



AEROSPACE STANDARD	MA2008	
	Issued Reaffirmed	1990-12 2015-08
Radii-Tube Bend, Metric		

RATIONALE

MA2008 has been reaffirmed to comply with the SAE five-year review policy.

1. SCOPE:

This standard defines criteria for acceptability of tube bends for hydraulic system metallic tubing.

2. REFERENCES:

MA2002 Impulse Testing of Hydraulic Hose, Tubing and Fitting Assemblies
MA2006 Hydraulic Tubing, Qualification Test Requirements
AIR1379 Prestressing (Autofretting) of Hydraulic Tubing Lines

3. REQUIREMENTS:

a. Recommended Bend Radii:

Recommended bend radii per Table 1 should be used where possible to minimize cost of tools, and because experience has shown these to be acceptable values. For low and medium strength tubing, special radii per Table 1 are acceptable.

b. Flatness Limitations:

(1) Flatness in the area of a tube bend shall be defined by Equation 1:

$$\text{Flatness} = \frac{\text{Max O.D.} - \text{Min O.D.}}{\text{Nominal O.D.}} \times 100\% \quad (\text{Eq. 1})$$

Terms are defined in Figure 1.

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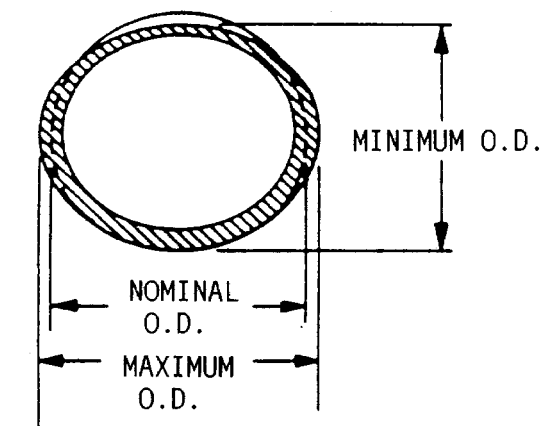
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TABLE 1 - Bend Radii for Low and Medium Strength
Corrosion Resistant Steel and Aluminum Tubing

Nominal Tube O.D.	Special Bend Radii 1.5D	Special Bend Radii 2D	Recommended Bend Radii 3D	Recommended Bend Radii 4D	Additional Bend Radii 6D
DN05	7.5	10	15	20	30
DN06	9	12	18	24	36
DN08	12	16	24	32	48
DN10	15	20	30	40	60
DN12	18	24	36	48	72
DN14	21	28	42	56	84
DN16	24	32	48	64	96
DN20	30	40	60	80	120
DN25	37.5	50	75	100	150
DN32	48	64	96	128	192
DN40	60	80	120	160	240

NOTE: Dimensions in millimeters



ENLARGED SECTION A - A

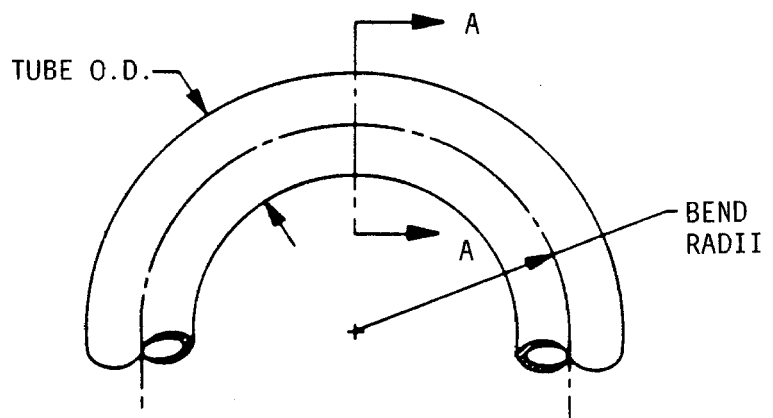


FIGURE 1 - Tube Bend