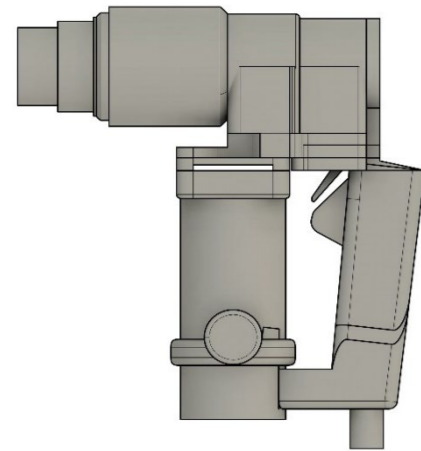
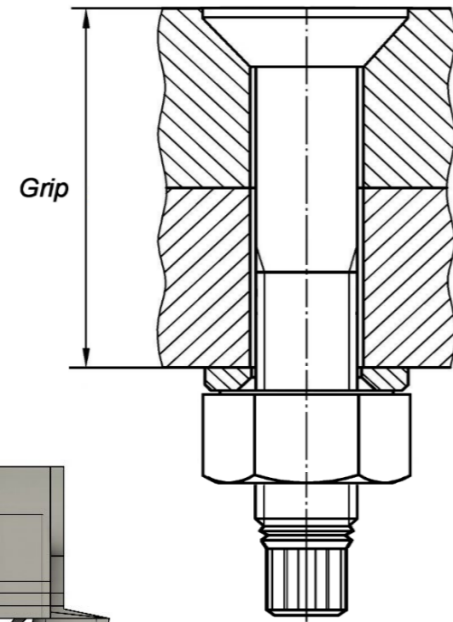


Grip Tolerances for CSK TCBs (HRD Nut + 1 Washer) and a Standard Shear Wrench



Standard Style Shear Wrench

BOLT SIZE	MIN	MAX
M12 X 30		
M12 X 35		
M12 X 40		
M12 X 45		
M12 X 50		
M12 X 55		
M12 X 65		
M12 X 75		

M16 X 50	21	26
M16 X 55	21	31
M16 X 60	21	36
M16 X 65	21	41
M16 X 70	30	46
M16 X 75	35	51
M16 X 80	40	56
M16 X 90	46	66
M16 X 100	57	76
M16 X 110	67	86
M16 X 120	77	96
M16 X 130	87	106
M16 X 140	97	116
M16 X 150	107	126
M16 X 160	117	136
M16 X 170	127	146

M20 X 65	28	36
M20 X 70	28	41
M20 X 75	28	46
M20 X 80	28	51
M20 X 85	37	56
M20 X 90	47	61
M20 X 95	48	66
M20 X 100	57	71
M20 X 105	59	76
M20 X 110	67	81
M20 X 115	69	86
M20 X 120	74	91
M20 X 125	79	96
M20 X 130	81	101
M20 X 135	89	106
M20 X 140	91	111
M20 X 150	101	121
M20 X 160	111	131
M20 X 170	121	141
M20 X 180	131	151
M20 X 190	141	161
M20 X 200	151	171

BOLT SIZE	MIN	MAX
M22 X 65	15	32
M22 X 70	20	37
M22 X 75	27	42
M22 X 80	30	47
M22 X 85	35	52
M22 X 90	40	57
M22 X 95	45	62
M22 X 100	50	67
M22 X 105	55	72
M22 X 115	65	82
M22 X 120	70	87
M22 X 130	80	97
M22 X 140	90	107
M22 X 150	100	117
M22 X 160	110	127
M22 X 170	120	137
M22 X 200	150	167

M24 X 70	30	35
M24 X 75	30	40
M24 X 80	30	45
M24 X 85	30	50
M24 X 90	30	55
M24 X 95	30	60
M24 X 100	50	65
M24 X 105	51	70
M24 X 110	55	75
M24 X 115	61	80
M24 X 120	70	85
M24 X 125	65	90
M24 X 130	70	95
M24 X 140	80	105
M24 X 150	90	115
M24 X 160	100	125
M24 X 170	110	135
M24 X 180	120	145
M24 X 190	130	155
M24 X 200	140	165
M24 X 210	151	175
M24 X 220	161	185
M24 X 230	171	195
M24 X 240	181	205
M24 X 260	201	225
M24 X 280	221	245

BOLT SIZE	MIN	MAX
M27 X 80	40	41
M27 X 90	40	51
M27 X 100	40	61
M27 X 110	52	71
M27 X 120	61	81
M27 X 130	71	91
M27 X 140	81	101
M27 X 150	91	111
M27 X 160	101	121
M27 X 170	111	131
M27 X 180	121	141
M27 X 190	131	151
M27 X 200	141	161
M27 X 220	161	181

M30 X 90	19	48
M30 X 100	42	58
M30 X 110	52	68
M30 X 120	62	78
M30 X 130	72	88
M30 X 140	82	98
M30 X 150	92	108
M30 X 160	102	118
M30 X 170	112	128
M30 X 180	122	138
M30 X 190	132	148
M30 X 200	142	158
M30 X 210	152	168
M30 X 220	162	178
M30 X 240	182	198
M30 X 260	202	218
M30 X 280	222	238

M36 X 110	32	57
M36 X 120	44	67
M36 X 130	54	77
M36 X 140	64	87
M36 X 150	74	97
M36 X 160	84	107
M36 X 170	94	117
M36 X 180	104	127
M36 X 190	114	137
M36 X 200	124	147
M36 X 210	134	157
M36 X 220	144	167
M36 X 240	164	187
M36 X 260	184	207
M36 X 280	204	227

*All measurements provided in mm
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Notes:

1. Bolt lengths in red font are stock items. Other sizes can be manufactured with a lead time TBA at time of order.

2. Short bolts are fully threaded and applies to bolt lengths above the heavy line.

3. Should a grip still be below the min grip tolerance, additional washers can be placed under the nut to adjust the grip thickness.

Notes from BS EN 1090-2:2018 section 8.2.2

Reference Min Grip: For preloaded bolts, at least four full threads (in addition to the thread run out) shall remain clear between the bearing surface of the nut and the unthreaded part of the shank.

Reference Max Grip: The length of protrusion shall be at least the length of one thread pitch measured from the outer face of the nut to the end of the bolt.

