DIN 9833

Ø d	l mm	d2 Hole	d5 mm	l2 mm	l1 mm	l3 mm
80	200	-	M12 x24 Guide pillar lifting hole	10	100	4
	224					
	250					
	280					
	315					
	355					
	400					
100	224	50	72	10	125	4
	250					
	280					
	315					
	355					
	400					
	450					
125	315	65	90	12	140	5
	355					
	400					
	450					
	500					
160	400	95	132	12	180	5
	450					
	500					
	560					

Operating Components: Self-lubricating guide bushes are recommended.

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

Order: G09.d x l

The importance of alignment precision of punch and matrix at dies is very obvious.
This alignment depends on accuracy and protection of precision, correct placement of guide pillar / bush groups, quality and abrasion resistance. It is especially demountable. We endeavor keeping this range with the additions we made such as new guiding equipment.

Ø d	l mm	d2 Hole	l2 mm	l1 mm	l3 mm
25	125	-	8	40	4
	140				
	160				
	180				
	200				
	224				
32	140	-	8	45	4
	160				
	180				
	200				
	224				
	250				
40	140	-	8	56	4
	160				
	180				
	200				
	224				
	250				
	280				
50	160	-	10	70	4
	180				
	200				
	224				
	250				
	280				
	315				
	355				
63	180	-	10	80	4
	200				
	224				
	250				
	280				
	315				
	355				
	400				

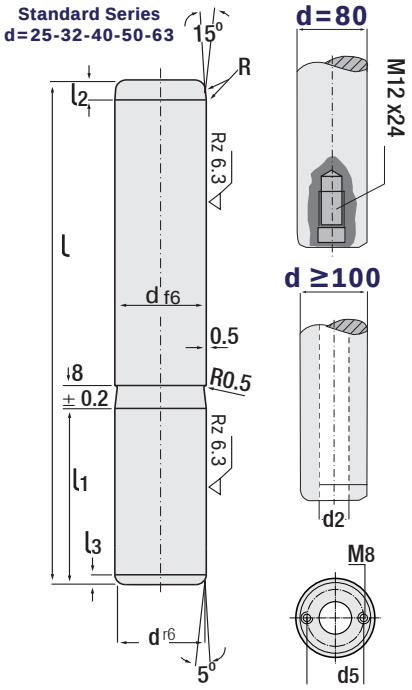
GTH guide pillars are polished with surface polishing machine at final stage of production (after grinding).

Custom-made production can be done as per request.

Code: G09

Guide Pillar for Large Dies

DIN 9833

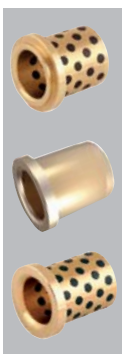


Heavy Duty Type for Dies

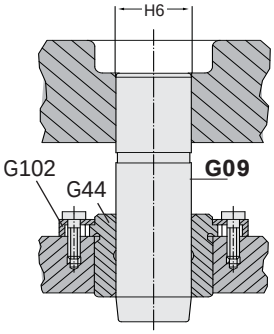
Practises: Ground surface is holeless up to Ø d = 80 and Ø 80 = M12 X 24 mm has one lifting hole. From Ø d.100, it has hollow (d2) and have 2 pieces M8 X 24 mm lifting holes.

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.



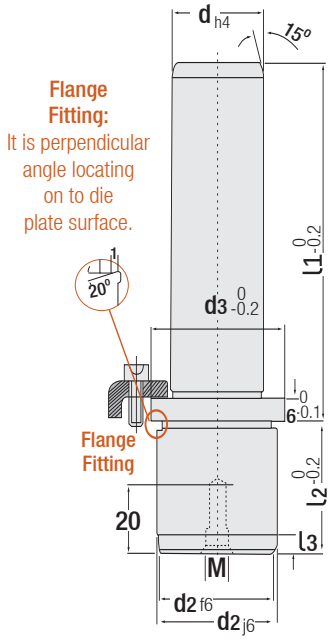
Mounting Example



DIN 9833 ISO 9182-3

Code: G15

Guide Pillar, Thickbacked



Ø d	l1	d2	d3	l2	l3	M
20	100	28	34	23	4	M.8
	125					
	140					
	160					
	180					
	200					
25	100	34	39	30	6	M.8
	125					
	140					
	160					
	180					
	200					
	220					
	240					
30	125	39	44	37	6	M.8
	140					
	160					
	180					
	200					
	220					
	240					
	260					
	315					

GTH guide pillars are polished with surface polishing machine at final stage of production (after grinding).

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

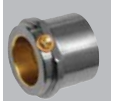
Operating Components: G100 - G33 G34 - G35 - G36 - G40 - G42

Order: G15. d x l1

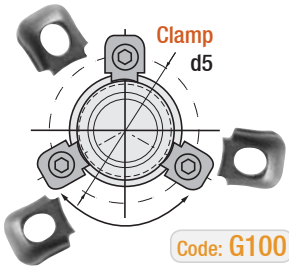
Compatible Bushes


G41- 42- 43


G 40 - 44


G 35 - 36

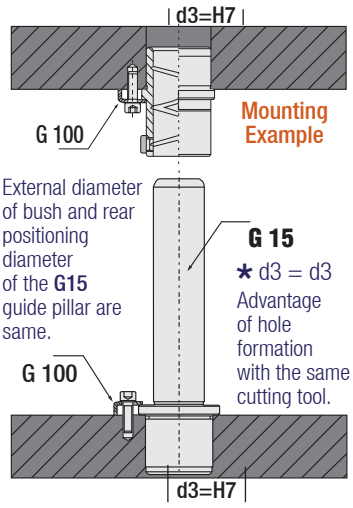

G 33 - 34



Code: G100

G15 / Guide Pillar, Thickbacked
It is used as guiding component at dies and blow moulds.

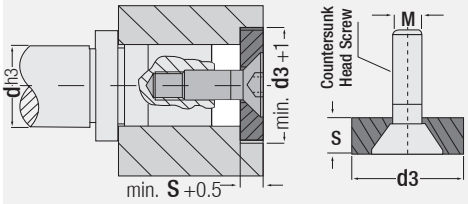
Advantageous Product:
Pillar mounting diameter and bush mounting diameter have the same tolerance value. In machining of guide pillar / bush holes on dies with the advantage of using same cutting tool (drill / reamer) for both guide pillar & bushes hole. Thus, the necessity of using different cutting 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.

Ø d3	Pillar Diameter d	Flange S	Screw M
22	Ø 15 / 16	5.5 mm	M8 x 20
25	Ø 19 / 20		
32	Ø 24 / 25		
40	Ø 32 / 30	7.5	
50	Ø 38 / 40	9.5 mm	
60	Ø 48 / 50		
73	Ø 60 / 63		
93	Ø 80	12	M12 x 20

Order: G110. d3

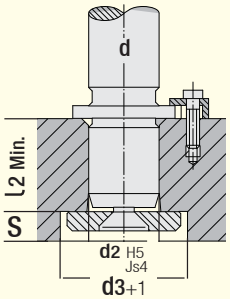
Usage: Guide pillar fixation (Die)
Support washer (Mould)

Mounting Dimensions and Tolerances of Demountable Die Guide Pillars

Technical Info

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

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



"d" Guide Pillar Dia.	d2 H5	d3 +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

DIN 9825 / ISO 9182-5

Ø d d2	L1 mm	L2 mm	L3 mm	Ø d3	Clamp d5	M M1	r r1
38 **40**	125	37	9	50	55.8	M8	r 3,5 r1 30
	140						
	160						
	180						
	200						
	224						
	250						
	280						
	315						
	355						
48 **50**	140	47	10	63	65.8	M8	r 3,5 r1 30
	160						
	180						
	200						
	224						
	250						
	280						
	315						
	355						
	400						
60 **63**	160	47	10	80	78.8	M8	r 4 r1 30
	180						
	200						
	224						
	250						
	280						
	315						
	355						
	400						
80	200	60	15	95	95.8	M 12	r 4 r1 30
	224						
	250						
	280						
	315						
	355						
	400						

Ø d d2	L1 mm	L2 mm	L3 mm	Ø d3	Clamp d5	M M1	r r1
15 **16**	100	20	4	22	31.8	M8	r 2 r1 10
	112						
	125						
	140						
	160						
	180						
	200						
	220						
	250						
	300						
19 **20**	100	23	4	25	35.8	M8	r 2 r1 10
	112						
	125						
	140						
	160						
	180						
	200						
	220						
	250						
	300						
	320						
24 **25**	100	30	6	32	40.8	M8	r 3 r1 20
	112						
	125						
	140						
	160						
	180						
	200						
	224						
	250						
	320						
	350						
32 **30**	112	37	7	40	45.8	M8	r 3 r1 20
	125						
	140						
	160						
	180						
	200						
	224						
	250						
	280						
	315						
	350						
	400						

Order: G10. d x l1

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

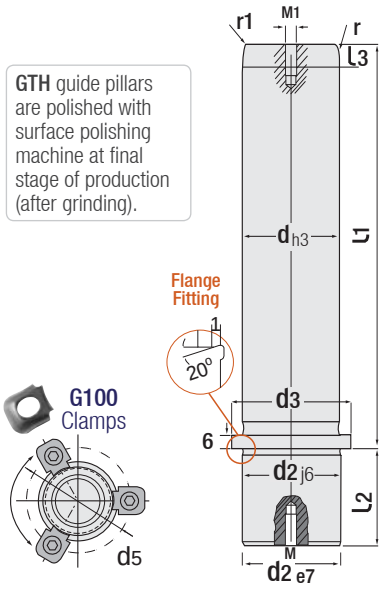
Operating Components: All sliding systems also can be used with ball cage bush.

All dimensions are promptly delivered from our stocks.

Code: G10

Guide Pillar with Centre Collar

GTH guide pillars are polished with surface polishing machine at final stage of production (after grinding).



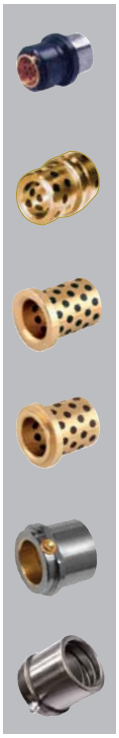
It can be inserted directly to the holes which opened on the die plate. During mounting, please avoid tight fitting. It can be positioned via soft-tight fitting to the holes and clamps or mounting flange with suitable tolerances or also with chemicals.

Technical Info: Refer to the mounting measurement tolerance table on the Page-34 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)

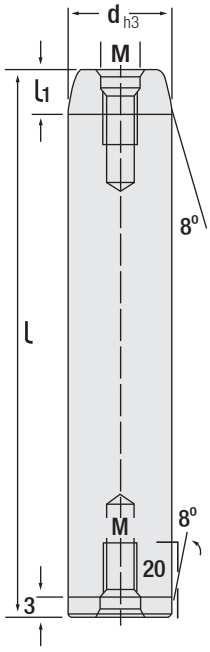
For precision and safe mounting: **G110** mounting flange.

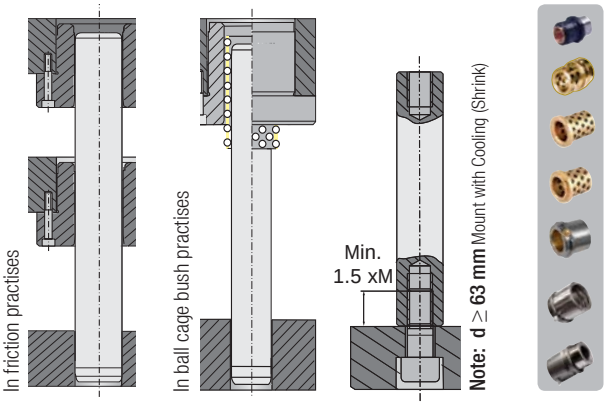


Guide Pillar, Plain & Threaded

Code: G24

DIN 9825 / ISO 9182





Note: 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= ø 16 - 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.

GTH guide pillars are polished with surface polishing machine at final stage of production (after grinding).

Order: G24. d 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.

Code: G24

Ø d	l mm	l1 mm	M
16	90	4	M8
	100		
	112		
15	125		
	140		
	160		
	180		
	200		
19	100	4	M8
	112		
	125		
	140		
	160		
20	180		
	200		
	224		
	250		
24	100	6	M8
	112		
	125		
	140		
	160		
	180		
25	200		
	224		
	250		
	280		
	315		

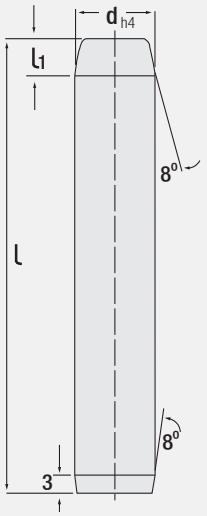
Ø d	l mm	l1 mm	M
32	112	6	M8
	125		
	140		
	160		
	180		
30	200		
	224		
	250		
	280		
	315		
38	125	10	M8
	140		
	160		
	180		
	200		
40	224		
	250		
	280		
	315		
	355		
	400		

Ø d	l mm	l1 mm	M
48	140	10	M 12
	160		
	180		
	200		
	224		
50	250		
	280		
	315		
	355		
	400		
60	200	15	M 12
	224		
	250		
	280		
63	315		
	355		
	400		
80	250	18	M 16
	280		
	315		
	355		
	400		
	450		
	500		

Guide Pillar

Code: G19

DIN 9825 / ISO 9182

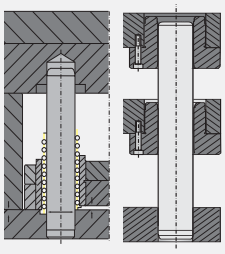


Ø d	l mm	l1 mm
12	100	6
	125	
18	125	6
	160	
30	160	7
	240	

* In-die auxiliary guide pillar

* Guide pillars for ejector plate in injection moulds

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.



Order: G19. d 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.

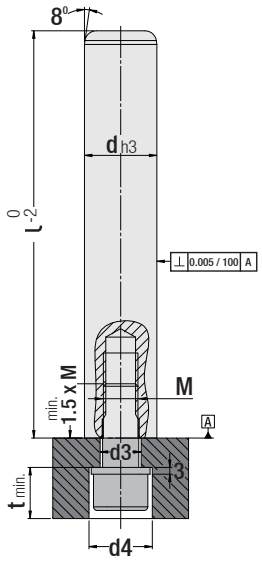
NEW

Code: G166

Guide Pillar - Bolted Type

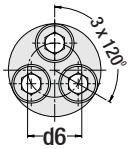
DIN 9825 / ISO 9182

* G166 is supplied with a screw and washer. GTH guide pillars are polished with surface polishing machine at final stage of production (after grinding).

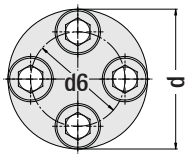


Hole pattern for pillar fastening:

d =
Ø15-**16** / 19-**20**
24-**25** / **30**-32 / 38-**40**



d = Ø48-**50** / 60-**63**



d = Ø80

Note: 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= ø 16 - 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.

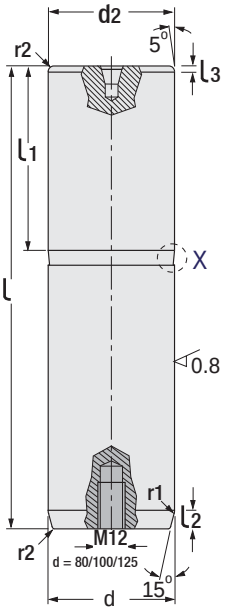
d mm	d3 mm	d4 mm	d6 mm	t min.	M	l mm	Cap Screw	(Nm)
15 **16**	9	17	-	12	8	90 100 112 125 140 160 180 200 224 250 280 315 355	M8 x 35	Tightening torque: 21
19 **20**	11	20	-	14	10	100 112 125 140 160 180 200 224 250 280 315 355 400	M10 x 40	Tightening torque: 37
24 **25**	14	22	-	16	12	100 112 125 140 160 180 200 224 250 280 315 355 400 450	M12 x 40	Tightening torque: 85
30 32	18	28	-	20.5	16	125 140 160 180 200 224 250 280 315 355 400 450	M16 x 40	Tightening torque: 150

d mm	d3 mm	d4 mm	d6 mm	t min.	M	l mm	Cap Screw	(Nm)
38 **40**	18	28	-	20.5	16	160 180 200 224 250 280 315 355 400 450 500 550 600	M16 x 40	Tightening torque: 150
48 **50**	14	22	28	16	12	180 200 224 250 280 315 355 400 450 500 550 600	M12 x 50	Tightening torque: 85
60 63	18	28	34	20.5	16	250 280 315 355 400 450 500 550 600	M16 x 60	Tightening torque: 200
80	18	28	54	20.5	16	280 315 355 400 450 500 550 600	M16 x 60	Tightening torque: 200

Order: G166. d 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.

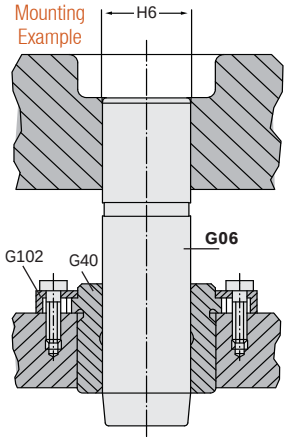


Guide Pillar

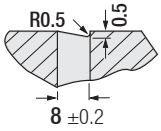
Reference: FCA

Code: G06

DIN 9833



X Detail



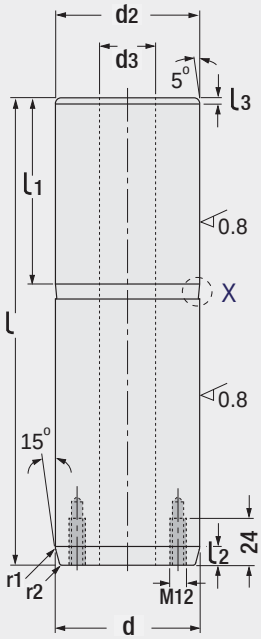
Code: G06

d f6	l mm	d2 r6	l2 +0.8	l3 +0.8	l1 +0.8	r1	r2
ø 32	160	32	8	4	45	15	2
	180						
	200						
ø 40	200	40	8	4	56	20	2
	224						
	240						
ø 50	224	50	10	4	70	20	2.5
	250						
	280						
ø 63	250	63	10	4	80	25	2.5
	280						
	315						

d f6	l mm	d2 r6	l2 +0.8	l3 +0.8	l1 +0.8	r1	r2
ø 80	250	80	10	4	100	30	2.5
	280						
	315						
	355						
ø 100	315	100	10	4	125	30	3
	355						
	400						
ø 125	355	125	12	4	140	40	4
	400						
	450						
	500						
	550						

Order: G06. d x l

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



Guide Pillar

Reference: FCA

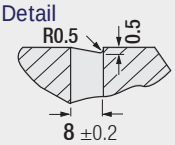
Code: G07

DIN 9833

Order: G07. d x l

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

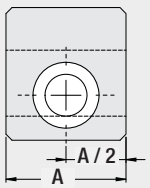
X Detail

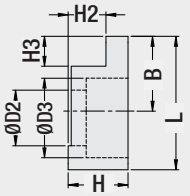


Code: G07

d f6	l mm	d2 r6	d3 ±0.2	l2 +0.8	l3 +0.8	l1 +0.8	r1	r2
80	250	80	40	10	4	100	30	4
	280							
	315							
	355							
100	315	100	50	10	4	125	30	5
	355							
	400							
125	355	125	65	12	5	140	30	5
	400							
	450							
	500							
	550							

Guide Pillar & Bush Clamp





Order: G102. Form

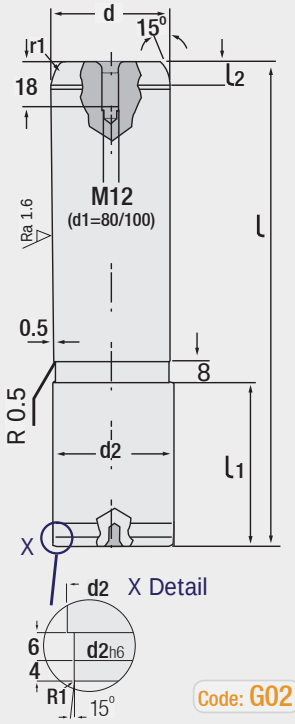
Code: G102

Ø d1 Bush / Pillar	l mm	A mm	B mm	H mm	H2 mm	H3 mm	D2 Ø	D3 Ø	Form Screw
25 - 32 40 - 50	20	20	12.5	10	6.3	5	7	11	**A** M.6 x16
63 - 80 100 - 125 160	32	32	21	16	10	10	11.5	17.5	**D** M.10 x25

FCA FIAT CHRYSLER AUTOMOBILES

Guide Pillar Code: G02

Reference: NAAMS



d f6	l mm	d2 r6	l1 mm	l2 mm	r1
25	140	25	40	4	2
	160				
	180				
32	140	32	45	6	2
	160				
	180				
	200				
40	160	40	56	8	2
	180				
	200				
	224				
	250				
50	160	50	70	12	2.5
	180				
	200				
	224				
	250				
	280				
	315				

Code: G02

d f6	l mm	d2 r6	l1 mm	l2 mm	r1
63	200	63	80	12	2.5
	224				
	250				
	280				
	315				
	355				
	400				
80	250	80	100	15	3
	280				
	315				
	355				
	400				
	500				
100	315	100	125	18	3
	355				
	400				
	500				

Order: G02. d x l

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

Code: G01

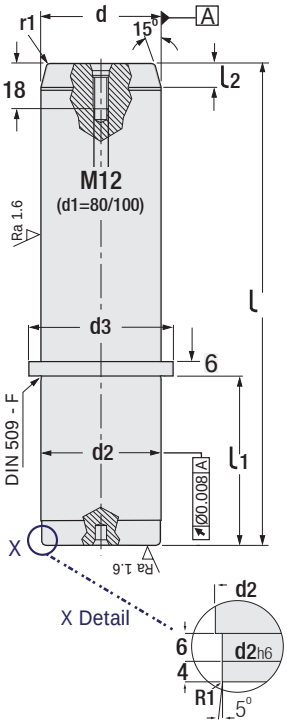
d f6	l mm	d2 r6	d3	l1 mm	l2 mm	r1
25	140	25	33	40	4	2
	160					
	180					
32	140	32	40	45	6	2
	160					
	180					
	200					
40	160	40	50	56	10	2
	180					
	200					
	224					
	250					
50	160	50	60	70	12	2
	180					
	200					
	224					
	250					
	280					
	315					
63	200	63	80	80	12	2
	224					
	250					
	280					
	315					
	355					
	400					
80	250	80	90	100	15	2
	280					
	315					
	355					
	400					
	500					
100	315	100	110	125	20	3
	355					
	400					
	500					

Order: G01. d x l

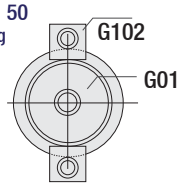
Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC

Guide Pillar with Centre Collar Code: G01

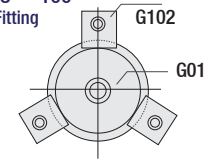
Reference: NAAMS



d1 = 25 ~ 50
Clamp Fitting



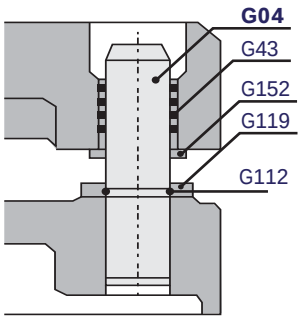
d1 = 63 ~ 100
Clamp Fitting

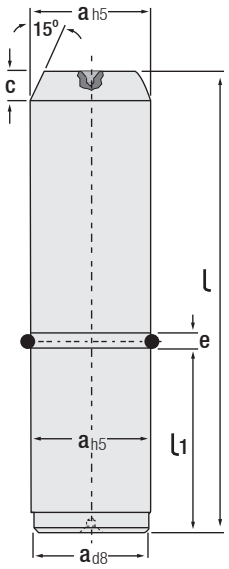


Ford

Guide Pillar
Code: G04

Reference: PSA





Code: G04

a h5	l mm	a d8	l1 mm	c mm	e
25	100	25	40	8	3
	125				
32	125	32	45	8	3
	220				
40	180	40	63	8	3
	200				
	220				

a h5	l mm	a d8	l1 mm	c mm	e
50	220	50	70	10	5
	250				
	280				
63	250	63	80	10	6
	315				
80	315	80	100	10	8
	355				

Order: G04. a x l

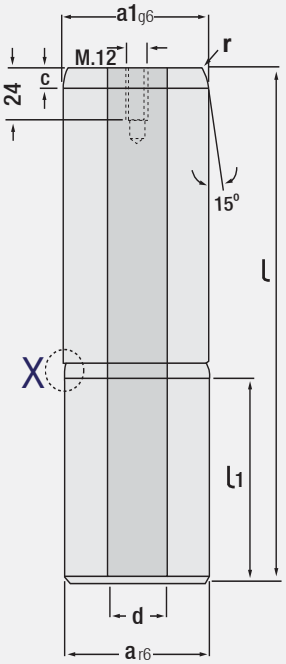
Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC

Guide Pillar
Code: G05

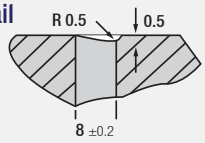
Reference: PSA

Order: G05. a x l

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



X - Detail

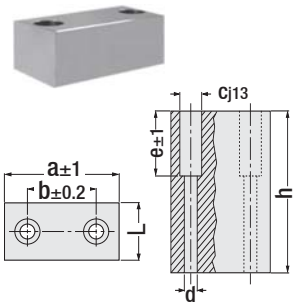


Code: G05

a r6	l mm	a1 g6	l1 mm	c mm	d Ø	r
100	250	100	125	10	50	3
	280					
	315					
	355					
	400					
125	315	125	140	12	65	4
	355					
	400					
	450					

Compensation Block
Rerefence: PSA

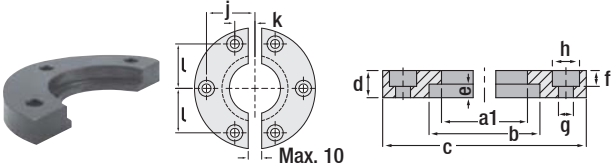
Code: G81



h	a	l	b	c	d	e
55	80	30	55	18	9	20
55	110	40	80	22	14	20
101	80	35	55	18	9	57
137	100	50	60	22	13	55
138	100	45	55	22	14	43
138	120	60	80	22	14	43

Order Example: G81. h x a

Bush Holder Flange
Code: G118



Bush	a1	b	c	d	e	f	g	h	j	k	l
25	32	41	72	10	5	7	6.6	12	-	20	20
32	40	51	80	12	6	7	6.6	12	-	21	25
40	50	61	100	12	8	7	6.6	12	41	14	38.5
50	63	72	125	16	10	9	9	16	49	17	46
63	80	91	140	20	12	11	11	18	57.5	17	55
80	100	113	180	25	16	13	14	22	72	20	70
100	125	141	200	32	20	13	14	22	85	25	81

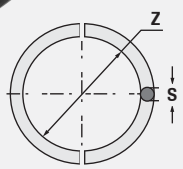
Order Example: G118. Bush (G118.25)

CITROËN PEUGEOT

Circlip

Code: G112

G02-G03-G04-G05
G06-G07-G09-G20
It is used with above guide pillars.



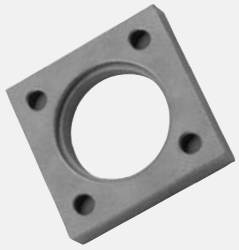
Pillar	z	s
Ø **25**	22.5	2.5
Ø **32**	28	4
Ø **40**	36	4
Ø **50**	46	4
Ø **63**	57	6
Ø **80**	74	6
Ø **100**	94	6

Order: G112. Pillar

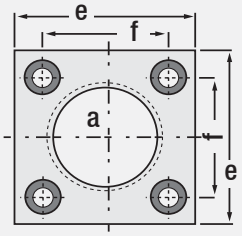
Square Flange for Guide Pillar

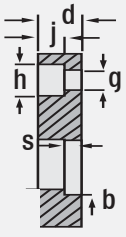
Reference: CNOMO
Reference: PSA

Code: G119



G03
G04
G05
It is used with above 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)

Code: G03

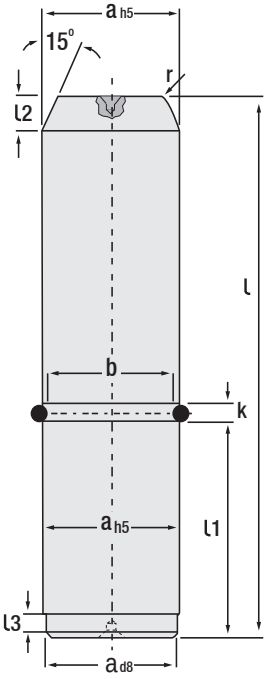
a h5	l mm	b	l1 mm	l2 mm	l3 mm	k	r
25	100	22.3	25	8	8	2.7	2
	125						
	140						
	160						
	180						
	200						
	224						
32	125	27.8	32	10	12	4.2	2
	140						
	160						
	180						
	200						
	224						
	250						
40	180	35.8	63	12	12	4.2	2
	200						
	224						
	250						
	280						
	315						
50	200	45.8	80	16	12	4.2	2.5
	224						
	250						
	280						
	315						
	355						
	400						
63	250	56.8	100	16	18	6.2	2.5
	280						
	315						
	355						
	400						
	450						
	500						
80	315	73.8	125	16	18	6.2	3
	355						
	400						
	450						
	500						
100	355	93.8	160	16	18	6.2	3
	400						
	450						
	500						

Order: G03. a x l

Guide Pillar

Reference: CNOMO

Code: G03

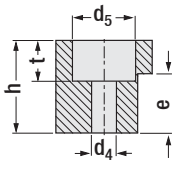


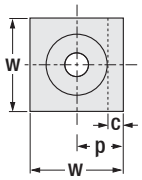
Bush Clamp

Code: G102E

Reference: CNOMO

Order Example:
G102E.40





Bush	w	p	h	e	c	t	d_4	d_5
Ø **40**	18	9.5	12	8	3	7	6.6	11
Ø **50**	22	12	16	10	4	9	9	15
Ø **63**	26	15	20	12	5	11	11	18
Ø **80**	26	15	25	16	5	11	11	18
Ø **100**	26	15	32	20	5	11	11	18

Automotive Standards RENAULT

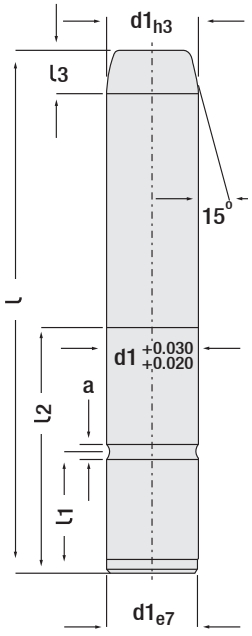
Guide Pillar for Cast Block Bush

Code: G20

Flange Cast Bush - Rectangular

Code: G79

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.



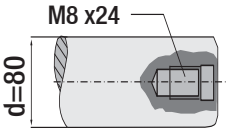
Flange Cast Bush Rectangular

Code: G79

Inner has been honed to Ød +0.015

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

Order: G79. d1



Guide Pillar

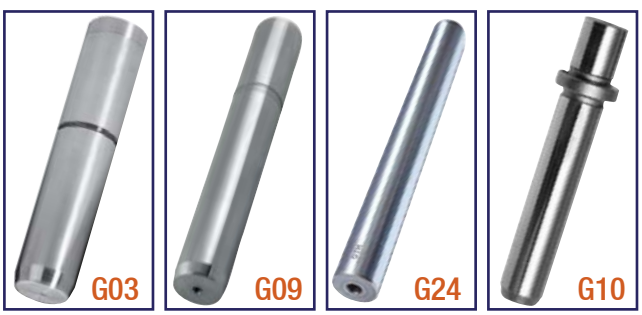
Code: G20

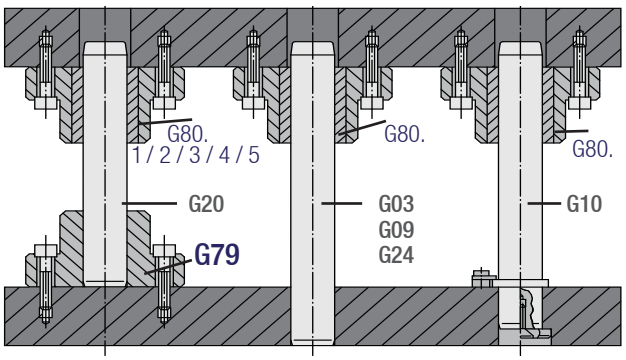
Ø d1	l mm	l1	l2	a	l3
40	180	37	77	8	10
	220				
	260				
	300				
	355				
	400				
50	200	47	95	8	10
	240				
	280				
	315				
	355				
	400				
	450				
63	240	60	120	8	12
	280				
	315				
	355				
	400				
	450				
80	240	60	120	8	16
	280				
	315				
	355				
	400				
	450				
	500				

Order: G20. d1 x l
Cast Bush: G79 x d1

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

IMPORTANT: Check perpendicularity of guide pillars after mounting.





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

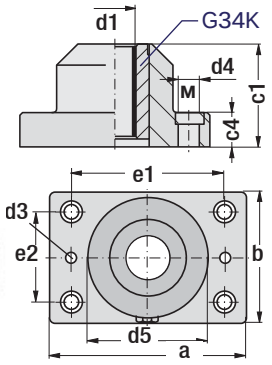
Flange Cast Bush - Rectangular

Steel Type

Code: G80.1

G20 + G79 + G80.1
Set as per request

Order: G80.1 x d1



Steel Type

Code: G80.1

Upper and lower parts of flange cast bushes have been machined **G34K Guide Bush** and grease fitting have been added.

d1	a mm	b mm	c1	c4	d3 Pin	d4 M	Ø d5	e1	e2
40	130	80	77	30	ø10	13 M12	70	95	45
50	160	96	95	35	ø10	15 M14	83	118	55
63	180	110	120	35	ø12	17 M16	94	132	62
80	215	130	120	40	ø14	21 M20	112	160	75

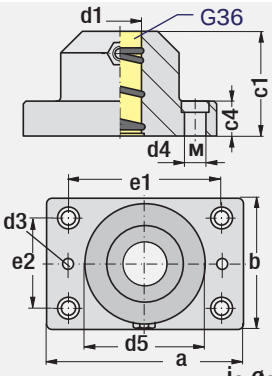
Flange Cast Bush - Rectangular

Bronze Type

Code: G80.2

G20 + G79 + G80.2
Set as per request

Order: G80.2 x d1



Bronze Type

Code: G80.2

Upper and lower parts of flange cast bushes have been machined **G36 Guide Bush** and grease fitting have been added.

d1	a mm	b mm	c1	c4	d3 Pin	d4 M	Ø d5	e1	e2
40	130	80	77	30	ø10	13 M12	70	95	45
50	160	96	95	35	ø10	15 M14	83	118	55
63	180	110	120	35	ø12	17 M16	94	132	62
80	215	130	120	40	ø14	21 M20	112	160	75

Flange Cast Bush - Rectangular

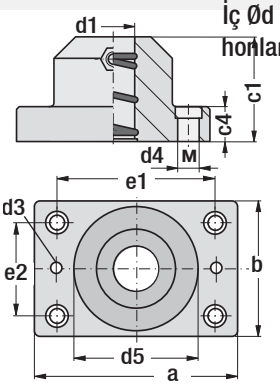
Cast Type

Code: G80.3

G20 + G79 + G80.3
Set as per request

Order: G80.3 x d1

İç Ød +0.015 honlanmıştır.



Cast Type

Code: G80.3

Upper and lower parts of Flange cast bushes have been machined inner hole has been machined as cast bush bearing.

d1 R6	a mm	b mm	c1	c4	d3 Pin	d4 M	Ø d5	e1	e2
40	130	80	77	30	ø10	13 M12	70	95	45
50	160	96	95	35	ø10	15 M14	83	118	55
63	180	110	120	35	ø12	17 M16	94	132	62
80	215	130	120	40	ø14	21 M20	112	160	75

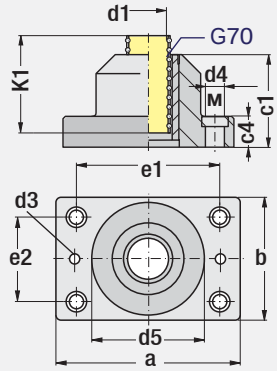
Flange Cast Bush - Rectangular

Ball Cage Type

Code: G80.4

G20 + G79 + G80.4
Set as per request

Order: G80.4 x d1



Ball Cage Type

Code: G80.4

Upper and lower parts of flange cast bushes have been machined **G38 Guide Bush** and **G70 Ball Cage Bush** have been added.

d1	a mm	b mm	c1	c4	d3 Pin	d4 M	Ø d5	e1	e2	K1
40	130	80	77	30	ø10	13 M12	70	95	45	80
50	160	96	95	35	ø10	15 M14	83	118	55	105
63	180	110	120	35	ø12	17 M16	94	132	62	140
80	215	130	120	40	ø14	21 M20	112	160	75	140

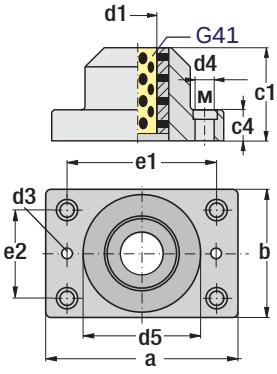
Flange Cast Bush - Rectangular

Self-Lubricating Type

Code: G80.5

G20 + G79 + G80.5
Set as per request

Order: G80.5 x d1



Self-Lubricating Type

Code: G80.5

Upper and lower parts of flange cast bushes have been machined **G41 Self-Lub. Guide Bush** have been added.

d1	a mm	b mm	c1	c4	d3 Pin	d4 M	Ø d5	e1	e2
40	130	80	77	30	ø10	13 M12	70	95	45
50	160	96	95	35	ø10	15 M14	83	118	55
63	180	110	120	35	ø12	17 M16	94	132	62
80	215	130	120	40	ø14	21 M20	112	160	75

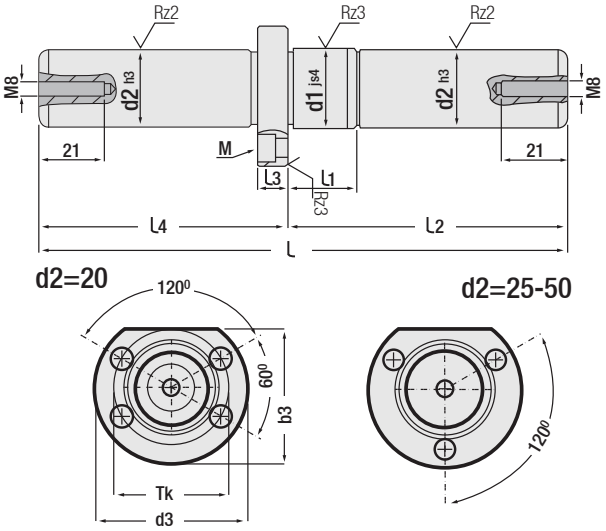
NEW

Guide Pillar with Centre Flange

Code: G135

(Screw clamping guide pillar with centre collar)

It can be used in standard pillar systems with many bearing bush connections. No clamping is necessary for die 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.



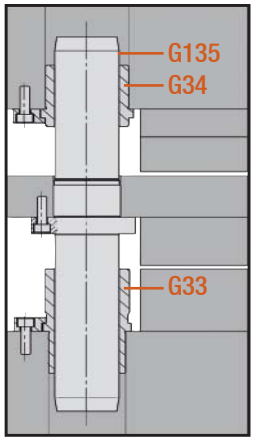
Compatible Bushes

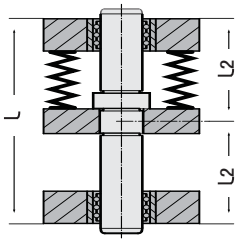
d2	l	l1	l2	l4	l3	d1	d3	b3	Tk	M
20	150	22	80	70	10	22	44	39	33	M5 4 pcs.
	160		90	70						
	180		90	90						
	200		90	110						
25	170	22	90	80	10	26	50	45	38	M5 3 pcs.
	190		110	80						
	210		120	90						
	190		90	100						
	200		100	100						
	260		160	100						
	220		100	120						
30	190	27	100	90	10	32	58	53	46	M5 3 pcs.
	200		110	90						
	260		160	100						
	220		110	110						
	230		120	110						
	250		120	130						
	260		130	130						
32	190	27	100	90	10	34	60	55	48	M5 3 pcs.
	200		110	90						
	260		160	100						
	220		110	110						
	230		120	110						
	250		120	130						
	260		130	130						
40	210	27	110	100	12	42	70	65	56	M6 3 pcs.
	220		120	100						
	240		120	120						
	250		130	120						
	270		130	140						
50	250	36	120	130	15	52	80	75	66	M6 3 pcs.
	260		110	150						
	270		120	150						

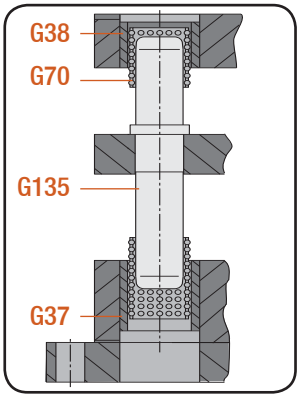
Guide Pillar with Centre Flange

(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**.





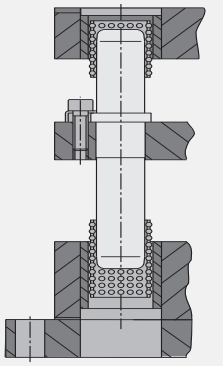


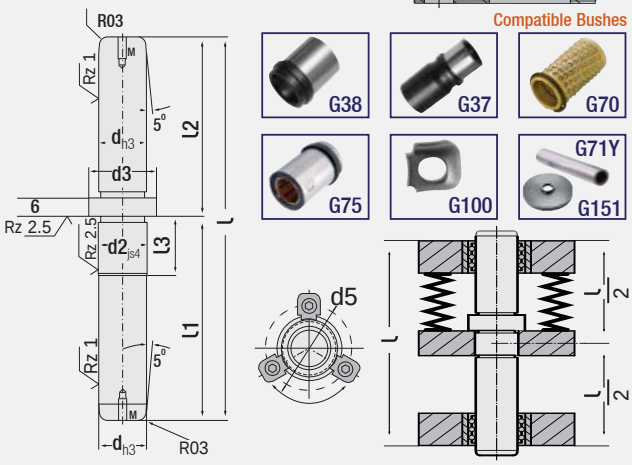
Order: G135. d2 x l 2 x l

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

Code: G08

Guide Pillar with Centre Fixing





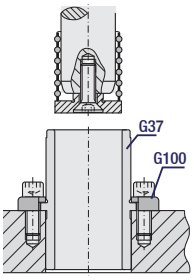
Compatible Bushes

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**.

d	l	l1	l2	l3	d2	d3	d5	M
20	160	90	70	19	20.05	26	37	M8
	170	100	70					
	180	100	80					
	190	110	80					
	200	110	90					
	210	110	100					
25	180	100	80	22	25.05	32	43	M8
	190	110	80					
	200	110	90					
	210	120	90					
	220	120	100					
	230	120	110					
30	180	100	80	25	30.05	38	49	M8
	190	110	80					
	200	110	90					
	210	120	90					
	220	120	100					
	230	130	100					
	240	130	110					
	250	140	110					
40	200	110	90	27	40.05	50	61	M8
	210	120	90					
	220	120	100					
	230	130	100					
	240	130	110					
	250	140	110					

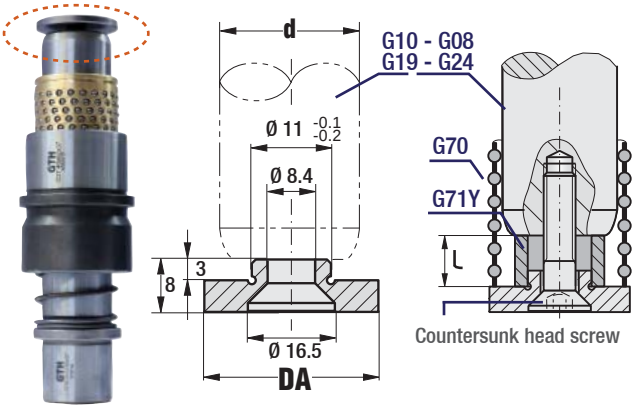
Order: **G08. d x l**

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



Code: G151

Ball Cage Holder Flange
(Locking flange for ball cage)



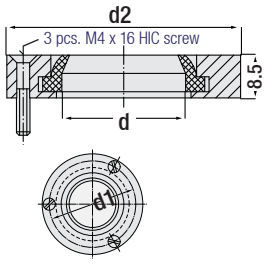
Holder Flange (locking flange for ball cage)
In ball cage bush systems, it prevents detaching of cage **(G70)** from guide pillar during operating. It is practical and provides convenience in die mounting.
In mounting to die: Spacer tube **(G71Y)** of ball cage stroke distance and countersunk head screw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

d	DA	Pillar Dia.
20	25	Ø 20
25	30	Ø 25
30	37	Ø 30
40	47	Ø 40

d	DA	Pillar Dia.
50	57	Ø 50
60	67	Ø 60
63	70	Ø 63

Order: **G151.d**

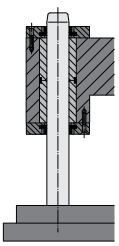
Material: 1.7131 (16MnCr5)



Perforated Flange

Code: G22

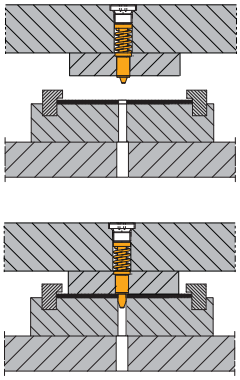
Pillar (d)	d1	d2
24 **25**	45	55
32 **30**	55	65
38 **40**	65	75
48 **50**	78	94
60 **63**	92	110



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.

Order: **G22.d**

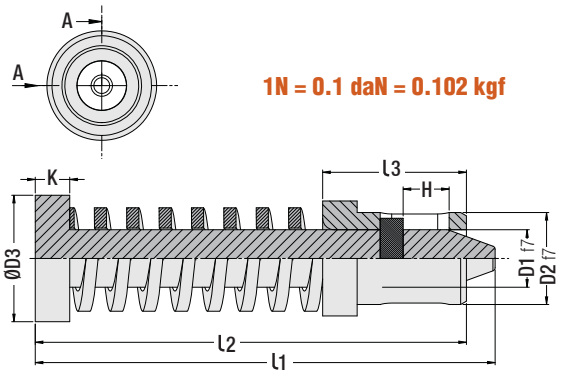
NEW



Pilot Unit

Code: G165

"G165" is used for centering of the moving sheet metal in progressive dies in each step. It is a compact and useful product.

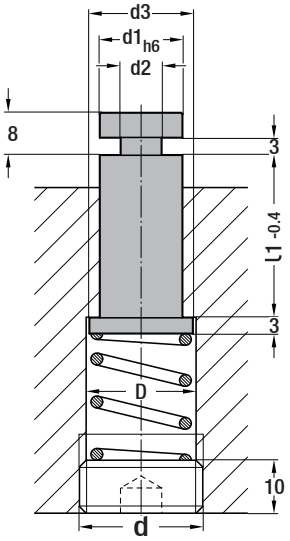


1N = 0.1 daN = 0.102 kgf

Order Code	F0 (N) preloaded	F1 (N) pressed	D1	l1	D2	D3	l2	l3	K	H
G165.05401	11	30	5	40	8	11	36	12	3	4.5
G165.05402	25	70								
G165.05403	30	84								
G165.05404	40	112								
G165.05405	55	155								
G165.05441	11	30	5	44	8	11	40	16	3	4.5
G165.05442	25	70								
G165.05443	30	84								
G165.05444	40	112								
G165.05445	55	155								
G165.08481	44	122	8	48	12	16	41	16	4	4.5
G165.08482	58	164								
G165.08483	79	220								
G165.08484	123	346								
G165.08485	165	460								
G165.08486	189	530								
G165.08521	44	122	8	52	12	16	45	20	4	4.5
G165.08522	58	164								
G165.08523	79	220								
G165.08524	123	346								
G165.08525	165	460								
G165.08526	189	530								
G165.10631	140	391	9.8	63.2	15	18	53	28	4	3.5
G165.10632	245	680								
G165.10633	540	1512								

Sheet Lifting Pin

Code: G23



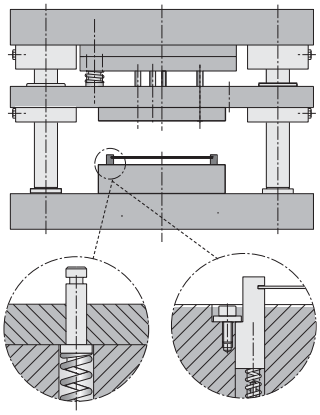
(for sheet lifting) Code: G23

d1 h6	l1-0.4 mm	Ø d2	Ø d3	D d
8	20	5	10	10.5 M.12 x1.5
	25			
	32			
	40			
10	25	6	12	12.5 M.14 x1.5
	32			
	40			
	50			
13	25	7	16	16.5 M.18 x1.5
	32			
	40			
	50			
16	32	8	20	21 M.22 x1.5
	40			
	50			

Order: G23. d1 x l1

Material: 1.7131 (16MnCr5)
Hardness: 58-60 HRC

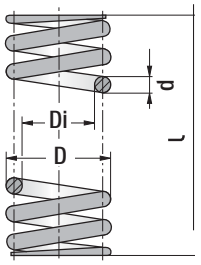
Mounting Example



It is used to align and lifting sheet in progressive / multi-stage forming dies. G145 - Compression spring set screw and round steel spring can be used for mounting.

Round Steel Spring

Code: G23S



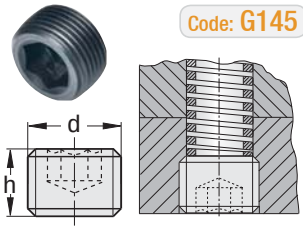
(sheet lifting spring)

D	Di	d	L
10.5	8.5	1.5	40
12.5	10.5	1.5	55
16.5	13	2	40
21	17	2.5	40

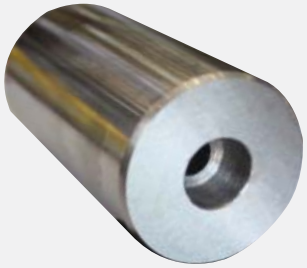
L: Spring length / die plate selection as per dimension.

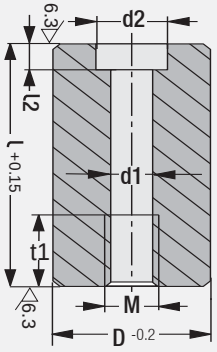
Compression Spring Set Screw

Code: G145



d Thread	dh Hole	h Length	SW Allen
M.12 x 1.5	10.5	10	6
M.14 x 1.5	12.5	10	6
M.18 x 1.5	16.5	10	8
M.22 x 1.5	20.5	10	8





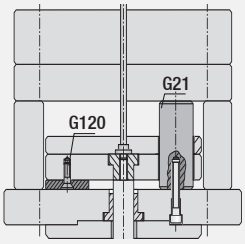
Support Pillar for Injection Mould

(Ejector plate / thrust wedge)

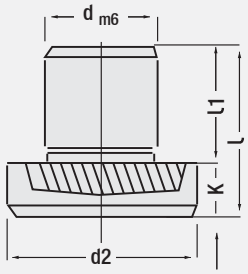
Code: G21

D	l	d1	d2	l2	t1	M
32	47	6.5	11	7.5	15	M8
	57					
	67					
	77					
	87					
	97					
40	47	8.5	15	10	20	M10
	57					
	67					
	77					
50	87					
	97					
	117					
63	57	8.5	15	10	20	M10
	67					
	77					
	87					
80	97	10.5	18	12	25	
	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. D x l



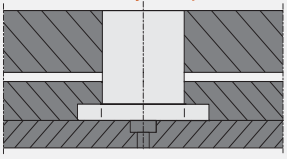
Thrust Pin

Code: G120

Stop / Thrust Pin: It is compatible to use between holder plates of injection moulds or dies.

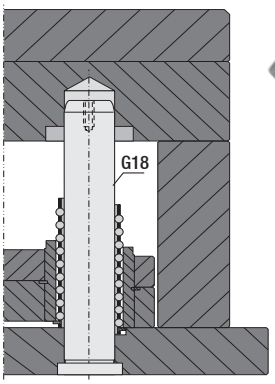
d m6	l mm	l1 mm	d2	K
8	17	12	16	5
14	21	15	24	6

Mounting Example



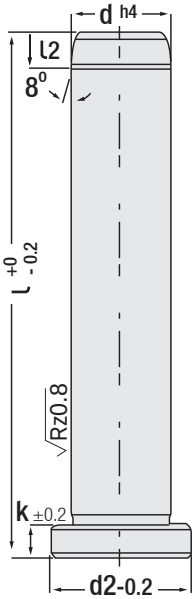
Order: G120. d x l

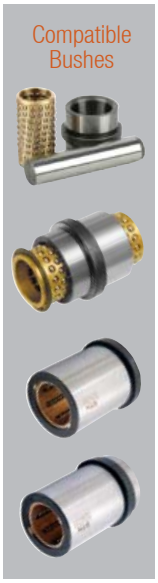
Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC



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.

Code: G18

d	l	l2	d2	k
12	80	4	16	4
	100			
	120			
18	120	7	22	6
	140			
	160			
20	120	7	24	6
	140			
	160			
	200			
25	140	7	28	6
	160			
	200			
	240			
30	160	7	36	6
	200			
	240			
40	180	10	48	10
	200			
	240			
	300			

Order: G18. d x l

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

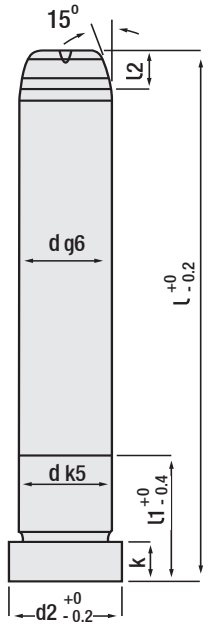
G18 - Areas of Usage:

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

Guide Pillar
(without oil groove)

Code: G17

It is suitable as ejector plates and core systems at injection moulds and as die inner guide pillar in dies. It is compatible using with self-lubricating bronze bushes or bushing components with oil groove.



d	l	l1	l2	d2	k
10	40	13	4	12	3
	60				
	80				
	100	15			
	120				
12	40	18	4	16	6
	60				
	80				
	100				
	120	22			
	140				
	160				
14	60	22	4	18	8
	80				
	100				
	120				
	140	26			
	160				
	180				
16	40	16	7	20	8
	60	24			
	80				
	100				
	120				
	140	26			
	160				
	180				
	200				

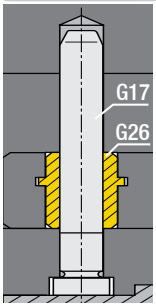
d	l	l1	l2	d2	k
18	60	26	7	22	8
	80				
	100				
	120				
	140	28			
	160				
	180				
	200				
	240				
20	60	28	7	24	8
	80				
	100				
	120				
	140	32			
	160				
	180				
	200				
	240				
22	80	37	7	26	15
	100				
	120				
	140	43			
	160				
	180				
	200				
	220				
	240				
	300				

d	l	l1	l2	d2	k
24	80	39	7	28	15
	100				
	120				
	140	45			
	160				
	180				
	200				
	220				
	240				
	300				
25	80	35	7	28	15
	100				
	120				
	140				
	160	44			
	180				
	200				
	220				
	240				
	300				
30	100	45	7	36	15
	120				
	140				
	160				
	180	53			
	200				
	220				
	240				
	300				
40	160	55	10	48	15
	180				
	200				
	220	63			
	240				
	280				
	300				
	320				
	360				
50	160	65	10	58	15
	200				
	240				
	300				
	360				

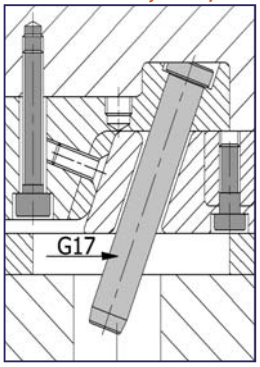
NEW

Note: Ø 25 Series are added in our stocks.

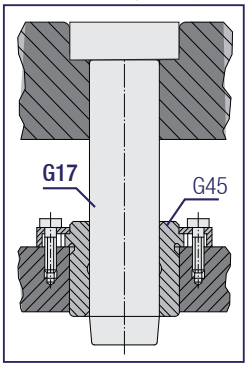
GTH guide pillars are polished with surface polishing machine at final stage of production (after grinding).



Mould Mounting Example



Die Mounting Example



Order: G17. d x l

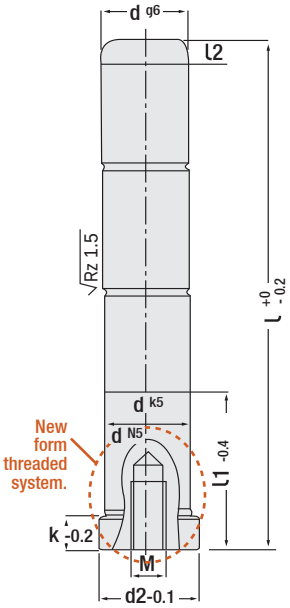
Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC

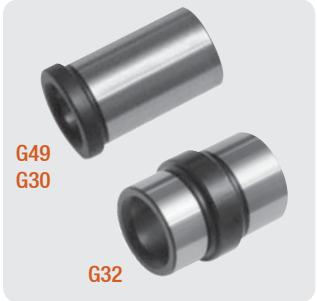
Operating Components: with all lubricated type bushes in injection moulds / dies.

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).





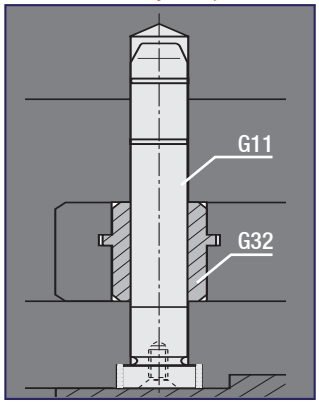
Order: G11. d x l

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.

d	l	l1	l2	d2	k	M
10	40	13	4	12	3	-
	60					
	80					
	100	15				
	120					
12	40	18	4	16	6	-
	60					
	80					
	100					
	120	22				
	140					
	160					
14	60	22	4	18	8	-
	80					
	100					
	120					
	140	26				
	160					
	180					
16	40	16	4	20	8	6
	60	24				
	80					
	100					
	120					
	140	26				
	160					
	180					
	200					
	220					
	250					
	300					

Mounting Example



d	l	l1	l2	d2	k	M
18	60	26	4	22	8	8
	80					
	100					
	120					
	140	28				
	160					
	180					
	200					
	240					
20	60	28	6	24	8	8
	80					
	100					
	120					
	140					
	160	32				
	180					
	200					
	220					
	240					
	250					
	300					
	320					
22	80	37	6	26	15	8
	100					
	120					
	140	43				
	160					
	180					
	200					
	220					
	240					
	300					
24	80	39	6	28	15	8
	100					
	120					
	140	45				
	160					
	180					
	200					
	220					
	240					
	300					

d	l	l1	l2	d2	k	M
NEW Note: Ø 25 Series are added in our stocks. 25	80	35	6	29	10	8
	100					
	120					
	140					
	160	44				
	180					
	200					
	220					
	250					
	300					
	320					
	350					
30	100	45	6	36	15	8
	120					
	140					
	160					
	180	53				
	200					
	220					
	240					
	300					
	360					
	400					
40	160	55	10	48	15	8
	180					
	200					
	220	63				
	240					
	280					
	300					
	320					
	360					
50	160	65	10	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).

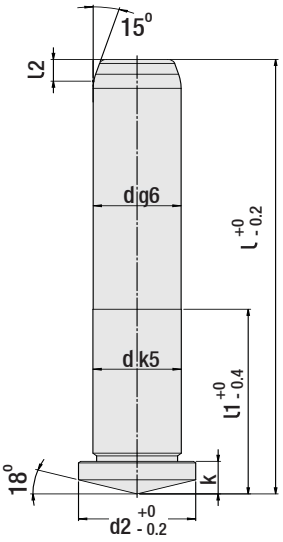
ATTENTION !
Please do not use two products together that have no oil grooves.
One of these products should be oil grooved.

NEW

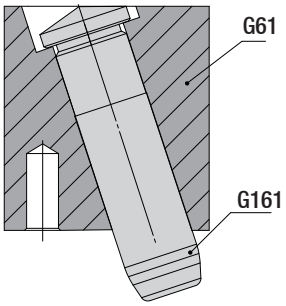
Angled Guide Pillar

Code: G161

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



Mounting Example



Order: G161. d x l

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

Code: G161

d	l	l1	l2	d2	k
12	40	34	4	16	6
	60				
	80				
	100				
	120				
	140				
	160				
14	60	34	4	18	8
	80				
	100				
	120				
	140				
	160				
	180				
16	40	43	7	20	8
	60				
	80				
	100				
	120				
	140				
	160				
	180				
	200				
20	60	43	7	24	8
	80				
	100				
	120				
	140				
	160				
	180				
	200				
	240				
25	80	52	7	28	15
	100				
	120				
	140				
	160				
	180				
	200				
	220				
	240				
	300				
30	100	60	7	36	15
	120				
	140				
	160				
	180				
	200				
	220				
	240				
	300				

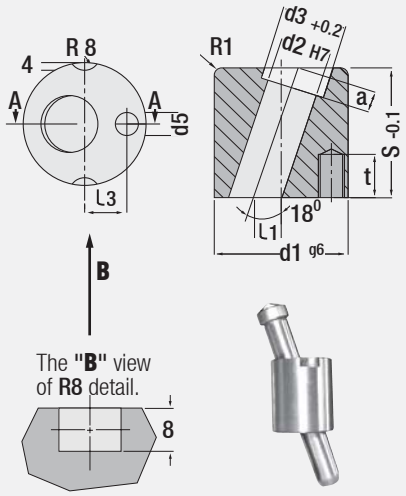
NEW

Angled Guide Bush

Code: G61

(Core pillar holder)

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.



Angled Guide Bush

Code: G61

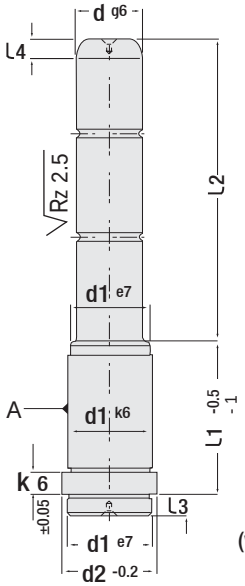
d2 H7	s -0.1	d1 g6	a	d3 +0.2	L1 ±0.15	L3	d5	t
12	36	32	6	17	7	10	M6	11
14	36	36	8	19	7	12	M8	16
16	46	40	8	21	8.5	13.5	M8	16
20	46	45	8	25	8.5	15	M8	16
25	56	50	15	29	10	16	M8	16
30	66	63	15	37	12	21	M10	20

Order: G61. d2

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

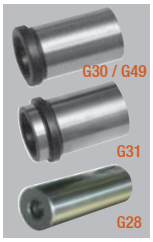
Code: G13

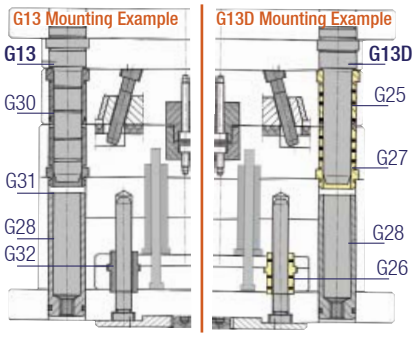
Guide Pillar with Centring Collar
(with oil groove & without oil groove)



Code: G13

(without oil groove)
"As per request"
Code: G13D





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

d	L1	L2	L3	L4	d1	d2	k
15 **14**	17	35 55 75 95	9	5	20	25	6
15 **14**	22	30 50 70 90 110 125 150	9	5	20	25	6
15 **14**	27	30 45 65 85 105 125 145 165	9	5	20	25	6
15 **14**	36	35 55 75 95 115 125 145 155	9	5	20	25	6
15 **14**	46	35 45 65 85 105 125 145	9	5	20	25	6
15 **14**	56	35 55 75 95 135	9	5	20	25	6
15 **14**	66	55 65 85 95 105 125	9	5	20	25	6
15 **14**	76	35 55 75 95 125	9	5	20	25	6
15 **14**	86	55 75 95	9	5	20	25	6
15 **14**	96	55 75 95	9	5	20	25	6
15 **14**	116	75	9	5	20	25	6
18 **20**	17	35 55 75 120	9	5	26	31	6
18 **20**	22	35 45 65 85 95 115	9	5	26	31	6
18 **20**	27	35 45 65 85 105 125 165 225 245	9	5	26	31	6

Order: **G13.** d x l1 x l2 (with oil groove)

Order: **G13D.** d 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. **GTH** mould pillars were polished with surface polishing machine at final stage of production.
The products with oil groove are available in our stocks.

To be continued on the next page

Guide Pillar with Centring Collar

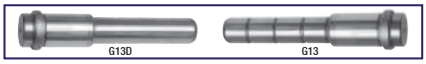
Code: G13 (with oil groove) Code: G13D (without oil groove)

d	l1	l2	l3	l4	d1	d2
18 **20**	36	35	9	5	26	31
		55				
		75				
		95				
		115				
		135				
		165				
		225				
		255				k:6
18 **20**	46	35	9	5	26	31
		45				
		65				
		85				
		105				
		135				
		165				
		245				k:6
18 **20**	56	35	9	5	26	31
		55				
		75				
		95				
		115				
		135				
		155				k:6
18 **20**	66	35	9	5	26	31
		55				
		75				
		95				
		115				
		135				
		145				k:6
18 **20**	76	35	9	5	26	31
		55				
		75				
		95				
		115				
		135				k:6

d	l1	l2	l3	l4	d1	d2
18 **20**	86	55	9	5	26	31
		75				
		95				
		125				
		135				k:6
18 **20**	96	55	9	5	26	31
		75				
		95				
18 **20**	116	75	9	5	26	31
		115				
18 **20**	136	135	9	5	26	31
22 **24**	17	35	9	5	30	35
		55				
		75				
22 **24**	22	35	9	5	30	35
		55				
		75				
		95				
		105				
		130				k:6
22 **24**	27	35	9	5	30	35
		45				
		65				
		85				
		105				
		125				
		165				
		205				
		245				k:6
22 **24**	36	35	9	5	30	35
		55				
		75				
		95				
		115				k:6

d	l1	l2	l3	l4	d1	d2
22 **24**	36	135	9	5	30	35
		165				
		205				
		245				
		285				k:6
22 **24**	46	35	9	5	30	35
		45				
		65				
		85				
		105				
		125				
		165				
		205				k:6
22 **24**	56	35	9	5	30	35
		55				
		75				
		95				
		115				
		135				
		165				
		205				k:6
22 **24**	66	35	9	5	30	35
		55				
		75				
		95				
		115				
		135				
		155				k:6
22 **24**	76	35	9	5	30	35
		55				
		75				
		95				
		115				
		145				k:6
22 **24**	86	55	9	5	30	35
		75				
		95				
		125				
		135				k:6
22 **24**	96	55	9	5	30	35
		75				
		95				
		125				

d	l1	l2	l3	l4	d1	d2
22 **24**	106	55	9	5	30	35
		75				
		95				
		115				
22 **24**	116	75	9	5	30	35
		115				
		155				
22 **24**	136	95	9	5	30	35
		135				
32 **30**	27	35	9	7	42	47
		45				
		65				
		85				
		105				
		125				
		145				
		165				
		185				
		245				
		285				k:6
32 **30**	36	35	9	7	42	47
		55				
		75				
		95				
		115				
		135				
		155				
		245				
		285				k:6
32 **30**	46	45	9	7	42	47
		65				
		85				
		105				
		125				
		145				
		165				
		245				
		285				



Order: G13. d x l1 x l2 (with oil groove)

Order: G13D. d x l1 x l2 (without oil groove)

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

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).

To be continued on the next page →

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

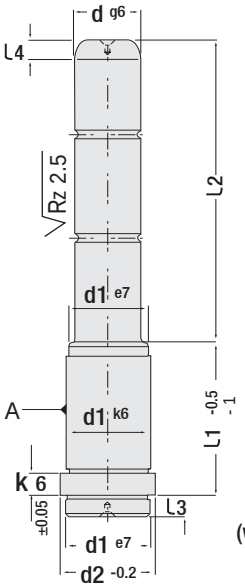
d	l1	l2	l3	l4	d1	d2	k
32 **30**	56	45	9	7	42	47	6
		55					
		75					
		95					
		115					
		135					
		155					
		175					
		245					
		295					
32 **30**	66	45	9	7	42	47	6
		55					
		75					
		95					
		115					
		135					
		155					
		175					
		245					
		295					
32 **30**	76	55	9	7	42	47	6
		75					
		95					
		115					
		135					
		155					
		225					
32 **30**	86	55	9	7	42	47	6
		75					
		95					
		115					
		135					
		155					
		225					
32 **30**	96	55	9	7	42	47	6
		75					
		95					
		115					
		135					
		155					
		205					
32 **30**	106	75	9	7	42	47	6
		95					
		115					
		125					
		145					
		165					

d	l1	l2	l3	l4	d1	d2	k
32 **30**	116	75	9	7	42	47	6
		95					
		115					
		135					
		155					
32 **30**	136	95	9	7	42	47	6
		115					
		135					
		155					
32 **30**	156	115	9	7	42	47	6
		155					
32 **30**	196	155	9	7	42	47	6
		195					
42 **40**	46	95	12	10	54	60	10
		165					
42 **40**	56	75	12	10	54	60	10
		115					
		155					
		195					
42 **40**	66	75	12	10	54	60	10
		135					
42 **40**	76	75	12	10	54	60	10
		115					
		175					
42 **40**	86	75	12	10	54	60	10
		135					
42 **40**	96	75	12	10	54	60	10
		115					
		155					
42 **40**	116	95	12	10	54	60	10
		135					
		195					
42 **40**	136	95	12	10	54	60	10
		135					
		215					
42 **40**	156	115	12	10	54	60	10
		155					
		215					
42 **40**	196	155	12	10	54	60	10
		195					
		235					
42 **40**	246	165	12	10	54	60	10
		245					

Order : G13. d x l1 x l2
(G13D = without oil groove)

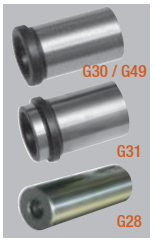
Code: G13

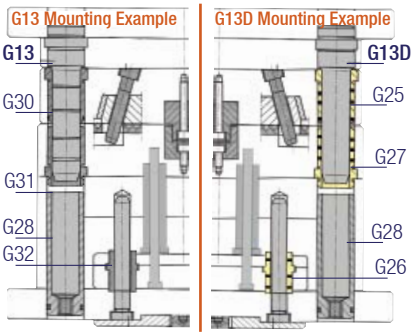
Guide Pillar with Centring Collar
(with oil groove & without oil groove)



Code: G13

(without oil groove)
"As per request"
Code: G13D





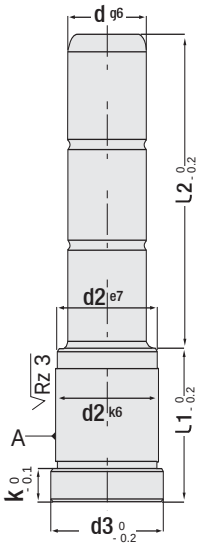
To be continued on the previous page

TKS for Turkish Mould Standard

Code: G12

Guide Pillar - Shouldered

(with oil groove & without oil groove)



Code: G12

(with oil groove)

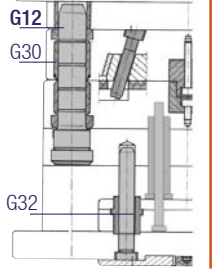
Code: G12D

(without oil groove)

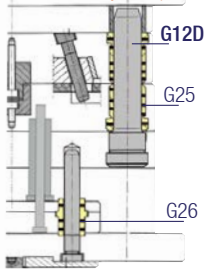
"As per request"

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).

G12 Mounting Example



G12D Mounting Example



To be continued on the next page

Guide Pillar Code: G12 (with oil groove) Code: G12D (without oil groove)

d	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			
		66			
14	26	26	20	25	6
		36			
		46			
		56			
		66			
		76			
14	36	26	20	25	6
		36			
		46			
		56			
		66			
		86			
14	46	26	20	25	6
		36			
		46			
		56			
		76			
		96			
14	56	26	20	25	6
		36			
		46			
		66			
		86			
		106			
16	26	26	24	28	6
		36			
		46			
		56			
		76			
		96			
16	36	26	24	28	6
		36			
		46			
		56			
		66			
		86			
		106			
16	46	26	24	28	6
		36			
		46			
		56			
		66			
		76			
		96			
		116			

d	l1	l2	d2	d3	k
16	56	26	24	28	6
		36			
		46			
		56			
		66			
		76			
		96			
		116			
16	66	26	24	28	6
		36			
		46			
		56			
		66			
		76			
		86			
		106			
		116			
16	76	26	24	28	6
		36			
		46			
		56			
		66			
		76			
		96			
		116			
16	86	26	24	28	6
		36			
		46			
		56			
		66			
		76			
		96			
		116			
18	26	26	26	31	6
		36			
		46			
		56			
		66			
		86			
18	36	26	26	31	6
		36			
		46			
		56			
		66			
		86			
		106			
18	46	26	26	31	6
		36			
		46			
		56			
		66			
		86			
		106			
		126			

d	l1	l2	d2	d3	k
18	56	26	26	31	6
		36			
		46			
		56			
		66			
		86			
		106			
		126			
18	66	26	26	31	6
		36			
		56			
		76			
		96			
		116			
18	76	26	26	31	6
		46			
		66			
		86			
		106			
		126			
18	86	26	26	31	6
		46			
		66			
		86			
		106			
		126			
20	26	26	28	32	6
		36			
		46			
		56			
		66			
		86			
20	36	26	28	32	6
		36			
		46			
		56			
		66			
		76			
		96			
20	46	26	28	32	6
		36			
		46			
		56			
		66			
		76			
		86			
		106			
20	56	26	28	32	6
		36			
		46			
		56			
		66			
		76			
		96			
		116			

Order : G12. d x l1 x l2
(G12D = without oil groove)

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

GTH guide pillars are polished with surface polishing machine at final stage of production (after grinding).

Guide Pillar - Shouldered

for Turkish Mould Standard

Code: G12 (with oil groove)

Code: G12D (without oil groove)

d	l1	l2	d2	d3	k
20	66	26	28	32	6
		36			
		46			
		56			
		66			
		76			
		96			
		116			
20	76	26	28	32	6
		36			
		46			
		56			
		66			
		76			
		86			
		106			
		126			
20	86	26	28	32	6
		36			
		46			
		56			
		66			
		76			
		86			
		106			
		126			
20	96	26	28	32	6
		36			
		46			
		56			
		66			
		76			
		86			
		106			
		126			
25	26	26	34	38	8
		36			
		46			
		56			
		66			
		76			
		96			
25	36	26	34	38	8
		36			
		46			
		56			
		66			
		76			
		86			
		106			
25	46	26	34	38	8
		36			
		46			
		56			
		66			
		76			
		96			
		116			
25	56	26	34	38	8
		36			
		46			

d	l1	l2	d2	d3	k
25	56	56	34	38	8
		66			
		76			
		96			
		116			
25	66	26	34	38	8
		36			
		46			
		56			
		66			
		76			
		86			
		106			
		126			
25	76	26	34	38	8
		36			
		46			
		56			
		66			
		76			
		86			
		106			
		126			
25	86	36	34	38	8
		46			
		56			
		66			
		76			
		86			
		96			
		116			
		136			
25	96	36	34	38	8
		46			
		56			
		66			
		76			
		86			
		96			
		116			
		136			
25	106	46	34	38	8
		56			
		66			
		76			
		86			
		96			
		116			
		136			
30	36	36	39	43	10
		46			
		56			
		66			
		86			
		106			
30	46	36	39	43	10
		46			
		56			

d	l1	l2	d2	d3	k
30	46	66	39	43	10
		76			
		96			
		116			
30	56	36	39	43	10
		46			
		56			
		66			
		76			
		86			
		106			
		126			
30	66	36	39	43	10
		46			
		56			
		66			
		76			
		86			
		96			
		116			
		136			
30	76	36	39	43	10
		46			
		56			
		76			
		96			
		116			
		136			
30	86	36	39	43	10
		46			
		66			
		86			
		106			
		126			
		146			
30	96	46	39	43	10
		66			
		86			
		106			
		126			
		146			
30	106	56	39	43	10
		76			
		96			
		116			
		136			
30	116	56	39	43	10
		76			
		96			
		116			
		136			
40	56	56	54	58	10
		86			
		106			

d	l1	l2	d2	d3	k
40	56	126	54	58	10
		156			
		186			
40	66	66	54	58	10
		96			
		116			
		136			
		166			
		196			
40	76	76	54	58	10
		106			
		126			
		146			
		166			
		196			
		216			
40	86	86	54	58	10
		126			
		146			
		176			
		206			
		226			
40	96	96	54	58	10
		136			
		156			
		186			
		216			
		236			
40	106	106	54	58	10
		126			
		156			
		186			
		226			
		246			
40	116	116	54	58	10
		136			
		166			
		196			
		236			
		256			
40	126	126	54	58	10
		166			
		196			
		236			
		266			
40	136	136	54	58	10
		196			
		226			
		266			

Order : G12. d x l1 x l2
(G12D = without oil groove)

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

To be continued on the previous page

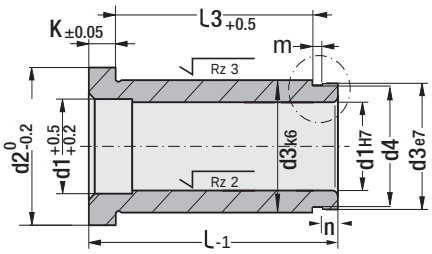
NEW

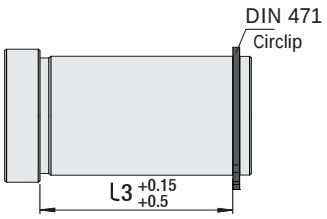
Guide Bush - Headed

Code: G49

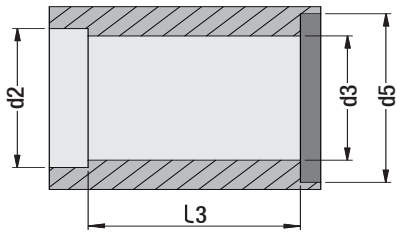
(with circlip slotted)

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



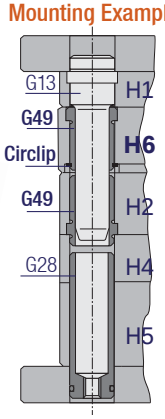


Mounting Dimensions



Compatible Pillars

Mounting Example



Guide Bush - Headed

Code: G49

d1	l	d3	d2	k	L3	m	n	d4	d5	Circlip
12	27	18	25	6	18	1	2	17	26.7	DIN 471 Ø 18
	36				27					
	46				37					
	56				47					
14 15	27	20	25	6	18	1	2	19	29.1	DIN 471 Ø 20
	36				27					
	46				37					
	56				47					
	66				57					
	76				67					
	86				77					
	96				87					
	116				107					
16	27	22	27	6	18	1	2	21	31.7	DIN 471 Ø 22
	36				27					
	46				37					
	56				47					
18 20	27	26	31	6	18	1	2	25	36.3	DIN 471 Ø 26
	36				27					
	46				37					
	56				47					
	66				57					
	76				67					
	86				77					
	96				87					
	116				107					
	136				127					
22 24	27	30	35	6	17	2	2	29	41.4	DIN 471 Ø 30
	36				26					
	46				36					
	56				46					
	66				56					
	76				66					
	86				76					
	96				86					
	116				106					
	136				126					
	156				146					
30 32	27	42	47	6	15	2	4	40	56	DIN 471 Ø 42
	36				24					
	46				34					
	56				44					
	66				54					
	76				64					
	86				74					
	96				84					
	116				104					
	136				124					
	156				144					
	176				164					
	196				184					
40 42	36	54	60	10	19	2	5	51	69.3	DIN 471 Ø 54
	46				29					
	56				39					
	66				49					
	76				59					
	86				69					
	96				79					
	116				99					
	136				119					
	156				139					
	176				159					
	196				179					
	246				229					
50	76	66	72	10	58	3	5	62	82.7	DIN 471 Ø 65
	96				78					
	116				98					
	136				118					
	156				138					
	196				178					
60	96	80	86	20	68	3	5	77	99.1	DIN 471 Ø 80
	116				88					
	136				108					
	156				128					
	196				168					
	246				218					

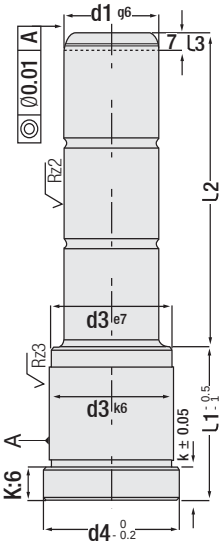
Order: **G49.** d1 x l

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

NEW

Code: G50

Guide Pillar - Shouldered



Code: G50

(with oil groove)

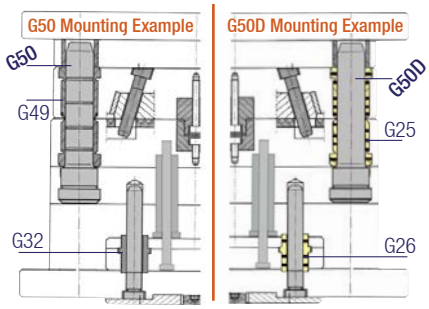
Code: G50D

(without oil groove)

"As per request"

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

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).



d1	L1	L2	d3	d4
14	17	35	20	25
		55		
		75		
		95		
14	22	20	20	25
		35		
		40		
		45		
		50		
		55		
		65		
		70		
		90		
		110		
14	27	20	20	25
		35		
		40		
		45		
		55		
		65		
		85		
		105		
14	36	20	20	25
		35		
		40		
		45		
		55		
		65		
		75		
		95		
14	46	20	20	25
		35		
		45		
		65		
		85		
		105		
14	56	20	20	25
		35		
		55		
		75		
		95		
14	66	55	20	25
		65		
		95		
14	76	55	20	25
		95		
14	86	55	20	25
		95		
14	96	55	20	25
		95		
14	116	75	20	25

d1	L1	L2	d3	d4
15	17	35	20	25
		55		
		75		
		95		
15	22	20	20	25
		35		
		40		
		45		
		50		
		55		
		65		
		70		
		90		
		110		
15	27	20	20	25
		35		
		40		
		45		
		55		
		65		
		85		
		105		
15	36	20	20	25
		35		
		40		
		45		
		55		
		65		
		75		
		95		
15	46	20	20	25
		35		
		45		
		65		
		85		
		105		
15	56	20	20	25
		35		
		55		
		75		
		95		
15	66	55	20	25
		65		
		95		
15	76	55	20	25
		95		
15	86	55	20	25
		95		
15	96	55	20	25
		95		
15	116	75	20	25

d1	L1	L2	d3	d4
18	17	35	26	31
		55		
		75		
		95		
18	22	20	26	31
		35		
		40		
		45		
		50		
		55		
		60		
		65		
		70		
		80		
		85		
		115		
18	27	20	26	31
		35		
		40		
		45		
		50		
		55		
		60		
		65		
		70		
		80		
		85		
		105		
		125		
18	36	20	26	31
		35		
		40		
		45		
		50		
		55		
		60		
		65		
		70		
		75		
		80		
		95		
		115		
		135		
18	46	20	26	31
		45		
		65		
		85		
		105		
		135		
		165		

GTH guide pillars are polished with surface polishing machine at final stage of production (after grinding).

Order: G50. d1 x l1 x l2
(G50D = without oil groove)

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

To be continued on the next page

Guide Pillar - Shouldered

Code: G50 (with oil groove)

d1	L1	L 2	d3	d4
18	56	20	26	31
		35		
		55		
		75		
		95		
18	66	55	26	31
		75		
		95		
18	76	55	26	31
		75		
		95		
18	86	55	26	31
		75		
		95		
18	96	55	26	31
		95		
18	116	115	26	31
18	136	135	26	31
20	17	35	26	31
		55		
		75		
		95		
20	22	20	26	31
		35		
		40		
		45		
		50		
		55		
		60		
		65		
		70		
		80		
		85		
		115		
20	27	20	26	31
		35		
		40		
		45		
		50		
		55		
		60		
		65		
		70		
		80		
		85		
		105		
		125		
20	36	20	26	31
		35		
		40		
		45		

d1	L1	L 2	d3	d4
20	36	50	26	31
		55		
		60		
		65		
		70		
		75		
		80		
		95		
		115		
		135		
20	46	20	26	31
		45		
		65		
		85		
		105		
		135		
		165		
20	56	20	26	31
		35		
		55		
		75		
		95		
20	66	55	26	31
		75		
		95		
20	76	55	26	31
		75		
		95		
20	86	55	26	31
		75		
		95		
20	96	55	26	31
		95		
20	116	115	26	31
20	136	135	26	31
22	17	35	30	35
		55		
		75		
22	22	35	30	35
		55		
		75		
		105		
		130		
22	27	25	30	35
		45		
		50		
		60		
		65		
		70		
		80		
		85		

d1	L1	L 2	d3	d4
22	27	105	30	35
		125		
		165		
22	36	25	30	35
		45		
		50		
		55		
		60		
		70		
		75		
		80		
		95		
		115		
		135		
		165		
22	46	25	30	35
		45		
		50		
		60		
		65		
		70		
		80		
		85		
		105		
		125		
		165		
22	56	25	30	35
		45		
		55		
		75		
		95		
		115		
		165		
22	66	55	30	35
		75		
		95		
22	76	25	30	35
		45		
		55		
		75		
		95		
		115		
22	86	55	30	35
		75		
		95		
22	96	55	30	35
		75		
		95		
22	116	75	30	35
		115		
		155		

d1	L1	L 2	d3	d4
22	136	135	30	35
22	156	155	30	35
24	17	35	30	35
		55		
		75		
24	22	35	30	35
		55		
		75		
		105		
		130		
24	27	25	30	35
		45		
		50		
		60		
		65		
		70		
		80		
		85		
		105		
		125		
		165		
24	36	25	30	35
		45		
		50		
		55		
		60		
		70		
		75		
		80		
		95		
		115		
		135		
		165		
24	46	25	30	35
		45		
		50		
		60		
		65		
		70		
		80		
		85		
		105		
		125		
		165		
24	56	25	30	35
		45		
		55		
		75		
		95		
		115		
		165		

Code: G50D (without oil groove)

d1	L1	L 2	d3	d4
24	66	55	30	35
		75		
		95		
24	76	25	30	35
		45		
		55		
		75		
		95		
		115		
24	86	55	30	35
		75		
		95		
24	96	55	30	35
		75		
		95		
24	116	75	30	35
		115		
		155		
24	136	135	30	35
24	156	155	30	35
30	22	35	42	47
		75		
		130		
30	27	45	42	47
		65		
		105		
		165		
30	36	55	42	47
		75		
		95		
		115		
		155		
30	46	45	42	47
		65		
		85		
		105		
		125		
		165		
30	56	55	42	47
		75		
		95		
		115		
		135		
		175		
30	66	55	42	47
		75		
		95		
		115		
		135		
		175		

GTH guide pillars are polished with surface polishing machine at final stage of production (after grinding).

Order: G50. d1 x l1 x l2
(G50D = without oil groove)

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

Code: G50D

Code: G50

To be continued on the next page →

d1	L1	L 2	d3	d4	L3	k
30	76	55	42	47	7	6
		75				
		95				
		115				
		155				
30	86	55	42	47	7	6
		75				
		95				
		115				
		155				
30	96	55	42	47	7	6
		75				
		95				
		115				
		155				
30	116	75	42	47	7	6
		115				
		155				
30	136	95	42	47	7	6
		115				
		155				
30	156	115	42	47	7	6
		155				
30	176	135	42	47	7	6
		175				
30	196	155	42	47	7	6
		195				
32	22	35	42	47	7	6
		75				
		130				
32	27	45	42	47	7	6
		65				
		105				
		165				
32	36	55	42	47	7	6
		75				
		95				
		115				
		155				
32	46	45	42	47	7	6
		65				
		85				
		105				
		125				
		165				
32	56	55	42	47	7	6
		75				
		95				
		115				
		135				
		175				

d1	L1	L 2	d3	d4	L3	k
32	66	55	42	47	7	6
		75				
		95				
		115				
		135				
		175				
32	76	55	42	47	7	6
		75				
		95				
		115				
		155				
32	86	55	42	47	7	6
		75				
		95				
		115				
		155				
32	96	55	42	47	7	6
		75				
		95				
		115				
		155				
32	116	75	42	47	7	6
		115				
		155				
32	136	95	42	47	7	6
		115				
		155				
32	156	115	42	47	7	6
		155				
32	176	135	42	47	7	6
		175				
32	196	155	42	47	7	6
		195				
40	36	75	54	60	10	10
		135				
40	46	95	54	60	10	10
		165				
40	56	75	54	60	10	10
		115				
		155				
		195				
40	66	75	54	60	10	10
		135				
40	76	75	54	60	10	10
		115				
		175				
40	86	75	54	60	10	10
		135				
40	96	75	54	60	10	10
		115				
		155				

d1	L1	L 2	d3	d4	L3	k
40	115	95	54	60	10	10
		135				
		195				
40	136	95	54	60	10	10
		135				
		215				
40	156	115	54	60	10	10
		155				
		215				
40	176	135	54	60	10	10
		155				
		175				
40	196	155	54	60	10	10
		195				
		235				
42	36	75	54	60	10	10
		135				
42	46	95	54	60	10	10
		165				
42	56	75	54	60	10	10
		115				
		155				
		195				
42	66	75	54	60	10	10
		135				
42	76	75	54	60	10	10
		115				
		175				
42	86	75	54	60	10	10
		135				
42	96	75	54	60	10	10
		115				
		155				
42	115	95	54	60	10	10
		135				
		195				
42	136	95	54	60	10	10
		135				
		215				
42	156	115	54	60	10	10
		155				
		215				
42	176	135	54	60	10	10
		155				
		175				
42	196	155	54	60	10	10
		195				
		235				
50	96	115	66	72	10	10
	116	135				
	136	135				
	156	155				
	196	175				
60	96	115	80	86	10	20
	116	135				
	136	135				
	156	155				
	196	175				
	246	195				

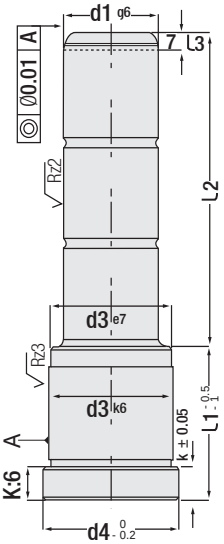
GTH guide pillars are polished with surface polishing machine at final stage of production (after grinding).

Order: G50. d1 x l1 x l2
(G50D = without oil groove)

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

Code: G50

Guide Pillar - Shouldered

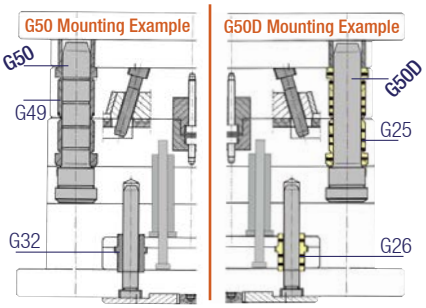


Code: G50
(with oil groove)

Code: G50D
(without oil groove)
"As per request"

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

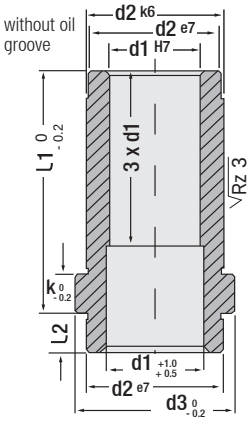
IMPORTANT! Injection Mould: Our guide pillars & bushes cover standard mould systems. But, guide pillar & bushes with different tolerances should be selected for aluminum injection moulds (high temperature / pressure). It should be requested from our company (production with special materials).



To be continued on the previous page

Guide Bush with Centring Collar

Code: G31



d1	l 1	d2	d3	k	l2
15 **14**	17 22 27 36 46 56 66 76 86 96 116	20	25	6	9
18 **20**	17 22 27 36 46 56 66 76 86 96 106 116 136	26	31	6	9
22 **24**	17 22 27 36 46 56 66 76 86 96 106 116 136 156	30	35	6	9

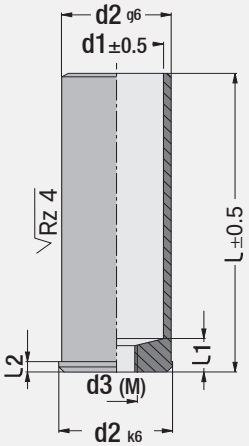
Code: G31

d1	l1	d2	d3	k	l2
32 **30**	27 36 46 56 66 76 86 96 106 116 126 136 156 196	42	47	6	9
42 **40**	46 56 66 76 86 96 116 136 156 196 246	54	60	10	12

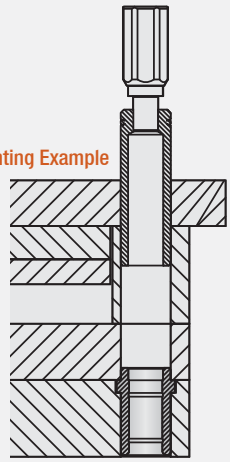
Order: G31. d1 x l1
Material: 1.7131 - Hardness: 58 - 62 HRC

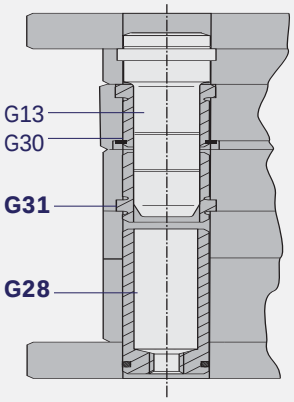
Centring Bush

Code: G28



Mounting Example



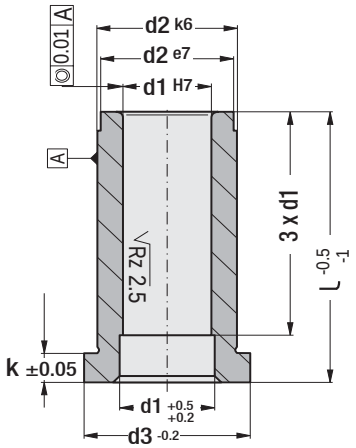


Order: G28. d2 x l
Material: 1.7131 - Hardness: 58 - 62 HRC

Code: G28

d2	l	d1	d3	l 1	l 2
20	30 40 60 80 100 120 140 160	16	M. 8	13	2.5
26	30 40 60 80 100 120 140 160 180	21	M. 10	13	2.5
30	40 60 80 100 120 140 160 180 200 240	25	M. 12	13	2.5
42	40 60 80 100 120 140 160 180 200 220 260 300	33	M. 12	13	4.5
54	60 80 120 160 200 240 280	43	M. 12	13	4.5

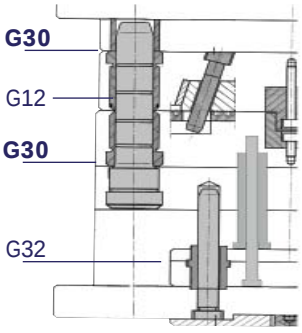
for Turkish Mould Standard



Guide Bush - Headed

Code: G30

d1	l	d2	d3	k
10 (NEW)	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			
	76			
16	26	24	28	6
	36			
	46			
	56			
	66			
	76			
	86			
18	26	26	31	6
	36			
	46			
	56			
	66			
	76			
	86			
20	26	28	32	6
	36			
	46			
	56			
	66			
	76			
	86			
	96			
25	26	34	38	8
	36			
	46			
	56			
	66			
	76			
	86			
	96			
	106			
30	36	39	43	10
	46			
	56			
	66			
	76			
	86			
	96			
	106			
	116			
40	46	54	58	10
	56			
	66			
	76			
	86			
	96			
	106			
	116			
	126			
	136			
	146			

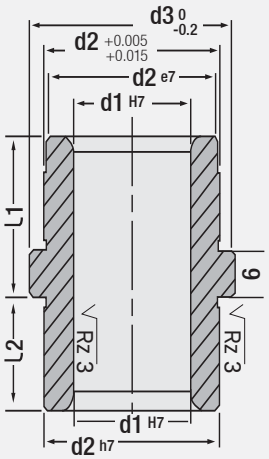


Order: G30. d1 x l

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

Guide Bush with Centre Collar

Code: G32

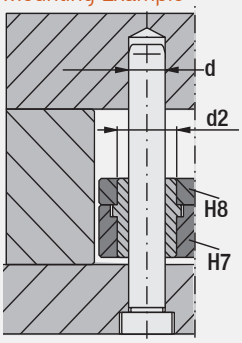


Code: G32

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.

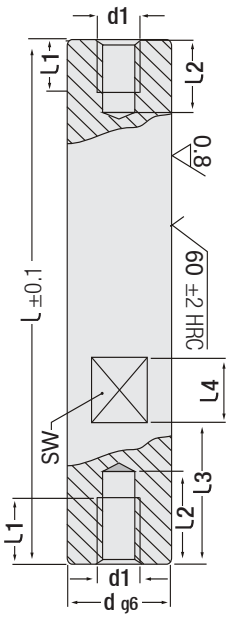


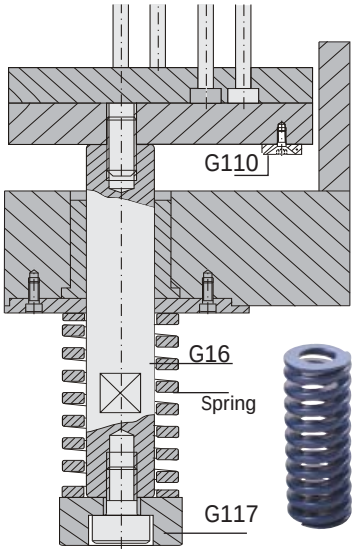
Order: G32. d1 x l1

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

Ejector Rod

Code: G16





Order: G16. d x l

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

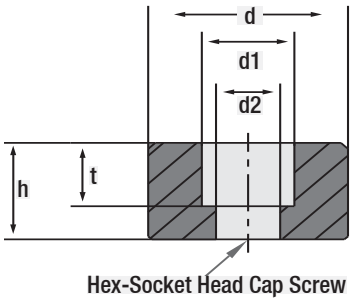
Ejector Rod

Code: G16

d	L	d1	l1	l2	l3	l4	SW
10	60	M.6	10	14	21	16	8
	70						
	80						
	100						
	140						
14	60	M.8	13	16	21	18	10
	80						
	100						
	120						
	140						
	180						
16	60	M. 10	16	20	21	18	12
	70						
	80						
	100						
	120						
	140						
	200						
18	100	M. 10	20	26	30	24	14
	120						
	140						
	160						
	180						
	200						
	220						
	240						
20	120	M. 12	24	30	40	30	14
	140						
	160						
	180						
	200						
	240						
24	120	M. 12	24	30	40	30	17
	140						
	160						
	180						
	200						
	240						
	260						
34	160	M. 16	34	40	50	30	24
	200						
	240						
	260						
	300						

Code: G117

Mounting Washer for Ejector Rod



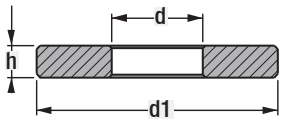
d	h	t	d1	d2
15	10	8.4	11	6.6
22	14	11	14.5	9
36	20	13.5	17.5	11
46	25	15.5	20	14
56	32	21	26	18

Order: G117. d x h

Code: G114

Thick Mounting Washer

Mould inner mounting washer / thick

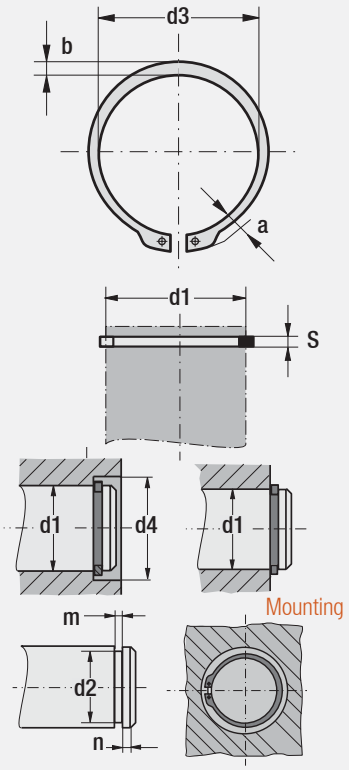


DIN 6340

Form	d	d1	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	35 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

External Circlip Code: DIN471



Code: DIN471

d1	S	a	b	d3	d4	m
16	1.0	3.5	2.2	14.7	24.4	1.1
20	1.2	4.0	2.6	18.5	29.0	1.3
21		4.1	2.7	19.5	30.2	
22		4.2	2.8	20.5	31.4	
24		4.4	3.0	22.2	33.8	
25		4.4	3.0	23.2	34.8	
26		4.5	3.1	24.2	36.1	
28	1.5	4.7	3.2	25.9	38.4	1.6
29		4.8	3.4	26.9	39.6	
30		5.0	3.5	27.9	41.0	
34		5.4	3.8	31.5	45.8	
37	1.75	5.7	4.1	34.2	49.4	1.85
39		5.8	4.2	35.2	50.6	
45		6.7	4.7	41.5	59.4	
50	2.0	6.9	5.1	45.8	64.8	2.15
54		7.1	5.3	49.8	70.0	

Order : DIN471. d1 x S

Code: G77

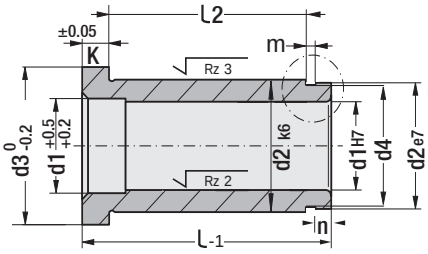
d1	L	d2	d3	K	L2	m	n	d4	d5	Circlip
12	26	16	19	4	16	1.1	4.9	15.2	24.3	DIN 471 Ø 16
	36				26					
	46				36					
	56				46					
	66				56					
14	26	20	25	6	16	1.3	2.7	19	29.1	DIN 471 Ø 20
	36				26					
	46				36					
	56				46					
	66				56					
	76				66					
16	26	24	28	6	16	1.3	2.7	22.9	34	DIN 471 Ø 24
	36				26					
	46				36					
	56				46					
	66				56					
	76				66					
	86				76					
20	26	28	32	6	16	1.6	2.4	26.6	38.5	DIN 471 Ø 28
	36				26					
	46				36					
	56				46					
	66				56					
	76				66					
	86				76					
	96				86					
25	26	34	38	8	14	1.6	2.4	32.3	46.1	DIN 471 Ø 34
	36				24					
	46				34					
	56				44					
	66				54					
	76				64					
	86				74					
	96				84					
	106				94					
30	36	39	43	10	21	1.85	3.15	37	52.1	DIN 471 Ø 39
	46				31					
	56				41					
	66				51					
	76				61					
	86				71					
	96				81					
	106				91					
	116				101					
40	46	54	58	10	28	3.35	5.85	51	71	DIN 471 Ø 54
	56				38					
	66				48					
	76				58					
	86				68					
	96				78					
	106				88					
	116				98					
	126				108					
	136				118					
	146				128					

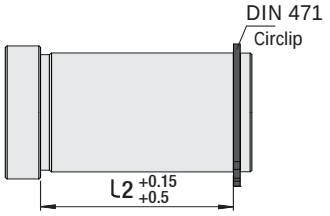
TKS for Turkish Mould Standard

Guide Bush - Headed Code: G77

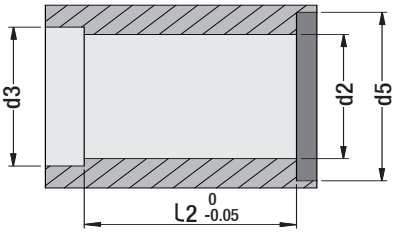
(with circlip slotted)

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



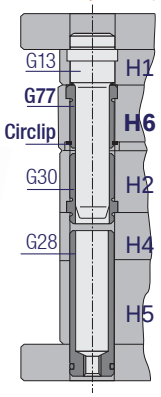


Mounting Dimensions



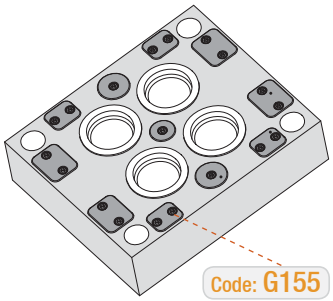
Compatible Pillars

Mounting Example

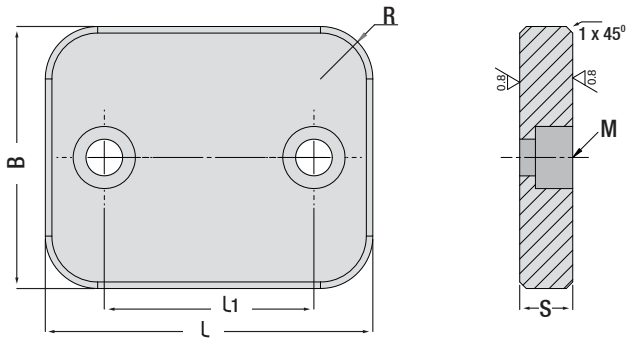


Order: G77. d1 x l

Material: 1.7131 - Hardness: 58 - 62 HRC



Wear - Shim Plate
(Core bases, for movable or fixed surfaces)



Wear - Shim Plate, Rectangular

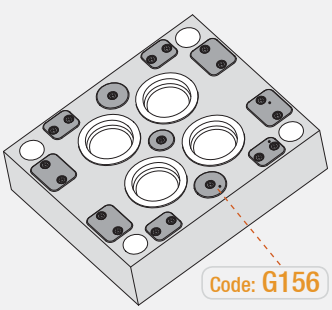
Clamping / locking loads occurred with the support of 1.2842 steel materials and heat treatment during injection and 2nd pressure are equally distributed to mould surfaces except cores, the mould surfaces are protected with this way. It can be used for both (movable and fixed) surfaces when necessary.
Usage: The necessary thickness should be correctly calculated during mounting. The final thickness is achieved by grinding back surface of the product when necessary. Plate to be used for the same core should be ground together. The parts to be used in mould locking should be ground together. The cleanliness and measurements of the mounting surfaces are important. Mounting hole sizes should be bigger than 0.2 (minimum) from one side. Hexagon socket head cap screws in 12.9 quality are used for connections.
***Connecting screws are provided separately**

Code: G155

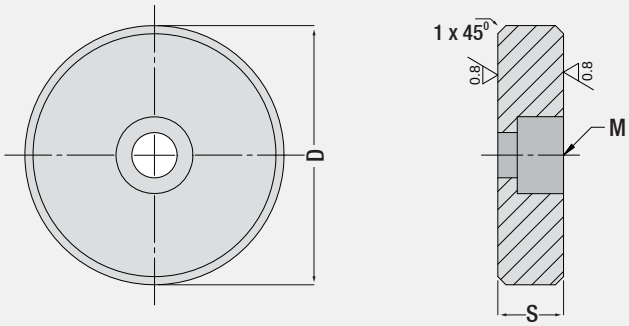
B -0.5	L -0.5	S +0.02 0	L1	R	M
32	40	8.1	24	8	M5
	64		40		M5
	100	10.1	64		M6
40	50	8.1	32	8	M5
	80	10.1	52		M6
	100	12.1	64		
50	64	10.1	40	8	M6
	100	12.1	64		
	125		80		
64	80	10.1	52	8	M6
	100	12.1	64		
	125		80		
	160		100		

Order: G155. B x L

Material: 1.2842 (Heat treated)
Hardness: 54 - 56 HRC



Wear - Shim Plate, Round
(Core bases, for movable or fixed surfaces)



Wear - Shim Plate, Round

In injection mould designs: Injection pressure on mould separation surfaces should be distributed according to a predefined value.
Thus, the mould separation surfaces are aligned correctly and the height differences are easily balanced thanks to innovative **GTH** products such as G155 / G156 / G157 - 1.2842 steel 54 - 56 HRC hardened shim plates are ready to mount with 0.2 mm precision tolerances in embedded mounting holes and round - rectangular versions.

Usage: The necessary thickness should be correctly calculated during mounting. The final thickness is achieved by grinding back surface of the product when necessary. Plate to be used for the same core should be ground together. The parts to be used in mould locking should be ground together. The cleanliness and measurements of the mounting surfaces are important. Mounting hole sizes should be bigger than 0.2 (minimum) from one side. Hexagon socket head cap screws in 12.9 quality are used for connections.
***Connecting screws are provided separately**

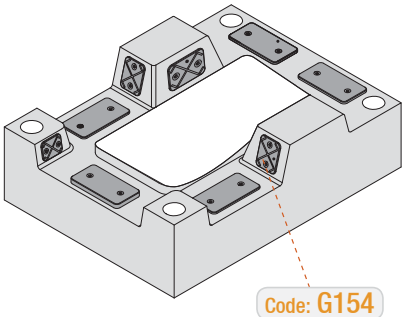
Code: G156

D -0.4	S ±0.03	M
20	8.1	M5
32	8.1	M5
40	10.1	M6
50	10.1	M6
64	12.1	M6

Order: G156. D

Material: 1.2842 (Heat treated)
Hardness: 54 - 56 HRC

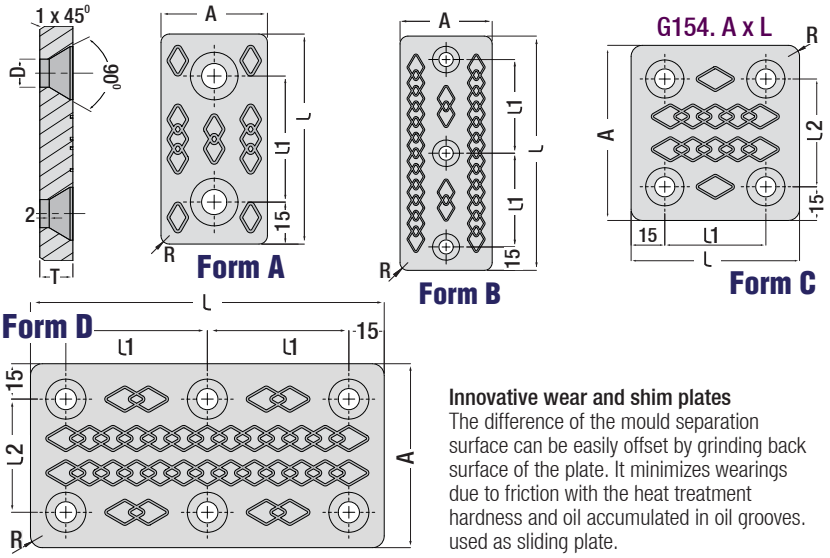
NEW



Code: G154

Wear - Shim Plate (with oil grooves)

(Hard, heat-treated core bases, for movable or fixed surfaces)



Innovative wear and shim plates
The difference of the mould separation surface can be easily offset by grinding back surface of the plate. It minimizes wearings due to friction with the heat treatment hardness and oil accumulated in oil grooves. used as sliding plate.

Clamping / locking loads occurred with the support of 1.2842 steel materials and heat treatment during injection and 2nd pressure are equally distributed to mould surfaces except cores, the mould surfaces are protected with this way. It can be used for both (movable and fixed) surfaces when necessary.

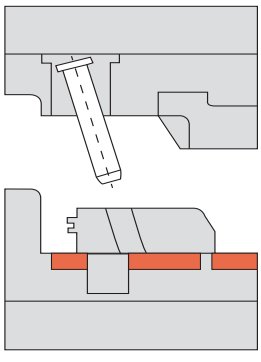
Wear - Shim Plate (with oil grooves) Code: G154

A +0 -0.2	L +0 -0.2	L1 ±0.1	L2 ±0.1	T ±0.02	R	D	Form	Countersunk Head Screws with Hex-Socket
18	50	20	-	7	3	6.5	A	M6 x20 2 pcs.
	75	45						
	100	70						
	150	60					B	M6 x 20 - 3 pcs.
28	50	20	-	7	3	9	A	M8 x 20 2 pcs.
	75	45						
	100	70						
	150	60					B	M8 x 20 - 3 pcs.
38	50	20	-	7	3	9	A	M8 x 20 2 pcs.
	75	45						
	100	70						
	150	60					B	M8 x 20 - 3 pcs.
48	75	45	-	7	5	9	A	M8 x 20 2 pcs.
	100	70						
	125	95						
	150	60					B	M8 x 20 - 3 pcs.
58	75	45	-	7	5	9	A	M8 x 20 2 pcs.
	100	70						
	125	95						
	150	60					B	M8 x 20 - 3 pcs.
78	75	45	48	7	5	9	C	M8 x 20 4 pcs.
	100	70						
	125	95						
	150	60					D	M8 x 20 - 6 pcs.

Usage: The necessary thickness should be correctly calculated during mounting. The final thickness is achieved by grinding back surface of the product when necessary. Mounting hole sizes should be bigger than 0.2 (minimum) from one side.

Order: G154. A x L

Material: 1.2842 (Heat treated)
Hardness: 54 - 56 HRC

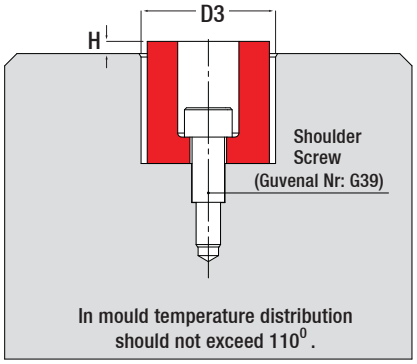


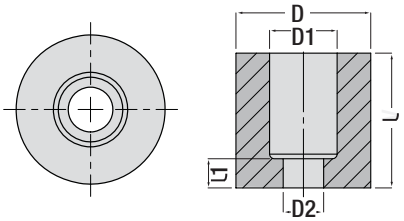
NEW

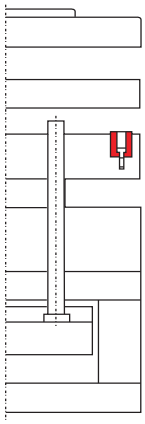
Code: G157

Urethane Spring for Mould Closing

(Cushioning purpose)







Product: Urethane shore hardness 90A.
Usage: All plates / side cores working by clashing each other in injection mould system start mould opening during mould opening before the machine. During closing, cushioning is used and a soft opening is achieved.
This way, it reduces practice surface damages and provides cushioning for high speed operations.

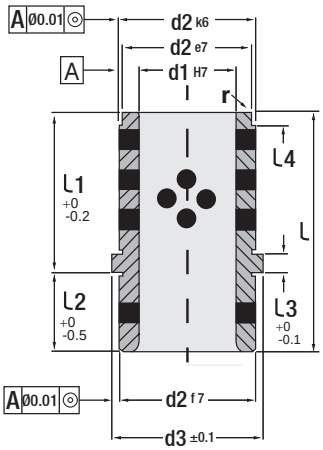
Code: G157

D	L	D1	D2	D3	L1	H	G39 Screw
Ø20	25	Ø11	Ø6.5	Ø22	6.5	3	M5xØ6x12
Ø30	30	Ø15	Ø9	Ø33	6.5	3	M6xØ8x16

Order: G157. D x L
Provided with shoulder screw (G39).

Code: G26

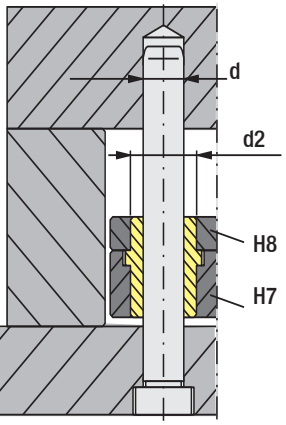
Guide Bush with Centre Collar, Self-Lubricating

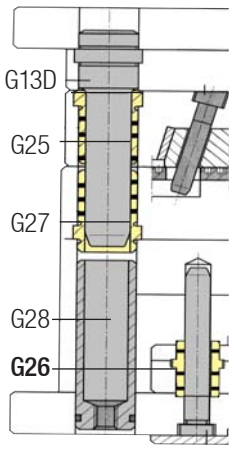


Especially, it can be used in pillar systems of the ejector plates in injection moulds with Guide Pillar without oil groove **(G17)**. Guide bushes are self-lubricating systems.

Heat Resistance: 150^0 C. It can even work in humid environments.

Working Direction





Code: G26

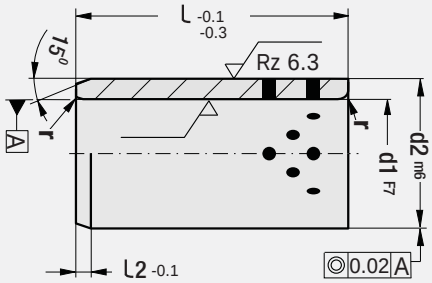
d1	l	d2	d3	l1	l2	l3	l4	r
14	26	20	25	17	9	6	2	1
16	26	20	25	17	9	6	2	1
20	39	26	31	22	17	6	2	1.5
22	49	30	35	27	22	6	4	1.5
25	49	30	35	27	22	6	2	2
30	63	42	47	36	27	6	2	5
40	63	50	60	36	27	8	6	4
50	92	63	72	55	37	8	6	4

Order: **G26.** d1 x l

Material: Bronze + graphite inserts

Code: G48

Guide Bush - Plain, Self-Lubricating



G48 products used in hydraulic press and injection mould machines and especially on plain guide pillars in mould systems.

Working Direction

* Hole tolerance for shrink fit: H7

d1	l	d2	l2	r
8	8	12	2	0.50
	10			
	15			
10	10	14	2	0.50
	12			
	15			
	20			
12	10	18	2	0.50
	12			
	15			
	20			
	25			
	30			
15 **16**	12	22	2	0.75
	16			
	20			
	25			
	30			
	35			
	40			
18 **20**	20	24 28 30	4	0.75
	25			
	30			
	35			
	40			
	50			

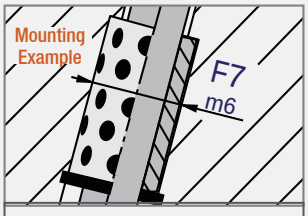
d1	l	d2	l2	r
24 **25**	20	33 35	4	0.75
	25			
	30			
	35			
	40			
	50			
35 **30**	20	38 40 45	4	0.75
	25			
	30			
	35			
	40			
	50			
	60			
38 **40**	25	50 55	4	1.50
	30			
	35			
	40			
	50			
	60			
	80			
42 **45**	30	55 60	4	1.50
	35			
	40			
	50			
	60			

d1	l	d2	l2	r
48 **50**	30	60 62 65	4	1.50
	40			
	50			
	60			
	70			
	80			
	100			
60	40	74 75	4	2.00
	50			
	60			
	80			
	100			
80	40	96 100	4	2.00
	60			
	80			
	100			
	120			
	140			
100	50	120 140 170 180	4	2.00
120	60			
150	80			
160	100			
	120			
	140			
	160			

IMPORTANT! Self-lub. bushes: The friction surface should be lubricated once in order to activate permanent lubricating at the first use.

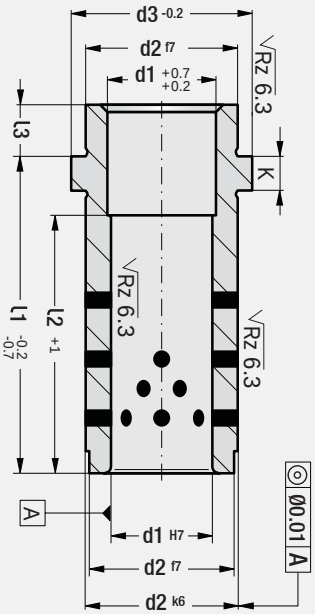
Lithium Grease - 1kg.

Order Code: W150206



Order: **G48.** d1 x d2 x l

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.
It can even work in humid environments.

Code: G27

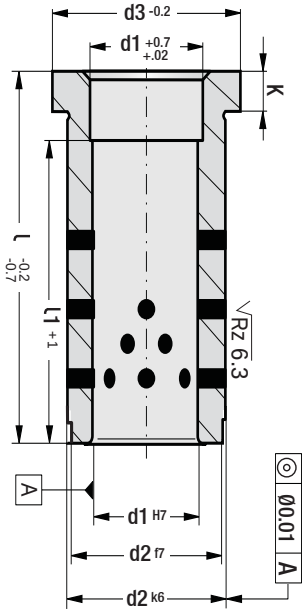
d1	l1	d2	d3	K	l3
14 15	17 22 27 36 46 56	20	25	6	6
			l2 : > 2 - 3 x d1		
16	17 22 27 36 46 56 66 76	20	25	6	8
			l2 : > 2 - 3 x d1		
20 18	17 22 27 36 46 56 66 76 86 96	26	31	6	8
			l2 : > 2 - 3 x d1		
25 22 24	22 27 36 46 56 66 76 86 96 116	30	35	6	8
			l2 : > 2 - 3 x d1		

d1	l1	d2	d3	K	l3
30 32	27 36 46 56 66 76 86 96 116 136	42	47	6	8
			l2 : > 2 - 3 x d1		
40 42	46 56 66 76 86 96 116 136 156 196	54	60	10	12
			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.

Order: G27. d1 x l1

Working Direction



Guide Bush Headed, Self-Lubricating

Code: G25

G25 products used in injection moulds with **G12D** 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.

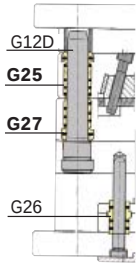
Code: G25

d1	l	d2	d3	K
12	16 21 27 36	18	22	4
			l1 : 2 - 3 x d1	
16 15	27 36 46 56	22	27	6
			l1 : 2 - 3 x d1	
20 18	27 36 46 56 66 76 96	26	31	6
			l1 : 2 - 3 x d1	
25 24 22	36 46 56 66 76 86 96	30	35	6
			l1 : 2 - 3 x d1	

d1	l	d2	d3	K
30 32	36 46 56 66 76 86 96 116	42	47	6
			l1 : 2 - 3 x d1	
40 42	36 46 56 66 76 86 96 116 136	54	60	10
			l1 : 2 - 3 x d1	

Order: G25. d1 x l

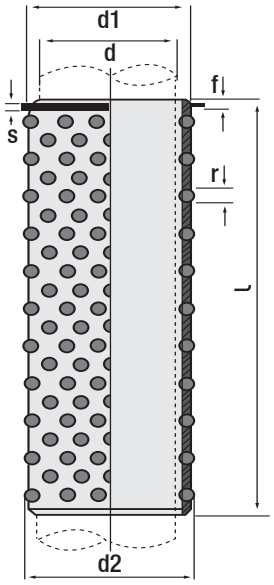
Material:
Bronze + graphite inserts

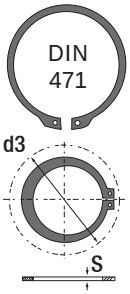


Ball Cage Bush

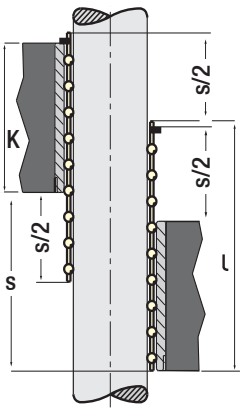
Code: G70

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





Used together



l = K + 0.5 x s

G70
Ball Cage

G70-1
Retaining Spring

G151
Holder Flange

G10
Guide Pillar

G37 - G38
Steel Bushes

Order: G70. d x l

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

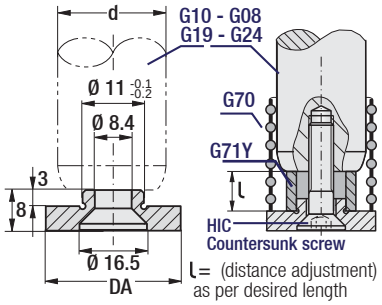
d mm	l mm	Ø d1	Ball d2	Ball r	Circlip d3	Circlip f	Circlip s
12	40	15	16	2	20.5	2.5	1.2
	56						
15	45	20	21	3	29	2.7	1.2
	56						
16	71	21	22		30.2		
18	45	23	24	3	32.6	2.8	1.2
	56						
	71						
19	45	24	25	3	33.2	2.9	1.2
	56						
	71						
20	80	25	26		34.2		
	95						
24	45	29	30	3	39.1	3.2	1.5
	56						
	71						
	80						
25	95	30	31		40.5		
	105						
	120						
32	45	39	40	4	51.4	4.0	1.8
	56						
	75						
	80						
30	95	37	38		49		
	105						
	120						
	140						
38	56	45	46	4	59.1	4.0	1.8
	71						
	80						
	95						
40	105	47	48		60.0		
	120						
	140						
	160						
48	71	55	56	4	70.2	4.3	2.0
	80						
	95						
	105						
50	120	57	58		72.6		
	140						
	160						
60	85	67	68	4	83.1	4.8	2.5
	95						
	105						
	120						
63	140	70	71		87		
	160						
	180						
	200						
80	105	90	92	6	108.5	6.2	3.0
	120						
	140						
	160						
	200						
	240						

NEW

Code: G151

Ball Cage Holder Flange

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



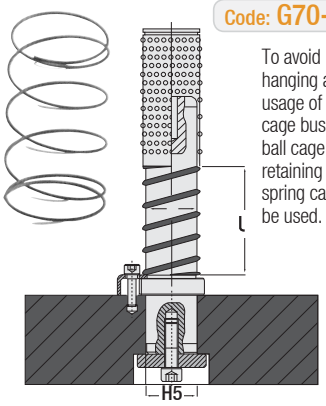
d	DA	Pillar Dia.
20	25	Ø 20
25	30	Ø 25
30	37	Ø 30
40	47	Ø 40
50	57	Ø 50
60	67	Ø 60
63	70	Ø 63

Order: G151. d (pillar)

Material: 1.7131 (16MnCr5)

Ball Cage Retaining Spring

Code: G70-1



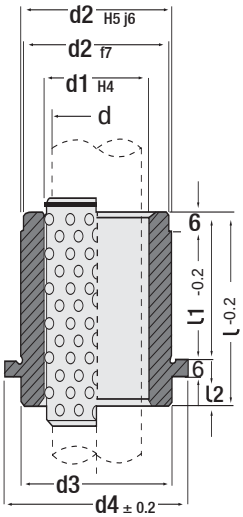
To avoid hanging at usage of ball cage bush, ball cage retaining spring can be used.

Ø d	l mm	Note:
19	Up to 40 ~ 140	Production in ball systems or other die inner designs as per request. **l: 10 mm ranges**
20		
24	Up to 40 ~ 180	
25		
30	Up to 50 ~ 230	
32		
38	Up to 60 ~ 280	
40		
48	Up to 70 ~ 280	
50		
60	Up to 80 ~ 250	Order: G70-1. d x l
63		

Guide Bush for Ball Cage
(Short type)

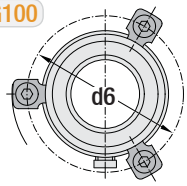
Code: G38

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 precison should be increased.

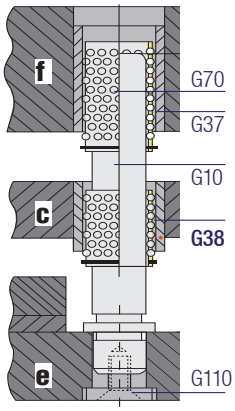


ø d	l mm	ø d1	ø d2	ø d3	ø d4	ø d6	l1 mm	l2 mm
15 **16**	35	21 22	30	30	34	46.8	23	12
19 **20**	35	25 26	32	32	40	48.8	23	12
24 **25**	35	30 31	40	40	48	56.8	23	12
32 **30**	42	40 38	48	48	55	64.8	30	12
38 **40**	52	46 48	58	58	65	74.8	37	15
48 **50**	65	56 58	70	70	80	86.8	47	18
60 **63**	80	68 71	85	85	95	101.8	60	20
80	80	92	105	105	118	121.8	60	20

Clamping Detail
Code: G100



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



Note: Two different products in section (d) are to avoid reverse closing of dies during mounting by using three pcs. main dimensions and one pcs. auxiliary (d= 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.**

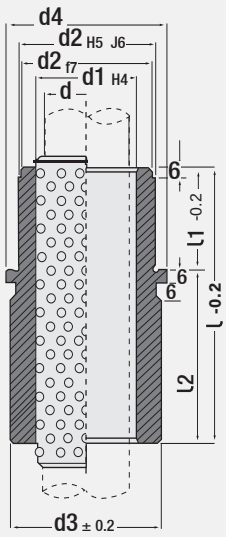
Order: **G38.** d x l x l1

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

Guide Bush for Ball Cage
(Long type)

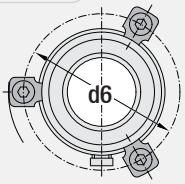
Code: G37

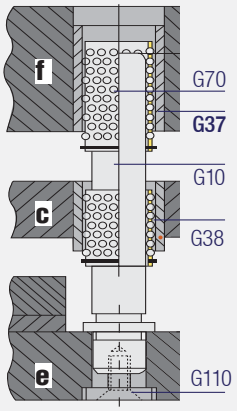
High precision guide bushes for ball cage: Despite providing high reliability at high speeds, contacting balls from one point, brings the system to precision status against impacts and side loads. This disadvantage is compensated to give product diameters up to a certain point in the upper tolerance,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



ø d	l mm	ø d1	ø d2	ø d3	ø d4	ø d6	l1 mm	l2 mm
15 **16**	43 59	21 22	30	32	34	46.8	23	20 36
19 **20**	43 59	25 26	32	39	40	48.8	23	20 36
24 **25**	59 79	30 31	40	46	48	56.8	23	36 56
32 **30**	75 93	40 38	48	53	55	64.8	30	45 63
38 **40**	82 108	46 48	58	63	65	74.8	37	45 71
48 **50**	97 127	56 58	70	77	80	86.8	47	50 80
60 **63**	116 150	68 71	85	92	95	101.8	60	56 90
80	120 150	92	105	115	118	121.8	60	60 90

Clamping Detail
Code: G100





Note: Should be ordered with **G70.**

Order: **G37.** d x l x l1

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

NEW

Plain Guide Bush for Ball Cage

Code: G167

ISO 9448-3

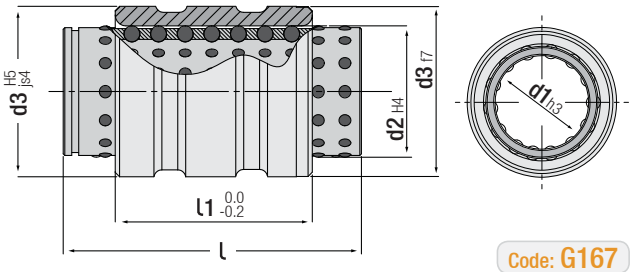
The inner diameter of the products is honed, the outer diameter is precision ground. The grooves on the product are made to provide better adhesion to the hole during mounting.

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.



Code: G167

d1 mm	d2 mm	d3 mm	l1 mm	l mm
12	16	22	23	40
			30	40
			37	40
15	21	28	23	45
			30	45
16	**22**		37	45
			47	56
			60	71
19	25	32	23	45
			30	45
			37	45
20	**26**		47	56
			60	71
			77	95
24	30	40	23	45
			30	45
			37	45
25	**31**		47	56
			60	71
			77	95

d1 mm	d2 mm	d3 mm	l1 mm	l mm
30	**38**	48	30	45
			37	50
32	40		47	56
			60	71
			77	95
			95	120
38	46	58	30	45
			37	50
			47	63
40	**48**		60	80
			77	95
			95	120
			120	140
48	56	70	37	50
			47	63
			60	80
50	**58**		77	95
			95	120
			120	140
60	68	85	60	95
			77	95
			95	120
63	**71**		120	140
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

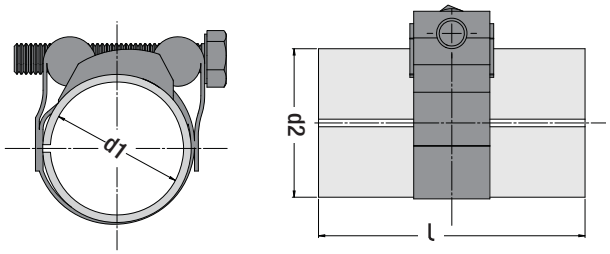
NEW

Limiting Bush

Code: G168

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

Mounting Example



Guide Pillar Ø	d1 mm	d2 mm	l mm
15 / 16	16	20	20
19 / 20	20	30	20
24 / 25	25	30	30
30 / 32	32	40	30
38 / 40	40	50	40
48 / 50	50	60	40
60 / 63	63	70	40

Order: G168. d1

Order Example: G168. 40

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: -55^0 / +175^0 C

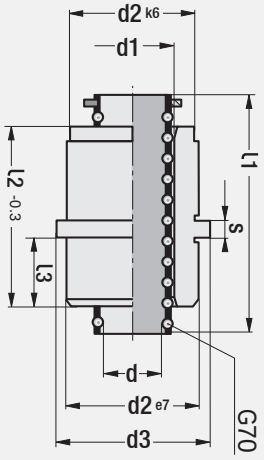
Package: 55 g.

Order Code: GL.64832

Code: G29

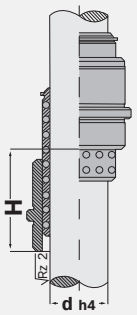
Steel Bush + Ball Cage Bush Set

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



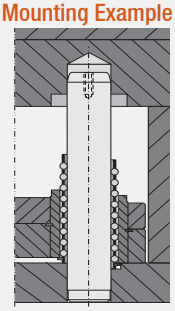
Code: G29

d Ø	l1 mm	l2 mm	l3 mm	d1 Ø	d2 Ø	d3 Ø	S mm	H mm
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



more precision and rapid motion

Mounting Example

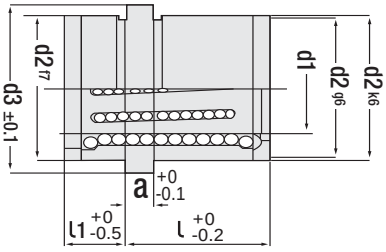


Order: G29. d x l1

Ball Material: 1.3505 (100Cr6)
Cage: Ms58 - **Steel Bush:** 1.7131 (16MnCr5)

Linear Ball Bearing Bush

Code: G75



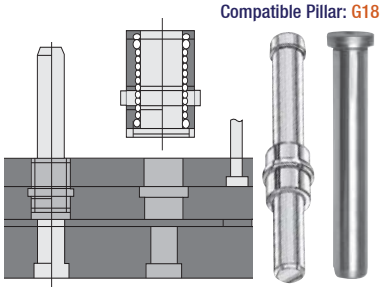
Free stroke, rapid and limitless movement.
New for ejector plate.
Operating Temp.: Max. 200°

Code: G75

d1 Ø	l mm	d2 Ø	d3 Ø	a mm	l1 mm	Ball Ø
12	22	24	28	6	8	3
18	26	30	34	6	9	3
20	26	32	36	6	9	3
	36					
25	26	40	45	6	10	3
	36					
	46					
30	46	48	54	8	12	4
	66					
40	46	60	66	8	12	4
	66					

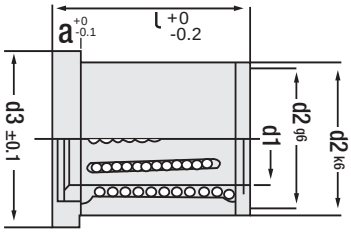
New Linear Ball Bearing Bushes G74 / G75:
There are balls at inclined - serial - parallel intermediate channels - lines inside of linear **G74 & G75** bushes (balls move by rotating in slot and frictionless). In this way, axial motion remains limitlessly free. Also, bearing logic is provided to the steel bush.

Compatible Pillar: G18



Linear Ball Bearing Bush - Headed

Code: G74



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

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

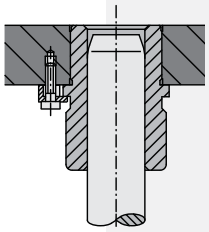
Balls are worked independently by rotating, they are not frictional.
Operating Temp.: Max. 200°

Code: G74

d1 Ø	l mm	d2 Ø	d3 Ø	a mm	Ball Ø	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					

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 **G75**: Rigidity in centering with free axial motion at long ejector systems of injection moulds - unlimited frictional motion. Linear bush **G74**: Quality control equipments - practical and reliable product for machine and mould production and device design.
For maintenance and cleaning: "Guvenal Signum (order code: W160110)" spray oil is used.

Order:
G75. d1 x l | G74. d1 x l

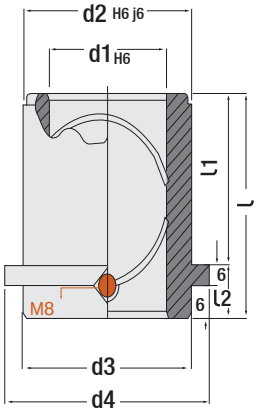


Guide Bush, Thick & Short Type

Code: G34K

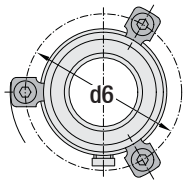
(for heavy dies / with collar & lubricating)

Thick type steel bushes: To provide perpendicularity at bush and guide pillar with new design of **GTH 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.

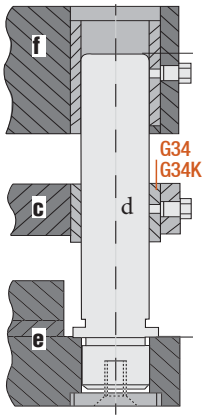


ø d1	l mm	ø d2	ø d3	ø d4	l1 mm	l2 mm
19 **20**	35	32	32	40	23	12
24 **25**	35	40	40	48	23	12
32 **30**	42	48	48	56	30	12
38 **40**	52	58	58	66	37	15
48 **50**	65	70	70	80	47	18
60 **63**	80	85	85	95	60	20
80	80	105	105	118	60	20

Clamping Detail Code: G100



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



Order: **G34K.** d1 x l x l1

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

IMPORTANT!
Pls. lubricate from grease nipple on bush occasionally.

Lithium Grease - 1kg.

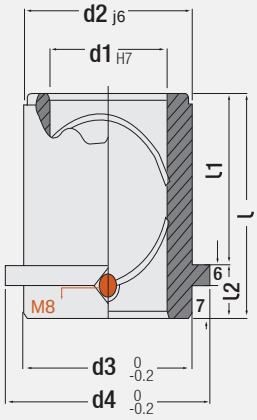
Order Code: W150206

Guide Bush, Thin & Short Type

Code: G34

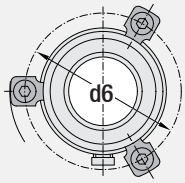
(with collar & lubricating)

For being **GTH 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.



ø d1	l mm	ø d2	ø d3	ø d4	l1 mm	l2 mm
16	36	28	28	34	23	13
20	36	28	28	34	23	13
25	36	34	34	39	23	13
30	50	39	39	44	37	13
40	50	50	50	54	37	13
50	60	60	60	64	47	13

Clamping Detail Code: G100



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

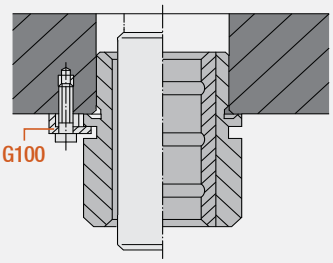
Mounting Details:

Code: G34K

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

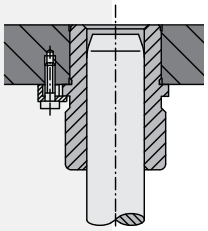
Code: G34

ø d1	d6
16	44.8
20	44.8
25	50.8
30	55.8
40	66.8
50	76.8



Order: **G34.** d1 x l x l1

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

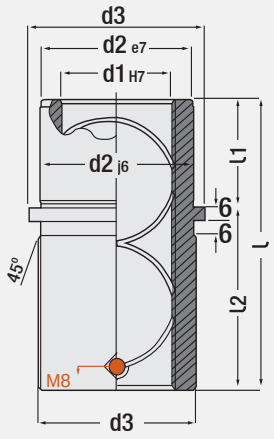


Guide Bush, Thin & Long Type

Code: G33

(with collar & lubricating)

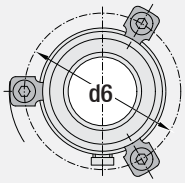
For being **GTH Die Components** products having long life and maximum resistance against abrasion, unique precision has provided at surface roughness. This is also created specific bushing system.



Ø d1	l mm	Ø d2	Ø d3	l1 mm	l2 mm
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

Clamping Detail

Code: G100



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

Mounting Details:

Code: G33

Ø d1	d6
16	44.8
20	44.8
25	50.8
30	55.8
40	66.8
50	76.8

Code: G33K

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

Order: **G33.** d1 x l x l1

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

IMPORTANT!
Pls. lubricate from grease nipple on bush occasionally.

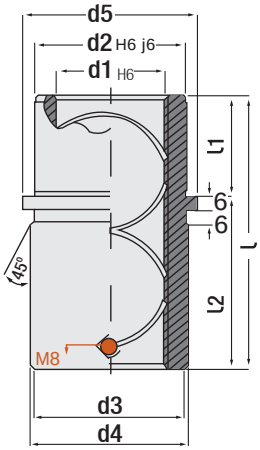
Lithium Grease - 1kg.
Order Code: W150206

Guide Bush, Thick & Long Type

Code: G33K

(for heavy dies / with collar & lubricating)

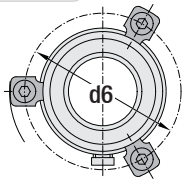
Thick type steel bushes: Please don't use two products without oil groove together. One of product in guide pillar or bushes should be used as set with oil groove. While using guide pillar and bush sets, should be considered that both of them have same brand. Because, grinding tolerance can be different 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 (production according to standards).



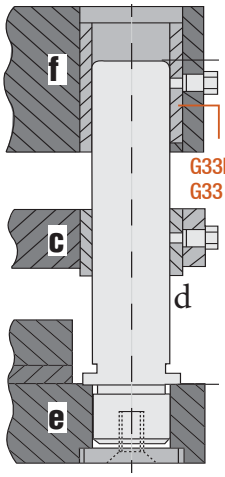
Ø d1	l mm	Ø d2	Ø d3	Ø d4	Ø d5	l1 mm	l2 mm
19 **20**	43	32	32	39	40	23	20
	59						36
24 **25**	59	40	40	46	48	23	36
	79						56
32 **30**	75	48	48	53	56	30	45
	93						63
38 **40**	82	58	58	63	66	37	45
	108						71
48 **50**	97	70	70	77	80	47	50
	127						80
60 **63**	116	85	85	92	95	60	56
	150						90
80	120	105	105	115	118	60	60
	150						90

Clamping Detail

Code: G100



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



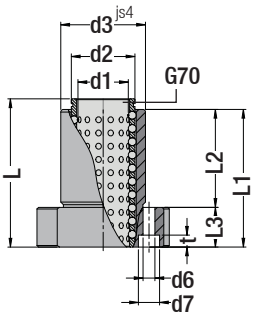
Order: **G33K.** d1 x l x l1

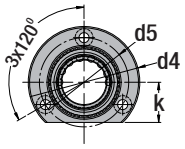
Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

Guide Bush with Flange, for Ball Cage

Code: G72.1

NEW





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

Order: **G72.1** x d1 x L1

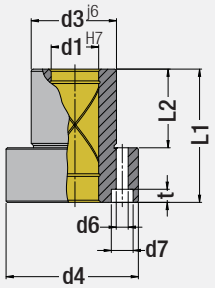
Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

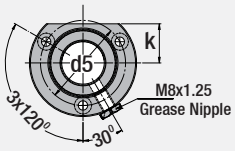
ø d1	ø d2	ø d3	ø d4	ø d5	ø d6	ø d7	t mm	k mm	L1 mm	L2 mm	L3 mm	L mm
19 / **20**	26	32	50	40	4.5	8	5	18	38	23		44
									45	30	15	56
									52	37		72
24 / **25**	31	40	63	50	5.5	10	6	23	38	23	15	44
									55	30	25	44
									62	37		72
30 / 32	38	48	72	58	5.5	10	6	28	45	20		55
									62	37	25	70
									72	47		80
38 / **40**	48	58	85	70	7	11	7	33	55	25		65
									67	37	30	80
									77	47		95
48 / **50**	58	70	104	86	9	15	9	38	62	37	25	80
									89	47	42	95
									102	60		120
60 / **63**	71	85	120	100	9	15	9	46	89	47	42	95
									102	60		120
80	92	105	148	125	11	18	12	56	125	75	50	140

Guide Bush with Flange, Bronze Plated

Code: G72.2

NEW





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

Order: **G72.2** x d1 x L1

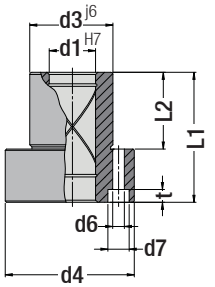
Material: 1.1213 (Cf53)
Bronze Casting

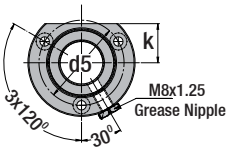
ø d1	ø d3	ø d4	ø d5	ø d6	ø d7	t mm	k mm	L1 mm	L2 mm
19 / **20**	32	50	40	4.5	8	5	18	38	23
								45	30
								52	37
24 / **25**	40	63	50	5.5	10	6	23	38	13
								55	30
								62	37
30 / 32	48	72	58	5.5	10	6	28	45	20
								62	37
								72	47
38 / **40**	58	85	70	6.6	11	7	33	55	25
								67	37
								77	47
48 / **50**	70	104	86	9	15	9	38	62	37
								89	47
								102	60
60 / **63**	85	120	100	9	15	9	46	89	47
								102	60
80	105	146	125	11	18	12	56	125	75

Guide Bush with Flange, Steel

Code: G72.3

NEW





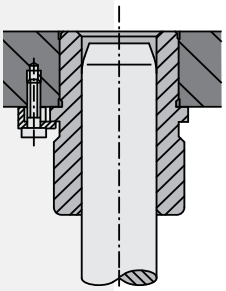
* 3 pcs **"IMB"** coded screws are used to fixed product.
* Clamping Screws should be ordered separately.

Order: **G72.3** x d1 x L1

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

ø d1	ø d3	ø d4	ø d5	ø d6	ø d7	t mm	k mm	L1 mm	L2 mm
19 / **20**	32	50	40	4.5	8	5	18	38	23
								45	30
								52	37
24 / **25**	40	63	50	5.5	10	6	23	38	13
								55	30
								62	37
30 / 32	48	72	58	5.5	10	6	28	45	20
								62	37
								72	47
38 / **40**	58	85	70	6.6	11	7	33	55	25
								67	37
								77	47
48 / **50**	70	104	86	9	15	9	38	62	37
								89	47
								102	60
60 / **63**	85	120	100	9	15	9	46	89	47
								102	60
80	105	146	125	11	18	12	56	125	75

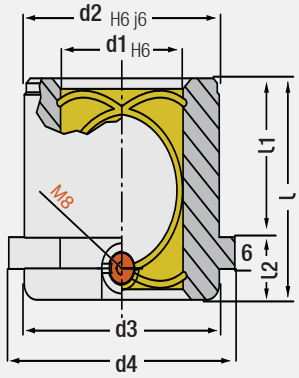
Code: G36



Code: G35

Guide Bush, Bronze Plated & Short Type

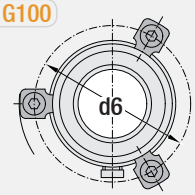
It has helical lubrication and inner lubrication system, its position can be lubricated with grease nipple from outside. Finally, equal distance to all lubrication points is ensured. Due to oil intake feature of bronze plated to inside it, there is no need for frequent lubrication, recommended operating 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.



Ø d1	l mm	Ø d2	Ø d3	Ø d4	l1 mm	l2 mm
19 **20**	35	32	32	40	23	12
24 **25**	35	40	40	48	23	12
32 **30**	42	48	48	56	30	12
38 **40**	52	58	58	66	37	15
48 **50**	65	70	70	80	47	18
60 **63**	80	85	85	95	60	20
80	80	105	105	118	60	20

Clamping Detail

Code: G100



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

Mounting Details:

Code: G36

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

Code: G35

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

In order to avoid reverse closing of die, Ø 19 - 24 - 32 - 38 - 48 - 60 can be used with 1 Pcs. main dimension.

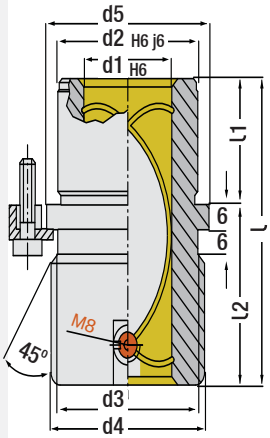
Bronze Plated Bushes:
Due to soft structure of the bronze material, the steel body material is only left in induction hardness.
Accordingly, you need to be careful when fitting during mounting.

Order: **G36.** d1 x l x l1

Material: 1.1213 (Cf53)
Bronze SnBz 10 HB 160 - 180

Guide Bush, Bronze Plated & Long Type

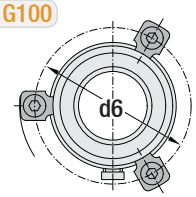
Hardened steel bushing absorbs strong side thrust. Thus, vibrationless rigid operation is ensured and bronze bush is protected against strong thrust made from end head, inner layer plated bronze with centrifugal technique is resistant against abrasion factor with its high quality.
In addition with its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



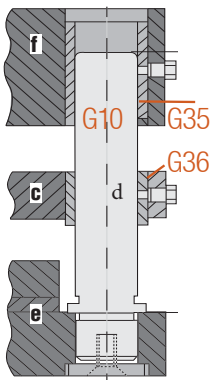
Ø d1	l mm	Ø d2	Ø d3	Ø d4	Ø d5	l1 mm	l2 mm
19 **20**	43	32	32	39	40	23	20
	59						36
24 **25**	59	40	40	46	48	23	36
	79						56
32 **30**	75	48	48	53	56	30	45
	93						63
38 **40**	82	58	58	63	66	37	45
	108						71
48 **50**	97	70	70	77	80	47	50
	127						80
60 **63**	116	85	85	92	95	60	56
	150						90
80	120	105	105	115	118	60	60
	150						90

Clamping Detail

Code: G100



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



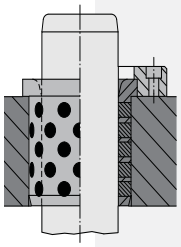
Order: **G35.** d1 x l x l1

Material: 1.1213 (Cf53)
Bronze SnBz 10 HB 160 - 180

IMPORTANT!
Pls. lubricate from grease nipple on bush occasionally.

Lithium Grease - 1kg.

Order Code: W150206



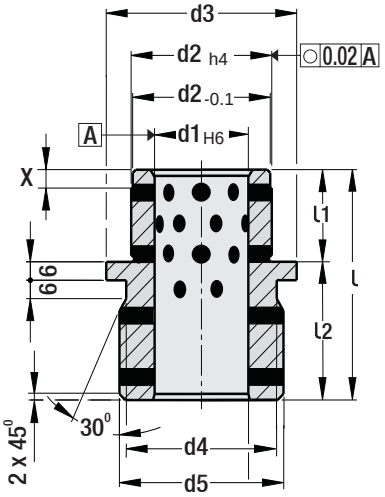
Code: G45

Guide Bush with Centre Collar, Self-Lubricating

DIN 9834 / ISO 9448

Working Direction

Heat Resistance: < 150°C



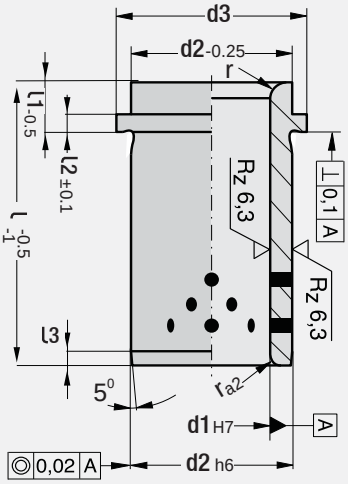
Code: G44

Guide Bush with Collar, Self-Lubricating

DIN 9834 / ISO 9448

Working Direction

Heat Resistance: < 150°C

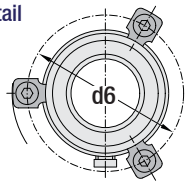


d1	l	d2	d3	d4	d6	d5	l1	l2
19 **20**	32	32	40	32	60.2	-	20	12
	50					34		30
	70					34		50
24 **25**	35	40	48	40	68.2	-	23	12
	60					42		37
	80					42		57
32 **30**	42	48	56	48	76.2	-	30	12
	75					50		45
	95					50		65
38 **40**	50	58	66	58	86.2	-	35	15
	80					60		45
	110					60		75
48 **50**	65	70	80	70	98.2	-	45	20
	90					74		45
	120					74		75

d1	l	d2	d3	d6	l1	l2	l3	r	ra2
20	32	28	34	71.2	12	6.3	3.0	3	1
25	40	32	40	75.2	10	6.3	3.0	3	1
30	50	40	50	83.2	12	6.3	4.0	3	1
32	50	40	50	83.2	12	6.3	4.0	3	1
40	63	50	63	93.2	15	6.3	5.0	3	1
50	71	63	71	106.2	17	6.3	6.3	5	1
63	80	80	90	123.2	19	10	8.0	6	1
80	100	100	112	143.2	22	10	10	8	1
100	125	125	140	168.2	21	10	12.5	10	1
125	160	160	180	203.2	30	10	16	12	1
160	200	200	220	243.2	32	10	16	18	1

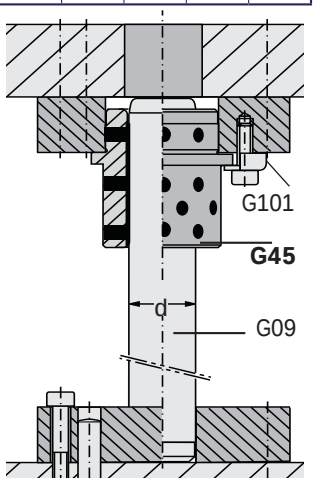
Clamping Detail

Code: G101



Form - A

3 mm
X = d : 19-20
6 mm
X = d > 20



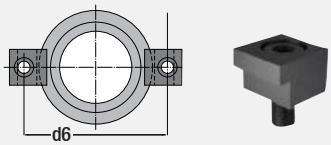
Order: G45. d1 x l

Material: Bronze + graphite inserts

IMPORTANT!
Self-lubricating components should be lubricated once in order to activate permanent lubricating at the first use.

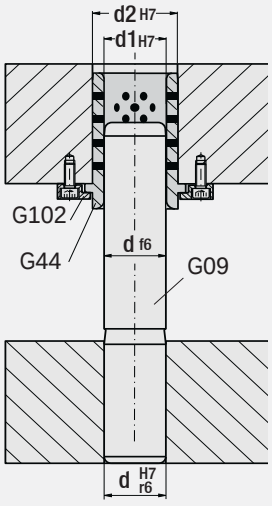
Clamping Detail

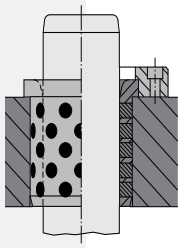
Code: G102 **Form - D**



Order: G44. d1 x l

Material: Bronze + graphite inserts



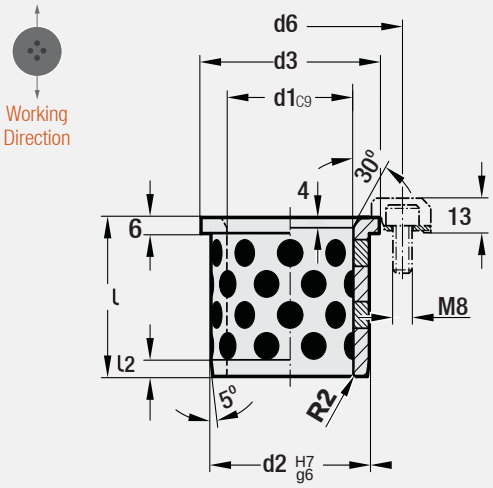


Guide Bush, Headed - NAAMS

Code: G41

Self-Lubricating

Heat Resistance: < 150°C



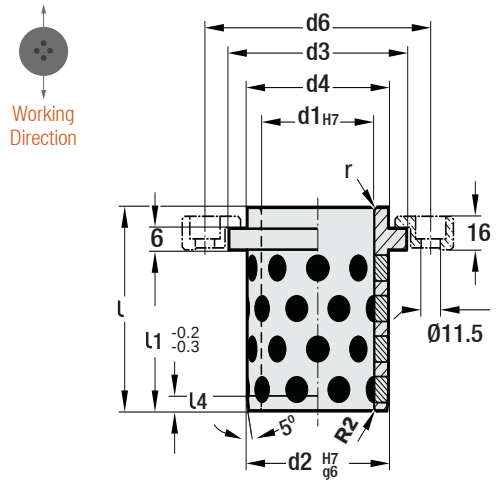
d1	l	d2	d3	d6	l2
25	40	32	40	63.2	4
32	50	40	50	71.2	4
40	55	50	63	81.2	5
50	63	63	71	94.2	6
63	75	80	90	111.2	8
80	90	100	112	131.2	10
100	115	125	140	166.2	12
125	138	160	180	191.2	12

Guide Bush with Collar - NAAMS

Code: G40

Self-Lubricating

Heat Resistance: < 150°C

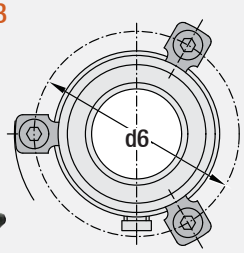


d1	l	d2	d3	d4	d6	l1	l4	r
20	40	28	34	28	71.2	30	3	3
25	40	32	40	32	75.2	30	4	3
30	50	40	50	40	83.2	40	4	3
32	50	40	50	40	83.2	40	4	3
40	63	50	63	50	93.2	50	5	3
50	71	63	71	63	106.2	56	6	5
63	80	80	90	80	123.2	63	8	6
80	100	100	112	100	143.2	80	10	8
100	125	125	140	125	168.2	106	12	10
125	160	160	180	160	203.2	132	12	12

Clamping Detail

Code: G101

Form - B



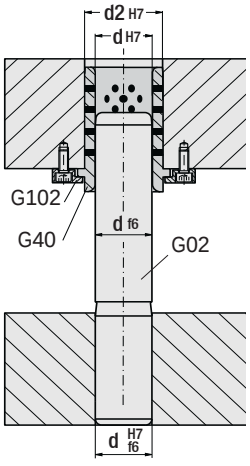
IMPORTANT!
Self-lubricating components should be lubricated once in order to activate permanent lubricating at the first use.

Lithium Grease - 1kg.

Order Code: W150206

Order: G41. d1 x l

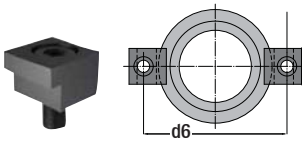
Material: Bronze + graphite inserts



Clamping Detail

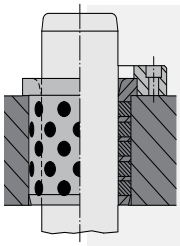
Code: G102

Form - D



Order: G40. d1 x l

Material: Bronze + graphite inserts



NEW

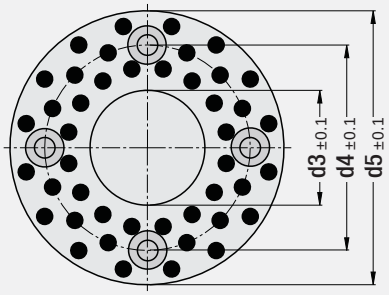
Code: G107

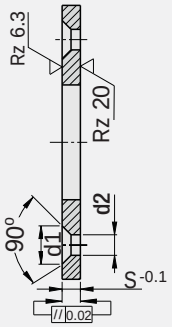
Thrust Washer - Perforated, Self-Lubricating

In-Die & Mould Slide Systems

Heat Resistance: < 150°C

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





d3	d5	d4	S	d1	d2	Hole
12.2	40	28	3	6.9	3.0	2
16.2	50	28	3	6.9	3.0	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	9.0	4
70.3	130	100	10	18.3	9.0	4
80.3	150	120	10	18.3	9.0	4

Order: G107. d3 x d5

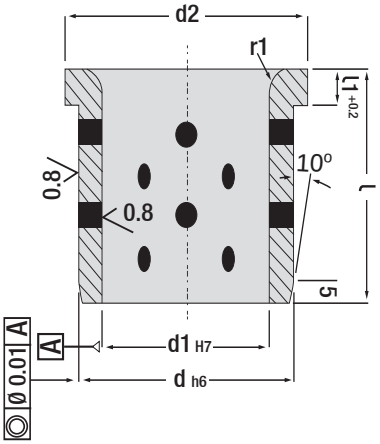
Material: Bronze + graphite inserts

Code: G42

Guide Bush Headed, Self-Lubricating

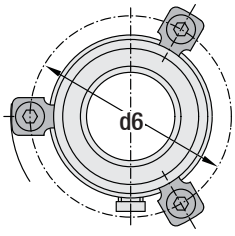
Working Direction

Heat Resistance: < 150°C



d1	l	d	d2	l1	r1
20	35	28	36	8	2
25	40	32	40	8	4
30	55	40	50	8	6
32	55	40	50	8	6
40	70	50	60	8	6
42	70	50	60	8	6
50	75	63	75	12	8
52	75	63	75	12	8
63	80	80	90	12	8
80	100	100	110	12	8
100	125	125	135	12	8

Code: G102



Code: G101

Order: G42. d1 x l

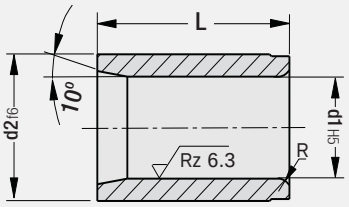
Material: Bronze + graphite inserts

Lithium Grease - 1kg.

Self-lubricating components should be lubricated once in order to activate permanent lubricating at the first use.

Order Code: W150206

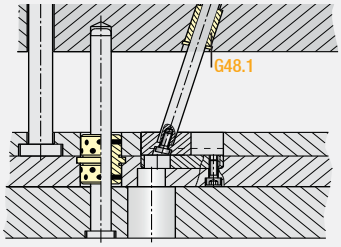
Code: G48.1

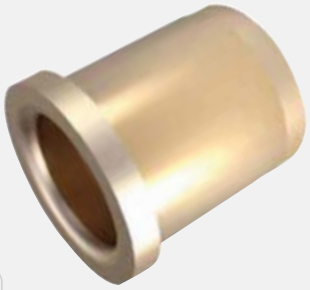


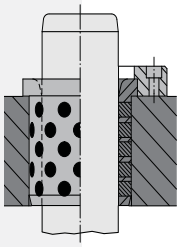
Bronze Bush - Plain

Order: G48.1 x d1 x L

d1	L	d2	R
10	14	14	1.0
10	20	14	1.0
12	20	17	1.5
12	25	17	1.5
16	25	22	2.0
16	32	22	2.0







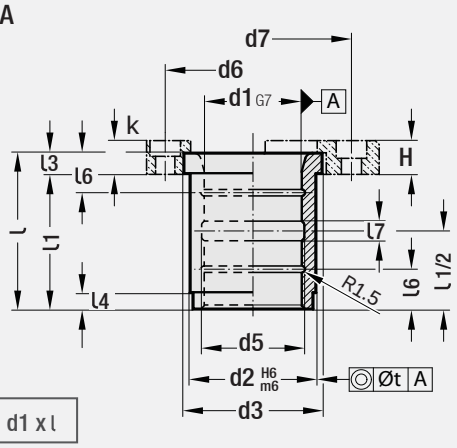
Code: G86

Guide Bush, Bronze

Heat Resistance: < 150°C

CNOMO / PSA

Working Direction



Order: G86. d1 x l

d1	l	d2	d3	d5	d6	d7	l1	l3	l4	l6	l7	h	k
20	32	28	32	22	-	48	28	4	3	-	5	10	-
25	40	35	40	27	-	56	35	5	5	-	5	10	-
32	50	44	50	34	-	65	44	6	8	12	5	12	-
40	63	52	60	42	75	82	55	8	8	16	8	12	12
50	80	63	71	52	90	98	70	10	8	20	10	16	16
63	100	80	90	65	111	115	88	12	10	25	12	20	20
80	125	100	112	82	133	144	109	16	10	32	16	25	25
100	160	125	140	102	162	170	140	20	10	40	20	32	32

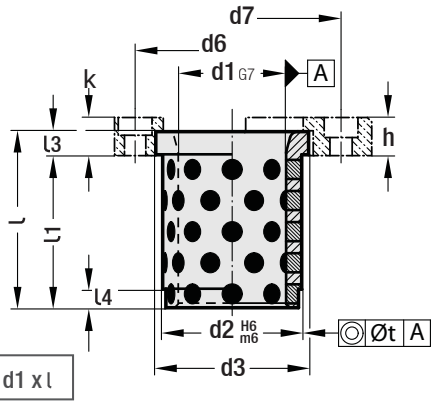
Guide Bush, Headed - CNOMO

Code: G43

Self-Lubricating

Heat Resistance: < 150°C

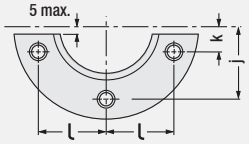
Working Direction

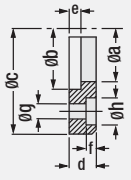


Order: G43. d1 x l

d1	l	d2	d3	d6	d7	l1	l3	l4	h	k	(A)t
20	32	28	32	-	48	28	4	3	10	-	0.01
25	40	35	40	-	56	35	5	5	10	-	0.01
32	50	44	50	-	65	44	6	5	12	-	0.01
40	63	52	60	75	82	55	8	8	12	12	0.02
50	80	63	71	90	98	70	10	8	16	16	0.02
63	100	80	90	111	115	88	12	10	20	20	0.02
80	125	100	112	133	144	109	16	10	25	25	0.02
100	160	125	140	162	170	140	20	10	32	32	0.02

Bush Holder Flange





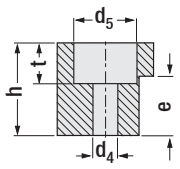
Order: G118. Bush

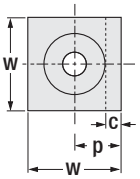
Code: G118

Bush	a	b	c	d	e	f	g	h	j	k	l
25	32	41	72	10	5	7	6.6	12	-	20	20
32	40	51	80	12	6	7	6.6	12	-	21	25
40	50	61	100	12	8	7	6.6	12	41	14	38.5
50	63	72	125	16	10	9	9	16	49	17	46
63	80	91	140	20	12	11	11	18	57.5	17	55
80	100	113	180	25	16	13	14	22	72	20	70
100	125	141	200	32	20	13	14	22	85	25	81

Bush Clamp

CNOMO





Order: G102E. Bush

FORM - E

Code: G102E

Bush	w	p	h	e	c	t	d_4	d_5
Ø 40	18	9.5	12	8	3	7	6.6	11
Ø 50	22	12	16	10	4	9	9	15
Ø 63	26	15	20	12	5	11	11	18
Ø 80	26	15	25	16	5	11	11	18
Ø 100	26	15	32	20	5	11	11	18

Note: Used with G03 / G43 guide pillars and bushes. Instead of this clamp in these standards, the clamps with code nr. G102 may be used.