

# SERVICE BULLETIN

ENGINE FUEL AND CONTROL — FUEL DIVERTER AND RETURN VALVE —  
REPLACEMENT OF, TO IMPROVE RELIABILITY

## 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 73-0240

## ATA NUMBER

73-13-42

## IAE PROPRIETARY INFORMATION

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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. 13298-73-008

IHI Corporation Service Bulletin No. 17300-73-008

## Compliance Category

6

## P&W Distribution Code

V2500

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## Summary

The purpose of this Service Bulletin is to introduce a modification of the Fuel Diverter and Return Valve (FDRV). Uneven wear of the fuel return valve assembly spool piston ring results in the inability for the closing of the valve. This results in a Class 1 electronic engine control Spill Valve Failed Open (SPVFO) fault that has driven delays and cancellations. The introduction of an improved FDRV with a revised Fuel Return Valve (FRV) eliminates the piston ring from the spool. The new spool incorporates a metering land designed to improve reliability and mitigate the occurrence of the SPVFO fault.

## 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

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

Engine Serial Nos. V15001 thru V18039

V2525-D5, V2528-D5

Engine Serial Nos. V20001 thru V20285

### Concurrent Requirements

There are no concurrent requirements.

### Reason

1. Condition: Uneven wear of the fuel return valve assembly spool piston ring results in the inability for the closing of the valve.
2. Background: The FDRV contains two valves, the fuel diverter valve and the fuel return valve. The FRV spool contains an active metal piston ring, which when commanded open/closed slides over a metering port on the valve sleeve. The uneven wear of the piston ring over time becomes enough that the piston ring develops a step at the metering port location temporarily preventing the valve spool from moving to the commanded closed position. This results in a Class 1 electronic engine control SPVFO fault that has driven delays and cancellations.
3. Objective: To introduce an improved FDRV with a revised FRV that eliminates the piston ring from the spool. The new spool incorporates a metering land designed to improve reliability and mitigate the occurrence of the SPVFO fault.
4. Substantiation: The means of compliance for the FDRV is by similarity and test. The new FDRV external dimensions/installation interface is unchanged. The changes introduced by this Service Bulletin were the subject of satisfactory testing.
5. Effects of Bulletin on:
  - Removal/Installation: Not affected.
  - Disassembly/Assembly: Not affected.
  - Cleaning: Not affected.

Inspection/Check: Not affected.

Repair: Not affected.

Testing: Not affected.

6. Supplemental Information

None.

Description

Replacement of the FDRV.

Compliance

Category 6

Accomplish when the subassembly (i.e. modules, accessories, components, build groups) is disassembled sufficiently to afford access to the affected part and to all affected spare parts.

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

The estimate of man-hours of labor directly necessary to do the intent of this Service Bulletin are as follows:

FOR ENGINES INSTALLED ON THE AIRCRAFT

1. Necessary for Removal of the FDRV ..... 5 hours

FOR ENGINES REMOVED FROM THE AIRCRAFT

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-A1 Series Illustrated Parts Catalog, P&W Ref. PN 2A4427, Chapter/Section 73-13-42.
3. V2500-A5 Series Illustrated Parts Catalog, P&W Ref. PN 2A4428, Chapter/Section 73-13-42.
4. V2500-D5, Series Illustrated Parts Catalog, P&W Ref. PN 2A4426, Chapter/Section 73-13-42.
5. A319/320/321 Aircraft Maintenance Manual, Chapter/Section 73-13-42 Removal and Installation of Fuel Diverter and Return Valve.
6. MD-90 Aircraft Maintenance Manual Chapter 73-13-42 Removal and Installation of Fuel Diverter and Return Valve
7. V2500 Service Bulletin No. V2500-ENG-73-0081 (Engine — Fuel And Control — Introduction Of A New Fuel Diverter And Return Valve With New Microswitch Assemblies).
8. IHI Corporation Service Bulletin No. 13298-73-008 (Engine — Fuel And Control — New Fuel Diverter And Return Valve With New Main Valve Assembly).
9. IHI Corporation Service Bulletin No. 17300-73-008 (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. 13298-73-008, and Service Bulletin No. 17300-73-008, (References 8 and 9), 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 IAE Spares Management & Logistics 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

Refer to support Program Launch Letter (PLL) in the IAE Portal as specified in Service Bulletin No. V2500-ENG-73-0240.

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
(13298G18)	1	*	VALVE, FUEL DIVERT & RETURN	5L0075 (13298G16) (73-13-42-01-100)	(1)(B)(N) (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
(17300G11)	1	*	VALVE, FUEL DIVERT & RETURN	5L0076 (17300G09) (73-13-42-01-100)	(1)(B)(N) (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
(17300G11)	1	*	VALVE, FUEL DIVERT & RETURN	5L0076 (17300G09) (73-13-42-01-100)	(1)(B)(N) (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 IAE Spares for firm quotations.

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

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### Spare Parts Availability

(B) The new part will be available approximately October 1, 2015.

(N) The old part is not available.

(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
	13298G18	Valve, Fuel Divert & Return	IHI Corporation 229 Tonogaya, Mizuho-Machi Nishitama-Gun Tokyo 190-1297 Japan Tel: (+81)-42-568-7268 <a href="http://www.ihi-aem.com">http://www.ihi-aem.com</a>
	17300G11	Valve, Fuel Divert & Return	
OR			
	17300G11	Valve, Fuel Divert & Return	IHI-ICR, LLC. 330 Industrial Court West Villa Rica, GA 30180 Tel: 770-456-4148 <a href="http://www.ihi-icr.com">http://www.ihi-icr.com</a>
Vendor Manufacturer's Code: 77381 See Illustrated Parts Catalog Vendor Manufacturer's Code List			

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### Tooling — Price and Availability

Special tools are not required to accomplish this Service Bulletin.

### Reidentified Parts

#### Reidentified Parts Data

New PN	Keyword	Old PN
(13298G18)	Valve, Fuel Divert & Return	5L0075 (13298G16)
(17300G11)	Valve, Fuel Divert & Return	5L0076 (17300G09)

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 5L0075 (13298G16) with 13298G18. See Figure 1.
  - A. Remove FDRV, PN 5L0075 (13298G16) as specified in Reference 5, Aircraft Maintenance Manual, Task 73-13-42-000-010-A.
  - B. Install new FDRV, PN 13298G18 as specified in Reference 5, Aircraft Maintenance Manual, Task 73-13-42-400-010-A.
2. Recording Instructions
  - A. A record of accomplishment is required.
3. Return the removed FDRV to vendor listed in the Vendor Services section for modification to vendor Service Bulletin 13298-73-008 as specified in Reference 8.

### For V2500-A1 Engines Removed from The Aircraft:

1. Replace the FDRV, PN 5L0075 (13298G16) with 13298G18. See Figure 1.
2. Return the removed FDRV to vendor listed in the Vendor Services section for modification to vendor Service Bulletin 13298-73-008 as specified in Reference 8.
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 5L0076 (17300G09) by the procedure that follows. See Figure 2.
  - A. Remove the FDRV, PN 5L0076 (17300G09) as specified in Reference 5, Aircraft Maintenance Manual, Chapter/Section 73-13-42.
  - B. Install new FDRV, PN 17300G11 as specified in Reference 5, Aircraft Maintenance Manual, Task 73-13-42-400-010-A.
2. Recording Instructions
  - A. A record of accomplishment is required.
3. Return the removed FDRV to vendor listed in the Vendor Services section for modification to vendor Service Bulletin 17300-73-008 as specified in Reference 9.

### For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5 Engines Removed from The Aircraft:

1. Replace the FDRV, PN 5L0076 (17300G09) with 17300G11. See Figure 2.
2. Return the removed FDRV to vendor listed in the Vendor Services section for modification to vendor Service Bulletin 17300-73-008 as specified in Reference 9.

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 5L0076 (17300G09) with 17300G11. See Figure 3.

- A. Remove FDRV, PN 5L0076 (17300G09) as specified in Reference 6, Aircraft Maintenance Manual, Task 73-13-42-020-801.
- B. Install new FDRV, PN 17300G11 as specified in Reference 6, Aircraft Maintenance Manual, Task 73-13-42-420-801.

2. Recording Instructions

- A. A record of accomplishment is required.

3. Return the removed FDRV to vendor listed in the Vendor Services section for modification to vendor Service Bulletin 17300-73-008 as specified in Reference 9.

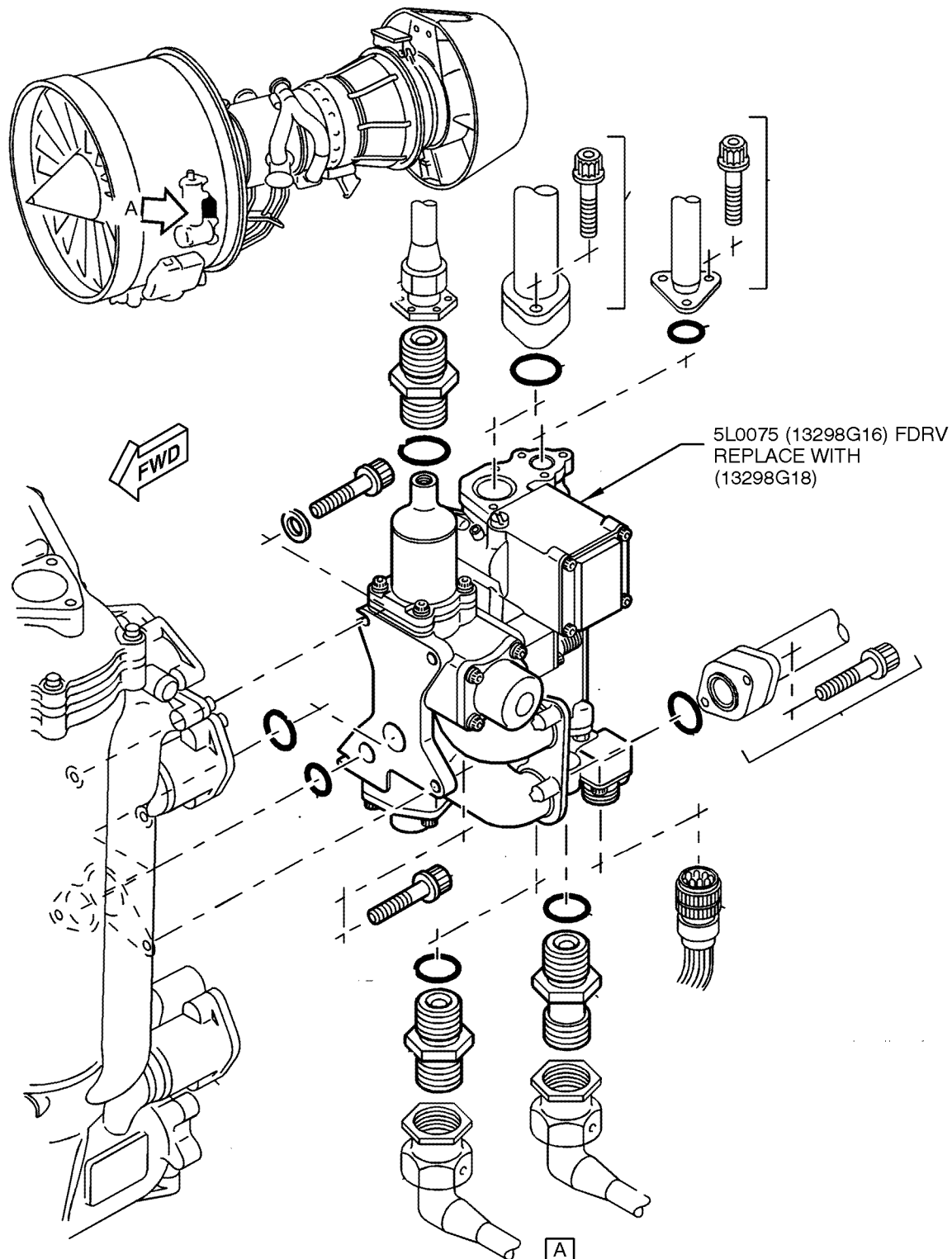
For V2525-D5, V2528-D5 Engines Removed from The Aircraft:

1. Replace the FDRV, PN 5L0076 (17300G09) with 17300G11. See Figure 3.

2. Return the removed FDRV to vendor listed in the Vendor Services section for modification to vendor Service Bulletin 17300-73-008 as specified in Reference 9.

3. Recording Instructions

- A. A record of accomplishment is required.



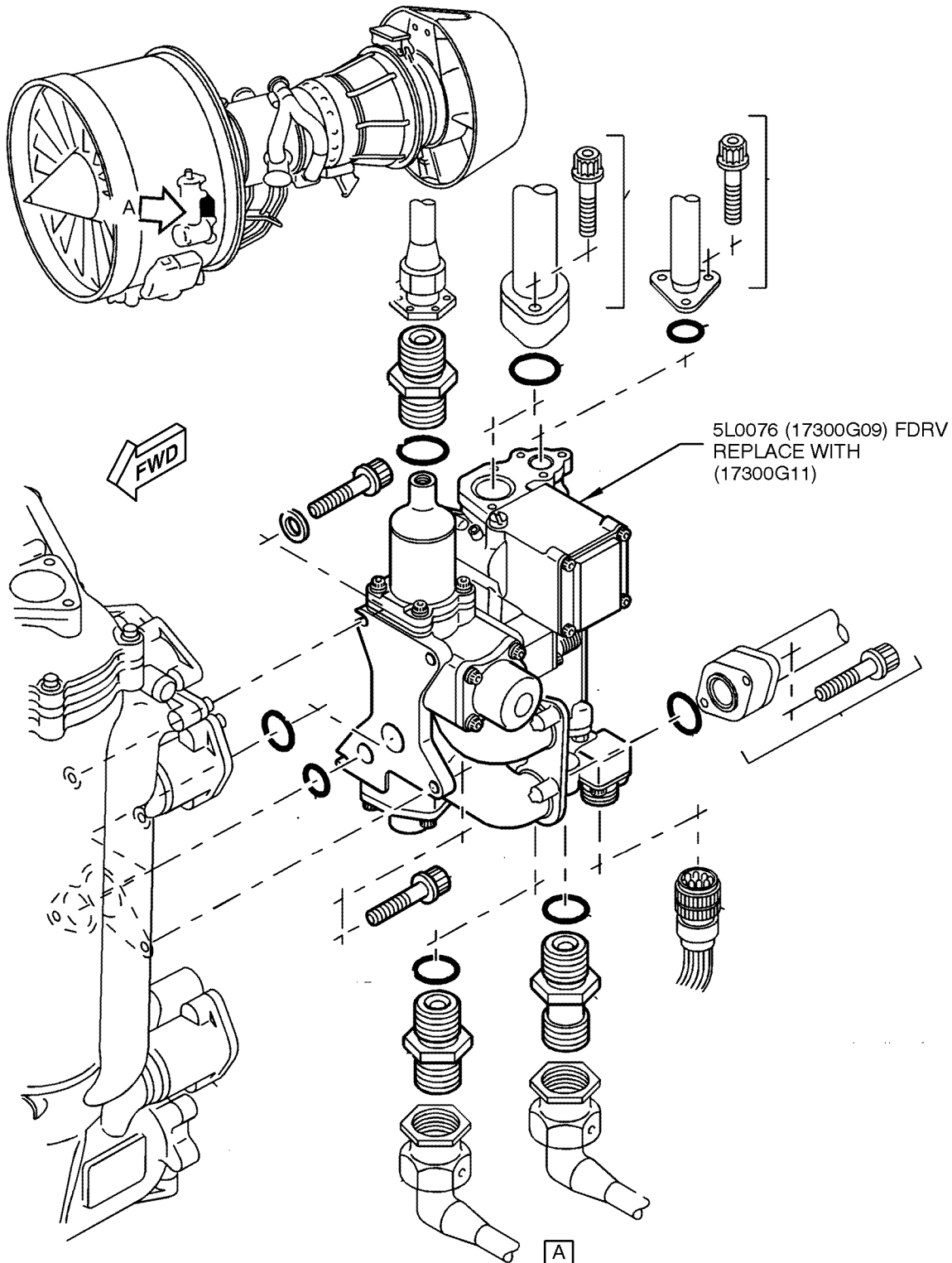
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LOCATION OF THE FDRV FOR V2500-A1 ENGINE MODELS  
73-13-42  
FIGURE 1

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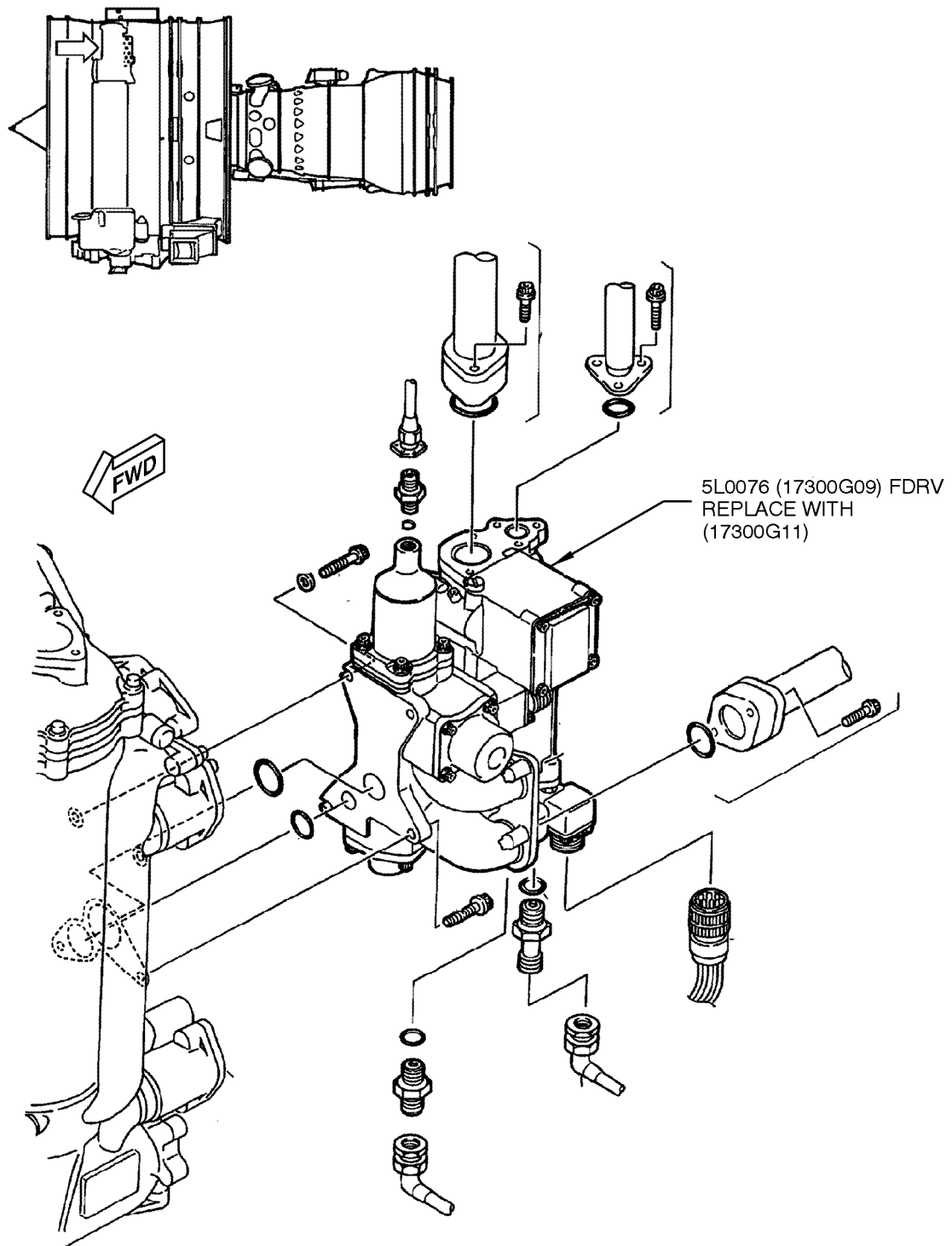
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LOCATION OF THE FDRV FOR V2500-A5 ENGINE MODELS  
73-13-42  
FIGURE 2

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

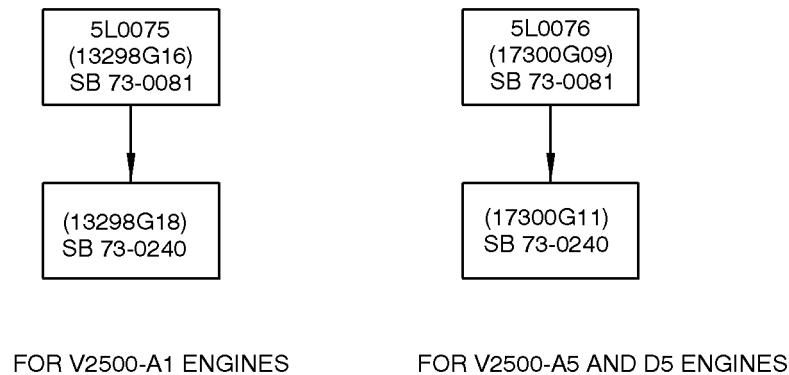
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## Appendix

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



B525802

### FDRV CHART A

### Added Data

#### Internal Reference Information

Revision No.	Reference Document	Origination
Original	EC13VI019	RG/IEL

Reference 8, IHI Corporation Service Bulletin No. 13298-73-008 and Reference 9, IHI Corporation Service Bulletin No. 17300-73-008 follows:

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### Technical Publications Cross Reference Table

Publication	Engine Model(s)	IAE IETM Pub Ref	P&W Part Number
EIPC — A1	V2500-A1102Q00	S-V2500-1IA	2A4427
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	