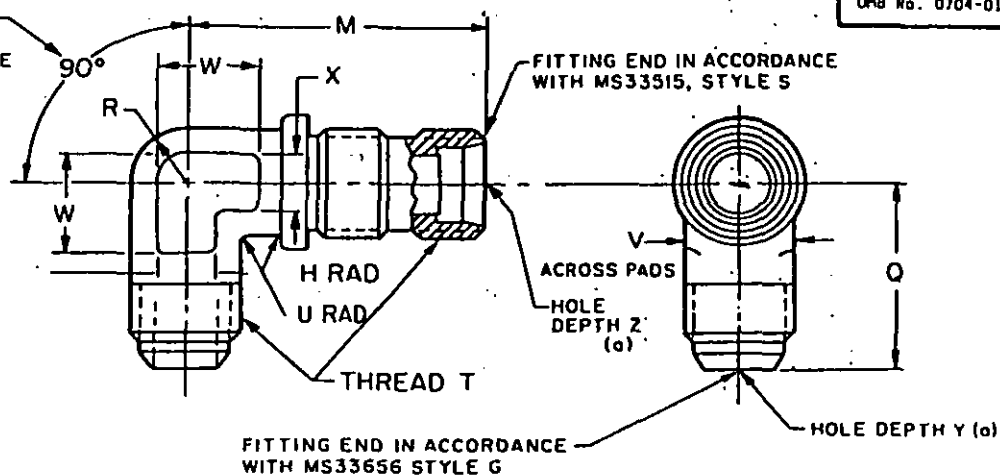


THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODDS SPECIFIED IN THE SOLICITATION: MIL-F-18280

TOLERANCE UP TO
AND INCLUDING
-6 SIZE $\pm 2 \frac{1}{2}^\circ$ ABOVE
-6 SIZE $\pm 1 \frac{1}{2}^\circ$



(C)

DASH NO.	TUBE OD	THREAD T MIL-S-8879	H RAD	M +.047 -0	Q +.047 -0	R RAD	U RAD	V	W APPROX	X APPROX
-3	3/16	.3750-24 UNJF-3A	.063	1.391	.891	.188		.375	.313	.250
-4	1/4	.4375-20 UNJF-3A		1.500	.953	.219	.063	.438	.375	
-5	5/16	.5000-20 UNJF-3A		1.531	1.016	.250		.500	.500	.313
-6	3/8	.5625-18 UNJF-3A	.094	1.688	1.078	.281	.094	.563		
-8	1/2	.7500-16 UNJF-3A		1.969	1.344	.325		.750	.625	.438
-10	5/8	.8750-14 UNJF-3A		2.250	1.547	.438		.875	.750	
-12	3/4	1.0625-12 UNJ-3A		2.469	1.766	.531	.125	1.063	.875	.500
-16	1	1.3125-12 UNJ-3A		2.594	1.922	.656		1.313	1.063	.625
-20	1-1/4	1.6250-12 UNJ-3A		2.875	2.156	.813		1.625	1.250	.750
-24	1-1/2	1.8750-12 UNJ-3A	.125	3.156	2.328	.938	.188	1.875	1.438	.875
-32	2	2.5000-12 UNJ-3A		3.750	2.875	1.250		2.563	1.938	1.188

- (a) DEPTHS Y AND Z SHALL 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 EXTEND BEYOND THE WALL ESTABLISHED BY THE RESPECTIVE INTERSECTING HOLE.

REQUIREMENTS:

1. MATERIAL - CARBON STEEL-
CORROSION RESISTANT STEEL-
ALUMINUM ALLOY-
TITANIUM ALLOY- } SEE PROCUREMENT SPECIFICATION.

PARTS MADE FROM 1137 OR 1141 FORGINGS QUALIFIED TO MIL-F-18280C SHALL NOT BE SUPPLIED AFTER 30 JUNE 1984.

2. FINISH: SEE PROCUREMENT SPECIFICATION.

NOTES:

- BREAK ALL SHARP EDGES AND REMOVE ALL BURRS AND SLIVERS.
- DIMENSIONS ARE IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCES: DECIMALS $\pm .016$, ANGLES $\pm 2^\circ$.
- PART NUMBERS
NO CODE LETTER IN PART NUMBER FOR CARBON STEEL.
ADD "D" AFTER DASH NUMBER FOR ALUMINUM ALLOY (2024).
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 "T" AFTER DASH NUMBER FOR TITANIUM ALLOY (6AL-4V).
ADD "R" AFTER DASH NUMBER FOR CORROSION RESISTANT STEEL TYPE 321.

(C) DENOTES CHANGES

PREPARING ACTIVITY: NAVY-AS

CUSTODIANS: ARMY-AV NAVY-

AIR FORCE-99 DLA-

REVIEW: USAF-82, ARMY-MI, DLA-CS

USER: NAVY-OS, ARMY-CR, ME, AT

PROJECT NUMBER: 4730-0029

MILITARY SPECIFICATION SHEET

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

SPECIFICATION SHEET NUMBER

MS24651C 23 MAY 1990

SUPERSEDING
MS24651B, 23 JAN 1989

AMSC- N/A FSC. 4730

DISTRIBUTION STATEMENT A Approved for public release; distribution is unlimited.

Page 1 of 2

DD FORM 672 MAY 1988

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

THIS SPECIFICATION IS APPROVED FOR USE
BY ALL DEPARTMENTS AND AGENCIES OF THE
DEPARTMENT OF DEFENSE.

NOTES (CONTINUED)

Form approved
GPO No. 0704-0188

EXAMPLES OF PART NUMBERS

MS24651-4 - ELBOW, 1/4 TUBING, CARBON STEEL
 MS24651-8D - ELBOW, 1/2 TUBING, ALUMINUM ALLOY (2014) (2024).
 MS24651-8W - ELBOW, 1/2 TUBING, ALUMINUM ALLOY (7075).
 MS24651-8J - ELBOW, 1/2 TUBING, CORROSION RESISTANT STEEL, TYPE 304.
 MS24651-8K - ELBOW, 1/2 TUBING, CORROSION RESISTANT STEEL, TYPE 316.
 MS24651-8T - ELBOW, 1/2 TUBING, TITANIUM ALLOY, 6AL-4V.
 MS24651-8R - ELBOW, 1/2 TUBING, CORROSION RESISTANT STEEL, TYPE 321.

4. ITEMS CODED "C" ON PREVIOUS ISSUES OF THIS STANDARD ARE NO LONGER TO BE FURNISHED. UNLESS OTHERWISE SPECIFIED, PARTS CODED J, K, OR R (AT SUPPLIER'S OPTION) SHALL BE FURNISHED IN LIEU OF "C" CODED PARTS.
5. TITANIUM NOT RECOMMENDED FOR USE IN OXYGEN SYSTEMS.
6. PARTS ARE NOT TO BE MANUFACTURED FROM TYPE 347 MATERIAL AFTER 31 JULY 1990. HOWEVER, TYPE 347 CODE "S" PARTS MAY BE USED UNTIL EXISTING STOCKS ARE DEPLETED.
7. 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.
8. REFERENCED GOVERNMENT (OR NON-GOVERNMENT) DOCUMENTS OF THE ISSUE LISTED IN THAT ISSUE OF THE DEPARTMENT OF DEFENSE INDEX OF SPECIFICATIONS AND STANDARDS (DoDISS) SPECIFIED IN THE SOLICITATION FORM A PART OF THIS STANDARD TO THE EXTENT SPECIFIED HEREIN.

PREPARING ACTIVITY: NAVY-AS

CUSTODIANS: ARMY-AV NAVY-

AIR FORCE-99 DLA-

REVIEW: USAF-82, ARMY-MI, DLA-CS

USER: NAVY-OS, ARMY-CR, ME, AT

PROJECT NUMBER: 4730-0029

MILITARY SPECIFICATION SHEET

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

SPECIFICATION SHEET NUMBER

MS24651C 23 MAY 1990

SUPERSEDING

MS24651B 23 JAN 1989

AMSC- N/A

FSC 4730

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

Page 2 of 2

DD FORM 672 MAY 1988

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

143994

THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST
 OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN
 THAT ISSUE OF THE DDSS SPECIFIED IN THE SOLICITATION: MIL-F-18280

THIS SPECIFICATION IS APPROVED FOR USE
 BY ALL DEPARTMENTS AND AGENCIES OF THE
 DEPARTMENT OF DEFENSE.