FEDERAL SUPPLY CLASS
4730

RATIONALE

OPERATING PRESSURES FOR ALUMINUM FITTINGS CLARIFIED. NADCAP-QML REQUIREMENT HAS BEEN ADDED. MATERIAL AND FINISH SPECIFICATION NUMBERS HAVE BEEN UPDATED. OTHER CLARIFICATIONS AND UPDATES

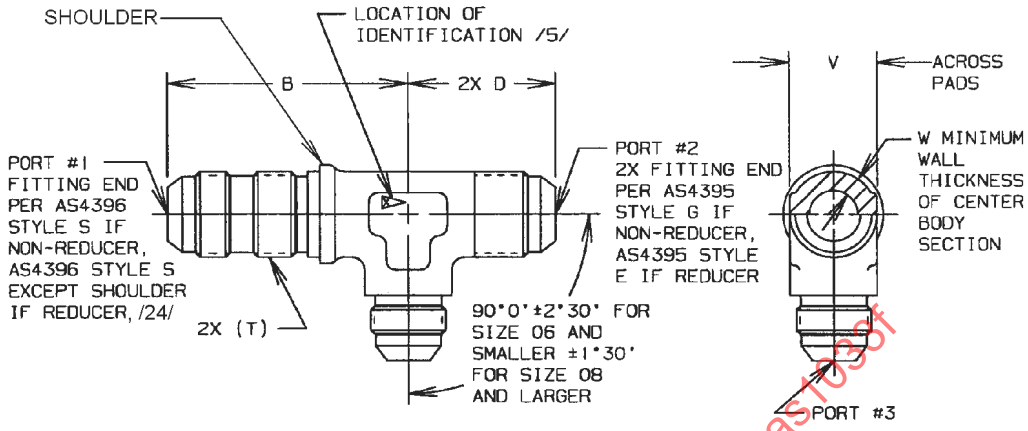


FIGURE 1 - FITTING, TEE, BULKHEAD END FOR OPTIONAL USE IN PORT
PORT #3 SHOWN AS REDUCER

INACTIVE IN PART /23/

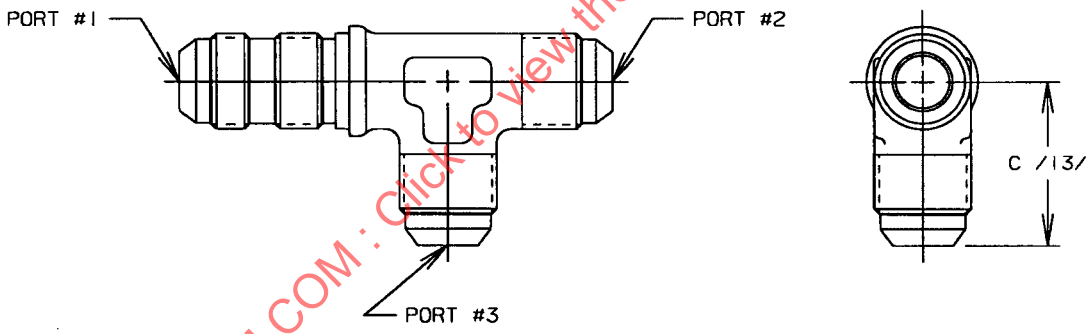
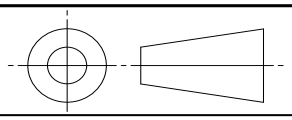


FIGURE 2 - FITTING, TEE, BULKHEAD END FOR OPTIONAL USE IN PORT
NON-REDUCER SHOWN
SAME AS FIGURE 1 EXCEPT AS SHOWN

INACTIVE IN PART /23/

SAE values your input. To provide feedback on this Technical Report, please visit
http://www.sae.org/technical/standards/AS1033F

THIRD ANGLE PROJECTION



ISSUED 1962-08 REVISED 2010-03

CUSTODIAN: G-3/G-3B

PROCUREMENT SPECIFICATION: /4/ AS4841

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

FITTING, TEE, STANDARD AND REDUCER, BULKHEAD ON RUN, FLARED

SAE AS1033

REV. F

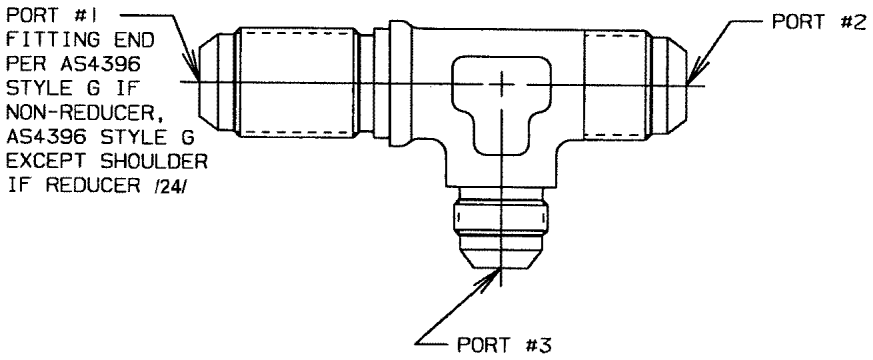


FIGURE 3 - FITTING, TEE, BULKHEAD END NOT FOR USE IN PORT
PORT #3 SHOWN AS REDUCER
SAME AS FIGURE 1 EXCEPT AS SHOWN, /21/
BULKHEAD END, NOT FOR USE IN PORT

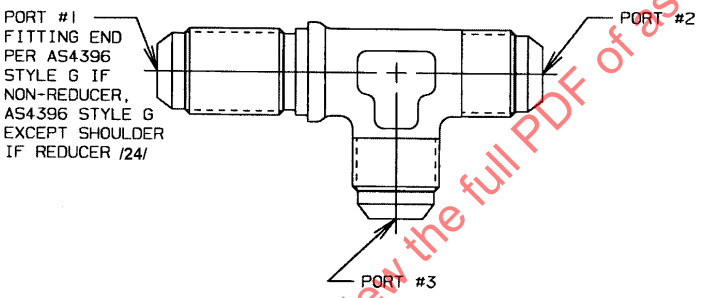


FIGURE 4 - FITTING, TEE, BULKHEAD END NOT FOR USE IN PORT
NON-REDUCER SHOWN
SAME AS FIGURE 2 EXCEPT AS SHOWN /21/
BULKHEAD END NOT FOR USE IN PORT

TABLE 1 - DIMENSIONS AND WEIGHTS /14/

BASIC NO. AS1033 /12/ /21/ SIZE CODE	C /13/	V	W	LB/EA APPROX REF ALUM	LB/EA APPROX REF STEEL	LB/EA APPROX REF TI
02	.851	.297- .314	.090	.0172	.049	.0273
03	.914	.360- .377	.100	.0242	.070	.0384
04	.976	.423- .440	.110	.0333	.095	.0527
05	1.039	.485- .502	.120	.042	.121	.066
06	1.101	.547- .565	.120	.053	.152	.084
08	1.367	.735- .753	.150	.115	.332	.183
10	1.570	.860- .878	.170	.150	.431	.238
12	1.789	1.047-1.065	.185	.272	.780	.430
16	1.945	1.292-1.317	.205	.386	1.11	.611
20	2.180	1.605-1.630	.240	.635	1.82	1.01
24	2.351	1.855-1.880	.250	.833	2.39	1.31
28	2.594	2.238-2.263	.310	1.031	2.97	1.62
32	2.898	2.542-2.572	.350	1.827	5.24	2.89

TABLE 2 - LEG LENGTH B

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 28	TUBE SIZE OF PORT #1 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 D

FORGING SIZE /12/	TUBE SIZE OF PORT #2 OR #3 02	TUBE SIZE OF PORT #2 OR #3 03	TUBE SIZE OF PORT #2 OR #3 04	TUBE SIZE OF PORT #2 OR #3 05	TUBE SIZE OF PORT #2 OR #3 06	TUBE SIZE OF PORT #2 OR #3 08	TUBE SIZE OF PORT #2 OR #3 10	TUBE SIZE OF PORT #2 OR #3 12	TUBE SIZE OF PORT #2 OR #3 16	TUBE SIZE OF PORT #2 OR #3 20	TUBE SIZE OF PORT #2 OR #3 24	TUBE SIZE OF PORT #2 OR #3 28	TUBE SIZE OF PORT #2 OR #3 32
02	.789	-	-	-	-	-	-	-	-	-	-	-	-
03	.820	.851	-	-	-	-	-	-	-	-	-	-	-
04	.820	.843	.914	-	-	-	-	-	-	-	-	-	-
05	.874	.905	.976	.976	-	-	-	-	-	-	-	-	-
06	.978	1.009	1.080	1.080	1.086	-	-	-	-	-	-	-	-
08	1.064	1.095	1.166	1.166	1.172	1.273	-	-	-	-	-	-	-
10	1.166	1.197	1.268	1.268	1.274	1.375	1.476	-	-	-	-	-	-
12	1.263	1.294	1.365	1.365	1.371	1.472	1.573	1.679	-	-	-	-	-
16	1.373	1.404	1.475	1.475	1.481	1.582	1.683	1.789	1.836	-	-	-	-
20	1.576	1.607	1.678	1.678	1.684	1.785	1.886	1.992	2.039	2.086	-	-	-
24	1.716	1.747	1.818	1.818	1.824	1.925	2.026	2.132	2.179	2.226	2.351	-	-
28	2.079	2.380	2.451	2.451	2.457	2.558	2.659	2.765	2.812	2.859	2.984	3.109	-
32	2.201	2.232	2.303	2.303	2.309	2.410	2.511	2.617	2.664	2.711	2.836	2.961	3.086

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	2.5000-12 UNJ
32	2.000	2.5000-12 UNJ

NOTICE:

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

NOTES:

/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 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. /23/

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. /23/

g. CODE LETTER T - 6AL-4V TITANIUM ALLOY FORGING OR BAR PER AMS4928. /22/

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-T7351 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 CODE LETTERS - NONE.

3. FINISH:

a. DASH AS CODE LETTER - CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 2, DYE BLACK.

b. MATERIAL CODE LETTER D:

1. ANODIZE PER AMS 2472 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. 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. /21/ SEE PROCUREMENT SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

c. MATERIAL CODE LETTER J - PASSIVATE PER AMS2700, TYPE 6 .

d. MATERIAL CODE LETTER K - PASSIVATE PER AMS2700, TYPE 6.

e. MATERIAL CODE LETTER R - PASSIVATE PER AMS2700, TYPE 6.

f. MATERIAL CODE LETTER S - PASSIVATE PER AMS2700, TYPE 6.

g. MATERIAL CODE LETTER T - ANODIZE PER AMS2488, TYPE 2 OR FLUORIDE PHOSPHATE CONVERSION COAT PER AMS2486.

h. MATERIAL CODE LETTER W:

1. ANODIZE PER AMS2472 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" PLACED 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. /21/ SEE PROCUREMENT REQUIREMENTS FOR ADDITIONAL REQUIREMENTS.

/4/ PROCUREMENT SPECIFICATION: AS4841 EXCEPT AS SPECIFIED ON THIS STANDARD. PRODUCT SUPPLIED TO THIS SPECIFICATION SHALL BE MANUFACTURED BY AN ACCREDITED MANUFACTURER LISTED IN THE NATIONAL AEROSPACE AND DEFENSE CONTRACTORS ACCREDITATION PROGRAM (NADCAP) QUALIFIED MANUFACTURER LIS FOR THIS PRODUCT TYPE. THE QML IS AVAILABLE AT www.eAuditNet.com..

/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 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 ALLOY STEEL.

6. INVENTORIED PARTS CONFORMING TO THE PREVIOUS "LETTER CHANGE" 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.

8. INTENDED USE: THIS PART IS DESIGNED FOR USE IN SYSTEMS WITH MAXIMUM OPERATING PRESSURES AS SHOWN IN TABLE 6.