

REV.  
A

AS4685

FEDERAL SUPPLY CLASS  
4730

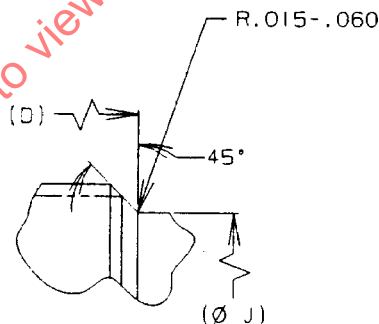
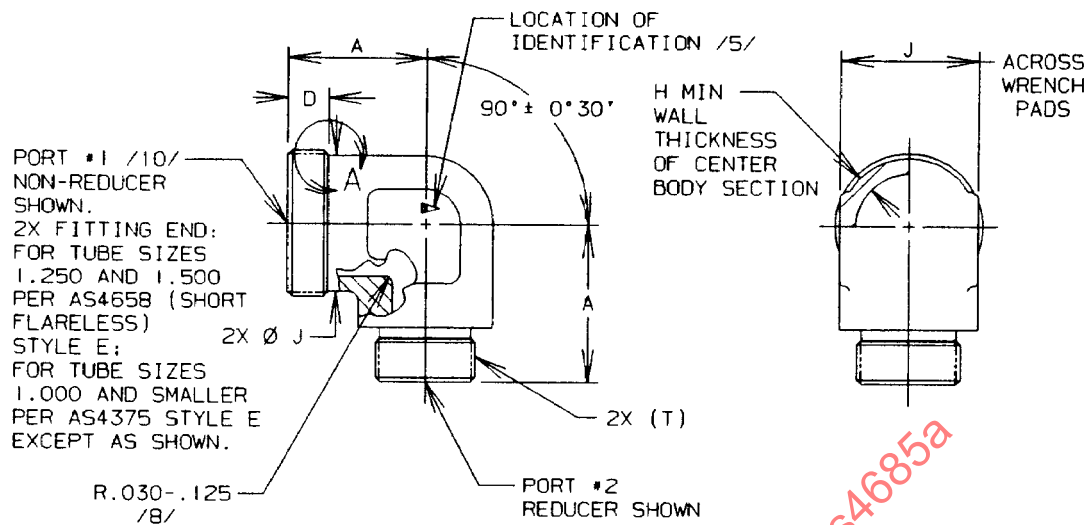
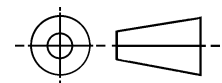


FIGURE 1 - FITTING, ELBOW, 90°, REDUCER

THIRD ANGLE PROJECTION



CUSTODIAN: SAE G-3/G-3B

PROCUREMENT SPECIFICATION: /4/ MIL-F-18280

**SAE Aerospace**  
An SAE International Group

**AEROSPACE STANDARD**

FITTING, ELBOW, 90°, REDUCER,  
FLARELESS AND SHORT FLARELESS

**AS4685**  
SHEET 1 OF 4

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TABLE 1 - DIMENSIONS AND WEIGHTS

| BASIC NO. |      |      |      | LB/EA         | LB/EA | LB/EA |
|-----------|------|------|------|---------------|-------|-------|
| AS4685    |      |      |      | MAX           | MAX   | MAX   |
| /9/       | /18/ | J    |      | ALUM          | CRES  | TI    |
| SIZE      | CODE | D    | H    | + .005/- .020 |       |       |
| 20        |      | .517 | .124 | 1.375         | .277  | .803  |
| 24        |      | .614 | .156 | 1.688         | .436  | 1.261 |
|           |      |      |      |               |       | .467  |
|           |      |      |      |               |       | .730  |

TABLE 2 - LEG LENGTH A

| SIZE<br>OF<br>PORT | FORGING SIZE /9/<br>20 | FORGING SIZE /9/<br>24 |
|--------------------|------------------------|------------------------|
| 02                 | 1.585                  | 1.710                  |
| 03                 | 1.632                  | 1.757                  |
| 04                 | 1.663                  | 1.788                  |
| 05                 | 1.663                  | 1.788                  |
| 06                 | 1.679                  | 1.804                  |
| 08                 | 1.772                  | 1.879                  |
| 10                 | 1.835                  | 1.960                  |
| 12                 | 1.898                  | 2.023                  |
| 14                 | 1.898                  | 2.023                  |
| 16                 | 1.898                  | 2.023                  |
| 20                 | 1.673                  | 1.798                  |
| 24                 | --                     | 1.798                  |

TABLE 3 - TUBE SIZE AND CORRESPONDING THREADS

| PORT<br>SIZE | (NOMINAL<br>TUBE<br>SIZE) | T THREAD<br>PER MIL-S-8879 |
|--------------|---------------------------|----------------------------|
| 02           | .125                      | .3125-24UNJF               |
| 03           | .188                      | .3750-24UNJF               |
| 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               |
| 14           | .875                      | 1.1875-12UNJ               |
| 16           | 1.000                     | 1.3125-12UNJ               |
| 20           | 1.250                     | 1.5625-12UNJ               |
| 24           | 1.500                     | 1.8125-12UNJ               |

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NOTES:

/1/ MATERIAL:

- a. CODE LETTER T: TYPE 6AL-4V TITANIUM ALLOY PER AMS 4928
- b. CODE LETTER V: TYPE 15-5PH CORROSION RESISTANT STEEL PER AMS 5659
- c. CODE LETTER W: TYPE 7075-T73 ALUMINUM ALLOY FORGING PER AMS 4141 OR TYPE 7075-T7351 ALUMINUM ALLOY BAR PER AMS 4124

2. HEAT TREATMENT:

- a. MATERIAL CODE LETTER T: NONE
- b. MATERIAL CODE LETTER V: HEAT TREAT TO CONDITION H-1075 PER AMS 2759/3
- c. MATERIAL CODE LETTER W: NONE

/3/ FINISH:

- a. MATERIAL CODE LETTER T: FLUORIDE PHOSPHATE CONVERSION COAT PER AMS 2486
- b. MATERIAL CODE LETTER V:
  - (1) V CODE PARTS TO BE PASSIVATED ONLY WILL HAVE NO FINISH CODE LETTER AFTER THE SIZE CODE IN THE PART NUMBER. THE FINISH WILL BE: PASSIVATE PER QQ-P-35, TYPE II OR VIII.
  - (2) 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.
- c. MATERIAL CODE LETTER W: ANODIZE PER AMS 2472 OR PER MIL-A-8625, TYPE II, CLASS 2 DYED BROWN SIMILAR TO COLOR 10080 OF FED-STD-595

/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 SHEET OR SIMILAR MEANS.

/5/ IDENTIFICATION AT LOCATION SHOWN: MARK PER AS478 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/ PORT #1 DETERMINES FORGING SIZE. MINIMUM FORGING SIZE IS -20.

/10/ PORT #1 IS LARGER THAN PORT #2.

11. THE (R) IS FOR THE CONVENIENCE OF THE USER IN LOCATING AREAS WHERE TECHNICAL REVISIONS, NOT EDITORIAL CHANGES, HAVE BEEN MADE TO THE PREVIOUS ISSUE OF THIS SPECIFICATION. IF THE SYMBOL IS NEXT TO THE SPECIFICATION TITLE, IT INDICATES A COMPLETE REVISION OF THE REPORT.

12. INVENTORIED PARTS CONFORMING TO THE PREVIOUS "LETTER CHANGE" MAY BE USED TO DEPLETION.

13. INTERPRETATION OF DRAWING PER ARP4296.

14. SURFACE TEXTURE: SYMBOLS PER ANSI Y14.36; REQUIREMENTS PER ANSI/ASME B46.1. UNLESS OTHERWISE SPECIFIED, MACHINED SURFACES TO BE 125  $\mu$ in Ra.

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