

6. Caratteristiche boccole con lubrificante solido BG

Questo particolare tipo di boccia è caratterizzata da una struttura base costruita in bronzo (BG2) con alveoli riempiti da materiale lubrificante solido, normalmente grafite. Il materiale di costruzione delle boccole può essere inoltre ottone (BG1), ghisa (BG4), acciaio (BG5), ed anche in lega bimetallica (BG3) su richiesta.

La particolare struttura così combinata, grazie alla sua capacità di autolubrificazione, permette una lunga durata dell'applicazione, garantendo pertanto elevate prestazioni nel tempo.

Queste caratteristiche diventano importanti in particolar modo a fronte di applicazioni che presentano le sotto indicate condizioni:

- impossibilità d'effettuare la lubrificazione dall'esterno
- occorre montare una boccia standard autolubrificante
- la temperatura d'esercizio è molto bassa o molto alta.

Le boccole con lubrificante solido vengono impiegate soprattutto nell'industria metallurgica, nelle macchine per il settore minerario, nell'industria navale, nelle turbine idrauliche ed in ambienti dove sono presenti agenti corrosivi o altre sostanze chimiche.

Anche queste boccole, sono normalmente disponibili in formato: cilindrico, flangiato, a ralla ed in piastre scorrevoli.

6. BG bushes with solid lubricant characteristics

This particular type of bushes is characterized by a base structure constructed in bronze (BG2) with sockets filled with solid lubricants, normally graphite. The construction material of the bushes can be also brass (BG1), cast iron (BG4), steel (BG5), and even in bimetal alloy (BG3) if requested.

This particular combination, thanks to its self-lubrication, permits a long duration in the application, guaranteeing as well high performance over time.

These characteristics become particularly important during applications which present the conditions indicated below:






- external lubrication is not possible
- a standard self-lubricating bush is required to be mounted.
- the operating temperature is very low or very high.

The bushes with solid lubricant is used especially in the metallurgic industry, in machines for the field of mining, in the naval industry, in hydraulic turbines, and in environments with corrosive agents or other chemical substances.

These items are available as cylindrical and flanged bushes, thrust washers, and as sliding plates.

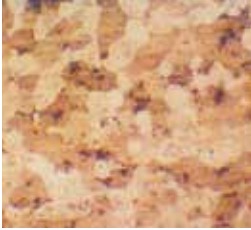
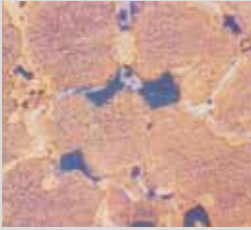
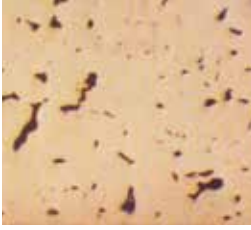

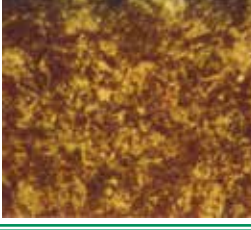
6.1 Caratteristiche tecniche

6.1 Technical features

					
Caratteristiche Characteristics	BG1	BG2	BG3	BG4	BG5
Composizione Composition	CuZn25Al6Fe3Mn3	CuSn6Zn6Pb3	Acciaio/Steel + CuSn6Zn6Pb3	GJL-250	100Cr6
Durezza Hardness	210 ~ 250 HB	80 ~ 120 HB	60 ~ 90 HB	180 ~ 230 HB	55 ~ 60 HRC (550 ~ 600 HB)
Temperatura max Max temperature	300° C	350° C	300° C	400° C	350° C
Carico max Max load	100 N/mm ²	60 N/mm ²	70 N/mm ²	60 N/mm ²	250 N/mm ²
Coefficiente d'attrito Friction coeff.	< 0,16	< 0,15	< 0,14	< 0,18	< 0,17
Velocità max (secco) Max speed (dry)	0,4 m/s	2 m/s	2 m/s	0,5 m/s	0,1 m/s
Velocità max (olio) Max speed (oil)	5 m/s	10 m/s	10 m/s	5 m/s	3 m/s
Pv massimo (secco) Max Pv (dry)	1,8 N/mm ² · m/s	0,5 N/mm ² · m/s	0,6 N/mm ² · m/s	0,8 N/mm ² · m/s	2,5 N/mm ² · m/s
Pv massimo (olio) Max Pv (oil)	3,8 N/mm ² · m/s	3,8 N/mm ² · m/s	3,8 N/mm ² · m/s	3,8 N/mm ² · m/s	3,8 N/mm ² · m/s

6.2 Specifica dei materiali

6.2 Material specifications

Lega Alloy	Metallografia Metallographic	Caratteristiche Characteristics
<p>BG 1 CuZn25Al6Fe3Mn3</p>		<p>Adatta per un uso generalizzato in varie circostanze con carichi o temperature sia basse che elevate, a secco o con lubrificazione a olio, persino in acqua. La sua composizione in ottone ad elevata durezza (doppia rispetto ad una normale boccola in bronzo) aumenta di gran lunga la resistenza a fatica, il che la rende adatta per macchinari per fusione a colata continua e nastri trasportatori per l'industria metallurgica. Può essere usata per macchine per stampaggio ad iniezione, negli interruttori automatici di corrente ad elevata tensione, attrezzature di sollevamento per macchinari da costruzione, tunnel di essiccaamento nelle cartiere, parti scorrevoli nei sistemi per salpare l'ancora, ecc.</p> <p><i>Basically general-purpose products, suitable for various circumstances including high or low load, high or low temperature, with oil or oilless lubrication, or even in the water. Thanks to its matrix made of high strength brass, its hardness doubles that of normal bronze bushes, and the wear performance increases to a large extent, so that it is suitable for continuous casting machines, and conveyors for metallurgy industry. It could also be used in plastic injection machines, in the automatic switch of high tension electricity, in the lifting and supporting parts of construction machines, drying tunnel of paper machines, sliding parts for ship unmooring, etc.</i></p>
<p>BG 2 CuSn6Zn6Pb3</p>		<p>Tipologia adatta per situazione con bassi carichi ed elevate temperature, come ad esempio forni da panettiere, macchinari dell'industria leggera, attrezzature, ecc.</p> <p><i>Suitable for low load and high temperature applications, such as raceway of bakery, machines of light industry, machine tools industry, etc.</i></p>
<p>BG 3 Acciaio/Steel + CuSn6Zn6Pb3</p>		<p>La parte interna delle boccole BG3 è dello stesso materiale delle boccole BG2, quindi queste due tipologie hanno la stessa applicazione. In più, godono di alcuni vantaggi come il risparmio sul costo delle materie prime ed un'accresciuta resistenza alla compressione. Sono adatte per parti di macchinari per costruzione che non richiedono lubrificazione ad olio, macchine dell'industria metallurgica, e nastri trasportatori.</p> <p><i>The inner side of BG3 bushings is made of the same material of BG2 bushings, so they can be used in the same applications. Moreover, BG3 have some advantages, as saving on material costs, and improved compressive strength. They are suitable for parts of construction machines that don't need oil lubrication, metallurgy machines, and conveying machines.</i></p>
<p>BG 4 GJL-250</p>		<p>Le BG4 sono fatte in un tipico materiale che abbassa notevolmente i costi, pur garantendo performance soddisfacenti, possono sostituire le BG2 quando le performance richieste non sono così elevate. Adatto per presse e macchinari per lo stampaggio.</p> <p><i>BG4 are made of a typical cost saving material. They could replace BG2 products where the mechanical requirements are not so high. They could reduce the cost largely, and meet the demands for application. Suitable for mould guide bushes, die carrier of plastic moulding machines, etc.</i></p>
<p>BG 5 100Cr6</p>		<p>Le BG5 sono fatte in un materiale rinforzato. Grazie alle loro eccellenti performance ad ampio spettro, sono adatte principalmente alle parti di supporto degli organi di sollevamento, come argani e gru. Ma essendo fatta in acciaio, non è adatta per applicazioni in acqua, con acidi o alcali.</p> <p><i>BG5 are a kind of fortified products. Due to their excellent comprehensive capabilities, they are especially suitable in the supporting parts of hoisting machines, e.g. support of roofer, hoist engine, crane, etc. But as for material being steel, they are not suitable for applications with water, acids, and alkali.</i></p>

BG1 - BG2 - BG4-AF

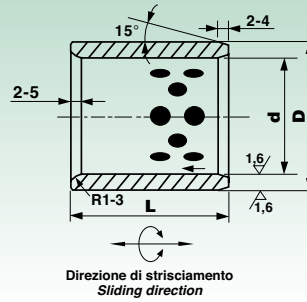
Diametro interno <i>Inner diameter</i> d	Tolleranze diametro interno <i>Inner diameter tolerances</i> d	Diametro esterno <i>Outer diameter</i> D	Tolleranze diametro esterno <i>Outer diameter tolerances</i> D
6 < ≤ 10	+ 0,028 + 0,013	10 < ≤ 18	+ 0,018 + 0,007
10 < ≤ 18	+ 0,034 + 0,016	18 < ≤ 30	+ 0,021 + 0,008
18 < ≤ 30	+ 0,041 + 0,020	30 < ≤ 50	+ 0,025 + 0,009
30 < ≤ 50	+ 0,050 + 0,025	50 < ≤ 80	+ 0,030 + 0,011
50 < ≤ 80	+ 0,060 + 0,030	80 < ≤ 120	+ 0,035 + 0,013
80 < ≤ 120	+ 0,071 + 0,036	120 < ≤ 180	+ 0,040 + 0,015
120 < ≤ 160	+ 0,083 + 0,043	-	-

BG1-F - BG2-F

Diametro interno <i>Inner diameter</i> d	Tolleranze diametro interno <i>Inner diameter tolerances</i> d	Diametro esterno <i>Outer diameter</i> D	Tolleranze diametro esterno <i>Outer diameter tolerances</i> D
6 < ≤ 10	+ 0,040 + 0,025	10 < ≤ 18	+ 0,0348 + 0,023
10 < ≤ 18	+ 0,050 + 0,032	18 < ≤ 30	+ 0,041 + 0,028
18 < ≤ 30	+ 0,061 + 0,040	30 < ≤ 50	+ 0,050 + 0,034
30 < ≤ 50	+ 0,075 + 0,050	50 < ≤ 65	+ 0,060 + 0,041
50 < ≤ 80	+ 0,090 + 0,060	65 < ≤ 80	+ 0,062 + 0,043
80 < ≤ 120	+ 0,107 + 0,072	81 < ≤ 100	+ 0,073 + 0,051
-	-	101 < ≤ 120	+ 0,054 + 0,022
-	-	120 < ≤ 140	+ 0,088 + 0,063

BG4 - BG4-F

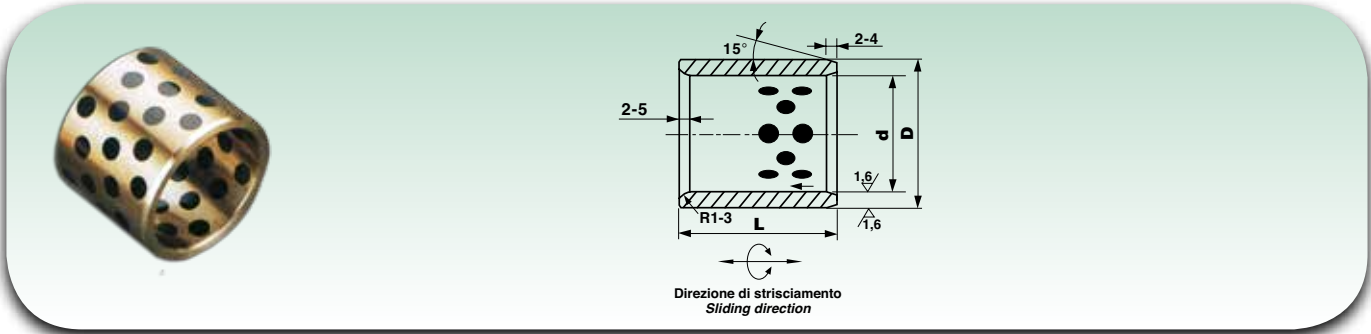
Diametro interno <i>Inner diameter</i> d	Tolleranze diametro interno <i>Inner diameter tolerances</i> d	Diametro esterno <i>Outer diameter</i> D	Tolleranze diametro esterno <i>Outer diameter tolerances</i> D
18 < ≤ 30	+ 0,021 0	30 < ≤ 50	± 0,008
30 < ≤ 50	+ 0,025 0	50 < ≤ 80	± 0,0095
50 < ≤ 80	+ 0,030 0	80 < ≤ 120	± 0,011
80 < ≤ 120	+ 0,035 0	120 < ≤ 140	± 0,0125



Dimensioni (mm) Dimensions (mm)				
$d_{(F7)}$	$D_{(m6)}$	L ^{-0,10 -0,30}		
8	12	8		
		10		
		12		
		15		
10	14	8		
		10		
		12		
		15		
		20		
		12	18	8
10				
12				
15				
16				
19				
20				
25				
30				
13	19			10
		12		
		15		
		16		
		20		
		14	20	10
12				
15				
20				
25				
30				
15	21			10
				12
		15		
		16		
		20		
		25		
		30		
		16	22	10
12				
15				
16				
19				
20				
25				
30				
35				
40				
17	23	15		
18	24	12		

Dimensioni (mm) Dimensions (mm)				
$d_{(F7)}$	$D_{(m6)}$	L ^{-0,10 -0,30}		
18	24	15		
		16		
		20		
		25		
		30		
19	26	15		
		20		
20	28	10		
		12		
		15		
		16		
		19		
		20		
		25		
		30		
		40		
		45		
20	30	16		
		20		
		25		
		30		
		35		
22	32	12		
		15		
		20		
		25		
		30		
25	30	16		
		20		
		25		
		30		
		35		
		40		
		25	33	12
				15
16				
20				
25				
30				
35				
40				
45				
50				
25	35	12		

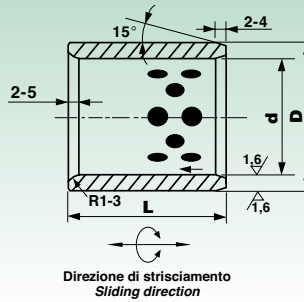
Dimensioni (mm) Dimensions (mm)		
$d_{(F7)}$	$D_{(m6)}$	L ^{-0,10 -0,30}
25	35	15
		16
		20
		25
		30
		35
28	38	40
		45
		50
		20
		25
30	35	30
		40
		45
		50
		16
		20
		25
		30
		35
		40
30	36	20
		25
		30
		35
		40
		45
30	38	50
		60
		12
		15
		20
		25
		30
		35
		40
		45
30	40	12
		15
		20
		25
		30
		35
		40
		45



Dimensioni (mm) Dimensions (mm)				
$d_{(F7)}$	$D_{(m6)}$	$L_{-0,10/-0,30}$		
30	40	60		
31,5	42	30		
		40		
32	42	20		
		30		
		40		
		40		
35	44	20		
		25		
		30		
		35		
		40		
		45		
		50		
		60		
		35	45	20
				25
30				
35				
40				
45				
50				
60				
38	48	30		
		40		
40	50	15		
		20		
		25		
		30		
		35		
		40		
		45		
		50		
		60		
		70		
		80		
40	55	15		
		25		
		30		
		35		
		40		
		45		
		50		
		60		
45	55	30		
		35		
		40		
		50		

Dimensioni (mm) Dimensions (mm)				
$d_{(F7)}$	$D_{(m6)}$	$L_{-0,10/-0,30}$		
45	55	60		
45	56	30		
		35		
		40		
		45		
		50		
		60		
		70		
		80		
45	60	30		
		35		
		40		
		45		
		50		
		60		
		70		
		80		
		50	60	20
				30
35				
40				
45				
50				
60				
70				
80				
50	62			30
		35		
		40		
		45		
		50		
		60		
		70		
		80		
		50	65	30
				40
45				
50				
60				
70				
80				
100				
55	70	30		
		35		
		40		
		45		
		50		

Dimensioni (mm) Dimensions (mm)				
$d_{(F7)}$	$D_{(m6)}$	$L_{-0,10/-0,30}$		
60	74	30		
		35		
		40		
		45		
		50		
60	75	60		
		70		
		80		
		30		
		35		
		40		
		45		
		50		
63	75	60		
		60		
		70		
		80		
		80		
63	76	60		
		70		
65	80	40		
		50		
		60		
		70		
		80		
		70	85	30
				35
				40
45				
50				
60				
70				
80				
70	90	50		
		60		
		70		
		80		
		80		
75	90	50		
		60		
		70		
		80		
		100		
75	95	60		



Dimensioni (mm) Dimensions (mm)		
$d_{(F7)}$	$D_{(m6)}$	$L \begin{smallmatrix} -0,10 \\ -0,30 \end{smallmatrix}$
75	95	70
		80
		100
80	96	35
		40
		45
		50
		60
		70
		80
		100
		120
80	100	40
		45
		50
		60
		70
		80
		100
		120
		140
85	100	60
		80

Dimensioni (mm) Dimensions (mm)		
$d_{(F7)}$	$D_{(m6)}$	$L \begin{smallmatrix} -0,10 \\ -0,30 \end{smallmatrix}$
90	100	40
		45
		50
		60
		70
		80
90	110	80
		100
		120
		140
		60
		80
100	120	100
		120
		50
		60
		70
		80
		90
		100
		120
110	130	50
		70
		80

Dimensioni (mm) Dimensions (mm)		
$d_{(F7)}$	$D_{(m6)}$	$L \begin{smallmatrix} -0,10 \\ -0,30 \end{smallmatrix}$
110	130	80
		100
		120
120	140	70
		80
		90
		100
		120
		140
125	145	100
		120
130	150	80
		100
140	160	100
		140
150	170	80
		100
		150
160	180	80
		100
		150
		-

Per ordinare specificare: BG.. tipo 1/2/3/4/5 + d + D + L

To order, please specify: BG..type 1/2/3/4/5 + d + D + L

Tolleranze di montaggio raccomandate:

Recommended mounting tolerances:

Sede:

Albero:

Housing:

Shaft:

H7

d8 (carico pesante)

H7

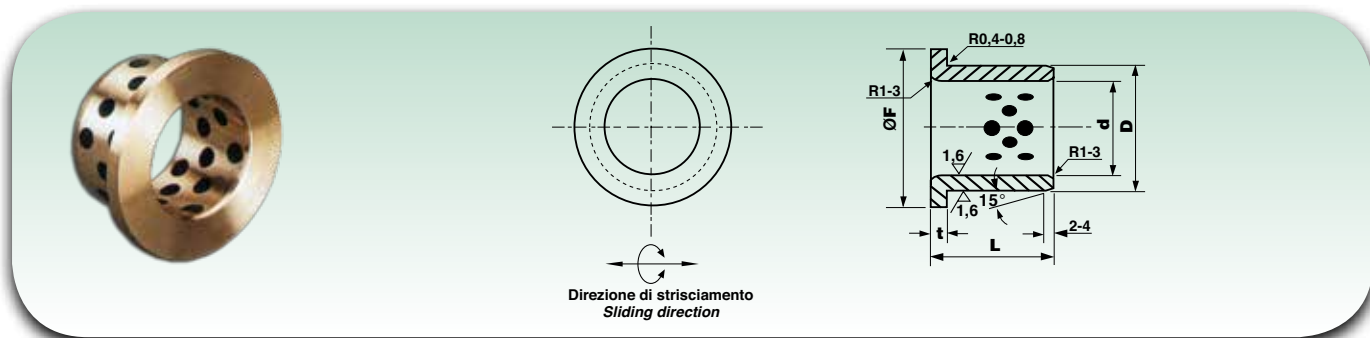
d8 (high load)

e7 (carico leggero)

e7 (low load)

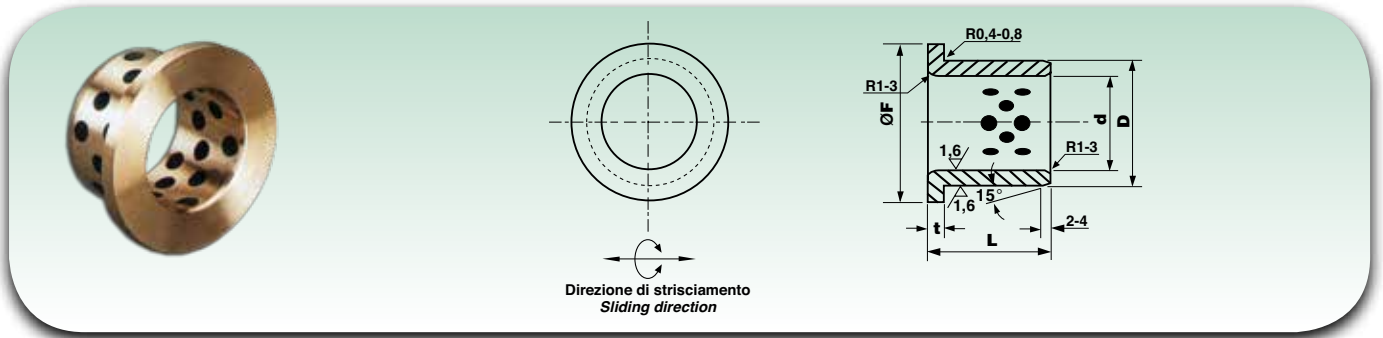
f7 (alta precisione)

f7 (high precision)



Dimensioni (mm) Dimensions (mm)				
$d_{(E7)}$	$D_{(r6)}$	F	$t \begin{smallmatrix} 0 \\ -0,1 \end{smallmatrix}$	$L \begin{smallmatrix} -0,10 \\ -0,30 \end{smallmatrix}$
8	12	20	2	10
				15
10	14	22	2	10
				12
				15
				17
				20
				25
12	18	25	3	10
				15
				20
				25
13	19	26	3	30
				10
				15
14	20	27	3	20
				25
				30
15	21	28	3	10
				15
				20
				25
				30
16	22	29	3	15
				18
				20
				23
				25
				30
				35
				40
18	24	32	3	20
				30
				35
20	28	40	5	15
				20
				25
				30
20	30	40	5	35
				40
				45
				50
				55
				60
25	33	45	5	15
				20
				25
				30
				35

Dimensioni (mm) Dimensions (mm)				
$d_{(E7)}$	$D_{(r6)}$	F	$t \begin{smallmatrix} 0 \\ -0,1 \end{smallmatrix}$	$L \begin{smallmatrix} -0,10 \\ -0,30 \end{smallmatrix}$
25	33	45	5	10
				15
25	35	45	5	20
				25
				30
				35
				40
				50
30	38	50	5	20
				25
				30
				35
				40
30	40	50	5	50
				20
				25
				30
31,5	40	50	5	35
				40
				45
				50
35	45	60	5	20
				25
				30
				35
				40
				50
40	50	65	5	20
				25
				30
				40
				50
45	55	70	5	60
				30
				35
				40
50	60	75	5	50
				55
				60
				65
55	65	80	5	40
				45
				50



Dimensioni (mm) Dimensions (mm)				
$d_{(E7)}$	$D_{(r6)}$	F	$t \begin{smallmatrix} 0 \\ -0,1 \end{smallmatrix}$	$L \begin{smallmatrix} -0,10 \\ -0,30 \end{smallmatrix}$
55	70	80	5	40
				60
60	75	90	7,5	40
				50
				60
				80
63	75	85	7,5	67
65	80	95	7,5	40
				60
				80
70	85	105	7,5	50
				80
75	90	110	7,5	60
				80

Dimensioni (mm) Dimensions (mm)				
$d_{(E7)}$	$D_{(r6)}$	F	$t \begin{smallmatrix} 0 \\ -0,1 \end{smallmatrix}$	$L \begin{smallmatrix} -0,10 \\ -0,30 \end{smallmatrix}$
80	100	120	10	50
				60
				80
90	110	130	10	100
				50
				60
				80
100	120	150	10	100
				60
				80
120	140	170	10	60
				80
				100

Per ordinare specificare: BG-F.. tipo 1/2/3/4/5 + d + D + L

To order, please specify: BG-F..type 1/2/3/4/5 + d + D + L

Tolleranze di montaggio raccomandate:

Recommended mounting tolerances:

Sede:

H7

Albero:

d8 (carico pesante)

e7 (carico leggero)

f7 (alta precisione)

Housing:

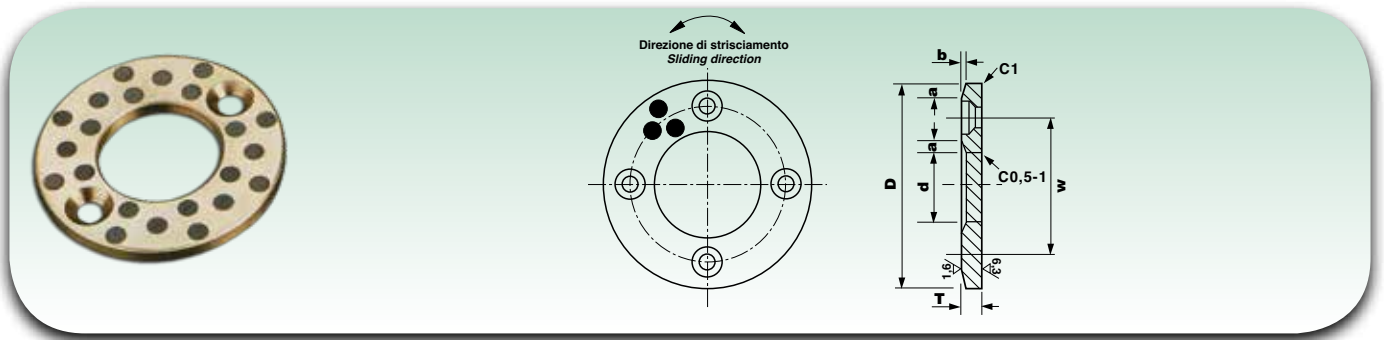
H7

Shaft:

d8 (high load)

e7 (low load)

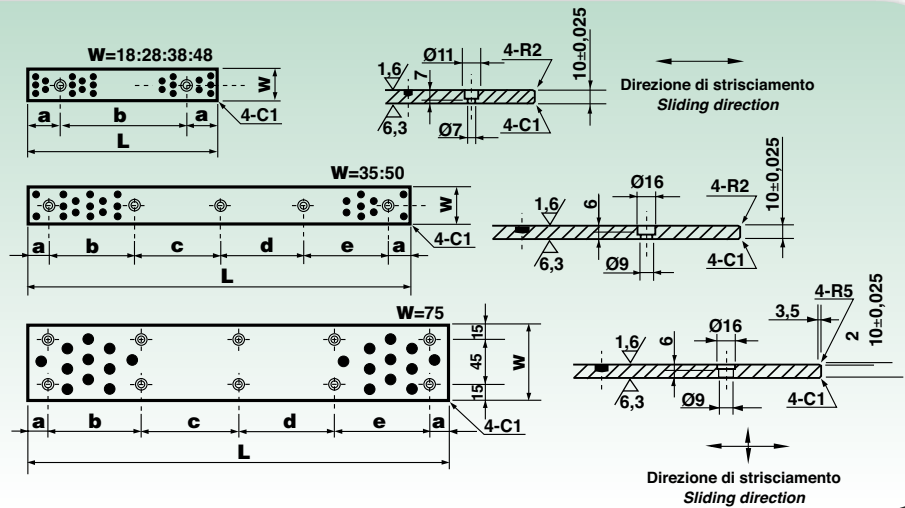
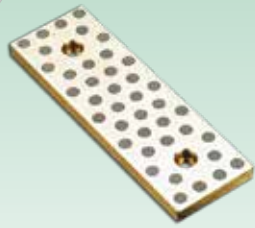
f7 (high precision)



Sigla Designation	Dimensioni (mm.) Dimensions (mm.)							
	d	D	T ⁰ _{-0,1}	W	Foro - Hole		a	b
					n°	Filetto - Thread		
BG1-W 10	10,2 ^{+0,2} _{+0,1}	30	3	20	2	M3	1,5	0,3
BG1-W 10 (SF)	10,2 ^{+0,2} _{+0,1}	30	3	20	senza foro - without hole		1,5	0,3
BG1-W 12	12,2 ^{+0,2} _{+0,1}	40	3	28	2	M3	2	0,4
BG1-W 12 (SF)	12,2 ^{+0,2} _{+0,1}	40	3	28	senza foro - without hole		2	0,4
BG1-W 13	13,2 ^{+0,2} _{+0,1}	40	3	28	2	M3	2	0,4
BG1-W 14	14,2 ^{+0,2} _{+0,1}	40	3	28	2	M3	2	0,4
BG1-W 15	15,2 ^{+0,2} _{+0,1}	50	3	35	2	M3	2	0,4
BG1-W 16	16,2 ^{+0,2} _{+0,1}	50	3	35	2	M3	2	0,4
BG1-W 16 (SF)	16,2 ^{+0,2} _{+0,1}	50	3	35	senza foro - without hole		2	0,4
BG1-W 18	18,2 ^{+0,2} _{+0,1}	50	3	35	2	M3	2	0,4
BG1-W 20	20,2 ^{+0,2} _{+0,1}	50	5	35	2	M5	2,5	0,4
BG1-W 20 (SF)	20,2 ^{+0,2} _{+0,1}	50	5	35	senza foro - without hole		2,5	0,4
BG1-W 25	25,2 ^{+0,2} _{+0,1}	55	5	40	2	M5	2,5	0,4
BG1-W 25 (SF)	25,2 ^{+0,2} _{+0,1}	55	5	40	senza foro - without hole		2,5	0,4
BG1-W 30	30,2 ^{+0,2} _{+0,1}	60	5	45	2	M5	2,5	0,4
BG1-W 35	35,2 ^{+0,2} _{+0,1}	70	5	50	2	M5	2,5	0,4
BG1-W 40	40,2 ^{+0,2} _{+0,1}	80	7	60	2	M6	3	0,5
BG1-W 45	45,3 ^{+0,2} _{+0,1}	90	7	70	2	M6	3	0,5
BG1-W 50	50,3 ^{+0,3} _{+0,1}	100	8	75	4	M6	4	0,6
BG1-W 55	55,3 ^{+0,3} _{+0,1}	110	8	85	4	M6	4	0,6
BG1-W 60	60,3 ^{+0,3} _{+0,1}	120	8	90	4	M8	5	0,8
BG1-W 65	65,3 ^{+0,3} _{+0,1}	125	8	95	4	M8	5	0,8
BG1-W 70	70,3 ^{+0,3} _{+0,1}	130	10	100	4	M8	5	0,8
BG1-W 75	75,3 ^{+0,3} _{+0,1}	140	10	110	4	M8	5	0,8
BG1-W 80	80,3 ^{+0,3} _{+0,1}	150	10	120	4	M8	5	0,8
BG1-W 90	90,5 ^{+0,3} _{+0,1}	170	10	140	4	M10	5	0,8
BG1-W 100	100,5 ^{+0,3} _{+0,1}	190	10	160	4	M10	5	0,8
BG1-W 120	120,5 ^{+0,3} _{+0,1}	200	10	175	4	M10	5	0,8

Per ordinare specificare: sigla + tipo 1/2/3/4/5

To order, please specify: designation + type 1/2/3/4/5



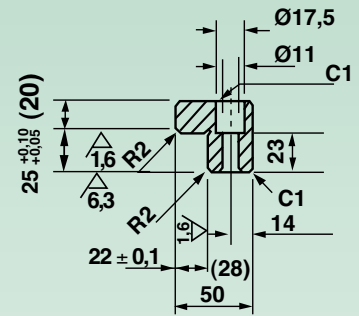
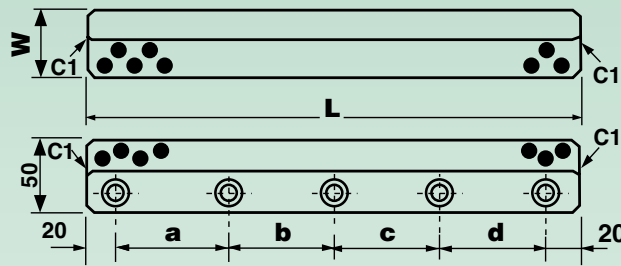
Sigla Designation	Dimensioni (mm) Dimensions (mm)								
	W ⁰ -0,2	L	Distanza tra i fori - Distance between bolts					Foro - Bolt	
			a	b	c	d	e	n°	Filetto Thread
BG1-SP 18-75	18	75 ⁰ _{-0,2}	15	45	-	-	-	2	M6
BG1-SP 18-100		100 ⁰ _{-0,2}	25	50	-	-	-		
BG1-SP 18-125		125 ⁰ _{-0,2}		75	-	-	-		
BG1-SP 18-150		150 ⁰ _{-0,2}		100	-	-	-		
BG1-SP 18-160		160 ⁰ _{-0,2}		110	-	-	-		
BG1-SP 18-220		220 ⁰ _{-0,3}		50	120	-	-		
BG1-SP 28-75	28	75 ⁰ _{-0,2}	15	45	-	-	-	2	M6
BG1-SP 28-100		100 ⁰ _{-0,2}	25	50	-	-	-		
BG1-SP 28-125		125 ⁰ _{-0,2}		75	-	-	-		
BG1-SP 28-150		150 ⁰ _{-0,2}		100	-	-	-		
BG1-SP 28-160		160 ⁰ _{-0,2}		110	-	-	-		
BG1-SP 28-220		220 ⁰ _{-0,3}		50	120	-	-		
BG1-SP 35-100	35	100 ⁰ _{-0,2}	20	60	-	-	-	2	M8
BG1-SP 35-150		150 ⁰ _{-0,2}		55	55	-	-	3	
BG1-SP 35-200		200 ⁰ _{-0,3}		70	70	70	-	4	
BG1-SP 35-250		250 ⁰ _{-0,3}		65	65	65	65	5	
BG1-SP 35-300		300 ⁰ _{-0,3}		80	75	75	80		
BG1-SP 35-350		350 ⁰ _{-0,3}							
BG1-SP 38-75	38	75 ⁰ _{-0,2}	15	45	-	-	-	2	M6
BG1-SP 38-100		100 ⁰ _{-0,2}	25	50	-	-	-		
BG1-SP 38-125		125 ⁰ _{-0,2}		75	-	-	-		
BG1-SP 38-150		150 ⁰ _{-0,2}		100	-	-	-		
BG1-SP 38-160		160 ⁰ _{-0,2}		110	-	-	-		
BG1-SP 38-220		220 ⁰ _{-0,3}		50	120	-	-		
BG1-SP 48-75	48	75 ⁰ _{-0,2}	15	45	-	-	-	2	M6
BG1-SP 48-100		100 ⁰ _{-0,2}	25	50	-	-	-		
BG1-SP 48-125		125 ⁰ _{-0,2}		75	-	-	-		
BG1-SP 48-150		150 ⁰ _{-0,2}		100	-	-	-		
BG1-SP 50-100	50	100 ⁰ _{-0,2}	20	60	-	-	-	2	M8
BG1-SP 50-150		150 ⁰ _{-0,2}		55	55	-	-	3	
BG1-SP 50-200		200 ⁰ _{-0,3}		70	70	70	-	4	
BG1-SP 50-250		250 ⁰ _{-0,3}		65	65	65	65	5	
BG1-SP 50-300		300 ⁰ _{-0,3}		90	90	90	90		
BG1-SP 50-400		400 ⁰ _{-0,5}							
BG1-SP 75-150	75	150 ⁰ _{-0,2}	20	110	-	-	-	4	M8
BG1-SP 75-200		200 ⁰ _{-0,3}		80	80	-	-	6	
BG1-SP 75-250		250 ⁰ _{-0,3}		105	105	-	-		
BG1-SP 75-300		300 ⁰ _{-0,3}		85	90	85	-	8	
BG1-SP 75-400		400 ⁰ _{-0,5}		120	120	120	-		
BG1-SP 75-500		500 ⁰ _{-0,5}		115	115	115	115	10	

Per ordinare specificare: sigla + tipo 1/2/3/4/5

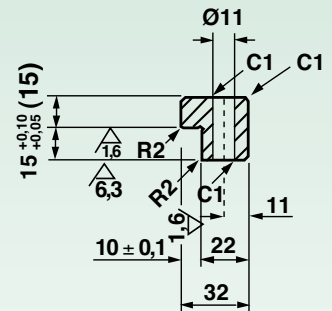
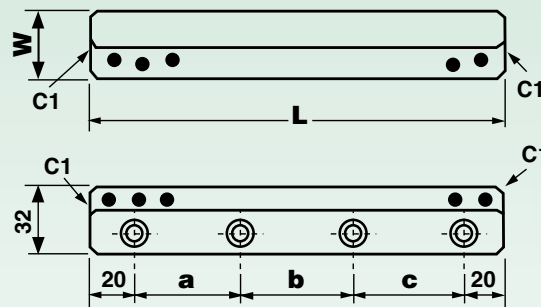
To order, please specify: designation + type 1/2/3/4/5



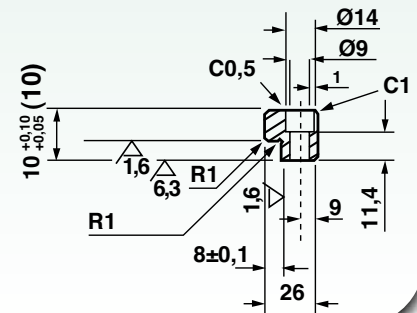
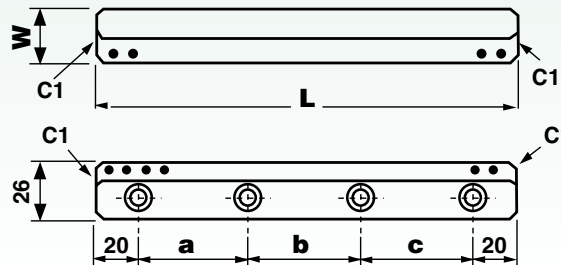
Tipo A Type



Tipo B Type



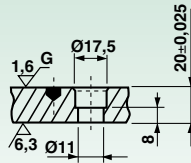
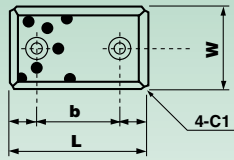
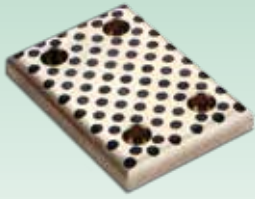
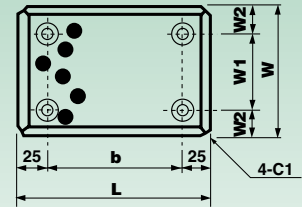
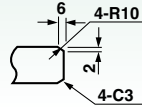
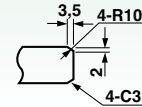
Tipo C Type



Sigla Designation	Tipo Type	Dimensioni (mm) Dimensions (mm)							
		W	L	Distanza tra i fori - Distance between bolts				Foro - Bolt	
				a	b	c	d	n°	Filetto Thread
BG1-SPL 20-100	C	20	100	60	-	-	-	2	M8
BG1-SPL 20-150			150	55	55	-	-	3	
BG1-SPL 20-200			200	55	50	55	-	4	
BG1-SPL 30-100	B	30	100	60	-	-	-	2	M10
BG1-SPL 30-150			150	55	55	-	-	3	
BG1-SPL 30-200			200	55	50	55	-	4	
BG1-SPL 30-250			250	70	70	70	-	4	
BG1-SPL 45-200	A	45	200	55	50	55	-	4	M10
BG1-SPL 45-250			250	70	70	70	-	4	
BG1-SPL 45-300			300	65	65	65	65	5	
BG1-SPL 45-350			350	80	75	75	80	5	

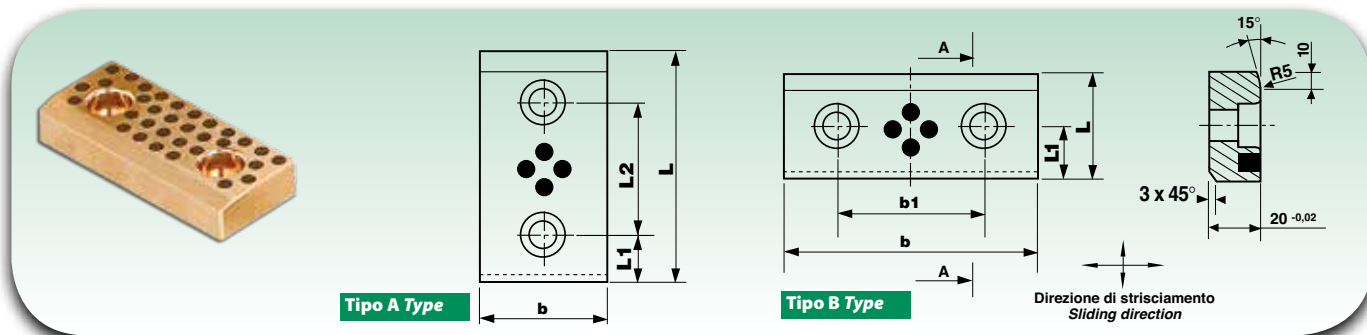
Per ordinare specificare: sigla + tipo 1/2/3/4/5

To order, please specify: designation + type 1/2/3/4/5


Tipo A Type

Tipo B Type


Sigla Designation	Dimensioni (mm) Dimensions (mm)						N. fori Holes n°	Tipo Type
	W ^{-0,1 -0,3}	L ^{-0,1 -0,3}	W1 ^{±0,2}	W2	b ^{±0,2}			
BG1-GP 28-75	28	75	-	-	45	2	A	
BG1-GP 28-100		100	-	-	50			
BG1-GP 28-125		125	-	-	75			
BG1-GP 28-150		150	-	-	100			
BG1-GP 28-200		200	-	-	150			
BG1-GP 38-75	38	75	-	-	45	2	A	
BG1-GP 38-100		100	-	-	50			
BG1-GP 38-125		125	-	-	75			
BG1-GP 38-150		150	-	-	100			
BG1-GP 38-200		200	-	-	150			
BG1-GP 48-75	48	75	-	-	45	2	A	
BG1-GP 48-100		100	-	-	50			
BG1-GP 48-125		125	-	-	75			
BG1-GP 48-150		150	-	-	100			
BG1-GP 48-200		200	-	-	150			
BG1-GP 58-75	58	75	-	-	45	2	A	
BG1-GP 58-100		100	-	-	50			
BG1-GP 58-150		150	-	-	100			
BG1-GP 75-75	75	75	-	-	25	2	A	
BG1-GP 75-100		100	-	-	50			
BG1-GP 75-125		125	-	-	75			
BG1-GP 75-150		150	-	-	100			
BG1-GP 75-200		200	-	-	150			
BG1-GP 100-100	100	100	50	25	50	4	B	
BG1-GP 100-125		125			75			
BG1-GP 100-150		150			100			
BG1-GP 100-200		200			150			
BG1-GP 100-250		250			200			
BG1-GP 125-125	125	125	50	37,50	75	4	B	
BG1-GP 125-150		150			100			
BG1-GP 125-200		200			150			
BG1-GP 125-250		250			200			
BG1-GP 150-150	150	150	100	25	100	4	B	
BG1-GP 150-200		200			150			
BG1-GP 150-250		250			200			
BG1-GP 150-300		300			250			
BG1-GP 200-200		200			150			25
BG1-GP 200-250	250	200						
BG1-GP 200-300	300	250						

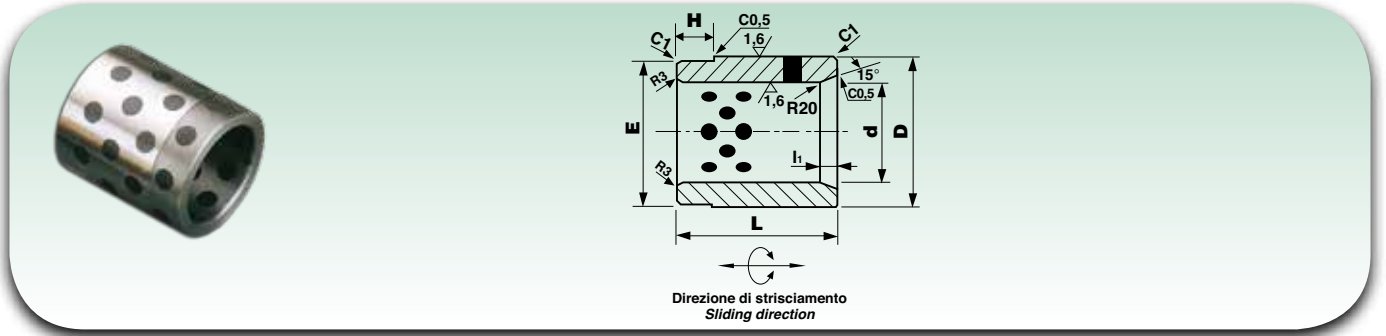
Per ordinare specificare: sigla + tipo 1/2/3/4/5
To order, please specify: designation + type 1/2/3/4/5



Sigla Designation	Dimensioni (mm) Dimensions (mm)					Tipo Type	
	b ^{-0,2}	L ^{-0,2}	b1 ^{±0,1}	L1 ^{±0,1}	L2 ^{±0,1}		
BG1-GPS 50-80	50	80	-	25	30	A	
BG1-GPS 50-100		100	-		50		
BG1-GPS 50-125		125	-		75		
BG1-GPS 50-160		160	-		110		
BG1-GPS 50-200		200	-		150		
BG1-GPS 80-50	80	50	30	25	-	B	
BG1-GPS 80-80		80	-		30	A	
BG1-GPS 80-100		100	-		50		
BG1-GPS 80-125		125	-		75		
BG1-GPS 80-160		160	-		110		
BG1-GPS 80-200		200	-		150		
BG1-GPS 80-250		250	-		170		
BG1-GPS 80-315	315	-	40	235			
BG1-GPS 100-50	100	50	50	25	-	B	
BG1-GPS 100-80		80		40	-		
BG1-GPS 100-100		100		-	25	50	A
BG1-GPS 100-125		125		-		75	
BG1-GPS 100-160		160		-		110	
BG1-GPS 100-200		200		-		150	
BG1-GPS 100-250		250		-		170	
BG1-GPS 100-315		315		-	40	235	
BG1-GPS 125-50	125	50	75	25	-	B	
BG1-GPS 125-80		80		40	-		
BG1-GPS 160-50	160	50	100	25	-	B	
BG1-GPS 160-80		80		40	-		

Per ordinare specificare: sigla + tipo 1/2/3/4/5

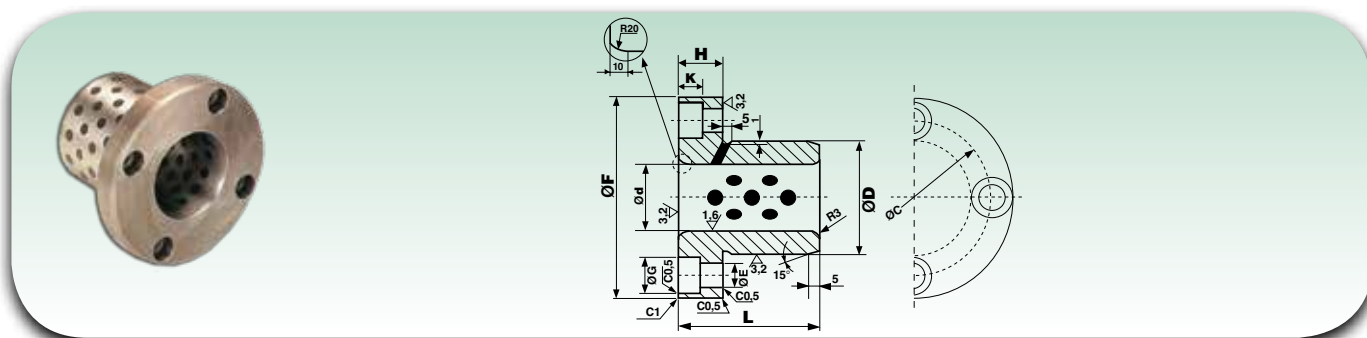
To order, please specify: designation + type 1/2/3/4/5



Sigla Designation	Dimensioni (mm) Dimensions (mm)					
	$d_{(H7)}$	$D_{(j6)}$	$L_{-0,20}^0$	$E_{-0,20}^0$	H	I ₁
BG4 30	30	50	50	49	10	5
BG4 40	40	60	60	59	10	5
BG4 50	50	70	75	69	15	5
BG4 60	60	80	90	79	20	10
BG4 80	80	100	120	99	25	10
BG4 100	100	120	150	119	25	10
BG4 120	120	140	180	139	25	10

Per ordinare specificare: sigla + tipo 1/2/3/4/5

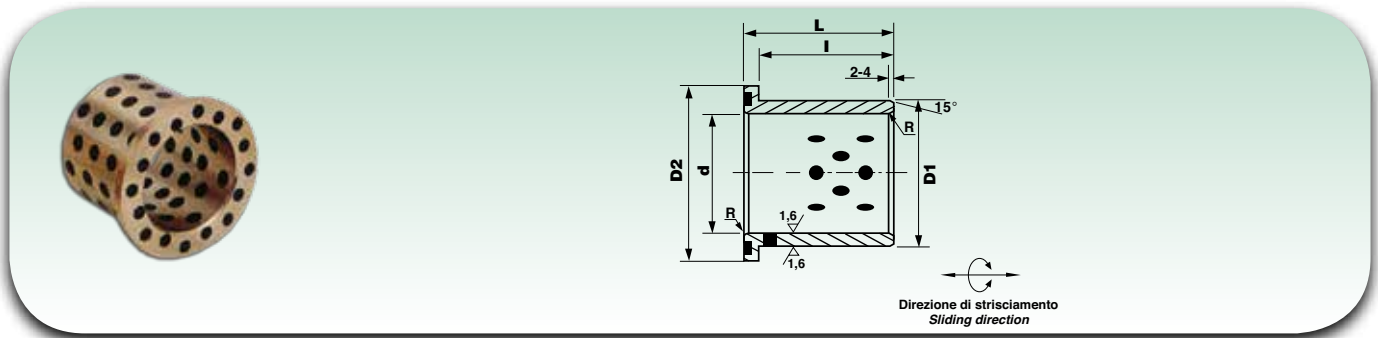
To order, please specify: designation + type 1/2/3/4/5



Sigla Designation	Dimensioni (mm) Dimensions (mm)								
	$d_{(H7)}$	$F^0_{-0,25}$	$D_{(j56)}$	H	$L^{\begin{smallmatrix} -0,10 \\ -0,30 \end{smallmatrix}}$	C	E	G	K
BG4-F 30	30	90	50	20	50	70	11	17,5	10,8
BG4-F 40	40	100	60	20	65	80	11	17,5	10,8
BG4-F 50	50	125	75	20	80	100	11	17,5	10,8
BG4-F 60	60	135	85	20	100	110	11	17,5	10,8
BG4-F 80	80	170	110	25	130	140	14	20	13
BG4-F 100	100	190	130	25	160	160	14	20	13

Per ordinare specificare: sigla + tipo 1/2/3/4/5

To order, please specify: designation + type 1/2/3/4/5



Sigla Designation	Dimensioni (mm) Dimensions (mm)				
	$d_{(F7)}$	$D1_{(m6)}$	D2	l	L
BG4-AF 12	12	18	25	11	15
BG4-AF 16	16	22	30	15	20
BG4-AF 20	20	28	36	20	25
BG4-AF 25	25	33	43	25	30
BG4-AF 30	30	38	48	30	35
BG4-AF 40	40	50	60	40	45
BG4-AF 50	50	62	75	49	55
BG4-AF 60	60	75	90	58	65

Per ordinare specificare: sigla + tipo 1/2/3/4/5

To order, please specify: designation + type 1/2/3/4/5