d1	L1	d2	d3	K
30 32	36	42	47	6
	46			
	56			
	66			
	76			
	86			
	96			
	116			
L1: 2 - 3 x d1				
40 42	36	54	60	10
	46			
	56			
	66			
	76			
	86			
	96			
	116			
L1: 2 - 3 x d1				
50	76	66	72	10
	86			
	96			
	116			
	136			
	156			
	196			
L1: 2 - 3 x d1				
60	96	80	86	20
	116			
	136			
	156			
	196			
L1: 2 - 3 x d1				



Order:
G27. d1 x L1



Material:
Bronze + graphite inserts

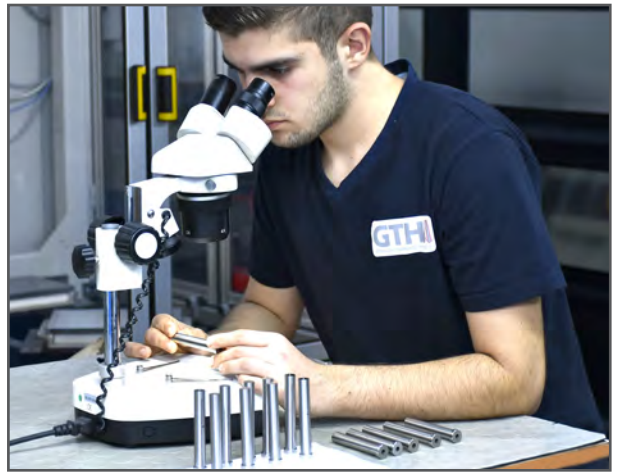


Order:
G25. d1 x L



Material:
Bronze + graphite inserts

Stable and reliable Die & Mould production is obtained with components having a reliable quality. Güvenal tends towards the highest quality standards with all development and test efforts.



Güvenal: Reliability and Excellence in the Tooling Industry Güvenal is a well-known manufacturer in the industry, recognized for its wide product range and fast distribution systems. Güvenal's meticulous Quality and Control Processes ensure the highest quality at every stage of the production process. Strict controls are applied at each step, from raw material selection to the final product formation. To ensure precision shaping quality, parameters such as circularity, concentricity, flatness, and perpendicularity are carefully monitored through 3D inspection technology. Additionally, hardness tests, along with hardened and induction parameter records, are conducted at our facility. Thanks to these processes, we continue to offer a wide variety of high-quality, excellent products with the lowest tolerances under the Güvenal Quality Assurance Labels.

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Guiding Components

NEW



Code: **G184-1**

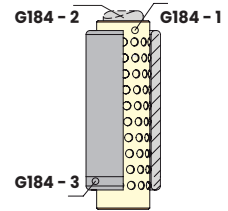
MINI Ball Cage

Code: **G184-2**

MINI Guide Pillar

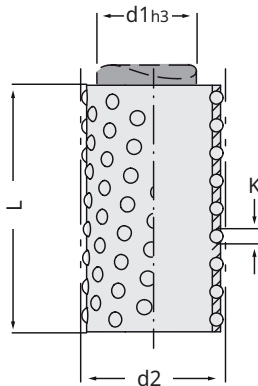
Code: **G184-3**

MINI Guide Bush for G184-1



The ball-guiding mini-series enables achieving maximum precision with smooth sliding.

The G184 series is widely used in high-speed stamping, injection moulding, control instruments, automation, robotics, and the semiconductor industries. Additionally, we can provide ball cages, bushes, and pillars made to custom specifications based on drawings.



Code: **G184-1**

MINI Ball Cage

Material: Bronze Cage B14

Balls: Steel for bearings 100Cr6

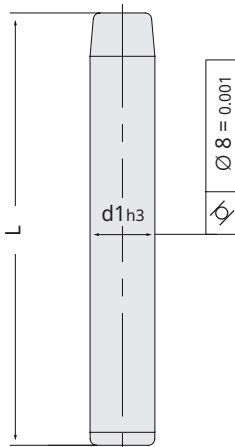
Superfinished grade AAA



Order:
G184-1. d1 x L

d1	L	d2	K	No. of Balls
4	10	6	1	28
	15			42
	20			63
	25			77
5	10	7	1	32
	15			48
	20			72
	25			88
	30			112

d1	L	d2	K	No. of Balls
6	10	8	1	36
	15			54
	20			81
	25			99
8	30	10	1	126
	15			60
	20			90
	25			110
	30			140
	40			190



Code: **G184-2**

MINI Guide Pillar
DIN 9825 / ISO 9182

Material: 1.7131

Hardness: 58-62 HRC

Heat treatment: Case-hardening and tempering

Note: Fine grinding and super finishing

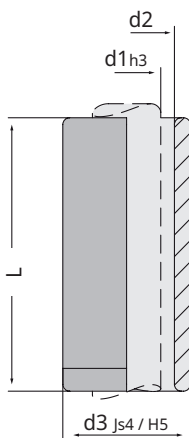


Order:
G184-2. d1 x L

d1	L
4	40
	50
	60
	80
	100
5	40
	50
	60
	80
	100

d1	L
6	40
	50
	60
	80
	100
8	100
	125
	140
	160
	160

d1	L
6	50
	60
	80
	100
	125
8	125
	140
	160
	160
	160



Code: **G184-3**

MINI Guide Bush for Ball Cage

Material: 1.7131

Hardness: 60-64 HRC

Heat treatment: Case-hardening and tempering

Note: Fine grinding and super finishing



Order:
G184-3. d1 x L

d1	d2	d3	L
4	6	8	10
			15
			20
			25
5	7	10	25
			30
			35
			40
			40

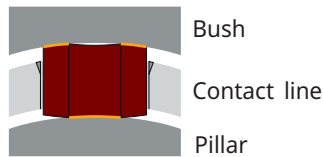
d1	d2	d3	L
6	8	11	15
			20
			25
			30
8	10	14	35
			40
			40
			40
			40

NEW

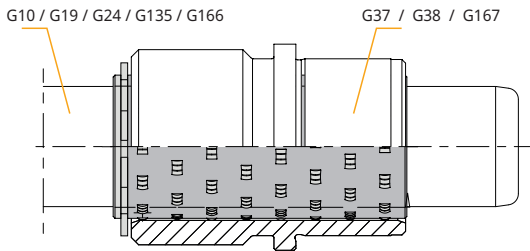


Roller Cage Code: **G81**

G81 Roller Cages create a linear contact with the guide bush and guide pillar, resulting in a significantly higher load-carrying capacity for each roller compared to a ball-cage of the same diameter. The profile rollers are arranged in a spiral pattern along the axis, ensuring each roller moves along its own unique path. The cages are designed with grooves to accommodate a DIN 471 circlip.

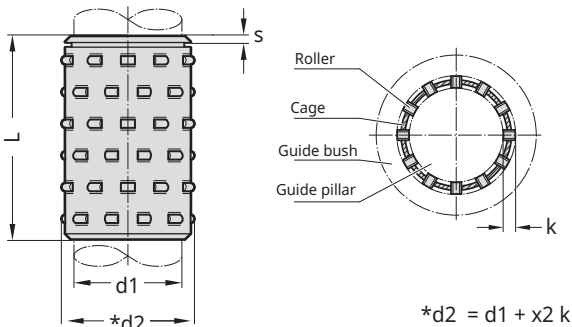


- Ideal for high-speed operations
- Suitable for applications requiring maximum precision
- Offers greater stiffness compared to ball cages
- Well-suited for **Fine Blanking & Progressive Dies** due to its ability to withstand high shear forces
- Suitable for **IML Injection Moulds**
- Reduced wear due to the axial offset of the rollers
- Optimized inlet geometry ensures smooth roller entry
- Play-free guidance achieved through optimal preload
- Can be used for axial motions only



Roller Cage: Aluminium

Rollers: Steel hardened, 100 Cr6, DIN 5402



d1	L	No. of Rollers	k	s
20	45	32	3	1.6
	55	40		
	65	48		
	75	56		
	85	64		
	95	72		
25	105	80	3	1.6
	45	40		
	55	50		
	65	60		
	75	70		
	85	80		
30	95	90	4	2.1
	105	100		
	115	110		
	125	120		
	45	48		
	55	60		
30	65	72	4	2.1
	75	84		
	85	96		
	95	108		
	105	120		
	115	132		
30	125	144	4	2.1
	135	156		
	145	168		
	155	180		
	165	192		
	175	204		

d1	L	No. of Rollers	k	s
40	55	70	4	2.1
	65	84		
	75	98		
	85	112		
	95	126		
	105	140		
50	115	154	4	2.1
	125	168		
	135	182		
	145	196		
	155	210		
	165	224		
63	175	238	4	2.1
	185	252		
	205	280		
	65	108		
	75	126		
	85	144		
63	95	162	4	2.1
	105	180		
	115	198		
	125	216		
	135	234		
	145	252		
63	155	270	4	2.1
	165	288		
	175	306		
	185	324		
	205	360		
	75	154		
63	85	176	4	2.1
	95	198		
	105	220		
	115	242		
	125	264		
	135	286		
63	145	308	4	2.1
	155	330		
	165	352		
	175	374		
	185	396		
	205	440		

Order: **G81**. d1 x L

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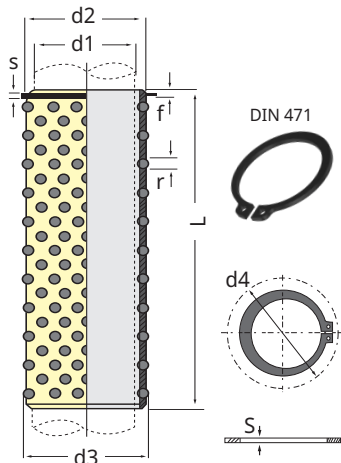
Guiding Components



Ball Cage

Code: **G70**

Heat resistance of ball cage is 120° C.
Ball cages are presented with circlips.



Mounting Example



Compatible Bushes



$$L = K + 0.5 \times s$$

d1	L	d2	Ball		Circlip		
			d3	r	d4	f	s
NEW 10	30	13	14	2	20.6	3.2	1.2
	40						
12	40	15	16	2	22.6	3.2	1.2
	56						
15	45	20	21	3	28.4	5	2
	65						
16	71	21	22	3	29.6	5	2
	71						
18	45	23	24	3	32.2	5	2
	56						
19	71	24	25	3	33.2	5	2
	71						
20	80	25	26	3	34.2	5	2
	80						
24	45	29	30	3	39.1	5	2
	56						
25	71	30	31	3	40.5	5	2
	80						
30	105	39	40	4	49	5	2
	105						
32	120	37	38	4	51.4	5	2
	120						
30	45	39	40	4	49	5	2
	56						
32	75	37	38	4	51.4	5	2
	80						
30	105	39	40	4	49	5	2
	105						
32	120	37	38	4	51.4	5	2
	120						
30	140	39	40	4	49	5	2
	140						

d1	L	d2	Ball		Circlip		
			d3	r	d4	f	s
38	56	45	46	4	59.1	5	2
	71						
40	80	47	48	4	60.8	5	2
	95						
48	105	55	56	4	70.2	5	2
	120						
50	140	57	58	4	72.6	5	2
	160						
60	71	67	68	4	83.1	5.7	2.7
	80						
63	95	70	71	4	87	5.7	2.7
	105						
80	120	90	92	6	108.5	6.7	3.2
	140						
80	160	90	92	6	108.5	6.7	3.2
	200						



Order: **G70**. d1 x L



Material: Ms58 **Ball:** 100Cr6
Tolerance: +0.001



Code: **G70 - 1**

Ball Cage Retaining Spring

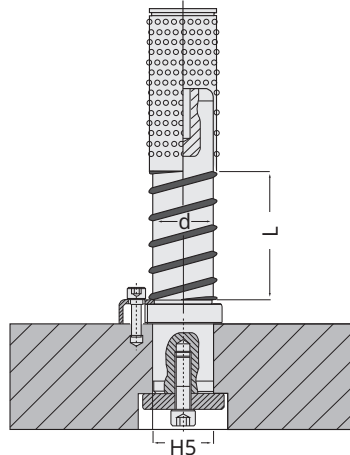
Note: Production in ball systems or other die inner designs Upon request.

L: 10 mm ranges

d	L
19 20	Up to 40 ~ 140
24 25	Up to 40 ~ 180
30 32	Up to 50 ~ 230
38 40	Up to 60 ~ 280
48 50	Up to 70 ~ 280
60 63	Up to 80 ~ 250



Order:
G70-1. d x L



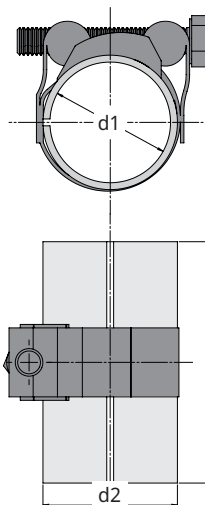
To avoid hanging at usage of ball cage bush, ball cage retaining spring can be used.



Limiting Bush

Code: **G168**

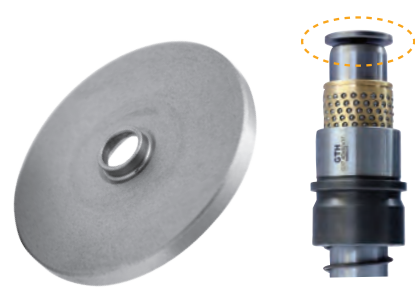
Order Code	d1	Guide Pillar	d2	L
G16816	16	15 / 16	20	20
G16820	20	19 / 20	30	20
G16825	25	24 / 25	30	30
G16832	32	30 / 32	40	30
G16840	40	38 / 40	50	40
G16850	50	48 / 50	60	40
G16863	63	60 / 63	70	40



Mounting
Example



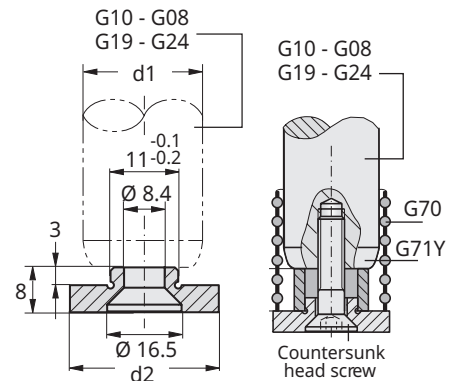
It helps to position the working length of the bushes running on the guide pillars.



Code: **G151**

Ball Cage Holder Flange

(Locking flange for ball cage)



d1	d2	Pillar Dia.
20	25	Ø 20
25	30	Ø 25
30	37	Ø 30
40	47	Ø 40
50	57	Ø 50
60	67	Ø 60
63	71	Ø 63



Order: **G151. d1**



Material: 1.7131 (16MnCr5)



Holder Flange / (locking flange for ball cage)

In ball cage bush systems, it prevents detaching of cage (**G70**) from guide pillar during operating. It is practical and provides convenience in die mounting. **In mounting to die:** Spacer tube (**G71Y**) of ball cage stroke distance and countersunk head screw (**HIC**) can be adjusted in desired length.

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Guiding Components

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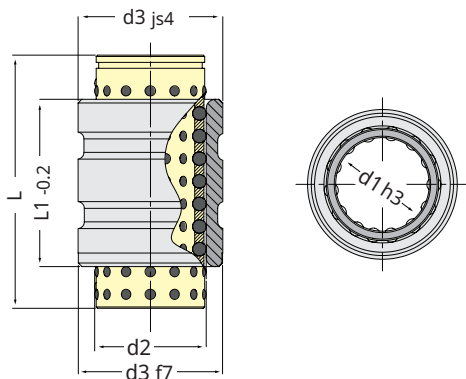
17

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Plain Guide Bush for Ball Cage
ISO 9448-3

Code: **G167**



d1	d2	d3	L1	L
NEW 10	14	22	23	30
			30	40
			37	40
12	16	22	23	40
			30	40
			37	40
15 16	21 22	28	23	45
			30	45
			37	45
			47	56
			60	71

d1	d2	d3	L1	L
19 20	25 26	32	23	45
			30	45
			37	45
			47	56
			60	71
24 25	30 31	40	77	95
			23	45
			30	45
			37	45
			47	56
30 32	38 40	48	60	71
			77	95
			95	120
			30	45
			37	50
38 40	46 48	58	47	56
			60	71
			77	95
			95	120
			120	140
48 50	56 58	70	30	45
			37	50
			47	63
			60	80
			77	95
60 63	68 71	85	95	120
			120	140
			60	95
			77	95
			95	120
80	92	105	120	140

Note: Ball Cage "G70" must be ordered separately.



Order:
G167. d1 x L1

Material: 1.7131
Hardness: 60 - 64 HRC



The inner diameter of the products is honed, the outer diameter is precision ground. The grooves on the product are made to provide better adhesion to the hole during mounting. **Advantages of G167:** No problem finding the position when changing the bushes. High accuracy and robustness. **Mounting Instruction:** Please secure with adhesive (Order Code: GL.64832) Do not press-fit.



Adhesive / Loctite 648

The adhesive provides optimum push retention for "G167" bushes. For adhesion of bearings bushes, screws and other machine components. Very fast adhesion to handling strength.

Heat Resistance: -55° / +175° C

Package: 50ml / 55 g.



Order: **GL.64832**



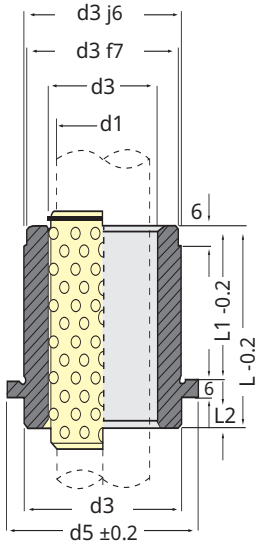
Guide Bush for Ball Cage
(Short type)

Code: **G38**



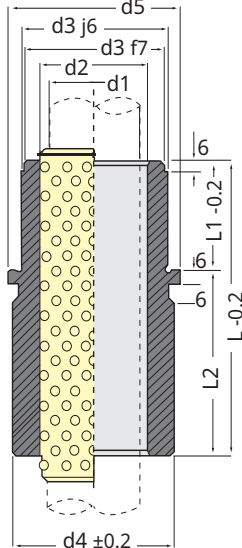
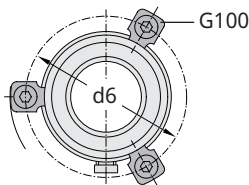
Guide Bush for Ball Cage
(Long type)

Code: **G37**



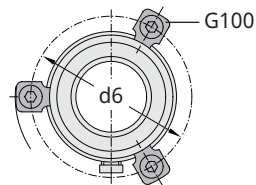
G38 guide bushes work without problem at dies, cuttings under 0.5 mm sheet metal thickness and where cutting space is low and when 200 stamp per minute are exceeded. It is not resistant to the lateral loads. They are preferred in cases that precision should be increased.

4 pcs. clamp for **d1: 38 mm** and larger sizes.



High precision guide bushes for ball cage: Despite providing high reliability at high speeds, contacting balls from one point, brings the system to precision status against impacts and side loads. This disadvantage is compensated to give product diameters up to a certain point in the upper tolerance, the working surface should be precise.

4 pcs. clamp for **d1: 38 mm** and larger sizes.



d1	L	d2	d3	d5	d6	L1	L2
15	35	21	30	34	46.2	23	12
16		22					
19	35	25	32	40	52.4	23	12
20		26					
24	35	30	40	48	60.8	23	12
25		31					
30	42	37	48	56	67.8	30	12
32		40					
38	52	46	58	66	78	37	15
40		48					
48	65	56	70	80	93.2	47	18
50		58					
60	80	68	85	95	108.4	60	20
63		71					
80	80	92	105	118	131.5	60	20



Order:
G38. d1 x L x L1

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

d1	L	d2	d3	d4	d5	d6	L1	L2
15	43	21	30	32	34	46.2	23	20
16		22						36
19	43	25	32	39	40	52.4	23	20
20		26						36
24	59	30	40	46	48	60.8	23	36
25		31						56
30	75	38	48	53	56	67.8	30	45
32		40						63
38	82	46	58	63	66	78	37	45
40		48						71
48	97	56	70	77	80	93.2	47	50
50		58						80
60	116	68	85	92	95	108.4	60	56
63		71						90
80	120	92	105	115	118	131.5	60	60
	150							90



Order:
G37. d1 x L x L1

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

Note: Two different products in section (d1) are to avoid reverse closing of dies during mounting by using three pcs. main dimensions and one pcs. auxiliary (d1= Ø15 - 19 - 24 - 32 - 38 - 48 - 60 mm) dimensions at same die, is avoided reverse closing of die plate. Thus, symmetrical die closure is ensured. **Example:** In the same die (Ø20 x 3 - Ø19 x 1) = 4 pieces **Note:** Should be ordered with G70.

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Guiding Components

NEW



2 pcs. DIN 471
(included)



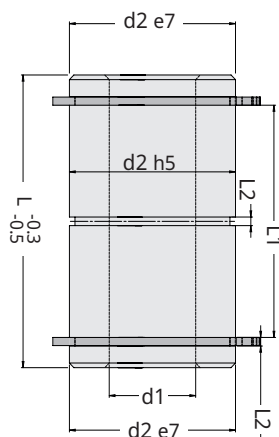
interior view

NEW

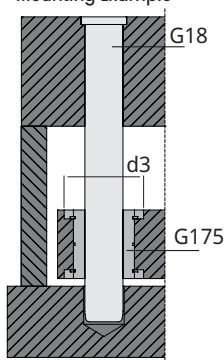


Linear Ball Bearing Bush with Circlips

Code: **G175**

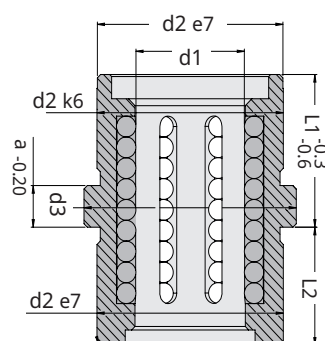


Mounting Example

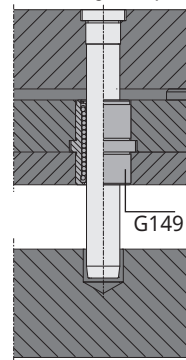


Linear Ball Bearing Bush with Centre Collar

Code: **G149**



Mounting Example



Operating Temp.: Max. 200°

Order Code	d1	L	d2	L1	L2	d3	Ball Dia.	Line Pcs.
G1751226	12	26	24	17	1.2	34	3	5
G1751834	18	34	30	25	1.5	41	3	6
G1751844	18	44	30	35	1.5	41	3	6
G1752034	20	34	32	25	1.5	43	3	6
G1752044	20	44	32	35	1.5	43	3	6
G1752544	25	44	40	30	1.75	51	3	8
G1752554	25	54	40	40	1.75	51	3	8
G1753054	30	54	48	40	1.75	61	4	8
G1753063	30	63	48	50	1.75	61	4	8

Operating Temp.: Max. 200°

d1	L1	L2	d2	d3	a	Ball Dia.	Line Pcs.
10	12 17	9	20	24	6	2.5	5
12	17	9 12	24	28	6	3	5
18	22	12 17	30	34	6	3	6
20	22	17	32	36	6	3	6
25	27	17 22	40	45	6	3	8
30	32 36	22 27	48	54	8	4	8
40	36	27	60	66	8	4	8



Order:
G149. d1 x L1 x L2



Güvenal Linear Ball Bushings are designed for high-performance linear motion in demanding tooling and mould making applications. Each bushing features a precision-ground steel outer shell and a durable bronze internal cage that guides multiple rows of recirculating ball bearings. Unlike conventional designs, the rolling elements in Güvenal bushes move at a slight angle relative to the axis of motion. This angled path increases the contact area with the pillar, significantly enhancing load capacity and operational stability. The all-metal construction ensures high resistance to heat, wear, and contamination—making these bushings ideal for environments where thermal and mechanical stress are common. Güvenal bushes are available in four different outer geometries, all sharing the same internal ball guidance system to ensure consistent performance across configurations.



interior view



Linear Ball Bearing Bush

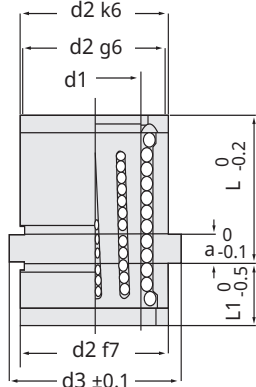
Code: **G75**

Free stroke, rapid and limitless movement.
New for ejector plate.

Operating Temp.: Max. 200°



Positioning :
Pls. do not make
direct fitting.
Precision assembly
recommended
with bronze / brass.



d1	L	d2	d3	a	L1	Ball Dia.	Line Pcs.
12	22	24	28	6	8	3	5
18	26	30	34	6	9	3	6
20	26	32	36	6	9	3	6
	36						
25	26	40	45	6	10	3	8
	36						
	46						
30	46	48	54	8	12	4	8
	66						
40	46	60	66	8	12	4	8
	66						
50	56	70	76	10	25	4	10



Order: **G75**. d1 x L

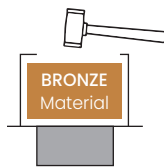


Linear Ball Bearing Bush
Headed

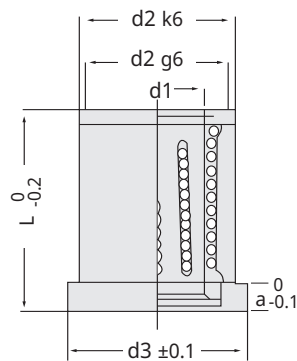
Code: **G74**

Balls are worked independently by rotating,
they are not frictional.

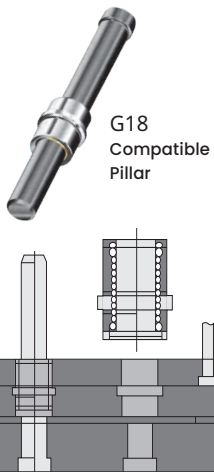
Operating Temp.: Max. 200°



Positioning :
Pls. do not make
direct fitting.
Precision assembly
recommended
with bronze / brass.



d1	L	d2	d3	a	Ball Dia.	Line Pcs.
18	35	30	34	6	3	6
20	35	32	36	6	3	6
	45					
	55					
30	45	48	54	8	4	8
	63					
40	45	60	66	8	4	8
	63					



Order: **G74**. d1 x L



New Linear Ball Bearing Bushes G74 - G75 - G149 - G175: There are balls at inclined - serial - parallel intermediate channels - lines inside of linear **G74-G75-G149-G175** bushes (balls move by rotating in slot and frictionless). In this way, axial motion remains limitlessly free. Also, bearing logic is provided to the steel bush. **The advantage of our new product G75 according to other similar product G29:** Extra stroke distances at unlimited axial direction and robust powerful centering is provided - free motion unlimited with low tolerance absorbs other pinking and tauting. It is presented unlimited motion advantages with compatibility to high speeds.
Linear bush G74: Quality control equipment - practical and reliable product for machine and mould production and device design.
For maintenance and cleaning: "Güvenal Signum (order code: W160110)" spray oil is used.



WARNING ! During production stage of **G74 - G75 - G149 - G175** products ball bearings are positioned at a certain angle. Other imitation products has no angle and the balls are at a single centre.

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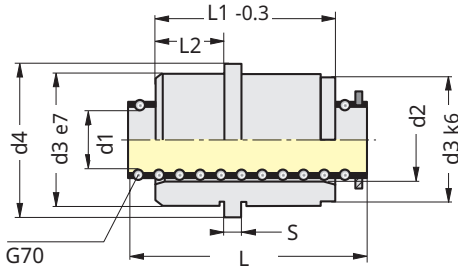
18

Guiding Components



Steel Bush + Ball Cage Bush Set

Code: **G29**

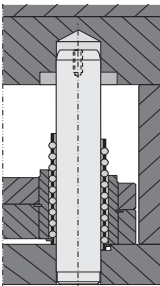


d1	L	L1	L2	d2	d3	d4	S	H
12	40	24	6	16	22	26	6	50
	56							82
18	45	34	11	24	30	35	6	44
	56							66
	71							96
30	56	54	21	38	46	52	6	32
	75							70
	95							110

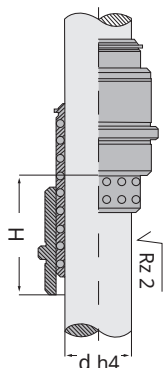


It provides more precision and rapid motion at ejector plates in injection moulds.

Mounting Example



more
precision
and rapid
motion



Order: **G29**. d1 x L

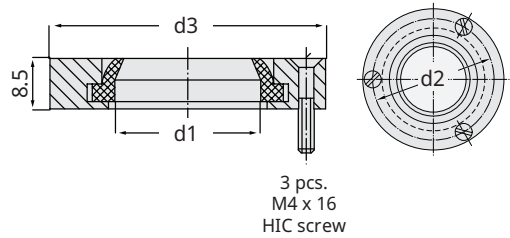


Ball Material: 1.3505 (100Cr6)

Cage: Ms58 **Steel Bush:** 1.7131 (16MnCr5)

Perforated Flange

Code: **G22**



Order Code	d1	d2	d3
G22 24	24	45	55
G22 25	25	45	55
G22 32	32	55	65
G22 30	30	55	65
G22 38	38	65	75
G22 40	40	65	75
G22 48	48	78	94
G22 50	50	78	94
G22 60	60	92	110
G22 63	63	92	110



Material: 1.7131 (16MnCr5)



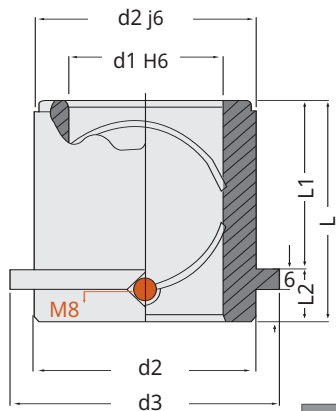
Guide Pillar Protection Flange:

Guide pillar protection flange protects dirt to be occurred at dies or thrust etc. Different various usage areas can be created in dies.

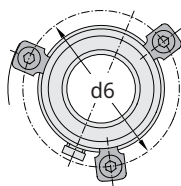


Guide Bush, Thick & Short Type
(with collar & lubricating)

Code: **G34K**

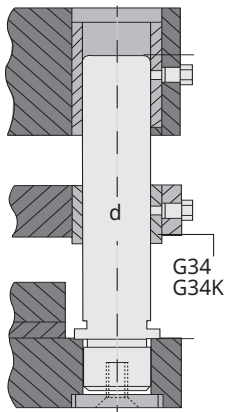


G100
Clamping Detail



4 pcs. clamp for
d1 = 38 mm and
larger sizes.

Mounting Example



Order:
G34K. d1 x L x L1

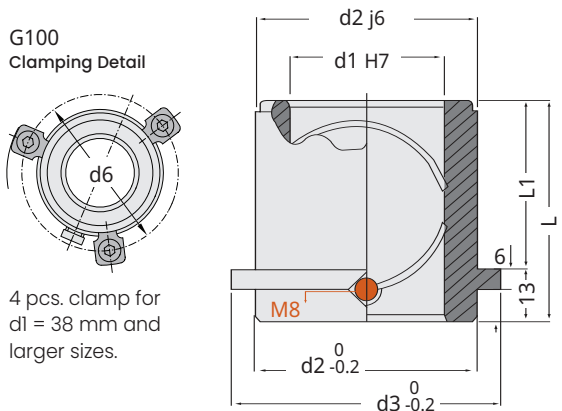
Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

Thick type steel bushes: To provide perpendicularity at bush and guide pillar with new design of **Güvenal Die Components** on product suitable flange fixation (balanced layout) on bearing area is created. During mounting, shrink fit should not be done. To avoid clamping and surface disorders at products by inserting soft tight products to the slots, mounting can be ensured with clamps.

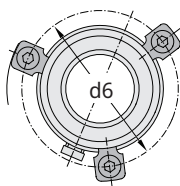


Guide Bush, Thin & Short Type
(with collar & lubricating)

Code: **G34**



G100
Clamping Detail



4 pcs. clamp for
d1 = 38 mm and
larger sizes.

Mounting Details:

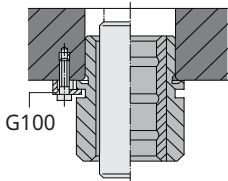
Code: **G34K**

Code: **G34**

d1	d6
20	52.4
25	60.8
30	69
40	79
50	93.2
63	108.4
80	131.5

d1	d6
16	46.2
20	46.2
25	51.4
30	56.4
40	66.8
50	77

d1	L	d2	d3	L1
16	36	28	34	23
20	36	28	34	23
25	36	34	39	23
30	50	39	44	37
40	50	50	54	37
50	60	60	64	47



Order:
G34. d1 x L x L1

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

For being **Güvenal Die Components** products having long life and maximum resistance against abrasion, unique precision has provided at surface roughness. This is also created specific bushing system.

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Guiding Components

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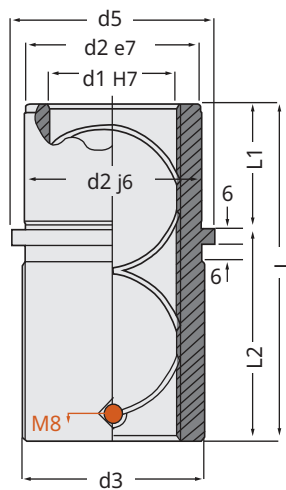
18

Guiding Components

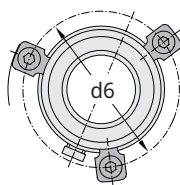


Guide Bush, Thin & Long Type
(with collar & lubricating)

Code: **G33**



G100
Clamping Detail



4 pcs. clamp for
d1 = 38 mm and
larger sizes.

Mounting Details:

Code: **G33**

Code: **G33K**

d1	L	d2	d3	L1	L2
16	70	28	34	23	47
20	70	28	34	23	47
25	80	34	39	23	57
30	90	39	44	37	53
40	100	50	54	37	63
50	120	60	64	47	73

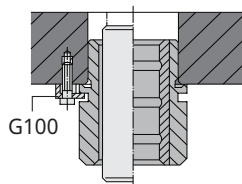
d1	d6
16	46.2
20	46.2
25	51.4
30	56.4
40	66.8
50	77

d1	d6
20	52.4
25	60.8
30	69
40	79
50	93.2
63	108.4
80	131.5



Order:
G33 d1 x L x L1

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

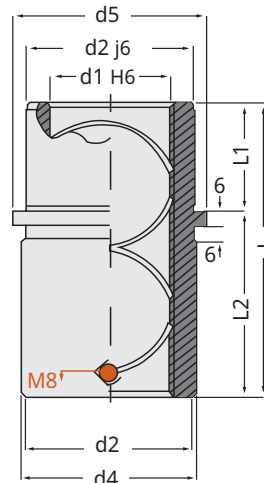


For being **Güvenal Die Components** products having long life and maximum resistance against abrasion, unique precision has provided at surface roughness. This is also created specific bushing system.

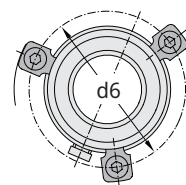


Guide Bush, Thick & Long Type
(for heavy dies / with collar & lubricating)

Code: **G33K**

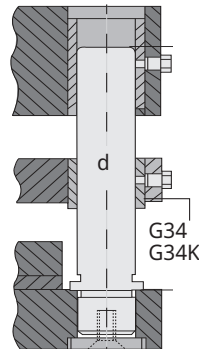


G100
Clamping Detail



4 pcs. clamp for
d1 = 38 mm and
larger sizes.

Mounting Example



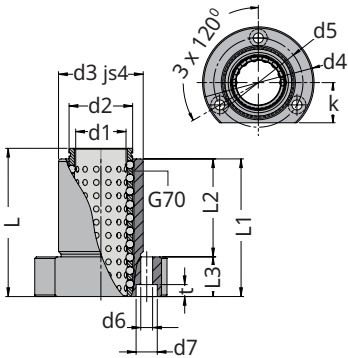
Order:
G33K d1 x L x L1

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

d1	L	d2	d4	d5	L1	L2
19	43	32	39	40	23	20
20	59					36
24	59	40	46	48	23	36
25	79					56
32	75	48	53	56	30	45
30	93					63
38	82	58	63	66	37	45
40	108					71
48	97	70	77	80	47	50
50	127					80
60	116	85	92	95	60	56
63	150					90
80	120	105	115	118	60	60
	150					90



Thick type steel bushes: Please don't use two products without oil groove together. One of product in guide pillar or bushes should be used as set with oil groove. While using guide pillar and bush sets, should be considered that both of them have same brand. Because, grinding tolerance can be different in different guide pillars and bushes. Also, this can be caused big problems during both mounting and operating. The dimensions not giving their tolerance are subjected to general tolerance (DIN 7168).



Code: **G72 - 1**

Guide Bush with Flange, for Ball Cage

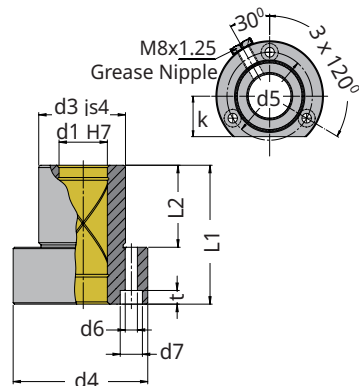
- * 3 pcs "IMB" coded screws are used to fixed product.
- * Clamping Screws & "G70" coded Ball Cage Bush should be ordered separately.



Order:
G72 - 1. d1 x L1 x L2

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

d1	d2	d3	d4	d5	d6	d7	t	k	L	L1	L2	L3
19	25	32	50	40	4.5	8	5	18	45	38	23	15
20	26								56	45	30	
									72	52	37	
24	30	40	63	50	5.5	10	6	23	45	38	23	15
25	31								71	55	30	
									72	62	37	25
30	38	48	72	58	5.5	10	6	28	56	45	30	15
32	40								71	62	37	
									80	72	47	25
38	46	58	85	70	7	11	7	33	63	55	30	25
40	48								80	67	37	
									95	77	47	30
48	56	70	104	86	9	15	9	38	80	62	37	25
50	58								95	89	47	
									120	102	60	42
60	68	85	120	100	9	15	9	46	95	89	47	
63	71								120	102	60	42
80	92	105	148	125	12	18	12	56	140	125	75	50



Code: **G72 - 2**

Guide Bush with Flange, Bronze Coated

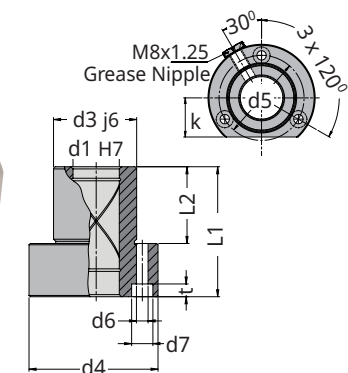
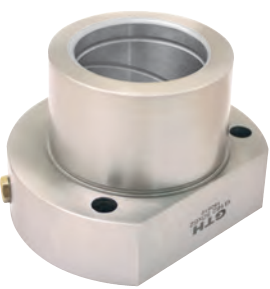
- * 3 pcs "IMB" coded screws are used to fixed product.
- * Clamping Screws should be ordered separately.



Order:
G72 - 2. d1 x L1 x L2

Material: 1.1213 (Cf53)
Bronze Casting

d1	d3	d4	d5	d6	d7	t	k	L1	L2
19	32	50	40	4.5	8	5	18	38	23
20								45	30
								52	37
24	40	63	50	5.5	10	6	23	38	23
25								55	30
								62	37
30	48	72	58	5.5	10	6	28	45	30
32								62	37
								72	47
38	58	85	70	6.6	11	7	33	55	30
40								67	37
								77	47
48	70	104	86	9	15	9	38	62	37
50								89	47
								102	60
60	85	120	100	9	15	9	46	89	47
63								102	60
80	105	146	125	11	18	12	56	125	75



Code: **G72 - 3**

Guide Bush with Flange, Steel

- * 3 pcs "IMB" coded screws are used to fixed product.
- * Clamping Screws should be ordered separately.



Order:
G72 - 3. d1 x L1 x L2

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

d1	d3	d4	d5	d6	d7	t	k	L1	L2
19	32	50	40	4.5	8	5	18	38	23
20								45	30
								52	37
24	40	63	50	5.5	10	6	23	38	23
25								55	30
								62	37
30	48	72	58	5.5	10	6	28	45	30
32								62	37
								72	47
38	58	85	70	6.6	11	7	33	55	30
40								67	37
								77	47
48	70	104	86	9	15	9	38	62	37
50								89	47
								102	60
60	85	120	100	9	15	9	46	89	47
63								102	60
80	105	146	125	11	18	12	56	125	75

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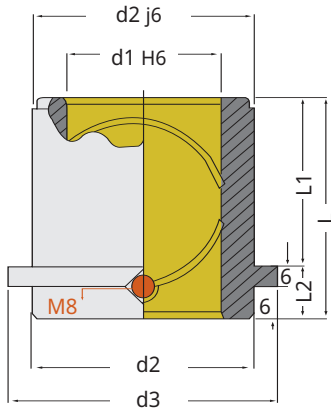
18

Guiding Components

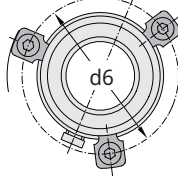


Code: **G36**

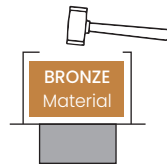
Guide Bush, Bronze Coated & Short Type



G100
Clamping Detail



4 pcs. clamp for
d1 = 38 mm and
larger sizes.



Positioning :
Pls. do not make
direct fitting.
Precision assembly
recommended
with bronze / brass.

Mounting Details:

Code: **G36**

Code: **G35**

d1	d6	d1	d6
20	48.8	20	48.8
25	56.8	25	56.8
30	64.8	30	64.8
40	74.8	40	74.8
50	86.8	50	86.8
63	101.8	63	101.8
80	121.8	80	121.8



Order: **G36**. d1 x L x L1

Material: 1.1213 (Cf53)

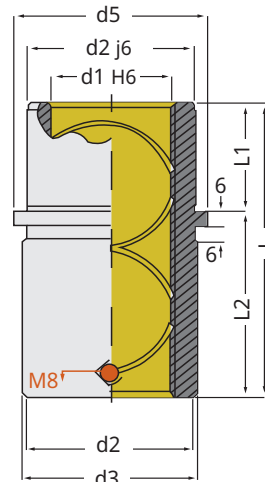
Bronze: SnBz 10 HB 160 - 180

It has helical lubrication and inner lubrication system, its position can be lubricated with grease nipple from outside. Finally, equal distance to all lubrication points is ensured. Due to oil intake feature of bronze coated to inside it, there is no need for frequent lubrication, recommended operating speed is 15-30 mt / min. If some conditions such as lubrication clearance, stroke length, radial load and heat distribution are provided, to reach speed as 600 - 800 stroke per minute is possible.

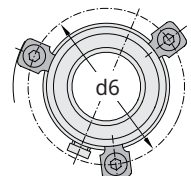


Code: **G35**

Guide Bush, Bronze Coated & Long Type

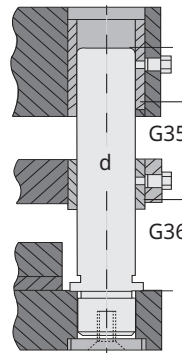


G100
Clamping Detail



4 pcs. clamp for
d1 = 38 mm and
larger sizes.

Mounting Example



IMPORTANT!

Pls. lubricate from
grease nipple
on bush
occasionally.



Order: **G35**. d1 x L x L1

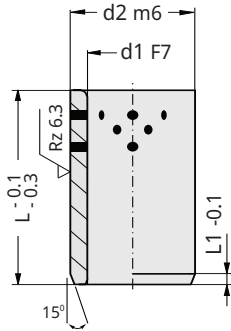
Material: 1.1213 (Cf53)

Bronze: SnBz 10 HB 160 - 180

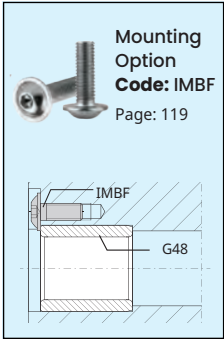
Hardened steel bushing absorbs strong side thrust. Thus, vibrationless rigid operation is ensured and bronze bush is protected against strong thrust made from end head, inner layer coated bronze with centrifugal technique is resistant against abrasion factor with its high quality. In addition with its excellent heat dissipation feature is ensured rapid distribution of excessive friction temperature.

d1	L	d2	d3	d5	L1	L2
19	43					20
20	59	32	39	40	23	36
24	59					36
25	79	40	46	48	23	56
32	75					45
30	93	48	53	56	30	63
38	82					45
40	108	58	63	66	37	71
48	97					50
50	127	70	77	80	47	80
60	116					56
63	150	85	92	95	60	90
80	120					60
	150	105	115	118	60	90

To prevent reverse
closing of the die, 3pcs
main dimensions (d1)
can be used together
with 1pcs intermediate
dimension (d1: 19 - 24 -
32 - 38 - 48 - 60 mm).



Working
Direction



Mounting
Option
Code: IMBF
Page: 119

Guide Bush - Plain / Self-Lubricating

Code: **G48**

* Hole tolerance
for shrink fit: H7



They are self-lubricating bushes, especially suitable for use in straight pillars of die systems and machines such as hydraulic presses and injection moulding machines. They are compatible with areas where magnetic effects are undesirable and have a wide range of applications in industrial use.

Large Stock Availability

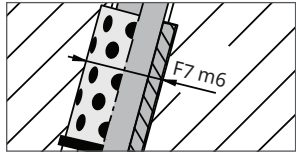
d1	d2	L	L1
8	12	8	2
		10	
		15	
10	14	10	2
		12	
		15	
12	18	20	2
		25	
		30	
		35	
		40	
15	22	45	2
		50	
		60	
		70	
		80	
16	22	100	2
		120	
		140	
		160	
		180	
18	28	20	4
		25	
		30	
		35	
		40	
20	30	50	4
		60	
		70	
		80	
		90	
24	35	100	4
		120	
		140	
		160	
		180	

d1	d2	L	L1
25	33	20	4
		25	
		30	
		35	
		40	
30	40	45	4
		50	
		60	
		70	
		80	
35	45	90	4
		100	
		110	
		120	
		130	
38	50	140	4
		160	
		180	
		200	
		220	
40	55	240	4
		260	
		280	
		300	
		320	
42	60	340	4
		360	
		380	
		400	
		420	
45	65	440	4
		460	
		480	
		500	
		520	

d1	d2	L	L1
48	60	30	4
		40	
		50	
		60	
		70	
50	65	80	4
		90	
		100	
		110	
		120	
60	75	130	4
		140	
		150	
		160	
		170	
80	100	180	4
		200	
		220	
		240	
		260	
100	120	280	4
		300	
		320	
		340	
		360	
120	140	380	4
		400	
		420	
		440	
		460	

d1	d2	L	L1
150	170	50	4
		60	
		80	
		100	
		120	
160	180	140	4
		160	
		180	
		200	
		220	

Mounting Example



Order:
G48. d1 x d2 x L

Material:
Bronze + graphite inserts

**Customised
Guide Units**

Upon request, Güvenal manufactures highly complex and precise guide elements based on customer specifications and provides measurement protocols if needed. This includes both the reworking of catalogue products and the production of entirely new items.

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Guiding Components

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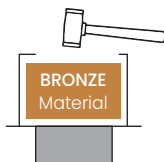
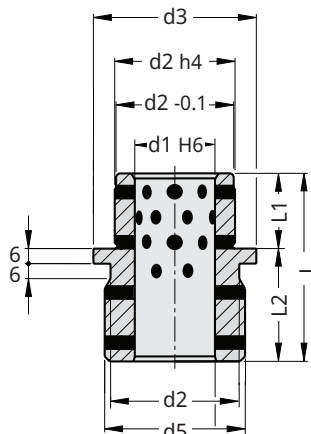
Working
Direction

Code: **G45**

Guide Bush with Centre Collar, Self-Lubricating

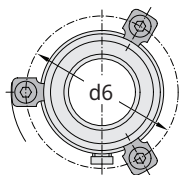
DIN 9834 / ISO 9448

Heat Resistance: < 150°C



Positioning :
Pls. do not make
direct fitting.
Precision assembly
recommended
with bronze / brass.

d1	L	d2	d3	d5	d6	L1	L2
19	32	32	40	-	57.4	20	12
20	50			34			30
20	70						50
24	35	40	48	-	65.4	23	12
24	60			42			37
25	80						57
32	42	48	56	-	73.4	30	12
32	75			50			45
30	95						65
38	50	58	66	-	83.4	35	15
40	80			60			45
40	110						75
48	65	70	80	-	97.4	45	20
48	90			74			45
50	120						75



G101A
Clamping
Detail

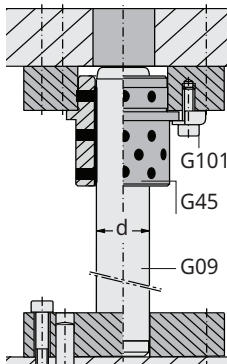


Order: **G45**. d1 x L



Material:

Bronze + Graphite inserts



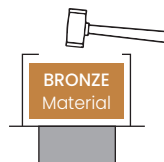
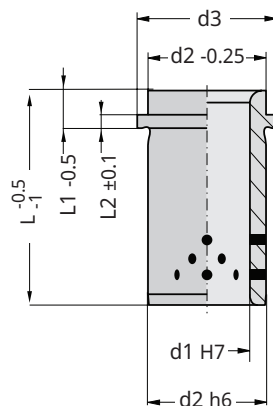
Working
Direction

Code: **G44**

Guide Bush with Collar, Self-Lubricating

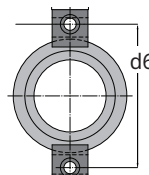
DIN 9834 / ISO 9448

Heat Resistance: < 150°C



Positioning :
Pls. do not make
direct fitting.
Precision assembly
recommended
with bronze / brass.

d1	L	d2	d3	L1	L2	d6
20	32	28	34	12	6.3	53.4
25	40	32	40	10		57.4
30	50	40	50	12		65.4
32	50	40	50	12		65.4
40	63	50	63	15	G102B or G120C	
50	71	63	71	17		
63	80	80	90	19		122.4
80	100	100	112	22	10	142.4
100	125	125	140	21		167.4
125	160	160	180	30		202.4
160	200	200	220	32		242.4



G102
Clamping
Detail

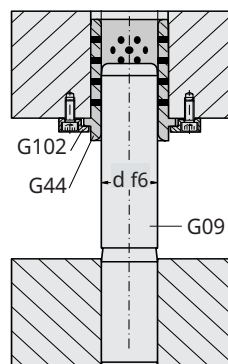


Order: **G44**. d1 x L



Material:

Bronze + Graphite inserts



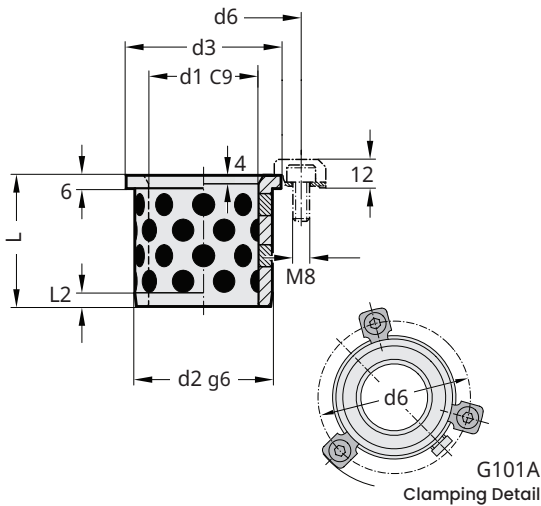


Guide Bush, Headed - NAAMS

Code: **G41**

Self-Lubricating

Heat Resistance: < 150°C



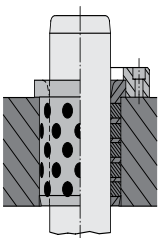
d1	L	d2	d3	L2	d6
25	40	32	40	4	57.4
32	50	40	50	4	67.4
40	55	50	63	5	80.4
50	63	63	71	6	88.4
63	75	80	90	8	107.4
80	90	100	112	10	129.4
100	115	125	140	12	157.4
125	138	160	180	12	197.4



Positioning :
Pls. do not make direct fitting.
Precision assembly recommended
with bronze / brass.

 Order: **G41.** d1 x L

 **Material:**
Bronze + Graphite inserts

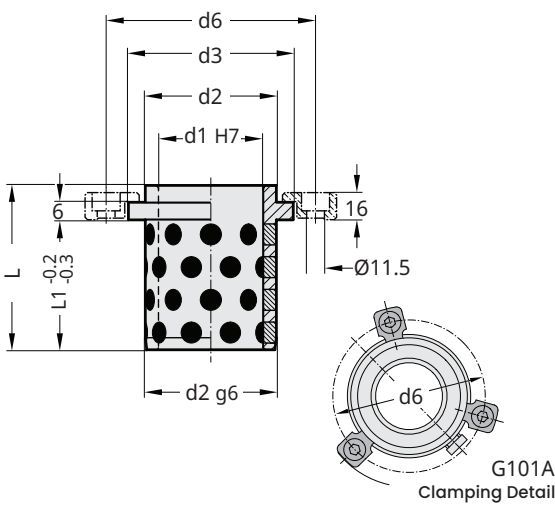


Guide Bush with Collar - NAAMS

Code: **G40**

Self-Lubricating

Heat Resistance: < 150°C



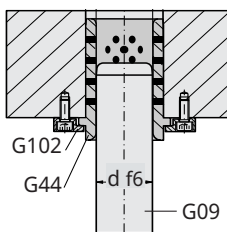
d1	L	d2	d3	d6	L1
20	40	28	34	51.4	30
25	40	32	40	57.4	30
30	50	40	50	67.4	40
32	50	40	50	67.4	40
40	63	50	63	80.4	50
50	71	63	71	88.4	56
63	80	80	90	107.4	63
80	100	100	112	129.4	80
100	125	125	140	157.4	106
125	160	160	180	197.4	132



Positioning :
Pls. do not make direct fitting.
Precision assembly recommended
with bronze / brass.

 Order: **G40.** d1 x L

 **Material:**
Bronze + Graphite inserts



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Guiding Components

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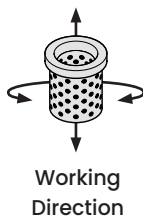
14

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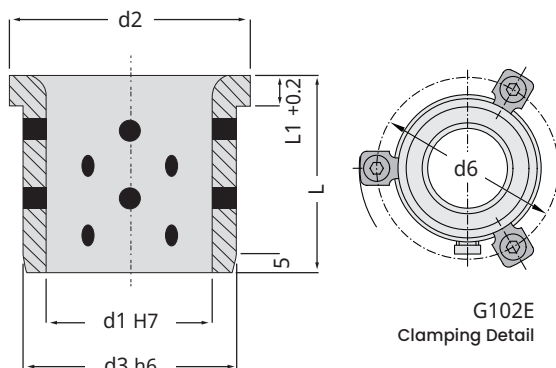


Guide Bush Headed

Code: **G42**

Self-Lubricating

Heat Resistance: < 150°C



d1	L	d3	d2	L1	d6
20	35	28	36	8	49.4
25	40	32	40		53.4
30	55	40	50		63.4
32	55	40	50		63.4
40	70	50	60		73.4
42	70	50	60		73.4
50	75	63	75	12	95.4
52	75	63	75		95.4
63	80	80	90		110.4
80	100	100	110		130.4
100	125	125	135		155.4



Order:
G42. d1 x L



Material:
Bronze + Graphite inserts



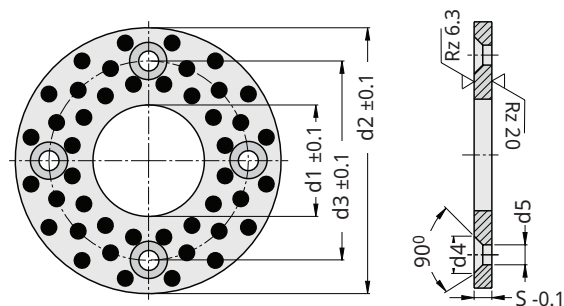
Thrust Washer - Perforated

Code: **G107**

Self-Lubricating

Heat Resistance: < 150°C

- * Spare part for in-die applications
- * Spare part in core systems etc. in injection moulds



d1	d2	d3	S	d4	d5	Hole
12.2	40	28	3	6.9	3	2
16.2	50	28	3	6.9	3	2
20.2	50	35	5	11.5	5.5	2
25.2	55	40	5	11.5	5.5	2
30.2	60	45	5	11.5	5.5	2
35.2	70	50	5	11.5	5.5	2
40.2	80	60	7	13.8	6.6	2
45.3	90	67.5	7	13.8	6.6	2
50.3	100	75	8	13.8	6.6	4
60.3	120	90	8	18.3	9	4
70.3	130	100	10	18.3	9	4
80.3	150	120	10	18.3	9	4



Order:
G107. d1 x d2



Material:
Bronze + Graphite inserts

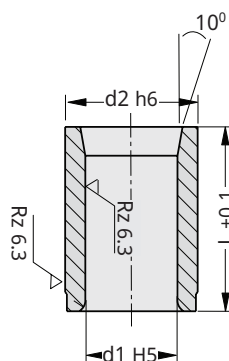
Guiding Components

NEW



Bronze Bush - Plain

Code: **G48 - 1**

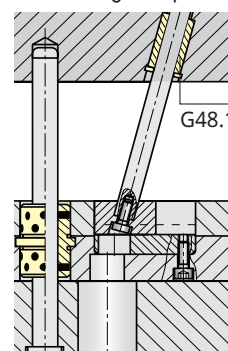


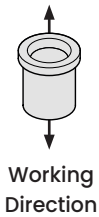
d1	L	d2
10	14	14
	20	
12	20	17
	25	
16	25	22
	32	



Order:
G48 - 1. d1 x L

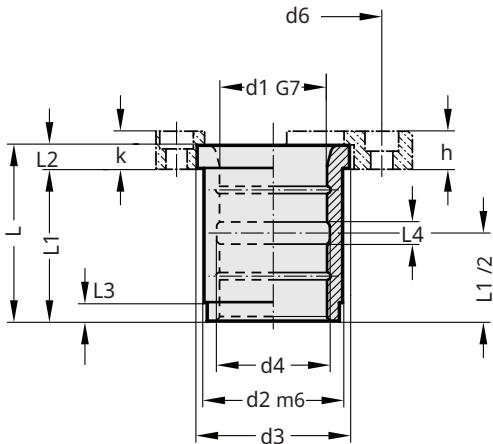
Mounting Example





Guide Bush, Bronze
Heat Resistance: < 150°C

Code: **G86**



d1	L	d2	d3	d4	d6	L1	L2	L3	L4	h	k
20	32	28	32	22	-	28	4	3	5	10	-
25	40	35	40	27	-	35	5	5	5	10	-
32	50	44	50	34	-	44	6	8	5	12	-
40	63	52	60	42	73.4	55	8	8	8	12	12
50	80	63	71	52	87.4	70	10	8	10	16	16
63	100	80	90	65	110.4	88	12	10	12	20	20
80	125	100	112	82	132.4	109	16	10	16	25	25
100	160	125	140	102	160.4	140	20	10	20	32	32



Positioning :
Pls. do not make direct fitting.
Precision assembly recommended
with bronze / brass.

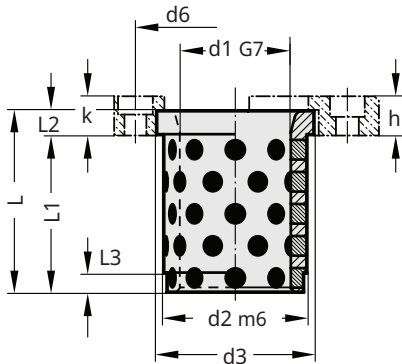


Order: **G86**. d1 x L

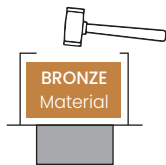


Guide Bush, Headed - CNOMO
Self-Lubricating

Code: **G43**



d1	L	d2	d3	d6	L1	L2	L3	h	k
20	32	28	32	-	28	4	3	10	-
25	40	35	40	-	35	5	5	10	-
32	50	44	50	-	44	6	5	12	-
40	63	52	60	73.4	55	8	8	12	12
50	80	63	71	87.4	70	10	8	16	16
63	100	80	90	110.4	88	12	10	20	20
80	125	100	112	132.4	109	16	10	25	25
100	160	125	140	160.4	140	20	10	32	32



Positioning :
Pls. do not make direct fitting.
Precision assembly recommended
with bronze / brass.



Order: **G43**. d1 x L



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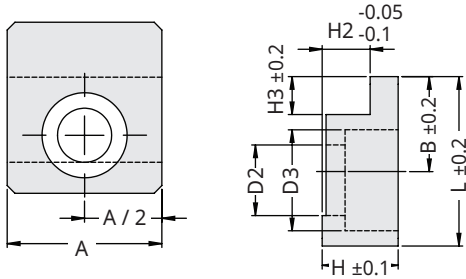
18

>> Clamps for Guiding Components



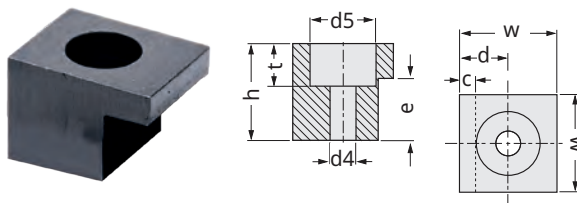
Guide Bush Clamp

Code: **G102**



Order Code	d - d1 Pillar / Bush	A	B	L	H	H2	H3	D2	D3	Screw
G102A	25 - 32 40 - 50	20	12.5	20	10	6.3	5	7	11	M6x16
G102B	63 - 80 100 - 125 160	20	15	25	12	6.3	5	9	15	M8x20
G102C	63 - 80 100 - 125	25	21	32	16	6.3	10	11	18	M10x20
G102D	63 - 80 100 - 125 160	32	21	32	16	10	10	11.5	17.5	M10x20

It is used to fix from cap or flange portion at guide pillar and self lubricating bush. While using for self-lubricating guide bushes and other bush components with bushes for $\varnothing \leq 63$ - 2 pcs. and for $\varnothing \geq 80$ - 3 pcs. clamps are used. Mounting screws should be supplied separately.



Bush Clamp

Code: **G102E**

Bush	w	p	h	e	c	t	d4	d5
40	18	9.5	12	8	3	7	6.6	11
50	22	12	16	10	4	9	9	15
63	26	15	20	12	5	11	11	18
80	26	15	25	16	5	11	11	18
100	26	15	32	20	5	11	11	18

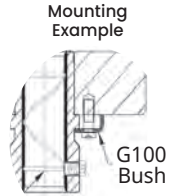
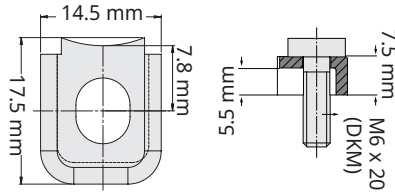


Order: **G102E**. Bush

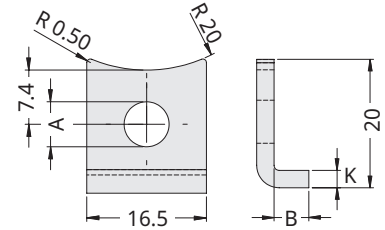


Guide Pillar & Bush Clamp

Order Code: **G100**



Can be used in clamping of demountable guide pillars (G10 - G15 - G01 - G08) in clamping system of guide pillars.

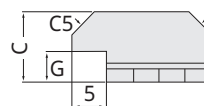
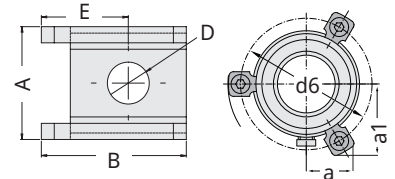


Guide Pillar & Bush Clamp

Code: **G143**

Order Code	Form	Screw	A	B	K
G143A	A	M6	6.20	4.80	2.5
G143B	B	M8	8.40	5.80	4

Thick and walled clamps used in clamping of guide pillar / bush sets in dies.



Screw / Form A
M6 x 20

Screw / Form B
M8 x 20

Guide Bush Clamp

Code: **G101**

Order Code	Bush	A	B	C	D	E	G
G101A	32 / 40 50 / 63 63 / 80 100 / 115	17.5	22.5	12	6.5	13.5	6
G101B	32 / 40 50 / 63 63 / 80 100 / 115 125	21	25.5	13.5	8.5	15	5.5

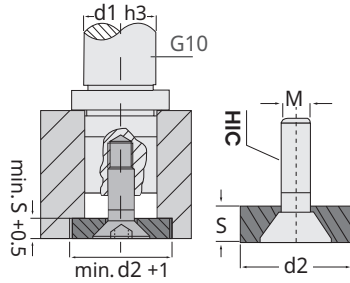
While using for self-lubricating guide bushes and other bush components with bushes for $\varnothing \leq 63$ 2 pcs. and for $\varnothing \geq 80$ 3 pcs. clamps are used. Mounting screws are supplied separately.



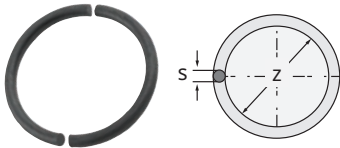
Code: **G110**

Mounting Flange

Guide pillar fixation & Support washer



Order Code	d2	d1 Pillar Diameter	S Flange	M Screw
G11022	22	Ø 15 / 16	5.5	M8 x 20
G11025	25	Ø 19 / 20		
G11032	32	Ø 24 / 25		
G11040	40	Ø 32 / 30	7.5	
G11050	50	Ø 38 / 40	9.5	
G11060	60	Ø 48 / 50		
G11073	73	Ø 60 / 63		
G11093	93	Ø 80	12	M12 x 20



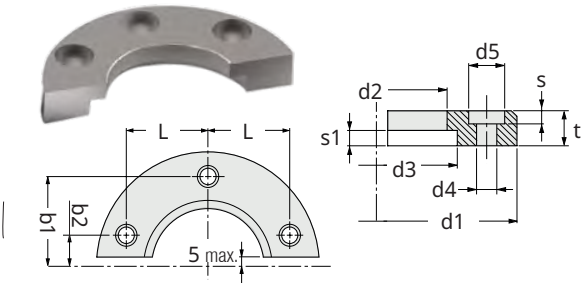
Code: **G112**

Circlip

G02 - G03 - G04 - G05 - G06 - G07
G09 - G20 = Compatible Guide Pillars

Order: **G112. Pillar**

Pillar	z	s
25	22.5	2.5
32	28	4
40	36	4
50	46	4
63	57	6
80	74	6
100	94	6



Bush Holder Flange

Code: **G118**

Bush	d1	d2	d3	d4	d5	t	s	s1	L	b1	b2
25	72	12	41	6.6	32	10	7	5	20	-	20
32	80	12	51	6.6	40	12	7	6	25	-	21
40	100	12	61	6.6	50	12	7	8	38.5	41	14
50	125	16	72	9	63	16	9	10	46	49	17
63	140	18	91	11	80	20	11	12	55	57.5	17
80	180	22	113	14	100	25	13	16	70	72	20
100	200	22	141	14	125	32	13	20	81	85	25



Order: **G118. Bush**

Reference:
CNOMO

Hex-socket Button Head Screw with Flange

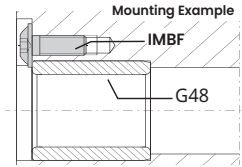
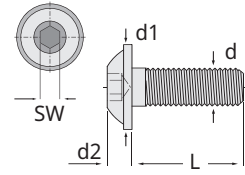
Code: **IMBF**

ISO 7380-2
10.9 - Zinc Plated



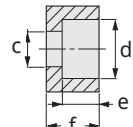
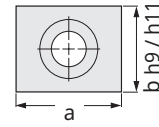
NEW

d	L	d1	d2	SW
M6	10	13.6	3.3	4
	12			
	16			
M8	16	17.8	4.4	5
	20			
M10	20	21.9	5.5	6



Order:
IMBF. d x L

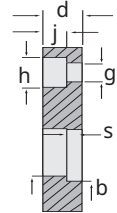
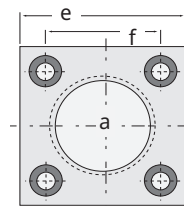
NEW



Holder Wedge Block (Ref: TSKMA)

Code: **G171**

Order Code	b	a	c	d	e	f	Tol.
G171 A	12	16	5.5	10	5	8	h9
G171 B	12	20	5.5	10	5	8	h9
G171 C	16	20	6.6	11	7	10	h9
G171 D	20	60	9	14	10	20	h11
G171 E	25	80	11	20	12	25	h11
G171 F	25	125	11	20	12	25	h11
G171 G	30	80	11	20	12	30	h11
G171 H	30	125	11	20	12	30	h11



Square Flange for Guide Pillar

Code: **G119**

"G03 - G04 - G05" = Compatible Guide Pillars

a Pillar	b	d	e	f	g	h	j	s
25	28	10	45	31	6.6	11	7	2.7
32	37	10	56	36	6.6	11	7	4.2
40	45	12	70	50	6.6	11	7	4.2
50	55	14	80	55	9	16	9	4.2
63	70	18	100	70	11	18	11	6.2
80	87	20	110	80	13	22	14	6.2
100	107	20	140	100	13	22	14	6.2



Order: **G119. a (pillar)**

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Guiding Components

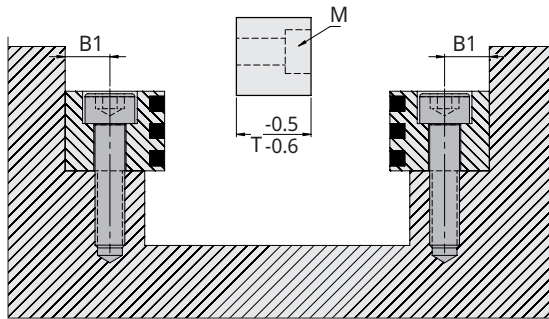
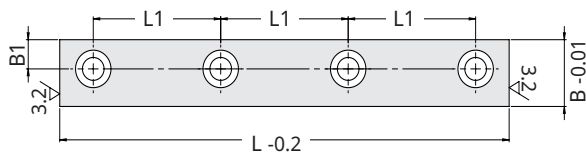
NEW



Wear Plate for Core Side

Self-Lubricating - Heat Resistance: 150°C

Code: **G172**



B	T	L	L1	B1	Hole	M
20	12	80	60	9	2	M6
		125	52.5			
	16	100	40		3	
		160	70			
25	22	125	50.5	11	4	M8
		200	58		3	
	30	160	68		4	
		250	74			
32	38	160	64	14	3	M10
		250	72		4	



Order:
G172. B x L

Material:

Bronze + graphite inserts

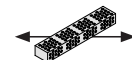


3D CAD
FILES
GÜVENAL



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3D CAD - Formats:
CATIA, STEP, IGES 3D, X_T

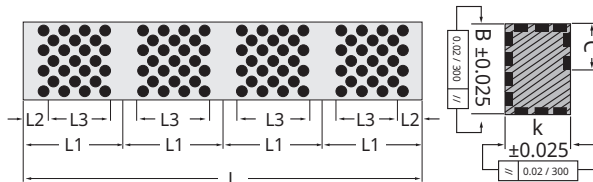


Working Direction

Wear Plate Two-Way Sliding Type

Self-Lubricating - Heat Resistance: 150°C

Code: **G123**



k	B	L	C	L1	L2	L3
10.3	15.3	75	6	25	3	6
		100				
		150				
		200				
		250				
		300				
15.3	25.3	105	8	35	4	8
		140				
		175				
		210				
		245				
		280				
		315				
		350				
		385				
		420				
25.3	35.3	135	12	45	5	10
		180				
		225				
		270				
		315				
		360				
		405				
		450				
		496				
35.3	45.3	165	16	55	6	12
		220				
		275				
		330				
		385				
		440				
		495				



Order:
G123. k x L x B

Material:

Bronze + graphite inserts



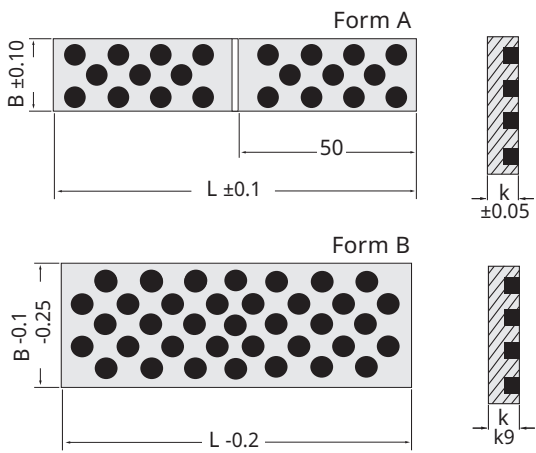
Die & Mould producers and users can be used by ordering standard product produced in 'L' length and cutting pieces suitable to their needs.

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- 18

Guiding Components



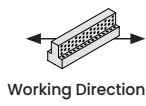
Wear Plate, Plain Type Code: **G122**
Self-Lubricating - Heat Resistance: 150°C



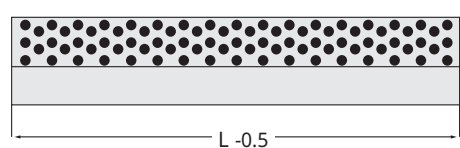
k	L	B	Form
5.3	302	20	A
		35	
		50	
10.3	302	20	A
		35	
		50	
5	50	25	B
	71		
	90		
5	50	40	B
	71		
	80		
	90		
6	100	40	B
	125		
	160	63	
	200		

Order: **G122.** k x L x B x Form

Long strip wear plates is compatible for use by perforated connection holes and cutting by user (in desired length). Working surfaces should be lubricated for once.

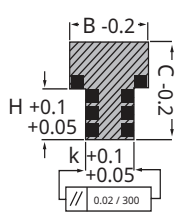


Wear Plate "T" Shaped Code: **G121**
Self-Lubricating - Heat Resistance: 150°C

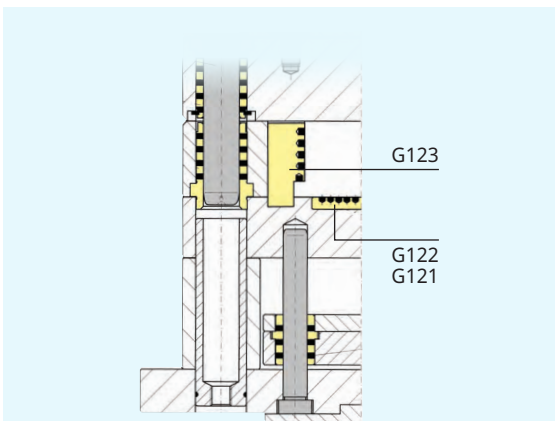


All wear plates friction surfaces are ground and all corners of wear plates are chamfered.

Order: **G121.** C x L



C	L	B	k	H
12	350	18	8	5
25	350	22	12	15
35	350	28	18	20



Usage of self-lub. wear plates on injection moulds:

Self-lubricating components provides load carrying capacity beyond expectations in low sliding speeds and a wide temperature range. The graphite inserts are positioned with an appropriate geometric structure. By this means maximum lubricating effect is achieved during sliding. They especially work better with hardened and ground bearings. Sliding surfaces should be slightly lubricated before starting to work.

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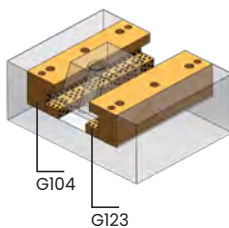
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Guiding Components



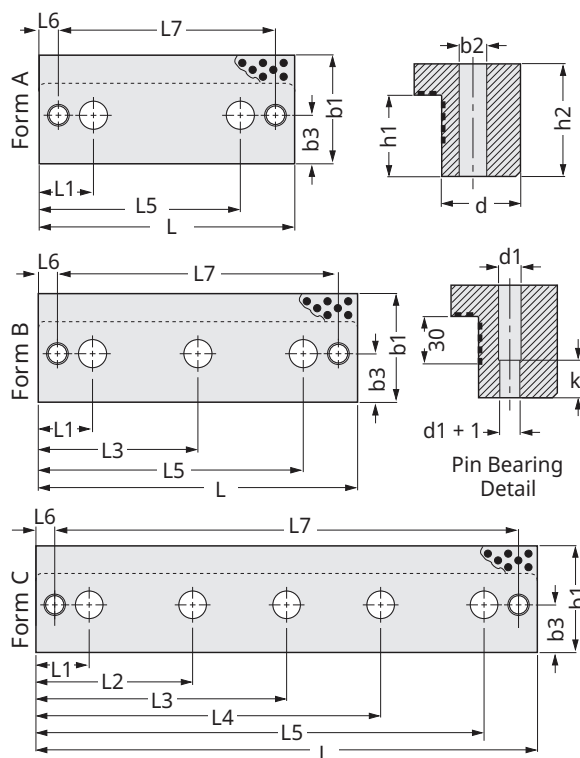
Mounting example



Wear Plate, "L" Shaped

Code: **G104**

Self-Lubricating & Two-Way Sliding Type



Form	b1	h1	b2	b3	d	d1	k	h2
A	55	55	37	20	13.5	10	23	39
A	70	75	50	30	17.5	12	35	55
A								
B								
C	85	90	63	38	22	16	45	65
A								
B								
C								

Form	L	L1	L2	L3	L4	L5	L6	L7
A	100	27.5	-	-	-	72.5	10	80
A	160					132.5		140
A	160					125		135
A	200	35	-	-	-	165	12.5	175
B	250					215		225
C	400					365		375
A	160	42.5	-	-	-	117.5	15	130
A	200					157.5		170
B	250					207.5		220
C	400					357.5		370



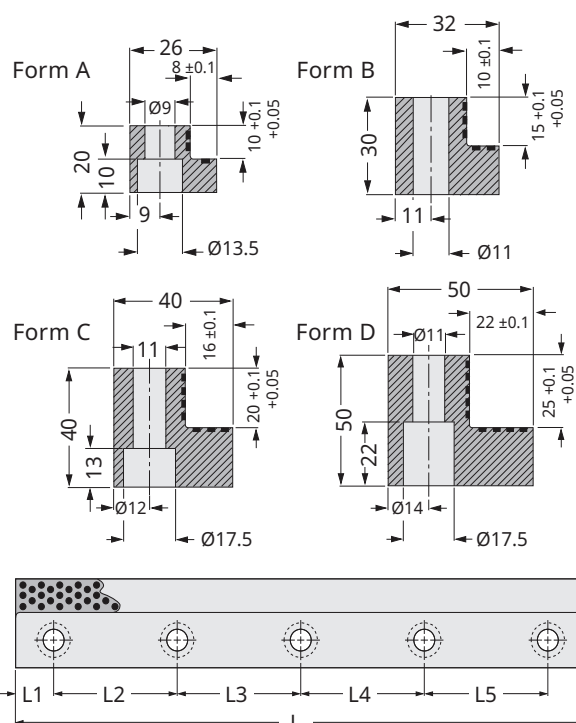
Order:
G104. b1 x h1 x L

Material:
Bronze + graphite inserts

Wear Plate, "L" Shaped

Code: **G105**

Self-Lubricating & Two-Way Sliding Type



Advantages of Self-Lub. Wear Plate:

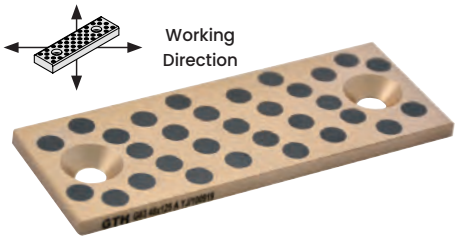
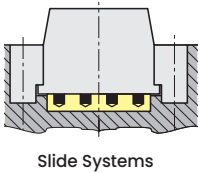
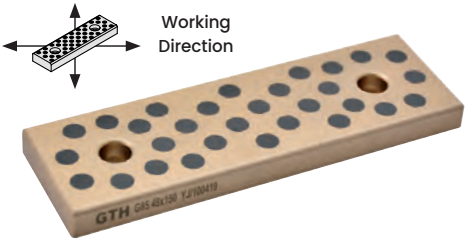
- * Highly compatible with sudden movements.
- * Maximum load carrying capacity at low speeds.
- * Can be used under water or with chemical solutions.
- * Wide range of temperature resistance.
- * Resistant to impact in case of vibration.

Form	L	L1	L2	L3	L4	L5	Hole
A	100	20	60	-	-	-	2
	150		55	55	-		3
	200		55	50	55		4
B	100	20	60	-	-	-	2
	150		55	55	-		3
	200		55	50	55		4
C	160	15	130	-	-	-	2
	250			80	-		3
D	200	20	55	50	55	-	4
	250		70	70	70	-	
	300		65	65	65	65	
	350		80	75	75	80	5



Order:
G105. Form x L

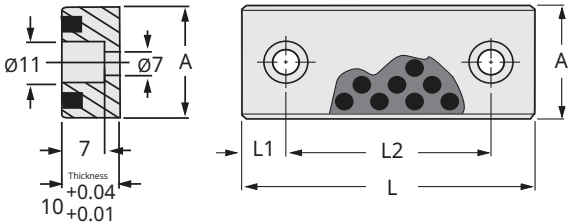
Material:
Bronze + graphite inserts



Wear Plate, Self-Lubricating

Code: **G85**

Thickness: 10 mm / with 2 holes



A	L	L1	L2	Hole
18	75	15	45	2 pcs. M6x20
	100	25	50	
	125		75	
	150		100	
28	75	15	45	2 pcs. M6x20
	100	25	50	
	125		75	
	150		100	
38	75	15	45	2 pcs. M6x20
	100	25	50	
	125		75	
	150		100	
48	75	15	45	2 pcs. M6x20
	100	25	50	
	125		75	
	150		100	



Order: **G85**. A x L

Material:
Bronze + Graphite Inserts

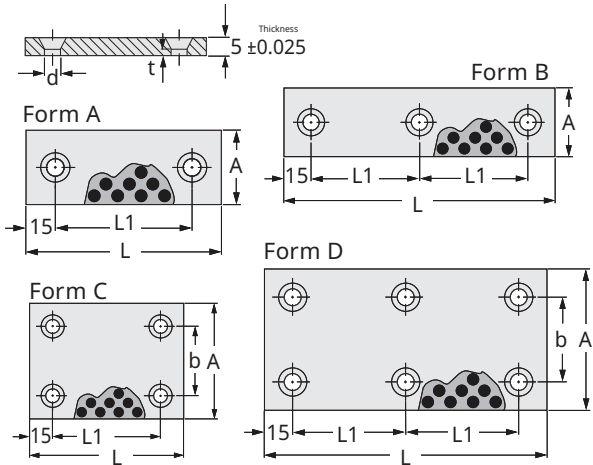


Self-lubricating components provides load carrying capacity beyond expectations in low sliding speeds and a wide temperature range. The graphite inserts are positioned with an appropriate geometric structure. By this means, maximum lubricating effect is achieved during sliding. They especially work better with hardened and ground bearings. Sliding surfaces should be slightly lubricated with lithium grease during mounting before starting to work. 25-30% of the surface in plain, self-lubricating bearings and pillar bearings are formed with graphite inserts. The part corresponding to self-lubricating bearing component should be ground and fixed to the sliding axis in parallel.

Wear Plate, Self-Lubricating

Code: **G83**

Thickness: 5 mm / Form: A - B - C - D



A	L	L1	b	d	t	Form	Screw
18	50	20	-	6.5	1	A	2 pcs. M6x10
	75	45				B	3 pcs.
	100	70					
	150	60				B	3 pcs.
28	50	20	-	9	0.5	A	2 pcs. M8x10
	75	45				B	3 pcs.
	100	70					
	150	60				B	3 pcs.
38	50	20	-	9	0.5	A	2 pcs. M8x16
	75	45				B	3 pcs.
	100	70					
	150	60				B	3 pcs.
48	75	45	-	9	0.5	A	2 pcs. M8x16
	100	70				B	3 pcs.
	125	95					
	150	60				B	3 pcs.
75	75	45	45	9	0.5	C	4 pcs. M8x16
	100	70				D	6 pcs.
	125	95					
	150	60				D	6 pcs.
100	100	70	70	9	0.5	C	4 pcs. M8x16
	125	95				D	6 pcs.
	150	60				D	6 pcs.



Order: **G83**. A x L

Material:
Bronze + Graphite Inserts



Self-lubricating plates are generally preferred because of their strength against lateral loads in large dies or injection moulds. They are maintenance-free, self-lubricating and work long time.

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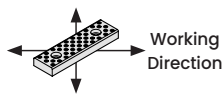
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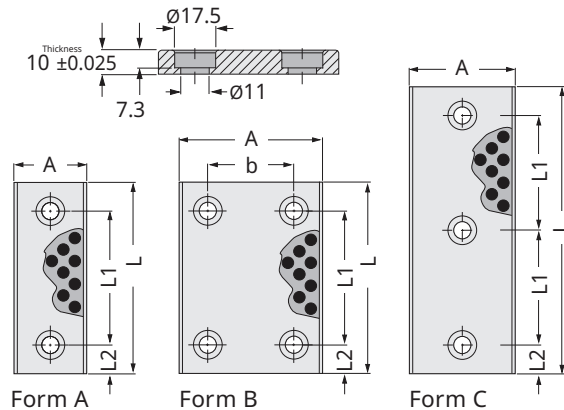
Guiding Components



Wear Plate

Code: **G84**

Self-Lubricating, Thickness: 10 mm / Form: A - B - C



A	L	L1	L2	b	Form
28	75	45	15	-	A
	100	50			
	125	75	25		
	150	100			
38	75	45	15	-	A
	100	50			
	125	75	25		
	150	100			
48	75	45	15	-	A
	100	50			
	125	75	25		
	150	100			
58	75	45	15	-	A
	100	50			
	125	75	25		

A	L	L1	L2	b	Form
58	150		25	-	A
	100		50		
	200				
75	75	45	15	-	A
	100	50			
	125	75	25		
	150	100			
100	100	50		-	B
	125	75			
	150	100	25		
	200	150			
125	150	100		-	B
	200	150	25		
	250	200			
150	150	100		-	B
	200	150	25		
	250	200			



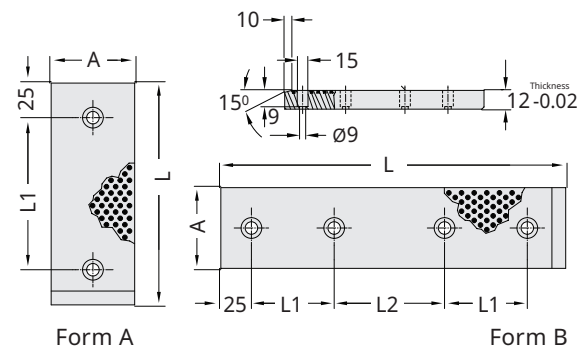
Self-Lubricating
G87

Steel Type
G87C

Wear Plate, VDI 3357

Code: **G87 - G87C**

Self-Lubricating, Thickness: 12 mm / Form: A - B



A	L	L1	L2	Form
30	80	30	-	A
	100	50		
	125	75		
	160	110		
	200	150		
30	250		80	B
	260	60	90	
	280		110	
	300	80	90	
	320		110	
40	80	30	-	A
	100	50		
	125	75		
	160	110		
	200	150		
50	80	30	-	A
	100	50		
	125	75		
	160	110		
	200	150		
50	250	60	80	B
	300	80	90	
	350	100	100	
	400	120	110	

A	L	L1	L2	Form
60	80	30	-	A
	100	50		
	125	75		
	160	110		
	200	150		
60	240		70	B
	250	60	80	
	260		90	
	280		110	
80	80	30	-	A
	100	50		
	125	75		
	160	110		
	200	150		
80	240		70	B
	250	60	80	
	260		90	
	280		110	
100	260	60	90	B
	280		110	



Order: **G84**. A x L



* Fixing screws: M10x20



Order:
G87. A x L



for steel type
Order:
G87C. A x L



Self-Lubricating
G91

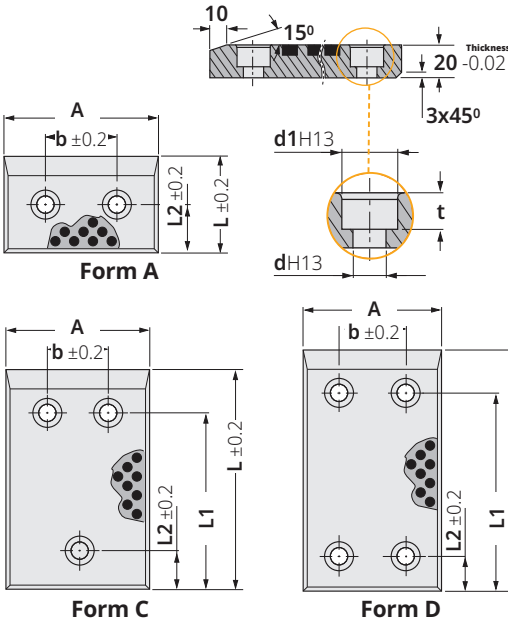


Steel Type
G91C

Wear Plate, VDI 3357

Code: **G91 - G91C**

Self-Lubricating, Thickness: 20 mm / Form: A - C - D



A	L	L1	L2	b	d	d1	t	Screw	Form
80	50	-	25	30	9	15	9	M8x25	A
100	50	-	25	50	13.5	20	13	M12x25	A
	80	-	40						
125	50	-	25	75	13.5	20	13	M12x25	A
	80	-	40						
	100	75	25						
	125	100	25	75	13.5	20	13	M12x25	C
	160	135							
	200	175	40						
160	250	210							
	315	275							
	50	-	25	110	13.5	20	13	M12x25	A
	80	-	40						
	100	75	25						
	125	100	25	110	13.5	20	13	M12x25	C
160	160	135							
	200	175	40						
	250	210							
	315	275							
160	250	210	40	110	13.5	20	13	M12x25	D
	315	275							



Order:
G91. A x L



for steel type
Order:
G91C. A x L



Self-Lubricating
G90

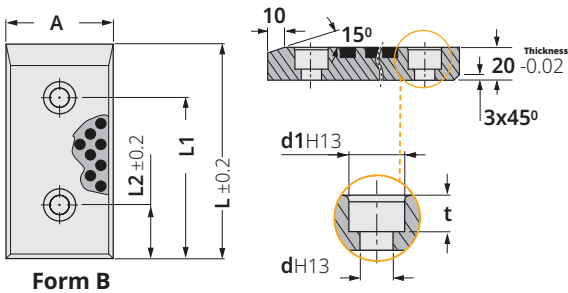


Steel Type
G90C

Wear Plate, VDI 3357

Code: **G90 - G90C**

Self-Lubricating, Thickness: 20 mm



Working Direction
Code: **G91 - G91C / G90 - G90C**

Heat Resistance 150°C
Code: **G91 - G91C / G90 - G90C**

A	L	L1	L2	d	d1	t	Screw	Form
50	80	55	25	9	15	9	M8x25	B
	100	75		13.5	20	13	M12x25	
	125	100						
	160	135						
	200	175						
80	80	55	25	13.5	20	13	M12x25	B
	100	75						
	125	100						
	160	135						
	200	175						
	250	210	40					
	315	275						
100	100	75	25	13.5	20	13	M12x25	B
	125	100						
	160	135						
	200	175						
	250	210	40					
	315	275						



Order:
G90. A x L



for steel type
Order:
G90C. A x L

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Guiding Components



NEW

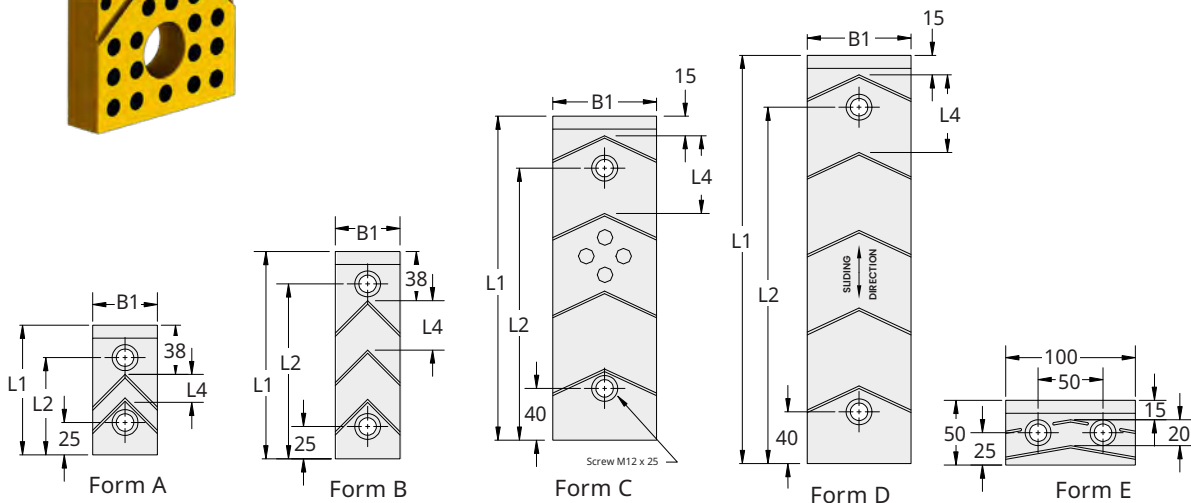
GLOBAL STANDARD COMPONENTS
NAAMS



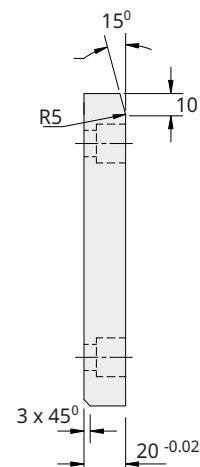
Wear Plate with Visual Wear Indicators, WDX138011

Self-Lubricating, Thickness: 20 mm

Code: **G78**



Order Code	B1	L1 ±0.2	L2 ±0.2	L4	Form
G7850100A	50	100	75	18	A
G7850125A		125	100	38	
G7850160B	50	160	135	38	B
G7850200B		200	175	50	
G7880100A	80	100	75	20	A
G7880125A		125	100	40	
G7880160B	80	160	135	40	B
G7880200B		200	175	60	
G7880250C	80	250	210	60	C
G7880315D	80	315	275	60	D
G7810050E	100	50	-	-	E
G78100100A	100	100	75	20	A
G78100125A		125	100	40	
G78100160B	100	160	135	40	B
G78100200B		200	175	60	
G78100250C	100	250	210	60	C
G78100315D	100	315	275	60	D



Material:
Bronze + Graphite Inserts

Heat Resistance: 150°C



NEW

GLOBAL STANDARD COMPONENTS
NAAMS

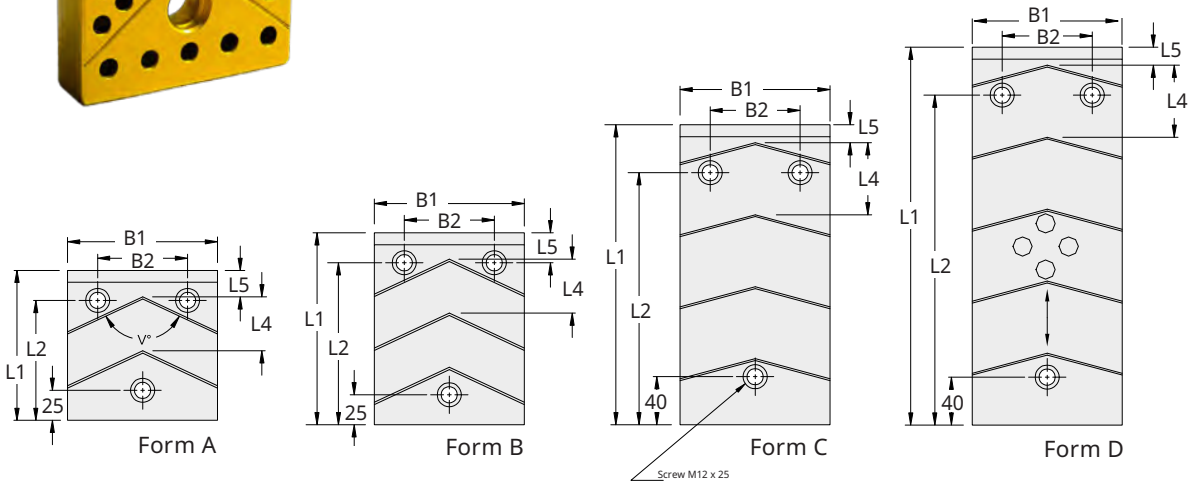


3D CAD
FILES
GÜVENAL

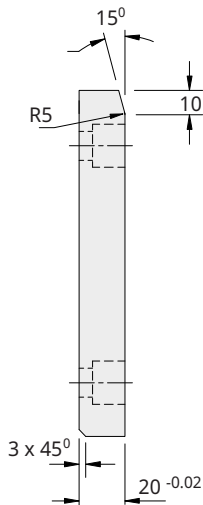
Wear Plate with Visual Wear Indicators, WDX138012

Code: **G78-12**

Self-Lubricating, Thickness: 20 mm



Order Code	B1	B2 ±0.2	L1 ±0.2	L2 ±0.2	L4	L5	Form
G78-12.125100A	125	75	100	75	35	22	A
G78-12.125125A			125	100	45	22	
G78-12.125160B	125	75	160	135	45	22	B
G78-12.125200B			200	175	60	22	
G78-12.125250C	125	75	250	210	60	15	C
G78-12.125315D	125	75	315	275	60	15	D
G78-12.160100A	160	110	100	75	40	15	A
G78-12.160125A			125	100	50	15	
G78-12.160160B	160	110	160	135	50	15	B
G78-12.160200B			200	175	60	15	
G78-12.160250C	160	110	250	210	60	15	C
G78-12.160315D	160	110	315	275	60	15	D



Material:
Bronze + Graphite Inserts

Heat Resistance: 150°C

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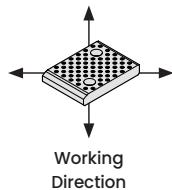
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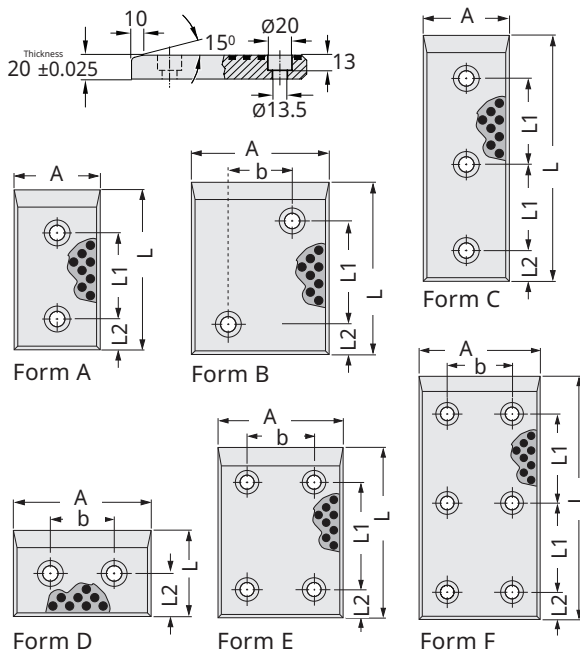
Guiding Components



Wear Plate, ISO 9183-1

Code: **G89**

Self-Lubricating, Thickness: 20 mm / Form: A-B-C-D-E-F



A	L	L1	L2	b	Form
50	80	35			A
	100	55			
	125	80	20	-	
	160	115			
	200	155			
	250	100	20	-	
80	50	-	25	40	D
	80	35			B
	100	55	20	40	
	125	80			
	160	115	20	40	
	200	155			
100	250	100	20	40	F
	315	132			C
	50	-	25	60	
	80	35	20	60	
	100	55			
	125	80			
125	160	115	20	60	E
	200	155			D
	250	100	20	60	
	315	132			
	50	-	25	120	
	80	35			
150	100	55			B
	125	80			
	160	115	20	120	
	200	155			
	250	100	20	120	
	315	132			
175	100	55			B
	125	80			
	160	115	20	120	
	200	155			
	250	100	20	120	
	315	132			

A	L	L1	L2	b	Form
125	50	-	25	85	D
	80	35	20	85	B
	100	55			E
	125	80	20	85	
	160	115			
	200	155			
150	250	100	20	85	F
	315	132			C
	50	-	25	120	
	80	35			
	100	55			
	125	80	20	120	
175	160	115			D
	200	155			
	250	100	20	120	
	315	132			
	50	-	25	120	
	80	35			
200	100	55			B
	125	80			
	160	115	20	120	
	200	155			
	250	100	20	120	
	315	132			

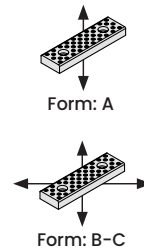


Order:
G89. A x L

- * Fixing screws: M12 x 25
- * Heat Resistance 150°C.



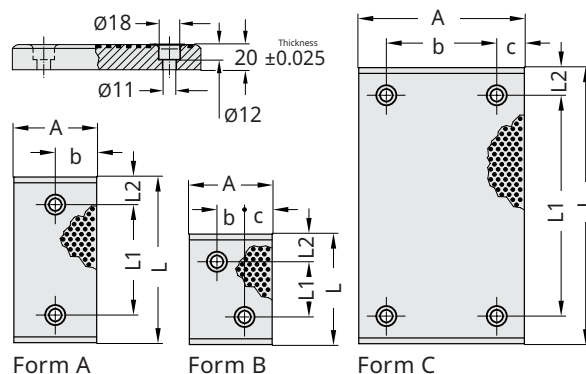
Working Direction



Wear Plate

Code: **G88**

Self-Lubricating, Thickness: 20 mm / Form: A-B-C



Advantages of Self-Lub. Wear Plate:

- * Highly compatible with sudden movements.
- * Maximum load carrying capacity at low speeds.
- * Can be used under water or with chemical solutions.
- * Wide range of temperature resistance.
- * Resistant to impact in case of vibration.

A	L	L1	L2	c	b	Form
28	75	45	15			A
	100	50				
	125	75	25	-	14	
	150	100				
	200	150				
	250	200				
38	75	45	15			A
	100	50				
	125	75	25	-	19	
	150	100				
	200	150				
	250	200				
48	75	45	15			A
	100	50				
	125	75	25	-	24	
	150	100				
	200	150				
	250	200				
58	75	45	15			A
	100	50				
	125	75	25	-	29	
	150	100				
	200	150				
	250	200				
75	75	45	15	-	37.5	A
	100	50	25	-	37.5	A
	125	75				B
	150	100	25	-	37.5	
	200	150				
	250	200				

A	L	L1	L2	c	b	Form
100	100	50				C
	125	75				
	150	100	25	25	50	
	200	150				
	250	200				
	300	250				
125	125	75				C
	150	100				
	200	150	25	37.5	50	
	250	200				
	300	250				
	350	300				
150	150	100				C
	200	150	25	25	100	
	250	200				
	300	250				
	350	300				
	400	350				
200	200	150				C
	250	200	25	25	150	
	300	250				
	350	300				
	400	350				
	450	400				



Order:
G88. A x L x Form

- * Fixing screws: M10 x 25
- * Heat Resistance 150°C.

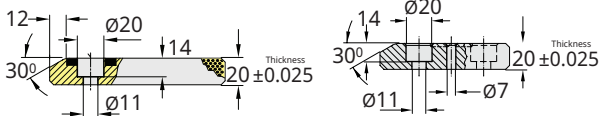


Self-Lubricating
G92

Code: **G92 - G92C**

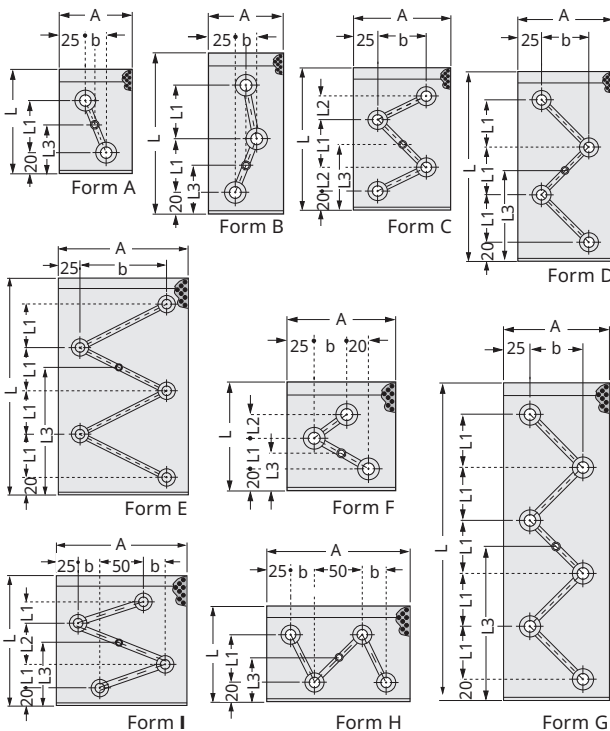
Wear Plate, AFNOR / ISO 9183-2

Form A - B - C - D - E - F - G - H - I



Steel Type
G92C

Working
Direction



A	L	L1	L2	L3	b	Form
70	100	50	-	45	20	A
	150	50	-	45	10	B
	200	50	-	95	20	D
100	150	50	25	70	50	C
	200	50	-	95	50	D
	250	50	-	145	50	E
150	200	50	-	95	100	D
	250	50	-	145	100	E
100	100	25	25	32.5	30	F
	300	50	-	145	50	G
150	100	50	-	45	25	H
	150	25	50	70	25	I
	300	50	-	145	100	G
200	100	50	-	45	50	H

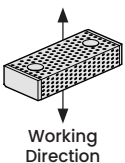
for steel type



Order:
G92. A x L



Order:
G92C. A x L

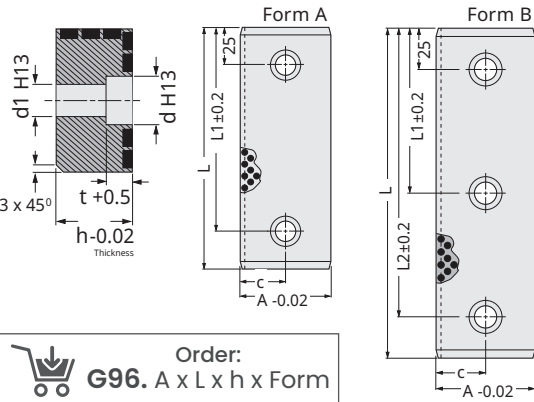


Working
Direction

Wear Plate, VDI 3357

Code: **G96**

Self-Lubricating / Two-Way Sliding Type Form: A - B



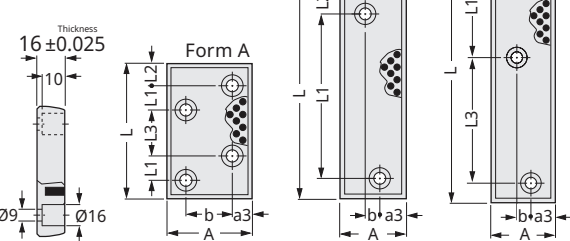
Order:
G96. A x L x h x Form

A	L	L1	L2	c	h	d	d1	t	Form
25	110	85	-	12.5	12	15	9	8.5	A
	120	95			15	18	11	10.5	
	110	85							
	120	95							
60	125	100	-	30	30	20	13.5	13	A
	150	125							
	160	135							
	200	100							
60	200	100	175	30	30	20	13.5	13	B
	125	100							B
	150	125	-	30	40	20	13.5	13	A
	160	135							A
	200	100	175	30	40	20	13.5	13	B
	125	100							B



Code: **G93**

Wear Plate, CNOMO



A	L	L1	L2	L3	b	a3	Form
50	63	39	12	-	20	15	B
50	160	126	21	-	12	19	B
50	250	100	21	116	12	19	C
63	100	18	15	34	39	12	A



Order:
G93. A x L

* Fixing screws: M10
* Heat Resistance 150°C.

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Guiding Components

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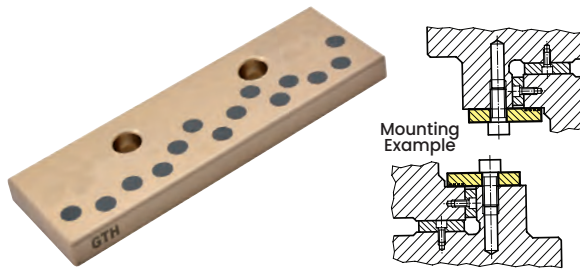
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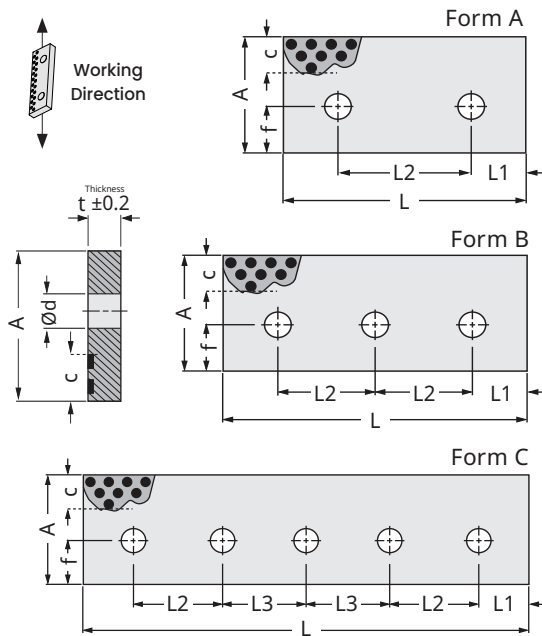
18

Guiding Components



Wear Plate, VDI 3357
Self-Lubricating

Code: **G95**



A	L	L1	L2	L3	t	c	f	d	Form	
35	160	45	70	-	10	10	15	11	A	
	200		110						B	
	250		80							
45	160	45	70	-	15	15	15	13.5	A	
	200		110						B	
	250		80							
55	160	45	70	-	15	20	20	17.5	A	
	200		110						B	
	250		80							
75	160	45	70	-	25	25	35	17.5	A	
	200		110						B	
	250		80							
100	160	45	70	-	25	30	40	17.5	A	
	200		110						B	
	250		80						C	
	400		80	75	30	30	40	22	A	
	160		70	-					75	B
	200		110							C
	250		80							
	400		80	75						
	125		160	45					70	-
200		110	B							
250		80	C							
400		80	75							



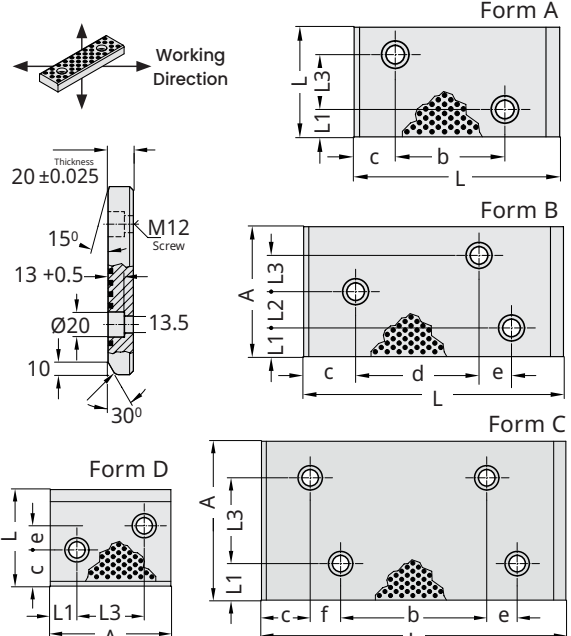
Order:
G95. A x L x t

Material:
Bronze + Graphite Inserts



Wear Plate, NAAMS
Self-Lubricating / Steel

Code: **G94 - G94C**



A	L	L1	L2	L3	c	f	b	e	Form
50	100	25	-	-	30	-	30	-	A
	150						80		
	200						120		
80	100	20	-	40	30	-	30	-	A
	150						80		
	200						120		
	250			40	170				
	315				210		25		
100	50	22	-	56	14	-	-	13	D
	80				-		20		
	100				28		28	40	-
	150		95	25		B			
	200		145						
	250		210						
	315								
125	80	25	-	75	30	-	-	20	D
	100						30	-	A
	150						80		
	200		37	38	40	-	95	25	B
	250						145		
	315						-		75
160	100	30	-	100	30	-	30	-	A
	150						80		
	200						95		
	250		50	50	40	25	120	25	
	315		-	100			185	C	



Order:
G94. A x L

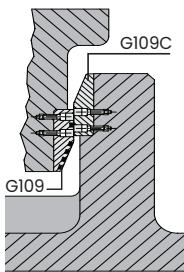


Order:
G94C. A x L

for steel type

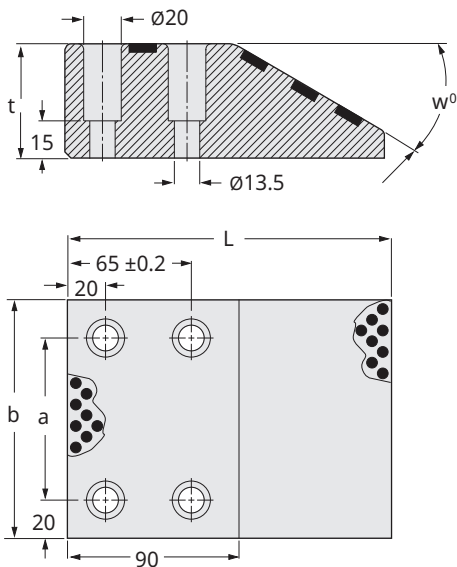


Mounting example



Cam Driver Plate, VDI 3357

Code: **G109**



b	L	t	a	w
100	170	45	60	20°
125			85	
150			110	
100	150	60	60	30°
100	170		60	
125	150		85	
125	170		85	
150	150		110	
150	170		110	

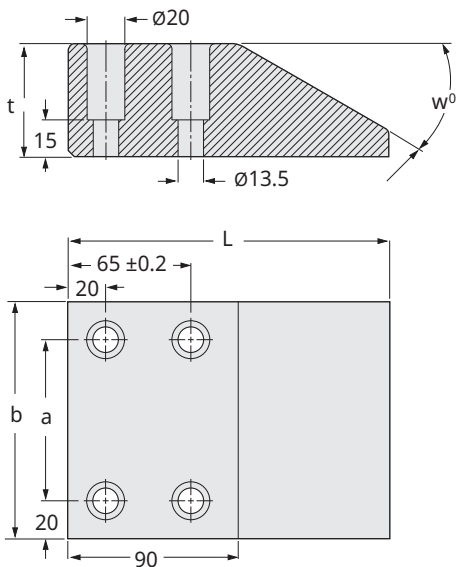
Order:
G109. b x L x t

Material:
Bronze + graphite inserts

Self-Lub. Angular Wear Plates for Upper and Lower Body of Cam Units Tolerance between hole distances is ± 0.25. ± 0.25 is used for all dimensions where tolerance is not specified.

Cam Driver Plate, VDI 3357

Code: **G109C**



b	L	t	a	w
100	170	45	60	20°
125			85	
150			110	
200			160	
100	150	60	60	30°
100	170		60	
125	150		85	
125	170		85	
150	150		110	
150	170		110	
200	150		160	
200	170		160	

Order:
G109C. b x L x t

Material:
Steel, Hardened

Steel Type, Angular Wear Plates for Upper and Lower Body of Cam Units Tolerance between hole distances is ± 0.25. ± 0.25 is used for all dimensions where tolerance is not specified.

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Guiding Components

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Guiding Components



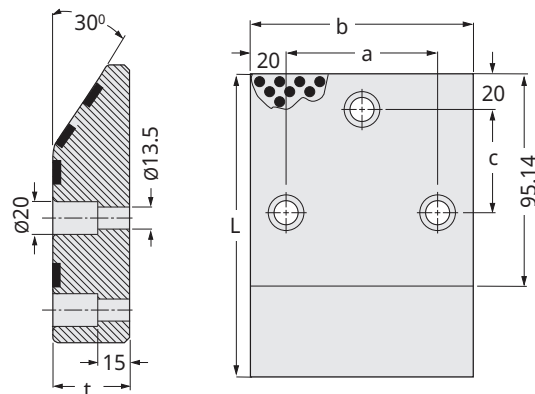
Self-Lubricating
G108



Steel Type
G108C

Cam Driver Plate

Code: **G108 - G108C**



b	L	t	a	c
100	125	30	60	50
	150	45		45
	170	60		45
125	125	30	85	50
	150	45		45
	170	60		45
160	125	30	120	50
	150	45		45
	170	60		45



Order:
G108. b x L

for steel type



Order:
G108C. b x L



Self-Lub. & Steel Angular Wear Plates for Upper and Lower Body of Cam Units
Tolerance between hole distances is ± 0.25 . ± 0.25 is used for all dimensions where tolerance is not specified.

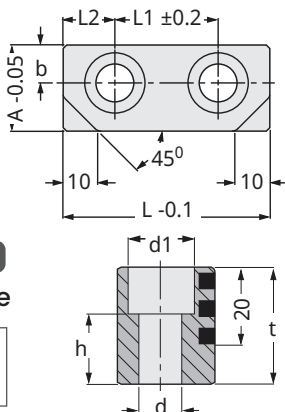


Code: **G76**

Return Cam Plate



Order:
G76. A x L



A	L	b	t	L1	L2	d	d1	h
25	60	11	30	30	15	11	17.5	18
32	60	16	38	30	15	13	20	23
32	80	16	38	40	20	13	20	23



Self-Lubricating
G106

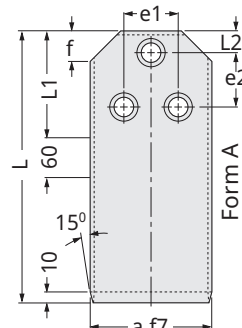
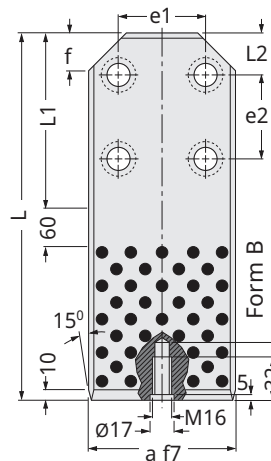
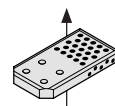
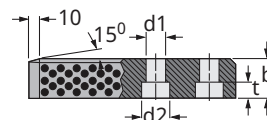


Steel Type
G106C

Guide Bar, VDI 3387

Self-Lubricating & Steel Types

Code: **G106 - G106C**



a	b	L	L1	L2	e1	e2	f	d1	d2	t	Form
63	36	200	90	20	36	50	18	14	20	16	A
71											
90	45		100		50		28	18	26	21	
112											
112		250									
140	45	315	150	40	90	80	36	22	33	25.5	B
140											
140	56	400									
190											
240											
240											

G106

Material:

Bronze + graphite inserts

G106C

Material:

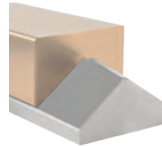
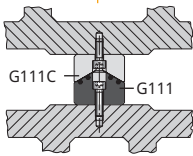
Steel, Hardened



Order:
G106. a x b x L

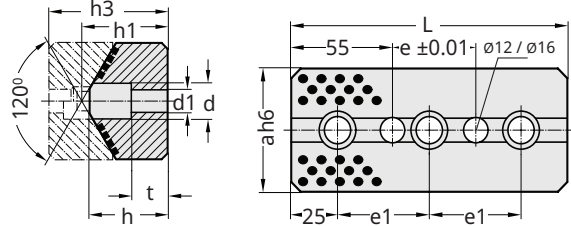


Order:
G106C. a x b x L



G111 Self-Lubricating
Cam Plate, "V" Guide - VDI 3357

Code: **G111**



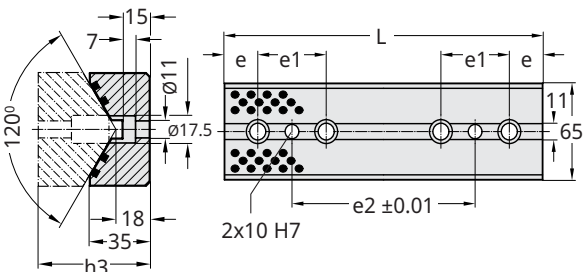
a	L	h1	h	h3	e	e1	d	d1	t	Hole
65	150	47	44	65	45	100	20	13.5	20	2
	200				95	150				3
	250				145	100				
	300				195	125				
125	150	52	47	85	45	100	26	17.5	15	2
	200				95	150				3
	250				145	100				
	300				195	125				

Order: **G111**. a x L

There is ± 0.12 tolerance between fixing holes and ± 0.10 tolerance between pin holes.

G139 Self-Lubricating
Cam Plate, "V" Guide

Code: **G139**



h3	L	e	e1	e2	Hole
65	100	20	60	20	2
	150	25	50	50	3
	200			100	4
	250			150	5
	300			200	6

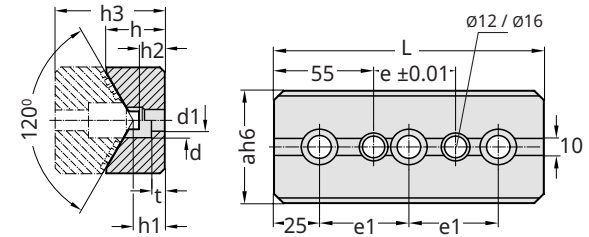
Order: **G139**. h3 x L

Material: Bronze + graphite inserts



G111C Steel
Cam Plate, "V" Guide - VDI 3357

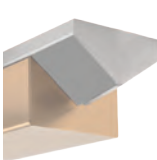
Code: **G111C**



a	L	h1	h	h2	h3	e	e1	d	d1	t	Hole
65	150	18	35	17	65	45	100	20	13.5	8	2
	200					95	150				3
	250					145	100				
	300					195	125				
125	150	33	60	32	85	45	100	26	17.5	15	2
	200					95	150				3
	250					145	100				
	300					195	125				

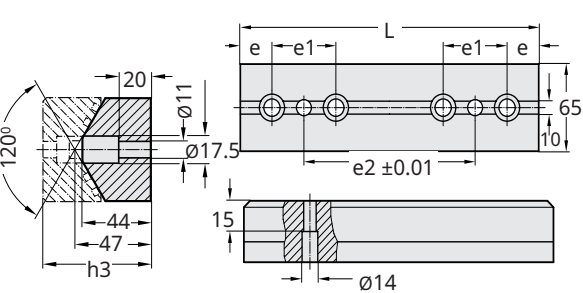
Order: **G111C**. a x L

Material: Steel, Hardened



G139C Steel
Cam Plate, "V" Guide

Code: **G139C**



h3	L	e	e1	e2	Hole
65	100	20	60	20	2
	150	25	50	50	3
	200			100	4
	250			150	5
	300			200	6

Order: **G139C**. h3 x L

Material: Steel, Hardened

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Guiding Components