

REV.
D

FEDERAL SUPPLY CLASS
4730

RATIONALE

ADDED REVISION BLOCK, INTRODUCTORY NOTICE, PART MARKING AND DIMENSIONING NOTES, REACTIVATED MATERIAL CODES DASH "A" AND "D" AND CLARIFIED OTHER MATERIAL STATUS.

NOTICE

THE INITIAL SAE PUBLICATION OF THIS DOCUMENT WAS TAKEN DIRECTLY FROM U.S. MILITARY STANDARD MS21904 AND RETAINS THE SAME PART NUMBERS ESTABLISHED BY THE ORIGINAL MILITARY DOCUMENT. PROCUREMENT OF MS21904 PART NUMBERS TO THIS "AS" STANDARD MAY RESULT IN LOSS OF CONFIGURATION CONTROL WHERE DIFFERENCES IN THE CANCELLED MIL-F-18280 AND THE SUPERSEDING AS18280 PROCUREMENT SPECIFICATIONS EXIST. AS1004 IS A RECOMMENDED REPLACEMENT STANDARD THAT ELIMINATES THIS PROBLEM.

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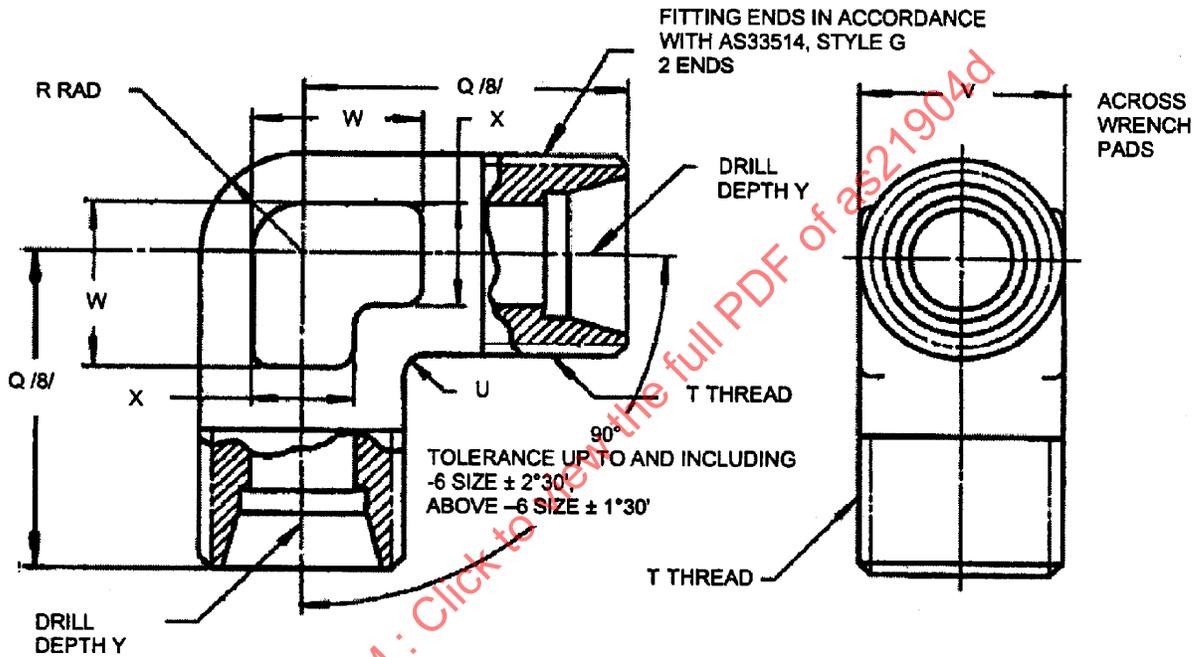
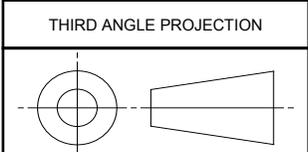


FIGURE 1 - ELBOW, FLARELESS TUBE, 90°

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CUSTODIAN: G-3/G-3B

PROCUREMENT SPECIFICATION: /11/ AS18280



AEROSPACE STANDARD

(R) ELBOW, FLARELESS TUBE, 90°

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TABLE 1A - DIMENSIONS G-V

DASH NO. /5/	NOMINAL		Q /8/ +.047 -.000	R RAD	U RAD	V
	TUBE SIZE REF	(T) THREAD AS8879				
-2	.125	.3125-24 UNJF-3A	.750	.156	.063	.313
-3	.188	.3750-24 UNJF-3A	.813	.188	.063	.375
-4	.250	.4375-20 UNJF-3A	.875	.219	.063	.438
-5	.313	.5000-20 UNJF-3A	.938	.250	.063	.500
-6	.375	.5625-18 UNJF-3A	1.031	.281	.094	.563
-8	.500	.7500-16 UNJF-3A	1.250	.375	.094	.750
-10	.625	.8750-14 UNJF-3A	1.406	.438	.094	.875
-12	.750	1.0625-12 UNJ-3A	1.563	.531	.094	1.063
-16	1.000	1.3125-12 UNJ-3A	1.719	.656	.125	1.313
-20	1.250	1.6250-12 UNJ-3A	1.875	.813	.125	1.625
-24	1.500	1.8750-12 UNJ-3A	2.000	.938	.125	1.875
-32	2.000	2.5000-12 UNJ-3A	2.438	1.250	.250	2.563

TABLE 1B - DIMENSIONS W-Y

DASH NO. /5/	W APPROX	X APPROX	Y +.047 -.000	WEIGHT, LB/EA, APPROX, REF.		
				STEEL	AL ALLOY	TI ALLOY
-2	.313	.188	.781	.040	.014	.023
-3	.313	.250	.844	.056	.020	.032
-4	.375	.250	.922	.062	.022	.035
-5	.500	.313	.984	.086	.031	.049
-6	.500	.313	1.063	.104	.037	.060
-8	.625	.438	1.313	.191	.064	.110
-10	.750	.438	1.469	.258	.087	.148
-12	.875	.500	1.625	.402	.135	.231
-16	1.063	.625	1.844	.535	.200	.308
-20	1.250	.750	2.000	.792	.265	.456
-24	1.438	.875	2.313	1.262	.463	.728
-32	2.000	1.188	2.688	3.062	1.125	1.766

NOTES:

NOTICE

THIS DOCUMENT REFERENCES PARTS THAT CONTAIN CADMIUM AS A PLATING MATERIAL. CONSULT LOCAL OFFICIALS IF YOU HAVE QUESTIONS CONCERNING CADMIUM'S USE.

1. MATERIAL:

SEE PROCUREMENT SPECIFICATION
 ALLOY STEEL
 ALUMINUM ALLOY
 CORROSION RESISTANT STEEL
 TITANIUM ALLOY

2. FINISH: SEE PROCUREMENT SPECIFICATION.

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

4. DIMENSIONS ARE IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCES: DECIMALS ±.016, ANGLES ±0°30'.

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/5/ PART NUMBERS:

MATERIAL CODE DASH "-" IN PART NUMBER FOR 4130 ALLOY STEEL.
 ADD MATERIAL CODE "V(SIZE)P" IN PLACE OF DASH FOR CORROSION RESISTANT STEEL (15-5PH), CADMIUM PLATED.
 ADD MATERIAL CODE "V" IN PLACE OF DASH FOR CORROSION RESISTANT STEEL (15-5PH), NOT CADMIUM PLATED.
 ADD MATERIAL CODE "D" IN PLACE OF DASH FOR ALUMINUM ALLOY (2014).
 ADD MATERIAL CODE "W" IN PLACE OF DASH FOR ALUMINUM ALLOY (7075).
 ADD MATERIAL CODE "J" IN PLACE OF DASH FOR CORROSION RESISTANT STEEL (TYPE 304).
 ADD MATERIAL CODE "K" IN PLACE OF DASH FOR CORROSION RESISTANT STEEL (TYPE 316).
 ADD MATERIAL CODE "R" AFTER DASH NUMBER FOR CORROSION RESISTANT STEEL (TYPE 321).
 ADD MATERIAL CODE "S" AFTER DASH NUMBER FOR CORROSION RESISTANT STEEL (TYPE 347). (INACTIVE)
 ADD MATERIAL CODE "T" AFTER DASH NUMBER FOR TITANIUM ALLOY (6AL-4V).

EXAMPLES OF PART NUMBERS:

MS21904-4	ELBOW, .250 TUBING, 4130 ALLOY STEEL.
MS21904V4P	ELBOW, .250 TUBING, CORROSION RESISTANT STEEL (15-5PH), CADMIUM PLATED. SEE TABLE 2 /A2/
MS21904V4	ELBOW, .250 TUBING, CORROSION RESISTANT STEEL (15-5PH), NOT CADMIUM PLATED.
MS21904D4	ELBOW, .250 TUBING, ALUMINUM ALLOY (2014). SEE TABLE 2 /C/
MS21904W4	ELBOW, .250 TUBING, ALUMINUM ALLOY (7075).
MS21904J4	ELBOW, .250 TUBING, CORROSION RESISTANT STEEL (TYPE 304).
MS21904K4	ELBOW, .250 TUBING, CORROSION RESISTANT STEEL (TYPE 316).
MS21904-4R	ELBOW, .250 TUBING, CORROSION RESISTANT STEEL (TYPE 321).
MS21904-4S	ELBOW, .250 TUBING, CORROSION RESISTANT STEEL (TYPE 347). (REPLACED) SEE TABLE 2 /D/
MS21904-4T	ELBOW, .250 TUBING, TITANIUM ALLOY (6AL-4V).

6. PART MARKING: SEE PROCUREMENT SPECIFICATION.
7. DIMENSIONING AND TOLERANCING: ASME Y14.5M-1994.
- /8/ AT THE OPTION OF THE MANUFACTURER, BASIC DIMENSION Q MAY BE .016 LESS THAN THE DIMENSIONS SPECIFIED, WITH THE PROVISION THAT BASIC DIMENSION Y IS ALSO MADE .016 LESS THAN THE DIMENSION SPECIFIED.
9. REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BID.
10. 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.
- /11/ PROCUREMENT SPECIFICATION: AS18280 EXCEPT AS SPECIFIED ON THIS STANDARD. PRODUCT SUPPLIED TO THIS SPECIFICATION SHALL BE MANUFACTURED BY AN ACCREDITED MANUFACTURER LISTED IN THE PERFORMANCE REVIEW INSTITUTE (PRI) QUALIFIED PRODUCTS LIST (QPL) PRI-QPL-AS18280 FOR THIS STANDARD. SEE www.eAuditNet.com FOR CURRENT QPL ON-LINE.
12. SURFACE TEXTURE: SYMBOLS PER ASME Y14.36M. REQUIREMENTS PER ASME B46.1. UNLESS OTHERWISE SPECIFIED, MACHINED SURFACES SHALL BE 125 Ra.
13. REVISION INDICATOR: A CHANGE BAR (H) LOCATED IN THE LEFT MARGIN 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 DOCUMENT. AN (R) SYMBOL TO THE LEFT OF THE DOCUMENT TITLE INDICATES A COMPLETE REVISION OF THE DOCUMENT, INCLUDING TECHNICAL REVISIONS. CHANGE BARS AND (R) ARE NOT USED IN ORIGINAL PUBLICATIONS, NOR IN DOCUMENTS THAT CONTAIN EDITORIAL CHANGES ONLY.
14. INTERPRETATION OF DRAWING PER AS4296.
15. FLUID PASSAGE, HOLE CONTOUR: AS4266 (OPTIONAL).
16. INVENTORIED PARTS CONFORMING TO THE PREVIOUS LETTER CHANGE MAY BE USED TO DEPLETION.

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