



Standard Part

Prevailing Torque Lock Nuts – Non-Metallic Insert, Inch (Non-Preferred)

STPE260

87366963

Rev Z

Page 1 of 7

1. SCOPE

The fasteners defined by this specification are non-preferred Grades B and C Inch Non-Metal Prevailing Torque Lock Nuts with coarse (UNC) and fine (UNF) threads. This standard conforms essentially with IFI-100 Standard, except for marking.

When a standard is referenced in a drawing or specification, it is understood that the reference is to the latest revision of the standard, unless stated otherwise.

2. GENERAL

Prevailing torque type is a nut which is frictionally resistant to rotation due to a self-contained prevailing torque feature, and not because of a compressive load developed against the bearing surface of the nut.

Prevailing torque is the torque necessary to rotate the nut on its mating externally threaded component, with the torque being measured while the nut is in motion, and with no axial load in the mating component.

Prevailing torque nuts covered by this standard are non-metallic, top insert, two-piece construction nuts which derive their prevailing torque characteristics from a full ring of non-metallic material located and retained in the nut at its top surface.

3. PART DESCRIPTION

Typical part description for BOM's and CAD drawings entered by Standards.

NUT, PREV TORQ NON-MTL 1-14 GR C ZND

For cross reference listing of company part numbers, go to [PARTsolutions](#).

4. RELATED DOCUMENTS

4.1 REFERENCE STANDARDS

CNH STPA020—Fastener Finishes and Material Specifications

CNH MAT0310—Zinc Plating

ANSI/ASME B1.1—Unified Inch Screw Threads

ASME B18.2.2—Square and Hex Nuts (Inch Series)

SAE J122—Surface Discontinuities on Nuts

SAE J995—Mechanical and Material Requirements for Steel Nuts

CNH STPA130—Restricted Standard Parts – Cadmium Finish

IFI-100/107—Prevailing-Torque Type Steel Hex and Hex Flange Nuts

AUTHOR	APPROVED BY	ECO	PART NUMBER
D RAVI	17APR26 A KHAN	17APR26 35526512	87366963

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Standard Part

Prevailing Torque Lock Nuts – Non-Metallic Insert, Inch (Non-Preferred)

STPE260

87366963

Rev Z

Page 2 of 7

4.2 REPLACED STANDARDS

Case E-136—Hex Prevailing Torque Nuts Non-Metallic Insert General Specification

Case E-137—Hex Prevailing Torque Non-Metallic Insert Coarse Thread Locknuts

Case E-138—Hex Prevailing Torque Non-Metallic Insert Fine Thread Locknuts

5. REQUIREMENTS

5.1 MECHANICAL DIMENSIONS

Hex Nut thread geometry shall conform to Unified Series 2B per ANSI/ASME B1.1. The dimensions shall meet the requirements of ASME B18.2.2 (see Tables 1 and 2).

5.2 MATERIAL

These nuts are available in two strength grades, IFI grades B and C as follows:

Grade	Locknut Size (Bolt Diameter) in.	Proof Load Stress psi	Rockwell Hardness
B	No. 4 thru 1	120,000	C28 max
	Over 1 thru 1-1/2	105,000	C28 max
C	No. 4 thru 5/8	150,000	C24/32
	Over 5/8 thru 1		C26/34
	Over 1 thru 1-1/2		C25/36

Locknuts shall be made of carbon or alloy steel of a grade adequate for the locknut to meet the mechanical and performance requirements of IFI-100 Standard. Material per CNH STPA020.

5.3 HEAT TREATMENT

Grade B and C locknuts may be treated as necessary to meet the mechanical and performance requirements of this standard.

5.4 SURFACE DISCONTINUITIES

All products under this specification shall be free from burrs, seams, laps, loose scale, irregular surfaces and any defects affecting their serviceability per SAE J122 (Surface Discontinuities on Nuts).

5.5 APPLICATION GUIDE

For general application where a prevailing torque nut is desirable the “all metal” type should be given first consideration primarily because of lower cost, absence of temperature limitations and advantages of one piece construction.

The non-metallic type should be restricted to use where machined threads are involved and then confined to the light, regular series, coarse thread, if at all possible.



Standard Part

Prevailing Torque Lock Nuts – Non-Metallic Insert, Inch (Non-Preferred)

STPE260

87366963

Rev Z

Page 3 of 7

Non-metallic insert nuts are not to be used in conjunction with externally threaded components having drilled holes, milled slots, or keyways which the insert must pass over during assembly.

5.6 THREAD START

Constriction of the locking feature shall be such that nuts 3/8 inch size and smaller will assemble a minimum of one half turn, and size 7/16 inch and larger a minimum of one full turn, by hand, on a basic "GO" thread plug gage. The plug gage shall be without a chip groove, and shall have a point with dimensions conforming to those for the point on hex cap screws.

5.7 BASIC DIMENSIONS:

The portion of the locknut containing the prevailing torque feature may have a special contour within the maximum permitted width across flats and thickness. The minimum width across flats shall not apply at depressed portion of locknut at prevailing torque feature.

5.8 PROOF LOAD, CLAMP LOAD AND PREVAILING TORQUES

All non-metallic insert locknuts must meet requirements shown in IFI-100/107.

5.9 MARKING

Grade C nuts shall be marked according to page 3. Grade B nuts may be unmarked or marked according to page 3. (Background: IFI-100 Standard specifies one circumferential notch to identify grade B locknuts and 2 circumferential notches to identify grade C locknuts. Military standard MS 17829 specifies one circumferential notch for grade C locknuts. Manufacturers have been conforming to the military standard.)

Standard Part

Prevailing Torque Lock Nuts – Non-Metallic Insert, Inch (Non-Preferred)

STPE260

87366963

Rev Z

Page 4 of 7

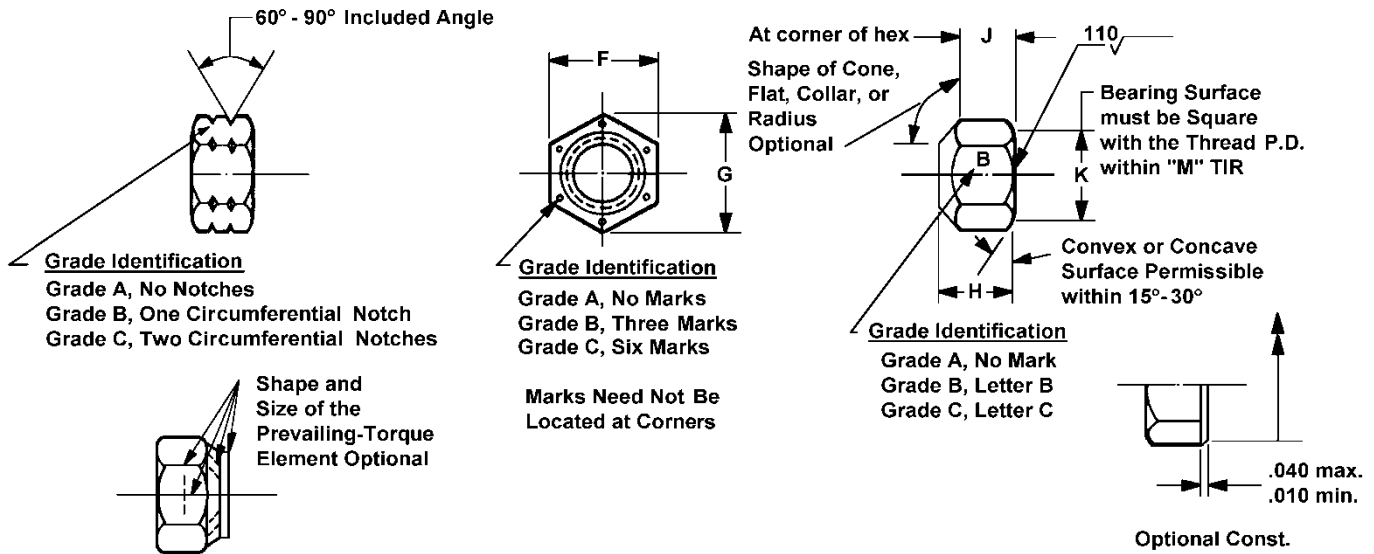


Table 1. Non-Metallic Insert Prevailing Torque Nuts - General Dimensions

Nominal Size or Basic Major Dia.		Width Across Flats		Width Across Corners		Thickness		Height of Hex	Diameter of Bearing Surface		Bearing Surface Angularity FIR
						Insert Type Locknut	All Types				
		F		G		H		J	K		M
		Max.	Min.	Max.	Min.	Max.	Min.	Min.	Max.	Min.	Max.
#6	0.138	0.313	0.302	0.361	0.344	0.188	0.102	0.075	0.313	0.297	0.008
#8	0.164	0.345	0.332	0.397	0.378	0.239	0.117	0.083	0.345	0.357	0.009
#10	0.190	0.376	0.362	0.433	0.413	0.249	0.117	0.083	0.376	0.357	0.009
#12	0.216	0.438	0.423	0.505	0.482	0.328	0.148	0.103	0.438	0.416	0.010
1/4	0.250	0.439	0.428	0.505	0.488	0.328	0.212	0.145	0.438	0.416	0.010
5/16	0.312	0.502	0.489	0.577	0.557	0.359	0.258	0.166	0.502	0.475	0.011
3/8	0.375	0.5645	0.551	0.650	0.628	0.469	0.320	0.198	0.564	0.534	0.012
7/16	0.437	0.627	0.616	0.724	0.698	0.524	0.365	0.223	0.689	0.597	0.013
1/2	0.500	0.752	0.736	0.866	0.840	0.609	0.427	0.262	0.752	0.712	0.014
9/16	0.562	0.877	0.861	1.010	0.982	0.656	0.473	0.286	0.877	0.830	0.015
5/8	0.625	0.940	0.922	1.083	1.051	0.765	0.535	0.329	0.939	0.890	0.016
3/4	0.750	1.127	1.052	1.299	1.191	0.890	0.617	0.382	1.127	1.033	0.018
7/8	0.875	1.3145	1.239	1.516	1.403	0.999	0.724	0.450	1.314	1.230	0.020
1	1.000	1.502	1.427	1.732	1.619	1.124	0.831	0.513	1.502	1.418	0.022
1 1/8	1.125	1.6895	1.614	1.949	1.859	1.281	0.939	0.576	1.689	1.603	0.025
1 1/4	1.250	1.877	1.801	2.165	2.046	1.422	1.030	0.628	1.877	1.781	0.028
1 3/8	1.375	2.0645	1.973	2.382	2.259	1.609	1.138	0.681	2.064	1.959	0.031
1 1/2	1.500	2.252	2.159	2.598	2.473	1.671	1.245	0.757	2.252	2.138	0.034

See Notes on following page.



Standard Part

Prevailing Torque Lock Nuts – Non-Metallic Insert, Inch (Non-Preferred)

STPE260

87366963

Rev Z

Page 5 of 7

NOTES:	1.	Dimensions. All dimensions are in inches
	2.	Application of Dimensions. Except as noted dimensions apply to all grades of locknuts.
	3.	Tapped Holes. Tapped holes shall be countersunk on the bearing face. The maximum countersink diameter shall be the thread basic (nominal) major diameter plus .030 in. for 3/8 in. nuts or smaller, and 1.08 times the basic major diameter for nuts larger than 3/8 in. No part of the threaded portion shall project beyond the bearing surface.
	4.	Concentricity of Tapped Hole. Axis of tapped hole shall be concentric with axis of locknut body within a tolerance of 1.5 percent (3 percent FIR) of the maximum width across flats.



Standard Part

Prevailing Torque Lock Nuts – Non-Metallic Insert, Inch (Non-Preferred)

STPE260

87366963

Rev Z

Page 6 of 7

Table 2. Non Metallic Insert Prevailing Torque Nuts

Nominal Diameter	Threads per Inch	Material	Thickness (max.)	DAC	DOR	PLN	ZND
#6	32	SST (18-8)				90472547	
#8	32	B					87319809
#8	32	SST (18-8)				90397962	
#10	24	B					86632551
#10	24	SST				9448	
#10	32	B		90338808			20332
#12	24	SST				91874369	
1/4	20	B		90418982			86625061
1/4	20	SST				8914	
1/4	28	B		90338805			
5/16	18	B		90338806	90429451		86050277
5/16	18	SST				47575188	
5/16	18	@SST				92826324	
3/8	16	B		90395301			86625064
3/8	16	5	.50				83959187
3/8 *	16	B	.281				86625065
3/8	24	B					20349
7/16	14	B					86637736
1/2 *	13	B	.328				86632537
1/2	13	B		90404695			87530607
1/2	13	SST				47575199	
1/2	13	@SST				92826323	
9/16	18	5				126292	
5/8	11	B		90395302			86639566
5/8	11	C			92067826		91877562
5/8	18	B		90399030			
5/8 *	18	B	.406				83991073
5/8 *	18	C	.406				86624024
3/4	10	B		90372270			86754
3/4	10	C			92067825		86632685
3/4	10	@SST				90389048	
3/4	16	B			87344001		
1	8	B					86755
1	8	SST (18-8)				90392728	
1 *	8	B	.892				84158901
1	8	C					84363632
1 1/4 *	7	B	1.109				84158902

* Thin Hex Nut

@ 18-8 Stainless Steel with Black Everlube 620C lubricant which shall be clean and dry to touch



Standard Part

Prevailing Torque Lock Nuts – Non-Metallic Insert, Inch (Non-Preferred)

STPE260**87366963**

Rev Z

Page 7 of 7

Table 2. Non Metallic Insert Prevailing Torque Nuts (continued)

Nominal Diameter	Threads per Inch	Material	Thickness (max.)	DAC	DOR	PLN	ZND
1 1/2 *	12	B	.828				86632538
1 1/2 *	12	C	1.09				91756556
1 1/2 *	6	B	.828				84158900
1 1/2 *	6	B	1.313				84158903

* Thin Hex Nut