

REV.
D

AS1040

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."
SAE reviews each technical report at least every five years at which time it may be reaffirmed, revised, or cancelled. SAE invites your written comments and suggestions.

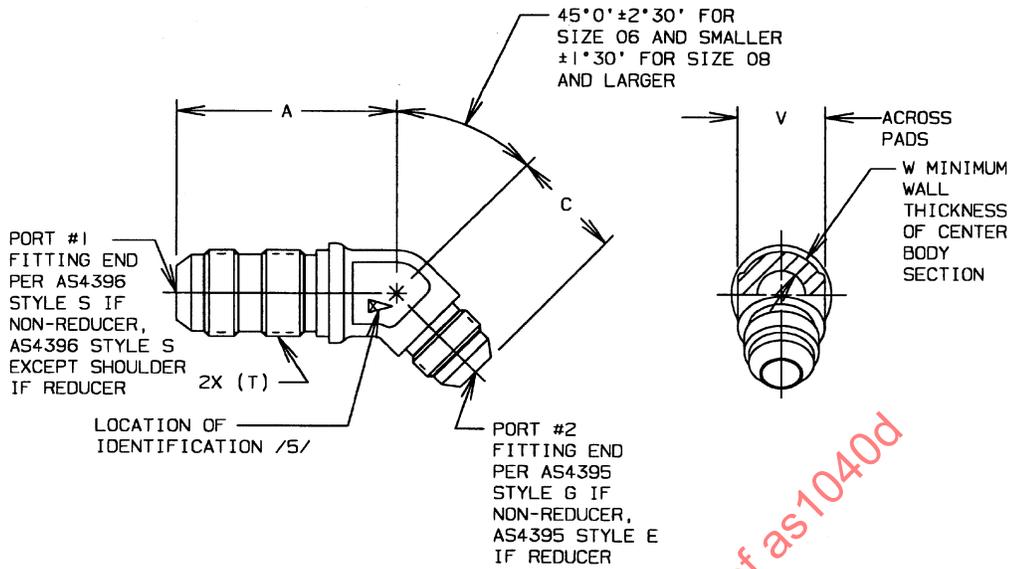


FIGURE 1 - FITTING, ELBOW, 45°, BULKHEAD END FOR OPTIONAL USE IN PORT
PORT #2 SHOWN AS REDUCER

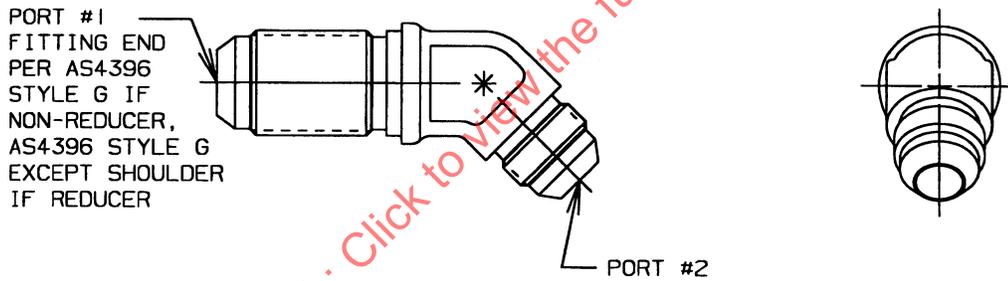
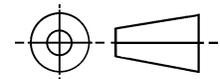


FIGURE 2 - FITTING, ELBOW, 45°, BULKHEAD END NOT FOR USE IN PORT
PORT #2 SHOWN AS REDUCER
SAME AS FIGURE 1 EXCEPT AS SHOWN /20/

INACTIVE IN PART - SEE NOTE /21/

THIRD ANGLE PROJECTION



CUSTODIAN: SAE G-3/G-3B

PROCUREMENT SPECIFICATION: /4/ AS4841

SAE The Engineering Society
For Advancing Mobility
INTERNATIONAL
Land Sea Air and Space®
400 Commonwealth Drive, Warrendale, PA 15096-0001

(R)

AEROSPACE STANDARD

FITTING, ELBOW, 45°,
STANDARD AND REDUCER,
BULKHEAD, FLARED

AS1040
SHEET 1 OF 5

REV. D

SAENORM.COM : Click to view the full PDF of as1040d

ISSUED 1962-08 REVISED 2001-01

REV.
D

AS1040

TABLE 1 - DIMENSIONS AND WEIGHTS /13/

BASIC NO. AS1040 /12/ /20/ SIZE CODE	V	W	LB/EA APPROX REF ALUM	LB/EA APPROX REF CRES	LB/EA APPROX REF TI
02	.297- .314	.090	1.26	3.63	2.00
03	.360- .377	.100	1.18	5.14	2.83
04	.423- .440	.110	2.49	7.16	3.95
05	.485- .502	.120	3.16	9.08	5.01
06	.547- .565	.120	4.04	11.6	6.41
08	.735- .753	.150	8.79	25.2	13.9
10	.860- .878	.170	11.3	32.4	17.9
12	1.047-1.065	.185	20.9	59.9	33.0
16	1.292-1.317	.205	30.2	86.9	47.9
20	1.605-1.630	.240	50.6	145	80.2
24	1.855-1.880	.250	67.7	194	107
32	2.542-2.572	.350	152	437	241

TABLE 2 - LEG LENGTH A

FORGING SIZE /12/	TUBE SIZE OF PORT #1 02	TUBE SIZE OF PORT #1 03	TUBE SIZE OF PORT #1 04	TUBE SIZE OF PORT #1 05	TUBE SIZE OF PORT #1 06	TUBE SIZE OF PORT #1 08	TUBE SIZE OF PORT #1 10	TUBE SIZE OF PORT #1 12	TUBE SIZE OF PORT #1 16	TUBE SIZE OF PORT #1 20	TUBE SIZE OF PORT #1 24	TUBE SIZE OF PORT #1 32
02	1.398	-	-	-	-	-	-	-	-	-	-	-
03	1.398	1.398	-	-	-	-	-	-	-	-	-	-
04	1.460	1.460	1.554	-	-	-	-	-	-	-	-	-
05	1.460	1.460	1.557	1.554	-	-	-	-	-	-	-	-
06	1.523	1.523	1.617	1.617	1.695	-	-	-	-	-	-	-
08	1.633	1.633	1.727	1.727	1.805	1.961	-	-	-	-	-	-
10	1.726	1.726	1.820	1.820	1.898	2.054	2.195	-	-	-	-	-
12	1.821	1.821	1.915	1.915	1.993	2.149	2.290	2.461	-	-	-	-
16	1.946	1.946	2.040	2.040	2.118	2.274	2.415	2.586	2.586	-	-	-
20	1.992	1.992	2.086	2.086	2.164	2.320	2.461	2.632	2.632	2.679	-	-
24	1.992	1.992	2.086	2.086	2.164	2.320	2.461	2.632	2.632	2.679	2.695	-
32	1.945	1.945	2.039	2.039	2.117	2.273	2.414	2.585	2.585	2.632	2.648	2.929

AEROSPACE STANDARD

(R)

FITTING, ELBOW, 45°,
STANDARD AND REDUCER,
BULKHEAD, FLARED**AS1040**
SHEET 2 OF 5**REV.**
D

REV.
D

AS1040

TABLE 3 - LEG LENGTH C

FORGING SIZE /12/	TUBE SIZE OF PORT #2 02	TUBE SIZE OF PORT #2 03	TUBE SIZE OF PORT #2 04	TUBE SIZE OF PORT #2 05	TUBE SIZE OF PORT #2 06	TUBE SIZE OF PORT #2 08	TUBE SIZE OF PORT #2 10	TUBE SIZE OF PORT #2 12	TUBE SIZE OF PORT #2 16	TUBE SIZE OF PORT #2 20	TUBE SIZE OF PORT #2 24	TUBE SIZE OF PORT #2 32
02	.664	-	-	-	-	-	-	-	-	-	-	-
03	.633	.664	-	-	-	-	-	-	-	-	-	-
04	.633	.655	.726	-	-	-	-	-	-	-	-	-
05	.671	.702	.773	.773	-	-	-	-	-	-	-	-
06	.728	.759	.830	.830	.836	-	-	-	-	-	-	-
08	.783	.814	.885	.885	.891	.992	-	-	-	-	-	-
10	.807	.838	.909	.909	.915	1.016	1.117	-	-	-	-	-
12	.873	.904	.975	.975	.981	1.082	1.183	1.289	-	-	-	-
16	1.013	1.044	1.115	1.115	1.121	1.222	1.323	1.429	1.476	-	-	-
20	1.091	1.122	1.193	1.193	1.199	1.300	1.401	1.507	1.554	1.601	-	-
24	1.154	1.185	1.256	1.256	1.262	1.363	1.464	1.570	1.617	1.664	1.789	-
32	1.341	1.372	1.443	1.443	1.449	1.550	1.651	1.757	1.804	1.851	1.976	2.226

TABLE 4 - 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
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

REV.
D

AS1040

NOTES:

- /1/ MATERIAL:
- a. DASH AS CODE LETTER - TYPE 4140 STEEL BAR PER AMS 6349 OR AMS 6382 OR TYPE 4130 STEEL FORGING OR BAR PER AMS 6370 OR AMS-S-6758 EXCEPT HEAT TREATMENT PER PROCUREMENT SPECIFICATION.
 - b. CODE LETTER D - TYPE 2014-T6 ALUMINUM ALLOY FORGING PER AMS 4133 OR AMS-QQ-A-367; OR 2024-T6 ALUMINUM ALLOY BAR PER AMS-QQ-A-225/6, OR 2024-T851 ALUMINUM ALLOY BAR PER AMS-QQ-A-225/6. /21/
 - c. CODE LETTER J - TYPE 304 CORROSION RESISTANT STEEL FORGING OR BAR PER AMS 5639 OR AMS-QQ-S-763 EXCEPT HARDNESS PER PROCUREMENT SPECIFICATION.
 - d. CODE LETTER K - TYPE 316 CORROSION RESISTANT STEEL FORGING OR BAR PER AMS 5648 OR AMS-QQ-S-763 EXCEPT HARDNESS PER PROCUREMENT SPECIFICATION.
 - e. CODE LETTER R - TYPE 321 CORROSION RESISTANT STEEL FORGING OR BAR PER AMS 5645 OR AMS-QQ-S-763 EXCEPT HARDNESS PER PROCUREMENT SPECIFICATION.
 - f. CODE LETTER T - 6AL-4V TITANIUM ALLOY FORGING OR BAR PER AMS 4928.
 - g. CODE LETTER W - 7075-T73 ALUMINUM ALLOY FORGING PER AMS 4141 OR AMS-QQ-A-367; OR 7075-T7351 ALUMINUM ALLOY BAR PER AMS 4124; OR 7075-T73 ALUMINUM ALLOY BAR PER AMS-QQ-A-225/9.
2. HEAT TREATMENT:
- a. DASH AS CODE LETTER - HARDNESS SHALL BE 92 HRB TO 40 HRC PER PROCUREMENT SPECIFICATION.
 - b. OTHER MATERIAL CODES - NONE.
3. FINISH:
- a. DASH AS CODE LETTER - CADMIUM PLATE PER QQ-P-416, TYPE II, CLASS 2, DYE BLACK.
 - b. MATERIAL CODE LETTER J - PASSIVATE PER AMS-QQ-P-35, TYPE VI OR VII.
 - c. MATERIAL CODE LETTER K - PASSIVATE PER AMS-QQ-P-35, TYPE VI OR VII.
 - d. MATERIAL CODE LETTER R - PASSIVATE PER AMS-QQ-P-35, TYPE VI OR VII.
 - e. MATERIAL CODE LETTER T - FLUORIDE PHOSPHATE CONVERSION COAT PER AMS 2486 OR ANODIZE PER AMS 2488, TYPE 2.
 - f. MATERIAL CODE LETTER W:
 1. ANODIZE PER AMS 2472 OR MIL-A-8625, TYPE II, CLASS 2, DYE BROWN, DUPLEX SEAL PER PROCUREMENT SPECIFICATION.
 2. W CODE PARTS TO BE COATED WITH HIGH PURITY ALUMINUM ONLY WILL HAVE THE FINISH CODE LETTER "V" AFTER THE SIZE CODE IN THE PART NUMBER. THE FINISH WILL BE: COAT WITH HIGH PURITY ALUMINUM PER MIL-DTL-83488, CLASS 3, TYPE II WITH MAXIMUM COATING THICKNESS OF .0005. GLASS BEAD PEEN PRESSURE SHALL BE 25 psi MAXIMUM.
- /4/ PROCUREMENT SPECIFICATION: AS4841 EXCEPT AS SPECIFIED ON THIS STANDARD. USERS OF THIS STANDARD SHALL PROCURE THIS PRODUCT FROM ACCREDITED MANUFACTURER(S), OR THEIR ACCREDITED DISTRIBUTOR(S), AS LISTED IN THE PERFORMANCE REVIEW INSTITUTE (PRI) QUALIFIED MANUFACTURERS LIST (QML) FOR THIS TYPE OF PRODUCT.
- /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 FOR CORROSION RESISTANT STEEL, TITANIUM AND ALUMINUM AND NO MATERIAL CODE LETTER FOR LOW ALLOY STEEL.
 - b. FOR SIZE 08 AND LARGER: MANUFACTURER'S NAME, CAGE CODE OR TRADEMARK, BASIC PART NUMBER, AND MATERIAL CODE LETTER FOR CORROSION RESISTANT STEEL, TITANIUM AND ALUMINUM AND NO MATERIAL CODE LETTER FOR LOW ALLOY STEEL.
6. INVENTORIED PARTS CONFORMING TO THE PREVIOUS ISSUE MAY BE USED TO DEPLETION.
- /7/ FITTINGS WITH AS4396 STYLE S ENDS MAY BE ASSEMBLED INTO INTERNALLY THREADED PORTS BUT ARE HISTORICALLY UNRELIABLE AND ARE ONLY SUITABLE IN THAT APPLICATION FOR 1500 psi MAXIMUM PRESSURE. FITTINGS WITH AS4396 STYLE G ENDS MAY BE DESIGNATED WITH THE SUFFIX G AFTER THE BASIC PART NUMBER AND CANNOT BE USED IN PORTS.