

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		<i>NUMBER:</i> MPAPS S-E-31.101-GS/PL
		<i>Former Designation:</i> ESP-E-31.101-GS
<i>TITLE:</i> Hex Machine Screw Nuts - English Series (Noun Code 5780)	<i>CURRENT REV No.:</i> 1506	<i>DATE:</i> June 2015
<i>WRITTEN/EDITED BY:</i> Materials Engineering	<i>APPROVED BY:</i> Materials Engineering	<i>SUPERSEDES:</i> ESP-E-31.101-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, NPP.		

- 1.0 GENERAL:** This standard conforms in all essentials with American National Standard B18.6.3 (R 1983) for Hex Machine Screw Nuts.
- 2.0 POLICY FOR SELECTING PARTS FOR NEW DESIGN:** Approved parts are so designated to reduce variety of parts and assure maximum availability, interchangeability, and cost savings in volume buying.

For new design, parts shall be selected from "Approved" part list only.

Size & Threads: #6 thru #12, UNC
 Material: Steel, Type 1 or SST-304
 Finishes: Zinc Trivalent, Class 6A (ZN6A) on Steel
 Plain (PLN) on SST-304

- 3.0 DIMENSIONS:** Hex machine screw nuts will have tops flat with chamfered corners. Diameter of top circle will be equal to the maximum width across flats within a tolerance of minus 15 percent.

The bearing surfaces will be perpendicular to the axis of the threaded hole pitch cylinder within a tolerance of 4 degrees.

Bottom of hex machine screw nuts are normally flat, but for special purposes may be chamfered if so specified by purchaser.

For nuts 1/4 inch and larger, use regular hexagon nuts.

- 4.0 THREADS:** Threads will be Unified Standard, Class 2B, UNC or UNF series.

- 5.0 MATERIAL:** Steel nuts, Type 1, MPAPS F-31, Part II.
 Brass (BRS) C36000 or equivalent hard temper per CEMS C-3.
 Stainless Steel, Type 18-8 (SST-304 as designated on part number page) per MPAPS A-37. Type 18-8 is a nonmagnetic general purpose stainless with excellent corrosion resistance. Stainless Steel will be *passivated per specification in MPAPS A-37.

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6.0 FINISH: Nuts will be furnished plain, plated, or coated in accordance with the MPAPS and class listed below:

Plain (PLN).

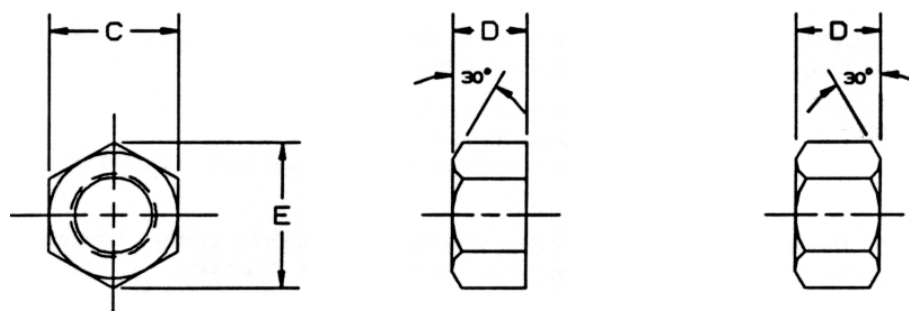
Zinc (ZN) on brass – MPAPS G-20, Class 1.

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

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

7.0 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.

8.0 WORKMANSHIP: Nuts will not contain imperfections which affect usability or serviceability such as excessive amounts of burrs, seams, laps, loose scale, or irregular surfaces.



Dimensions in inches:

Nominal Size	Basic Thread Diameter	Threads Per Inch		C Width Across Flats			E Width Across Corners		D Thickness		
		UNC	UNF	Basic	Max	Min	Max	Min	Basic	Max	Min
0	.06		80	5/32	.156	.150	.180	.171	3/64	.050	.043
1	.073	64	72	5/32	.156	.150	.180	.171	3/64	.050	.043
2	.0860	56	64	3/16	.187	.180	.217	.205	1/16	.066	.057
3	.0990	48	56	3/16	.187	.180	.217	.205	1/16	.066	.057
4	.1120	40	48	1/4	.250	.241	.289	.275	3/32	.098	.087
5	.1250	40	44	5/16	.312	.302	.361	.344	7/64	.114	.102
6	.1380	32	40	5/16	.312	.302	.361	.344	7/64	.114	.102
8	.1640	32	36	11/32	.344	.332	.397	.378	1/8	.130	.117
10	.1900	24	32	3/8	.375	.362	.433	.413	1/8	.130	.117
12	.2160	24	28	7/16	.437	.423	.505	.482	5/32	.161	.148

Note: For 1/4 inch and larger size nuts, see Regular Hexagon Nuts in MPAPS S-E-1.101-GS/PL

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