

RATIONALE

UPDATES AND GENERAL EDITORIAL CORRECTIONS HAVE BEEN MADE. INACTIVATION FOR NEW DESIGN AND REPLACEMENT BY AS6044.

REV.
F

SAE AS1004

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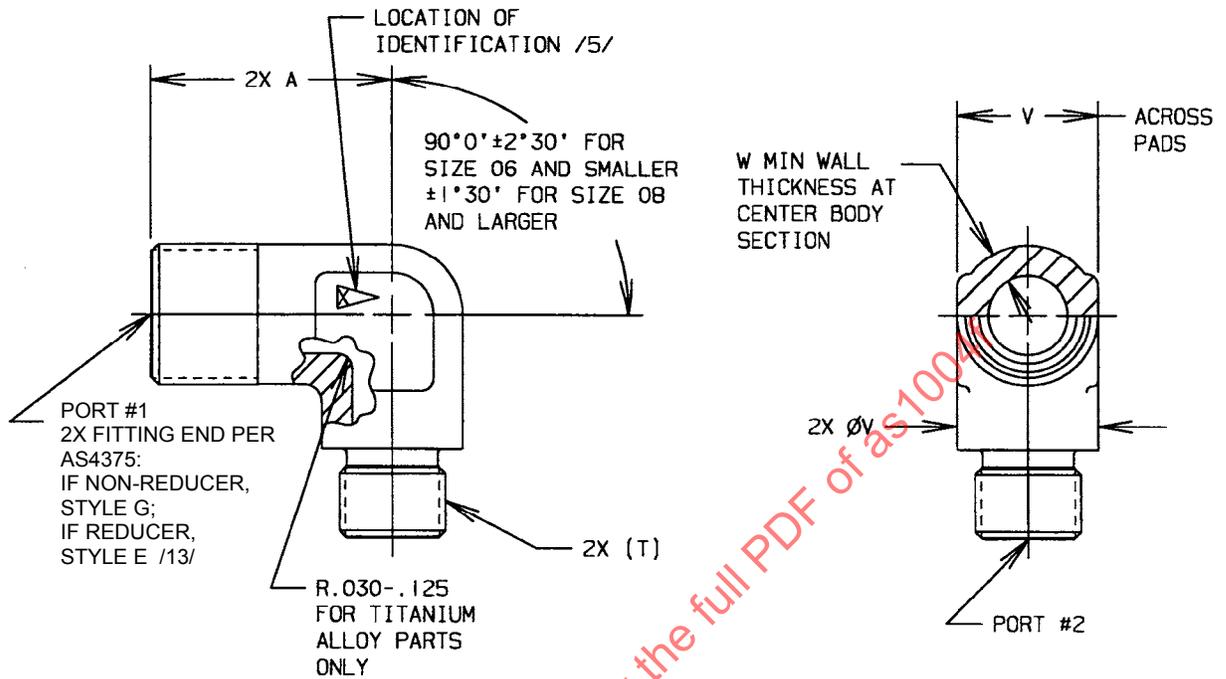


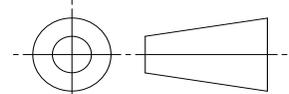
FIGURE 1 - FITTING, ELBOW, 90°, PORT #2 SHOWN AS REDUCER

INACTIVE /21/

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THIRD ANGLE PROJECTION



CUSTODIAN: G-3/G-3B

PROCUREMENT SPECIFICATION: /4/ AS18280

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

FITTING, ELBOW, 90°,
STANDARD AND REDUCER,
FLARELESS

SAE AS1004
SHEET 1 OF 5

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TABLE 1 - DIMENSIONS AND WEIGHTS /12/

BASIC NO. AS1004 /11/ /20/ SIZE CODE	V	W	LB/EA APPROX REF ALUM	LB/EA APPROX REF STEEL	LB/EA APPROX REF TI
02	.297- .314	.090	.0105	.0300	.0166
03	.360- .377	.100	.0162	.0465	.0257
04	.423- .440	.110	.0217	.0624	.0344
05	.485- .502	.120	.0295	.0847	.0467
06	.547- .565	.120	.0378	.109	.0599
08	.735- .753	.150	.0783	.225	.124
10	.860- .878	.170	.0959	.275	.152
12	1.047-1.065	.185	.179	.514	.283
14	1.173-1.191	.200	.227	.652	.359
16	1.292-1.317	.205	.276	.791	.436
20	1.605-1.630	.240	.466	1.34	.739
24	1.855-1.880	.250	.595	1.71	.943
32	2.542-2.572	.350	1.40	4.01	2.21

TABLE 2 - LEG LENGTH A

FORGING SIZE /11/	TUBE SIZE OF PORT #1 OR #2 /13/												
	02	03	04	05	06	08	10	12	14	16	20	24	32
02	.773	-	-	-	-	-	-	-	-	-	-	-	-
03	.789	.836	-	-	-	-	-	-	-	-	-	-	-
04	.820	.867	.898	-	-	-	-	-	-	-	-	-	-
05	.883	.930	.961	.961	-	-	-	-	-	-	-	-	-
06	.961	1.008	1.039	1.039	1.055	-	-	-	-	-	-	-	-
08	1.086	1.133	1.164	1.164	1.180	1.273	-	-	-	-	-	-	-
10	1.180	1.226	1.258	1.258	1.274	1.367	1.430	-	-	-	-	-	-
12	1.272	1.320	1.351	1.351	1.367	1.460	1.523	1.586	-	-	-	-	-
14	1.398	1.445	1.476	1.476	1.492	1.585	1.648	1.742	1.680	-	-	-	-
16	1.429	1.476	1.507	1.507	1.523	1.616	1.679	1.742	1.742	1.742	-	-	-
20	1.585	1.632	1.663	1.663	1.679	1.772	1.835	1.898	1.898	1.898	1.898	-	-
24	1.710	1.757	1.788	1.788	1.804	1.897	1.960	2.023	2.023	2.023	2.023	2.023	-
32	2.148	2.195	2.226	2.226	2.242	2.335	2.398	2.461	2.461	2.461	2.461	2.461	2.461

TABLE 3 - TUBE SIZE AND CORRESPONDING THREAD

PORT SIZE	(NOMINAL TUBE SIZE)	T THREAD PER AS8879 CLASS 3A
02	.125	.3125-24 UNJF
03	.188	.3750-24 UNJF
04	.250	.4375-20 UNJF
05	.312	.5000-20 UNJF
06	.375	.5625-18 UNJF
08	.500	.7500-16 UNJF
10	.625	.8750-14 UNJF
12	.750	1.0625-12 UNJ
14	.875	1.1875-12 UNJ
16	1.000	1.3125-12 UNJ
20	1.250	1.6250-12 UNJ
24	1.500	1.8750-12 UNJ
32	2.000	2.5000-12 UNJ

NOTES:

NOTICE

THIS DOCUMENT REFERENCES A PART WHICH CONTAINS CADMIUM AS A PLATING MATERIAL. CONSULT LOCAL OFFICIALS IF YOU HAVE QUESTIONS CONCERNING CADMIUM'S USE.

/1/ MATERIAL:

- a. CODE LETTER DASH (-) - TYPE 4130 STEEL FORGING OR BAR PER AMS6370 OR AMS-S-6758 EXCEPT HEAT TREATMENT PER PROCUREMENT SPECIFICATION. /2/
- b. CODE LETTER D - TYPE 2024-T6 OR -T851 ALUMINUM ALLOY BAR PER AMS-QQ-A-225/6 OR TYPE 2014-T6 ALUMINUM ALLOY FORGING PER AMS4133. /2/
- c. CODE LETTER F - TYPE 4130 LOW ALLOY STEEL FORGING OR BAR PER AMS6370 OR AMS-S-6758 EXCEPT HEAT TREATMENT PER PROCUREMENT SPECIFICATION. /2/
- d. CODE LETTER J - TYPE 304 CORROSION RESISTANT STEEL FORGING OR BAR PER AMS5639 OR AMS-QQ-S-763 EXCEPT HARDNESS PER PROCUREMENT SPECIFICATION. /2/
- e. CODE LETTER K - TYPE 316 CORROSION RESISTANT STEEL FORGING OR BAR PER AMS5648 OR AMS-QQ-S-763 EXCEPT HARDNESS PER PROCUREMENT SPECIFICATION. /2/
- f. CODE LETTER R - TYPE 321 CORROSION RESISTANT STEEL FORGING OR BAR PER AMS5645 OR AMS-QQ-S-763 EXCEPT HARDNESS PER PROCUREMENT SPECIFICATION. /2/
- g. CODE LETTER S - TYPE 347 CORROSION RESISTANT STEEL FORGING OR BAR PER AMS5646 OR AMS-QQ-S-763 EXCEPT HARDNESS PER PROCUREMENT SPECIFICATION. /2/
- h. CODE LETTER T - TYPE 6AL-4V TITANIUM ALLOY FORGING OR BAR PER AMS4928.
- i. CODE LETTER W - TYPE 7075-T73 ALUMINUM ALLOY FORGING PER AMS4141 OR AMS-QQ-A-367; OR 7075-T7351 ALUMINUM ALLOY BAR PER AMS4124; OR 7075-T73 ALUMINUM ALLOY BAR PER AMS-QQ-A-225/9. /2/

/2/ HEAT TREATMENT:

- a. MATERIAL CODE LETTER (-) AND F - HARDNESS SHALL BE 92 HRB TO 40 HRC PER PROCUREMENT SPECIFICATION.
- b. MATERIAL CODE LETTERS D AND W - ELECTRICAL CONDUCTIVITY AND HARDNESS PER PROCUREMENT SPECIFICATION.
- c. MATERIAL CODE LETTERS J, K, R AND S - HARDNESS SHALL BE 80 HRB MINIMUM PER PROCUREMENT SPECIFICATION.
- d. OTHER MATERIAL CODES - NONE.

3. FINISH:

- a. MATERIAL CODE LETTER (-) AND F - CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 2.
- b. MATERIAL CODE LETTER D - ANODIZE PER AMS2472 OR MIL-A-8625, TYPE II, CLASS 2, DYE GREEN SIMILAR TO COLOR 14187 OF FED-STD-595.
- c. MATERIAL CODE LETTERS J, K, R AND S - PASSIVATE PER AMS2700 TYPE 6 OR 7.
- d. MATERIAL CODE LETTER T - FLUORIDE PHOSPHATE CONVERSION COAT PER AMS 2486 OR ANODIZE PER AMS 2488, TYPE 2.
- e. MATERIAL CODE LETTER W - ANODIZE PER AMS 2472 OR MIL-A-8625, TYPE II, CLASS 2, DYE BROWN SIMILAR TO COLOR 10080 OF FED-STD-595.

/4/ PROCUREMENT SPECIFICATION: AS18280 EXCEPT AS SPECIFIED ON THIS STANDARD. PRODUCT SUPPLIED TO THIS SPECIFICATION SHALL BE MANUFACTURED BY AN ACCREDITED MANUFACTURER AS LISTED IN THE PERFORMANCE REVIEW INSTITUTE (PRI) QUALIFIED PRODUCTS LIST (QPL) PRI-QPL-AS18280 FOR THIS STANDARD. SEE <http://www.eauditnet.com> FOR CURRENT QPL ONLINE.

/5/ IDENTIFICATION AT LOCATION SHOWN: MARK PER AS478 CLASS C OR D OR METHOD 7A3, 15A3, OR 15B.

- a. FOR SIZE 06 AND SMALLER MANUFACTURER'S NAME, CAGE CODE OR TRADEMARK, LETTERS "AS" AND MATERIAL CODE LETTER.
- b. FOR SIZE 08 AND LARGER, MANUFACTURER'S NAME, CAGE CODE OR TRADEMARK, BASIC PART NUMBER AND MATERIAL CODE LETTER.

6. INVENTORIED PARTS CONFORMING TO THE PREVIOUS ISSUE MAY BE USED TO DEPLETION.

7. INTENDED USE: THIS PART IS DESIGNED FOR USE IN TUBING CONNECTION SYSTEMS WITH NOMINAL OPERATING PRESSURES AS FOLLOWS:

- a. SIZES 02 THROUGH 24 IN LOW ALLOY STEEL, CORROSION RESISTANT STEEL AND TITANIUM ALLOY AT 3000 psi.
- b. SIZES 02 THROUGH 20 IN ALUMINUM ALLOY AND SIZE 32 IN ALL OTHER MATERIALS AT 1500 psi.
- c. SIZE 24 IN ALUMINUM ALLOY AT 1000 psi.
- d. SIZE 32 IN ALUMINUM ALLOY AT 600 psi.

8. FOR REDUCER CONFIGURATIONS, THE PRESSURE RATING IS DETERMINED BY THE LARGEST PORT.

9. THE NON-REDUCER CONFIGURATION WITHOUT A SUFFIX PART NUMBER CODE IS THE FUNCTIONAL EQUIVALENT OF AS21904 FOR THE CORRESPONDING FORGING SIZE AND IS INTENDED TO BE SUITABLE AS A REPLACEMENT STANDARD.

10. WHEN MACHINING FROM BAR STOCK OR OVERSIZED FORGING, THE CENTER BODY DIMENSIONS SHALL CONFORM TO AS1376, TABLE 2.

/11/ THE DIMENSIONS IN THE TABLE ARE FOR FINAL MACHINED PARTS. THE FORGING SIZE IS DETERMINED AS THE SIZE NECESSARY TO MAKE THE LARGEST FITTING END.

 An SAE International Group	AEROSPACE STANDARD	SAE AS1004 SHEET 4 OF 5	REV. F
	FITTING, ELBOW, 90°, STANDARD AND REDUCER, FLARELESS		