MAK-A-KEY
CUT, FILE, & FIT KEY STOCK
BOX 232 • MINNEAPOLIS, KS • 67467
SALES@HUYETT.COM • FAX 785-392-2845

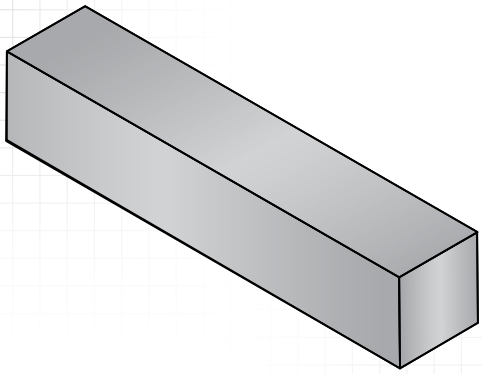
METRIC

DESCRIPTION

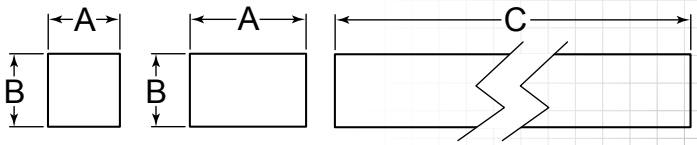
A stock of material that is 305 mm or greater in length from which machine keys are made. It is available in stocked standard sizes or can be custom made to your specifications.

HOW TO IDENTIFY

1. Measure width (A).
2. Measure height (B).
3. Measure length (C).
4. Build the part number from the chart on the next page.



SQUARE RECTANGLE



PREFIX MATERIAL/FINISH

UNDERSIZE

30	=	Cold Finished Steel, Plain*
31	=	Cold FInished Steel, Zinc Yellow Trivalent
70	=	300 Series (A1-A5) Stainless Steel, Plain
80	=	316 (A4) Stainless Steel, Plain

OVERSIZE

35	=	Cold Finished Steel, Plain*
36	=	Cold FInished Steel, Zinc Clear Trivalent
75	=	300 Series (A1-A5) Stainless Steel, Plain

Material/finish combinations may not be available in all sizes. Unless specifically stated, our standard cold finished steel key stock (30 series) is any one of the following grades, subject to market availability: 1018, 1035, 1045, 1095, 1215, or 8630. Our standard stainless steel key stock (70 series) is any 300 series (A1-A5) stainless steel subject to market availability. Call for precise grade.

305 MM AND 1,000 MM STAINLESS STEEL AND PLATED KEY STOCK ARE MARKED FOR EASY IDENTIFICATION

WIDTH (A) AND HEIGHT (B) TOLERANCES

MATERIAL		SQUARE		RECTANGLE	
(Prefix)	*(Material/Finish)*	*(Size Range)*	*(Tolerance)*	*(Size Range)*	*(Tolerance)*
Undersize					
30	Cold Finished Steel, Plain*	0 – 3 mm >3 – 6 mm >6 – 10 mm >10 – 19 mm >19 – 30 mm >30 – 50 mm	+0/-0.025 mm +0/-0.030 mm +0/-0.036 mm +0/-0.043 mm +0/-0.052 mm +0/-0.062 mm	*See "DIN 6880 Standard Tolerancing for Flat Metric Steels," on page 32.*	
31	Cold Finished Steel, Zinc Yellow Trivalent				
70	300 Series Stainless Steel, Plain				
80	316 Stainless Steel, Plain				
Oversize					
35	Cold Finished Steel, Plain*	All Sizes	+0.076/-0 mm	All Sizes	+0.076/-0 mm
36	Cold Finished Steel, Zinc Clear Trivalent				
75	300 Series Stainless Steel, Plain				

LENGTH (C) TOLERANCES

LENGTH	TOLERANCE
305 – 1,000 mm	+0/-3.175 mm
>1,000 – 3,000 mm	+0/-6.35 mm
>3,000 – 4,000 mm	+0/-152.4 mm

Nonstandard lengths up to 4,000 mm are available. Lengths over 1 m may be subject to a packaging charge.

TOLERANCE NOTES

DIN 6880 is the most common European specification for key stock. Grade 30 is undersized and meets this tolerance specification. Grade 35 is oversized and drawn to bar stock tolerances similar to Mak-A-Key™ designs.

FOR DETAILED SPECIFICATIONS AND TOLERANCES, VISIT HUYETT.COM.

METRIC

ZINC PLATING AND OTHER FINISHES AVAILABLE FOR ALL PARTS

SEE PAGE 16

HOW TO BUILD A PART NUMBER

350807-1000

LIST THE LARGER DIMENSION OF (A) OR (B) FIRST

ITEM PREFIX	(A) WIDTH	(B) HEIGHT	(C) LENGTH
	1 mm to 50 mm	1 mm to 50 mm	305 mm to 4,000 mm
35	08	07	-1000
TO ORDER CHOOSE YOUR MATERIAL,	CHOOSE YOUR WIDTH,	CHOOSE YOUR HEIGHT,	CHOOSE YOUR LENGTH.

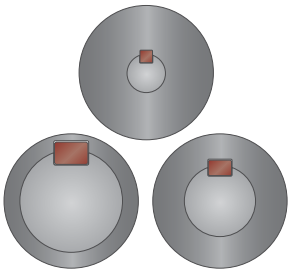
CODE	MATERIAL
30	Cold Finished Steel, Plain*, Undersize
31	Cold Finished Steel, Zinc Yellow Trivalent, Undersize
35	Cold Finished Steel, Plain*, Oversize
36	Cold Finished Steel, Zinc Clear Trivalent, Oversize
70	300 Series Stainless Steel, Plain, Undersize
75	300 Series Stainless Steel, Plain, Oversize
80	316 Stainless Steel, Plain, Undersize

CODE	WIDTH
01	1.00 mm
02	2.00 mm
025	2.50 mm
03	3.00 mm
04	4.00 mm
05	5.00 mm
06	6.00 mm
07	7.00 mm
08	8.00 mm
09	9.00 mm
10	10.00 mm
11	11.00 mm
12	12.00 mm
13	13.00 mm
14	14.00 mm
15	15.00 mm
16	16.00 mm
17	17.00 mm
18	18.00 mm
19	19.00 mm
20	20.00 mm
21	21.00 mm
22	22.00 mm
23	23.00 mm
24	24.00 mm
25	25.00 mm
28	28.00 mm
30	30.00 mm
32	32.00 mm
35	35.00 mm
36	36.00 mm
38	38.00 mm
40	40.00 mm
45	45.00 mm
50	50.00 mm

CODE	HEIGHT
01	1.00 mm
02	2.00 mm
025	2.50 mm
03	3.00 mm
04	4.00 mm
05	5.00 mm
06	6.00 mm
07	7.00 mm
08	8.00 mm
09	9.00 mm
10	10.00 mm
11	11.00 mm
12	12.00 mm
13	13.00 mm
14	14.00 mm
15	15.00 mm
16	16.00 mm
17	17.00 mm
18	18.00 mm
19	19.00 mm
20	20.00 mm
21	21.00 mm
22	22.00 mm
23	23.00 mm
24	24.00 mm
25	25.00 mm
28	28.00 mm
30	30.00 mm
32	32.00 mm
35	35.00 mm
36	36.00 mm
38	38.00 mm
40	40.00 mm
45	45.00 mm
50	50.00 mm

CODE	LENGTH
-305	305 mm (1')
-1000	1,000 mm (1 m)
-3000	3,000 mm (3 m)
-4000	4,000 mm (4 m)

Nonstandard lengths up to 4,000 mm are available. Lengths over 1 m may be subject to a packaging charge.

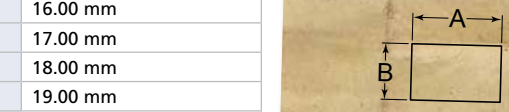


SIZING KEYS TO SHAFTS

Unless the mating hub lacks clearance, small shafts generally use square keys. Larger shaft diameters (over 170 mm or 6.5") use rectangular keys.

MEASURING METRIC KEY STOCK

Metric key stock is available in square or rectangle profiles.



METRIC

Metric key stock calls out width (A) first, then height (B).

FOR DETAILED SPECIFICATIONS AND TOLERANCES, VISIT HUYETT.COM.

**Limited warranty for surface finish: 30 days from date of shipment. See page 12 for details.*

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DIN TOLERANCES

DIN 6880 key stock is the standard for metric key stock worldwide. DIN 6880 is drawn to close undersize tolerance to yield a tight fit in the mating key way. As the material is drawn, the steel may be bead blasted to remove surface imperfections and increase brightness.

DIN 6880 is made to a C45 designation (AISI 1045) for carbon steel and A4 (AISI 316) for stainless steel. In some instances, we may substitute DIN 174 or DIN 178 for stainless steel only.

DIN 6880 IS THE MOST COMMON EUROPEAN KEY STOCK STANDARD

DIN 6880 STANDARD TOLERANCING FOR RECTANGLE (FLAT) METRIC STEELS

(Width × Height)	(Width Tolerance)	(Height Tolerance)
5 x 3	+0/-0.030 mm	+0/-0.060 mm
6 x 4	+0/-0.030 mm	-0.075
7 x 4	+0/-0.036 mm	+0/-0.030 mm
8 x 5		
8 x 7		
10 x 6		
10 x 8	+0/-0.036 mm	+0/-0.036 mm
12 x 6	+0/-0.043 mm	+0/-0.075 mm
12 x 8	+0/-0.043 mm	+0/-0.036 mm
12 x 10		
14 x 6	+0/-0.043 mm	+0/-0.075 mm
14 x 9	+0/-0.043 mm	+0/-0.090 mm
16 x 7		
16 x 10		
18 x 7		
18 x 11		
20 x 8	+0/-0.052 mm	+0/-0.090 mm
20 x 12		+0/-0.110 mm
22 x 9		+0/-0.090 mm
22 x 14		+0/-0.110 mm
25 x 9		+0/-0.090 mm
25 x 14		+0/-0.110 mm
25 x 22		+0/-0.130 mm
28 x 10		+0/-0.090 mm
28 x 16		+0/-0.110 mm
28 x 25		+0/-0.130 mm
32 x 18	+0/-0.062 mm	+0/-0.110 mm
32 x 11		
32 x 30		+0/-0.130 mm
36 x 20		
36 x 12		+0/-0.110 mm
36 x 34		+0/-0.160 mm
40 x 22		+0/-0.130 mm
40 x 38		+0/-0.160 mm
45 x 25		+0/-0.130 mm
45 x 43		+0/-0.160 mm
50 x 28		+0/-0.130 mm

DIN 174 RECTANGLE (FLAT) MATERIAL
(ISO TOLERANCE H11)

(Width)	(Tolerance)	(Height)	(Tolerance)
5 – 6 mm	+0/-0.075 mm	1.5 – 3 mm	+0/-0.060 mm
8 – 10 mm	+0/-0.090 mm	4 – 6 mm	+0/-0.075 mm
12 – 18 mm	+0/-0.110 mm	8 – 10 mm	+0/-0.090 mm
20 – 30 mm	+0/-0.130 mm	12 – 16 mm	+0/-0.110 mm
32 – 50 mm	+0/-0.160 mm	20 – 30 mm	+0/-0.130 mm

DIN 178 SQUARE MATERIAL
(ISO TOLERANCE H11)

(Height & Width)	(Tolerance)	(Height & Width)	(Tolerance)
0 – 3 mm	+0/-0.060 mm	10 –18 mm	+0/-0.110 mm
3 – 6 mm	+0/-0.075 mm	18 – 30 mm	+0/-0.130 mm
6 – 10 mm	+0/-0.090 mm	30 – 50 mm	+0/-0.160 mm

DECARBURIZATION

Decarburization, also known as decarbonization or decarb, is the reduction of carbon content in steel. This can be an intentional process or a side effect of a process. It can happen in three distinct events: a reaction at the surface, diffusion of carbon atoms, or as a result of carbides dissolving in the steel.

CAUSE AND EFFECT

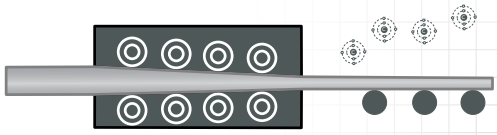
The amount of carbon within a metal determines its hardness. Decarburization occurs when the steel is heated above 700°C (1,292°F) or as a side effect from cold rolling. Reducing carbon in the surface of the steel can result in softer readings when measuring hardness.

Decarburization is a serious problem because surface properties can be significantly degraded compared to interior properties. It can bring down the strength of steel and increase shear strain below the surface. Fatigue resistance can be decreased and crack growth and wear rate increased.

Decarburization can be remedied on through hardened parts by grinding the surface, while case hardened parts can be carburized in furnaces with inert gas atmospheres.

ASTM A108 Level 1 allows a .010" deep decarburization layer on cold finished steel bar sides up to 5/8". Sides over 5/8" are allowed a maximum of 1.6%. Decarburization will be more likely to occur in medium and high carbon grades. The decarb must be removed prior to testing to accurately measure hardness.

RESULT OF HEATING



RESULT OF ROLLING

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