NAVISTAR, INC.			
Material, Parts, and Process Specifications (MPAPS)		*NUMBER:* **MPAPS S-F-17.101-GS/PL**	
		Former Designation: **ESP-F-17.101-GS**	
TITLE: **Flat Round Hole Washers for Rivets – English Series (Noun Code 9720)**		*CURRENT REV No.:* **1706**	*DATE:* **June 2017**
WRITTEN/EDITED BY: **A. Bourdon**	*APPROVED BY:* **R. Goluch**	*SUPERSEDES:* **1506 - June 2015**	

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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.

1.0 GENERAL: This standard covers the dimensions and physical properties of Rivet Washers and conforms to standard Rivet sizes. A riveting (burr) washer is a small plain washer which is assembled with a small rivet before peening the end to provide a large area of contact on the part.

2.0 MATERIAL: Steel (STL); 1010 or 1020; commercial Wrought Copper (COP); or equivalent as indicated by part number.

3.0 FINISHES: As designated by part number, washers will be furnished plain, plated or coated in accordance with the MPAPS and class listed below:

Zinc Trivalent (ZN6A) – MPAPS G-20, Class 6A.
Phosphate Coating (PHC) – MPAPS G-1, Class B1.

4.0 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.

5.0 THICKNESS: In accordance with Manufacturers Standard Gage.

6.0 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.

Sizes: 1/8, 3/16, 3 or 1/4, 5/16 and 3/8
Material: Steel
Finishes: Plain (PLN), Zinc Trivalent (ZN6A), and Phosphate Coated (PHC)

7.0 DEFECTS: Washers must be free from burrs, loose scale, sharp edges and all other defects that might affect their serviceability.

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	Rivet Size		ID	OD	Thickness			
					USS Gage		Max	Min
*	12	(.109)	.125	.375	20	(.036)	.041	.031
	1/8	(.125)	.141	.438	18	(.048)	.055	.041
*	9	(.148)	.156	.438	18	(.048)	.055	.041
*	8	(.165)	.172	.500	18	(.048)	.055	.041
	3/16	(.188)	.203	.500	18	(.048)	.055	.041
*	6	(.203)	.219	.500	18	(.048)	.055	.041
*	5	(.220)	.234	.625	18	(.048)	.055	.041
*	4	(.238)	.250	.625	18	(.048)	.055	.041
	3 or 1/4	(.259)	.266	.625	16	(.060)	.075	.045
*	2	(.284)	.297	.625	16	(.060)	.075	.045
*	1	(.300)	.312	.625	16	(.060)	.075	.045
	5/16	(.312)	.328	.750	16	(.060)	.075	.045
*	11/32	(.344)	.359	.750	16	(.060)	.075	.045
	3/8	(.375)	.391	.875	16	(.060)	.075	.045

* NON-PREFERRED

Acceptable Tolerance for ID: +.008” / -.005”

8.0 PART LIST:

8.1 Approved:

Inside Diameter	Outside Diameter	Minimum Thickness	Finish	Material	Part Number
.203	.500	.041	ZN6A	STL	16547R1

9.0 TECHNICAL INFORMATION:

For further information related to the technical content of this specification, contact:	Suppliers may purchase controlled copies of this specification by contacting:
Materials Engineering and Technology Dept. 10400 W. North Avenue Melrose Park, IL 60160 E-mail: MaterialsEngineering@Navistar.com	IHS Markit Inc. 15 Inverness Way East Englewood CO 80112-5776 Phone: 1-800-854-7179 E-mail: Automotive@IHS.com Website: http://global.ihs.com

REVISION HISTORY

Revision Level	Change	Approved by	Date Approved
1706	Added tolerance for ID dimension	R. Goluch	6/21/2017

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