

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)	NUMBER: MPAPS S-EM-58.101-GS/PL	
	Former Designation: ESP-EM-58.101-GS	
TITLE: Prevailing Torque Hex Flange Nuts – All Metal – Metric Series (Noun Code 5780)	CURRENT REV No.: 1506	DATE: June 2015
WRITTEN/EDITED BY: Materials Engineering	APPROVED BY: Materials Engineering	SUPERSEDES: ESP-EM-58.101-GS - August 2012
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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 GENERAL: This specification is based on and contains elements of the following standards:

American National Standard: ANSI B-18.16.1M, B-18.16.2M, B-18.16.3M
International Organization for Standardization: ISO 7044

General specifications, mechanical and performance requirement, and test requirements for prevailing torque nuts outlined in MPAPS S-EM-56.101-GS/PL are also applicable to this standard.

2.0 APPLICATION GUIDE: To ensure full benefit of the prevailing torque feature, two fully formed threads must be visible beyond the top surface of the nut.

3.0 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.

4.0 POLICY FOR SELECTING PARTS FOR NEW DESIGN: Approved parts are so designated to reduce variety of parts and assure maximum availability and cost savings:

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

Nominal Sizes: M6, M8, M10, M12, M16, M20

Material: Class 10

Finish: Phosphate Coating (PHC)

5.0 BEARING SURFACE: The bearing surface will be flat to concave to a maximum of 2 degrees from the plane formed by the bearing circle diameter. The plane formed by the bearing circle diameter will be perpendicular to the thread within the runout limit specified when measured at diameter Dw.

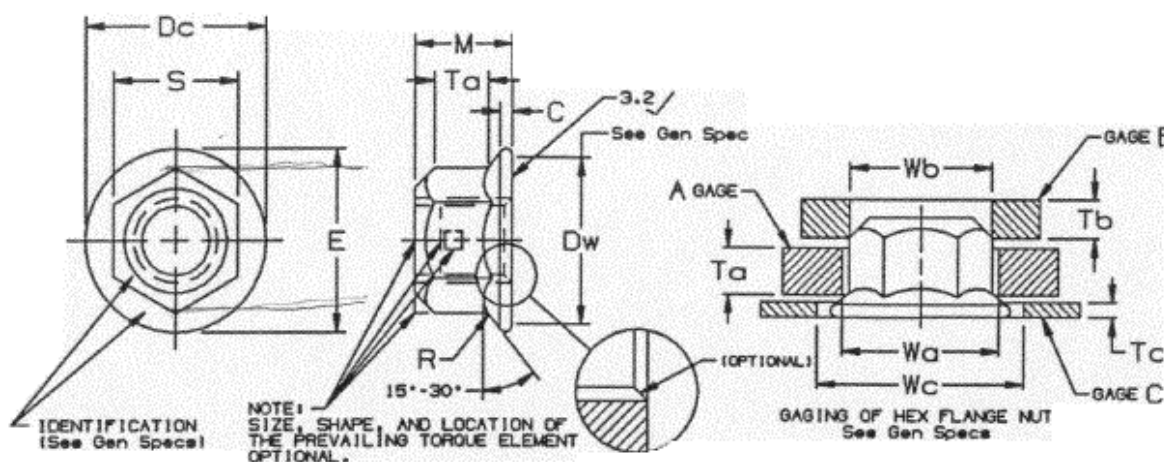
6.0 HEX HEIGHT: The hex heights will be the distance, measured at a corner of the hex from the junction of hex head with the flange to the top of the head.

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- 7.0 WRENCHING HEIGHT:** The wrenching height, T_a , is the distance, measured at a corner of the hex, from the junction of the hex head with the flange to the last plane of full formed hex, i.e., the plane perpendicular to the nut axis which is closest to the top of the head at which the width across corners is within its specified limits.
- 8.0 CORNER FILL:** The rounding due to lack of fill at the six corners of the hex will be reasonably uniform.
- 9.0 GAGING OF HEX PORTION:** The nut will be gaged using two plain ring gages, A and B, to demonstrate the coincidental acceptability of hex height, wrenching height, corner fill and width across corners. Gage A will be placed over the hex and will seat on the flange. Gage B will be placed on the top of the nut normal to the nut axis. The two gages will not be in contact. (Note: The minimum inside diameter of Gage A equals the maximum width across corners; the maximum inside diameter of Gage B equals the minimum width across corners minus 0.01 mm; the maximum thickness of Gage A equals or is greater than the computed wrenching height necessary to provide sufficient driveability to develop two times the torsional strength of the properly mated externally threaded component.)
- 10.0 FLANGE:** The top surface of the flange will be conical or slightly rounded (convex). The flange periphery will be round within the specified maximum flange diameter and a tolerance of minus 5 percent. The contour of the edge at the flange periphery will be optional provided the minimum flange thickness is maintained at the minimum bearing circle diameter.
- 11.0 GAGING OF FLANGE:** The flange will be gaged using two plain ring gages, A and C, to demonstrate the coincidental acceptability of flange diameter and thickness. Gage C will be seated on a flat surface and the nut placed on it. Gage A will be placed over the hex portion. The nut will seat within Gage C and Gages A and C will not be in contact.
- 12.0 DIMENSIONS:**



DIMENSIONS OF PREVAILING – TORQUE HEX FLANGE NUTS

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