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Superseding AS686A

Piloted Ring Seal Tube Swivel Connection Assembly

RATIONALE

AS686B has been reaffirmed to comply with the SAE five-year review policy.

FOREWORD

Changes in this Revision are format/editorial only.

1. SCOPE:

This standard presents the designer with sufficient information to fully define the configuration of the connection and to determine the limits of application for given conditions.

1.1 Purpose:

To provide design criteria and an index of parts and standards for piloted ring seal tube swivel connections.

2. REFERENCES:

ARP573
AS130
MS9378
MS9083
MS9084

3. DETAIL REQUIREMENTS:

3.1 The assembly diagram in Figure 1 shows the connection assembly with the alternative fastener selection.

3.2 This aircraft engine connection is intended for use with fluids such as fuel, oil or air. The temperature range of this connection is dependent upon the material used for the ring seal and is normally within the -65 F to +500 F range. The maximum operating pressure can vary from 800 psi to 3000 psi dependent upon the tube size and wall thickness, and the ring seal and fastener size.

(This document supersedes and cancels ARP686, issued 3-15-66, and AS687A, issued 1-15-63.)

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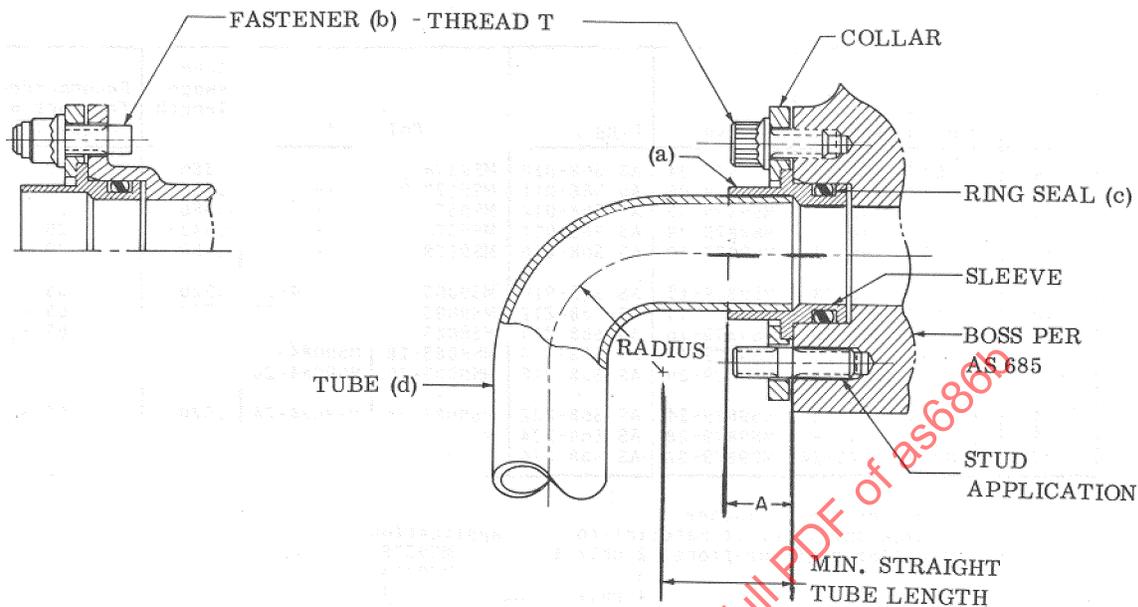
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- a. Use ARP573, "Silver and Copper Alloy Brazed Joints for Aircraft Power Plants," for the fabrication of the tube and sleeve assembly. Caution: Cadmium plated parts cannot be subjected to brazing cycle temperature.
- b. On thru-fastener design, use a connector with turned flange and slab head bolts, and provide adequate flange and shell wall thickness based on strength requirements using the standard collars and sleeve.
- c. Ring seals to be coated sparingly with petrolatum or the fluid used in the system and assembled in groove of sleeve. Rotation of sleeve recommended to assure proper positioning of ring seal.
- d. Tube may be straight or formed to desired bend radius per AS130, "Bending Radius, Tube."

FIGURE 1

- 3.3 Dimensions and recommended torque data applicable to the assembly shown in Figure 1 are given below in Table 1. The minimum tube swage length (A) is equal to the maximum length of mating hole in the sleeve. Tube swaged diameter should be in accordance with ARP573. The minimum straight tube length should be preferably in accordance with ARP573. This dimension may be reduced to a limit established by dimension "A" where design permits.