INCH-POUND

AN914 Rev 11
12 December 2012
SUPERSEDING
AN914 Rev 10
19 July 2011

DETAIL SPECIFICATION SHEET

ELBOW, PIPE, INTERNAL AND EXTERNAL THREAD, 90°

Reinstated after 19 July 2011. Inactive for new design.
For new design, use SAE-AS4854.

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-AS4842.

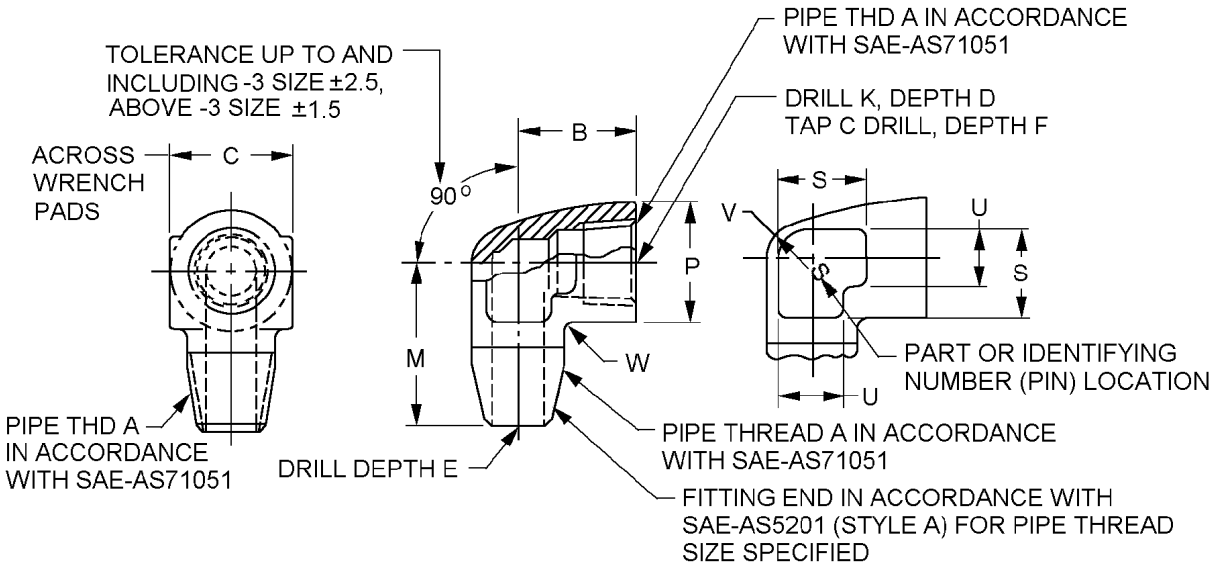


FIGURE 1. Elbow 90° dimensions and configuration.

Dash number	A		B +.047 (1.19) -0.00 inches (mm)	C inches (mm)	D (drill depth) +.047 (1.19) -0.00 inches (mm)	E (drill depth) +.047 (1.19) -0.00 inches (mm)
	Pipe thread ANPT SAE-AS71051	SAE-AS5201 size code				
1	1/8-27	02	.609 (15.47)	.625 (15.88)	.641 (16.28)	.891 (22.63)
2	1/4-18	04	.891 (22.63)	.813 (20.65)	.938 (23.83)	1.266 (32.16)
3	3/8-18	06	.938 (23.83)	.938 (23.83)	1.000 (25.40)	1.359 (34.52)
4	1/2-14	08	1.172 (29.77)	1.188 (30.18)	1.297 (32.94)	1.734 (44.04)
6	3/4-14	12	1.344 (34.14)	1.375 (34.93)	1.469 (37.31)	1.859 (47.22)
8	1-11 1/2	16	1.594 (40.49)	1.750 (44.45)	1.719 (43.66)	2.234 (56.74)
10	1/ 1/4-11 1/2	20	1.750 (44.45)	2.156 (57.76)	1.906 (48.41)	2.375 (60.33)

Dash number	F (drill depth) inches (mm)	K Dia. inches (mm)	M +.047 (1.19) -0.00 inches (mm)	P Dia. inches (mm)	S Approx inches (mm)	U Approx inches (mm)
1	.422 (10.72)	.188 (4.78)	.859 (21.82)	.578 (14.68)	.500 (12.70)	.250 (6.35)
2	.563 (14.30)	.281 (7.14)	1.219 (30.96)	.781 (19.84)	.625 (15.88)	.375 (9.53)
3	.609 (15.47)	.406 (10.31)	1.297 (32.94)	.922 (23.42)	.750 (19.05)	.500 (12.70)
4	.797 (20.24)	.531 (13.49)	1.609 (40.87)	1.156 (29.36)	.875 (22.23)	.625 (15.88)
6	.813 (20.65)	.719 (18.26)	1.734 (44.04)	1.359 (34.52)	1.000 (25.40)	.750 (19.05)
8	.969 (24.61)	.938 (23.83)	2.109 (53.57)	1.688 (42.88)	1.125 (28.58)	.875 (22.23)
10	.969 (24.61)	1.125 (28.58)	2.250 (57.15)	2.063 (52.40)	1.250 (31.75)	1.000 (25.40)

Dash number	V Rad. inches (mm)	W Rad. inches (mm)	Weight max lbs (kg)			
			Copper alloy	Al alloy	Steel, CRES	Ti alloy
1	.219 (5.56)	.063 (1.60)	.069 (0.03)	.023 (0.010)	.069 (0.031)	.038 (0.017)
2	.281 (7.14)	.094 (2.39)	.180 (0.08)	.060 (0.027)	.180 (0.082)	.100 (0.045)
3	.344 (8.74)	.094 (2.39)	.240 (0.11)	.080 (0.036)	.240 (0.109)	.132 (0.060)
4	.438 (11.13)	.125 (3.18)	.435 (0.20)	.145 (0.066)	.434 (0.197)	.240 (0.109)
6	.574 (14.58)	.125 (3.18)	.600 (0.27)	.200 (0.091)	.599 (0.272)	.331 (0.150)
8	.688 (17.48)	.125 (3.18)	1.140 (0.52)	.380 (0.172)	1.138 (0.516)	.628 (0.285)
10	.859 (21.82)	.156 (3.96)	1.720 (0.78)	.580 (0.263)	1.737 (0.788)	.959 (0.435)

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified tolerances are ±.016 inch (0.41 mm).
4. Break sharp edges .and remove all hanging burrs and slivers
5. Machined surfaces shall be finished to 125µin Ra, forged surfaces shall be 250µin 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.
7. Referenced documents shall be of the issue in effect on date of invitation for bid.

FIGURE 1. Elbow 90° dimensions and configuration - Continued.

REQUIREMENTS:

Dimensions and configuration shall be in accordance with figure 1.

Materials and finishes shall be in accordance with SAE-AS4842, see table I for material and finish code.

TABLE I. Material and finish code letters.

Material code	Material	Protective chemical finish 3/ 4/
Blank 1/	Copper alloy, type 377 forging in accordance with ASTM B124/B124M or half hard forging or bar in accordance with ASTM B138/B138M or bar in accordance with SAE-AMS4614	No finish
BC 1/	Copper alloy, type 377 forging in accordance with ASTM B124/B124M or half hard forging or bar in accordance with ASTM B138/B138M or bar in accordance with SAE-AMS4614	Cadmium in accordance with SAE-AMS-QQ-P-416, type II, class 3
D 2/	Type 2014-T6 aluminum alloy forging in accordance with SAE-AMS-QQ-A-367 or SAE-AMS4133, or type 2024-T6 aluminum alloy bar in accordance with SAE-AMS-QQ-A-225/6, or type 2024-T851 aluminum alloy bar in accordance with SAE-AMS-QQ-A-225/6 or SAE-AMS4339	Anodize in accordance with SAE-AMS2472 or MIL-A-8625, type II, class 2, dye blue, duplex seal in accordance with procurement specification.
DV 2/	Type 2014-T6 aluminum alloy forging in accordance with SAE-AMS-QQ-A-367 or SAE-AMS4133, or type 2024-T6 aluminum alloy bar in accordance with SAE-AMS-QQ-A-225/6, or type 2024-T851 aluminum alloy bar in accordance with SAE-AMS-QQ-A-225/6 or SAE-AMS4339	High purity aluminum in accordance with MIL-DTL-83488, class 3, type II with maximum coating thickness of .0005 inch. Glass bead peen pressure shall be 25 psi (1.72 bar) maximum.
J	Type 304 corrosion resistant steel forging or bar in accordance with SAE-AMS-QQ-S-763 or SAE-AMS5639	Passivate in accordance with SAE-AMS2700, type VI or VII
K	Type 316 corrosion resistant steel forging or bar in accordance with SAE-AMS-QQ-S-763 or SAE-AMS5648	Passivate in accordance with SAE-AMS2700, type VI or VII

See notes at end of table.

TABLE I. Material and finish code letters - Continued.

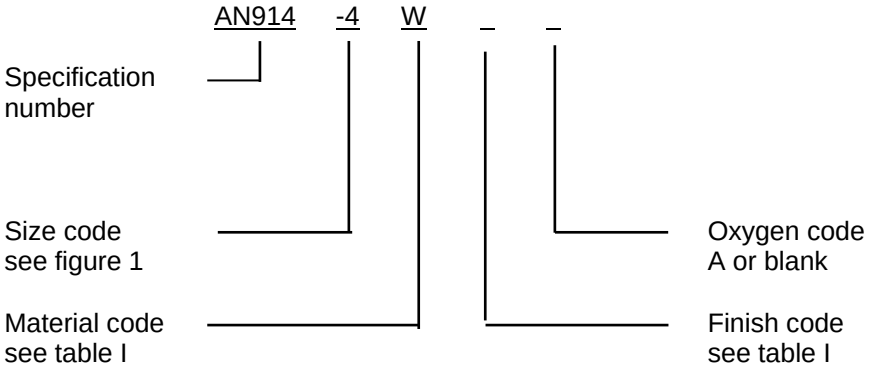
Material code	Material	Protective chemical finish 3/ 4/
R	Type 321 corrosion resistant steel forging or bar in accordance with SAE-AMS-QQ-S-763 or SAE-AMS5645.	Passivate in accordance with SAE-AMS2700, type VI or VII
W 2/	Type 7075-T73 aluminum alloy forging in accordance with SAE-AMS-QQ-A-367 or SAE-AMS4141, or type 7075-T73 aluminum alloy bar in accordance with SAE-AMS-QQ-A-225/9, in accordance with type 7075-T7351 Aluminum alloy bar in accordance with SAE-AMS4124.	Anodize in accordance with SAE-AMS2472 or MIL-A-8625, type II, class 2, dye brown similar to color 10080 in accordance with FED-STD-595, duplex seal in accordance with procurement specification.
WV 2/	Type 7075-T73 aluminum alloy forging in accordance with SAE-AMS-QQ-A-367 or SAE-AMS4141, or type 7075-T73 aluminum alloy bar in accordance with SAE-AMS-QQ-A-225/9, in accordance with type 7075-T7351 Aluminum alloy bar in accordance with SAE-AMS4124.	High purity aluminum in accordance with MIL-DTL-83488, class 3, type II with maximum coating thickness of .0005 inch. Glass bead peen pressure shall be 25 psi (1.72 bar) maximum
T 3/	Titanium	Anodize in accordance with SAE-AMS2488, type 2

1/ Material code was dash on previous revisions, changed to agree with SAE-ARP1590.
2/ Aluminum code D is inactivated, use code W.
3/ Titanium and cadmium shall not be used in oxygen systems.
4/ Cadmium shall not be used in potable water systems.

Oxygen systems for aerospace, shipboard, and ground support equipment. Parts for use on oxygen systems shall be identified in the PIN as code “A” and shall be furnished cleaned, packaged, and labeled in accordance with SAE-AS611 to a process approved by the user.

Users are cautioned that the 90° pipe elbow should be evaluated to their cleanliness requirements before installing in any equipment. Only qualified technical personnel with knowledge for the selection of cleaning methods for oxygen rich environments should make the determination as to what cleanliness level is acceptable for their application.

PIN: The PIN consists of the prefix “AN” the specification sheet number, a dash number for internal and external pipe thread size, material code letter, finish code, and oxygen code. Unassigned PIN’s shall not be used.



PIN examples:

AN914-4W indicates a 90° elbow 1/2-14 ANPT internal and external pipe thread, aluminum alloy 7075-T73.

AN914-1WV indicates a 90° elbow 1/2-14 ANPT internal and external pipe thread, aluminum alloy 7075-T73 finish with high purity aluminum.

AN914-1WA indicates a 90° elbow 1/2-14 ANPT internal and external pipe thread, aluminum alloy 7075-T73 for use on oxygen systems.

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

Supersession data:

Due to stress corrosion cracking aluminum alloys 2014 and 2024 “D” designator has been replaced by aluminum alloy 7075 “W” designator. Example: AN914-8D use AN918-8W.

Metal cracking due to high temperatures CRES alloy 347 “S” designator has been replaced by CRES alloy 321 “R” designator. Example: AN914-8S use AN914-8R.

Table II provides a detailed cross-reference of AN914 PINs and replacement SAE-AS4854 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.

TABLE II. Cross-reference data.

AN PIN (inactive)	Pipe size	Replacement AS PIN (for new design)	AN PIN (inactive)	Pipe size	Replacement AS PIN (for new design)
AN914-1	.125	AS4854-01	AN914-6	.750	AS4854-06
AN914-1D	.125	AS4854W01	AN914-6D	.750	AS4854W06
AN914-1DV	.125	AS4854W01V	AN914-6DV	.750	AS4854W06V
AN914-1J	.125	AS4854J01	AN914-6J	.750	AS4854J06
AN914-1K	.125	AS4854K01	AN914-6K	.750	AS4854K06
AN914-1R	.125	AS4854R01	AN914-6R	.750	AS4854R06
AN914-1S	.125	AS4854R01	AN914-6S	.750	AS4854R06
AN914-1T	.125	None	AN914-6T	.750	None
AN914-1W	.125	AS4854W01	AN914-6W	.750	AS4854W06
AN914-1WV	.125	AS4854W01V	AN914-6WV	.750	AS4854W06V
AN914-2	.250	AS4854-02	AN914-8	1.000	AS4854-08
AN914-2D	.250	AS4854W02	AN914-8D	1.000	AS4854W08
AN914-2DV	.250	AS4854W02V	AN914-8DV	1.000	AS4854W08
AN914-2J	.250	AS4854J02	AN914-8J	1.000	AS4854J08
AN914-2K	.250	AS4854K02	AN914-8K	1.000	AS4854K08
AN914-2R	.250	AS4854R02	AN914-8R	1.000	AS4854R08
AN914-2S	.250	AS4854R02	AN914-8S	1.000	AS4854R08
AN914-2T	.250	None	AN914-8T	1.000	None
AN914-2W	.250	AS4854W02	AN914-8W	1.000	AS4854W08
AN914-2WV	.250	AS4854W02V	AN914-8WV	1.000	AS4854W08V
AN914-3	.375	AS4854-03	AN914-10	1.250	AS4854-10
AN914-3D	.375	AS4854W03	AN914-10D	1.250	AS4854W10
AN914-3DV	.375	AS4854W03V	AN914-10DV	1.250	AS4854W10V
AN914-3J	.375	AS4854J03	AN914-10J	1.250	AS4854J10
AN914-3K	.375	AS4854K03	AN914-10K	1.250	AS4854K10
AN914-3R	.375	AS4854R03	AN914-10R	1.250	AS4854R10
AN914-3S	.375	AS4854R03	AN914-10S	1.250	AS4854R10
AN914-3T	.375	None	AN914-10T	1.250	None
AN914-3W	.375	AS4854W03	AN914-10W	1.250	AS4854W10
AN914-3WV	.375	AS4854W03V	AN914-10WV	1.250	AS4854W10V
AN914-4	.500	AS4854-04			
AN914-4D	.500	AS4854W04			
AN914-4DV	.500	AS4854W04V			
AN914-4J	.500	AS4854J04			
AN914-4K	.500	AS4854K04			
AN914-4R	.500	AS4854R04			
AN914-4S	.500	AS4854R04			
AN914-4T	.500	None			
AN914-4W	.500	AS4854W04			
AN914-4WV	.500	AS4854W04V			

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-AS4842, this document references the following:

FED-STD-595/10080	SAE-AMS-QQ-P-416	SAE-AMS4614
MIL-A-8625	SAE-AMS-QQ-S-763	SAE-AMS5639
MIL-DTL-83488	SAE-AMS2472	SAE-AMS5645
ASME B46.1	SAE-AMS2488	SAE-AMS5648
ASTM B124/B124M	SAE-AMS2700	SAE-ARP1590
ASTM B138/B138M	SAE-AMS4133	SAE-AS611
SAE-AMS-QQ-A-225/6	SAE-AMS4124	SAE-AS4854
SAE-AMS-QQ-A-225/9	SAE-AMS4141	SAE-AS5201
SAE-AMS-QQ-A-367	SAE-AMS4339	SAE-AS71051

CONCLUDING MATERIAL

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

Preparing activity:
DLA - CC

(Project 4730-2013-011)

Review activities:
Navy - MC, SH
Air Force - 71

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