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REV.  
B

AS24652™

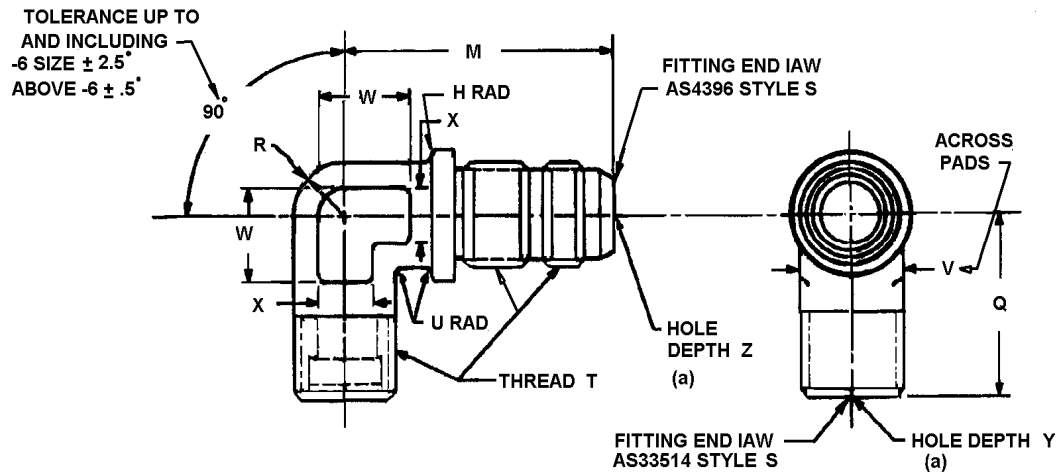
FEDERAL SUPPLY CLASS  
4730

## RATIONALE

ADD NOTE: "WHEN MACHINED FROM BAR OR OVERSIZE FORGING, THE CENTER BODY DIMENSIONS SHALL CONFORM TO AS1376, TABLE 1." NOTES 6, 7, 11, 12, AND 15 ADDED TO HARMONIZE THIS STANDARD WITH OTHER AS219XX STANDARDS. UPDATE PROCUREMENT SPECIFICATION NOTE TO CURRENT VERBIAGE.

## NOTICE

THE INITIAL PUBLICATION OF THIS DOCUMENT WAS TAKEN DIRECTLY FROM U.S. MILITARY STANDARD MS24652. AS5239 IS THE SUGGESTED REPLACEMENT STANDARD. AS5239 ELIMINATES THE POSSIBILITIES OF PART NUMBER DISCREPANCIES ORIGINATING FROM MS24652 PART NUMBERS.



(a) DEPTHS Y AND Z SHOULD BE MACHINED SUCH THAT THE CROSS-SECTIONAL AREA AT THE JUNCTION OF THE PASSAGES IS NOT SMALLER THAN THE CROSS-SECTIONAL AREA OF THE SMALLER HOLE. Y AND Z AT THEIR DEEPEST POINTS SHALL NOT EXCEED BEYOND THE WALL ESTABLISHED BY THE INTERSECTING HOLE.

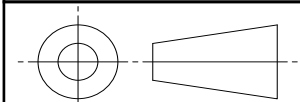
FIGURE 1 - ELBOW, TUBE, 90° BULKHEAD, FLARED TO FLARELESS TUBE

TABLE 1 - DIMENSIONS H-X

| DASH NO.<br>/5/ | TUBE<br>OD | THREAD T<br>AS8879<br>CLASS 3A | H<br>RAD | M<br>+.047<br>- .000 | Q<br>+.047<br>- .000 | R<br>RAD | U<br>RAD | V     | W<br>APPROX | X<br>APPROX |
|-----------------|------------|--------------------------------|----------|----------------------|----------------------|----------|----------|-------|-------------|-------------|
| -3              | .188       | .3750-24UNJF                   | .063     | 1.438                | .906                 | .188     | .063     | .375  | .313        | .250        |
| -4              | .250       | .4375-20UNJF                   | .063     | 1.578                | .938                 | .219     | .063     | .438  | .375        | .250        |
| -5              | .313       | .5000-20UNJF                   | .094     | 1.609                | 1.031                | .250     | .063     | .500  | .500        | .313        |
| -6              | .375       | .5625-18UNJF                   | .094     | 1.797                | 1.063                | .281     | .094     | .563  | .500        | .313        |
| -8              | .500       | .7500-16UNJF                   | .094     | 2.094                | 1.313                | .375     | .094     | .750  | .625        | .438        |
| -10             | .625       | .8750-14UNJF                   | .094     | 2.375                | 1.500                | .438     | .125     | .875  | .750        | .438        |
| -12             | .750       | 1.0625-12UNJ                   | .094     | 2.656                | 1.625                | .531     | .125     | 1.063 | .875        | .500        |
| -16             | 1.000      | 1.3125-12UNJ                   | .125     | 2.781                | 1.719                | .656     | .125     | 1.313 | 1.063       | .625        |
| -20             | 1.250      | 1.6250-12UNJ                   | .125     | 3.109                | 2.000                | .813     | .188     | 1.625 | 1.250       | .750        |
| -24             | 1.500      | 1.8750-12UNJ                   | .125     | 3.203                | 2.188                | .938     | .188     | 1.875 | 1.438       | .875        |
| -32             | 2.000      | 2.5000-12UNJ                   | .125     | 4.094                | 2.375                | 1.250    | .188     | 2.563 | 1.938       | 1.188       |

For more information on this standard, visit  
<https://www.sae.org/standards/content/AS24652B/>

THIRD ANGLE PROJECTION



CUSTODIAN: G-3/G-3B

PROCUREMENT SPECIFICATION: AS18280 /10/



## AEROSPACE STANDARD

ELBOW, TUBE - 90°, BULKHEAD,  
FLARED TUBE UNIVERSAL TO FLARELESS TUBE

AS24652™  
SHEET 1 OF 3

REV.  
B

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NOTES:

NOTICE

THIS DOCUMENT REFERENCES A PART WHICH CONTAINS CADMIUM AS PLATING MATERIAL. CONSULT LOCAL OFFICIALS IF YOU HAVE QUESTIONS CONCERNING CADMIUM'S USE.

1. MATERIALS: REFER TO PROCUREMENT SPECIFICATION.

CARBON STEEL  
CORROSION RESISTANT STEEL  
ALUMINUM ALLOY  
TITANIUM ALLOY

2. FINISH: REFER TO PROCUREMENT SPECIFICATION.

3. BREAK EDGES .003 TO .015, UNLESS OTHERWISE SPECIFIED.

4. DIMENSIONS ARE IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCES: DECIMALS  $\pm 0.016$ , ANGLES  $\pm 0^{\circ}30'$ .

- /5/ PART NUMBERS:

DASH "-" IN PART NUMBER FOR 4130 ALLOY STEEL IS REPLACED BY CODE LETTER "F" SEE TABLE 2. /17A/  
ADD "F" IN PLACE OF DASH FOR ALLOY STEEL IS REPLACEMENT FOR CODE "-"  
ADD "V(SIZE)P" IN PLACE OF DASH FOR CORROSION RESISTANT STEEL (15-5PH), CADMIUM PLATED  
ADD "V" IN PLACE OF DASH FOR CORROSION RESISTANT STEEL (15-5PH), NOT CADMIUM PLATED  
ADD "D" AFTER DASH NUMBER FOR ALUMINUM ALLOY (2024) IS REPLACED BY CODE LETTER "W" SEE TABLE 2. /17C/  
ADD "W" AFTER DASH NUMBER FOR ALUMINUM ALLOY (7075)  
ADD "J" AFTER DASH NUMBER FOR CORROSION-RESISTANT STEEL, TYPE 304  
ADD "K" AFTER DASH NUMBER FOR CORROSION-RESISTANT STEEL, TYPE 316  
ADD "R" AFTER DASH NUMBER FOR CORROSION-RESISTANT STEEL, TYPE 321  
ADD "S" AFTER DASH NUMBER FOR CORROSION RESISTANT STEEL TYPE 347 IS REPLACED BY CODE "R" SEE TABLE 2. /17D/  
ADD "T" AFTER DASH NUMBER FOR TITANIUM ALLOY (6AL-4V)

EXAMPLES OF PART NUMBERS:

|            |                                                                                    |
|------------|------------------------------------------------------------------------------------|
| MS24652-4  | ELBOW, .250 TUBE, 90°, 4130 ALLOY STEEL IS REPLACED SEE TABLE 2. /17A/             |
| MS24652F4  | ELBOW, .250 TUBE, 90°, 4130 ALLOY STEEL                                            |
| MS24652V4P | ELBOW, .250 TUBE, 90°, CRES (15-5PH), CADMIUM PLATED                               |
| MS24652V4  | ELBOW, .250 TUBE, 90°, CRES (15-5PH), NOT CADMIUM PLATED                           |
| MS24652-8D | ELBOW, .500 TUBE, 90°, ALUMINUM ALLOY (2024) IS REPLACED SEE TABLE 2. /17C/        |
| MS24652-8W | ELBOW, .500 TUBE, 90°, ALUMINUM ALLOY (7075)                                       |
| MS24652-8J | ELBOW, .500 TUBE, 90°, CRES, (TYPE 304)                                            |
| MS24652-8K | ELBOW, .500 TUBE, 90°, CRES, (TYPE 316)                                            |
| MS24652-8R | ELBOW, .500 TUBE, 90°, CRES, (TYPE 321)                                            |
| MS24652-8S | ELBOW, .500 TUBE, 90°, CRES (TYPE 347) IS REPLACED BY CODE "R" SEE TABLE 2. /17D/. |
| MS24652-8T | ELBOW, .500 TUBE, 90°, TITANIUM ALLOY (6AL-4V)                                     |

6. PART MARKING: REFER TO PROCUREMENT SPECIFICATION.

7. DIMENSIONING AND TOLERANCING: ASME Y14.5M-1982.

8. REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BID.

9. IN THE EVENT OF A CONFLICT BETWEEN THE TEXT OF THIS STANDARD AND THE REFERENCES CITED HEREIN, THE TEXT OF THIS STANDARD SHALL TAKE PRECEDENCE.

- /10/ PROCUREMENT SPECIFICATION: AS18280 EXCEPT AS SPECIFIED ON THIS STANDARD. PRODUCT MANUFACTURED TO THIS STANDARD SHALL MEET THE REQUIREMENTS SPECIFIED HEREIN AND THE PROCUREMENT SPECIFICATION. ORIGINAL COMPONENT MANUFACTURERS (OCM) AND VALUE ADDED DISTRIBUTORS (VAD) SHALL BE LISTED IN THE PRI QUALIFIED PRODUCTS LIST (QPL) PRI-QPL-AS18280 FOR THIS STANDARD. SEE WWW.EAUDITNET.COM FOR CURRENT QPL ONLINE.

11. SURFACE TEXTURE: SYMBOLS PER ASME Y14.36M. REQUIREMENTS PER ASME B46.1. UNLESS OTHERWISE SPECIFIED, MACHINED SURFACE SHALL BE 125 MICROINCHES Ra.

|                                                                                     |                                                                         |  |                                 |                         |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--|---------------------------------|-------------------------|
|  | <b>AEROSPACE STANDARD</b>                                               |  | <b>AS24652™</b><br>SHEET 2 OF 3 | <b>REV.</b><br><b>B</b> |
|                                                                                     | ELBOW, TUBE - 90°, BULKHEAD,<br>FLARED TUBE UNIVERSAL TO FLARELESS TUBE |  |                                 |                         |

