

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS S-C-34.101-GS/PL
		Former Designation: ESP-C-34.101-GS
TITLE: Square Head Set Screws- English Series (Noun Code 7450)	CURRENT REV No.: 1506	DATE: June 2015
WRITTEN/EDITED BY: Materials Engineering	APPROVED BY: Materials Engineering	SUPERSEDES: ESP-C-34.101-GS - August 2006
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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, NPP.		

1.0 GENERAL: This standard conforms essentially with the American National Standard, ANSI B 18.6.2 and SAE Standard J 102 for Square Head Set Screws.

2.0 CONTENTS:

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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.

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

Point: Cup

Thread: UNC 2A

Material: Steel (STL)

Finish: Zinc Trivalent, Class 6A (ZN6A), and
Phosphate Coating (PHC)

Length Incrementation:

Over 1/2 to 1 inch = 1/8

Over 1 to 2 inches = 1/4

Over 2 inches = 1/2

- 4.0 SERVICE PARTS SUBSTITUTION POLICY:** In the event that engineering does not indicate a "Do not substitute" in engineering specifications, the following substitutions may be implemented in service. This policy is the result of a proposal circulated April 20, 1981, and subsequently approved by engineering departments worldwide.

Square Head Set Screws

To Be Replaced

Plain (PLN) Finish

Service Replacement

Zinc Trivalent, Class 6A (ZN6A) finish or
phosphate coating (PHC) finish (if ZN6A
equivalent is not set up for service)

- 5.0 DESIGN CONSIDERATION:** To insure the validity of a single part number for two material strengths, application design must be to the case hardened set screws.

- 6.0 LENGTH:** Length of square head set screws will be measured from the bottom of the head to the extreme point in a line parallel to the axis of the screw. The tolerance on screw length will be as tabulated below:

Size Range	Length Tolerance		
	Up to 1 inch, incl	Over 1 inch to 2 inches, incl	Over 2 inches
10 to 5/8	-.03	-.06	-.09
3/4 to 1-1/2	-.06	-.12	-.18

- 7.0 THREADS:** Threads will be Unified Standard, Class 2A, UNC or UNF series or UNRC or UNRF series with radius root, optional with manufacturer. Class 2A limits will apply to plain finish (unplated or uncoated) screws and to plated or coated screws before plating or coating. For screws with additive finish the maximum diameters of Class 2A may be exceeded by the amount of the allowance, that is, the basic diameters (the Class 2A maximum diameters plus the allowance) will apply to plated or coated screws after plating or coating. The major diameter of plated or coated screws may approach but will not be less than the Class 2A minimum limit.

Since standard gages provide only for lengths of engagement up to 1-1/2 diameters, changes in pitch diameter of either or both external or internal thread may be required for longer lengths of engagement.

- 8.0 LENGTH OF THREAD:** Square head set screws will have complete (full form) threads extending over that portion of the screw length that is not affected by the point. For the respective head constructions, threads will extend to the conical underside of head, to within one thread (as measured with a non-chamfered or non-counterbored standard thread ring gage) from the flat

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