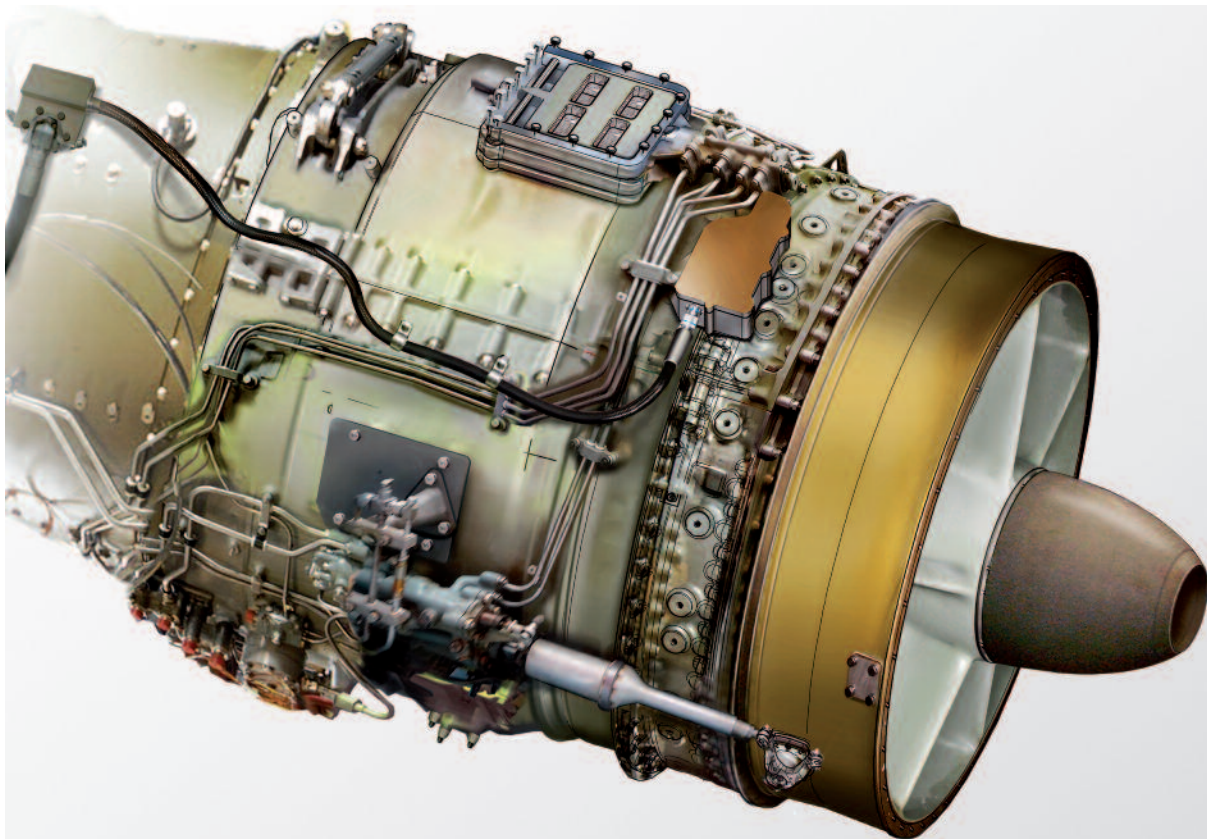


ES2008 Eddy Current Speed Probe retrofit – Mod 5033

Replaces the existing magnetic pulse probes and associated mechanical systems with a more reliable electronic measuring system utilising Eddy Current Speed Probes.



Engineered solution purpose

This engineered solution eliminates the need for all internal wheel case and radial drive features that were required for the magnetic pulse speed probe. This in turn will both improve availability and reliability of the gas generator as well as reduce the cost of an overhaul. The Eddy Current Speed Probe will be the latest and current standard for the Avon.

Benefits

- Reduced long-term cost of ownership via lower future overhaul costs for the internal and external drive system, up to \$35,000 savings per overhaul.
- Improved availability and reliability due to the elimination of the mechanical drive components of the current system. This in turn will eliminate the risk of failures that require an engine to be pulled from service.
- Improved maintainability and reparability due to full access to the new system along with reduced number of components.

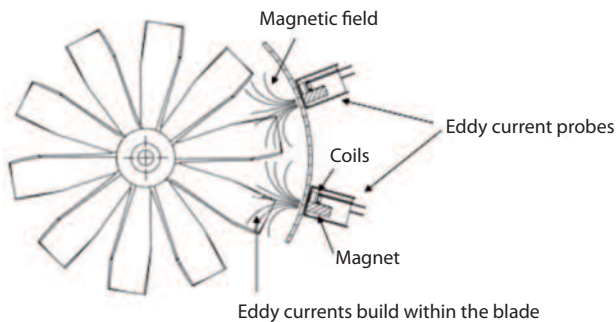
Technical description

This upgrade modification requires the installation of a new speed probe, which uses Eddy current technology to measure speed.

The speed probe will be installed on the 00 compressor casing using minor non-intrusive machining and senses the eddy current produced by the passing compressor blades through the casing.

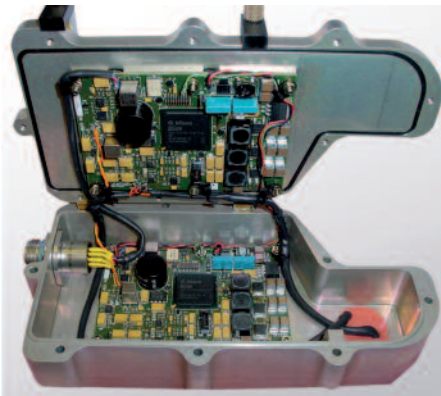
The speed probes are mechanically integrated to a Signal Conditioning Unit (SCU), which determines the blade passing frequency from the eddy current and converts it to the existing probe pulse / rev scaling. With the proposed design, the current features needed to drive the phonic wheel are no longer needed.

The Eddy Current Speed Probe is the latest Avon 200 production standard and comes with both CSA, CE & SIL 3 certification.

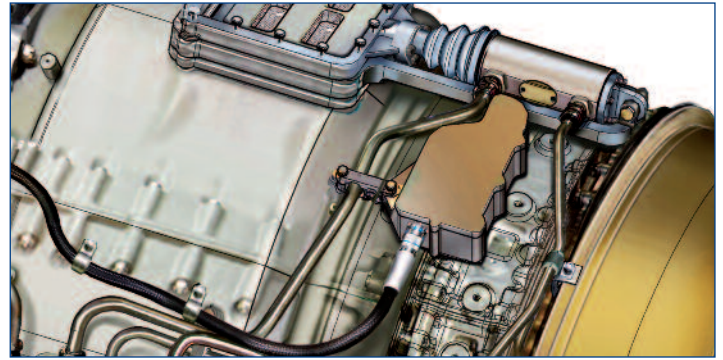


Applicability

- All marks if Phase 2 configured Avon engines
- Plug & Play, no need for control system changes. Existing take-off / flying leads are utilised.



The signal conditioning unit



Scope of work

- Minor, non-intrusive, machining of stage 00 compressor casing
- Removal of Magnetic Speed Probe and internal gear box
- Installation of Signal Conditioning Unit
- Installation of Junction Box and Harness
- A 24 volt DC supply needs to be provided by the customer.

Undertaken

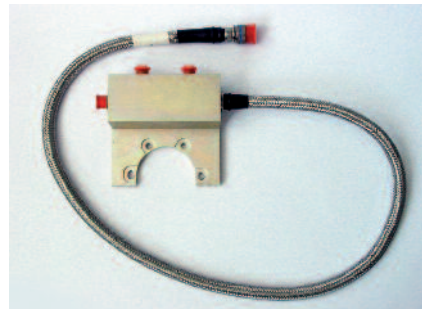
Can only be undertaken at overhaul.

Bill of Materials

- Signal Conditioning Unit
- Junction Box and Harness
- Engine Blanks
- Power Supply Harness options available for customer installation in accordance with local electrical requirements.

Complementary upgrades

- Avon VIGV Closed Loop Control
- Controls Upgrade
- Instrumentation Upgrade.



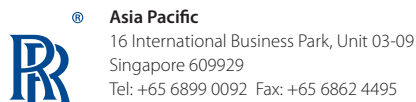
Junction box and harness



Regional Sales Offices

Americas – North America
8303 McHard Road, Houston, Texas 77053, USA
Tel: +1 281 436 6700 Fax: +1 281 436 6777

Americas – South America
Av. Almirante Barroso 52, 9th Floor, 20031-000
Rio de Janeiro, Brazil
Tel: +55 21 2277 0100 Fax: +55 21 2277 0168



Asia Pacific
16 International Business Park, Unit 03-09
Singapore 609929
Tel: +65 6899 0092 Fax: +65 6862 4495

Europe / Middle East / Africa
Ansty, Coventry CV7 9JR
United Kingdom
Tel: +44 (0)24 7662 4000 Fax: +44 (0)24 7662 4666

www.rolls-royce.com
www.energymanager-online.com

© Rolls-Royce plc 2010

The information in this document is the property of Rolls-Royce plc and may not be copied or communicated to a third party, or used for any purpose other than that for which it is supplied, without the express written consent of Rolls-Royce plc.

While this information is given in good faith, based on the latest information available to Rolls-Royce plc, no warranty or representation is given concerning such information, which must not be taken as establishing any contractual or other commitment binding upon Rolls-Royce plc or any of its subsidiary or associated companies.

ER000-00/00-0M