1. SCOPE

The fasteners defined by this specification are Metric Non-Metallic Insert Prevailing Torque Nuts with coarse and fine threads.

This specification contains elements of standards: ISO 7040 and ANSI B18.16.3M.

This standard may differ in some respects with certain segments of ISO and national standards. In recognition of these possible differences, the sizes and tolerance ranges used were established in an effort to enable the use of commercially available items, dimensionally interchangeable worldwide.

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 CAD drawings and BOM's entered by Standards.

NUT, PREV TORQUE NON-MTL M8X8 10 ZND

For cross-reference listing of company part numbers, go to CNH Catalogue.

4. RELATED DOCUMENTS

4.1 REFERENCE STANDARDS

CNH STPA020—Fastener Finishes and Material Specifications
CNH MAT0310—Zinc Plating
SAE J122—Surface Discontinuities on Nuts
ISO 898/2—Mechanical Properties of Nuts with Specified Proof Load Values - Coarse Thread
ISO 2320—Prevailing Torque Steel Hex Nuts - Mechanical and Performance Properties.
ISO 7040—Prevailing torque type hex nuts (with non-metallic insert), style 1 - Classes 5, 8 and 10
ANSI B18.16.1M—Mechanical & Performance Requirements for Prevailing Torque Steel Metric Hex Nuts
ANSI B18.16.2M—Torque/Tension Test Requirements for Prevailing Torque Steel Metric Hex Nuts
ANSI B18.16.3M—Dimensional Requirements for Prevailing Torque Steel Metric Hex Nuts
DIN 985—Hexagon Nuts Self-Locking Thin Type
Fiat 10125—Prevailing Torque Hexagon Nuts with Polyamide Insert
Fiat 10125/03—Prevailing Torque Hexagon Nuts with Polyamide Insert-Severe Applications
Iveco 18-1103— Zinc-Nickel Electrolytic Coating for Ferrous Metal Parts

4.2 REPLACED STANDARDS

Case EM-033—Hex Nuts Prevailing Torque Non-Metallic Insert Preferred
Case EM-034—Hex Nuts Prevailing Torque Non-Metallic Insert Non-Preferred

5. REQUIREMENTS

5.1 MATERIAL

Material as designated by part number per CNH STPA020. Material properties: Steel, ISO Classes, 5, 8 and 10, in accordance with ISO 2320. Stainless Steel Material A4-80 in accordance with ISO 3506-2.

5.2 PREFERRED PARTS POLICY

Preferred parts are so designated to reduce variety of parts and assure maximum availability and cost savings:

Nominal Sizes: M6, 8, 10, 12, 16, 20, 24, 30, 36
Material: Class 8
Finish: Zinc dichromate (ZND)

5.3 MECHANICAL DIMENSIONS

All dimensions in this standard are in millimeters. All unspecified detail must conform to standards listed above.

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.

5.5 THREADS

Threads prior to introduction of the prevailing-torque feature shall be standard (coarse) pitch ISO metric screw threads, tolerance class 6H.

5.6 MARKING

Nuts of thread diameters of 5 mm and larger and property classes equal to or higher than 8 shall be marked with the property class designation symbol per ISO 898/2.

5.7 MECHANICAL AND PERFORMANCE REQUIREMENTS

Nuts covered by this standard shall meet mechanical and performance requirement as specified in one or more of the following standards: ISO 2320, ANSI B18.16.1M, and ANSI B18.16.2M.

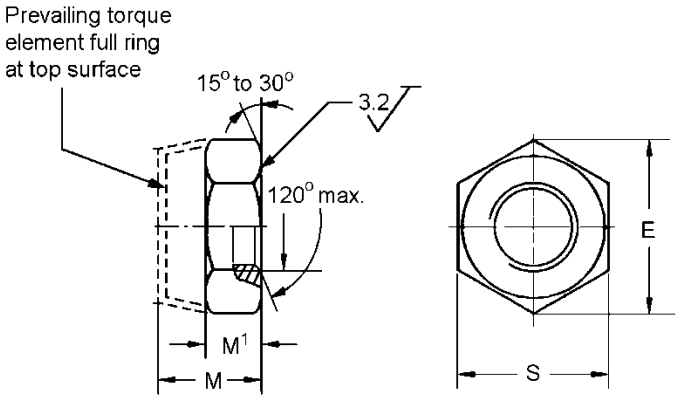

Table 1: Prevailing Torque Nuts – Metric Non-Metallic Insert Nuts, M4 through M16

Nominal Size			M4*	M5*	M6	M8	M10	M12	M14*	M16
S	Width Across Flats	max.	7	8	10	13	16	18	21	24
		min.	6.78	7.78	9.78	12.73	15.73	17.73	20.67	23.67
E	Width Across Corners	max.	8.08	9.24	11.55	15.01	18.48	20.78	24.25	27.71
		min.	7.66	8.79	11.05	14.38	17.77	20.03	23.35	26.75
M	Thickness - ISO	max.	6	6.8	8	9.5	11.9	14.9	17	19.1
	Fiat – Refer to Table 3	min.	5.3	6	7.2	8.5	10.9	13.9	15.8	17.8
M^1	Wrenching Height	min.	2.2	2.75	3	3.7	4.8	6.7	7.7	8.8
	Nominal Pitch		0.7	0.8	1	1.25	1.5	1.75	2	2

* Non-preferred sizes

Table 2: Prevailing Torque Nuts – Metric Non-Metallic Insert Nuts, M18 through M36

Nominal Size			M18	M20	M22	M24	M27	M30	M36
S	Width Across Flats	max.	27	30	32	36	41	46	55
		min.	26.16	29.16	31	35	40	45	53.8
E	Width Across Corners	max.	--	34.64	--	41.57	--	53.12	63.51
		min.	29.56	32.95	35.03	39.55	45.2	50.85	60.79
M	Thickness - ISO	max.	20	22.8	25	27.1	27	32.6	38.9
	Fiat – Refer to Table 3	min.	19.18	20.7	23.7	25.6	25	30.1	36.4
M^1	Wrenching Height	min.	12.1	10.9	14.5	13	14.8	15.7	19
	Nominal Pitch		2.5	2.5	2.5	3	3	3.5	4

Table 3a: Prevailing Torque Nuts – Metric Non-Metallic Insert Nuts

Nominal Size	Pitch	Height	Material	Nut Finish					
				ZND	PLN	PHC	BZN	DAC	DOR
2.5	0.45	3.5	8	84180938					
3	0.5	4.5	8	87358558					
4	0.7	6	8	86625075					90433532
5	0.8	6.8	8	86639241				90392593	
**5	0.8	5	SST – A2		#92285757				
6	1	4.8	8	412152				90349702	
6	1	8	8	393392			87016580	90349697	51683565
6	1	8	10						51683567
8	1.25	10.4	8	393393				90349724	
8	1.25	10.6	8	87597953					
8	1.25	10.6	SST		920008122				
**8	1.25	8	SST (18-8)		90397976				
**8	1.25	8	8	437013					
8	1.25	8.8	8	440431					
8	1.25	9.5	8	412250				90349712	51683568
8	1.25	9.5	10						51683569
10	1.5	10	8	#84100524	440430			#90349736	
*10	1.5	10	SST		#84253870				
10	1.5	11.5	8	756970					
10	1.5	11.9	8	412141				87664047	51683570
10	1.5	11.9	10						51683571
**12	1.5	12	10	47551523					
**12	1.75	12	8	#84278115				#90399031	
12	1.75	14.9	10			87021758			
12	1.75	13.8	10	87497918					
12 (DIN)	1.75	14	8	412126					
12 (ISO)	1.75	14.9	8	87497916					51683959
12 (ISO)	1.75	14.9	10					90372267	51683994
12	1.75	15.6	8	393395					
16	1.5	17.6	8	412589					
16	2		10	86012007					
16	2	19.1	8	412066				90349739	51684117
16	2	19.1	10						51684123
**16	2	16	SST		84312238				
18	1.5	***18.5	8		87489980				

* Thin Nut **Height per DIN 985 ***Height per UNI 5588 # DIN Head

Table 3a: Prevailing Torque Nuts – Metric Non-Metallic Insert Nuts (Continued)

Nominal Size	Pitch	Height	Material	Nut Finish					
				ZND	PLN	PHC	BZN	DAC	DOR
20	1.5	22	8	84015548					
*20	1.5	**20	10	87489983					
*20	2.5	**20	8	82020635					
20	2.5	23	8	412180					51684139
20	2.5	23	10	84010564					51684143
22	2.5	25	8	86639242					
22	2.5	25	10	91703255					
24	1.5	27.1	8	87682418					
24	2	27.4	8	84011668					
24	1.5	27.1	8	87682418					
24	2	23.9^	12						47582001
24	2	27.4	8	84011668					
24	3	18.5	8		9837597				
24	3	**24	12					48135673	
24	3	27.1	8	86639243					51684147
24	3	27.1	10						51684150
24	3	28	8	9837788					
24	3	28	10	76040495					
27	2	30.8	10	76049026					
27	3	27	10	92263883					
30	3.5	24	10	76040496					
30	2	**30.1	8	47705809					
36	4	**36	8	48135674					

* Thin Nut **Height per DIN 985 ***Height per UNI 5588 # DIN Head ^ Per ISO 10513

Table 3b. Prevailing Torque Nuts – Metric Non-Metallic Insert Nuts (ISO 7040)

Stainless Steel Material A4-80 per ISO 3506-2

These nuts shall be provided with Everlube 620C lubricant which shall be clean and dry to touch

Nominal Diameter	Pitch	Material	Finish	Part Number
4	0.7	A4-80	PLN	51486565
6	1	A4-80	PLN	51487057
8	1.25	A4-80	PLN	51487061
10	1.5	A4-80	PLN	51487101
12	1.75	A4-80	PLN	51487102
16	2	A4-80	PLN	51487103

Table 3c. Prevailing Torque Nuts – Metric Non-Metallic Insert Nuts

Nominal Diameter	Pitch	Height	Material	Finish	Part Number
8	1.25	**8	8	BGM	92139024
10	1.5	10	8	ZN-NI-4	92173024
10	1.5	10	8	ZN-NI-6	#92030897
10	1.5	10	8	BGM	92092867
10	1.5	**10	10	BGM	92139025
24	3	28	10	BGM	92174032
30	2	**30	8	BGM	92139026

DIN Head
**Height per DIN 985

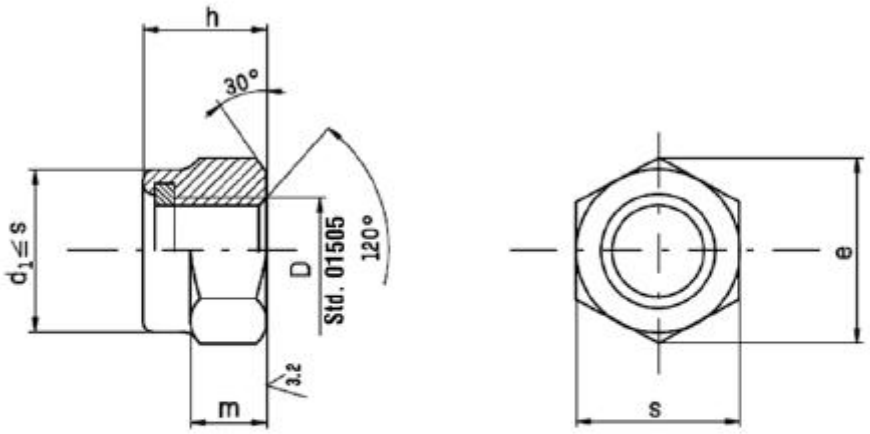

Table 4: Prevailing Torque Nuts – Metric Non-Metallic Fiat 10125

Designation D (6H)	s			e min.	h max.	m min.
	nom.	tol.	Devtn. limit			
M4	7	h12	0 -0.150	7.4	6	3.2
M5	8			8.87	6.8	4
M6	10	h13	0 -0.220	11.05	7.8	4.8
M8	13		0 -0.270	14.38	10.6	6.4
M10 X 1.25	17			18.90	12.3	8
M10 X 1.5						
M12 X 1.25	19		0 -0.330	21.10	14.8	9.6
M12 X1.5						
M12 X 1.75						
M14 X 1.5	22			24.49	16.6	11.2
M14 X 2						
M16 X 1.5	24			26.75	18	12.8
M18 X 1.5	27			30.14	21	14.4
M20 X 1.5	30			33.53	23	16
M24 X 2	36	h14	0 -0.620	39.98	28	19.2

Table 5a: Prevailing Torque Nuts – Metric Non-Metallic Fiat 10125

Nominal Size	Pitch	Height	Material	Nut Finish				
				ZND	Zn-Ni	BZN	BGM	DAC
4	0.7	6	10	12574021				
*5	0.8	5.4	04	12577811		12577817		
5	0.8	6.8	8	12574115				
5	0.8	6.8	10	12574121				
*6	1	6	04	12575411				
*6	1	6	05	12575421				
6	1	7.8	10	12574221				90374442
6	1	7.8	8	12574211		12574217	90497451	90349700
8	1.25	10.6	10	16104121		16104127		90349734
8	1.25	10.6	8			16104117	5182282	16104114
%8	1.25	10.6	8	15503611				90349707
*8	1.25	8.5	04	16104411		16104417	5182241	16104414
*8	1.25	8.5	05	16104421				
%*8	1.25	8.5	05	15505725				
*8	1.25	8.5	04	@16104511				@90349722
*10	1.25	10	04	#12575611				
*10	1.25	10	05	#12575621				
*10	1.25	10	8	#920092563				
10	1.25	12.3	8	#12574511				#12574514
%10	1.25	12.3	8	#15503711				
10	1.25	12.3	10	#12574521				
%10	1.25	12.3	10	#15503721				
10	1.5	12.3	8	#12577211			#90468848	
10	1.5	12.3	10	#12577221				#90367865
%*12	1.25	12	05	#15506225				
*12	1.25	12	04	#16105111				
12	1.25	14.8	8	#16105011				#16105014
12	1.25	14.8	10	#16105021				
12	1.25	14.8	10	#16105025				
12	1.50	14.8	8	#12574711				
12 (DIN)	1.75	14.8	8	#12577511				#12577514
12	1.75	14.8	10	#12577521			#90393189	
*14	1.5	14	05	#12575821				#12575824
*14	1.5	14	04	#12575815				
14	1.5	16.6	8	#12574811				
14	1.5	16.6	8	#12574815				

***** Thin Nut **Height per DIN 985 ***Height per UNI 5588 # DIN 6924 Head @ m=5.8
% For severe applications per Fiat 10125/03

Table 5a: Prevailing Torque Nuts – Metric Non-Metallic Fiat 10125 (Continued)

Nominal Size	Pitch	Height	Material	Nut Finish				
				ZND	Zn-Ni	BZN	BGM	DAC
14	1.5	16.6	10	#12574821				
14	1.5	16.6	10	#12574825				
14	2	16.6	8	#12577311				
14	2	16.6	10	#12577321				
*16	1.5	15	04	12575911				12575914
*16	1.5	15	05	12575921				
16	1.5	18	8	12574911			90509359	
16	1.5	18	10	12574921			91776282	
16	1.5	18	10	15504021				
16	2	18	8	12577411			91776283	
16	2	18	10	12577421			92248822	
*18	1.5	16	04	12576011				12576014
*18	1.5	16	05	12576021				
18	1.5	21	8	12575011	90509363			
18	1.5	21	10	12575021				
18	2.5	21	8	12577611				
*20	1.5	17.5	04	12577011				
*20	1.5	17.5	05	12577021				
20	1.5	23	8	12575111				
20	1.5	23	10	12575121				
20	2.5	23	8	12577711			92092758	90349740
20	2.5	23	10			12577727		
*24	2	21	05	12576121				
24	2	28	8	12575311				
24	2	28	10	12575321				

***** Thin Nut **Height per DIN 985 ***Height per UNI 5588 # DIN 6924 Head
% For severe applications per Fiat 10125/03
Zn-Ni – Zinc Nickel per Iveco 18-1103 Fe/ZnNi 7 IV

Table 5b: Prevailing Torque Nuts – Metric Non-Metallic Fiat 10125

Nominal Size	Pitch	Height	Material	Nut Finish
				ZN-NI-6
12	1.25	14.8	8	#92030893

DIN 6924 Head