
AIRWORTHINESS DIRECTIVE

On the commencement date specified below, and for the reasons set out in the background section, the CASA delegate whose signature appears below repeals Airworthiness Directive (AD) AD/AIRCON/12 Amdt 4 and issues the following AD under subregulation 39.001 (1) of CASR and subsection 33 (3) of the *Acts Interpretation Act 1901*. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct an 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.

Airconditioning Equipment

**AD/AIRCON/12
Amdt 5**

**Hartzell Engine Technologies, Kelly
Aerospace Power Systems, and Janaero
Devices - Cabin Combustion Heaters**

20/2019

Applicability: This AD applies to Hartzell Engine Technologies, Kelly Aerospace Power Systems and Janaero Devices Combustion Heaters, B-Series Models B1500, B2030, B3040, B4050 and B-Series Extended Life (*EL*) Models B2500, B3500 and B4500, marked as meeting the standards of FAA TSO-C20, and fitted to an aircraft.

- Requirement:**
1. **INSPECTION**

All of the following action must be taken:

 - (a) inspection of the combustion heater installation, including any airframe mounted components necessary for heater operation, for general condition and security;
 - (b) inspection of the hot air outlet ducting adjacent to the heater for freedom from exhaust contamination and corrosion;
 - (c) cleaning the heater fuel filter (if installed),
 - (d) checking the heater fuel system for loose connections and leaks using system pressure;
 - (e) inspection of the heater drain lines for freedom from obstructions;
 - (f) inspection and adjustment of spark plugs and contact breaker points where necessary, in accordance with the manufacturer's published instructions.
 2. **PRESSURE TEST**
 - (1) At least 1 of the following actions must be taken:
 - (a) a pressure decay test of the combustion heater in accordance with the instructions contained in Janitrol Aircraft Heaters – Overhaul and Maintenance Manual part number (*P/N*) 24E25-1 (for the B-Series (standard) units), and P/N 94E47 (for the B-Series (*EL*) units) as in force from time to time; or
 - (b) a functional check of the combustion heater during which the carbon monoxide (*CO*) level in the heated air entering the cabin is measured. Quantitative CO must be used and the CO level entering the cabin must be less than 1 part in 20 000 parts of air (equivalent to 50 parts per million).

Airconditioning Equipment

AD/AIRCON/12 Amdt 5 (continued)

- (2) If the heater fails any part of the test or check mentioned in paragraph 2 (1) of this AD, the heater must be:
 - (a) overhauled in accordance with Requirement 4 of this AD; or
 - (b) disabled in accordance with Requirement 5 of this AD; or
 - (c) replaced.

3. PRESSURE SWITCH TEST

- (1) Subject to paragraph 3 (3) of this AD, an operational test of the air pressure switch must be conducted in accordance with the combustion heater manufacturer's Overhaul and Maintenance Manual, as in force from time to time.
- (2) If the switch fails the test mentioned in paragraph 3 (1) of this AD, the switch must be:
 - (a) disabled in accordance with Requirement 5 of this AD; or
 - (b) replaced.
- (3) Compliance with Requirement 3 of this AD is not required if an air pressure switch P/N 94E42 is installed.

4. OVERHAUL

The heater and the associated airframe mounted components necessary for heater operation must be overhauled in accordance with the overhaul and maintenance manual for the particular model of combustion heater, as in force from time to time.

5. DISABLE

Subject to any minimum equipment list requirements or permissible unserviceabilities approved under regulation 37 of the *Civil Aviation Regulations 1988* that are applicable to the aircraft, the heater must be disabled as follows:

- (a) cap the fuel supply line;
- (b) disconnect the electrical power and ensure that the connections are properly secured to reduce the possibility of electrical spark or structural damage;
- (c) inspect and test to ensure that the cabin heater system is disabled and the cabin fans are operative;
- (d) ensure that no other aircraft system is affected by this action;
- (e) ensure there are no fuel leaks;
- (f) fabricate a placard with the words "System Inoperative" and install the placard at the heater control valve within the pilot's clear view.

Note 1: Comply with Kelly Aerospace Power Systems Service Bulletin No. 25 (as in force at the date of this AD) for procedures to temporarily disable the heater.

Airconditioning Equipment

AD/AIRCON/12 Amdt 5 (continued)

Note 2: Permanent disablement of the heater will require approved modification data including internal inspection and functional tests before return to service of the aircraft.

Note 3: FAA AD 2004-21-05 Amdt 39-13826 is consistent with this AD.

- Compliance: 1, 2 and 3. The actions in Requirements 1, 2 and 3 must be taken:
- (a) unless previously accomplished in accordance with Requirements 1, 2 and 3 of AD/AIRCON/12 Amdt 4, by the earlier of the following after the effective date of this AD:
 - (i) 100 heater hours;
 - (ii) 12 months' time in service (**TIS**); and
 - (b) at intervals not exceeding the earlier of the following:
 - (i) 100 heater hours;
 - (ii) 24 months' TIS.
4. The action in Requirement 4 must be taken at intervals in accordance with the heater manufacturer's published Time Between Overhaul for the particular heater model.
5. The action in Requirement 5 must be taken as required by Requirements 2 and 3 of this AD.

Note 4: If a heater hour meter is not installed, the aircraft hours may be divided by 2 to provide the heater TIS hours.

This AD commences on 16 October 2019.

Background: Two heater failures, one resulted in explosion and the other in fire of the baggage compartment prompted this AD action.

AD/AIRCON/12 became effective on 2 January 1997.

AD/AIRCON/12 Amdt 1 became effective on 13 June 2002.

AD/AIRCON/12 Amdt 2, which became effective on 20 January 2005, removed the terminating action that was provided by the fitment of ceramic-coated combustion tubes. It has been demonstrated that ceramic-coated combustion tubes suffer from the same problems as uncoated combustion tubes.

AD/AIRCON/12 Amdt 3, which became effective on 14 April 2005, changed the overhaul period to include an option to follow the manufacturer's recommended overhaul period and clarification of aspects relating to the disabling of the heater.

AD/AIRCON/12 Amdt 4 made reference to the overhaul and maintenance manual for the B-Series (EL) units and pertinent manufacturer's data relative to heater disabling and return to service. The overhaul compliance statement was simplified to reflect manufacturer requirements with minor editorial changes made throughout the text for readability.

Airconditioning Equipment

AD/AIRCON/12 Amdt 5 (continued)

AD/AIRCON/12 Amdt 5 removes Note 1 from the applicability section of the AD.
Note 1 referenced AD/AIRCON/9 which has been cancelled.

A handwritten signature in black ink, appearing to read 'van Dijk', with a large, sweeping flourish extending downwards and to the left.

Pieter van Dijk
Delegate of the Civil Aviation Safety Authority

2 October 2019