SUPPLEMENT S007
TO THE AIRPLANE FLIGHT MANUAL
DA 50 C

RECIRCULATING AIR - CABIN COOLING

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0.2 RECORD OF REVISIONS

Rev. No.	Reason	Chap-ter	Page(s)	Date of Revision	Approval Note	Date of Approval	Date Inserted	Signature
2	OÄM 50-002/g	All	All, except Cover Page	22-Nov-2022	Issue 002 of AFM Supplement S007 to AFM Doc. No. 9.01.01-E is approved under the authority of DOA ref. EASA 21J.052	02-Dec-2022		
3	OÄM 50-002/k	All	All	07-Aug-2025	Rev.3 to AFM Supplement S007 to AFM Doc. No. 9.01.01-E is approved under the authority of DOA ref. EASA 21J.052	21-Aug-2025		

0.3 LIST OF EFFECTIVE PAGES

Chapter	Page	Date
0	9-S007-1	07-Aug-2025
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	9-S007-4	07-Aug-2025
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0.4 TABLE OF CONTENTS

1. GENERAL

This Supplement describes the function of the Air Conditioning System (RACC) and supplies all information for the safe and efficient operation of the system.

This Supplement is a permanent part of the AFM and must remain in the AFM at all times when the Recirculating Air - Cabin Cooling System is installed.

2. OPERATING LIMITATIONS

2.14 LIMITATION PLACARDS

On the Instrument Panel:

THE RACC MUST BE SWITCHED OFF
IF THE ADF IS USED FOR NAVIGATION

2.15 OTHER LIMITATIONS

2.15.8 RECIRCULATING AIR CABIN COOLING LIMITATIONS

The Recirculating Air Cabin Cooling System adversely effects the accuracy of the ADF system (if installed). The RACC must be switched OFF if the ADF system is used for navigation.

3. EMERGENCY PROCEDURES

3.1 INTRODUCTION

3.1.1 GENERAL

NOTE

It is reccommended to switch OFF the RACC System at Outside Air Temperatures below 10 °C (50 °F).

1. RACC control panel ON/OFF button . . . . . OFF (press for 3 seconds)

END OF CHECKLIST

3.7 OTHER EMERGENCIES

3.7.9 RECIRCULATING AIR - CABIN COOLING SYSTEM FAILURES

(a) Smoke and Fire

1. RACC control panel ON/OFF button . . . . . OFF (press for 3 seconds)
2. Continue with Section 3.6 - SMOKE AND FIRE of the main AFM.

END OF CHECKLIST

(b) Excessive Noise or Vibration

1. RACC control panel ON/OFF button . . . . . OFF (press for 3 seconds)

END OF CHECKLIST

(c) Failure Indication on Control Panel Display

If Failure "FP", "OP" or "SC" Is Displayed on Control Panel Display

1. RACC control panel ON/OFF button . . . . . OFF (press for 3 seconds)

No Airflow / No Cooled Airflow from RACC Overhead Air Outlets

1. RACC control panel ON/OFF button . . . . . OFF (press for 3 seconds)

END OF CHECKLIST

3A. ABNORMAL OPERATING PROCEDURES

NOTE

It is reccommended to switch OFF the RACC System at Outside Air Temperatures below 10 °C (50 °F).

4. NORMAL OPERATING PROCEDURES

4.5 CHECKLISTS FOR NORMAL OPERATING PROCEDURES

NOTE

It is reccommended to switch OFF the RACC System at Outside Air Temperatures below 10 °C (50 °F).

4.5.1 PRE-FLIGHT INSPECTION

I. Cabin Check

Recirculating Air - Cabin Cooling System:

a) RACC control panel . . . . . check OFF
(no indication on RACC control unit or LED flashing)

END OF CHECKLIST

II. Walk-Around Check, Visual Inspection

6. Fuselage, Right Side, Underside:

a) RACC air in/outlet . . . . . visual inspection

END OF CHECKLIST

4.5.22 RACC SYSTEM GROUND OPERATION

(a) Ground Operation with External Power Unit on Rear EPU plug.

NOTE

The External Power Unit must be capable to supply a minimum of 100 A at 28 V DC to operate the RACC - System.

1. POWER lever. . . . . check IDLE
2. Parking brake . . . . . set
3. AVIONIC MASTER . . . . . check OFF
4. ELECT. MASTER . . . . . check OFF
5. ENGINE MASTER . . . . . check OFF
6. External power to rear EPU plug . . . . . connect
7. RACC control panel ON/OFF button . . . . . ON

END OF CHECKLIST

(b) Ground Operation with Engine Running

NOTE

At low RPM the RACC is automatically disconnected from its power supply and requires re-activation. This may happen during the ECU test and taxiing.

1. RACC control panel ON/OFF button . . . . . ON

END OF CHECKLIST

(c) Power Off

1. RACC control panel ON/OFF button . . . . . OFF (press for 3 seconds)

END OF CHECKLIST

4.5.23 RACC SYSTEM OPERATION IN FLIGHT

NOTE

It is reccommended to switch OFF the RACC System at Outside Air Temperatures below 10 °C (50 °F).

NOTE

At low RPM the RACC is automatically disconnected from its power supply and requires re-activation. This may happen during the ECU test and taxiing.

(a) Power On

1. RACC control panel ON/OFF button . . . . . ON

END OF CHECKLIST

(b) Power Off

1. RACC control panel ON/OFF button . . . . . OFF (press for 3 seconds)

END OF CHECKLIST

4.5.24 ENGINE SHUT-DOWN

1. RACC air in/outlet . . . . . check OFF
   (no indication on RACC control unit or LED flashing)

END OF CHECKLIST

5. PERFORMANCE

5.3 PERFORMANCE TABLES AND DIAGRAMS

5.3.5 TAKE-OFF DISTANCE

NOTE

With the Recirculating Air - Cabin Cooling System switched ON the Ground Roll Distance is increased by 75 m (246 ft) and the Take-Off Distance is increased by 150 m (492 ft).

NOTE

At ISA, sea level and MTOM the Take-Off Distance is increased by 44 m (144 ft) resulting in a total Take-Off Distance of 778 m (2552 ft).

5.3.6 CLIMB PERFORMANCE

NOTE

The Rate of Climb with the Recirculating Air - Cabin Cooling System switched ON is reduced by 70 ft/min.

NOTE

For the Take-Off Climb with 100 % power at ISA, sea level and MTOM the climb rate is reduced by 47 ft/min resulting in a Take-Off climb rate of 806 ft/min.

5.3.8 TIME, FUEL AND DISTANCE TO CLIMB

NOTE

The time, fuel and distance to climb with the RACC system switched ON is increased by 15%.

5.3.9 CRUISE PERFORMANCE

NOTE

The Cruise Speed with the Recirculating Air - Cabin Cooling System switched ON is reduced by 10 kts.

6. MASS AND BALANCE

No change.

7. DESCRIPTION OF THE AIRPLANE AND ITS SYSTEMS

7.16 RECIRCULATING AIR - CABIN COOLING SYSTEM

7.16.1 GENERAL

The airconditioning system (Recirculating Air Cabin Cooling System - RACC) consists of the following main parts:

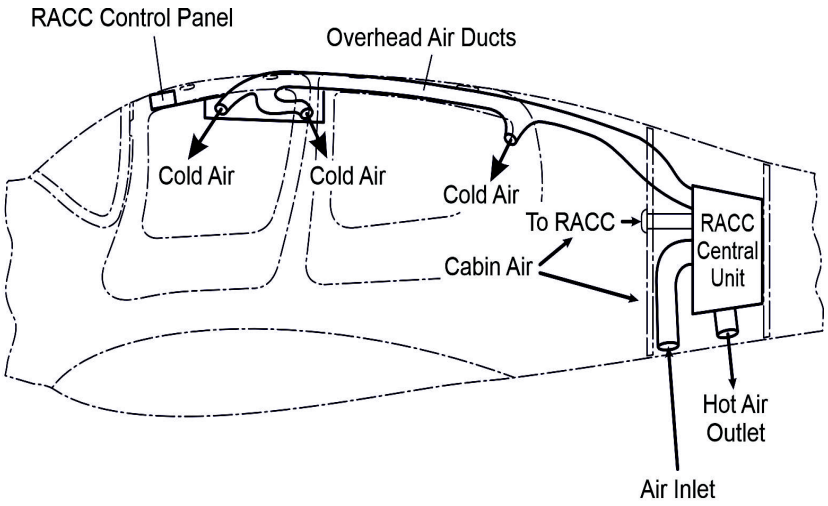
- RACC control panel (in front of central headliner device unit)
- Overhead air ducts and eyeball vent air outlets
- RACC unit (aft of the baggage compartment cover)

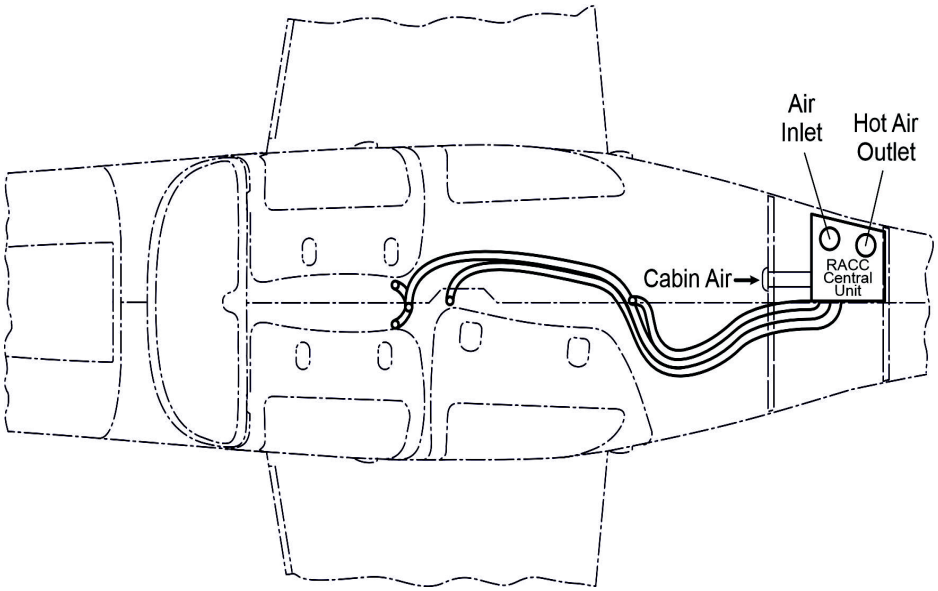
The RACC system is not connected to the primary electrical system of the airplane. Alternator 2 provides the electrical power to operate the RACC System. As soon as an alternator failure is detected by the G1000 system, the RACC is disconnected from the power supply of Alternator 2.

Furthermore, in case of activation of the essential bus, the RACC is disconnected from the power supply.

NOTE

The RACC System effects the performance of the airplane.
Refer to Chapter 5 of this Supplement.





RACC System Schematic

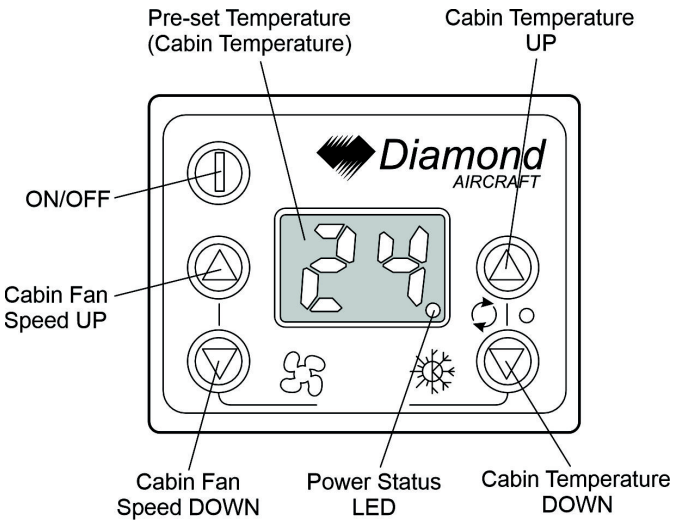
7.16.2 CONTROL PANEL

The RACC control panel is located in front of the central headliner device unit. The RACC System is electrically connected to alternator 2 and to the rear EPU plug, which provides the electrical power for the system. If electrical power is provided, the Power Status LED flashes. To operate the RACC System press the ON/OFF button once and wait until the display is permanently illuminated. The fan speed (three speed settings) is controlled with the UP and DOWN buttons to the left of the temperature display. The temperature preset buttons are located to the right of the temperature display. The preset cabin air temperature is shown on the temperature display in °C. Press shortly on the ON/OFF button to get the actual cabin temperature displayed.

In case of certain failures in the system, a failure code is displayed on the control panel.

FP	Low or high pressure situation in the refrigerant circuit
OP and SC	Cabin temperature sensor failure

In that case the RACC has to be switched off and maintenance on the RACC unit is necessary. Refer to Chapter 3. - Emergency Procedures.



Control Panel

7.16.3 RACC UNIT

The RACC unit is located behind the passenger seats and the rear baggage cover. It takes cabin air at the rear baggage cover and recirculates it through the central unit and via the overhead air duct to the cooling air nozzles in the overhead panel. The RACC unit consists of an electrically driven compressor, two fans, heat exchangers, air inlets, air outlets, a control panel and a control box. According to the preset cabin air temperature on the control panel, the control box operates the compressor and all essential control elements of the central unit in order to achieve the preset cabin air temperature.

7.16.4 RACC POWER SUPPLY

As soon as the engine is running, alternator 2 provides the electrical power for the RACC system.

The RACC system is automatically disconnected from the electrical system in case of a failure of alternator 2 or if the ESSENTIAL BUS switch is set to ON.

On the ground, the RACC System is powered via a separate EPU plug, located on the RH rear lower fuselage shell.

8. AIRPLANE HANDLING, CARE AND MAINTENANCE

No change.

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