

Taper Bushes



Taper bushes provide a low cost, simple, quick method of securing sprocket, pulleys and couplings to a wide range of standard metric and imperial dimensioned shafts of general commercial tolerances and finish.

The taper surfaces on the bush and mating hub are driven together by high tensile screws, causing the split bush to be firmly contracted onto the shaft. The strong clamping force which can be achieved enables transmission of high torque without the problems of fretting associated with simple keyseated drives.

The design ensures quick, easy installation of sprockets and pulleys onto shafts with simple positioning for alignment. Positive jacking-off of the bush during removal ensures quick disassembly without normal problems of seizure between shaft and pulley. The standard bushes shown opposite are suitable for taper bore pulleys shown on pages 35-36.



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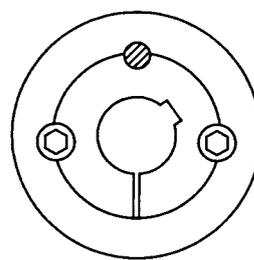
Instructions - Installation and Removal

Installation

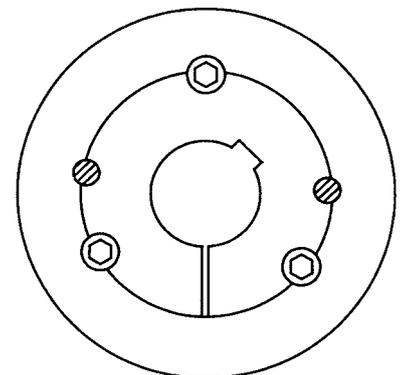
1. Remove protective coating from the bore and outside bush, and bore of hub. After ensuring the mating tapered surfaces are completely clean, insert bush in hub so that holes line up.
2. Oil thread and point of grub screws, or thread and under head of cap screws. Place screws loosely in holes threaded in hub, shown thus  in diagram.
3. Clean shaft and fit hub and bush to shaft. Locate in position, remembering bush will nip the shaft first and then hub will be drawn on to the bush.
4. Using a hexagon wrench tighten screws gradually and alternately until all are pulled up very tightly. Use a piece of pipe on wrench to increase leverage.
5. When a key is not used, hammer against large end of bush using a block or sleeve to prevent damage. Screws will now turn a little more. Repeat this alternate hammering and screw tightening once or twice. After drive has run under load for a short time, check tightness of screws.
6. If a key is to be fitted, do so after the bush has been tightened on to the shaft, and then fit a parallel key that is side fitting with top clearance.
7. Fill empty holes with grease to exclude dirt.

Removal

1. Slacken all screws by several turns, remove one or two according to number of jacking off holes thus  in diagram. Insert screws in jacking off holes after oiling thread and point of grub screws or thread under head of cap screws.
2. Tighten screws alternately until bush is loosened in hub and assembly is free on the shaft.
3. Remove assembly from shaft.



Bush with 2 Grub Screws
(Sizes 1008-3030)



Bush with 3 Grub Screws
(Sizes 3535 and above)

Installation and Design Recommendations

It is recommended that a key should be fitted with bushes in rigid and flexible couplings, timing belt and chain drives, and wherever loads of a heavy pulsating nature are encountered. All keyways are parallel keyways to British Standard 4235 Part 1 : 1972 for metric dimensional shafts, or British Standard 46 Part 1 : 1958 for imperial dimensional shafts, with the exception of those marked* in the tables which are slightly shallower. Where a key is used it should be parallel type with side fitting and top clearance.

It is not recommended to use taper bushes with maximum or minimum bore sizes on drives where high shock loads may be encountered.

Taper Bushes

Bush Dimensions



Bush No.	Approx. Weight kg	Bush Dimensions					Metric Bore Bushes				Imperial Bore Sizes								
		Length mm	o.d. large end of taper mm	Grub Screws			Bore sizes available mm				Keyway mm		Bore sizes available inches		Keyway Inches				
				No.	Screw Size	Key Size mm					Width	Depth at Centre			Width	Depth at Side			
1008	0.11	22.2	35	2	1/4" x 1/2" B.S.W.	3	9	11	10	12	3	1.4	3/8	1/2	3/4	1/8	3/16	1/16	3/32
1108	0.12	22.2	38	2	1/4" x 1/2" B.S.W.	3	9	11	10	12	3	1.4	3/8	1/2	3/4	1/8	3/16	1/16	3/32
1210	0.23	25.4	48	2	3/8" x 5/8" B.S.W.	5	14	11	12		4	1.8	5/8	1/2	3/4	1/8	3/16	1/16	3/32
1215	0.35	38.1					18	19	20	22	25	28	30	6	2.8	7/8	1	1 1/8	1/4
1610	0.35	25.4	57	2	3/8" x 5/8" B.S.W.	5	14	18	16	22	5	2.3	5/8	1/2	3/4	1/8	3/16	1/16	3/32
1615	0.45	38.1					24	25	28	30	32	40	42	6	2.8	7/8	1	1 1/8	1/4
					(1615 only)		42	42	42	12	1.3**	1 3/8	1 5/8	1 5/8	3/8	7/16	1/8	1/8*	
2012	0.68	31.8	70	2	7/16" x 7/8" B.S.W.	6	14	15	16	22	5	2.3	7/8	1	3/4	3/16	1/4	3/32	1/8
							18	19	20	30	6	2.8	1 1/8	1 1/4	1 1/4	5/16	3/8	1/8	1/8
							24	25	28	30	8	3.3	1 3/8	1 1/2	1 3/4	7/16	3/8	5/32	1/8
							32	35	38	38	10	3.3	1 5/8	1 3/4	2	7/16	1/2	5/32	1/8
							45	48	50	50	12	3.8	1 7/8	2	2	1/2	5/8	7/32	5/32
2517	1.5	44.5	86	2	1/2" x 1" B.S.W.	6	19	20	22	22	6	2.8	7/8	1	1 1/4	5/16	1/4	1/8	1/8
2525	1.9	63					24	25	28	30	32	35	38	8	3.3	1 5/8	1 1/2	1 3/4	7/16
							45	48	50	55	10	3.3	1 5/8	1 3/4	2	7/16	1/2	5/32	1/8
							60	65†	55	55	12	3.8	1 7/8	2	2	5/8	7/32	5/32	
							60	65†	55	55	14	4.3	2 1/8	2 1/2	2 1/2	5/8	5/8	3/16	3/16
							60	65†	55	55	16	4.4	2 3/8	2 3/4	3	5/8	5/8	3/16	3/16
3020	2.7	50.8	108	2	5/8" x 1 1/4" B.S.W.	8	25	28	30	38	8	3.3	1 3/8	1 1/2	1 3/4	3/8	5/16	1/8	1/8
3030	3.6	76					32	35	38	42	45	48	50	10	3.3	1 5/8	1 3/4	2	7/16
							55	55	55	55	12	3.3	1 7/8	2	2	1/2	5/8	5/32	1/8
							60	65	55	55	14	3.8	1 7/8	2	2	5/8	5/8	7/32	1/8
							70	75	55	55	16	4.3	2 1/8	2 1/2	2 1/2	5/8	5/8	3/16	3/16
							70	75	55	55	18	4.4	2 3/8	2 3/4	3	5/8	5/8	3/16	3/16
							70	75	55	55	20	4.9	3 1/4	3 3/8	3 3/8	5/8	5/8	3/16	3/16
							80	85	55	55	22	5.4	3 3/4	3 1/2	4	7/8	7/8	1/4	1/4
							90	95	55	55	25	5.4	4 1/4	4 1/2	4	1 1/4	1 1/4	5/16*	5/16*
							90	95	55	55	28	6.4	4 3/4	4 3/4	5	1 1/4	1 1/4	5/16*	5/16*
							100	105	55	55	32	7.4	5 1/4	5 1/2	5	1 1/4	1 1/4	5/16*	5/16*
3525	4.0	63	127	3	1/2" x 1 1/2" B.S.W.	10	32	35	38	42	10	3.3	1 5/8	1 3/4	2	7/16	3/8	5/32	1/8
3535	5.0	89					45	48	50	55	60	65	75	12	3.3	1 5/8	1 3/4	2	7/16
							60	65	75	75	14	3.8	2 1/4	2 1/2	2 1/2	5/8	3/4	7/32	1/4
							70	75	75	75	16	4.3	2 3/4	3	3	7/8	3/4	5/16	1/4
							80	85	75	75	18	4.4	3 1/4	3 3/8	3 3/8	7/8	3/4	5/16	1/4
							80	85	75	75	20	4.9	3 3/4	3 1/2	4	7/8	3/4	5/16	1/4
							90	95	75	75	22	5.4	4 1/4	4 1/2	4	1	1	1/4*	1/4*
							90	95	75	75	25	5.4	4 3/4	4 3/4	4	1	1	1/4*	1/4*
							100	105	75	75	28	6.4	5 1/4	5 1/2	5	1 1/4	1 1/4	5/16*	5/16*
4030	6.5	76	146	3	5/8" x 1 3/4" B.S.W.	12	45	48	50	55	12	3.3	1 3/8	1 1/2	1 3/4	7/16	1/2	5/32	1/8
4040	7.7	102					60	65	75	75	80	85	95	14	3.8	1 5/8	1 3/4	2	7/16
							70	75	75	75	16	4.3	2 1/8	2 1/2	2 1/2	5/8	3/4	7/32	1/4
							70	75	75	75	18	4.4	2 3/8	2 3/4	3	7/8	3/4	5/16	1/4
							80	85	75	75	20	4.9	3 1/4	3 1/2	4	7/8	3/4	5/16	1/4
							80	85	75	75	22	5.4	3 3/4	3 1/2	4	1	1	1/4*	1/4*
							90	95	75	75	25	5.4	4 1/4	4 1/2	4	1	1	1/4*	1/4*
							90	95	75	75	28	6.4	4 3/4	4 3/4	5	1 1/4	1 1/4	5/16*	5/16*
4535	8	89	162	3	3/4" x 2" B.S.W.	14	60	65	75	75	16	4.3	2 1/4	2 3/8	2 1/2	5/8	3/4	7/32	1/4
4545	10	114					70	75	75	75	80	85	95	18	4.4	2 3/4	3	3	7/8
							80	85	75	75	20	4.9	3 1/4	3 1/2	4	7/8	3/4	5/16	1/4
							80	85	75	75	22	5.4	3 3/4	4	4	1	1	1/4*	1/4*
							90	95	75	75	25	5.4	4 1/4	4 1/2	4 1/2	1 1/4	1 1/4	5/16*	5/16*
							90	95	75	75	28	6.4	4 3/4	4 3/4	5	1 1/4	1 1/4	5/16*	5/16*
5040	12	102	178	3	7/8" x 2 1/4" B.S.W.	17	70	75	75	75	20	4.9	2 3/4	3	3 3/2	7/8	3/4	5/16	1/4
5050	14	127					80	85	95	95	100	105	110	22	5.4	3 1/4	3 1/2	4	7/8
							100	105	110	110	25	5.4	3 3/4	4	4	1	1	3/8	3/8
							100	105	110	110	28	6.4	4 1/4	4 1/2	4 3/4	1 1/4	1 1/4	5/16*	5/16*
							115	120	125	125	32	7.4	5 1/4	5 1/2	5	1 1/4	1 1/4	5/16*	5/16*

†Bore size 65mm has keyway 2.3mm deep on 2525 Bush

* Shallow Key not to B.S. 46 Part 1.

**Shallow Key not to B.S. 4235 Part 1.

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