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AS4691

REV. A

FEDERAL SUPPLY CLASS
4730

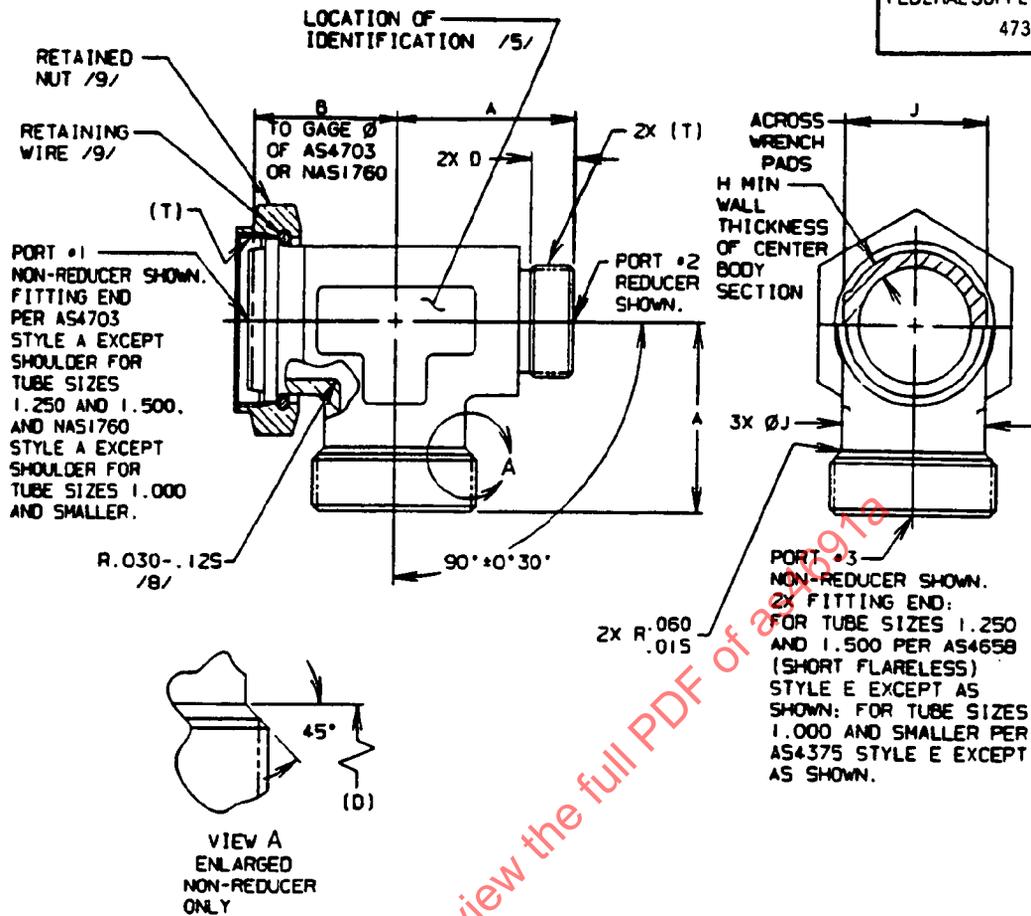


FIGURE 1 - TEE ASSEMBLY

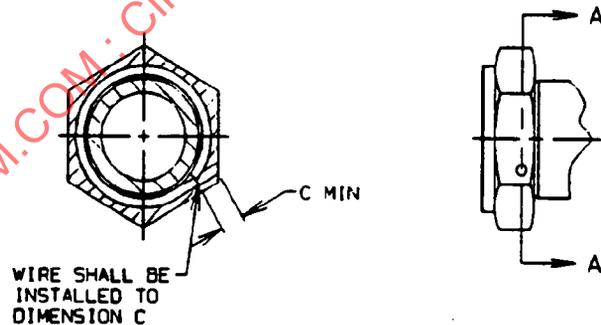
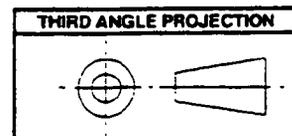


FIGURE 2 - INSTALLATION, RETAINED NUT AND RETAINING WIRE



CUSTODIAN: SAE G-3/G-3B

PROCUREMENT SPECIFICATION: /4/ 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
TEE ASSEMBLY, REDUCER,
RETAINED NUT ON RUN,
FLARELESS AND SHORT FLARELESS

AS4691 REV. A
SHEET 1 OF 5

ISSUED 1992-07-15 REVISED 1994-01-12 (A)

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TABLE 1 - DIMENSIONS AND WEIGHTS

| BASIC NO. | | | | | LB/EA | LB/EA | LB/EA |
|-----------|------|------|------|---------------|-------|-------|-------|
| AS4691 | | | | | MAX | MAX | MAX |
| /10/ /17/ | J | | | | ALUM | CRES | TI |
| SIZE CODE | C | D | H | + .005/- .020 | | | |
| 20 | .155 | .517 | .124 | 1.375 | .395 | 1.146 | .666 |
| 24 | .180 | .614 | .156 | 1.688 | .570 | 1.651 | .954 |

TABLE 2 - LEG LENGTH A

| SIZE OF PORT #2 & #3 | FORGING SIZE /10/ 20 | FORGING SIZE /10/ 24 |
|----------------------|----------------------|----------------------|
| 04 | 1.424 | 1.549 |
| 05 | 1.424 | 1.549 |
| 06 | 1.440 | 1.565 |
| 08 | 1.533 | 1.658 |
| 10 | 1.596 | 1.721 |
| 12 | 1.659 | 1.784 |
| - | | |
| 16 | 1.659 | 1.784 |
| 20 | 1.678 | 1.577 |
| 24 | -- | 1.803 |

TABLE 3 - LEG LENGTH B

| SIZE OF PORT #1 | FORGING SIZE /10/ 20 | FORGING SIZE /10/ 24 |
|-----------------|----------------------|----------------------|
| 04 | 1.401 | 1.526 |
| 05 | 1.453 | 1.578 |
| 06 | 1.514 | 1.639 |
| 08 | 1.611 | 1.736 |
| 10 | 1.690 | 1.815 |
| 12 | 1.679 | 1.850 |
| 16 | 1.727 | 1.852 |
| 20 | 1.603 | 1.728 |
| 24 | -- | 1.756 |

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TABLE 4 - TUBE SIZE AND CORRESPONDING THREADS

| PORT SIZE | (NOMINAL TUBE SIZE) | T THREAD PER MIL-S-8879 |
|--------------|---------------------------|----------------------------|
| 04 | .250 | .4375-20UNJF |
| 05 | .312 | .5000-20UNJF |
| 06 | .375 | .5625-18UNJF |
| 08 | .500 | .7500-16UNJF |
| 10 | .625 | .8750-14UNJF |
| 12 | .750 | 1.0625-12UNJ |
| 16 | 1.000 | 1.3125-12UNJ |
| 20 | 1.250 | 1.5625-12UNJ |
| 24 | 1.500 | 1.8125-12UNJ |

NOTES:

/1/ MATERIAL:

a. CODE LETTER T:

- (1) BODY: TYPE 6AL-4V TITANIUM ALLOY PER AMS 4928
- (2) NUT: CODE LETTER T OF AS4702 OR AS1790 REFERENCE (TYPE 6AL-4V TITANIUM ALLOY)
- (3) WIRE: PER AS4701 OR AS1791 REFERENCE (CLASS 302 OR 305 CORROSION RESISTANT STEEL)

b. CODE LETTER V:

- (1) BODY: TYPE 15-5PH CORROSION RESISTANT STEEL PER AMS 5659
- (2) NUT: CODE LETTER V OF AS4702 OR AS1790 REFERENCE (TYPE 15-5PH CORROSION RESISTANT STEEL)
- (3) WIRE: PER AS4701 OR AS1791 REFERENCE (CLASS 302 OR 305 CORROSION RESISTANT STEEL)

c. CODE LETTER W:

- (1) BODY: TYPE 7075-T73 ALUMINUM ALLOY FORGING PER AMS 4141 OR TYPE 7075-T7351 ALUMINUM ALLOY BAR PER AMS 4124
- (2) NUT: CODE LETTER W OF AS4702 OR AS1790 REFERENCE (TYPE 7075-T73 ALUMINUM ALLOY)
- (3) WIRE: PER AS4701 OR AS1791 REFERENCE (CLASS 302 OR 305 CORROSION RESISTANT STEEL)

2. HEAT TREAT:

a. MATERIAL CODE LETTER T:

- (1) BODY, NUT, AND WIRE: NONE

b. MATERIAL CODE LETTER V:

- (1) BODY: HEAT TREAT TO CONDITION H-1075 PER AMS 2759/3
- (2) NUT: MATERIAL CODE LETTER V OF AS4702 OR AS1790 REFERENCE (HEAT TREAT TO CONDITION H-1075)
- (3) WIRE: NONE

c. MATERIAL CODE LETTER W:

- (1) BODY, NUT, AND WIRE: NONE

/3/ FINISH:

a. MATERIAL CODE LETTER T:

- (1) BODY: FLUORIDE PHOSPHATE CONVERSION COAT PER AMS 2486
- (2) NUT: CODE LETTER T OF AS4702 OR AS1790 WITH SUFFIX N REFERENCE (FLUORIDE PHOSPHATE CONVERSION COAT AND COAT WITH DRY LUBRICANT ON IO)
- (3) WIRE: PER AS4701 OR AS1791 REFERENCE (PASSIVATE AND COAT WITH DRY LUBRICANT)

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NOTES (CONTINUED):

- b. MATERIAL CODE LETTER V:
- (1) BODY:
 - (a) V CODE PARTS TO BE PASSIVATED ONLY WILL HAVE NO FINISH CODE LETTER AFTER THE PART NUMBER. THE FINISH WILL BE: PASSIVATE PER QQ-P-35, TYPE II OR VIII.
 - (b) V CODE PARTS TO BE CADMIUM PLATED ONLY WILL HAVE THE FINISH CODE LETTER "P" AFTER THE SIZE CODE IN THE PART NUMBER. THE FINISH WILL BE: CADMIUM PLATE PER QQ-P-416, TYPE II, CLASS 2.
 - (2) NUT: CODE LETTER V OF AS4702 OR AS1790 REFERENCE
 - (a) NO FINISH CODE LETTER AT END OF PART NUMBER: PASSIVATE AND COAT WITH DRY FILM LUBRICANT DN ID
 - (b) FINISH CODE LETTER P AT END OF PART NUMBER: CADMIUM PLATE
 - (3) WIRE: PER AS4701 OR AS1791 REFERENCE (PASSIVATE AND COAT WITH DRY LUBRICANT)
- c. MATERIAL CODE LETTER W:
- (1) BODY: ANODIZE PER AMS 2472 DYED BROWN, SIMILAR TO COLOR 10080 OF FED-STO-595
 - (2) NUT: CODE LETTER W OF AS4702 OR AS1790 WITH SUFFIX N REFERENCE (ANODIZE DYED BROWN AND COAT WITH DRY LUBRICANT)
 - (3) WIRE: PER AS4701 OR AS1791 REFERENCE, FINISH CODE LETTER P AT END OF PART NUMBER (CADMIUM PLATE)
- /4/ PROCUREMENT SPECIFICATION: MIL-F-18280 EXCEPT AS SPECIFIED ON THIS STANDARD. THIS PART SHALL BE QUALIFIED TO THE PROCUREMENT SPECIFICATION AS APPLICABLE IN A COMPLETE ASSEMBLY. USERS OF THIS STANDARD ARE ADVISED TO CONTROL SOURCE APPROVAL(S) BY STANDARD PAGE SUPPLEMENT OR SIMILAR MEANS.
- /5/ IDENTIFICATION AT LOCATION SHOWN: MARK PER AS47B CLASS C OR D OR METHOD 7A3, 15A3, OR 15B. MANUFACTURER'S NAME, TRADEMARK OR CAGE CODE, BASIC PART NUMBER, AND MATERIAL CODE LETTER.
6. THIS PART IS DESIGNED FOR USE IN SYSTEMS WITH OPERATING PRESSURES AS FOLLOWS:
- a. SIZES -20 AND -24 TITANIUM ALLOY AND CORROSION RESISTANT STEEL AT 3000 psi
 - b. SIZES -20 AND -24 ALUMINUM ALLOY AT 600 psi
- LARGEST PORT DETERMINES PRESSURE RATING.
7. WHEN MACHINED FROM BAR OR OVERSIZED FORGINGS, THE CENTER BODY SECTION SHALL CONFORM TO AS1376, TABLE 10.
- /8/ RADIUS APPLICABLE FOR TITANIUM PARTS ONLY.
- /9/ RETAINED NUT AND RETAINING WIRE:
- a. TUBE SIZES 1.250 AND 1.500: AS4702 RETAINED NUT AND AS4701 RETAINING WIRE
 - b. TUBE SIZES 1.000 AND SMALLER: AS1790 RETAINED NUT AND AS1791 RETAINING WIRE
- ASSEMBLE RETAINED NUT TO FITTING BODY WITH RETAINING WIRE AS SHOWN IN FIGURE 2. THE NUT SHALL BE FREE TO ROTATE AFTER ASSEMBLY.
- /10/ LARGEST PORT DETERMINES FORGING SIZE REGARDLESS OF THE LOCATION. MINIMUM FORGING SIZE IS -20. THIS STANDARD IS FOR REDUCERS ONLY; FOR ALL PORTS THE SAME SIZE USE AS4674.
11. INVENTORIED PARTS CONFORMING TO THE PREVIOUS "LETTER CHANGE" MAY BE USED TO DEPLETION.
12. INTERPRETATION OF DRAWING PER ARP4296.
13. SURFACE TEXTURE: SYMBOLS PER ANSI Y14.36; REQUIREMENTS PER ANSI/ASME B46.1. UNLESS OTHERWISE SPECIFIED, MACHINED SURFACES TO BE 125 μ in Ra.
14. BREAK EDGES .003 TO .015 UNLESS OTHERWISE SPECIFIED.
15. DIMENSIONING AND TOLERANCING: ANSI Y14.5M
16. DIMENSIONS IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCES: LINEAR DIMENSIONS \pm .010, ANGULAR DIMENSIONS \pm 5°.