TAPER BUSHES

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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 Dunlop Taper bushes. All standard Dunlop Taper bushes 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 bushes the equivalent of a shrink-on fit.

TAPER BUSH	MINIMUM HUB DIAMETERS (mm) FOR VARIOUS MATERIALS			
	TENSILE STRENGTH N/mm²			
	CAST IRON 180	CAST IRON 250	STEEL 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 BUSH FIXING

The following table shows average slip torque values in Nm for each basic Taper bush size with a variety of common metric bore diameters. The values assume that the assembly uses a Dunlop Taper bush fitted in accordance with the instructions supplied with every bush to a hub prepared to the Dunlop specification. 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.

TAPER BUSH	BORE (mm)	AVERAGE SLIP TORQUE (Nm)
1008	12	29
	19	59
	24	66
1108	12	28
	19	49
	28	79
1210	16	82
	24	142
	32	210
1610 1615	19	98
	24	135
	42	265
2012	24	320
	42	340
	50	420
2517	24	220
	42	430
	60	670

TAPER BUSH	BORE (mm)	AVERAGE SLIP TORQUE (Nm)
3020 3030	38	520
	55	890
	75	1300
3525* 3535	42	1000
	75	2150
	100	3075
4030* 4040	48	1700
	75	3150
	115	5150
4535 4545	55	2500
	100	5500
	125	6625
5040 5050	75	3950
	100	5650
	125	7370

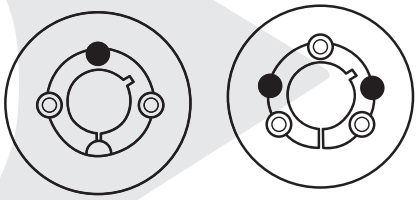
Large bores marked* are only available in bush sizes marked*

TO INSTALL

- Remove the protective coating from the bore and outside of bush and bore of hub. After ensuring that the mating tapered surfaces are completely clean and free from oil or dirt, insert bush in hub so that holes line up.
- Sparingly 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.
- If a key is to be fitted place it in the shaft keyway before fitting the bush. It is essential that it is a parallel key and side fitting only and has TOP CLEARANCE.
- Clean shaft and fit hub to shaft as one unit and locate in position desired, remembering that bush will nip the shaft first and then the hub will be slightly drawn on to the brush.
- Using a hexagon wrench tighten screws gradually and alternately to torque shown in table below.
- Hammer against large-end of bush, using a block or sleeve to prevent damage. (This will ensure that the bush is seated squarely in the bore). Screws will now turn a little more. Repeat this alternate hammering and screw tightening once or twice to achieve maximum grip on the shaft.
- After drive has been running under load for a short time stop and check tightness of screws.
- Fill empty holes with grease to exclude dirt.

TO REMOVE

- Slacken all screws by several turns, remove one or two according to number of removal holes shown thus ● in diagram. Insert screws into removal holes after oiling thread and under head of cap screws.
- Tighten screws alternately until bush is loosened in hub and assembly is free on the shaft.
- Remove assembly from shaft.



Removal holes ●

BUSH SIZE		1008	1108	1210	1610	1615	2012	2517	3020	3030	3525	3535	4030	4040	4535	4545	5040	5050
Screw tightening torque (Nm)		5.6	5.6	20	20	20	30	50	90	90	115	115	170	170	190	190	270	270
	QTY	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3
Screw Details	Size (BSW)	¼"	¼"	⅜"	⅜"	⅜"	7/16"	½"	⅝"	⅝"	½"	½"	⅝"	⅝"	¾"	¾"	⅞"	⅞"
	Hex, Socket size (mm)	3	3	5	5	5	6	6	8	8	10	10	12	12	14	14	14	14
Large end dia. (mm)		35.0	38.0	47.5	57.0	57.0	70.0	85.5	108	108	127	127	146	146	162	162	178	178
Bush length (mm)		22.3	22.3	25.4	25.4	38.1	31.8	44.5	50.8	76.2	63.5	89.0	76.2	102	89.0	114	102	127
Approx mass (kg)		0.1	0.1	0.2	0.3	0.5	0.7	1.5	2.7	3.6	3.8	5.0	5.6	7.7	7.5	10.0	11.1	14.0

DUNLOP

TAPER BUSHES

TAPER BUSHES

Description

Dunlop Taper Bushes are the most convenient and cost effective method of fixing components to a mating shaft without using any special tools. Taper Bushes are pre-machined with the required bore & keyway size and are supplied complete with locking set screws, thus making savings in time and cost on any machining process. They are available with both metric or imperial bore and keyway size options.

Taper Bushes are designed for use with V-Pulleys, Chain Sprockets, Micro V-Pulleys, Timing Belt Pulleys, Couplings, Weld-On & Bolt-On Hubs. Part numbers are identified by a 4 digit number (e.g. 1610) which represents the taper bush series followed by the bore size (e.g. 28mm) for example 1610x28mm.

METRIC BORES AND KEYWAYS

BORE DIA.	KEYWAY		SHALLOW KEYWAY DEPTH	TAPER BUSH PART NUMBER								
	WIDTH	DEPTH		1008	1108	1210	1610	1615	2012	2517	3020	3030
9	3	1.4	-	*	*							
10	3	1.4	-	*	*							
11	4	1.8	-	*	*	*						
12	4	1.8	-	*	*	*						
14	5	2.3	-	*	*	*	*	*	*			
15	5	2.3	-	*	*	*	*	*	*			
16	5	2.3	-	*	*	*	*	*	*	*		
18	6	2.8	-	*	*	*	*	*	*	*		
19	6	2.8	-	*	*	*	*	*	*	*		
20	6	2.8	-	*	*	*	*	*	*	*		
22	6	2.8	-	*	*	*	*	*	*	*		
24	8	3.3	1.3	*	*	*	*	*	*	*		
25	8	3.3	1.3	*	*	*	*	*	*	*	*	
28	8	3.3	1.3		*	*	*	*	*	*	*	
30	8	3.3	-			*	*	*	*	*	*	
32	10	3.3	-			*	*	*	*	*	*	
35	10	3.3	-				*	*	*	*	*	*
38	10	3.3	-				*	*	*	*	*	*
40	12	3.3	-				*	*	*	*	*	*
42	12	3.3	2.2				*	*	*	*	*	*
45	14	3.8	-						*	*	*	*
48	14	3.8	-						*	*	*	*
50	14	3.8	-						*	*	*	*
55	16	4.3	-							*	*	*
60	18	4.4	-							*	*	*
65	18	4.4	-								*	*
70	20	4.9	-								*	*
75	20	4.9	-								*	*

METRIC BORES AND KEYWAYS

BORE DIA.	KEYWAY		SHALLOW KEYWAY DEPTH	TAPER BUSH PART NUMBER							
	WIDTH	DEPTH		3525	3535	4030	4040	4535	4545	5040	5050
35	10	3.3	-	*	*						
38	10	3.3	-	*	*						
40	12	3.3	-	*	*	*	*				
42	12	3.3	-	*	*	*	*				
45	14	3.8	-	*	*	*	*				
48	14	3.8	-	*	*	*	*				
50	14	3.8	-	*	*	*	*				
55	16	4.3	-	*	*	*	*	*	*		
60	18	4.4	-	*	*	*	*	*	*		
65	18	4.4	-	*	*	*	*	*	*		
70	20	4.9	-	*	*	*	*	*	*	*	*
75	20	4.9	-	*	*	*	*	*	*	*	*
80	22	5.4	-	*	*	*	*	*	*	*	*
85	22	5.4	-	*	*	*	*	*	*	*	*
90	25	5.4	-	*	*	*	*	*	*	*	*
95	25	5.4	-	*		*	*	*	*	*	*
100	28	6.4	4.4	*		*	*	*	*	*	*
105	28	6.4	-			*		*	*	*	*
110	28	6.4	-			*		*	*	*	*
115	32	7.4	5.4			*		*		*	*
120	32	7.4	-					*		*	*
125	32	7.4	-					*		*	*

INCH BORES AND KEYWAYS

BORE DIA.	KEYWAY		SHALLOW KEYWAY DEPTH	TAPER BUSH PART NUMBER								
	WIDTH	DEPTH		1008	1108	1210	1610	1615	2012	2517	3020	3030
0.375	0.125	0.06	-	*	*							
0.500	0.125	0.06	-	*	*		*	*				
0.625	0.187	0.09	-	*	*	*	*	*				
0.750	0.187	0.09	-	*	*	*	*	*	*	*		
0.875	0.250	0.12	-	*	*	*	*	*	*	*		
1.000	0.250	0.12	0.052	*	*	*	*	*	*	*		
1.125	0.312	0.11	0.064		*	*	*	*	*	*		
1.250	0.312	0.11	-			*	*	*	*	*	*	*
1.375	0.375	0.11	-				*	*	*	*	*	*
1.500	0.375	0.11	-				*	*	*	*	*	*
1.625	0.437	0.13	0.103				*	*	*	*	*	*
1.750	0.437	0.13	-						*	*	*	*
1.875	0.500	0.13	-						*	*	*	*
2.000	0.500	0.13	-						*	*	*	*
2.125	0.625	0.18	-							*	*	*
2.250	0.625	0.18	-							*	*	*
2.375	0.625	0.18	-							*	*	*
2.500	0.625	0.18	-							*	*	*
2.625	0.750	0.21	-								*	*
2.750	0.750	0.21	-								*	*
2.875	0.750	0.21	-								*	*
3.000	0.750	0.21	-								*	*

METRIC BORES AND KEYWAYS

BORE DIA.	KEYWAY		SHALLOW KEYWAY DEPTH	TAPER BUSH PART NUMBER							
	WIDTH	DEPTH		3525	3535	4030	4040	4535	4545	5040	5050
1.500	0.375	0.11	-	*	*						
1.625	0.437	0.13	-	*	*						
1.750	0.437	0.13	-	*	*	*	*				
1.875	0.500	0.13	-	*	*	*	*				
2.000	0.500	0.13	-	*	*	*	*				
2.125	0.625	0.18	-	*	*	*	*				
2.250	0.625	0.18	-	*	*	*	*	*	*		
2.375	0.625	0.18	-	*	*	*	*	*	*		
2.500	0.750	0.18	-	*	*	*	*	*	*		
2.625	0.750	0.21	-	*	*	*	*	*	*		
2.750	0.750	0.21	-	*	*	*	*	*	*	*	*
2.875	0.750	0.21	-	*	*	*	*	*	*	*	*
3.000	0.875	0.21	-	*	*	*	*	*	*	*	*
3.125	0.875	0.26	-	*	*	*	*	*	*	*	*
3.250	0.875	0.26	-	*	*	*	*	*	*	*	*
3.375	0.875	0.26	-	*	*	*	*	*	*	*	*
3.500	1.000	0.26	-	*	*	*	*	*	*	*	*
3.750	1.000	0.32	0.245	*		*	*	*	*	*	*
4.000	1.250	0.32	0.155	*		*	*	*	*	*	*
4.250	1.250	0.37	-			*		*	*	*	*
4.500	1.250	0.37	0.255			*		*	*	*	*
4.750	1.250	0.37	-					*		*	*
5.000	1.250	0.37	0.258					*		*	*