GUIDE COMPONENTS FOR AUTOMOBILE DIE

GUIDE COMPONENTS FOR AUTOMOBILE DIE









Product name Catalog No.	GUIDE POSTS GPM	OIL-FREE GUIDE BUSHINGS GBF GBW	OIL-FREE GUIDE BUSHINGS WITH FLANGES HGBF	GUIDE POSTS GPOB
Page	380	381	381	382

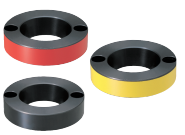








LOCKING STOPPERS FOR GUIDE POSTS GPSB	STROKE END BLOCKS GEB DSEB	LOCKING END BLOCKS FOR GUIDE BUSHINGS KEB	BALL GUIDE POST SETS PKHL PKHLU PKH PKH—U
382	383	384	386









DISTANCE GUIDE RINGS HKD	OIL-FREE HEEL GUIDE PLATES OGG OGP OGPZ	OIL-FREE HEEL GUIDE PLATES GWZ GWAZ GWBZ	HEEL GUIDE PLATES WITH OIL GROOVES GW GWA GWB
388	389	390	391

NEW







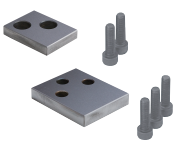


HEEL GUIDE PLATES—OIL-FREE SLIDE PLATE CHANGABLE TYPE— GPRSE GPRSK GPRST	PAD KEEPERS KEPN	—WITH OIL GROOVES— KEPNZ	PAD GUIDE BLOCKS PGWN
392	393	393	394

NEW



NEW



NEW



NEW

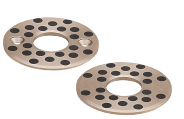


GUIDE BLOCKS FOR STRIPPER PLATES GBFC GBSC	—LOCATING PLATES— HDPT HDPTT	GUIDE BLOCKS FOR STRIPPER PLATES —CORNER GUIDE TYPE— GBLK	GUIDE BUSHINGS —FLANGE TYPE— SGBW
395	396	397	398

NEW



NEW



NEW



NEW



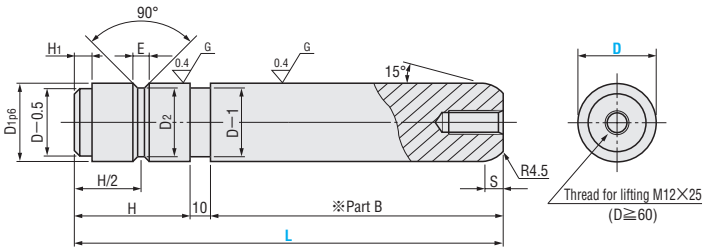
UNIVERSAL GUIDE BUSHINGS —STRAIGHT TYPE— GGBW	WASHERS GBWC GBWCN	UNIVERSAL GUIDE BUSHINGS —STRAIGHT BRONZE TYPE— GGBP	UNIVERSAL GUIDE BUSHINGS —FLANGE TYPE— GGBF
399	400	401	402

GUIDE POSTS

■Guide posts



GPM



※Part B: Induction hardening

M S45C
H 55HRC～
(Induction hardening)

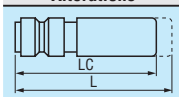
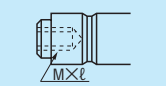
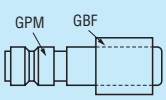
D		D1p6		D2	H	E	S	H1	Catalog No. Type	Catalog No. D	L
25	−0.005 −0.015	25	+0.035 +0.022	21	30	8	5	5	GPM	25	80 100 120 140 160
30	−0.005 −0.015	30	+0.035 +0.022	26	40	8	5	10	GPM	30	100 120 140 160 180 200
40	−0.005 −0.015	40	+0.042 +0.026	36	50	8	5	10	GPM	40	120 140 160 180 200
50	−0.005 −0.015	50	+0.042 +0.026	45	70	10	10	10	GPM	50	160 180 200 250 300
60	−0.010 −0.020	60	+0.051 +0.032	55	90	12	10	10	GPM	60	200 220 250 300 350
65	−0.010 −0.020	65	+0.051 +0.032	60	100	12	10	10	GPM	65	250 300 350
80	−0.010 −0.025	80	+0.051 +0.032	75	120	12	10	10	GPM	80	250 300 350 400
100	−0.010 −0.025	100	+0.059 +0.037	95	150	12	10	10	GPM	100	300 350 400 450 500

Order — Catalog No. — L
GPM 80 — 300

Days to Ship: Quotation

Price: Quotation

Alterations — Catalog No. — L(LC) — (MC)
GPM 40 — LC110 — MC

Alterations	Code	Spec.
	LC	Post length change Lmin.≦LC＜L 1mm increment Can be used for 30≦D≦50.
	MC	Tap machining T on the fixing side
	BF	Attached with cast-type oil-free guide bushings (shown on the page at right)

D	Lmin.
30	85
40	105
50	140

D	M	ℓ
25	8	18
30 ～ 80	12	25
100	16	32

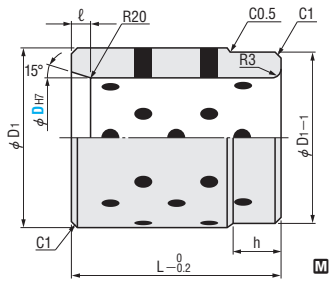
D	BF
30	GBF30
40	GBF40
50	GBF50
60	GBF60
80	GBF80
100	GBF100

■Oil-free guide bushings



GBF(Cast type)
GBW(Copper alloy type)

RoHS



Ⓜ GBF FC250
Special solid lubricant (embedded)
GBW Copper alloy
Special solid lubricant (embedded)

Ⓡ Sliding is in the linear direction only.

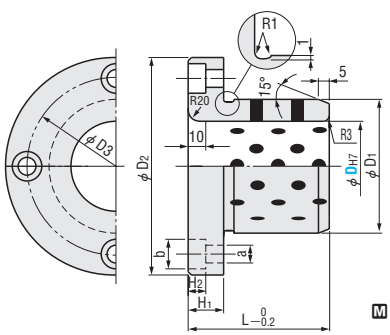
D1		DH7		L	h	ℓ	Catalog No.	
							Type	D
50	± 0.008	30	+0.021 0	50	10	5		30
60	± 0.0095	40	+0.025 0	60				40
70		50		75	15	10	GBF(Cast type)	50
80	± 0.011	60	+0.030 0	90	20		GBW(Copper alloy type)	60
100		80		120	25			80
120	± 0.013	100	+0.035 0	150				100

■Oil-free guide bushings with flanges



HGBF(Cast type)

RoHS



Ⓜ FC250
Special solid lubricant (embedded)
Ⓐ Hexagon socket head cap screws

D2	D3	D1		DH7		L	H1	H2	a	b	Ⓐ Mounting bolts	Catalog No.	
												Type	D
90	70	50	±0.008	30	+0.021 0	50	20	10.8	11	17.5	CB10—30 4 pcs	HGBF	30
100	80	60	±0.0095	40	+0.025 0	65							40
125	100	75		50		80							50
135	110	85	±0.011	60	+0.030 0	100							60
170	140	110		80		130	25	13	14	20	CB12—40 4 pcs		80
190	160	130	±0.0125	100	+0.035 0	160							100

Order — Catalog No.
GBF 50
HGBF 60

Days to Ship — Quotation

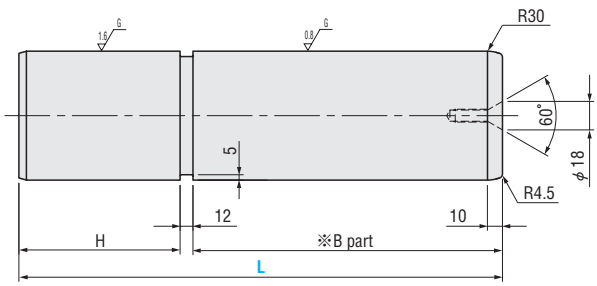
Price — Quotation

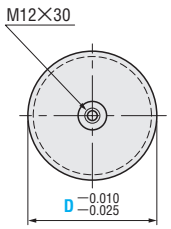
■Guide posts

RoHS



GPOB





※ B part is induction hardened.

M S45C
H 55HRC～
(Induction hardening)

D		H	Catalog No. Type	Catalog No. D	L
80	−0.010 −0.025	100	GPOB	80	350
					400
100		120		100	350
					400
					450
120		150		120	450
					500

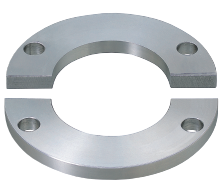
Order — Catalog No. — L
GPOB 80 — 350

Days to Ship: Quotation

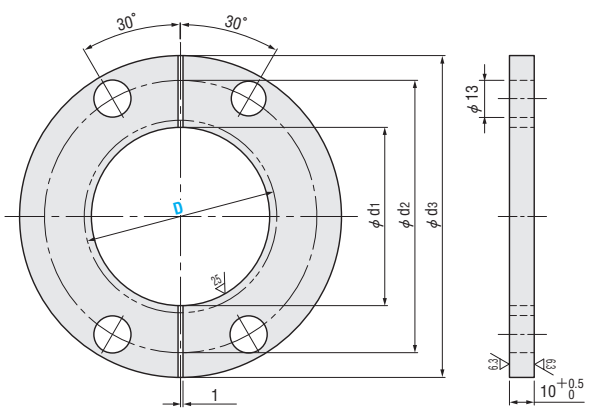
Price: Quotation

■Locking stoppers for guide posts

RoHS



GPSB



A set consists of 2 pieces.

M S45C

d1	d2	d3	Catalog No. Type	Catalog No. D
72	110	130	GPSB	80
92	130	150		100
112	156	177.8		120

Order — Catalog No.
GPSB 80

Days to Ship: Quotation

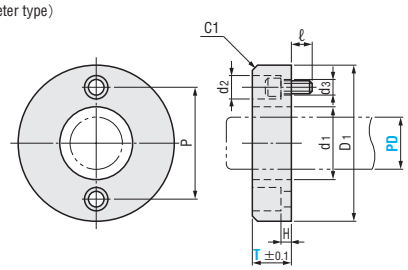
Price: Quotation

STROKE END BLOCKS
—FOR PRESS-FIT POSTS AND LARGE OUTER DIAMETER TYPES—



RoHS

GEB (For press-fit posts)
DSEB (Large outer diameter type)



PD: Outside diameter of post

M SS400
S Black oxide (Fe_3O_4)
A Hexagon socket head cap screws

D_1	P	d_1	T	H	d_2	d_3	A Accessories Mounting bolts	ℓ	Catalog No. Type	Catalog No. PD	T	Color
75	60	43	20•25•30	10	10	5.5	CB5—20	10	GEB	38	20	R (Red)
90	72	55	20•25	10	11	6.5	CB6—20			50	25	
			30•35•40	20			CB6—30				30	Y (Yellow)
120	92	65	20•25	8	14	9	CB8—20	12		60	35	N (Normal)
			30•35•40	18			CB8—30					
150	116	88	20•25	8			CB8—20			80	40	
			30•35•40	18			CB8—30					
120	100	54	15	5	14	9	CB8—20	15	DSEB	50	15	R (Red)
			20	10				10				Y (Yellow)
140	120	64	15	5				15		60	20	
			20	10				10				N (Normal)

N (Normal) exterior is black oxide (Fe_3O_4).

Order

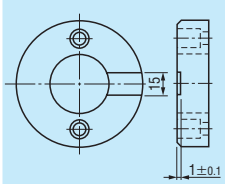
Catalog No.	—	T	—	Color
GEB 50	—	30	—	Y

Days to Ship Quotation

Price Quotation

Alterations

Catalog No.	—	T	—	Color	—	(NMC)
GEB 50	—	30	—	Y	—	NMC

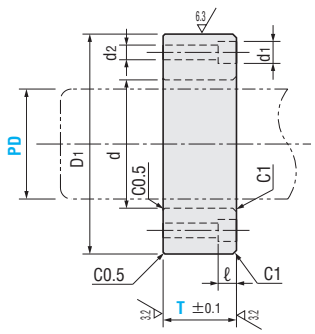
Alteration	Code	Spec.
	NMC	Addition of a groove for height adjustment The surface treatment at the location of the alteration is removed.

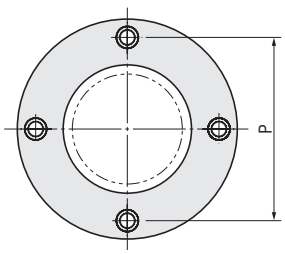
LOCKING END BLOCKS FOR GUIDE BUSHINGS

RoHS



KEB

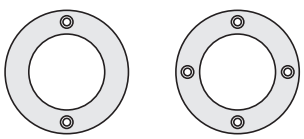




PD: Outside diameter of post

M SS400
S Black oxide (Fe_3O_4)
A Hexagon socket head cap screws

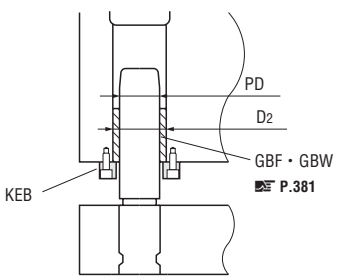
PD=30～60　PD=80・100



A

T dimension	Length L of provided cap screws
20	25
25	30
30	35
35	40
40	45
45	50
50	55
55	60

ex Example



Because this product combines the functions of a locking block and end block, it is effective in reducing the required man-hours.

D1	PD Post diameters	D2 Bushing outside diameter	d	P	ℓ※1	d1	d2	A Accessories Mounting bolts※2	Catalog No. Type	Catalog No. PD	T 5mm increments	Color
96	30	50	35	72	15	17.5	11	CB10—L 2 pcs.	KEB	30	20 ～ 30	R (Red)
106	40	60	45	82						40	20 ～ 40	
116	50	70	55	92						50	20 ～ 55	Y (Yellow)
126	60	80	65	102						60		
150	80	100	85	124		20	14	CB12—L 4 pcs.		80		N (Normal)
170	100	120	105	144						100	20 ～ 50	

N (Normal) exterior is black oxide (Fe_3O_4). ※1 If T=20, ℓ=12 ※2 For L dimension, refer to the above table.

Order

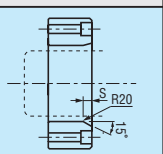
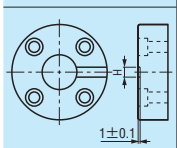
Catalog No.	—	T	—	Color
KEB 50	—	30	—	Y

Days to Ship: Quotation

Price: Quotation

Alterations

Catalog No.	—	T	—	Color	—	(KTP・NMC)
KEB50	—	30	—	Y	—	KTP

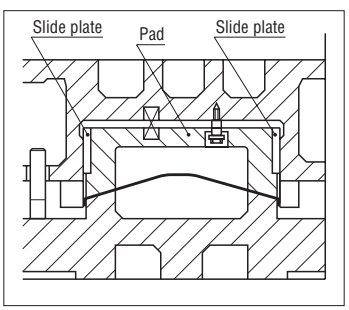
Alterations	Code	Spec.
	KTP	Addition of a lead-in guide for inserting the guide post. Machined by tapering on the inner diameter. PD: 30・40 S: 5; 50～100 S: 10. The surface treatment at the location of the alteration is removed.
	NMC	Addition of a groove for height adjustment. PD: 30・40 H: 10; 50～100 H: 15. The surface treatment at the location of the alteration is removed.

■Reduce man-hours (die costs) by using a PKH pad guide system

Conventional pad guide systems

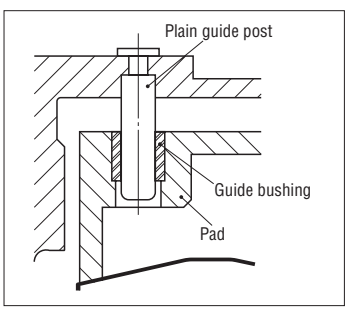
● **Slide plate system**

Slide plates are generally used for the pad guides as shown below in medium and large press dies, including dies for automobile parts. However it is difficult to finish the sliding surfaces of these plates with precision. Therefore when the die is assembled, the clearance must be measured and the slide plates must be adjusted. However the use of NC systems for die machining has made high-precision machining of dies possible. When such high-precision dies are used, adjusting the slide plates may cause displacement of the die surfaces.



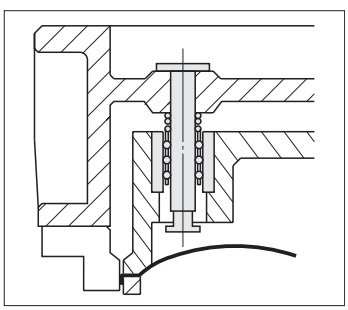
● **Plain guide post system**

In addition to the slide plate system, plain guide posts are also used as pad guides. However, since most pads are not well-balanced, pad assembly and disassembly are troublesome tasks.



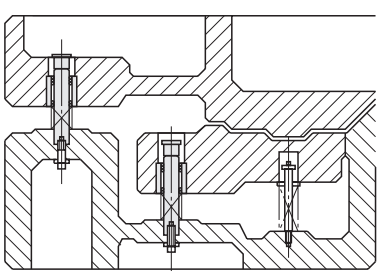
■Pad guide system using ball guide posts

The ball guide post system does not require man-hours for machining like the slide plate system. It also allows frequent die assembly and disassembly to be performed easily. Consequently, this system has significant benefits in terms of reducing machining man-hours and therefore die costs. A 50% reduction in total costs (machining cost + part costs) compared with the slide plate system can be expected.
The system is also superior in terms of die setup workability and safety.



Other examples of uses for ball guide posts

● Use for drawing dies or bending dies

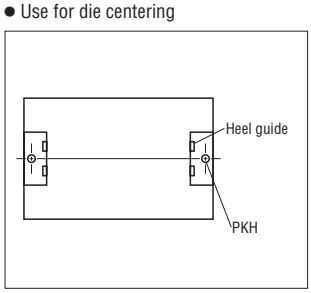


No slide plates are required.

Except for the die guides of trimming dies and others which may be exposed to thrust, PKH-U and PKHLU provide greater durability.

PKHLU is a thrust load absorbing type. It is particularly suitable for bending dies and drawing dies, and can absorb error resulting from machining.

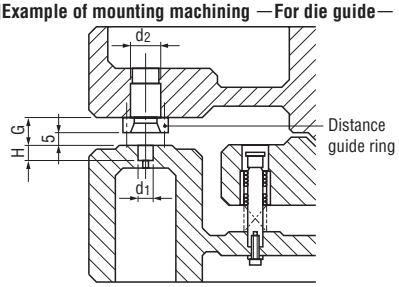
● Use for die centering



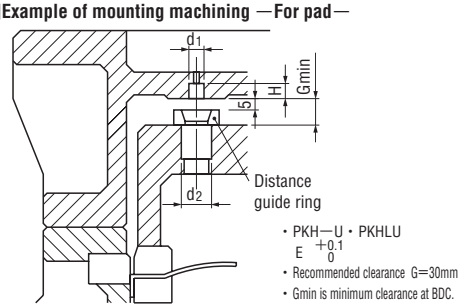
When used to center the upper and lower dies in a die set that uses heel guide plates, the PKH system ensures easy and correct die assembly and disassembly.

Example

■**Example of mounting machining —For die guide—**



■**Example of mounting machining —For pad—**



・PKH—U・PKHLU
E $^{+0.1}_{0}$
・Recommended clearance G=30mm
・Gmin is minimum clearance at BDC.

■**Bushing installation method**

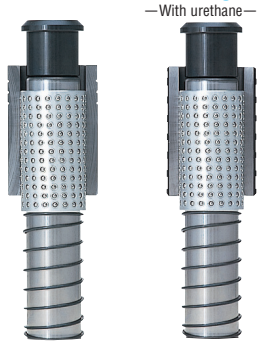
(1) Loctite adhesive ● **PKHL・PKH** ·····No.638 (LOC638 **P.306**)
● **PKHLU・PKH—U**···No.401 or No.406 (products of Henkel Japan)

(2) Fixed by HKD (**P.388**)

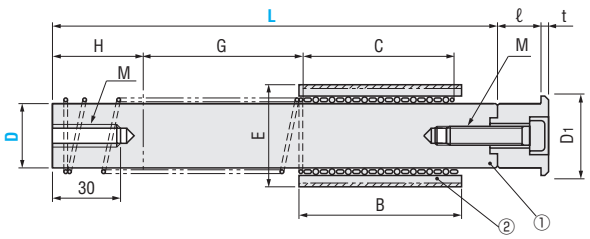
BALL GUIDE POST SETS
—FOR DIE GUIDES AND PADS—

RoHS

PKHL **PKHLU** —With urethane—



—For die guides—



PKHL
①② M SUJ2
H 58HRC ～

PKHLU
① M SUJ2
H 58HRC ～
② M SUJ2 Urethane
H 58HRC ～ Shore A90

D		d_1		E		d_2	B	C	ℓ	M	t	D_1	G min.	H	Catalog No. Type	Catalog No. D	L
50			83	0 −0.010	+0.1 0	+0.045 +0.015	120	110	40	12	10	58	30	60	PKHL PKHLU	50	240
									20								280
60	+0.035 +0.030	+0.065 +0.045	95				130	120	50			68		80		60	260
									30								300
80			120	0 −0.012		+0.045 +0.015	140	130	50			88		100		80	300
									30								340
100	+0.040 +0.032	+0.070 +0.045	145				160	150	50	16	15	108	40	120		100	350
									30								400
									10								450

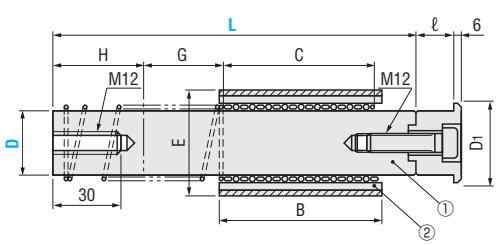
d_1 and d_2 are the dimension tolerances for mounting hole machining as shown at the bottom of the page at left. Sales of individual components P.387

RoHS

PKH **PKH—U** —With urethane—



—For pads—



PKH
①② M SUJ2
H 58HRC ～

PKH—U
① M SUJ2
H 58HRC
② M SUJ2 Urethane
H 58HRC ～ Shore A95

D		d_1		E		d_2	B	C	ℓ	D_1	G min.	H	Catalog No. Type	Catalog No. D	L 10mm increments
38	+0.030 +0.025	+0.060 +0.040	64	0 −0.008	+0.1 0	+0.040 +0.015	80	50	20	46	20	40	PKH PKH—U	38	130 ～ 160
								75	30		25				170 ～ 200
50	+0.035 +0.030	+0.065 +0.045	83	0 −0.010		+0.045 +0.015	100	60	20	58	30	50		50	150 ～ 190
								90	30						200 ～ 240
60			95					70	20	68	30	60		60	170 ～ 210
								90	30		20				220 ～ 260
80			120							88		80		80	260 ～ 300

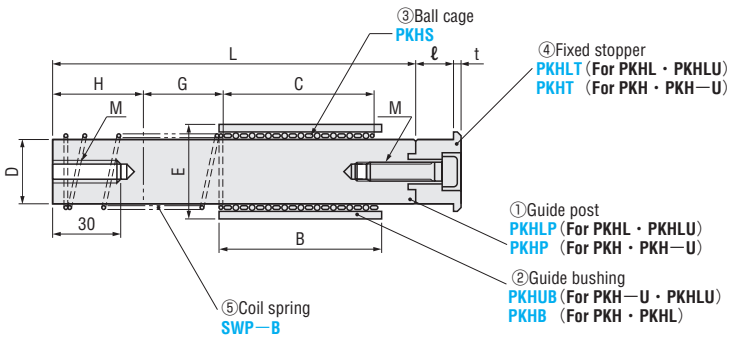
d_1 and d_2 are the dimension tolerances for mounting hole machining as shown at the bottom of the page at left. Sales of individual components P.387

Order | Catalog No. — L | PKH 50 — 240 | P Price | Quotation

Days to Ship | Quotation

COMPONENTS FOR BALL GUIDE POST SETS

RoHS



For detailed dimensions, refer to P.386.

Set			①Guide post			②Guide bushing		③Ball cage		④Fixed stopper	
Type	D	L	Type	D	L	Type	D—B	Type	D—C	Type	D—ℓ
For die guides PKHL PKHLU	50	240	For die guides PKHLP	50	240	PKHB (For PKHL PKH)	50—120	PKHS	50—110	For die guides PKHLT	50—20
		280			280						50—40
	60	260		60	260		60—130		60—120		60—30
		300			300						60—50
	80	300		80	300		80—140		80—130		80—30
		340			340						80—50
	100	350		100	350		100—160		100—150		100—10
		400			400						100—30
		450			450						100—50
For pads PKH PKH—U	38	130 ～ 160	For pads PKHP	38	130 ～ 160	With urethane PKHUB (For PKHLU PKH—U)	38— 80		38— 50	For pads PKHT	38—20
		170 ～ 200			170 ～ 200				38— 75		38—30
	50	150 ～ 190		50	150 ～ 190		50—100		50— 60		50—20
		200 ～ 240			200 ～ 240				50— 90		50—30
	60	170 ～ 210		60	170 ～ 210		60—100		60— 70		60—20
		220 ～ 260			220 ～ 260				60— 90		60—30
	80	260 ～ 300		80	260 ～ 300		80—100		80— 90		80—30

Order

Catalog No.	—	L
PKHP 50	—	200

Catalog No.
PKHB 60—130

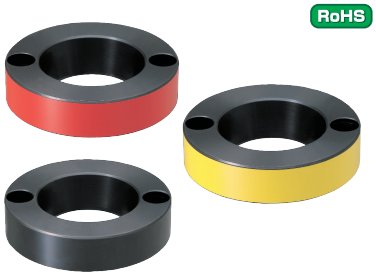
Days to Ship: Quotation

Price: Quotation

■⑤Coil spring (For detailed specifications, page at right)

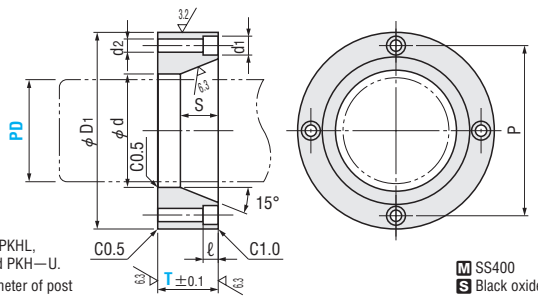
Set			⑤Coil spring		
Type	D	L	Type	D	FL (Free length)
For die guides PKHL PKHLU	50	240	SWP—B	50	140
		280			150
	60	260		60	150
		300			170
	80	300		80	180
		340			200
	100	350		100	200
		400			230
		450			260
For pads PKH PKH—U	38	130 ～ 160		38	L— 50
		170 ～ 200			L— 60
	50	150 ～ 190		50	L— 70
		200 ～ 240			L— 90
	60	170 ～ 210		60	L— 90
		220 ～ 260			L— 100
	80	260 ～ 300		80	L— 100

DISTANCE GUIDE RINGS



RoHS

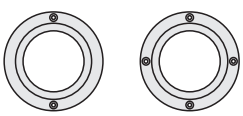
HKD

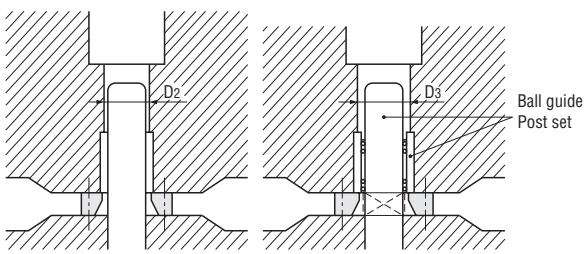


- Can be used for PKHL, PKHLU, PKH and PKH—U.
- PD: Outside diameter of post

M SS400
S Black oxide (Fe_3O_4)

PD=38・50・60　PD=80・100





D_1	d	P	S		d_1	d_2	ℓ	D_2	D_3	Catalog No.		T	Color
			T=25	T≧30						Type	PD	5mm increments	
108	54	88	23	28	17.5	11	15	38	50	HKD	38	25 ～ 55	R (Red)
118	64	98						50	60		50		Y (Yellow)
148	84	126						60	80		60		N (Normal)
168	104	146						80	100		80		
188	124	166			20	14		100	—		100		

N (Normal) exterior is black oxide (Fe_3O_4).

Order

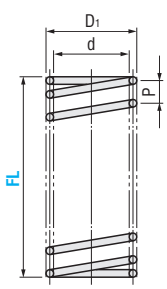
Catalog No.	—	T	—	Color
HKD 38	—	30	—	R

Price: Quotation

Days to Ship: Quotation

SWP—B

RoHS



D_1	d	P	Catalog No. Type	D	FL
42.5	38.5	18	SWP—B	38	80 90 100 110 120 130 140
55.7	50.5	20		50	80 90 100 110 120 130 140 150
66.9	60.5	20		60	80 90 100 110 120 130 140 150 160 170
87.7	80.5	30		80	160 170 180 190 200
108.5	100.5	50		100	200 230 260

Order

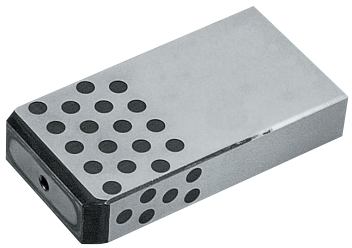
Catalog No.	—	D	—	FL
SWP—B	—	50	—	130

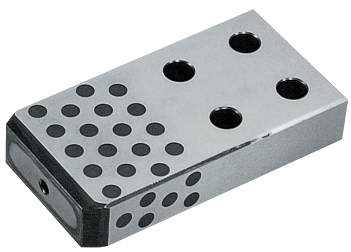
Price: Quotation

Days to Ship: Quotation

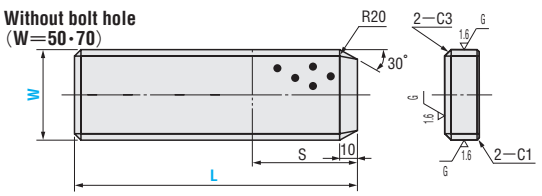
OIL-FREE HEEL GUIDE PLATES

RoHS

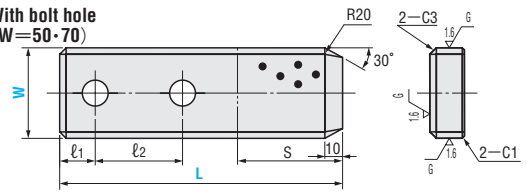




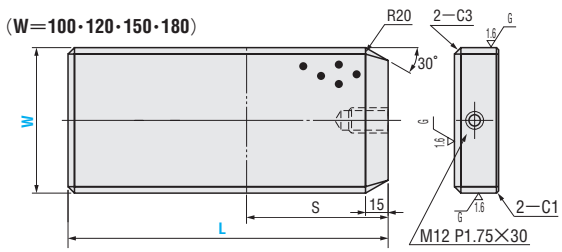
Without bolt hole (W=50·70)



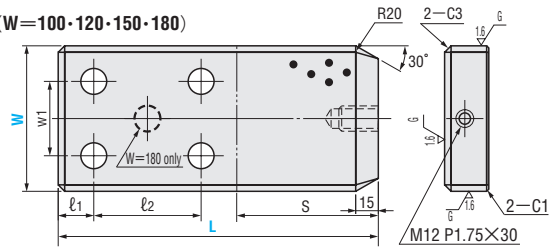
With bolt hole (W=50·70)



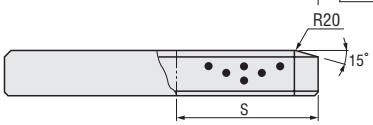
(W=100·120·150·180)



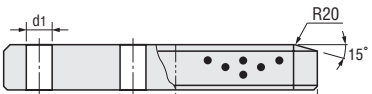
(W=100·120·150·180)



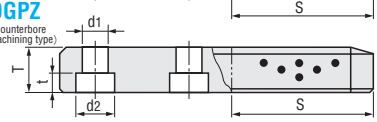
OGG



OGP



OGPZ
(Counterbore machining type)



M S45C
Special solid lubricant (embedded)

Slide part (S)
H 55HRC ~ (Induction hardening)

W		T	S	OGP·OGPZ ℓ1	ℓ2	w1	d1	d2	t	Catalog No. Type	W	L
50	0 −0.025	30	60	20	50	—	18	26	18	OGG OGP OGPZ	50	160
			120		50							200
			120		80							260
70	0 −0.030	35	100	25	60						70	230
			160		60							260
			160		75							300
			150		150							350
100	0 −0.035	45	100	30	60	60	22	32	22		100	230
			160		60							280
			160		100							330
			200		120							390
120	0 −0.035	45	100	30	60						120	230
			160		60							280
			160		100							330
			200		120							390
150	0 −0.040	50	160	30	60	90					150	280
			190		80							330
			190		140							390
			190		180							430
180	0 −0.040	55	160	30	60	120					180	280
			190		80							330
			190		140							390
			190		180							430
			200		200							480
			250		225							550

Order — Catalog No. — L

OGP 50 — 160

Days to Ship: Quotation

Price: Quotation

- Lubricate the plates before use. (initial greasing)
- The special solid lubricant embedded in the grooves continuously provides a lubricant film according to the load.
- The plate can slide only in the direction of L dimension.

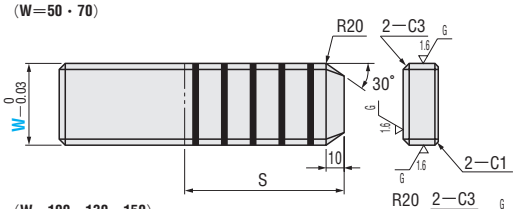
RoHS



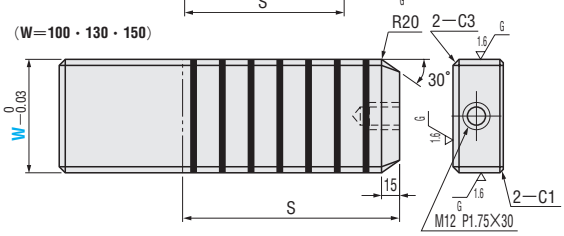


Without bolt hole

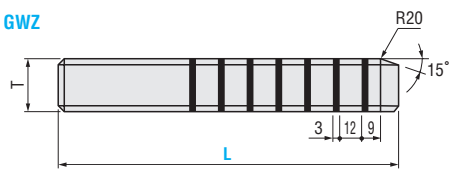
(W=50・70)



(W=100・130・150)



GWZ

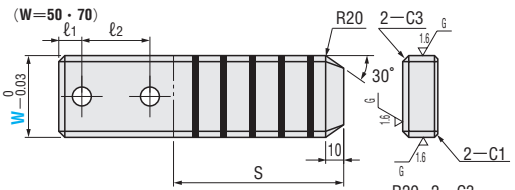


M S45C
Special solid lubricant (embedded)

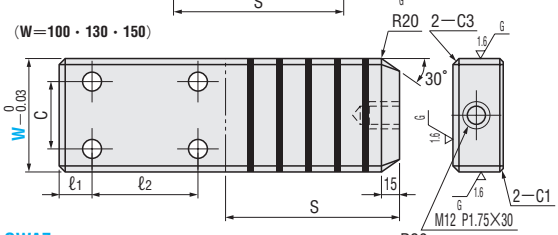
Slide part (S)
H 55HRC～ (Induction hardening)

With bolt hole

(W=50・70)

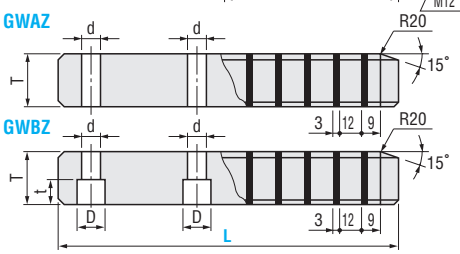


(W=100・130・150)



GWAZ

GWBZ



M S45C
Special solid lubricant (embedded)

Slide part (S)
H 55HRC～ (Induction hardening)

T	GWAZ・GWBZ						Number of grooves	S	Catalog No.		L
	ℓ1	ℓ2	C	d	D	t			Type	W	
30	20	50	—	18	26	18	3	60	GWZ GWAZ GWBZ	50	160
							5	90			190
							7	120			220
35	25	60	—				6	100		70	230
							9	140			270
							11	180			310
45	30	90	60				8	130		100	300
							11	180			350
							14	230			400
50	30	120	80	22	32	22	9	150		130	350
							12	200			400
							16	250			450
60	35	150	100				11	180		150	420
							14	230			470
							18	280			520

Order

Catalog No.	—	L
GWBZ 50	—	160

Price Quotation

Days to Ship Quotation

- Lubricate the plates before use. (initial greasing)
- The special solid lubricant embedded in the grooves continuously provides a lubricant film according to the load.
- The plate can slide only in the direction of L dimension.

HEEL GUIDE PLATES WITH OIL GROOVES

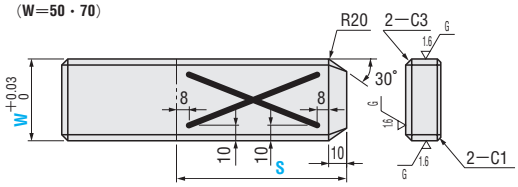
RoHS



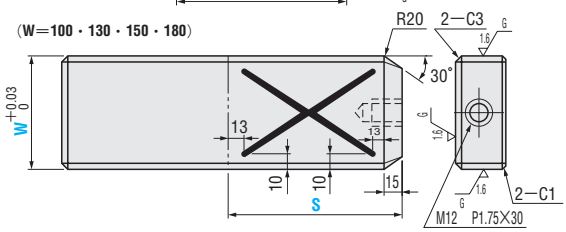


Without bolt hole

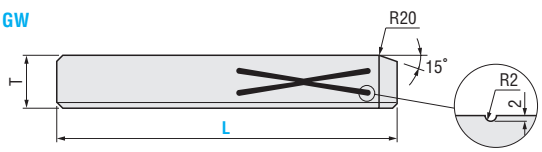
(W=50・70)



(W=100・130・150・180)

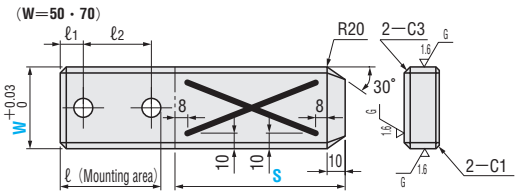


GW

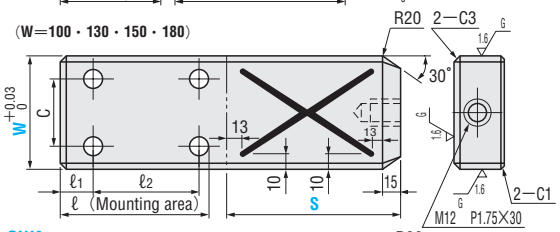


With bolt hole

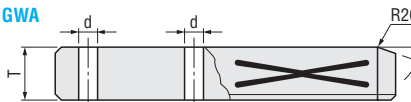
(W=50・70)



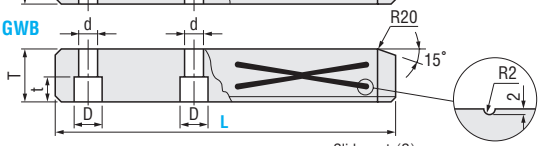
(W=100・130・150・180)



GWA



GWB



Slide part (S)

M S45C

H 55HRC～ (Induction hardening)

T	GWA・GWB							Catalog No.		S	L 10mm increments
	ℓ	ℓ1	ℓ2	C	d	D	t	Type	W		
30	90	20	50	—	18	26	18	GW GWA GWB	50	60	150 ～ 180
										90	190 ～ 250
35	110	25	60	—					70	90	200 ～ 250
										120	230 ～ 350
45	150	30	90	60					100	120	270 ～ 320
										180	330 ～ 400
50	150	30	90	80	22	32	22		130	150	300 ～ 380
	180		120							210	390 ～ 500
60	160	35	90	100					150	180	340 ～ 450
	220		150							240	460 ～ 550
	180		110	120					180	200	380 ～ 470

Order

Catalog No.	—	S	—	L
GW 100	—	180	—	350

Price Quotation

Days to Ship Quotation

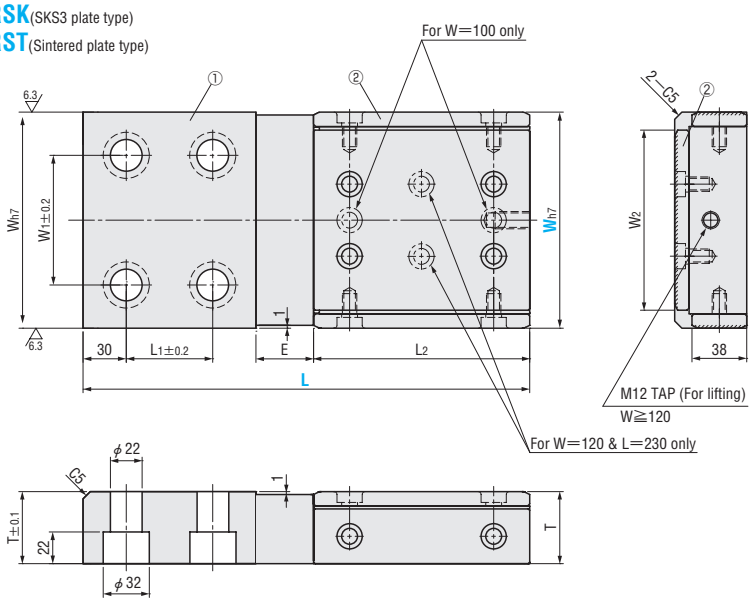
HEEL GUIDE PLATES

—OIL-FREE SLIDE PLATE CHANGABLE TYPE—





GPRSE(Copper alloy plate type)
GPRSK(SKS3 plate type)
GPRST(Sintered plate type)



• Slide direction

M ① Heel guide plates S45C
② GPRSE Copper alloy embedded with special solid lubricant (STW)
GPRSK SKS3 embedded with special solid lubricant (SPTH)
GPRST Special sintered alloy (STZ)

Wh7		W1	W2	L1	L2	T	E	②Qty. of mounting bolts	Catalog No.	W	L
100	0 —0.035	60	75	60	75	45	35	6	GPRSE GPRSK GPRST	100	230
					125						280
				100			45				330
				120	150		60				390
120			100	60	75		35			120	230
					125						280
				100			45				330
				120	150		60				390
150	0 —0.040	90	125	60	125	50	35	8		150	280
				100			45				330
				120	150		60				390
				140			80				430

Order

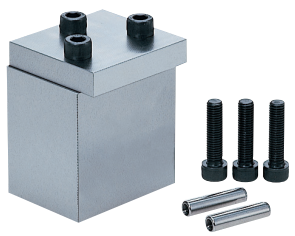
Catalog No.	W		L
GPRSE GPRSK GPRST	100 120 150	— — —	280 390 330

Days to Ship **Quotation**

Price **Quotation**

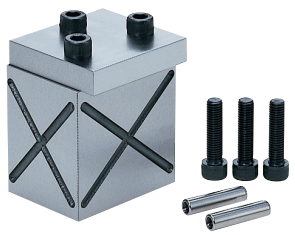
KEPN

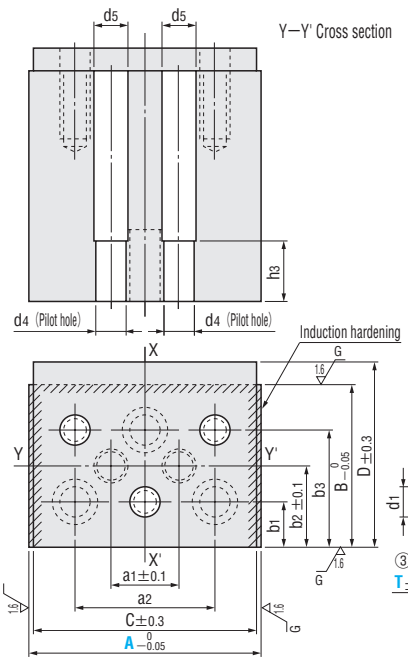
RoHS



KEPNZ (With oil grooves)

RoHS

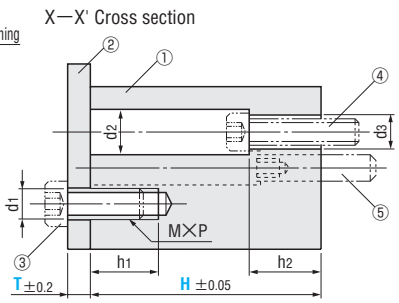




A		KEPN80 KEPNZ80	KEPN100 KEPNZ100
③	T=10	CB10—30 3 pcs.	CB12—35 3 pcs.
	T=15	CB10—35 3 pcs.	CB12—40 3 pcs.
	T=20	—	CB12—45 3 pcs.
④		CB10—50 3 pcs.	CB12—55 3 pcs.
⑤		MSTM10—40 2 pcs.	MSTM13—50 2 pcs.

No accessories are provided for KEPNP (plate only).

① M S45C
H 40～45HRC (Induction hardening)
② M S45C



①Mounting block															②Plate					
A	B	a1	a2	b1	b2	b3	d1	d2	d3	d4	h1	h2	h3	M×P	C	D	a2	b1	b3	d5
80	60	25	50	15	30	45	11	18	11	9.8	25	30	20	10×1.5	76	75	50	15	45	12
100	70	30	60	20	35	50	13	20	13	12.8	30		25	12×1.75	96	85	60	20	50	15

Catalog No. Type	A	H	T
KEPN KEPNZ (①～⑤)	80	50 60	10 15
		70 80 100	10 15
		120	15
	100	60	10
		70 80 100	15
		120	20

Catalog No. Type	A	T
KEPNP (② only)	80	10
		15
	100	10
		15
		20

Order

Catalog No. — H — T

KEPN 80 — 50 — 10
KEPNP 80 — 10

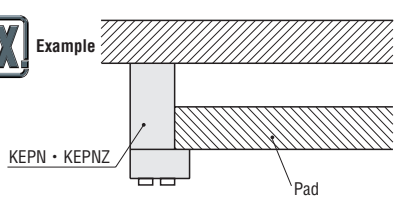
Days to Ship Quotation

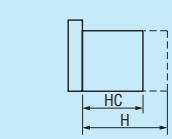
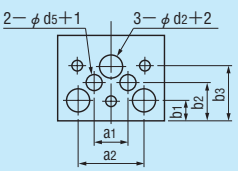
Price Quotation

Alterations

Catalog No. — H(HC) — T — (NC)
KEPN 80 — HC55 — 10

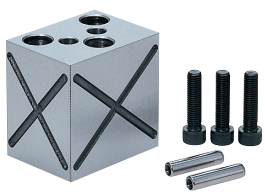
Example



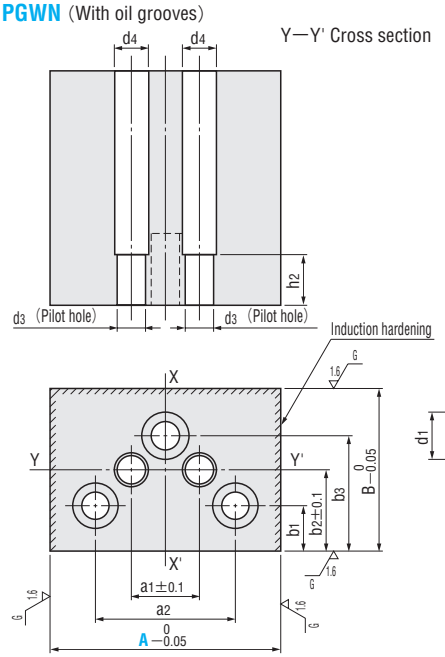
Alterations	Code	Spec.
	HC	H dimension change Hmin.＜HC＜Hmax. 1mm increments Can be used for KEPN and KEPNZ. If (H—HC)＜10 ··· h2, h3 is shortened by (H—HC). If 10≦(H—HC)＜20··· h2, h3 is shortened by (H—HC—10).
	NC	3 bolt holes and 2 dowel pin holes are machined in the plate ② so that it can be removed in assembled form together with the mounting block ①.

PAD GUIDE BLOCKS

RoHS



PGWN (With oil grooves)



M S45C
H 40～45HRC (Induction hardening)
A

PGWN80		PGWN100	
CB10—50	3 pcs.	CB12—55	3 pcs.
MSTM10—40	2 pcs.	MSTM13—50	2 pcs.

Each corner edge is chamfered to C0.2～0.5.

A	B	a_1	a_2	b_1	b_2	b_3	d_1	d_2	d_3	d_4	h_1	h_2	Catalog No. Type	Catalog No. A	H
80	60	25	50	15	30	45	18	11	9.8	12	30	20	PGWN	80	50 60 70 80 100 120
100	70	30	60	20	35	50	20	13	12.8	15	30	25	PGWN	100	60 70 80 100 120

Order

Catalog No.	—	H
PGWN 80	—	50

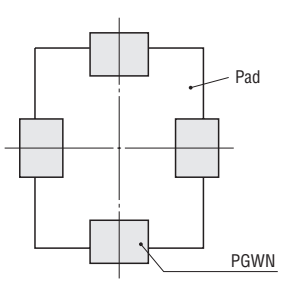
Price Quotation

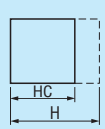
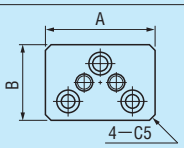
Alterations

Catalog No.	—	H(HC)	—	(CC)
PGWN 80	—	HC55	—	CC

Days to Ship Quotation

Example



Alterations	Code	Spec.
	HC	H dimension change Hmin.＜HC＜Hmax. 1mm increments If (H—HC)＜10… h_1 is shortened by (H—HC). If 10≦(H—HC)＜20… h_1 is shortened by (H—HC—10).
	CC	Change to C5 for chamfering of 4 corner edges

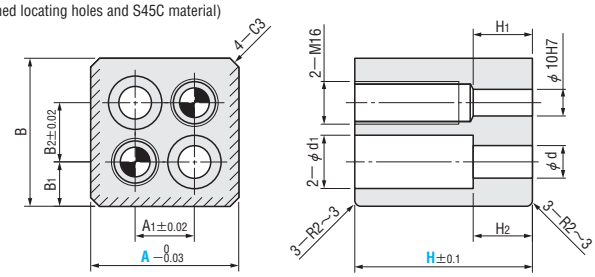
GUIDE BLOCKS FOR STRIPPER PLATES



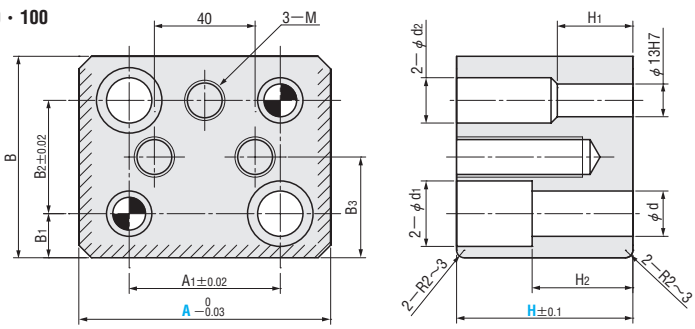


GBFC (With fine machined locating holes and FC250 material)
GBSC (With fine machined locating holes and S45C material)

• **A=50**



• **A=70 · 100**



M GBFC FC250
GBSC S45C
Special solid lubricant (embedded)(//// part)

A1	B	B1	B2	B3	H1	H2	d	d1	d2	M	Catalog No.	A	H
20	50	15	20	—	20	20	11	18	—	—	GBFC GBSC	50	50 60 90
40	70	15	40	35	25	30	13	20	16	M12		70	70 90
60	80	17.5	45	40	30	40	18	26	18	M16		100	70 90 130*

Order

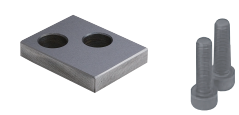
Catalog No.	A	—	H
GBFC	50	—	60
GBSC	100	—	90

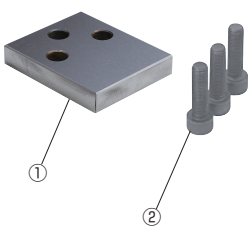
*H=130 is only for GBSC.

Days to Ship: Quotation

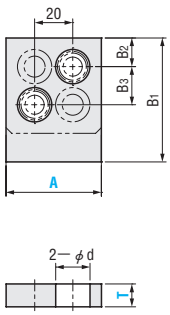
Price: Quotation

■Locating plates

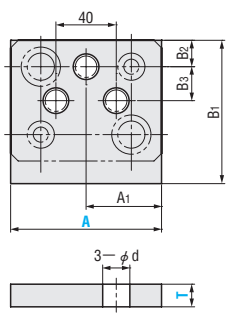




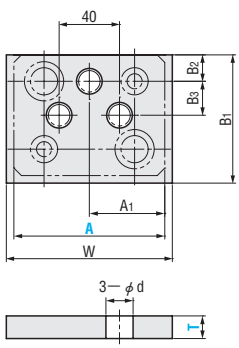
HDPT (Supported by one side) • A=50



• A=70・100



HDPTT (Supported by three sides)



M ① S45C
② SCM435

d	② Provided bolts	A1	B1	B2	B3	Catalog No.	A	T
18	M16×40	—	65	15	20	HDPT	50	12
13	M12×40	35	85	15	20		70	15
17	M16×50	50	95	17.5	22.5		100	

d	② Provided bolts	A1	W	B1	B2	B3	Catalog No.	A	T
13	M12×40	35	80	75	15	20	HDPTT	70	15
18	M16×50	50	110	85	17.5	22.5		100	

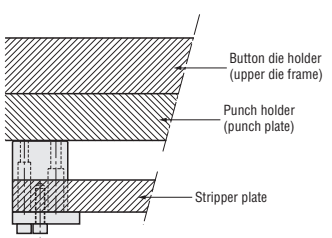
Order

Catalog No.	A	—	T
HDPT	70	—	15

Days to Ship: Quotation

Price: Quotation

Example

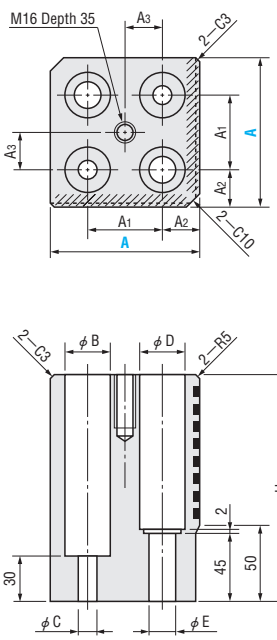


GUIDE BLOCKS FOR STRIPPER PLATES
—CORNER GUIDE TYPE—

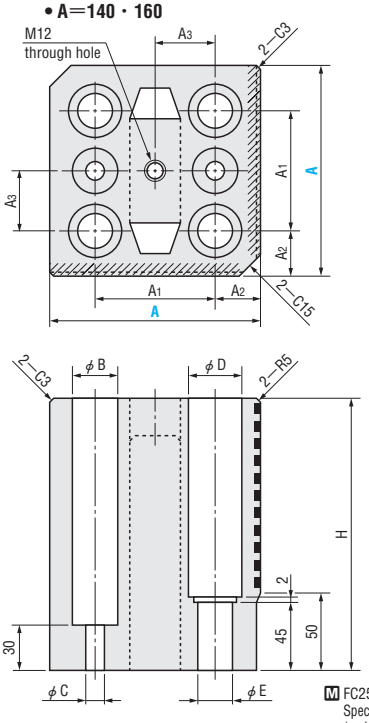


GBLK(Locating by bottom holes)

• **A=100**



• **A=140 · 160**



M FC250
Special solid lubricant (embedded)(//// part)

A1	A2	A3	φB	φC	φD	φE	Catalog No.	A
50	25	25	2— φ31	2— φ12	2— φ31	2— φ18	GBLK	100
80	30	40	2— φ30	2— φ12	4— φ37	4— φ22		140
100	30	50	2— φ30	2— φ12	4— φ37	4— φ22		160

Order

Catalog No.	A
GBLK	100

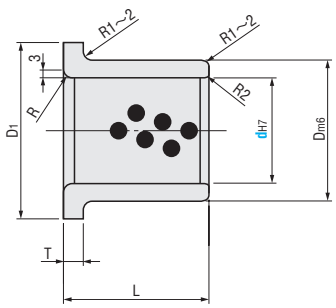
Days to Ship: Quotation

Price: Quotation

GUIDE BUSHINGS
—FLANGE TYPE—



SGBW (Flange type)



• Slide direction



M Copper alloy
Special solid lubricant (embedded)

dH7		Dm6		D1	T	R	L	Catalog No.	
								Type	d
25	+0.021 0	35	+0.025 +0.009	45	7	10	40	SGBW	25
30		40		50	10		50		30
40	+0.025 0	55	+0.030 +0.011	65		20	70		40
50		65		75			80		50
60	+0.030 0	75		85					60
65		80		90					65
							120		65A
80		100	+0.035 +0.013	110			100		80
							140		80A
100	+0.035 0	120		130			100		100
							140		100A

Order — Catalog No.: SGBW65, SGBW65A

Days to Ship: Quotation

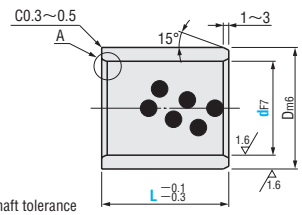
Price: Quotation

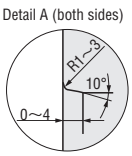
NEW PRODUCTS

UNIVERSAL GUIDE BUSHINGS
—STRAIGHT TYPE—



GGBW





• Slide direction



- Matching shaft tolerance
  - For general purpose (heavy load) d8
  - For general purpose (light load) e7
  - For high precision f7
- Recommended machining tolerance for holes H7

M Copper alloy
Special solid lubricant (embedded)

dF7		Dm6		Applicable washers	Catalog No. Type	Catalog No. d	L
8	+0.028	12	+0.018 +0.007	—	GGBW	8	8 10 12 15
10	+0.013	14		GBWC10		10	8 10 12 15 20
12		18		GBWC12		12	8 10 12 15 16 19 20 25 30
13		19		GBWC13		13	10 12 15 16 20
14	+0.034	20		GBWC14		14	10 12 15 20 25 30
15	+0.016	21		GBWC15		15	10 12 15 16 20 25 30
16		22	+0.021 +0.008	GBWC16		16	10 12 15 16 19 20 25 30 35 40
17		23		GBWC18		17	15
18		24				18	12 15 16 20 25 30 35 40
19		26		—		19	15 20
20		28		GBWC20		20	10 12 15 16 19 20 25 30 35 40 50
20		30				20A	16 20 25 30 35 40 70 100
22	+0.041	32		—		22	12 15 20 25
25	+0.020	33		GBWC25		25	12 15 16 20 25 30 35 40 50 60
25		35				25A	12 15 16 20 25 30 35 40 50
28		38		—		28	20 25 30 40
30		38	+0.025 +0.009	GBWC30		30	12 15 20 25 30 35 40 50 60
30		40				30A	12 15 20 25 30 35 40 50 60
32		42		—		32	15 20 30 40
35		44		GBWC35		35	20 25 30 35 40 50 60
35		45				35A	20 25 30 35 40 50 60
38		48		—		38	30 40
40		50		GBWC40		40	15 20 25 30 35 40 50 60 70 80
40	+0.050	55				40A	15 25 30 35 40 50 60
45	+0.025	55		GBWC45		45	30 35 40 50 60
45		56	+0.030 +0.011			45A	30 35 40 50 60
45		60				45B	30 35 40 50 60 70 80
50		60		GBWC50		50	20 30 35 40 50 60 70 80
50		62				50A	30 35 40 50 60 70
50		65				50B	30 40 50 60 70 80 100
55		70		GBWC55		55	30 35 40 50 60 70
60		74		GBWC60		60	30 35 40 50 60 70 80 100
60		75				60A	30 35 40 50 60 70 80 100
63		75		—		63	60 70 80
65	+0.060	80		GBWC65		65	40 50 60 70 80
70	+0.030	85		GBWC70		70	30 35 40 50 60 70 80 100
70		90	+0.035 +0.013			70A	50 60 70 80
75		90		GBWC75		75	50 60 70 80 100
75		95				75A	60 70 80 100
80		96		GBWC80		80	20 40 50 60 70 80 100 120
80		100				80A	40 50 60 70 80 100 120 140
85		100		—		85	25 60 80
90	+0.071	110		GBWC90		90	30 50 60 70 80 90 100 120
100	+0.036	120		GBWC100		100	40 50 60 70 80 90 100 120 140
110		130		—		110	50 70 80 100 120
120		140		GBWC120		120	70 80 90 100 120 140
125		145				125	100 120
130	+0.083	150	+0.040 +0.015	—		130	80 100 130
140	+0.043	160				140	100 140
150		170				150	80 100 150
160		180				160	80 100 150

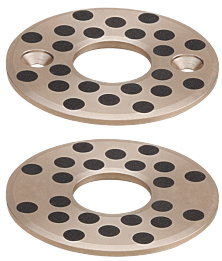
Order

Catalog No.	—	L
GGBW60	—	50
GGBW60A	—	50

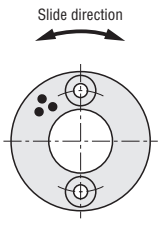
Days to Ship: Quotation

Price: Quotation

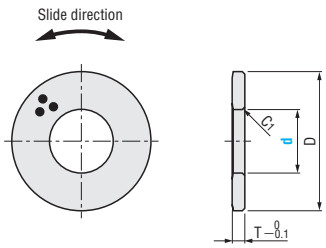
WASHERS



GBWC



GBWCN (Without bolt holes type)



M Copper alloy
Special solid lubricant (embedded)

d (Actual dimension)	D	T	Mounting bolt hole				Catalog No.	d (Nominal dimension)
			P.C.D	Qty.	Flat head bolt used	d1		
10.2	30	3	20	2	M3	3.5	GBWC	10
12.2	40		28					12
13.2								13
14.2								14
15.2	50		35					15
16.2								16
18.2								18
20.2		5			M5	6		20
25.2	55		40					25
30.2	60		45					30
35.2	70		50					35
40.2	80	7	60		M6	7		40
45.3	90		67.5					45
50.3	100	8	75	4				50
55.3	110		85					55
60.3	120		90		M8	9		60
65.3	125		95					65
70.3	130	10	100					70
75.3	140		110					75
80.3	150		120					80
90.5	170		140		M10	11		90
100.5	190		160					100
120.5	200		175					120
10.2	30	3	Without bolt holes				GBWCN	10
12.2	40							12
16.2	50							16
20.2		5						20
25.2	55							25

Order	Catalog No.	d
	GBWC	60

Days to Ship: Quotation

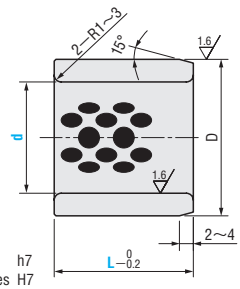
Price: Quotation

NEW PRODUCTS

UNIVERSAL GUIDE BUSHINGS
—STRAIGHT BRONZE TYPE—



GGBP



• Slide direction



• Matching shaft tolerance h7
• Recommended machining tolerance for holes H7

M Copper alloy
Special solid lubricant (embedded)

d		D		Catalog No. Type	Catalog No. d	L					
20	+0.105 +0.072	30	+0.049 +0.028	GGBP	20	20	25	30			
25		35	+0.059 +0.034		25	20		30	40		
30		40			30		25	30	40		
30		42			30A		25	30	40		
32	+0.144 +0.105	42			32			30	40		
32		45			32A			30	40		
35		45			35			30	40	50	
35		48			35A			30	40	50	
40		50			40			30	40	50	
40		55	+0.071 +0.041		40A			30	40	50	
45		55			45				40	50	
45		60			45A				40	50	
50		60			50				40	50	60
50		65			50A				40	50	60
55	+0.190 +0.144	70	+0.073 +0.043		55					50	60
60		75			60					50	60	80
60		80			60A					50	60	80
65		80			65						60	80
65		85	+0.086 +0.051		65A						60	80
70		85			70						60	80
70		90			70A						60	80
75		90			75						60	80
75		95			75A						60	80
80		95			80							80	100
80		100			80A							80	100
85	+0.242 +0.188	100			85							80	100
85		105	+0.089 +0.054		85A							80	100
90		110			90							80	100
90		115			90A							80	100
100		120			100							80	100	120
160		125	+0.103 +0.063		100A							80	100	120

Order

Catalog No.	—	L
GGBP60	—	50
GGBP60A	—	50

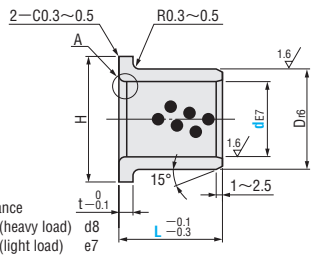
Days to Ship: Quotation

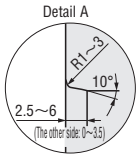
Price: Quotation

UNIVERSAL GUIDE BUSHINGS
—FLANGE TYPE—



GGBF





• Slide direction



• Matching shaft tolerance
For general purpose (heavy load) d8
For general purpose (light load) e7
For high precision f7
• Recommended machining tolerance for holes H7

M Copper alloy
Special solid lubricant (embedded)

dE7		Dr6		H	t	Catalog No. Type	Catalog No. d	L
8	+0.040 +0.025	12	+0.034 +0.023	20	2	GGBF	8	10 15
10		14		22			10	10 12 15 17 20
12	+0.050 +0.032	18	+0.041 +0.028	25	3		12	15 20 25 30
13		19		26			13	15 20
14		20		27			14	15 20 25
15		21		28			15	15 20 25 30
16		22		29			16	15 18 20 23 25 30 35 40
18		24		32			18	20 30
20	+0.061 +0.040	30	+0.050 +0.034	40	5		20	15 20 25 30 35 40
25		35		45			25	15 20 25 30 35 40 50
30		40		50			30	20 25 30 35 40 50
35	+0.075 +0.050	45		60			35	20 25 30 35 40 50
40		50		65			40	20 25 30 35 40 50
45		55	+0.060 +0.041	70			45	30 35 40 50 60
50		60		75			50	30 35 40 50 60
55	+0.090 +0.060	65		80			55	40 60
60		75	+0.062 +0.043	90	7.5		60	40 50 80
70		85	+0.073 +0.051	105			70	50 80
80		100		120	10		80	60 80 100
90	+0.107 +0.072	110	+0.076 +0.054	130			90	60 80
100		120		150			100	80 100
120		140	+0.088 +0.063	170			120	80 100

Order

Catalog No.	—	L
GGBF60	—	50

Days to Ship: Quotation

Price: Quotation