

REV.
D

AS21908

FEDERAL SUPPLY CLASS
4730

RATIONALE

AS21908D HAS BEEN REAFFIRMED TO COMPLY WITH THE SAE FIVE-YEAR REVIEW POLICY.

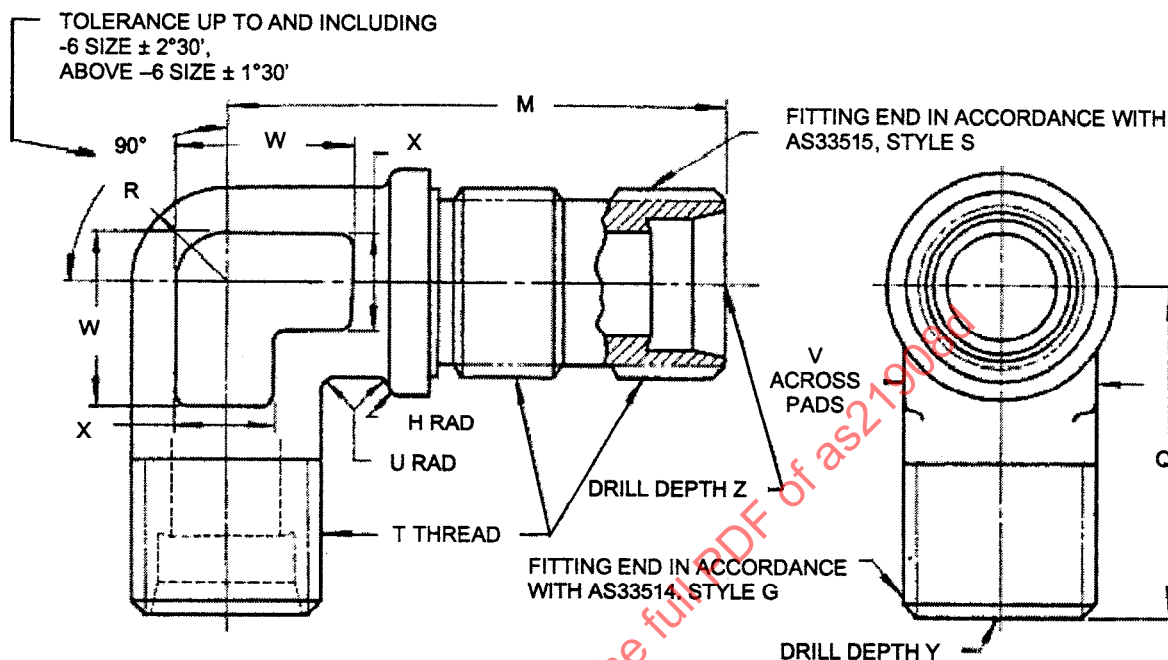


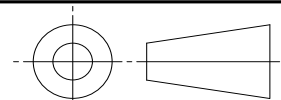
FIGURE 1 - ELBOW, BULKHEAD UNIVERSAL 90°, FLARELESS TUBE

TABLE 1A - DIMENSIONS H-4

DASH NO. /5/	NOMINAL TUBE SIZE	T THREAD AS8879	H RAD	M +.047 -.000	Q +.047 -.000	R RAD
-2	.125	.3125-24 UNJF-3A	.063	1.313	.781	.156
-3	.188	.3750-24 UNJF-3A	.063	1.391	.906	.188
-4	.250	.4375-20 UNJF-3A	.063	1.500	.938	.219
-5	.313	.5000-20 UNJF-3A	.094	1.531	1.031	.250
-6	.375	.5625-18 UNJF-3A	.094	1.688	1.063	.281
-8	.500	.7500-16 UNJF-3A	.094	1.969	1.313	.375
-10	.625	.8750-14 UNJF-3A	.094	2.250	1.500	.438
-12	.750	1.0625-12 UNJ-3A	.094	2.469	1.625	.531
-16	1.000	1.3125-12 UNJ-3A	.125	2.594	1.719	.656
-20	1.250	1.6250-12 UNJ-3A	.125	2.875	2.000	.813
-24	1.500	1.8750-12 UNJ-3A	.125	3.156	2.188	.938
-32	2.000	2.5000-12 UNJ-3A	.125	3.750	2.375	1.250

SAE values your input. To provide feedback on this Technical Report, please visit <http://www.sae.org/technical/standards/AS21908D>

THIRD ANGLE PROJECTION



CUSTODIAN: G-3/G-3B

PROCUREMENT SPECIFICATION: /10/ AS18280



AEROSPACE STANDARD

ELBOW, BULKHEAD UNIVERSAL 90°,
FLARELESS TUBE

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TABLE 1B - DIMENSIONS U-Z

DASH NO. /5/	U RAD	V	W APPROX	X APPROX	Y +.047 -.000	Z +.047 -.000	WEIGHT, LB/EA, APPROX, REF.		
							STEEL	AL ALLOY	TI ALLOY
-2	.063	.313	.313	.188	.813	1.344	.048	.017	.027
-3	.063	.375	.313	.250	.938	1.422	.064	.023	.036
-4	.063	.438	.375	.250	.969	1.531	.071	.025	.040
-5	.063	.500	.500	.313	1.063	1.563	.102	.038	.058
-6	.094	.563	.500	.313	1.094	1.719	.123	.054	.070
-8	.094	.750	.625	.438	1.344	2.000	.237	.091	.136
-10	.125	.875	.750	.438	1.563	2.344	.400	.133	.230
-12	.125	1.063	.875	.500	1.719	2.578	.530	.190	.305
-16	.125	1.313	1.063	.625	1.813	2.688	.920	.310	.530
-20	.188	1.625	1.250	.750	2.125	3.000	1.330	.524	.767
-24	.188	1.875	1.438	.875	2.359	3.359	1.960	.700	1.130
-32	.188	2.563	1.938	1.188	2.438	4.063			

NOTES:

NOTICE

THIS DOCUMENT REFERENCES A PART WHICH CONTAINS 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 ± 0.016 , ANGLES $\pm 0^{\circ}30'$.

/5/ PART NUMBERS:

DASH "-" IN PART NUMBER FOR 4130 ALLOY STEEL IS CANCELLED AND REPLACED, SEE TABLE 2 /A/
 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" IN PLACE OF DASH FOR ALUMINUM ALLOY (2014): CANCELLED AND REPLACED, SEE TABLE 2 /C/
 ADD "W" IN PLACE OF DASH FOR ALUMINUM ALLOY (7075)
 ADD "J" IN PLACE OF DASH FOR CORROSION RESISTANT STEEL (TYPE 304)
 ADD "K" IN PLACE OF DASH 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): CANCELLED, SEE TABLE 2 /D/
 ADD "T" AFTER DASH NUMBER FOR TITANIUM ALLOY (6AL-4V)



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ELBOW, BULKHEAD UNIVERSAL 90°,
 FLARELESS TUBE

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EXAMPLES OF PART NUMBERS:

MS21908-4	ELBOW, .250 TUBING, 4130 ALLOY STEEL IS CANCELLED AND REPLACED, SEE TABLE 2 /A/
MS21908V4P	ELBOW, .250 TUBING, CORROSION RESISTANT STEEL (15-5PH), CADMIUM PLATED
MS21908V4	ELBOW, .250 TUBING, CORROSION RESISTANT STEEL (15-5PH), NOT CADMIUM PLATED
MS21908D4	ELBOW, .250 TUBING, ALUMINUM ALLOY (2014) IS CANCELLED, REPLACED, SEE TABLE 2 /C/
MS21908W4	ELBOW, .250 TUBING, ALUMINUM ALLOY (7075)
MS21908J4	ELBOW, .250 TUBING, CORROSION RESISTANT STEEL (TYPE 304)
MS21908K4	ELBOW, .250 TUBING, CORROSION RESISTANT STEEL (TYPE 316)
MS21908-4R	ELBOW, .250 TUBING, CORROSION RESISTANT STEEL (TYPE 321)
MS21908-4S	ELBOW, .250 TUBING, CORROSION RESISTANT STEEL (TYPE 347) IS CANCELLED, SEE TABLE 2 /D/
MS21908-4T	ELBOW, .250 TUBING, TITANIUM ALLOY (6AL-4V)

6. TITANIUM SHALL NOT BE USED FOR OXYGEN SYSTEMS.
7. SEE TABLE 2 FOR CANCELLED AND SUPERSEDED DOCUMENT AND PART NUMBERS.

TABLE 2 - CANCELLED AND SUPERSEDED DOCUMENT AND PART NUMBERS

CANCELLED DOCUMENT NUMBER	PART NUMBERS	SUPERSESSON NOTES	SUPERSEDING DOCUMENT NUMBER	SUPERSEDING PART NUMBERS
MS21908	MS21908-(2 THRU 32)	/A/	AS21908	MS21908V(2 THRU 32)P
MS21908	MS21908C(2 THRU 32)	/B/	AS21908	MS21908J(2 THRU 32), MS21908K(2 THRU 32), OR MS21908-(2 THRU 32)R
MS21908	MS21908D(2 THRU 32)	/C/	AS21908	MS21908W(2 THRU 32)
MS21908	MS21908W(2 THRU 32)	NONE	AS21908	MS21908W(2 THRU 32)
MS21908	MS21908J(2 THRU 32)	NONE	AS21908	MS21908J(2 THRU 32)
MS21908	MS21908K(2 THRU 32)	NONE	AS21908	MS21908K(2 THRU 32)
MS21908	MS21908-(2 THRU 32)R	NONE	AS21908	MS21908-(2 THRU 32)R
MS21908	MS21908-(2 THRU 32)S	/D/	AS21908	MS21908-(2 THRU 32)R
MS21908	MS21908-(2 THRU 32)T	NONE	AS21908	MS21908-(2 THRU 32)T

/A/ PARTS CODED "-" FOR 4130 ALLOY STEEL ARE NOT TO BE MANUFACTURED. PARTS CODED "V(SIZE)P" FOR CORROSION RESISTANT STEEL (15-5PH) WITH CADMIUM PLATE SHALL BE FURNISHED IN LIEU OF "-" CODED (4130) PARTS. PARTS CODED "-" FOR 4130 ALLOY STEEL MAY BE PROCURED UNTIL 12-31-06.

/B/ PARTS CODED "C" FOR CORROSION RESISTANT STEEL (TYPE 303) ARE NOT TO BE MANUFACTURED. PARTS CODED "J", "K" OR "R" FOR CORROSION RESISTANT STEEL (TYPES 304, 316, OR 321, RESPECTIVELY) SHALL BE FURNISHED IN LIEU OF "C" CODED PARTS AT SUPPLIERS OPTION.

/C/ PARTS CODED "D" FOR ALUMINUM ALLOY 2014 ARE NOT TO BE MANUFACTURED. PARTS CODED "W" FOR ALUMINUM ALLOY 7075 SHALL BE FURNISHED IN LIEU OF 2014 (D CODE) PARTS. PARTS CODED "D" FOR ALUMINUM ALLOY 2014 MAY BE PROCURED UNTIL 12-31-06.

/D/ PARTS CODED "S" FOR CORROSION RESISTANT STEEL (TYPE 347) ARE NOT TO BE MANUFACTURED. PARTS CODED "S" MAY BE USED UNTIL EXISTING STOCK IS DEPLETED. PARTS CODED "R" FOR CORROSION RESISTANT STEEL (TYPE 321) SHALL BE FURNISHED IN LIEU OF "S" CODED PARTS.

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. PRODUCT SUPPLIED TO THIS SPECIFICATION SHALL BE MANUFACTURED BY AN ACCREDITED MANUFACTURER AS LISTED IN THE PERFORMANCE REVIEW INSTITUTE (PRI) QUALIFIED PRODUCTS LIST PRI-QPL-AS18280 FOR THIS STANDARD. SEE <http://www.eauditnet.com> FOR CURRENT QPL ONLINE.
11. SURFACE TEXTURE: SYMBOLS PER ASME Y14.36M; REQUIREMENTS PER ASME B46.1; UNLESS OTHERWISE SPECIFIED MACHINED SURFACES SHALL BE 125 Ra.

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