Safety is Power!

ISO9001 • JISQ9100

MS JAB CM016

JIS Q 9100:2009 ISO 9001:2008

It is an anti-loosening nut
which has remarkable locking force!

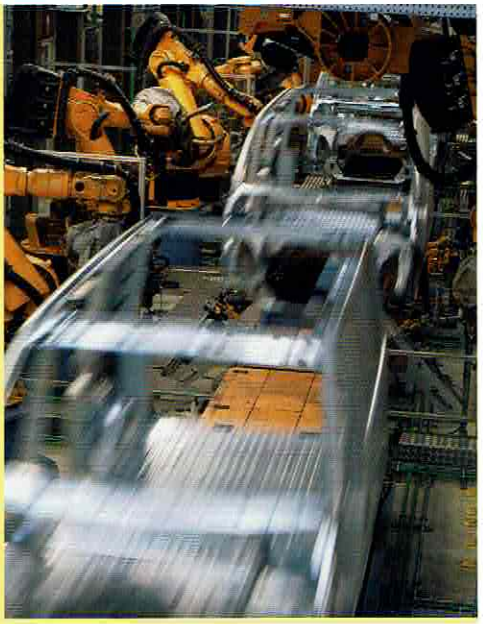
HARDLOCK®

Register of International Marks

HOPLOCK Industry Co. Ltd

APPLICATION







INSTALLATION PROCEDURE

Use a spanner to tighten the convex nut to a rated torque.

Run down the concave nut onto the convex nut manually.

Please make sure there is gap between the concave nut and the convex nut.
if the gap is less than 1 pitch, do not use the HARDLOCK Nut with this bolt.

Tighten the concave nut with a torque wrench or a spanner. Please refer to the tightening torque table.

Completion of tightening.
When removing nut, please remove by the reverse procedure.

Installation Hints :

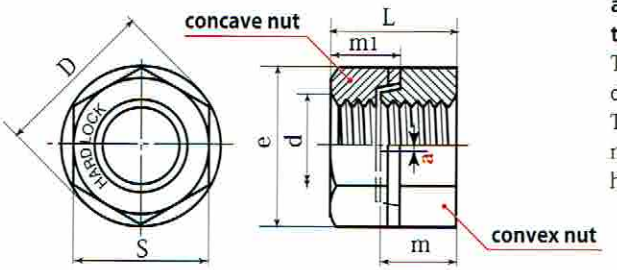
1. Make sure all parts and threads are clean and undamaged thereby ensuring the best assembly.
2. ANTI-SEIZE lubricant is recommended on all bolts and/or shafts along with the nuts tapered cone to prevent galling and seizing.
3. It is recommend to have at least 2 threads protruding beyond the top of the nut assembly.
4. Installation of the concave nut, refer to tightening torque table.
5. It is recommended to give the nut assembly an additionl turn after the first fastening for smooth engagement of the threads in the initial phase.

Precautionary statement :

1. Check the gap between convex nut and concave nut after tightening concave nut manually. If there is little gap, refrain from using the HARDLOCK Nut with the bolt.
2. Never install or remove both nuts simultaneously.

HARDLOCK NUT RIM & HARDLOCK NUT BASIC

HARDLOCK NUT RIM(HLN-R) TO METRIC THREADS



The gap between convex nut and concave nut after tightening concave nut to the specified torque value below.
The dimensions are slightly changed depending on the threading accuracy of bolts. There is no effect on loosening if the nuts are not in contact as long as the installation torque has been achieved.

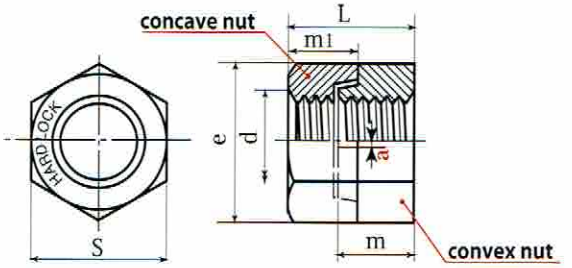
〈Dimension table〉

a: Eccentricity(All on the Lower nuts)

d		m		m1		S		e	L	D	Unit Weight	Availability				Tightening Torque for concave nut
Nominal Size or Basic Major Dia. of Thread		Thickness Convex Nuts		Thickness Concave Nuts		Width Across Flats		Width Across Corners	Overall Height	Dia. of Rim		Class4 SS400	Class8 S45C	Class10 SCM435	A2 SUS304	
		Basic	Tolerance	Basic	Tolerance	Basic	Tolerance	Approx.	Approx.	Approx.	Approx.					
M5	0.8	4.0	±0.2	4.0	±0.2	8.0	0/-0.2	9.2	7.2	9.2	1.9	○			○	2～*3
M6	1.0	5.0	±0.3	5.0	0/-0.3	10.0	0/-0.6	11.5	8.5	11.5	4.0	○			○	4～*5
M8	1.25	6.5	0/-0.58	6.5	0/-0.58	13.0	0/-0.7	15.0	10.8	15.0	8.9	○	○	○	○	9～*13
M10	1.5	8.0	0/-0.58	8.0	0/-0.58	17.0	0/-0.7	19.6	13.2	19.6	18.0	○	○	○	○	18～*24
M12	1.75	10.0	0/-0.58	9.3	0/-0.58	19.0	0/-0.8	21.9	16.0	21.9	26.0	○	○	○	○	27～*39
M16	2.0	12.0	±1.0	11.0	0/-0.7	24.0	0/-0.8	27.7	20.3	27.7	46.0	○	○	○	○	70～*100
M20	2.5	15.0	±1.0	14.5	0/-0.7	30.0	0/-0.8	34.6	25.8	34.6	93.0	○	○	○		120～*200
M22	2.5	17.0	±1.0	15.6	0/-1.2	32.0	0/-1.0	37.0	29.0	37.0	115.0	○	○	○		150～*250
M24	3.0	18.0	±1.0	17.6	0/-1.2	36.0	0/-1.0	41.6	31.5	41.6	183.0	○	○	○		160～*300
M27	3.0	21.0	±1.0	17.6	0/-1.2	41.0	0/-1.0	47.3	33.5	47.3	243.0	○	○	○		250～*390
M30	3.5	23.0	±1.0	18.6	0/-1.2	46.0	0/-1.0	53.1	36.5	53.1	312.0	○	○	○		270～*440

Threads accuracy : JIS B0205(1998)/ISO261 6H
Material/ Finish : Class4 / JIS SS400 equivalent (Low carbon steel), Class8 / JIS S45C (Medium carbon steel), A2 / JIS SUS304 equivalent (Stainless steel)
*Sizes over M20 in A2 are also available in HLN-B (Basic type)
*The concave nut can be tighten beyond the maximum torque value until the concave nut is touching the convex nut because the coefficient of friction will vary depending on the surface roughness.
*In the case of Hot Dip Zinc Galvanized (HDZ35) finish, please tighten the concave nut 50% more than the above tightening torque value due to the high coefficient of friction.

HARDLOCK NUT BASIC(HLN-B) TO INCH THREADS 〈MADE-TO-ORDER〉



a: Eccentricity(All on the Lower nuts)

〈Dimension table〉

d		S			e		m & m1			L	Unit Weight	Tightening Torque for concave nut
Nominal Size or Basic Major Dia. of Thread		Width Across Flats			Width Across Corners		Thickness Hex Nuts			Overall Height		
		Basic	Max.	Min.	Max.	Min.	Basic	Max.	Min.	Approx.	Approx.	
UNC 1/4	0.2500	7/16	0.438	0.428	0.505	0.488	7/32	0.226	0.212	0.370	3.3	4～*5
UNC 5/16	0.3125	1/2	0.500	0.489	0.577	0.557	17/64	0.273	0.258	0.433	7.9	9～*13
UNC 3/8	0.3750	9/16	0.562	0.551	0.650	0.628	21/64	0.337	0.320	0.535	17.6	18～*24
UNC 7/16	0.4375	11/16	0.688	0.675	0.794	0.768	3/8	0.385	0.365	0.610	20.8	27～*39
UNC 1/2	0.5000	3/4	0.750	0.736	0.866	0.840	7/16	0.448	0.427	0.724	28.1	40～*58
UNC 5/8	0.6250	15/16	0.938	0.922	1.083	1.051	35/64	0.559	0.515	0.937	52.8	70～*100
UNC 3/4	0.7500	1-1/8	1.125	1.088	1.299	1.240	41/64	0.665	0.597	1.106	105.0	120～*200
UNC 7/8	0.8750	1-5/16	1.312	1.269	1.516	1.447	3/4	0.776	0.704	1.307	130.0	150～*250
UNC 1	1.0000	1-1/2	1.500	1.450	1.732	1.653	55/64	0.887	0.811	1.500	246.0	250～*390