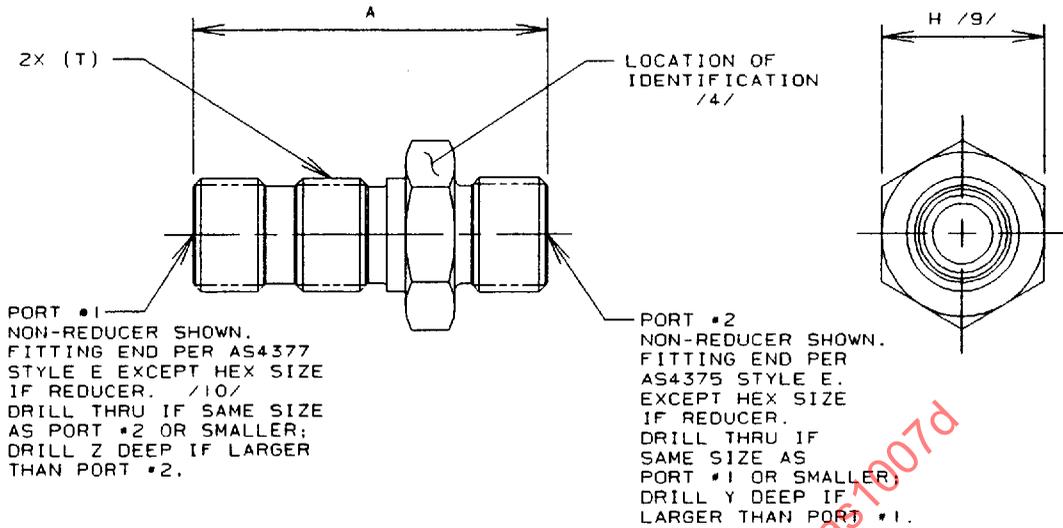


FEDERAL SUPPLY CLASS  
4730

REV.  
D

AS1007



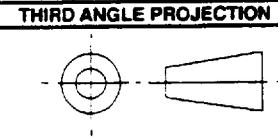
PORT #1  
NON-REDUCER SHOWN.  
FITTING END PER AS4377  
STYLE E EXCEPT HEX SIZE  
IF REDUCER. /10/  
DRILL THRU IF SAME SIZE  
AS PORT #2 OR SMALLER;  
DRILL Z DEEP IF LARGER  
THAN PORT #2.

PORT #2  
NON-REDUCER SHOWN.  
FITTING END PER  
AS4375 STYLE E.  
EXCEPT HEX SIZE  
IF REDUCER.  
DRILL THRU IF  
SAME SIZE AS  
PORT #1 OR SMALLER;  
DRILL Y DEEP IF  
LARGER THAN PORT #1.

FIGURE 1 - NONREDUCER

TABLE 1 - OVERALL LENGTH A

| SIZE OF PORT #2 | SIZE OF PORT #2 | SIZE OF PORT #3 | SIZE OF PORT #4 | SIZE OF PORT #5 | SIZE OF PORT #6 | SIZE OF PORT #8 | SIZE OF PORT #10 | SIZE OF PORT #12 | SIZE OF PORT #14 | SIZE OF PORT #16 | SIZE OF PORT #20 | SIZE OF PORT #24 | SIZE OF PORT #32 |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| 02              | 1.484           | 1.516           | 1.578           | 1.609           | 1.703           | 1.844           | 2.000            | 2.156            | 2.156            | 2.156            | 2.156            | 2.156            | 2.422            |
| 03              | 1.516           | 1.563           | 1.625           | 1.656           | 1.750           | 1.891           | 2.047            | 2.203            | 2.203            | 2.203            | 2.203            | 2.203            | 2.469            |
| 04              | 1.547           | 1.594           | 1.656           | 1.688           | 1.781           | 1.922           | 2.078            | 2.234            | 2.234            | 2.234            | 2.234            | 2.234            | 2.500            |
| 05              | 1.578           | 1.625           | 1.688           | 1.688           | 1.781           | 1.922           | 2.078            | 2.234            | 2.234            | 2.234            | 2.234            | 2.234            | 2.500            |
| 06              | 1.641           | 1.688           | 1.750           | 1.750           | 1.797           | 1.938           | 2.094            | 2.250            | 2.250            | 2.250            | 2.250            | 5.250            | 2.516            |
| 08              | 1.734           | 1.781           | 1.844           | 1.844           | 1.891           | 2.031           | 2.188            | 2.344            | 2.344            | 2.344            | 2.344            | 2.344            | 2.609            |
| 10              | 1.813           | 1.859           | 1.922           | 1.922           | 1.969           | 2.109           | 2.250            | 2.406            | 2.406            | 2.406            | 2.406            | 2.406            | 2.672            |
| 12              | 1.922           | 1.969           | 2.031           | 2.031           | 2.078           | 2.219           | 2.360            | 2.484            | 2.469            | 2.469            | 2.469            | 2.469            | 2.734            |
| 14              | 1.922           | 1.969           | 2.031           | 2.031           | 2.078           | 2.219           | 2.360            | 2.469            | 2.469            | 2.469            | 2.469            | 2.469            | 2.734            |
| 16              | 1.922           | 1.969           | 2.031           | 2.031           | 2.078           | 2.219           | 2.360            | 2.469            | 2.469            | 2.469            | 2.469            | 2.469            | 2.734            |
| 20              | 1.922           | 1.969           | 2.031           | 2.031           | 2.078           | 2.219           | 2.360            | 2.469            | 2.469            | 2.469            | 2.469            | 2.469            | 2.734            |
| 24              | 1.922           | 1.969           | 2.031           | 2.031           | 2.078           | 2.219           | 2.360            | 2.469            | 2.469            | 2.469            | 2.469            | 2.469            | 2.734            |
| 32              | 1.984           | 2.031           | 2.094           | 2.094           | 2.141           | 2.281           | 2.422            | 2.531            | 2.531            | 2.531            | 2.531            | 2.531            | 2.734            |



CUSTODIAN: SAE G-3/G-3B      PROCUREMENT SPECIFICATION: /3/ MIL-F-18280

**SAE** The Engineering Society  
For Advancing Mobility  
Land Sea Air and Space  
**INTERNATIONAL**  
400 Commonwealth Drive, Warrendale, PA 15096-0001

**AEROSPACE STANDARD**  
UNION, STANDARD  
AND REDUCER, BULKHEAD,  
FLARELESS TUBE

**AS1007**  
SHEET 1 OF 5

**REV. D**

ISSUED 1966-03-15      REVISED 1992-11-30 (D)

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.

REV.  
D

AS1007

TABLE 2 - DRILL DEPTH Y

| SIZE OF PORT #2 | SIZE OF PORT #1 24 | SIZE OF PORT #1 20 | SIZE OF PORT #1 16 | SIZE OF PORT #1 14 | SIZE OF PORT #1 12 | SIZE OF PORT #1 10 | SIZE OF PORT #1 08 | SIZE OF PORT #1 06 | SIZE OF PORT #1 05 | SIZE OF PORT #1 04 | SIZE OF PORT #1 03 | SIZE OF PORT #1 02 |
|-----------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 32              | .656               | .578               | .562               | .485               | .516               | .469               | .469               | .469               | .469               | .469               | .438               | .453               |
| 24              | -                  | .656               | .641               | .547               | .578               | .656               | .641               | .562               | .547               | .531               | .516               | .516               |
| 20              | -                  | -                  | .703               | .625               | .656               | .625               | .625               | .641               | .609               | .609               | .594               | .594               |
| 16              | -                  | -                  | -                  | .688               | .719               | .688               | .688               | .703               | .672               | .672               | .656               | .656               |
| 14              | -                  | -                  | -                  | -                  | .861               | .719               | .719               | .735               | .719               | .704               | .688               | .688               |
| 12              | -                  | -                  | -                  | -                  | -                  | .750               | .750               | .766               | .750               | .734               | .719               | .719               |
| 10              | -                  | -                  | -                  | -                  | -                  | -                  | .672               | .703               | .672               | .672               | .656               | .656               |
| 08              | -                  | -                  | -                  | -                  | -                  | -                  | -                  | .641               | .625               | .625               | .594               | .594               |
| 06              | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | .562               | .562               | .531               | .547               |
| 05              | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | .516               | .500               | .500               |
| 04              | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | .484               | .484               |
| 03              | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | .469               |

TABLE 3 - DRILL DEPTH Z

| SIZE OF PORT #2 | SIZE OF PORT #1 03 | SIZE OF PORT #1 04 | SIZE OF PORT #1 05 | SIZE OF PORT #1 06 | SIZE OF PORT #1 08 | SIZE OF PORT #1 10 | SIZE OF PORT #1 12 | SIZE OF PORT #1 14 | SIZE OF PORT #1 16 | SIZE OF PORT #1 20 | SIZE OF PORT #1 24 | SIZE OF PORT #1 32 |
|-----------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 02              | 1.016              | 1.062              | 1.078              | 1.156              | 1.250              | 1.391              | 1.500              | 1.477              | 1.438              | 1.375              | 1.297              | 1.438              |
| 03              | -                  | 1.047              | 1.078              | 1.141              | 1.250              | 1.391              | 1.500              | 1.471              | 1.422              | 1.375              | 1.297              | 1.422              |
| 04              | -                  | -                  | 1.094              | 1.172              | 1.281              | 1.406              | 1.516              | 1.494              | 1.453              | 1.391              | 1.312              | 1.453              |
| 05              | -                  | -                  | -                  | 1.172              | 1.281              | 1.422              | 1.531              | 1.500              | 1.453              | 1.391              | 1.328              | 1.453              |
| 06              | -                  | -                  | -                  | -                  | 1.297              | 1.438              | 1.547              | 1.523              | 1.391              | 1.422              | 1.344              | 1.484              |
| 08              | -                  | -                  | -                  | -                  | -                  | 1.453              | 1.562              | 1.533              | 1.484              | 1.438              | 1.359              | 1.391              |
| 10              | -                  | -                  | -                  | -                  | -                  | -                  | 1.562              | 1.537              | 1.500              | 1.438              | 1.359              | 1.500              |
| 12              | -                  | -                  | -                  | -                  | -                  | -                  | -                  | 1.574              | 1.531              | 1.468              | 1.406              | 1.531              |
| 14              | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | 1.566              | 1.503              | 1.430              | 1.559              |
| 16              | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | 1.516              | 1.453              | 1.562              |
| 20              | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | 1.468              | 1.594              |
| 24              | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | -                  | 1.672              |

**SAE** The Engineering Society  
For Advancing Mobility  
Land Sea Air and Space  
**INTERNATIONAL**

**AEROSPACE STANDARD**

UNION, STANDARD  
AND REDUCER, BULKHEAD,  
FLARELESS TUBE

**AS1007**

SHEET 2 OF 5

**REV.****D**

REV.  
D

AS1007

TABLE 4 - TUBE SIZE AND CORRESPONDING THREAD

| (NOMINAL)    |               |                            |
|--------------|---------------|----------------------------|
| PORT<br>SIZE | TUBE<br>SIZE) | T THREAD<br>PER MIL-S-8879 |
| 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              |

TABLE 5 - HEX DIMENSION AND WEIGHTS

| LARGEST<br>PORT SIZE | H           | LB/EA       |             |           |
|----------------------|-------------|-------------|-------------|-----------|
|                      |             | MAX<br>ALUM | MAX<br>CRES | MAX<br>TI |
| 02                   | .559-.566   | .011        | .031        | .017      |
| 03                   | .621-.628   | .018        | .048        | .027      |
| 04                   | .684-.691   | .023        | .062        | .035      |
| 05                   | .746-.753   | .029        | .078        | .045      |
| 06                   | .809-.816   | .035        | .095        | .054      |
| 08                   | .996-1.003  | .064        | .175        | .100      |
| 10                   | 1.121-1.128 | .090        | .244        | .140      |
| 12                   | 1.371-1.378 | .133        | .361        | .208      |
| 14                   | 1.484-1.516 | -           | -           | -         |
| 16                   | 1.609-1.641 | .202        | .552        | .318      |
| 20                   | 1.859-1.891 | .249        | .678        | .391      |
| 24                   | 2.105-2.145 | .295        | .814        | .469      |
| 32                   | 2.730-2.770 | -           | -           | -         |

REV.  
D

AS1007

## NOTES:

- /1/ MATERIAL:
- DASH AS CODE LETTER - TYPE 1137 STEEL BAR PER ASTM A 108.
  - CODE LETTER D - 2024T6 ALUMINUM ALLOY BAR PER AMS 4112 OR QQ-A-225/6; OR 2024T851 ALUMINUM ALLOY BAR PER QQ-A-225/6.
  - CODE LETTER J - 30304 CORROSION RESISTANT STEEL BAR PER AMS 5639 OR 304 CORROSION RESISTANT STEEL BAR PER QQ-S-763.
  - CODE LETTER K - 30316 CORROSION RESISTANT STEEL BAR PER AMS 5648 OR 316 CORROSION RESISTANT STEEL BAR PER QQ-S-763.
  - CODE LETTER R - 30321 CORROSION RESISTANT STEEL BAR PER AMS 5645 OR 321 CORROSION RESISTANT STEEL BAR PER QQ-S-763. /7/
  - CODE LETTER S - 30347 CORROSION RESISTANT STEEL BAR PER AMS 5646 OR 347 CORROSION RESISTANT STEEL BAR PER QQ-S-763. /8/
  - CODE LETTER T - 6AL4V TITANIUM ALLOY BAR PER AMS 4928.
  - CODE LETTER W - 7075T7351 ALUMINUM ALLOY BAR PER AMS 4124; OR 7075T73 ALUMINUM ALLOY BAR PER QQ-A-225/9.
2. FINISH:
- DASH AS CODE LETTER - CADMIUM PLATE PER QQ-P-416, TYPE II, CLASS 2.
  - 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.
  - MATERIAL CODE LETTER J - PASSIVATE PER QQ-P-35, TYPE VI OR VII.
  - MATERIAL CODE LETTER K - PASSIVATE PER QQ-P-35, TYPE VI OR VII.
  - MATERIAL CODE LETTER R - PASSIVATE PER QQ-P-35, TYPE VI OR VII.
  - MATERIAL CODE LETTER S - PASSIVATE PER QQ-P-35, TYPE VI OR VII.
  - MATERIAL CODE LETTER T - FLUORIDE PHOSPHATE CONVERSION COAT PER AMS 2486.
  - 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.
- /3/ PROCUREMENT SPECIFICATION: MIL-F-18280 EXCEPT AS SPECIFIED ON THIS STANDARD. THIS PART SHALL BE QUALIFIED TO THE PROCUREMENT SPECIFICATION IN A COMPLETE ASSEMBLY. USERS OF THIS STANDARD ARE ADVISED TO CONTROL SOURCE APPROVAL(S) BY STANDARD PAGE SUPPLEMENT SHEET OR SIMILAR MEANS.
- /4/ IDENTIFICATION AT LOCATION SHOWN: MARK PER AS478 CLASS C OR D OR METHOD 7A3, 15A3, OR 15B.
- FOR SIZES 06 (.375 OD TUBE SIZE) AND SMALLER MANUFACTURER'S NAME, CAGE NUMBER OR TRADEMARK, LETTERS "AS" AND MATERIAL CODE LETTER.
  - FOR SIZES 08 (.500 OD TUBE SIZE) AND LARGER, MANUFACTURER'S NAME, CAGE NUMBER OR TRADEMARK, BASIC PART NUMBER AND MATERIAL CODE LETTER.
- THE PRESENCE OF LETTERS "MS" OR "MS21924" OR COMPLETE MS PART NUMBER OF NONREDUCER FITTINGS SHALL NOT BE CAUSE FOR REJECTION.
- THIS PART IS DESIGNED FOR USE IN SYSTEMS WITH OPERATING PRESSURES AS SPECIFIED IN THE PROCUREMENT SPECIFICATION EXCEPT SIZE -14 SHALL BE RATED SAME AS SIZE -16. FOR REDUCER CONFIGURATION, PRESSURE RATING IS DETERMINED BY LARGEST PORT.
  - THE NONREDUCER CONFIGURATION IS FUNCTIONALLY EQUIVALENT TO MS21924 FOR THE CORRESPONDING TUBE SIZE.
- /7/ 321 CORROSION RESISTANT STEEL SUPERSEDES 347 CORROSION RESISTANT STEEL (MATERIAL CODE LETTER "S"). PARTS IN STOCK MADE FROM 347 CORROSION RESISTANT STEEL MAY BE USED IN LIEU OF PARTS MADE FROM 321 CORROSION RESISTANT STEEL UNTIL STOCK IS DEPLETED.
- /8/ INACTIVE FOR NEW DESIGN. USE 321 CORROSION RESISTANT STEEL PARTS.
- /9/ DIMENSION H IS DETERMINED BY LARGER TUBE SIZE.
- /10/ REDUCER CONFIGURATION (PORT #1 IS LARGER THAN PORT #2): PARTS IN STOCK WITH AS4377, STYLE S FITTING END MAY BE USED UNTIL STOCK IS DEPLETED. PARTS MANUFACTURED AFTER OCTOBER 31, 1992 SHALL HAVE AS4377, STYLE E FITTING END.
- INTERPRETATION OF DRAWING PER AMS 4296.
  - SURFACE TEXTURE: SYMBOLS PER ANSI Y14.36; REQUIREMENTS PER ANSI/ASME B46.1. UNLESS OTHERWISE SPECIFIED, MACHINED SURFACES TO BE 125  $\mu$ in Ra.