

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS S-E-40.101-GS/PL
		Former Designation: ESP-E-40.101-GS
TITLE: Hex Piloted – Projection Weld 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-40.101-GS - March 2011
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: Weld nuts are used as pre-positioned nuts that permit blind one-sided assembly of parts. These nuts are designed with 3 or 6 projections at the corners for projection welding. A pilot around the threaded hole is used to positively locate the nut when it is inserted into the hole provided in the part to which it is assembled. The pilot also minimizes the splatter of molten metal into threads during the welding operation.

2.0 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.

3.0 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.

Design: Hex, piloted 6 projections (Special Series - .035 Pilot Heights)

Hex, piloted 3 projections (Standard Series - Short Pilot and Standard Series - Long Pilot)

Thread: Coarse

Sizes: 10, 1/4, 5/16, 3/8, 1/2, and 5/8

4.0 MISCELLANEOUS DIMENSIONS: Tops of nuts may be chamfered or rounded at corners and edges provided the flat area and degree of flatness are sufficient to provide intimate contact with the welding electrode. The axis of the threaded hole will be at right angles to the top face within 2°. Pilot diameter will not be eccentric with threaded hole by more than .008". Heights of all projections on any one nut will be within .005 inch of each other.

5.0 THREADS: Unified Series, Class 2B.

6.0 MATERIAL: Low Carbon Steel (STL) AISI 1008 or 1010.

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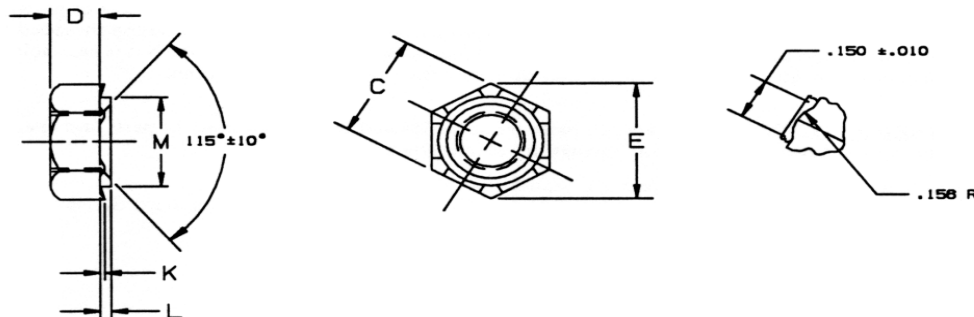
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7.0 FINISH: Plain (PLN),

8.0 SURFACE DISCONTINUITIES: Allowable limits are defined in MPAPS F-31, Part II. In addition, nuts will be free from burrs, sharp edges, loose scale, dirt, or other contaminants which adversely affect their weldability or serviceability.

9.0 QUALITY: Nuts must meet the quality requirements of MPAPS FT-9553.

10.0 SIX PROJECTION SPECIAL SERIES .035 PILOT:



SIX PROJECTION SPECIAL SERIES .035 PILOT[†]

10.1 Part List:

10.1.1 Approved:

Dimensions in inches:

Dimensions in inches.

Nominal Size	Across Flats	E	D	K	L	M	Rec Hole Size in Plate	Reference Weld Quality Test **				Part Number
		Across Corners	Thick-ness	Projection Height	Pilot Height	Pilot Dia		.0359 Sheet		.0598 Sheet		
	Max	Min	±.010	±.002	+ .000 - .005	+ .000 - .012		+ .000 - .013	Torque Ft Lbs Min	Pushout Load Lbs Min	Torque Ft Lbs Min	
10 - 24	.500	.556	.188	.015	.035	.406	.422	15	380	25	1050	257920C1
1/4 - 20	.500	.556	.188	.015	.035	.406	.422	30	490	35	1175	257924C1
5/16 - 18	.562	.624	.219	.015	.035	.469	.484	40	600	50	1250	257926C1
* 5/16 - 24	.562	.624	.219	.015	.035	.469	.484	40	600	50	1250	257927C1
3/8 - 16	.625	.691	.250	.015	.035	.531	.547	45	680	55	1325	257928C1
* 7/16 - 20	.750	.830	.312	.015	.035	.656	.672	50	740	80	1400	257931C1
1/2 - 13	.812	.898	.375	.015	.035	.719	.734	50	740	80	1400	257932C1

[†] Recommended panel thickness range: .0359" - .0747".

* Non-Preferred.

** Reference test values are for weld process setup and control. Nuts are welded to cold rolled, bare steel, coupons in the two thicknesses shown. Minimum torque values represent torsional strength of weld when torque directly applied to nut with torque wrench. Pushout values represent axial tensile pushout loads on assembled weld nuts.

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