



(a) AT OPTION OF MANUFACTURER, BASIC DIMENSION Q MAY BE MADE 1/64 LESS THAN THE DIMENSIONS SPECIFIED, WITH THE PROVISION THAT BASIC DIMENSION Y IS ALSO MADE 1/64 LESS THAN THE DIMENSION SPECIFIED.

MATERIALS: STEEL - BARS, SHAPES, OR FORGINGS.  
ALUMINUM ALLOY - BARS, SHAPES, OR FORGINGS.  
TITANIUM ALLOY - BARS, SHAPES OR FORGINGS.  
CORROSION RESISTANT STEEL - BARS, SHAPES, OR FORGINGS.  
SEE PROCUREMENT SPECIFICATION.

FINISH: SEE PROCUREMENT SPECIFICATION.

NO CODE LETTER IN PART NUMBER FOR STEEL.  
ADD D AFTER DASH NUMBER FOR ALUMINUM ALLOY (EXCEPT 7075-T73).  
ADD J AFTER DASH NUMBER FOR CORROSION RESISTANT STEEL, TYPE 304.  
ADD K AFTER DASH NUMBER FOR CORROSION RESISTANT STEEL, TYPE 316.  
ADD S AFTER DASH NUMBER FOR CORROSION RESISTANT STEEL, TYPE 347.  
ADD T AFTER DASH NUMBER FOR TITANIUM  
ADD W AFTER DASH NUMBER FOR 7075-T73.

EXAMPLE OF PART NUMBERS:  
AN821-8 - ELBOW, 1/2 TUBING, STEEL  
AN821-8D - ELBOW, 1/2 TUBING, ALUMINUM ALLOY (EXCEPT 7075-T73).  
AN821-8J - ELBOW, 1/2 TUBING, CORROSION RESISTANT STEEL, TYPE 304.  
AN821-8K - ELBOW, 1/2 TUBING, CORROSION RESISTANT STEEL, TYPE 316.  
AN821-8S - ELBOW, 1/2 TUBING, CORROSION RESISTANT STEEL, TYPE 347.  
AN821-8T - ELBOW, 1/2 TUBING TITANIUM.  
AN821-8W - ELBOW, 1/2 TUBING 7075-T73.

BREAK ALL SHARP EDGES AND REMOVE ALL HANGING BURRS AND SLIVERS WHICH MIGHT BECOME DISLODGED UNDER USAGE.

DIMENSIONS IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCES: FRACTIONS +1/64, DECIMALS ±.005, ANGLES ±1/2°.

TITANIUM NOT TO BE USED IN OXYGEN SYSTEMS.

**CANCELLED**

<p>8 ENTIRE STANDARD REVISED</p>		<p>AIR FORCE-NAVY AERONAUTICAL STANDARD</p>	
<p>A. A. AIR FORCE - 82 Other Cust ARMY - AV NAVY - AS</p>	<p>INTERNATIONAL INTEREST</p>	<p>ELBOW - FLARED TUBE, 90°</p>	
<p>AIR FORCE - 89</p>	<p>PROCUREMENT SPECIFICATION</p>	<p>SUPERSEDES:</p>	<p>AN821</p>
<p>MIL - F - 8509</p>	<p>SHEET 1 OF 2</p>	<p>PROJECT 4730-0051</p>	<p>APPROVED 13 DEC 40 REVISED 7 16 APRIL 82 8 5 AUG 83</p>

USER ACTIVITIES

DLA-CS

REVIE.

This standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document.

USER ACTIVITIES

REVIEWER ACTIVITIES DL A-CS

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DASH NO.	TUBING OD	THREAD T (REF)	(a) Q +3/64 -0	R RAD	U RAD	V	W APPROX	X APPROX	Y +3/64 -0
AN821-2	1/8	5/16-24UNJF-3A	49/64	5/32	1/16	5/16	5/16	3/16	51/64
AN821-3	3/16	3/8-24UNJF-3A	53/64	3/16		3/8			55/64
AN821-4	1/4	7/16-20UNJF-3A	57/64	7/32		7/16	3/8	1/4	15/16
AN821-5	5/16	1/2-20UNJF-3A	61/64	1/4	3/32	1/2	1/2	5/16	1
AN821-6	3/8	9/16-18UNJF-3A	1-1/16	9/32		9/16			1-1/8
AN821-8	1/2	3/4-16UNJF-3A	1-1/4	3/8		3/4	5/8	7/16	1-5/16
AN821-10	5/8	7/8-14UNJF-3A	1-29/64	7/16		7/8	3/4		1-33/64
AN821-12	3/4	1-1/16-12UNJ 3A	1-21/32	17/32	1/8	1-1/16	7/8	1/2	1-23/32
AN821-16	1	1-5/16-12UNJ 3A	1-13/16	21/32		1-5/16	1-1/16	5/8	1-15/16
AN821-20	1-1/4	1-5/8-12UNJ 3A	2-1/16	13/16		1-5/8	1-1/4	3/4	2-3/16
AN821-24	1-1/2	1-7/8-12UNJ 3A	2-21/64	15/16		1-7/8	1-7/16	7/8	2-41/64
AN821-28	1-3/4	2-1/4-12UNJ A	2-13/16	1-1/8	3/16	2-1/4	1-3/4	1-1/16	2-15/16
AN821-32	2	2-1/2-12UNJ 3A	3-1/16	1-1/4	1/4	2-9/16	2	1-3/16	3-1/4

APPROVED 13 DEC 40 REVISED 8 FOR CHANGES SEE PAGES 1 & 2 5 AUG 83

8 ENTIRE STANDARD REVISED

P. A.  
AIR FORCE-82  
Other Cust  
ARMY - A  
NAVY - AS  
AIR FORCE-99

INTERNATIONAL INTEREST

AIR FORCE-NAVY AERONAUTICAL STANDARD

ELBOW-FLARED TUBE, 90°

AN821

PROCUREMENT SPECIFICATION  
MIL-F-5509

SUPERSEDES:

SHEET 2 OF 2