INCH-POUND
MS39324B
25 June 2015
SUPERSEDING
MS39324A
9 May 1980

DETAIL SPECIFICATION SHEET

ADAPTER, 37 DEGREE, FLARE TO "O" RING BOSS, 45 DEGREE FLARE

Inactive for new design after 17 August 1999. For new design, use SAE-J514.

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-18666.

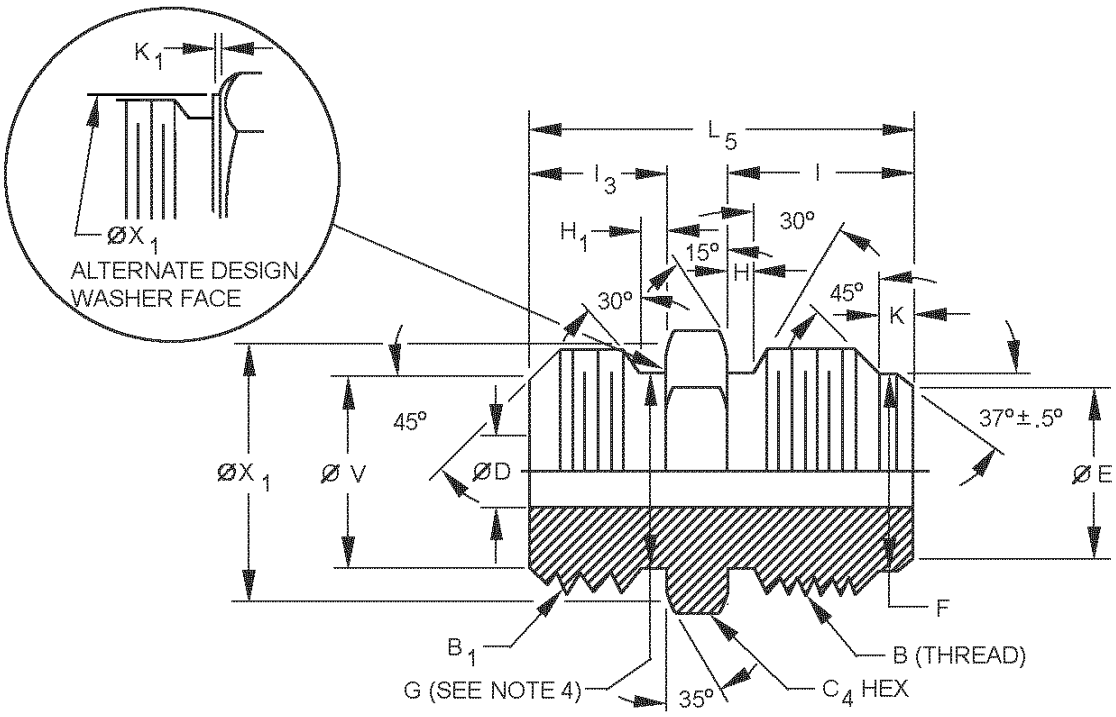


FIGURE 1. Adapter, 37°, flare to "O" ring boss.

Dash number	Tube O.D. nom	B Straight thread Nom size (see note 5)	B_1 Straight Thread Nom size (see note 5)	C_4	D dia.		E dia.	
				Hex Nom	Inches ±.003	mm ±0.08	Inches ±.003	mm ±0.08
-4-4	1/4 -1/4	.4375-20 UNF-2A	.4375-20 UNF-2A	9/16	.172	4.37	.193	4.90
-5-4	5/16 – 1/4	.5000-20 UNF-2A	.4375-20 UNF-2A	9/16	.172	4.37	.255	6.48
-6-4	3/8 – 1/4	.5625-18 UNF-2A	.4375-20 UNF-2A	5/8	.172	4.37	.318	8.08
-8-4	1/2 – 1/4	.7500-16 UNF-2A	.4375-20 UNF-2A	13/16	.172	4.37	.426	10.82
-10-4	5/8 – 1/4	.8750-14 UNF-2A	.4375-20 UNF-2A	15/16	.172	4.37	.539	13.69
-12-4	3/4 – 1/4	1.0625-12 UN-2A	.4375-20 UNF-2A	1 1/8	.172	4.37	.664	16.87
-5-5	5/16 – 5/16	.5000-20 UNF-2A	.4375-20 UNF-2A	5/8	.234	5.94	.255	6.48
-6-5	3/8 – 5/6	.5625-18 UNF-2A	.5000-20 UNF-2A	5/8	.234	5.94	.318	8.08
-8-5	1/2 – 5/16	.7500-16 UNF-2A	.5000-20 UNF-2A	13/16	.234	5.94	.426	10.82
-10-5	5/8 – 5/16	.8750-14 UNF-2A	.5000-20 UNF-2A	15/16	.234	5.94	.539	13.69
-12-5	3/4 – 5/16	1.0625-12 UN-2A	.5000-20 UNF-2A	1 1/8	.234	5.94	.664	16.87
-6-6	3/8 - 3/8	.5625-18 UNF-2A	.5625-18 UNF-2A	11/16	.297	7.54	.318	8.08
-8-6	1/2 - 3/8	.7500-16 UNF-2A	.5625-18 UNF-2A	13/16	.297	7.54	.426	10.82
-10-6	5/8 - 3/8	.8750-14 UNF-2A	.5625-18 UNF-2A	15/16	.297	7.54	.539	13.69
-12-6	3/4 - 3/8	1.0625-12 UN-2A	.5625-18 UNF-2A	1 1/8	.297	7.54	.664	16.87
-8-8	1/2 – 1/2	.7500-16 UNF-2A	.7500-16 UNF-2A	7/8	.391	9.93	.426	10.82
-10-8	5/8 – 1/2	.8750-14 UNF-2A	.7500-16 UNF-2A	1 1/8	.391	9.93	.539	13.69
-12-8	3/4 – 1/2	1.0625-12 UN-2A	.7500-16 UNF-2A	1 1/4	.391	9.93	.664	16.87
-10-10	5/8 – 5/8	.8750-14 UNF-2A	.8750-14 UNF-2A	1	.484	12.29	.539	13.69
-12-10	3/4 – 5/8	1.0625-12 UN-2A	.8750-14 UNF-2A	1 1/8	.484	12.29	.664	16.87
-12-12	3/4 -3/4	1.0625-12 UN-2A	1.0625-12 UN-2A	1 1/4	.609	15.47	.664	16.87
-12-16	3/4 - 1	1.0625-12 UN-2A	1.3125-12 UN-2A	1 1/2	.609	15.47	.664	16.87

Dash number	F		G		H		H_1	
	Inches ±.005	mm ±0.13	Inches ±.002	mm ±0.05	Inches +.015 -.000	mm +0.38 -0.00	Inches +.015 -.000	mm +0.38 -0.00
-4-4	.359	9.12	.364	9.25	.075	1.91	.075	1.91
-5-4	.421	10.69	.364	9.25	.075	1.91	.075	1.91
-6-4	.476	12.09	.364	9.25	.083	2.11	.075	1.91
-8-4	.654	16.61	.364	9.25	.094	2.39	.075	1.91
-10-4	.767	19.48	.364	9.25	.107	2.72	.075	1.91
-12-4	.938	23.83	.364	9.25	.125	3.18	.075	1.91
-5-5	.421	10.69	.427	10.85	.075	1.91	.075	1.91
-6-5	.476	12.09	.427	10.85	.083	2.11	.075	1.91
-8-5	.654	16.61	.427	10.85	.094	2.39	.075	1.91
-10-5	.767	19.48	.427	10.85	.107	2.72	.075	1.91
-12-5	.938	23.83	.427	10.85	.125	3.18	.075	1.91
-6-6	.476	12.09	.482	12.24	.083	2.11	.083	2.11
-8-6	.654	16.61	.482	12.24	.094	2.39	.083	2.11
-10-6	.767	19.48	.482	12.24	.107	2.72	.083	2.11
-12-6	.938	23.83	.482	12.24	.125	3.18	.083	2.11
-8-8	.654	16.61	.660	16.76	.094	2.39	.094	2.39
-10-8	.767	19.48	.660	16.76	.107	2.72	.094	2.39
-12-8	.938	23.83	.660	16.76	.125	3.18	.094	2.39
-10-10	.767	19.48	.773	19.63	.107	2.72	.107	2.72
-12-10	.938	23.83	.773	19.63	.125	3.18	.107	2.72
-12-12	.938	23.83	.945	24.00	.125	3.18	.125	3.18
-12-16	.938	23.83	1.195	30.35	.125	3.18	.125	3.18

FIGURE 1. Adapter, 37°, flare to “O” ring boss - Continued.

Dash number	I		I_3		K		K_1	
	Inches ±.005	mm ±0.13	Inches ±.005	mm ±0.13	Inches +.015 -.000	mm +0.38 -0.00	Inches +.015 -.000	mm +0.38 -0.00
-4-4	.550	13.97	.360	9.14	.193	4.90	---	---
-5-4	.550	13.97	.360	9.14	.193	4.90	---	---
-6-4	.556	14.12	.360	9.14	.198	5.03	.062	1.57
-8-4	.657	16.69	.360	9.14	.253	6.43	.062	1.57
-10-4	.758	19.25	.360	9.14	.266	6.76	.062	1.57
-12-4	.864	21.95	.360	9.14	.315	8.00	.062	1.57
-5-5	.550	13.97	.360	9.14	.193	4.90	---	---
-6-5	.556	14.12	.360	9.14	.198	5.03	---	---
-8-5	.657	16.69	.360	9.14	.253	6.43	.062	1.57
-10-5	.758	19.25	.360	9.14	.266	6.76	.062	1.57
-12-5	.864	21.95	.360	9.14	.315	8.00	.062	1.57
-6-6	.556	14.12	.391	9.93	.198	5.03	---	---
-8-6	.657	16.69	.391	9.93	.253	6.43	.062	1.57
-10-6	.758	19.25	.391	9.93	.266	6.76	.062	1.57
-12-6	.864	21.95	.391	9.93	.315	8.00	.062	1.57
-8-8	.657	16.69	.438	11.13	.253	6.43	---	---
-10-8	.758	19.25	.438	11.13	.266	6.76	.094	2.39
-12-8	.864	21.95	.438	11.13	.315	8.00	.094	2.39
-10-10	.758	19.25	.500	12.70	.266	6.76	---	---
-12-10	.864	21.95	.500	12.70	.315	8.00	---	---
-12-12	.864	21.95	.594	15.09	.315	8.00	---	---
-12-16	.864	21.95	.594	15.09	.315	8.00	---	---

FIGURE 1. Adapter, 37°, flare to “O” ring boss - Continued.

Dash number	L_5		V dia.		X_1 dia	
	Inches ±.002	mm ±0.05	Inches ±.005	mm ±0.13	Inches +.015 -.000	mm +0.38 -0.00
-4-4	1.23	31.24	.365	9.27	.563	14.30
-5-4	1.23	31.24	.365	9.27	.563	14.30
-6-4	1.23	31.24	.365	9.27	.563	14.30
-8-4	1.34	34.04	.365	9.27	.563	14.30
-10-4	1.47	37.34	.365	9.27	.563	14.30
-12-4	1.64	41.66	.365	9.27	.563	14.30
-5-5	1.23	31.24	.425	10.80	.625	15.88
-6-5	1.23	31.24	.425	10.80	.625	15.88
-8-5	1.34	34.04	.425)	10.80	.625	15.88
-10-5	1.47	37.34	.425	10.80	.625	15.88
-12-5	1.64	41.66	.425	10.80	.625	15.88
-6-6	1.29	32.77	.480	12.19	.688	17.48
-8-6	1.40	35.56	.480	12.19	.688	17.48
-10-6	1.50	38.10	.480	12.19	.688	17.48
-12-6	1.67	42.42	.480	12.19	.688	17.48
-8-8	1.48	37.59	.660	16.76	.875	22.23
-10-8	1.58	40.13	.660	16.76	.875	22.23
-12-8	1.72	43.69	.660	16.76	.875	22.23
-10-10	1.70	43.18	.775	19.69	1.000	25.40
-12-10	1.80	45.72	.775	19.69	1.000	25.40
-12-12	1.97	50.04	.945	24.00	1.250	31.75
-12-16	2.00	50.80	1.195	30.35	1.250	31.75

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Break all sharp edges and remove all burrs and slivers.
4. “O” ring groove shall be smooth and free from tool marks 100µ inches (2.54 µm) maximum.
5. Threads in accordance with ASME B1.1.

FIGURE 1. Adapter, 37°, flare to “O” ring boss - Continued.

REQUIREMENTS:

Fittings shall be as specified on figure 1 and in tables I and II.

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

TABLE I. Materials.

Material	Form	Specification	Alloy
Carbon steel	Bar	SAE-J403	1110, 1120, 1140, 1213, 1215, or 12L14
	Forgings		
Chrome-molybdenum steel	Bars	SAE-AMS6370	4130
	Forgings	SAE-AMS6382	
		SAE-AMS6370	
Corrosion resistant steel	Bars and forgings	ASTM A276/A276M	304, 304L, 316, or 321
		ASTM A564/A564M	XM-12 (15-5 PH) UNS S15500 or 603 (17-4 PH) UNS S17400
		SAE-AMS5639	UNS S30400
		SAE-AMS5645	UNS S32100
		SAE-AMS5647	UNS S30403
		SAE-AMS5743	UNS S35500
	Bar	ASTM A582/A582M	UNS S30300
Nickel-copper alloy	Bar	ASTM B164 QQ-N-281	UNS N04400
High-chromium nickel alloy	Bar	ASTM B166	UNS N06690
	Forgings	ASTM B564	
Titanium 1/	Bars	SAE-AMS4928	6AI-4V annealed
	Forgings		

1/ Titanium shall not be used in oxygen or potable water systems.

Finish. Finishes shall be as specified in table II. All platings 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 corrosion after 96 hours of salt spray. Fluid 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 II. Material and finish identification codes.

PIN code material/plating finish	Material	Plating finish
Blank	Steel	Cadmium plating in accordance with SAE-AMS-C-81562, type II, class 3 or SAE-AMS-QQ-P-416, type II, class 2. 1/
CN		Cadmium plating in accordance with SAE-AMS-C-81562, type II, class 3 or SAE-AMS-QQ-P-416, type II, class 2 with NAVAIR trivalent chromium pretreatment (TCP) in accordance with MIL-DTL-81706, type II, class 1A. 1/
E		NAVAIR TCP in accordance with MIL-DTL-81706, type II, class 1A.
F	Steel	Zinc plate (finish J, P, or R) with NAVAIR TCP in accordance with MIL-DTL-81706, type II, class 1A.
H	Steel	Aluminum-nickel in accordance with ASTM F1136/F1136M, grade 3, NC.
J	Steel	Zinc-nickel in accordance with SAE-AMS2417, type 2, grade B.
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, class1.
R	Steel	Zinc plating in accordance with ASTM B633; type VI, Fe/Zn 5. 2/
S	Corrosion resistant steel	No additional finish. Passivation in accordance with SAE-AMS2700, method 1, type 6 or 7.
T	Titanium	Anodize in accordance with SAE-AMS2488 type 2. 3/
TF	Titanium	Fluoride phosphate in accordance with SAE-AMS2486. 3/
Z	Steel	Zinc plating in accordance with ASTM B633; type II or III, Fe/Zn 5, or ASTM B695, type II, class 5. 4/
ZN	Steel	Zinc plating in accordance with ASTM B633; type II or III, Fe/Zn 5, or ASTM B695, type II, class 5 with NAVAIR TCP in accordance with MIL-DTL-81706, type II, class 1A. 4/

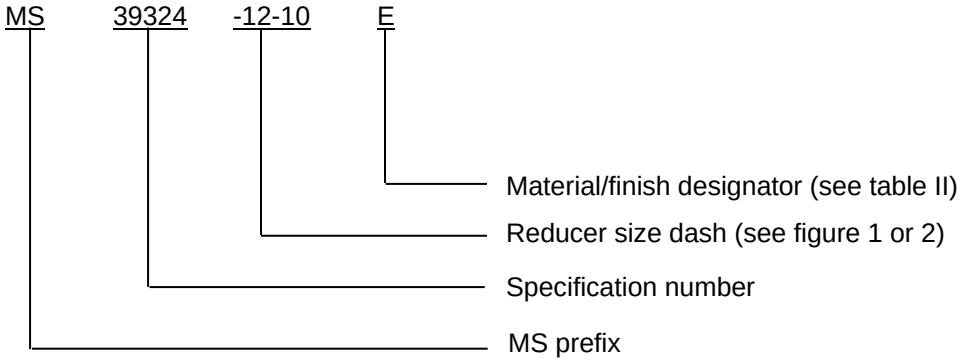
1/ Embrittlement test need not be run. Cadmium shall not be used in oxygen or potable water systems.
2/ Hexavalent chromium free.
3/ A pretreatment, a modification of the fluoride treatment, or a post treatment shall be applied so the final color of the fittings shall be similar to FED-STD-595 colors 36076 through 36293.
4/ Not for use in aircraft.

Trivalent wrenchability. When the finish has been damaged due to poor wrenchability, the surface of the connector shall be touched up using the brush plating process below. The term “trivalent wrenchability” is used to evaluate the ability of the finish to withstand abrasion from an excessive amount of wrenching.

a. Brush plating of hard chromium by electrodeposition shall be in accordance with SAE-AMS-2451/5.
b. Brush plating of medium-hardness, low stress nickel by electrodeposition shall be in accordance with SAE-AMS-2451/9.
c. Brush plating of NAVAIR TCP shall be in accordance with MIL-DTL-81706, type II, class 1A, material form 1 through 6, application method B. Example of a PIN: M817062A6B.

Maximum operating pressure. Maximum operating pressure shall be in accordance with SAE-J514.

PIN: The PIN consists of the letters “MS”, the specification number, a dash, number for adapter size, and a letter for material finish designator.



PIN example: MS39324-12-10E indicates an adapter 3/4 to 5/8 inch (19.05 to 15.88 mm), steel with NAVAIR TCP.

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.

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.

Table III provides a detailed cross-reference of inactive MS39324 PIN’s and for new design SAE-J514 PIN’s.

MS39324 parts have threads in accordance with ASME B1.1 the SAE parts have straight threads in accordance with SAE-J425.

The part substitutions specified in table III are intended for most ground vehicle applications and are not intended for use in aerospace applications.

Users are cautioned to evaluate replacement parts for their particular application.

CAUTION: The superseding information is valid as of the date of this specification and may be superseded by subsequent revisions of the superseding document.

TABLE III. MS39324 to SAE-J514 cross reference.

Inactive for new design MS39324 PIN	For new design SAE-J514 PIN	Tube O.D. nom
MS39324-4-4	Not available	1/4 -1/4
MS39324-4-4CN	Not available	1/4 -1/4
MS39324-4-4E	Not available	1/4 -1/4
MS39324-4-4F	Not available	1/4 -1/4
MS39324-4-4H	Not available	1/4 -1/4
MS39324-4-4J	Not available	1/4 -1/4
MS39324-4-4M	J514-4-4-070120M	1/4 -1/4
MS39324-4-4N	J514-4-4-070120N	1/4 -1/4
MS39324-4-4P	J514-4-4-070120P	1/4 -1/4
MS39324-4-4R	Not available	1/4 -1/4
MS39324-4-4S	J514-4-4-070120S	1/4 -1/4
MS39324-4-4T	J514-4-4-070120T	1/4 -1/4
MS39324-4-4TF	Not available	1/4 -1/4
MS39324-4-4Z	J514-4-4-070120Z	1/4 -1/4
MS39324-4-4ZN	Not available	1/4 -1/4
MS39324-5-4	Not available	5/16 - 1/4
MS39324-5-4CN	Not available	5/16 - 1/4
MS39324-5-4E	Not available	5/16 - 1/4
MS39324-5-4F	Not available	5/16 - 1/4
MS39324-5-4H	Not available	5/16 - 1/4
MS39324-5-4J	Not available	5/16 - 1/4
MS39324-5-4M	J514-5-5-070120M	5/16 - 1/4
MS39324-5-4N	J514-5-5-070120N	5/16 - 1/4
MS39324-5-4P	J514-5-5-070120P	5/16 - 1/4
MS39324-5-4R	Not available	5/16 - 1/4
MS39324-5-4S	J514-5-5-070120S	5/16 - 1/4
MS39324-5-4T	J514-5-5-070120T	5/16 - 1/4
MS39324-5-4TF	Not available	5/16 - 1/4
MS39324-5-4Z	J514-5-5-070120Z	5/16 - 1/4
MS39324-5-4ZN	Not available	5/16 - 1/4
MS39324-6-4	Not available	3/8 - 1/4
MS39324-6-4CN	Not available	3/8 - 1/4
MS39324-6-4E	Not available	3/8 - 1/4
MS39324-6-4F	Not available	3/8 - 1/4
MS39324-6-4H	Not available	3/8 - 1/4
MS39324-6-4J	Not available	3/8 - 1/4
MS39324-6-4M	J514-6-4-070120M	3/8 - 1/4
MS39324-6-4N	J514-6-4-070120N	3/8 - 1/4
MS39324-6-4P	J514-6-4-070120P	3/8 - 1/4
MS39324-6-4R	Not available	3/8 - 1/4
MS39324-6-4S	J514-6-4-070120S	3/8 - 1/4
MS39324-6-4T	J514-6-4-070120T	3/8 - 1/4
MS39324-6-4TF	Not available	3/8 - 1/4
MS39324-6-4Z	J514-6-4-070120Z	3/8 - 1/4
MS39324-6-4ZN	Not available	3/8 - 1/4

TABLE III. MS39324 to SAE-J514 cross reference.

Inactive for new design MS39324 PIN	For new design SAE-J514 PIN	Tube O.D. nom
MS39324-8-4	Not available	1/2 - 1/4
MS39324-8-4CN	Not available	1/2 - 1/4
MS39324-8-4E	Not available	1/2 - 1/4
MS39324-8-4F	Not available	1/2 - 1/4
MS39324-8-4H	Not available	1/2 - 1/4
MS39324-8-4J	Not available	1/2 - 1/4
MS39324-8-4M	J514-8-4-070120M	1/2 - 1/4
MS39324-8-4N	J514-8-4-070120N	1/2 - 1/4
MS39324-8-4P	J514-8-4-070120P	1/2 - 1/4
MS39324-8-4R	Not available	1/2 - 1/4
MS39324-8-4S	J514-8-4-070120S	1/2 - 1/4
MS39324-8-4T	J514-8-4-070120T	1/2 - 1/4
MS39324-8-4TF	Not available	1/2 - 1/4
MS39324-8-4Z	J514-8-4-070120Z	1/2 - 1/4
MS39324-8-4ZN	Not available	1/2 - 1/4
MS39324-10-4	Not available	5/8 - 1/4
MS39324-10-4CN	Not available	5/8 - 1/4
MS39324-10-4E	Not available	5/8 - 1/4
MS39324-10-4F	Not available	5/8 - 1/4
MS39324-10-4H	Not available	5/8 - 1/4
MS39324-10-4J	Not available	5/8 - 1/4
MS39324-10-4M	J514-10-4-070120N	5/8 - 1/4
MS39324-10-4N	J514-10-4-070120M	5/8 - 1/4
MS39324-10-4P	J514-10-4-070120P	5/8 - 1/4
MS39324-10-4R	Not available	5/8 - 1/4
MS39324-10-4S	J514-10-4-070120S	5/8 - 1/4
MS39324-10-4T	J514-10-4-070120T	5/8 - 1/4
MS39324-10-4TF	Not available	5/8 - 1/4
MS39324-10-4Z	J514-10-4-070120Z	5/8 - 1/4
MS39324-10-4ZN	Not available	5/8 - 1/4
MS39324-12-4	Not available	3/4 - 1/4
MS39324-12-4CN	Not available	3/4 - 1/4
MS39324-12-4E	Not available	3/4 - 1/4
MS39324-12-4F	Not available	3/4 - 1/4
MS39324-12-4H	Not available	3/4 - 1/4
MS39324-12-4J	Not available	3/4 - 1/4
MS39324-12-4M	J514-12-4-070120M	3/4 - 1/4
MS39324-12-4N	J514-12-4-070120N	3/4 - 1/4
MS39324-12-4P	J514-12-4-070120P	3/4 - 1/4
MS39324-12-4R	Not available	3/4 - 1/4
MS39324-12-4S	J514-12-4-070120S	3/4 - 1/4
MS39324-12-4T	J514-12-4-070120T	3/4 - 1/4
MS39324-12-4TF	Not available	3/4 - 1/4
MS39324-12-4Z	J514-12-4-070120Z	3/4 - 1/4
S39324-12-4ZN	Not available	3/4 - 1/4

TABLE III. MS39324 to SAE-J514 cross reference - Continued.

Inactive for new design MS39324 PIN	For new design SAE-J514 PIN	Tube O.D. nom
MS39324-5-5	Not available	5/16 - 5/16
MS39324-5-5CN	Not available	5/16 - 5/16
MS39324-5-5E	Not available	5/16 - 5/16
MS39324-5-5F	Not available	5/16 - 5/16
MS39324-5-5H	Not available	5/16 - 5/16
MS39324-5-5J	Not available	5/16 - 5/16
MS39324-5-5M	J514-5-5-070120M	5/16 - 5/16
MS39324-5-5N	J514-5-5-070120N	5/16 - 5/16
MS39324-5-5P	J514-5-5-070120P	5/16 - 5/16
MS39324-5-5R	Not available	5/16 - 5/16
MS39324-5-5S	J514-5-5-070120S	5/16 - 5/16
MS39324-5-5T	J514-5-5-070120T	5/16 - 5/16
MS39324-5-5TF	Not available	5/16 - 5/16
MS39324-5-5Z	J514-5-5-070120Z	5/16 - 5/16
MS39324-5-5ZN	Not available	5/16 - 5/16
MS39324-6-5	Not available	3/8 - 5/16
MS39324-6-5CN	Not available	3/8 - 5/16
MS39324-6-5E	Not available	3/8 - 5/16
MS39324-6-5F	Not available	3/8 - 5/16
MS39324-6-5H	Not available	3/8 - 5/16
MS39324-6-5J	Not available	3/8 - 5/16
MS39324-6-5M	J514-6-5-070120M	3/8 - 5/16
MS39324-6-5N	J514-6-5-070120N	3/8 - 5/16
MS39324-6-5P	J514-6-5-070120P	3/8 - 5/16
MS39324-6-5R	Not available	3/8 - 5/16
MS39324-6-5S	J514-6-5-070120S	3/8 - 5/16
MS39324-6-5T	J514-6-5-070120T	3/8 - 5/16
MS39324-6-5TF	Not available	3/8 - 5/16
MS39324-6-5Z	J514-6-5-070120Z	3/8 - 5/16
MS39324-6-5ZN	Not available	3/8 - 5/16
MS39324-8-5	Not available	1/2 - 5/16
MS39324-8-5CN	Not available	1/2 - 5/16
MS39324-8-5E	Not available	1/2 - 5/16
MS39324-8-5F	Not available	1/2 - 5/16
MS39324-8-5H	Not available	1/2 - 5/16
MS39324-8-5J	Not available	1/2 - 5/16
MS39324-8-5M	J514-8-5-070120M	1/2 - 5/16
MS39324-8-5N	J514-8-5-070120N	1/2 - 5/16
MS39324-8-5P	J514-8-5-070120P	1/2 - 5/16
MS39324-8-5R	Not available	1/2 - 5/16
MS39324-8-5S	J514-8-5-070120S	1/2 - 5/16
MS39324-8-5T	J514-8-5-070120T	1/2 - 5/16
MS39324-8-5TF	Not available	1/2 - 5/16
MS39324-8-5Z	J514-8-5-070120Z	1/2 - 5/16
MS39324-8-5ZN	Not available	1/2 - 5/16

TABLE III. MS39324 to SAE-J514 cross reference - Continued.

Inactive for new design MS39324 PIN	For new design SAE-J514 PIN	Tube O.D. nom
MS39324-10-5	Not available	5/8 - 5/16
MS39324-10-5CN	Not available	5/8 - 5/16
MS39324-10-5E	Not available	5/8 - 5/16
MS39324-10-5F	Not available	5/8 - 5/16
MS39324-10-5H	Not available	5/8 - 5/16
MS39324-10-5J	Not available	5/8 - 5/16
MS39324-10-5M	J514-10-5-070120M	5/8 - 5/16
MS39324-10-5N	J514-10-5-070120N	5/8 - 5/16
MS39324-10-5P	J514-10-5-070120P	5/8 - 5/16
MS39324-10-5R	Not available	5/8 - 5/16
MS39324-10-5S	J514-10-5-070120S	5/8 - 5/16
MS39324-10-5T	J514-10-5-070120T	5/8 - 5/16
MS39324-10-5TF	Not available	5/8 - 5/16
MS39324-10-5Z	J514-10-5-070120Z	5/8 - 5/16
MS39324-6-4ZN	Not available	5/8 - 5/16
MS39324-12-5	Not available	3/4 - 5/16
MS39324-12-5CN	Not available	3/4 - 5/16
MS39324-12-5E	Not available	3/4 - 5/16
MS39324-12-5F	Not available	3/4 - 5/16
MS39324-12-5H	Not available	3/4 - 5/16
MS39324-12-5J	Not available	3/4 - 5/16
MS39324-12-5M	J514-12-5-070120M	3/4 - 5/16
MS39324-12-5N	J514-12-5-070120N	3/4 - 5/16
MS39324-12-5P	J514-12-5-070120P	3/4 - 5/16
MS39324-12-5R	Not available	3/4 - 5/16
MS39324-12-5S	J514-12-5-070120S	3/4 - 5/16
MS39324-12-5T	J514-12-5-070120T	3/4 - 5/16
MS39324-12-5TF	Not available	3/4 - 5/16
MS39324-12-5Z	J514-12-5-070120Z	3/4 - 5/16
MS39324-12-5ZN	Not available	3/4 - 5/16
MS39324-6-6	Not available	3/8 - 3/8
MS39324-6-6CN	Not available	3/8 - 3/8
MS39324-6-6E	Not available	3/8 - 3/8
MS39324-6-6F	Not available	3/8 - 3/8
MS39324-6-6H	Not available	3/8 - 3/8
MS39324-6-6J	Not available	3/8 - 3/8
MS39324-6-6M	J514-6-6-070120M	3/8 - 3/8
MS39324-6-6N	J514-6-6-070120N	3/8 - 3/8
MS39324-6-6P	J514-6-6-070120P	3/8 - 3/8
MS39324-6-6R	Not available	3/8 - 3/8
MS39324-6-6S	J514-6-6-070120S	3/8 - 3/8
MS39324-6-6T	J514-6-6-070120T	3/8 - 3/8
MS39324-6-6TF	Not available	3/8 - 3/8
MS39324-6-6Z	J514-6-6-070120Z	3/8 - 3/8
MS39324-6-6ZN	Not available	3/8 - 3/8

TABLE III. MS39324 to SAE-J514 cross reference - Continued.

Inactive for new design MS39324 PIN	For new design SAE-J514 PIN	Tube O.D. nom
MS39324-8-6	Not available	1/2 - 3/8
MS39324-8-6CN	Not available	1/2 - 3/8
MS39324-8-6E	Not available	1/2 - 3/8
MS39324-8-6F	Not available	1/2 - 3/8
MS39324-8-6H	Not available	1/2 - 3/8
MS39324-8-6J	Not available	1/2 - 3/8
MS39324-8-6M	J514-8-6-070120M	1/2 - 3/8
MS39324-8-6N	J514-8-6-070120N	1/2 - 3/8
MS39324-8-6P	J514-8-6-070120P	1/2 - 3/8
MS39324-8-6R	Not available	1/2 - 3/8
MS39324-8-6S	J514-8-6-070120S	1/2 - 3/8
MS39324-8-6T	J514-8-6-070120T	1/2 - 3/8
MS39324-8-6TF	Not available	1/2 - 3/8
MS39324-8-6Z	J514-8-6-070120Z	1/2 - 3/8
MS39324-8-6ZN	Not available	1/2 - 3/8
MS39324-10-6	Not available	5/8 - 3/8
MS39324-10-6CN	Not available	5/8 - 3/8
MS39324-10-6E	Not available	5/8 - 3/8
MS39324-10-6F	Not available	5/8 - 3/8
MS39324-10-6H	Not available	5/8 - 3/8
MS39324-10-6J	Not available	5/8 - 3/8
MS39324-10-6M	J514-10-6-070120M	5/8 - 3/8
MS39324-10-6N	J514-10-6-070120N	5/8 - 3/8
MS39324-10-6P	J514-10-6-070120P	5/8 - 3/8
MS39324-10-6R	Not available	5/8 - 3/8
MS39324-10-6S	J514-10-6-070120S	5/8 - 3/8
MS39324-10-6T	J514-10-6-070120T	5/8 - 3/8
MS39324-10-6TF	Not available	5/8 - 3/8
MS39324-10-6Z	J514-10-6-070120Z	5/8 - 3/8
MS39324-10-6ZN	Not available	5/8 - 3/8
MS39324-12-6	Not available	3/4 - 3/8
MS39324-12-6CN	Not available	3/4 - 3/8
MS39324-12-6E	Not available	3/4 - 3/8
MS39324-12-6F	Not available	3/4 - 3/8
MS39324-12-6H	Not available	3/4 - 3/8
MS39324-12-6J	Not available	3/4 - 3/8
MS39324-12-6M	J514-12-6-070120M	3/4 - 3/8
MS39324-12-6N	J514-12-6-070120N	3/4 - 3/8
MS39324-12-6P	J514-12-6-070120P	3/4 - 3/8
MS39324-12-6R	Not available	3/4 - 3/8
MS39324-12-6S	J514-12-6-070120S	3/4 - 3/8
MS39324-12-6T	J514-12-6-070120T	3/4 - 3/8
MS39324-12-6TF	Not available	3/4 - 3/8
MS39324-12-6Z	J514-12-6-070120Z	3/4 - 3/8
MS39324-12-6ZN	Not available	3/4 - 3/8

TABLE III. MS39324 to SAE-J514 cross reference - Continued.

Inactive for new design MS39324 PIN	For new design SAE-J514 PIN	Tube O.D. nom
MS39324-8-8	Not available	1/2 -1/2
MS39324-8-8CN	Not available	1/2 -1/2
MS39324-8-8E	Not available	1/2 -1/2
MS39324-8-8F	Not available	1/2 -1/2
MS39324-8-8H	Not available	1/2 -1/2
MS39324-8-8J	Not available	1/2 -1/2
MS39324-8-8M	J514-8-8-070120M	1/2 -1/2
MS39324-8-8N	J514-8-8-070120N	1/2 -1/2
MS39324-8-8P	J514-8-8-070120P	1/2 -1/2
MS39324-8-8R	Not available	1/2 -1/2
MS39324-8-8S	J514-8-8-070120S	1/2 -1/2
MS39324-8-8T	J514-8-8-070120T	1/2 -1/2
MS39324-8-8TF	Not available	1/2 -1/2
MS39324-8-8Z	J514-8-8-070120Z	1/2 -1/2
MS39324-8-8ZN	Not available	1/2 -1/2
MS39324-10-8	Not available	5/8 - 1/2
MS39324-10-8CN	Not available	5/8 - 1/2
MS39324-10-8E	Not available	5/8 - 1/2
MS39324-10-8F	Not available	5/8 - 1/2
MS39324-10-8H	Not available	5/8 - 1/2
MS39324-10-8J	Not available	5/8 - 1/2
MS39324-10-8M	J514-10-8-070120M	5/8 - 1/2
MS39324-10-8N	J514-10-8-070120N	5/8 - 1/2
MS39324-10-8P	J514-10-8-070120P	5/8 - 1/2
MS39324-10-8R	Not available	5/8 - 1/2
MS39324-10-8S	J514-10-8-070120S	5/8 - 1/2
MS39324-10-8T	J514-10-8-070120T	5/8 - 1/2
MS39324-10-8TF	Not available	5/8 - 1/2
MS39324-10-8Z	J514-10-8-070120Z	5/8 - 1/2
MS39324-10-8ZN	Not available	5/8 - 1/2
MS39324-12-8	Not available	3/4 - 1/2
MS39324-12-8CN	Not available	3/4 - 1/2
MS39324-12-8E	Not available	3/4 - 1/2
MS39324-12-8F	Not available	3/4 - 1/2
MS39324-12-8H	Not available	3/4 - 1/2
MS39324-12-8J	Not available	3/4 - 1/2
MS39324-12-8M	J514-12-8-070120M	3/4 - 1/2
MS39324-12-8N	J514-12-8-070120N	3/4 - 1/2
MS39324-12-8P	J514-12-8-070120P	3/4 - 1/2
MS39324-12-8R	Not available	3/4 - 1/2
MS39324-12-8S	J514-12-8-070120S	3/4 - 1/2
MS39324-12-8T	J514-12-8-070120T	3/4 - 1/2
MS39324-12-8TF	Not available	3/4 - 1/2
MS39324-12-8Z	J514-12-8-070120Z	3/4 - 1/2
MS39324-12-8ZN	Not available	3/4 - 1/2

TABLE III. MS39324 to SAE-J514 cross reference - Continued.

Inactive for new design MS39324 PIN	For new design SAE-J514 PIN	Tube O.D. nom
MS39324-10-10	Not available	5/8 - 5/8
MS39324-10-10CN	Not available	5/8 - 5/8
MS39324-10-10E	Not available	5/8 - 5/8
MS39324-10-10F	Not available	5/8 - 5/8
MS39324-10-10H	Not available	5/8 - 5/8
MS39324-10-10J	Not available	5/8 - 5/8
MS39324-10-10M	J514-10-10-070120M	5/8 - 5/8
MS39324-10-10N	J514-10-10-070120N	5/8 - 5/8
MS39324-10-10P	J514-10-10-070120P	5/8 - 5/8
MS39324-10-10R	Not available	5/8 - 5/8
MS39324-10-10S	J514-10-10-070120S	5/8 - 5/8
MS39324-10-10T	J514-10-10-070120T	5/8 - 5/8
MS39324-10-10TF	Not available	5/8 - 5/8
MS39324-10-10Z	J514-10-10-070120Z	5/8 - 5/8
MS39324-10-10ZN	Not available	5/8 - 5/8
MS39324-12-10	Not available	3/4 - 5/8
MS39324-12-10CN	Not available	3/4 - 5/8
MS39324-12-10E	Not available	3/4 - 5/8
MS39324-12-10F	Not available	3/4 - 5/8
MS39324-12-10H	Not available	3/4 - 5/8
MS39324-12-10J	Not available	3/4 - 5/8
MS39324-12-10M	J514-12-10-070120M	3/4 - 5/8
MS39324-12-10N	J514-12-10-070120N	3/4 - 5/8
MS39324-12-10P	J514-12-10-070120P	3/4 - 5/8
MS39324-12-10R	Not available	3/4 - 5/8
MS39324-12-10S	J514-12-10-070120S	3/4 - 5/8
MS39324-12-10T	J514-12-10-070120T	3/4 - 5/8
MS39324-12-10TF	Not available	3/4 - 5/8
MS39324-12-10Z	J514-12-10-070120Z	3/4 - 5/8
MS39324-12-10ZN	Not available	3/4 - 5/8

TABLE III. MS39324 to SAE-J514 cross reference - Continued.

Inactive for new design MS39324 PIN	For new design SAE-J514 PIN	Tube O.D. nom
MS39324-12-12	Not available	3/4 -3/4
MS39324-12-12CN	Not available	3/4 -3/4
MS39324-12-12E	Not available	3/4 -3/4
MS39324-12-12F	Not available	3/4 -3/4
MS39324-12-12H	Not available	3/4 -3/4
MS39324-12-12J	Not available	3/4 -3/4
MS39324-12-12M	J514-12-12-070120M	3/4 -3/4
MS39324-12-12N	514-12-12-070120N	3/4 -3/4
MS39324-12-12P	J514-12-12-070120P	3/4 -3/4
MS39324-12-12R	Not available	3/4 -3/4
MS39324-12-12S	J514-12-12-070120S	3/4 -3/4
MS39324-12-12T	J514-12-12-070120T	3/4 -3/4
MS39324-12-12TF	Not available	3/4 -3/4
MS39324-12-12Z	J514-12-12-070120Z	3/4 -3/4
MS39324-12-12ZN	Not available	3/4 -3/4
MS39324-12-16	Not available	3/4 - 1
MS39324-12-16CN	Not available	3/4 - 1
MS39324-12-16E	Not available	3/4 - 1
MS39324-12-16F	Not available	3/4 - 1
MS39324-12-16H	Not available	3/4 - 1
MS39324-12-16J	Not available	3/4 - 1
MS39324-12-16M	J514-12-16-070120M	3/4 - 1
MS39324-12-16N	J514-12-16-070120N	3/4 - 1
MS39324-12-16P	J514-12-16-070120P	3/4 - 1
MS39324-12-16R	Not available	3/4 - 1
MS39324-12-16S	J514-12-16-070120S	3/4 - 1
MS39324-12-16T	J514-12-16-070120T	3/4 - 1
MS39324-12-16TF	Not available	3/4 - 1
MS39324-12-16Z	J514-12-16-070120Z	3/4 - 1
MS39324-12-16ZN	Not available	3/4 - 1

Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue, due to the extent of the changes.

Referenced documents. In addition to MIL-DTL-18666, this document references the following:

FED-STD-595/36076	FED-STD-595/36280	ASTM B564	SAE-AMS4928
FED-STD-595/36081	FED-STD-595/36293	ASTM B633	SAE-AMS5639
FED-STD-595/36099	MIL-DTL-16232	ASTM B695	SAE-AMS5645
FED-STD-595/36118	MIL-DTL-81706	ASTM F1136/F1136M	SAE-AMS5647
FED-STD-595/36134	QQ-N-281	SAE-AMS-C-81562	SAE-AMS5743
FED-STD-595/36152	ASME B1.1	SAE-AMS-QQ-P-416	SAE-AMS6370
FED-STD-595/36170	ASTM A276/A276M	SAE-AMS2417	SAE-AMS6382
FED-STD-595/36173	ASTM A564/A564M	SAE-AMS2451/5	SAE-J403
FED-STD-595/36176	ASTM A582/A582	SAE-AMS2451/9	SAE-J425
FED-STD-595/36231	ASTM B117	SAE-AMS2486	SAE-J514
FED-STD-595/36251	ASTM B164	SAE-AMS2488	
FED-STD-595/36270	ASTM B166	SAE-AMS2700	

CONCLUDING MATERIAL

Custodians:
Army - AT
Navy - SH
Air Force - 99
DLA - CC

Preparing activity:
DLA - CC

(Project 4730-2015-041)

Review activities:
Army - AR
Navy - CG, MC, SA
Air Force - 71

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.