



A Textron Company

ALERT SERVICE BULLETIN

430-16-57

7 October 2016

Revision A, 8 December 2016

**MODEL AFFECTED:** 430

**SUBJECT:** ENGINE, COMBUSTION ASSEMBLY - INSPECTION OF OUTER COMBUSTION CASE P/N M250-10404

**HELICOPTERS AFFECTED:** Serial number 49001 and subsequent.

**COMPLIANCE:** Refer to attached Rolls-Royce Corporation (RRC) Revision 1 of the ALERT Commercial Engine Bulletin CEB A-72-5070, dated November 30, 2016.

**DESCRIPTION:**

The purpose of Revision A of this bulletin is to achieve complete distribution of the attached Revision 1 of supplier bulletin to the current affected model distribution list on record by Bell Helicopter Textron.  
Applicability of this bulletin to any spare part shall be determined prior to its installation on an affected helicopter.

**APPROVAL:**

Refer to attached Rolls-Royce Corporation (RRC) Revision 1 of the ALERT Commercial Engine Bulletin CEB A-72-5070, dated November 30, 2016.

**CONTACT INFO:**

For any questions regarding this bulletin, please contact:

Rolls-Royce M250 Customer Support Group  
Email: [helicoptercustsupp@rolls-royce.com](mailto:helicoptercustsupp@rolls-royce.com)  
Phone: +1 (317) 230-2720 or inside North America: 1-888-255-4766



## ENGINE, COMBUSTION ASSEMBLY - INSPECTION OF OUTER COMBUSTION CASE P/N M250-10404

### 1. PLANNING INFORMATION

#### A. Effectivity

##### (1) Engines

All Rolls-Royce Model 250®-C28 Series, Model 250-C30 Series, Model 250-C40B, Model 250-C47 Series, and Model 250-C47E Series engines with M250-10404 Outer Combustion Case installed are affected by this bulletin.

##### (2) Spares - Affected

#### B. Reason

Rolls-Royce has become aware of the potential of M250-10404 Outer Combustion Cases to crack in certain locations. This commercial engine bulletin (CEB) is being released to further decrease the inspection interval from 150 to 25 hours in order to discover potential power and performance reduction causing cracks.

#### C. Description

This CEB provides the instructions for operators perform a repetitive visual and Leak-Tec inspection at every 25 flight hours.

#### D. Approval

Technical aspects are FAA approved.

#### E. Compliance

Compliance Code 2. To be complied with within 25 flight hours after receipt of this bulletin and every 25 flight hours thereafter.

(1) For an Outer Combustion Case (OCC) that complies with the minimum weld size requirements in 2.A.(2), the 25 hour repetitive inspection per this CEB is no longer required. Refer to the applicable Operations and Maintenance Manual for recommended inspection intervals.

(2) For operators in remote locations with no maintenance personnel available, the inspection can be extended to a maximum of 50 hours after receipt of bulletin and 25 hours thereafter.

#### F. Interchangeability - Not affected

#### G. Material Availability

NEW P/N	NAME	QTY/ENG
M250-10404	Case Assy, Outer Combustion	1

#### H. Tooling - Not affected

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Model 250-C28 Series	CEB A-72-2218
Model 250-C30 Series	CEB A-72-3303
Model 250-C47 Series	CEB A-72-6085
Model 250-C40B	CEB A-72-5070
Model 250-C47E Series	CEB A-72-7002

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- I. Weight and Balance – Not affected
- J. Electrical Load Data – Not affected
- K. References
  - (1) 16W2 Operation and Maintenance Manual, Turboshaft Models 250–C28B, –C28C.
  - (2) 14W2 Operation and Maintenance Manual, Turboshaft Models 250–C30, –C30S, –C30G, –C30G/2, –C30P, –C30M (OMM).
  - (3) CSP21003 Operation and Maintenance Manual, Turboshaft M250–C30R/3 (OMM).
  - (4) CSP21004 Operation and Maintenance Manual, Turboshaft M250–C47M (OMM).
  - (5) CSP21001 Operation and Maintenance Manual, Turboshaft Model 250–C47B (OMM).
  - (6) CSP21000 Operation and Maintenance Manual, Turboshaft M250–C40B (OMM).
  - (7) CSP21006 Operation and Maintenance Manual, Turboshaft M250–C30R/3M (OMM).
  - (8) CSP21011 Operation and Maintenance Manual, Turboshaft Models M250–C47E.
- L. Other Publications – Not affected
- M. Prerequisites – None

## 2. ACCOMPLISHMENT INSTRUCTIONS

- A. Inspect the inner fuel nozzle boss doubler weld size on the external surface of the OCC.

**NOTE:** If due to installation constraints, the weld cannot be fully inspected per [section A.\(1\)](#) below, skip to [section 2.B.](#) and complete the visual and Leak–Tec inspection.

- (1) Inner fuel nozzle boss weld depicted in [Fig. 1](#) must be at least 0.085 in. (2.2 mm) in height as measured from the fuel nozzle boss doubler

**NOTE:** Additional clarification on the acceptance criteria is shown in [Fig. 2](#).

- (2) If the leg of the weld meets the minimum size requirements at all circumferential locations around the fuel nozzle boss:
  - (a) Mark “CW” adjacent to the part number per 478–2D1 shallow vibropeen to track bulletin compliance.
  - (b) Proceed to Section 2.C

**NOTE:** If this specific OCC qualifies for this alternate compliance method, the requirement for Visual and Leak–Tec inspections every 25 hours is lifted and the inspection interval returns to 150 hours per the Operations and Maintenance Manual.

- (3) If the fuel nozzle boss inner weld does not meet the size requirements in [Fig 1](#):

- (a) Comply with inspection criteria in [section 2.B.\(1\)](#) and [2.B.\(2\)](#)

**NOTE:** OCCs that do not meet the definition in [Fig.1](#) are required to continue the recurring 25 hour inspection requirement.

- B. Inspection – Accomplishment of both items (1) and (2) must be completed at time of compliance.

- (1) Using a bright light (flashlight or equivalent) and mirror, inspect all the welds on the outer combustion case (see [Fig. 3](#)). No cracks are allowed. An outer combustion case that is cracked must be removed from service and repaired. Welded areas are:

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- (a) Horizontal butt welds on outer surface and between the air discharge tube attachment flanges and gas producer attachment flange on forward side.
- (b) Both forward and aft circumferential seam welds between outer case and inner liner.
- (c) Welds for attaching bosses for fuel nozzle, both combustion case drain valves, both igniter plugs.

**NOTE:** Pay particular attention to welds in areas surrounding the threaded fuel nozzle boss.

- (2) Inspect, utilizing the Leak-Tec (step 2.B.(2)(a)) or fluorescent penetrant inspection (step 2.B.(2) (b)) method, the above designated areas (steps 2.B.(1)(a) thru 2.B.(1)(c)). No cracks are allowed. An outer combustion case that is cracked must be removed from service and repaired. Inspect the designated areas in one of the two methods as follows:

**CAUTION:** DO NOT APPLY LEAK-TEC TO A HOT ENGINE. DAMAGE TO THE ENGINE CAN OCCUR. THE ENGINE TEMPERATURE MUST BE SATISFACTORY FOR INSPECTION WHEN THE BARE HAND CAN BE PLACED ON THE OUTER COMBUSTION CASE WITHOUT DISCOMFORT.

- (a) Apply Leak-Tec to the above designated areas (steps 2.B.(1)(a) thru 2.B.(1)(c)) and utilizing a suitable power source, motor the engine to approximately 20% N1 (or as close as possible considering the power available) and look for bubbles. No bubbles (crack indication) are allowed.

**NOTE:** Observe the duty cycle time on the starter-generator.

- (b) Fluorescent penetrant inspect the above designated areas (steps 2.B.(1)(a) thru 2.B.(1)(c)) utilizing a light source for cracks. No crack indications are allowed.

**NOTE:** Refer to Customer Support Video instructions for the Leak-Tec inspection method. <https://youtu.be/Ju4arLnmmGc>

- C. Record compliance in the Engine Log Books, Engine Assembly, and Turbine Assembly pages as applicable with the following:

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Model 250-C30 Series	CEB 72-3303
Model 250-C47 Series	CEB 72-6085
Model 250-C40B	CEB 72-5070
Model 250-C47E Series	CEB 72-7002

**NOTE:** Additional blank CEB Compliance log book pages are available from Aviall.

**NOTE:** Notify Rolls-Royce Customer support via e-mail at [Helicoptercustsupp@rolls-royce.com](mailto:Helicoptercustsupp@rolls-royce.com) of any OCC which has "CW" added per [Para 2.A.\(2\)\(a\)](#) and the OCC serial number.

### 3. MATERIAL INFORMATION

#### A. Configuration Chart

NEW P/N	QTY/ ENG	NAME	OLD P/N	QTY/ ENG	INSTRUCTIONS/ DISPOSITION
M250-10404	1	Case Assy, Outer Combustion	M250-10404	1	1

#### INSTRUCTIONS/DISPOSITION NOTES

- 1. New or inspected item.

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### 4. INSTRUCTIONS/DISPOSITION NOTES:

#### A. Inspected Item

If Outer Combustion Case is found to have a crack, remove and replace component, and email the following to Rolls-Royce at [helicoptercustsupp@rolls-royce.com](mailto:helicoptercustsupp@rolls-royce.com):

Operator:  
Engine S/N:  
OCC P/N Removed:  
OCC S/N Removed:  
OCC Hours:  
OCC Cycles:  
Date of Compliance:  
Photo of the crack in the component

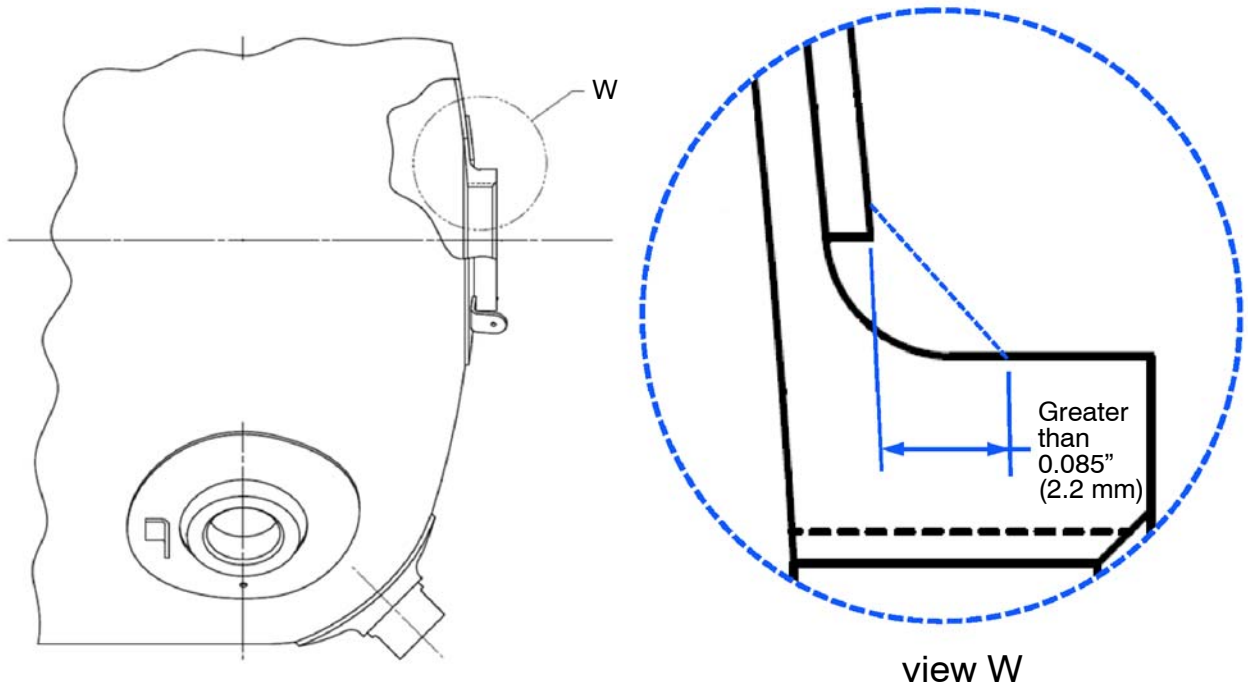
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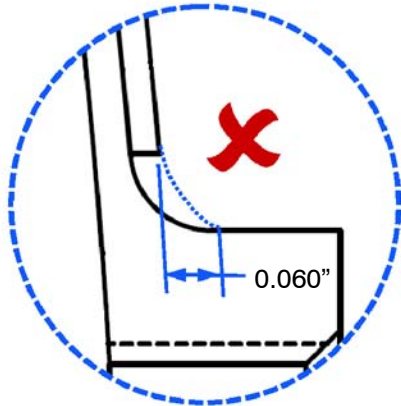
Examples of Acceptable and Unacceptable Weld Sizes  
FIG. 1

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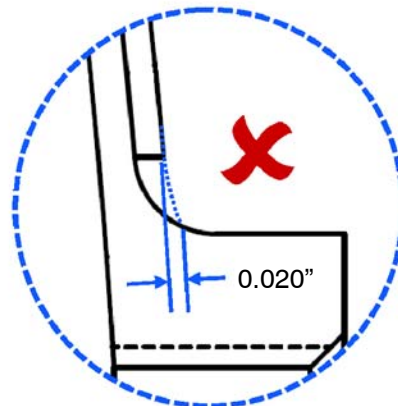
Model 250-C28 Series	CEB A-72-2218
Model 250-C30 Series	CEB A-72-3303
Model 250-C47 Series	CEB A-72-6085
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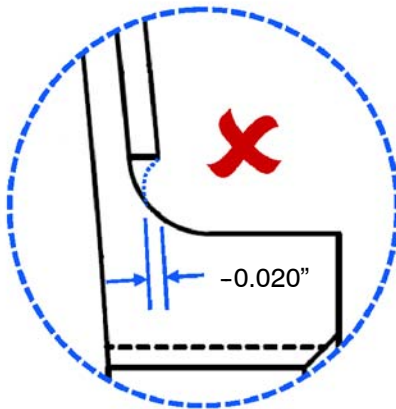
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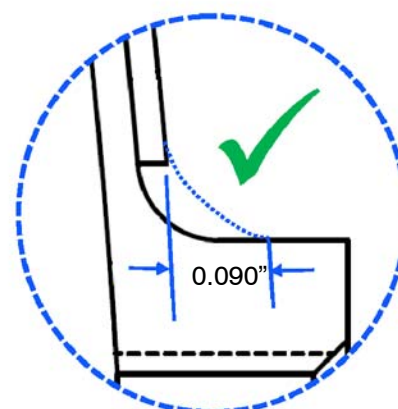
Weld size too small



Weld size too small



Weld undercut not allowed



Weld size acceptable

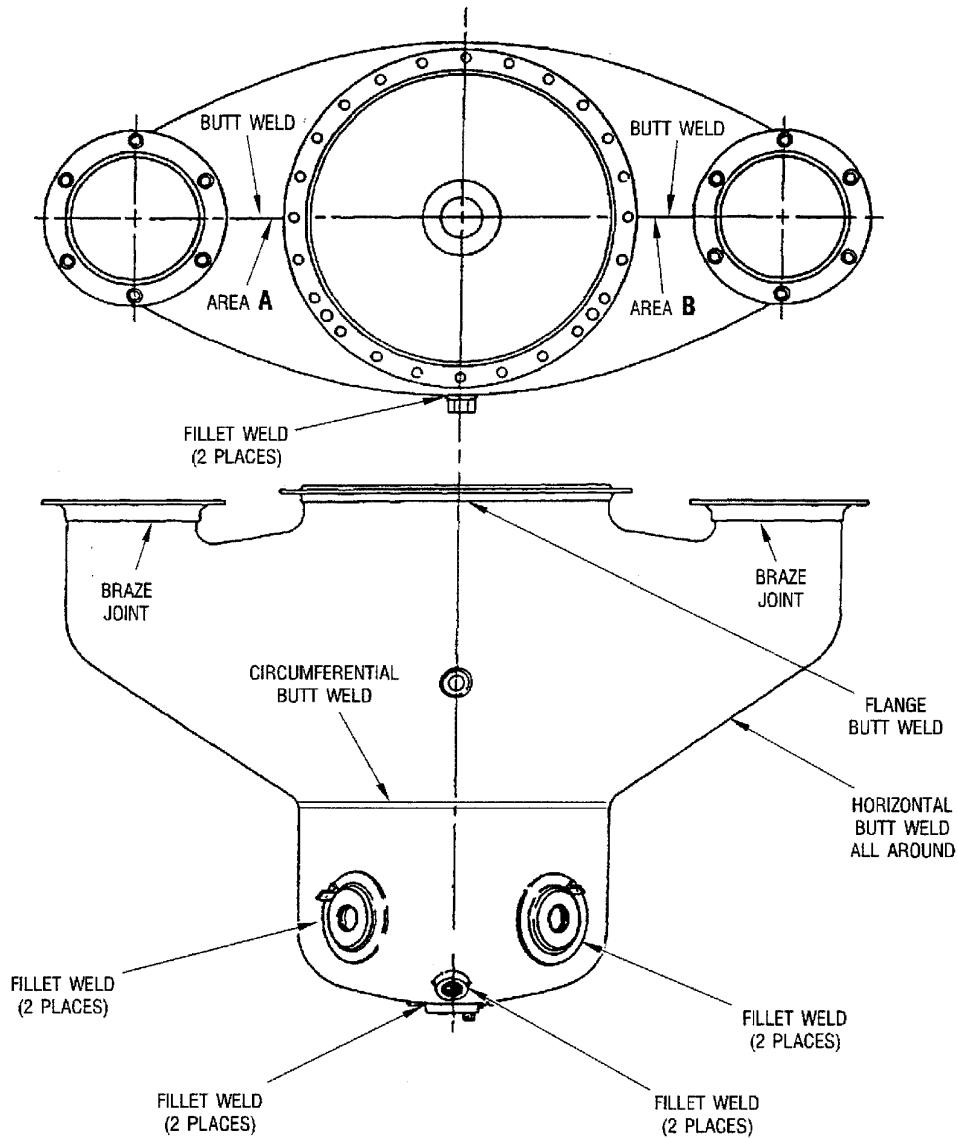
Examples of Acceptable and Unacceptable Weld Sizes  
FIG. 2

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Visual Inspection Areas of the Combustion Case  
FIG. 3

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