

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS S-E-71.101-GS/PL
		Former Designation: ESP-E-71.101-GS
TITLE:	Stamped Nuts - English Series (Noun Code 5780)	CURRENT REV No.: 1506
		DATE: June 2015
WRITTEN/EDITED BY: Materials Engineering	APPROVED BY: Materials Engineering	SUPERSEDES: ESP-E-71.101-GS - August 2006
PRINTED COPIES OF THIS DOCUMENT MUST BE VERIFIED FOR CURRENT REVISION		
<i>This specification may involve hazardous materials, equipment, and procedures. This specification does not purport to address all of the safety issues associated with its use. The user is responsible to consult appropriate safety and health practices and to determine the applicability of regulatory limits prior to use.</i>		
Change Notice: Changed to New MPAPS format; Combined GS, PP.		

1.0 GENERAL: This specification covers performance and other requirements for stamped nuts described in section 10.0.

Formed thread stamped nuts are single thread nuts with the thread engaging portion spirally formed permitting free spinning run down on the bolt.

Self-threading stamped nuts are turned on an "unthreaded stud" (any projection without screw threads). Generally the projection is solid or tubular metal or plastic.

2.0 APPLICATIONS: Stamped nuts are generally used for lighter duty applications, where the primary stress is applied across the axis of the bolt or stud and the tension load on the nut is moderate. These types of fasteners are often used to reduce assembly costs. Formed thread stamped nuts have a self-cleaning action which allows assembly to bolts clogged with paint, dirt, burrs or other foreign elements.

3.0 MISCELLANEOUS DIMENSIONS: Taper on sides of hexagon portions of nuts (angle between one side and the axis of nut) will not exceed one degree, the maximum limit specified being the largest dimension. Tolerance on steel stock thickness will be plus or minus .001 inch for thicknesses up to and including .028 inch, and plus or minus .0015 inch for heavier thicknesses.

4.0 THREAD EMBOSSEMENTS: Detail of the thread engaging portion of formed thread style nuts will be such as to permit nut to assemble readily with the specified screw and not strip or deform at the recommended torques. The edges around the opening will be spirally formed to match the pitch of the screw threads and, as indicated, the top or top and bottom corners on edges of holes will be swaged to provide flats for bearing on flanks of the mating thread.

The detail and formation of embossments in thread forming style nuts will be such as to enable nuts to cut or form threads on cast or wire studs conforming to the recommended stud designs contained herein, at or below the recommended torques. The formed hole in these embossments will accept plain cylindrical gages having diameters conforming to the tabulated formed hole gage diameters when inserted parallel to the axis of the nut.

5.0 SCREW LENGTH: The proper machine screw length to be used with single thread engaging nuts, is to allow one and one-half threads to protrude beyond the thread engaging element of the

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fastener. Sheet metal screws with tapered ends (Types AB and B) should protrude two or three threads beyond the thread-engaging element to assure engagement on the full screw root diameter.

6.0 MATERIAL: Spring steel, 1050 thru 1065 per MPAPS A-0, Part I, suitably processed to meet the performance requirements of the specification.

7.0 FINISH: Nuts will be furnished plain, plated or coated in accordance with the International Engineering Material Specification and class listed below.

Plain (PLN).

Zinc Trivalent (ZN6A) – MPAPS G-20, Class 6A.

Phosphate Coating (PHC) – MPAPS G-1, Class B-2.

Chromium Bright (CRB) – CEMS G-19, Part III, Class 13.

8.0 RESTRICTED CHEMICAL SUBSTANCES: Effective January 1, 2007, all product supplied to the requirements of this specification must comply with the requirements of the MPAPS B-50 specification.

9.0 SURFACE DISCONTINUITIES: Allowable limits defined in MPAPS F-31, Part II.

Dimensions in inches:

TYPE AC
(Acorn Type)

Nominal Size	L Max	Torque lb-In	Tension lb
6 -32	.21	9	130
8 -32	.24	11	150
10 -24	.25	18	240
10 -32	.25	15	150
1/4 -20	.28	38	350
5/16-18	.36	70	470
3/8 -16	.34	70	500

Flange Base Types

Type		DE			DO		
Nominal Size	Flange Dia Basic	L Min	Torque lb-in	Tension lb	L Min	Torque lb-in	Tension lb
6 -32	.437	-	-	-	.28	16	120
6 -32	.531	-	-	-	.30	16	110
8 -32	.469	.25	21	160	.30	23	160
8 -32	.625	-	-	-	.31	28	150
8 -32	.750	-	-	-	-	-	-
10 -24	.500	-	-	-	.34	38	240
10 -24	.562	-	-	-	.34	42	230
10 -24	.625	-	-	-	.36	42	220
10 -24	.750	-	-	-	.38	42	200
10 -24	.875	-	-	-	.39	42	180
10 -32	.500	.25	26	180	.30	30	200
1/4 -20	.594	-	-	-	.39	64	350
1/4 -20	.687	-	-	-	.41	64	300
1/4 -20	.812	-	-	-	.42	64	300
1/4 -20	.875	-	-	-	.42	70	300
1/4 20	1.000	-	-	-	.45	64	260
5/16-18	.812	-	-	-	.44	110	470
3/8 -32	.625	.23	40	200	-	-	-
7/16-20	.812	.33	54	370	-	-	-

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