

RATIONALE

THIS DOCUMENT HAS BEEN REAFFIRMED TO COMPLY WITH THE SAE 5-YEAR REVIEW POLICY.

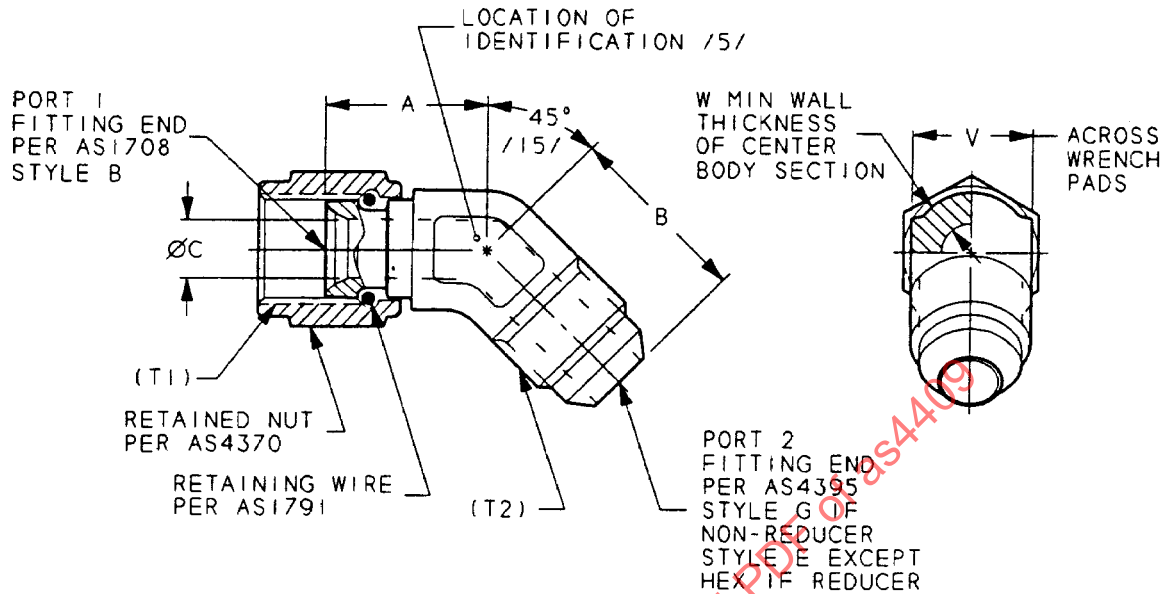


FIGURE 1 - FITTING ASSEMBLY, ELBOW 45°

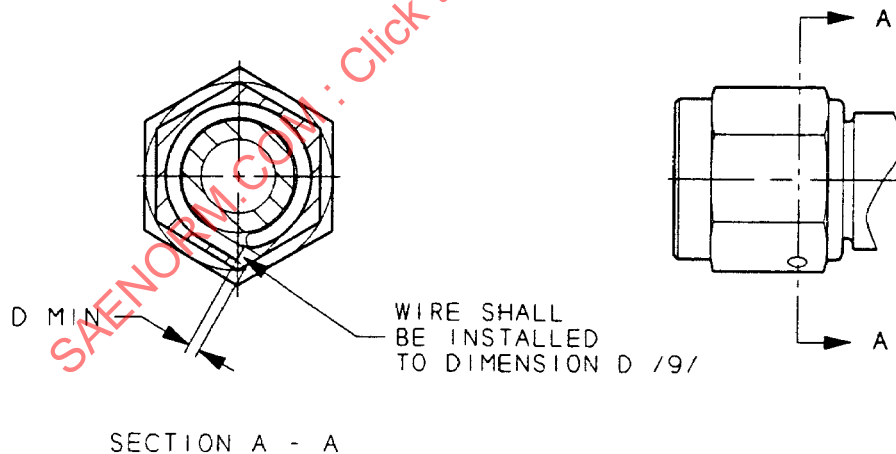
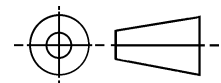


FIGURE 2 - INSTALLATION, RETAINED NUT AND RETAINING WIRE

THIRD ANGLE PROJECTION



CUSTODIAN: SAE G-3/G-3B

PROCUREMENT SPECIFICATION: /4/ MIL-F-5509

SAE Aerospace
An SAE International Group**AEROSPACE STANDARD**FITTING ASSEMBLY, ELBOW 45°, REDUCER AND
NONREDUCER, INTERNAL FLARE TO FLARED TUBE**AS4409**
SHEET 1 OF 4

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TABLE 1 - DIMENSIONS AND WEIGHTS

BASIC NO. AS4409 /16/ SIZE CODE	(NOMINAL TUBE SIZE)	T1, T2 THREAD PER MIL-S-8879	C	D	V	W	LB/EA MAX ALUM	LB/EA MAX CRES	LB/EA MAX TI
02	.125	.3125-24 UNJF	.065-.058	.045	.313	.090	.012	.034	.019
03	.187	.3750-24 UNJF	.128-.121	.045	.375	.100	.021	.060	.034
04	.250	.4375-20 UNJF	.175-.168	.045	.438	.110	.025	.072	.041
05	.312	.5000-20 UNJF	.237-.230	.045	.500	.120	.032	.092	.053
06	.375	.5625-18 UNJF	.301-.293	.045	.563	.120	.044	.123	.071
08	.500	.7500-16 UNJF	.395-.387	.055	.750	.150	.077	.224	.140
10	.625	.8750-14 UNJF	.488-.480	.063	.875	.170	.118	.343	.196
12	.750	1.0625-12 UNJ	.614-.604	.095	1.063	.185	.196	.570	.326
16	1.000	1.3125-12 UNJ	.851-.839	.125	1.313	.205	.294	.852	.488
20	1.250	1.6250-12 UNJ	1.086-1.073	.155	1.625	.240	.551	1.600	.916
24	1.500	1.8750-12 UNJ	1.320-1.307	.180	1.875	.250	.734	2.130	1.220
32	2.000	2.5000-12 UNJ	1.791-1.776	.180	2.563	.350	.961	2.790	1.598

TABLE 2 - LEG LENGTH A

SIZE OF PORT #1	FORG. SIZE /8/ 02	FORG. SIZE /8/ 03	FORG. SIZE /8/ 04	FORG. SIZE /8/ 05	FORG. SIZE /8/ 06	FORG. SIZE /8/ 08	FORG. SIZE /8/ 10	FORG. SIZE /8/ 12	FORG. SIZE /8/ 16	FORG. SIZE /8/ 20	FORG. SIZE /8/ 24	FORG. SIZE /8/ 32
02	.403	.414	.427	.439	.466	.504	.530	.569	.634	.699	.796	.940
03	--	.416	.430	.442	.469	.507	.533	.572	.637	.702	.799	.943
04	--	--	.438	.450	.477	.515	.541	.580	.645	.710	.807	.951
05	--	--	--	.492	.519	.557	.583	.622	.687	.752	.798	.998
06	--	--	--	--	.603	.641	.667	.706	.771	.836	.888	1.029
08	--	--	--	--	--	.749	.775	.814	.878	.943	.995	1.091
10	--	--	--	--	--	--	.825	.864	.927	.992	1.044	1.139
12	--	--	--	--	--	--	.828	.892	.957	.957	1.009	1.139
16	--	--	--	--	--	--	--	.911	.976	.976	1.028	1.191
20	--	--	--	--	--	--	--	--	1.023	1.075	1.284	
24	--	--	--	--	--	--	--	--	--	1.155	1.327	
32	--	--	--	--	--	--	--	--	--	--	--	1.483

TABLE 3 - LEG LENGTH B

SIZE OF PORT #2	FORG. SIZE /8/ 02	FORG. SIZE /8/ 03	FORG. SIZE /8/ 04	FORG. SIZE /8/ 05	FORG. SIZE /8/ 06	FORG. SIZE /8/ 08	FORG. SIZE /8/ 10	FORG. SIZE /8/ 12	FORG. SIZE /8/ 16	FORG. SIZE /8/ 20	FORG. SIZE /8/ 24	FORG. SIZE /8/ 32
02	.664	.633	.633	.671	.728	.783	.807	.873	1.013	1.091	1.154	1.341
03	--	.664	.655	.702	.759	.814	.838	.904	1.044	1.122	1.185	1.372
04	--	--	.726	.773	.830	.885	.909	.975	1.115	1.193	1.256	1.443
05	--	--	--	.773	.830	.885	.909	.975	1.115	1.193	1.256	1.443
06	--	--	--	--	.836	.891	.915	.981	1.121	1.199	1.262	1.449
08	--	--	--	--	--	.992	1.016	1.082	1.222	1.300	1.363	1.550
10	--	--	--	--	--	--	1.117	1.183	1.323	1.401	1.464	1.651
12	--	--	--	--	--	--	--	1.289	1.429	1.507	1.570	1.757
16	--	--	--	--	--	--	--	--	1.476	1.554	1.617	1.804
20	--	--	--	--	--	--	--	--	--	1.601	1.664	1.851
24	--	--	--	--	--	--	--	--	--	--	1.789	1.976
32	--	--	--	--	--	--	--	--	--	--	--	2.226

NOTES:

/1/ MATERIAL:

a. NO CODE LETTER:

- (1) BODY: TYPE 4130 STEEL FORGING OR BAR PER AMS 6370 OR MIL-S-6758
- (2) NUT: CODE LETTER NONE OF AS4370 (TYPE 4130 STEEL)
- (3) WIRE: PER AS1791 (CLASS 302 OR 305 CORROSION RESISTANT STEEL)

b. CODE LETTER D:

- (1) BODY: 2014T6 ALUMINUM ALLOY FORGING PER AMS 4133 OR QQ-A-367; OR 2024T6 ALUMINUM ALLOY BAR PER AMS4112 OR QQ-A-225/6; OR 2024T851 ALUMINUM ALLOY BAR PER QQ-A-225/6
- (2) NUT: CODE LETTER D OF AS4370 (TYPE 2024 ALUMINUM ALLOY)
- (3) WIRE: PER AS1791 (TYPE 302 OR 305 CORROSION RESISTANT STEEL)

c. CODE LETTER J:

- (1) BODY: 30304 CORROSION RESISTANT STEEL FORGING OR BAR PER AMS 5639 OR 304 CORROSION RESISTANT STEEL PER QQ-S-763
- (2) NUT: CODE LETTER J OF AS4370 (TYPE 304 CORROSION RESISTANT STEEL)
- (3) WIRE: PER AS1791 (TYPE 302 OR 305 CORROSION RESISTANT STEEL)

d. CODE LETTER K:

- (1) BODY: 30316 CORROSION RESISTANT STEEL FORGING OR BAR PER AMS 5648 OR 316 CORROSION RESISTANT STEEL PER QQ-S-763
- (2) NUT: CODE LETTER K OF AS4370 (TYPE 316 CORROSION RESISTANT STEEL)
- (3) WIRE: PER AS1791 (TYPE 302 OR 305 CORROSION RESISTANT STEEL)

e. CODE LETTER S:

- (1) BODY: 30347 CORROSION RESISTANT STEEL FORGING OR BAR PER AMS 5646 OR 347 CORROSION RESISTANT STEEL PER QQ-S-763
- (2) NUT: CODE LETTER S OF AS4370 (TYPE 347 CORROSION RESISTANT STEEL)
- (3) WIRE: PER AS1791 (TYPE 302 OR 305 CORROSION RESISTANT STEEL)

f. CODE LETTER T:

- (1) BODY: 6AL-4V TITANIUM ALLOY FORGING OR BAR PER AMS 4928
- (2) NUT: CODE LETTER T OF AS4370 (TYPE 6AL4V TITANIUM)
- (3) WIRE: PER AS1791 (TYPE 302 OR 305 CORROSION RESISTANT STEEL)

g. CODE LETTER W:

- (1) BODY: 7075T73 ALUMINUM ALLOY FORGING PER AMS 4141 OR QQ-A-367; OR 7075T7351 ALUMINUM ALLOY BAR PER AMS 4124; OR 7075T73 ALUMINUM ALLOY BAR PER QQ-A-225/9
- (2) NUT: CODE LETTER W OF AS4370 (TYPE 7075 ALUMINUM ALLOY)
- (3) WIRE: PER AS1791 (TYPE 302 OR 305 CORROSION RESISTANT STEEL)

2. HEAT TREAT PER PROCUREMENT SPECIFICATION.

/3/ FINISH:

a. NO CODE LETTER:

- (1) BODY: CADMIUM PLATE PER QQ-P-416, TYPE II, CLASS 2, DYE BLACK
- (2) NUT: NO CODE LETTER OF AS4370 (CADMIUM PLATE, DYE BLACK)
- (3) WIRE: PER AS1791 (PASSIVATE AND COAT WITH DRY FILM LUBRICANT)

b. CODE LETTER D:

- (1) BODY: ANODIZE PER AMS 2472 OR MIL-A-8625, TYPE II, CLASS 2, DYE BLUE, DUPLEX SEAL
- (2) NUT: CODE LETTER D OF AS4370 (ANODIC COATING, DYE BLUE)
- (3) WIRE: PER AS1791 (PASSIVATE AND COAT WITH DRY FILM LUBRICANT)

c. CODE LETTER J:

- (1) BODY: PASSIVATE PER QQ-P-35, TYPE VI OR TYPE VII
- (2) NUT: CODE LETTER J OF AS4370 (PASSIVATED)
- (3) WIRE: PER AS1791 (PASSIVATE AND COAT WITH DRY FILM LUBRICANT)

d. CODE LETTER K:

- (1) BODY: PASSIVATE PER QQ-P-35, TYPE VI OR TYPE VII
- (2) NUT: CODE LETTER K OF AS4370 (PASSIVATED)
- (3) WIRE: PER AS1791 (PASSIVATE AND COAT WITH DRY FILM LUBRICANT)

e. CODE LETTER S:

- (1) BODY: PASSIVATE PER QQ-P-35, TYPE VI OR TYPE VII
- (2) NUT: CODE LETTER S OF AS4370 (PASSIVATED)
- (3) WIRE: PER AS1791 (PASSIVATE AND COAT WITH DRY FILM LUBRICANT)

f. CODE LETTER T:

- (1) BODY: FLUORIDE PHOSPHATE CONVERSION COAT PER AMS 2486
- (2) NUT: CODE LETTER T OF AS4370 (FLUORIDE PHOSPHATE CONVERSION COAT)
- (3) WIRE: PER AS1791 (PASSIVATE AND COAT WITH DRY FILM LUBRICANT)

g. CODE LETTER W:

- (1) BODY: ANODIZE PER AMS 2472 OR MIL-A-8625, TYPE II, CLASS 2, DYE BROWN, DUPLEX SEAL
- (2) NUT: CODE LETTER W OF AS4370 (ANODIC COATING, DYE BROWN)
- (3) WIRE: PER AS1791 (PASSIVATE AND COAT WITH DRY FILM LUBRICANT)