UDC 621.886.6

December 1967

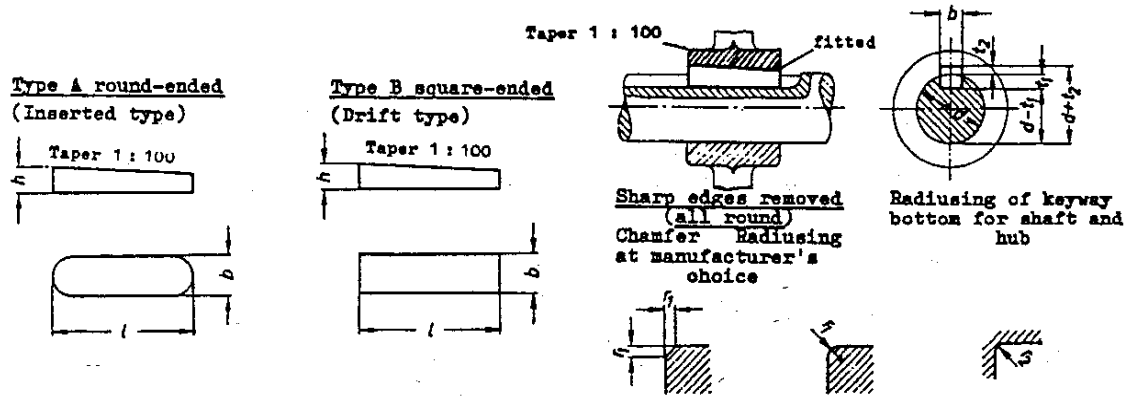
Stressed-type Fastenings with Taper Action
Taper Keys Keyways
Dimensions and Application

DIN 6886

Spannungsverbindungen mit Anzug; Keile, Nuten, Abmessungen und Anwendung

For connection with an ISO Recommendation in course of preparation, see under Explanations.

Dimensions in mm



Radiusing of keyway bottom for shaft and hub

Designation of a key Type A of width b = 20 mm, height h = 12 mm and length l = 125 mm:

Key A 20 x 12 x 125 DIN 6886

Cross-section of taper key (key steel acc. to DIN 6880)	Width b	2	3	4	5	6	8	10	12	14	16	18	20	22
	Height h	2	3	4	5	6	7	8	8	9	10	11	12	14
For shaft diameter d [1]	over	6	8	10	12	17	22	30	38	44	50	58	65	75
	to	8	10	12	17	22	30	38	44	50	58	65	75	85
Keyway width	b D10	2	3	4	5	6	8	10	12	14	16	18	20	22
Shaft keyway depth	t_1 [2]	1,2	1,8	2,5	3	3,5	4	5	5	5,5	6	7	7,5	9
	perm.var.	+0,1					+0,2							
Hub keyway depth	t_2 [2]	0,5	0,9	1,2	1,7	2,2	2,4	2,4	2,4	2,9	3,4	3,4	3,9	4,4
	perm.var.	+0,1					+0,2							
Chamfer or radius	r_1 min.	0,16			0,25		0,4						0,6	
	r_1 max.	0,25			0,4		0,6						0,8	
Radiusing of keyway bottom	r_2 max.	0,16			0,25		0,4						0,6	
	r_2 min.	0,08			0,16		0,25						0,4	

Length l [3]	perm.var. Taper key	perm.var. Keyway	Weight 7.85 kg/dm³) kg/1000 pieces for Type B												
6			0,186												
8			0,246	0,358											
10			0,306	0,695	1,24										
12			0,366	0,831	1,48	2,32									
14			0,424	0,966	1,73	2,71									
16	−0,2	+0,2	0,482	1,10	1,97	3,09	4,44								
18			0,540	1,23	2,21	3,47	5,01								
20			0,598	1,37	2,45	3,84	5,90	8,46							
22				1,50	2,69	4,22	6,11	9,52							
25				1,69	3,04	4,78	6,92	10,8	15,5						
28				1,87	3,39	5,34	7,73	12,1	17,3						
32				2,14	3,86	6,08	8,80	13,7	19,7	23,6					
36				2,39	4,32	6,81	9,86	15,4	22,1	26,5					
40					4,77	7,54	10,9	17,1	24,5	29,4	38,7				
45					5,34	8,45	12,2	19,1	27,5	33,0	43,4	55,2			
50	−0,3	+0,3				9,32	13,5	21,2	30,4	36,5	48,1	61,2	75,9		
56						10,4	15,1	23,6	33,9	40,7	53,6	68,4	84,8	103	
63							16,8	26,4	38,0	45,6	60,0	76,5	95,1	116	140
70							18,6	29,2	42,0	50,4	66,5	84,8	105	128	155
80								33,2	47,7	57,3	75,6	96,5	120	146	176
90								37,0	53,3	64,0	84,4	108	134	163	211
100									58,8	70,4	93,5	119	148	181	233
110									64,3	77,2	102	131	163	198	256
125										86,9	115	147	183	223	289
140	−0,5	+0,5								96,3	125	163	204	248	322
160											144	185	231	281	365
180												206	257	314	407
200													283	346	449
220														378	490
250															550
Weight deduction for Type A			0,013	0,043	0,104	0,203	0,351	0,724	1,29	1,84	2,81	4,06	5,66	7,62	10,7

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For notes and footnotes, see page 2

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Cross-section of taper key (key steel acc.to DIN 6880)	Width b	25	28	32	36	40	45	50	56	63	70	80	90	100
	Height h	14	16	18	20	22	25	28	32	32	36	40	45	50
For shaft diameter d [1]	over	85	95	110	130	150	170	200	230	260	290	330	380	440
	to	95	110	130	150	170	200	230	260	290	330	380	440	500
Keyway width	b D10	25	28	32	36	40	45	50	56	63	70	80	90	100
Shaft keyway depth	t_1 [2]	9	10	11	12	13	15	17	20	20	22	25	28	31
	perm.var.	+0,2			+0,3									
Hub keyway depth	t_2 [2]	4,4	5,4	6,4	7,1	8,1	9,1	10,1	11,1	11,1	13,1	14,1	16,1	18,1
	perm.var.	+0,2			+0,3									
Chamfer or radius	r_1 min.	0,6			1				1,6			2,5		
	r_1 max.	0,8			1,2				2			3		
Radiusing of keyway bottom	r_2 max.	0,6			1				1,6			2,5		
	r_2 min.	0,4			0,7				1,2			2		

Length l [3]	perm.var. Taper Key	perm.var. Keyway	Weight (7.85 kg/dm³) kg/1000 pieces for Type B ≈												
70	−0,3	+0,3	187												
80			214	274											
90			239	308	397										
100			265	341	439	551									
110			290	374	482	605	741								
125			328	423	546	685	839	1080							
140			366	471	609	764	937	1200	1500	For taper keys of width b = 56 to 100 mm there are no specified lengths.					
160			415	535	691	868	1060	1370	1710						
180	−0,5	+0,5	463	597	773	973	1190	1530	1910						
200			510	659	854	1070	1320	1700	2120						
220			557	721	933	1170	1440	1860	2320						
250			626	811	1050	1320	1630	2100	2620						
280			692	899	1170	1470	1810	2330	2920						
320				1010	1320	1660	2050	2650	3300						
360					1470	1850	2290	2950	3700						
400						2040	2510	3250	4080						
Weight deduction for Type A			13,8	19,8	29,2	40,6	55,8	80,6	112						

For the time being no permissible variations have been laid down for the taper on the key and in the hub keyway. If special conditions make necessary the observance of certain permissible variations these must be agreed at the time of ordering. The dimension h is the maximum height of the key, dimensions $(d + t_2)$ and t_2 relate to the maximum depth of the keyway in the hub.

Material: for key heights h up to 25 mm: St 50-1 K according to DIN 1652
for key heights h over 25 mm: St 60-2 K according to DIN 1652;
other grades of steel, e.g. quality steels and high-grade steels, are to be specially agreed.

1) Where mating dimensions are involved, particularly for shaft extensions, it is essential that the correct correlation of key cross-section to shaft diameter be observed.

2) In workshop drawings the dimensions t_1 and $(d - t_1)$ as well as t_2 and $(d + t_2)$ can be shown side by side. In many cases, however, the dimensions t_1 and $(d + t_2)$ are sufficient. At the same time the permissible variations and machining allowances on the shaft and hub bore are to be taken into account as appropriate.

3) Intermediate lengths, if unavoidable, are to be chosen according to DIN 3. The permissible variations for the next greater length l are always to be adopted in borderline cases.

Explanations

The content of this Standard agrees essentially with the conclusions of Technical Committee ISO/TC 16 "Keys" on which the following ISO draft is based:

Draft ISO Recommendation No. 1085

Taper keys and their corresponding keyways, with or without gib head

Clavetage par clavettes inclinées, avec ou sans talon

Keile und Nasenkeile

The following amendments and additions should be noted compared with the February 1956 issue of DIN 6886:

a) Some of the keyway depths in shaft and hub have been altered.
They correspond with the depths for feather keys according to DIN 6885 Sheet 1 and with full utilisation of the tolerances on keyway depth they ensure oversize of
0.1 mm up to the 6 × 6 key
0.2 mm from the 8 × 7 up to 32 × 18 key, and
0.3 mm from and including the 36 × 20 key
referred each time to the nominal height of the key.

b) The values for chamfering and radiusing the keys and for radiusing the keyway bottom have been altered in some cases, but no difficulty in regard to interchangeability need be feared on this account.

c) The former lengths 315 and 355 mm have been replaced by lengths 320 and 360 mm.

d) The material data have been taken over from the new issue of DIN 6880.