

## AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below issues the following Airworthiness Directive (AD) under subregulation 39.001(1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

### International Aero Engines AG V2500 series

**AD/V2500/5****No. 4 Bearing Oil System Components****9/2008**

**Applicability:** International Aero Engines AG (IAE): IAE V2500-A1, V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5, V2525-D5, and V2528-D5 turbofan engines with a part listed by part number (P/N) in this AD installed.

*Note 1: These engines are installed on, but not limited to, Airbus A319, A320, A321, and McDonnell Douglas MD-90 aeroplanes.*

**Requirement:**     **1. V2500-A1 Engines:**

For V2500-A1 engines, remove the parts listed by P/N in the following Table 1 of this AD. The ATA chapter reference of the IAE V2500-A1 engine manual (E-V2500- 1IA) contains information on removing the parts.

**Table 1. - V2500-A1 Parts To Be Removed**

| ATA chapter reference | P/N        | Nomenclature                             |
|-----------------------|------------|------------------------------------------|
| 72-42-20              | 2A0367-01  | Tube Assy of, Weep, No. 4 Bearing Outer. |
| 72-42-20              | 2A2873-01  | Tube Assy of, Weep, No. 4 Bearing Outer. |
| 72-42-20              | 2A0830-01  | Tube, Scavenge, No. 4 Bearing Assy.      |
| 72-42-20              | 2A1949-01  | Tube, Scavenge, No. 4 Bearing Assy.      |
| 72-42-20              | 2A2028-01  | Tube, Scavenge, No. 4 Bearing Assy.      |
| 72-42-20              | 2A0830-001 | Tube, Scavenge, No. 4 Bearing Assy.      |
| 72-42-20              | 2A2274-01  | Tube, Scavenge, No. 4 Bearing Assy.      |
| 72-42-33              | 2A0853     | Seal Assy, No. 4 Bearing, Front.         |
| 72-42-33              | 2A2055     | Seal Assy, No. 4 Bearing, Front.         |
| 72-42-33              | 2A2834     | Seal Assy, No. 4 Bearing, Front.         |
| 72-42-33              | 2A2930     | Seal Assy, No. 4 Bearing, Front.         |
| 72-42-33              | 2A3525     | Seal Assy, No. 4 Bearing, Front.         |
| 72-42-33              | 2A3538     | Seal Assy, No. 4 Bearing, Front.         |
| 72-42-33              | 2A0851     | Support Assy, No. 4 Bearing Seal.        |
| 72-42-33              | 2A2833     | Support, No. 4 Bearing, Seal Assy.       |

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|          |            |                                                    |
|----------|------------|----------------------------------------------------|
| 72-42-33 | 2A3537     | Support, No. 4 Bearing Seal Assy.                  |
| 72-42-35 | 2A0892-01  | Duct Assy, Cooling Air, No. 4 Bearing, Front.      |
| 72-42-35 | 2A2257-01  | Duct Assy, Cooling Air, No. 4 Bearing, Front.      |
| 72-43-20 | 2A2056     | Seal Assy, No. 4 Bearing, Rear.                    |
| 72-43-20 | 2A2931     | Seal Assy, No. 4 Bearing, Rear.                    |
| 72-43-20 | 2A3526     | Seal Assy, No. 4 Bearing, Rear.                    |
| 72-43-20 | 2A0847     | Seal Ring Holder.                                  |
| 72-43-20 | 2A0891-01  | Duct Assy, Cooling Air, No. 4 Bearing, Rear.       |
| 72-43-20 | 2A1205-01  | Duct Assy, Cooling Air, No. 4 Bearing, Rear.       |
| 72-43-20 | 2A3078-01  | Duct Assy, Cooling Air, No. 4 Bearing, Rear.       |
| 72-45-11 | 2A0594     | Metering Plug, HPT Hub, Stage 1.                   |
| 72-45-11 | 2A1040     | Metering Plug, HPT Hub, Stage 1.                   |
| 72-45-11 | 2A2181     | Metering Plug, HPT Hub, Stage 1.                   |
| 72-45-13 | 2A0884     | Seal Air, HPT Stage 1.                             |
| 72-45-13 | 2A1203     | Seal Air, HPT Stage 1.                             |
| 72-45-13 | 2A0884-001 | Seal Air, HPT Stage 1.                             |
| 79-22-49 | 5R8111     | Tube A/O Oil-No. 4 Brg Scav Dif Case to Bif Panel. |
| 79-22-49 | 5R8138     | Tube A/O Oil-No. 4 Brg Scav Dif Case to Bif Panel. |
| 79-22-49 | 6A5367     | Tube A/O Oil-No. 4 Brg Scav Dif Case to Bif Panel. |
| 79-22-49 | 5A9083     | Tube A/O Oil-No. 4 Brg Discon to Discon.           |
| 79-22-49 | 5A9084     | Tube A/O Oil-No. 4 Brg Discon to Scav Valve.       |
| 79-22-49 | 5A8573     | Tube A/O Oil-Press 'T' To Pressure Transducer.     |
| 79-23-51 | 1648MK2    | Scavenge Valve.                                    |

**2. V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 Engines:**

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 engines, remove the parts listed by P/N in the following Table 2 of this AD. The ATA chapter reference of the IAE V2500-A5 engine manual (E-V2500-11A) contains information on removing the parts.

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**Table 2. - V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 Parts To Be Removed**

| <b>ATA chapter reference</b> | <b>P/N</b> | <b>Nomenclature</b>                                |
|------------------------------|------------|----------------------------------------------------|
| 72-42-20                     | 2A0367-01  | Tube Assy of, Weep, No. 4 Bearing Outer.           |
| 72-42-20                     | 2A2873-01  | Tube Assy of, Weep, No. 4 Bearing Outer.           |
| 72-42-33                     | 2A2055     | Seal Assy, No. 4 Bearing, Front.                   |
| 72-42-33                     | 2A2834     | Seal Assy, No. 4 Bearing, Front.                   |
| 72-42-33                     | 2A2930     | Seal Assy, No. 4 Bearing, Front.                   |
| 72-42-33                     | 2A3525     | Seal Assy, No. 4 Bearing, Front.                   |
| 72-42-33                     | 2A3538     | Seal Assy, No. 4 Bearing, Front.                   |
| 72-42-33                     | 2A0851     | Support Assy, No. 4 Bearing Seal.                  |
| 72-42-33                     | 2A2833     | Support, No. 4 Bearing, Seal Assy.                 |
| 72-42-33                     | 2A3537     | Support, No. 4 Bearing Seal Assy.                  |
| 72-42-35                     | 2A0892-01  | Duct Assy, Cooling Air, No. 4 Bearing, Front.      |
| 72-42-35                     | 2A2257-01  | Duct Assy, Cooling Air, No. 4 Bearing, Front.      |
| 72-43-20                     | 2A2056     | Seal Assy, No. 4 Bearing, Rear.                    |
| 72-43-20                     | 2A2931     | Seal Assy, No. 4 Bearing, Rear.                    |
| 72-43-20                     | 2A3526     | Seal Assy, No. 4 Bearing, Rear.                    |
| 72-43-20                     | 2A0847     | Seal Ring Holder.                                  |
| 72-43-20                     | 2A0891-01  | Duct Assy, Cooling Air, No. 4 Bearing, Rear.       |
| 72-43-20                     | 2A1205-01  | Duct Assy, Cooling Air, No. 4 Bearing, Rear.       |
| 72-43-20                     | 2A3078-01  | Duct Assy, Cooling Air, No. 4 Bearing, Rear.       |
| 72-45-11                     | 2A0594     | Metering Plug, HPT Hub, Stage 1.                   |
| 72-45-11                     | 2A1040     | Metering Plug, HPT Hub, Stage 1.                   |
| 72-45-11                     | 2A2354     | Metering Plug, HPT Hub, Stage 1.                   |
| 72-45-11                     | 2A3182     | Metering Plug, HPT Hub, Stage 1.                   |
| 72-45-13                     | 2A1352     | Seal Air, HPT Stage 1.                             |
| 72-45-13                     | 2A3032     | Seal Air, HPT Stage 1.                             |
| 79-22-49                     | 5R8138     | Tube A/O Oil-No. 4 Brg Scav Dif Case to Bif Panel. |

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AD/V2500/5 (continued)

|          |        |                                                    |
|----------|--------|----------------------------------------------------|
| 79-22-49 | 6A5367 | Tube A/O Oil-No. 4 Brg Scav Dif Case to Bif Panel. |
| 79-22-49 | 5A9083 | Tube A/O Oil-No. 4 Brg Discon to Discon.           |
| 79-22-49 | 5A9084 | Tube A/O Oil-No. 4 Brg Discon to Scav Valve.       |
| 79-22-49 | 5A8573 | Tube A/O Oil-Press 'T' To Pressure Transducer.     |

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, and V2533-A5 engines with HPT stage 1 rotor assembly, P/Ns 2A9521-002 and 2A9621-002, the stage 1 HPT hub metering plug, P/N 2A3182, does not need to be removed.

**3. V2525-D5 and V2528-D5 Engines**

For V2525-D5 and V2528-D5 engines, remove the parts listed by P/N in the following Table 3 of this AD. The ATA chapter reference of the IAE V2500-D5 engine manual (E-V2500-3IA) contains information on removing the parts.

**Table 3. - V2525-D5 and V2528-D5 Parts To Be Removed**

| <b>ATA chapter reference</b> | <b>P/N</b> | <b>Nomenclature</b>                          |
|------------------------------|------------|----------------------------------------------|
| 72-42-20                     | 2A0367-01  | Tube Assy of, Weep, No. 4 Bearing Outer.     |
| 72-42-20                     | 2A2873-01  | Tube Assy of, Weep, No. 4 Bearing Outer.     |
| 72-42-33                     | 2A0851     | Support Assy, No. 4 Bearing Seal.            |
| 72-42-33                     | 2A2833     | Support, No. 4 Bearing, Seal Assy.           |
| 72-42-33                     | 2A3537     | Support, No. 4 Bearing Seal Assy.            |
| 72-42-33                     | 2A2834     | Seal Assy, No. 4 Bearing, Front.             |
| 72-42-33                     | 2A2930     | Seal Assy, No. 4 Bearing, Front.             |
| 72-42-33                     | 2A3525     | Seal Assy, No. 4 Bearing, Front.             |
| 72-42-33                     | 2A3538     | Seal Assy, No. 4 Bearing, Front.             |
| 72-42-35                     | 2A2257-01  | Duct Assy, Cooling Air, No. 4 Bearing, Front |
| 72-43-20                     | 2A2056     | Seal Assy, No. 4 Bearing, Rear.              |
| 72-43-20                     | 2A2931     | Seal Assy, No. 4 Bearing, Rear.              |
| 72-43-20                     | 2A3526     | Seal Assy, No. 4 Bearing, Rear.              |
| 72-43-20                     | 2A0847     | Seal Ring Holder.                            |
| 72-43-20                     | 2A1205-01  | Duct Assy, Cooling Air, No. 4 Bearing, Rear. |
| 72-43-20                     | 2A3078-01  | Duct Assy, Cooling Air, No. 4 Bearing, Rear. |
| 72-45-11                     | 2A3182     | Metering Plug, HPT Hub, Stage 1.             |

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AD/V2500/5 (continued)

|          |        |                                  |
|----------|--------|----------------------------------|
| 72-45-11 | 2A2354 | Metering Plug, HPT Hub, Stage 1. |
| 72-45-13 | 2A1352 | Seal Air, HPT Stage 1.           |
| 72-45-13 | 2A3032 | Seal Air, HPT Stage 1.           |

For V2525-D5 and V2528-D5 engines with HPT stage 1 rotor assembly, P/Ns 2A9521-002 and 2A9621-002, the stage 1 HPT hub metering plug, P/N 2A3182, does not need to be removed.

4. Do not install any part that has a P/N listed in this AD.

**Previous Credit**

Previous accomplishment of IAE Service Bulletin V2500-ENG-72- 0541, Revision 4, dated March 12, 2008 satisfies the requirements of this AD.

*Note 2: FAA AD 2008-14-15 Amdt 39-15610 dated 2 July 2008 refers.*

Compliance: For Requirement 1 - At the next shop visit after the effective date of this AD but not later than 30 November 2008.

For Requirement 2 - At the next shop visit after the effective date of this AD but not later than 30 June 2011.

For Requirement 3 - At the next shop visit after the effective date of this AD but not later than 30 June 2011.

For Requirement 4 - From the effective date of this AD.

This Airworthiness Directive becomes effective on 28 August 2008.

Background: This AD results from instances of oil loss from the No. 4 bearing compartment. The issuing of this AD is intended to prevent heat damage to high-pressure turbine (HPT) and low-pressure turbine (LPT) critical life limited hardware such as the HPT stage 1-2 airseal. Damage to the HPT stage 1-2 airseal could cause uncontained engine failure and damage to the aeroplane.



James Coyne  
Delegate of the Civil Aviation Safety Authority

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