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REV.
A

MA2069

FEDERAL SUPPLY CLASS
4730

RATIONALE

MA2069A HAS BEEN REAFFIRMED TO COMPLY WITH THE SAE FIVE-YEAR REVIEW POLICY.

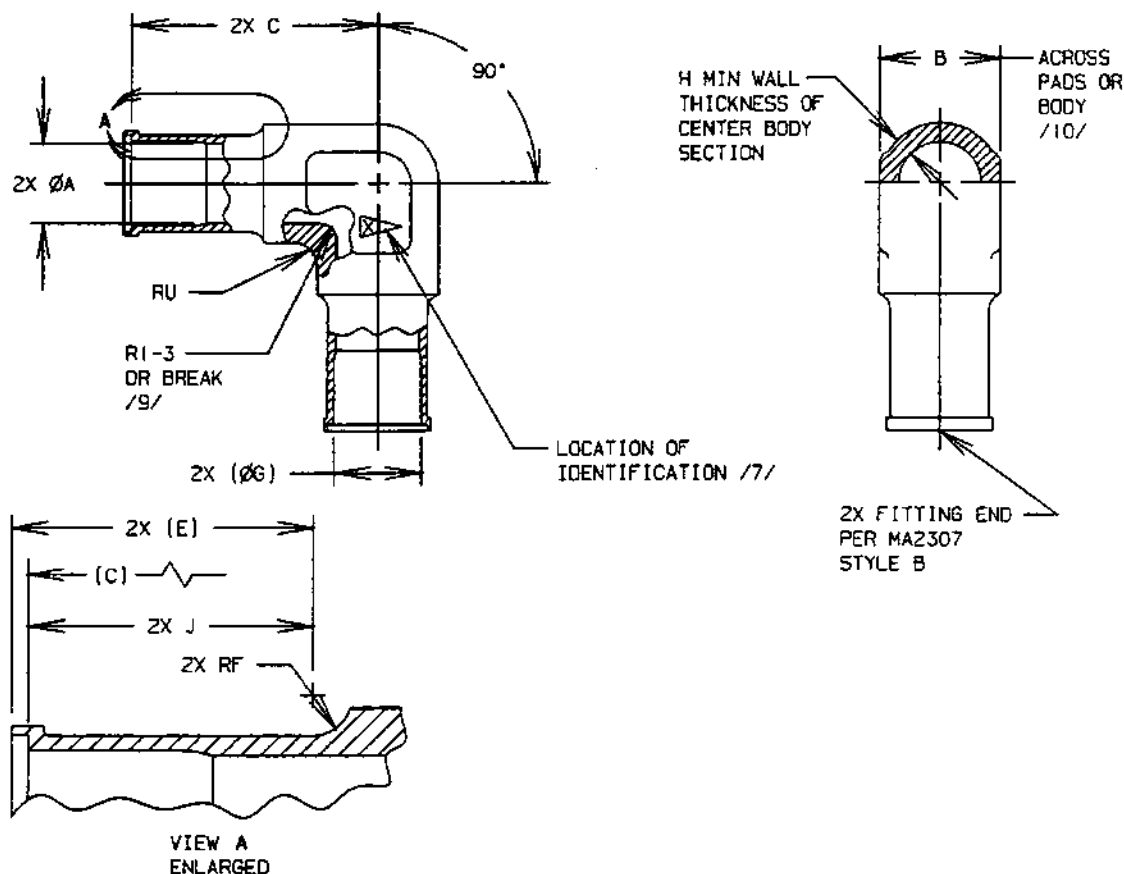


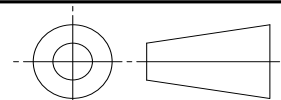
FIGURE 1 - FITTING, ELBOW, 90°

TABLE 1A - DIMENSIONS

BASIC NO. MA2069 /18/ SIZE CODE	(NOMINAL TUBE SIZE DN) /1/	(NOMINAL TUBE WALL)	A ±0.1	B	C ±0.25	E	F ±0.1	G
06	6	0.5	4.5	9.50-10.06	21.00	15.0	2.0	4.95
08	8	0.6	6.0	9.50-10.06	23.00	15.3	2.0	6.75
10	10	0.6	8.0	11.40-12.06	25.00	15.3	2.0	8.75
12	12	0.7	10.0	14.4-15.1	30.00	15.1	2.0	10.55
14	14	0.8	11.5	17.4-18.1	31.00	16.2	3.0	12.35
16	16	0.9	13.0	17.4-18.1	32.00	18.8	3.0	14.15
20	20	1.0	17.5	22.4-22.1	36.00	19.4	3.0	17.95
25	25	1.0	22.0	28.4-29.1	41.00	22.2	3.0	22.95

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on this Technical Report, please visit
<http://www.sae.org/technical/standards/MA2069A>

THIRD ANGLE PROJECTION



CUSTODIAN: G-3/G-3B

PROCUREMENT SPECIFICATION: /6/ MA4510



AEROSPACE STANDARD

(R) FITTING, ELBOW, 90°,
INTEGRAL WELD RING,
21,000 KPA, METRIC

MA2069
SHEET 1 OF 2

REV.
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Documents

TABLE 1B - DIMENSIONS AND WEIGHTS

BASIC NO. MA2069 /18/ SIZE CODE	H	J	U	kg/EA MAX CRES	kg/EA MAX TI
06	1.1	14.2	2.0	0.0107	0.00614
08	1.2	14.6	2.0	0.0127	0.00725
10	1.2	14.6	3.0	0.0184	0.0105
12	1.3	14.2	3.0	0.0364	0.0208
14	1.4	15.4	5.0	0.0564	0.0322
16	1.4	18.0	5.0	0.0515	0.0294
20	1.6	18.4	5.0	0.0699	0.0399
25	2.3	21.2	5.0	0.147	0.0839

NOTES:

- /1/ DN = NOMINAL TUBE OUTSIDE DIAMETER.
- /2/ MATERIAL:
a. CODE LETTER T - TYPE 6AL-4V TITANIUM ALLOY BAR PER AMS 4928.
b. CODE LETTER V - TYPE 15-5PH CORROSION RESISTANT STEEL FORGING OR BAR PER AMS 5659.
3. HEAT TREATMENT:
a. CODE LETTER T - NONE.
b. CODE LETTER V - HEAT TREAT TO CONDITION H 1075 PER AMS 2759/3.
4. FINISH: NONE.
5. PACKAGING: PER PROCUREMENT SPECIFICATION.
- /6/ PROCUREMENT SPECIFICATION: MA4510. THIS PART SHALL BE QUALIFIED TO THE PROCUREMENT SPECIFICATION IN A COMPLETE ASSEMBLY. USERS OF THIS STANDARD ARE ADVISED TO CONTROL SOURCE APPROVAL(S) BY STANDARD PAGE SUPPLEMENT SHEET OR SIMILAR MEANS.
- /7/ IDENTIFICATION AT LOCATION SHOWN: MARK PER AS478 CLASS C OR D OR METHOD 7A3, 15A3, OR 15B MANUFACTURER'S IDENTIFICATION, CAGE CODE NUMBER OR TRADEMARK, BASIC PART NUMBER FOR SIZE DN12 AND LARGER, LETTERS "MA" FOR SIZE DN10 AND SMALLER AND MATERIAL CODE LETTER.
8. THIS PART IS DESIGNED FOR USE IN SYSTEMS WITH MAXIMUM OPERATING PRESSURE OF 21,000 kPa WHEN ORBITAL ARC WELDED TO TITANIUM ALLOY OR CORROSION RESISTANT STEEL TUBING.
- /9/ RADIUS OR BREAK APPLICABLE FOR TITANIUM PARTS ONLY.
- /10/ WRENCH PADS ARE NOT REQUIRED ON THIS PART. WHEN MACHINED FROM BAR OR OVERSIZE FORGINGS, THE CENTER BODY SECTION SHALL CONFORM TO MA1376, TABLE 5.
11. THE (R) 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. IF THE SYMBOL IS NEXT TO THE DOCUMENT TITLE, IT INDICATES A COMPLETE REVISION OF THE DOCUMENT.
12. INVENTORIED PARTS CONFORMING TO THE PREVIOUS "LETTER CHANGE" MAY BE USED TO DEPLETION.
13. INTERPRETATION OF DRAWING PER MAP4296.
14. SURFACE TEXTURE: SYMBOLS PER ANSI Y14.36; REQUIREMENTS PER ANSI/ASME B46.1. UNLESS OTHERWISE SPECIFIED, MACHINED SURFACES TO BE 3.2 μm Ra. FORGED SURFACES MAY BE 6.4 μm Ra.
15. BREAK EDGES 0.1 TO 0.4 UNLESS OTHERWISE SPECIFIED. SEE MA2307.
16. DIMENSIONING AND TOLERANCING: ASME Y14.5M-1994
17. DIMENSIONS IN MILLIMETERS. UNLESS OTHERWISE SPECIFIED, TOLERANCES: LINEAR DIMENSIONS ± 0.4 , ANGULAR DIMENSIONS $\pm 1^\circ$.
- /18/ EXAMPLE OF PART NUMBER: MA2069 T 12
- BASIC PART NUMBER _____
- MATERIAL CODE LETTER /2/ _____
- SIZE CODE, TUBE SIZE
IN MILLIMETERS

	AEROSPACE STANDARD		MA2069 SHEET 2 OF 2	REV. A
	(R) FITTING, ELBOW, 90°, INTEGRAL WELD RING, 21,000 KPA, METRIC			





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