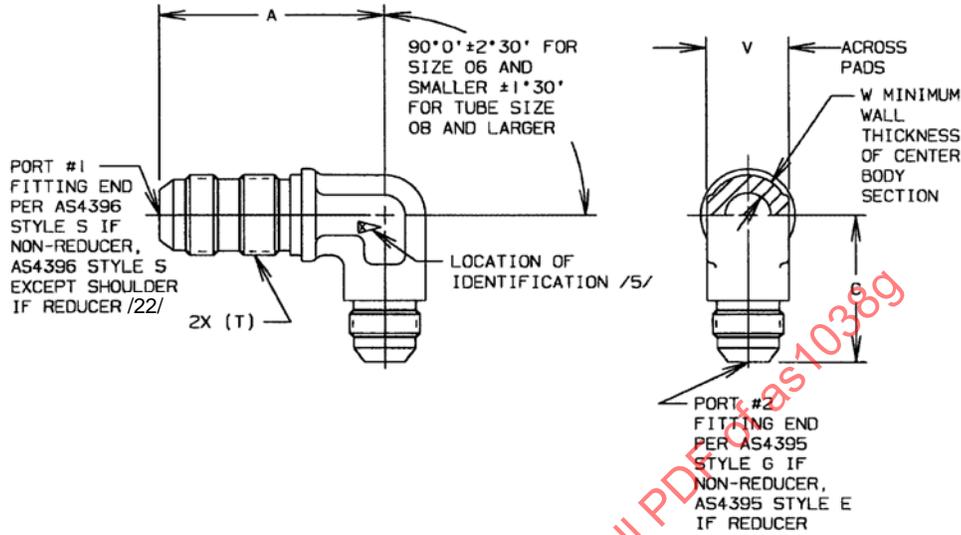


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RATIONALE

REACTIVATE MATERIALS. CORRECT SIZE 28 LEG LENGTH DIMENSIONS. UPDATE SPECIFICATION REFERENCE.

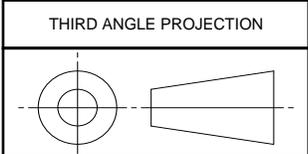


**FIGURE 1 - FITTING, ELBOW, 90°, BULKHEAD END FOR OPTIONAL USE IN PORT PORT #2 SHOWN AS REDUCER**

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CUSTODIAN: G-3/G-3B

PROCUREMENT SPECIFICATION: AS4841



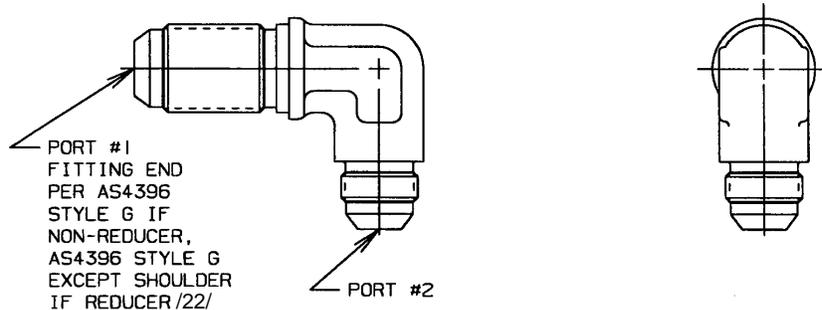
**AEROSPACE STANDARD**

FITTING, ELBOW, 90°,  
STANDARD AND REDUCER,  
BULKHEAD, FLARED

**AS1038**  
SHEET 1 OF 6

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ISSUED 1962-08 REVISED 2015-03



**FIGURE 2 - FITTING, ELBOW, 90°, BULKHEAD END NOT FOR USE IN PORT  
PORT #2 SHOWN AS REDUCER  
SAME AS FIGURE 1 EXCEPT AS SHOWN**

**TABLE 1 - DIMENSIONS AND WEIGHTS /13/**

BASIC NO. AS1038 /12/ /20/ SIZE CODE	V		W	LB/100 APPROX REF ALUM	LB/100 APPROX REF STEEL	LB/100 APPROX REF TI
02	.297 -	.314	.090	1.36	3.90	2.15
03	.360 -	.377	.100	1.93	5.52	3.04
04	.423 -	.440	.110	2.68	7.69	4.24
05	.485 -	.502	.120	3.39	9.72	5.38
06	.547 -	.565	.120	4.35	12.51	6.89
08	.735 -	.753	.150	9.45	27.09	14.94
10	.860 -	.878	.170	12.2	34.74	19.17
12	1.047 -	1.065	.185	22.4	64.3	35.5
16	1.292 -	1.317	.205	32.5	93.6	51.5
20	1.605 -	1.630	.240	54.4	155.7	86.1
24	1.855 -	1.880	.250	72.7	208.8	115.2
28	2.238 -	2.263	.310	117.8	364.5	187.2
32	2.542 -	2.572	.350	163	468.9	259.2

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	<b>AEROSPACE STANDARD</b>	<b>AS1038</b> SHEET 2 OF 6	<b>REV.</b> <b>G</b>
	FITTING, ELBOW, 90°, STANDARD AND REDUCER, BULKHEAD, FLARED		

**TABLE 2 - LEG LENGTH A**

FORGING SIZE /12/	TUBE SIZE OF PORT #1												
	02	03	04	05	06	08	10	12	16	20	24	28	32
02	1.429	-	-	-	-	-	-	-	-	-	-	-	-
03	1.461	1.461	-	-	-	-	-	-	-	-	-	-	-
04	1.507	1.507	1.601	-	-	-	-	-	-	-	-	-	-
05	1.538	1.538	1.632	1.632	-	-	-	-	-	-	-	-	-
06	1.648	1.648	1.742	1.742	1.820	-	-	-	-	-	-	-	-
08	1.789	1.789	1.883	1.883	1.961	2.117	-	-	-	-	-	-	-
10	1.929	1.929	2.023	2.023	2.101	2.257	2.398	-	-	-	-	-	-
12	2.039	2.039	2.133	2.133	2.211	2.367	2.508	2.679	-	-	-	-	-
16	2.164	2.164	2.258	2.258	2.336	2.492	2.633	2.804	2.804	-	-	-	-
20	2.445	2.445	2.539	2.539	2.617	2.773	2.914	3.085	3.085	3.132	-	-	-
24	2.726	2.726	2.820	2.820	2.898	3.054	3.195	3.366	3.366	3.413	3.429	-	-
28	2.969	2.969	3.063	3.063	3.141	3.297	3.438	3.609	3.609	3.656	3.672	3.828	-
32	3.133	3.133	3.227	3.227	3.305	3.461	3.602	3.773	3.773	3.820	3.836	3.992	4.117

**TABLE 3 - LEG LENGTH C**

FORGING SIZE /12/	TUBE SIZE OF PORT #2												
	02	03	04	05	06	08	10	12	16	20	24	28	32
02	.851	-	-	-	-	-	-	-	-	-	-	-	-
03	.883	.914	-	-	-	-	-	-	-	-	-	-	-
04	.883	.905	.976	-	-	-	-	-	-	-	-	-	-
05	.937	.968	1.039	1.039	-	-	-	-	-	-	-	-	-
06	.993	1.024	1.095	1.095	1.101	-	-	-	-	-	-	-	-
08	1.158	1.189	1.260	1.260	1.266	1.367	-	-	-	-	-	-	-
10	1.260	1.291	1.362	1.362	1.368	1.469	1.570	-	-	-	-	-	-
12	1.373	1.404	1.475	1.475	1.481	1.582	1.683	1.789	-	-	-	-	-
16	1.482	1.513	1.584	1.584	1.590	1.691	1.792	1.898	1.945	-	-	-	-
20	1.669	1.700	1.771	1.771	1.777	1.878	1.979	2.085	2.132	2.179	-	-	-
24	1.716	1.747	1.818	1.818	1.824	1.925	2.026	2.132	2.179	2.226	2.351	-	-
28	1.899	1.912	1.983	1.983	1.989	2.090	2.191	2.297	2.344	2.391	2.516	2.641	-
32	2.031	2.044	2.115	2.115	2.121	2.222	2.323	2.429	2.476	2.523	2.648	2.773	2.898

**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
28	1.750	2.2500-12 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. DASH AS CODE LETTER - TYPE 4130 STEEL FORGING OR BAR PER AMS6370 OR AMS-S-6758, OR TYPE 4140 STEEL BAR PER AMS6349 OR AMS6382.
- b. CODE LETTER D - TYPE 2014-T6 ALUMINUM ALLOY FORGING PER AMS4133 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.
- c. CODE LETTER J - TYPE 304 CORROSION RESISTANT STEEL FORGING OR BAR PER AMS5639.
- d. CODE LETTER K - TYPE 316 CORROSION RESISTANT STEEL FORGING OR BAR PER AMS5648.
- e. CODE LETTER R - TYPE 321 CORROSION RESISTANT STEEL FORGING OR BAR PER AMS5645.
- f. CODE LETTER S - TYPE 347 CORROSION RESISTANT STEEL FORGING OR BAR PER AMS5646.
- g. CODE LETTER T - 6Al-4V TITANIUM ALLOY FORGING OR BAR PER AMS4928. /21/
- h. CODE LETTER W - 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. HEAT TREATMENT:

- a. DASH AS MATERIAL CODE LETTER - HARDNESS SHALL BE 92 HRB TO 40 HRC PER PROCUREMENT SPECIFICATION.
- b. OTHER MATERIAL CODE LETTERS - NONE.

3. FINISH:

- a. DASH AS MATERIAL CODE LETTER - CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 2, DYE BLACK.
- b. MATERIAL CODE LETTER D:
  - 1. ANODIZE PER AMS2472 OR MIL-A-8625, TYPE II, CLASS 2, DYE BLUE, DUPLEX SEAL PER PROCUREMENT SPECIFICATION.
  - 2. D CODE PARTS TO BE COATED WITH HIGH PURITY ALUMINUM ONLY WILL HAVE THE FINISH CODE LETTER "V" PLACED AFTER THE SIZE CODE IN THE PART NUMBER. HIGH PURITY ALUMINUM COAT PER PROCUREMENT SPECIFICATION. /20/
- c. MATERIAL CODE LETTER J - PASSIVATE PER AMS2700, TYPE 6 OR 7.
- d. MATERIAL CODE LETTER K - PASSIVATE PER AMS2700, TYPE 6 OR 7.
- e. MATERIAL CODE LETTER R - PASSIVATE PER AMS2700, TYPE 6 OR 7.
- f. MATERIAL CODE LETTER S - PASSIVATE PER AMS2700, TYPE 6 OR 7.

	<b>AEROSPACE STANDARD</b>	<b>AS1038</b> SHEET 4 OF 6	<b>REV.</b> <b>G</b>
	FITTING, ELBOW, 90°, STANDARD AND REDUCER, BULKHEAD, FLARED		