

Quick Detachable Bushing and Mating
Hub Standard



MPTA STANDARD

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Abstract

This standard provides general dimensions and tolerances for inch and metric quick detachable bushings and mating hubs.

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Foreword

This Foreword is provided for informational purposes only and is not to be construed to be part of any technical specification.

This standard is a revision of QD-1-1992. This revision (2016) is an extension of MPTA-B6i-2010 to include dimensions and tolerances for metric quick detachable bushings and mating hubs.

Suggestions for the improvement of, or comments on, this publication are welcome. They should be mailed to Mechanical Power Transmission Association, 5672 Strand Court, Suite 2, Naples, FL 34110 on your company letterhead.

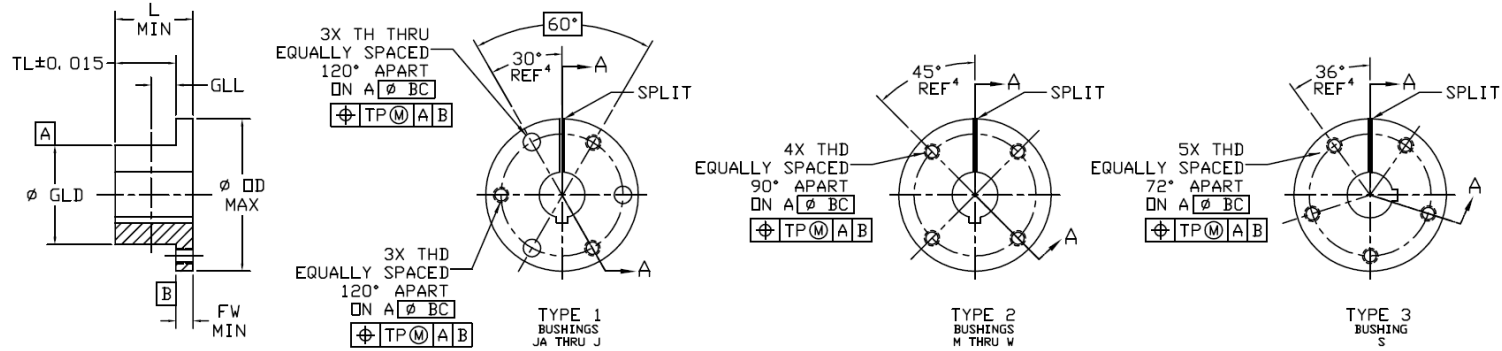
Scope

This standard is intended to provide dimensions and tolerances, which will permit bushings made by one manufacturer to be used to mount sheaves or other products made by a different manufacturer.

The bushing system described in this guideline is limited to systems having the following characteristics:

- ...An external flange
- ...No external key
- ...A nominal $\frac{3}{4}$ inch/foot taper
- ...Split through both flange and taper
- ...Conventional and reverse mount capability

Table 1.1 – DETACHABLE BUSHINGS (Inch)

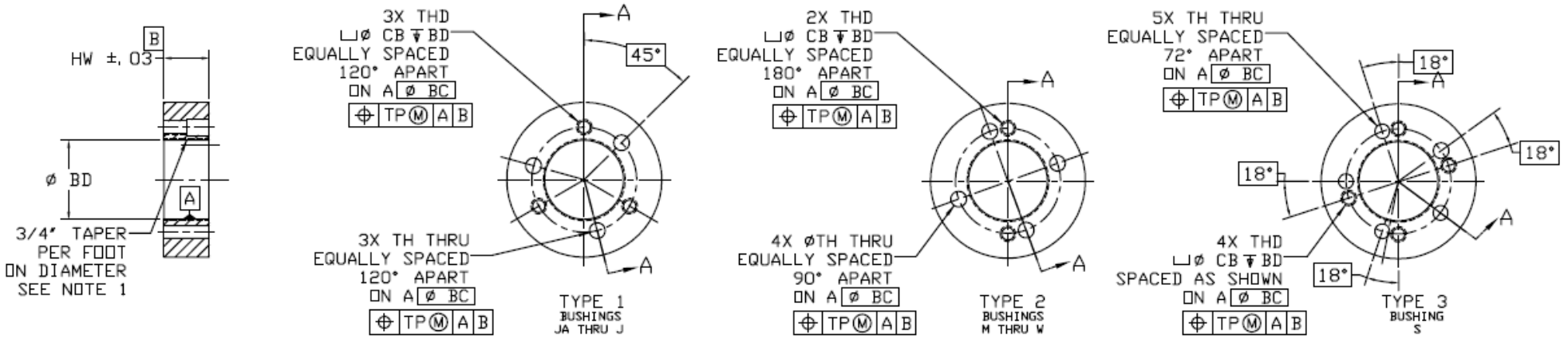


BUSHING	BUSHING TYPE	DIMENSIONS (IN)									
		GAGE LINE		FLANGE WIDTH FW	OUTSIDE DIAMETER OD	TAPER LENGTH TL	BUSHING LENGTH L	THREADED HOLD THREAD SIZE THD	THRU HOLE MIN DIAMETER TH	THREADED AND THRU HOLE	
		DIAMETER GLD	LOCATION GLL							BOLT CIRCLE DIAMETER BC	TRUE POSITION TP
JA	1	1.3750	0.1860 / 0.2340	0.30	2.02	0.56	0.80	#10-24 UNC-2B	0.2189	1.6560	0.007
SH	1	1.8710	0.2120 / 0.274	0.36	2.70	0.81	1.17	1/4-20 UNC-2B	0.2813	2.2500	0.007
SDS	1	2.1875	0.2320 / 0.298	0.42	3.20	0.88	1.30	1/4-20 UNC-2B	0.3125	2.6875	0.007
SD	1	2.1875	0.2220 / 0.298	0.42	3.20	1.38	1.80	1/4-20 UNC-2B	0.3125	2.6875	0.007
SK	1	2.8125	0.2580 / 0.377	0.48	3.89	1.25	1.67	5/16-18 UNC-2B	0.3438	3.3125	0.007
SF	1	3.1250	0.2680 / 0.377	0.48	4.64	1.44	1.98	3/8-16 UNC-2B	0.4375	3.8750	0.015
E	1	3.8340	0.2780 / 0.377	0.73	6.02	1.88	2.61	1/2-13 UNC-2B	0.5625	5.0000	0.015
F	1	4.4375	0.3750 / 0.471	0.80	6.64	2.75	3.61	9/16-12 UNC-2B	0.625	5.6250	0.015
J	1	5.1484	0.3750 / 0.471	0.98	7.27	3.50	4.48	5/8-11 UNC-2B	0.6875	6.2500	0.015
M	2	6.5000	0.3750 / 0.471	1.23	9.14	5.50	6.73	3/4-10 UNC-2B	0.8125 (3)	7.8750	0.015
N	2	7.0000	0.3750 / 0.471	1.48	10.02	6.63	8.11	7/8-9 UNC-2B	0.9375 (3)	8.5000	0.015
P	2	8.2500	0.3750 / 0.471	1.73	11.77	7.63	9.36	1-8 UNC-2B	1.0625 (3)	10.0000	0.030
W	2	10.4375	0.5000 / 0.628	1.98	15.02	9.38	11.36	1-1/8-7 UNC-2B	1.0938 (3)	12.7500	0.030
S	3	12.1250	0.7500 / 0.878	3.23	17.77	12.50	15.73	1-1/4-7 UNC-2B	1.3125 (3)	15.0000	0.030

NOTES

- (1) Taper angle 1°47'24" ± 2' (per side) or 80% contact with on-size ring gage
- (2) All dimensions are prior to splitting
- (3) Only required for reverse mount
- (4) Angle may vary per manufacturer's individual standards

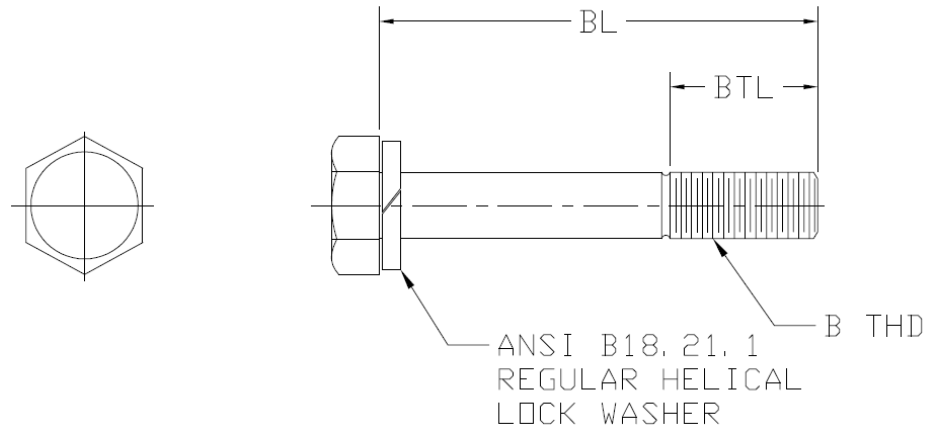
Table 1.2 – MATING HUBS (Inch)



BUSHING	HUB TYPE	DIMENSIONS (IN)										
		LARGE END BORE DIAMETER BD		HUB WIDTH FW	THREADED BOLT HOLE					THRU HOLE MIN DIAMETER TH	THREADED AND THRU HOLE	
		MIN	MAX		THREAD SIZE THD	COUNTER BORE DIAMETER MIN D	COUNTER BORE DEPTH CBD	COUNTER BORE DEPTH TOLERANCE CD	BOLT CIRCULAR DIAMETER BC		TRUE POSITION TP	
JA	1	1.3730	1.3750	0.56	#10-24 UNC-2B	NONE	NONE	NONE	0.2190	1.6560	0.007	
SH	1	1.8680	1.8710	0.81	1/4-20 UNC-2B	0.2813	0.31	\pm 0.06	0.2813	2.2500	0.007	
SDS	1	2.1835	2.1875	0.75	1/4-20 UNC-2B	0.3125	0.25	\pm 0.06	0.3125	2.6875	0.007	
SD	1	2.1835	2.1875	1.25	1/4-20 UNC-2B	0.3125	0.75	\pm 0.06	0.3125	2.6875	0.007	
SK	1	2.8085	2.8125	1.25	5/16-18 UNC-2B	0.3438	0.62	\pm 0.06	0.3438	3.3125	0.007	
SF	1	3.1210	3.1250	1.25	3/8-16 UNC-2B	0.4375	0.56	\pm 0.06	0.4375	3.8750	0.015	
E	1	3.8300	3.8340	1.63	1/2-13 UNC-2B	0.5625	0.75	\pm 0.06	0.5625	5.0000	0.015	
F	1	4.4355	4.4395	2.50	9/16-12 UNC-2B	0.6250	1.50	\pm 0.12	0.6250	5.6250	0.015	
J	1	5.1410	5.1450	3.19	5/8-11 UNC-2B	0.6875	2.06	\pm 0.12	0.6875	6.2500	0.015	
M	2	6.4920	6.4960	5.19	3/4-10 UNC-2B	0.8125	3.94	\pm 0.12	0.8125	7.8750	0.015	
N	2	6.9900	6.9940	6.25	7/8-9 UNC-2B	0.9375	4.81	\pm 0.12	0.9375	8.5000	0.015	
P	2	8.2400	8.2440	7.25	1-8 UNC-2B	1.1250	5.56	\pm 0.12	1.1250	10.0000	0.030	
W	2	10.4270	10.4310	9.00	1-1/8-7 UNC-2B	1.2500	7.19	\pm 0.12	1.2500	12.7500	0.030	
S	3	12.1230	12.1270	12.00	1-1/4-7 UNC-2B	1.3750	9.25	\pm 0.12	1.3750	15.0000	0.030	

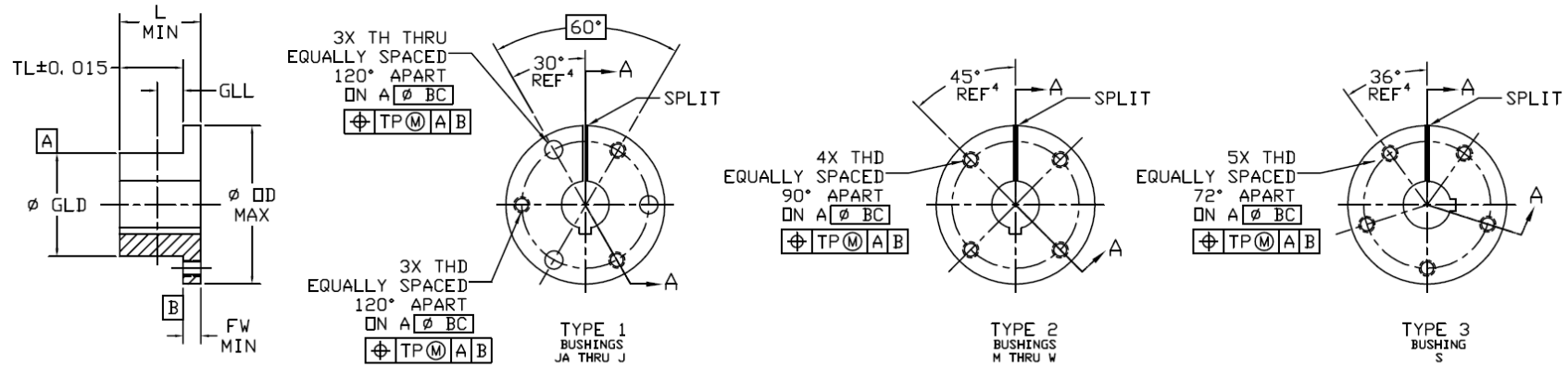
NOTES
 (1) Taper angle 1°47'24" \pm 2' (per side) or 80% contact with on-size ring gage
 (2) Bores measured with taper plug gage only.

Table 1.3 – FASTENERS (Inch)



BUSHING	DIMENSIONS (IN)					
	HEX HEAD CAP SCREW					
	NUMBER OF SCREWS REQUIRED	THREAD SIZE BTHD	STANDARD MOUNT BOLT LENGTH BL	STANDARD MOUNT MIN THREAD LENGTH REQUIRED WITH WASHER BTL	REVERSE MOUNT BOLT LENGTH BL	REVERSE MOUNT MIN THREAD LENGTH REQUIRED WITH WASHER BTL
JA	3	#10-24 UNC-2B	1.00	1.00	1.00	1.00
SH	3	1/4-20 UNC-2B	1.38	1.13	1.13	1.13
SDS	3	1/4-20 UNC-2B	1.38	1.13	1.13	1.13
SD	3	1/4-20 UNC-2B	1.88	1.38	1.38	1.38
SK	3	5/16-18 UNC-2B	2.00	1.50	1.50	1.50
SF	3	3/8-16 UNC-2B	2.00	1.50	1.50	1.50
E	3	1/2-13 UNC-2B	2.75	1.88	1.88	1.88
F	3	9/16-12 UNC-2B	3.63	2.75	2.75	2.75
J	3	5/8-11 UNC-2B	4.50	3.38	3.38	3.38
M	4	3/4-10 UNC-2B	6.75	2.00	3.00	2.00
N	4	7/8-9 UNC-2B	8.00	2.25	3.50	2.25
P	4	1-8 UNC-2B	9.50	2.50	4.00	2.50
W	4	1-1/8-7 UNC-2B	11.50	2.75	4.50	2.75
S	5	1-1/4-7 UNC-2B	15.50	4.50	7.00	4.50

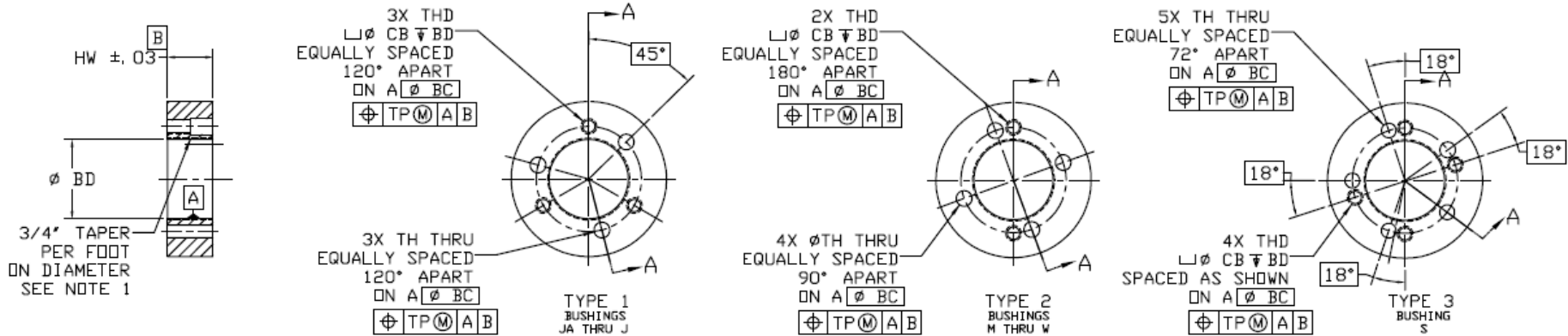
Table 2.1 – DETACHABLE BUSHINGS (Metric)



BUSHING	BUSHING TYPE	DIMENSIONS (MM)									
		GAGE LINE		FLANGE WIDTH FW	OUTSIDE DIAMETER OD	TAPER LENGTH TL	BUSHING LENGTH L	THREADED HOLD THREAD SIZE THD	THRU HOLE MIN DIAMETER TH	THREADED AND THRU HOLE	
		DIAMETER GLD	LOCATION GLL							BOLT CIRCULAR DIAMETER BC	TRUE POSITION TP
JA	1	34.93	4.72 / 5.94	7.62	51.31	14.22	20.32	M5 x 0.8	5.56	42.06	0.18
SH	1	47.52	5.38 / 6.96	9.14	68.58	20.57	29.72	M6 x 1	7.15	57.15	0.18
SDS	1	55.56	5.89 / 7.57	10.67	81.28	22.35	33.02	M6 x 1	7.94	68.26	0.18
SD	1	55.56	5.64 / 7.57	10.67	81.28	35.05	45.72	M6 x 1	7.94	68.26	0.18
SK	1	71.44	6.55 / 9.56	12.19	98.81	31.75	42.42	M8 x 1.25	8.73	84.14	0.18
SF	1	79.38	6.81 / 9.56	12.19	117.86	36.58	50.29	M10 x 1.5	11.11	98.43	0.38
E	1	97.38	7.06 / 9.56	18.54	152.91	47.75	66.29	M12 x 1.75	14.29	127.00	0.38
F	1	112.71	9.53 / 11.96	20.32	168.66	69.85	91.69	M14 x 2	15.88	142.88	0.38
J	1	130.77	9.53 / 11.96	24.89	184.66	88.90	113.79	M16 x 2	17.46	158.75	0.38
M	2	165.10	9.53 / 11.96	31.24	232.16	139.70	170.94	M20 x 2.5	20.64	200.03	0.38
N	2	177.80	9.53 / 11.96	37.59	254.51	168.40	205.99	M22 x 2.5	23.81	215.90	0.38
P	2	209.55	9.53 / 11.96	43.94	298.96	193.80	237.74	M24 x 3	26.99	254.00	0.76
W	2	265.11	12.70 / 15.95	50.29	381.51	238.25	288.54	Contact Manufacturer		323.85	0.76
S	3	307.98	19.05 / 22.30	82.04	451.36	317.50	399.54			381.00	0.76

- NOTES
- (1) Taper angle 1°47'24" ± 2' (per side) or 80% contact with on-size ring gage
 - (2) All dimensions are prior to splitting
 - (3) Only required for reverse mount
 - (4) Angle may vary per manufacturer's individual standards

Table 2.2 – MATING HUBS (Metric)

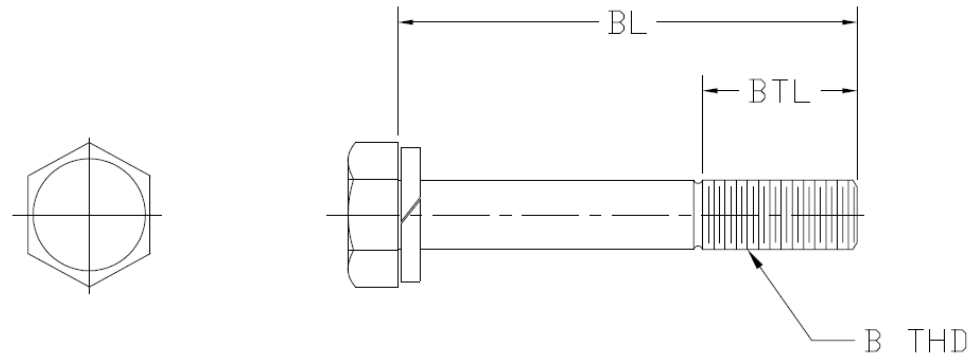


BUSHING	HUB TYPE	DIMENSIONS (MM)									
		LARGE END BORE DIAMETER BD		HUB WIDTH FW	THREADED BOLT HOLE			THRU HOLE MIN DIAMETER TH	THREADED AND THRU HOLE		
		MIN	MAX		THREAD SIZE THD	COUNTER BORE DIAMETER MIN D	COUNTER BORE DEPTH CBD		COUNTER BORE DEPTH TOLERANCE CD	BOLT CIRTGLE DIAMETER BC	TRUE POSITION TP
JA	1	34.87	34.93	14.22	M5 x 0.8	NONE	NONE	NONE	5.56	42.06	0.18
SH	1	47.45	47.52	20.57	M6 x 1	7.15	7.87	± 1.52	7.15	57.15	0.18
SDS	1	55.46	55.56	19.05	M6 x 1	7.94	6.35	± 1.52	7.94	68.26	0.18
SD	1	55.46	55.56	31.75	M6 x 1	7.94	19.05	± 1.52	7.94	68.26	0.18
SK	1	71.34	71.44	31.75	M8 x 1.25	8.73	15.75	± 1.52	8.73	84.14	0.18
SF	1	79.27	79.38	31.75	M10 x 1.5	11.11	14.22	± 1.52	11.11	98.43	0.38
E	1	97.28	97.38	41.40	M12 x 1.75	14.29	19.05	± 1.52	14.29	127.00	0.38
F	1	112.66	112.76	63.50	M14 x 2	15.88	38.10	± 3.05	15.88	142.88	0.38
J	1	130.58	130.68	81.03	M16 x 2	17.46	52.32	± 3.05	17.46	158.75	0.38
M	2	164.90	165.00	131.83	M20 x 2.5	20.64	100.08	± 3.05	20.64	200.03	0.38
N	2	177.55	177.65	158.75	M22 x 2.5	23.81	122.17	± 3.05	23.81	215.90	0.38
P	2	209.30	209.40	184.15	M24 x 3	28.58	141.22	± 3.05	28.58	254.00	0.76
W	2	264.85	264.95	228.60	Contact Manufacturer					323.85	0.76
S	3	307.92	308.03	304.80	Contact Manufacturer					381.00	0.76

NOTES

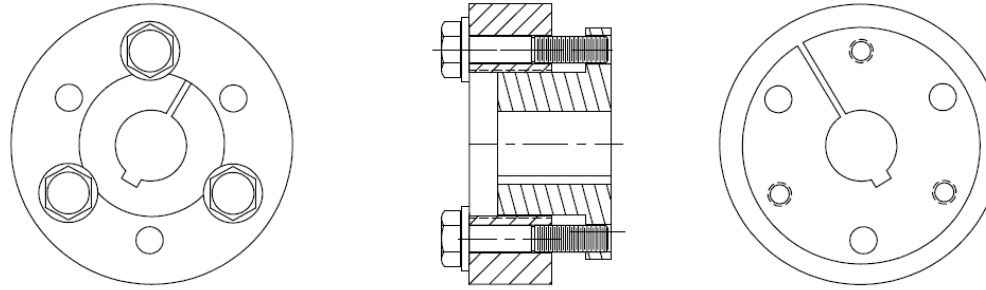
- (1) Taper angle 1°47'24" ± 2' (per side) or 80% contact with on-size ring gage
- (2) Bores measured with taper plug gage only.

Table 2.3 – FASTENERS (Metric)

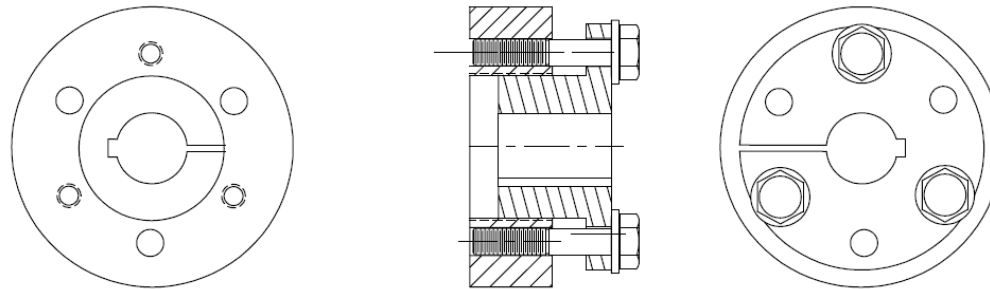


BUSHING	DIMENSIONS (MM)					
	HEX HEAD CAP SCREW					
	NUMBER OF SCREWS REQUIRED	THREAD SIZE BTHD	STANDARD MOUNT BOLT LENGTH BL	STANDARD MOUNT MIN THREAD LENGTH REQUIRED WITH WASHER BTL	REVERSE MOUNT BOLT LENGTH BL	REVERSE MOUNT MIN THREAD LENGTH REQUIRED WITH WASHER BTL
JA	3	M5 x 0.8	25	25.4	25.4	25.4
SH	3	M6 x 1	35	28.7	28.7	28.7
SDS	3	M6 x 1	35	28.7	28.7	28.7
SD	3	M6 x 1	50	35.1	35.1	35.1
SK	3	M8 x 1.25	50	38.1	38.1	38.1
SF	3	M10 x 1.5	50	38.1	38.1	38.1
E	3	M12 x 1.75	70	47.8	47.8	47.8
F	3	M14 x 2	100	69.9	69.9	69.9
J	3	M16 x 2	120	85.9	85.9	85.9
M	4	M20 x 2.5	170	50.8	76.2	50.8
N	4	M22 x 2.5	200	57.2	88.9	57.2
P	4	M24 x 3	240	63.5	101.6	63.5
W	4	Contact Manufacturer				
S	5					

Table 3.0 – MOUNTING ARRANGEMENT



STANDARD



REVERSED

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