

REV. G

SAE AS1009

FEDERAL SUPPLY CLASS  
4730

RATIONALE

UPDATES AND GENERAL EDITORIAL CORRECTIONS HAVE BEEN MADE. INACTIVATION FOR NEW DESIGN AND REPLACEMENT BY AS6049.

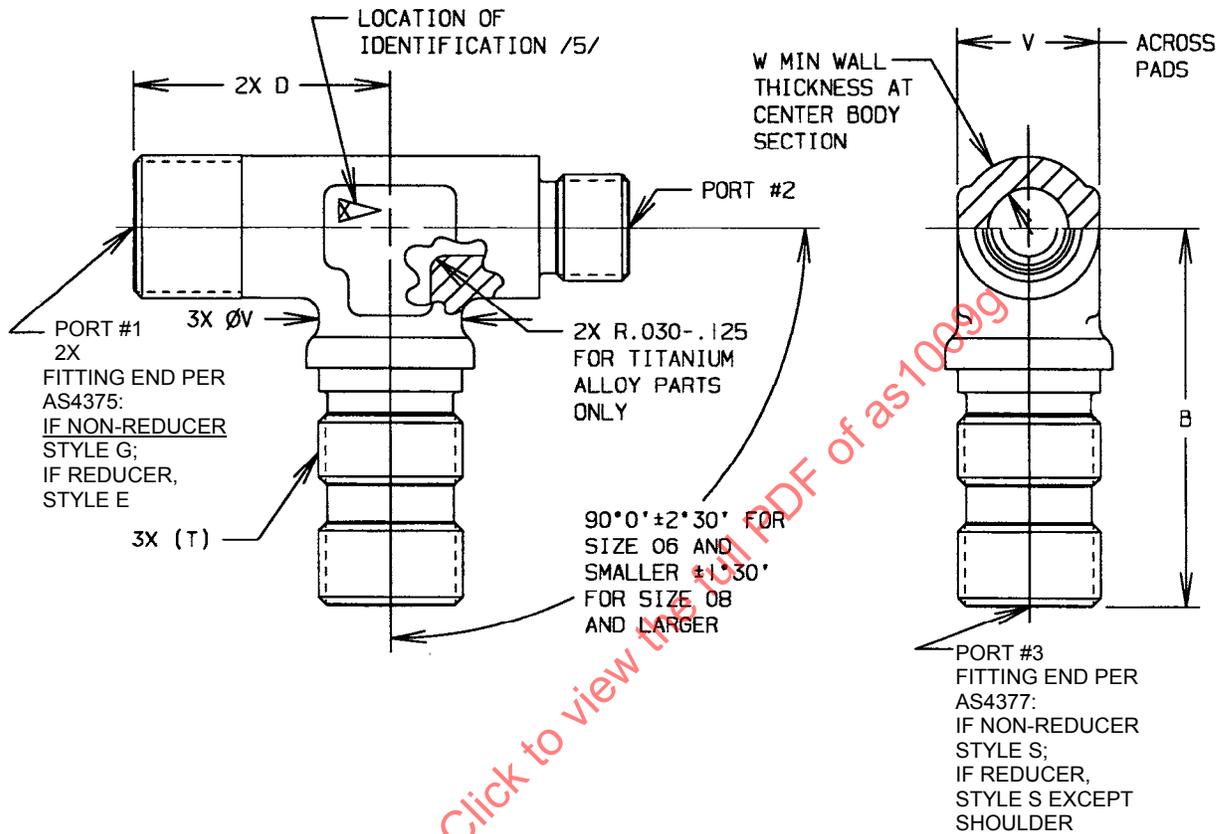
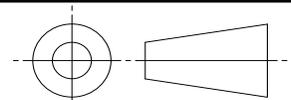


FIGURE 1. FITTING, TEE, BULKHEAD END FOR OPTIONAL USE IN PORT INSTALLATION, PORT #2 SHOWN AS REDUCER

INACTIVE /22/

SAE values your input. To provide feedback on this Technical Report, please visit <http://www.sae.org/technical/standards/AS1009G>

THIRD ANGLE PROJECTION



CUSTODIAN: G-3/G-3B

PROCUREMENT SPECIFICATION: /4/ AS18280

**SAE Aerospace**  
An SAE International Group

**AEROSPACE STANDARD**

FITTING, TEE, STANDARD AND REDUCER, BULKHEAD ON SIDE, FLARELESS

**SAE AS1009**  
SHEET 1 OF 7

**REV. G**

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.

ISSUED 1966-03 REAFFIRMED 2005-06 REVISED 2010-04

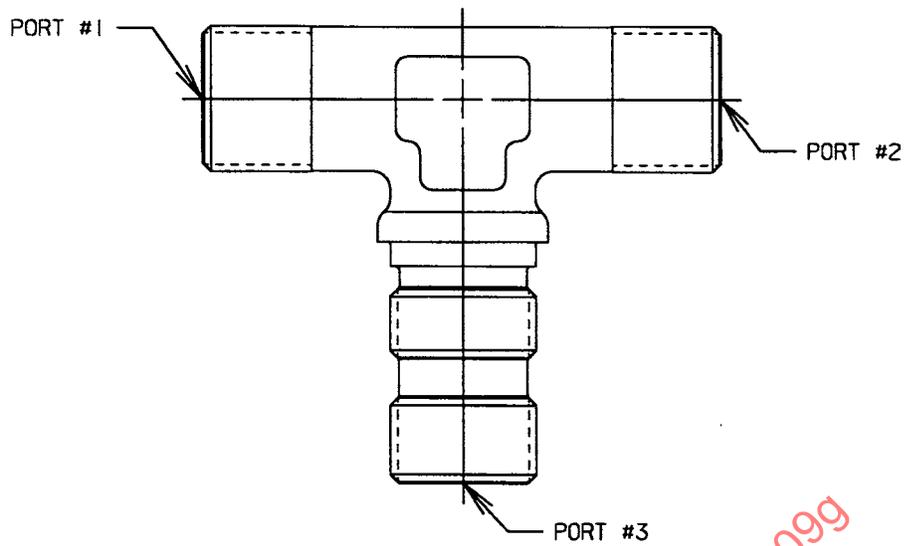


FIGURE 2 - FITTING, TEE, BULKHEAD END FOR OPTIONAL USE  
IN PORT INSTALLATION, NON-REDUCER SHOWN, SAME  
AS FIGURE 1 EXCEPT AS SHOWN

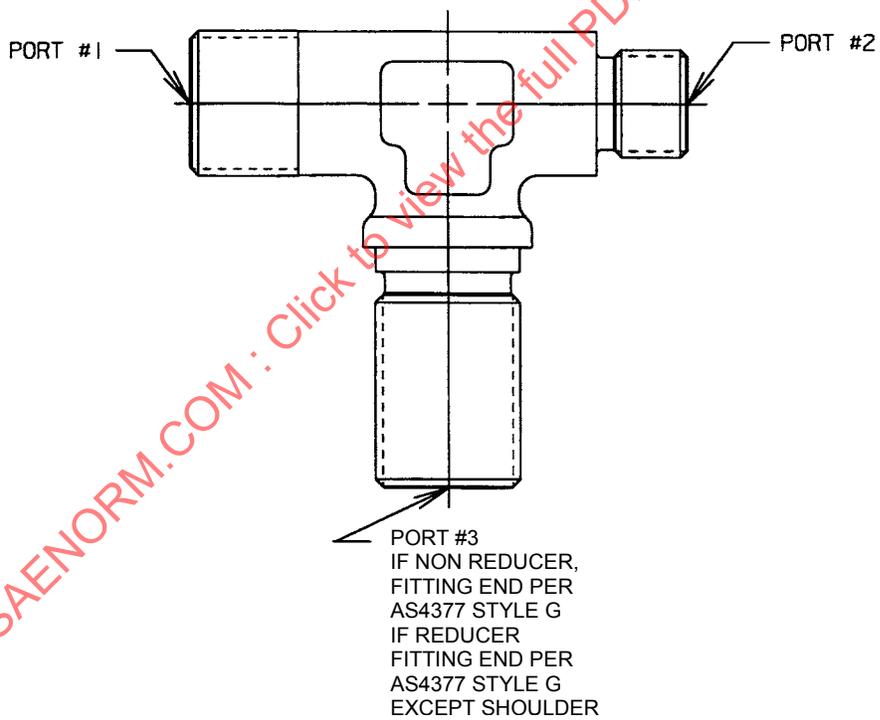


FIGURE 3 - FITTING, TEE, BULKHEAD END NOT FOR USE IN PORT  
INSTALLATION, PORT #2 SHOWN AS REDUCER, SAME AS  
FIGURE 1 EXCEPT AS SHOWN

TABLE 1 - DIMENSIONS AND WEIGHTS /13/

BASIC NO. AS1009 /12/ /21/ SIZE CODE	V	W	LB/EA APPROX REF ALUM	LB/EA APPROX REF STEEL	LB/EA APPROX REF TI
02	.297- .314	.090	.0198	.0558	.0315
03	.360- .377	.100	.0252	.0702	.0405
04	.423- .440	.110	.0297	.0846	.0486
05	.485- .502	.120	.0432	.127	.0729
06	.547- .565	.120	.0522	.140	.0801
08	.735- .753	.150	.0972	.274	.158
10	.860- .878	.170	.149	.405	.233
12	1.047-1.065	.185	.230	.630	.363
14	1.173-1.191	.200	-	-	-
16	1.292-1.317	.205	.308	.868	.500
20	1.605-1.630	.240	.558	1.55	.893
24	1.855-1.880	.250	.734	2.00	1.15
32	2.542-2.572	.350	-	-	-

TABLE 2 - LEG LENGTH B

FORGING SIZE /12/	TUBE SIZE OF PORT #3 /14/												
	02	03	04	05	06	08	10	12	14	16	20	24	32
02	1.336	-	-	-	-	-	-	-	-	-	-	-	-
03	1.367	1.414	-	-	-	-	-	-	-	-	-	-	-
04	1.413	1.460	1.523	-	-	-	-	-	-	-	-	-	-
05	1.445	1.492	1.555	1.555	-	-	-	-	-	-	-	-	-
06	1.555	1.602	1.665	1.665	1.711	-	-	-	-	-	-	-	-
08	1.664	1.711	1.774	1.774	1.820	1.992	-	-	-	-	-	-	-
10	1.804	1.851	1.914	1.914	1.960	2.132	2.273	-	-	-	-	-	-
12	1.914	1.961	2.024	2.024	2.070	2.242	2.383	2.492	-	-	-	-	-
14	2.024	2.071	2.134	2.134	2.180	2.352	2.493	2.617	2.617	-	-	-	-
16	2.039	2.086	2.149	2.149	2.195	2.367	2.508	2.617	2.617	2.617	-	-	-
20	2.320	2.367	2.430	2.430	2.476	2.648	2.789	2.898	2.898	2.898	2.898	-	-
24	2.602	2.649	2.712	2.712	2.758	2.930	3.071	3.180	3.180	3.180	3.180	3.180	-
32	2.992	3.039	3.102	3.102	3.148	3.320	3.461	3.570	3.570	3.570	3.570	3.570	3.773

TABLE 3 - LEG LENGTH D

FORGING SIZE /12/	TUBE SIZE OF PORT #1 OR #2 /14/												
	02	03	04	05	06	08	10	12	14	16	20	24	32
02	.804	-	-	-	-	-	-	-	-	-	-	-	-
03	.883	.930	-	-	-	-	-	-	-	-	-	-	-
04	.883	.930	.961	-	-	-	-	-	-	-	-	-	-
05	.977	1.024	1.055	1.055	-	-	-	-	-	-	-	-	-
06	.992	1.039	1.070	1.070	1.086	-	-	-	-	-	-	-	-
08	1.149	1.196	1.227	1.227	1.243	1.336	-	-	-	-	-	-	-
10	1.274	1.320	1.352	1.352	1.368	1.461	1.524	-	-	-	-	-	-
12	1.335	1.383	1.414	1.414	1.430	1.523	1.586	1.649	-	-	-	-	-
14	1.398	1.445	1.476	1.476	1.492	1.585	1.648	1.742	1.693	-	-	-	-
16	1.429	1.476	1.507	1.507	1.523	1.616	1.679	1.742	1.742	1.742	-	-	-
20	1.710	1.757	1.788	1.788	1.804	1.897	1.960	2.023	2.023	2.023	2.023	-	-
24	1.898	1.945	1.976	1.976	1.992	2.085	2.148	2.211	2.211	2.211	2.211	2.211	-
32	2.085	2.132	2.163	2.163	2.179	2.272	2.335	2.398	2.398	2.398	2.398	2.398	2.398

TABLE 4 - TUBE SIZE AND CORRESPONDING THREAD

PORT SIZE	(NOMINAL TUBE SIZE)	T THREAD PER AS8879 CLASS A
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 LOW ALLOY 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/

 An SAE International Group	<b>AEROSPACE STANDARD</b>	<b>SAE AS1009</b> SHEET 4 OF 7	<b>REV. G</b>
	FITTING, TEE, STANDARD AND REDUCER, BULKHEAD ON SIDE, FLARELESS		

- 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 AMS 2472 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/ FITTINGS WITH AS4377 STYLE G ENDS MAY BE DESIGNATED WITH THE SUFFIX "G" AFTER THE PART NUMBER AND CANNOT BE USED IN PORTS. FITTINGS WITH AS4377 STYLE S ENDS MAY BE ASSEMBLED INTO INTERNALLY THREADED PORTS BUT ARE NOT RECOMMENDED FOR THIS APPLICATION. FITTINGS WITH AS4377 STYLE S ENDS ARE HISTORICALLY UNRELIABLE WHEN INSTALLED IN PORTS BUT HAVE BEEN USED SUCCESSFULLY IN APPLICATIONS WITH PRESSURES LIMITED TO 1500 psi.

 An SAE International Group	<b>AEROSPACE STANDARD</b>	 <b>SAE AS1009</b> SHEET 5 OF 7	<b>REV.</b> <b>G</b>
	FITTING, TEE, STANDARD AND REDUCER, BULKHEAD ON SIDE, FLARELESS		