

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS S-E-72.101-GS/PL
		Former Designation: ESP-E-72.101-GS
TITLE: Crown 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-72.101-GS - February 2010
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<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 MISCELLANEOUS DIMENSIONS: The bearing surface of nuts will be flat with chamfered corners, the diameter of bearing circle being the maximum width across flats within a tolerance of minus 5 percent. Tops of hexagons will be chamfered from the boss diameter. The length of chamfers at hexagon corners will be from .05 to .15 times the basic thread diameter. The surface of chamfers may be slightly convex or rounded. A rounding or lack of fill at junction of corners with chamfer will be permissible provided the minimum width across corners is reached and maintained beyond a distance of .175 times the basic thread diameter from both the bearing face and the top of hexagon portion of nut.

The bearing surface will be at right angles to the axis of the threaded hole within 2° for 5/8 inch size, or smaller; and within 1° for larger sizes. (The maximum total runout of bearing face equals the tangent of the specified angle times the width across flats.)

Actual size across flats will be not less than specified minimum limit between two planes, perpendicular to the axis of the nut, spaced at a distance equal to .25 times hexagon thickness above and below the mid-plane through the nut flats.

Tolerance on dimensions not otherwise controlled will be plus and minus .010 inch.

The threaded hole will be at true position within a tolerance zone having a radius equal to .03 times the maximum width across flats, regardless of feature size, and will be countersunk on the bearing face. The maximum countersink diameter will be the thread basic diameter plus .025 inch for 3/8 inch size, or smaller; and plus .06 times the basic thread diameter for larger sizes. The minimum countersink diameter and depth will be such that no part of the threaded portion projects beyond the bearing face.

2.0 THREADS: Threads will be Unified Coarse or Fine (UNC, UNF) Class 2B.

3.0 MATERIAL: Steel (STL), Type 5, per MPAPS F-31, Part II.
 Stainless steel (SST-304) Type 304 per MPAPS A-37.
 Brass (BRS) C36000 or equivalent, hard temper, per CEMS C-3.

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Nominal Size Range	Minimum Proof Load, psi			
	Low Crown Nuts		High Crown Nuts	
	Coarse Thread	Fine Thread	Coarse Thread	Fine Thread
1/4 to 3/4, incl	132,000	120,000	141,000	128,000
7/8 and 1	126,000	115,000	135,000	122,500
1-1/8 and 1-1/4	115,500	105,000	123,000	112,000

4.0 FINISHES: Nuts will be furnished plain, plated or coated in accordance with MPAPS and class listed below:

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

Chromium Bright (CRB) on steel – CEMS G-19, Part III, Class 3, 5, or 8 depending on pitch.

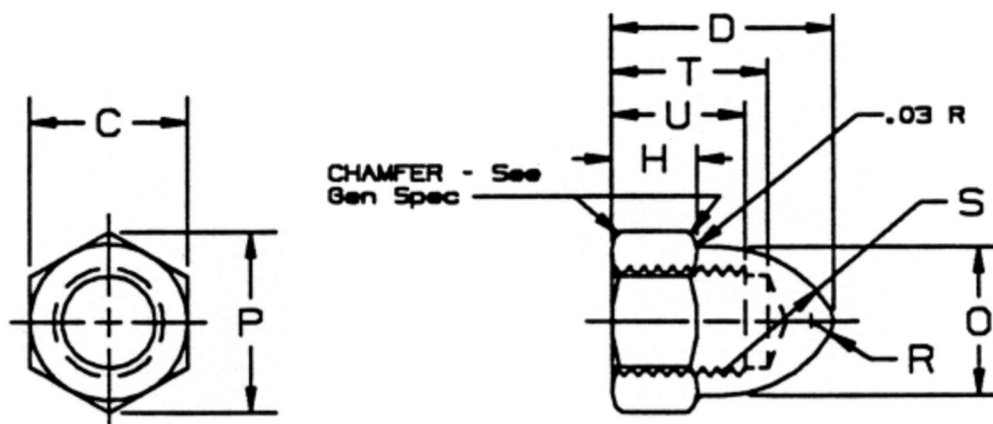
Chromium Bright (CRB) on brass – CEMSG-19, Part III, Class 3, 5, or 8 depending on pitch.

Black Organic (BLZ) on steel – TMS-4113

5.0 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.

6.0 SURFACE DISCONTINUITIES: Will conform to allowable limits shown in SAE Recommended Practice J122, "Sampling Procedure" and "Methods of Test" per MPAPS F-31, Part II.

7.0 HIGH CROWN NUTS:



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