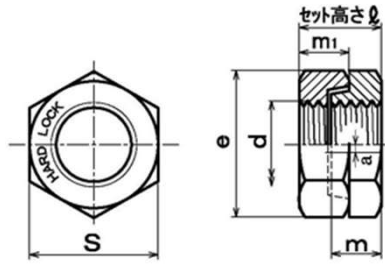




A new concept shapes safty
HARDLOCK Industry Co.,Ltd.



Basic Thin Type: Dimension table & tightening torque table

Dimensions in milimeters (mm)

Unit : mm

Nominal Size	Pitch		Thickness				Width across flats		e	Overall height	Unit Weight
			Convex nut		Concave nut						
	P		m		m1		s		approx.	l	g
d	Coarse	Fine	Basic	Tolerance	Basic	Tolerance	Basic	Tolerance		approx.	approx.
M16	2	1.5	10	0 -0.8	10	0 -0.8	24	0 -0.8	27.7	16.3	36
M18	2.5	1.5	11	0 -0.9	11	0 -0.9	27	0 -0.8	31.2	17.8	52
M20	2.5	1.5	12	0 -0.9	12	0 -0.9	30	0 -0.8	34.6	19.3	67
M22	2.5	1.5	13	0 -0.9	13	0 -0.9	32	0 -1	37	21.4	81
M24	3	2	14	0 -0.9	14	0 -0.9	36	0 -1	41.6	22.9	116
M27	3	2	16	0 -1.4	16	0 -1.4	41	0 -1	47.3	25.9	176
M30	3.5	2	18	0 -1.4	18	0 -1.4	46	0 -1	53.1	29.9	260
M33	3.5	2	20	0 -1.5	20	0 -1.5	50	0 -1	57.7	33.4	344
M36	4	3	21	0 -1.5	21	0 -1.5	55	0 -1.2	63.5	33.9	424
M39	4	3	23	0 -1.5	23	0 -1.5	60	0 -1.2	69.3	37.5	556
M42	4.5	4	25	0 -1.5	25	0 -1.5	65	0 -1.2	75	41	730
M45	4.5	4	27	0 -1.5	27	0 -1.5	70	0 -1.2	80.8	45	923
M48	5	4	29	0 -1.5	29	0 -1.5	75	0 -1.2	86.5	49	1,169
M52	5	4	31	0 -1.5	31	0 -1.5	80	0 -1.2	92.4	52.5	1,428
M56	5.5	4	34	0 -1.5	34	0 -1.5	85	0 -1.4	98.1	57.5	1,687

Dimensions in millimeters (mm)

Unit : mm

Nominal Size	Pitch		Thickness				Width across flats		e	Overall height	Unit Weight
			Convex nut		Concave nut						
	d	P		m		m1		s			
Coarse		Fine	Basic	Tolerance	Basic	Tolerance	Basic	Tolerance	approx.	approx.	approx.
M64	6	4	38	0 -1.5	38	0 -1.5	95	0 -1.4	110	63.5	2,304
M68			40	0 -1.7	40	0 -1.7	100	0 -1.4	115	66.6	2,700
M72			42	0 -1.7	42	0 -1.7	105	0 -1.4	121	68.6	3,060
M76			46	0 -1.7	46	0 -1.7	110	0 -1.4	127	76.6	3,740
M80			48	0 -1.7	48	0 -1.7	115	0 -1.4	133	80.6	4,250
M85			50	0 -1.7	50	0 -1.7	120	0 -1.4	139	82.6	4,610
M90			54	0 -2	54	0 -2	130	0 -1.6	150	90.6	5,900
M95			57	0 -2	57	0 -2	135	0 -1.6	156	95.6	6,770
M100			60	0 -2	60	0 -2	145	0 -1.6	167	100.6	8,430
M105			63	0 -2	63	0 -2	150	0 -1.6	173	105.6	9,250
M110			65	0 -2	65	0 -2	155	0 -1.6	179	107.6	11,750
M115			69	0 -2	69	0 -2	165	0 -1.6	191	115.6	12,280
M120			72	0 -2	72	0 -2	170	0 -1.6	196	120.6	13,330
M125			76	0 -2	76	0 -2	180	0 -1.6	208	128.6	16,290
M130			78	0 -2	78	0 -2	185	0 -1.6	214	130.6	17,150

Nut shape: JIS B1181 (2004)/ISO 4032

Screw precision: JIS B0205 (1998)/ISO 261 – 6H

Please inquire for dimensions, pitch and other specifications not mentioned above.

Specifications, including size, are subject to change without notice.

Tightening Torque Table Dimensions in newton meters

Nominal size	Pitch	Reference tightening torque for convex nut						Recommended tightening torque for convex nut
		*70% of the bolt yield point						
		Class4 (SS400 or equivalent)		Class8 (S45C)	Class10 (SCM435)	A2 (SUS304 or equivalent)		
		4.8 (320N/mm ²)		8.8 (640N/mm ²)	10.9 (900N/mm ²)	A2-50	A2-70	
CR3		HDZ35	Manganese Phosphate coating		Plain		Common to all materials	
M16	2	50	120	105	140	35		70
M18	2.5	70	165	140	195	45	100	100~150
M20	2.5	100	230	200	280	65	140	120~200
M22	2.5	135	315	270	380	90	190	150~250
M24	3	170	400	340	480	110	240	160~300
M27	3	250	585	500	700	165	350	250~390
M30	3.5	340	790	680	955	220	480	270~440
M33	3.5	460	1,080	925	1,300	300	650	290~490
M36	4	595	1,385	1,185	1,670	390	835	340~590
M39	4	765	1,790	1,530	2,160	500	1,080	390~640
M42	4.5	950	2,215	1,900	2,670	620	1,330	440~690
M45	4.5	1,185	2,775	2,370	3,340	780	1,670	490~740
M48	5	1,425	3,320	2,850	4,000	940	2,000	540~780
M52	5	1,845	4,305	3,685	5,190	1,210	2,590	590~830
M56	5.5	2,290	5,350	4,585	6,445	1,500	3,220	640~880
M64	6	3,460	8,070	6,915	9,725	2,270	4,860	690~930
M68		4,190	9,770	8,375	11,780	2,750	5,890	Tighten about 1 turn after tighten manually
M72		5,025	11,720	10,045	14,125	3,295	7,065	
M76		5,960	13,905	11,915	16,760	3,910	8,380	
M80		7,010	16,345	14,010	19,705	4,600	9,850	
M85		8,480	19,785	16,960	23,850	5,565	11,925	
M90		10,145	23,670	20,290	28,530	6,655	14,265	
M95		12,015	28,035	24,030	33,790	7,885	16,895	
M100		14,100	32,905	29,205	39,660	9,255	19,830	
M105		16,420	38,310	32,835	46,175	10,775	23,090	
M110		18,975	44,270	37,950	53,365	12,450	26,680	
M115		21,780	50,825	43,565	61,260	14,295	30,630	
M120		24,855	57,995	49,710	69,905	16,310	34,950	
M125		28,200	65,810	56,410	79,325	18,510	39,660	
M130	31,840	74,295	63,680	89,550	20,895	44,775		

The above reference tightening torque for the convex nut is calculated on the basis of the torque coefficient of 0.15.

The above tightening torque for the convex nut with HDZ35 is calculated on the basis of the torque coefficient of 0.35.

Regarding the tightening torque for the convex nut in A2, please check strength classification of the bolt used.

The above tightening torque for the convex nut is calculated to be 60 – 80 % of the Basic type.

The proof load of the convex nut is equal to the general single nut, therefore there is no unique torque value for the convex nut.

The concave nut can be tightened until contact with the convex nut even if its tightening torque value exceeds our recommended maximum value because the torque coefficient will vary depending on the surface roughness.

In the case of HDZ, please tighten the convex nut 50% more than the above torque value due to the high torque coefficient.