

SERVICE BULLETIN

ENGINE FUEL AND CONTROL — FUEL DIVERTER AND RETURN VALVE — REPLACEMENT OF
THE FUEL DIVERTER AND RETURN VALVE TO DECREASE SERVICE INTERRUPTIONS

MODEL APPLICATION

V2500-A1, V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5,
V2533-A5, V2525-D5, V2528-D5

BULLETIN ISSUE SEQUENCE

V2500 Series 73-0247

ATA NUMBER

73-13-42

IAE PROPRIETARY INFORMATION

This document is the property of International Aero Engines (IAE). You may not possess, use, copy or disclose this document or any information in it, for any purpose, including without limitation to design, manufacture, or repair parts, or obtain FAA or other government approval to do so, without IAE's express written permission. Neither receipt nor possession of this document alone, from any source, constitutes such permission. Possession, use, copying or disclosure by anyone without IAE's express written permission is not authorized and may result in criminal and/or civil liability.

Export Classification: Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).

Supplier Service Bulletin

IHI Corporation Service Bulletin No. 13298-73-009

IHI Corporation Service Bulletin No. 17300-73-009

Compliance Category

7

P&W Distribution Code

V2500

December 14/18

V2500-ENG-73-0247

Summary

The purpose of this Service Bulletin is to introduce a new Fuel Diverter and Return Valve (FDRV). In warm weather conditions, the FDRV may not close properly during engine shutdown, resulting in a Spill Valve Failed Open (SPVFO) Class 1 fault upon engine start. The new FDRV incorporates a larger diameter pushing piston to improve FDRV reliability.

Planning Information

Effectivity Data

Engine Models Applicable

V2500-A1

Engine Serial Nos. V0001 thru V0361

V2522-A5, V2524-A5, V2527M-A5, V2527-A5, V2527E-A5, V2530-A5, V2533-A5

Engine Serial Nos. V10001 thru V13190

Engine Serial Nos. V15001 thru V18943

V2525-D5, V2528-D5

Engine Serial Nos. V20001 thru V20285

Concurrent Requirements

There are no concurrent requirements.

Reason

1. Condition: Differences in the material expansion rates of the pushing piston and the internal sleeve can cause an interference fit during warm weather operating conditions, which can result in the Fuel Return Valve (FRV) not closing during engine shutdown.
2. Background: The FDRV contains two valves, the Fuel Diverter Valve (FDV) and the FRV. When the engine is not running, the FRV is forced to the closed position by a pushing piston using an internal spring. Due to a materials difference between the internal sleeve and the pushing piston, the piece parts can bind at warmer temperatures and prevent the pushing piston from moving to position the FRV in the closed position. This results in a Class 1 electronic engine control SPVFO fault upon subsequent engine start that has driven delays and cancellations.
3. Objective: Introduce an improved FDRV PN 17300G12 for the V2500-A5 and V2500-D5 engines and PN 13298G19 for the V2500-A1 engine with a revised pushing piston that increases the internal inner diameter of the pushing piston. The new pushing piston increases the clearance between the internal sleeve to ensure the piece parts will not bind even at maximum operating temperatures and maintains seal integrity.
4. Substantiation: The changes introduced by this Service Bulletin were the subject of satisfactory engineering analysis and testing. This Service Bulletin complies with the applicable engine certification basis.
5. Effects of Bulletin on:
 - Removal/Installation: Not Affected.
 - Disassembly/Assembly: Not Affected.
 - Cleaning: Not Affected.
 - Inspection/Check: Not Affected.

December 14/18

V2500-ENG-73-0247

Page 2

IAE PROPRIETARY INFORMATION

©IAE International Aero Engines AG (date as above). All rights reserved.
Not subject to the EAR per 15 C.F.R. Chapter 1, Part 734.3(b)(3).

Repair: Not Affected.

Testing: Not Affected.

6. Supplemental Information

None.

Description

Replace the FDRV.

Compliance

Category 7

Accomplish when supply of superseded parts has been depleted.

Approval Data

The part number changes and/or part modifications specified in the Accomplishment Instructions and Material Information sections of this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the engine model(s) given.

The aircraft Type Certificate (TC) holder has been informed of this change

Manpower

For Engines Installed On The Aircraft

1. No more man-hours are necessary when done at complete disassembly/assembly.

For Engines Not Installed On The Aircraft

1. No more man-hours are necessary when done at complete disassembly/assembly.

Weight and Balance

1. Weight Change

None.

2. Moment Arm

No Effect.

3. Datum

Engine Front Mount Centerline (Power Plant Station (PPS) 100)

Electrical Load Data

This Service Bulletin has no effect on the aircraft electrical load.

Software Accomplishment Summary

Not Applicable.

References

NOTE: In 2014 IAE converted the V2500 Technical Publications to a new system. As a result of the conversion, some manuals were consolidated. All manuals received

new P&W part numbers. To facilitate the use of this Service Bulletin, a Technical Publications conversion table is provided in the Appendix.

1. ATA Locator — 73-13-42.
2. V2500 Standard Practices and Processes, P&W Ref. PN 2A4414, Chapter/Section 73-13-42.
3. V2500-A1 Series Illustrated Parts Catalog, P&W Ref. PN 2A4427, Chapter/Section 73-13-42.
4. V2500-A5 Series Illustrated Parts Catalog, P&W Ref. PN 2A4428, Chapter/Section 73-13-42.
5. V2500-D5, Series Illustrated Parts Catalog, P&W Ref. PN 2A4426, Chapter/Section 73-13-42.
6. A319/320/321 Aircraft Maintenance Manual, Chapter/Section 73-13-42 Removal and Installation of Fuel Diverter and Return Valve.
7. MD-90 Aircraft Maintenance Manual Chapter 73-13-42 Removal and Installation of Fuel Diverter and Return Valve.
8. V2500 Service Bulletin V2500-ENG-73-0081 (Engine — Fuel And Control — Introduction Of A New Fuel Diverter And Return Valve With New Microswitch Assemblies).
9. V2500 Service Bulletin V2500-ENG-73-0240 (Engine — Fuel And Control — Fuel Diverter And Return Valve — Replacement Of, To Improve Reliability).
10. IHI Corporation Service Bulletin No. 13298-73-009 (Engine — Fuel And Control — New Fuel Diverter And Return Valve with New Main Valve Assembly).
11. IHI Corporation Service Bulletin No. 17300-73-009 (Engine — Fuel And Control — New Fuel Diverter And Return Valve with New Main Valve Assembly).

NOTE: For a copy of the IHI Corporation Service Bulletin No. 13298-73-009, and Service Bulletin No. 17300-73-009, (Reference 10 and 11), contact IHI Corporation located in Tokyo Japan as identified in the Vendor Services or Special Components/Materials table section of this service bulletin.

Other Publications Affected

NOTE: In 2014 IAE converted the V2500 Technical Publications to a new system. As a result of the conversion, some manuals were consolidated. All manuals received new P&W part numbers. To facilitate the use of this Service Bulletin, a Technical Publications conversion table is provided in the Appendix.

1. V2500-A1 Series Illustrated Parts Catalog, P&W Ref. PN 2A4427, Chapter/Section 73-13-42.
2. V2500-A5 Series Illustrated Parts Catalog, P&W Ref. PN 2A4428, Chapter/Section 73-13-42.
3. V2500-D5, Series Illustrated Parts Catalog, P&W Ref. PN 2A4426, Chapter/Section 73-13-42.

Interchangeability of Parts

Old and new parts are directly interchangeable.

Information in the Appendix

Alternate Accomplishment Instructions (No)

Progression Charts (Yes)

Added Data (Yes)

Revision to Table of Limits (No)

Inspection Procedures (No)

Material Information

Material — Price and Availability

1. Part prices were not available at the time of Service Bulletin publication. Contact IHI Spares for firm quotations.
2. There is no kit provided to do this Service Bulletin.
3. Part availability information is provided in material data Instructions — Disposition.

Industry Support Program

Industry support shall be provided for the applicable as follows:

The Industry support for Reference 9, Service Bulletin V2500-ENG-73-0240 will expire on December 31, 2018. The price starting January 1, 2019 shall be \$3,900 in addition to the repair/overhaul fixed pricing for the subject year as set by the supplier. For all FDRV PN 5L0076 (17300G09) and PN 5L0075 (13298G16) operators who wish to upgrade to the PN 17300G12 and PN 13298G19, both Reference 9, Service Bulletin V2500-ENG-73-0240 and V2500-ENG-73-0247 will need to be incorporated to upgrade to the new modification FDRV.

For those operators who have previously applied Reference 9, Service Bulletin V2500-ENG-73-0240, the incorporation of Service Bulletin V2500-ENG-73-0247 shall be at no additional cost outside of repair/overhaul pricing as fixed by supplier. The support term for the application of this Service Bulletin will continue permanently. The industry support will apply to all FDRV PN 17300G11 units purchased with a new production engine.

For those operators who wish to purchase a FDRV PN 17300G12 or PN 13298G19 for spare purposes, the pricing shall be the spares list price determined by the supplier.

Operators are requested to work directly with IHI to obtain details regarding this program. The industry support program is applied by only IHI approved repair stations, such as IHI Mizuho (Japan) and IHI-ICR LLC (US). All services should be arranged directly through IHI.

The material data that follows is for each engine.

For V2500-A1 Engines:

New PN	Qty	Estimate of Unit Price (\$)	Keyword	Old PN	Instructions — Disposition
13298G19	1	*	VALVE, FUEL DIVERT & RETURN	13298G18 (73-13-42-01-100G)	(1)(A)(L)(V)

The material data that follows is for each engine.

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5 Engines:

New PN	Qty	Estimate of Unit Price (\$)	Keyword	Old PN	Instructions — Disposition
17300G12	1	*	VALVE, FUEL DIVERT & RETURN	17300G11 (73-13-42-01-100H)	(1)(A)(L)(V)

The material data that follows is for each engine.

For V2525-D5, V2528-D5 Engines:

New PN	Qty	Estimate of Unit Price (\$)	Keyword	Old PN	Instructions — Disposition
17300G12	1	*	VALVE, FUEL DIVERT & RETURN	17300G11 (73-13-42-01-100F)	(1)(A)(L)(V)

Instructions/Disposition Code Statements:

Parts Modification Conditions

Estimated part prices are provided when they are available at time of publication. The Estimate of Unit Price is only for planning purposes and does not constitute a firm quotation. An asterisk (*) is shown where part pricing information was unavailable. In either case, contact IHI Spares for firm quotations.

(1) The new part can be obtained by modification of the old part as specified in the Accomplishment Instructions.

Spare Parts Availability

(A) The new part is available.

(L) The old part will be supplied until the supply is fully used.

(V) This is the IHI Corporation part number.

Vendor Services or Special Components/Materials

Vendor Services or Special Components/Materials

P&W Designation	Vendor Designation	Name	Vendor Name & Address
13298G19	13298G19	Valve, Fuel Divert & Return	IHI Corporation 229 Tonogaya, Mizuho-Machi Nishitama-Gun, Tokyo, 190-1297 Japan Tel: (+81)-42-568-7268 http://www.ihi-aem.com
17300G12	17300G12	Valve, Fuel Divert & Return	
	13298-73-009	Service Bulletin	
	17300-73-009		
Vendor Manufacturer's Code: 77381 See Illustrated Parts Catalog Vendor Manufacturer's Code List			
OR			

P&W Designation	Vendor Designation	Name	Vendor Name & Address
17300G12	17300G12	Valve, Fuel Divert & Return	IHI-ICR, LLC. 330 Industrial Court West Villa Rica, GA 30180 USA Tel: 770-456-4148 http://www.ihi-icr.com
Vendor Manufacturer's Code: 77381 See Illustrated Parts Catalog Vendor Manufacturer's Code List			

NOTE: EXCEPT FOR WORK OR SUPPLIES TO BE PERFORMED OR FURNISHED BY IAE, IT IS UNDERSTOOD THAT IAE DOES NOT ENDORSE THE WORK PERFORMED BY THE COMPANY OR COMPANIES NAMED HEREIN OR ANY OTHER COMPANY AND DOES NOT ACCEPT RESPONSIBILITY TO ANY DEGREE FOR THE SELECTION OF SUCH COMPANY OR COMPANIES FOR THE PERFORMANCE OF ANY WORK OR PROCUREMENT OF SUPPLIES.

Tooling — Price and Availability

Special tools are not required to accomplish this Service Bulletin.

Reidentified Parts

Reidentified Parts Data

New PN	Keyword	Old PN
13298G19	Valve, Fuel Divert & Return	13298G18
17300G12	Valve, Fuel Divert & Return	17300G11

Other Material Information Data

Not Applicable.

Accomplishment Instructions

For V2500-A1 Engines Installed On The Aircraft:

NOTE: Service Bulletin incorporation on engines installed on aircraft may be desirable and should be individually evaluated.

1. Replace the FDRV, PN 13298G18 with PN 13298G19. See Figure 1.
 - A. Remove the FDRV, PN 13298G18 as specified in Reference 6, Aircraft Maintenance Manual, Task 73-13-42-000-010-A.
 - B. Install the new FDRV, PN 13298G19 as specified in Reference 6, Aircraft Maintenance Manual, Task 73-13-42-400-010-A.
2. Return the removed FDRV, PN 13298G18 to the vendor listed in the Vendor Services or Special Components/Materials.
3. Recording Instructions
 - A. A record of accomplishment is required.

For V2500-A1 Engines Not Installed On The Aircraft:

1. Replace the FDRV, PN 13298G18 with PN 13298G19. See Figure 1.
2. Return the removed FDRV, PN 13298G18 to the vendor listed in the Vendor Services or Special Components/Materials.
3. Recording Instructions
 - A. A record of accomplishment is required.

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5 Engines Installed On The Aircraft:

NOTE: Service Bulletin incorporation on engines installed on aircraft may be desirable and should be individually evaluated.

1. Replace the FDRV, PN 17300G11 by the procedure that follows. See Figure 2.
 - A. Remove the FDRV, PN 17300G11 as specified in Reference 6, Aircraft Maintenance Manual, Task 73-13-42-000-010-A.
 - B. Install the new FDRV, PN 17300G12 as specified in Reference 6, Aircraft Maintenance Manual, Task 73-13-42-400-010-A.
2. Return the removed FDRV, PN 17300G11 to the vendor listed in the Vendor Services or Special Components/Materials.
3. Recording Instructions
 - A. A record of accomplishment is required.

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5 Engines Not Installed On The Aircraft:

1. Replace the FDRV, PN 17300G11 with 17300G12. See Figure 2.
2. Return the removed FDRV, PN 17300G11 to the vendor listed in the Vendor Services or Special Components/Materials.

3. Recording Instructions

- A. A record of accomplishment is required.

For V2525-D5, V2528-D5 Engines Installed On The Aircraft:

NOTE: Service Bulletin incorporation on engines installed on aircraft may be desirable and should be individually evaluated.

1. Replace the FDRV, PN 17300G11 with 17300G12. See Figure 3.
 - A. Remove the FDRV, PN 17300G11 as specified in Reference 7, Aircraft Maintenance Manual, Task 73-13-42-020-801.
 - B. Install the new FDRV, PN 17300G12 as specified in Reference 7, Aircraft Maintenance Manual, Task 73-13-42-420-801.

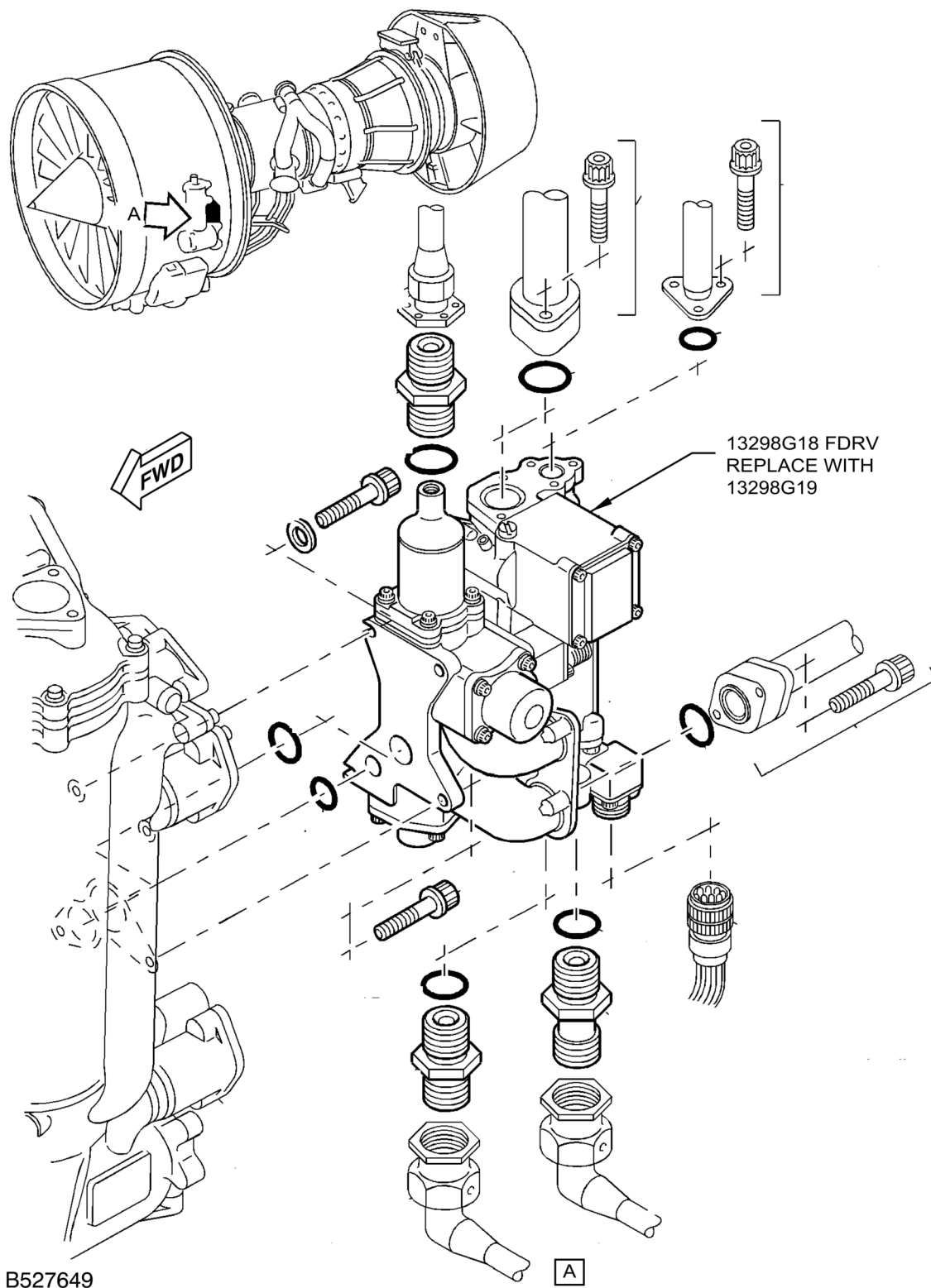
2. Return the removed FDRV, PN 17300G11 to the vendor listed in the Vendor Services or Special Components/Materials.

3. Recording Instructions

- A. A record of accomplishment is required.

For V2525-D5, V2528-D5 Engines Not Installed On The Aircraft:

1. Replace the FDRV, PN 17300G11 with 17300G12. See Figure 3.
2. Return the removed FDRV, PN 17300G11 to the vendor listed in the Vendor Services or Special Components/Materials.
3. Recording Instructions
 - A. A record of accomplishment is required.

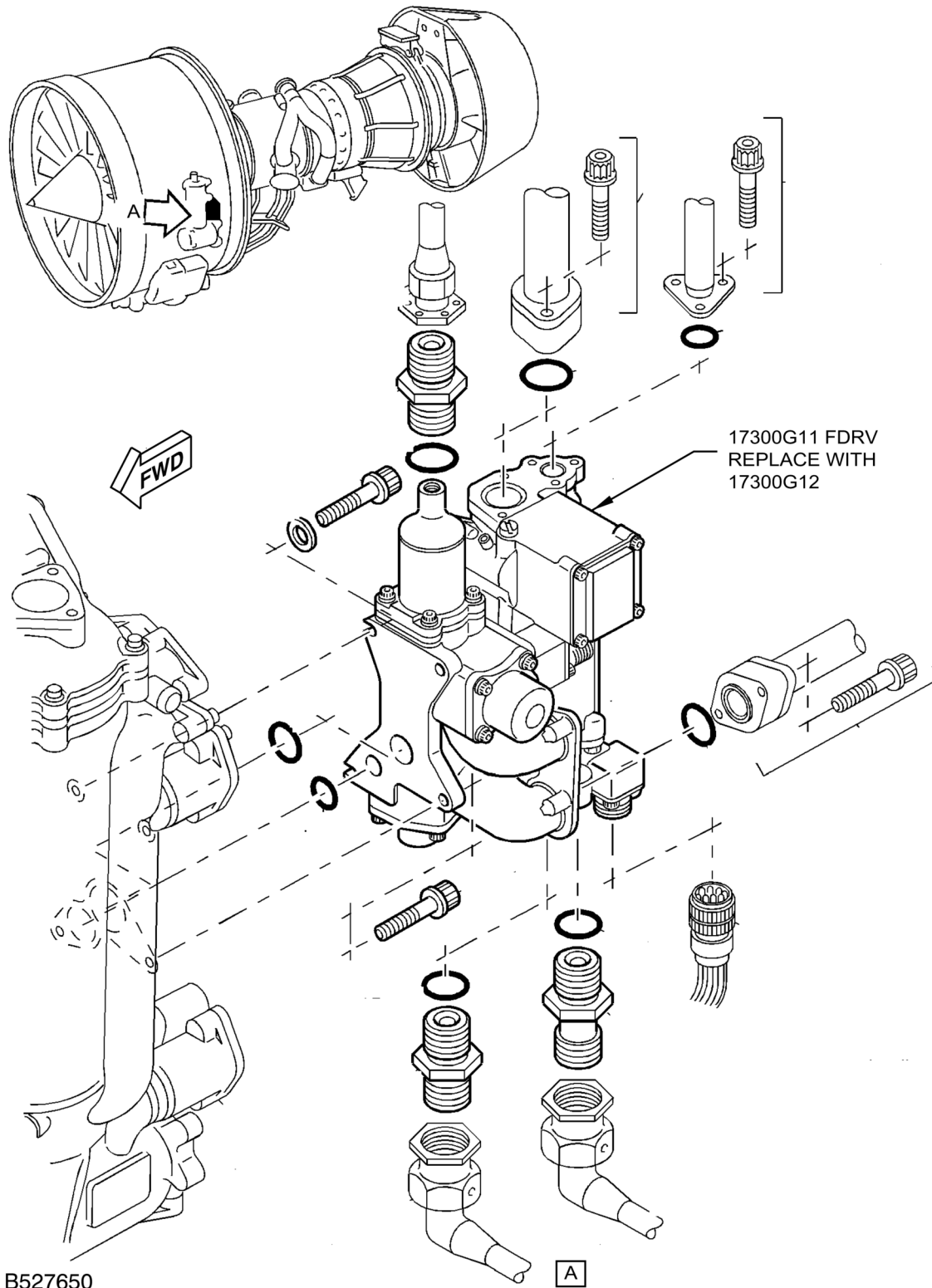


LOCATION OF THE FDRV FOR V2500-A1 ENGINE MODELS
73-13-42
FIGURE 1

December 14/18

V2500-ENG-73-0247

Page 11

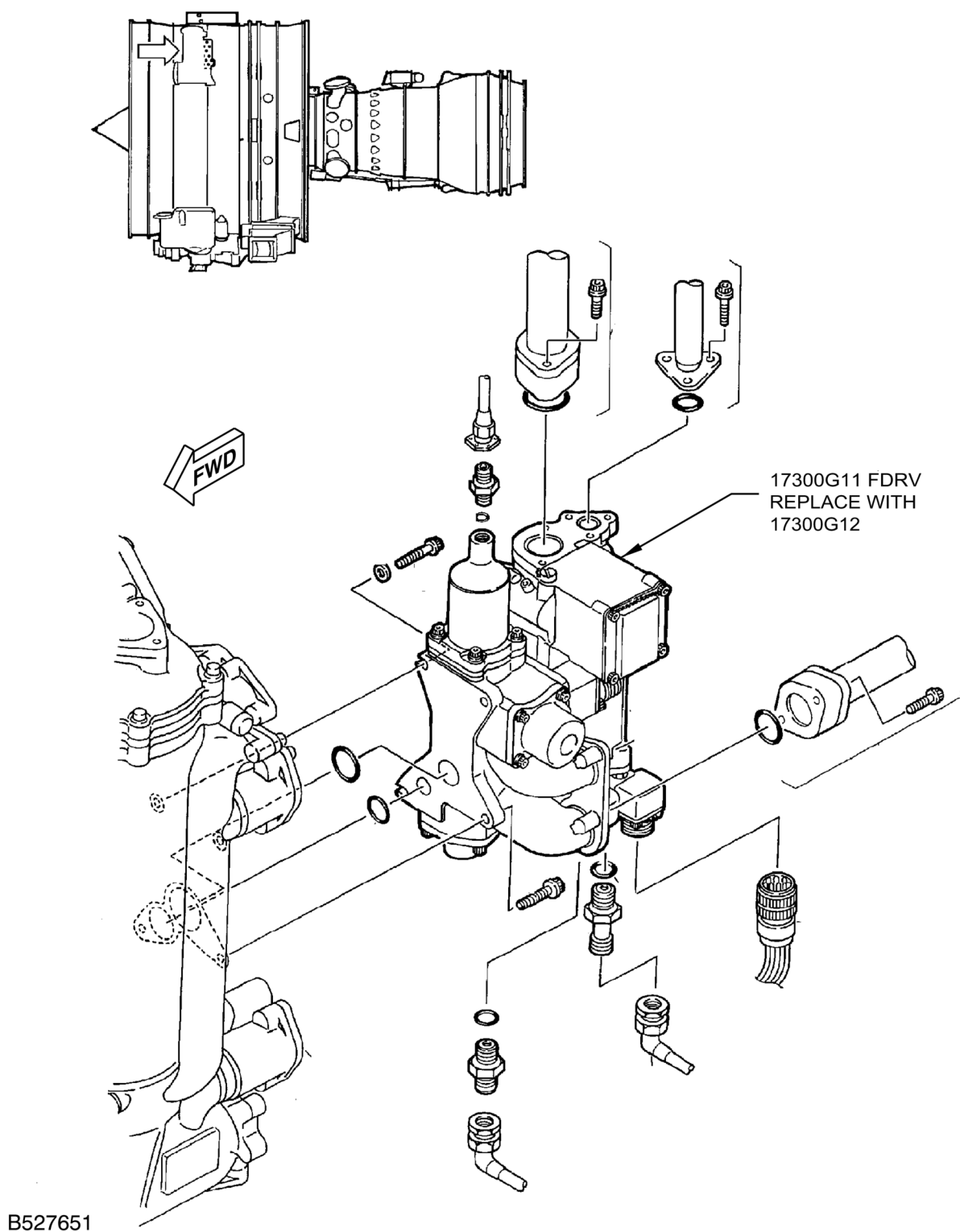


LOCATION OF THE FDRV FOR V2500-A5 ENGINE MODELS
73-13-42
FIGURE 2

December 14/18

V2500-ENG-73-0247

Page 12



LOCATION OF THE FDRV FOR V2500-D5 ENGINE MODELS
73-13-42
FIGURE 3

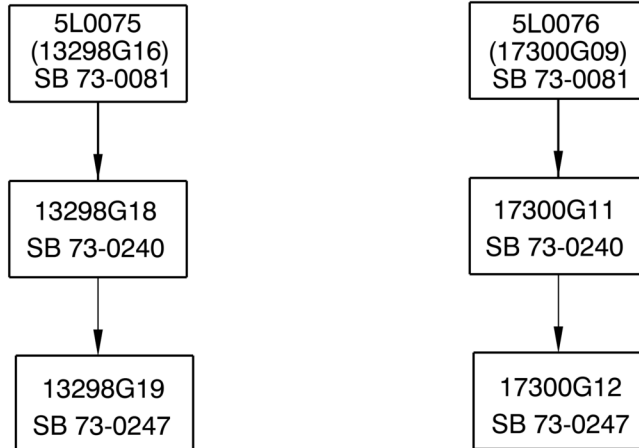
December 14/18

V2500-ENG-73-0247

Page 13

Appendix

Parts Progression To Show the Changed Part in Relation to Other Parts



FOR V2500-A1 ENGINES

FOR V2500-A5 AND D5 ENGINES

B527648

FDRV
CHART A

Added Data

Internal Reference Information

Revision No.	Reference Document	Origination
Original	EC 18VI001	LA/RCM

Number values shown in parentheses adjacent to U.S. values are International System of units (SI) equivalents.

NOTE: In 2014 IAE converted the V2500 Technical Publications to a new system. As a result of the conversion, some manuals were consolidated. All manuals received new P&W part numbers. To facilitate the use of this Service Bulletin, the following Technical Publications cross reference table is provided.

Technical Publications Cross Reference Table

Publication	Engine Model(s)	IAE IETM Pub Ref	P&W Part Number
ENGINE MANUAL — A1, A5	All	E-V2500-1IA	2A4407
CMM-EHC — A1, A5	All	EHC-V2500-1IA	2A4409
CMM-FN — A1, A5	All	FN-V2500-1IA	2A4410
CMM-MMC — A1, A5	All	MECH-V2500-1IA	2A4411
CMM-THD — A1, A5	All	THD-V2500-1IA	2A4412
TLM — A1, A5	All	T-V2500-1IA	2A4408
ENGINE MANUAL — D5	All	E-V2500-3IA	2A4416
CMM-EHC — D5	All	EHC-V2500-3IA	2A4418
CMM-FN — D5	All	FN-V2500-3IA	2A4419
CMM-MMC — D5	All	MECH-V2500-3IA	2A4420
CMM-THD — D5	All	THD-V2500-3IA	2A4423
TLM — D5	All	T-V2500-3IA	2A4417
SPPM (SPM) — A1, A5, D5	All	SPP-V2500-1IA	2A4414
EIPC — A1	V2500-A1102Q00	S-V2500-1IA	2A4427

Publication	Engine Model(s)	IAE IETM Pub Ref	P&W Part Number
EIPC — A5	V2522/V2524/V2527M-AQ02	S-V2500-6IA	2A4428
	V2522/V2524/V2527M-AQ03	S-V2500-6IB	
	V2522/V2524/V2527M-SQ02	S-V2500-6SA	
	V2522/V2524/V2527M-SQ03	S-V2500-6SB	
	V2522/V2524/V2527M-SQ04	S-V2500-6NA	
	V2522/V2524/V2527M-SQ05	S-V2500-6NB	
	V2527/V2527E-AQ02	S-V2500-7IA	
	V2527/V2527E-AQ03	S-V2500-7IB	
	V2527/V2527E-SQ02	S-V2500-7SA	
	V2527/V2527E-SQ03	S-V2500-7SB	
	V2527/V2527E-SQ04	S-V2500-7NA	
	V2527/V2527E-SQ05	S-V2500-7NB	
	V2530-AQ02	S-V2500-2IA	
	V2530-AQ03	S-V2500-2IB	
	V2530-SQ02	S-V2500-2SA	
	V2530-SQ03	S-V2500-2SB	
	V2530-SQ04	S-V2500-2NA	
	V2530-SQ05	S-V2500-2NB	
	V2533-AQ02	S-V2500-5IA	
	V2533-AQ03	S-V2500-5IB	
	V2533-SQ02	S-V2500-5SA	
	V2533-SQ03	S-V2500-5SB	
	V2533-SQ04	S-V2500-5NA	
	V2533-SQ05	S-V2500-5NB	
EIPC — D5	V2525/V2528-AQ02	S-V2500-3IA	2A4426
	V2525/V2528-AQ03	S-V2500-3IB	
	V2525/V2528-AQ04	S-V2500-3IC	