

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS S-M-5.101-GS/PL
		Former Designation: ESP-M-5.101-GS
TITLE: Pipe Fittings - English Series		CURRENT REV No.: 1506
		DATE: June 2015
WRITTEN/EDITED BY: Materials Engineering	APPROVED BY: Materials Engineering	SUPERSEDES ESP-M-5.101-GS - August 2006
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: Cast iron, malleable iron and steel fittings conform to ANSI Standards B-16.3 and B-16.14. Brass fittings conform to ANSI Standard B-16.15.

This standard covers pipe fittings parts like reducing pipe adapters, pipe couplings, pipe and street elbows, pipe tees, pipe crosses and pipe caps.

2.0 CONTENTS:

	Page
General	1
Material	2
Finish	2
Restricted Chemical Substances	2
Policy for Selecting Parts for New Design	2
Threads	2
Pressure Ratings	2
Workmanship	2
Reducing Pipe Adapters	3
Pipe Couplings	4
90 Degree Street Elbows	5
90 Degree Pipe Elbows	6
Pipe Tees	7
Reducing Pipe Tees	7
Pipe Crosses	8
Pipe Caps	8
Technical Information	9

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JUNE 2015

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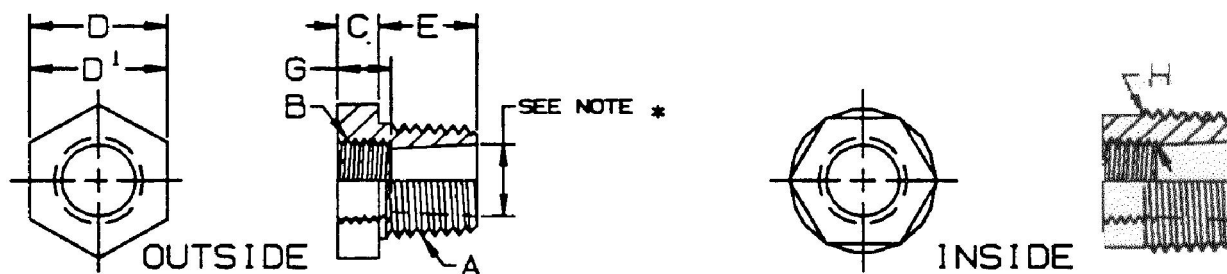
- 3.0 MATERIAL:** Malleable Iron (MI) - ASTM A197.
Steel (STL) - SAE 1112 or Equivalent per MPAPS A-0, Part I
Brass (BRS) C83600 or Equivalent, per CEMS C-2.
Wrought Steel Pipe (WST) per CEMS A-18, Grade 1
Stainless Steel, Type 304 (SST-304). A non-magnetic general purpose stainless
Compatible with SST 300 series fasteners. Excellent corrosion resistance.
304 Stainless Steel will be *passivated in accordance with specification in
MPAPS A-37.
- 4.0 FINISH:** Parts will be furnished plain, plated or coated in accordance with MPAPS and class listed below:
- Plain (PLN)
Zinc Trivalent (ZN6A) – MPAPS G-20, Class 6A
Phosphate Coated (PHC) - G-1, Class B-2
- 5.0 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.
- 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.
- Material: Malleable Iron (MI) Material: Brass (BRS) - (for reducer pipe adapters)
Finish: Plain (PLN)
- 7.0 THREADS:** American National Standard Taper Pipe Threads (ANSI B-2.1). The gaging limit will be plus or minus one thread. Threads will be countersunk a distance not less than 1/2 the pitch to an angle of 45 ° with the axis of thread. Thread length specified will include the countersink or chamfer. Square socket pipe plugs will be chamfered on both ends.
Sealant Coating: All fittings that have external pipe threads will be furnished with a pre-applied sealant coating on the pipe threads that meets the requirements of CEMS D-31.
- 8.0 PRESSURE RATINGS:** The pressure rating is 150 pounds for malleable iron fittings and 125 pounds for brass fittings. These ratings designate the maximum working saturated steam pressure.
- 9.0 WORKMANSHIP:** All parts must be free from burrs, loose scale, sharp edges, primary graphite and all other defects that might affect their serviceability.

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JUNE 2015

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10.0 REDUCING PIPE ADAPTERS:



Dimensions in inches:

Dimensions in inches.

A	B	C	D	D ^{1†}	E	G	H
Nominal Size and Taper Pipe Thread		Head Height	Head Width		Thread Length	Thread Depth	Metal Thick- ness
		Min	Min	Nom	Min	Min	Min
** 1/4	1/8	.14	.64	5/8	.44	.26	---
3/8	1/8	.16	.68	11/16	.48	.25	---
** 3/8	1/4	.16	.68	11/16	.48	.40	---
1/2	1/8	.19	.87	7/8	.56	.25	---
1/2	1/4	.19	.87	7/8	.56	.32	---
** 1/2	3/8	.19	.87	7/8	.56	.41	---
3/4	1/8	.22	1.15	1-1/8	.63	.25	---
3/4	1/4	.22	1.15	1-1/8	.63	.32	---
3/4	3/8	.22	1.15	1-1/8	.63	.36	---
** 3/4	1/2	.22	1.15	1-1/8	.63	.56	---
1	1/8	.30	1.12	---	.75	.25	---
1	1/4	.30	1.12	----	.75	.32	---
1	3/8	.30	1.12	----	.75	.36	---
1	1/2	.25	1.42	1-7/16	.75	.43	---
1	3/4	.25	1.42	1-7/16	.75	.50	---
1 - 1/4	1/4	.34	1.12	----	.80	.32	.185
1 - 1/4	3/8	.34	1.12	----	.80	.36	.185
1 - 1/4	1/2	.34	1.34	----	.80	.43	.185
1 - 1/4	3/4	.28	1.76	----	.80	.50	---
1 - 1/4	1	.28	1.76	----	.80	.58	---
1 - 1/2	1/4	.37	1.12	----	.83	.32	.200
1 - 1/2	3/8	.37	1.12	----	.83	.36	.200
1 - 1/2	1/2	.37	1.34	----	.83	.43	.200
1 - 1/2	3/4	.37	1.63	---	.83	.50	.200
1 - 1/2	1	.31	2.00	----	.83	.58	---
** 1 - 1/2	1- 1/4	.31	2.00	----	.83	.71	---
2	1/4	.41	1.12	----	.88	.32	.220
2	3/8	.41	1.12	----	.88	.36	.220
2	1/2	.41	1.34	----	.88	.43	.220
2	3/4	.41	1.63	----	.88	.50	.220
2	1	.41	1.95	----	.88	.58	.220
2	1- 1/4	.34	2.48	----	.88	.67	---
2	1- 1/2	.34	2.48	----	.88	.70	---

* Unless otherwise indicated, maximum core diameter will not exceed the tap drill diameter for the reduction of one size and minimum core diameter will not be less than the tap drill diameter for the size reduction specified.

** For these sizes, the maximum core diameter will not exceed the root diameter of the internal thread and the minimum core diameter will not be less than the tap drill diameter for the size reduction specified.

† Head widths will apply to steel bushings and at manufacturers option, to brass bushings made from bar stock. Across flats dimensions will conform to commercial tolerances of the bar from which the parts are made.

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JUNE 2015



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Page 3 of 9
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