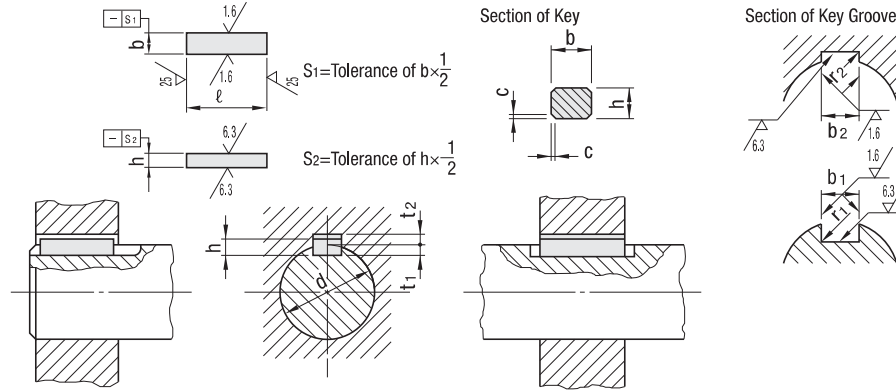


1. Parallel Keys and Key Grooves



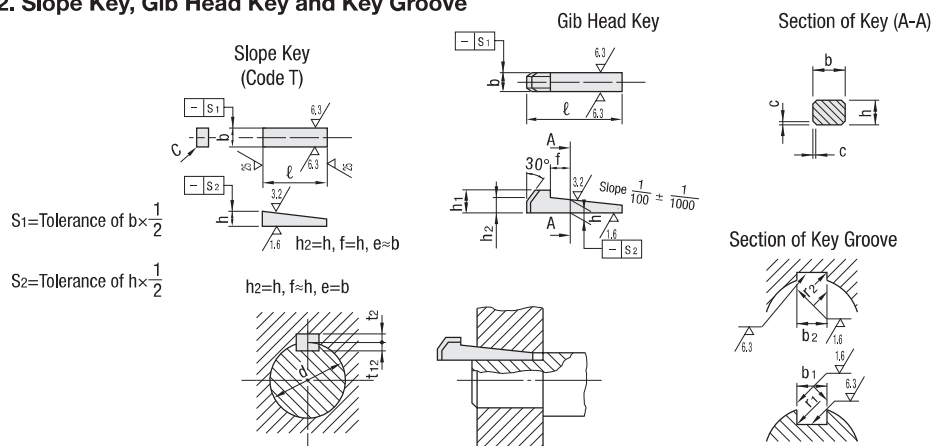
Unit: mm

Key Nominal Dimension b×h	Dimension of Key Groove									Reference		
	Reference Dimension of b1, b2	(Sliding Type)		Standard		Precision Class	r1 and r2	Reference Dimension of t1	Reference Dimension of t2	Reference Dimension of t2, t1	Applicable Shaft Dia.(¹) d	
		b1	b2	b1	b2	b1 and b2						
		Tolerance (H9)	Tolerance (D10)	Tolerance (N9)	Tolerance (Js9)	Tolerance (P9)						
2×2	2	+0.025	+0.060	−0.004		−0.006	0.08~0.16	1.2	1.0	+ 0.1 0	6~8	
3×3	3	0	+0.020	−0.029	±0.0125	−0.031		1.8	1.4		8~10	
4×4	4	+0.030	+0.078	0 −0.030	±0.0150	−0.012 −0.042		2.5	1.8		10~12	
5×5	5						3.0				2.3	12~17
6×6	6						3.5				2.8	17~22
(7×7)	7	+0.036	+0.098	0 −0.036	±0.0180	−0.015 −0.051	0.16~0.25	4.0	3.0	+ 0.2 0	20~25	
8×7	8							4.0	3.3		22~30	
10×8	10							5.0	3.3		30~38	
12×8	12	+0.043	+0.120	0 −0.043	±0.0215	−0.018 −0.061	0.25~0.40	5.0	3.3		38~44	
14×9	14							5.5	3.8		44~50	
(15×10)	15							5.0	5.0	50~55		
16×10	16	+0.052	+0.149	0 −0.052	±0.0260	−0.022 −0.074	0.40~0.60	6.0	4.3	+ 0.3 0	50~58	
18×11	18							7.0	4.4		58~65	
20×12	20							7.5	4.9		65~75	
22×14	22	9.0	5.4	75~85								
(24×16)	24	8.0	8.0	80~90								
25×14	25	+0.062	+0.180	0 −0.062	±0.0310	−0.026 −0.088	0.70~1.00	9.0	5.4	+ 0.3 0	85~95	
28×16	28							10.0	6.4		95~110	
32×18	32							11.0	7.4		110~130	
(35×22)	35	+0.074	+0.220	0 −0.074	±0.0370	−0.032 −0.106	1.20~1.60	11.0	11.0		+ 0.3 0	125~140
36×20	36							12.0	8.4			130~150
(38×24)	38							12.0	12.0	140~160		
40×22	40	+0.087	+0.260	0 −0.087	±0.0435	−0.037 −0.124	2.00~2.50	13.0	9.4	+ 0.3 0		150~170
(42×26)	42							13.0	13.0			160~180
45×25	45							15.0	10.4		170~200	
50×28	50	17.0	11.4	200~230								
56×32	56	+0.087	+0.260	0 −0.087	±0.0435	−0.037 −0.124	2.00~2.50	20.0	12.4		+ 0.3 0	230~260
63×32	63							20.0	12.4	260~290		
70×36	70							22.0	14.4	290~330		
80×40	80	25.0	15.4	330~380								
90×45	90	+0.087	+0.260	0 −0.087	±0.0435	−0.037 −0.124	2.00~2.50	28.0	17.4	+ 0.3 0		380~440
100×50	100							31.0	19.5		440~500	

Note(1) The applicable shaft diameter is calculated from the torque corresponding to the strength of the key, for presentation as referential data for general-purpose use. When the key is of an appropriate size relative to the torque to be transmitted, a shaft thicker than the applicable shaft diameter may be used. In some cases, t1 and t2 should be adjusted so that a side of the key will come into uniform contact with the shaft and the hub. A shaft narrower than the applicable shaft diameter should not be used.

Reference The nominal sizes given in () do not conform to the relevant international standard and must not be used in new design.

2. Slope Key, Gib Head Key and Key Groove



Unit: mm

Key Nominal Dimension b×h	Dimension of Key Groove							Dimension of Key Groove							Reference Applicable Shaft Dia. (2) d			
	b		h		h1	c	ℓ (1)	b1 and b2		r1 and r2	Reference Dimension of t1	Reference Dimension of t2	Reference Dimension of t2, t1					
	Reference Dimension	Tolerance (h9)	Reference Dimension	Tolerance				Reference Dimension	Tolerance (D10)									
2×2	2	0	2	0	h9	—	0.16 ~0.25	6~30	2	+0.060	0.08 ~0.16	1.2	0.5	+0.05	6~8			
3×3	3	−0.025	3	−0.025		—		6~36	3	+0.020		1.8	0.9	8~10				
4×4	4	0 −0.030	4	0		7		8~45	4	+0.078 +0.030		2.5	1.2	10~12				
5×5	5		5	−0.030		8		10~56	5			3.0	1.7	+0.1	12~17			
6×6	6		6	0 −0.036	10	14~70	6	3.5	2.2		0	17~22						
(7×7)	7		7.2	0 −0.036	10	16~80	7	4.0	3.0		20~25							
8×7	8	0 −0.036	7	0 −0.090	h11	11	0.25 ~0.40	18~90	8	+0.098 +0.040	0.16 ~0.25	4.0	2.4	+0.2	22~30			
10×8	10		8			0		12	22~110			10	5.0		2.4	30~38		
12×8	12		8			0		12	28~140			12	5.0		2.4	0	38~44	
14×9	14		9			0		14	36~160			14	5.5		2.9	44~50		
(15×10)	15	0 −0.043	10.2	0 −0.070	h10	15	0.40 ~0.60	40~180	15	+0.120 +0.050	0.25 ~0.40	5.0	5.0	+0.1	50~55			
16×10	16		10	0 −0.090		16		45~180	16			6.0	3.4	50~58				
18×11	18		11	0		18		50~200	18			7.0	3.4	58~65				
20×12	20		12	0 −0.110		20		56~220	20			7.5	3.9	0	65~75			
22×14	22	0 −0.052	14	0 −0.110	h11	22	0.60 ~0.80	63~250	22	+0.149 +0.065	0.40 ~0.60	9.0	4.4	+0.2	75~85			
(24×16)	24		16.2			0 −0.070		24	70~280			24	8.0		8.0	+0.1	80~90	
25×14	25		14			0		22	70~280			25	9.0		4.4	85~95		
28×16	28		16			0 −0.110		25	80~320			28	10.0		5.4	0	95~110	
32×18	32	0 −0.062	18	0 −0.110	h11	28	1.00 ~1.20	90~360	32	+0.180 +0.080	0.70 ~1.00	11.0	6.4	+0.3	110~130			
(35×22)	35		22.3			0 −0.084		h10	32			100~400	35		11.0	11.0	+0.15	125~140
36×20	36		20			0 −0.130		h11	—			36	12.0		7.1	+0.3	130~150	
(38×24)	38		24.3			0 −0.084		h10	36			—	38		12.0	12.0	+0.15	140~160
40×22	40	0 −0.074	22	0 −0.130	h11	36	1.60 ~2.00	—	40	+0.220 +0.100	1.20 ~1.60	13.0	8.1	+0.3	150~170			
(42×26)	42		26.3	0 −0.084		h10		40	—			42	13.0	13.0	+0.15	160~180		
45×25	45		25	0		40		—	45			15.0	9.1	170~200				
50×28	50		28	0 −0.130		45		—	50			17.0	10.1	200~230				
56×32	56	0 −0.087	32	0 −0.160	h11	50	2.50 ~3.00	—	56	+0.260 +0.120	2.00 ~2.50	20.0	11.1	+0.3	230~260			
63×32	63		32			0		50	—			63	20.0		11.1	260~290		
70×36	70		36			0		56	—			70	22.0		13.1	290~330		
80×40	80		40			0		63	—			80	25.0		14.1	330~380		
90×45	90	0 −0.087	45	0	h11	70	2.50 ~3.00	—	90	+0.260 +0.120	2.00 ~2.50	28.0	16.1	+0.3	380~440			
100×50	100		50			0		80	—			100	31.0		18.1	440~500		

Note⁽¹⁾: From the values for ℓ given below, which are in the appropriate range in the table, one should be selected.

The tolerance for ℓ should be h12 under JIS B0401 (dimension tolerance and fitting), in principle.

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⁽²⁾: The appropriate shaft diameter should be matched with the torque corresponding to the strength of the key.

Reference: The nominal sizes given in () should not be used unless they are absolutely necessary.

The groove for the boss should be slanted to 1/100, in principle.