

REV.  
B

AS4227

## RATIONALE

FEDERAL SUPPLY CLASS  
4730

1. CHANGE PROCUREMENT SPECIFICATION FROM AS4510 TO AS85421 OR AS85720.
2. REVISE NOTE /5/ TO AGREE WITH THE PROCUREMENT SPECIFICATION CHANGED.
3. ADD NOTES 15 AND 16 TO SUPPORT GOVERNMENT PROCUREMENTS.
4. ADD TABLES 2A AND 2B WELDED FITTING END WITH PIN FOR 5000 PSI AND 4000 PSI AND BELOW TO BE USED WITH 5000 PSI AND 4000 PSI BEAM SEAL FITTINGS LISTED IN QPL-AS85720 AND QPL-AS85421.

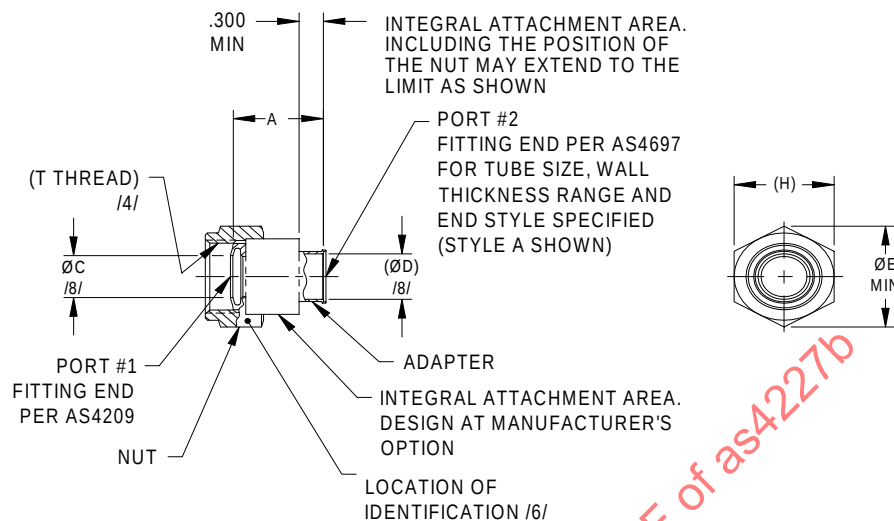


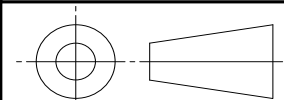
FIGURE 1 - FITTING ASSEMBLY, ADAPTER

TABLE 1A - DIMENSIONS

| BASIC NO.<br>AS4227 /14/<br>SIZE AND TUBE | RANGE OF<br>NOMINAL<br>TUBE WALL<br>FOR PORT #2<br>/7/ /14/ | (NOMINAL<br>TUBE<br>SIZE) | T THREAD<br>PER AS8879<br>CLASS 3B | PORT #2<br>STYLE<br>/8/ | A    |
|-------------------------------------------|-------------------------------------------------------------|---------------------------|------------------------------------|-------------------------|------|
| 03-018                                    | .016-.018                                                   | .188                      | .3750-28 UNJS                      | A                       | .635 |
| 03-022                                    | .019-.022                                                   | .188                      | .3750-28 UNJS                      | A                       | .635 |
| 04-022                                    | .019-.022                                                   | .250                      | .4375-24 UNJS                      | B                       | .747 |
| 05-022                                    | .019-.022                                                   | .312                      | .5000-24 UNJS                      | B                       | .675 |
| 05-028                                    | .023-.028                                                   | .312                      | .5000-24 UNJS                      | B                       | .675 |
| 06-022                                    | .019-.022                                                   | .375                      | .5625-20 UNJS                      | B                       | .781 |
| 06-028                                    | .023-.028                                                   | .375                      | .5625-20 UNJS                      | B                       | .781 |
| 06-032                                    | .029-.032                                                   | .375                      | .5625-20 UNJS                      | B                       | .781 |
| 08-022                                    | .019-.022                                                   | .500                      | .7188-20 UNJS                      | B                       | .788 |
| 08-043                                    | .033-.043                                                   | .500                      | .7188-20 UNJS                      | A                       | .788 |
| 10-028                                    | .023-.028                                                   | .625                      | .8438-18 UNJS                      | B                       | .857 |
| 10-043                                    | .033-.043                                                   | .625                      | .8438-18 UNJS                      | B                       | .857 |
| 10-055                                    | .044-.055                                                   | .625                      | .8438-18 UNJS                      | A                       | .857 |
| 12-028                                    | .023-.028                                                   | .750                      | 1.0000-16 UNJ                      | B                       | .898 |
| 12-055                                    | .044-.055                                                   | .750                      | 1.0000-16 UNJ                      | B                       | .899 |
| 12-065                                    | .056-.065                                                   | .750                      | 1.0000-16 UNJ                      | A                       | .899 |

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on this Technical Report, please visit  
<http://www.sae.org/technical/standards/AS4227B>

THIRD ANGLE PROJECTION



CUSTODIAN: G-3/G-3B

PROCUREMENT SPECIFICATION: /5/ AS85421 OR AS85720



## AEROSPACE STANDARD

(R) FITTING ASSEMBLY, ADAPTER,  
INTERNAL THREAD,  
BEAM SEAL TO INTEGRAL WELD RING

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TABLE 1A - DIMENSIONS (CONTINUED)

| BASIC NO.<br>AS4227 /14/<br>SIZE AND TUBE<br>WALL CODES | RANGE OF<br>NOMINAL<br>TUBE WALL<br>FOR PORT #2<br>/7/ /14/ | (NOMINAL<br>TUBE<br>SIZE) | T THREAD<br>PER AS8879<br>CLASS 3B | PORT #2<br>STYLE<br>/8/ | A     |
|---------------------------------------------------------|-------------------------------------------------------------|---------------------------|------------------------------------|-------------------------|-------|
| 14-032                                                  | .029-.032                                                   | .875                      | 1.1250-16 UNJ                      | B                       | .944  |
| 14-065                                                  | .056-.065                                                   | .875                      | 1.1250-16 UNJ                      | A                       | .944  |
| 16-043                                                  | .033-.043                                                   | 1.000                     | 1.2500-14 UNJ                      | B                       | .997  |
| 16-078                                                  | .066-.078                                                   | 1.000                     | 1.2500-14 UNJS                     | A                       | .997  |
| 16-078                                                  | .079-.089                                                   | 1.000                     | 1.2500-14 UNJS                     | A                       | .997  |
| 20-055                                                  | .044-.055                                                   | 1.250                     | 1.5781-14 UNJS                     | B                       | 1.043 |
| 20-089                                                  | .079-.089                                                   | 1.250                     | 1.5781-14 UNJS                     | A                       | 1.043 |
| 24-055                                                  | .044-.055                                                   | 1.500                     | 1.8438-14 UNJS                     | B                       | 1.450 |

TABLE 1B - DIMENSIONS AND WEIGHTS

| BASIC NO.<br>AS4227 /14/<br>SIZE AND TUBE<br>WALL CODES | C<br>/8/    | D<br>/8/ | E     | H     | RECOMMENDED<br>MAXIMUM<br>PRESSURE<br>PSI /7/ | APPROX<br>MASS<br>CRES<br>LB/100 | APPROX<br>MASS<br>TI<br>LB/100 |
|---------------------------------------------------------|-------------|----------|-------|-------|-----------------------------------------------|----------------------------------|--------------------------------|
| 03-018                                                  | ---         | .146     | .568  | .500  | 5000                                          | 2.18                             | 1.24                           |
| 03-022                                                  | ---         | .138     | .568  | .500  | 5000                                          | 2.18                             | 1.24                           |
| 04-022                                                  | .184- .194  | .200     | .638  | .562  | 5000                                          | 2.99                             | 1.71                           |
| 05-022                                                  | .232- .242  | .262     | .709  | .625  | 4000                                          | 3.71                             | 2.12                           |
| 05-028                                                  | .232- .242  | .250     | .709  | .625  | 5000                                          | 3.71                             | 2.20                           |
| 06-022                                                  | .297- .307  | .325     | .780  | .688  | 3000                                          | 4.73                             | 2.70                           |
| 06-028                                                  | .297- .307  | .313     | .780  | .688  | 4000                                          | 4.73                             | 2.70                           |
| 06-032                                                  | .297- .307  | .305     | .780  | .688  | 5000                                          | 4.73                             | 2.70                           |
| 08-022                                                  | .398- .408  | .450     | .993  | .875  | 2000                                          | 7.87                             | 4.50                           |
| 08-043                                                  | ---         | .408     | .993  | .875  | 5000                                          | 7.87                             | 4.50                           |
| 10-028                                                  | .512- .523  | .563     | 1.120 | 1.000 | 2000                                          | 11.10                            | 6.33                           |
| 10-043                                                  | .512- .523  | .533     | 1.120 | 1.000 | 4000                                          | 11.10                            | 6.33                           |
| 10-055                                                  | ---         | .509     | 1.120 | 1.000 | 5000                                          | 11.10                            | 6.33                           |
| 12-028                                                  | .649- .660  | .688     | 1.260 | 1.125 | 2000                                          | 13.40                            | 7.66                           |
| 12-055                                                  | ---         | .634     | 1.260 | 1.125 | 4000                                          | 13.40                            | 7.66                           |
| 12-065                                                  | ---         | .614     | 1.280 | 1.125 | 5000                                          | 13.40                            | 7.66                           |
| 14-032                                                  | .769- .780  | .805     | 1.540 | 1.375 | 2000                                          | 22.30                            | 12.70                          |
| 14-065                                                  | ---         | .739     | 1.540 | 1.375 | 4000                                          | 22.30                            | 12.70                          |
| 16-043                                                  | .862- .874  | .908     | 1.650 | 1.500 | 2000                                          | 29.60                            | 16.90                          |
| 16-078                                                  | ----        | .838     | 1.650 | 1.500 | 4000                                          | 29.60                            | 16.90                          |
| 16-089                                                  | ----        | .816     | 1.500 | 1.500 | 5000                                          | 29.60                            | 16.90                          |
| 20-055                                                  | 1.115-1.128 | 1.134    | 2.063 | 1.875 | 2000                                          | 45.80                            | 26.20                          |
| 20-089                                                  | ---         | 1.066    | 2.063 | 1.875 | 4000                                          | 45.80                            | 26.20                          |
| 24-055                                                  | 1.324-1.337 | 1.384    | 2.338 | 2.125 | 2000                                          | 67.30                            | 38.50                          |

**AEROSPACE STANDARD**(R) FITTING ASSEMBLY, ADAPTER,  
INTERNAL THREAD,  
BEAM SEAL TO INTEGRAL WELD RING**AS4227**  
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NOTES:

/1/ MATERIAL:

- a. CODE LETTER P – TYPE 17-4PH CORROSION RESISTANT STEEL PER AMS5643.
- b. CODE LETTER T – TYPE 6Al-4V TITANIUM ALLOY BAR PER AMS4965.
- c. CODE LETTER V – TYPE 15-5PH, CONDITION H1075 STA, CORROSION RESISTANT STEEL PER AMS5659.
- d. CODE LETTER Y – TYPE 718 CORROSION AND HEAT RESISTANT NICKEL ALLOY PER AMS5663.

2. HEAT TREATMENT:

- a. MATERIAL CODE LETTER P – CONDITION H1075 PER AMS2759/3.
- b. MATERIAL CODE LETTER T, Y – NONE.
- c. MATERIAL CODE LETTER V – AGE TO CONDITION H1075 PER AMS-H-6875 OR AMS2759/3.

3. FINISH:

- a. MATERIAL CODE LETTER P – PASSIVATE PER AMS2700 TYPE 2 OR 8.
- b. MATERIAL CODE LETTER T, Y – NONE.
- c. MATERIAL CODE LETTER V – PASSIVATE PER AMS2700 TYPE 2 OR 8.

/4/ DRY FILM LUBRICANT

- a. MATERIAL CODE LETTERS: P, V, T, (400 °F MAX) USE LUBRICANT AS5272 TYPE I OR TYPE III.
- b. MATERIAL CODE LETTER Y, (1300 °F MAX) USE LUBRICANT AS1701 CLASS IV.

APPLY DRY FILM LUBRICANT TO THE THREADS OF THE NUT AND TO THE SEALING SURFACE. MINOR OVER SPRAY ON THE OUTSIDE OF THE NUT IS PERMITTED. OVER SPRAY IN THE BORE IS NOT PERMITTED.

/5/ PROCUREMENT SPECIFICATION: AS85421 FOR SYSTEM PRESSURE 4000 PSI AND BELOW OR AS85720 FOR SYSTEM PRESSURE ABOVE 4000 PSI. THESE PARTS SHALL BE QUALIFIED TO THE APPLICABLE REQUIREMENT OF PROCUREMENT SPECIFICATION AS A COMPLETE ASSEMBLY. THE WELDED FITTING END AND WELDED FITTING PARTS SHALL MEET THE PERFORMANCE REQUIREMENTS OF AS4510. PRODUCT SUPPLIED TO THIS SPECIFICATION SHALL BE MANUFACTURED BY THE ACCREDITED MANUFACTURER LISTED IN THE PERFORMANCE REVIEW INSTITUTE (PRI) QUALIFIED PRODUCT LIST (QPL) PRI-QPL-AS85421 OR PRI-QPL-AS85720 AS APPLICABLE FOR THIS STANDARD. SEE <http://www.eAuditNet.com> FOR CURRENT QPL ONLINE.

/6/ IDENTIFICATION AT LOCATION SHOWN: MARK PER AS478 CLASS C OR D, OR METHOD 7A3, 15A3, OR 15B, MANUFACTURER'S IDENTIFICATION, CAGE CODE NUMBER OR TRADEMARK, BASIC PART NUMBER, MATERIAL CODE LETTER AND TUBE WALL CODE.

/7/ THIS PART IS DESIGNED FOR USE IN SYSTEMS WITH MAXIMUM OPERATING PRESSURES SHOWN IN TABLE 1B WITH RECOMMENDATION THAT THE MINIMUM WALL THICKNESS OF THE TUBING WELDED TO THE AS4697 FITTING END OF PORT #2 BE THE VALUE SHOWN FOR THE APPROPRIATE OPERATING PRESSURE IN ARP4698. THINNER WALL THICKNESSES MAY BE USED.

/8/ IF PORT #2 IS STYLE A, ØD WILL EXTEND THROUGHOUT THE PART AND ØC WILL NOT APPLY.

9. INTERPRETATION OF DRAWING PER AS4296.

10. SURFACE TEXTURE: SYMBOLS PER ASME Y14.36M. REQUIREMENTS PER ASME B46.1. UNLESS OTHERWISE SPECIFIED, MACHINED SURFACES SHALL BE 125 MICROINCHES Ra. SURFACES OF HEX FLATS ON NUT MAY BE 250 MICROINCHES Ra.

11. BREAK EDGES .003 TO .015 UNLESS OTHERWISE SPECIFIED.

12. DIMENSIONING AND TOLERANCING: ASME Y14.5M -1994.

13. DIMENSIONS IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCES: LINEAR DIMENSIONS ±.010, ANGULAR DIMENSIONS ±0°30'.

|                                                                                     |                                                                                       |                               |                         |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------|-------------------------|
|  | <b>AEROSPACE STANDARD</b>                                                             | <b>AS4227</b><br>SHEET 3 OF 5 | <b>REV.</b><br><b>B</b> |
|                                                                                     | (R) FITTING ASSEMBLY, ADAPTER,<br>INTERNAL THREAD,<br>BEAM SEAL TO INTEGRAL WELD RING |                               |                         |

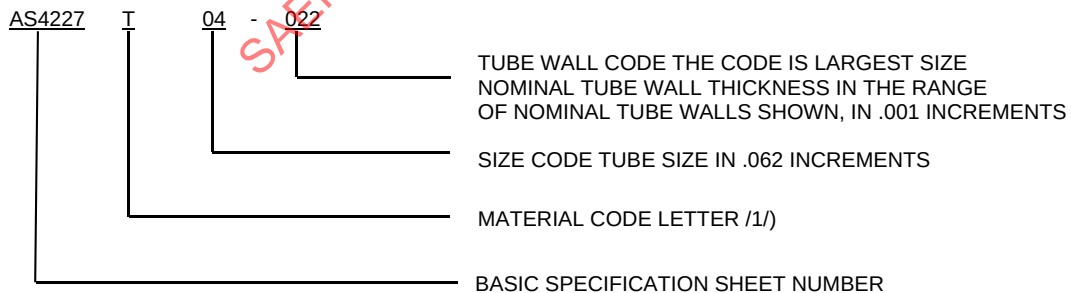
TABLE 2A - FITTINGS, WELDED END, MEET THE PERFORMANCE REQUIREMENTS OF  
AS4510 AND AS4510/2, 5000 PSI SYSTEM

| DASH<br>NUMBER | TUBE<br>WALL<br>CODE | FITTING PART NUMBER |               |               | RECOMMENDED<br>PRESSURE (PSI)<br>MAX |
|----------------|----------------------|---------------------|---------------|---------------|--------------------------------------|
|                |                      | TITANIUM            | 15-5 CRES     | 17-4 CRES     |                                      |
| -03            | .018                 | AS4229T03-018       | AS4229V03-018 | AS4229P03-018 | 5000                                 |
| -03            | .022                 | AS4229T03-022       | AS4229V03-022 | AS4229P03-022 | 5000                                 |
| -04            | .022                 | AS4229T04-022       | AS4229V04-022 | AS4229P04-022 | 5000                                 |
| -05            | .028                 | AS4229T05-028       | AS4229V05-028 | AS4229P05-028 | 5000                                 |
| -06            | .032                 | AS4229T06-032       | AS4229V06-032 | AS4229P06-032 | 5000                                 |
| -08            | .043                 | AS4229T08-043       | AS4229V08-043 | AS4229P08-043 | 5000                                 |
| -10            | .055                 | AS4229T10-055       | AS4229V10-055 | AS4229P10-055 | 5000                                 |
| -12            | .065                 | AS4229T12-065       | AS4229V12-065 | AS4229P12-065 | 5000                                 |
| -16            | .089                 | AS4229T16-089       | AS4229V16-089 | AS4229P16-089 | 5000                                 |

TABLE 2B - FITTINGS, WELDED END, MEET THE PERFORMANCE REQUIREMENTS OF  
AS4510 AND AS4510/2, 4000 PSI SYSTEM AND BELOW

| DASH<br>NUMBER | TUBE<br>WALL<br>CODE | FITTING PART NUMBER |               |               | RECOMMENDED<br>PRESSURE (PSI)<br>MAX |
|----------------|----------------------|---------------------|---------------|---------------|--------------------------------------|
|                |                      | TITANIUM            | 15-5 CRES     | 17-4 CRES     |                                      |
| -05            | .022                 | AS4229T05-022       | AS4229V05-022 | AS4229P05-022 | 4000                                 |
| -06            | .022                 | AS4229T06-022       | AS4229V06-022 | AS4229P06-022 | 3000                                 |
| -06            | .028                 | AS4229T06-028       | AS4229V06-028 | AS4229P06-028 | 4000                                 |
| -08            | .022                 | AS4229T08-022       | AS4229V08-022 | AS4229P08-022 | 2000                                 |
| -10            | .028                 | AS4229T10-028       | AS4229V10-028 | AS4229P10-028 | 2000                                 |
| -10            | .043                 | AS4229T10-043       | AS4229V10-043 | AS4229P10-043 | 4000                                 |
| -12            | .028                 | AS4229T12-028       | AS4229V12-028 | AS4229P12-028 | 2000                                 |
| -12            | .055                 | AS4229T12-055       | AS4229V12-055 | AS4229P12-055 | 4000                                 |
| -14            | .032                 | AS4229T14-032       | AS4229V14-032 | AS4229P14-032 | 2000                                 |
| -14            | .065                 | AS4229T14-065       | AS4229V14-065 | AS4229P14-065 | 4000                                 |
| -16            | .043                 | AS4229T16-043       | AS4229V16-043 | AS4229P16-043 | 2000                                 |
| -16            | .078                 | AS4229T16-078       | AS4229V16-078 | AS4229P16-078 | 4000                                 |
| -20            | .055                 | AS4229T20-055       | AS4229V20-055 | AS4229P20-055 | 2000                                 |
| -20            | .089                 | AS4229T20-089       | AS4229V20-089 | AS4229P20-089 | 4000                                 |
| -24            | .055                 | AS4229T24-055       | AS4229V24-055 | AS4229P24-055 | 2000                                 |

14. EXAMPLE OF PART NUMBER:



PART NUMBER AS4227T04-022 REPRESENTS 1/4 INCH TITANIUM FITTING ADAPTER, BEAM SEAL TO INTEGRAL WELD RING, .022 INCH NOMINAL TUBE WALL WITH STYLE B PORT #2, 5000 PSI MAXIMUM RECOMMENDED PRESSURE.

|                                                                                     |                                                                                       |                               |                         |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------|-------------------------|
|  | <b>AEROSPACE STANDARD</b>                                                             | <b>AS4227</b><br>SHEET 4 OF 5 | <b>REV.</b><br><b>B</b> |
|                                                                                     | (R) FITTING ASSEMBLY, ADAPTER,<br>INTERNAL THREAD,<br>BEAM SEAL TO INTEGRAL WELD RING |                               |                         |