

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS S-KM-3.401-GS/PL
		Former Designation: ESP-KM-3.401-GS
TITLE: Closed Cushion Clamps– Metric – Inch (Noun Code-1640)	CURRENT REV No.: 1506	DATE: June 2015
WRITTEN/EDITED BY: Materials Engineering	APPROVED BY: Materials Engineering	SUPERSEDES: ESP-KM-3.401-GS - June 2014
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.		

1.0 GENERAL: This standard covers closed steel clamps with rubber cushion designed to fasten and securely hold cables, wire harnesses, tubing, hose, engine accessories, etc. Cushion clamps provide protection from abrasion and corrosion, and also provide electrical insulation, sound abatement, and some shock absorption.

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

3.0 CONTENTS:

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4.0 STANDARD CLOSED CUSHION CLAMPS:

4.1 Clamp Material:

Required: Steel, Grade 1C, Temper No.3-5, MPAPS A-6, Part I;

Finish – Zinc Plated, Class 6A, per MPAPS G-20

Optional: Steel, Grade 1 Galvanized, 60G60GU, MPAPS A-6, Part II.

Current parts are made with steel clamps of 0.8 mm (0.03”) or 1.27 mm (0.05”) in thickness.

See section 7.0 for requirements for each part number.

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4.2 Cushion Material:

Two types of material are available, as follows:

4.2.1 Standard applications:

Standard cushion clamps are made with cushion material EPDM per TMS-6039, TSR-0012; Color black; Maximum service temperature is approximately 125°C (260°F) with short duration excursion to 150°C (300°F) permitted. Part numbers of standard closed clamps with EPDM cushion are given in Table 1 of section 7.0, Closed Cushion Clamp Part List.

4.2.2 High temperature applications:

Closed clamps for higher temperature applications are made with cushion material silicone rubber per TMS-6039, TSR-0067; Color: Orange; Maximum service temperature is approximately 175°C (350°F) with short excursion to 230°C (450°F) permitted. Part numbers of higher temperature application are in Table 2 of section 7.0, Closed Cushion Clamp Part List.

5.0 HEAVY DUTY CLOSED GROMMET CLAMPS: These are two-piece grommets using thicker steel pieces typically of 2-3mm in thickness. They are patented by the manufacturer, Franklin Fastener, and have much higher cost than the standard closed cushion clamps, and should only be selected for applications when these heavy duty clamps are necessary. The part numbers of the heavy duty closed grommet clamps are given in Table 3 of section 7.0, Closed Cushion Clamp Part List.

6.0 WORKMANSHIP: Clamps must be furnished in the open position, and shall be free from burrs, loose scale, sharp edges, and all other defects that might affect their serviceability.

7.0 DIMENSIONS AND PART LIST OF STANDARD CLOSED CUSHION CLAMPS:

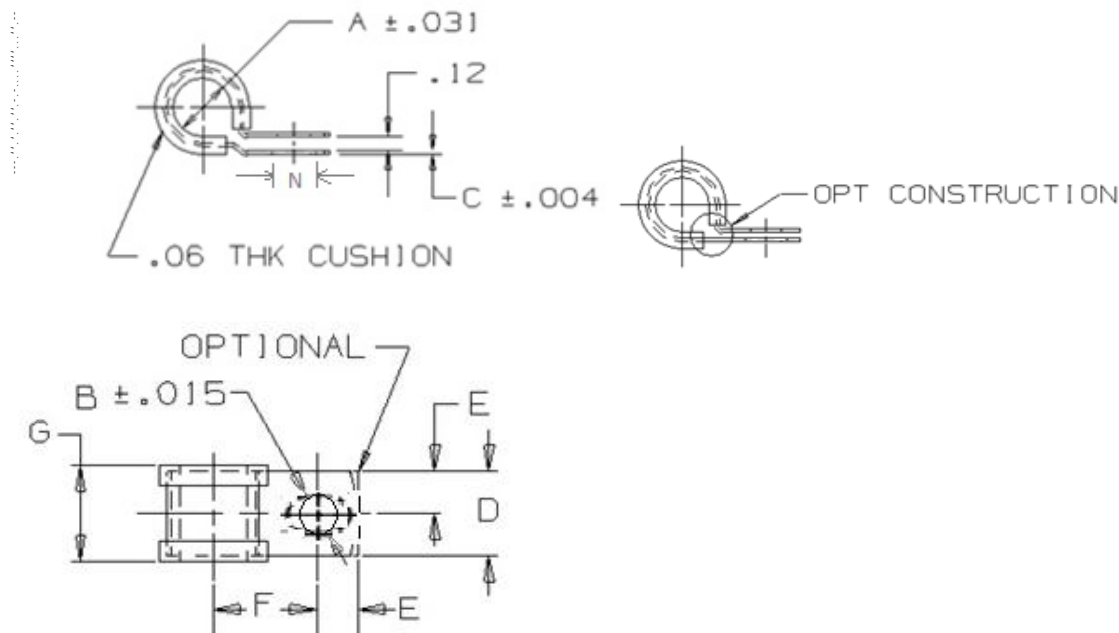


Fig. 1 Standard closed cushion clamp – single hose

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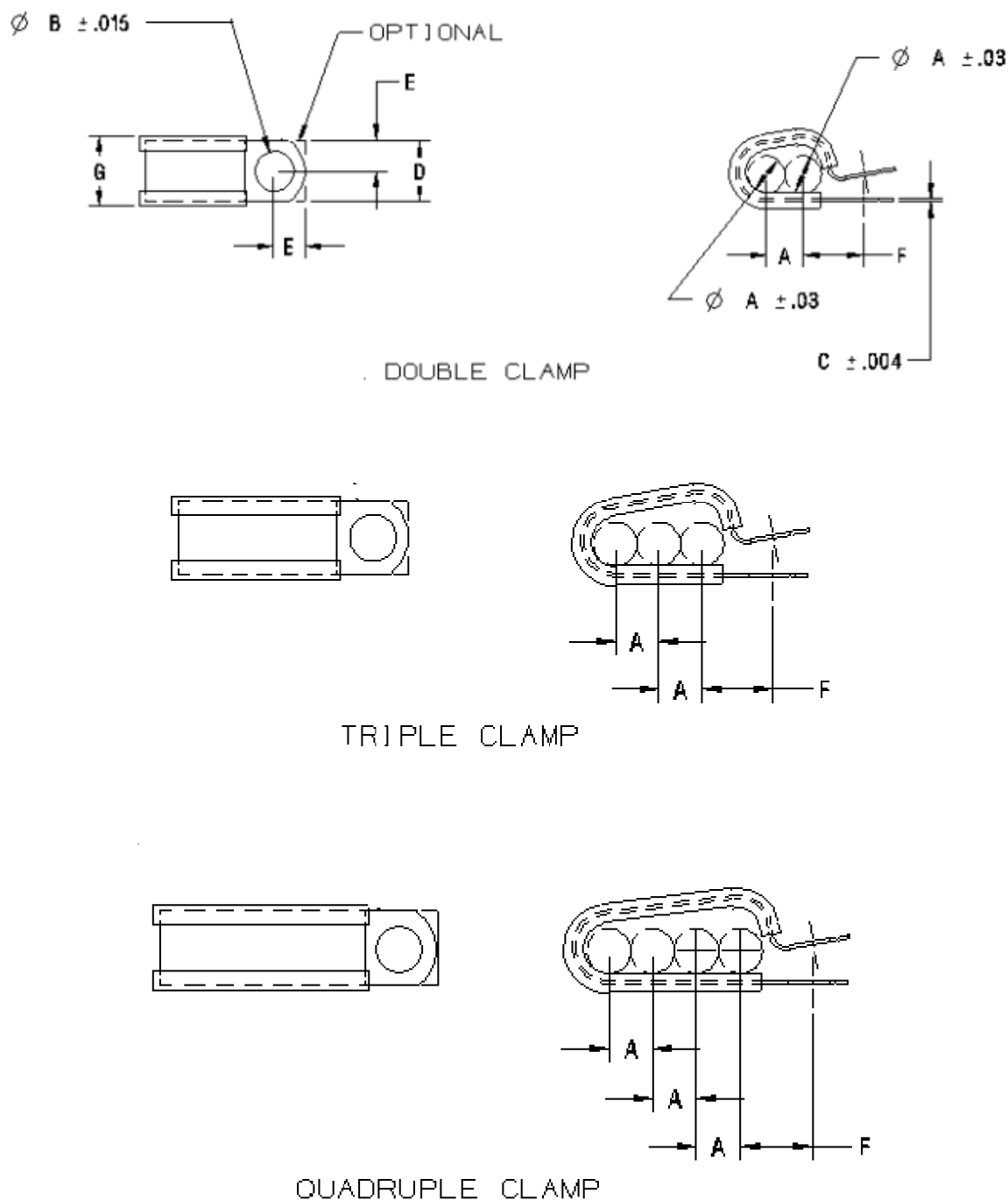


Fig. 2 Standard closed cushion clamp – multiple hoses

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