

INCH-POUND

AN838 Rev 9  
 7 June 2011  
 SUPERSEDING  
 AN838 Rev 8  
 30 August 1982

DETAIL SPECIFICATION SHEET

ELBOW, TUBE TO HOSE, 90°

Reinstated after 7 June 2011. Inactive for new design.  
 For new design, use SAE-AS5181.

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 SAE-AS4843/1.

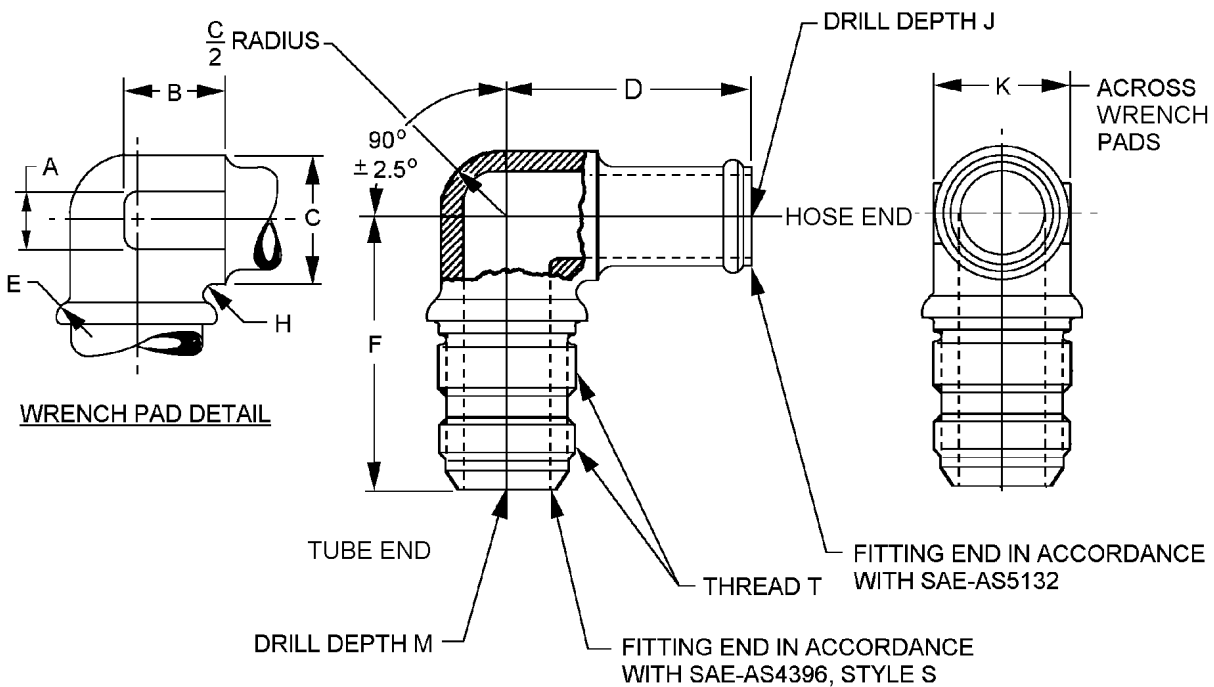


FIGURE 1. 90° Elbow.

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Dash number	Hose ID inches (mm)	Tube size inches (mm)	Thread T SAE-AS8879	A Approx inches (mm)	B Approx inches (mm)
4	.250 (6.35)	.250 (6.35)	.4375-20UNJF-3A	.250 (6.25)	.313 (7.95)
6	.375 (9.53)	.375 (9.53)	.5625-18UNJF-3A	.313 (7.95)	.500 (12.70)
8	.500 (12.70)	.500 (12.70)	.7500-16UNJF-3A	.438 (11.13)	.625 (15.88)
10	.625 (15.88)	.625 (15.88)	.8750-14UNJF-3A	.438 (11.13)	.750 (19.05)
12	.750 (19.05)	.750 (19.05)	1.0625 -12UNJF-3A	.500 (12.70)	.938 (23.83)
16	1.000 (25.40)	1.000 (25.40)	1.3125 -12UNJ-3A	.563 (14.30)	1.000 (25.40)
20	1.250 (31.75)	1.250 (31.75)	1.6250 -12UNJF-3A	.563 (14.30)	1.250 (37.75)
24	1.500 (38.10)	1.500 (38.10)	1.8750 -12UNJF-3A	.625 (15.88)	1.500 (38.10)

Dash number	C Dia. inches (mm)	D +.047 (1.19) - .000 inches (mm)	E Radius inches (mm)	F +.047 (1.19) - .000 inches (mm)
4	.438 (11.13)	1.844 (46.84)	.063 (1.60)	1.563 (39.70)
6	.563 (14.30)	1.938 (49.23)		1.734 (44.04)
8	.750 (19.05)	2.031 (51.59)	.094 (2.39)	2.313 (58.75)
10	.875 (22.23)	2.094 (53.19)		2.281 (57.94)
12	1.063 (27.00)	2.250 (57.15)		2.563 (65.10)
16	1.313 (33.35)	2.375 (60.33)	.125 (3.18)	2.688 (68.28)
20	1.625 (41.28)	2.531 (64.29)		2.922 (74.22)
24	1.875 (47.63)	2.656 (67.46)		3.063 (77.80)

Dash number	H Radius inches (mm)	J +.047 (1.19) - .000 inches (mm)	K inches (mm)	M +.047 (1.19) - .000 inches (mm)
4	.063 (1.57)	1.906 (48.41)	.438 (11.13)	1.594 (40.49)
6	.094 (2.39)	2.000 (50.80)	.563 (14.30)	1.766 (44.86)
8		2.109 (53.57)	.750 (19.05)	2.109 (53.57)
10	.125 (3.18)	2.172 (55.17)	.875 (22.23)	2.391 (60.73)
12		2.375 (60.33)	1.063 (27.00)	2.688 (68.28)
16		2.547 (64.69)	1.313 (33.35)	2.875 (73.03)
20	.188 (4.78)	2.766 (70.26)	1.625 (41.28)	3.156 (80.16)
24		2.938 (74.63)	1.875 (47.63)	3.359 (85.32)

## NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified tolerances are  $\pm 0.010$  inch (0.25 mm).
4. Break sharp edges and remove all hanging burrs and slivers
5. Machined surfaces shall be finished to  $125\mu$  in Ra, forged surfaces shall be  $250\mu$  inches Ra, unless otherwise specified on the figures. Surface finish shall be in accordance with ASME B46.1.
6. For design features purposes, this standard takes precedence over documents referenced herein.

FIGURE 1. 90° Elbow - Continued.

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## REQUIREMENTS:

Dimensions and configuration shall be in accordance with figure 1

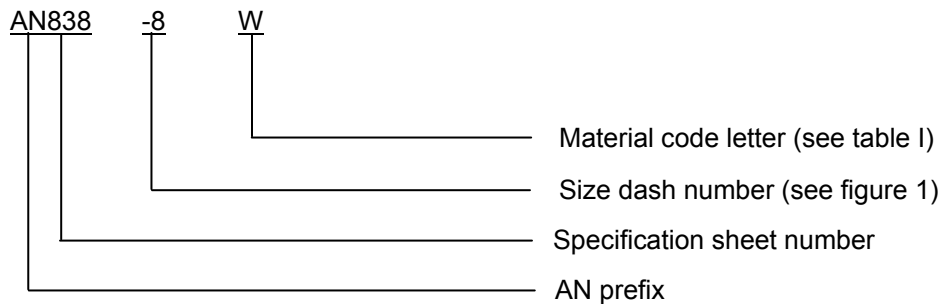
Installation shall be in accordance with MS21344.

Materials and finishes shall be in accordance with SAE-AS4843/1, see table I for material code.

TABLE I. Material and code letters.

Code letter	Material
Blank	Copper alloy
J	Corrosion resistant steel (CRES), type 304
K	CRES, type 316
R	CRES. Type 321
S	CRES, type 347
W	Aluminum alloy 7075-T73

Part or Identifying Number (PIN): The PIN consists of the letter "AN" the specification sheet number, a dash number for tube and hose size, and a letter designator for material type. Unassigned PIN's shall not be used.



PIN example. AN838-8-W is for a 90° elbow for .500 inch (12.70 mm) tube and hose, aluminum alloy 7075-T73.

Marking: Part shall be permanently marked with the AN PIN, and include the manufacturers CAGE, name, or trademark.

Supersession data. The aluminum "D" designator has been replaced by the "W" designator.

Table II provides a detailed cross-reference of AN838 PINs and replacement SAE-AS5181 PINs. Users are cautioned to evaluate replacements 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.

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TABLE II. Cross-reference data. 1/

AN PIN	Hose Size	Tube Size	Replacement AS PIN	New design
AN838-4	0.250	0.250	AS5181B04	
AN838-4D	0.250	0.250	AS5181W04	AS5181W04
AN838-4J	0.250	0.250	AS5181J04	
AN838-4K	0.250	0.250	AS5181K04	
AN838-4R	0.250	0.250	AS5181R04	
AN838-4S	0.250	0.250	AS5181R04	AS5181R04
AN838-4W	0.250	0.250	AS5181W04	
AN838-6	0.375	0.375	AS5181B06	
AN838-6D	0.375	0.375	AS5181W06	AS5181W06
AN838-6J	0.375	0.375	AS5181J06	
AN838-6K	0.375	0.375	AS5181K06	
AN838-6R	0.375	0.375	AS5181R06	
AN838-6S	0.375	0.375	AS5181R06	AS5181R06
AN838-6W	0.375	0.375	AS5181W06	
AN838-8	0.500	0.500	AS5181B08	
AN838-8D	0.500	0.500	AS5181W08	AS5181W08
AN838-8J	0.500	0.500	AS5181J08	
AN838-8K	0.500	0.500	AS5181K08	
AN838-8R	0.500	0.500	AS5181R08	
AN838-8S	0.500	0.500	AS5181R08	AS5181R08
AN838-8W	0.500	0.500	AS5181W08	
AN838-10	0.625	0.625	AS5181B10	
AN838-10D	0.625	0.625	AS5181W10	AS5181W08
AN838-10J	0.625	0.625	AS5181J10	
AN838-10K	0.625	0.625	AS5181K10	
AN838-10R	0.625	0.625	AS5181R10	
AN838-10S	0.625	0.625	AS5181R10	AS5181R08
AN838-10W	0.625	0.625	AS5181W10	

See note at end of table.

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TABLE II. Cross-reference data - Continued. 1/

AN PIN	Hose Size	Tube Size	Replacement AS PIN	New design
AN838-12	0.750	0.750	AS5181B12	
AN838-12D	0.750	0.750	AS5181W12	AS5181W12
AN838-12J	0.750	0.750	AS5181J12	
AN838-12K	0.750	0.750	AS5181K12	
AN838-12R	0.750	0.750	AS5181R12	
AN838-12S	0.750	0.750	AS5181R12	AS5181R12
AN838-12W	0.750	0.750	AS5181W12	
AN838-16	1.000	1.000	AS5181B16	
AN838-16D	1.000	1.000	AS5181W16	AS5181W16
AN838-16J	1.000	1.000	AS5181J16	
AN838-16K	1.000	1.000	AS5181K16	
AN838-16R	1.000	1.000	AS5181R16	
AN838-16S	1.000	1.000	AS5181R16	AS5181R16
AN838-16W	1.000	1.000	AS5181W16	
AN838-20	1.250	1.250	AS5181B20	
AN838-20D	1.250	1.250	AS5181W20	AS5181W20
AN838-20J	1.250	1.250	AS5181J20	
AN838-20K	1.250	1.250	AS5181K20	
AN838-20R	1.250	1.250	AS5181R20	
AN838-20S	1.250	1.250	AS5181R20	AS5181R20
AN838-20W	1.250	1.250	AS5181W20	
AN838-24	1.500	1.500	AS5181B24	
AN838-24D	1.500	1.500	AS5181W24	AS5181W24
AN838-24J	1.500	1.500	AS5181J24	
AN838-24K	1.500	1.500	AS5181K24	
AN838-24R	1.500	1.500	AS5181R24	
AN838-24S	1.500	1.500	AS5181R24	AS5181R24
AN838-24W	1.500	1.500	AS5181W24	

1/ For new design use material designators R and W.

Changes from previous issues. 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 SAE-AS4843/1, this document references the following:

MS21344  
ASME B46.1  
SAE-AS4396  
SAE-AS5132  
SAE-AS5181  
SAE-AS8879

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CONCLUDING MATERIAL

Custodians:

Army - AV  
Navy - AS  
Air Force - 99  
DLA - CC

Preparing activity:

DLA - CC

(Project 4730-2011-044)

Review activities:

Navy - 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.daps.dla.mil>.