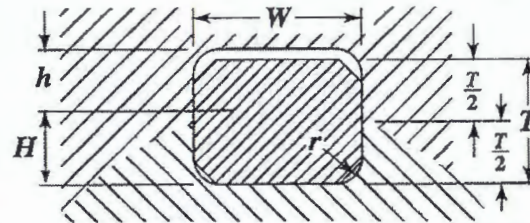


Table 1. British Standard Rectangular Parallel Keys, Keyways, and Keybars B.S. 46: Part I: 1958



Diameter of Shaft		Key					Keyway in Shaft				Keyway in Hub				Nominal Keyway Radius, r^a	Keybar			
Over	Up to and Including	Size $W \times T$	Width, W		Thickness, T		Width W_s		Depth H		Width W_h		Depth h			Width W	Thickness T		
			Max.	Min.	Max.	Min.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.				Max.	Min.
1	1¼	⅝ × ¼	0.314	0.312	0.253	0.250	0.311	0.312	0.146	0.152	0.312	0.313	0.112	0.118	0.010	0.314	0.312	0.253	0.250
	1¼	⅜ × ¼	0.377	0.375	0.253	0.250	0.374	0.375	0.150	0.156	0.375	0.376	0.108	0.114	0.010	0.377	0.375	0.253	0.250
	1½	⅞ × ⅝	0.440	0.438	0.315	0.312	0.437	0.438	0.186	0.192	0.438	0.439	0.135	0.141	0.020	0.440	0.438	0.315	0.312
	1¾	½ × ⅝	0.502	0.500	0.315	0.312	0.499	0.500	0.190	0.196	0.500	0.501	0.131	0.137	0.020	0.502	0.500	0.315	0.312
2	2½	⅝ × ⅞	0.627	0.625	0.441	0.438	0.624	0.625	0.260	0.266	0.625	0.626	0.185	0.191	0.020	0.627	0.625	0.441	0.438
	2½	¾ × ½	0.752	0.750	0.503	0.500	0.749	0.750	0.299	0.305	0.750	0.751	0.209	0.215	0.020	0.752	0.750	0.503	0.500
3	3½	⅞ × ¾	0.877	0.875	0.629	0.625	0.874	0.875	0.370	0.376	0.875	0.876	0.264	0.270	0.062	0.877	0.875	0.629	0.625
	3½	1 × ¾	1.003	1.000	0.754	0.750	0.999	1.000	0.441	0.447	1.000	1.001	0.318	0.324	0.062	1.003	1.000	0.754	0.750
4	5	1¼ × ¾	1.253	1.250	0.879	0.875	1.248	1.250	0.518	0.524	1.250	1.252	0.366	0.372	0.062	1.253	1.250	0.879	0.875
5	6	1½ × 1	1.504	1.500	1.006	1.000	1.498	1.500	0.599	0.605	1.500	1.502	0.412	0.418	0.062	1.504	1.500	1.006	1.000
6	7	1½ × 1¼	1.754	1.750	1.256	1.250	1.748	1.750	0.746	0.746	1.750	1.752	0.526	0.532	0.125	Bright keybar is not normally available in sections larger than the above.			
7	8	2 × 1⅝	2.005	2.000	1.381	1.375	1.998	2.000	0.818	0.824	2.000	2.002	0.573	0.579	0.125				
8	9	2½ × 1½	2.255	2.250	1.506	1.500	2.248	2.250	0.897	0.905	2.250	2.252	0.619	0.627	0.125				
9	10	2½ × 1⅝	2.505	2.500	1.631	1.625	2.498	2.500	0.975	0.983	2.500	2.502	0.666	0.674	0.187				
10	11	2¾ × 1⅞	2.755	2.750	1.881	1.875	2.748	2.750	1.114	1.122	2.750	2.752	0.777	0.785	0.187				
11	12	3 × 2	3.006	3.000	2.008	2.000	2.998	3.000	1.195	1.203	3.000	3.002	0.823	0.831	0.187				
12	13	3½ × 2½	3.256	3.250	2.133	2.125	3.248	3.250	1.273	1.281	3.250	3.252	0.870	0.878	0.187				
13	14	3½ × 2⅞	3.506	3.500	2.383	2.375	3.498	3.500	1.413	1.421	3.500	3.502	0.980	0.988	0.250				
14	15	3¾ × 2½	3.756	3.750	2.508	2.500	3.748	3.750	1.492	1.502	3.750	3.752	1.026	1.036	0.250				
15	16	4 × 2⅞	4.008	4.000	2.633	2.625	3.998	4.000	1.571	1.581	4.000	4.002	1.072	1.082	0.250				
16	17	4¼ × 2⅞	4.258	4.250	2.883	2.875	4.248	4.250	1.711	1.721	4.250	4.252	1.182	1.192	0.312	All dimensions in inches.			
17	18	4½ × 3	4.508	4.500	3.010	3.000	4.498	4.500	1.791	1.801	4.500	4.502	1.229	1.239	0.312				
18	19	4¾ × 3⅝	4.758	4.750	3.135	3.125	4.748	4.750	1.868	1.878	4.750	4.752	1.277	1.287	0.312				
19	20	5 × 3⅞	5.008	5.000	3.385	3.375	4.998	5.000	2.010	2.020	5.000	5.002	1.385	1.395	0.312				

^aThe key chamfer shall be the minimum to clear the keyway radius. Nominal values are given.

Table 2. British Standard Square Parallel Keys, Keyways, and Keybars B.S. 46: Part I: 1958

The diagram illustrates a square key fitted into a shaft and a hub. The key's width is labeled W and its thickness is T . The shaft has a diameter D , and the keyway depth in the shaft is H . The hub has a thickness h , and the keyway depth in the hub is h . The keyway in the hub has a radius r . The keyway in the shaft has a radius r . The key is shown in cross-section, with the shaft and hub also shown in cross-section.

Diameter of Shaft		Key			Keyway in Shaft				Keyway in Hub				Nominal Keyway Radius, r^a	Bright Keybar		
Over	Up to and Including	Size, $W \times T$	Width, W and Thickness, T		Width, W_s		Depth, H		Width, W_h		Depth, h			Width, W and Thickness, T		
			Max.	Min.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		Max.	Min.	
$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{8} \times \frac{1}{8}$	0.127	0.125	0.124	0.125	0.072	0.078	0.125	0.126	0.060	0.066	0.010	0.127	0.125	
$\frac{1}{2}$	$\frac{3}{4}$	$\frac{3}{16} \times \frac{3}{16}$	0.190	0.188	0.187	0.188	0.107	0.113	0.188	0.189	0.088	0.094	0.010	0.190	0.188	
$\frac{3}{4}$	1	$\frac{1}{4} \times \frac{1}{4}$	0.252	0.250	0.249	0.250	0.142	0.148	0.250	0.251	0.115	0.121	0.010	0.252	0.250	
1	$1\frac{1}{4}$	$\frac{5}{16} \times \frac{5}{16}$	0.314	0.312	0.311	0.312	0.177	0.183	0.312	0.313	0.142	0.148	0.010	0.314	0.312	
$1\frac{1}{4}$	$1\frac{1}{2}$	$\frac{3}{8} \times \frac{3}{8}$	0.377	0.375	0.374	0.375	0.213	0.219	0.375	0.376	0.169	0.175	0.010	0.377	0.375	
$1\frac{1}{2}$	$1\frac{3}{4}$	$\frac{7}{16} \times \frac{7}{16}$	0.440	0.438	0.437	0.438	0.248	0.254	0.438	0.439	0.197	0.203	0.020	0.440	0.438	
$1\frac{3}{4}$	2	$\frac{1}{2} \times \frac{1}{2}$	0.502	0.500	0.499	0.500	0.283	0.289	0.500	0.501	0.224	0.230	0.020	0.502	0.500	
2	$2\frac{1}{2}$	$\frac{5}{8} \times \frac{5}{8}$	0.627	0.625	0.624	0.625	0.354	0.360	0.625	0.626	0.278	0.284	0.020	0.627	0.625	
$2\frac{1}{2}$	3	$\frac{3}{4} \times \frac{3}{4}$	0.752	0.750	0.749	0.750	0.424	0.430	0.750	0.751	0.333	0.339	0.020	0.752	0.750	
3	$3\frac{1}{2}$	$\frac{7}{8} \times \frac{7}{8}$	0.877	0.875	0.874	0.875	0.495	0.501	0.875	0.876	0.387	0.393	0.062	0.877	0.875	
$3\frac{1}{2}$	4	1×1	1.003	1.000	0.999	1.000	0.566	0.572	1.000	1.001	0.442	0.448	0.062	1.003	1.000	
4	5	$1\frac{1}{4} \times 1\frac{1}{4}$	1.253	1.250	1.248	1.250	0.707	0.713	1.250	1.252	0.551	0.557	0.062	1.253	1.250	
5	6	$1\frac{1}{2} \times 1\frac{1}{2}$	1.504	1.500	1.498	1.500	0.848	0.854	1.500	1.502	0.661	0.667	0.062	1.504	1.500	

^aThe key chamfer shall be the minimum to clear the keyway radius. Nominal values are given. All dimensions in inches.

Table 1. British Standard Metric Keyways for Square and Rectangular Parallel Keys BS 4235:Part 1:1972 (1986)

Shaft		Key	Keyway											
Nominal Diameter d		Size, $b \times h$	Width, b						Depth				Radius r	
Over	Up to and Incl.		Nom.	Free Fit		Normal Fit		Close Fit	Shaft t_1		Hub t_2		Max.	Min.
				Shaft (H9)	Hub (D10)	Shaft (N9)	Hub (J _s 9) ^a	Shaft and Hub (P9)	Nom.	Tol.	Nom.	Tol.		
				Tolerances										
Keyways for Square Parallel Keys														
6	8	2 × 2	2	+0.025	+0.060	−0.004	+0.012	−0.006	1.2	} +0.1 0	1	} +0.1 0	0.16	0.08
8	10	3 × 3	3	0	+0.020	−0.029	−0.012	−0.031	1.8		1.4		0.16	0.08
10	12	4 × 4	4	} +0.030 0	+0.078 +0.030	0 −0.030	+0.015 −0.015	−0.012 −0.042	2.5		1.8		0.16	0.08
12	17	5 × 5	5						3		2.3		0.25	0.16
17	22	6 × 6	6						3.5		2.8		0.25	0.16

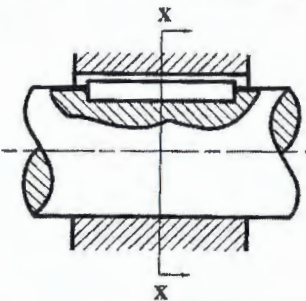
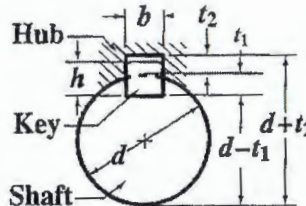
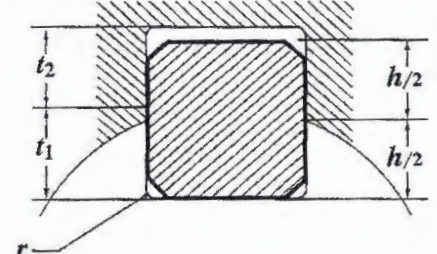


Diagram showing a shaft with a keyway, labeled with 'x' at the top and bottom.



Section x-x diagram showing dimensions: b , t_2 , t_1 , h , d , $d+t_2$, and $d-t_1$. Labels include Hub, Key, and Shaft.



Enlarged Detail of Key and Keyways showing dimensions: t_2 , t_1 , $h/2$, and radius r .

Table 1. (Continued) British Standard Metric Keyways for Square and Rectangular Parallel Keys BS 4235:Part 1:1972 (1986)

Shaft		Key		Keyway													
Nonimal Diameter d		Size, $b \times h$		Width, b					Depth				Radius r				
Over	Up to and Incl.			Nom.	Free Fit		Normal Fit		Close Fit	Shaft t_1		Hub t_2		Max.	Min.		
					Shaft (H9)	Hub (D10)	Shaft (N9)	Hub (J _s 9)*	Shaft and Hub (P9)	Nom.	Tol.	Nom.	Tol.				
Tolerances																	
Keyways for Rectangular Parallel Keys																	
22	30	8 × 7	8	}	+0.036	+0.098	0	+0.018	−0.015	4	}	+0.2 0	}	+0.2 0	0.25	0.16	
30	38	10 × 8	10		0	+0.040	−0.036	−0.018	−0.051	5					3.3	0.40	0.25
38	44	12 × 8	12		}	+0.043	+0.120 +0.050	0 −0.043	+0.021 −0.021	−0.018 −0.061					5	3.3	0.40
44	50	14 × 9	14	5.5											3.8	0.40	0.25
50	58	16 × 10	16	6											4.3	0.40	0.25
58	65	18 × 11	18	7											4.4	0.40	0.25
65	75	20 × 12	20	}	+0.052	+0.149 +0.065	0 −0.052	+0.026 −0.026	−0.022 −0.074	7.5					4.9	0.60	0.40
75	85	22 × 14	22							9					5.4	0.60	0.40
85	95	25 × 14	25							9					5.4	0.60	0.40
95	110	28 × 16	28							10					6.4	0.60	0.40
110	130	32 × 18	32	}	+0.062	+0.180 −0.080	0 −0.062	+0.031 −0.031	−0.026 −0.088	11					7.4	0.60	0.40
130	150	36 × 20	36							12	8.4	1.00	0.70				
150	170	40 × 22	40							13	9.4	1.00	0.70				
170	200	45 × 25	45							15	10.4	1.00	0.70				
200	230	50 × 28	50	}	+0.074	+0.220 +0.100	0 −0.074	+0.037 −0.037	−0.032 −0.106	17	11.4	1.00	0.70				
230	260	56 × 32	56							20	12.4	1.60	1.20				
260	290	63 × 32	63							20	12.4	1.60	1.20				
290	330	70 × 36	70							22	14.4	1.60	1.20				
330	380	80 × 40	80	}	+0.087 0	+0.260 +0.120	0 −0.087	+0.043 −0.043	−0.037 −0.124	25	15.4	2.50	2.00				
380	440	90 × 45	90							28	17.4	2.50	2.00				
440	500	100 × 50	100							31	19.5	2.50	2.00				

^aTolerance limits J_s9 are quoted from BS 4500, "ISO Limits and Fits," to three significant figures.

All dimensions in millimeters.