SERVICE BULLETIN

ENGINE FUEL AND CONTROL — FUEL TEMPERATURE THERMOCOUPLE — REPLACEMENT OF, TO IMPROVE RELIABILITY

MODEL APPLICATION

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

BULLETIN ISSUE SEQUENCE

V2500 Series 73-0242

ATA NUMBER

73-35-15

Supplier Service Bulletin

Harco Service Bulletin No. SB1-73-35-45.

Compliance Category

6

P&W Distribution Code

V2500

Summary

The purpose of this Service Bulletin is to replace the current fuel temperature thermocouple with an improved design. The current design consists of two independent thermocouples in individual sheaths parallel to one another. A sensed temperature difference of more than 10°C between the two channels in the fuel temperature thermocouple has caused fuel temperature cross check fault messages. The new design consists of a single sheath which contains both thermocouples. This improves reliability and mitigates the occurrence of the cross check fault.

Planning Information

Effectivity Data

Engine Models Applicable

V2522-A5, V2524-A5, V2527M-A5, V2527-A5, V2527E-A5, V2530-A5, V2533-A5 that HAVE incorporated Reference 5, Service Bulletin V2500-ENG-72-0565
Engine Serial Nos. V10001 thru V13190
Engine Serial No. V15001

V2522-A5, V2524-A5, V2527M-A5, V2527-A5, V2527E-A5, V2530-A5, V2533-A5
Engine Serial Nos. V15002 thru V18256.

V2525-D5, V2528-D5
Engine Serial Nos. V20001 thru V20285

Concurrent Requirements

There are no concurrent requirements.

Reason

1. Condition: A sensed temperature split between the two channels in the fuel temperature thermocouple results in a fuel temperature cross check fault.
2. Background: The current design fuel temperature thermocouple consists of two independent thermocouples in individual sheaths parallel to one another housed in a common terminal block. Both new and in-service engines have experienced random fuel temperature cross check messages, which occur when the channel temperatures differ more than10°C for more than 30 seconds. Root cause has been determined to be hot fuel temperature streaks within the fuel.
3. Objective: To introduce an improved fuel temperature thermocouple with a single sheath design that contains both thermocouples. The new design improves reliability and mitigates the occurrence of the cross check fault.
4. Substantiation: The means of compliance for the fuel temperature thermocouple is by similarity, analysis and test. The new fuel temperature thermocouple 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

Replace the fuel temperature thermocouple.

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

FOR ENGINES INSTALLED ON THE AIRCRAFT

1. Open/Close Fan Cowl Doors 1.0
2. Necessary for Parts Replacement 1.0
3. Total Necessary Man-hours 2.0

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 — 73-35-15.
2. V2500-A5 Series Illustrated Parts Catalog, P&W Ref. PN 2A4428, Chapter/Section 73-35-15.
3. V2500-D5, Series Illustrated Parts Catalog, P&W Ref. PN 2A4426, Chapter/Section 73-35-15.
4. V2500 Aircraft Maintenance Manual, Chapter/Section 71-13-00, 73-35-15.
5. V2500 Service Bulletin V2500-ENG-72-0565 (Engine — Provide The Requirements For Modification To The V2500 SelectOne™ Retrofit Standard).
6. V2500 Service Bulletin V2500-ENG-73-0071 (Engine — Fuel And Control — Replacement Of Fuel Temperature Thermocouple With Thermocouple With Stud And Nut Terminations).
7. V2500 Service Bulletin V2500-ENG-73-0142 (Engine Fuel And Control — Fuel Temperature Thermocouple — Introduction Of A Revised Thermocouple).
8. Harco Service Bulletin No. SB1-73-35-45.

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-A5 Series Illustrated Parts Catalog, P&W Ref. PN 2A4428, Chapter/Section 73-35-15.
2. V2500-D5 Series Illustrated Parts Catalog, P&W Ref. PN 2A4426, Chapter/Section 73-35-15.

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.
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

Not Applicable.

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
22912-200	1	*	THERMCPL — FUEL TEMP	HAD22308 (73-35-15-01-100)	(2)(B)(N) (S)(V)
22912-200	1	*	THERMCPL — FUEL TEMP	22912-000 (73-35-15-01-100)	(2)(B)(N) (S)(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
22912-200	1	*	THERMCPL — FUEL TEMP	HAD22308 (73-35-15-01-100)	(2)(B)(N) (S)(V)
22912-200	1	*	THERMCPL — FUEL TEMP	22912-000 (73-35-15-01-100)	(2)(B)(N) (S)(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.

(2) The new part is a replacement part only, and cannot be obtained by modification of the old part.

Spare Parts Availability

(B) The new part will be available approximately March 31, 2016.

(N) The old part is not available.

(S) Procure the part directly from the Supplier referenced in Vendor Services or Special Components.

(V) This is the HARCO part number.

Vendor Services or Special Components/Materials

Vendor Services or Special Components/Materials

P&W Designation	Vendor Designation	Name	Vendor Name & Address
	22912-200	Thermcpl — Fuel Temp	HARCO LLC 186 Cedar St Branford, CT 06405 USA
Source Code: 00060 See Illustrated Parts Catalog Vendor Manufacturer's Code List			
To obtain a copy of Reference 8, Harco Service Bulletin No. SB1-73-35-45. Contact Harco: www.harcolabs.com			

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

Not Applicable.

Other Material Information Data

Not Applicable.

Accomplishment Instructions

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5 and V2500-A5 SelectOne™ 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 Fuel Temperature Thermocouple, PN HAD22308 or PN 22912-000 by the procedure that follows. See Figure 1.
   A. Open the fan cowl doors as specified in Reference 4, Aircraft Maintenance Manual, Chapter/Section 71-13-00.
   B. Remove the Fuel Temperature Thermocouple, PN HAD22308 or PN 22912-000 as specified in Reference 4, Aircraft Maintenance Manual, Chapter/Section 73-35-15.
   C. Replace the Fuel Temperature Thermocouple, PN HAD22308 with PN 22912-200 or PN 22912-000 with PN 22912-200.
   D. Install the new Fuel Temperature Thermocouple, PN 22912-200 as specified in Reference 4, Aircraft Maintenance Manual, Chapter/Section 73-35-15.
   E. Close the fan cowl doors as specified in Reference 4, Aircraft Maintenance Manual, Chapter/Section 71-13-00.
2. Recording Instructions
   A. A record of accomplishment is required.

For V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5 and V2500-A5 SelectOne™ Engines Removed from The Aircraft:

1. Replace the Fuel Temperature Thermocouple, PN HAD22308 with PN 22912-200 or PN 22912-000 with PN 22912-200. See Figure 1.
2. 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 Fuel Temperature Thermocouple, PN HAD22308 or PN 22912-000 by the procedure that follows. See Figure 2.
   A. Open the fan cowl doors as specified in Reference 4, Aircraft Maintenance Manual, Chapter/Section 71-13-00.
   B. Remove the Fuel Temperature Thermocouple, PN HAD22308 or PN 22912-000 as specified in Reference 4, Aircraft Maintenance Manual, Chapter/Section 73-35-15.
   C. Replace the Fuel Temperature Thermocouple, PN HAD22308 with PN 22912-200 or PN 22912-000 with PN 22912-200.
   D. Install the new Fuel Temperature Thermocouple, PN 22912-200 as specified in Reference 4, Aircraft Maintenance Manual, Chapter/Section 73-35-15.
   E. Close the fan cowl doors as specified in Reference 4, Aircraft Maintenance Manual, Chapter/Section 71-13-00.

2. Recording Instructions

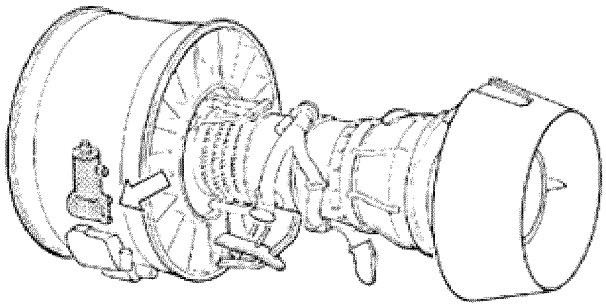
   A. A record of accomplishment is required.

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

1. Replace the Fuel Temperature Thermocouple, PN HAD22308 with PN 22912-200 or PN 22912-000 with PN 22912-200. See Figure 2.

2. Recording Instructions

   A. A record of accomplishment is required.



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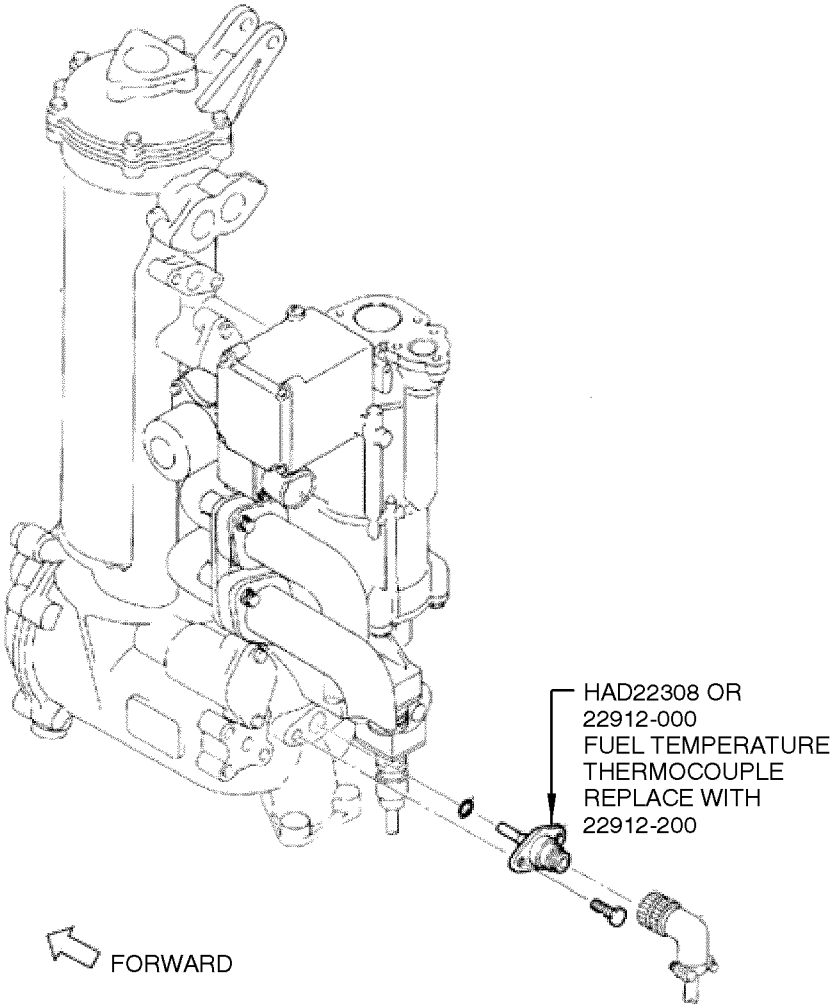

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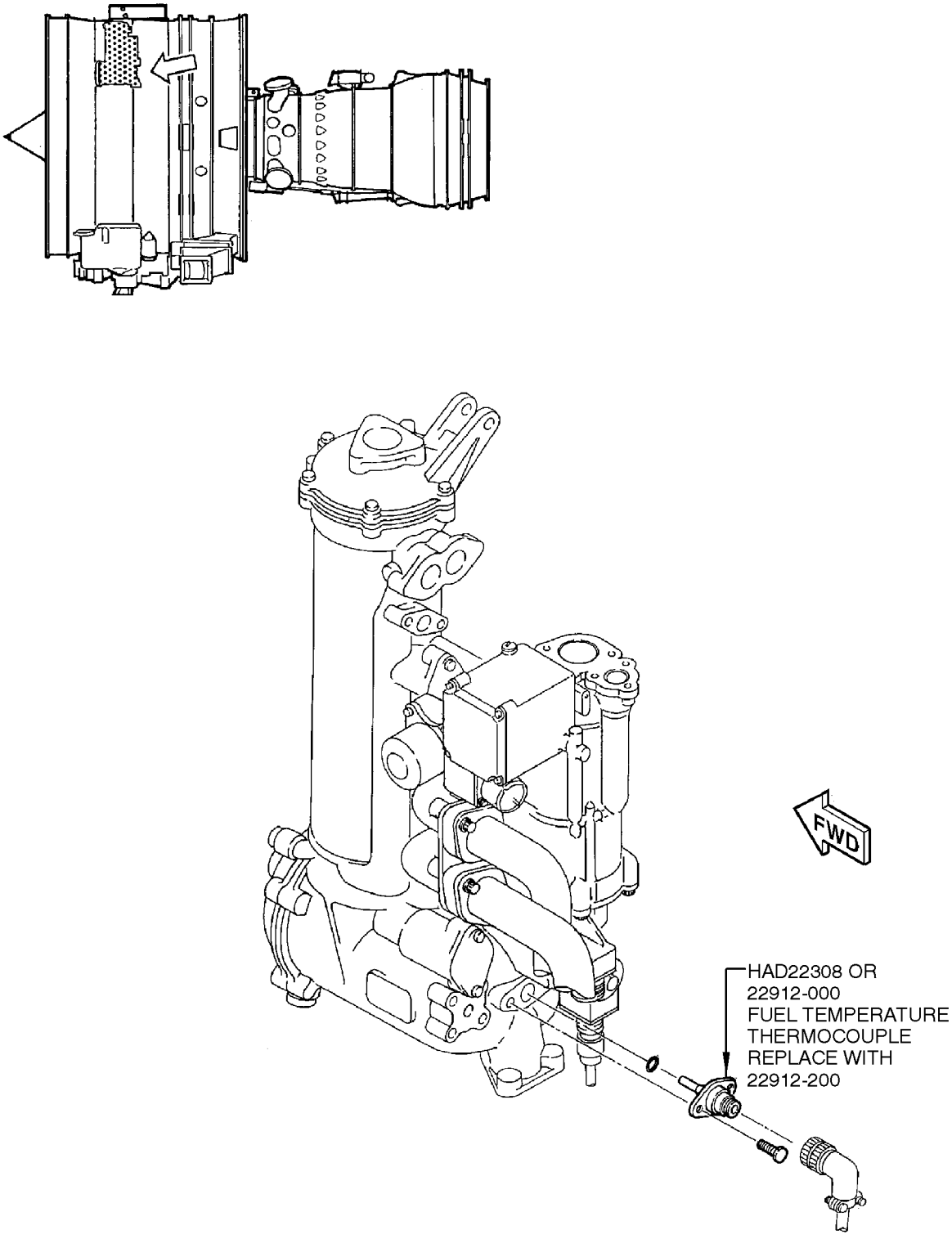
LOCATION OF THE FUEL TEMPERATURE THERMOCOUPLE
73-35-15
FIGURE 1



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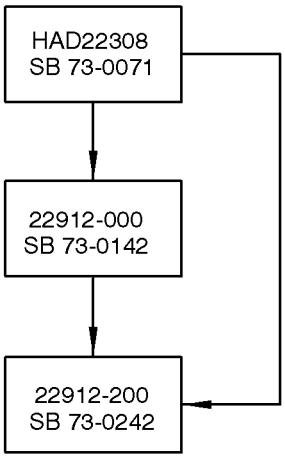
LOCATION OF THE FUEL TEMPERATURE THERMOCOUPLE
73-35-15
FIGURE 2

Appendix

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



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FUEL TEMPERATURE THERMOCOUPLE
CHART A

Added Data

Internal Reference Information

Revision No.	Reference Document	Origination
Original	EC15VI003	FS/IEL

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Technical Publications Cross Reference Table

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	