NAVISTAR, INC.

Material, Parts, and Process Specifications (MPAPS)	NUMBER: MPAPS S-G-40.101-GS/PL	
	Former Designation: ESP-G-40.101-GS	
TITLE: Semi-Tubular and Full Tubular Rivets - English Series Not Recommended (Noun Code 7220)	CURRENT REV No.: 1506	DATE: June 2015
WRITTEN/EDITED BY: Materials Engineering / APPROVED BY: Materials Engineering	SUPERSEDES: ESP-G-40.101-GS - August 2006	

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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.

Change Notice: **Changed to New MPAPS format; Combined GS, PP, NR.**

1.0 GENERAL: This standard conforms essentially with American National Standard B-18.7.

2.0 HEADS: The bearing surface of flat, oval and truss head rivets will be at right angles to the axis of the rivet shank within 2 degrees. Heads of all tubular rivets will not be eccentric with the shank beyond a tolerance of 3 percent of the maximum head diameter. Because the heads are not machined or trimmed, the circumference may be slightly irregular and the edges rounded or flat.

Oval and truss head rivets will be furnished with a definite fillet under the head; however, the radius of fillet will not exceed the values specified in the dimensional tables.

3.0 DIMENSIONS: The length of oval and truss head rivets will be measured, parallel to the axis of rivet, from the underside of the head to the extreme end. The length of flat countersunk rivet will be measured from the juncture of the conical underside of head with rivet shank to the extreme end, except for the 120 degree flat countersunk head rivets on which the length will be measured from the top of the head to the extreme end.

The minimum lengths and increments applicable to longer lengths will be as specified in Table 1.

The tolerance on rivet lengths will be as specified in Table 1.

Table 1 - Length Increments and Length Tolerances for Semi-Tubular and Full Tubular Rivets

Nominal Size	Length Increment	Minimum Nominal Rivet Length	Tolerance on Length For Nominal Lengths		
			Up To and Including 4 Times Shank Dia	Over 4 Times Shank Dia and Up To and Including 8 Times Shank Dia	Over 8 Times Shank Dia
1/16	.016	.062	±.007	±.008	±.010
5/64	.016	.078	±.007	±.008	±.010
3/32	.016	.078	±.007	±.008	±.010
1/8	.016	.094	±.007	±.010	±.015
9/64	.031	.125	±.010	±.012	±.015
3/16	.031	.156	±.010	±.012	±.015
7/32	.062	.188	±.010	±.015	±.020
1/4	.062	.219	±.010	±.015	±.020
5/16	.062	.250	±.010	±.015	±.020

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Hole depth will be measured parallel to the axis of the rivet from the extreme end of rivet to the intersection of the diameter of the hole with the contour at the bottom of hole. The hole depth to extreme point on bottom contour of hole will not be greater than the shank length of rivet. The tolerance on hole depth will be the same as the tolerance on length of rivet.

4.0 MATERIAL: As designated by part number, rivets will be low carbon steel (STL), brass (BRS), copper (COP), or aluminum (AL) standard with manufacturer.

5.0 FINISHES: As designated by part number, rivets will be furnished plain, plated, or coated in accordance with the Navistar Engineering Material Specification and class listed below:

Plain (PLN).
Zinc Trivalent, Class 6A (ZN6A) on steel – MPAPS G-20, Class 6A.
Zinc, Class 1 (ZN) on brass – MPAPS G-20, Class 1.
Phosphate Coating on steel (PHC) - Standard with manufacturer.
Nickel Bright on steel or brass (NIB) – MPAPS G-19, Class 5.
Tin on steel or brass (TIN) - Standard with manufacturer.
Copper on steel or brass (COP) - Standard with manufacturer.
Black Enamel on steel (BLE) - Standard with manufacturer.

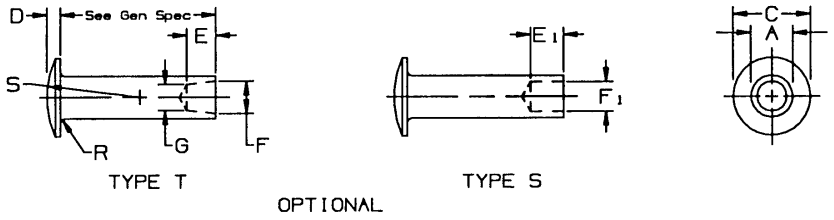
6.0 RESTRICTED CHEMICAL SUBSTANCES: Effective January 1, 2007, all product supplied to the requirements of this specification must comply with the requirements of the MPAPS B-50 specification.

7.0 POLICY FOR SELECTING PARTS FOR NEW DESIGN:

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

Type:	Semi-Tubular
Head Style:	Oval and 120º Countersunk
Nominal Sizes:	All sizes except 5/64 and 7/32
Lengths:	Maximum 1 inch Minimum see Table 1.
Material:	Steel (STL) or Brass (BRS)
Finish:	Plain (PLN) or Zinc Trivalent, Class 6A (ZN6A)

8.0 OVAL HEAD SEMI-TUBULAR RIVETS :



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