

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 773

RECTANGULAR OR SQUARE PARALLEL KEYS

AND THEIR CORRESPONDING KEYWAYS

(Dimensions in millimetres)

[ISO/R 773:1969](#)

<https://standards.iteh.ai/catalog/standards/sist/cc31e401-c4a9-4d4c-8a69-de990ebcb8ff/iso-r-773-1969>

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BRIEF HISTORY

The ISO Recommendation R 773, *Rectangular or square parallel keys and their corresponding keyways (Dimensions in millimetres)*, was drawn up by Technical Committee ISO/TC 16, *Keys and keyways*, the Secretariat of which is held by the Institut Belge de Normalisation (IBN).

Work on this question by the Technical Committee led in 1965 to the adoption of a Draft ISO Recommendation.

In November 1966, this Draft ISO Recommendation (No. 1084) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Argentina	Greece	Spain
Austria	Hungary	Sweden
Belgium	India	Switzerland
Brazil	Italy	Turkey
Chile	Japan	U.A.R.
Denmark	Korea, Rep. of	United Kingdom
France	Netherlands	U.S.S.R.
Germany	South Africa, Rep. of	Yugoslavia

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in January 1969, to accept it as an ISO RECOMMENDATION.

**RECTANGULAR OR SQUARE PARALLEL KEYS
AND THEIR CORRESPONDING KEYWAYS**
(Dimensions in millimetres)

1. SCOPE

This ISO Recommendation specifies the dimensional characteristics of rectangular or square parallel keys and of their corresponding keyways in shaft and hub. It also gives the relations which should be observed between the diameter of shaft and section of key.

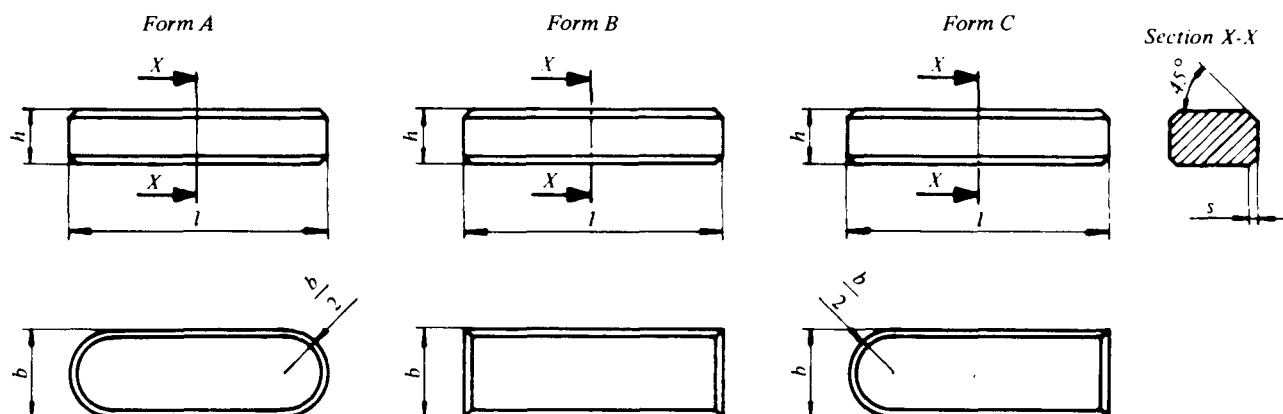
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2. FIELD OF APPLICATION

This ISO Recommendation is for general purposes, for cylindrical shaft ends*, but it is recommended that the values given be adhered to even for special applications.

Attention is drawn to the fact that some ISO Recommendations, published previously, give dimensions and tolerances other than those appearing in the present ISO Recommendation.

3. DIMENSIONS AND TOLERANCES OF KEYS



* The relation between the diameter of conical shaft end and key section is given in ISO Recommendation R 775, *Cylindrical and 1/10 conical shaft ends*.

Dimensions in millimetres

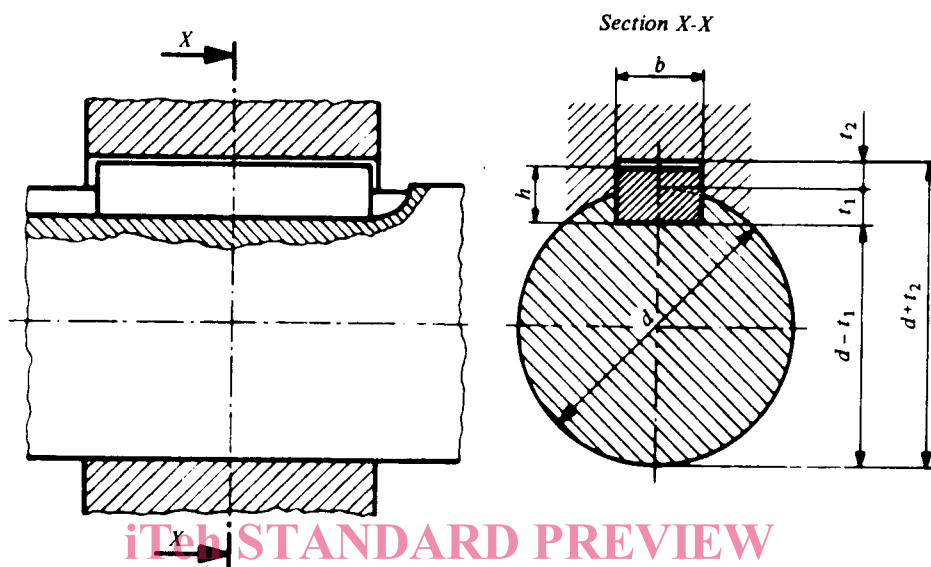
Width <i>b</i>		Thickness <i>h</i>		Chamfer <i>s</i>		Range of lengths <i>l</i> **	
nominal	Tolerance h9	nominal	Tolerance*	min.	max.	from	to
2	0	2	0	0.16	0.25	6	20
3	-0.025	3	-0.025	0.16	0.25	6	36
4		4		0.16	0.25	8	45
5	0	5	0	0.25	0.40	10	56
6	-0.030	6	-0.030	0.25	0.40	14	70
8	0	7		0.25	0.40	18	90
10	-0.036	8		0.40	0.60	22	110
12		8	0	0.40	0.60	28	140
14	0	9	-0.090	0.40	0.60	36	160
16	-0.043	10		0.40	0.60	45	180
18		11		0.40	0.60	50	200
20		12		0.60	0.80	56	220
22	0	14	0	0.60	0.80	63	250
25	-0.052	14	-0.110	0.60	0.80	70	280
28		16		0.60	0.80	80	320
32		18		0.60	0.80	90	360
36		20		1.00	1.20	100	400
40	0	22	0	1.00	1.20	—	—
45	-0.062	25	-0.130	1.00	1.20	—	—
50		28		1.00	1.20	—	—
56		32		1.60	2.00	—	—
63	0	32		1.60	2.00	—	—
70	-0.074	36	0	1.60	2.00	—	—
80		40	-0.160	2.50	3.00	—	—
90	0	45		2.50	3.00	—	—
100	-0.087	50		2.50	3.00	—	—

* Tolerance on thickness *h* of the key : square section : h9; rectangular section : h11.

** Preferred lengths of keys : 6 - 8 - 10 - 12 - 14 - 16 - 18 - 20 - 22 - 25 - 28 - 32 - 36 - 40 - 45 - 50 - 56 - 63 - 70 - 80 - 90 - 100 - 110 - 125 - 140 - 160 - 180 - 200 - 220 - 250 - 280 - 320 - 360 - 400.

NOTE. - Material : Steel having a tensile strength not less than 58.8 daN/mm² (60 kgf/mm²) in the finished condition, unless another specification is agreed between manufacturer and customer. (The mechanical properties of the steel will be specified later.)

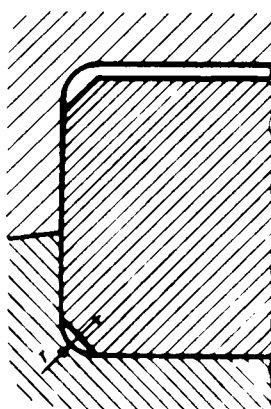
4. DIMENSIONS AND TOLERANCES OF KEYWAYS



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Detail of keyway and key

Dimensions in millimetres

Shaft		Key*	Keyway												
Diameter d			Section $b \times h$	Width b					Depth**				Radius r		
over	to			nomi- nal	Tolerance					Shaft t_1		Hub t_2		max.	min.
					Free keys		Normal keys		Close keys Shaft and hub P9	nom.	Tol.	nom.	Tol.		
		Shaft H9	Hub D10	Shaft N9	Hub J _s 9										
6	8	2 × 2	2	+0.025	+0.060	-0.004	+0.0125	-0.006	1.2		1		0.16	0.08	
8	10	3 × 3	3	0	+0.020	-0.029	-0.0125	-0.031	1.8		1.4		0.16	0.08	
10	12	4 × 4	4						2.5	+0.1 0	1.8	+0.1 0	0.16	0.08	
12	17	5 × 5	5	+0.030 0	+0.078 +0.030	0 -0.030	+0.0150 -0.0150	-0.012 -0.042	3.0		2.3		0.25	0.16	
17	22	6 × 6	6						3.5		2.8		0.25	0.16	
22	30	8 × 7	8	+0.036	+0.098	0	+0.0180	-0.015	4.0		3.3		0.25	0.16	
30	38	10 × 8	10	0	+0.040	-0.036	-0.0180	-0.051	5.0		3.3		0.40	0.25	
38	44	12 × 8	12						5.0		3.3		0.40	0.25	
44	50	14 × 9	14	+0.043	+0.120	0	+0.0215	-0.018	5.5		3.8		0.40	0.25	
50	58	16 × 10	16	0	+0.050	-0.043	-0.0215	-0.061	6.0		4.3		0.40	0.25	
58	65	18 × 11	18						7.0	+0.2 0	4.4	+0.2 0	0.40	0.25	
65	75	20 × 12	20						7.5		4.9		0.60	0.40	
75	85	22 × 14	22	+0.052	+0.149	0	+0.0260	-0.022	9.0		5.4		0.60	0.40	
85	95	25 × 14	25	0	+0.065	-0.052	-0.0260	-0.074	9.0		5.4		0.60	0.40	
95	110	28 × 16	28						10.0		6.4		0.60	0.40	
110	130	32 × 18	32						11.0		7.4		0.60	0.40	
130	150	36 × 20	36						12.0		8.4		1.00	0.70	
150	170	40 × 22	40	+0.062 0	+0.180 +0.080	0 -0.062	+0.0310 -0.0310	-0.026 -0.088	13.0		9.4		1.00	0.70	
170	200	45 × 25	45						15.0		10.4		1.00	0.70	
200	230	50 × 28	50						17.0		11.4		1.00	0.70	
230	260	56 × 32	56						20.0	+0.3 0	12.4	+0.3 0	1.60	1.20	
260	290	63 × 32	63	+0.074 0	+0.220 +0.100	0 -0.074	+0.0370 -0.0370	-0.032 -0.106	20.0		12.4		1.60	1.20	
290	330	70 × 36	70						22.0		14.4		1.60	1.20	
330	380	80 × 40	80						25.0		15.4		2.50	2.00	
380	440	90 × 45	90	+0.087 0	+0.260 +0.120	0 -0.087	+0.0435 -0.0435	-0.037 -0.124	28.0		17.4		2.50	2.00	
440	500	100 × 50	100						31.0		19.5		2.50	2.00	

- The relation between the diameter of shaft and the section of key applies to normal use. A smaller section of key may be used if adequate for the torque to be transmitted. In that case the depths t_1 and t_2 should be recalculated to maintain the relation $\frac{h}{2}$. A larger section of key should not be used.

- ** The depth of keyways in shafts and hubs should be obtained by direct measurement or by measuring the dimensions $(d - t_1)$ and $(d + t_2)$. The tolerances applicable to t_1 and t_2 apply to these two composite dimensions $(d - t_1)$ and $(d + t_2)$, but the sign for the tolerance given in the table for t_1 has to be reversed. Keyway depths should not be measured from the side corner.

The tolerance on t_1 and t_2 is approximately equal to the tolerance k_{12} which would be obtained by adopting the thickness h of the key as nominal size.

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