



User Activities:  
Army - AV  
Navy - OS, MC

Review Activities:  
AFM - AT, GL, ME  
Air Force - B2  
DLA - CS

TABLE I  
STANDARD SIZES - RECOMMENDED FOR NEW DESIGN AND ENGINEERING

DASH NUMBER	TUBE O.D. NOM	A PIPE THREAD NPTF	B STRAIGHT THREAD CLASS 2A	C HEX FLAT NOM	D DIA DRILL	D <sub>1</sub> DIA DRILL	L ±.02	S MAX	
									ASSY
1	31	1/8	1/8	5/16-24UNF	7/16	0.093	0.188	1.04	0.49
2	32	3/16	1/8	3/8-24UNF	7/16	0.125	0.188	1.09	0.49
3	33	1/4	1/8	7/16-20UNF	1/2	0.203	0.188	1.12	0.55
4	34	5/16	1/8	1/2-20UNF	9/16	0.234	0.188	1.12	0.55
7	37	3/8	1/4	9/16-18UNF	5/8	0.281	0.281	1.34	
9	39	1/2	3/8	3/4-16UNF	13/16	0.422	0.406	1.44	0.67
12	42	5/8	1/2	7/8-14UNF	7/8	0.500	0.531	1.75	0.91
14	44	3/4	3/4	1-1/16-12UN	1-1/8	0.656	0.719	1.88	0.94
15	45	7/8	3/4	1-3/16-12UN	1-1/4	0.718	0.719	1.88	
18	48	1	1	1-5/16-12UN	1-3/8	0.875	0.938	2.07	1.13
20	50	1-1/4	1-1/4	1-5/8-12UN	1-11/16	1.093	1.250	2.18	1.20
21	51	1-1/2	1-1/2	1-7/8-12UN	2	1.344	1.500	2.28	1.27
22	52	2	2	2-1/2-12UN	2-5/8	1.813	1.938	2.46	1.37

TABLE II  
NONSTANDARD SIZES - NOT RECOMMENDED FOR NEW DESIGN AND ENGINEERING

DASH NUMBER	TUBE O.D. NOM	A PIPE THREAD NPTF	B STRAIGHT THREAD CLASS 2A	C HEX FLAT NOM	D DIA DRILL	D <sub>1</sub> DIA DRILL	L ±.02	S MAX	
									ASSY
5	35	1/4	1/4	7/16-20UNF	9/16	0.203	.281	1.32	0.69
6	36	5/16	1/4	1/2-20UNF	9/16	0.234	.281	1.32	0.69
8	38	1/2	1/4	3/4-16UNF	13/16	0.422	.281	1.44	0.67
10	40	5/8	3/8	7/8-14UNF	7/8	0.500	.406	1.56	0.77
11	41	3/8	1/2	9/16-18UNF	7/8	0.281	.531	1.60	0.91
13	43	3/4	1/2	1-1/16-12UN	1-1/8	0.656	.531	1.88	0.86
16	46	7/8	1	1-3/16-12UN	1-3/8	0.718	.938	2.07	1.13
17	47	1	3/4	1-5/16-12UN	1-3/8	0.875	.719	1.88	0.86
19	49	1-1/4	1	1-5/8-12UN	1-11/16	1.093	.938	2.15	0.90

FOR NOTES SEE SHEET 2.

Ⓢ Denotes change

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.  
This military standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document, when applicable.

P.A. AR Other Cust 99	TITLE <b>ADAPTER, STRAIGHT, PIPE TO TUBE, MALE PIPE END, FLARELESS TYPE, HYDRAULIC</b>	<b>MILITARY STANDARD MS51819</b>
PROCUREMENT SPECIFICATION MIL-F-18866	SUPERSEDES: CNM11 in part, and 14 in part	SHEET 1 OF 2

APPROVED 29 DEC 1967 REVISED 30 DEC 1970 17 June 1982 30 July 1987

NOTES:

1. **MATERIAL:** Steel, carbon in accordance with procurement specification.  
Steel, corrosion-resisting in accordance with procurement specification.
  2. **PROTECTIVE COATING:** Cadmium plated in accordance with procurement specification.  
Zinc plated in accordance with procurement specification.  
Phosphate coating in accordance with procurement specification.  
Passivation treatment in accordance with procurement specification.
  3. **DIMENSIONS AND TOLERANCES:** Dimensions and tolerances not shown shall be in accordance with the SAE Standard for Flareless Tube Fittings (SAE J514).
  4. **THREADS:** Threads shall be in accordance with Screw-Thread Standards for Federal Services, FED-STD-R28.
  5. **PART NUMBER:** The MS part number consists of the MS number, plus the dash number and (for complete assembly) the applicable MS51825 sleeve style designator.
    - A. For complete assembly (with nut and sleeve), cadmium plated, use the MS number, plus the assembly dash number and the sleeve style designator. Example: MS51819-1A or MS51819-1B.
    - B. For the body only, cadmium plated, use the MS number and the body dash number. Example: MS51819-31.
    - C. For zinc coating add "Z" and (for complete assembly) the sleeve style designator to the dash number. Example: MS51819-1ZA or MS51819-1ZB or MS51819-31Z.
    - D. For phosphate coating add "P" and (for complete assembly) the sleeve style designator to the dash number. Example: MS51819-1PA or MS51819-1PB or MS51819-31P.
    - E. For corrosion-resisting steel add "SS" and (for complete assembly) the sleeve style designator to the dash number. Example: MS51819-1SSA or MS51819-1SSB or MS51819-31SS.
  6. For design feature purposes, this standard takes precedence over procurement documents referenced herein.
  7. Reference documents shall be of the issue in effect on date of invitations for bid.
  8. The illustration is for identification and is not intended to restrict designs or shapes not dimensioned.
  9. At manufacturer's option, through passages may conform with the smaller diameter specified or the appropriate end may be counterbored to the larger diameter for depth S.
  - \* 10. After 22 NOV 1974, bodies will be used for production only and **SHALL NOT** be stocked for maintenance. Existing stock of bodies should be used until depleted.
  11. CAUTION: The following data is furnished for the purpose of new design only and is not intended to imply interchangeability.
- ⓔ MS51819 will replace MS39206 for new design after approval date on this document. Table III below gives reference data for coordination of equivalent tube sizes, in both compression and hydraulic type adapters. Assembly replacement is authorized.

TABLE III (FOR INFORMATION ONLY)  
ASSEMBLY EQUIVALENCY

PART NUMBER		PART NUMBER		PART NUMBER	
COMPRESSION	HYDRAULIC	COMPRESSION	HYDRAULIC	COMPRESSION	HYDRAULIC
MS39206-1	MS51819-1	MS39206-8	MS51819-8	MS39206-15	MS51819-15
-2	-2	-9	-9	-16	-16
-3	-3	-10	-10	-17	-17
-4	-4	-11	-11	-18	-18
-5	-5	-12	-12	-19	-19
-6	-6	-13	-13	-20	-20
-7	-7	-14	-14	-21	-21

P.A. Other Cust 99	AR	TITLE ADAPTER, STRAIGHT, PIPE TO TUBE, MALE PIPE END, FLARELESS TYPE, HYDRAULIC	MILITARY STANDARD <b>MS51819</b>
PROCUREMENT SPECIFICATION MIL-F-18866	SUPERSEDES:	CNHXI in part, and 14 in part	SHEET 2 OF 2

User Activities:  
Army - AV  
Navy - OS, MC

Review Activities:  
Army - AT, CI, ME  
Air Force - 82  
DLA - CS

ⓔ

This military standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document, when applicable.

APPROVED 29 DEC 1967 REVISED 30 DEC 1970 30 FOR CHANGES SEE SHEET 1 17 June 1982 30 FOR CHANGES SEE SHEET 2. 30 JULY 1987