V2500 International Aero Engines

SERVICE BULLETIN

ENGINE - MAIN GEARBOX ASSEMBLY - PROVIDE A NEW VSCF SHAFT PLUG ASSEMBLY

MODEL APPLICATION

V2525-D5

V2528-D5

BULLETIN INDEX LOCATOR

72-60-00

Compliance Category Code

6

Internal Reference No.

EC99VF004

Jul.19/99

V2500-ENG-72-0355

ENGINE - MAIN GEARBOX ASSEMBLY - PROVIDE A NEW VSCF SHAFT PLUG ASSEMBLY

1. Planning Information

A. Effectivity

(1) Aircraft:

(a) McDonnel Douglas MD-90

(1) Engine:

(a) V2525-D5 Engines prior to serial No. V20286

(b) V2528-D5 Engines prior to serial No. V20286

A. Concurrent Requirement

None

B. Reason

(1) Problem

For the management of VSCF problems in service, it is desirable to perform return flights to main maintenance stations with inoperative failed VSCF's. This condition can be achieved by removal of the VSCF input shaft, but requires installation of a plug assembly in to the VSCF drive gear to prevent oil leakage from gearbox. This requirement has been done issuing SBE-72-0232. During flights with inoperative failed VSCF interference between the plug and the VSCF bearing nut took place several times.

(2) Background

There have been many VSCF failures and front bearing distress in service.

(3) Substantation

A dimensional check will be required in order to guarantee the correct position of the plug.

(4) Objective

To introduce a revised plug assembly which eliminates the interference condition

(5) Effect of Bulletin on:

(a) Operation

Not affected

(b) Maintenance

Not affected

(c) Overhaul

Affected

(d) Repair schemes

Not affected

(e) Interchangeability

Not affected

(f) Fits and clearance

Not affected

A. Description

The change introduced by this Service Bulletin is as follows:

(1) Introduce a new plug assembly.

(2) Create two new parts to reduce the axial dimension of the plug.

(3) Add in the gearbox assembly procedure, a dimensional check of the plug in order to assure the necessary gap for the bearing nut of the VSCF and avoid the interference.

(4) Add provision to facilitate the removal of the plug

A. Compliance

Category Code 6

Accomplish when the sub-assembly (That is modules, accessories, components, and build groups) is disassembled sufficiently to get access to all affected parts.

B. Approval

The part number changes and/or modification are given in Section 2 and 3 of this Service Bulletin. They obey the applicable Federal Aviation Regulation and are FAA-APPROVED for the Engine Model listed.

C. Manpower

Estimated man-hours to incorporate the full intent of this Bulletin:

Venue	Estimated Man-hours
In service:	
At overhaul:	

D. Material - Price and Availability

(1) Modification Kit is not required.

(2) Refer to 2. Material Information section for prices and availability of future spares.

A. Tooling - Price and Availability

Special tools are not necessary

B. Weight and Balance

(1)Weight change

None

(2)Moment arm

Not effect

(3)Datum

Engine front mount centerline (Powerplant Station (P.P.S) 100)

A. Electrical Load Data

The aircraft electrical load is not affected by this Service Bulletin.

B. References

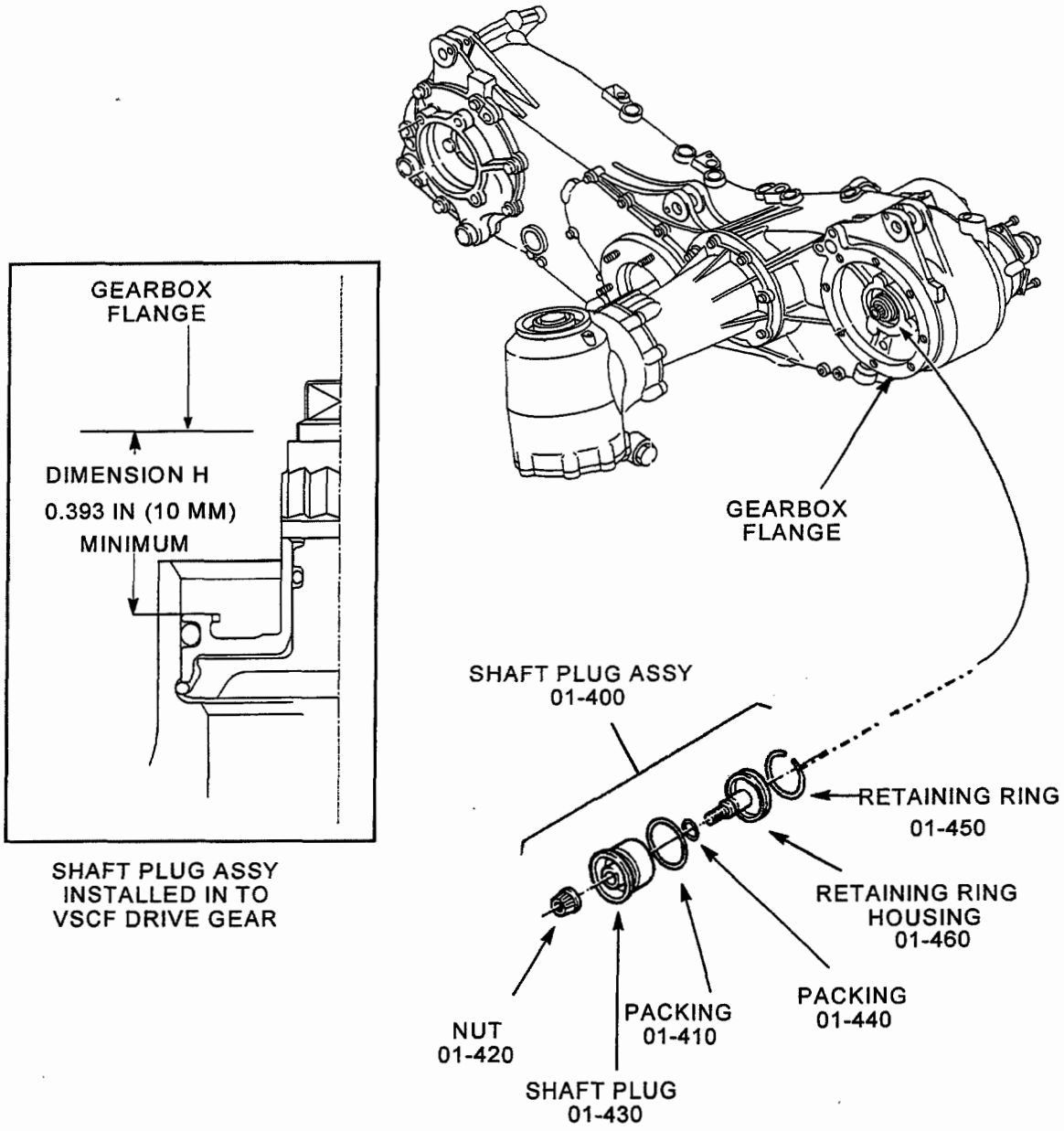
(1) The V2500-D5 Engine Manual (EM) Chapter/Section 72-60-10 Removal.

(2) SBE-72-0232 Engine - Main Gearbox Assembly - Provide a modified VSCF shaft plug assembly

A. Other Publications Affected

(1) The V2500-D5 Engine Illustrated Parts Catalog, (S-V2500-3IA) Chapter/Section 72-60-10 will be changed to add new parts

(2) The V2500-D5 Engine Manual (E-V2500-3IA) Chapter/Section 72-60-10 Removal/Installation will be revised.



Installation of VSCF shaft plug assy
Figure 1

2. Material information:

Applicability: for each V2500 engine for which this Service Bulletin is applicable

A. Kits associated with this Bulletin:

None

B. Parts affected by this Bulletin

NEW PART No. (ATA No.)	QTY	EST'D UNIT PRICE(S)	PART TITLE	OLD PART No. (IPC No.)	INSTR DISP
4A0416 (72-60-03)	1	-	.Plug, Assy Shaft	4A0411 (01-400)	(A) (B) (S1)
4P0417 (72-60-03)	1	-	..Plug, Shaft	4P0412 (01-430)	(A) (S2)
4P0418 (72-60-03)	1	-	..Housing, Retaining Ring	4P0134 (01-460)	(A) (S2)

NOTE: The unit prices, if shown, are an estimate and they are given for the purposes of planning only. For information about actual prices, refer to the IAE Price Catalogue or contact IAE's spare parts sales department.

A. Instructions/Disposition Code Statements:

(A) Part is available for sale.

(B) Old part is no longer available.

(S1) Old and new parts coded (S1) are not interchangeable

(S2) New parts coded (S2) must be fitted as a set. Mixing of old and new parts is not permitted.

2. Accomplishment Instructions:

A. Rework Instructions

(1) There are no rework instructions for this service bulletin.

A. Assembly Instructions.

(1) Make sure that proper packings are installed on the retaining ring housing and on the shaft plug. See Figure 1.

(2) Tighten the nut until the mating faces of the nut, shaft plug, retaining ring and retaining housing touch. Make sure that the retaining ring is evenly seated between the retaining ring housing and the shaft plug.

(3) Lubricate the packing with CoMat 10-077 approved engine oil and install the pre-assembled shaft plug assembly into VSCF drive gear.

(4) Push the shaft plug assembly into gear until it touches the ID spline in the gear.

(5) Hold the square end of the shaft plug and torque the nut to 290 to 370 lbfin. Make sure the square end is pushed in while you torque the nut.

(6) Make sure that the plug assembly is tight in the VSCF drive gear.

(7) To avoid the interference between the VSCF bearing nut and the plug shaft check the dimension H between the shaft plug and the gearbox flange. The dimension H must be 0.393in. (10 mm) minimum. Refer to Figure 1. In addition, as alternative procedure, you can check the dimension between the shaft plug and the external flange of the QAD adaptor P/N 1B193-1. This dimension must be 0.730in. (18,5 mm) minimum.

(8) Before an operative VSCF generator is installed, the shaft plug must be removed. Use the approved procedure in Reference (1) to remove the shaft plug assy. If necessary, use a two jaws standard puller type CJ93B (SNAP-ON tool catalogue) or equivalent to make easier the operation.

A. Recording Instructions

Put a notice in the Aircraft Log that the plug assembly is installed.