

REV.  
G

SAE AS1002

FEDERAL SUPPLY CLASS  
4730

# RATIONALE

UPDATES AND GENERAL EDITORIAL CORRECTIONS HAVE BEEN MADE. INACTIVATION FOR NEW DESIGN AND REPLACEMENT BY AS6042.

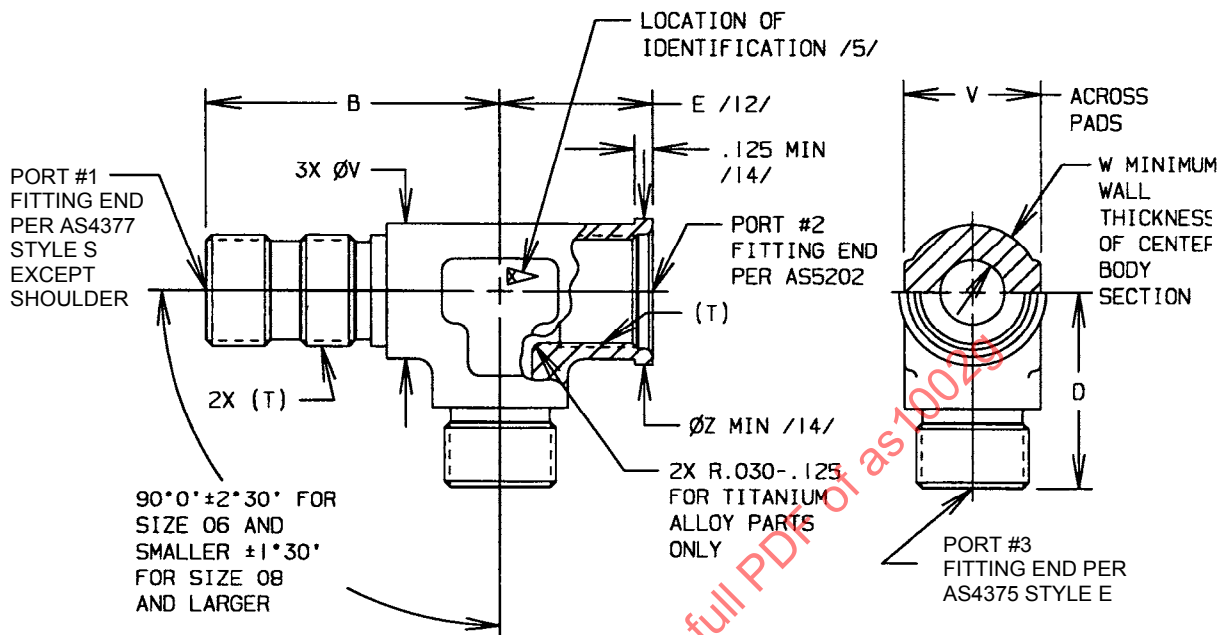


FIGURE 1 - FITTING, TEE, BULKHEAD END FOR OPTIONAL USE IN PORT INSTALLATION, PORT #2 SHOWN AS NON-REDUCER

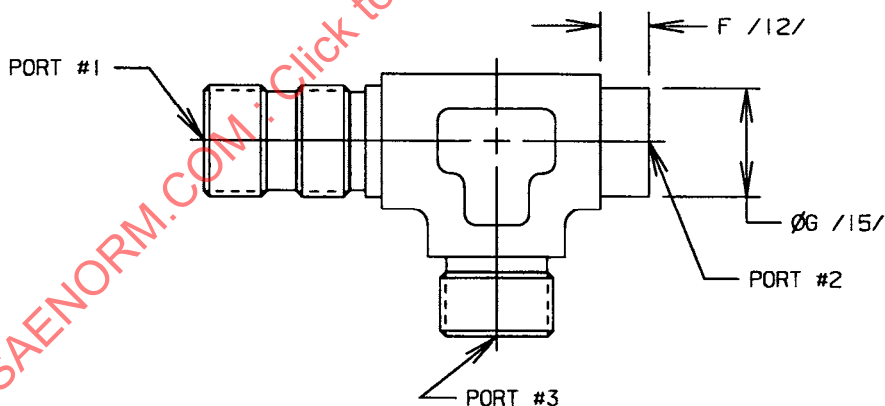
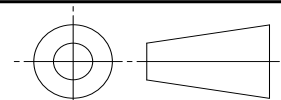


FIGURE 2 - FITTING, TEE, BULKHEAD END FOR OPTIONAL USE IN PORT INSTALLATION, PORT #2 SHOWN AS REDUCER, SAME AS FIGURE 1 EXCEPT AS SHOWN

INACTIVE /25/

SAE values your input. To provide feedback on this Technical Report, please visit <http://www.sae.org/technical/standards/AS1002G>

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 AND INTERNAL PORT ON RUN, FLARELESS

**SAE AS1002**  
SHEET 1 OF 6

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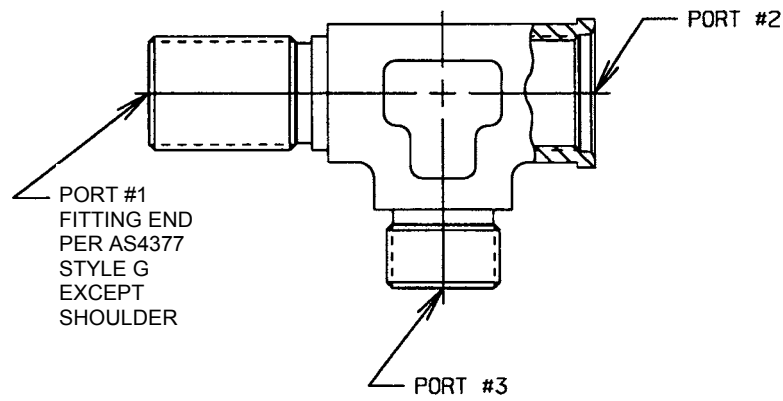


FIGURE 3 - FITTING, TEE, BULKHEAD END NOT FOR USE IN PORT INSTALLATION, PORT #2 SHOWN AS NON-REDUCER, SAME AS FIGURE 1 EXCEPT AS SHOWN

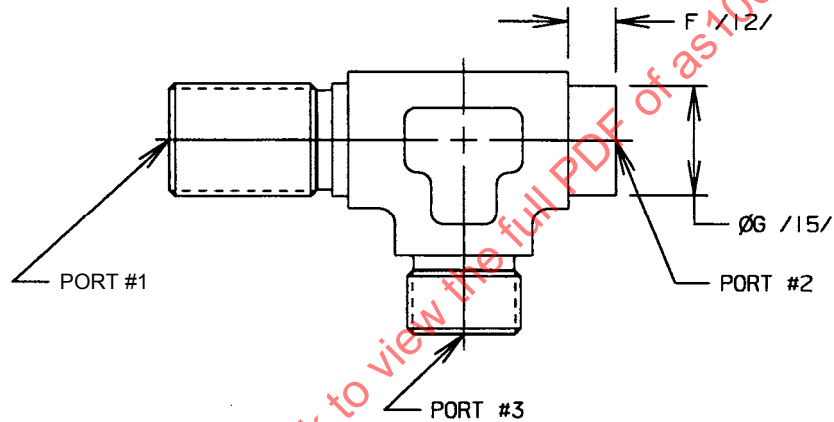


FIGURE 4 - FITTING, TEE, BULKHEAD END NOT FOR USE IN PORT INSTALLATION, PORT #2 SHOWN AS REDUCER, SAME AS FIGURE 1 EXCEPT AS SHOWN

TABLE 1 - DIMENSIONS AND WEIGHTS /16/

| BASIC NO.<br>AS1002<br>/13/ /24/<br>SIZE CODE | E<br>/12/ | F<br>/12/ | V           | W    | Z<br>/14/ | LB/EA<br>APPROX<br>REF<br>ALUM | LB/EA<br>APPROX<br>REF<br>STEEL | LB/EA<br>APPROX<br>REF<br>TI |
|-----------------------------------------------|-----------|-----------|-------------|------|-----------|--------------------------------|---------------------------------|------------------------------|
| 02                                            | .648      | -         | .485- .502  | .090 | .562      | .018                           | .051                            | .029                         |
| 03                                            | .711      | -         | .547- .565  | .100 | .625      | .039                           | .104                            | .060                         |
| 04                                            | .773      | .375      | .735- .753  | .110 | -         | .083                           | .233                            | .134                         |
| 05                                            | .773      | .375      | .735- .753  | .120 | .750      | .099                           | .278                            | .160                         |
| 06                                            | .836      | .375      | .860- .878  | .120 | -         | .116                           | .326                            | .188                         |
| 08                                            | 1.023     | .469      | 1.047-1.065 | .150 | -         | .197                           | .554                            | .319                         |
| 10                                            | 1.180     | .625      | 1.047-1.065 | .170 | 1.125     | .206                           | .579                            | .334                         |
| 12                                            | 1.367     | .688      | 1.297-1.317 | .185 | 1.375     | .360                           | 1.012                           | .583                         |
| 14                                            | 1.507     | .706      | 1.547-1.567 | .200 | -         | -                              | -                               | -                            |
| 16                                            | 1.555     | .719      | 1.605-1.630 | .205 | 1.625     | .455                           | 1.340                           | .773                         |
| 20                                            | 1.742     | .781      | 1.855-1.880 | .240 | 1.938     | .672                           | 1.950                           | 1.125                        |

TABLE 2 - LEG LENGTH B /17/

| FORGING<br>SIZE<br>/13/ | TUBE SIZE OF PORT #1 |       |       |       |       |       |       |       |       |       |       |
|-------------------------|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                         | 02                   | 03    | 04    | 05    | 06    | 08    | 10    | 12    | 14    | 16    | 20    |
| 02                      | 1.398                | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| 03                      | 1.430                | 1.477 | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| 04                      | 1.585                | 1.632 | 1.695 | -     | -     | -     | -     | -     | -     | -     | -     |
| 05                      | 1.585                | 1.632 | 1.695 | 1.695 | -     | -     | -     | -     | -     | -     | -     |
| 06                      | 1.758                | 1.805 | 1.868 | 1.868 | 1.914 | -     | -     | -     | -     | -     | -     |
| 08                      | 1.727                | 1.774 | 1.837 | 1.837 | 1.883 | 2.055 | -     | -     | -     | -     | -     |
| 10                      | 1.804                | 1.851 | 1.914 | 1.914 | 1.960 | 2.132 | 2.273 | -     | -     | -     | -     |
| 12                      | 1.883                | 1.930 | 1.993 | 1.993 | 2.039 | 2.211 | 2.352 | 2.461 | -     | -     | -     |
| 14                      | 2.040                | 2.087 | 2.150 | 2.150 | 2.196 | 2.368 | 2.509 | 2.618 | 2.618 | -     | -     |
| 16                      | 2.102                | 2.149 | 2.212 | 2.212 | 2.258 | 2.430 | 2.571 | 2.680 | 2.680 | 2.680 | -     |
| 20                      | 2.242                | 2.289 | 2.352 | 2.352 | 2.398 | 2.570 | 2.711 | 2.820 | 2.820 | 2.820 | 2.820 |

TABLE 3 - LEG LENGTH D /17/

| FORGING<br>SIZE<br>/13/ | TUBE SIZE OF PORT #3 |       |       |       |       |       |       |       |       |       |       |
|-------------------------|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                         | 02                   | 03    | 04    | 05    | 06    | 08    | 10    | 12    | 14    | 16    | 20    |
| 02                      | .867                 | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| 03                      | .883                 | .930  | -     | -     | -     | -     | -     | -     | -     | -     | -     |
| 04                      | 1.039                | 1.086 | 1.117 | -     | -     | -     | -     | -     | -     | -     | -     |
| 05                      | 1.039                | 1.086 | 1.117 | 1.117 | -     | -     | -     | -     | -     | -     | -     |
| 06                      | 1.086                | 1.133 | 1.164 | 1.164 | 1.180 | -     | -     | -     | -     | -     | -     |
| 08                      | 1.180                | 1.227 | 1.258 | 1.258 | 1.274 | 1.367 | -     | -     | -     | -     | -     |
| 10                      | 1.273                | 1.320 | 1.351 | 1.351 | 1.367 | 1.460 | 1.523 | -     | -     | -     | -     |
| 12                      | 1.351                | 1.398 | 1.429 | 1.429 | 1.445 | 1.538 | 1.601 | 1.644 | -     | -     | -     |
| 14                      | 1.492                | 1.593 | 1.870 | 1.570 | 1.586 | 1.679 | 1.724 | 1.867 | 1.867 | -     | -     |
| 16                      | 1.554                | 1.601 | 1.632 | 1.632 | 1.648 | 1.741 | 1.804 | 1.867 | 1.867 | 1.867 | -     |
| 20                      | 1.695                | 1.742 | 1.773 | 1.773 | 1.789 | 1.882 | 1.945 | 2.008 | 2.008 | 2.008 | 2.008 |

TABLE 4 - MACHINED ØG /15/ /17/

| FORGING<br>SIZE<br>/13/ | TUBE SIZE OF PORT #2 |      |      |      |      |       |       |       |       |       |    |
|-------------------------|----------------------|------|------|------|------|-------|-------|-------|-------|-------|----|
|                         | 02                   | 03   | 04   | 05   | 06   | 08    | 10    | 12    | 14    | 16    | 20 |
| 02                      | -                    | -    | -    | -    | -    | -     | -     | -     | -     | -     | -  |
| 03                      | -                    | -    | -    | -    | -    | -     | -     | -     | -     | -     | -  |
| 04                      | .594                 | .656 | -    | -    | -    | -     | -     | -     | -     | -     | -  |
| 05                      | .594                 | .656 | -    | -    | -    | -     | -     | -     | -     | -     | -  |
| 06                      | .594                 | .656 | .719 | .781 | -    | -     | -     | -     | -     | -     | -  |
| 08                      | .594                 | .656 | .719 | .781 | .844 | -     | -     | -     | -     | -     | -  |
| 10                      | .594                 | .656 | .719 | .781 | .844 | -     | -     | -     | -     | -     | -  |
| 12                      | .594                 | .656 | .719 | .781 | .844 | 1.062 | -     | -     | -     | -     | -  |
| 14                      | .594                 | .656 | .719 | .781 | .844 | 1.062 | 1.188 | 1.438 | -     | -     | -  |
| 16                      | .594                 | .656 | .719 | .781 | .844 | 1.062 | 1.188 | 1.438 | 1.562 | -     | -  |
| 20                      | .594                 | .656 | .719 | .781 | .844 | 1.062 | 1.188 | 1.438 | 1.562 | 1.688 | -  |

TABLE 5 - TUBE SIZE AND CORRESPONDING THREAD

| PORT<br>SIZE | (NOMINAL<br>TUBE<br>SIZE) | T THREAD<br>PER AS8879 |
|--------------|---------------------------|------------------------|
| 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          |

## 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/
- 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.

|                                                                                                                   |                                                                                        |  |                                   |                         |
|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|--|-----------------------------------|-------------------------|
| <br>An SAE International Group | <b>AEROSPACE STANDARD</b>                                                              |  | <b>SAE AS1002</b><br>SHEET 4 OF 6 | <b>REV.</b><br><b>G</b> |
|                                                                                                                   | FITTING, TEE, STANDARD AND REDUCER,<br>BULKHEAD AND INTERNAL PORT ON RUN,<br>FLARELESS |  |                                   |                         |