



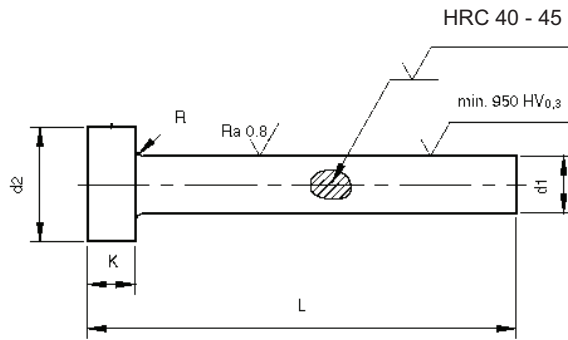
Straight Ejector Pins

MATERIAL: SKD 61 Hotwork Die Steel

STANDARD: JIS

HARDNESS: Surface: Nitrided to $\geq 950^\circ$ HV and Bright polished

Core: Hardened throughout to 40-45 HRC



d1 -0.01 -0.02	d2 0 -0.2	K 0 -0.05	L ⁺⁵ +0.1														
			100	150	200	250	300	350	400	500	600	700	800	1,000			
1.0	6	4															
1.5																	
2.0																	
2.5																	
3.0																	
3.5	7	6															
4.0	8																
4.5	9																
5.0																	
5.5																	
6.0	10	8															
6.5	11																
7.0																	
7.5			13														
8.0	14																
8.5																	
9.0																	
10		15															
12		17															
14	19																
16	21																
20	25																
25	30																

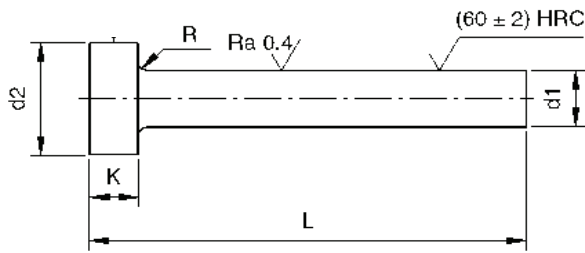


Straight Ejector Pins

MATERIAL: SUJ-2 Through Hardened Steel

STANDARD: JIS

HARDNESS: Throughout hardened to 60 ± 2 HRC



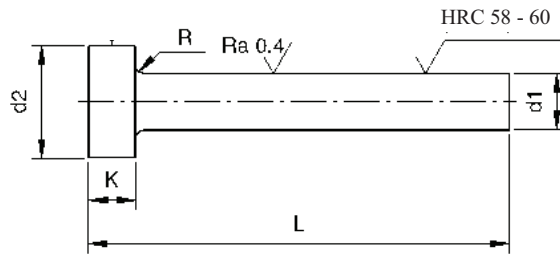
d1 -0.01 -0.02	d2 0 -0.2	K 0 -0.05	L ⁺⁵ _{+0.1}														
			100	150	200	250	300	350	400	500	600	700	800	1,000			
1.0	6	4															
1.5																	
2.0																	
2.5																	
3.0																	
3.5	7	6															
4.0	8																
4.5	9																
5.0																	
5.5																	
6.0	10																
6.5																	
7.0	11																
7.5	13		8														
8.0																	
8.5	14																
9.0																	
10																	
12	15																
14	17																
16	19																
20	21																
25	25																
25	30																



HSS Ejector Pins

MATERIAL: SKH 51 (M2) High Speed Steel

HARDNESS: Throughout hardened to 58 - 60 HRC



d1	d2 0 -0.2	K 0 -0.05	L ⁺⁵ +0.1				
			100	150	200	250	300
0.8	3	4					
0.9							
1.0 1.1							
1.2 1.3 1.4							
1.5							
1.6	4	4					
1.7 1.8 1.9							
2							
2.5			5				
3	6	6					
3.5	7						
4	8						
4.5	9						
5							
5.5	10						
6							
6.5	11						
7							
8	13	8					
10	15						
12	17						



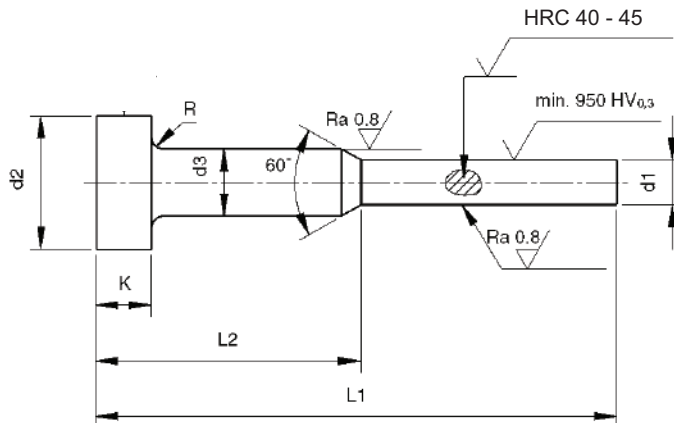
Stepped Ejector Pins

MATERIAL: SKD 61 Hotwork Die Steel

STANDARD: JIS

HARDNESS: Surface: Nitrided to $\geq 950^{\circ}$ HV

Core: Hardened throughout to 40-45 HRC



d1	d3	d2	K	L1 / L2				
				100 / 25,50	150 / 50,70	200 / 50,70	250 / 70,100	300 / 70,100
-0.01	0	0	0					
-0.02	-0.1	-0.2	-0.05					
0.8	3.0	6.0	4.0					
0.9								
1.0								
1.1								
1.2								
1.3								
1.4								
1.5								
1.6								
1.7								
1.8								
1.9								
2.0								
2.1								
2.2								
2.3								
2.4								
2.5								
3.0	4.0	8.0	6.0					
3.5								

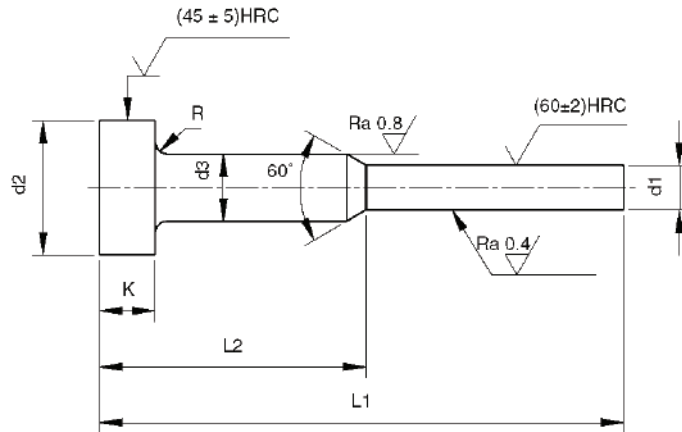


Stepped Ejector Pins

MATERIAL: SUJ-2 Through Hardened Steel

STANDARD: JIS

HARDNESS: Throughout hardened to 60 ± 2 HRC



d1 -0.01 -0.02	d3 0 -0.1	d2 0 -0.2	K 0 -0.05	L1 / L2				
				100 / 25,50	150 / 50,70	200 / 50,70	250 / 70,100	300 / 70,100
0.8	3.0	6.0	4.0					
0.9								
1.0								
1.1								
1.2								
1.3								
1.4								
1.5								
1.6								
1.7								
1.8								
1.9								
2.0								
2.1								
2.2								
2.3								
2.4								
2.5								
3.0	4.0	8.0	6.0					
3.5								

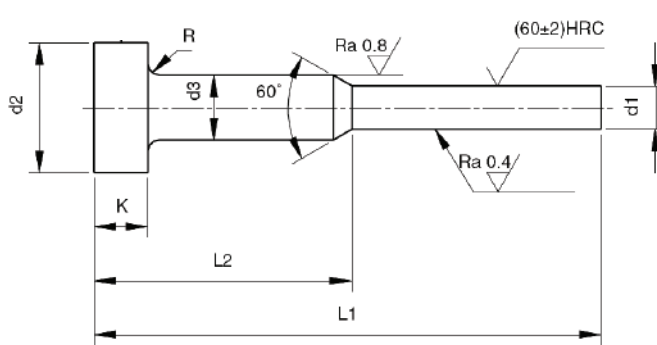


Stepped Ejector Pins

MATERIAL: SKH 51 (M2) High Speed Steel

STANDARD: JIS

HARDNESS: Throughout hardened to 58-60 HRC



d1 0 -0.005	d3 0 -0.1	d2 0 -0.2	K 0 -0.05	L1 / L2					
				50 / 15	100 / 25,50	150 / 50,70	200 / 70,100	250 / 70,100	300 / 70,100
0.5-0.6	1	3	4.0						
	1.5								
0.7	1.5								
	2	4							
0.8	1.5	3							
	2	4							
	2.5	5							
0.9	1.5	3							
	2	4							
	2.5	5							
1.0	1.5	3							
	2	4							
	2.5	5							
	3	6							
1.1-1.5	2	4							
	2.5	5							
	3	6							
1.6	2	4							
1.7-2.1	2.5	5							
	3	6							
2.2-2.3	3								
2.4-2.5	3								

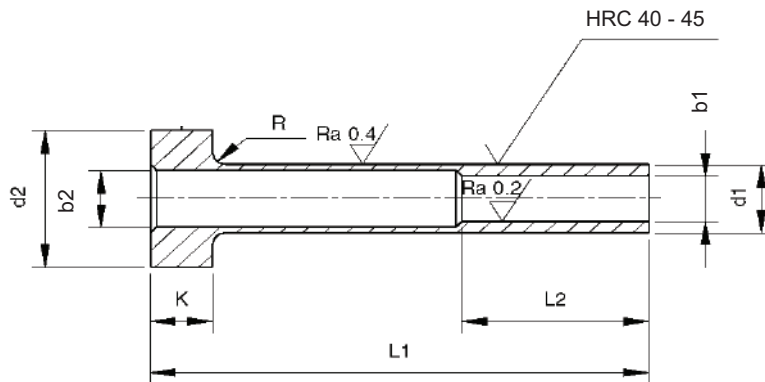


Ejector Sleeves

MATERIAL: SKD 61 Hotwork Die Steel

STANDARD: JIS

HARDNESS: I.D. & O.D. Nitrided to 950° HV



d1 -0.01 -0.02	b1 H7	d2 0 -0.2	K 0 -0.5	b2	R	L1 / L2													
						100/40	125/50	150/50	175/50	200/70	225/70	250/80	275/80	300/100					
4	2.0	8.0	6.0	b1+0.5	0.3														
4.5	2.5	9.0																	
5.0	2.0																		
	2.5																		
	3.0																		
5.5	2.5	10																	
6.0	2.0																		
	2.5																		
	3.0																		
	3.5																		
	4.0																		
7.0	3.0	11					0.5												
	3.5																		
	4.0																		
	5.0																		
8.0	4.0	13	8.0	b1+0.5	0.8														
	5.0																		
	6.0																		
10	6.0	15																	
	8.0																		
12	8.0	17																	



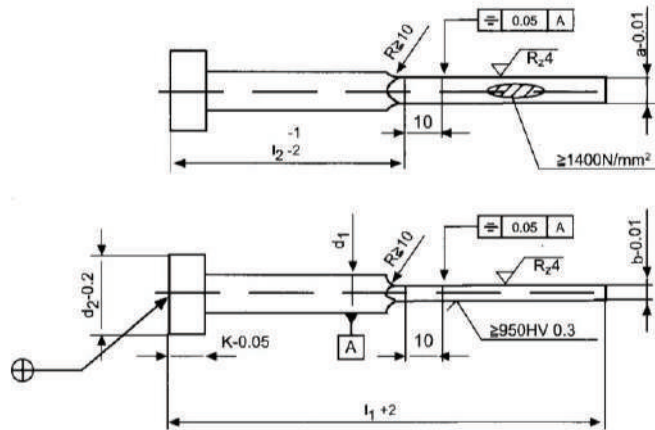
Flat Ejector Pins

MATERIAL: SKD 61 Hotwork Die Steel

STANDARD: JIS

HARDNESS: Surface: Nitrided to $\geq 950^\circ$ HV with Bright polished

Core: Hardened throughout to 40-45 HRC



a	b	d1	d2	K	L1/L2				
					100 / 40	150 / 50	200 / 75	250 / 100	300 / 125
-0.01	-0.01	-0.1	-0.2	-0.05					
3	0.8	3.5	7	4					
	1.0								
	1.2								
	1.5								
3	0.8	4	8	6					
	1.0								
	1.2								
	1.5								
4	0.8	5	9	6					
	1.0								
	1.2								
	1.5								
	1.8								
5	0.8	6	10	6					
	1.0								
	1.2								
	1.5								
	1.8								
	2								
6	0.8	7	11	6					
	1.0								
	1.2								
	1.5								
	1.8								
	2								
6	0.8	8	13	8					
	1.0								
	1.2								
	1.5								
	1.8								
	2								
8	1.0	10	15	8					
	1.2								
	1.5								
	1.8								
	2								
10	1.0	12	17	8					
	1.2								
	1.5								
	1.8								
	2								

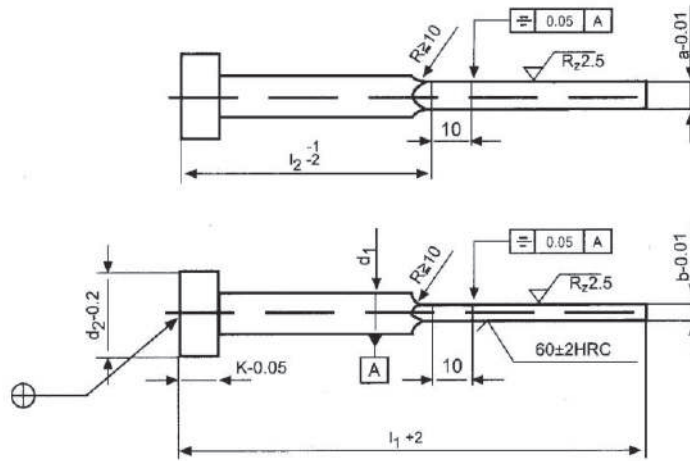


Flat Ejector Pins

MATERIAL: SUJ-2 Through Hardened Steel

STANDARD: JIS

HARDNESS: Throughout hardened to 60 ± 2 HRC



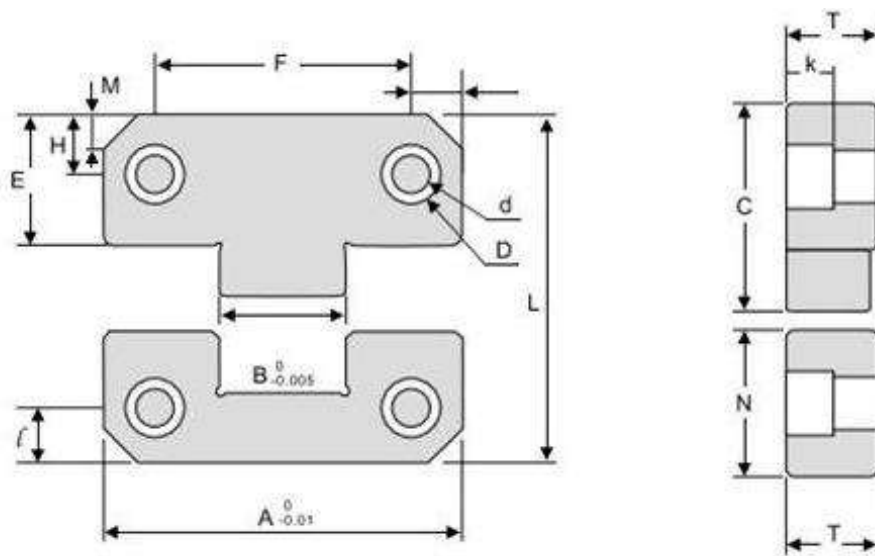
a -0.01	b -0.01	d1 -0.1	d2 -0.2	K -0.05	L1/L2				
					100 / 40	150 / 50	200 / 75	250 / 100	300 / 125
3	0.8	3.5	7	4					
	1.0								
	1.2								
	1.5								
3	0.8	4	8	6					
	1.0								
	1.2								
	1.5								
4	0.8	5	9	6					
	1.0								
	1.2								
	1.5								
5	0.8	6	10	6					
	1.0								
	1.2								
	1.5								
6	0.8	7	11	6					
	1.0								
	1.2								
	1.5								
6	0.8	8	13	8					
	1.0								
	1.2								
	1.5								
8	1.0	10	15	8					
	1.2								
	1.5								
	1.8								
10	1.0	12	17	8					
	1.2								
	1.5								
	1.8								
	2								



Straight Side Locks

MATERIAL: YK 30

HARDNESS: 53+/-2 HRC

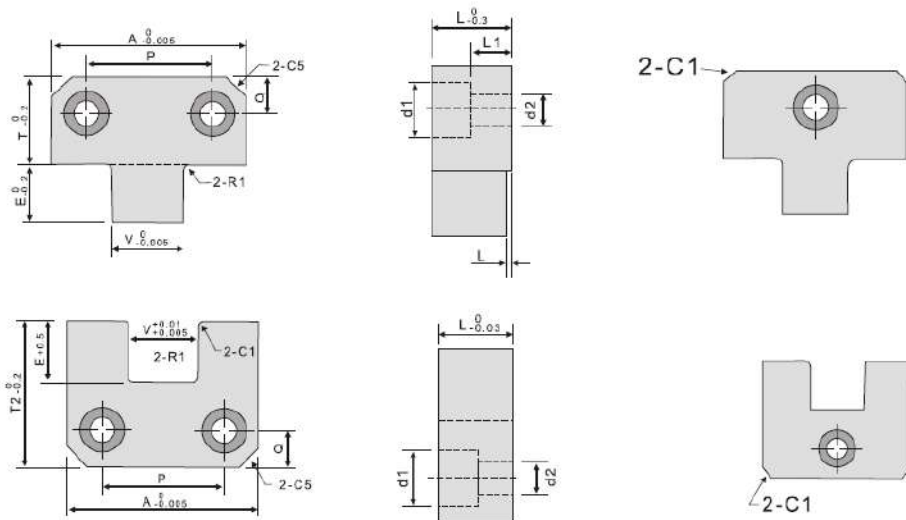


A	B	C	D	d	E	F	H	l	N	K	T	M
1.500	.500	1.180	.406	.281	.870	.938	.437	.281	.870	.312	.620	.19
2.000	.680	1.180	.406	.281	.870	1.250	.437	.375	.870	.312	.620	.19
3.000	1.000	1.910	.593	.406	1.370	2.250	3688	.688	1.370	.438	.745	.38
4.000	1.375	2.640	.593	.406	1.870	2.750	.875	.875	1.870	.438	.745	.50
5.000	1.750	2.640	.781	.531	1.870	3.500	.875	.875	1.870	.563	1.120	.50



Straight Side Locks

MATERIAL: Tool Steel
HARDNESS: 58-62 HRC

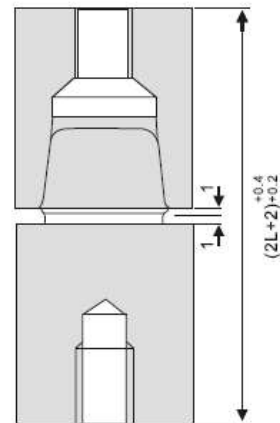
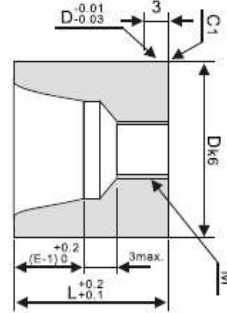
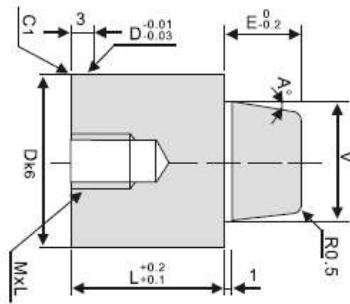


A	E	V	T1	T2	I	R1	C1	P	Q	d1	d2	L	L1
16	6	7	11	17	1	1	0.5	-	5	8	4.5	8	3
20	6	8	11	17	1	1	0.5	-	5	8	4.5	8	3
25	8	10	11	19	1	1	0.5	-	5	8	4.5	8	3
30	8	12	14	22	1	1	0.5	16	6	9.5	5.5	10	4
30	20	12	14	34	2	2	1	16	6	9.5	5.5	10	4
40	10	15	18	28	1	1	0.5	22	7	11	6.6	13	6
40	25	15	18	43	2	2	1	22	7	11	6.6	13	6
60	20	25	30	50	2	2	1	36	12	14	8.6	20	11
60	35	25	30	65	2	2	1	36	12	14	8.6	20	11
80	30	30	40	70	2	2	1	52	14	18	11	25	14
80	45	30	40	85	2	2	1	52	14	18	11	25	14



Round Corner Locks

MATERIAL: SKD 11
HARDNESS: 58 – 62 HRC



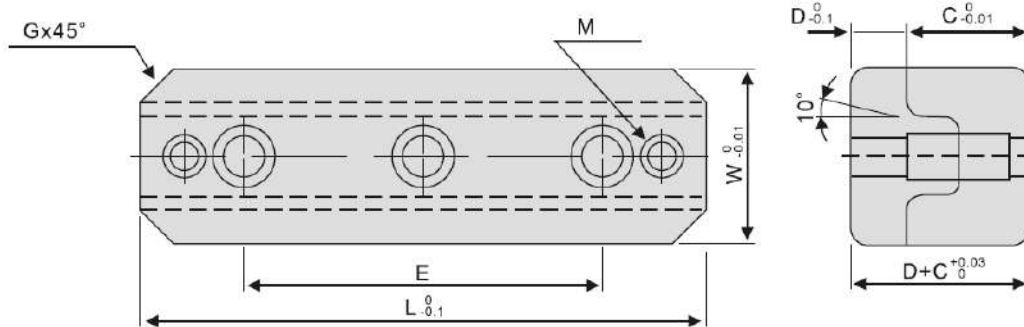
D	L	V	E	A	M x L
13	14	7	6	3°	M4 x 10
16	14	10	6		M5 x 10
20	19	13	9		M6 x 12
25	24	16	12		M8 x 16
30	29	20	15		M10 x 20
32	29	20	15		M10 x 20
35	34	24	18		M12 x 24



Inside Tapper Locks

MATERIAL: SUJ2

HARDNESS: 58 – 62 HRC



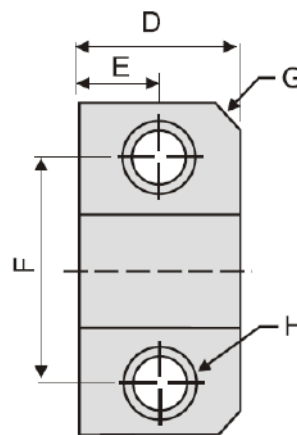
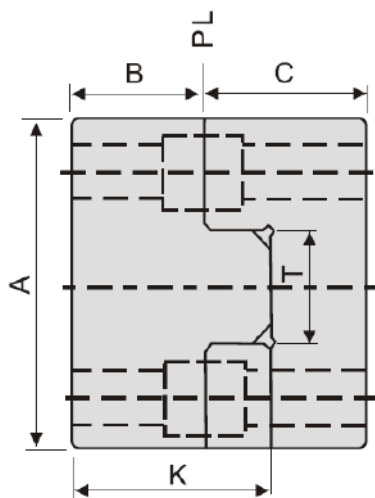
W	L	E	D	C	G	M
25	50	-	8	17.5	5	M5
30	100	60	10	22	4	M6
40	150	100	13	25	5	M8



Square interlocks

MATERIAL: YK 30

HARDNESS: 53 +/- 2 HRC

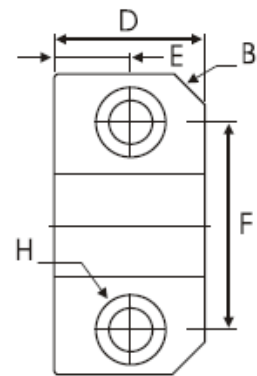
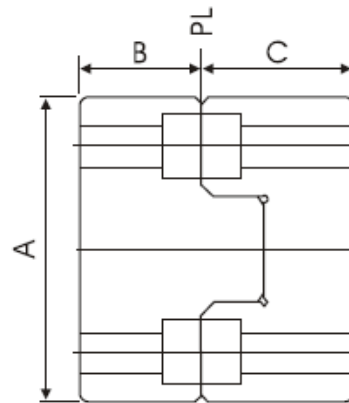
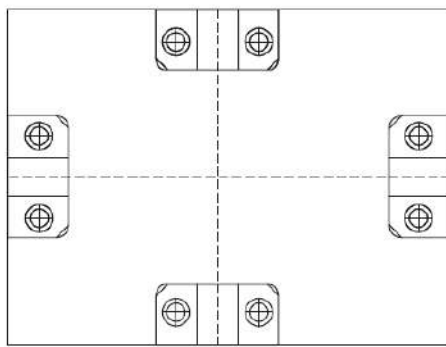


A	B	C	D	E	F	G	H	K	T
50	20	25	25	12.5	34	C5	M6	30	17
70	25	30	50	25	52	C8	M8	40	30



0° Side Locks

MATERIAL: YK 30
HARDNESS: 53 +/- 2 HRC

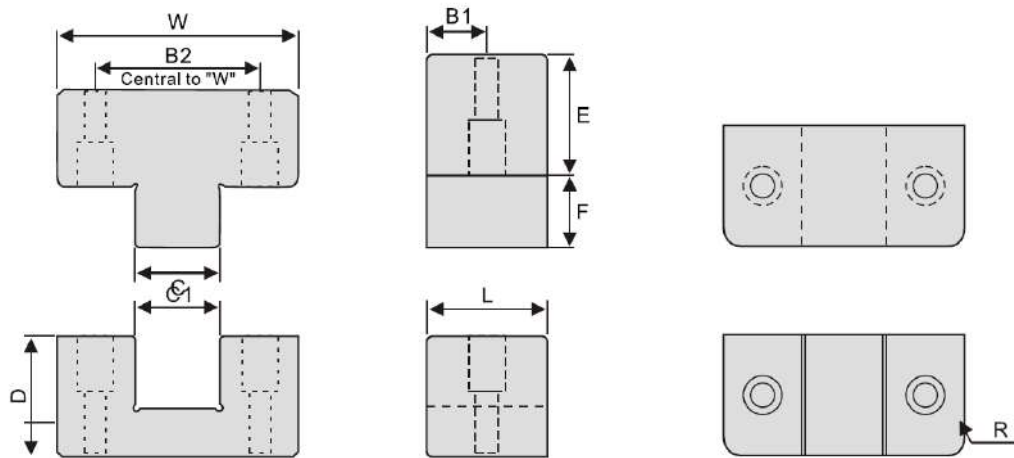


A	B	C	D	E	F	G	H
50	20	25	25	12.5	34	C5	M6
75	25	30	30	25	52	C8	M8



Top Locks

MATERIAL: SKD 11
HARDNESS: 58-62 HRC



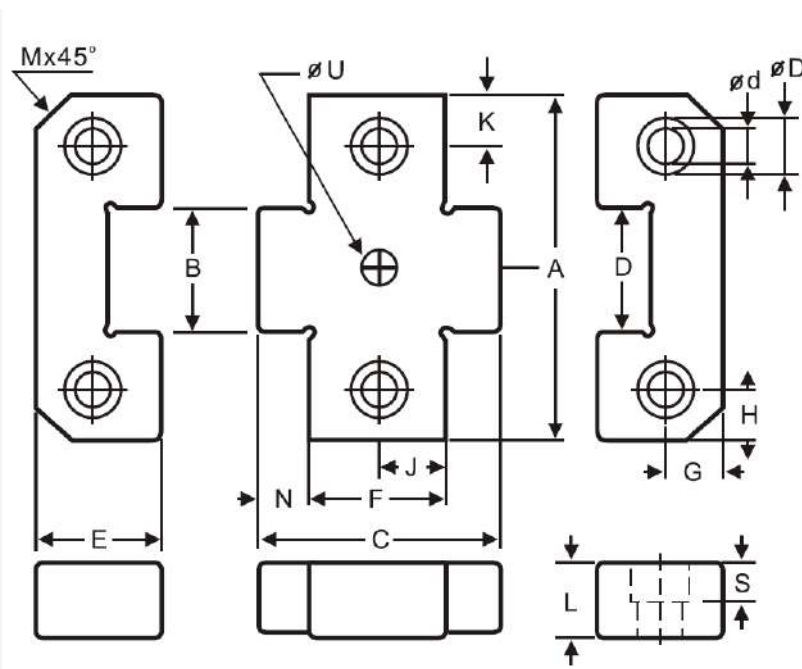
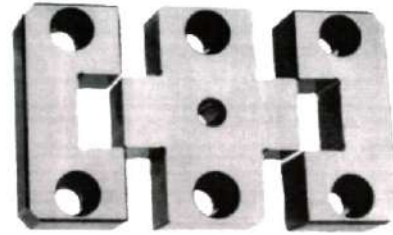
W 0 -0.005	L 0 -0.002	F 0 -0.002	C 0.002 TOTAL	B1 +0.1 -0.1	B2 +0.1 -0.1	D 0 -0.002	R Radius	E 0 -0.002	SHCS (Male)	SHCS (Female)
35	20	10	13	10	24	20	6	15	M4 x 16	M4 x 20
50	25	15	18	12.5	34	30	8	20	M5 x 20	M5 x 30
75	30	20	28	15	52	40	10	20	M6 x 20	M6 x 40



X-Style Interlock

MATERIAL: SUJ2

HARDNESS: 58-62 HRC



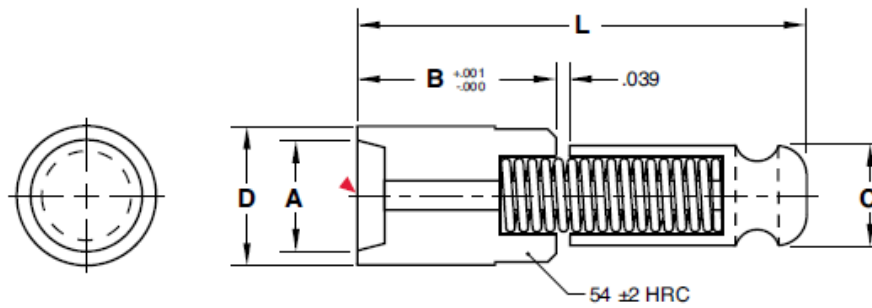
A	B	C	D	d	E	F	G	H	J	K	L	M	N	S	U
40	12	43	10.5	6.5	21.5	26	11	8	13	8	16	5	8.5	8	6
40	12	53	10.5	6.5	21.5	36	11	8	18	8	16	5	8.5	8	6
50	17	43	10.5	6.5	21.5	26	11	8	13	8	16	5	8.5	8	6
50	17	53	10.5	10.5	21.5	36	11	8	18	8	16	5	8.5	8	6
75	25	51	16.5	10.5	36	26	18	12.5	13	12.5	19	5	14	12	10
75	25	61	16.5	10.5	36	36	18	12.5	18	12.5	19	5	14	12	10
100	35	71	16.5	10.5	45	36	22	15	18	15	19	5	20	12	10
100	35	81	16.5	10.5	45	46	22	15	23	15	19	5	20	12	10
125	45	71	16.5	10.5	45	36	22	20.5	18	20.5	25	5	20	12	12
125	45	81	16.5	10.5	45	46	22	20.5	23	20.5	25	5	20	12	12



Air Valve

MATERIAL: 420 Stainless steel

HARDNESS: 52-56 HRC



	D			A		B		C		L	
	mm	Inch		mm	Inch	mm	Inch	mm	Inch	mm	Inch
AV-08	8	.3149	+0.0006 +0.0002	6.6	.260	11	.433	6	.236	23.5	.925
AV-12	12	.4727	+0.0007 +0.0003	9.7	.382	18	.708	8	.315	34.0	1.339
AV-18	18	.7086	+0.0007 +0.0003	14.8	.583	22	.866	12	.472	45.5	1.791