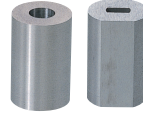


BUTTON DIES

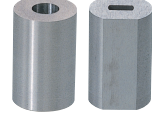
BUTTON DIES



NEW



NEW



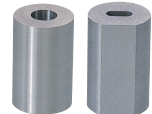
Product name	BUTTON DIES —DOWEL SLOT TYPE—	SCRAP RETENTION BUTTON DIES —DOWEL SLOT TYPE—	BUTTON DIES —STRAIGHT TYPE (REGULAR)—	BUTTON DIES —STRAIGHT TYPE (ECONOMY)—
Catalog No.				
Page	169	170	171	173



NEW



NEW



TILTING BUTTON DIES —DOWEL SLOT TYPE—	HARDLESS BUTTON DIES —DOWEL SLOT TYPE—	SCRAP RETENTION REVERSE ANGULAR BUTTON DIES —DOWEL SLOT TYPE—	SCRAP RETENTION BUTTON DIES —STRAIGHT TYPE (REGULAR)—
175	176	177	179

NEW



SCRAP RETENTION BUTTON DIES —STRAIGHT TYPE(ECONOMY)—
181

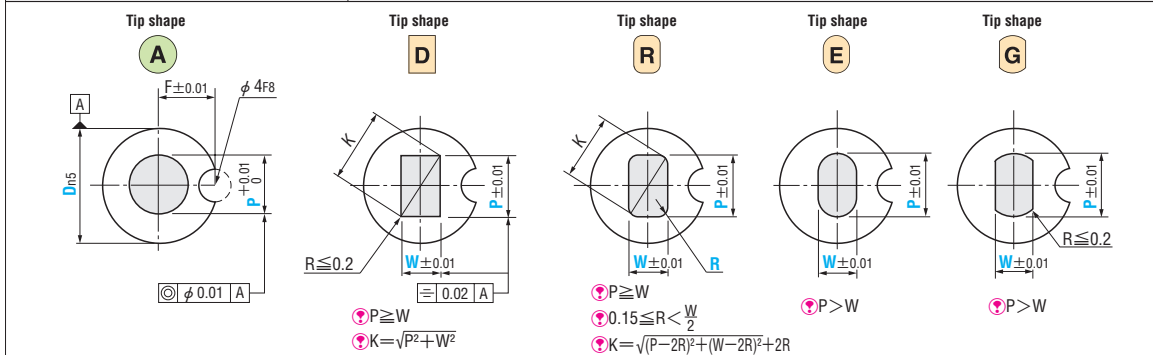
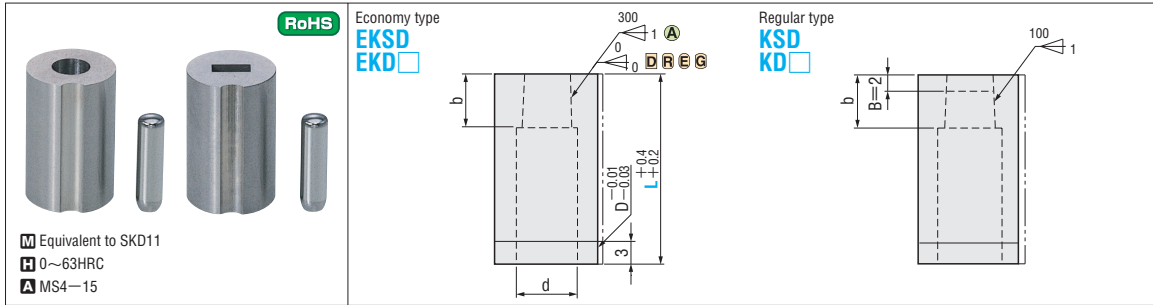
BUTTON DIES — GUIDE —

* : STANDARD COMPONENTS FOR PRESS DIE

Button die type	□	Type	Shank dia. tolerance	Normal			Scrap retention			Scrap Retention Reverse Taper			Non-clogging		
				Round	Shaped	Page	Round	Shaped	Page	Round	Shaped	Page	Round	Page	
Dowel slot		Equivalent to SKD11	Economy type	D _{n5}	EKSD	EKD□	P.169	SR-EKSD	SR-EKD□	P.170					
		Regular type	KSD		KD□	SR-KSD		SR-KD□	SRT-KSD		SRT-KD□	P.177			
Straight		Equivalent to SKD11	Regular type	D _{n5}	MSD	SD□	P.171	SR-MSD	SR-SD□	P.179					
			D _{+0.005} 0	A-MSD	A-SD□	SRA-MSD		SRA-SD□							
		Economy type	D _{n5}	EMSD	ESD□	P.173	SR-EMSD	SR-ESD□	P.181						
		D _{+0.005} 0	A-EMSD	A-ESD□	SRA-EMSD		SRA-ESD□								
Powdered highspeed steel	Regular type	D _{n5}	PMSD	PSD□	P.171	SR-PMSD	SR-PSD□	P.179							
	D _{+0.005} 0	A-PMSD	A-PSD□	SRA-PMSD		SRA-PSD□									
Economy type	D _{n5}	EPMSD	EPSD□	P.173	SR-EPMSD	SR-EPSD□	P.181								
D _{+0.005} 0	A-EPMSD	A-EPSD□	SRA-EPMSD		SRA-EPSD□										
Tilting, dowel slot		Equivalent to SKD11	Regular type	D _{n5}	KSDS	KD□S	P.175								
For flame hardening, dowel slot		SX105V	Regular type	D _{P.234}	HKSDS	HKD□S	P.176								
Headed		Equivalent to SKD11	Regular type	D _{m5}	MHD	HD□	* P.251	SR-MHD	SR-HD□	* P.259					
			D _{+0.005} 0	A-MHD	A-HD□	SRA-MHD		SRA-HD□							
		Economy type	D _{m5}	EMHD	EHD□	* P.253	SR-EMHD	SR-EHD□	* P.261						
		D _{+0.005} 0	A-EMHD	A-EHD□	SRA-EMHD		SRA-EHD□								
Powdered highspeed steel	Regular type	D _{m5}	PMHD	PHD□	* P.251	SR-PMHD	SR-PHD□	* P.259							
	D _{+0.005} 0	A-PMHD	A-PHD□	SRA-PMHD		SRA-PHD□									
Economy type	D _{m5}	EPMHD	EPHD□	* P.253	SR-EPMHD	SR-EPHD□	* P.261								
D _{+0.005} 0	A-EPMHD	A-EPHD□	SRA-EPMHD		SRA-EPHD□										
Angular, Headed		Equivalent to SKD11	Regular type	D _{m5}	AHD	AHD□	* P.269	SR-AHD	SR-AHD□	* P.273					
				D _{+0.005} 0	A-AHD	A-AHD□		SRA-AHD	SRA-AHD□						
Powdered highspeed steel	D _{m5}	PAHD	PAHD□	* P.269	SR-PAHD	SR-PAHD□	* P.273								
D _{+0.005} 0	A-PAHD	A-PAHD□	SRA-PAHD		SRA-PAHD□										
Angular, straight		Equivalent to SKD11	Regular type	D _{n5}	ASD	ASD□	* P.271	SR-ASD	SR-ASD□	* P.275					
				D _{+0.005} 0	A-ASD	A-ASD□		SRA-ASD	SRA-ASD□						
		Powdered highspeed steel	D _{n5}	PASD	PASD□	* P.271	SR-PASD	SR-PASD□	* P.275						
			D _{+0.005} 0	A-PASD	A-PASD□		SRA-PASD	SRA-PASD□							
Long shaped hole, headed		Equivalent to SKD11	Regular type	D _{m5}	MHDS	HD□S	* P.277								
				D _{n5}	MSDS	SD□S									
Long shaped hole, straight		Equivalent to SKD11	Regular type	D _{n5}	MSDS	SD□S	* P.277								
Configurable full length, headed		Equivalent to SKD11	Regular type	D _{m5}	S-MHD	S-HD□	* P.279	SRS-MHD	SRS-HD□	* P.281					
					S-MHDS	S-HD□S		SRS-MHDS	SRS-HD□S						
Configurable full length, straight		Equivalent to SKD11	Regular type	D _{n5}	S-MSD	S-SD□	* P.279	SRS-MSD	SRS-SD□	* P.281					
					S-MSDS	S-SD□S		SRS-MSDS	SRS-SD□S						
Configurable size; full length, shaped hole depth, and relief hole specified; headed		Equivalent to SKD11	Regular type	D _{m5}	FMHD	FHD□	* P.283	SR-FMHD	SR-FHD□	* P.285					
					FMHDS	FHD□S		SRA-FMHD	SRA-FHD□						
Configurable size; full length, shaped hole depth, and relief hole specified; straight		Equivalent to SKD11	Regular type	D _{n5}	FMSD	FSD□	* P.283	SR-FMSD	SR-FSD□	* P.285					
					FMSDS	FSD□S		SRA-FMSD	SRA-FSD□						

BUTTON DIES

—DOWEL SLOT TYPE—



D _{n5}	Catalog No.		L							0.01mm increments				b	d	F			
	Type	D								A		D R E G					R		
			min. P	max. P	P	K	max. P	P	W	min. R									
10	Economy type	Regular type	10	16	20	22	25	28	30	32	35	2.00	6.00	6.00	1.20	0.15 ≤ R < W/2 (R only)	6	6.4	6
13			13	16	20	22	25	28	30	32	35	3.00	8.00	8.00	1.50			8.4	7.5
16	A EKSD	KSD	16	16	20	22	25	28	30	32	35	5.00	10.00	10.00	2.00		10.6	8	
20			20	16	20	22	25	28	30	32	35	7.00	12.00	12.00	3.00		12.6	10	
22	D EKDD	KDD	22	16	20	22	25	28	30	32	35	8.00	14.00	14.00	3.00		14.6	11	
25			25	16	20	22	25	28	30	32	35	10.00	16.00	16.00	3.00		16.6	12.5	
32	R EKDR	KDR	32	16	20	22	25	28	30	32	35	15.00	20.00	20.00	4.00		20.6	16	
38			38	16	20	22	25	30	35	19.00	26.00	26.00	5.00	26.6	19				
45	E EKDE	KDE	45	20	22	25	30	35	25.00	35.00	35.00	6.00	36.0	22.5					
50			50	20	22	25	30	35	33.00	40.00	40.00	7.00	41.0	25					
56	G EKDG	KDG	56	20	22	25	30	35	38.00	45.00	45.00	8.00	46.0	28					

Order **Catalog No.** — **L** — **P** — **W** — **R(R only)**
EKDR 13 — **20** — **P6.00** — **W2.40** — **R1.00**

Days to Ship **Quotation**

Price **Quotation**

Alterations **Catalog No.** — **L(LC)** — **P(PC)** — **W(WC)** — **R** — **(BC·KC...etc.)**
EKDD 13 — **20** — **P6.00** — **WC1.00** — **KC90**

Alterations	Code	A	D R E G
Alterations to tip	PC	Shaped hole diameter change $\min. \frac{P}{W} > \frac{PC}{WC} \geq \frac{P-W}{2} \min. \geq 1.00$ 0.01mm increments ⓐ Only, if PC is 1.00~1.99, then b=4.	
	WC	$\max. \frac{P}{W} < \frac{PC}{WC} \leq P \cdot K \max. + 0.2$ 0.01mm increments	
	BC	Tip length change $1 \leq BC \leq b$ 0.1mm increments ⓧ Cannot be used for economy types.	

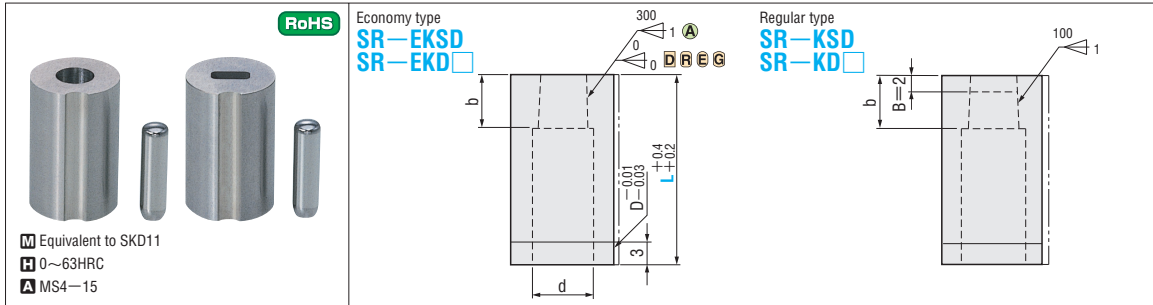
Alterations	Code	A	D R E G
Alterations to full length	LC	Full length change $10 \leq LC < L$ 0.1mm increments (if combined with LKC-LKZ, 0.01mm increments can be selected.) ⓧ Press-in lead is shortened by (L-LC).	
	LKC	Full length tolerance change $L \begin{matrix} +0.4 \\ +0.2 \end{matrix} \begin{matrix} +0.01 \\ 0 \end{matrix}$	
	LKZ	Full length tolerance change $L \begin{matrix} +0.4 \\ +0.2 \end{matrix} \begin{matrix} +0.01 \\ 0 \end{matrix}$ ⓧ Cannot be used for L<16 or D>25.	
Others	KC	Key flat position change 1° increments	

SCRAP RETENTION BUTTON DIES

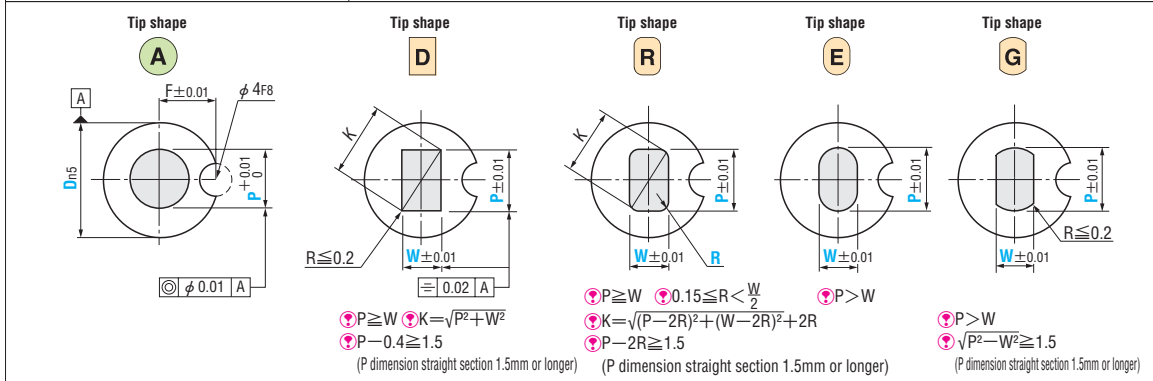
—DOWEL SLOT TYPE—

PRODUCTS DATA

P.999



Equivalent to SKD11
 ~63HRC
 MS4-15



Dn5	Catalog No.		D	L	0.01mm increments				0.01mm increments	0.005mm increments	b	d	F
	Type	Type			A	D R E G	R	MT	C				
10			10	16 20 22 25 28 30 32 35	2.00 ~ 6.00	6.00	1.20	0.15 ≤ R < W/2 Select a workpiece material thickness of 0.15mm or more.	MT ≥ 0.15 Select a workpiece material thickness of 0.15mm or more.	If the clearance C ≥ 0.010 a value above 0.010mm can be selected.	6	6.4	6
13			13	16 20 22 25 28 30 32 35	3.00 ~ 8.00	8.00	1.50				8	8.4	7.5
16			16	16 20 22 25 28 30 32 35	5.00 ~ 10.00	10.00	2.00				8	10.6	8
20	A	SR-EKSD SR-KSD	20	16 20 22 25 28 30 32 35	7.00 ~ 12.00	12.00	3.00				8	12.6	10
22	D	SR-EKDD SR-KDD	22	16 20 22 25 28 30 32 35	8.00 ~ 14.00	14.00	3.00				8	14.6	11
25	R	SR-EKDR SR-KDR	25	16 20 22 25 28 30 32 35	10.00 ~ 16.00	16.00	3.00				8	16.6	12.5
32	R	SR-EKDR SR-KDR	32	16 20 22 25 28 30 32 35	15.00 ~ 20.00	20.00	4.00				8	20.6	16
38	E	SR-EKDE SR-KDE	38	16 20 22 25 30 35	19.00 ~ 26.00	26.00	5.00				8	26.6	19
45	E	SR-EKDE SR-KDE	45	20 22 25 30 35	25.00 ~ 35.00	35.00	6.00				8	36.0	22.5
50	G	SR-EKDG SR-KDG	50	20 22 25 30 35	33.00 ~ 40.00	40.00	7.00				8	41.0	25
56	G	SR-EKDG SR-KDG	56	20 22 25 30 35	38.00 ~ 45.00	45.00	8.00	8	46.0	28			

Can be used only for workpiece materials with tensile strengths up to 1177N/mm² (120kgf/mm²).
 MT(workpiece material thickness)and C(clearance)are used as data for machining the scrap retention grooves. Specify the shaped hole dimensions(P-W-R)when selecting the button die finishing dimensions.

Order **Catalog No.** - L - P - W - R(R only) - MT - C
 SR-EKDR 13 - 20 - P6.00 - W2.40 - R1.00 - MT1.50 - C0.105

Days to Ship **Quotation** Price **Quotation**

Alterations **Catalog No.** - L(LC) - P(PC) - W(WC) - R - MT - C - (BC-KC...etc.)
 SR-EKDD 13 - 20 - P6.00 - WC1.00 - MT1.50 - C0.105 - KC90

Alterations	Code	A	D R E G
Alterations to tip	PC	Shaped hole diameter change $\min. \frac{P}{W} > \frac{PC}{WC} = \frac{P-W}{W} \min. \geq 1.00$ 0.01mm increments * A only, if PC is 1.00~1.99, then b=4.	
	WC	$\max. \frac{P}{W} < \frac{PC}{WC} = P \cdot Kmax. + 0.2$ 0.01mm increments	
Alterations to full length	BC	Tip length change $\frac{P}{Bmax.}$ 1.00~1.99 3 2.00~3.99 5 4.00~ 6	Tip length change $1 \leq BC < 2$ 0.1mm increments
		$1 \leq BC \leq Bmax$ 0.1mm increments * Cannot be used for economy types.	

Alterations	Code	A	D R E G
Shaped hole	PKC	Shaped hole diameter tolerance change $P \pm 0.01 \rightarrow \pm 0.005$ * Cannot be used for economy types.	Shaped hole diameter tolerance change $P \cdot W \pm 0.01 \rightarrow \pm 0.01$ * Cannot be used for economy types.
Alterations to full length	LC	Full length change $10 \leq LC < L$ 0.1mm increments (if combined with LKC-LKZ, 0.01mm increments can be selected.) * Press-in lead is shortened by (L-LC).	
	LKC	Full length tolerance change $L \pm 0.4 \rightarrow \pm 0.05$	
Others	LKZ	Full length tolerance change $L \pm 0.2 \rightarrow \pm 0.01$ * Cannot be used for L < 16 or D > 25.	
	KC		Key flat position change 1° increments

BUTTON DIES

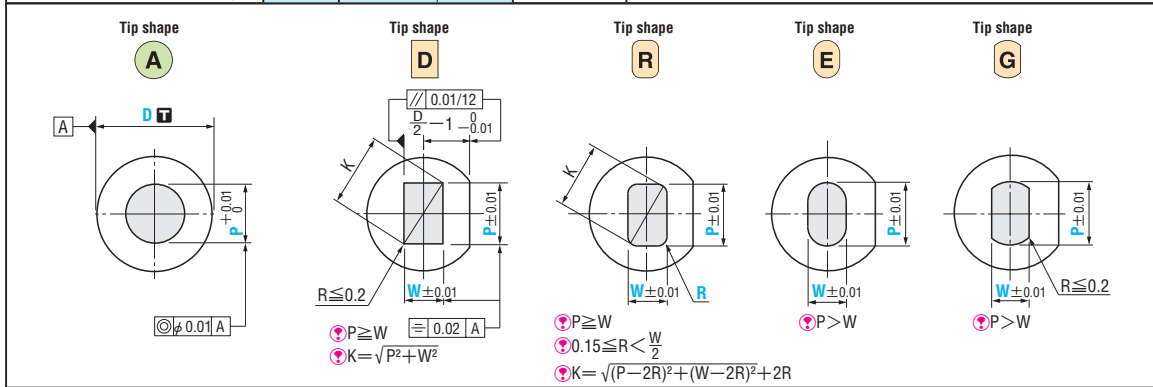


BUTTON DIES

— STRAIGHT TYPE (REGULAR) —

Straight type	Shank diameter D tolerance	M H	D dimension	Catalog No.	The hole shape can be selected from A D R E G below.		
	D _{n5}	Equivalent to SKH51 61~64HRC	D3~5	MSD	Regular type		
			D6~56				
			Equivalent to SKD11 60~63HRC	D8~56		SD□	
				D6~25		PMSD	
			D ₀ ^{+0.005}	Powdered highspeed steel 64~67HRC		D3~5	A-MSD
						D6~16	A-SD□
	D8~16	A-MSD					
	D6~16	A-PMSD					
	D8~16	A-PSD□					
	D8~16	A-PSD□					

For shank diameter tolerance D $\begin{matrix} n5 \\ 0 \end{matrix}$ $\begin{matrix} +0.005 \\ 0 \end{matrix}$



D tolerance	Catalog No.	L	0.01mm increments				b	d			
			Type	D	A				R		
					min. P	max. P				P·Kmax.	P·Wmin.
D _{n5}	(Equivalent to SKH51)	(3) 16 20	A MSD A-MSD	D	0.30~1.00	—	—	2	2.0		
		(4) 16 20 22 25 28 30			0.50~2.00	—			2.4		
		(5) 16 20 22 25 28 30			0.50~2.50	—		2.9			
		(6) 16 20 22 25 28 30 32 35			1.00~3.00	—		3.4			
		(Equivalent to SKD11)			8 16 20 22 25 28 30 32 35	1.00~4.00		4.00	1.00	4	4.4
					10 16 20 22 25 28 30 32 35 (40)	2.00~6.00		6.00	1.20		6
	13 16 20 22 25 28 30 32 35 (40)		3.00~8.00	8.00	1.50	8		8.4			
	16 16 20 22 25 28 30 32 35 (40)		5.00~10.00	10.00	2.00			10.6			
	(20) 16 20 22 25 28 30 32 35 (40)		7.00~12.00	12.00	3.00			12.6			
	(22) 16 20 22 25 28 30 32 35 (40)		8.00~14.00	14.00	3.00			14.6			
	D ₀ ^{+0.005}	(Powdered highspeed steel)	(6) 16 20 22 25 30 35	A PMSD A-PMSD	D	1.00~3.00		—	0.15 ≤ R < $\frac{W}{2}$ (a only)	3	3.4
			8 16 20 22 25 30 35			1.00~4.00		4.00			1.00
10 16 20 22 25 30 35			2.00~6.00			6.00	1.20	6		6.4	
13 16 20 22 25 30 35			3.00~8.00			8.00	1.50			8	8.4
16 16 20 22 25 30 35			5.00~10.00			10.00	2.00	10.6			
(20) 16 20 22 25 30 35			7.00~12.00			12.00	3.00	12.6			
(25) 16 20 22 25 30 35		10.00~16.00	16.00	3.00	16.6						

Ⓜ D=(3), (4), (5), and (6) are specifications available for A shape(round) only. They are not available for shapes D R E G.
 Ⓜ D=(20) (22) (25) (32) (38) (45) (50) (56) are specifications available for shank diameter tolerance of D_{n5} only.
 Ⓜ L=(40) is a specification available for shank dia. tolerance of D_{n5} only.



Order

Catalog No. — L — P — W — R(® only)
MSD 13 — 30 — P7.00



Days to Ship

Quotation



Price

Quotation



Alterations

Catalog No. — L(LC·SLC) — P(PC) — W(WC) — R — (BC·KC·WK...etc.)
SDD 38 — 35 — P21.03 — W6.83 — BC4.0

Alterations	Code	A	D R E G
Alterations to tip	PC WC	Shaped hole diameter change min. $P > PC \geq \frac{Pmin.}{2} \geq 0.50$ 0.01mm increments ⊕ If PC is 1.00~1.99, then b=4.	Shaped hole diameter change min. $\frac{P}{W} > \frac{PC}{WC} \geq \frac{P \cdot Wmin.}{2} \geq 1.00$ 0.01mm increments
		$\frac{P}{max. W} < \frac{PC}{WC} \leq P \cdot Kmax. + 0.2$ 0.01mm increments	
	BC	Tip length change $1 \leq BC \leq b$ 0.1mm increments ⊗ Cannot be used for $P < 1.00$.	
	PKC	Shaped hole diameter tolerance change $P +0.01 \begin{matrix} \rightarrow \\ 0 \end{matrix} +0.005$ ⊗ Cannot be used for $P < 1.00$.	Shaped hole diameter tolerance change $P \cdot W \pm 0.01 \begin{matrix} \rightarrow \\ 0 \end{matrix} +0.01$

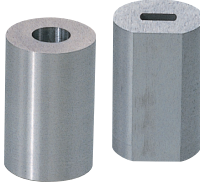
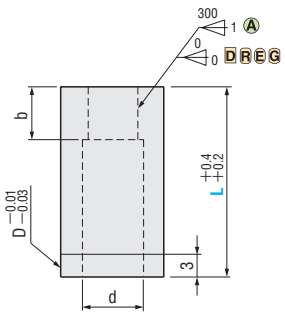
Alterations	Code	A	D R E G
Alterations to full length	LC	Full length change $10 \leq LC < L$ 0.1mm increments (if combined with LKC·LKZ, 0.01mm increments can be selected.) ⊕ Press-in lead is shortened by $(L-LC)$.	
	SLC	Changes to full length and full length tolerance are processed using a single code. The allowable ranges of change, increment, ordering process, and notes(⊕) are the same as for LC. LC + Full length tolerance change Full length change + Full length tolerance change $L +0.4 \begin{matrix} \rightarrow \\ 0 \end{matrix} +0.05$ $L +0.2 \begin{matrix} \rightarrow \\ 0 \end{matrix}$ ⊕ Can be selected in 0.01mm increments.	
	LKC	Full length tolerance change $L +0.4 \begin{matrix} \rightarrow \\ 0 \end{matrix} +0.05$ $L +0.2 \begin{matrix} \rightarrow \\ 0 \end{matrix}$	
	LKZ	Full length tolerance change $L +0.4 \begin{matrix} \rightarrow \\ 0 \end{matrix} +0.01$ $L +0.2 \begin{matrix} \rightarrow \\ 0 \end{matrix}$ ⊗ Cannot be used for $L(LC) < 16$. ⊗ Cannot be used for $D > 25$.	
Others	KC	⊕ Addition of single key flat ⊗ Cannot be used for D3~8.	Key flat position change 1° increments
	WKC	⊕ Addition of double key flats in parallel ⊗ Cannot be used for D3 ~ 6. ⊕ Can be combined with KC for shapes D R E G	

BUTTON DIES

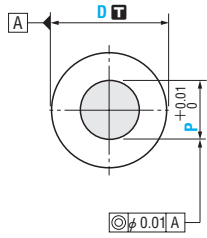
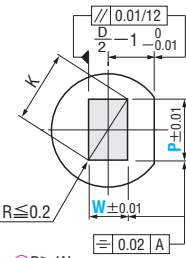
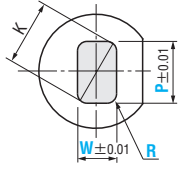
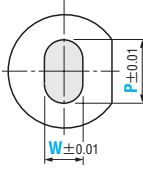
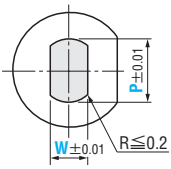


BUTTON DIES

—STRAIGHT TYPE (ECONOMY)—

Straight type	Shank diameter D tolerance	$\frac{M}{H}$	D dimension	Catalog No.	The hole shape can be selected from A D R E G below.		
	Dn5	Equivalent to SKD11 60~63HRC	D6~56	EMSD	Economy type 		
			D8~56	ESD			
			Powdered highspeed steel 64~67HRC	D6~25		EPMSD	
				D8~25		EPSD	
			D +0.005/0	Equivalent to SKD11 60~63HRC		D6~16	A-EMSD
						D8~16	A-ESD
	Powdered highspeed steel 64~67HRC	D6~16				A-EPMSD	
		D8~16				A-EPSD	

For shank diameter tolerance D n5 +0.005/0

Tip shape	Tip shape	Tip shape	Tip shape	Tip shape
A	D	R	E	G
				
$\text{P} \geq \text{W}$	$\text{P} \geq \text{W}$	$\text{P} \geq \text{W}$	$\text{P} > \text{W}$	$\text{P} > \text{W}$
	$\text{R} \leq 0.2$	$0.15 \leq \text{R} < \frac{\text{W}}{2}$		$\text{R} \leq 0.2$
	$\text{K} = \sqrt{\text{P}^2 + \text{W}^2}$	$\text{K} = \sqrt{(\text{P} - 2\text{R})^2 + (\text{W} - 2\text{R})^2} + 2\text{R}$		

D tolerance	Catalog No.	L	0.01mm increments				b	d
			A	D R E G	R			
D n5 +0.005/0	Type	D	min. P max.	P-Kmax.	P-Wmin.	R		
6	(Equivalent to SKD11) (Dn5) (D +0.005/0)	(6) 16 20 22 25 28 30 32 35	1.00~3.00	—	—	—	3 3.4	
8		8 16 20 22 25 28 30 32 35	1.00~4.00	4.00	1.00	—	4 4.4	
10		10 16 20 22 25 28 30 32 35 (40)	2.00~6.00	6.00	1.20	—	6 6.4	
13		13 16 20 22 25 28 30 32 35 (40)	3.00~8.00	8.00	1.50	—	8 8.4	
16		16 16 20 22 25 28 30 32 35 (40)	5.00~10.00	10.00	2.00	—	10.6	
20		(20) 16 20 22 25 28 30 32 35 (40)	7.00~12.00	12.00	3.00	—	12.6	
22		(22) 16 20 22 25 28 30 32 35 (40)	8.00~14.00	14.00	3.00	—	14.6	
25		(25) 16 20 22 25 28 30 32 35 (40)	10.00~16.00	16.00	3.00	—	16.6	
32		(32) 16 20 22 25 28 30 32 35	15.00~20.00	20.00	4.00	—	20.6	
38		(38) 16 20 22 25 30 35	19.00~26.00	26.00	5.00	—	26.6	
45		(45) 20 22 25 30 35	25.00~35.00	35.00	6.00	—	36.0	
50		(50) 20 22 25 30 35	33.00~40.00	40.00	7.00	—	41.0	
56		(56) 20 22 25 30 35	38.00~45.00	45.00	8.00	—	46.0	
6		(Powdered highspeed steel) (Dn5) (D +0.005/0)	(6) 16 20 22 25 30 35	1.00~3.00	—	—	—	3 3.4
8			8 16 20 22 25 30 35	1.00~4.00	4.00	1.00	—	4 4.4
10			10 16 20 22 25 30 35	2.00~6.00	6.00	1.20	—	6 6.4
13	13 16 20 22 25 30 35		3.00~8.00	8.00	1.50	—	8 8.4	
16	16 16 20 22 25 30 35		5.00~10.00	10.00	2.00	—	10.6	
20	(20) 16 20 22 25 30 35		7.00~12.00	12.00	3.00	—	12.6	
25	(25) 16 20 22 25 30 35		10.00~16.00	16.00	3.00	—	16.6	

$0.15 \leq \text{R} < \frac{\text{W}}{2}$ (only)

- ⊙ D(6) is a specification available for shape A (round) only. It is not available for shapes D R E G.
- ⊙ D=(20) (22) (25) (32) (38) (45) (50) (56) are specifications available for shank diameter tolerance of Dn5 only.
- ⊙ L=(40) is a specification available for shank dia. tolerance of Dn5 only.

BUTTON DIES



Order

Catalog No. — L — P — W — R (R only)
EMSD 13 — 30 — P7.00



Days to Ship

Quotation



Price

Quotation



Alterations

Catalog No. — L(LC·SLC) — P(PC) — W(WC) — R — (KC·WKC...etc.)
ESDD 38 — 35 — P21.03 — W6.83 — KC90


Alterations	Code	A	D R E G
Alterations to tip	PC WC	Shaped hole diameter change min.: $P > PC \geq \frac{P \cdot \min.}{2} \geq 0.50$ 0.01mm increments ⚠ When PC is 1.00~1.99, then b=4. max.: $\frac{P}{W} < \frac{PC}{WC} \leq P \cdot K_{max.} + 0.2$ 0.01mm increments	Shaped hole diameter change min.: $P > \frac{PC}{WC} \geq \frac{P \cdot W \cdot \min.}{2} \geq 1.00$ 0.01mm increments
Alterations to full length	LC	Full length change $10 \leq LC < L$ 0.1mm increments (if combined with LKC-LKZ, 0.01mm increments can be selected.) ⚠ Press-in lead is shortened by (L-LC).	
	SLC	Changes to full length and full length tolerance are processed using a single code. The allowable ranges of change, increment, ordering process, and notes (⚠) are the same as for LC. LC Full length change + LKC Full length tolerance change $L + 0.4 \rightarrow +0.05$ $+0.2 \rightarrow 0$ ⚠ Can be selected in 0.01mm increments.	
	LKC	Full length tolerance change $L + 0.4 \rightarrow +0.05$ $+0.2 \rightarrow 0$	
	LKZ	Full length tolerance change $L + 0.4 \rightarrow +0.01$ $+0.2 \rightarrow 0$ ⚠ Cannot be used for L(LC) < 16. ⚠ Cannot be used for D > 25.	

Alterations	Code	A	D R E G
Others	KC	⊙ Addition of single key flat ⚠ Cannot be used for D6.	Key flat 0° position change 1° increments
	WKC	⊙ Addition of double key flats in parallel ⚠ Cannot be used for D6. ⚠ Can be combined with KC for shapes D R E G	

BUTTON DIES

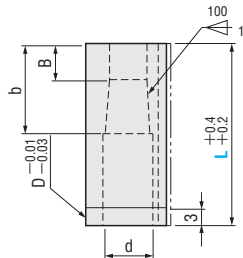
TILTING BUTTON DIES

—DOWEL SLOT TYPE—

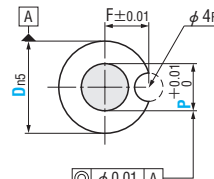


RoHS **KS** **DS**
KD **□** **S**

Equivalent to SKD11
60~63HRC
MS4-15

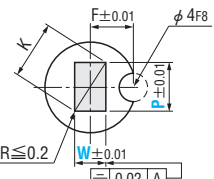


Tip shape **A**



$\phi 0.01$ A

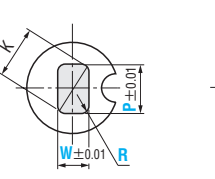
Tip shape **D**



$\equiv 0.02$ A

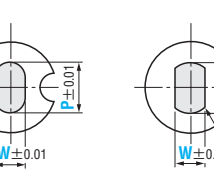
$P \geq W$
 $K = \sqrt{P^2 + W^2}$

Tip shape **R**



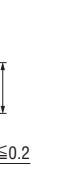
$P \geq W$
 $0.15 \leq R < \frac{W}{2}$
 $K = \sqrt{(P-2R)^2 + (W-2R)^2} + 2R$

Tip shape **E**



$P > W$

Tip shape **G**



$P > W$

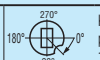
D tolerance	Type	Catalog No.	D	L				0.01mm increments				B	b	d	F			
								A		D R E G						R		
								min. P	max.	P·Kmax.	P·Wmin.							
D _{n5}	A	KS	10	16	20	22	25	30	35	40	2.00~6.00	6.00	1.20	6	10	6.4	6	
			13	16	20	22	25	30	35	40	3.00~8.00	8.00	1.50			8.4	7.5	
	16	16	20	22	25	30	35	40	5.00~10.00	10.00	2.00	10.6	8					
	D	KD	DS	20	16	20	22	25	30	35	40	7.00~12.00	12.00	3.00	8	12	12.6	10
				25	16	20	22	25	30	35	40	10.00~16.00	16.00	3.00			16.6	12.5
	32	16	20	22	25	30	35	40	15.00~20.00	20.00	4.00	20.6	16					
	R	KR	DR	38	16	20	22	25	30	35	40	19.00~26.00	26.00	5.00	10	15	26.6	19
				45	20	22	25	30	35	40	25.00~35.00	35.00	6.00	36.0			22.5	
	50	20	22	25	30	35	40	33.00~40.00	40.00	7.00	41.0	25						
	E	KE	DE	56	20	22	25	30	35	40	38.00~45.00	45.00	8.00	14	20	46.0	28	
56				20	22	25	30	35	40	38.00~45.00	45.00	8.00	46.0			28		

Order Catalog No. — L — P — W — R(R only)
KD **S** **25** — **35** — **P10.00** — **W8.00**

Days to Ship **Quotation** **P** Price **Quotation**

Alterations Catalog No. — L(LC) — P(PC) — W(WC) — R — (BC·KC...etc.)
KDR **S** **45** — **40** — **P25.2** — **W10.2** — **R1.50** — **BC20**

Alterations	Code	A	D R E G
Alterations to tip	PC WC	Shaped hole diameter change $\min: \frac{P-PC}{W-WC} \geq 1.00$ 0.01mm increments Ⓢ A only, if PC is 1.00~1.99, then B·b=4. $\max: \frac{P-PC}{W-WC} \leq P \cdot Kmax. + 0.2$ 0.01mm increments	
	BC	Tip length change $1 \leq BC \leq b$ 0.1mm increments	

Alterations	Code	A	D R E G
Alterations to hole	PKC	Shaped hole diameter tolerance change $P + 0.01 \rightarrow +0.005$ $0 \rightarrow 0$	Shaped hole diameter tolerance change $P \cdot W \pm 0.01 \rightarrow +0.01$ $0 \rightarrow 0$
Alterations to full length	LC	Full length change $10 \leq LC < L$ 0.1mm increments if combined with LKC, 0.01mm increments can be selected. Ⓢ Press-in lead is shortened by (L-LC).	
	LKC	Full length tolerance change $L + 0.4 \rightarrow +0.05$ $+0.2 \rightarrow 0$	
Others	KC		Key flat position change 1° increments 

HARDLESS BUTTON DIES

—DOWEL SLOT TYPE—

RoHS

HKSDS
HKD□S

M SX105V
H Not hardened
A MS4—15

Tip shape **A**

Tip shape **D**

$P \geq W$
 $K = \sqrt{P^2 + W^2}$

Tip shape **R**

$P \geq W$
 $0.15 \leq R < \frac{W}{2}$
 $K = \sqrt{(P-2R)^2 + (W-2R)^2} + 2R$

Tip shape **E**

$P > W$

Tip shape **G**

$P > W$

D _{h5}	Catalog No.	L	0.01mm increments				b	d	F
			Type	D	A	D R E G			
20	A HKSDS	25	20	6.00~12.20	12.20	3.00	8	12.6	10
25	D HKD□S		25	10.00~16.20	16.20	3.00		16.6	12.5
32	R HKDRS		32	15.00~20.20	20.20	4.00	10	20.6	16
38	E HKDES		38	19.00~26.20	26.20	5.00		26.6	19

0.15 ≤ R < W/2 (R only)

Order Catalog No. — L — P — W — R (R only)
 HKDRS 20 — 25 — P10.00 — W8.00 — R2.25

Days to Ship **Quotation** **P** Price **Quotation**

Alterations Catalog No. — L(LC) — P(PC) — W(WC) — R — (KC·LKC·TYC...etc.)
 HKD□S 20 — 25 — P8.00 — WC2.00 — KC90

Alterations	Code	A	D R E G
Alterations to tip	PC WC		

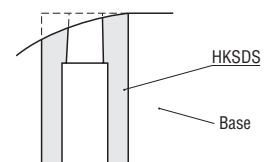
Alterations	Code	A	D R E G
Alterations to full length	LC		
	LKC		
Head	KC		

■ Button dies for flame hardening...

Because these button dies have not been hardened, alterations can be added easily. They are suitable for cases such as when the shape is machined after the die is installed onto a cast base. If flame hardening is performed after machining, the hardened surface layer will be 63~64HRC, providing high wear resistance.

⚠ The shaped hole dimensions are the dimensions prior to flame hardening. Be aware that depending on the hardening conditions, some changes in the dimensions may occur.

EX Example





SCRAP RETENTION REVERSE ANGULAR BUTTON DIES

— DOWEL SLOT TYPE —

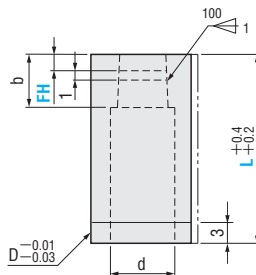
Patent pending

RoHS

SRT—KSD
SRT—KD□



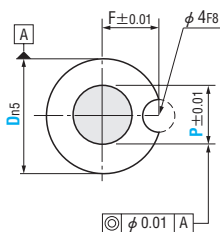
M Equivalent to SKD11
H 60~63HRC
A MS4—15



Select a push-in amount of punch greater than FH dimension. Pushing in until the straight part is effective against scrap retention and scrap clogging.

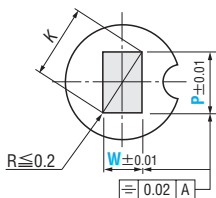
Tip shape

A



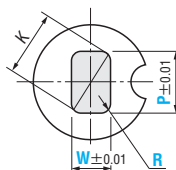
Tip shape

D



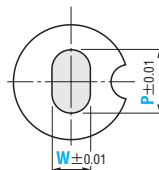
Tip shape

R



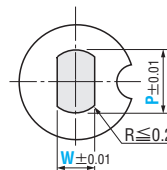
Tip shape

E



Tip shape

G



$P \geq W$ $K = \sqrt{P^2 + W^2}$
 $P - 0.4 \geq 1.5$
(P dimension straight section 1.5mm or longer)

$P \geq W$ $0.15 \leq R < \frac{W}{2}$ $P > W$
 $K = \sqrt{(P-2R)^2 + (W-2R)^2} + 2R$
 $P - 2R \geq 1.5$
(P dimension straight section 1.5mm or longer)

$P > W$
 $\sqrt{P^2 - W^2} \geq 1.5$
(P dimension straight section 1.5mm or longer)

BUTTON DIES

D tolerance	Catalog No.	L	0.01mm increments						MT (workpiece material thickness)	0.005mm increments C (clearance)	Select TS (Tensile strength (N/mm ²))	0.1mm increments FH (Taper depth)	b	d	F									
			A	D	R	E	G	R																
D	n5	Type	D	min. P max.																				
10	+0.016 +0.010	(Equivalent to SKD11) (Dn5)	10	16	20	22	25	28	30	32	35	2.00~6.00	6.00	2.00	0.15 ≤ R < W/2 (R only)	MT ≥ 0.5	C ≥ 0.060 (But C ≥ 0.050 if the clearance is 10% or below C ≥ 0.050) Clearance	Select the level of tensile strength Level Tensile strength (N/mm ²) H 800~ M 600~ L ~599	1.0~5.0	6	6.4	6.0		
13	+0.020	A SRT—KSD	13	16	20	22	25	28	30	32	35	3.00~8.00	8.00	2.00									8.4	7.5
16	+0.012	D SRT—KDD	16	16	20	22	25	28	30	32	35	5.00~10.00	10.00	2.00									10.6	8.0
20		R SRT—KDR	20	16	20	22	25	28	30	32	35	7.00~12.00	12.00	3.00	1.0~7.0	8	12.6	10.0						
22	+0.024 +0.015	E SRT—KDE	22	16	20	22	25	28	30	32	35	8.00~14.00	14.00	3.00					14.6	11.0				
25		G SRT—KDG	25	16	20	22	25	28	30	32	35	10.00~16.00	16.00	3.00					16.6	12.5				

Use with the clearance (C) less than 20% of the processed plate material thickness (MT), otherwise the effect will not be as expected. Clearance (C) ≤ Processed plate material thickness (MT) × 20%
1/100 of relief taper length is as follows. Relief taper length = b - (FH + 1)
P dimension will change if regrinding is applied. Note that the change amount varies with the taper width (max. 0.05mm on one side) and taper depth & regrinding amount.



Order

Catalog No. — L — P — W — R(R only) — MT — C — TS — FH
 SRT—KDD16 — 25 — P9.20 — W2.00 — MT1.0 — C0.1 — M — FH2.0
 SRT—KSD16 — 25 — P9.2 — MT1.0 — C0.1 — H — FH2.0



Days to Ship

Quotation



Price

Quotation



Alterations

Catalog No. — L(LC) — P(PC) — W(WC) — R — MT — C — TS — FH — (KC...etc.)
 SRT—KDD 16 — 25 — P9.20 — W2.00 — MT1.00 — C0.100 — M — FH2.0 — KC90

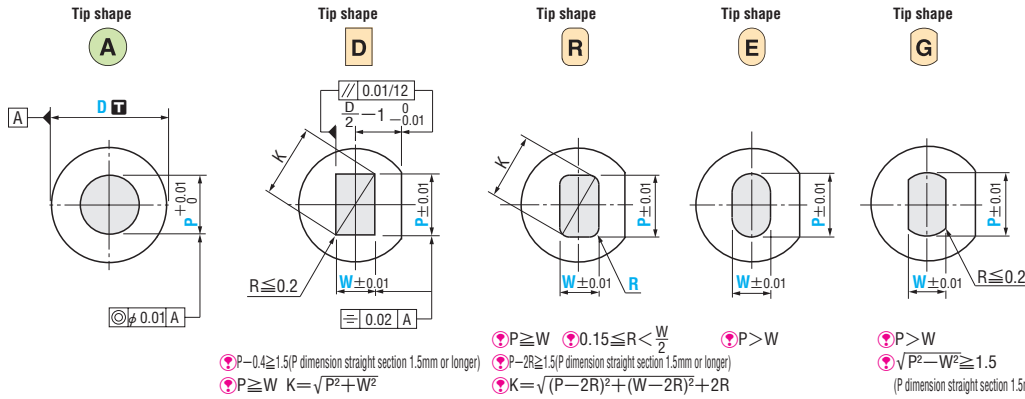
Alterations	Code	(A)	D R E G
Alterations to tip 	PC	Shaped hole diameter change min.: $\frac{P-PC}{W} \geq \frac{P-Wmin.}{2} \geq 2.00$ 0.01mm increments	
	WC	max.: $\frac{P}{W} < \frac{PC}{WC} \leq P \cdot Kmax. + 0.2$ 0.01mm increments	
Alterations to full length 	LC	Full length change $10 \leq LC < L$ 0.1mm increments (If combined with LKC-LKZ, 0.01 mm increments can be selected.) ⚠ Press-in lead is shortened by (L-LC).	
	LKC	Full length tolerance change $L \begin{matrix} +0.4 \\ +0.2 \end{matrix} \Rightarrow \begin{matrix} +0.05 \\ 0 \end{matrix}$	
	LKZ	Full length tolerance change $L \begin{matrix} +0.4 \\ +0.2 \end{matrix} \Rightarrow \begin{matrix} +0.01 \\ 0 \end{matrix} \otimes L < 16$	
Others	KC	—	Key flat position change 1° increments



SCRAP RETENTION BUTTON DIES

— STRAIGHT TYPE (REGULAR) —

Straight type	Shank diameter D tolerance	M H	D dimension	Catalog No.	The hole shape can be selected from A D R E G below.	
<p>For shank diameter tolerance D tolerance select either n5 or $\frac{+0.005}{0}$</p>	Dn5	Equivalent to SKH51 61~64HRC Equivalent to SKD11 60~63HRC Equivalent to SKD11 60~63HRC	D4~5	SR-MSD	Regular type 	
			D6~56			
			D8~56			SR-SD□
			D6~25			SR-PMSD
			D8~25			SR-PSD□
			D4~5			SRA-MSD
	D6~16					
	D8~16	SRA-SD□				
	D6~16	SRA-PMSD				
	D8~16	SRA-PSD□				
	D6~16	Powdered highspeed steel 64~67HRC				
	D8~16					
D6~16						
D8~16						
D6~16						
D8~16						



D tolerance	n5	+0.005/0	Catalog No.	D	L	0.01mm increments				0.005mm increments	b	d
						A	D R E G	R	MT			
4			(Equivalent to SKH51) (Dn5) (D $\frac{+0.005}{0}$)	(4)	16 20 22 25 28 30	1.00~2.00	—	—	MT ≥ 0.15 Select a workpiece material thickness of 0.15mm or more. C ≥ 0.010 Select a clearance of 0.010mm or more.	2	2.4	
5	+0.013/+0.008		A SR-MSD SRA-MSD	(5)	16 20 22 25 28 30	1.00~2.50	—	—		2.9		
6				(6)	16 20 22 25 28 30 32 35	1.00~3.00	—	—		3	3.4	
8		+0.005/0		8	16 20 22 25 28 30 32 35	1.00~4.00	4.00	1.00		4	4.4	
10	+0.016/+0.010		(Equivalent to SKD11) (Dn5) (D $\frac{+0.005}{0}$)	10	16 20 22 25 28 30 32 35 (40)	2.00~6.00	6.00	1.20		6	6.4	
13	+0.020/+0.012		A SR-MSD SRA-MSD	13	16 20 22 25 28 30 32 35 (40)	3.00~8.00	8.00	1.50		8.4		
16			D SR-SDD SRA-SDD	16	16 20 22 25 28 30 32 35 (40)	5.00~10.00	10.00	2.00		10.6		
20			R SR-SDR SRA-SDR	(20)	16 20 22 25 28 30 32 35 (40)	7.00~12.00	12.00	3.00		12.6		
22	+0.024/+0.015		E SR-SDE SRA-SDE	(22)	16 20 22 25 28 30 32 35 (40)	8.00~14.00	14.00	3.00		14.6		
25			G SR-SDG SRA-SDG	(25)	16 20 22 25 28 30 32 35 (40)	10.00~16.00	16.00	3.00		16.6		
32				(32)	16 20 22 25 28 30 32 35	15.00~20.00	20.00	4.00		20.6		
38	+0.028/+0.017			(38)	16 20 22 25 28 30 35	19.00~26.00	26.00	5.00		26.6		
45				(45)	20 22 25 30 35	25.00~35.00	35.00	6.00	36.0			
50				(50)	20 22 25 30 35	33.00~40.00	40.00	7.00	41.0			
56	+0.033/+0.020			(56)	20 22 25 30 35	38.00~45.00	45.00	8.00	46.0			
6	+0.013/+0.008		(Powdered highspeed steel) (Dn5) (D $\frac{+0.005}{0}$)	(6)	16 20 22 25 30 35	1.00~3.00	—	—	3	3.4		
8	+0.016/+0.010	+0.005/0	A SR-PMSD SRA-PMSD	8	16 20 22 25 30 35	1.00~4.00	4.00	1.00	4	4.4		
10			D SR-PSDD SRA-PSDD	10	16 20 22 25 30 35	2.00~6.00	6.00	1.20	6	6.4		
13	+0.020/+0.012		R SR-PSDR SRA-PSDR	13	16 20 22 25 30 35	3.00~8.00	8.00	1.50	8.4			
16			E SR-PSDE SRA-PSDE	16	16 20 22 25 30 35	5.00~10.00	10.00	2.00	10.6			
20	+0.024/+0.015		G SR-PSDG SRA-PSDG	(20)	16 20 22 25 30 35	7.00~12.00	12.00	3.00	12.6			
25				(25)	16 20 22 25 30 35	10.00~16.00	16.00	3.00	16.6			

(4)~(5) (6) are specifications available for shape A (round) only. It is not available for shapes D R E G. (A) Can be used only for workpiece materials with tensile strengths up to 1177N/mm² (120kgf/mm²).
 (20) (22) (25) (32) (38) (45) (50) (56) are specifications available for shank diameter tolerance of Dn5 only.
 L=(40) is a specification available for shank dia. tolerance of Dn5 only.
 MT (workpiece material thickness) and C (clearance) are used as data for machining the scrap retention grooves. Specify the shaped hole dimensions (P-W-R) when selecting the button die finishing dimensions.



Order

Catalog No. — L — P — W — R(R only) — MT — C
 SR—SDR 13 — 35 — P5.25 — W2.82 — R0.40 — MT1.50 — C0.105



Days to Ship

Quotation



Price

Quotation



Alterations

Catalog No. — L(LC·SLC) — P(PC) — W(WC) — R — MT — C — (BC·KC·LKC·...etc.)
 SR—SDD 13 — 35 — P5.58 — W2.25 — MT1.50 — C0.105 — LKC

Alterations	Code	A	D R E G								
Alterations to tip	PC WC	Shaped hole diameter change $\min.: \frac{P}{W} > \frac{PC}{WC} \Rightarrow \frac{P-W}{2} \min. \geq 1.00$ 0.01mm increments ⓐ only, if PC is 1.00~1.99, then b=4. $\max.: \frac{P}{W} < \frac{PC}{WC} \Rightarrow P \cdot K \max. + 0.2$ 0.01mm increments									
	BC	Tip length change <table border="1"> <tr> <td>P</td> <td>Bmax.</td> </tr> <tr> <td>1.00~1.99</td> <td>3</td> </tr> <tr> <td>2.00~3.99</td> <td>5</td> </tr> <tr> <td>4.00~</td> <td>6</td> </tr> </table> Tip length change $1 \leq BC < b$ 0.1 mm increments $1 \leq BC \leq B \max.$ $1 \leq BC \leq b$ 0.1mm increments	P	Bmax.	1.00~1.99	3	2.00~3.99	5	4.00~	6	
	P	Bmax.									
1.00~1.99	3										
2.00~3.99	5										
4.00~	6										
PKC	Shaped hole diameter tolerance change $P + 0.01 \begin{matrix} \uparrow \\ \downarrow \end{matrix} + 0.005 \begin{matrix} \uparrow \\ \downarrow \end{matrix} 0$ Shaped hole diameter tolerance change $P \cdot W \pm 0.01 \begin{matrix} \uparrow \\ \downarrow \end{matrix} + 0.01 \begin{matrix} \uparrow \\ \downarrow \end{matrix} 0$										

Alterations	Code	A	D R E G						
Alterations to full length	LC	Full length change $10 \leq LC < L$ 0.1mm increments (if combined with LKC-LKZ, 0.01 mm increments can be selected.) ⓐ Press-in lead is shortened by (L-LC).							
	SLC	Changes to full length and full length tolerance are processed using a single code. The allowable ranges of change, increment, ordering process, and notes (ⓐ) are the same as for LC. Full length change + Full length tolerance change $L + 0.4 \begin{matrix} \uparrow \\ \downarrow \end{matrix} + 0.05 \begin{matrix} \uparrow \\ \downarrow \end{matrix} 0$ $L + 0.2 \begin{matrix} \uparrow \\ \downarrow \end{matrix} 0$ ⓐ Can be selected in 0.01mm increments.							
	LKC	Full length tolerance change $L + 0.4 \begin{matrix} \uparrow \\ \downarrow \end{matrix} + 0.05 \begin{matrix} \uparrow \\ \downarrow \end{matrix} 0$							
	LKZ	Full length tolerance change $L + 0.4 \begin{matrix} \uparrow \\ \downarrow \end{matrix} + 0.01 \begin{matrix} \uparrow \\ \downarrow \end{matrix} 0$ ⓐ Cannot be used for L(LC) < 16. ⓐ Cannot be used for D > 25.							
Others	KC	Addition of single key flat ⓐ Cannot be used for D4~6.	<table border="1"> <tr> <td>270°</td> <td>Key flat</td> </tr> <tr> <td>180°</td> <td>position change</td> </tr> <tr> <td>90°</td> <td>1° increments</td> </tr> </table>	270°	Key flat	180°	position change	90°	1° increments
	270°	Key flat							
180°	position change								
90°	1° increments								
	WKC	Addition of double key flats in parallel ⓐ Cannot be used for D4~6. ⓐ Can be combined with KC for shapes D R E G							



SCRAP RETENTION BUTTON DIES

— STRAIGHT TYPE(ECONOMY) —

Straight type	Shank diameter D tolerance	M H	D dimension	Catalog No.	The hole shape can be selected from A D R E G below.	
	Dn5	Equivalent to SKD11 60~63HRC	D6~56	SR—EMSD	Economy type 	
			D8~56	SR—ESD □		
			D6~25	SR—EPMSD		
			D8~25	SR—EPSD □		
	D ^{+0.005} ₀	Equivalent to SKD11 60~63HRC	D6~16	SRA—EMSD		
			D8~16	SRA—ESD □		
			Powdered highspeed steel 64~67HRC	D6~16		SRA—EPMSD
				D8~16		SRA—EPSD □
				D6~16		SRA—EMSD
				D8~16		SRA—ESD □

For shank diameter tolerance D tolerance select either n5 or ^{+0.005}₀

Tip shape	Tip shape	Tip shape	Tip shape	Tip shape
A	D	R	E	G
$P \geq W$ $P - 0.4 \geq 1.5(P \text{ dimension straight section } 1.5\text{mm or longer})$ $P \geq W \quad K = \sqrt{P^2 + W^2}$	$P \geq W$ $P - 2R \geq 1.5(P \text{ dimension straight section } 1.5\text{mm or longer})$ $K = \sqrt{(P - 2R)^2 + (W - 2R)^2} + 2R$	$P \geq W$ $0.15 \leq R < \frac{W}{2}$ $P > W$	$P > W$ $\sqrt{P^2 - W^2} \geq 1.5$ (P dimension straight section 1.5mm or longer)	$P > W$ $\sqrt{P^2 - W^2} \geq 1.5$ (P dimension straight section 1.5mm or longer)

D tolerance	Catalog No.	L	0.01mm increments				0.005mm increments		b	d		
			A	D R E G	R	MT	C					
D n5 ^{+0.005} ₀	Type	D	min. P max.	P-Kmax.	P-Wmin.	R	(workpiece material thickness)	(clearance)				
6 ^{+0.013} _{+0.008} 8 ^{+0.016} _{+0.010} 10 ^{+0.020} _{+0.012} 13 ^{+0.020} _{+0.012} 16 ^{+0.024} _{+0.015} 20 ^{+0.024} _{+0.015} 22 ^{+0.024} _{+0.015} 25 32 38 ^{+0.028} _{+0.017} 45 50 56 ^{+0.033} _{+0.020}	(Equivalent to SKD11) (Dn5) (D ^{+0.005} ₀)	(6)	16 20 22 25 28 30 32 35	1.00~ 3.00	—	—	0.15 ≤ R < W/2 (R only)	MT ≥ 0.15 Select a workpiece material thickness of 0.15mm or more.	C ≥ 0.010 Select a clearance of 0.010mm or more.		3	3.4
		(8)	16 20 22 25 28 30 32 35	1.00~ 4.00	4.00	1.00					4	4.4
		(10)	16 20 22 25 28 30 32 35 (40)	2.00~ 6.00	6.00	1.20					6	6.4
		(13)	16 20 22 25 28 30 32 35 (40)	3.00~ 8.00	8.00	1.50					8	8.4
		(16)	16 20 22 25 28 30 32 35 (40)	5.00~10.00	10.00	2.00					10.6	10.6
		(20)	(20) 16 20 22 25 28 30 32 35 (40)	7.00~12.00	12.00	3.00					12.6	12.6
		(22)	(22) 16 20 22 25 28 30 32 35 (40)	8.00~14.00	14.00	3.00					14.6	14.6
		(25)	(25) 16 20 22 25 28 30 32 35 (40)	10.00~16.00	16.00	3.00					16.6	16.6
		(32)	(32) 16 20 22 25 28 30 32 35	15.00~20.00	20.00	4.00					20.6	20.6
		(38)	(38) 16 20 22 25 30 35	19.00~26.00	26.00	5.00					26.6	26.6
(45)	(45) 20 22 25 30 35	25.00~35.00	35.00	6.00	36.0	36.0						
(50)	(50) 20 22 25 30 35	33.00~40.00	40.00	7.00	41.0	41.0						
(56)	(56) 20 22 25 30 35	38.00~45.00	45.00	8.00	46.0	46.0						
6 ^{+0.013} _{+0.008} 8 ^{+0.016} _{+0.010} 10 ^{+0.020} _{+0.012} 13 ^{+0.020} _{+0.012} 16 ^{+0.024} _{+0.015} 20 ^{+0.024} _{+0.015} 25	(Powdered highspeed steel) (Dn5) (D ^{+0.005} ₀)	(6)	16 20 22 25 30 35	1.00~ 3.00	—	0.15 ≤ R < W/2 (R only)	MT ≥ 0.15 Select a workpiece material thickness of 0.15mm or more.	C ≥ 0.010 Select a clearance of 0.010mm or more.		3	3.4	
		(8)	16 20 22 25 30 35	1.00~ 4.00	4.00					1.00	4	4.4
		(10)	16 20 22 25 30 35	2.00~ 6.00	6.00					1.20	6	6.4
		(13)	16 20 22 25 30 35	3.00~ 8.00	8.00					1.50	8	8.4
		(16)	16 20 22 25 30 35	5.00~10.00	10.00					2.00	10.6	10.6
		(20)	(20) 16 20 22 25 30 35	7.00~12.00	12.00					3.00	12.6	12.6
		(25)	(25) 16 20 22 25 30 35	10.00~16.00	16.00					3.00	16.6	16.6

(6) is a specification available for shape (A) (round) only. It is not available for shapes (D) (R) (E) (G).
 () Can be used only for workpiece materials with tensile strengths up to 1177N/mm²(120kgf/mm²).
 D=(20) (22) (25) (32) (38) (45) (50) (56) are specifications available for shank diameter tolerance of Dn5 only.
 L=(40) is a specification available for shank dia. tolerance of Dn5 only.
 MT(workpiece material thickness) and C(clearance) are used as data for machining the scrap retention grooves. Specify the shaped hole dimensions (P·W·R) when selecting the button die finishing dimensions.

BUTTON DIES



Order

Catalog No. — **L** — **P** — **W** — **R(R only)** — **MT** — **C**
 SR—ESDR 13 — 35 — P5.25 — W2.82 — R0.40 — MT1.50 — C0.105



Days to Ship

Quotation



Price

Quotation



Alterations

Catalog No. — **L(LC-SLC)** — **P(PC)** — **W(WC)** — **R** — **MT** — **C** — (KC·LKC...etc.)
 SR—ESDD13 — 35 — P5.58 — W2.25 — MT1.50 — C0.105 — LKC

Alterations	Code	A	D R E G					
Alterations to tip 	PC WC	Shaped hole diameter change $\min: \frac{P}{W} > \frac{PC}{WC} \Rightarrow \frac{P-W\min}{2} \geq 1.00$ 0.01mm increments (A) only, if PC is 1.00~1.99, then b=4. <hr/> $\max: \frac{P}{W} < \frac{PC}{WC} \Rightarrow P \cdot K\max. + 0.2$ 0.01mm increments						
		Full length change $10 \leq LC < L$ 0.1mm increments (if combined with LKC-LKZ, 0.01mm increments can be selected.) (Press-in lead is shortened by $L-LC$.)						
Alterations to full length 	LC	Changes to full length and full length tolerance are processed using a single code. The allowable ranges of change, increment, ordering process, and notes (A) are the same as for LC.						
	SLC	<table border="0"> <tr> <td style="text-align: center;">LC</td> <td style="text-align: center;">LKC</td> </tr> <tr> <td>Full length change</td> <td>+ Full length tolerance change</td> </tr> <tr> <td></td> <td>$L \begin{matrix} +0.4 \\ +0.2 \end{matrix} \Rightarrow \begin{matrix} +0.05 \\ 0 \end{matrix}$</td> </tr> </table> (A) Can be selected in 0.01mm increments.	LC	LKC	Full length change	+ Full length tolerance change		$L \begin{matrix} +0.4 \\ +0.2 \end{matrix} \Rightarrow \begin{matrix} +0.05 \\ 0 \end{matrix}$
LC	LKC							
Full length change	+ Full length tolerance change							
	$L \begin{matrix} +0.4 \\ +0.2 \end{matrix} \Rightarrow \begin{matrix} +0.05 \\ 0 \end{matrix}$							

Alterations	Code	A	D R E G
Alterations to full length 	LKC	Full length tolerance change $L \begin{matrix} +0.4 \\ +0.2 \end{matrix} \Rightarrow \begin{matrix} +0.05 \\ 0 \end{matrix}$	
	LKZ	Full length tolerance change $L \begin{matrix} +0.4 \\ +0.2 \end{matrix} \Rightarrow \begin{matrix} +0.01 \\ 0 \end{matrix}$	(X) Cannot be used for $L(LC) < 16$. (X) Cannot be used for $D > 25$.
Others 	KC	Addition of single key flat (X) Cannot be used for D6.	 Key flat 180°/270°/90° position change 1° increments
	WKC	Addition of double key flats in parallel (X) Cannot be used for D6. (A) Can be combined with KC for shapes D R E G	

BUTTON DIES