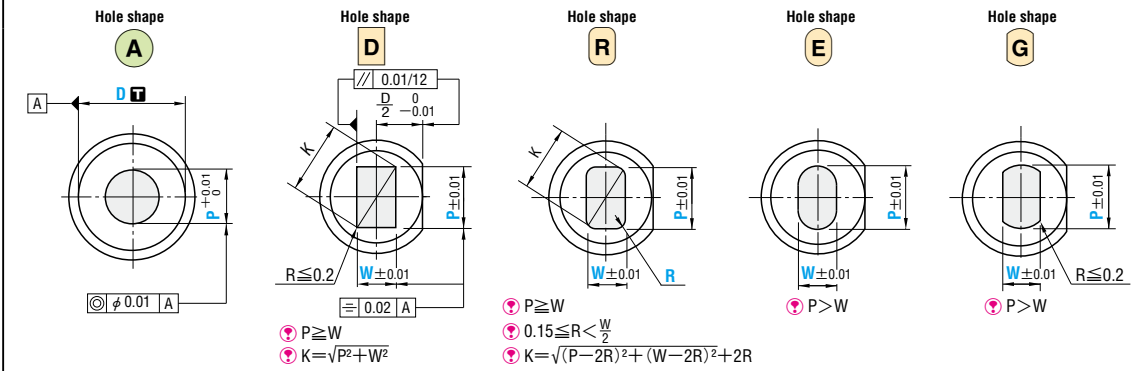


ANGULAR BUTTON DIES

—HEADED—

Headed type	Shank diameter D tolerance	Material H	D dimension	Catalog No.	The hole shape can be selected from A D R E G below.	
	D _{m5}	Equivalent to SKH51 61~64HRC Equivalent to SKD11 60~63HRC Equivalent to SKD11 60~63HRC	D3~5	AHD		
			D6~25	AHD		
			D6~25	PAHD		
			D6~25	PAHD		
			D _{+0.005/0}	D3~5		A-AHD
				D6~16		A-AHD
Powdered high-speed steel 64~67HRC	D _{+0.005/0}	Equivalent to SKH51 61~64HRC Equivalent to SKD11 60~63HRC Equivalent to SKD11 60~63HRC	D3~5	A-PAHD		
			D6~16	A-PAHD		
			D3~16	A-PAHD		
			D6~16	A-PAHD		

For shank diameter tolerance D tolerance, select either m5 or +0.005/0.



D tolerance	Catalog No.	Type	D	L	0.01mm increments				H	T
					A	D R E G	R	R		
D m5	(D _{m5})	(D _{+0.005/0})	(3)	8 13	0.30~0.70	—	—	—	4	—
+0.006/+0.002	(Equivalent to SKH51) (Powdered high-speed steel)	(Equivalent to SKH51) (Powdered high-speed steel)	(4)	8 13 16 20 22 25 30	0.50~1.50	—	—	—	5	3
+0.009/+0.004	A AHD PAHD A-AHD A-PAHD	(5)	16 20 22 25 30	0.50~2.50	—	—	—	6	—	—
+0.012/+0.006	(D _{m5})	(D _{+0.005/0})	6	16 20 22 25 30 35	1.00~3.00	3.00	1.00	—	9	—
+0.015/+0.007	(Equivalent to SKD11) (Powdered high-speed steel)	(Equivalent to SKD11) (Powdered high-speed steel)	8	16 20 22 25 30 35	1.00~4.00	4.00	1.00	—	11	—
+0.017/+0.008	A AHD PAHD A-AHD A-PAHD	10	16 20 22 25 30 35 (40)	2.00~6.00	6.00	1.20	—	13	—	—
—	D AHDD PAHDD A-AHDD A-PAHDD	13	16 20 22 25 30 35 (40)	3.00~8.00	8.00	1.50	—	16	5	—
—	R AHDR PAHDR A-AHDR A-PAHDR	16	16 20 22 25 30 35 (40)	5.00~10.00	10.00	2.00	—	19	—	—
—	E AHDE PAHDE A-AHDE A-PAHDE	(20)	16 20 22 25 30 35	7.00~12.00	12.00	3.00	—	23	—	—
—	G AHDG PAHDG A-AHDG A-PAHDG	(25)	16 20 22 25 30 35	10.00~16.00	16.00	3.00	—	28	—	—

* D = (3), (4), and (5) are specifications available for shape A (round) only. They are not available for shapes D R E G.
 * D = (20) and (25) are specifications available for shank diameter tolerance of D_{m5} only.
 * L = (40) is a specification available for AHD, AHDD, AHDR, AHDE, and AHDG only.

Order Catalog No. — L — P — W — R (R only)
 AHDR 13 — 25 — P6.20 — W2.00 — R0.50

Days to Ship **Quotation**

Alterations Catalog No. — L (LC·LCT·LMT) — P (PC) — W (WC) — R — (BC·HC·TC·CKC·MKC, etc.)
 AHD 6 — 16 — P2.47 — HC8.0—ANF1.2—KFC135

Alteration	Code	A	D R E G	1Code
Alterations to shaped hole	PC WC	Shaped hole diameter change min.: $P > PC \geq \frac{P_{min}}{2} \geq 0.50$ 0.01 mm increments max.: $\frac{P}{W} < \frac{PC}{WC} \leq P \cdot K_{max} + 0.2$ 0.01 mm increments	Shaped hole diameter change min.: $P < PC \geq \frac{P - W_{min}}{2} \geq 1.00$ 0.01 mm increments	
	BC	Shaped hole depth change $1 \leq BC \leq 4$ 0.1 mm increments * Cannot be used for P < 1.0.		
	PKC	Shaped hole diameter tolerance change $P \pm 0.01 \Rightarrow +0.005$ * Cannot be used for P < 1.00.	Shaped hole diameter tolerance change $P \cdot W \pm 0.01 \Rightarrow +0.01$	
	LC	Full length change $10 \leq LC < L$ 0.1 mm increments (If combined with LKC-LKZ-CKC-MKC, then 0.01 mm increments can be selected.) * Press-in lead is shortened by (L-LC).		
	LKC LKZ	Full length tolerance change $L \pm 0.4 \Rightarrow +0.05$ $L \pm 0.2 \Rightarrow 0$ * Cannot be used for L (LC) < 10. Full length tolerance change $L \pm 0.4 \Rightarrow +0.01$ $L \pm 0.2 \Rightarrow 0$ * Cannot be used for L (LC) < 16.		
Alterations to full length	CKC	Changes to head thickness tolerance and full length tolerance are processed using a single code. Machining limits are the same as for TKC and LKC. * Cannot be used for L (LC) < 16. TKC Head thickness tolerance change $T \pm 0.3 \Rightarrow +0.02$ $T \pm 0.2 \Rightarrow 0$ LKC Full length tolerance change $L \pm 0.4 \Rightarrow +0.05$ $L \pm 0.2 \Rightarrow 0$		Quotation
	MKC	Changes to head thickness tolerance and full length tolerance are processed using a single code. Machining limits are the same as for TKM and LKC. * Cannot be used for L (LC) < 16. TKM Head thickness tolerance change $T \pm 0.3 \Rightarrow 0$ $T \pm 0.2 \Rightarrow -0.02$ LKC Full length tolerance change $L \pm 0.4 \Rightarrow +0.05$ $L \pm 0.2 \Rightarrow 0$		Quotation
	LCT	Changes to head thickness tolerance, full length, and full length tolerance are processed using a single code. The ordering process is the same as for LC. The machining limits and notes (*) are the same as for each individual alteration. TKC Head thickness + Full length + Full length tolerance change ± 0.01 mm increments * Cannot be used for L < 16. LC change tolerance change LKC Full length tolerance change		
	LMT	Changes to head thickness tolerance, full length, and full length tolerance are processed using a single code. The ordering process is the same as for LC. The machining limits and notes (*) are the same as for each individual alteration. TKM Head thickness + Full length + Full length tolerance change ± 0.01 mm increments * Cannot be used for L < 16. LC change tolerance change LKC Full length tolerance change		

P Price **Quotation**

Alteration	Code	A	D R E G	1Code																			
Alterations to head	HC	Head diameter change $D \leq HC < H$ 0.1 mm increments																					
	TC	Head thickness change $2 \leq TC < T$ 0.1 mm increments (If combined with TKC-TKM-CKC-MKC-LCT-LMT, 0.01 mm increments can be selected.) * Full length L is shortened by (T-TC). If combined with LC-LCT-LMT, full length remains as specified.																					
	KC	Addition of single key flat to head * Cannot be used for L (LC) < 16.	Key flat position, change 1° increments																				
	WKC	Addition of double key flats in parallel * Can be combined with KC for shapes D R E G. * Cannot be used for L (LC) < 16.																					
	KFC	Double key flats at 0° and a selected angle 1° increments * Cannot be combined with KC-WKC. * Cannot be used for L (LC) < 16.	Double key flats at 0° and a selected angle 1° increments * Cannot be combined with KC-WKC. * Cannot be used for L (LC) < 16.																				
	TKC TKM	Head thickness tolerance change $T \pm 0.3 \Rightarrow +0.02$ $T \pm 0.2 \Rightarrow 0$ * Cannot be used for L (LC) < 16. Head thickness tolerance change $T \pm 0.3 \Rightarrow -0.02$ $T \pm 0.2 \Rightarrow 0$ * Cannot be used for L (LC) < 16.																					
Others	SKC	Single key flat on shank * Can be used with $D \geq 8$ and L (LC) ≥ 20 * Cannot be combined with KC-WKC-KFC-ANF.																					
	ANF	Angular angle change $0.6 \leq ANF \leq 1.2$ 0.2° increments * $d \leq d_{max}$ * $d = P + 2(L-B) \tan(ANF)$ * $P - B \tan(ANF) \geq 0.6$ * $W - B \tan(ANF) \geq 0.6$ * Cannot be used for P/W < 1.0. * Cannot be used for D=3. Taper 1/50 Angle (one side) 0.573°	<table border="1"> <thead> <tr> <th>D</th> <th>d max.</th> </tr> </thead> <tbody> <tr><td>4</td><td>2.4</td></tr> <tr><td>5</td><td>2.9</td></tr> <tr><td>6</td><td>3.4</td></tr> <tr><td>8</td><td>4.4</td></tr> <tr><td>10</td><td>6.4</td></tr> <tr><td>13</td><td>8.4</td></tr> <tr><td>16</td><td>10.6</td></tr> <tr><td>20</td><td>12.6</td></tr> <tr><td>25</td><td>16.6</td></tr> </tbody> </table>	D	d max.	4	2.4	5	2.9	6	3.4	8	4.4	10	6.4	13	8.4	16	10.6	20	12.6	25	16.6
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BUTTON DIES