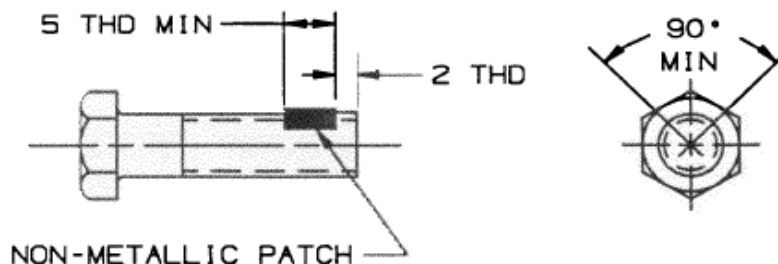


NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS S-B-4.101-GS/PL
		Former Designation: ESP-B-4.101-GS
TITLE: Prevailing-Torque Hexagon Head Bolts - English Series (Noun Code 0810)	CURRENT REV No.: 1506	DATE: June 2015
WRITTEN/EDITED BY: Materials Engineering	APPROVED BY: Materials Engineering	SUPERSEDES: ESP-B-4.101-GS - December 2012
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: A prevailing-torque bolt is one which is torsionally resistant to rotation due to a self-contained prevailing-torque feature and not because of a compressive load developed against the under head bearing surface, a tensile load developed in the shank, or frictional devices designed into the underside of the head. These latter types normally are considered "free running" locking bolts and have high breakaway torsion requirements but no prevailing-torque. A prevailing-torque bolt intends to delay or prevent total disassembly of joint when clamp force is decreased or ceases to exist.

The threaded fasteners covered by this standard are prevailing-torque hexagon head bolts with a non-metallic plastic patch bonded to a specified portion of the threads to provide the prevailing-torque feature. These bolts are for applications where temperatures will not exceed 250 F. All mating tapped holes should be countersunk before threading. Included angle of countersinks should be 90 degrees and the diameter of countersinks should be .030 inch larger than the nominal diameter of the thread for 1/4 inch size up to .040 inch to .050 inch over nominal for larger sizes.



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.

NUMBER: MPAPS S-B-4.101-GS/PL	TITLE: <i>Prevailing-Torque Hexagon Head Bolts</i>	REVISION: 1506
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3.0 CONTENTS:

	Page
General	1
Restricted Chemical Substances	2
Basic Bolt	2
Surface Discontinuities	2
Policy for Selecting Parts for New Design	2
Prevailing-Torque Feature	2
Prevailing-Torque Performance Requirements	2
Test Method	3
Part List	5
Technical Information	6

4.0 BASIC BOLT: The bolt must comply in all respects with the General Specification for Hexagon Head Bolts, MPAPS S-B-1.101-GS/PL.

5.0 SURFACE DISCONTINUITIES: Per MPAPS F-31. The use of serrated thread rolling dies is optional for the parts contained in and referenced to this standard.

6.0 POLICY FOR SELECTING PARTS FOR NEW DESIGN:

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

Material:	Type 8
Finish:	Phosphate Coating (PHC)
Diameters:	1/4, 5/16, 3/8, 1/2, 5/8, 3/4, 1, 1-1/4, 1-1/2 inches
Threads:	Unified Coarse (UNC)
Length Incrementation:	Same as Hexagon Head Bolts

7.0 PREVAILING-TORQUE FEATURE: The location and size of the non-metallic plastic patch must comply with the illustration shown above. Bolts will assemble a minimum of one full turn by hand into any mating internally threaded component that is accepted by a properly selected GO thread plug gage.

The prevailing-torque feature will be free from visible porosity, voids, and cracks, and will be uniform in color without streaks, dark areas or other indicators of contamination or degradation. It will be firmly attached to the bolt and will not loosen under normal handling. It will be chemically inert to Regular Gear Lubricant Grade 90 HR, Navistar CEMS B-22; Heavy Duty Type Engine Oil Grade 10W-30HD, Navistar MPAPS B-21, Part II; Anti-freeze, Single Phase, Ethylene Glycol Base, Navistar MPAPS B-1; and "Hy-Tran Fluid," Navistar CEMS B-6.

8.0 PREVAILING-TORQUE PERFORMANCE REQUIREMENTS: The prevailing torque of lock bolts occurring during any installation or removal will not exceed the maximum prevailing torque specified in Table 1 when tested as specified on page 3. In addition, the maximum prevailing torques developed by lock screws during first and fifth removals will not be less than the minimum removal torques specified in Table 1 when tested in accordance with method described below Table 1.