

TAPER BUSHES AND HUBS

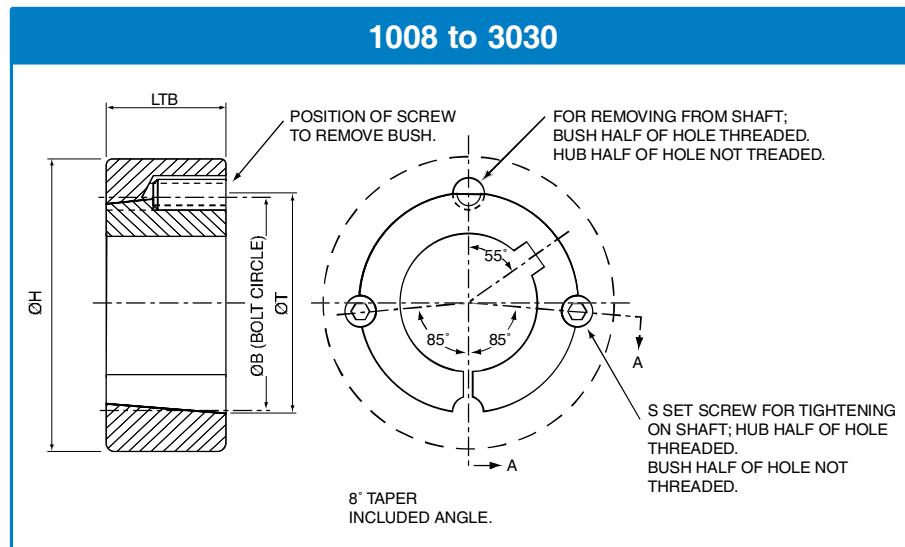


Taper Bushes

Range and Material Specifications:

Challenge Taper Bushes are manufactured to the highest quality standards using GG22 - 25 cast iron depending on size. Thin wall bushes are produced from C45 steel. All surfaces are carefully machined to provide maximum contact area and transmission of torque.

In excess of 500 sizes of Challenge Taper Bushes are manufactured and stocked making this one of the most comprehensive ranges available today.

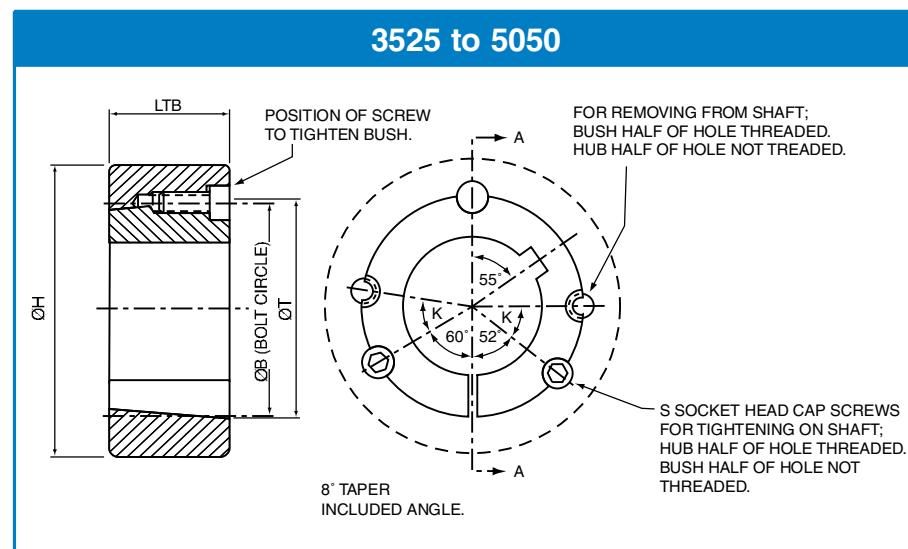


Taper Bush 1008 to 3030

BUSH Size.	Ø T	LTB	Minimum HUB Dia H			Ø B	S Set Screws	
			UTS 200 N/mm ²	UTS Gray Iron	UTS 420 N/mm ² Steel		QTY. Screws	Size (Inches)
1008	35.20	22.3	59	54	51	33.73	2	1/4 x 1/2
1108	38.38	22.3	61	57	54	36.92	2	1/4 x 1/2
1210	47.62	25.4	99	86	78	44.44	2	3/8 x 5/8
1215	47.62	38.1	79	73	68	44.44	2	3/8 x 5/8
1310	50.80	25.4	100	88	80	47.63	2	3/8 x 5/8
1610	57.15	25.4	102	92	85	53.97	2	3/8 x 5/8
1615	57.15	38.1	86	81	77	53.97	2	3/8 x 5/8
2012	69.85	31.8	115	106	99	66.68	2	7/16 x 7/8
2517	85.73	44.5	125	119	113	82.55	2	1/2 x 1
2525	85.73	63.5	115	111	108	82.56	2	1/2 x 1
3020	107.96	50.8	154	146	140	101.60	2	5/8 x 1.1/4
3030	107.96	76.2	141	136	132	101.60	2	5/8 x 1.1/4

Severe operating conditions may require the use of a larger diameter hub.

Taper Bushes



Taper Bush 3525 to 5050

BUSH Size.	\varnothing T	LTB	Minimum HUB Dia H			\varnothing B	S Cap Screws		K
			UTS 200 N/mm ² Gray Iron	UTS 250 N/mm ² Gray Iron	UTS 420 N/mm ² Steel		QTY. Cap Screws	Size (Inches)	
3525	127.00	63.5	206	191	178	122.68	3	1/2 x 1.1/2	40°
3535	127.00	89.0	185	176	168	122.68	3	1/2 x 1.1/2	40°
4030	146.05	76.2	220	207	197	140.72	3	5/8 x 1.3/4	40°
4040	146.05	101.5	203	195	188	140.72	3	5/8 x 1.1/4	40°
4535	161.93	89.0	221	212	205	455.70	3	3/4 x 2	40°
4545	161.93	114.3	211	205	200	155.70	3	3/4 x 2	40°
5040	177.80	101.6	236	229	223	170.69	3	7/8 x 2.1/4	37°
5050	177.80	127.0	230	223	219	170.69	3	7/8 x 2.1/4	37°

Severe operating conditions may require the use of a larger diameter hub.

Taper Bushes

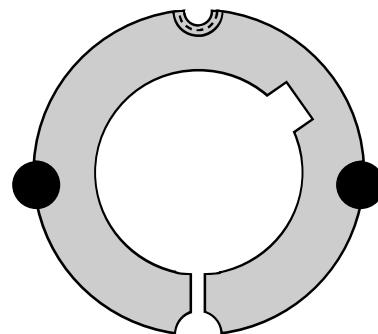
To Install

1. Clean shaft, bore and outside of bush, and bore of hub. Remove any oil, laquer or dirt. Place bush in hub and match half holes to make complete holes (each complete hole will be threaded on one side only).
2. Lightly oil thread and point of set screws, or thread and under head of cap screws. Place screws loosely in holes that are threaded on hub side.
3. Make sure bush is free in hub. Slip assembly onto shaft and locate in the desired position.
4. Tighten screws alternately and evenly until all are pulled up tightly (See table for torque settings).
5. Hammer against large end of bush using hammer and block or sleeve to avoid damage. Screws can now be turned a little more to the specified torque setting. Repeat this alternate hammering and screw re-tightening until the specified torque is reached. Fill all holes with grease to exclude dirt.

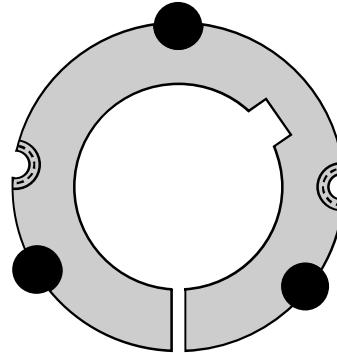
To Remove

1. Remove all screws (●). Lightly oil thread and point of set screws, or thread and under head of cap screws.
2. Insert screws into removel holes that are threaded on the bush side(☛). In sizes where washers are found under screw heads, be sure to use these washers.
3. Tighten screws alternately until bush is loosened in hub and then remove the complete assembly. If bush does not loosen immediately, tap on hub.

1008 to 3030



3525 to 5050



Recommended Wrench Torque

Bush Size.	Screws	Tightening Torque (Nm)	Bush Size.	Screws	Tightening Torque (Nm)	Bush Size.	Screws	Tightening Torque (Nm)
1008	1/4" Set Screws	6	2012	7/16" Set Screws	30	4030	5/8" Cap Screws	170
1108	1/4" Set Screws	6	2517	1/2" Set Screws	50	4040	5/8" Cap Screws	170
1210	3/8" Set Screws	20	2525	1/2" Set Screws	50	4535	3/4" Cap Screws	190
1215	3/8" Set Screws	20	3020	5/8" Set Screws	90	4545	3/4" Cap Screws	190
1310	3/8" Set Screws	20	3030	5/8" Set Screws	90	5040	7/8" Cap Screws	270
1610	3/8" Set Screws	20	3525	1/2" Cap Screws	113	5050	7/8" Cap Screws	270
1615	3/8" Set Screws	20	3535	1/2" Cap Screws	113			

Taper Bushes - Metric

1008

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
9	0.13	3 x 1.4	3 x 1.8
10	0.14	3 x 1.4	3 x 1.8
11	0.14	4 x 1.8	4 x 2.5
12	0.13	4 x 1.8	4 x 2.6
14	0.13	5 x 2.3	5 x 3.0
16	0.12	5 x 2.3	5 x 3.0
18	0.11	6 x 2.8	6 x 3.5
19	0.10	6 x 2.8	6 x 3.5
20	0.10	6 x 2.8	6 x 3.5
22	0.09	6 x 2.8	6 x 3.5
24*	0.09	8 x 1.3*	8 x 4.0
25*	0.08	8 x 1.3*	8 x 4.0

1108

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
9	0.16	3 x 1.4	3 x 1.8
10	0.15	3 x 1.4	3 x 1.8
11	0.10	4 x 1.8	4 x 2.5
12	0.16	4 x 1.8	4 x 2.5
14	0.16	5 x 2.3	5 x 3.0
16	0.14	5 x 2.3	5 x 3.0
18	0.14	6 x 2.8	6 x 3.5
19	0.13	5 x 2.8	6 x 3.5
20	0.13	6 x 2.8	6 x 3.5
22	0.12	6 x 2.8	6 x 3.5
24	0.11	8 x 3.3	8 x 4.0
25	0.10	8 x 3.3	8 x 4.0
28*	0.09	8 x 1.3*	8 x 4.0

1210

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
11	0.20	4 x 1.8	4 x 2.5
12	0.28	4 x 1.8	4 x 2.5
14	0.28	5 x 2.3	5 x 3.0
16	0.27	5 x 2.3	5 x 3.0
18	0.26	6 x 2.8	6 x 3.5
19	0.25	6 x 2.8	6 x 3.5
20	0.25	6 x 2.8	6 x 3.5
22	0.23	6 x 2.8	6 x 3.5
24	0.22	8 x 3.3	8 x 4.0
25	0.21	8 x 3.3	8 x 4.0
28	0.19	8 x 3.3	8 x 4.0
30	0.17	8 x 3.3	8 x 4.0
32	0.15	10 x 3.3	10 x 5.0

1215

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
11	0.41	4 x 1.8	4 x 2.5
12	0.40	4 x 1.8	4 x 2.5
14	0.39	5 x 2.3	5 x 3.0
16	0.38	5 x 2.3	5 x 3.0
18	0.37	6 x 2.8	6 x 3.5
19	0.36	6 x 2.8	6 x 3.5
20	0.35	6 x 2.8	6 x 3.5
22	0.33	6 x 2.8	6 x 3.5
24	0.31	8 x 3.3	8 x 4.0
25	0.30	8 x 3.3	8 x 4.0
28	0.27	8 x 3.3	8 x 4.0
30	0.24	8 x 3.3	8 x 4.0
32	0.22	10 x 3.3	10 x 5.0

1310

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
14	0.32	5 x 2.3	5 x 3.0
16	0.31	5 x 2.3	5 x 3.0
18	0.30	6 x 2.8	6 x 3.5
19	0.29	6 x 2.8	6 x 3.5
20	0.29	6 x 2.8	6 x 3.5
22	0.28	5 x 2.8	6 x 3.5
24	0.26	8 x 3.3	8 x 4.0
25	0.26	8 x 3.3	8 x 4.0
28	0.23	8 x 3.3	8 x 4.0
30	0.22	8 x 3.3	8 x 4.0
32	0.20	10 x 3.3	10 x 5.0
35	0.17	10 x 3.3	10 x 5.0

1610

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
14	0.42	5 x 2.3	5 x 3.0
16	0.41	5 x 2.3	5 x 3.0
18	0.40	6 x 2.8	6 x 3.5
19	0.40	6 x 2.8	6 x 3.5
20	0.39	6 x 2.8	6 x 3.5
22	0.38	6 x 2.8	6 x 3.5
24	0.36	8 x 3.3	8 x 4.0
25	0.35	8 x 3.3	8 x 4.0
28	0.33	8 x 3.3	8 x 4.0
30	0.31	8 x 3.3	8 x 4.0
32	0.29	10 x 3.3	10 x 5.0
35	0.26	10 x 3.3	10 x 5.0
38	0.24	10 x 3.3	10 x 5.0
40	0.22	12 x 3.3	12 x 5.0
42	0.20	12 x 3.3	12 x 5.0

Bold italic type indicate bushes made of steel.

Keyways are in accordance with BS4235, Part 1, 1972, DIN6885 and conform to ISO recommendations with the exception of those marked* which are shallower.

Depth of key measured at center

Taper Bushes - Metric

1615

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
14	0.60	5 x 2.3	5 x 3.0
16	0.58	5 x 2.3	5 x 3.0
18	0.56	6 x 2.8	6 x 3.5
19	0.56	6 x 2.8	6 x 3.5
20	0.54	6 x 2.8	6 x 3.5
22	0.52	6 x 2.8	6 x 3.5
24	0.50	8 x 3.3	6 x 4.0
25	0.49	8 x 3.3	8 x 4.0
28	0.47	8 x 3.3	8 x 4.0
30	0.44	8 x 3.3	8 x 4.0
32	0.41	10 x 3.3	10 x 5.0
35	0.38	10 x 3.3	10 x 5.0
38	0.33	10 x 3.3	10 x 5.0
40	0.31	12 x 3.3	12 x 5.0
42*	0.28	12 x 2.2*	12 x 5.0

2012

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
14	0.79	5 x 2.3	5 x 3.0
16	0.78	5 x 2.3	5 x 3.0
18	0.77	6 x 2.8	6 x 3.5
19	0.76	6 x 2.8	6 x 3.5
20	0.76	6 x 2.8	6 x 3.5
22	0.74	6 x 2.8	6 x 3.5
24	0.73	8 x 3.3	8 x 4.0
25	0.71	8 x 3.3	8 x 4.0
28	0.68	8 x 3.3	8 x 4.0
30	0.66	8 x 3.3	8 x 4.0
32	0.64	10 x 3.3	10 x 5.0
35	0.61	10 x 3.3	10 x 5.0
38	0.57	10 x 3.3	10 x 5.0
40	0.54	12 x 3.3	12 x 5.0
42	0.51	12 x 3.3	12 x 5.0
45	0.47	14 x 3.8	14 x 5.5
48	0.42	14 x 3.8	14 x 5.5
50	0.37	14 x 3.8	14 x 5.5

2517

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
16	1.75	5 x 2.3	5 x 3.0
18	1.71	6 x 2.8	6 x 3.5
19	1.66	6 x 2.8	6 x 3.5
20	1.62	6 x 2.8	6 x 3.5
22	1.58	6 x 2.8	6 x 3.5
24	1.56	8 x 3.3	8 x 4.0
25	1.56	8 x 3.3	8 x 4.0
28	1.50	8 x 3.3	8 x 4.0
30	1.49	8 x 3.3	8 x 4.0
32	1.46	10 x 3.3	10 x 5.0
35	1.42	10 x 3.3	10 x 5.0
38	1.35	10 x 3.3	10 x 5.0
40	1.31	12 x 3.3	12 x 5.0
42	1.26	12 x 3.3	12 x 5.0
45	1.20	14 x 3.8	14 x 5.5
48	1.14	14 x 3.8	14 x 5.5
50	1.10	14 x 3.8	14 x 5.5
55	0.95	16 x 4.3	16 x 6.0
60	0.82	18 x 4.4	18 x 7.0
65	0.70	18 x 4.4	18 x 7.0

2525

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
22	2.20	6 x 2.8	6 x 3.5
24	2.17	8 x 3.3	8 x 4.0
25	2.15	8 x 3.3	8 x 4.0
28	2.09	8 x 3.3	8 x 4.0
30	2.05	8 x 3.3	8 x 4.0
32	2.01	10 x 3.3	10 x 5.0
35	1.94	10 x 3.3	10 x 5.0
38	1.86	10 x 3.3	10 x 5.0
40	1.80	12 x 3.3	12 x 5.0
42	1.74	12 x 3.3	12 x 5.0
45	1.65	14 x 3.8	14 x 5.5
48	1.55	14 x 3.8	14 x 5.5
50	1.48	14 x 3.8	14 x 5.5
55	1.29	16 x 4.3	16 x 6.0
60	1.08	18 x 4.4	18 x 7.0

3020

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
25	2.93	8 x 3.3	8 x 4.0
28	2.88	8 x 3.3	8 x 4.0
30	2.85	8 x 3.3	8 x 4.0
32	2.84	10 x 3.3	10 x 5.0
35	2.77	10 x 3.3	10 x 5.0
38	2.71	10 x 3.3	10 x 5.0
40	2.67	12 x 3.3	12 x 5.0
42	2.60	12 x 3.3	12 x 5.0
45	2.56	14 x 3.8	14 x 5.5
48	2.47	14 x 3.8	14 x 5.5
50	2.20	14 x 3.8	14 x 5.5
55	2.15	16 x 4.3	16 x 6.0
60	2.07	18 x 4.4	18 x 7.0
65	1.93	18 x 4.4	18 x 7.0
70	1.70	20 x 4.9	20 x 7.5
75	1.50	20 x 4.9	20 x 7.5

3030

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
35	3.97	10 x 3.3	10 x 5.0
38	3.89	10 x 3.3	10 x 5.0
40	3.80	12 x 3.3	12 x 5.0
40	3.65	12 x 3.3	12 x 5.0
42	3.40	14 x 3.8	14 x 5.5
45	3.35	14 x 3.8	14 x 5.5
48	3.30	14 x 3.8	14 x 5.5
50	3.25	14 x 3.8	14 x 5.5
55	3.20	16 x 4.3	16 x 6.0
60	2.95	18 x 4.4	18 x 7.0
65	2.67	18 x 4.4	18 x 7.0
70	2.45	20 x 4.9	20 x 7.5
75	2.10	20 x 4.9	20 x 7.5

Bold italic type indicate bushes made of steel.

Keyways are in accordance with BS4235, Part 1, 1972, DIN6885 and conform to ISO recommendations with the exception of those marked* which are shallower.

Depth of key measured at center

Taper Bushes - Metric

3525

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
35	4.96	10 x 3.3	10 x 5.0
38	4.88	10 x 3.3	10 x 5.0
40	4.82	12 x 3.3	12 x 5.0
42	4.76	12 x 3.3	12 x 5.0
45	4.67	14 x 3.8	14 x 5.5
48	4.57	14 x 3.8	14 x 5.5
50	4.50	14 x 3.8	14 x 5.5
55	4.31	16 x 4.3	16 x 6.0
60	4.10	18 x 4.4	18 x 7.0
65	3.88	18 x 4.4	18 x 7.0
70	3.64	20 x 4.9	20 x 7.5
75	3.38	20 x 4.9	20 x 7.5
80	3.10	22 x 5.4	22 x 9.0
85	2.80	22 x 5.4	22 x 9.0
90	2.49	25 x 5.4	25 x 9.0
95	2.20	25 x 5.4	25 x 9.0
100*	2.00	28 x 5.4*	28 x 10.0

3535

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
35	6.20	10 x 3.3	10 x 5.0
38	6.50	10 x 3.3	10 x 5.0
40	6.60	12 x 3.3	12 x 5.0
42	6.34	12 x 3.3	12 x 5.0
45	6.25	14 x 3.8	14 x 5.5
48	6.10	14 x 3.8	14 x 5.5
50	6.00	14 x 3.8	14 x 5.5
55	5.77	16 x 4.3	16 x 6.0
60	5.45	18 x 4.4	18 x 7.0
65	5.15	18 x 4.4	18 x 7.0
70	4.80	20 x 4.9	20 x 7.5
75	4.45	20 x 4.9	20 x 7.5
80	4.06	22 x 5.4	22 x 9.0
85	3.63	22 x 5.4	22 x 9.0
90	3.50	25 x 5.4	25 x 9.0

4030

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
40	7.85	12 x 3.3	12 x 5.0
42	7.78	12 x 3.3	12 x 5.0
45	7.66	14 x 3.8	14 x 5.5
48	7.54	14 x 3.8	14 x 5.5
50	7.46	14 x 3.8	14 x 5.5
55	7.23	16 x 4.3	16 x 6.0
60	6.99	18 x 4.4	18 x 7.0
65	6.72	18 x 4.4	18 x 7.0
70	6.43	20 x 4.9	20 x 7.5
75	6.11	20 x 4.9	20 x 7.5
80	5.78	22 x 5.4	22 x 9.0
85	5.42	22 x 5.4	22 x 9.0
90	5.05	25 x 5.4	25 x 9.0
95	4.65	25 x 6.4	25 x 9.0
100	4.23	28 x 6.4	28 x 10.0
105	4.00	28 x 6.4	28 x 10.0
110	3.80	28 x 6.4	28 x 10.0
115*	3.60	32 x 5.4*	32 x 11.0

4040

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
40	10.46	12 x 3.3	12 x 5.0
42	10.07	12 x 3.3	12 x 5.0
45	9.77	14 x 3.8	14 x 5.5
48	9.84	14 x 3.8	14 x 5.5
50	9.50	14 x 3.8	14 x 5.5
55	9.25	16 x 4.3	16 x 6.0
60	8.90	18 x 4.4	18 x 7.0
65	8.50	18 x 4.4	18 x 7.0
70	8.20	20 x 4.9	20 x 7.5
75	7.70	20 x 4.9	20 x 7.5
80	7.40	22 x 5.4	22 x 9.0
85	6.90	22 x 5.4	22 x 9.0
90	6.40	25 x 5.4	25 x 9.0
95	5.95	25 x 5.4	25 x 9.0
100	5.50	28 x 6.4	28 x 10.0

Bold italic type indicate bushes made of steel.

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Depth of key measured at center

Taper Bushes - Metric

4535

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
55	10.69	16 x 4.3	10 x 6.0
60	10.40	18 x 4.4	18 x 7.0
65	10.08	18 x 4.4	18 x 7.0
70	9.74	20 x 4.9	20 x 7.5
75	9.38	20 x 4.9	20 x 7.5
80	8.99	22 x 5.4	22 x 9.0
85	8.57	22 x 5.4	22 x 9.0
90	8.13	25 x 5.4	25 x 9.0
95	7.67	25 x 5.4	25 x 9.0
100	7.17	28 x 6.4	28 x 10.0
105	6.66	28 x 6.4	28 x 10.0
110	6.12	28 x 6.4	28 x 10.0
115	6.00	32 x 7.4	32 x 11.0
120	5.80	32 x 7.4	32 x 11.0
125	5.60	32 x 7.4	32 x 11.0

4545

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
55	13.20	16 x 4.3	16 x 6.0
60	12.90	18 x 4.4	18 x 7.0
65	12.40	18 x 4.4	18 x 7.0
70	12.00	20 x 4.9	20 x 7.5
75	11.50	20 x 4.9	20 x 7.5
80	10.90	22 x 5.4	22 x 9.0
85	10.50	22 x 5.4	22 x 9.0
90	9.90	25 x 5.4	25 x 9.0
95	9.50	25 x 5.4	25 x 9.0
100	8.90	28 x 6.4	28 x 10.0
105	8.20	28 x 6.4	28 x 10.0
110	7.40	28 x 6.4	28 x 10.0

5040

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
70	13.93	20 x 4.9	20 x 7.5
75	13.52	20 x 4.9	20 x 7.5
80	13.07	22 x 5.4	22 x 9.0
85	12.60	22 x 5.4	22 x 9.0
90	12.09	25 x 5.4	25 x 9.0
95	11.56	25 x 5.4	25 x 9.0
100	11.00	28 x 6.4	28 x 10.0
105	10.41	28 x 6.4	28 x 10.0
110	9.80	28 x 6.4	28 x 10.0
115	9.15	32 x 7.4	32 x 11.0
120	8.48	32 x 7.4	32 x 11.0
125	7.77	32 x 7.4	32 x 11.0

5050

BORE	WT. (kg)	KEYSEAT BUSH	SHAFT
70	17.00	20 x 4.9	20 x 7.5
75	16.30	20 x 4.9	20 x 7.5
80	15.60	22 x 5.4	22 x 9.0
85	15.00	22 x 5.4	22 x 9.0
90	14.40	25 x 5.4	25 x 9.0
95	13.60	25 x 5.4	25 x 9.0
100	12.90	28 x 6.4	28 x 10.0
105	12.30	28 x 6.4	28 x 10.0
110	11.50	28 x 6.4	28 x 10.0
115	10.60	32 x 7.4	32 x 11.0
120	9.80	32 x 7.4	32 x 11.0
125	8.90	32 x 7.4	32 x 11.0

Bold italic type indicate bushes made of steel.

Keyways are in accordance with BS4235, Part 1, 1972, DIN6885 and conform to ISO recommendations with the exception of those marked* which are shallower.

Depth of key measured at center

Taper Bushes - Imperial

1008

BORE	WT. (kg)	BUSH	KEYSEAT SHAFT
3/8	0.14	0.125 x 0.060	0.125 x 0.072
1/2	0.13	0.125 x 0.060	0.125 x 0.072
5/8	0.12	0.188 x 0.088	0.188 x 0.107
3/4	0.11	0.188 x 0.088	0.188 x 0.107
7/8	0.09	0.250 x 0.115	0.250 x 0.142
1*	0.07	0.250 x 0.053*	0.250 x 0.142

1108

BORE	WT. (kg)	BUSH	KEYSEAT SHAFT
3/8	0.17	0.125 x 0.060	0.125 x 0.072
1/2	0.16	0.125 x 0.060	0.125 x 0.072
5/8	0.15	0.188 x 0.088	0.188 x 0.107
3/4	0.14	0.188 x 0.088	0.188 x 0.107
7/8	0.12	0.250 x 0.115	0.250 x 0.142
1	0.10	0.250 x 0.115	0.250 x 0.142
1 1/8*	0.80	0.312 x 0.080*	0.312 x 0.177

1210

BORE	WT. (kg)	BUSH	KEYSEAT SHAFT
1/2	0.20	0.125 x 0.060	0.125 x 0.072
5/8	0.28	0.188 x 0.088	0.188 x 0.107
3/4	0.26	0.188 x 0.088	0.188 x 0.107
7/8	0.24	0.250 x 0.115	0.250 x 0.142
1	0.21	0.250 x 0.115	0.250 x 0.142
1 1/8	0.10	0.312 x 0.112	0.312 x 0.177
1 1/4	0.15	0.312 x 0.112	0.312 x 0.177

1215

BORE	WT. (kg)	BUSH	KEYSEAT SHAFT
5/8	0.42	0.188 x 0.088	0.188 x 0.101
3/4	0.30	0.188 x 0.088	0.188 x 0.107
7/8	0.36	0.250 x 0.115	0.250 x 0.142
1	0.32	0.250 x 0.115	0.250 x 0.142
1 1/8	0.28	0.312 x 0.112	0.312 x 0.177
1 1/4	0.24	0.312 x 0.112	0.312 x 0.177

1310

BORE	WT. (kg)	BUSH	KEYSEAT SHAFT
1/2	0.35	0.125 x 0.060	0.125 x 0.072
5/8	0.34	0.188 x 0.088	0.188 x 0.107
3/4	0.32	0.188 x 0.088	0.188 x 0.107
7/8	0.30	0.250 x 0.115	0.250 x 0.142
1	0.28	0.250 x 0.115	0.250 x 0.142
1 1/8	0.25	0.312 x 0.112	0.312 x 0.177
1 1/4	0.22	0.312 x 0.112	0.312 x 0.177
1 3/8	0.19	0.375 x 0.111	0.375 x 0.213

1610

BORE	WT. (kg)	BUSH	KEYSEAT SHAFT
1/2	0.46	0.125 x 0.060	0.125 x 0.072
5/8	0.44	0.188 x 0.088	0.188 x 0.107
3/4	0.42	0.188 x 0.088	0.188 x 0.107
7/8	0.40	0.250 x 0.115	0.250 x 0.142
1	0.38	0.250 x 0.115	0.250 x 0.142
1 1/8	0.35	0.312 x 0.112	0.312 x 0.177
1 1/4	0.32	0.312 x 0.112	0.312 x 0.177
1 3/8	0.29	0.375 x 0.111	0.375 x 0.213
1 1/2	0.25	0.375 x 0.111	0.375 x 0.213
1 5/8*	0.21	0.438 x 0.134	0.438 x 0.248

1615

BORE	WT. (kg)	BUSH	KEYSEAT SHAFT
1/2	0.66	0.125 x 0.060	0.125 x 0.072
5/8	0.04	0.188 x 0.088	0.188 x 0.107
3/4	0.61	0.188 x 0.088	0.188 x 0.107
7/8	0.58	0.250 x 0.115	0.250 x 0.142
1	0.55	0.250 x 0.115	0.250 x 0.142
1 1/8	0.51	0.312 x 0.112	0.312 x 0.177
1 1/4	0.46	0.312 x 0.112	0.312 x 0.177
1 3/8	0.41	0.375 x 0.111	0.375 x 0.213
1 1/2	0.36	0.375 x 0.111	0.375 x 0.213
1 5/8*	0.30	0.438 x 0.103*	0.438 x 0.248

Bold italic type indicate bushes made of steel.

Keyways are parallel and in accordance with BS46:Part 1:1958, with the exception of those marked* which are shallower.

Depth of key measured at centre

Taper Bushes - Imperial

2012

BORE	WT. (kg)	KEYSEAT	
		BUSH	SHAFT
5/8	0.85	0.188 x 0.088	0.188 x 0.107
3/4	0.83	0.188 x 0.088	0.188 x 0.107
7/8	0.80	0.250 x 0.115	0.250 x 0.142
1	0.77	0.250 x 0.115	0.250 x 0.142
1 1/8	0.74	0.312 x 0.112	0.312 x 0.177
1 1/4	0.70	0.312 x 0.112	0.312 x 0.177
1 3/8	0.66	0.375 x 0.11	0.375 x 0.213
1 1/2	0.61	0.375 x 0.11	0.375 x 0.213
1 5/8	0.56	0.438 x 0.134	0.438 x 0.248
1 3/4	0.51	0.438 x 0.134	0.438 x 0.248
1 7/8	0.45	0.500 x 0.131	0.500 x 0.283
2	0.39	0.500 x 0.131	0.500 x 0.283

2517

BORE	WT. (kg)	KEYSEAT	
		BUSH	SHAFT
3/4	1.77	0.188 x 0.088	0.188 x 0.107
7/8	1.74	0.250 x 0.115	0.250 x 0.142
1	1.70	0.250 x 0.115	0.250 x 0.142
1 1/8	1.65	0.312 x 0.112	0.312 x 0.177
1 1/4	1.60	0.312 x 0.112	0.312 x 0.177
1 3/8	1.54	0.375 x 0.110	0.376 x 0.213
1 1/2	1.48	0.375 x 0.110	0.375 x 0.213
1 5/8	1.41	0.438 x 0.134	0.438 x 0.248
1 3/4	1.33	0.438 x 0.134	0.438 X 0.248
1 7/8	1.25	0.500 x 0.131	0.500 X 0.263
2	1.17	0.500 x 0.131	0.500 X 0.283
2 1/8	1.07	0.625 x 0.185	0.626 x 0.354
2 1/4	0.98	0.625 x 0.185	0.625 x 0.354
2 3/8	0.88	0.625 x 0.185	0.025 x 0.354
2 1/2	0.77	0.625 x 0.185	0.625 x 0.354

2525

BORE	WT. (kg)	KEYSEAT	
		BUSH	SHAFT
7/8	2.38	0.250 x 0.115	0.250 x 0.142
1	2.31	0.250 x 0.115	0.250 x 0.142
1 1/8	2.24	0.312 x 0.112	0.312 x 0.177
1 1/4	2.19	0.312 x 0.112	0.312 x 0.177
1 3/8	1.99	0.375 x 0.110	0.375 x 0.213
1 1/2	1.97	0.375 x 0.110	0.375 x 0.213
1 5/8	1.94	0.438 x 0.134	0.438 x 0.248
1 3/4	1.62	0.438 x 0.134	0.438 x 0.248
1 7/8	1.72	0.500 x 0.131	0.500 x 0.283
2	1.58	0.500 x 0.131	0.500 x 0.283
2 1/8	1.45	0.625 x 0.185	0.625 x 0.364
2 1/4	1.31	0.625 x 0.185	0.625 x 0.354
2 3/8	1.18	0.625 x 0.185	0.625 x 0.354
2 1/2	1.01	0.625 x 0.153*	0.625 x 0.354

3020

BORE	WT. (kg)	KEYSEAT	
		BUSH	SHAFT
1 1/4	3.07	0.312 x 0.112	0.212 x 0.177
1 3/8	3.00	0.375 x 0.110	0.375 x 0.213
1 1/2	2.93	0.375 x 0.110	0.375 x 0.213
1 5/8	2.85	0.438 x 0.134	0.438 x 0.248
1 3/4	2.76	0.438 x 0.134	0.438 x 0.248
1 7/8	2.67	0.500 x 0.131	0.500 x 0.283
2	2.57	0.500 x 0.131	0.500 x 0.283
2 1/8	2.47	0.625 x 0.185	0.625 x 0.354
2 1/4	2.36	0.625 x 0.185	0.025 x 0.354
2 3/8	2.24	0.625 x 0.185	0.625 x 0.354
2 1/2	2.12	0.625 x 0.185	0.025 x 0.354
2 5/8	1.99	0.750 x 0.209	0.750 x 0.424
2 3/4	1.85	0.750 x 0.209	0.750 x 0.424
2 7/8	1.78	0.750 x 0.209	0.750 x 0.424
3	1.56	0.750 x 0.209	0.750 x 0.424

3030

BORE	WT. (kg)	KEYSEAT	
		BUSH	SHAFT
1 1/4	4.44	0.312 x 0.112	0.312 x 0.177
1 3/8	4.34	0.375 x 0.110	0.375 x 0.213
1 1/2	4.23	0.375 x 0.110	0.375 x 0.213
1 5/8	4.12	0.438 x 0.134	0.438 x 0.248
1 3/4	3.99	0.438 x 0.134	0.438 x 0.248
1 7/8	3.85	0.500 x 0.131	0.500 x 0.283
2	3.70	0.500 x 0.131	0.500 x 0.283
2 1/8	3.55	0.625 x 0.185	0.625 x 0.354
2 1/4	3.38	0.625 x 0.185	0.625 x 0.354
2 3/8	3.21	0.625 x 0.185	0.625 x 0.354
2 1/2	3.02	0.625 x 0.185	0.625 x 0.354
2 5/8	2.63	0.750 x 0.209	0.750 x 0.424
2 3/4	2.62	0.750 x 0.209	0.750 x 0.424
2 7/8	2.41	0.750 x 0.209	0.750 x 0.424
3	2.19	0.750 x 0.209	0.750 x 0.424

Bold italic type indicate bushes made of steel.

Keyways are parallel and in accordance with BS46:Part 1:1958, with the exception of those marked* which are shallower.

Depth of key measured at centre

Taper Bushes - Imperial

3525

BORE	WT. (kg)	KEYSEAT	
		BUSH	SHAFT
1 1/2	5.28	0.375 x 0.110	0.375 x 0.213
1 5/8	5.18	0.438 x 0.134	0.438 x 0.248
1 3/4	5.08	0.438 x 0.134	0.438 x 0.248
1 7/8	4.96	0.500 x 0.131	0.500 x 0.283
2	4.84	0.500 x 0.131	0.500 x 0.283
2 1/8	4.71	0.625 x 0.185	0.625 x 0.354
2 1/4	4.57	0.625 x 0.185	0.625 x 0.354
2 3/8	4.42	0.625 x 0.185	0.625 x 0.354
2 1/2	4.27	0.625 x 0.185	0.625 x 0.354
2 5/8	4.11	0.750 x 0.209	0.750 x 0.424
2 3/4	3.94	0.750 x 0.209	0.750 x 0.424
2 7/8	3.76	0.750 x 0.209	0.750 x 0.424
3	3.58	0.750 x 0.209	0.750 x 0.424
3 1/8	3.38	0.875 x 0.264	0.875 x 0.495
3 1/4	3.18	0.875 x 0.264	0.875 x 0.495
3 3/8	2.07	0.875 x 0.264	0.875 x 0.495
3 1/2	2.80	0.875 x 0.264	0.875 x 0.495
3 3/4*	2.50	0.999 x 0.245*	1.000 x 0.566
4*	2.20	0.999 x 0.155*	1.000 x 0.566

3535

BORE	WT. (kg)	KEYSEAT	
		BUSH	SHAFT
1 1/2	7.16	0.375 x 0.110	0.375 x 0.213
1 5/8	7.02	0.438 x 0.134	0.438 x 0.248
1 3/4	0.88	0.438 x 0.134	0.438 x 0.248
1 7/8	6.73	0.500 x 0.131	0.500 x 0.283
2	6.55	0.500 x 0.131	0.500 x 0.283
2 1/8	6.36	0.625 x 0.185	0.625 x 0.354
2 1/4	6.16	0.625 x 0.185	0.625 x 0.354
2 3/8	5.96	0.625 x 0.185	0.625 x 0.354
2 1/2	5.75	0.625 x 0.185	0.625 x 0.354
2 5/8	5.51	0.750 x 0.209	0.750 x 0.424
2 3/4	5.28	0.750 x 0.209	0.750 x 0.424
2 7/8	5.02	0.750 x 0.209	0.750 x 0.424
3	4.77	0.750 x 0.209	0.750 x 0.424
3 1/8	4.50	0.875 x 0.264	0.875 x 0.495
3 1/4	4.21	0.875 x 0.264	0.875 x 0.495
3 3/8	3.92	0.875 x 0.264	0.875 x 0.495
3 1/2	3.62	0.875 x 0.264	0.875 x 0.495

4030

BORE	WT. (kg)	KEYSEAT	
		BUSH	SHAFT
1 3/4	8.33	0.438 x 0.134	0.438 x 0.248
2	8.04	0.500 x 0.131	0.500 x 0.283
2 1/8	7.88	0.625 x 0.185	0.625 x 0.354
2 1/4	7.71	0.625 x 0.185	0.625 x 0.354
2 3/8	7.54	0.625 x 0.185	0.625 x 0.354
2 1/2	7.36	0.625 x 0.185	0.625 x 0.354
2 5/8	7.16	0.750 x 0.209	0.750 x 0.424
2 3/4	6.96	0.750 x 0.209	0.750 x 0.424
2 7/8	6.75	0.750 x 0.209	0.750 x 0.424
3	6.53	0.750 x 0.209	0.750 x 0.424
3 1/8	6.28	0.875 x 0.264	0.875 x 0.495
3 1/4	6.05	0.875 x 0.264	0.875 x 0.495
3 3/8	5.80	0.875 x 0.264	0.875 x 0.495
3 1/2	5.54	0.875 x 0.264	0.875 x 0.495
3 3/4	4.98	1.000 x 0.318	1.000 x 0.566
4	4.40	1.000 x 0.318	1.000 x 0.566
4 1/4	4.00	1.250 x 0.366	1.250 x 0.707
4 1/2*	3.70	1.250 x 0.255*	1.250 x 0.707

4040

BORE	WT. (kg)	KEYSEAT	
		BUSH	SHAFT
1 3/4	10.92	0.438 x 0.134	0.438 x 0.248
1 7/8	10.61	0.500 x 0.131	0.500 x 0.283
2	10.42	0.500 x 0.131	0.500 x 0.238
2 1/8	10.21	0.625 x 0.185	0.625 x 0.254
2 1/4	9.99	0.625 x 0.185	0.625 x 0.354
2 3/8	9.71	0.625 x 0.185	0.625 x 0.354
2 1/2	9.51	0.625 x 0.185	0.625 x 0.354
2 5/8	9.15	0.750 x 0.209	0.750 x 0.424
2 3/4	8.97	0.750 x 0.209	0.750 x 0.424
2 7/8	8.09	0.750 x 0.209	0.750 x 0.424
3	8.40	0.750 x 0.209	0.750 x 0.424
3 1/8	8.09	0.875 x 0.264	0.875 x 0.495
3 1/4	7.76	0.875 x 0.264	0.875 x 0.495
3 3/8	7.43	0.875 x 0.264	0.875 x 0.495
3 1/2	7.08	0.875 x 0.264	0.875 x 0.495
3 3/4	6.35	1.000 x 0.318	1.000 x 0.566
4	5.56	1.000 x 0.318	1.000 x 0.566

Bold italic type indicate bushes made of steel.

Keyways are parallel and in accordance with BS46:Part 1:1958, with the exception of those marked* which are shallower.

Depth of key measured at centre

Taper Bushes - Imperial

4535

BORE	WT. (kg)	KEYSEAT	
		BUSH	SHAFT
2 1/4	8.65	0.625 x 0.185	0.625 x 0.354
2 3/8	14.06	0.625 x 0.185	0.625 x 0.354
2 1/2	9.99	0.625 x 0.185	0.625 x 0.354
2 3/4	9.53	0.750 x 0.209	0.750 x 0.424
2 7/8	12.87	0.750 x 0.209	0.750 x 0.424
3	9.02	0.750 x 0.209	0.750 x 0.424
3 1/8	8.75	0.875 x 0.264	0.875 x 0.495
3 1/4	8.46	0.875 x 0.264	0.875 x 0.495
3 3/8	8.17	0.875 x 0.264	0.875 x 0.495
3 1/2	7.87	0.875 x 0.264	0.875 x 0.495
3 3/4	7.22	1.000 x 0.318	1.000 x 0.566
4	6.54	1.000 x 0.318	1.000 x 0.566
4 1/4	5.81	1.250 x 0.366	1.250 x 0.707
4 1/2	5.03	1.250 x 0.366	1.250 x 0.707
4 3/4	4.90	1.250 x 0.366	1.250 x 0.707

4545

BORE	WT. (kg)	KEYSEAT	
		BUSH	SHAFT
2 1/4	14.30	0.625 x 0.185	0.625 x 0.354
2 3/8	14.06	0.625 x 0.185	0.625 x 0.354
2 1/2	13.80	0.625 x 0.185	0.625 x 0.354
2 3/4	13.20	0.750 x 0.209	0.750 x 0.424
2 7/8	12.87	0.750 x 0.209	0.750 x 0.424
3	12.54	0.750 x 0.209	0.750 x 0.424
3 1/8	8.75	0.875 x 0.264	0.875 x 0.495
3 1/4	11.83	0.875 x 0.264	0.875 x 0.495
3 3/8	11.46	0.875 x 0.264	0.875 x 0.495
3 1/2	11.07	0.875 x 0.264	0.875 x 0.495
3 3/4	10.25	1.000 x 0.318	1.000 x 0.566
4	9.37	1.000 x 0.318	1.000 x 0.566
4 1/4	8.43	1.250 x 0.366	1.250 x 0.707
4 1/2	7.43	1.250 x 0.366	1.250 x 0.707

5040

BORE	WT. (kg)	KEYSEAT	
		BUSH	SHAFT
2 3/4	15.12	0.750 x 0.209	0.750 x 0.424
2 7/8	12.50	0.750 x 0.209	0.750 x 0.424
3	14.54	0.750 x 0.209	0.750 x 0.424
3 1/8	14.10	0.875 x 0.264	0.875 x 0.495
3 1/4	13.90	0.875 x 0.264	0.875 x 0.495
3 3/8	13.57	0.875 x 0.264	0.875 x 0.495
3 1/2	13.22	0.875 x 0.264	0.875 x 0.495
3 3/4	12.49	1.000 x 0.318	1.000 x 0.566
4	11.70	1.000 x 0.318	1.000 x 0.566
4 1/4	10.87	1.250 x 0.366	1.250 x 0.707
4 1/2	10.40	1.250 x 0.366	1.250 x 0.707
4 3/4	10.00	1.250 x 0.366	1.250 x 0.707
5	9.90	1.250 x 0.366	1.250 x 0.707

5050

BORE	WT. (kg)	KEYSEAT	
		BUSH	SHAFT
2 3/4	15.12	0.750 x 0.209	0.750 x 0.424
2 7/8	12.50	0.750 x 0.209	0.750 x 0.424
3	17.80	0.750 x 0.209	0.750 x 0.424
3 1/8	14.10	0.875 x 0.264	0.875 x 0.495
3 1/4	16.93	0.875 x 0.264	0.875 x 0.495
3 3/8	15.99	0.875 x 0.264	0.875 x 0.495
3 1/2	15.16	1.000 x 0.318	1.000 x 0.566
3 3/4	14.18	1.000 x 0.318	1.000 x 0.566
4	13.13	1.250 x 0.366	1.250 x 0.707
4 1/4	12.03	1.250 x 0.366	1.250 x 0.707
4 1/2	10.86	1.250 x 0.366	1.250 x 0.707
4 3/4	9.03	1.250 x 0.366	1.250 x 0.707
5			

Bold italic type indicate bushes made of steel.

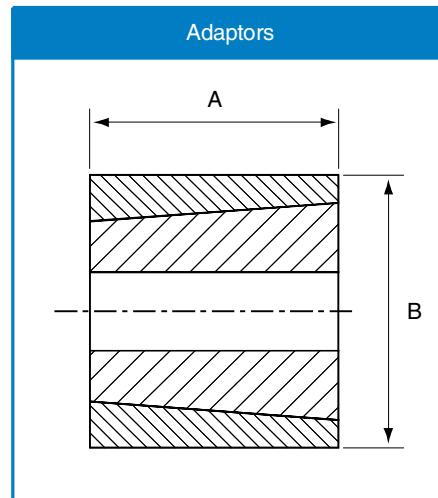
Keyways are parallel and in accordance with BS46:Part 1:1958, with the exception of those marked* which are shallower.

Depth of key measured at centre

Adaptors

Adaptors

Hub Type	A	B	Key Section
1008PM	22	45	-
1008KM	22	45	5 x 5
1210PM	25	60	-
1210KM	25	60	6 x 6
1610PM	25	70	-
1610KM	25	70	10 x 8
2517PM	45	105	-
2517KM	45	105	16 x 10
3030PM	76	130	-
3030KM	76	130	20 x 12
3535PM	90	160	-
3535KM	90	160	22 x 12
4040PM	102	185	-
4040KM	102	185	24 x 12



Adaptors for Pilot Bored components allow them to take standard Taper Lock bushes. This added convenience removes the need to drill, tap and taper-bore.

PM = Plain outside diameter

KM = Keyway on outside diameter allowing additional torque transmission

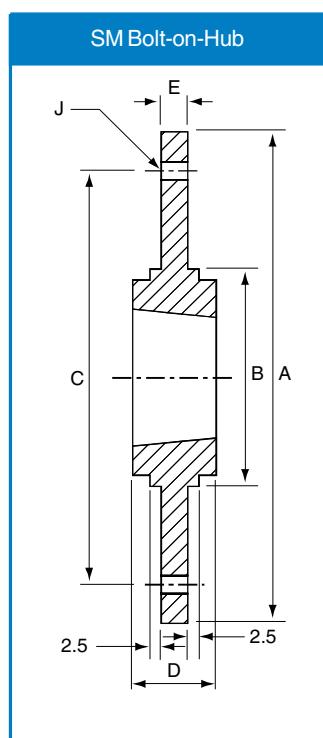
Bolt-on-Hubs

Taper Bore Bolt-on-Hubs are designed for use with the universally accepted Taper Bush. They provide a convenient means of securing fan rotors, impellers, agitators and other devices which must be fastened firmly to shafts.

Challenge Bolt-on-Hubs, type BF and SM, complete the range. They are manufactured from GG22 cast iron and are phosphated for extra rust protection.

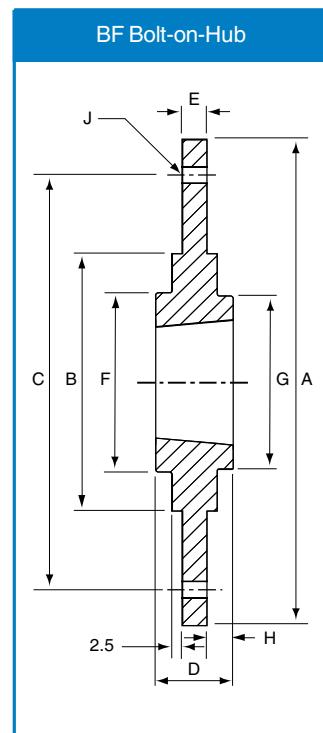
SM Bolt-on-Hubs

Hub Reference	Bush Number	A	B	C	D	E	J (No. x Diam)
SM 12	1210	180	90	135	26	6.5	6 x 7.5
SM 16-1	1610	200	110	150	26	7.5	6 x 7.5
SM 16-2	1615	200	110	150	38	7.5	6 x 7.5
SM 20	2012	270	140	190	32	8.5	6 x 9.5
SM 25	2517	340	170	240	45	9.5	6 x 11.5
SM 30-1	3020	430	220	300	51	13.5	8 x 13.5
SM 30-2	3020	485	250	340	51	13.5	8 x 13.5



BF Bolt-on-Hubs

Hub Reference	Bush Number	A	B	C	D	E	G	H	J (No. x Diam)
BF12	1210	120	80	100	25	5.5	80	10	6 x 7.5
BF16	1610	130	90	110	25	6.5	90	10	6 x 7.5
BF20	2012	145	100	125	32	8.5	100	13	6 x 9.5
BF25	2517	185	130	155	44	11.5	119	20	8 x 11.5
BF30	3020	220	165	190	50	11.5	147	20	8 x 13.5

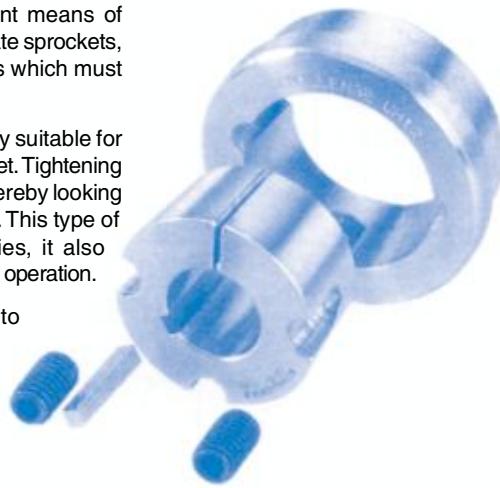


Weld-on-Hubs

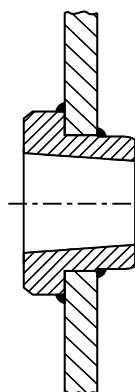
Taper Bore Weld-on-Hubs are made out of steel, drilled, tapped and taper bored to receive standard Taper Bushes. The extended flange provides a convenient means of welding hubs into fan rotors, steel pulleys, plate sprockets, impellers, agitators and many other devices which must be firmly fastened to the shaft.

Weld-on-Hubs are easy to install and entirely suitable for use where severe operating conditions are met. Tightening the screws contracts the bore of the bush, thereby locking it to the shaft with the equivalent of press fit. This type of construction eliminates mounting difficulties, it also prevents loosening and wear on the hub during operation.

Challenge Weld-on-Hubs are manufactured to complement the Taper Bush range and include W, WG, WH, WHG, WM and WMG Taper Bore Hubs. All are manufactured to world standards using C45 steel.



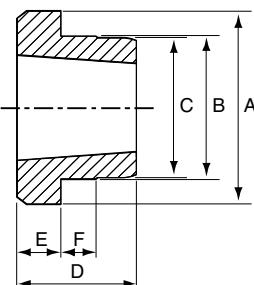
Typical Assembly



W Weld-on-Hubs

Hub Reference	Bush Number	A	B	C	D	E	F
W12	1215	73.03	63.50	62.71	38.10	15.88	9.53
W16	1615	82.55	73.03	72.24	38.10	15.88	9.53
W20	2017	101.60	80.90	88.11	44.45	19.05	14.45
W25	2517	127.00	111.13	110.34	44.45	19.05	12.70
W30	3030	149.86	133.35	132.56	76.20	25.40	19.05
W35	3535	184.15	158.75	157.96	88.90	31.75	25.40
W40	4040	225.43	196.85	196.06	101.60	31.75	31.75
W45	4545	254.00	222.25	221.46	114.30	38.10	38.10

W Weld-on-Hub

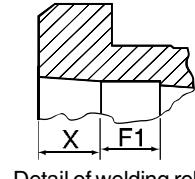
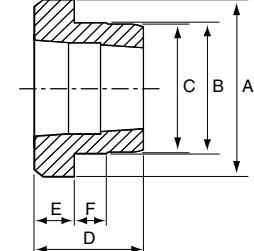


WG Weld-on-Hubs

Hub Reference	Bush Number	A	B	C	D	E	F	F1	X
WG12	1215	73.03	63.50	62.71	38.10	15.88	9.53		
WG16	1515	82.55	73.03	72.24	38.10	15.88	9.53		
WG20	2017	101.60	88.90	88.11	44.45	19.05	14.45		
WG25	2017	127.00	111.13	110.34	44.45	19.05	12.70		
WG30	3030	149.86	133.35	132.56	70.20	25.40	19.05	25	19
WG35	3535	184.15	158.75	157.96	88.90	31.75	25.40	31	22
WG40	4040	225.43	196.85	196.06	101.60	31.75	31.75	37	22
WG45	4545	254.00	222.25	221.46	114.30	38.10	38.10	44	15

"G" notation represents welding relief.

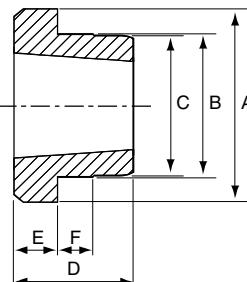
WG Weld-on-Hub



Detail of welding relief

Weld-on-Hubs

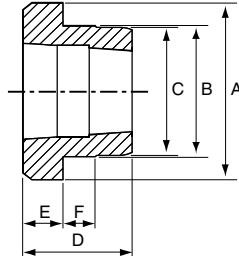
WH Weld-on-Hub



WH Weld-on-Hubs

Hub Reference	Bush Number	A	B	C	D	E	F
WH12	1210	70	65	64.5	25	9	10
WH16-1	1610	80	75	74.5	25	9	10
WH20	2012	95	90	89.5	32	12	12
WH25	2517	115	110	109.5	44	19	15
WH30-2	3020	145	140	139.5	50	20	15
WH35	3525	190	180	179.5	65	25	25
WH40-1	4030	200	190	189.0	76	32	30
WH40-2	4040	200	190	189.5	101	32	30
WH45-1	4535	210	200	190.5	89	40	30
WH45-2	4545	210	200	190.5	114	40	30
WH50-1	5040	230	220	210.5	102	40	35
WH50-2	5050	230	220	219.5	127	40	35

WHG Weld-on-Hub



WHG Weld-on-Hubs

Hub Reference	Bush Number	A	B	C	D	E	F	F1	X
WHG12	1210	70	65	64.5	25	9	10	-	-
WHG16-1	1610	80	75	74.5	25	9	10	-	-
WHG20	2012	95	90	89.5	32	12	12	-	-
WHG25	2517	115	110	109.5	44	19	15	-	-
WHG30-2	3020	145	140	139.5	50	20	15	21	14
WHG35	3525	190	180	179.5	65	25	25	31	19
WHG40-1	4030	200	190	189.0	76	32	30	27	22
WHG40-2	4040	200	190	189.5	101	32	30	27	22
WHG45-1	4S35	210	200	199.5	89	40	30	33	25
WHG45-2	4545	210	200	199.5	114	40	30	33	25
WHG50-1	5040	230	220	219.5	102	40	35	37	29
WHG50-2	5050	230	220	219.5	127	40	35	37	20

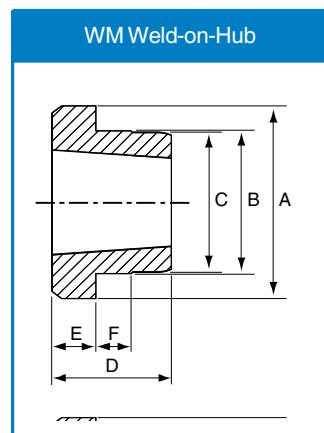
"G" notation represents welding relief.

Detail of welding relief

Weld-on-Hubs

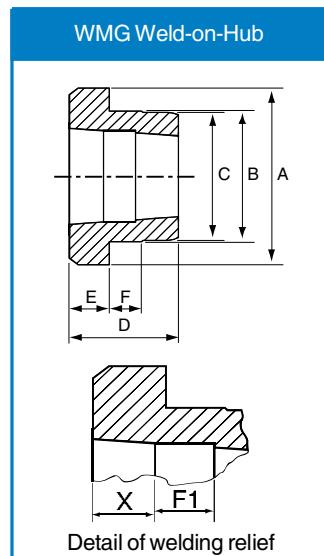
WM Weld-on-Hubs

Hub Reference	Bush Number	A	B	C	D	E	F
WM12	1210	70	60	58	26	9	10
WM16-1	1010	83	70	68	26	9	10
WM16-2	1615	83	70	68	38	10	11
WM20	2012	95	90	88	32	12	12
WM25	2517	127	110	108	44	19	13
WM30-2	3020	152	130	125	50	20	15
WM30-3	3030	152	130	125	76	25	19
WM35	3535	184	155	151	89	32	25
WM40	4040	225	195	187	102	32	32
WM45	4545	254	220	213	114	38	38
WM50	5050	278	242	228	127	38	38



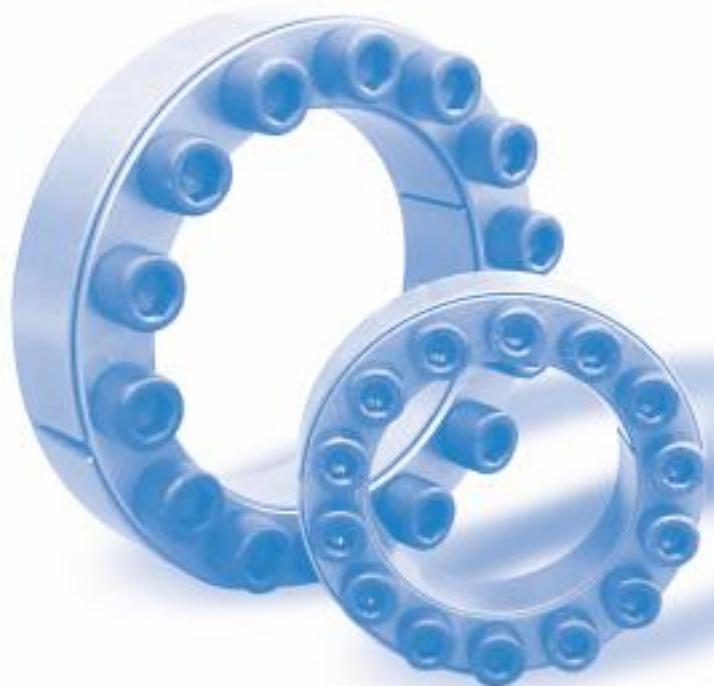
WMG Weld-on-Hubs

Hub Reference	Bush Number	A	B	C	D	E	F	F1	X
WMG12	1210	70	60	58	26	9	10	8	9
WMG16-1	1610	53	70	68	26	9	10	8	9
WMG16-2	1615	83	70	68	38	16	11	8	16
WMG20	2012	95	90	88	32	12	12	10	12
WMG25	2517	127	110	108	44	19	13	10	19
WMG30-2	3020	152	130	125	50	20	15	12	20
WMG30-3	3030	152	130	125	70	25	19	12	25
WMG35	3535	184	155	151	89	32	25	15	32
WMG40	4040	225	195	187	102	32	32	15	32
WMG45	4545	254	220	213	114	38	38	20	38
WMG50	5050	276	242	228	127	38	38	20	38



"G" notation represents welding relief.

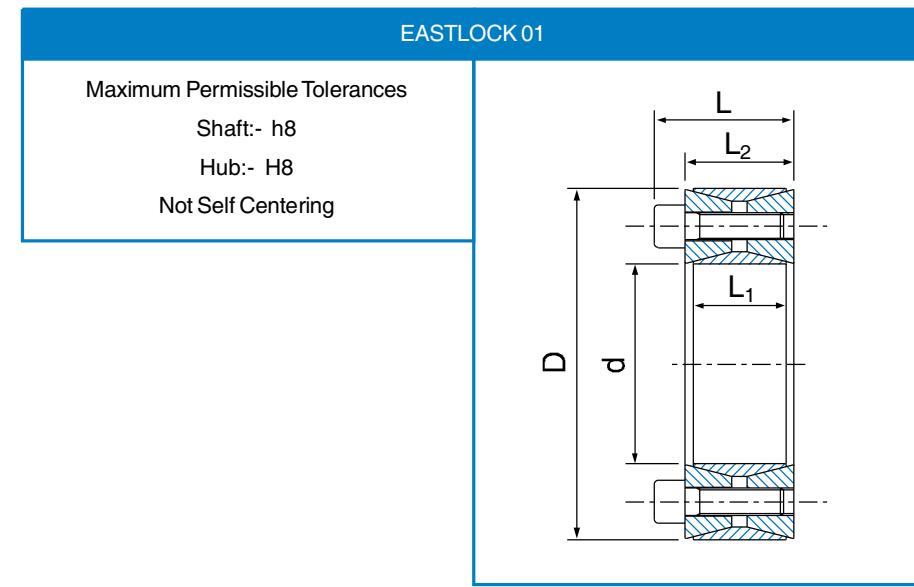
CLAMPING ELEMENTS



Eastlock

EASTLOCK 01 Clamping Element

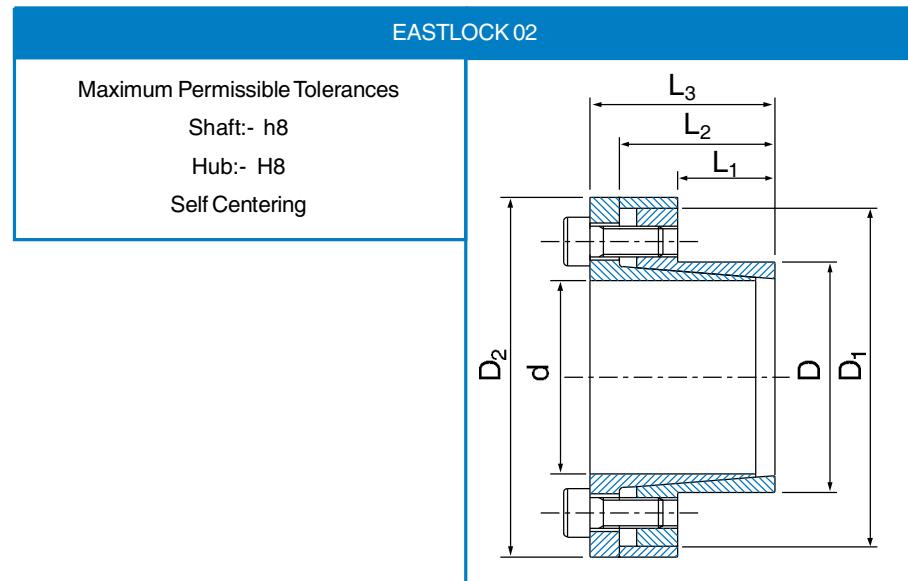
\O_d mm	\O_D mm	Dimensions			Torque Mt Nm	Axial Force Ft kN	Contact Pressure Shaft P N/mm ²	Hub P ₁ N/mm ²	Locking Screws (DIN 912-12.9)		
		L_1 mm	L_2 mm	L mm					Qty.	Size	Tightening Torque T _s Nm
19	47	17	20	26	270	26.8	220	93	8	M6x18	16
20	47	17	20	26	280	26.8	210	93	8	M6x18	16
22	47	17	20	26	315	26.8	207	96	8	M6x18	16
24	50	17	20	26	375	30.1	206	103	9	M6x18	16
25	50	17	20	26	390	30.1	206	103	9	M6x18	16
28	55	17	20	26	485	33.5	204	103	10	M6x18	16
30	55	17	20	26	520	33.5	190	103	10	M6x18	16
32	60	17	20	26	660	40.2	214	114	12	M6x18	16
35	60	17	20	26	715	40.2	196	114	12	M6x18	16
38	65	17	20	26	920	46.9	204	122	14	M6x18	16
40	65	17	20	26	960	46.9	200	122	14	M6x18	16
42	75	20	24	32	1550	73.2	228	125	12	M8x22	38
45	75	20	24	32	1650	73.2	208	125	12	M8x22	38
48	80	20	24	32	1756	73.2	190	110	12	M8x22	38
50	80	20	24	32	1830	73.2	189	115	12	M8x22	38
55	85	20	24	32	2348	85.4	200	130	14	M8x22	38
60	90	20	24	32	2580	85.4	180	122	14	M8x22	38
65	95	20	24	32	3190	97.6	191	130	16	M8x22	38
70	110	24	28	38	4800	134.4	211	132	14	M10x25	75
75	115	24	28	38	5100	134.4	194	128	14	M10x25	75
80	120	24	28	38	5400	134.4	182	124	14	M10x25	75
85	125	24	28	38	6500	153.6	196	133	16	M10x25	75
90	130	24	28	38	6920	153.6	181	128	16	M10x25	75
95	135	24	28	38	8350	172.8	196	139	18	M10x25	75
100	145	26	33	45	9970	197.4	198	139	14	M12x30	130
110	155	26	33	45	11050	187.4	181	128	14	M12x30	130
120	165	26	33	45	13600	225.6	187	139	16	M12x30	130
130	180	34	38	50	18500	282.0	168	119	20	M12x35	130
140	190	34	38	50	21700	310.1	168	128	22	M12x35	130
150	200	34	38	50	25300	338.4	170	128	24	M12x35	130
160	210	34	38	50	29300	366.6	171	132	26	M12x35	130
170	225	38	44	58	33300	389.0	162	123	22	M14x40	207
180	235	38	44	58	38600	424.0	168	128	24	M14x40	207
190	250	46	52	66	47150	495.0	154	114	28	M14x45	207
200	260	46	52	66	53800	531.0	157	118	30	M14x45	207



Eastlock

EASTLOCK 02 Clamping Element

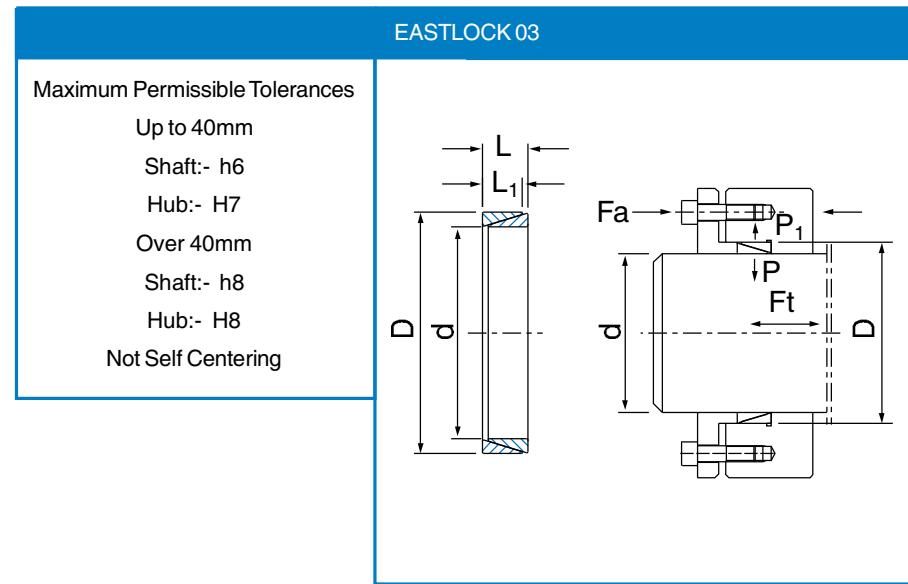
Ød mm	ØD mm	Dimensions						Transmission Torque Mt Nm	Axial Force Ft kN	Contact Pressure Shaft P N/mm²	Hub P N/mm²	Lock Screws (DIN 912-12.9)		
		L_1 mm	L_2 mm	L_3 mm	L mm	ØD_2 mm	ØD_1 mm					Qty.	Size	Tightening Torque T_s Nm
8	15	12	21	24	28	32	28	35	7.2	190.0	105.0	3	M4x12	5.2
9	16	14	23	27	31	32	28	38	7.2	150.0	92.0	3	M4x12	5.2
10	16	14	23	27	31	32	28	45	9.0	140.0	90.0	3	M4x12	5.2
11	18	14	23	27	31	34	30	55	9.0	174.8	106.8	4	M4x12	5.2
12	18	14	23	27	31	34	30	60	9.0	160.8	106.8	4	M4x12	5.2
14	23	14	23	27	31	39	35	68	9.0	137.4	83.6	4	M4x12	5.2
15	24	16	29	36	42	45	40	110	13.0	161.8	101.2	4	M6x18	17.0
16	24	16	29	36	42	45	40	125	13.0	151.7	101.2	4	M6x18	17.0
18	26	18	31	38	44	47	42	175	18.0	159.8	110.7	4	M6x18	17.0
19	27	18	31	38	44	48	43	190	18.0	151.4	106.6	4	M6x18	17.0
20	28	18	31	38	44	49	44	210	21.0	143.9	102.8	4	M6x18	17.0
22	32	25	38	45	51	54	48	245	21.0	112.8	77.6	4	M6x18	17.0
24	34	25	38	45	51	56	50	270	21.0	103.4	73.0	4	M6x18	17.0
25	34	25	38	45	51	56	50	280	21.0	99.3	73.0	4	M6x18	17.0
28	39	25	38	45	51	61	55	385	31.0	110.8	79.6	6	M6x18	17.0
30	41	25	38	45	51	63	57	505	31.0	124.1	90.8	6	M6x18	17.0
32	43	30	43	50	56	65	59	535	31.0	97.0	72.2	6	M6x18	17.0
35	47	30	43	50	56	69	63	787	42.0	118.9	88.0	8	M6x18	17.0
38	50	30	43	50	56	72	66	842	42.0	108.9	82.8	8	M6x18	17.0
40	53	32	45	52	58	75	69	985	53.0	109.1	82.3	8	M6x18	17.0
42	55	32	55	52	70	77	71	1035	78.0	103.9	79.3	8	M8x22	42.0
45	59	40	56	64	72	85	79	1790	78.0	127.4	97.2	8	M8x22	42.0
48	62	40	56	64	72	88	82	1935	78.0	119.5	92.5	8	M8x22	42.0
50	65	50	66	74	82	92	85	2550	97.0	114.7	98.2	10	M8x22	42.0
55	71	50	66	74	82	98	91	2792	97.0	104.3	80.8	10	M8x22	42.0
60	77	50	66	74	82	104	97	3055	97.0	95.6	74.5	10	M8x22	42.0
65	84	50	66	74	82	111	104	3297	97.0	88.2	68.8	10	M8x22	42.0
70	90	60	80	91	101	122	115	4495	123.0	86.7	67.4	10	M10x25	84.0
75	95	60	80	91	101	126	119	6365	197.0	93.0	74.0	10	M10x25	84.0
80	100	65	85	96	106	131	124	8196	237.0	97.0	77.0	12	M10x25	84.0
85	106	65	85	96	106	137	130	8745	237.0	91.0	73.0	12	M10x25	84.0
90	112	65	85	96	106	143	136	10600	276.0	100.0	51.0	12	M10x25	84.0
95	120	65	85	96	106	153	144	11232	276.0	95.0	75.0	14	M10x25	84.0
100	125	65	89	102	114	162	153	14765	348.0	114.0	91.0	12	M12x30	145.0
110	140	70	94	107	119	177	168	16262	348.0	96.0	75.0	14	M12x30	145.0
120	155	90	114	127	139	195	185	23697	465.0	91.0	71.0	18	M12x30	145.0
130	165	90	114	127	139	205	195	25579	465.0	84.0	66.0	18	M12x30	145.0
140	175	90	114	127	139	215	205	28205	465.0	78.0	63.0	18	M12x30	145.0
150	185	90	114	127	139	225	215	29841	465.0	73.0	59.0	18	M12x30	145.0



Eastlock

EASTLOCK 03 Clamping Element

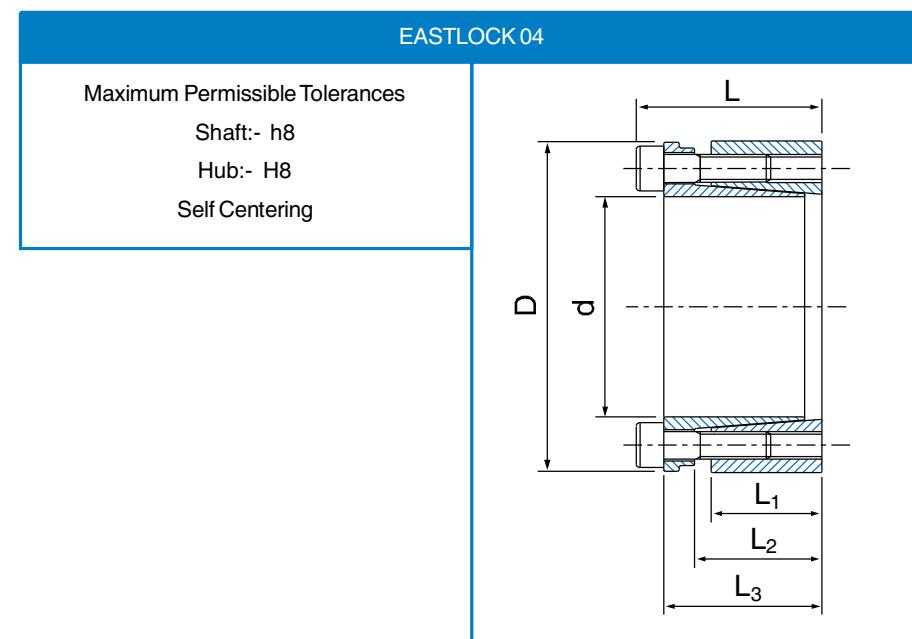
Ød mm	ØD mm	Dimensions		Transmission Axial Force			Contact Pressure	
		L mm	L ₁ mm	Torque Mt Nm	F _a kN	F _t kN	Shaft P N/mm ²	Hub P ₁ N/mm ²
8	11	4.5	3.7	2.9	4.3	0.97	98	73
10	13	4.5	3.7	6.9	12.1	1.37	98	75
12	15	4.5	3.7	9.8	12.4	1.64	98	78
14	18	6.3	5.3	19.2	20.4	2.74	98	76
15	19	6.3	5.3	22.1	23.5	2.94	98	77
16	20	6.3	5.3	25.1	23.9	3.14	98	78
18	22	6.3	5.3	31.8	24.8	3.53	98	80
19	24	6.3	5.3	35.3	29.1	3.72	98	77
20	25	6.3	5.3	39.2	29.5	3.92	98	78
22	26	6.3	5.3	47.0	28.3	4.31	98	83
24	28	6.3	5.3	56.8	29.4	4.70	98	84
25	30	6.3	5.3	60.8	31.8	4.90	98	81
28	32	6.3	5.3	76.4	31.9	5.49	98	86
30	35	6.3	5.3	88.2	34.8	5.88	98	84
32	36	6.3	5.3	100.0	35.9	6.27	98	87
35	40	7.0	6.0	136.0	44.8	7.74	98	86
38	44	7.0	6.0	160.0	48.8	8.43	98	84
40	45	8.0	6.6	195.0	57.6	9.75	98	87
42	48	8.0	6.6	216.0	61.4	10.30	98	86
45	52	10.0	8.6	321.0	90.3	14.30	98	85
48	55	10.0	8.6	367.0	92.7	15.30	98	85
50	57	10.0	8.6	397.0	94.7	15.90	98	86
55	62	10.0	8.6	480.0	99.7	17.40	98	87
60	68	12.0	10.4	692.0	130.9	23.00	98	86
65	73	12.0	10.4	813.0	134.9	25.00	98	87
70	79	14.0	12.2	1110.0	172.4	31.60	98	87
75	84	14.0	12.2	1260.0	185.7	33.80	98	87
80	91	17.0	15.0	1770.0	247.1	44.10	98	86
90	101	17.0	15.0	2240.0	266.2	50.00	98	87
100	114	21.0	18.7	3450.0	370.8	69.60	98	86
110	124	21.0	18.7	4170.0	406.1	76.40	98	87
120	134	21.0	18.7	4950.0	432.0	83.30	98	88
130	148	28.0	25.3	7840.0	640.8	122.00	98	86
140	158	28.0	25.3	9110.0	676.5	131.00	98	87
150	168	28.0	25.3	10500.0	713.0	140.00	98	87



Eastlock

EASTLOCK 04 Clamping Element

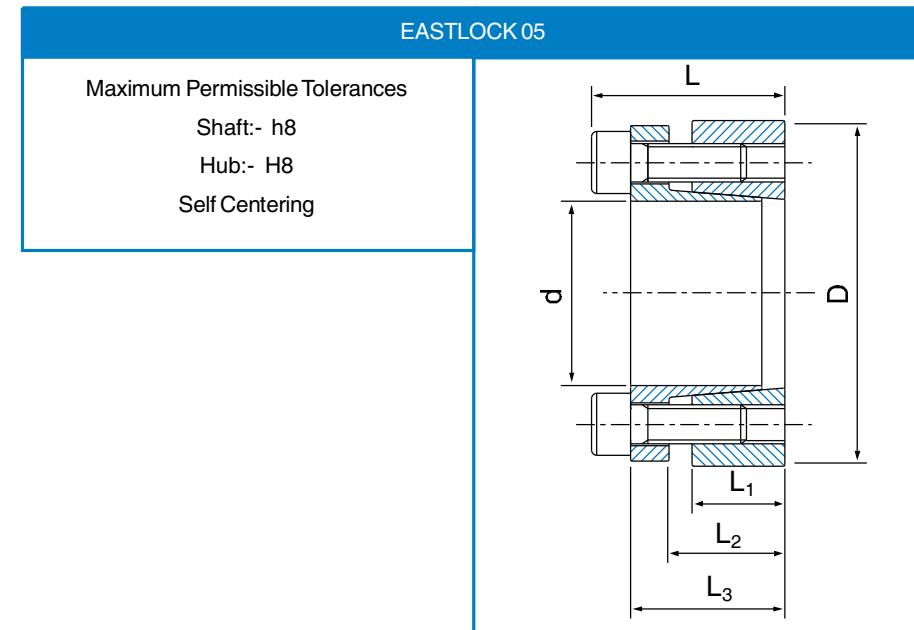
Ød mm	ØD mm	Dimensions					Transmission Torque Mt Nm	Axial Force Ft kN	Contact Pressure Shaft P N/mm ²	Hub P ₁ N/mm ²	Lock Screws (DIN 912-12.9)		
		L_1 mm	L_2 mm	L_3 mm	L mm	Qty.					Size	Tightening Torque T _s Nm	
19	47	26	31	39	45	353	30.6	228	98	4	M6x25	17	
20	47	26	31	39	45	382	33.4	226	98	4	M6x25	17	
22	47	26	31	39	45	431	33.4	215	93	4	M6x25	17	
24	50	26	31	39	45	519	50.2	215	102	6	M6x25	17	
25	50	26	31	39	45	578	50.2	225	102	6	M6x25	17	
28	55	26	31	39	45	686	50.2	215	107	6	M6x25	17	
30	55	26	31	39	45	745	50.2	196	117	6	M6x25	17	
32	60	26	31	39	45	912	66.9	225	111	8	M6x25	17	
35	60	26	31	39	45	1010	66.9	196	116	8	M6x25	17	
38	65	26	31	39	45	1216	66.9	205	121	8	M6x25	17	
40	65	26	31	39	45	1323	66.9	196	122	8	M6x25	17	
42	75	30	36	47	55	2128	66.9	232	137	6	M8x30	41	
45	75	30	36	47	55	2304	92.1	232	137	6	M8x30	41	
48	80	30	36	47	55	2461	110.0	213	132	6	M8x30	41	
50	80	30	36	47	55	2530	122.8	213	132	6	M8x30	41	
55	85	30	36	47	55	3138	122.8	218	142	8	M8x30	41	
60	90	30	36	47	55	3314	122.8	194	153	8	M8x30	41	
65	95	30	36	47	55	4079	122.8	208	137	8	M8x30	41	
70	110	40	46	57	67	6707	193.5	220	140	8	M10x35	83	
75	115	40	46	62	72	7354	193.5	205	135	8	M10x35	83	
80	120	40	46	62	72	7943	193.5	196	127	8	M10x35	83	
85	125	40	46	62	72	9512	241.9	205	142	10	M10x35	83	
90	130	40	46	62	72	10100	241.9	196	135	10	M10x35	83	
95	135	40	46	62	72	11865	241.9	205	145	10	M10x35	83	
100	145	46	52	77	89	15396	282.8	211	145	8	M12x45	145	
110	155	46	52	77	89	16867	282.8	192	136	8	M12x45	145	
120	165	46	52	77	89	22064	353.6	211	152	10	M12x45	145	
130	180	46	52	77	89	23535	424.3	192	137	12	M12x45	145	
140	190	51	59	84	90	30210	448.5	192	142	8	M14x45	230	
150	200	51	59	84	90	36440	489.0	201	150	10	M14x45	230	



Eastlock

EASTLOCK 05 Clamping Element

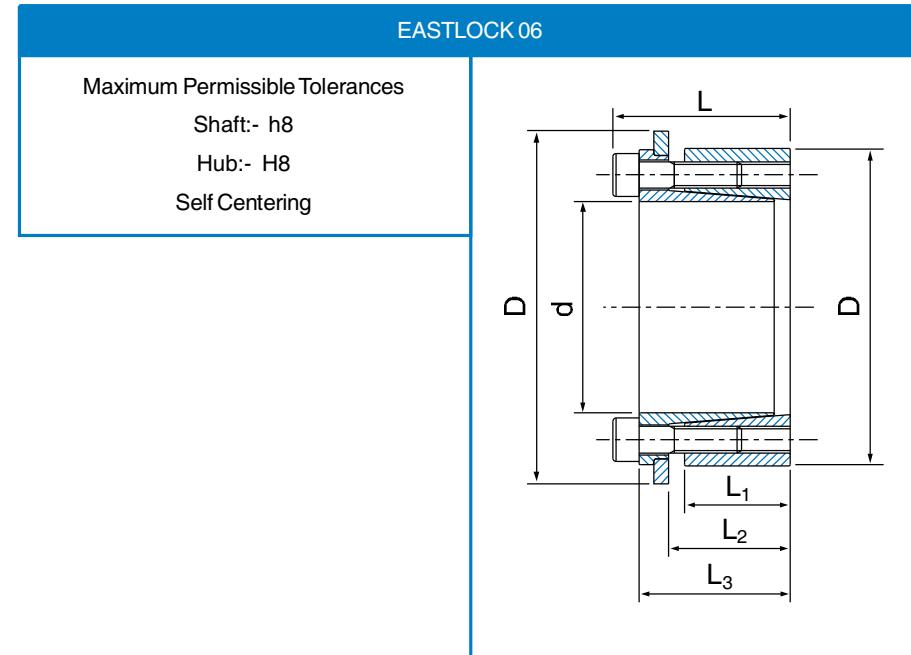
Ød mm	ØD mm	Dimensions				Transmission Torque Mt Nm	Axial Force Ft kN	Contact Pressure Shaft P N/mm ²	Hub P ₁ N/mm ²	Lock Screws (DIN 912-12.9)		
		L ₁ mm	L ₂ mm	L ₃ mm	L mm					Qty.	Size	Tightening Torque T _s Nm
19	47	17	22	28	34	355	31	280	120	5	M6x20	14
20	47	17	22	28	34	360	33	280	120	5	M6x20	14
22	47	17	22	28	34	400	33	268	123	5	M6x20	14
24	50	17	22	28	34	440	36	243	120	6	M6x20	14
25	50	17	22	28	34	560	36	280	138	6	M6x20	14
28	55	17	22	28	34	625	36	250	128	6	M6x20	14
30	55	17	22	28	34	650	36	235	128	6	M6x20	14
32	60	17	22	28	34	950	50	290	150	8	M6x20	14
35	60	17	22	28	34	1050	50	268	150	8	M6x20	14
38	65	17	22	28	34	1140	50	252	146	8	M6x20	14
40	65	17	22	28	34	1200	50	232	146	8	M6x20	14
45	75	20	25	33	41	2180	70	285	168	7	M8x25	35
50	80	20	25	33	41	2430	85	258	158	7	M8x25	35
55	85	20	25	33	41	3050	85	268	173	8	M8x25	35
60	90	20	25	33	41	3350	85	243	163	8	M8x25	35
65	95	20	25	33	41	4080	85	253	173	9	M8x25	35
70	110	24	30	40	50	6280	119	278	178	8	M10x30	70
75	115	24	30	40	50	6680	119	258	168	8	M10x30	70
80	120	24	30	40	50	7130	119	248	168	8	M10x30	70
85	125	24	30	40	50	8750	132	258	178	9	M10x30	70
90	130	24	30	40	50	9080	132	248	168	9	M10x30	70
95	135	24	30	40	50	10580	132	258	178	10	M10x30	70
100	145	26	32	44	56	13380	170	268	188	8	M12x35	125
110	155	26	32	44	56	14580	170	238	178	8	M12x35	125
120	165	26	32	44	56	17880	200	248	178	9	M12x35	125
130	180	34	40	52	64	25950	270	238	168	12	M14x40	190
140	190	34	40	54	68	26950	270	208	148	9	M14x40	190
150	200	34	40	54	68	32950	320	228	168	10	M14x40	190



Eastlock

EASTLOCK 06 Clamping Element

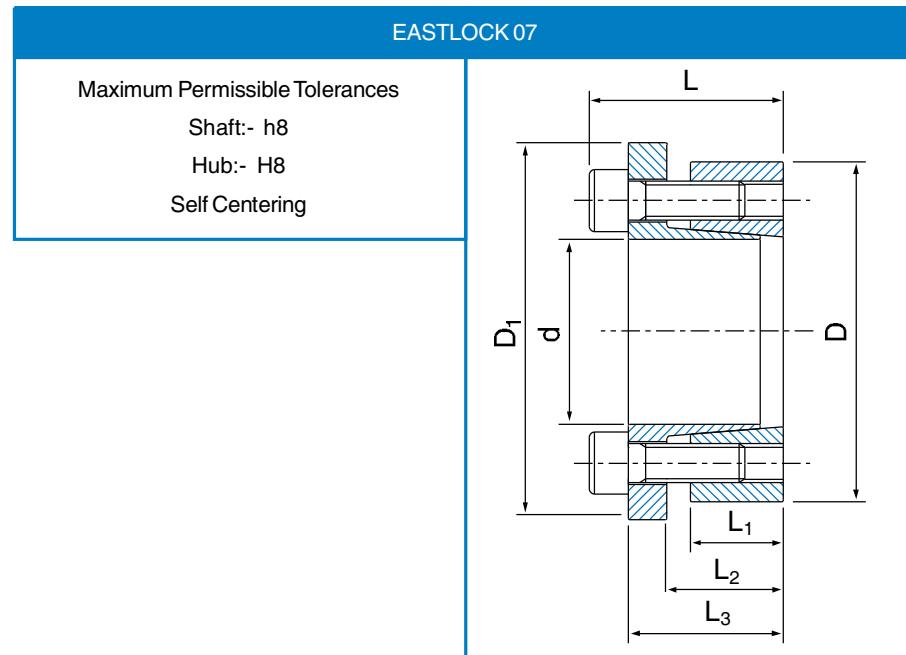
Ød mm	ØD mm	ØD ₁ mm	Dimensions				Transmission Torque Mt Nm	Axial Force Ft kN	Contact Pressure Shaft P N/mm ²	Contact Pressure Hub P ₁ N/mm ²	Lock Screws (DIN 912-12.9)		
			L ₁ mm	L ₂ mm	L ₃ mm	L mm					Qty.	Size	Tightening Torque Ts Nm
19	47	53	26	31	39	45	294	19.8	228	96	4	M6x20	17
20	47	53	26	31	39	45	313	23.4	226	96	4	M6x20	17
22	47	53	26	31	39	45	362	23.4	206	97	4	M6x20	17
24	50	56	26	31	39	45	421	35.1	206	100	6	M6x20	17
25	50	56	26	31	39	45	470	35.1	221	110	6	M6x20	17
28	55	61	26	31	39	45	578	35.1	202	105	6	M6x20	17
30	55	61	26	31	39	45	637	35.1	221	118	6	M6x20	17
32	60	66	26	31	39	45	784	46.8	197	114	8	M6x20	17
35	60	66	26	31	39	45	843	46.8	202	118	8	M6x20	17
38	65	71	26	31	39	45	1010	46.8	197	121	8	M6x20	17
40	65	71	26	31	39	45	1108	46.8	234	143	8	M6x20	17
42	75	81	30	36	47	55	1892	46.8	216	135	6	M8x30	41
45	75	81	30	36	47	55	1912	64.4	216	135	6	M8x30	41
48	80	86	30	36	47	55	2137	73.6	221	142	6	M8x30	41
50	80	86	30	36	47	55	2167	86.0	221	143	6	M8x30	41
55	85	91	30	36	47	55	2677	86.0	221	143	8	M8x30	41
60	90	96	30	36	47	55	2853	86.0	197	131	8	M8x30	41
65	95	101	30	36	47	55	3500	86.0	206	142	8	M8x30	41
70	110	116	40	46	57	67	5717	135.0	221	142	8	M10x35	83
75	115	121	40	46	62	72	6207	135.0	216	148	8	M10x35	83
80	120	126	40	46	62	72	6707	135.0	198	139	8	M10x35	83
85	125	131	40	46	62	72	8002	169.0	216	157	10	M10x35	83
90	130	136	40	46	62	72	8502	169.0	197	143	10	M10x35	83
95	135	141	40	46	62	72	10002	169.0	187	138	10	M10x35	83
100	145	151	46	52	77	89	13336	198.0	197	148	8	M12x45	145
110	155	161	46	52	77	89	14582	198.0	197	178	8	M12x45	145
120	165	171	46	52	77	89	19083	248.0	216	158	10	M12x45	145
130	180	186	46	52	77	89	20417	297.0	198	143	12	M12x45	145
140	190	196	51	59	84	90	24920	342.0	188	138	8	M14x45	230
150	200	206	51	59	84	90	30130	342.0	198	149	10	M14x45	230



Eastlock

EASTLOCK 07 Clamping Element

Ød mm	ØD mm	ØD ₁ mm	Dimensions				Transmission Torque Mt Nm	Axial Force Ft kN	Contact Pressure Shaft P N/mm ²	Contact Pressure Hub P ₁ N/mm ²	Lock Screws (DIN 912-12.9)		
			L ₁ mm	L ₂ mm	L ₃ mm	L mm					Qty.	Size	Tightening Torque Ts Nm
19	47	56	17	22	28	34	274	28	215	93	5	M6x20	17
20	47	56	17	22	28	34	284	32	215	93	5	M6x20	17
22	47	56	17	22	28	34	314	32	196	93	5	M6x20	17
24	50	59	17	22	28	34	401	32	215	107	6	M6x20	17
25	50	59	17	22	28	34	441	34	210	107	6	M6x20	17
28	55	64	17	22	28	34	490	34	196	98	6	M6x20	17
30	55	64	17	22	28	34	529	34	186	98	6	M6x20	17
32	60	69	17	22	28	34	755	46	210	112	8	M6x20	17
35	60	69	17	22	28	34	824	46	186	107	8	M6x20	17
38	65	74	17	22	28	34	892	46	191	112	8	M6x20	17
40	65	74	17	22	28	34	941	46	186	102	8	M6x20	17
45	75	84	20	25	33	41	1716	64	225	132	7	M8x25	41
50	80	84	20	25	33	41	1893	85	205	127	7	M8x25	41
55	85	94	20	25	33	41	2403	85	210	132	8	M8x25	41
60	90	99	20	25	33	41	2648	85	186	122	8	M8x25	41
65	95	104	20	25	33	41	3188	85	196	132	9	M8x25	41
70	110	119	24	30	40	50	4905	119	215	137	8	M10x30	83
75	115	124	24	30	40	50	5150	119	195	127	8	M10x30	83
80	120	129	24	30	40	50	5490	119	185	122	8	M10x30	83
85	125	134	24	30	40	50	6620	132	195	132	9	M10x30	83
90	130	139	24	30	40	50	6960	132	185	127	9	M10x30	83
95	135	144	24	30	40	50	8190	132	195	137	10	M10x30	83
100	145	154	26	32	44	56	10100	170	205	145	8	M12x35	145
110	155	164	26	32	44	56	11030	170	190	135	8	M12x35	145
120	165	174	26	32	44	56	13600	200	205	142	9	M12x35	145
130	180	189	34	40	52	64	19000	270	186	137	12	M12x35	145
140	190	199	34	40	54	68	21800	270	177	127	9	M14x40	230
150	200	209	34	40	54	68	25600	320	185	137	10	M14x40	230



Eastlock

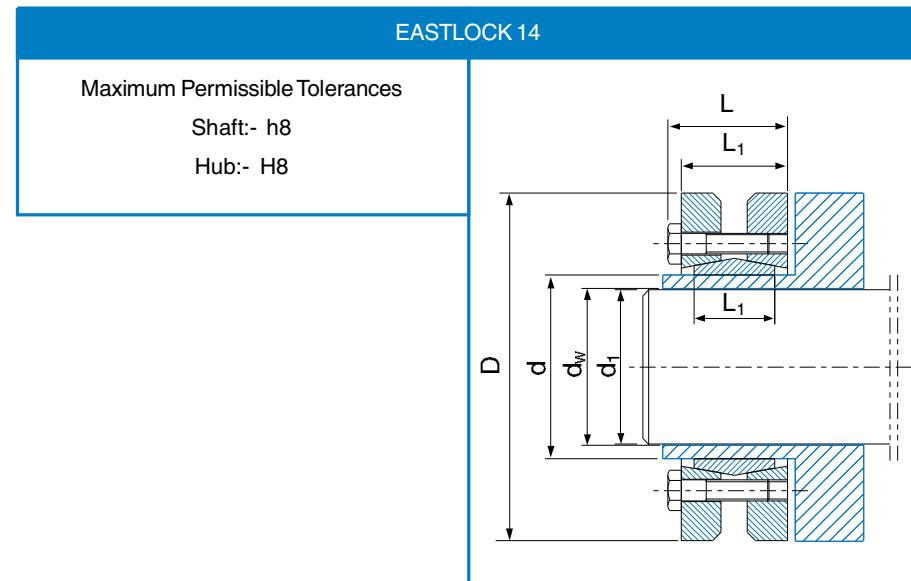
EASTLOCK 14 Clamping Element

Ød mm	ØD mm	dw mm	Dimensions				Transmission Torque Mt Nm	Axial Force Ft kN	Contact Press Shaft P N/mm ²	Lock Screws (DIN 912-12.9)		
			L ₁ mm	L ₂ mm	L mm	C _(dw-d1) mm				Qty.	Size	Tightening Torque Ts Nm
24	50	19					170	15.0	286.0	6	M5x18	4.9
		20	14	19.5	23.0	0.017	210	18.5				
		21					250	21.0				
30	60	24					300	15.7	233.0	7	M5x18	4.9
		25	16	21.5	25.0	0.017	340	23.7				
		26					380	26.7				
36	72	28					440	27.0	307.0	5	M6x20	11.8
		30	18	23.5	27.5	0.032	570	38.0				
		31					630	43.0				
44	80	32					620	44.0	317.0	7	M6x20	11.8
		35	20	25.5	29.5	0.032	780	49.0				
		36					860	54.0				
50	90	38					940	48.8	289.0	8	M6x25	11.8
		40	22	27.5	31.5	0.032	1160	58.8				
		42					1380	69.0				
55	100	42					1160	48.0	252.0	8	M6x25	11.8
		45	23	30.5	34.5	0.032	1520	61.7				
		48					1880	77.0				
62	110	48					1850	69.0	279.0	10	M6x25	11.8
		50	23	30.5	34.5	0.048	2200	80.9				
		52					2400	90.0				
68	115	50					2000	71.2	255.0	10	M6x25	11.8
		55	23	30.5	34.5	0.048	2500	80.9				
		60					3150	95.7				
75	138	55					2500	94.4	273.0	7	M8x30	29.4
		60	25	32.5	37.8	0.048	3200	111.0				
		65					3950	126.0				
80	145	60					3200	99.3	256.0	7	M8x30	29.4
		65	25	32.5	37.8	0.048	3900	115.0				
		70					4600	130.0				
90	155	65					4750	141.0	271.0	10	M8x35	29.4
		70	30	39.0	44.3	0.048	6000	160.0				
		75					7250	178.0				
100	170	70					6900	163.0	258.0	12	M8x35	29.4
		75	34	44.0	49.3	0.048	7500	182.0				
		80					9000	202.0				
110	185	75					7200	185.0	244.0	9	M10x40	57.8
		80	39	50.0	56.4	0.048	9000	207.0				
		85					10800	221.0				

Eastlock

EASTLOCK 14 Clamping Element

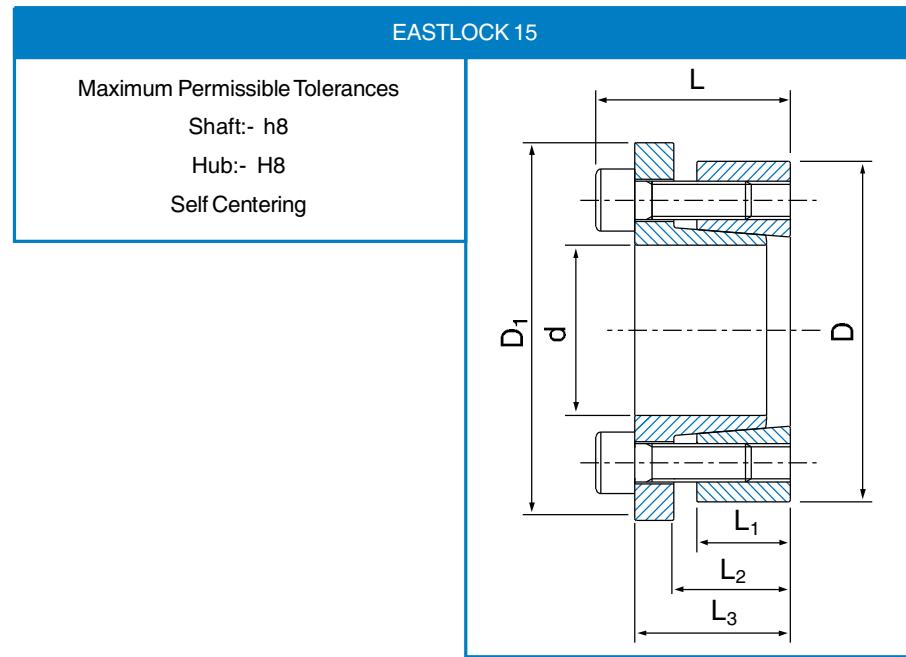
Ød mm	ØD mm	dw mm	Dimensions				Torque Mt Nm	Transmission Axial Force Ft kN	Contact Press Shaft P N/mm ²	Lock Screws (DIN 912-12.9)		
			L ₁ mm	L ₂ mm	L mm	C _(dw-d1) mm				Qty.	Size	Tightening Torque Ts Nm
125	215	85	42	54.0	60.4	0.069	11000	240.0	266.0	12	M10x40	57.8
		90					13000	262.0				
		95					15000	285.0				
140	230	95	46	60.5	68.0	0.069	15100	308.0	264.0	10	M12x45	98.0
		100					17600	331.0				
		105					20100	357.0				
155	265	105	50	64.5	72.0	0.069	22000	366.0	263.0	12	M12x50	98.0
		110					25000	392.0				
		115					28000	417.0				
165	290	115	56	71.0	81.0	0.069	31000	513.0	277.0	8	M16x55	245.0
		120					25000	544.0				
		125					39000	564.0				



Eastlock

EASTLOCK 15 Clamping Element

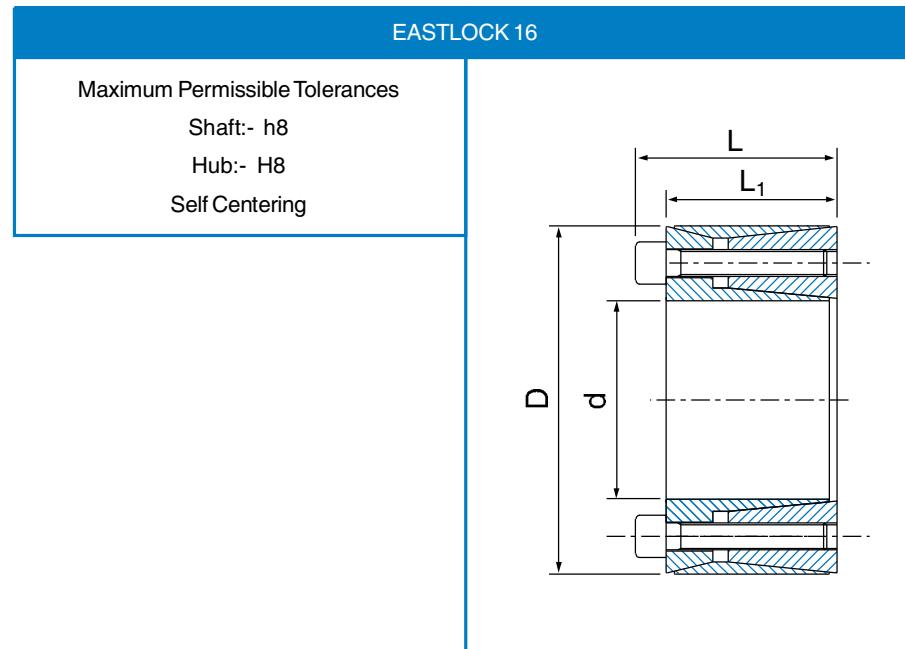
Ød mm	ØD mm	ØD ₁ mm	Dimensions				Transmission Torque Mt Nm	Contact Pressure Shaft P N/mm ²	Contact Pressure Hub P ₁ N/mm ²	Lock Screws (DIN 912-12.9) Tightening		
			L ₁ mm	L ₂ mm	L ₃ mm	L mm				Qty.	Size	Torque Ts Nm
14	55	62	17	22	31	39	282	458	118	4	M8x25	41
16	55	62	17	22	31	39	313	400	118	4	M8x25	41
18	55	62	17	22	31	39	353	356	118	4	M8x25	41
19	55	62	17	22	31	39	372	337	118	4	M8x25	41
20	55	62	17	22	31	39	392	320	118	4	M8x25	41
22	55	62	17	22	31	39	431	290	118	4	M8x25	41
24	55	62	17	22	31	39	470	265	118	4	M8x25	41
25	55	62	17	22	31	39	490	255	118	4	M8x25	41
28	55	62	17	22	31	39	549	228	118	4	M8x25	41
30	55	62	17	22	31	39	588	213	118	4	M8x25	41
24	65	72	17	22	31	39	617	332	122	5	M8x25	41
25	65	72	17	22	31	39	637	320	122	5	M8x25	41
28	65	72	17	22	31	39	725	285	122	5	M8x25	41
30	65	72	17	22	31	39	764	267	122	5	M8x25	41
32	65	72	17	22	31	39	823	250	122	5	M8x25	41
35	65	72	17	22	31	39	902	228	122	5	M8x25	41
38	65	72	17	22	31	39	970	210	122	5	M8x25	41
40	65	72	17	22	31	39	1029	200	122	5	M8x25	41
30	80	87	20	25	33	41	1082	315	120	7	M8x25	41
32	80	87	20	25	33	41	1155	298	120	7	M8x25	41
35	80	87	20	25	33	41	1260	272	120	7	M8x25	41
38	80	87	20	25	33	41	1370	250	120	7	M8x25	41
40	80	87	20	25	33	41	1440	238	120	7	M8x25	41
42	80	87	20	25	33	41	1510	226	120	7	M8x25	41
45	80	87	20	25	33	41	1620	212	120	7	M8x25	41
48	80	87	20	25	33	41	1735	198	120	7	M8x25	41
50	80	87	20	25	33	41	1806	190	120	7	M8x25	41



Eastlock

EASTLOCK 16 Clamping Element

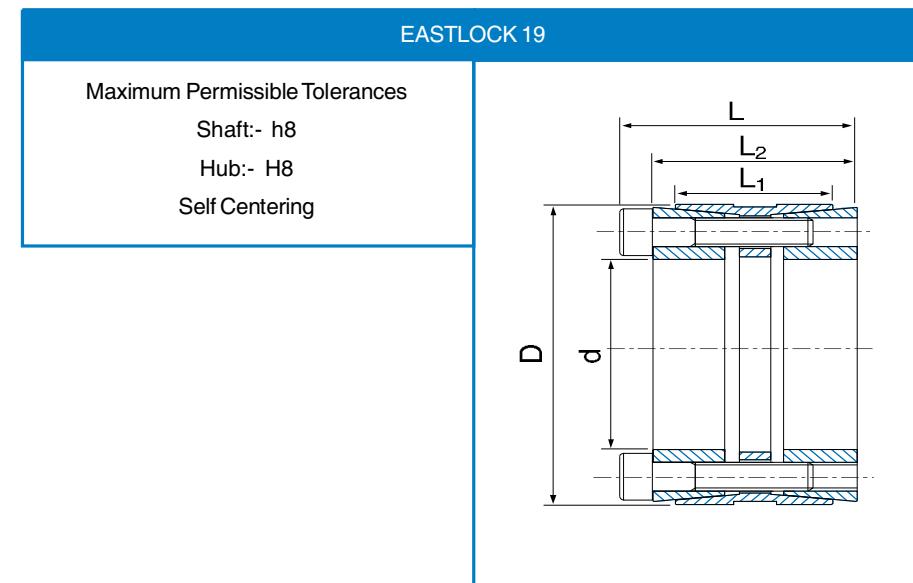
Ød mm	ØD mm	Dimensions		Transmission Torque Mt Nm	Axial Force Ft kN	Contact Pressure Shaft P N/mm ²	Hub P ₁ N/mm ²	Lock Screws (DIN 912-12.9) Qty.	Tightening Size	Torque Ts Nm
		L ₁ mm	L mm							
16	32	18.0	24	72	9	83	41	4	M4x16	5
18	40	18.0	24	210	23	83	74	4	M6x18	17
19	41	18.0	24	222	23	155	72	4	M6x18	17
20	42	18.0	24	233	23	147	70	4	M6x18	17
22	44	18.0	24	257	23	134	67	4	M6x18	17
24	46	18.0	24	420	35	184	96	6	M6x18	17
25	47	18.0	24	438	35	177	94	6	M6x18	17
28	50	18.0	24	490	35	158	88	6	M6x18	17
30	52	18.0	24	525	35	147	85	6	M6x18	17
32	54	18.0	24	560	35	138	82	6	M6x18	17
35	57	21.5	28	459	26	79	49	6	M6x18	17
36	58	21.5	28	630	35	103	64	8	M6x18	17
38	60	21.5	28	665	35	97	62	8	M6x18	17
40	62	21.5	28	700	35	93	60	8	M6x18	17
42	70	28.0	36	1730	82	159	96	8	M8x22	40
45	73	28.0	36	1853	82	149	92	8	M8x22	40
48	76	28.0	36	1977	82	139	88	8	M8x22	40
50	78	28.0	36	2059	82	134	86	8	M8x22	40
55	83	28.0	36	2589	94	139	92	8	M8x22	40
60	88	28.0	36	2824	94	127	87	8	M8x22	40
65	93	35.0	45	3060	94	94	66	8	M8x22	40
70	105	35.0	45	4671	133	124	83	8	M10x25	81
75	110	35.0	45	5004	133	116	79	8	M10x25	81
80	115	35.0	45	6005	150	122	85	9	M10x25	81
85	120	35.0	45	7089	167	127	90	10	M10x25	81
90	125	35.0	45	7506	167	120	87	10	M10x25	81
100	138	35.0	45	8340	167	108	79	10	M10x25	81



Eastlock

EASTLOCK 19 Clamping Element

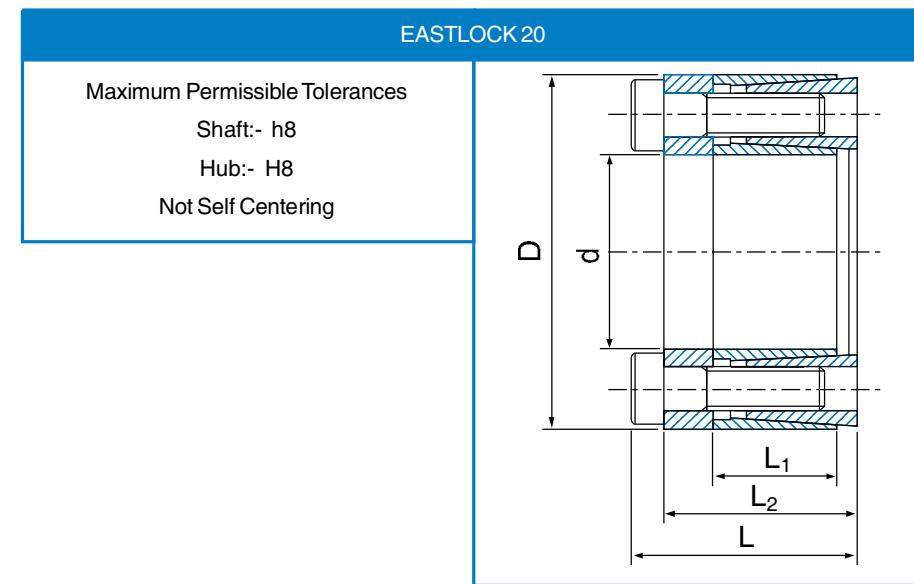
Ø_d mm	Ø_D mm	Dimensions			Transmission Torque Mt Nm	Axial Force Ft kN	Contact Pressure Shaft P N/mm ²	Contact Pressure Hub P_1 N/mm ²	Locking Screws (DIN 912-12.9)		
		L_1 mm	L_2 mm	L mm					Qty.	Size	Tightening Torque T_s Nm
25	55	32	40	46	840	67	295	134	6	M6x35	18
28	55	32	40	46	940	67	264	134	6	M6x35	18
30	55	32	40	46	1000	67	246	134	6	M6x35	18
35	60	44	54	60	1300	74	174	101	7	M6x45	18
38	75	44	54	62	2600	74	296	150	7	M8x50	41
40	75	44	54	62	2900	145	281	150	7	M8x50	41
42	75	44	54	62	2930	145	268	150	7	M8x50	41
45	75	44	54	62	3260	145	250	150	7	M8x50	41
48	80	56	64	62	3800	155	207	124	8	M8x55	41
50	80	56	64	72	4150	155	200	98	8	M8x55	41
55	85	56	64	72	5150	186	205	104	9	M8x55	41
60	90	56	64	72	6200	207	202	106	10	M8x55	41
65	95	56	64	72	6750	207	187	100	10	M8x55	41
70	110	70	78	88	11500	329	223	114	10	M10x60	83
75	115	70	78	88	12060	329	223	114	10	M10x60	83
80	120	70	78	88	14500	360	215	115	11	M10x60	83
85	125	70	78	88	15100	360	215	115	12	M10x60	83
90	130	70	78	88	17600	390	208	115	12	M10x60	83
95	135	70	78	88	18300	390	208	115	12	M10x60	83
100	145	90	100	112	23300	467	200	107	11	M12x80	145
110	155	90	100	112	30400	553	198	110	12	M12x80	145
120	165	90	100	112	37000	617	212	120	14	M12x80	145
130	180	104	116	130	49000	759	192	112	12	M14x90	230
140	190	104	116	130	59000	843	208	124	14	M14x90	230
150	200	104	116	130	67000	897	208	127	15	M14x90	230
160	210	104	116	130	76000	950	208	128	16	M14x90	230
170	225	134	148	164	10200	1223	182	113	16	M16x110	360
180	235	134	148	164	11500	1289	184	115	16	M16x111	360
190	250	134	148	164	13000	1363	186	116	16	M16x112	360
200	260	134	148	164	14370	1438	177	112	16	M16x113	360
220	285	134	148	164	17400	1582	188	115	16	M16x114	360



Eastlock

EASTLOCK 20 Clamping Element

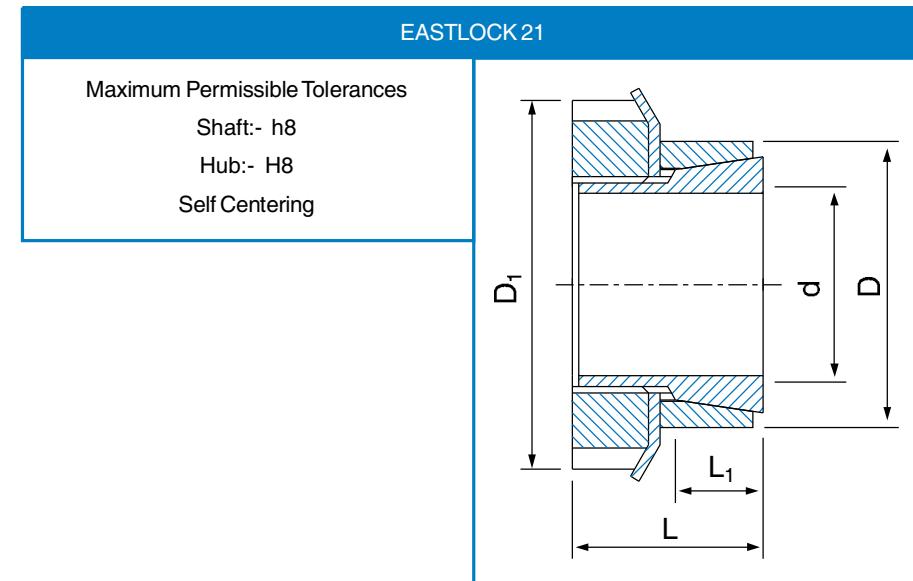
\O_d mm	\O_D mm	Dimensions			Transmission Torque Mt Nm	Axial Force Ft kN	Contact Pressure Shaft P N/mm ²	Contact Pressure Hub P_1 N/mm ²	Locking Screws (DIN 912-12.9)		
		L_1 mm	L_2 mm	L mm					Qty.	Size	Tightening Torque T_s Nm
18	40	12	18.5	24.5	190	21	260	120	6	M6x15	17
19	41	12	18.5	24.5	210	22	260	120	6	M6x15	17
20	42	12	18.5	24.5	240	24	250	120	6	M6x15	17
24	46	12	18.5	24.5	290	24	250	120	6	M6x15	17
25	47	12	18.5	24.5	330	26	230	120	8	M6x15	17
28	50	12	18.5	24.5	370	26	220	120	8	M6x15	17
30	52	12	18.5	24.5	430	28	210	120	8	M6x15	17
35	57	15	22.0	28.0	610	35	170	100	12	M6x15	17
38	60	15	22.0	28.0	680	35	170	100	12	M6x15	17
40	62	15	22.0	28.0	780	39	170	100	12	M6x15	17
42	70	18	28.0	36.0	1480	70	190	110	12	M8x22	41
45	73	18	28.0	36.0	1500	66	210	130	12	M8x22	41
48	76	18	28.0	36.0	1550	66	210	130	12	M8x22	41
50	78	18	28.0	36.0	1650	66	190	120	12	M8x22	41
55	83	18	28.0	36.0	2000	72	190	120	16	M8x22	41
60	88	18	28.0	36.0	2350	78	190	120	16	M8x22	41
70	105	22	35.0	45.0	3900	111	180	120	12	M10x25	83
80	115	22	35.0	45.0	4800	120	180	120	16	M10x25	83



Eastlock

EASTLOCK 21 Clamping Element

\O_d mm	\O_D mm	\O_{D_1} mm	Dimensions		Transmission Torque Mt Nm	Axial Force Ft kN	Contact Pressure Shaft P N/mm ²	Contact Pressure Hub P_1 N/mm ²	Locking Screws (DIN 912-12.9)		
			L_1 mm	L mm					Qty.	Size	Tightening Torque T_s Nm
14	25	32	20	30	91	13	124	74	1	M20x1	92
15	25	32	20	30	99	13	117	70	1	M20x1	92
16	25	32	20	30	80	10	83	53	1	M20x1	70
17	25	32	20	32	99	12	91	62	1	M22x1.5	91
18	30	32	20	32	193	21	158	95	1	M25x1.5	188
19	30	38	20	32	167	18	123	78	1	M25x1.5	154
20	30	38	20	32	136	14	90	60	1	M25x1.5	119
22	35	45	25	36	345	31	151	95	1	M30x1.5	327
24	35	45	25	36	262	22	96	66	1	M30x1.5	228
25	35	45	25	36	209	17	71	51	1	M30x1.5	175
28	40	52	25	37	447	32	121	85	1	M35x1.5	387
30	40	52	25	37	298	20	70	53	1	M35x1.5	242
32	45	52	30	44	701	44	121	86	1	M40x1.5	606
35	45	58	30	44	403	23	58	45	1	M40x1.5	319
36	50	58	30	45	283	16	39	28	1	M40x1.5	217
38	50	58	30	45	805	42	99	75	1	M45x1.5	657
40	50	65	30	45	524	26	58	46	1	M45x1.5	407
42	55	65	30	46	1184	56	119	91	1	M50x1.5	966
45	55	70	30	46	661	29	58	47	1	M50x1.5	503
48	60	75	30	46	1267	53	97	78	1	M55x2	1000
50	60	75	30	46	813	33	58	48	1	M55x2	616
55	65	80	30	46	768	28	45	38	1	M60x2	574
60	70	85	30	52	1420	47	70	60	1	M65x2	1045



COUPLINGS



FFX Tyre Couplings

FFX Tyre Coupling Data

Coupling Size	Bush Size	Max Bore Metric	Max Bore Inch	A	B	C	E ₁	G	Type F	F & H D	Type B F	D	Clamping Screw	Weight# (kg)	Inertia# (kgm ²)
040B	—	32	—	104	—	82	11.0	29	—	—	33.0	22	M5	0.8	0.00074
040F	1008	25	1"	104	—	82	11.0	29	33.0	22	—	—	—	0.8	0.00074
040H	1008	25	1"	104	—	82	11.0	29	33.0	22	—	—	—	0.8	0.00074
050B	—	38	—	133	79	100	12.5	38	—	—	45.0	32	M5	1.2	0.00115
050F	1210	32	1.1/4"	133	79	100	12.5	38	38.0	25	—	—	—	1.2	0.00115
050H	1210	32	1.1/4"	133	79	100	12.5	38	38.0	25	—	—	—	1.2	0.00115
060B	—	45	—	165	70	125	16.5	38	—	—	55.0	38	M6	2.0	0.0052
060F	1610	42	1.5/8"	165	103	125	16.5	38	42.0	25	—	—	—	2.0	0.0052
060H	1610	42	1.5/8"	165	103	125	16.5	38	42.0	25	—	—	—	2.0	0.0052
070B	—	50	—	187	80	144	11.5	—	—	—	47.0	35	M10	3.1	0.009
070F	2012	50	2"	187	80	144	11.5	42	44.0	32	—	—	—	3.1	0.009
070H	1610	42	1.5/8"	187	80	144	11.5	38	42.0	25	—	—	—	3.0	0.009
080B	—	60	—	211	98	167	12.5	—	—	—	55.0	42	M10	4.9	0.018
080F	2517	60	2.1/2"	211	97	167	12.5	48	58.0	45	—	—	—	4.9	0.018
080H	2012	50	2"	211	98	167	12.5	42	45.0	32	—	—	—	4.6	0.017
090B	—	70	—	235	112	188	13.5	—	—	—	63.5	49	M12	7.1	0.032
090F	2517	60	2.1/2"	235	108	188	13.5	48	59.5	45	—	—	—	7.0	0.031
090H	2517	60	2.1/2"	235	108	188	13.5	48	59.5	45	—	—	—	7.0	0.031
100B	—	80	—	254	125	216	13.5	—	—	—	70.5	56	M12	9.9	0.055
100F	3020	75	3"	254	120	216	13.5	55	65.5	51	—	—	—	9.9	0.055
100H	2517	60	2.1/2"	254	113	216	13.5	48	59.5	45	—	—	—	9.4	0.054
110B	—	90	—	279	128	233	12.5	—	—	—	75.5	63	M12	12.5	0.081
110F	3020	75	3"	279	134	233	12.5	55	63.5	51	—	—	—	11.7	0.078
110H	3020	75	3"	279	134	233	12.5	55	63.5	51	—	—	—	11.7	0.078
120B	—	100	—	314	143	264	14.5	—	—	—	84.5	70	M16	16.9	0.137
120F	3525	100	4"	314	140	264	14.5	67	79.5	65	—	—	—	16.5	0.137
120H	3020	75	3"	314	140	264	14.5	55	65.5	51	—	—	—	15.9	0.13
140B	—	130	—	359	178	311	16.0	—	—	—	110.5	94	M20	22.2	0.254
140F	3525	100	4"	359	178	311	16.0	67	81.5	65	—	—	—	22.3	0.255
140H	3525	100	4"	359	178	311	16.0	67	81.5	65	—	—	—	22.3	0.255
160B	—	140	—	402	187	345	15.0	—	—	—	117.0	102	M20	35.8	0.469
160F	4030	115	4.1/2"	402	197	345	15.0	80	92.0	77	—	—	—	32.5	0.38
160H	4030	115	4.1/2"	402	197	345	15.0	80	92.0	77	—	—	—	32.5	0.38
180B	—	150	—	470	200	398	23.0	—	—	—	137.0	114	M20	49.1	0.871
180F	4535	125	5"	470	205	398	23.0	89	112.0	89	—	—	—	42.2	0.847
180H	4535	125	5"	470	205	398	23.0	89	112.0	89	—	—	—	42.2	0.847
200B	—	150	—	508	200	429	24.0	—	—	—	138.0	114	M20	58.2	1.301
200F	4535	125	5"	508	205	429	24.0	89	113.0	89	—	—	—	53.6	1.281
200H	4535	125	5"	508	205	429	24.0	89	113.0	89	—	—	—	53.6	1.281
220B	—	160	—	562	218	474	27.5	—	—	—	154.5	127	M20	79.6	2.142
220F	5040	125	5"	562	223	474	27.5	92	129.5	102	—	—	—	72.0	2.104
220H	5040	125	5"	562	223	474	27.5	92	129.5	102	—	—	—	72.0	2.104
250B	—	190	—	628	254	532	29.5	—	—	—	161.5	132	M20	104.0	3.505

Notes

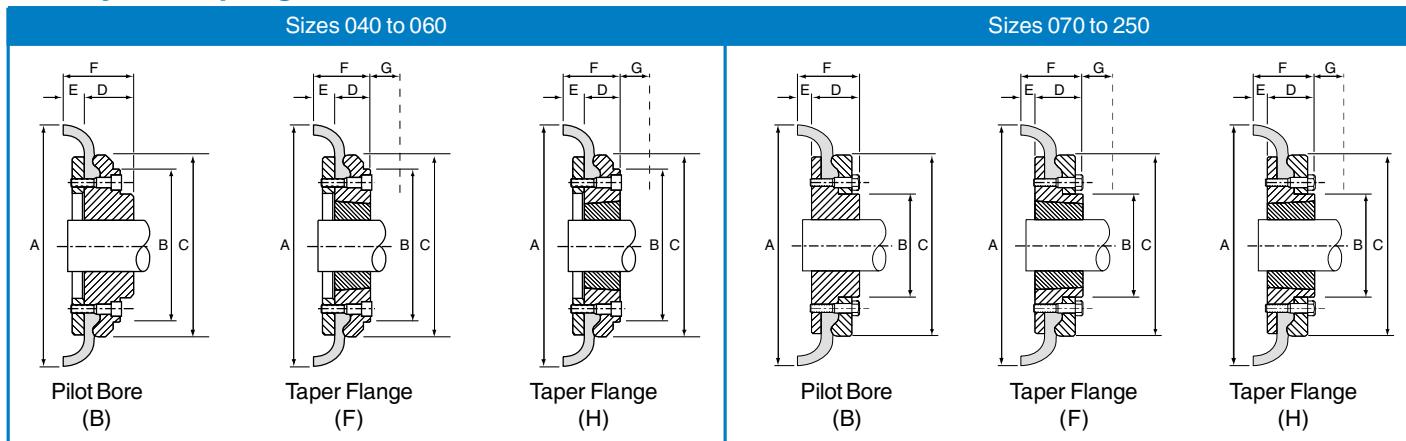
G = Wrench clearance needed to allow for the tightening or loosening of the bush on the shaft as well as the tyre clamping screws.

E₁ = Half the distance required between flanges faces

= Weight and inertia figures are for a single flange including mid range bore, clamping ring, screws and half tyre.

FFX Tyre Couplings

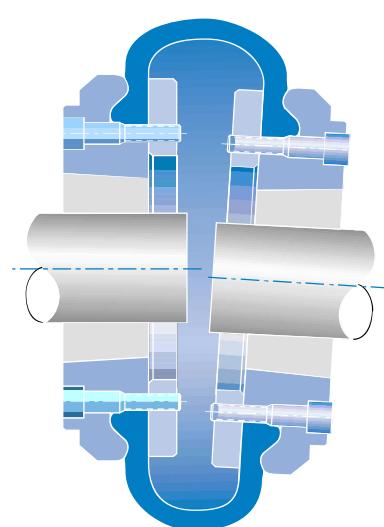
FFX Tyre Coupling Data



FFX Coupling Installation and Operational Data

Coupling Size	Flange Face Spacing (mm)	Gap Between Tyre Ends (mm)	Nominal Torque (Nm)	Max Speed (rev/min)	Max Par Mis (mm)	Max End Float (mm)	Clamping Screw Size	Clamping Screw Torque (Nm)
40	22	2	24	4500	1.1	1.3	M6	15
50	25	2	66	4500	1.3	1.7	M6	15
60	33	2	127	4000	1.6	2.0	M6	15
70	23	3	250	3600	1.9	2.3	M8	24
80	25	3	375	3100	2.1	2.6	M8	24
90	27	3	500	3000	2.4	3.0	M10	40
100	27	3	675	2600	2.6	3.3	M10	40
110	25	3	875	2300	2.9	3.7	M10	40
120	29	3	1330	2050	3.2	4.0	M12	50
140	32	5	2325	1800	3.7	4.6	M12	55
160	30	5	3770	1600	4.2	5.3	M16	80
180	46	6	6270	1500	4.8	6.0	M16	105
200	48	6	9325	1300	5.3	6.6	M16	120
220	55	6	11600	1100	5.8	7.3	M20	165
250	59	6	14675	1000	6.6	8.2	M20	165

NB. All flexible tyres have an angular misalignment capacity up to 4 deg.



CHALLENGE®
FFX
Tyre Coupling



Accommodate
simultaneous
maximum
misalignment
in all planes.

HRC Couplings

HRC Common Data

Coupling No	Nominal Torque Nm	Overall Diameter A	Hub Diameter B	Assembled Length F	Element		Parallel Misalignment (mm)	Weight (kg)	Assembled Length (L)		
					Ring Dia E	Ring Width G			FF, FH, HH	FB, HB	BB
70	31	69	60	25.5	31	18.5	0.3	1.00	65.5	65.5	65.5
90	80	85	70	30.5	32	22.5	0.3	1.17	69.5	76.5	82.5
110	160	112	100	45.5	45	29.5	0.3	5.00	82.5	100.5	119.5
130	315	130	105	53.5	50	36.5	0.4	5.46	89.5	110.5	131.5
150	600	150	115	60.5	62	40.5	0.4	7.11	107.5	129.5	152.5
180	950	180	125	73.5	77	49.5	0.4	16.65	142.5	165.5	189.5
230	2000	225	155	85.5	99	59.5	0.5	26.05	164.5	202.5	239.5
280	3150	275	206	105.5	119	74.5	0.5	50.05	207.5	246.5	285.5

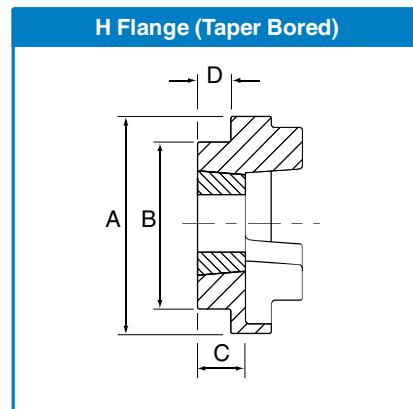
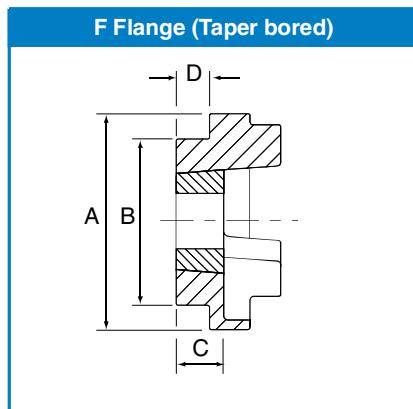
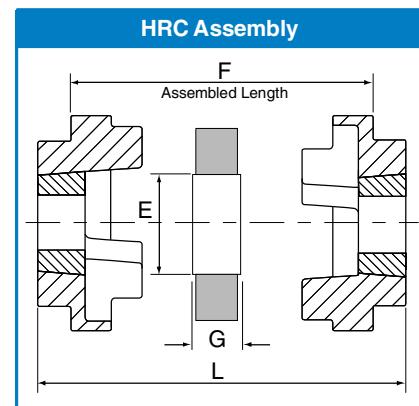
Angular misalignmet capacity up to 1 deg

Mass is for an FF, FH or HH coupling with mid range Taper Lock Bushes

F refers to combinations of flanges: FF, FH, HH, FB, HB, BB.

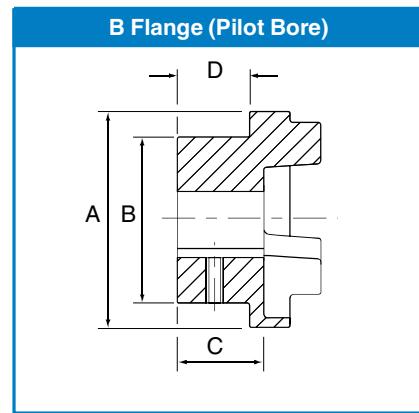
HRC Type F & H

Coupling No	Bush size	Max. Bore (mm) (ins)		Shoulder Width D	Hub Width C
		(mm)	(ins)		
70	1008	25	1	20.0	23.5
90	1108	28	1.1/8	19.5	23.5
110	1610	42	1.5/8	18.5	26.5
130	1610	42	1.5/8	18.0	26.5
150	2012	50	2	23.5	33.5
180	2517	60	2.1/2	34.5	46.5
230	3020	75	3	39.5	52.5
280	3525	100	4	51.0	66.5



HRC Type B

Coupling No	Max. Bore (mm)	Pilot Bore (mm)	Keyway Screw Size	Shoulder Width D	Hub Width C
70	32	8	M 6	20	23.5
90	42	10	M 6	26	30.5
110	55	10	M10	37	45.5
130	60	15	M10	39	47.5
150	70	20	M10	46	56.5
180	80	25	M10	58	70.5
230	100	25	M12	77	90.5
280	115	30	M16	90	105.5



Jaw Couplings

Jaw Coupling Data

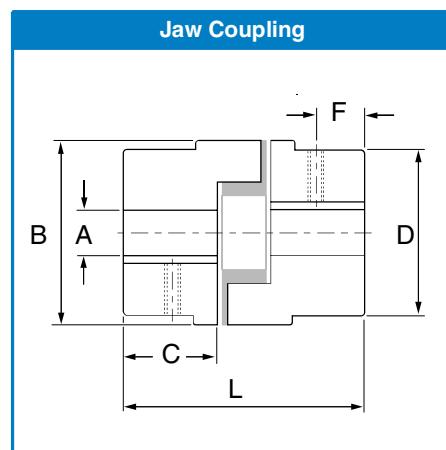
Coupling No	Nominal Torque (Nm)	Pilot Bore A (mm)	Max Bore A (mm)	Overall Diameter B	Assembled Length L	Hub Width C	Hub Diameter D	Set Screw Position F	Set Screw Size	Complete Weight (kg)
035	-	3	8	16.0	20	7	16.0	3.0	M3	0.06
050	3.51	6	14	27.5	44	16	27.5	6.5	M6	0.10
070	5.77	9	19	35.0	51	19	35.0	9.5	M6	0.25
075	11.90	9	24	44.5	54	21	44.5	8.0	M6	0.45
090	19.20	9	24	54.0	54	21	54.0	8.7	M6	0.55
095	25.80	9	28	54.0	64	25	54.0	11.5	M6	0.65
100	55.40	12	35	65.0	89	35	65.0	12.5	M8	1.60
110	105.00	15	42	84.0	108	43	84.0	20.5	M10	3.00
150	150.00	15	48	96.0	115	45	96.0	22.5	M10	4.90
190	200.00	19	55	115.0	133	54	102.0	22.5	M12	7.00
225	280.00	19	60	127.0	153	64	108.0	25.5	M12	9.00

Angular misalignmet capacity up to 1 deg

Parallel misalignment capacity up to 0.38mm

Mass is for a complete coupling with a pilot bore

Nitrile insert temperature range -40 degC to 100 degC



Chain Couplings

Chain Coupling Data

Coupling Size	Chain Size	Bore Min (mm)	Bore Max (mm)	Casing O.D A	Casing Width B	Assembled Width C	Hub Length D	Hub Diam E	Bolt Centres F	Complete Weight (kg)
3012	35-2	12	15	70	62	65	28	25	57	0.5
4012	40-2	12	20	78	72	78	36	31	61	1.0
4014	40-2	12	25	85	75	80	36	43	72	1.4
4016	40-2	14	30	92	75	80	36	50	77	1.8
5014	50-2	14	35	101	84	100	45	53	82	2.5
5016	50-2	16	40	111	85	100	45	60	92	3.2
5018	50-2	16	45	123	85	100	45	70	106	4.0
6018	60-2	20	55	144	106	122	54	85	122	7.2
6020	60-2	20	70	160	108	123	54	98	132	9.5
6022	60-2	25	75	168	116	123	54	110	145	11.3
8018	80-2	30	75	190	128	140	67	110	160	14.7
8020	80-2	30	85	211	138	144	67	120	184	18.2
8022	80-2	35	95	226	138	155	67	140	196	23.3
10020	100-2	40	110	280	152	176	91	160	250	36.0
12018	120-2	40	120	305	180	196	119	170	280	49.0
12022	120-2	40	150	355	180	220	119	210	335	77.0

Chain Coupling Selection

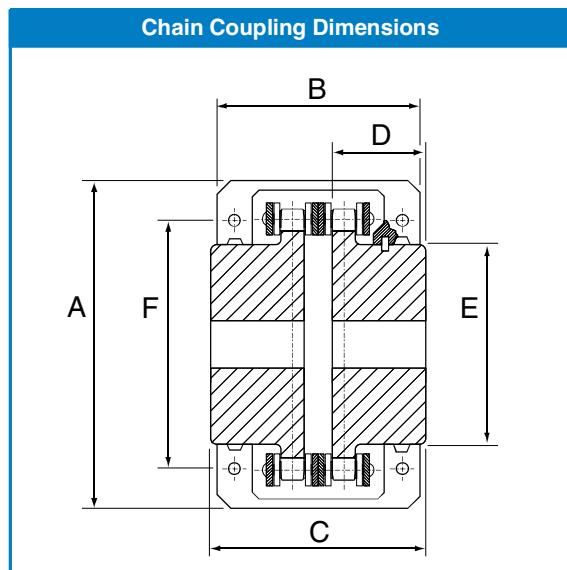
In general, the torque capacity of the coupling exceeds the normal torque transmitted by the largest shaft size that the coupling can accommodate.

Therefore, select the smallest coupling which accommodates both shaft diameters.

Where there is reverse operation, shock loads, or any other severe operating condition, it is recommended that the next coupling size up is selected.

Operation

In order to ensure that the maximum service life of the coupling is achieved, the cover together with the supplied 'O' rings should always be used. This is even more important when the drive is operating at high speeds or in a moist environment. The space between the cover and chain, should be filled with a soft to medium consistency grease.



TORQUE LIMITERS



Torque Limiters

Challenge Torque Limiter

Prevent Machine Damage and Eliminate Costly Down Time.

The Challenge Torque limiter is a mechanical protective device that limits the transmitted torque in a drive system by slipping when the torque demand exceeds a preset value. This is excessive torque is normally a result of shock loads, overloads, or machine jams. The torque limiter automatically re-engages when the overload is removed. No manual re-setting is required. Challenge Torque Limiters prevent machine damage, thus eliminating costly downtime.

Challenge Torque Limiters utilize spring loaded friction discs for their operation and slip torque is preset by adjustment of the spring force using the adjustment nut or bolts.

Challenge Torque Limiters can be used with platewheel sprockets, gears, sheaves, or flange plates as the center member. This center member is clamped between two friction discs.

Because the Challenge Torque Limiter ratings are realistic and consistent with optimum spring loads, they permit longer slip time, maintain re-engagement at preset torque and provide long lasting machine protection. This is an important advantage over the shear-pin mechanism which only serves as a one-shot remedy.



Sizes 50-1 and 50-2

- Single Nut Adjustment
- Lock Washer to prevent the nut from loosening



Sizes 65-1 and 65-2

Sizes 89-1 and 89-2

- Single Nut Adjustment
- Lock Washer to prevent the nut from loosening



Sizes 127-1 and 127-2

Sizes 178-1 and 178-2

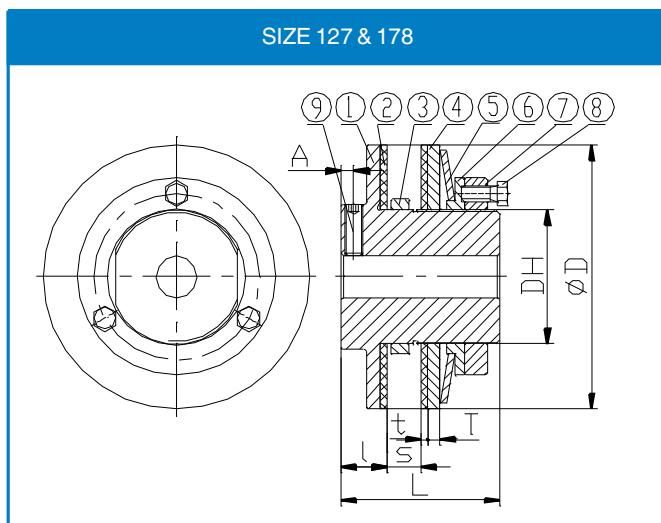
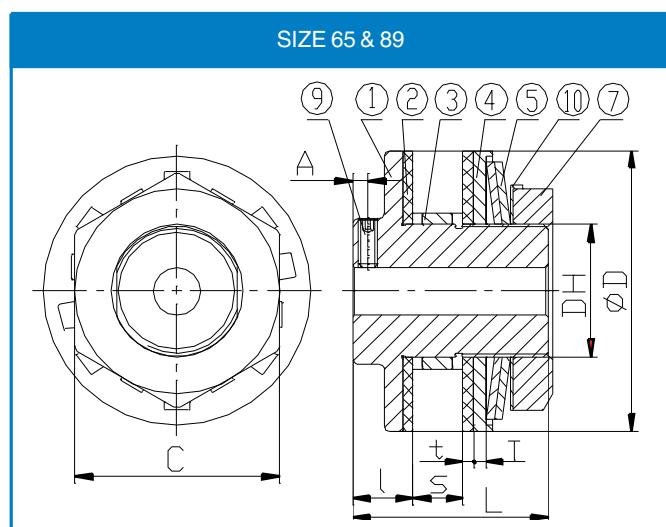
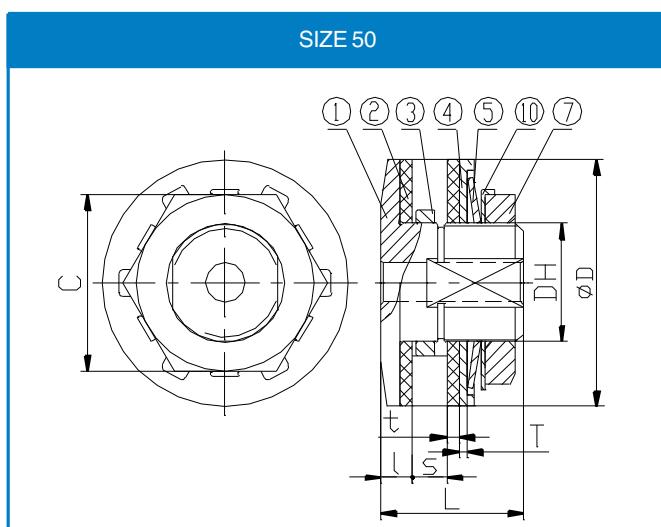
- Three Bolts Adjustment
- Torque preset by the three bolts (an adjustment nut to fix a pilot plate in place)

Designation

89 - 1

Number of spring discs
Size

Torque Limiters



Description of parts

- (1) Hub
- (2) Friction Disc
- (3) Bush
- (4) Pressure Plate
- (5) Disc Spring
- (6) Pilot Plate
- (7) Adjustment Nut
- (8) Adjustment Bolt
- (9) Set Screw
- (10) Lock Washer

Dimensions and Capacity for Sizes 50 to 178

Size	Torque Range (kgf·m)	Plain Bore	Max. Bore	Bush Length	O.D. of Bush	Bore for Center Member	D	DH	L	I	T	t	S (Max)	A	C	Adjust. Nut	Adjust. Bolt	Set Screw	Weight (kg)
50-1	0.3 ~ 1.0																	0.248	
50-2	0.7 ~ 2.0	8	14	3.8 6.0	30 -0.020 -0.041	30 0.033 0	50	24	29	6.5	1.6	2.5	7	-	36	M24 P1.0	-	-	0.256
65-1	0.7 ~ 2.8																	0.721	
65-2	1.4 ~ 5.5	10	22	6.0 8.0	41 -0.025 -0.050	41 0.039 0	65	35	48	16.0	4.0	3.2	9	4.0	50	M35 P1.5	-	M5	0.739
89-1	2.0 ~ 7.6																	2.417	
89-2	3.5 ~ 15.2	17	25	6.0 8.0 9.5 14.5	49 -0.025 -0.050	49 0.039 0	89	42	62	19.0	4.0	3.2	16	5.0	65	M42 P1.5	-	M6	2.477
127-1	4.8 ~ 21.4																	3.692	
127-2	9.0 ~ 42.9	20	42	6.0 8.0 9.5 14.5	74 -0.030 -0.060	74 0.046 0	127	65	76	22.0	6.0	3.2	16	6.0	-	M65 P1.5	M8 P1.0 3pcs	M8	3.858
178-1	11.8 ~ 58.1																	9.033	
178-2	22.8 ~ 111	30	64	8.0 9.5 14.5 17.0 22.0	105 -0.036 -0.071	105 0.054 0	178	95	98	24.0	7.0	3.2	29	6.5	-	M95 P1.5	M10 P1.25 3pcs	M10	9.436

1 kgf.m = 9.80665 Nm

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Torque Limiters

SELECTION PROCEDURE

1. Determine the required slip torque required for the machine. If the slip torque is not known then set the torque limiter to 1.5 ~ 2 times the torque that the motor produces on the shaft where the torque limiter is to be mounted.
2. From the Torque Range column, select a torque limiter that has sufficient torque. Also ensure that the chosen size can accommodate the required bore.
3. Based on the thickness of the center member to be inserted between the friction discs, determine the required bush length. Always choose a bush, which will not exceed the width of the center member. The maximum width of the center member that can be accommodated is shown as "S max." in the dimension table.

Bore Sizes, Minimum Recommended number of Sprocket Teeth and Bush Lengths

Size	Bore of Center Member (mm)	Sprocket Pitch and Number of Teeth													
		9.525 – (06B)		12.7 – (08B)		15.875 – (10B)		19.05 – (12B)		25.4 – (16B)		31.75 – (20B)		38.1 – (24B)	
		Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)
50	30	20	3.8	16	6	17	8	18	9.5	15	14.5	21	17	18	22
65	41			20	6	21	8	25	9.5	19	14.5				
89	49			26	6	29	8	33	9.5	26	14.5				
127	74			35	6										
178	105					39	8								

SETTING THE TORQUE

Setting the torque on the limiter is achieved by tightening or loosening the adjustment nut and/or the adjustment bolts. An adjustment nut is provided for torque adjustment on the size 50 through to size 89. On the sizes 127 and 178, the adjustment is accomplished by adjusting the provided bolts.

If the torque limiter slips under normal loading conditions, tighten the nut (for size 50 ~ size 89) or the bolts (for size 127 ~ size 178) gradually until the torque limiter stops slipping.

Always tighten (or loosen) the bolts or nut evenly. Try this adjustment several times, so as to find the proper torque setting for the machine.

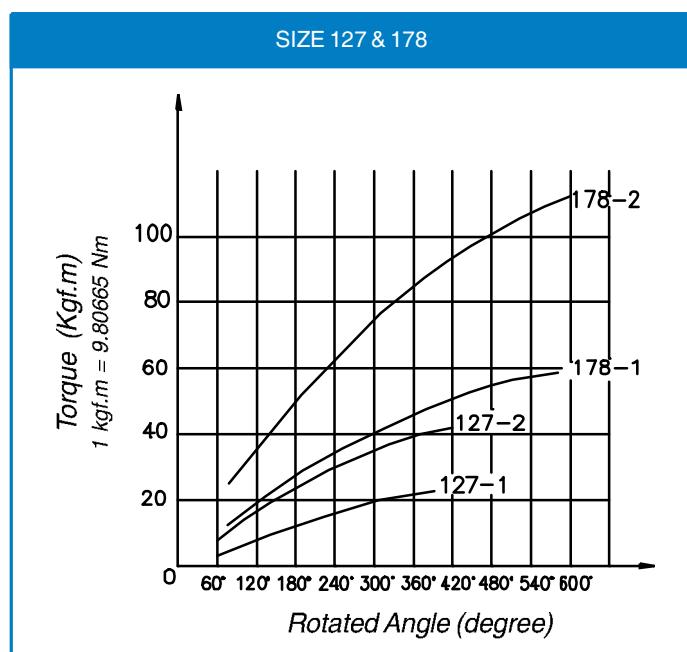
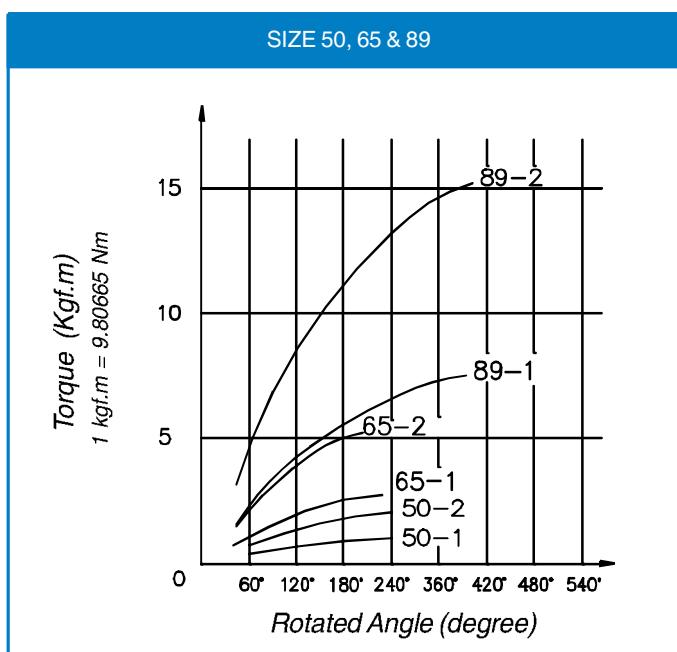
CENTER MEMBER INFORMATION

1. So as to obtain the rated torque release and re-engagement, Challenge recommend that the center member should be machined on its rubbing surfaces. The recommended surface finish is Ra1.6. It should also be flat, parallel, square with the bore and free from rust, scale, and oil. If these recommendations are not adhered to, the slip torque could be erratic.
2. The recommended bore that the center member should be machined to, is shown in the table below. Also, provided is the minimum number of sprocket teeth to be used, together with the suggested bush length.

ROTATED ANGLE AND SETTING TORQUE

The chart below shows the relation between the effective rotated angle and preset torque and can be used as guidance. As an example, size 127-2 at 30kgf.m (294Nm) needs a rotated angle of +/-260 degrees of adjustment on the bolts.

To get the precise torque setting, Challenge recommends the run-in of the torque limiter.



MOTOR MOUNTS



Rapid Fit Motor Mounts

Specification

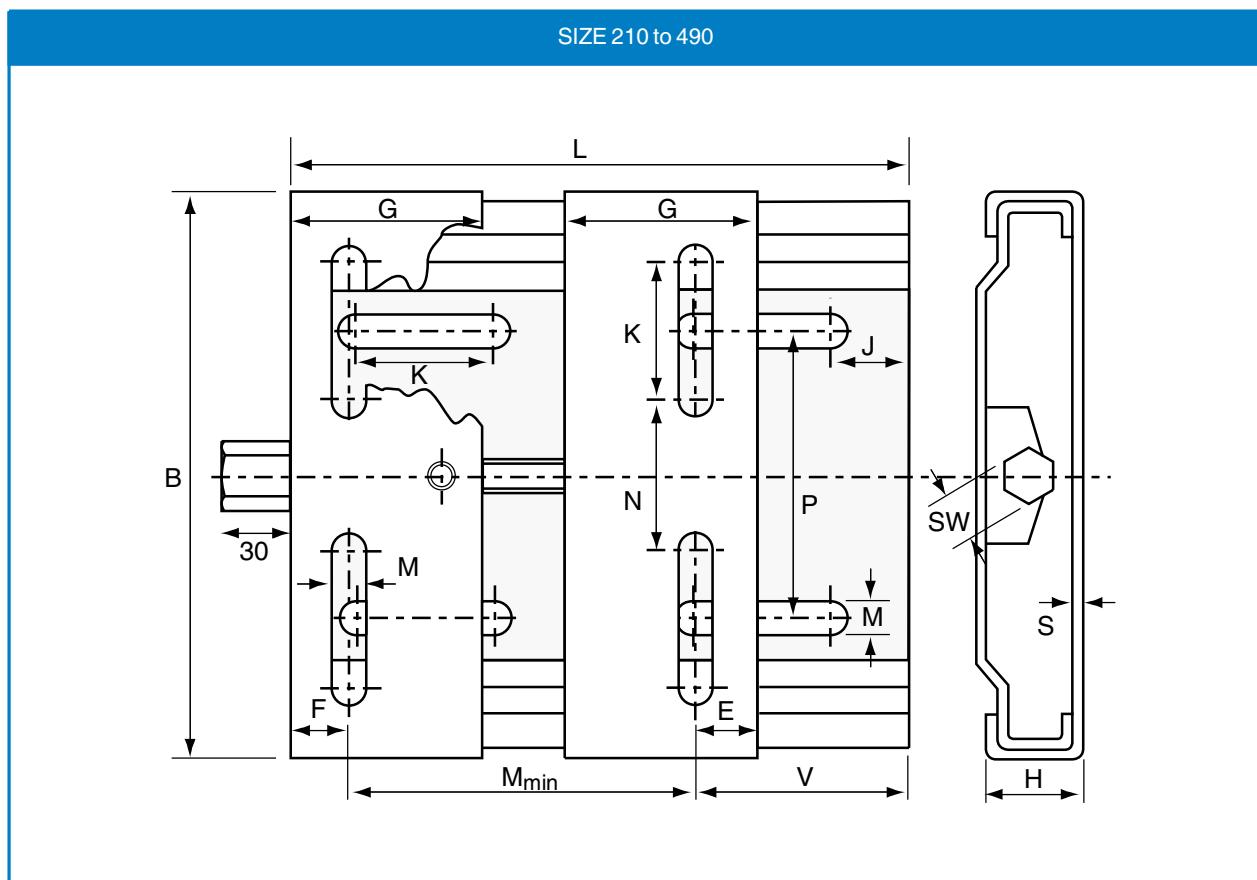
The fastest and most economical method of securing motors to machine beds. The five sizes are manufactured from galvanised steel and they can accommodate motor frame sizes 63 to 180. They have four slotted holes for fastening the base to the foundation.

Alignment

The pressed top plate is designed to slide over the base plate preventing vibration and noise whilst ensuring continuous belt alignment. Belts are tensioned by adjusting a single screw.

Motor Mounting

The motor is bolted to the two piece top plate which accommodates a wide range of motors. Centre distance adjustments can be made without the need to loosen the motor bolts.



Dimensions for Sizes 210 to 490 Rapid Fit Motor Mount

Type	Frame Size	L	B	H	M _{min}	G	E	J	K	M	N	P	SW	S
210	63 - 80	210	195	33	100	70	20	25	50.0	10.5	43	98	19	3
270	63 - 100	270	195	33	100	70	20	25	50.0	10.5	43	98	19	3
340	90 - 132	340	290	39	136	95	27	29	62.5	12.5	90	165	22	4
430	90 - 160	430	290	39	136	95	27	29	62.5	12.5	90	165	22	4
490	160 - 180	490	409	40	110	95	40	30	60.0	15.0	193	142	22	4

Standard Motor Mounts

Specification

Produced in three sizes for motors from frame size 63 to 225 and manufactured from pressed steel fabrications with four slotted holes for fastening the base to the foundation.

Alignment

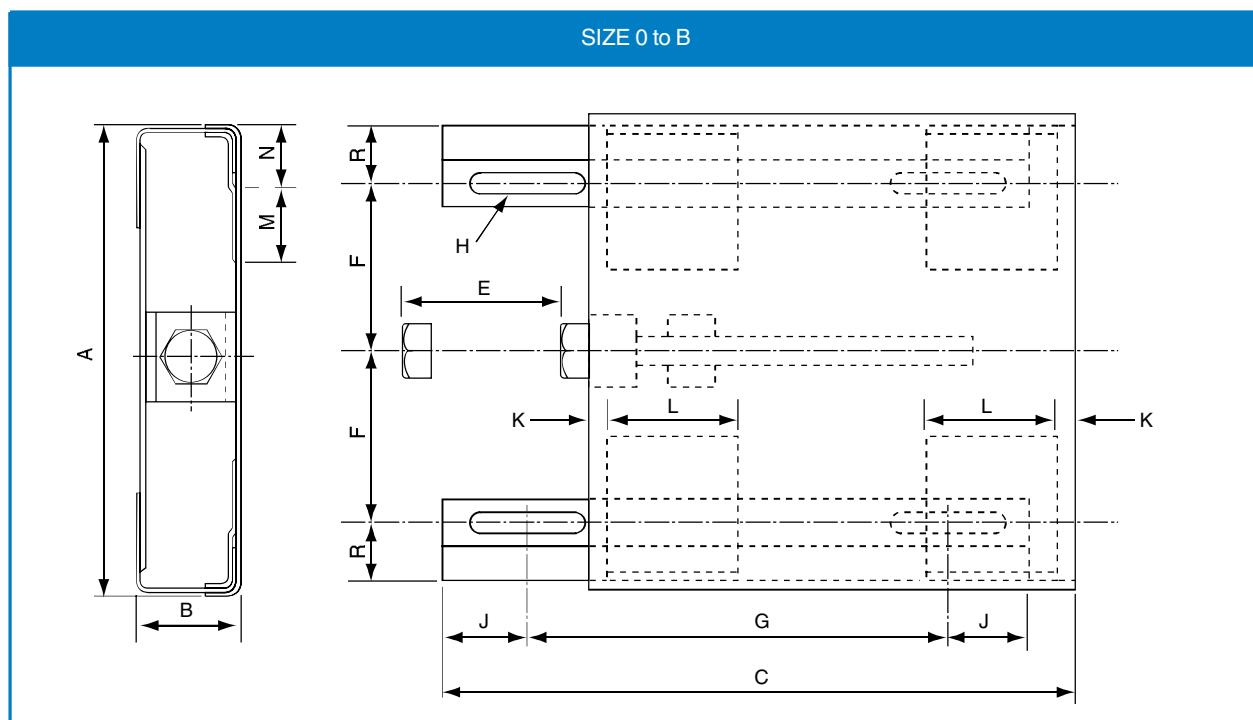
The pressed top plate is designed to slide exactly over the mounting rails preventing vibration and noise whilst ensuring continuous belt alignment. Belts are tensioned by adjusting a single screw which is possible whilst the motor is running.

Surface Finish

Stove enamelled finish with zinc plated adjustment screws to prevent corrosion.

Motor Mounting

The top plate requires drilling to accommodate the required motor mounting bolts. Centre distance adjustments can be made without the need to loosen the motor bolts.



Dimensions for Sizes 0 to B Motor Mounts

Base Ref	Motor Frame Ref	Motor Bolt Holes	A	B	C	D	Movement E	F	G	H	J	K	I	M	N	R	SW	Approx. Weight kg
0	63 71	7	146	29	225	170	80	55.0	148	9.5 x 25	27	60	50	32	18	15.0	17	1.4
A	80 90S 90L	10																
	100S 100L 112S 112M 132S	12	240	55	325	258	100	89.0	215	13 x 51	45	10	70	51	32	28.5	24	5.3
B	132M	12																
	160M 160L 180M 180L	15																
	200M 200L 225S 225M	19	428	60	578	450	180	172.5	370	17 x 50	51	28	100	98	42	36.0	24	19.0

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Slide Rails

Specification

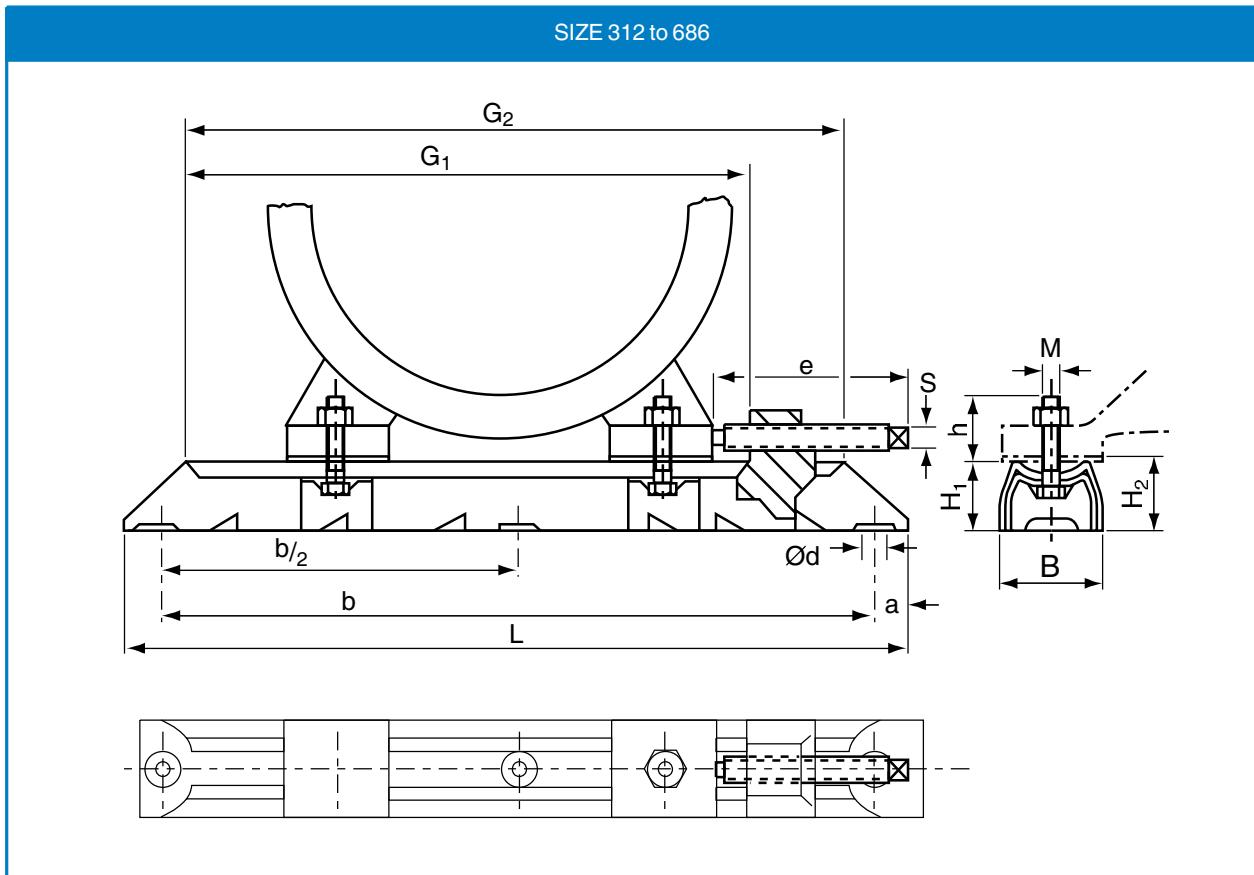
Covering frame sizes 63 to 225, Challenge slide rails are manufactured in galvanised steel with movable positioning blocks for rapid accurate drive alignment.

Alignment

The pressed steel rails are solidly fixed by three securing bolts while the motor is bolted to the rails eradicating vibration and noise whilst ensuring rigid positioning.

Motor Mounting

The motor is bolted to the slide rails and positioned with the aid of adjustment screws. The motor must be stopped and the motor bolts loosened before repositioning.



Dimensions for Sizes 312 to 686 Slide Rails

Base Ref	Overall Length L	Slide Length G ₁	Motor Frame Ref	M x h	I x S	G ₂	a	b	b/2	Ø d	B	H ₁	H ₂	Weight kg
312/6	312	240	63/71	M6 x 19	75 x 6	262	16	280	-	12	40	28	30	1.4
312/8	312	240	80/90	M8 x 27	75 x 6	262	16	280	-	12	40	28	30	1.5
375/6	375	305	63/71	M6 x 19	75 x 6	325	16	343	-	12	40	26	30	1.5
375/8	375	305	80/90	M8 x 27	75 x 6	325	16	343	-	12	40	28	30	1.6
375/10	375	305	100/112	M10 x 32	75 x 6	325	16	343	-	12	40	28	30	1.6
395/8	395	302	80/90	M8 x 28	97 x 8	325	20	355	-	12	50	40	43	3.4
395/10	395	302	100/112	M10 x 35	97 x 8	325	20	355	-	12	50	40	43	3.4
495/8	495	405	80/90	M8 x 29	97 x 8	425	20	455	-	12	50	40	43	4.0
495/10	495	405	100/112/132	M10 x 35	97 x 8	425	20	455	-	12	50	40	43	4.0
495/12	495	405	160	M12 x 49	97 x 8	425	20	455	-	12	50	40	43	4.0
530/10	530	413	132	M10 x 37	119 x 9	442	25	480	-	14	60	50	54	6.4
530/12	530	413	160	M12 x 49	119 x 9	442	25	480	-	14	60	50	54	6.4
630/10	630	515	132	M10 x 37	119 x 9	542	25	580	-	14	60	50	54	8.2
630/12	630	515	160/180	M12 x 45	119 x 9	542	25	580	-	14	60	50	54	8.2
686/12	686	538	160/180	M12 x 43	154 x 12	575	28	630	315	18	75	60	64	12.8
686/16	686	538	200/225	M16 x 62	154 x 12	575	28	630	315	18	75	60	64	12.8

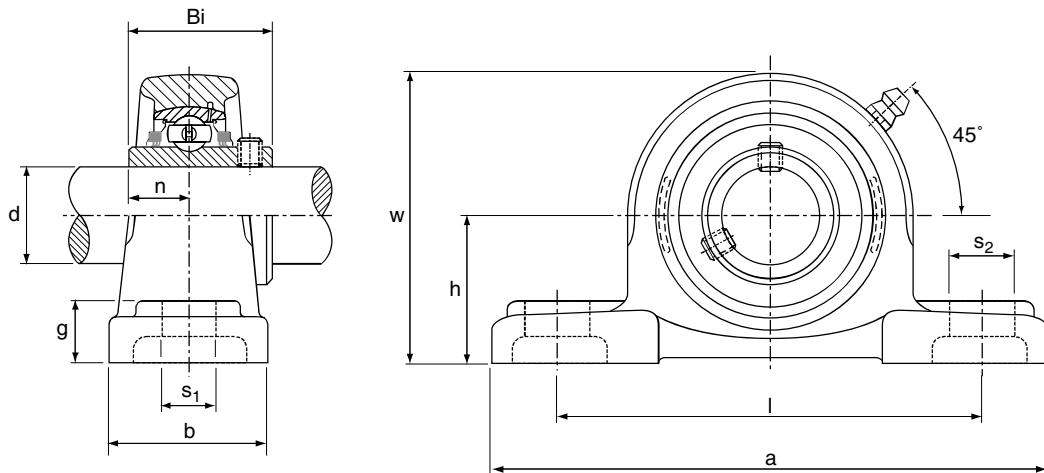
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BEARING UNITS



Pillow Blocks

UCP 200 Pillow Blocks

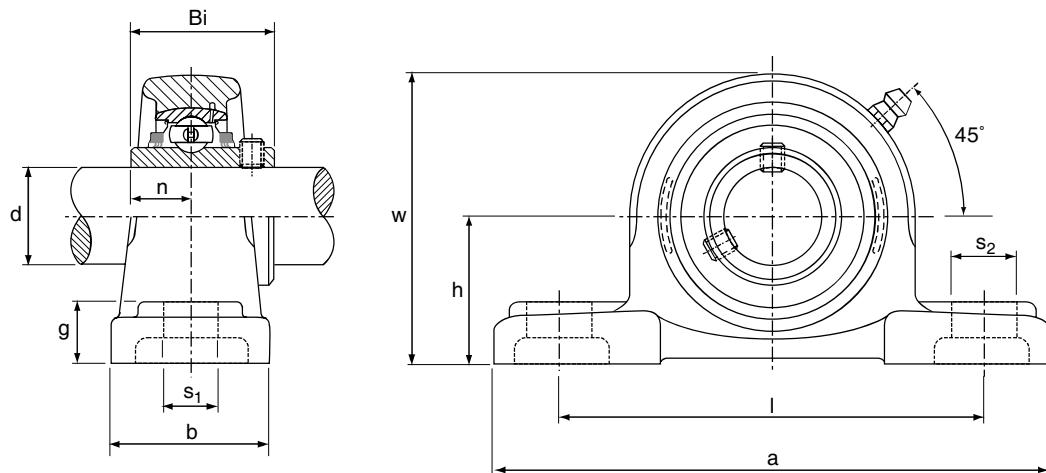


UCP 200 Pillow Blocks (Normal Duty)

Bearing Unit	Shaft Dia. d inch d mm	h	a	l	b	s ₂	s ₁	g	w	Bi	n	Bolt Size inch mm	Insert No.	Housing No.	Weight kg	
UCP 204		20											UC 204			
UCP 204-12	3/4	20	33.3	127	96	38	19	13	15	65	31.0	12.7	M10	UC 204-12	P204	0.65
UCP 205		25	36.5	140	105	38	19	13	16	70	34.0	14.3	M10	UC 205		
UCP 205-16	1	25											3/8	UC 205-16	P205	0.79
UCP 206		30	42.9	165	121	48	21	17	18	83	38.1	15.9	M14	UC 206		
UCP 206-18	1-1/8	30											1/2	UC 206-18	P206	0.79
UCP 207		35	47.6	167	126	48	21	17	19	92	42.9	17.5	M14	UC 207		
UCP 207-20	1-1/4	35											M14	UC 207-20		
UCP 207-22	1-3/8	35											M14	UC 207-22	P207	1.60
UCP 208		40	49.2	184	136	54	21	17	19	98	49.2	19.0	1/2	UC 208		
UCP 208-24	1-1/2	40											M14	UC 208-24	P208	2.00
UCP 209		45	54.0	190	146	54	21	17	20	106	49.2	19.0	1/2	UC 209		
UCP 209-28	1-3/4	45											M14	UC 209-28	P209	2.20
UCP 210		50	57.2	206	159	60	25	20	22	112	51.6	19.0	M16	UC 210		
UCP 210-32	2	50											M16	UC 210-32	P210	2.80
UCP 211		55	63.5	219	171	60	25	20	22	126	55.6	22.2	5/8	UC 211		
UCP 211-32	2	55											M16	UC 211-32	P211	3.40
UCP 212		60	69.8	241	184	70	25	20	25	137	65.1	25.4	5/8	UC 212		
UCP 212-36	2-1/4	60											M16	UC 212-36	P212	4.80
UCP 213		65	76.2	265	203	70	29	25	27	150	65.1	25.4	3/4	UC 213		
UCP 213-40	2-1/2	65											M20	UC 213-40	P213	5.70
UCP 214		70	79.4	266	210	72	31	25	27	156	74.6	30.2	3/4	UC 214		
UCP 214-44	2-3/4	70											M20	UC 214-44	P214	7.00
UCP 215		75	82.6	275	217	74	31	25	28	163	77.8	33.3	3/4	UC 215		
UCP 215-48	3	75											M20	UC 215-48	P215	7.60
UCP 216		80	88.9	292	232	78	31	25	30	175	82.6	33.3		UC 216	P216	9.00

Pillow Blocks

UCPX 00 Pillow Blocks



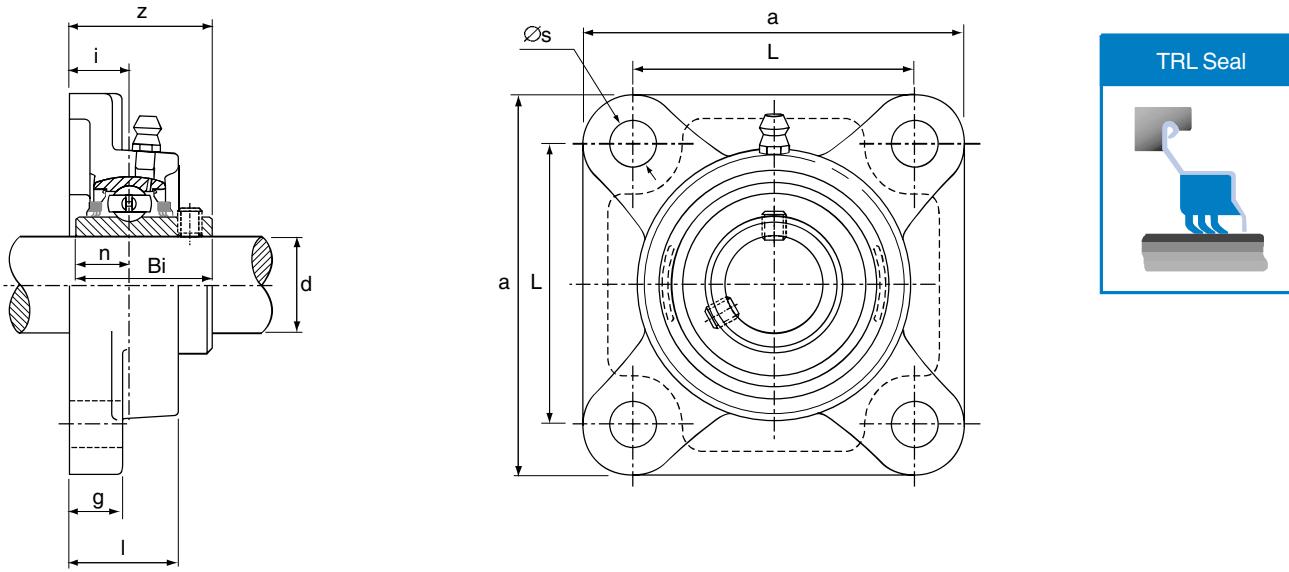
UCPX 00 Pillow Block (Medium Duty)

Bearing Unit	Shaft Dia. d inch d mm	h	a	l	b	s ₂	s ₁	g	w	Bi	n	Bolt Size inch mm	Insert No.	Housing No.	Weight kg	
UCPX 05		25	44.4	159	119	51	25	17	18	85	38.1	15.9	M14	UCX 05	PX 05	1.50
UCPX 05-16	1	30	47.6	175	127	57	25	17	20	94	42.9	17.5	1/2	UCX 05-16	UCX 05-16	
UCPX 06		35	54.0	203	144	57	30	17	22	105	49.2	19.0	M14	UCX 06	UCX 06-20	
UCPX 06-20	1-1/4	40	58.7	222	156	67	32	20	26	113	49.2	19.0	1/2	UCX 07	UCX 07-20	
UCPX 07		45	58.7	222	156	67	33	20	26	116	51.6	19.0	M16	UCX 08	UCX 07-22	
UCPX 07-20	1-1/4	50	63.5	241	171	73	36	20	27	126	55.6	22.2	5/8	UCX 08-24	UCX 07-22	
UCPX 07-22	1-3/8	55	69.8	260	184	79	36	25	30	139	65.1	25.4	M16	UCX 09	UCX 09-28	
UCPX 09		60	76.2	286	203	83	41	25	32	152	65.1	25.4	3/4	UCX 09-28	PX 09	3.60
UCPX 09-28	1-3/4	65	76.2	286	203	83	41	25	32	154	74.6	30.2	M20	UCX 10	UCX 10-32	
UCPX 10		70	88.9	330	229	89	51	27	35	171	77.8	33.3	3/4	UCX 10-32	PX 10	4.40
UCPX 10-32	2	75	88.9	330	229	89	51	27	35	175	82.6	33.3	M22	UCX 12	UCX 11-36	
UCPX 11		80	101.6	381	283	102	59	27	42	195	85.7	34.1	7/8	UCX 12-36	PX 11	6.30
UCPX 11-36	2-1/4												M22	UCX 13	UCX 11-36	
UCPX 12													M20	UCX 13-40	PX 12	7.40
UCPX 12-36	2-1/4												M20	UCX 13-40	PX 13	7.70
UCPX 13													M22	UCX 14	PX 14	10.60
UCPX 13-40	2-1/2												M22	UCX 14-44	PX 15	11.10
UCPX 14													M22	UCX 15	PX 15	16.20
UCPX 14-44	2-3/4												M22	UCX 15-48	PX 16	
UCPX 15													M22	UCX 16		
UCPX 15-48	3												M22			
UCPX 16													M22			

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Flange Units

UCF 200 4 Hole Flange Units



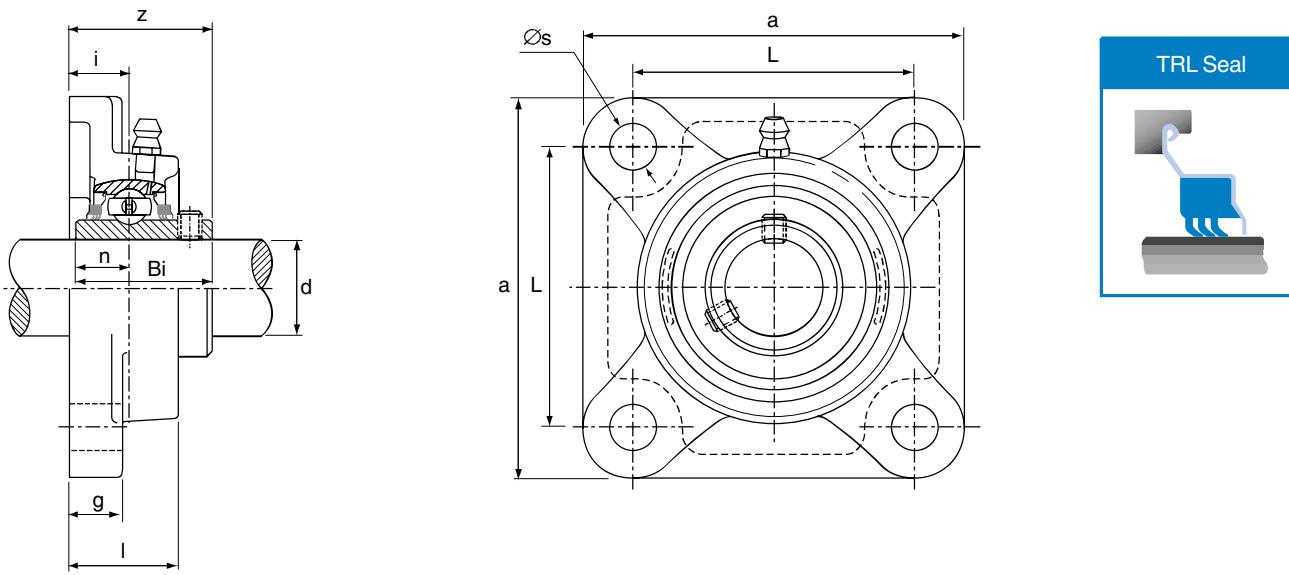
UCF 200 4 Hole Flange Units (Normal Duty)

Bearing Unit	Shaft Dia. d inch d mm	a	L	i	g	l	$\emptyset s$	z	Bi	n	Bolt Size inch mm	Insert No.	Housing No.	Weight kg	
UCF 204		20										UC 204			
UCF 204-12	3/4	20	86	64	15	12	25.5	12	33.3	31.0	12.7	3/8	UC 204-12	F 204	0.6
UCF 205		25	95	70	16	14	27	12	35.7	34.0	14.3	3/8	UC 205		
UCF 205-16	1	25										M10	UC 205-16	F 205	0.8
UCF 206		30	108	83	18	14	31	12	40.2	38.1	15.9	3/8	UC 206		
UCF 206-18	1-1/8	30										M10	UC 206-18	F 206	1.1
UCF 207		35										M12	UC 207		
UCF 207-20	1-1/4	35	117	92	19	16	34	14	44.4	42.9	17.5	7/16	UC 207-20		
UCF 207-22	1-3/8	35										M12	UC 207-22	F 207	1.5
UCF 208		40	130	102	21	16	36	16	51.2	49.2	19.0	1/2	UC 208		
UCF 208-24	1-1/2	40										M14	UC 208-24	F 208	1.9
UCF 209		45	137	105	22	18	38	16	52.2	49.2	19.0	1/2	UC 209		
UCF 209-28	1-3/4	45										M14	UC 209-28	F 209	2.3
UCF 210		50	143	111	22	18	40	16	54.6	51.6	19.0	1/2	UC 210		
UCF 210-32	2	50										M14	UC 210-32	F 210	2.5
UCF 211		55	162	130	25	20	43	19	58.4	55.6	22.2	5/8	UC 211		
UCF 211-32	2	55										M16	UC 211-32	F 211	3.4
UCF 212		60	175	143	29	20	48	19	68.7	65.1	25.4	5/8	UC 212		
UCF 212-36	2-1/4	60										M16	UC 212-36	F 212	4.4
UCF 213		65	187	149	30	20	50	19	69.7	65.1	25.4	5/8	UC 213		
UCF 213-40	2-1/2	65										M16	UC 213-40	F 213	5.3
UCF 214		70	193	152	31	24	54	19	75.4	74.6	30.2	5/8	UC 214		
UCF 214-44	2-3/4	70										M16	UC 214-44	F 214	6.0
UCF 215		75	200	159	35	24	57	19	79.5	77.8	33.3	5/8	UC 215		
UCF 215-48	3	75										M16	UC 215-48	F 215	6.6
UCF 216		80	208	165	35	24	59	23	84.3	82.6	33.3	M20	UC 216	F 216	7.5

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Flange Units

UCFX 00 4 Hole Flange Units



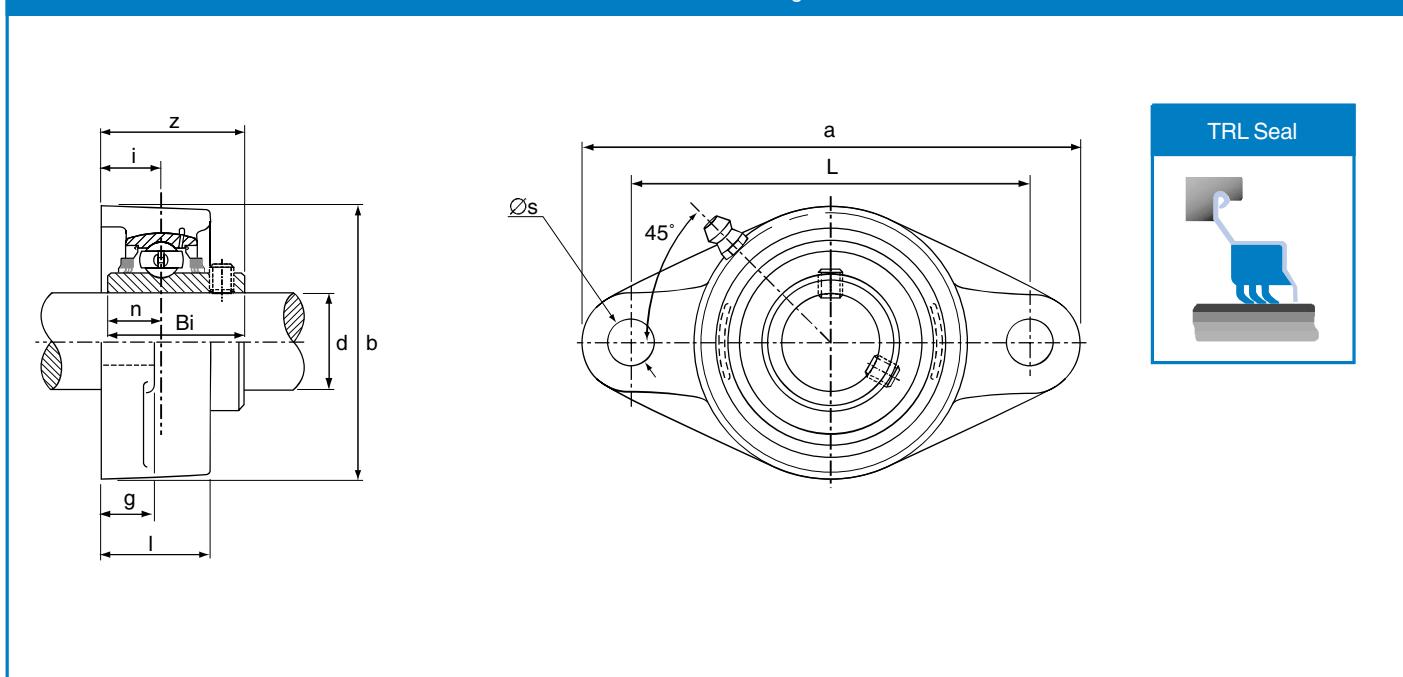
UCFX 00 4 Hole Flange Units (Medium Duty)

Bearing Unit	Shaft Dia. d inch d mm	a	L	i	g	l	$\emptyset s$	z	Bi	n	Bolt Size inch mm	Insert No.	Housing No.	Weight kg			
UCFX 05		25	108	83	18	13	30	12	40.2	38.1	15.9	3/8	M10	UCX 05	FX 05	1.1	
UCFX 05-16	1	30	117	92	19	14	34	16	44.4	42.9	17.5	1/2	M14	UCX 05-16	FX 06	1.4	
UCFX 06		35	130	102	21	14	38	16	51.2	49.2	19.0	1/2	M14	UCX 06	UCX 06-20		
UCFX 06-20	1-1/4	40	137	105	22	14	40	19	52.2	49.2	19.0	5/8	M16	UCX 07	UCX 07-20		
UCFX 07		45	143	111	23	14	40	19	55.6	51.6	19.0	5/8	M16	UCX 07-20	UCX 07-22	FX 07	1.9
UCFX 07-20	1-1/4	50	162	130	26	20	44	19	59.4	55.6	22.2	5/8	M16	UCX 07-22			
UCFX 07-22	1-3/8	55	175	143	29	20	49	19	68.7	65.1	25.4	5/8	M16	UCX 08	UCX 08-24	FX 08	2.1
UCFX 08		60	187	149	34	21	59	19	73.7	65.1	25.4	5/8	M16	UCX 08-24			
UCFX 08-24	1-1/2	65	187	149	34	21	59	19	78.4	74.6	30.2	5/8	M16	UCX 09	UCX 09-28	FX 09	2.5
UCFX 09		70	197	152	37	24	60	23	81.5	77.8	33.3	3/4	M20	UCX 09-28			
UCFX 09-28	1-3/4	75	197	152	40	24	68	23	89.3	82.6	33.3	3/4	M20	UCX 10	UCX 10-32	FX 10	3.6
UCFX 10		80	214	171	40	24	70	23	91.6	85.7	34.1	3/4	M20	UCX 10-32			
UCFX 10-32	2																
UCFX 11																	
UCFX 11-36	2-1/4																
UCFX 12																	
UCFX 12-36	2-1/4																
UCFX 13																	
UCFX 13-40	2-1/2																
UCFX 14																	
UCFX 14-44	2-3/4																
UCFX 15																	
UCFX 15-48	3																
UCFX 16																	

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused. All dimensions in millimetres unless otherwise stated.

Flange Units

UCFL 200 2 Hole Flange Units



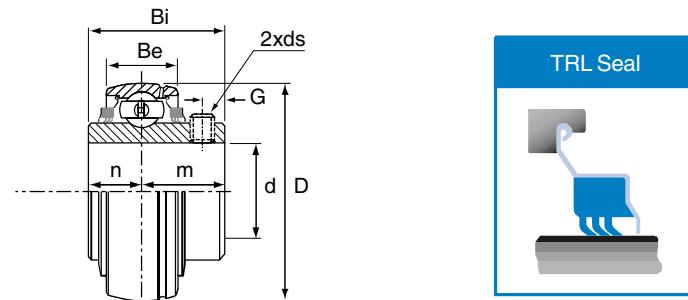
UCFL 200 2 Hole Flange Units (Normal Duty)

Bearing Unit	Shaft Dia. d inch d mm	a	L	i	g	l	$\varnothing s$	b	z	Bi	n	Bolt Size inch mm	Insert No.	Housing No.	Weight kg	
UCFL 204		20	113	90	15	11	26	12	60	33.3	31.0	12.7	M10	UC 204	FL 204	0.5
UCFL 204-12	3/4	25	130	99	16	13	27	16	68	35.7	34.0	14.3	M14	UC 204-12		
UCFL 205		1	148	117	18	13	31	16	80	40.2	38.1	15.9	1/2	UC 205	FL 205	0.6
UCFL 205-16		30	161	130	19	14	34	16	90	44.4	42.9	17.5	M14	UC 205-16		
UCFL 206		1-1/4	175	144	21	14	36	16	100	51.2	49.2	19.0	M14	UC 206	FL 206	0.9
UCFL 206-20		35	188	148	22	15	38	19	108	52.2	49.2	19.0	1/2	UC 206-20		
UCFL 207		1-1/4	224	184	25	18	43	19	130	58.4	55.6	22.2	M16	UC 207	FL 207	1.2
UCFL 207-20	1-3/8	40	258	210	30	20	50	23	155	69.7	65.1	25.4	5/8	UC 207-20		
UCFL 207-22		45	265	216	31	20	54	23	160	75.4	74.6	30.2	M20	UC 207-22	FL 207	1.6
UCFL 208		50	275	225	35	20	57	23	165	79.5	77.8	33.3	3/4	UC 208	FL 208	1.9
UCFL 208-24	1-1/2	55	290	232	38	22	60	25	170	84.5	82.5	36.5	M20	UC 208-24	FL 208	2.2
UCFL 209		60	258	248	40	25	63	25	175	88.5	86.5	38.5	M20	UC 209	FL 209	2.5
UCFL 209-28	2-1/4	65	275	255	43	28	66	28	180	93.5	91.5	41.5	M20	UC 209-28	FL 209	2.8
UCFL 210		70	290	262	45	30	68	28	185	98.5	96.5	44.5	M20	UC 210	FL 210	3.2
UCFL 210-32	2-3/4	75	275	275	50	35	72	33	190	103.5	101.5	48.5	M20	UC 210-32	FL 210	3.6
UCFL 211		80	310	290	55	40	75	38	200	108.5	106.5	52.5	M20	UC 211	FL 211	4.1
UCFL 211-32		85	325	305	58	43	78	41	205	113.5	111.5	55.5	M20	UC 211-32		
UCFL 212		90	340	320	60	48	81	46	210	118.5	116.5	58.5	M20	UC 212	FL 212	4.5
UCFL 212-36		95	355	335	63	51	84	49	215	123.5	121.5	61.5	M20	UC 212-36		
UCFL 213		100	370	350	65	54	87	52	220	128.5	126.5	64.5	M20	UC 213	FL 213	5.1
UCFL 213-40		105	385	365	68	57	90	55	225	133.5	131.5	67.5	M20	UC 213-40		
UCFL 214		110	400	380	70	60	93	58	230	138.5	136.5	70.5	M20	UC 214	FL 214	5.5
UCFL 214-44		115	415	395	73	63	96	61	235	143.5	141.5	73.5	M20	UC 214-44		
UCFL 215		120	430	410	75	65	99	64	240	148.5	146.5	76.5	M20	UC 215	FL 215	6.4
UCFL 215-48	3	125	445	425	78	68	102	67	245	153.5	151.5	79.5	M20	UC 215-48		

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Inserts

UC 200 Inserts



UC 200 Inserts with Set Screws (Normal Duty)

Bearing Unit	Shaft Dia. d inch d mm	D	Bi	Be	n	m	G	ds inch mm	Load Rating (kg) Dynamic Static	Weight kg
UC 204	3/4	20	47	31.0	17	12.7	18.3	4.8 1/4-28UNF	M6X1.0 1000 630	0.16
UC 204-12		25	52	34.0	17	14.3	19.7	5.5 1/4-28UNF	M6X1.0 1100 710	0.16 0.20
UC 205	1	30	62	38.1	19	15.9	22.2	6.0 1/4-28UNF	M6X1.0 1520 1020	0.20 0.32
UC 205-16	1-1/4	35	72	42.9	20	17.5	25.4	6.5 5/16-24UNF 5/16-24UNF	M8X1.0 2010 1390	0.32 0.48
UC 206		40	80	49.2	21	19.0	30.2	8.0 5/16-24UNF	M8X1.0 2560 1810	0.48 0.64
UC 206-20	1-1/2	45	85	49.2	22	19.0	30.2	8.0 5/16-24UNF	M8X1.0 2560 1810	0.32 0.68
UC 207		50	90	51.6	24	19.0	32.6	10.0 3/8-24UNF	M10X1.0 2750 2020	0.68 0.82
UC 207-20	1-1/4	55	100	55.6	25	22.2	33.4	10.0 3/8-24UNF	M10X1.0 3400 2550	0.54 1.11
UC 207-22	1-3/8	60	110	65.1	27	25.4	39.7	10.0 3/8-24UNF	M10X1.0 4100 3150	0.48 1.26
UC 208	1-1/2	65	120	65.1	28	25.4	39.7	10.0 3/8-24UNF	M10X1.0 4480 3470	1.54 1.86
UC 208-24		70	125	74.6	30	30.2	44.4	12.0 7/16-20UNF	M12X1.5 4870 3810	1.67 1.94
UC 209	2-1/2	75	130	77.8	30	33.3	44.5	12.0 7/16-20UNF	M12X1.5 5190 4190	2.05 2.12
UC 209-28	2-3/4	80	140	82.6	33	33.3	49.3	14.0 1/2-20UNF	M12X1.5 5700 4550	2.21 2.79
UC 210		80	160	96.0	37	39.7	56.3	14.0 1/2-20UNF	M12X1.5 7500 6170	2.79 4.46
UC 210-32	3-1/2									
UC 211										
UC 211-32	2									
UC 212										
UC 212-36	2-1/4									
UC 213										
UC 213-40	2-1/2									
UC 214										
UC 214-44	2-3/4									
UC 215										
UC 215-48	3									
UC 216										
UC 218-56	3-1/2									

Bearing Speeds

The maximum rotational speed of a grease lubricated ball bearing is related to the fit between shaft and bearing.

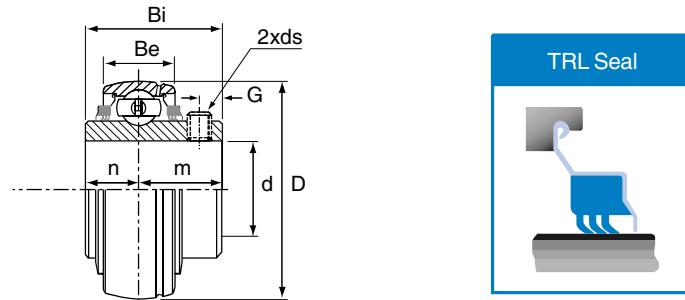
Under normal operating conditions the fit between the bearing and shaft should be h7. The maximum permissible bearing speeds are shown on the right.

A looser fit, allowing lower speeds is recommended for lighter loads and a tighter fit allowing higher speeds is recommended for heavier loads

Bearing No.	Max Speed r/min	Bearing No.	Max Speed r/min
201	4500	210	1800
202	4500	211	1600
203	4500	212	1500
204	4000	213	1400
205	3400	214	1300
206	2800	215	1200
207	2400	216	1100
208	2200	217	1000
209	1900	218	950

Inserts

UCX 00 Inserts



UCX 00 Inserts with Set Screws (Medium Duty)

Bearing Unit	Shaft Dia. d inch d mm	D	Bi	Be	n	m	G	ds inch mm	Load Rating (kg) Dynamic Static	Weight kg
UCX05		25								
UCX05-16	1	62	38.1	19	15.9	22.2	6	1/4-28UNF	1520	1020
UCX06		30								
UCX06-20	1-1/4	72	42.9	20	17.5	25.4	6.5	5/16-24UNF	M8X1.0	2010
UCX07		35								
UCX07-20	1-1/4	80	49.2	21	19.0	30.2	8.0	5/16-24UNF	M8X1.0	2560
UCX07-22	1-3/8							5/16-24UNF		1810
UCX08		40								
UCX08-24	1-1/2	85	49.2	22	19.0	30.2	8.0	5/16-24UNF	M8X1.0	2650
UCX09		45								
UCX09-28	1-3/4	90	51.6	24	19.0	32.6	10.0	3/8-24UNF	M10X1.0	2750
UCX10		50								
UCX10-32	2	100	55.6	25	22.2	33.4	10.0	3/8-24UNF	M10X1.0	3400
UCX11		55								
UCX11-36	2-1/4	110	65.1	27	25.4	39.7	10.0	3/8-24UNF	M10X1.0	4100
UCX12		60								
UCX12-38	2-3/8	120	65.1	28	25.4	39.7	10.0	3/8-24UNF	M10X1.0	4480
UCX13		65								
UCX13-40	2-1/2	125	74.6	30	30.2	44.4	12.0	7/16-20UNF	M12X1.5	4870
UCX14		70								
UCX14-44	2-3/4	130	77.8	30	33.3	44.5	12.0	7/16-20UNF	M12X1.5	5190
UCX15		75								
UCX15-48	3	140	82.6	32	33.3	49.3	14.0	7/16-20UNF	M12X1.5	5700

Bearing Speeds

The maximum rotational speed of a grease lubricated ball bearing is related to the fit between shaft and bearing.

Under normal operating conditions the fit between the bearing and shaft should be h7. The maximum permissible bearing speeds are shown on the right.

A looser fit, allowing lower speeds is recommended for lighter loads and a tighter fit allowing higher speeds is recommended for heavier loads

Bearing No.	Max Speed r/min	Bearing No.	Max Speed r/min
201	4500	210	1800
202	4500	211	1600
203	4500	212	1500
204	4000	213	1400
205	3400	214	1300
206	2800	215	1200
207	2400	216	1100
208	2200	217	1000
209	1900	218	950

Notes

CHALLENGE WORLDWIDE PLC AND GROUP OF COMPANIES

TERMS OF SALE

**These Terms do not apply if you deal as a Consumer
Your statutory rights are not affected by these conditions**

1. DEFINITIONS

In these Terms of Sale the following meanings shall apply:

"We" and "Us"	means CHALLENGE WORLDWIDE Plc
"You"	means the person seeking to purchase Goods from Us.
"the Goods"	means the goods or where the context permits the services to be supplied by Us.
"Company Signatory"	means a person authorised by Us.
"the Terms"	means the terms set out in this document and special terms agreed in writing between a Company Signatory and You or on Buyer's order.
"the Contract"	means the contract for the supply of Goods incorporating these Terms.
"Consumer"	means any natural person acting for purposes outside their trade, business or profession.
"the Defect"	means the condition and/or any attribute of the Goods and/or any other circumstances which but for the effect of these Terms would have entitled You to damages.

2. THE CONTRACT

2.1 All orders are accepted by Us only under these Terms and they may not be altered other than with the written agreement of a Company Signatory. Any contrary or additional terms unless so agreed are excluded.

2.2 Quotations are invitations to treat only.

2.3 Orders may be cancelled only with the written agreement of a Company Signatory and You will indemnify Us against all costs claims losses or expenses incurred as a result of that cancellation.

2.4 You shall be responsible to Us for ensuring the accuracy of the terms of any order including any applicable design drawing or specification provided to Us by You and for giving Us any necessary information relating to the Goods within a sufficient time to enable Us to perform the Contract in accordance with its Terms.

2.5 .1 It is Your responsibility to be fully conversant with the nature and performance of the Goods, including any harmful effects their use may have.

2.5.2 Without prejudice to Clause 2.5.4 of these Terms while We take every precaution in the preparation of our catalogues technical circulars price lists and other literature these documents are for your general guidance only and statements included in these documents (in the absence of fraud on our part) shall not constitute representations by Us and We shall not be bound by them.

2.5.3 We undertakes to comply with the Safety Legislation including, but not limited to the provision of any available information relating to the safety of the Goods to secure so far as reasonable practicable the health and safety of the users of the Goods.

2.5.4 You will comply with the Safety Legislation and agrees to indemnify and keep indemnified Us against Your failure to comply with the Safety Legislation. In particular, You shall indemnify Us against any and all claims or proceedings resulting from any injury, loss or damage caused by a failure to use the Goods in accordance with Our instructions whether such failure is on the part of the Your employees, contractors or agents or a third party to whom You have supplied the Goods.

2.5.5 We shall not be liable in respect of any misrepresentation made by Us our employees or agents to You or your employees or agents as to the condition of the Goods their fitness for any purpose or as to quantity or measurements unless the representation is:

2.5.5.1 made or confirmed in writing by a Company Signatory; and/or

2.5.5.2 fraudulent

2.5.6 For the avoidance of doubt our liability for damages for misrepresentation (other than fraudulent) is excluded or limited by Clause 8 of these Terms.

3. PRICE

3.1 The price of the Goods shall be as published in our price list current at the date of delivery of the Goods. The price is exclusive of VAT which shall be due at the rate ruling on the date of a VAT invoice.

3.2 Prices listed or quoted are based on costs prevailing at the time when they are given or agreed. We shall be entitled to adjust the price of the Goods as at the time of delivery by such amount as may be necessary to cover any increase sustained by Us after the date of acceptance of your order and any direct or indirect costs of making handling or supplying the Goods.

3.3 Prices listed or quoted are applicable to the quantity specified and on the information provided by You at the time of order. In the event of orders being placed for lesser quantities or if there is any change in specifications, delivery dates, or delay is caused by our instructions or lack of instructions we shall be entitled to adjust the price of the Goods as ordered to take account of the variations.

3.4 We shall have the option of supplying any Goods ordered by You in imperial measurements in the nearest equivalent metric measurements and the Goods may be charged in metric measure allowing for conversions.

4. PAYMENT

4.1 Unless other credit terms have been agreed in writing with a Company Signatory all accounts are due for payment on the last day of the month following the month in which the Goods are delivered.

4.2 Late payments will incur interest at the rate of 5% per annum above the base rate of Barclays Bank Plc in force from time to time from the due date until the date of payment after as well as before judgement.

4.3 Credit facilities may be withdrawn or reduced at any time in our sole discretion.

4.4 Even if We have previously agreed to give You credit we reserve the right to refuse to execute any order or contract if the arrangements for payment or your credit rating is not satisfactory to Us. In our discretion We may require security satisfactory to Us or payment for each consignment when it is available and before it is despatched in which case delivery will not be effected until We are in receipt of security or cleared funds as requested by Us.

4.5 In the case of short delivery You will remain liable to pay the full invoice price of all goods delivered or available for delivery.

4.6 You may not withhold payment of any invoice or other amount due to Us by reason of any right of set off or counterclaim which You may have or allege to have for any reason whatever.

4.7 We shall be entitled at all times to set off any debt or claim of whatever nature which We may have against You against any sums due from Us to You.

5. DELIVERY

5.1 Delivery will be effected when the Goods leave our premises whether carried by Us or an independent carrier or the premises of our suppliers when the Goods are delivered direct from suppliers.

5.2 Delivery dates are given in good faith but are estimates only.

5.3 Time for delivery shall not be of the essence of the Contract.

5.4 For the avoidance of doubt and without detracting from any other provisions of these Terms We shall not be liable for any damages whatsoever whether direct or indirect (including for the avoidance of doubt any liability to any third party) resulting from any delay in delivery of the Goods or failure to deliver the Goods in a reasonable time whether such delay or failure is caused by our negligence or otherwise howsoever.

5.5 We reserve the right to make delivery by instalments and tender a separate invoice in respect of each instalment. Our failure to deliver any one or more instalments or any claim by You in respect of any one or more instalments shall not entitle You to treat the Contract as a whole as repudiated.

5.6 The price agreed includes our normal delivery charges but We may make an additional charge if We incur further costs or expense such as (but not limited to) those caused by delivery of less than a full load; complying with your request for delivery outside our normal delivery pattern or trading hours or by instalments; orders of small value which are not economical for us to deliver free.

5.7 You must provide the necessary labour for unloading the Goods and unloading is to be completed with reasonable speed. If our delivery vehicle is kept waiting for an unreasonable time or is obliged to return without completing delivery or if We provide additional staff to unload Goods an additional charge will be made.

5.8 You may collect Goods from Us during our trading hours. If they are not collected within 14 days from when We notify You that they are available a storage charge will be payable before the Goods are released.

5.9 If you fail to take delivery accept or collect the Goods within the agreed time in our discretion We may make an additional charge, invoice You for the Goods or treat the contract as repudiated and in any case recover our losses from You.

5.10 If you collect Goods from Us You are solely responsible for the size weight and positioning of the load on the vehicle and shall indemnify Us in respect of all costs claims losses or expenses We may incur as a result of your collecting the Goods including any resulting from our negligence.

6. INSPECTION

6.1 You shall inspect the Goods at the place and time of unloading or collection but nothing in these Terms shall require You to break packaging and/or unpack Goods which are intended to be stored before use.

6.2.1 You must advise Us by telephone immediately and give Us written notice within three working days of unloading of any claim for short delivery.

6.2.2 If You do not give Us that notice within that time the Goods will be deemed to have been delivered in the quantities shown in the delivery documents.

6.2.3 You shall not be entitled and irrevocably and unconditionally waive any right to reject the Goods or claim any damages whatsoever for short delivery howsoever caused.

6.2.4 Our liability for short delivery is limited to make good the shortage.

6.3.1 Where it is or would have been apparent on a reasonable inspection that the goods are not in conformity with the Contract or (where the Contract is a contract for sale by sample) that the bulk does not compare with the sample You must advise Us by telephone immediately and give Us written notice within three working days of inspection.

6.3.2 If You fail to give Us that notice within that time the Goods will be deemed to have been accepted and You shall not be entitled and irrevocably and unconditionally waive any right to reject the Goods.

6.3.3 If you fail to give Us that notice within that time Clause 8 shall have effect.

7. TITLE AND RISK

7.1 Risk in the Goods shall pass to You when the Goods are delivered.

7.2 The property in the Goods shall remain with Us until You pay all sums due to Us whether in respect of this Contract or otherwise.

7.3 Until title passes:-

7.3.1 You shall hold the Goods as our fiduciary agent and bailee.

7.3.2 The Goods shall be stored separately from any other goods and You shall not interfere with any identification marks labels batch numbers or serial numbers on the Goods.

7.3.3 We agree that You may use or agree to sell the Goods as principal and not as our agents in the ordinary course of your business subject to the express condition that at our direction the entire proceeds of any sale or insurance proceeds received in respect of the goods are held in trust for Us and not mixed with any other monies or paid into an overdrawn bank account and shall at all times be identifiable as our money.

7.4 We shall be entitled at any time to recover any or all of the Goods in your possession to which We have title and for that purpose We our employees or agents may with such transport as is necessary enter upon any premises occupied by You or to which You have access and where the Goods may be or are believed to be situated.

8. LIABILITIES

8.1 Nothing in these Terms shall exclude or restrict our liability for death or personal injury resulting from our negligence or our liability for fraudulent misrepresentation.

8.2 Subject to Clause 8.1 these Terms We shall not be liable by reason of any misrepresentation (unless fraudulent) or any breach of warranty condition or other term express or implied or any breach of duty (common law or statutory) or negligence for any damages whatsoever. Instead of liability in damages We undertake liability under Clause 8.3 below.

8.3 Where but for the effect of Clause 8.2 of these Terms You would have been entitled to damages against Us We shall not be liable to pay damages but subject to the conditions set out in Clause 8.4 below shall in our sole discretion either repair the Goods at our own expense or supply replacement Goods free of charge or refund all (or where appropriate part) of the price paid for the relevant Goods.

8.4 We will not be liable under Clause 8.3:

8.4.1 If the Defect arises from fair wear and tear.

8.4.2 If the Defect arises from wilful damage negligence abnormal working conditions misuse alteration or repair of the Goods failure to follow British Standard or industry instructions relevant to the

Goods or storage of the Goods in unsuitable conditions (but this sub-clause shall not apply to any act or omission on our part)

8.4.3 Unless after discovery of the Defect we are given a reasonable opportunity to inspect the Goods before they are used or in any way interfered with. For the avoidance of doubt We acknowledge that the costs of suspending works are relevant to the determination of what is a reasonable opportunity and this sub-clause shall not apply to any works affecting the Goods which it may be reasonably necessary to carry out in the interests of safety and/or as emergency measures.

8.4.4 If the Defect would have been apparent on a reasonable inspection under Clause 6.1 of these Terms at the time of unloading unless You advise Us by telephone immediately and written notice of any claim is given to Us within three working days of the time of unloading; or in any other case.

8.4.5 The Defect is discovered within four months from the date of delivery and We are given written notice of the Defect within three working days of it being discovered.

8.5 If the Goods are manufactured processed or milled by Us to the design quantity measure or specification of You or your agents then;

8.5.1 Subject to Clause 8.1 of these Terms We shall not be under any liability for damages whatsoever or under Clause 8.3 of these Terms as the case may be except in the event of:

8.5.1.1 Fraudulent misrepresentation.

8.5.1.2 Misrepresentation where the representation was made or confirmed in writing by a Company Signatory.

8.5.1.3 Non-compliance with such design quantity measurement or specification.

8.5.1.4 Breach of a written warranty signed by a Company Signatory that the Goods are fit for that purpose; or

8.5.1.5 A claim maintainable against Us pursuant to Clause 8.1 of these Terms.

8.5.2 You will unconditionally fully and effectively indemnify Us against all loss damages costs on an indemnity basis and expenses awarded against or incurred by Us in connection with or paid or agreed to be paid by Us in settlement of any claim for infringement of any patents copyright design trademark or any other industrial or intellectual property rights of any other person.

8.5.3 You will further unconditionally fully and effectively indemnify Us against all loss damages costs on an indemnity basis and expenses awarded against or incurred by Us in connection with or paid or agreed to be paid by Us in settlement of any other claim arising from any such manufacturing processing or milling including but not limited to any Defect in the Goods. This indemnity will be reduced in proportion to the extent that such loss damage costs and expenses are due to our negligence.

8.6 You will unconditionally fully and effectively indemnify Us against all loss damages costs on an indemnity basis and expenses awarded against or incurred by Us in connection with or paid or agreed to be paid by Us in settlement of any claim by or arising from the supply or use of the Goods. This indemnity will be reduced in proportion to the extent that such loss damage costs and expenses are due to our negligence.

8.7 Without prejudice to any other provisions in these Terms in any event our total liability for any one claim or for the total of all claims arising from any one act of default on our part (whether arising from our negligence or otherwise) shall not exceed the purpose price of the goods the subject matter of any claim.

9. NON PAYMENT/INSOLVENCY

9.1 "Insolvent" means You becoming unable to pay your debts within the meaning of Section 123 of the Insolvency Act 1986; the levying or the threat of execution or distress on any of your property; the appointment of a receiver or administrative receiver over all or any part of your property; a proposal for a voluntary arrangement or compromise between You and your creditors whether pursuant to the Insolvency Act 1986 or otherwise; the passing of a resolution for voluntary winding-up or summoning a meeting to pass such a resolution otherwise than for the purposes of a bona fide amalgamation or reconstruction; the presentation of a petition for your winding-up or for an administration order in relation to You; if You suffer any analogous step or proceedings under foreign law or You ceasing or threatening to cease to carry on your business.

9.2 If you fail to pay the price for any Goods on the due date or fail to pay any sum due to Us under any contract on the due date or You become Insolvent or if You are a Limited Company or partnership and there is a material breach in your constitution or You commit a material breach of this Contract and fail to remedy that breach all sums outstanding between You and Us shall become immediately payable and We shall be entitled to do any one or more of the following (without prejudice to any other right or remedy We may have)

9.2.1 Require payment in cleared funds in advance of further deliveries.

9.2.2 Cancel or suspend any further deliveries to You under any contract without liability on our part.

9.2.3 Without prejudice to the generality of Clause 7 of these Terms exercise any of our rights pursuant to that clause.

9.3 If we reasonably incur third party costs such as tracing or debt collection agency costs or seek legal advice or take legal proceedings to enforce our rights as a result of your breach of this Contract including but not limited to recovery of any sums due, you will reimburse us such reasonable agency costs or legal costs incurred on an indemnity basis.

10. GENERAL

10.1 This Contract shall be governed and interpreted according to the law of England and Wales and You agree to submit to the non-exclusive jurisdiction of the English Courts.

10.2 We shall not be liable for any delay or failure to perform any of our obligations in relation to the Goods due to any cause beyond our reasonable control including industrial action.

10.3 The waiver by Us of any breach or default of these Terms shall not be construed as a continued waiver of that breach nor as a waiver of any subsequent breach of the same or any other provision.

10.4 If any clause or sub-clause of these Terms is held by a competent authority to be invalid or unenforceable the validity of the other clauses and sub-clauses of these Terms shall not be affected and they shall remain in full force and effect.

10.5 We may assign novate or sub-contract all or part of this Contract and You shall be deemed to consent to any novation. This Contract is personal to You and it may not be assigned.

10.6 Nothing in this Contract is intended to or will grant any right to any third party to enforce any terms of this contract whether express or implied.



MANUFACTURERS OF CHALLENGE PT PRODUCTS

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