

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

BOLT SIZE	MIN	MAX
M20 X 50		
M20 X 55		
M20 X 60		
M20 X 65	28	36
M20 X 70	28	41
M20 X 75		
M20 X 80		
M20 X 85		

BOLT SIZE	MIN	MAX
M22 X 55		
M22 X 60		
M22 X 65		
M22 X 70		
M22 X 75		
M22 X 80		
M22 X 85		
M22 X 90		

BOLT SIZE	MIN	MAX
M24 X 60		
M24 X 65		
M24 X 70		
M24 X 75		
M24 X 80	30	45
M24 X 85		
M24 X 90		
M24 X 95		

BOLT SIZE	MIN	MAX
M27 X 70		
M27 X 80		
M27 X 90		
M27 X 100		
M27 X 110		
M27 X 120		
M27 X 130		
M27 X 140		

BOLT SIZE	MIN	MAX
M30 X 80		
M30 X 90		
M30 X 100		
M30 X 110		
M30 X 120	62	78
M30 X 130	72	88
M30 X 140	82	98
M30 X 150	92	108

M16 X 40		
M16 X 45		
M16 X 50	21	26
M16 X 55		
M16 X 60		
M16 X 65	21	41
M16 X 70		
M16 X 75		
M16 X 80		
M16 X 90		
M16 X 100		
M16 X 105		
M16 X 110		
M16 X 120		
M16 X 130		
M16 X 140		
M16 X 150		
M16 X 160		
M16 X 170		

M20 X 90	42	61
M20 X 95		
M20 X 100	53	71
M20 X 105		
M20 X 110	64	81
M20 X 115		
M20 X 120		
M20 X 125	79	96
M20 X 130		
M20 X 135	86	106
M20 X 140		
M20 X 145		
M20 X 150		
M20 X 155		
M20 X 160		
M20 X 165		
M20 X 175		
M20 X 185		
M20 X 200		
M20 X 220		

M22 X 95		
M22 X 100		
M22 X 105		
M22 X 115	65	84
M22 X 120		
M22 X 130		
M22 X 140		
M22 X 150		
M22 X 160		
M22 X 170		
M22 X 200		
M22 X 210		

M24 X 100	50	65
M24 X 105		
M24 X 110		
M24 X 115		
M24 X 120	70	85
M24 X 125		
M24 X 130		
M24 X 140	81	105
M24 X 150	91	115
M24 X 160		
M24 X 170		
M24 X 180		
M24 X 190		
M24 X 200		
M24 X 210		
M24 X 220		
M24 X 230		
M24 X 240		
M24 X 260		
M24 X 280		

M27 X 150		
M27 X 160		
M27 X 170		
M27 X 180		
M27 X 190		
M27 X 200		
M27 X 220		
M27 X 240		

M30 X 160		
M30 X 170		
M30 X 180		
M30 X 190		
M30 X 200		
M30 X 210	152	168
M30 X 220		
M30 X 240		
M30 X 260		
M30 X 280		

M36 X 100		
M36 X 120		
M36 X 140		
M36 X 160		
M36 X 170		
M36 X 180		
M36 X 190		
M36 X 200		
M36 X 210		
M36 X 220		
M36 X 240		
M36 X 260		
M36 X 280		

Notes:

The revision of EN 14399-10: 2018 has been modified to allow short bolts to be fully threaded.

This will apply to bolt lengths shown above the heavy line.

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



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Notes from BS EN 1090-2:2008 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.