UDC 621.886.6 April 1968

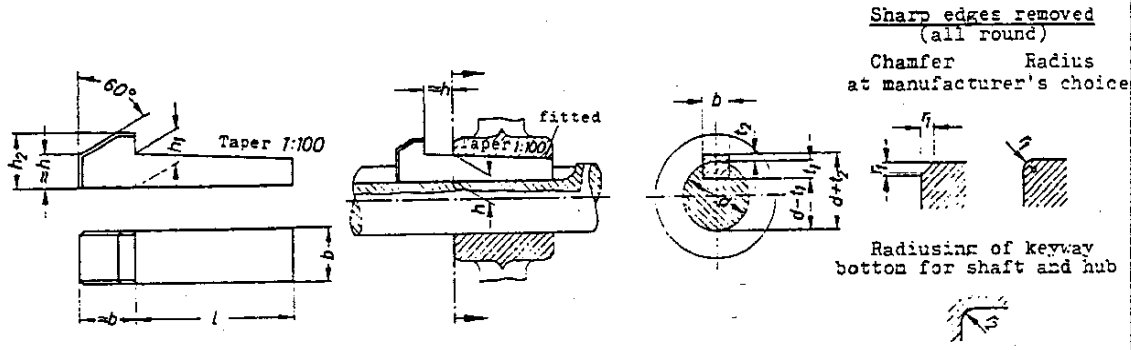
Stressed-type Fastenings with Taper Action Taper Keys with Gib Head Keyways Dimensions and Application

DIN 6887

Spannungsverbindungen mit Anzug; Nasenkeile, Nuten, Abmessungen und Anwendung

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

Dimensions in mm



Designation of a gib head taper key of width b = 18 mm, height h = 11 mm and length L = 125 mm:
Gib head taper key 18 × 11 × 125 DIN 6887

Key width	b h9	4	5	6	8	10	12	14	16	18	20	22	25
Key height	h Nom.dim.	4	5	6	7	8	8	9	10	11	12	14	14
For shaft diameter d [1]	over	10	12	17	22	30	38	44	50	58	65	75	85
	up to	12	17	22	30	38	44	50	58	65	75	85	95
Key height	h_1	4,1	5,1	6,1	7,2	8,2	8,2	9,2	10,2	11,2	12,2	14,2	14,2
	perm. var.		−0,1						−0,2				
Gib height	h_2	7	8	10	11	12	12	14	16	18	20	22	22
Keyway width	b D10	4	5	6	8	10	12	14	16	18	20	22	25
Shaft keyway depth	t_1 [2]	2,5	3	3,5	4	5	5	5,5	6	7	7,5	9	9
	perm. var.		+0,1						+0,2				
Hub keyway depth	t_2 [2]	1,2	1,7	2,2	2,4	2,4	2,4	2,9	3,4	3,4	3,9	4,4	4,4
	perm. var.		+0,1						+0,2				
Chamfer or radiusing	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 [3]	perm. var.	Weight (7,85 kg/dm³) kg/1000 pieces ≈											
14		2,57	4,23										
16		2,82	4,62	7,15									
18		3,07	5,00	7,70									
20	−0,2	3,31	5,39	8,25	14,1								
22		3,55	5,77	8,81	15,0								
25		3,92	6,35	9,64	16,3	24,5							
28		4,28	6,92	10,5	17,7	26,4							
32		4,75	7,67	11,5	19,4	28,7	37,4						
36		5,25	8,42	12,6	21,1	31,2	40,0						
40		5,70	9,16	13,7	22,8	33,8	43,3	60,3					
45		6,27	10,1	15,0	24,9	36,8	47,1	65,2	86,3				
50	−0,3		11,0	16,4	27,1	39,9	50,6	69,8	92,6	121			
56			12,0	18,0	29,5	43,4	54,8	75,4	100	130	166		
63				19,7	32,5	47,7	60,6	82,3	109	141	178	231	
70				21,5	35,4	51,7	64,7	88,7	117	151	191	249	294
80					39,4	57,6	71,2	98,2	129	166	209	271	320
90					43,4	63,4	78,6	107	141	181	227	294	347
100						68,2	86,0	116	151	195	245	317	372
110						74,8	93,3	125	164	210	262	339	398
125							102	138	181	230	278	373	436
140							112	151	198	251	303	407	475
160	−0,5							165	220	279	335	451	534
180									241	306	366	493	572
200										332	397	536	620
220											428	577	668
250												639	739
280													808

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Explanations on page

Key width	b h9	28	32	36	40	45	50	56	63	70	80	90	100
Key height	h Nom.dim.	16	18	20	22	25	28	32	32	36	40	45	50
For shaft diameter d [1]	over	95	110	130	150	170	200	230	260	290	330	380	440
	up to	110	130	150	170	200	230	260	290	330	380	440	500
Key height	h_1	16,2	18,3	20,4	22,4	25,4	28,4	32,5	32,5	36,5	40,5	45,6	50,6
	perm.var.	−0,2		−0,3									
Gib height	h_2	25	28	32	36	40	45	50	50	56	63	70	80
Keyway width	b D10	28	32	36	40	45	50	56	63	70	80	90	100
Shaft keyway depth	t_1 [2]	10	11	12	13	15	17	20	20	22	25	28	31
	perm.var.	+0,2		+0,3									
Hub keyway depth	t_2 [2]	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 radiusing	r_1 min.	0,6		1				1,6			2,5		
	max.	0,8		1,2				2			3		
Radiusing of keyway bottom	r_2 max.	0,6		1				1,6			2,5		
	min.	0,4		0,7				1,2			2		

Length (l [3])	perm.var.	Weight (7,85 kg/dm³) kg/1000 pieces ≈						
80	−0,3	426						
90		460	621					
100		493	665	874				
110		527	707	929	1190			
125		574	772	1010	1290	1710		
140		626	828	1090	1390	1840	2370	
160		690	920	1200	1520	2010	2580	No lengths are specified for keys of width b = 56 to 100 mm.
180		753	1000	1300	1650	2170	2780	
200	−0,5	818	1080	1410	1780	2340	3000	
220		881	1170	1510	1910	2480	3210	
250		971	1290	1660	2100	2750	3520	
280		1060	1400	1810	2280	2980	3800	
320		1170	1550	2000	2490	3270	4170	
360			1700	2200	2750	3610	4490	
400				2390	3000	3920	4990	

So far no permissible variations have been laid down for the taper on the key and in the keyway. If special conditions make necessary the observance of certain permissible variations these must be agreed at the time of ordering. The dimension h_1 is the maximum height of the key (less gib head) and the dimensions $(d + t_2)$ and t_2 relate to the maximum depth of the keyway in the hub.

Material: St 60-1

suitable half-finished product: Key steel according to DIN 6880; 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 1956x issue of DIN 6887:

a) Some of the keyway depths in shaft and hub have been altered. They correspond with the depths for keys according to DIN 6886 as well as for feather keys according to DIN 6885 Sheet 1, and with full utilization 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 also 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 gib heights h_2 have been reduced for gib head keys from 63 × 32 and including the 90 × 45 size. The chamfering of the gib head has been increased from 30° to 60°.