UDC 621.886.6 September 1974

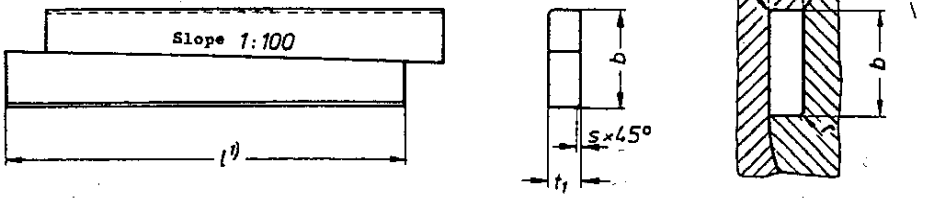
Tangential Keys and Tangential Keyways for Alternating Shock Loads

DIN 268

Tangentkeile und Tangentkeilnuten für stoßartige Wechselbeanspruchungen

For connection with ISO Draft ISO/DIS 3117-1973 published by the International Organization for Standardization (ISO), see Explanations.

Dimensions in mm



Designation of a tangential key (consisting of 2 parts) of b = 60 mm calculated width, t_1 = 20 mm thickness and l = 250 mm length1):

Tangential key 60 x 20 x 250 DIN 268

b calculated	Key t_1 h11	Key s min.	Key s max.	Keyway t_2	Keyway t_2 perm. var.	Keyway r max.	Keyway r min.	For shaft diameter d
30	10	1	1,2	10,3	+0,2 0	1	0,7	100
33	11			11,4				110
36	12			12,4	+0,3 0			120
37,5	12,5			12,9				125
39	13			13,4				130
42	14			14,4				140
45	15			15,4				150
48	16			16,4				160
51	17	1,6	2	17,4		1,6	1,2	170
54	18			18,4				180
57	19			19,4				190
60	20			20,4				200
66	22			22,4				220
72	24	2,5	3	24,4		2,5	2	240
75	25			25,4				250
78	26			26,4				260
84	28			28,4				280
90	30			30,4				300
96	32			32,4				320

Table continued on page 2

1) The length l is dependent upon the design in question and must be quoted. It is recommended that a length be chosen which is some 10 to 15 % greater than the length of the hub.

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Key				Keyway				For shaft diameter
b calculated	t_1 h11	s min.	s max.	t_2	t_2 perm. var.	r max.	r min.	d
102	34	3	4	34,4	$+0{,}3$ 0	3	2,5	340
108	36			36,4				360
114	38			38,4				380
120	40			40,4				400
126	42			42,4				420
132	44			44,4				440
135	45			45,4				450
138	46			46,4				460
144	48			48,4				480
150	50			50,5				500
159	53			53,5				530
168	56			56,5				560
180	60			60,5				600
189	63			63,5				630

Material: St 60-2 according to DIN 17100

Other grades of steel, e.g., high-grade and fine steel, are to be specially agreed.

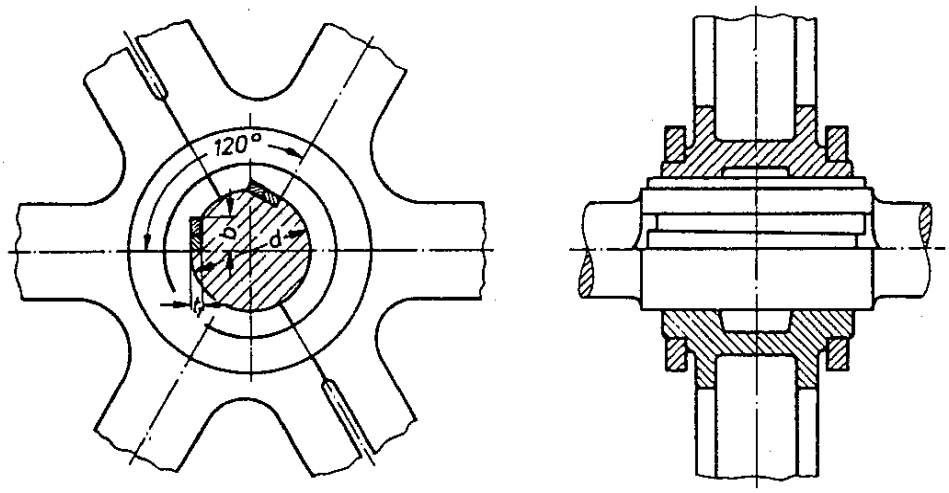
In the case of values lying between the shaft diameters listed in the Table, it is recommended that the key thickness t_1 of the next smaller shaft diameter be selected. The width b is calculated from $b = \sqrt{t_1 \cdot (d - t_1)}$.

For shaft diameters larger than 630 mm, $t_1 = 0.1\ d$, $b = 0.3\ d$ are recommended.

If no alternating shock loads occur, tangential keys according to DIN 271 are recommended.

The shaft diameter 125 mm according to ISO Recommendation R 775 and the proposed ISO Recommendation on tangential keys is not included in DIN 748 Part 1.

Application



For dimensions d, t_1, t_2 and b see pages 1 and 2

The two tangential keys can also be arranged at an angle of 180° should an angle of 120° present assembly difficulties.

Explanations

The present Standard corresponds in substance to the ISO Draft

ISO/DIS 3117-1973

Tangential keying

Clavetage par clavettes tangentielles

While it is true that this ISO Draft deals only with tangential keys and keyways for constant loads (DIN 271), it none the less indicates that, for alternating shock loads, tangential keys with t = 0.1 d and b = 0.3 d are recommended. As compared with the April 1924 Issue of DIN 268, the following amendments and additions should be noted:

a) The shaft diameters were partly changed to conform to ISO Recommendation R 775 and also to correspond to DIN 748 Part 1.

b) While existing cross-sections of keys and keyways have been retained, changes have in some cases been made in the slope of the keys and in the rounding of the bottom of the keyways.

c) Shaft diameters above 630 mm have been omitted. Should it be necessary, however, tangential keys and keyways for larger shaft diameters can be determined from the formulae quoted.

d) The contents of the Standard have been revised and supplemented, e.g., by the inclusion of an example of designation and details of materials.