



DEFENSE LOGISTICS AGENCY
WEAPONS SUPPORT
P.O. BOX 3990
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May 14, 2026

MEMORANDUM FOR MILITARY/INDUSTRY DISTRIBUTION

SUBJECT: Initial Draft of: MS39202H(2), MS39212K(1)
Project Number: 4730-2026-040, 4730-2026-041

The initial draft for these documents is now available for viewing and downloading from the DLA Weapons Support (Columbus) -VA website:

<https://landandmaritimeapps.dla.mil/programs/milspec/default.aspx>

Updating a referenced document (SAE J514) in MS39202 and MS39212. Any other changes will be minor per MIL-STD-961.

Concurrence or comments are required at this Center within 30 days from the date of this letter. Late comments will be held for the next coordination of the document. Comments from military departments must be identified as either "Essential" or "Suggested". Essential comments must be justified with supporting data. Military review activities should forward comments to their custodians of this office, as applicable, in sufficient time to allow for consolidating the department's reply. Lack of response to this draft will be construed as concurrence.

If this document is of interest to you, please provide your comments or suggested changes. The point of contact for this document is Mr. Ahmad, phone number 614-693-0661, e-mail Haseeb.Ahmad@dlamail, or may be mailed via the US Postal Service to DLA Weapons Support (Columbus), ATTN: VAI (Attention: Haseeb Ahmad), P.O. Box 3990, Columbus, OH 43218-3990.

Sincerely,

-/Signed/-
MUHAMMAD AKBAR
Chief,
Interconnection Branch

Note: This draft, dated 14 May 2026 and prepared by DLA-CC, has not been approved and is subject to modification. **DO NOT USE PRIOR TO APPROVAL.** (Project 4730-2026-040).

INCH-POUND

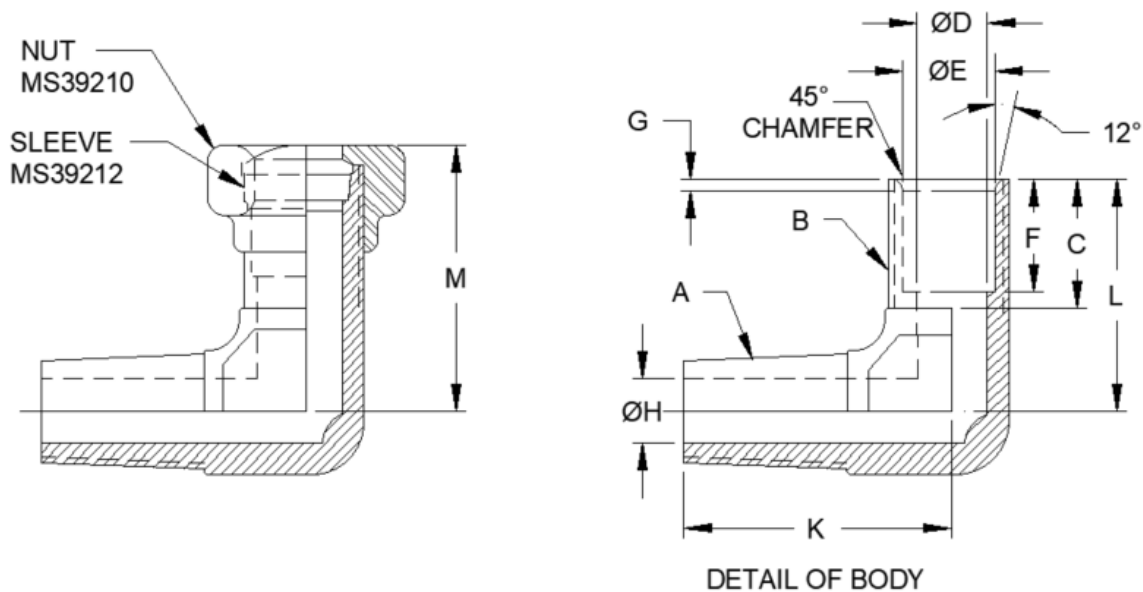
MS39202H
w/AMENDMENT 2
DRAFT
SUPERSEDING
MS39202H
w/AMENDMENT 1
21 November 2019

DETAIL SPECIFICATION SHEET

ELBOWS, PIPE TO TUBE- SAFETY SLEEVE COMPRESSION TYPE, 90 DEGREE, MALE PIPE END

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-18866.



See notes at end of figure.

FIGURE 1. Elbow, pipe to tube.



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Dash No.	Tube O.D. nom. inch (mm)	A pipe thread NPTF	B (see note 4)
1	.1250 (3.175)	.125 - 27	.3125-24UNF-2A
2	.1875 (4.763)	.125 - 27	.3750-24UNF-2A
3	.2500 (6.350)	.125 - 27	.5000-20UNF-2A
4	.3125 (7.938)	.125 - 27	.5625-18UNF-2A
5	.2500 (6.350)	.250 - 18	.5000-20UNF-2A
6	.3750 (9.525)	.250 - 18	.6250-18UNF-2A
7	.3750 (9.525)	.375 - 18	.6250-16UNF-2A
8	.5000 (12.700)	.375 - 18	.7500-16UNF-2A
9	.6250 (15.875)	.375 - 18	.9375-16UN-2A
10	.3750 (9.525)	.500 - 14	.6250-18UNF-2A
11	.5000 (12.700)	.500 - 14	.7500-16UNF-2A
12	.6250 (15.875)	.500 - 14	.9375-16UN-2A
13	.7500 (19.050)	.500 - 14	1.0625-16UN-2A
14	.7500 (19.050)	.750 - 14	1.0625-16UN-2A
15	.8750 (22.225)	.750 - 14	1.1875-16UN-2A
16	1.0000 (25.400)	.750 - 14	1.3125-16UN-2A
17	.8750 (22.225)	1.000 - 11 1/2	1.1875-16UN-2A
18	1.0000 (25.400)	1.000 - 11 1/2	1.3125-16UN-2A
19	1.2500 (31.750)	1.000 - 11 1/2	1.6250-16UN-2A
20	1.2500 (31.750)	1.250 - 11 1/2	1.6250-16UN-2A
21	1.5000 (38.100)	1.500 - 11 1/2	1.8750-16UN-2A

See notes at end of figure.

FIGURE 1. Elbow, pipe to tube - Continued.

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Dash No.	C Thread Length inch (mm)	D dia. inch (mm)	E dia. inch (mm)		F inch (mm)
			inch	mm	
1	.281 (7.14)	.094 (2.39)	.135 .139	3.43 3.53	.203 (5.16)
2	.281 (7.14)	.125 (3.17)	.196 .200	4.98 5.08	.250 (6.35)
3	.406 (10.31)	.203 (5.16)	.261 .265	6.63 6.73	.297 (7.54)
4	.406 (10.31)	.203 (5.16)	.324 .328	8.23 8.33	.297 (7.54)
5	.406 (10.31)	.203 (5.16)	.261 .265	6.63 6.73	.297 (7.54)
6	.438 (11.13)	.281 (7.14)	.386 .390	9.80 9.91	.297 (7.54)
7	.438 (11.13)	.281 (7.14)	.386 .390	9.80 9.91	.297 (7.54)
8	.438 (11.13)	.422 (10.72)	.514 .518	13.06 13.16	.313 (7.95)
9	.469 (11.91)	.438 (12.70)	.641 .645	16.28 16.38	.344 (8.74)
10	.438 (11.13)	.281 (7.14)	.386 .390	9.80 9.91	.297 (7.54)
11	.438 (11.13)	.422 (10.72)	.511 .518	13.74 13.16	.313 (7.95)
12	.469 (11.91)	.500 (12.70)	.641 .645	16.28 16.38	.344 (8.74)
13	.469 (11.91)	.656 (16.66)	.766 .770	19.46 19.56	.344 (8.74)
14	.469 (11.91)	.656 (16.66)	.766 .770	19.46 19.56	.344 (8.74)
15	.469 (11.91)	.719 (18.26)	.891 .895	22.63 22.73	.344 (8.74)
16	.469 (11.91)	.875 (22.23)	1.016 1.020	25.81 25.91	.406 (10.31)
17	.469 (11.91)	.719 (18.26)	.891 .895	22.63 22.73	.344 (8.74)
18	.469 (11.91)	.875 (22.23)	1.016 1.020	25.81 25.91	.406 (10.31)
19	.547 (13.89)	1.094 (27.79)	1.270 1.274	32.26 32.54	.406 (10.31)
20	.531 (13.49)	1.094 (27.79)	1.270 1.274	32.26 32.54	.406 (10.31)
21	.563 (14.30)	1.344 (34.14)	1.520 1.524	38.61 38.71	.469 (11.91)

See notes at end of figure.

FIGURE 1. Elbow, pipe to tube - Continued.

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Dash No.	G inch (mm)	H dia. inch (mm)	K inch (mm)	L inch (mm)	M inch (mm)
1	.125 (3.18)	.188 (4.78)	.750 (19.05)	.656 (16.66)	.969 (24.61)
2	.156 (3.96)	.188 (4.78)	.750 (19.05)	.656 (16.66)	1.000 (25.40)
3	.203 (5.16)	.188 (4.78)	.781 (19.84)	.750 (19.05)	1.156 (29.36)
4	.203 (5.16)	.188 (4.78)	.781 (19.84)	.813 (20.65)	1.188 (30.18)
5	.203 (5.16)	.281 (7.14)	1.063 (27.00)	.875 (22.23)	1.281 (32.54)
6	.203 (5.16)	.281 (7.14)	1.063 (27.00)	.938 (23.83)	1.375 (34.93)
7	.203 (5.16)	.422 (10.72)	1.188 (30.18)	1.125 (28.58)	1.562 (39.67)
8	.203 (5.16)	.422 (10.72)	1.188 (30.18)	1.125 (28.58)	1.656 (42.06)
9	.234 (5.94)	.422 (10.72)	1.188 (30.18)	1.313 (33.35)	1.844 (46.84)
10	.203 (5.16)	.438 (11.13)	1.438 (36.53)	1.125 (28.58)	1.563 (39.70)
11	.203 (5.16)	.438 (11.13)	1.250 (31.75)	1.188 (30.18)	1.719 (43.66)
12	.234 (5.94)	.500 (12.70)	1.438 (36.53)	1.313 (33.35)	1.844 (46.84)
13	.203 (5.16)	.500 (12.70)	1.563 (39.70)	1.500 (38.10)	2.094 (53.19)
14	.203 (5.16)	.719 (18.26)	1.563 (39.70)	1.500 (38.10)	2.094 (53.19)
15	.203 (5.16)	.656 (16.66)	1.750 (44.45)	1.750 (44.45)	2.344 (59.54)
16	.203 (5.16)	.719 (18.26)	1.750 (44.45)	1.750 (44.45)	2.344 (59.54)
17	.203 (5.16)	.875 (22.23)	1.938 (49.23)	1.750 (44.45)	2.344 (59.54)
18	.203 (5.16)	.875 (22.23)	1.938 (49.23)	1.750 (44.45)	2.344 (59.54)
19	.203 (5.16)	.875 (22.23)	1.938 (49.23)	2.250 (57.15)	2.875 (73.03)
20	.203 (5.16)	1.125 (28.58)	2.313 (58.75)	2.250 (57.15)	2.875 (73.03)
21	.203 (5.16)	1.343 (34.11)	2.563 (65.10)	2.375 (60.33)	3.063 (77.80)

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Tolerances: Unless otherwise specified, decimals ± 0.016 (0.41mm), degrees $\pm 2^\circ$.
4. Threads shall be in accordance with FED-STD-H28.
5. Break all sharp edges; remove all burrs and slivers.
6. Dimensions and tolerances not shown shall be in accordance with SAE-J514-1 for 37° flared fittings.
7. The drawing is for identification purposes only and is not intended to restrict designs and shapes not dimensioned.

FIGURE 1. Elbow, pipe to tube - Continued.

REQUIREMENTS:

Fittings shall be as specified on figure 1 and table I.

Materials shall be in accordance with MIL-DTL-18866 and table I.

The Part or Identifying Number (PIN) is for the complete item with MS39210 nuts and MS39212 sleeves.

Maximum operating pressure. See MIL-DTL-18866. Maximum operating pressure shall be determined from the NPTF pipe size specified on figure 1.

Finish. Finishes shall be as specified in table I.

All plating's shall be capable of meeting a minimum of 96 hours salt spray test in accordance with ASTM B117. The fittings shall show no evidence of red corrosion after 96 hours of salt spray. Fluid

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passages, other openings and internal threads shall not be subject to the plating thickness requirement and may have bare areas provided they are protected with a light film of oil.

Table I. Material and finish designators.

Material finish designator	Material	Finish
C	Steel bar, type 1117, 1118 or 1137 in accordance with ASTM A29/A29M	Carbon steel: Cadmium in accordance with SAE-AMS-QQ-P-416, type II, class 3, 200μ inches to 300μ inches (5.08 μm to 7.62 μm) thick. <u>1/ 5/ 7/</u>
CZ	Steel bar, type 1117, 1118 or 1137 in accordance with ASTM A29/A29M	Zinc plating in accordance with ASTM B633; type III or V, Fe/Zn 8. <u>4/ 5/</u>
F	Steel	Cadmium in accordance with SAE-AMS-QQ-P-416, type II, class 3, 200μ inches to 300μ inches (5.08 μm to 7.62 μm) thick. <u>1/ 5/ 7/</u>
FZ	Steel	Zinc plating in accordance with ASTM B633; type III or V, Fe/Zn 8. <u>4/ 5/</u>
H	Steel	Zinc-Aluminum in accordance with ASTM F1136/F1136M, grade 3, NC. <u>2/</u>
J	Steel	Zinc-nickel in accordance with SAE-AMS2417, type 2, grade B. <u>2/ 3/</u>
M	Nickel-copper alloy UNS N04400	No additional finish.
N	High-chromium nickel alloy UNS N06690	No additional finish.
P	Steel	Zinc phosphate finish in accordance MIL-DTL-16232 type Z, class 1. <u>4/</u>
S	Corrosion resistant steel	No additional finish. Passivation in accordance with SAE-AMS2700, method 1, type 6 or 7, free machining alloy UNS S30300 method 1, type 2 or 4.
T	Titanium	Anodize in accordance with SAE-AMS2488 type 2. <u>6/ 8/</u>
TF	Titanium	Fluoride phosphate in accordance with SAE-AMS2486. <u>6/ 8/</u>
Z	Steel	Zinc plating in accordance with ASTM B633, type VI, Fe/Zn 8. <u>4/</u>
ZC	Steel	Zinc may be any zinc plating from PIN codes CZ and J with a colored chromate coating. <u>4/ 5/</u>

1/ Embrittlement test need not be run.

2/ Hexavalent chromium free. Finish shall be RoHS compliant.

3/ The zinc-nickel alloy plate shall contain 12% to 16% nickel. The coating thickness shall be 315μ inches (8μm) minimum.

4/ Not for use in aircraft. Requires approval from the Program Office for all applications. Zinc-plated materials should be avoided in hydraulic systems with water-glycol fluids. Reference ASTM MNL37 - Fuels and Lubricants Handbook.

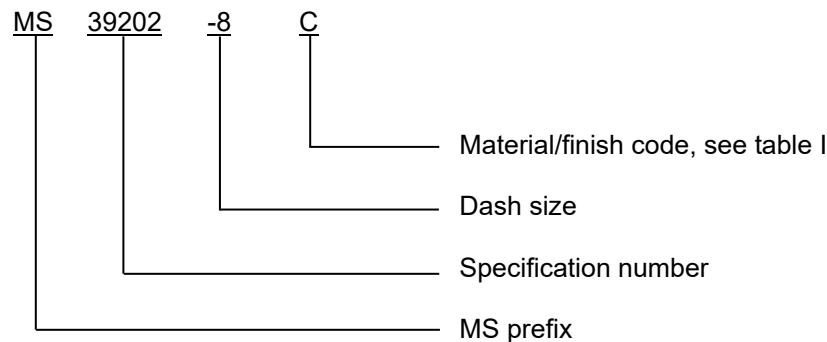
5/ These finishes have a chromate conversion coating which includes hexavalent chromium and are not recommended for Army ground systems.

6/ A pretreatment, a modification of the fluoride treatment, or a post treatment shall be applied so the final color of the fittings shall be similar to SAE-AMS-STD-595 colors 36076 through 36293.

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- 7/ Cadmium shall not be used in oxygen or potable water systems. Cadmium is prohibited from use in NAVSEA-owned shipboard systems in accordance with the requirements of T9070-AL-DPC-020/077-2, unless otherwise approved by NAVSEA. The use of cadmium plating for Army vehicles is prohibited unless otherwise explicated stated in the contract as a requirement.
- 8/ Titanium shall not be used in oxygen or potable water systems.

PIN example: The PIN consists of the MS prefix, specification number, dash number for size code, and a material finish design.



MS39202-8C indicates a 90° elbow pipe to tube, 3/8 pipe thread to 3/4 straight thread, steel bar with cadmium plating.

Cadmium is not recommended. To the users of this document, it is recommended that the use of carbon steel material with cadmium plating be used only when other materials and finishes specified in this document cannot meet performance requirements.

Cadmium is prohibited from use in NAVSEA-owned shipboard systems in accordance with the requirements of T9070-AL-DPC-020/077-2, unless otherwise approved by NAVSEA.

The use of cadmium plating for Army vehicles is prohibited unless otherwise explicated stated in the contract as a requirement.

Class I and II ozone depleting substances (ODS) shall not be used in MS39202 or any referenced procedures.

Tapered pipe thread connections are generally prohibited in high shock applications.

Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

Referenced documents shall be of the issue in effect on date of invitations for bid.

Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

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Referenced documents. In addition to MIL-DTL-18866, this document references the following:

FED-STD-H28	SAE-AMS-STD-595/36076	SAE-AMS-STD-595/36270
MIL-DTL-16232	SAE-AMS-STD-595/36081	SAE-AMS-STD-595/36280
MS39210	SAE-AMS-STD-595/36099	SAE-AMS-STD-595/36293
MS39212	SAE-AMS-STD-595/36118	SAE-AMS2417
ASTM A29/A29M	SAE-AMS-STD-595/36134	SAE-AMS2486
ASTM B117	SAE-AMS-STD-595/36152	SAE-AMS2488
ASTM B633	SAE-AMS-STD-595/36170	SAE-AMS2700
ASTM F1136/F1136M	SAE-AMS-STD-595/36173	SAE-J514-1
ASTM MNL37	SAE-AMS-STD-595/36176	T9070-AL-DPC-020/077-2
SAE-AMS-QQ-P-416	SAE-AMS-STD-595/36231	
	SAE-AMS-STD-595/36251	

CONCLUDING MATERIAL

Custodians:

Army - AT
Navy - AS
Air Force - 71
DLA - CC

Preparing activity:

DLA - CC

(Project 4730-2026-040)

Review activities:

Army - AR
Navy - SA

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil>.