

METRIC BORES AND KEYWAYS

Bore Dia.	Keyway		Shallow Keyway Depth	Product Code										
	Width	Depth		1008	1108	1210	1610	1615	2012	2517	3020	3030		
9	3	1.4	–	029A0009	029B0009									
10	3	1.4	–	010	010									
11	4	1.8	–	011	011	029C0011								
12	4	1.8	–	012	012	012								
14	5	2.3	–	014	014	014	029G0014	029H0014	029K0014					
15	5	2.3	–	015	015	015	015	015	015					
16	5	2.3	–	016	016	016	016	016	016	029M0016				
18	6	2.8	–	018	018	018	018	018	018	018				
19	6	2.8	–	019	019	019	019	019	019	019				
20	6	2.8	–	020	020	020	020	020	020	020				
22	6	2.8	–	022	022	022	022	022	022	022				
24	8	3.3	1.3	024*	024	024	024	024	024	024				
25	8	3.3	1.3	025*	025	025	025	025	025	025	029P0025			
28	8	3.3	1.3		028*	028	028	028	028	028	028			
30	8	3.3	–			030	030	030	030	030	030			
32	10	3.3	–			032	032	032	032	032	032			
35	10	3.3	–				035	035	035	035	035		029Q0035	
38	10	3.3	–				038	038	038	038	038		038	
40	12	3.3	–				040	040	040	040	040		040	
42	12	3.3	2.2				042*	042*	042	042	042		042	
45	14	3.8	–						045	045	045		045	
48	14	3.8	–						048	048	048		048	
50	14	3.8	–						050	050	050		050	
55	16	4.3	–							055	055		055	
60	18	4.4	–							060	060		060	
65	18	4.4	–								065		065	
70	20	4.9	–								070		070	
75	20	4.9	–								075		075	

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Bore Dia.	Keyway		Shallow Keyway Depth	Product Code										
	Width	Depth		3525	3535	4030	4040	4535	4545	5040	5050			
35	10	3.3	–	029J0035	029R0035									
38	10	3.3	–	038	038									
40	12	3.3	–	040	040	029X0040	029S0040							
42	12	3.3	–	042	042	042	042							
45	14	3.8	–	045	045	045	045							
48	14	3.8	–	048	048	048	048							
50	14	3.8	–	050	050	050	050							
55	16	4.3	–	055	055	055	055	029Y0055	029T0055					
60	18	4.4	–	060	060	060	060	060	060					
65	18	4.4	–	065	065	065	065	065	065					
70	20	4.9	–	070	070	070	070	070	070	029Z0070		029U0070		
75	20	4.9	–	075	075	075	075	075	075	075		075		075
80	22	5.4	–	080	080	080	080	080	080	080		080		080
85	22	5.4	–	085	085	085	085	085	085	085		085		085
90	25	5.4	–	090	090	090	090	090	090	090		090		090
95	25	5.4	–		095	095	095	095	095	095		095		095
100	28	6.4	4.4		100*	100	100	100	100	100		100		100
105	28	6.4	–			105		105	105	105		105		105
110	28	6.4	–			110		110	110	110		110		110
115	32	7.4	5.4			115*		115		115		115		115
120	32	7.4	–					120				120		120
125	32	7.4	–					125				125		125

Dimensions in millimetres.

Keyways are British Standard Metric BS 4235: Part 1: 1972 DIN 6885 and conform to ISO recommendations with the exception of those marked* which are shallower. Where a key is to be used it should be parallel and side fitting, with top clearance. Depth of keyway is measured at the CENTRE.

Bold italic type indicates bushes made of steel or ductile iron.

Taper Lock Inch Bushes



INCH BORES AND KEYWAYS

Bore Dia.	Keyway		Shallow Keyway Depth	Product Code										
	Width	Depth		1008	1108	1210	1610	1615	2012	2517	3020	3030		
0.375	0.125	0.06	–	019A0006	019B0006									
0.500	0.125	0.06	–	008	008		019G0008	019H0008						
0.625	0.187	0.09	–	010	010	019C0010	010	010						
0.750	0.187	0.09	–	012	012	012	012	012	019K0012	019M0012				
0.875	0.250	0.12	–	014	014	014	014	014	014	014				
1.000	0.250	0.12	0.052	100*	100	100	100	100	100	100				
1.125	0.312	0.11	0.064		102*	102	102	102	102	102				
1.250	0.312	0.11	–			104	104	104	104	104	019P0104	019Q0104		
1.375	0.375	0.11	–				106	106	106	106	106	106	106	106
1.500	0.375	0.11	–				108	108	108	108	108	108	108	108
1.625	0.437	0.13	0.103				110	110*	110	110	110	110	110	110
1.750	0.437	0.13	–						112	112	112	112	112	112
1.875	0.500	0.13	–						114	114	114	114	114	114
2.000	0.500	0.13	–						200	200	200	200	200	200
2.125	0.625	0.18	–							202	202	202	202	202
2.250	0.625	0.18	–							204	204	204	204	204
2.375	0.625	0.18	–							206	206	206	206	206
2.500	0.625	0.18	–							208	208	208	208	208
2.625	0.750	0.21	–								210	210	210	210
2.750	0.750	0.21	–								212	212	212	212
2.875	0.750	0.21	–								214	214	214	214
3.000	0.750	0.21	–								300	300	300	300

INCH BORES AND KEYWAYS

Bore Dia.	Keyway		Shallow Keyway Depth	Product Code										
	Width	Depth		3525	3535	4030	4040	4535	4545	5040	5050			
1.500	0.375	0.11	–	019J0108	019R0108									
1.625	0.437	0.13	–	110	110									
1.750	0.437	0.13	–	112	112	019X0112	19S0112							
1.875	0.500	0.13	–	114	114	114	114							
2.000	0.500	0.13	–	200	200	200	200							
2.125	0.625	0.18	–	202	202	202	202							
2.250	0.625	0.18	–	204	204	204	204	019Y0204	019T0204					
2.375	0.625	0.18	–	206	206	206	206	206	206					
2.500	0.625	0.18	–	208	208	208	208	208	208					
2.625	0.750	0.21	–	210	210	210	210	210	210					
2.750	0.750	0.21	–	212	212	212	212	212	212	019Z0212	019U0212			
2.875	0.750	0.21	–	214	214	214	214	214	214	214	214	214	214	214
3.000	0.750	0.21	–	300	300	300	300	300	300	300	300	300	300	300
3.125	0.875	0.26	–	302	302	302	302	302	302	302	302	302	302	302
3.250	0.875	0.26	–	304	304	304	304	304	304	304	304	304	304	304
3.375	0.875	0.26	–	306	306	306	306	306	306	306	306	306	306	306
3.500	0.875	0.26	–	308	308	308	308	308	308	308	308	308	308	308
3.750	1.000	0.32	0.245	312*		312	312	312	312	312	312	312	312	312
4.000	1.000	0.32	0.155	400*		400	400	400	400	400	400	400	400	400
4.250	1.250	0.37	–			404		404	404	404	404	404	404	404
4.500	1.250	0.37	0.255			408*		408	408	408	408	408	408	408
4.750	1.250	0.37	–					412			412	412	412	412
5.000	1.250	0.37	0.258					500*			500	500	500	500

Dimensions in inches.

All Keyways are parallel and to British Standard 46: Part 1: 1958, with the exception of those marked* which are shallower.

Where a key is to be used it should be side fitting, with top clearance. Depth of keyway is measured at the CENTRE.

Bold italic type indicates bushes made of steel or ductile iron.

MINIMUM DIAMETERS OF TAPER BORED HUBS

The following table shows the recommended minimum diameter in mm for bespoke component hubs that are to be drilled, tapped and taper bored for use with Taper Lock bushes. The table differentiates between grey iron and ductile materials of various minimum tensile strength grades (in N/mm² or MN/m² units, which are numerically equal).

All standard Fenner Taper Lock products are tested to ensure that they are capable of safely containing the radial and circumferential hub stresses generated by the wedging mechanism which makes Taper Lock the equivalent of a shrink-on fit. For Taper Lock hub machining details, consult your local Authorised Distributor.

Taper Lock® Bush	Minimum Hub Diameters (mm) for Various Materials			
	Tensile Strength N/mm ²			
	Cast Iron 180	Cast Iron 250	Steel / Ductile Iron 420	Steel 600
1008	62	54	51	47
1108	64	57	54	50
1210	104	86	78	69
1610	109	92	85	78
1615	90	81	77	73
2012	121	106	99	92
2517	130	119	113	108
3020	160	146	140	132
3030	144	136	132	127
3525	211	191	178	167
3535	191	176	168	160
4030	224	207	197	186
4040	209	195	188	180
4535	223	212	205	198
4545	215	205	200	194
5040	240	229	223	216
5050	233	223	219	213

AVERAGE SLIP TORQUES FOR TAPER LOCK FIXING (WITHOUT KEY)

The following table shows empirically derived average slip torque values in Nm for each basic Taper Lock bush size with a variety of common metric bore diameters. The values assume that the assembly uses a Fenner Taper Lock bush fitted, in accordance with the instructions supplied with every bush, to a hub prepared to the Fenner specification. Slip will tend to occur at the bush/shaft interface, at the prescribed torque, unless a key is fitted. With a key, the slip tendency transfers to the bush/hub interface at a greater torque value related to the ratio of bush outer dia. to bore dia.. Consult your local Authorised Distributor for specific values.

Formula to calculate the slip torque if a key is used: $\frac{\text{Large OD of Bush}^\#}{\text{Bush bore}} \times \text{Average slip torque value}$

[#] From the table on page 129

Bush	Bore (mm)	Average Slip Torque (Nm)	Bush	Bore (mm)	Average Slip Torque (Nm)		
1008	12	29	3020	38	520		
	19	51		3030	48	730	
	24	66			55	890	
1108	12	28	3525*		60	970	
	19	49		75	1300		
	24	64		3535	42	1000	
	28	79			60	1580	
1210	16	82	4030*	75	2150		
	19	105		4040	90	2600	
	24	142			100*	3075	
	32	210			4535*	48	1700
1610	19	98	4545			60	2300
	1615	24		135		75	3150
2012		38	240	4535*		100	4400
	42	265	115*		5150		
	24	165	5040		55	2500	
	38	320			5050	75	3900
	42	340				100	5500
48	400	110		6300			
50	420	125*	6625				
2517	24	220	5040	75	3950		
	38	380		5050	100	5650	
	42	430			125	7370	
	48	510					
	55	600					
	60	670					

Large bores marked* are only available in bush sizes marked*

Taper Lock bushes work effectively on shaft diameters of: Nominal +0.05 / -0.125mm