

COMPONENTS FOR AUTOMOBILE DIES

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Product name Catalog No.	SPOOL RETAINERS CSR	STROKE ADJUSTMENT COLLARS FOR SPOOL RETAINERS CSRE	URETHANE WASHERS FOR SPOOL RETAINERS CSRUR	SPOOL RETAINERS — THICK TYPE — CSRH	SPOOL RETAINERS — LARGE FLANGE TYPE — CSRTA
Page	861	862	862	863	863



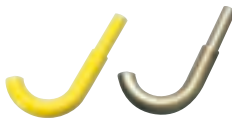
SPOOL RETAINERS — COUNTERBORE TYPE — CSRZ	BLANK HOLDER STOPPER BOLTS CBH	RETAINER PINS CSPST CSPWT CSPS	STOPPERS FOR RETAINER PINS SPP CSPT CST-N
864	864	865	866



ROUND DISTANCE PLATES DTPM DTPME DTPY DTPYE	SQUARE DISTANCE PLATES DTPK DTPB	SHIMS FOR DISTANCE PLATES DTPMS DTPKS	STROKE END BLOCKS DEB
867	867	868	869



LOCATING KEYS LK	BACKUP KEYS BUKE	WASHERS FOR DIE FASTENING KWN	WASHERS FOR OBLONG HOLES WSS	SCRAP BREAKERS FOR CAM PIERCE DIES CPSBR
870	870	871	871	871



AIR VENTS FOR DRAWING DIES WAV5	ANGLE STAYS UAS	CUSHION PINS MCUP HCUP LCUP	LIFTER CUSHION PINS DTCA DTCB	BUSHINGS FOR LIFTER CUSHION PINS TGF TGW
872	872	873	874	875



PLATE LIFTER PINS LCP	LIFTER PLATE STOPPERS BSE BST	SPARE PUNCH BOXES PBX100Y PBX150Y	HOLE REPAIR SCREWS MM MM-B
876	876	877	878



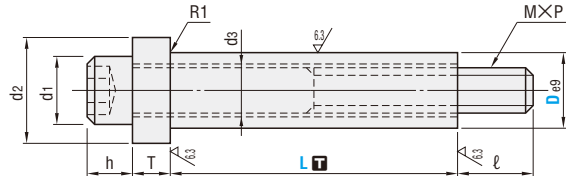
HINGE PINS CLKGH	HINGE PIN KEYS HK	TENSION SPRING PINS SSPO WSP0	TENSION SPRINGS AW□	TENSION SPRINGS AWK	TENSION SPRINGS RINGS BSR
879	879	879	880	880	880

SPOOL RETAINERS



RoHS

CSR



① **M** SCM435
Strength class 12.9

② **M** S45C
H 38~43HRC
S Black oxide (Fe₃O₄)

	L	T
$L \leq 100$	$L \pm 0.03$	
$L \geq 110$	$L \pm 0.05$	

D_{eq}	d_1	d_2	d_3	$M \times P$	h	T	ℓ
10	$\phi 8.867$	10	15	6.3	6	5	10
13	$\phi 10.032$	13	18	8.4	8	5	15
16	$\phi 10.075$	16	24	10.6	10	8	22
20	$\phi 12.040$	18	28	12.6	12	10	20
25	$\phi 12.092$	24	36	16.8	16	13	27
32	$\phi 12.112$	30	45	20.8	20	16	34

Catalog No.	Type	D	L	Base unit price 1~19 pieces
CSR	10	10	15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 100	
	13	13	15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 100 110 120	
	16	16	20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 100 110 120 130 140 150 160 170 180	
	20	20	30 35 40 45 50 55 60 65 70 75 80 85 90 100 110 120 130 140 150 160 170 180	
	25	25	40 45 50 55 60 65 70 75 80 85 90 100 110 120 130 140 150 160 170 180 200	
	32	32	60 70 80 90 100 110 120 130 140 150 160 170 180 200	



Order

Catalog No. — **L**
CSR 20 — **60**



Price

Quotation



Days to Ship

Quotation



Example

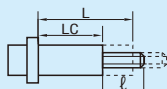
Page at right



Alterations

Catalog No. — **L(LC)**
CSR 20 — **LC57.0**

Quotation

Alteration	Code	Spec.	1Code					
	LC	Retainer L dimension change LCmin. ≤ LC < Lmax. L ± 0.03 0.1mm increments Install the bolts so that the ℓ dimension is within the range shown below.	Quotation					
D		10		13	16	20	25	32
LCmin.		10.1		10.0	10.0	25.0	30.0	55.0
ℓ		10~14.9		15~24.9	22~31.9	20~29.9	27~36.9	34~43.9

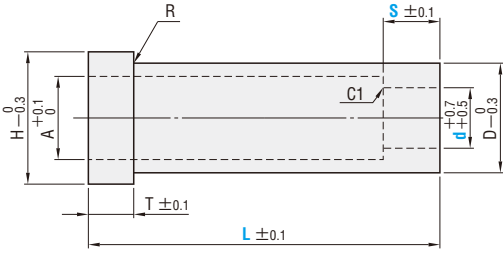
STROKE ADJUSTMENT COLLARS AND URETHANE WASHERS FOR SPOOL RETAINERS

Stroke adjustment collars for spool retainers

RoHS

CSRE





M SS400

S Black oxide (Fe₃O₄)

Applicable CSR standard		H	T	A	D	R	Catalog No.		L 10mm increments	S 5mm increments
Type	D						Type	d		
CSR	10	36	5	16	28	1.0	CSRE	10	50～100	10～25
	13	40	5	19	30			13		
	16	46	8	25	36			16		
	20	55	10	29	44			20		
	25	60	13	37	50			25	60～100	
	32	70	16	46	60	1.5		32		



Order

Catalog No.

CSRE 13

L

100

S

S25



Price

Quotation



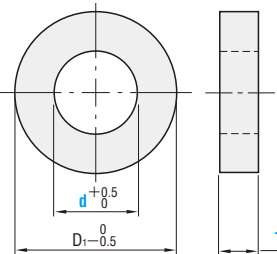
Days to Ship

Quotation

Urethane washers for spool retainers

RoHS

CSRUR



Shore A90

Applicable standard		D ₁	d	Catalog No.		T (Selection)	Base unit price 1~19 pieces
Type	D			Type	d		
CSR	16	24	16	CSRUR	16	5·10	Quotation
	20	28	20		20		
	25	36	25		25		
	32	45	32		32	10·15	



Order

Catalog No.

CSRUR 20

T

10



Days to Ship

Quotation



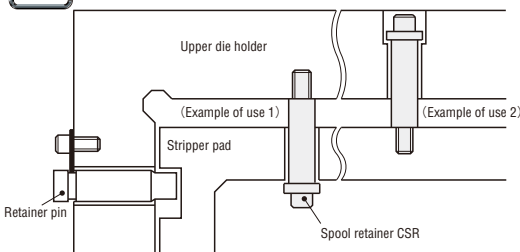
Price

Quotation

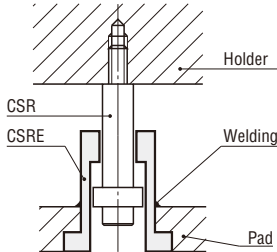


Example

Example of combined use of retainer pin and spool retainer

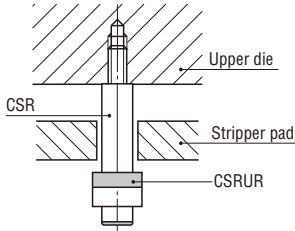


Stroke adjustment collar for spool retainer



●When a spool retainer (CSR) is used for the pad in a progressive or transfer die, using a collar (CSRE) will make it possible to extend the stroke length.

Urethane washer for spool retainer



●The use of urethane washers (CSRUR) is effective for impact absorption, vibration absorption, and noise reduction.

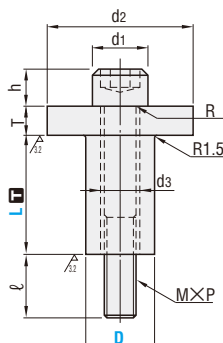
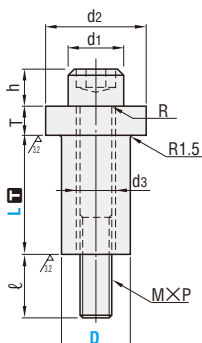
SPOOL RETAINERS

—THICK TYPE / LARGE FLANGE TYPE—

RoHS

Thick type
CSRH

Large flange type
CSRTA



	L
L ≤ 100	L ± 0.03
L ≥ 110	L ± 0.05

① **CSRH · CSRTA**

Hexagon socket head cap screw (CB)

② **SCM435**

Strength class 12.9 (M10~20)
10.9 (M24)

③ **S45C**

④ 25~30HRC

⑤ Black oxide (Fe₃O₄)

D _{es}	d ₁	d ₂	d ₃	M×P	R	h	T	ℓ	Catalog No. Type	D	L	Base unit price 1~9 pieces
18	-0.032 -0.075	16	27	10.7	10×1.5	1.0	10	8	22	18	60 70 80 90 100 110 120 130 140 150	CSRH
22	-0.040 -0.092	18	33	12.7	12×1.75	1.0	12	10	20	22	60 70 80 90 100 110 120 130 140 150	
30		24	44	16.7	16×2.0	1.5	16	13	27	30	60 70 80 90 100 110 120 130 140 150 160 170 180	Quotation
36	-0.050 -0.112	30	53	20.7	20×2.5	1.5	20	16	34	36	80 90 100 110 120 130 140 150 160 170 180	
44		36	64	24.7	24×3.0	1.5	24	18	42	44	80 90 100 110 120 130 140 150 160 170 180	

D _{es}	d ₁	d ₂	d ₃	M×P	R	h	T	ℓ	Catalog No. Type	D	L	Base unit price 1~9 pieces
22	-0.040 -0.092	18	50	12.7	12×1.75	1.0	12	10	20	22	80 90 100 110 120 130	CSRTA
30		24	60	16.7	16×2.0	1.5	16	13	27	30	80 90 100 110 120 130	Quotation
36	-0.050 -0.112	30	70	20.7	20×2.5	1.5	20	16	34	36	100 110 120 130 140 150	
44		36	80	24.7	24×3.0	1.5	24	18	42	44	100 110 120 130 140 150	



Order

Catalog No. — L

CSRH 30 — 150
CSRTA 36 — 100



Days to Ship

Quotation



Price

Quotation

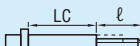


Alterations



Catalog No. — L (LC)

CSRH 30 — LC175.5

Alteration	Code	Spec.	1Code												
	LC	Retainer L dimension change $L_{min} \leq LC < L_{max}$ 0.1mm increments Install the bolts so that the l dimension is within the range shown at right. <table><thead><tr><th>D</th><th>l</th></tr></thead><tbody><tr><td>18</td><td>22~31.9</td></tr><tr><td>22</td><td>20~29.9</td></tr><tr><td>30</td><td>27~36.9</td></tr><tr><td>36</td><td>34~43.9</td></tr><tr><td>44</td><td>42~51.9</td></tr></tbody></table>	D	l	18	22~31.9	22	20~29.9	30	27~36.9	36	34~43.9	44	42~51.9	Quotation
D	l														
18	22~31.9														
22	20~29.9														
30	27~36.9														
36	34~43.9														
44	42~51.9														



Example

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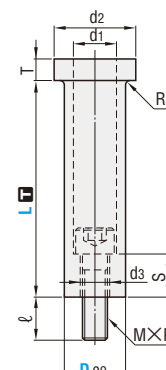
SPOOL RETAINERS / BLANK HOLDER STOPPER BOLTS

—COUNTERBORE TYPE—

Spool retainers RoHS



Counterbore type
CSRZ

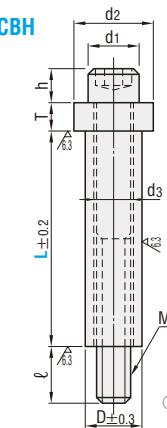


① **CSRZ**
Hexagon socket head cap screw (CB)
② **SCM435**
Strength class 12.9 (M10~20)
10.9 (M24)
③ **S45C**
25~30HRC
S Black oxide (Fe₃O₄)

Blank holder stopper bolts RoHS



CBH



① **SCM435**
Strength class 12.9
②③ **S45C**
S Black oxide (Fe₃O₄)

D _{e9}	d ₁	d ₂	d ₃	M×P	Provided bolt	T	S	ℓ	Catalog No. Type	D	L	Base unit price 1~9 pieces
20	—	15	26	9	8×1.25	CB 8—35	6	20	15	20	40 50 60 70 80 90	Quotation
24	—0.040 —0.092	18	33	11	10×1.5	CB10—45	6	25	20	24	50 60 70 80 90 100	
28	—	20	37	13	12×1.75	CB12—50	8	30	20	28	50 60 70 80 90 100 110	
35	—0.050 —0.112	26	47	17	16×2.0	CB16—60	8	35	25	35	60 70 80 90 100 110 120 130	
44	—	32	57	21	20×2.5	CB20—70	8	40	30	44	70 80 90 100 110 120 130	

D	d ₁	d ₂	d ₃	h	T	M×P	ℓ	Catalog No. Type	No.	L	Base unit price 1~9 pieces
25.4	24	36	17.4	16	13	16×2.0	27	CBH	25	100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 280 300	Quotation
31.8	30	45	21.8	20	16	20×2.5	34		32	100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 280 300	

Order Catalog No. — L

CSRZ 35 — 100
CBH 25 — 180

Alterations Catalog No. — L (LC)

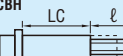
CSRZ 35 — LC114.0
CBH 25 — LC175.0

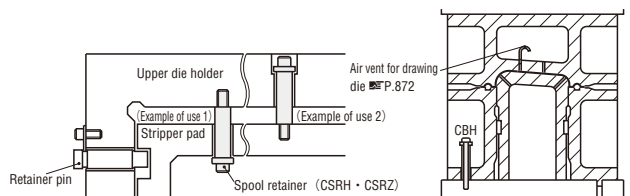
Quotation

Days to Ship Quotation

Price Quotation

Example Example showing combined use of retainer pin and spool retainer

Alteration	Code	Spec.	1Code						
CSRZ 	LC	Retainer L dimension change for spool retainer Lmin. — 10 ≤ LC < Lmax. 0.1mm increments Bolt size remains the same. S dimension is shortened by (L-LC).	Quotation						
CBH 		Retainer L dimension change for blank holder stopper 60 ≤ LC < 300 0.1mm increments Install the bolts so that the l dimension is within the range shown at right.							
		<table><tr><th>No.</th><th>l</th></tr><tr><td>25</td><td>27 ~ 36.9</td></tr><tr><td>32</td><td>34 ~ 43.9</td></tr></table>	No.	l	25	27 ~ 36.9	32	34 ~ 43.9	
No.	l								
25	27 ~ 36.9								
32	34 ~ 43.9								



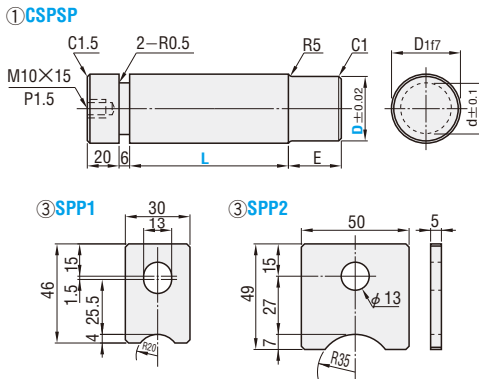
RETAINER PIN SETS



No.	Catalog No.	Parts list	M	H	S
①	CSPSP	Retainer pin (single groove type)	S45C	20~25 HRC	Black oxide (Fe ₃ O ₄)
②	CSPWP	Retainer pin (double grooves type)			
③	SPP	Round hole stopper	SS400	—	Black oxide (Fe ₃ O ₄)
④	CSPT	Oblong hole stopper			
⑤	CST—N	Spring lock stopper	For details,  page at right.		

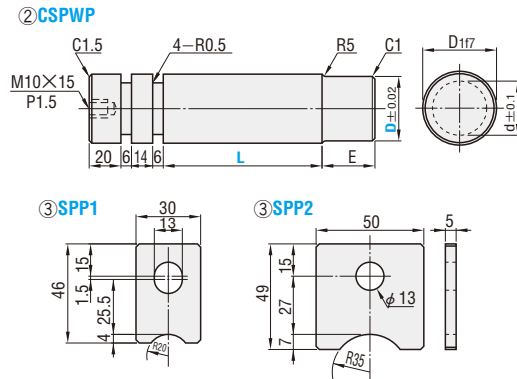
Single groove type

P—CSPS (①CSPSP+③SPP sets)



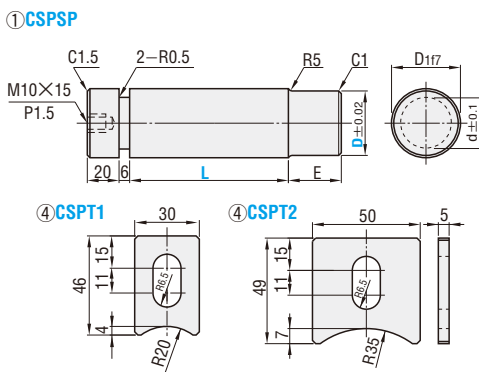
Double grooves type

P—CSPW (②CSPWP+③SPP sets)

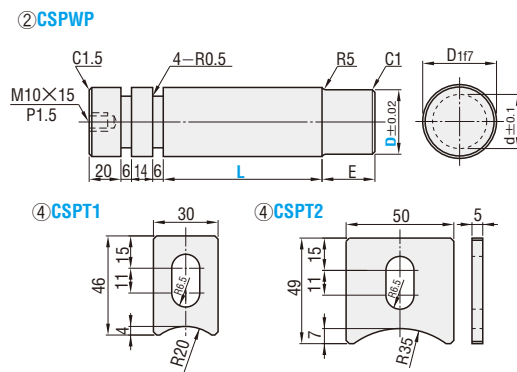


Round hole stopper type

CSPS (①CSPSP+④CSPT sets)

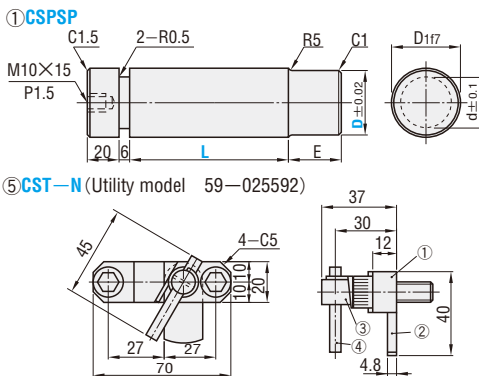


CSPW (②CSPWP+④CSPT sets)

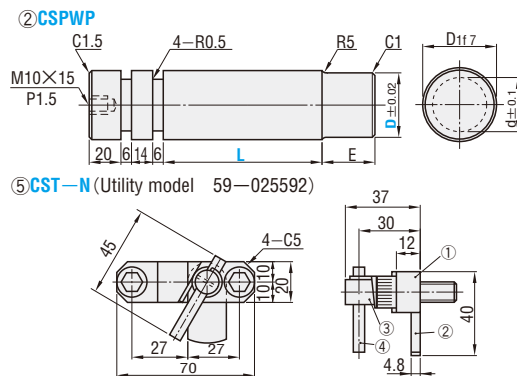


Oblong hole stopper type

CSPST (①CSPSP+⑤CST—N sets)



CSPWT (②CSPWP+⑤CST—N sets)



Spring lock stopper type

① ②			E	⑤	Maximum allowable load N (kgf) (Safety coefficient 1)	Static load N (kgf) (Safety coefficient 3)	Repeated load N (kgf) (Safety coefficient 5)	Alternating load N (kgf) (Safety coefficient 8)	Impact load N (kgf) (Safety coefficient 12)	Catalog No.		Base unit price 1 ~ 19 pieces							
D	D ₁₇	d		S						Type	D—L	Single groove type				Double grooves type			
													CSPSP	P—CSPS	CSPS	CSPST	CSPWP	P—CSPW	CSPW
20	22	—0.020 —0.041	14	25	27	37167 { 3790 }	12356 { 1260 }	7453 { 760 }	4609 { 470 }	3138 { 320 }	Single groove type	20—40 60 80							
30	32	—0.025 —0.050	22		31	125427 { 12790 }	41776 { 4260 }	25105 { 2560 }	15691 { 1600 }	10493 { 1070 }	(Pin only) CSPSP	30—60 80 100							
40	42		30	35	253600 { 25860 }	84533 { 8620 }	50700 { 5170 }	31675 { 3230 }	21182 { 2160 }	(Set) P—CSPS CSPS CSPST	40—60 80 100 120								
50	52		30	40	495334 { 50510 }	165144 { 16840 }	99047 { 10100 }	61880 { 6310 }	41286 { 4210 }	Double grooves type	50—80 100 120								
60	62	—0.030 —0.060	50	35	45	727751 { 74210 }	242617 { 24740 }	145531 { 14840 }	91006 { 9280 }	60703 { 6190 }	(Pin only) CSPWP	60—100 120 140							
70	72		60		50	990570 { 101010 }	330190 { 33670 }	198094 { 20200 }	123858 { 12630 }	82572 { 8420 }	(Set) P—CSPW CSPW CSPWT	70—120 140 160							

• Load {kgf} = Load {N} × 0.101972



Order

Catalog No.

CSPWT 30—80
P—CSPS 50—120



Days to Ship

Quotation



Price

Quotation

For larger orders, ask about prices/delivery.



Alterations



Catalog No. — (EC·WD)

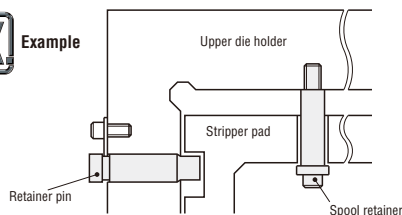
P—CSPS 30—80 — EC21—WD



Quotation



Example



Alteration	Code	Spec.		1Code
	EC	E dimension change 1mm increments	D	EC
			20 30 40 50 60 70	21~24 25~29 25~34
	WD	Welding of the retainer pin and stopper. Can be used for P-CSPS only.		

Quotation

Stoppers for retainer pins

D (Applicable retainer pins)	Catalog No.	Base unit price 1~19 pieces
20•30•40	Round hole type SPP	1
50•60•70	Round hole type CSPT	2
20•30•40	Oblong hole type	1
50•60•70	Oblong hole type	2
All sizes	Spring lock type CST—N	



Order

Catalog No.

SPP 2
CSPT 1
CST—N



Days to Ship

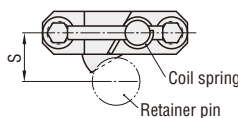
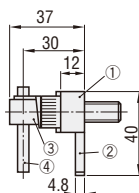
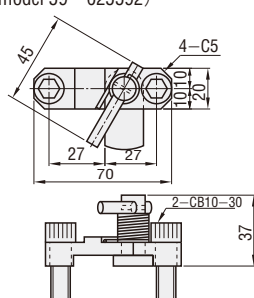
Quotation



Price

Quotation

⑤ Spring lock stopper type —Details— CST—N (Utility model 59—025592)



(※Figure above shows a case when installed onto the retainer pin.)

- Because the retainer pin is locked by the force of the spring, it can be securely locked in place simply by operating the lever with one hand.
- Stoppers can be mounted in any position.

M ① SUS304
② ③ ④ S45C
A CB10—30

ROUND DISTANCE PLATES / SQUARE DISTANCE PLATES

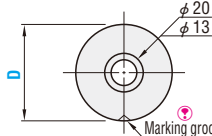
Round distance plates

RoHS



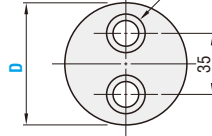
—One hole type—

D=45・55・65・90



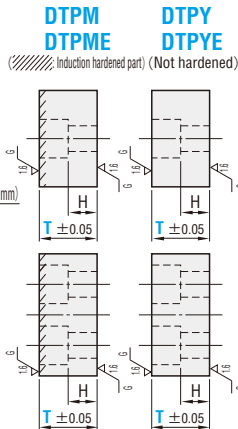
—Two holes type—

D=65・80・90



⚠ A marking groove is not provided for D45, 55.

M S45C



Square distance plates

RoHS

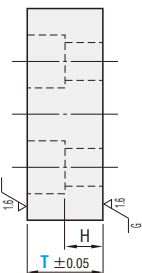
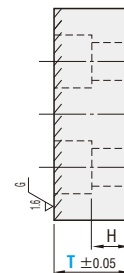
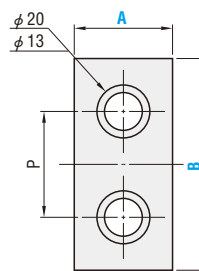


DTPK

(/// Induction hardened part)

DTPB

(Not hardened)



M S45C

Round distance plates

Bolt hole	H	Catalog No.		T	Color	Base unit price 1~9 pieces			
		Type	D			DTPM-DTPME (Normal)	R (Red) (Yellow)	DTPY-DTPYE (Normal)	R (Red) (Yellow)
One hole	6	DTPM (Induction hardened)	45	20	R (Red)				
	15			30					
	15			40					
	6	DTPY (Not hardened)	55	20					
One hole	15			30					
	15	DTPME (Induction hardened)	65	30	Y (Yellow)				
	15			40					
	15			50					
Two holes	15	DTPYE (Not hardened)	90	30					
	15			40					
	15			50					
	15	DTPM (Induction hardened)	65	30	N (Normal)				
	15			40					
	15			50					
	15			100					
	15			30					
	15	DTPY (Not hardened)	80	40					
	15			50					
	15			30					

⚠ A marking groove with a depth of 2~3mm is machined for the one bolt hole type.



Order

Catalog No. — B — T — Color (R・Y・N)

DTPME 65 — 30 — R
DTPK 50 — 80 — 30 — N



Days to Ship

Quotation



Price

Quotation

Square distance plates

H	P	Catalog No.		B	T	Color	Base unit price 1~9 pieces			
		Type	A				DTPK (Normal)	R (Red) (Yellow)	DTPB (Normal)	R (Red) (Yellow)
6	30	DTPK (Induction hardened)	38	60	20	R (Red)				
15	30			60	30					
15	55			80	30					
6	30			60	40					
6	30	DTPB (Not hardened)	50	60	20					
15	30			60	30					
6	55			80	30					
6	55			80	40					
15	55	DTPB (Not hardened)	60	80	20	Y (Yellow)				
6	55			80	30					
15	55			80	40					
6	70			100	30					
6	70	DTPB (Not hardened)	80	100	20	N (Normal)				
15	70			100	30					
6	85			120	30					
15	85			120	40					



Alteration

Catalog No. — T — (DC・TC・NMC)

DTPM 65 — 40 — R—DC20

●DTPY・DTPYE・DTPB 9 Days

●DTPM・DTPME 9 Days

Alteration	Code	Spec.	1Code
DC	DC	Cutting of D dimension on one side 13≤DC<D/2 1mm increments ⚠ Can be used for round distance plates only.	DTPM・DTPME DTPY・DTPYE・DTPB
TC	TC	Plate thickness (T dimension) change (T-5)≤TC<T 1mm increments ⚠ Cannot be used for DTPM, DTPME, and DTPK. ⚠ Cannot be used for T=20. ⚠ Check of Bolt-head size.	Quotation
NMC	NMC	Groove machining ⚠ Can be used for T = 50 only. ⚠ Cannot be used for DTPM and DTPME. ⚠ Can be used for round distance plates only.	

SHIMS FOR ROUND DISTANCE PLATES / SHIMS FOR SQUARE DISTANCE PLATES

■Shims for round distance plates

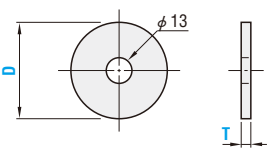
RoHS

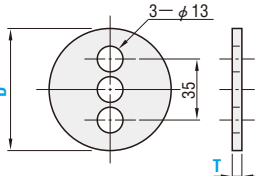


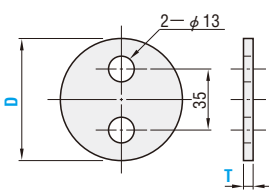
DTPMS

D=45・55

D=65・90





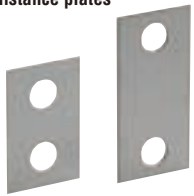


T	±
0.05	±0.005
0.1	±0.020
0.2	±0.030
0.3	±0.035
0.5	±0.040
1.0	±0.050

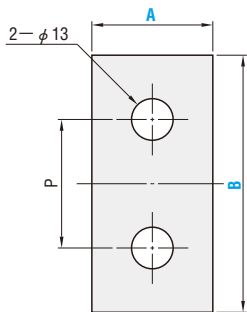
M SUS304

■Shims for square distance plates

RoHS



DTPKS



T	±
0.05	±0.005
0.1	±0.020
0.2	±0.030
0.3	±0.035
0.5	±0.040
1.0	±0.050

M SUS304

■Shims for round distance plates			
Catalog No.		T	Base unit price 1~9 pieces
Type	D		
DTPMS	45	0.05	
		0.1	
		0.2	
		0.3	
		0.5	
		1.0	
	55	0.05	
		0.1	
		0.2	
		0.3	
		0.5	
		1.0	
	65	0.05	Quotation
		0.1	
		0.2	
		0.3	
		0.5	
		1.0	
	80	0.05	
		0.1	
		0.2	
		0.3	
		0.5	
		1.0	
	90	0.05	
		0.1	
		0.2	
		0.3	
		0.5	
		1.0	

■Shims for square distance plates							
P	Catalog No.		B	T	Base unit price 1~9 pieces		
	Type	A					
30	DTPKS	38	60	0.05			
				0.1			
				0.2			
				0.3			
				0.5			
				1.0			
			80	0.05			
				0.1			
				0.2			
				0.3			
				0.5			
				1.0			
		50	60	0.05	Quotation		
				0.1			
				0.2			
				0.3			
				0.5			
				1.0			
			80	0.05			
				0.1			
				0.2			
				0.3			
				0.5			
				1.0			
55			80	0.05			
				0.1			
				0.2			
				0.3			
				0.5			
				1.0			

■Shims for square distance plates					
P	Catalog No.		B	T	Base unit price 1~9 pieces
	Type	A			
55	DTPKS	60	80	0.05	
				0.1	
				0.2	
				0.3	
				0.5	
				1.0	
			100	0.05	
				0.1	
				0.2	
				0.3	
				0.5	
				1.0	
		80	100	0.05	Quotation
				0.1	
				0.2	
				0.3	
				0.5	
				1.0	
			120	0.05	
				0.1	
				0.2	
				0.3	
				0.5	
				1.0	


Order

Catalog No.

B

T

DTPME 65 — 0.2
DTPKS 50 — 60 — 0.2


Days to Ship

Quotation

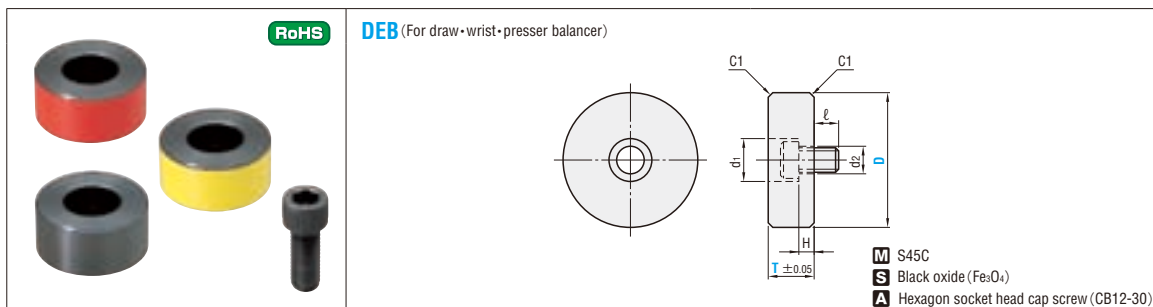
P

Price

Quotation

STROKE END BLOCKS

—DRAW·WRIST·PRESSER BALANCER—



d ₁	d ₂	H	ℓ	Catalog No.		T	Color	Base unit price 1~9 pieces
				Type	D			
20	14	6	24	DEB	40	20	R (Red)	Quotation
		14	16			30		
		6	24			20		
		14	16		50	30		
		6	24			20		
		14	16			30		
		6	24		60	40	N (Normal)	
		14	16			50		
		6	24			20		
		14	16		70	30		
						40		
						50		

🌸 N (Normal) exterior is black oxide (Fe₃O₄).

⚠ N (Normal) exterior is black oxide (Fe₃O₄).



Order

Catalog No. — T — R·Y·N
DEB 60 — 20 — N



Days to Ship

Quotation



Alterations

Catalog No. — T — R·Y·N — (NMC)
DEB 50 — 30 — Y — NMC

Alteration	Code	Spec.	1Code
	NMC	Addition of a groove for height adjustment ⚠ The surface treatment at the location of the alteration is removed.	Quotation

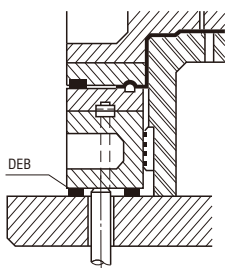


Price

Quotation



Example



LOCATING KEYS / BACKUP KEYS

Locating keys

RoHS

LK

M S45C

A	T	d ₁	d ₂	h	a	Catalog No.		L	Base unit price 1~49 pieces	
						Type	A			
20	20	9	14	10	3	LK	20	60 80	Quotation	
25	25	11	18	12	4		25	60 80 100		
								28		60 80 100
										32

P Price

Quotation

Order

Catalog No. — L

LK 20 — 60

Days to Ship

Quotation

Alterations

Catalog No. — L(LC)

LK 25 — LC70

Quotation

Alteration	Code	Spec.	1Code
	LC	L dimension change 30 ≤ LC < L 5mm increments Both ends are cut to the specified dimension.	Quotation

Backup keys

RoHS

BUKE

M SS400

T	d	Catalog No.		L (Selection)	Base unit price 1~19 pieces
		Type	A		
20	11	BUKE	20	120	
25	13		25	150	
25	13		30	100	Quotation
				125	
				150	

P Price

Quotation

Order

Catalog No. — L

BUKE 25 — 150

Days to Ship

Quotation

Alterations

Catalog No. — L(LC)

BUKE 20 — LC115

Alteration	Code	Spec.	1Code
	LC	L dimension change 50 ≤ LC < L 1mm increments Both ends are cut to the specified dimension.	Quotation

ex Example

Mutual positioning of dies

Backup key (BUKE)

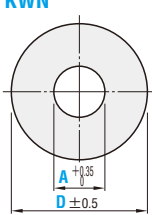
Details

WASHERS FOR DIE FASTENING / WASHERS FOR OBLONG HOLES / SCRAP BREAKERS FOR CAM PIERCE DIES



Washers for die fastening

KWN

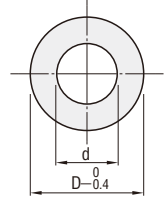


M S45C
S Black oxide (Fe_3O_4)
H 25~30HRC



Washers for oblong holes

WSS



M S45C
H 23~30HRC

Catalog No.		A	T	Base unit price 1~19 pieces
Type	D			
KWN	50	22	10·15	Quotation
	60	26	10·15	
	70	26	10·15	
	80	26	15	

D	d	T	t	Catalog No.		Base unit price 1~49 pieces	Volume discount unit price		
				Type	No.		50~199	200~499	500~1000
12.5	6.4	+0.25	2.5	WSS	6				
17	8.4	0			8				
21	10.5		3		10				
24	13	+0.3	4		12				
30	17	0	5		16				
37	21				20				

For larger orders, ask about prices/delivery.

Order

Catalog No. — **A** — **T**

KWN 60 — **22** — **15**

WSS 8

Example

Hexagon socket head cap screw

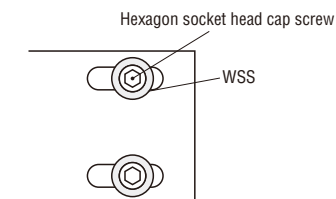
WSS

Days to Ship

Quotation

Price

Quotation

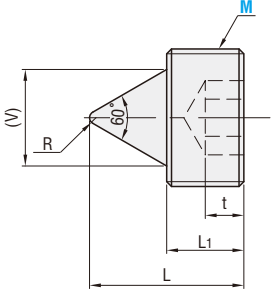


To prevent breakage, the plate thickness is slightly thicker and the hardness is 23~30HRC.



Scrap breakers for cam pierce dies

CPSBR



M S45C
S Black oxide (Fe_3O_4)
H 25~30HRC

Dimensions in parentheses are reference values.

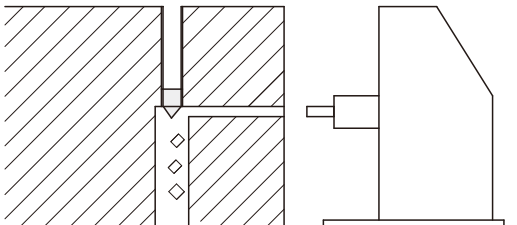
M×P	L	L ₁	B	V	t	R	Catalog No.		Base unit price 1~9 pieces
							Type	M	
16×1.5	20	10	8	(12.7)	5	1	CPSBR	16	Quotation
20×1.5	24	12	10	(15.0)	6			20	
24×1.5	26	12	14	(17.3)	8			24	

Order

Catalog No.

CPSBR20

Example



Days to Ship

Quotation

Price

Quotation

AIR VENTS FOR DRAWING DIES / ANGLE STAYS

■ Air vents for drawing dies

RoHS

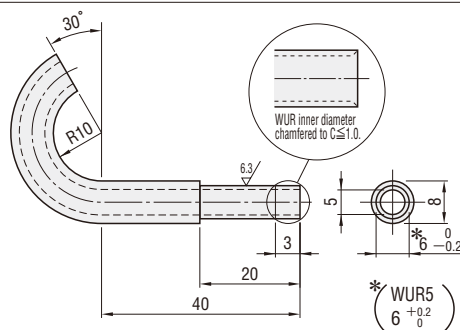
WUR 5

WAV 5



Yellow
M Polyurethane
H Shore A90

Use an epoxy-based adhesive for mounting.
M Brass (C2700T)



Catalog No.

Base unit price
1~9 pieces



Order

Catalog No.

WAV 5



Days to Ship

Quotation

WUR 5 (Polyurethane)

WAV 5 (C2700T)

Quotation



Price

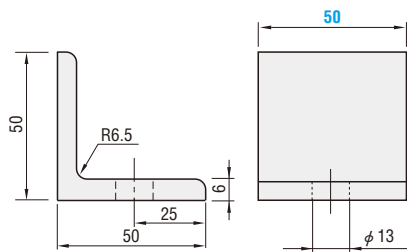
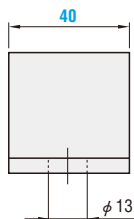
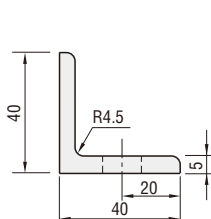
Quotation

■ Angle stays

RoHS

UAS40—40

UAS50—50



M SS400

Catalog No.

Base unit price
1~9 pieces



Order

Catalog No.

UAS 40—40



Days to Ship

Quotation

UAS

40—40

50—50

Quotation

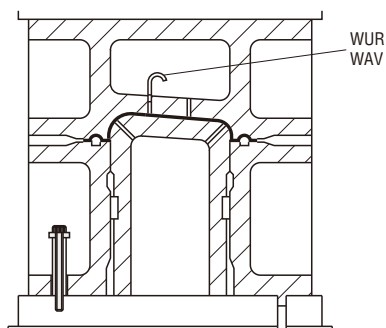


Price

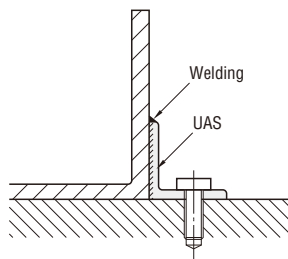
Quotation



Example



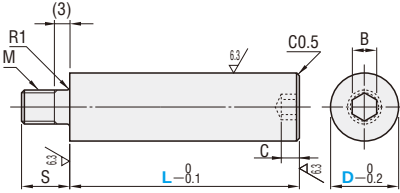
Air vent for drawing die



CUSHION PINS

RoHS

RCUP (Male thread type, tightened with hex wrench)



M S45C H 50HRC~ (Induction hardened)



Order

Catalog No. — L
RCUP 20 — 200



Days to Ship

Quotation



Price

Quotation



Alterations



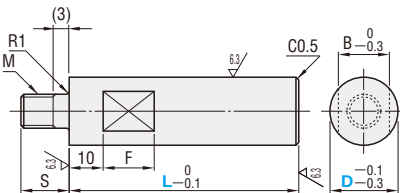
Catalog No. — L(LC) — (LKC)
RCUP 20 — LC195 — LKC

M×P	S	B	C	Catalog No.		L	Base unit price	
				Type	D			10mm increments
10×1.5	15	8	5	RCUP	16	50~100		
						110~150		
						160~200		
12×1.75	18	10	6		20	50~100		
						110~150		
						160~200		
16×2.0	24	14	9		25	210~250	Quotation	
						50~100		
						110~150		
20×2.5	30	17	12		32	160~200		
						210~250		
						50~100		
					110~150			
					160~200			
					210~250			

The RCUP male thread diameter is one rank larger than MCUP.

RoHS

MCUP (Male thread type, tightened with spanner)



M S45C H 50HRC~ (Induction hardened)



Order

Catalog No. — L
MCUP 20 — 200



Days to Ship

Quotation



Price

Quotation



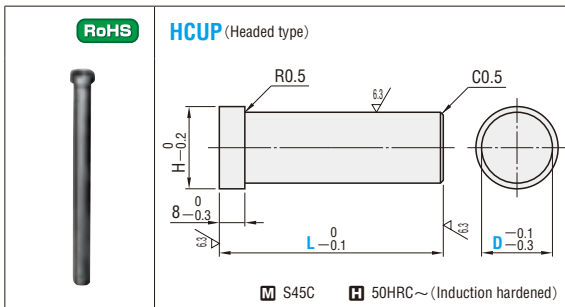
Alterations



Catalog No. — L(LC) — (LKC·MC)
MCUP 20 — LC195 — LKC

M×P	S	B	F	Catalog No.		L	Base unit price
				Type	D	10mm increments	1~9 pieces
8×1.25	12	13	16	MCUP	16	50~100	
						110~150	
						160~200	
						210~250	
10×1.5	15	16			20	50~100	
						110~150	
						160~200	
						210~250	
12×1.75	18	18			25	50~100	
						110~150	
						160~200	
						210~250	
16×2.0	24	21	32	100~150			
				160~200			
				210~250			

Alteration	Code	Spec.	1Code														
	LC	Full length change $35 \leq LC < L$ 1mm increments	Quotation														
	LKC	Full length tolerance change T L tolerance $0.1 \rightarrow 0.04$ LC $\rightarrow 0.1$ mm increments (When combined with LC, LC can be specified in 0.1mm increments)															
	MC	Tapping <table><tr><th>D</th><th>M</th><th>ℓ</th></tr><tr><td>16</td><td>8</td><td></td></tr><tr><td>20</td><td>10</td><td>2×M</td></tr><tr><td>25</td><td>12</td><td></td></tr><tr><td>32</td><td>16</td><td></td></tr></table>		D	M	ℓ	16	8		20	10	2×M	25	12		32	16
D	M	ℓ															
16	8																
20	10	2×M															
25	12																
32	16																



H	Catalog No.		L	Base unit price
	Type	D	10mm increments	
15	HCUP	10	50~100	Quotation
			110~150	
			160~200	
18		13	50~100	
			110~150	
			160~200	
21		16	50~100	
			110~150	
			160~200	
25		20	50~100	
			110~150	
			160~200	
30		25	50~100	
			110~150	
			160~200	
37		32	50~100	
			110~150	
			160~200	
			210~250	



Order

Catalog No. — L
HCUP 13 — 150



Days to Ship

Quotation



Price

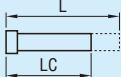
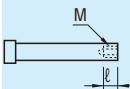
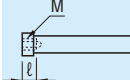
Quotation

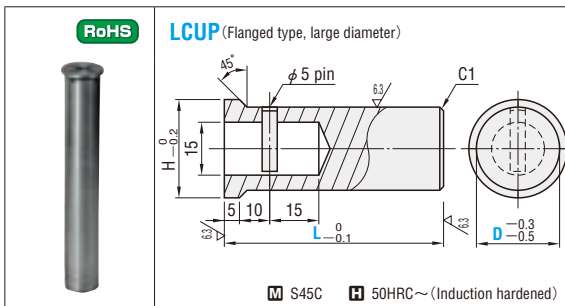


Alterations



Catalog No. — L (LC) — (LKC·MC·NC)
HCUP 13 — LC155 — LKC

Alteration	Code	Spec.	1Code															
	LC	Full length change $35 \leq LC < L$ 1mm increments	Quotation															
	LKC	Full length tolerance change T L tolerance $0 \rightarrow -0.1 \rightarrow -0.04$ $LC \rightarrow 0.1$ mm increments (When combined with LC, LC can be specified in 0.1mm increments)																
	MC	Tapping <table><tr><th>D</th><th>M</th><th>ℓ</th></tr><tr><td>10</td><td>6</td><td></td></tr><tr><td>13-16</td><td>8</td><td>2×M</td></tr><tr><td>20</td><td>10</td><td></td></tr><tr><td>25-32</td><td>12</td><td></td></tr></table>		D	M	ℓ	10	6		13-16	8	2×M	20	10		25-32	12	
D	M	ℓ																
10	6																	
13-16	8	2×M																
20	10																	
25-32	12																	
	NC	Tapping <table><tr><th>D</th><th>M</th><th>ℓ</th></tr><tr><td>10</td><td>6</td><td></td></tr><tr><td>13-16</td><td>8</td><td>2×M</td></tr><tr><td>20</td><td>10</td><td></td></tr><tr><td>25-32</td><td>12</td><td></td></tr></table>	D	M	ℓ	10	6		13-16	8	2×M	20	10		25-32	12		
D	M	ℓ																
10	6																	
13-16	8	2×M																
20	10																	
25-32	12																	



H	Catalog No.		L	Base unit price
	Type	D	20mm increments	
30	LCUP	25	80~160	Quotation
			180~240	
40		32	100~160	
			180~240	
45		38	100~160	
			180~280	
60		50	160~220	
			240~300	



Order

Catalog No. — L
LCUP 38 — 160



Days to Ship

Quotation



Price

Quotation



Alterations



Catalog No. — L (LC) — (LKC)
LCUP 38 — LC153 — LKC

Alteration	Code	Spec.	1Code
	LC	Full length change $45 \leq LC < L$ 1mm increments	Quotation
	LKC	Full length tolerance change L tolerance $0 \rightarrow -0.1 \rightarrow -0.04$	

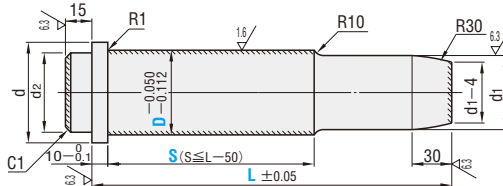
LIFTER CUSHION PINS / BUSHINGS FOR LIFTER CUSHION PINS

Lifter cushion pins

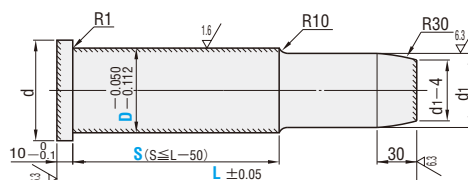
RoHS



DTCA



DTCB



section : Induction hardened

M S45C

55HRC~

d	d ₁	d ₂	Catalog No.		L	S	Base unit price 1~9 pieces		
			Type	D	5mm increments	5mm increments	DTCA	DTCB	
38	29	26	DTCA	30	100~160	50~110			
					165~240	50~190			
					245~275	50~225			
48	39	36		40	100~160	50~110			
					165~280	50~230	Quotation		
					285~360	50~310			
58	49	46	DTCB	50	365~460	50~410			
					160~220	50~170			
					225~300	50~250			
				305~410	50~360				
				415~460	50~410				

Quotation



Order

Catalog No. — L — S

DTCA 50 — 300 — 100



Days to Ship

Quotation



Price

Quotation

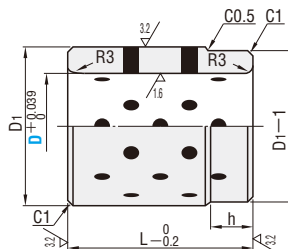
Bushings for lifter cushion pins

RoHS



TGF (Cast type)

TGW (Copper alloy type)



TGF M FC250

Special solid lubricant (embedded)

TGW M Copper alloy

Special solid lubricant (embedded)

D ₁	h	L	Catalog No.		Base unit price 1~9 pieces	
			Type	D	TGF	TGW
50	±0.008	10	TGF (Cast type) TGW (Copper alloy type)	30		
60	±0.0095	15		40		
70		100		50		

Quotation



Order

Catalog No.

TGF 30



Price

Quotation



Days to Ship

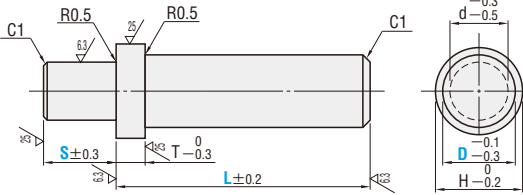
Quotation

PLATE LIFTER PINS / LIFTER PLATE STOPPERS

Plate lifter pins


RoHS

LCP



M S45C
H 50HRC~
 (Induction hardened)

d	T	H	Catalog No.		L	S	Base unit price	
			Type	D	10mm increments	1mm increments	1~9 pieces	
10	8	18	LCP	13	100~200 210~250	10~20		
13		16		100~200 210~300				
				100~190				
16		25		20	200~300 310~400	15~30	Quotation	
20		30		25	100~240 250~300 310~400 410~500	15~40		
25		40		32	100~240 250~300 310~400 410~500	15~50		



Order

Catalog No. — L — S
LCP 20 — 250 — 25



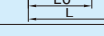
Days to Ship

Quotation



Alterations

Catalog No. — L(LC) — S — (MC)
LCP 20 — LC248 — 25 — MC

Alteration	Code	Spec.	1Code																	
	LC	Full length change $L_{min} \leq LC < L_{max}$. 1mm increments	Quotation																	
	MC	Tapping <table><tr><td>D</td><td>13</td><td>16</td><td>20</td><td>25</td><td>32</td></tr><tr><td>M</td><td>8</td><td>8</td><td>10</td><td>12</td><td>16</td></tr><tr><td>ℓ</td><td colspan="5">2×M</td></tr></table>		D	13	16	20	25	32	M	8	8	10	12	16	ℓ	2×M			
D	13	16	20	25	32															
M	8	8	10	12	16															
ℓ	2×M																			



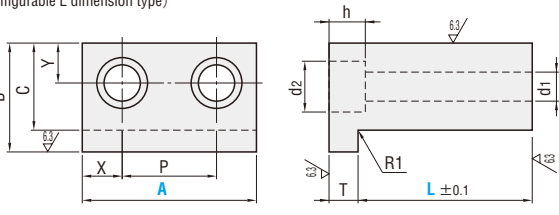
Price

Quotation

Lifter plate stoppers


RoHS

BSE (Fixed L dimension type)
BST (Configurable L dimension type)



M S45C

B	T	C	X	Y	P	d ₁	d ₂	h	Catalog No.		L	Base unit price 1~9 pieces		
									Type	A				
38	10	30	15	15	30	11	18	12	BSE (Fixed L dimension type)	60	40	50	60	Quotation
45	13	36	20	18	40	14	20	14			80	70	80	
												50	60	
										100				
60	15	50	25	25	50	18	26	18		100	60			
											70	80	90	
											100			



Order

Catalog No. — L
BSE 80 — 70
BST 60 — 43



Days to Ship

Quotation

B	T	C	X	Y	P	d ₁	d ₂	h	Catalog No.		L 1mm increments	Base unit price 1~9 pieces	
									Type	A			
38	10	30	15	15	30	11	18	12	BST (Configurable L dimension type)	60	41~ 59	Quotation	
45	13	36	20	18	40	14	20	14			80		61~ 79
													51~ 59
										61~ 89			
60	15	50	25	25	50	18	26	18		100	91~ 99		
											61~ 89		
											101~ 120		



Price

Quotation

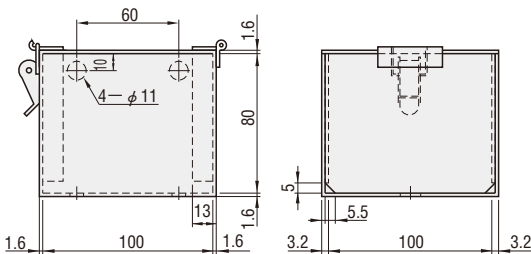
⚠ If L is 100 or less and an even 10mm increment, please use BSE instead of BST.

SPARE PUNCH BOXES

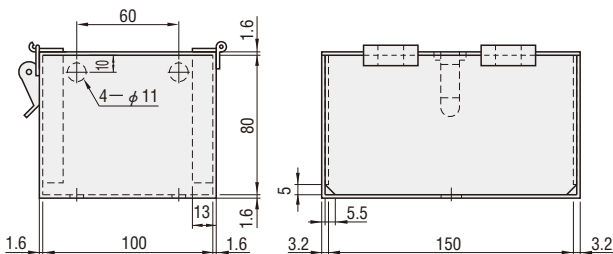
RoHS

PBX100Y

●With 2 bolt holes, 1 on the side and 1 on the bottom, this box can be fastened from either surface.



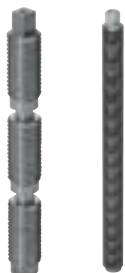
PBX150Y



M SPCC
S Baking finish (yellow)

Catalog No.	Base unit price	Order	Days to Ship	Price
	1~9 pieces			
PBX100Y	Quotation	Quotation	Quotation	Quotation
PBX150Y				

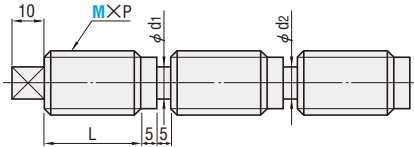
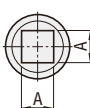
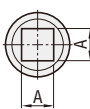
HOLE REPAIR SCREWS



RoHS

MMS (SS400)
MMF (FC250)

MMSB (SS400)
MMFB (FC250)



MMS・MMSB SS400
MMF・MMFB FC250

M×P (Coarse thread)	A	d ₁	d ₂	L	Catalog No.		Base unit price 1~19 pieces		
					Type	M	MMS	MMF	
12×1.75	8	8.5	8.0	24	MMS (SS400)	12			
16×2.0	8	8.5	8.0	32		16			
20×2.5	13	10.5	10.0	40		20	Quotation		
24×3.0	16	10.5	10.0	48	MMF (FC250)	24			
30×3.5	18	12.5	12.0	60		30			

How to use

- These products can be used to repair holes that were created by mistake.
- Tighten the upper square part with a spanner.
- After the screw is installed, cut it using an iron saw.
- MMS and MMF can be broken using a pipe wrench.

M×P (Coarse thread)	A	L	Catalog No.		Base unit price 1~19 pieces		
			Type	M	MMSB	MMFB	
6×1.0	4	100	MMSB (SS400)	6			
8×1.25	5			8			
10×1.5	6			10			
10×1.5	7	130	MMFB (FC250)	10	Quotation		
12×1.75	8	200	MMSB (SS400) MMFB (FC250)	12			
16×2.0	8			16			
20×2.5	13			20			
24×3.0	16			24			
30×3.5	18			30			

Order

Catalog No.

MMS 12

Days to Ship

Quotation

Price

Quotation

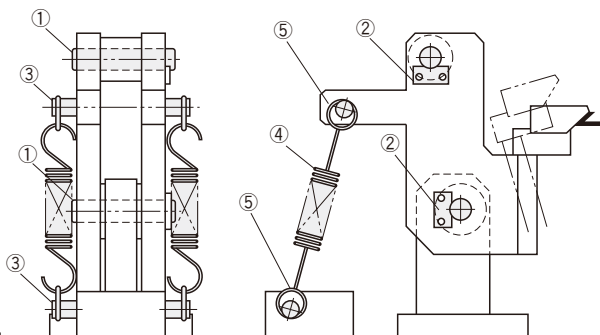
878

LINK COMPONENTS FOR HEMMING DIES —GUIDE— / HINGE PINS / HINGE PIN KEYS / TENSION SPRINGS PINS

■ Use these products for standardizing hemming dies.



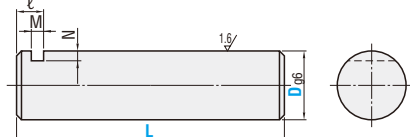
① Hinge pin ③ Tension spring pin ⑤ Ring for tension spring
② Hinge pin key ④ Tension spring



Hinge pins

CLKGH

RoHS



M S45C
H 55HRC~
(Induction hardened)

D ₁₆	ℓ	M	N	Catalog No. Type	D ₁₆	L 1mm increments	Base unit price 1~5 pieces
25	-0.007		4	CLKGH	25	50~150	
30	-0.020				30	151~300	
						50~150	
						151~300	
35		10	5		35	80~150	
						151~300	
						301~400	
40	-0.009		5		40	80~150	
	-0.025					151~300	
						301~400	
45					45	100~150	
						151~300	
						301~500	
50					50	100~150	
						151~300	
						301~500	

Quotation



Order

Catalog No. — L
CLKGH 30 — 157



Price

Quotation



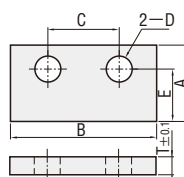
Days to Ship

Quotation

Hinge pin keys

RoHS

HK

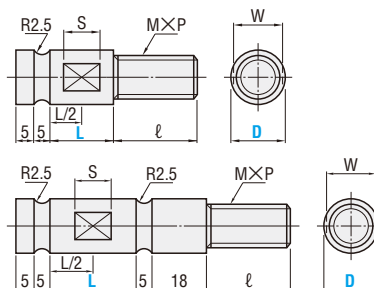


M SS400

Tension spring pins

RoHS

SSPO



M S45C
S Black oxide (Fe₃O₄)

A	B	C	D	E	T	Catalog No. Type	No.	Base unit price 1~19 pieces
20	35	18	6.5	13	4.5	HK	7	Quotation
25	40	20		15			8	

S	W	M×P	ℓ	Catalog No. Type	D	L	Base unit price 1~19 pieces
8	14	12×1.75	24	SSPO	16	12 15 18	Quotation
	17	16×2.0	32		20		
10	22	20×2.5	40		25		
8	14	12×1.75	24	WSPO	16	25 30	Quotation
	17	16×2.0	32		20	25 30 35	
10	22	20×2.5	40		25	35 45	



Order

Catalog No. — L
SSPO 20 — 15
HK 7



Price

Quotation



Days to Ship

Quotation

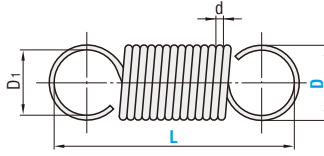
TENSION SPRINGS / TENSION SPRINGS RINGS

Tension springs



RoHS

**AWL
AWM
AWH
AWB**



Max. load N (kgf) max
Initial tension N (kgf) min

Maximum load N(kgf) max. ±10%

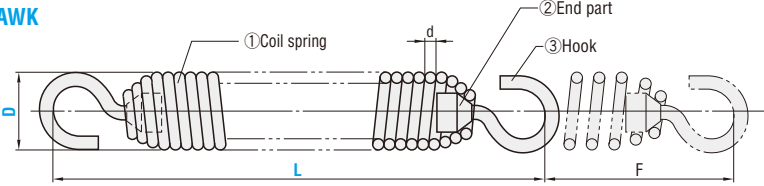
M SWP—A

Tension springs



RoHS

AWK



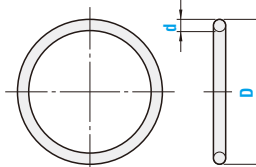
M ① Coil spring SWP—A
② End part S45C
③ Hook part SWP—A (wire diameter φ 6)

Tension spring rings



RoHS

BSR



M SS400
S Black oxide (Fe₃O₄)

Tension springs

D ₁	d	Spring constant N/mm (kgf/mm)	F max.	Maximum load N(kgf)	Initial tension N(kgf)	Catalog No. Type D—L	Base unit price 1~19 pieces
21 (±0.4)	2	0.95 [0.097]	55.22	61.98 {6.32}	9.22 {0.94}	AWL25 — 68	Quotation
		0.60 [0.061]	87.94			83	
		0.39 [0.040]	132.93			105	
		0.25 [0.026]	210.64			143	
		0.16 [0.016]	333.34			203	
26.8 (±0.5)	2.6	1.30 [0.133]	64.94	101.40 {10.34}	16.57 {1.69}	AWL32 — 86.1	Quotation
		0.82 [0.084]	103.42			106.5	
		0.54 [0.055]	156.33			135.5	
		0.34 [0.035]	247.72			184.9	
		0.22 [0.022]	392.02			262.9	
19.8 (±0.4)	2.6	2.95 [0.301]	35.10	132.39 {13.50}	28.73 {2.93}	AWM25 — 72.1	Quotation
		1.86 [0.190]	55.90			92.5	
		1.23 [0.125]	84.50			121.5	
		0.77 [0.079]	133.90			170.9	
		0.49 [0.050]	211.90			248.9	
25.6 (±0.5)	3.2	3.19 [0.325]	45.50	184.66 {18.83}	39.42 {4.02}	AWM32 — 91.2	Quotation
		2.00 [0.204]	72.46			116.8	
		1.32 [0.135]	109.53			152.0	
		0.83 [0.085]	173.56			212.8	
		0.53 [0.054]	274.66			308.8	

D ₁	d	Spring constant N/mm (kgf/mm)	F max.	Maximum load N(kgf)	Initial tension N(kgf)	Catalog No. Type D—L	Base unit price 1~19 pieces
18.6 (±0.4)	3.2	7.37 [0.752]	23.76	242.22 {24.70}	67.08 {6.84}	AWH25 — 77.2	Quotation
		4.63 [0.472]	37.84			102.8	
		3.06 [0.312]	57.20			138.0	
		1.93 [0.197]	90.64			198.8	
		1.22 [0.124]	143.44			294.8	
24 (±0.5)	4	8.48 [0.865]	29.97	353.53 {36.05}	99.44 {10.14}	AWH32 — 98	Quotation
		5.33 [0.543]	47.73			130	
		3.52 [0.359]	72.15			174	
		2.23 [0.227]	114.33			250	
		1.40 [0.143]	180.93			370	
17 (±0.4)	4	20.00 [2.040]	15.26	466.99 {47.62}	161.91 {16.51}	AWB25 — 84	Quotation
		12.55 [1.280]	24.30			116	
		8.31 [0.847]	36.73			160	
		5.25 [0.535]	58.20			236	
		3.31 [0.338]	92.10			356	

• Load (kgf) = Load (N) × 0.101972

• The initial tension values are provided only for reference.

• kgf = N × 0.101972

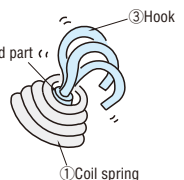
Wire diameter d	Spring constant N/mm (kgf/mm)	F=L×23%		F=L×25%		Initial tension N Load (kgf)	Identifying color	Catalog No. Type D—L	Base unit price 1~19 pieces	
		Fmm	N Load (kgf)	Fmm	N Load (kgf)					
5.0	12.55 [1.28]	42.1	703.1 [71.7]	45.7	748.3 [76.3]	174.8 [17.84]	Brown	AWK 34—183	Quotation	
	10.91 [1.11]	45.5	671.2 [68.3]	49.5	714.8 [72.8]		Red			198
	10.04 [1.03]	47.8	654.7 [67.1]	52.0	696.9 [71.4]		Black			208
	9.30 [0.95]	50.1	640.7 [65.4]	54.5	681.6 [69.6]		Yellow			218
	8.66 [0.88]	52.4	628.6 [64.0]	57.0	668.4 [68.0]		Light blue			228
Endurance operating count		1,000,000		500,000						

Tension spring rings

Catalog No.	D	Base unit price 1~19 pieces
Type	d	
BSR	4	34
	4	40
	5	40

Features

Because the hook ③ and the coil spring ① are separate parts, this product is more resistant to fatigue fracture caused by axial rotation and uneven load. The coil spring ① and the end part ② are in linear contact, providing high durability.



Order

Catalog No.

**AWL25—105
AWK34—183
BSR4—40**



Days to Ship

Quotation



Price

Quotation