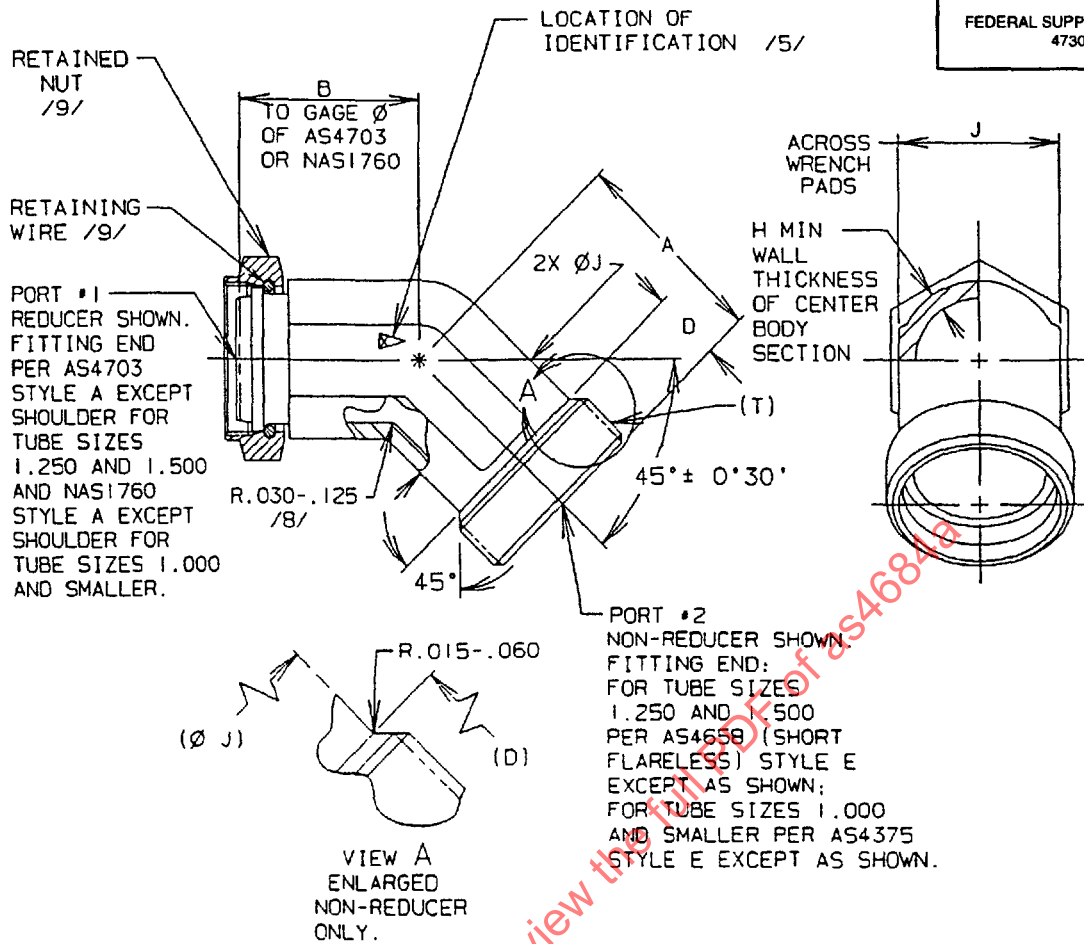


REV.
A

AS4684

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be reaffirmed, revised, or cancelled. SAE invites your written comments and suggestions.



(R) FIGURE 1 - FITTING ASSEMBLY, ELBOW, 45°

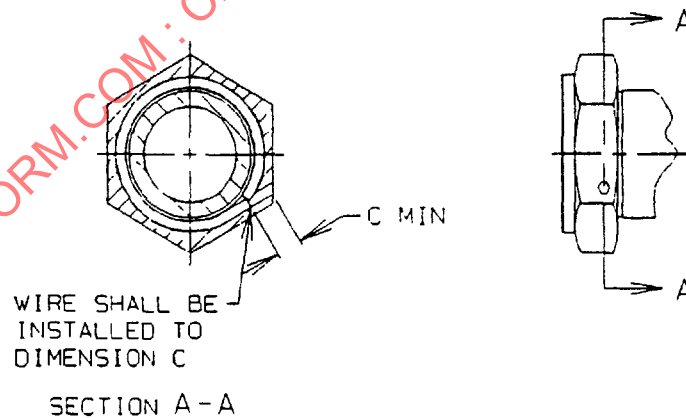
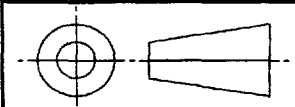


FIGURE 2 - INSTALLATION, RETAINED NUT AND RETAINING WIRE

THIRD ANGLE PROJECTION



CUSTODIAN: SAE G-3/G-3B

PROCUREMENT SPECIFICATION: /4/ MIL-F-18280

SAE The Engineering Society
For Advancing Mobility
Land Sea Air and Space
INTERNATIONAL

400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE STANDARD

FITTING ASSEMBLY, ELBOW, 45°, FLARELESS AND
SHORT FLARELESS, REDUCER, RETAINED NUT

AS4684

SHEET 1 OF 4

REV.**A**

Copyright 1995 by Society of Automotive Engineers, Inc.
All rights reserved

Distributed under license from the IHS Archive

Printed in the U.S.A.

REVISED 1995-05 (A)

ISSUED 1992-07

REV.
A

AS4684

TABLE 1 - DIMENSIONS AND WEIGHTS

BASIC NO. AS4684 /10/ /18/ SIZE CODE	D	H	J + .005/- .020	LB/EA MAX ALUM	LB/EA MAX CRES	LB/EA MAX TI
20	.517	.124	1.375	.268	.779	.451
24	.614	.156	1.688	.381	1.098	.636

(R) TABLE 2 - WIRE INSERTION DEPTH

PORT SIZE	(NOMINAL TUBE SIZE)	C
04	.250	.076
05	.312	.076
06	.375	.084
08	.500	.095
10	.625	.114
12	.750	.150
16	.875	.176
20	1.000	.247
24	1.500	.287

TABLE 3 - LEG LENGTH A

SIZE OF PORT #2	FORGING SIZE /10/ 20	FORGING SIZE /10/ 24
04	.876	.928
05	.876	.928
06	.892	.944
08	.985	1.037
10	1.048	1.100
12	1.111	1.163
16	1.111	1.163
20	1.053	.956
24	--	1.105

TABLE 4 - LEG LENGTH B

SIZE OF PORT #1	FORGING SIZE /10/ 20	FORGING SIZE /10/ 24
04	.853	.950
05	.905	.957
06	.966	1.018
08	1.063	1.115
10	1.142	1.194
12	1.131	1.183
16	1.179	1.231
20	1.055	1.107
24	--	1.135

SAE The Engineering Society
For Advancing Mobility
Land Sea Air and Space
INTERNATIONAL

400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE STANDARD

FITTING ASSEMBLY, ELBOW, 45°, FLARELESS AND
SHORT FLARELESS, REDUCER, RETAINED NUT

AS4684
SHEET 2 OF 4

REV.
A

REV.
A

AS4684

(R) TABLE 5 - TUBE SIZE AND CORRESPONDING THREADS

PORT SIZE	(NOMINAL TUBE SIZE)	T THREAD PER MIL-S-8879
04	.250	.4375-20UNJF
05	.312	.5000-20UNJF
06	.375	.5625-18UNJF
08	.500	.7500-16UNJF
10	.625	.8750-14UNJF
12	.750	1.0625-12UNJ
16	1.000	1.3125-12UNJ
20	1.250	1.5625-12UNJ
24	1.500	1.8125-12UNJ

NOTES:

/1/ MATERIAL:

a. CODE LETTER T:

- (1) BODY: TYPE 6AL-4V TITANIUM ALLOY PER AMS 4928
- (2) NUT: CODE LETTER T OF AS4702 OR AS1790 REFERENCE (TYPE 6AL-4V TITANIUM ALLOY)
- (3) WIRE: PER AS4701 OR AS1791 REFERENCE (CLASS 302 OR 305 CORROSION RESISTANT STEEL)

b. CODE LETTER V:

- (1) BODY: TYPE 15-5PH CORROSION RESISTANT STEEL PER AMS 5659
- (2) NUT: CODE LETTER V OF AS4702 OR AS1790 REFERENCE (TYPE 15-5PH CORROSION RESISTANT STEEL)
- (3) WIRE: PER AS4701 OR AS1791 REFERENCE (CLASS 302 OR 305 CORROSION RESISTANT STEEL)

c. CODE LETTER W:

- (1) BODY: TYPE 7075-T73 ALUMINUM ALLOY FORGING PER AMS 4141 OR TYPE 7075-T7351 ALUMINUM ALLOY BAR PER AMS 4124
- (2) NUT: CODE LETTER W OF AS4702 OR AS1790 REFERENCE (TYPE 7075-T73 ALUMINUM ALLOY)
- (3) WIRE: PER AS4701 OR AS1791 REFERENCE (CLASS 302 OR 305 CORROSION RESISTANT STEEL)

2. HEAT TREAT:

a. MATERIAL CODE LETTER T:

- (1) BODY, NUT, AND WIRE: NONE

b. MATERIAL CODE LETTER V:

- (1) BODY: HEAT TREAT TO CONDITION H-1075 PER AMS 2759/3
- (2) NUT: MATERIAL CODE LETTER V OF AS4702 OR AS1790 REFERENCE (HEAT TREAT TO CONDITION H-1075)
- (3) WIRE: NONE

c. MATERIAL CODE LETTER W:

- (1) BODY, NUT, AND WIRE: NONE

/3/ FINISH:

a. MATERIAL CODE LETTER T:

- (1) BODY: FLUORIDE PHOSPHATE CONVERSION COAT PER AMS 2486
- (2) NUT: CODE LETTER T OF AS4702 OR AS1790 WITH SUFFIX N REFERENCE (FLUORIDE PHOSPHATE CONVERSION COAT AND COAT WITH DRY LUBRICANT ON ID)
- (3) WIRE: PER AS4701 OR AS1791 REFERENCE (PASSIVATE AND COAT WITH DRY LUBRICANT)

b. MATERIAL CODE LETTER V:

- (1) BODY:
 - (a) V CODE PARTS TO BE PASSIVATED ONLY WILL HAVE NO FINISH CODE LETTER AFTER THE PART NUMBER. THE FINISH WILL BE: PASSIVATE PER QQ-P-35, TYPE II OR VIII.
 - (b) V CODE PARTS TO BE CADMIUM PLATED ONLY WILL HAVE THE FINISH CODE LETTER "P" AFTER THE SIZE CODE IN THE PART NUMBER. THE FINISH WILL BE: CADMIUM PLATE PER QQ-P-416, TYPE II, CLASS 2.
- (2) NUT: CODE LETTER V OF AS4702 OR AS1790 REFERENCE
 - (a) NO FINISH CODE LETTER AT END OF PART NUMBER: PASSIVATE AND COAT WITH DRY FILM LUBRICANT ON ID
 - (b) FINISH CODE LETTER P AT END OF PART NUMBER: CADMIUM PLATE
- (3) WIRE: PER AS4701 OR AS1791 REFERENCE (PASSIVATE AND COAT WITH DRY LUBRICANT)

AEROSPACE STANDARD
 FITTING ASSEMBLY, ELBOW, 45°, FLARELESS AND
 SHORT FLARELESS, REDUCER, RETAINED NUT
AS4684

SHEET 3 OF 4

REV.**A**