

REV.
B

MA2048

RATIONALE

MA2048B HAS BEEN REAFFIRMED TO COMPLY WITH THE SAE FIVE-YEAR REVIEW POLICY.

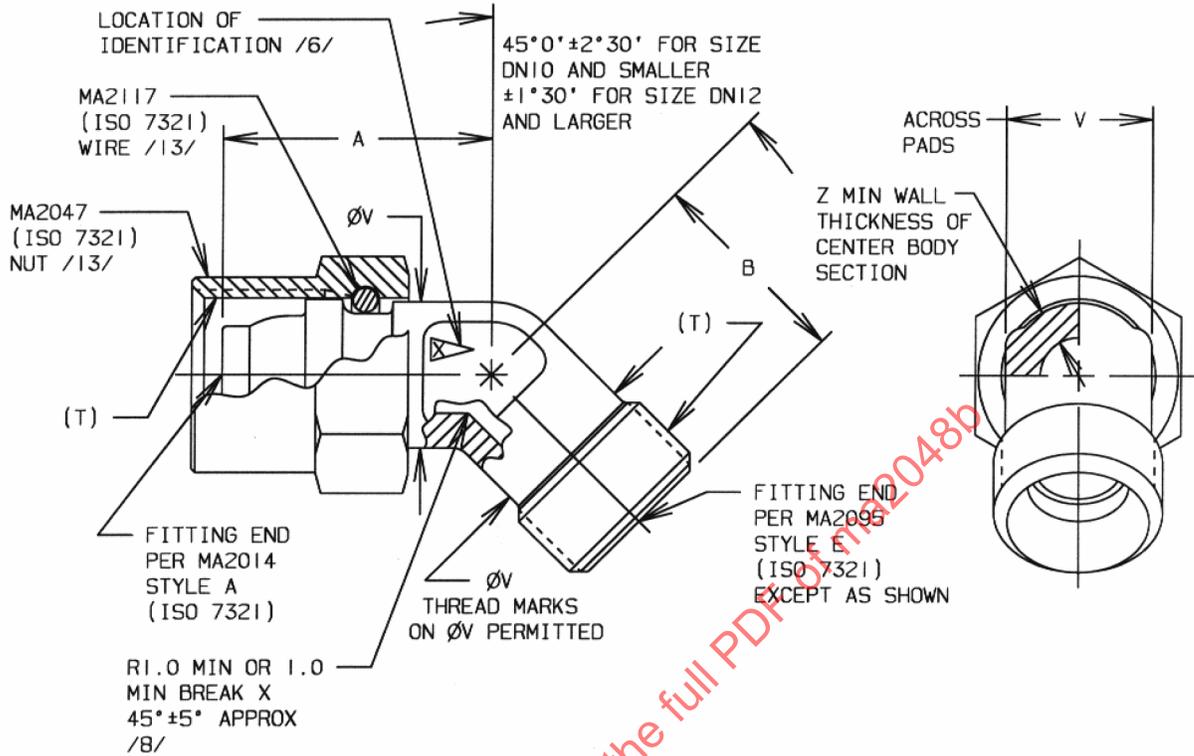
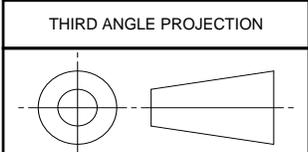


FIGURE 1 - ELBOW, 45°, FLARELESS

TABLE 1 - DIMENSIONS AND WEIGHTS

BASIC NO. MA2048 /19/ SIZE CODE	(NOMINAL TUBE SIZE DN) /1/	T THREAD PER MA1370 (ISO 5855-3)		A	B	V	Z	Kg/100 APPROX, REF CRES	Kg/100 APPROX, REF TI
		EXT 4g6g	INT 4H5H						
05	5	MJ 10 X 1		20.5	15	7.50-8.06	1.3	1.96	1.12
06	6	MJ 12 X 1.25		21.0	16	9.50-10.06	1.8	2.99	1.70
08	8	MJ 14 X 1.5		21.8	17	11.40-12.06	1.8	4.35	2.46
10	10	MJ 16 X 1.5		24.0	20	13.40-14.06	2.0	5.84	3.30
12	12	MJ 18 X 1.5		26.5	21	15.4 -16.1	2.0	7.70	4.37
14	14	MJ 20 X 1.5		28.5	23	17.4 -18.1	2.0	9.39	5.32
16	16	MJ 22 X 1.5		30.5	24	19.4 -20.1	2.0	11.6	6.57
20	20	MJ 27 X 1.5		36.0	28	23.4 -24.1	2.5	18.2	10.3
25	25	MJ 33 X 1.5		40.0	32	29.4 -30.1	2.5	31.4	17.7
32	32	MJ 42 X 2		46.0	36	38.2 -39.2	3.5	51.4	28.8

SAE values your input. To provide feedback on this Technical Report, please visit <http://www.sae.org/technical/standards/MA2048B>



CUSTODIAN: G-3/G-3B

PROCUREMENT SPECIFICATION: /5/ MA2005 (ISO 7169)



AEROSPACE STANDARD

(R) FITTING ASSEMBLY, ELBOW, 45°, THIN WALL, RETAINED NUT, FLARELESS, METRIC

MA2048
SHEET 1 OF 3

REV. B

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ISSUED 1985-08 REVISED 2005-02 REAFFIRMED 2015-04

NOTES:

- /1/ DN = NOMINAL TUBE OUTSIDE DIAMETER.
- /2/ MATERIAL:
 - a. CODE LETTER J -
 - ELBOW - TYPE 304 CORROSION RESISTANT STEEL PER AMS 5639 OR AMS-QQ-S-763.
 - NUT - CODE LETTER J OF MA2047 REFERENCE (TYPE 304 CORROSION RESISTANT STEEL).
 - WIRE - PER MA2117 REFERENCE (TYPE 302 OR 305 CORROSION RESISTANT STEEL).
 - b. CODE LETTER K -
 - ELBOW - TYPE 316 CORROSION RESISTANT STEEL PER AMS 5648 OR AMS-QQ-S-763.
 - NUT - CODE LETTER K OF MA2047 REFERENCE (TYPE 316 CORROSION RESISTANT STEEL).
 - WIRE - PER MA2117 REFERENCE (TYPE 302 OR 305 CORROSION RESISTANT STEEL).
 - c. CODE LETTER R -
 - ELBOW - TYPE 321 CORROSION RESISTANT STEEL PER AMS 5645 OR AMS-QQ-S-763.
 - NUT - CODE LETTER R OF MA2047 REFERENCE (TYPE 321 CORROSION RESISTANT STEEL).
 - WIRE - PER MA2117 REFERENCE (TYPE 302 OR 305 CORROSION RESISTANT STEEL).
 - d. CODE LETTER T -
 - ELBOW - TYPE 6AL-4V TITANIUM ALLOY PER AMS 4928.
 - NUT - CODE LETTER T OF MA2047 REFERENCE (TYPE 6AL-4V TITANIUM ALLOY).
 - WIRE - PER MA2117 REFERENCE (TYPE 302 OR 305 CORROSION RESISTANT STEEL).
- 3. HEAT TREATMENT: NONE.
- 4. FINISH:
 - a. MATERIAL CODE LETTERS J, K OR R -
 - ELBOW - PASSIVATE PER AMS-QQ-P-35, TYPE VI OR VII.
 - NUT - MATERIAL CODE LETTERS J, K OR R OF MA2047 REFERENCE (PASSIVATE).
 - WIRE - PER MA2117 REFERENCE (PASSIVATE AND COAT WITH SOLID FILM LUBRICANT).
 - b. MATERIAL CODE LETTER T -
 - ELBOW - FLUORIDE PHOSPHATE CONVERSION COAT PER AMS 2486.
 - NUT - MATERIAL CODE LETTER T OF MA2047 REFERENCE (FLUORIDE PHOSPHATE CONVERSION COAT).
 - WIRE - PER MA2117 REFERENCE (PASSIVATE AND COAT WITH SOLID FILM LUBRICANT).
- /5/ PROCUREMENT SPECIFICATION: MA2005 (ISO 7169) EXCEPT AS SPECIFIED ON THIS STANDARD. THIS PART SHALL BE QUALIFIED TO THE PROCUREMENT SPECIFICATION AS APPLICABLE IN A COMPLETE ASSEMBLY. USERS OF THIS STANDARD ARE ADVISED TO CONTROL SOURCE APPROVAL BY STANDARD PAGE SUPPLEMENT SHEETS OR SIMILAR MEANS.
- /6/ IDENTIFICATION AT LOCATION SHOWN: MARK PER AS478 CLASS C OR METHOD 7A3, 15A3, OR 15B.
 - a. FOR SIZES DN10 AND SMALLER: MANUFACTURER'S NAME, CAGE CODE OR TRADEMARK AND MATERIAL CODE LETTER.
 - b. FOR SIZES DN12 AND LARGER: MANUFACTURER'S NAME, CAGE CODE OR TRADEMARK, BASIC PART NUMBER AND MATERIAL CODE LETTER.
- 7. THIS PART IS DESIGNED FOR USE IN SYSTEMS AT TYPE II TEMPERATURE (-55° TO 135°C) WITH OPERATING PRESSURE AS FOLLOWS:
 - a. SIZES DN05 THROUGH DN25 AT 28,000 kPa.
 - b. SIZE DN32 AT 14,000 kPa.
- /8/ RADIUS OR BREAK APPLICABLE FOR TITANIUM PARTS ONLY.

	AEROSPACE STANDARD	MA2048 SHEET 2 OF 3	REV. B
	(R) FITTING ASSEMBLY, ELBOW, 45°, THIN WALL, RETAINED NUT, FLARELESS, METRIC		