

HEICO-LOCK®

TORQUE GUIDELINES

1/4

HEICO-LOCK®	Zinc flake coated
BOLT	8.8 (galvanized or zinc plated)

BOLT SIZE	HEICO ITEM NO.	THREAD PITCH [MM]	OILED GF=0,75 μG=0,10 μK=0,16		DRY GF=0,62 μG=0,15 μK=0,18	
			TORQUE [NM]	PRELOAD [KN]	TORQUE [NM]	PRELOAD [KN]
M3	HLS-3	0,50	1,3	2,4	1,3	2,0
M3,5	HLS-3,5	0,60	2,1	3,3	2,1	2,7
M4	HLS-4	0,70	3,1	4,2	3,1	3,5
M5	HLS-5	0,80	6,0	6,8	6,0	5,6
M6	HLS-6	1,00	10,5	9,7	10,6	8,0
M8	HLS-8	1,25	25,1	17,6	25,2	14,5
M10	HLS-10	1,50	49,4	27,8	49,9	23,0
M12	HLS-12	1,75	84,7	40,4	85,6	33,4
M14	HLS-14	2,00	135,8	55,4	137,3	45,8
M16	HLS-16	2,00	207,0	75,2	210,3	62,2
M18	HLS-18	2,50	289,0	92,0	293,0	76,0
M20	HLS-20	2,50	407,0	118,0	411,0	97,0
M22	HLS-22	2,50	553,0	146,0	559,0	120,0
M24	HLS-24	3,00	696,0	169,0	708,0	140,0
M27	HLS-27	3,00	1.014,0	221,0	1.029,0	182,0
M30	HLS-30	3,50	1.381,0	269,0	1.402,0	222,0
M33	HLS-33	3,50	1.858,0	333,0	1.892,0	275,0
M36	HLS-36	4,00	2.398,0	392,0	2.442,0	324,0
M39	HLS-39	4,00	3.089,0	468,0	3.152,0	387,0
M42	HLS-42	4,50	3.826,0	538,0	3.902,0	445,0
M45	HLS-45	4,50	4.761,0	627,0	4.857,0	518,0
M48	HLS-48	5,00	5.766,0	707,0	5.884,0	585,0
M52	HLS-52	5,00	7.373,0	844,0	7.537,0	698,0
M56	HLS-56	5,50	9.183,0	974,0	9.387,0	806,0
M60	HLS-60	5,50	11.350,0	1.134,0	11.606,0	937,0
M64	HLS-64	6,00	13.677,0	1.284,0	13.998,0	1.062,0
M68	HLS-68	6,00	16.894,0	1.467,0	17.258,0	1.212,0
M72	HLS-72	6,00	20.112,0	1.661,0	20.585,0	1.373,0
M76	HLS-76	6,00	23.706,0	1.867,0	24.290,0	1.543,0

GF = ratio of yield point [%]

μG = thread friction

μK = washer friction



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HEICO-LOCK®	Zinc flake coated
BOLT	10.9 (non-plated)

BOLT SIZE	HEICO ITEM NO.	THREAD PITCH [MM]	OILED GF=0,75 μG=0,10 μK=0,16		DRY GF=0,62 μG=0,15 μK=0,18	
			TORQUE [NM]	PRELOAD [KN]	TORQUE [NM]	PRELOAD [KN]
M3	HLS-3	0,50	1,9	3,4	1,9	2,8
M3,5	HLS-3,5	0,60	2,9	4,6	2,9	3,8
M4	HLS-4	0,70	4,3	5,9	4,3	4,9
M5	HLS-5	0,80	8,4	9,6	8,5	7,9
M6	HLS-6	1,00	14,8	13,6	14,8	11,2
M8	HLS-8	1,25	35,2	24,7	35,5	20,4
M10	HLS-10	1,50	69,5	39,1	70,3	32,4
M12	HLS-12	1,75	119,3	56,9	120,5	47,0
M14	HLS-14	2,00	191,0	77,9	193,1	64,4
M16	HLS-16	2,00	290,9	105,7	295,5	87,4
M18	HLS-18	2,50	409,0	130,0	412,0	107,0
M20	HLS-20	2,50	569,0	165,0	580,0	137,0
M22	HLS-22	2,50	776,0	205,0	787,0	169,0
M24	HLS-24	3,00	980,0	238,0	996,0	197,0
M27	HLS-27	3,00	1.422,0	310,0	1.447,0	256,0
M30	HLS-30	3,50	1.941,0	378,0	1.977,0	313,0
M33	HLS-33	3,50	2.611,0	468,0	2.663,0	387,0
M36	HLS-36	4,00	3.370,0	551,0	3.436,0	456,0
M39	HLS-39	4,00	4.349,0	659,0	4.430,0	544,0
M42	HLS-42	4,50	5.383,0	757,0	5.480,0	625,0
M45	HLS-45	4,50	6.698,0	882,0	6.835,0	729,0
M48	HLS-48	5,00	8.107,0	994,0	8.267,0	822,0
M52	HLS-52	5,00	10.370,0	1.187,0	10.592,0	981,0
M56	HLS-56	5,50	12.916,0	1.370,0	13.195,0	1.133,0
M60	HLS-60	5,50	15.954,0	1.594,0	16.325,0	1.318,0
M64	HLS-64	6,00	19.237,0	1.806,0	19.679,0	1.493,0
M68	HLS-68	6,00	23.746,0	2.062,0	24.279,0	1.705,0
M72	HLS-72	6,00	28.273,0	2.335,0	28.951,0	1.931,0
M76	HLS-76	6,00	33.331,0	2.625,0	34.160,0	2.170,0

GF = ratio of yield point [%]

μG = thread friction

μK = washer friction



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HEICO-LOCK®	Zinc flake coated
BOLT	12.9 (non-plated)

BOLT SIZE	HEICO ITEM NO.	THREAD PITCH [MM]	OILED GF=0,75 μG=0,10 μK=0,16		DRY GF=0,62 μG=0,15 μK=0,18	
			TORQUE [NM]	PRELOAD [KN]	TORQUE [NM]	PRELOAD [KN]
M3	HLS-3	0,50	2,3	4,1	2,3	3,4
M3,5	HLS-3,5	0,60	3,5	5,5	3,5	4,5
M4	HLS-4	0,70	5,2	7,1	5,2	5,9
M5	HLS-5	0,80	10,1	11,5	10,2	9,5
M6	HLS-6	1,00	17,7	16,3	17,8	13,5
M8	HLS-8	1,25	42,4	29,7	42,6	24,5
M10	HLS-10	1,50	83,6	47,0	84,2	38,8
M12	HLS-12	1,75	143,2	68,3	144,6	56,4
M14	HLS-14	2,00	229,2	93,5	231,8	77,3
M16	HLS-16	2,00	349,3	126,9	354,6	104,9
M18	HLS-18	2,50	491,0	156,0	497,0	129,0
M20	HLS-20	2,50	683,0	198,0	695,0	164,0
M22	HLS-22	2,50	931,0	246,0	945,0	203,0
M24	HLS-24	3,00	1.177,0	286,0	1.193,0	236,0
M27	HLS-27	3,00	1.707,0	372,0	1.741,0	308,0
M30	HLS-30	3,50	2.331,0	454,0	2.368,0	375,0
M33	HLS-33	3,50	3.135,0	562,0	3.193,0	464,0
M36	HLS-36	4,00	4.049,0	662,0	4.122,0	547,0
M39	HLS-39	4,00	5.214,0	790,0	5.318,0	653,0
M42	HLS-42	4,50	6.457,0	908,0	6.585,0	751,0
M45	HLS-45	4,50	8.034,0	1.058,0	8.195,0	874,0
M48	HLS-48	5,00	9.729,0	1.193,0	9.917,0	986,0
M52	HLS-52	5,00	12.440,0	1.424,0	12.708,0	1.177,0
M56	HLS-56	5,50	15.499,0	1.644,0	15.828,0	1.359,0
M60	HLS-60	5,50	19.146,0	1.913,0	19.595,0	1.582,0
M64	HLS-64	6,00	23.093,0	2.168,0	23.620,0	1.792,0
M68	HLS-68	6,00	28.502,0	2.475,0	29.134,0	2.046,0
M72	HLS-72	6,00	33.928,0	2.802,0	34.738,0	2.317,0
M76	HLS-76	6,00	39.997,0	3.150,0	40.992,0	2.604,0

GF = ratio of yield point [%]

μG = thread friction

μK = washer friction



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HEICO-LOCK®	Stainless steel (AISI 316L EN 1.4404/4404 or equivalent alloy)
BOLT	Stainless steel A4

BOLT SIZE	HEICO ITEM NO.	THREAD PITCH [MM]	A4-70, MoS2 GF=0,65 μG=0,14 μK=0,15		A4-80, MoS2 GF=0,65 μG=0,14 μK=0,15	
			TORQUE [NM]	PRELOAD [KN]	TORQUE [NM]	PRELOAD [KN]
M3	HLS-3S	0,50	0,9	1,5	1,2	2,0
M3,5	HLS-3,5S	0,60	1,4	2,0	1,8	2,6
M4	HLS-4S	0,70	2,0	2,6	2,7	3,4
M5	HLS-5S	0,80	3,9	4,1	5,2	5,5
M6	HLS-6S	1,00	6,9	5,9	9,2	7,8
M8	HLS-8S	1,25	16,5	10,7	22,1	14,3
M10	HLS-10S	1,50	32,8	17,0	43,5	22,6
M12	HLS-12S	1,75	56,0	24,6	74,9	32,9
M14	HLS-14S	2,00	90,0	33,8	119,8	45,0
M16	HLS-16S	2,00	137,3	45,8	183,2	61,1
M18	HLS-18S	2,50	192,0	56,3	257,0	75,1
M20	HLS-20S	2,50	269,0	71,6	359,0	95,5
M22	HLS-22S	2,50	366,0	88,7	488,0	118,3
M24	HLS-24S	3,00	462,0	103,1	617,0	137,5
M27	HLS-27S	3,00	673,0	134,4	897,0	179,2
M30	HLS-30S	3,50	918,0	164,0	1.224,0	218,6
M33	HLS-33S	3,50	1.237,0	202,9	1.648,0	270,5
M36	HLS-36S	4,00	1.595,0	238,9	2.126,0	318,5
M39	HLS-39S	4,00	2.057,0	285,4	2.743,0	380,5
M42	HLS-42S	4,50	2.546,0	327,9	3.395,0	437,2
M45	HLS-45S	4,50	3.170,0	382,0	4.227,0	509,3
M48	HLS-48S	5,00	3.836,0	430,9	5.115,0	574,5
M52	HLS-52S	5,00	4.913,0	514,2	6.550,0	685,6
M56	HLS-56S	5,50	6.120,0	593,8	8.160,0	791,7
M60	HLS-60S	5,50	7.571,0	690,9	10.094,0	921,2
M64	HLS-64S	6,00	9.130,0	782,7	12.174,0	1.043,6
M68	HLS-68S	6,00	11.245,0	893,7	14.993,0	1.191,6
M72	HLS-72S	6,00	13.403,0	1.012,0	17.871,0	1.349,3
M76	HLS-76S	6,00	15.816,0	1.137,6	21.089,0	1.516,8

GF = ratio of yield point [%]

μG = thread friction

μK = washer friction



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