EADS CASA	FUNCTIONAL TEST	PFBFA-30-11-01-00/0	Issue	A	Pages.	9
	SPF, Aircraft System Engineering Department					
Aircraft	A330 MRTT					

Title:

Leak test of the wing anti-ice duct

Summary:

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REVISIONS RECORD

Issue	Revision Reason	Approved
Date	**Chapters, Sections, Affected Pages**	**Signature**
A	New Issue	Rafael Moreno Sánchez
21/05/07	All pages	[signature]

1 INTRODUCTION

1.1 Object

The aim of this test is to check that there is no leakage in the joints of the wing anti-ice ducts extremes after their rotation.

1.2 List of acronyms and abbreviations

AMM	Aircraft Maintenance Manual
APU	Auxiliary Power Unit
LH	Left hand
MRTT	Multi-Role Tanker Transport
RH	Right hand

2 APPLICABLE DOCUMENTATION

[1]	NT-FA-SGE-07004	A330-200 MRTT ATA 30 Functional Tests
[2]	AMM – RAAF	A330 Aircraft Maintenance Manual (AMM) – Royal Australian Air Force (RAAF)
[3]	F362A7000	A330-MRTT ATA30&36 Installation Drawing

3 REQUIRED EQUIPMENT

	Access platform 3.5 m (11 ft. 6 in.)
	Circuit breaker(s) safety clip(s)
	Safety barriers
	Warning notices
98D27803000000	1 LOCKING TOOL - FLAP/SLAT CONTROL LEVER
Material No. 11-001	USA MIL-D-16791 TYPE I DETERGENT
	Ground air power cart that works between 2.41 bar (35 psi) and 2.76 bar (40 psi).

4 DEFINITIONS

N/A

5 PRELIMINARY INSTRUCTIONS

5.1 Previous actions

Before performing this test, the following points must be confirmed:

The rotation of the wing anti-ice ducts have been done in accordance with [3] and vent outlets of the covering metal sheet are facing the leak detection sensing elements.

NOTE: This test is only applicable to the wing anti-ice ducts downstream of the RH and LH sides wing anti-ice valves.

The electrical bonding of the wing anti-ice ducts disassembled and reassembled during the modification has been done and checked.

The avionics equipment ventilation is operational.

5.2 Safety instructions and warnings

MAKE SURE THAT THE SAFETY DEVICES AND THE WARNING NOTICES ARE IN POSITION BEFORE YOU START A TASK ON OR NEAR:

- THE FLIGHT CONTROLS
- THE FLIGHT CONTROL SURFACES
- THE LANDING GEAR AND THE RELATED DOORS
- COMPONENTS THAT MOVE.

MOVEMENT OF COMPONENTS CAN KILL OR INJURE PERSONS.

MAKE SURE THAT THE TRAVEL RANGES OF THE FLIGHT CONTROLS ARE CLEAR. MOVEMENT OF FLIGHT CONTROLS CAN CAUSE INJURY TO PERSONS AND/OR DAMAGE.

MAKE SURE THAT THERE ARE NO PERSONS OR EQUIPMENT NEAR THE SLATS. THE SLATS WILL MOVE WITH THE FLAPS AND CAN KILL OR INJURE PERSONS.

MAKE SURE THAT THE PNEUMATIC SYSTEM IS DEPRESSURIZED BEFORE YOU START TO WORK. PRESSURIZED AIR CAN CAUSE INJURY TO PERSONNEL.

USE SOLVENTS/CLEANING AGENTS, SEALANTS AND OTHER SPECIAL MATERIALS ONLY WITH A GOOD FLOW OF AIR THROUGH THE WORK AREA. THESE MATERIALS ARE POISONOUS, FLAMMABLE, AND SKIN IRRITANTS. OBEY THE MANUFACTURERS INSTRUCTIONS. PUT ON PROTECTIVE CLOTHING. DO NOT GET THEM IN YOUR MOUTH. DO NOT SMOKE. DO NOT BREATHE THE GAS. GET MEDICAL HELP IF YOUR SKIN OR EYES BECOME IRRITATED.

6 TEST EXECUTION

1. Put the warning notices in position:
   a. On the ground-power connections for high-pressure air, to tell persons not to pressurize the pneumatic system.
   b. In the cockpit, to tell persons not to operate the engines or the APU.
   c. On the panel 225VU, to tell persons not to pressurize the bleed air system. Make sure that the APU BLEED, the ENG 1 BLEED, the ENG 2 BLEED, the PACK 1 and the PACK 2 pushbutton switches are released.
   d. On the panel 114VU, to tell persons not to operate the slats.

2. Fully extend the slats (Ref. AMM TASK 27-80-00-866-801).

3. Install the LOCKING TOOL - FLAP/SLAT CONTROL LEVER on the flap/slat control lever on panel 114VU.

4. Get access to the avionics compartment. Then open, put a safety clip and tag these circuit breakers:

PANEL	DESIGNATION	FIN	LOCATION
722VU	SFCC 2 SLAT	2CW	V40
742VU	ANTI ICE WING	1DL	L68
742VU	SFCC 1 SLAT	1CW	L62

5. Put the access platform below the applicable zone.

6. Remove the applicable access panels (Panels to access the wing anti-ice ducts affected during the modification).

7. Remove the insulation muffs of the joints between the wing anti-ice ducts affected during the modification.

8. Remove the safety clip and the tag and close this circuit breaker:

PANEL	DESIGNATION	FIN	LOCATION
742VU	ANTI ICE WING	1DL	L68

9. Apply CLEANING AGENTS (Material No. 11-001) to the joints that were affected by the modification.

10. Do the operational test of the wing ice-protection system (Ref. AMM TASK 30-11-00-710-801) taking into account the Note below and examine the joints for leakage of air:
    a. If bubbles form in the CLEANING AGENTS (Material No. 11-001) and are continuous, the leakage is acceptable.
    b. If the air pressure (from the bleed air supply) blows the CLEANING AGENTS (Material No. 11-001) off the joint and prevents a continuous series of bubbles, the leakage is not acceptable.

NOTE: The AMM TASK 30-11-00-710-801 has three options for the pressurization of the pneumatic system: the APU, a Ground Air Power Cart (GAPC) or the engines. For this test it is recommended to use a GAPC, which must provide a pressure between 2.41 bar (35 psi) and 2.76 bar (40 psi), as the source of bleed air. In this way hot air is avoided and the soap solution can be used. The other two options for the pressurization with hot air involve different methods to detect leaks (Ref AMM TASK 36-22-00-790-801).

11. Install the insulation muffs removed in step 7.

12. Make sure that the work area is clean and clear of tools and other items.

13. Install the access panels removed in step 6.

14. Remove the safety clips and the tags and close these circuit breakers:

PANEL	DESIGNATION	FIN	LOCATION
722VU	SFCC 2 SLAT	2CW	V40
742VU	SFCC 1 SLAT	1CW	L62

15. Remove the LOCKING TOOL - FLAP/SLAT CONTROL LEVER on the flap/slat control lever on panel 114VU.

16. Retract the slats fully (Ref. AMM TASK 27-80-00-866-802).

17. Remove all the fixtures, tools, test and support equipment used during this test.

7 TEST RESULTS

Test results have to be logged on Table 1 and any additional observations have to be recorded.

Task	Test result	Date
Leaks on the LH wing anti-ice ducts		
Leaks on the RH wing anti-ice ducts		

Table 1. List of tasks

IMPORTANT NOTE: Any comments or remarks arisen during test execution shall be written down here and sent to Engineering Department. Non-conformities shall be processed according to CASA-1023

NOTE: In Case of NCS, write down its number on Table 2

N.C.S. Number	Date

Table 2

NOTE: After this functional test execution, stamp the correspondent operation on the Production Order**.**

NOTE: Every result sheet must be stamped and attached to Production Order**.**

STAMP:	
DATE:	

8 ANNEX

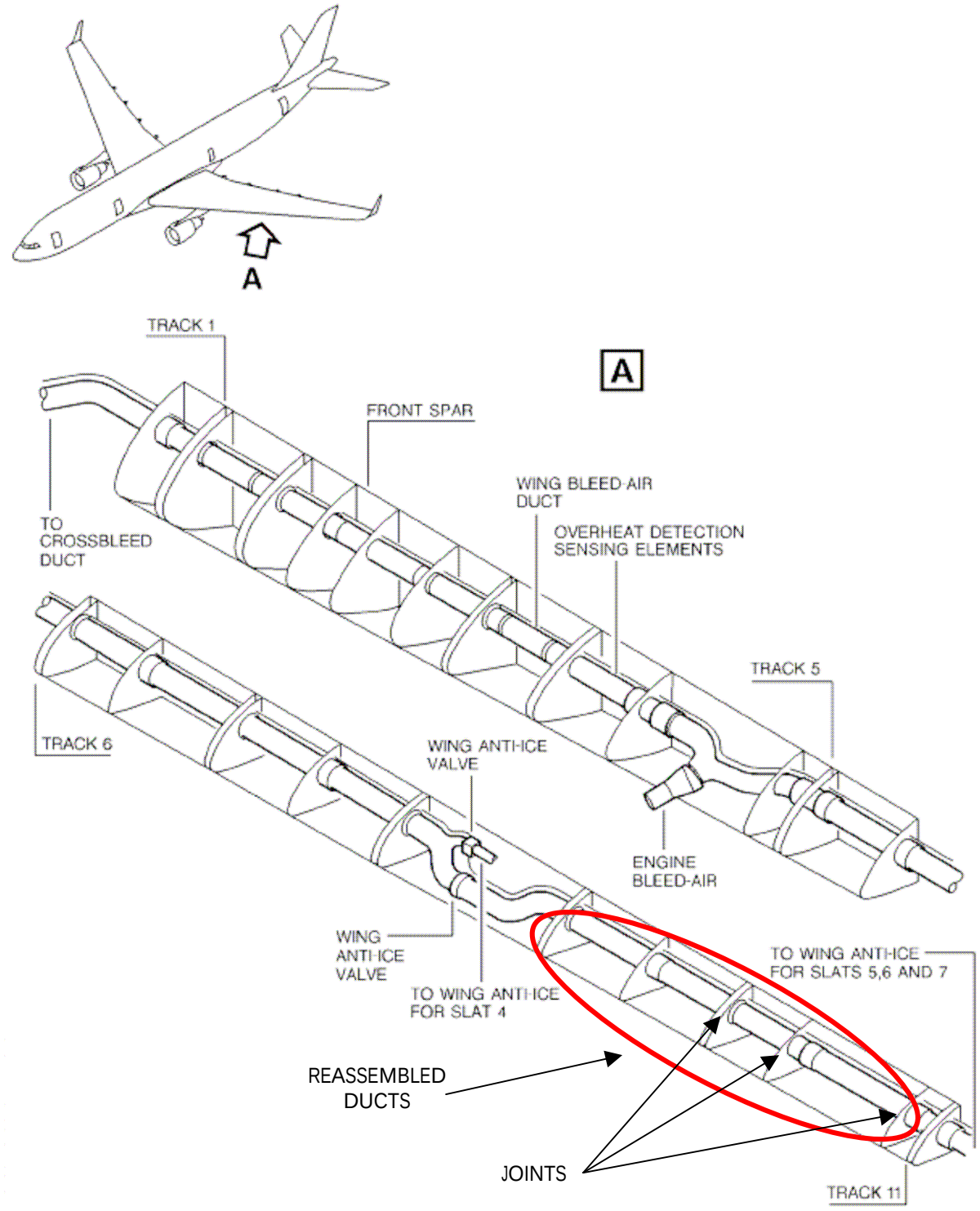

Figure 1. Wing anti-ice ducting

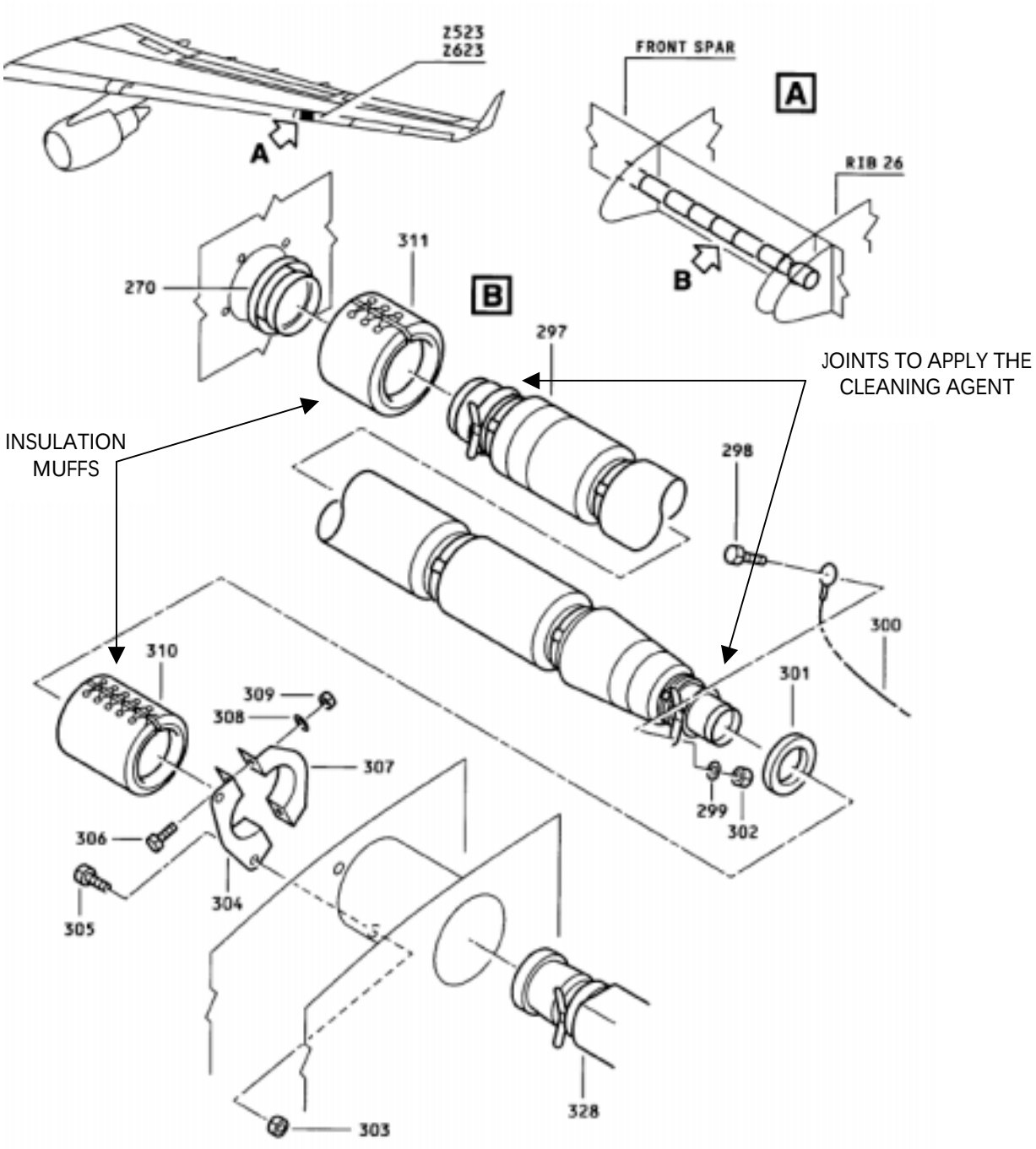

Figure 2. Detail of a wing anti-ice duct