

SERVICE BULLETIN

ENGINE — RING SEGMENT ASSEMBLIES, 2ND STAGE HIGH PRESSURE TURBINE
(HPT) — INTRODUCTION OF, FOR IMPROVED EFFICIENCY

MODEL APPLICATION

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

BULLETIN ISSUE SEQUENCE

V2500 Series 72-0649

ATA NUMBER

72-45-24

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Compliance Category

8

November 24/15

V2500-ENG-72-0649

Page 1 of 16

Summary

See the Reason.

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 11, Service Bulletin V2500-ENG-72-0562.

Engine Serial Nos. V15001.

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

Engine Serial Nos. V15002 thru V17954, V17956, V17958, V17960, V17962, V17964, V17966, V17968, V17970.*

* This estimate of engine serial numbers will be revised, if necessary, when parts are installed in engines in production.

Concurrent Requirements

This Service Bulletin must be done at the same time or after Reference 11, Service Bulletin V2500-ENG-72-0562.

This Service Bulletin must be done at the same time or after Reference 12, Service Bulletin No V2500-ENG-72-0575.

This Service Bulletin must be done at the same time or after Reference 13, V2500-ENG-72-0576.

Reason

1. Condition: The A5 SelectOne™ HPT has the capability for improved efficiency.
2. Background: This Service Bulletin improves Thrust Specific Fuel Consumption (TSFC) by contouring the A5 SelectOne™ HPT 2nd Vane I.D. Trailing Edge Platform.
3. Objective: Redesign the 2nd Vane Casting, 2nd Vane and 2nd Vane Cluster to cast in the revised I.D. Trailing Edge Platform contour.
4. Substantiation: The changes introduced by this Service Bulletin were the subject of satisfactory engineering analysis. This Service Bulletin complies with the applicable engine certification basis.
5. Effects of Bulletin on:
 - Removal/Installation: None.
 - Disassembly/Assembly: None.
 - Cleaning: None.
 - Inspection/Check: None.
 - Repair: None.
 - Testing: None.
6. Supplemental Information
 - None.

November 24/15

V2500-ENG-72-0649

Page 2

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Description

Replace or do a modification of the 2nd stage HPT vane ring segment and 2nd stage vane ring segment.

Compliance

Category 8

Accomplish based upon experience with the prior configuration.

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 holder has been informed of this inspection

Manpower

1. In Service

..... Not Applicable.

2. At Overhaul

..... Not Applicable.

Weight and Balance

1. Weight Change

- 0.30 Pound(s) (- 0.14 kg).

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 — 72-45-24.

2. V2500 Engine Illustrated Parts Catalogs P&W Ref. PN 2A4428, Chapter/Section 72-45-24.

3. V2500 Engine Manual, P&W Ref. PN 2A4407, Chapter/Section 72-45-24.

4. V2500 Engine Manual, P&W Ref. PN 2A4416, Chapter/Section 72-45-24.
5. IAE V2500 Service Bulletin V2500-ENG-70-0428 (Engine — HP Turbine Rotor and Stator Assembly — To Announce The Availability of New Stage 2 HP Turbine Vanes).
6. IAE V2500 Service Bulletin V2500-ENG-72-0237 (Engine — HP Turbine Rotor And Stator Assembly — Provide New Stage 2 HPT Vanes).
7. IAE V2500 Service Bulletin V2500-ENG-72-0365 (Engine — Provide Pretrenched Second Stage HPT Air Sealing Ring Segments).
8. IAE V2500 Service Bulletin V2500-ENG-72-0368 (Engine — Provide New 2nd Stage High Pressure Turbine (HPT) Vanes).
9. IAE V2500 Service Bulletin V2500-ENG-72-0489 (Engine — Allow For The Use Of Reoperated 2nd Stage HPT Vanes In Newer Delivered Configurations).
10. IAE V2500 Service Bulletin V2500-ENG-72-0522 (Engine — Provide New Second Stage Vane With Increased Cooling Air).
11. IAE V2500 Service Bulletin V2500-ENG-72-0562 (Engine — High Pressure Turbine (HPT) — V2500 Selectone Production And Retrofit — HPT Upgrade).
12. IAE V2500 Service Bulletin V2500-ENG-72-0575 (Engine — Rotor And Stator Assembly — Provide New 2nd Stage High Pressure Turbine (HPT) Restaggered Blades).
13. IAE V2500 Service Bulletin V2500-ENG-72-0576 (Engine — Turbine Nozzle — Provide A New High Pressure Turbine (HPT) 1st Stage Vane Assembly).
14. IAE V2500 Service Bulletin V2500-ENG-72-0631 (Engine — Provide New Turbine Cooling Air (TCA) Orifice Plate To Improve Thrust Specific Fuel Consumption (TSFC)).
15. IAE V2500 Service Bulletin V2500-ENG-72-0634 (Engine — Seals, Blade Outer Air (Duct Segments), 1st And 2nd Stage High Pressure Turbine (HPT) — Replace Or Modify To Improve Efficiency).
16. IAE V2500 Service Bulletin V2500-ENG-72-0653 (Engine — Blade, Second Stage High Pressure Turbine (HPT) — Introduction Of, To Reduce Corrosion).

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 Engine Illustrated Parts Catalog, P&W Ref. PN 2A4427, Chapter/Section 72-45-24.
2. V2500 Engine Manual, P&W Ref. PN 2A4407, Chapter/Section 72-45-24 Cleaning, Inspection and Repair, to add the new part.
3. V2500 Engine Manual, P&W Ref. PN 2A4416, Chapter/Section 72-45-24 Cleaning, Inspection and Repair, to add the new part.

Interchangeability of Parts

Old and new parts are directly interchangeable. However, to achieve the full benefit of this change it is recommended that this Service Bulletin be incorporated in sets.

It is permissible to intermix the old (PN 2A4262 or PN 2A4162) 2nd stage vane cluster and new (PN 2A4462 or PN 2A4562) 2nd stage vane cluster parts.

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. There is a kit, number 2A4430 to do this Service Bulletin.
2. Part availability information is provided in material data Instructions — Disposition.
3. V2500-A5 SelectOne™ retrofit kit 2A4435, introduced by Reference 16, Service Bulletin V2500-ENG-72-0653, will no longer be supplied. It is replaced with PN 2A4430 because of the new HPT Stage 2 Vane PN 2A4462 and PN 2A4562 introduced by this Service Bulletin. HPT Stage 2 Vane PN 2A4162 and PN 2A4262 are details of PN 2A4435 V2500-A5 SelectOne™ retrofit kit. HPT Stage 2 Vane PN 2A4462 and PN 2A4562 are details of PN 2A4430 V2500-A5 SelectOne™ retrofit kit. There are no other changes to the content of the V2500-A5 SelectOne™ retrofit kit.

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
2A4462	17	29,210.00	SEGMENT, RING HPT STG 2 VANE	2A4262 (72-45-24-2-50 A)	(1)(B)(K)(L)
2A4562	2	30,150.00	SEGMENT, RING HPT STG 2 VANE	2A4162 (72-45-24-2-260 A)	(1)(B)(K)(L)

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.

Spare Parts Availability

(B) The new part will be available approximately December 15, 2015.

(K) PN 2A4262 and PN 2A4162 are details of 2A4435 V2500-A5 SelectOne™ retrofit kit. PN 2A4462 and PN 2A4562 are details of 2A4430 V2500-A5 SelectOne™ retrofit kit.

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

Vendor Services or Special Components/Materials

Vendor Services

P&W Designation	Vendor Designation	Name	Vendor Name & Address
2A4462 2A4562		Segment, Ring HPT Stage 2 Vane	Dallas Airfoil Repair Operations (GSP-DARO) 1177 Great Southwest Parkway Mail Stop 970-00 Grand Prairie, TX 75050 USA
FAA Repair License Number: P82R980N			
Source Code: 4T938 See Standard Practices Source Code List			
2A4462 2A4562		Segment, Ring HPT Stage 2 Vane	Turbine Overhaul Services Pte, Ltd. (TOS) 5 Tuas Drive 2 Mail Stop 107-58 Singapore 638639
FAA Repair License Number: OT3Y748L			
Source Code: 0AH76 See Standard Practices Source 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
2A4462	SEGMENT, RING HPT STG 2 VANE	2A4262
2A4562	SEGMENT, RING HPT STG 2 VANE	2A4162

Other Material Information Data

Not Applicable.

Accomplishment Instructions

1. Replace the 17 2nd Stage HPT Vane Ring Segments, PN 2A4262 with PN 2A4462 or do a modification of the 2nd Stage HPT Vane Ring Segment, PN 2A4262. See Figure 1.
 - A. Send the parts to either vendor listed in the Vendor Services section. The modified 2nd Stage HPT Vane Ring Segment will be returned identified as given in Table 1 below.

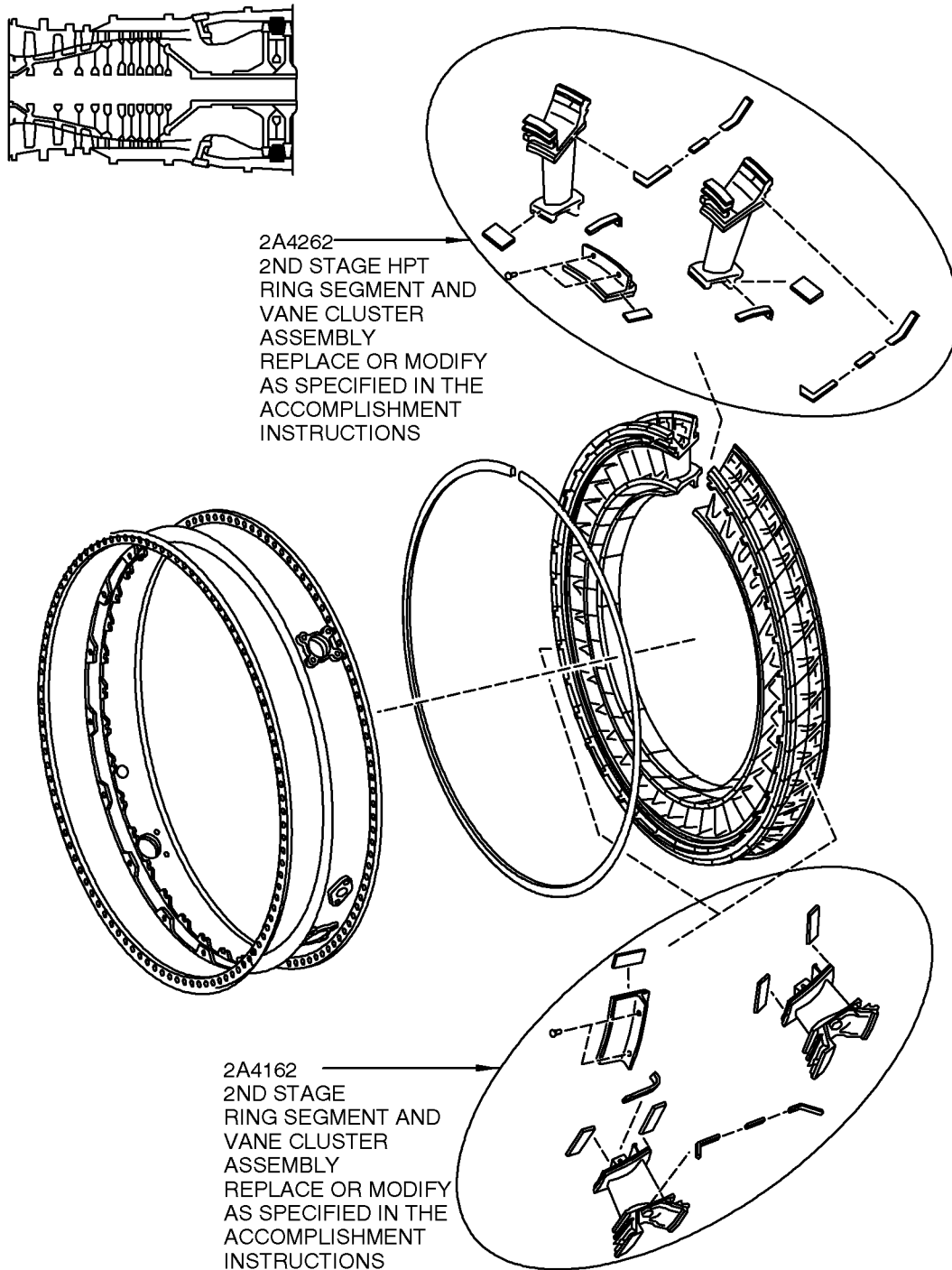
Table 1

New PN	Old PN
2A4462	2A4262

2. Replace the two 2nd Stage Vane Ring Segments, PN 2A4162 with PN 2A4562 or do a modification of the 2nd Stage Vane Ring Segment, PN 2A4162. See Figure 1.
 - A. Send the parts to either vendor listed in the Vendor Services section. The modified 2nd Stage Vane Ring Segment will be returned identified as given in Table 2 below.

Table 2

New PN	Old PN
2A4562	2A4162



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LOCATION OF THE RING SEGMENT AND VANE CLUSTER ASSEMBLY (BORESCOPE)
72-45-24
FIGURE 1

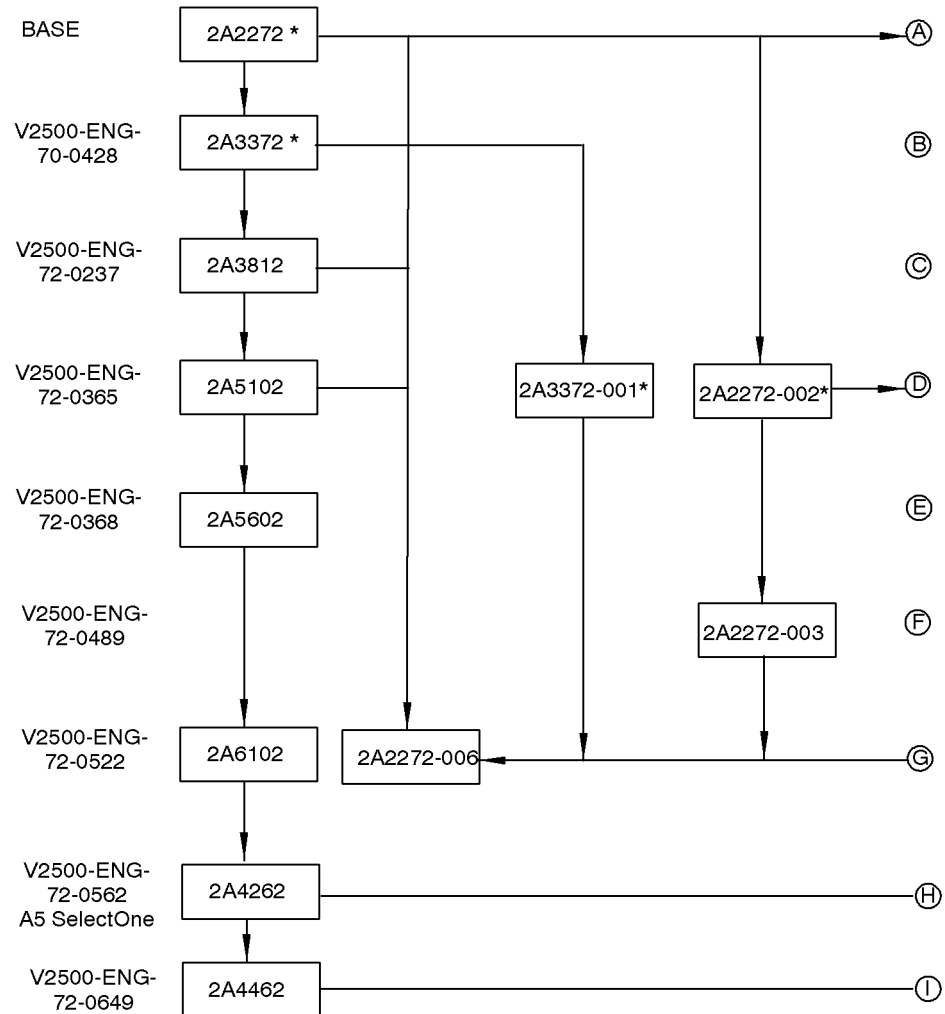
November 24/15

V2500-ENG-72-0649

Page 9

Appendix

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



* DO NOT USE IN MODEL V2533-A5

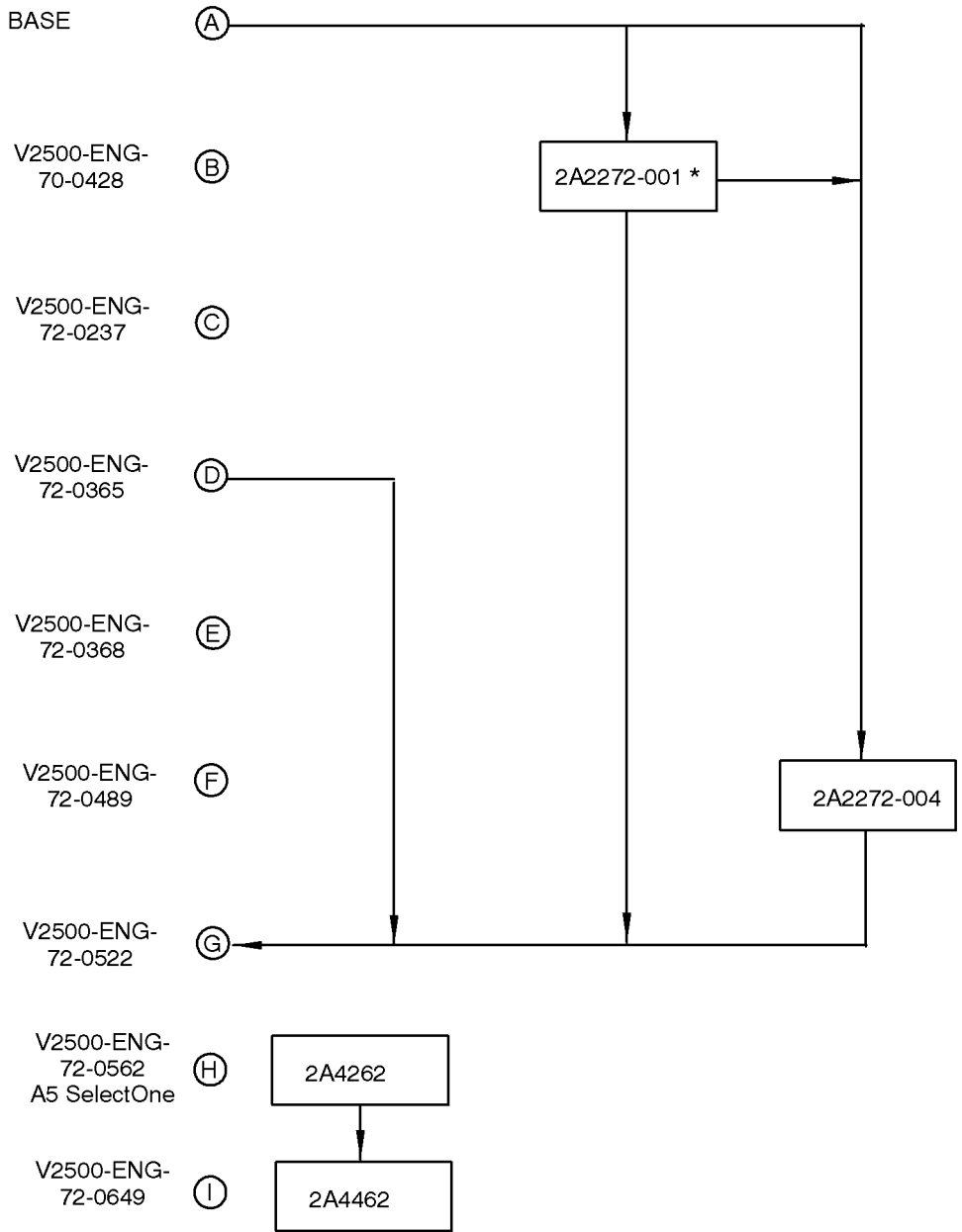
B525455

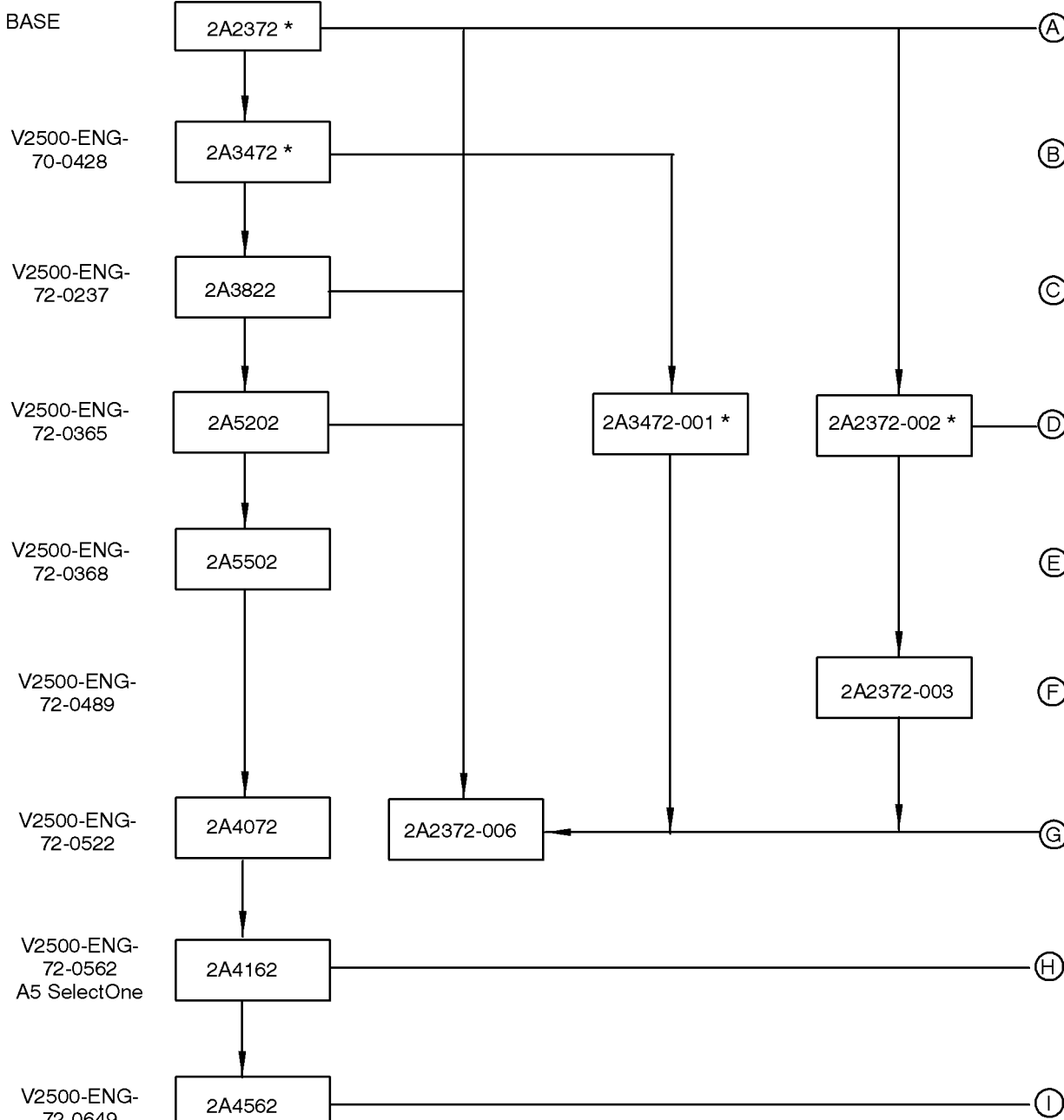
RING SEGMENT AND VANE CLUSTER ASSEMBLY (BORESCOPE) REF. CATALOG
SEQUENCE NO. 72-45-24 FIGURE 02 ITEM 050.
CHART A, SHEET 1

November 24/15

V2500-ENG-72-0649

Page 11





* DO NOT USE IN MODEL V2533-A5

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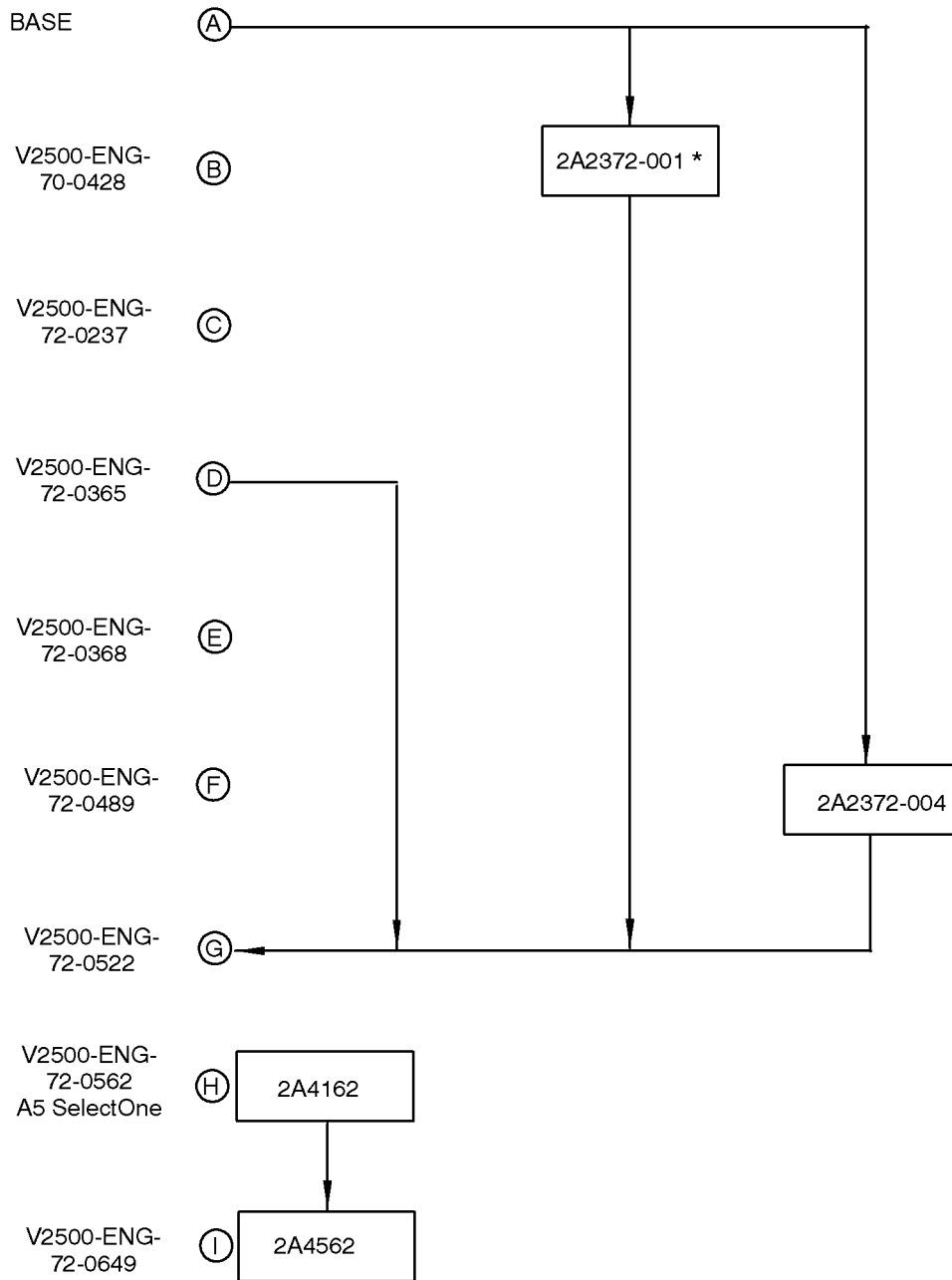
RING SEGMENT AND VANE CLUSTER ASSEMBLY (BORESCOPE) REF. CATALOG
SEQUENCE NO. 72-45-24 FIGURE 02 ITEM 260.
CHART B, SHEET 1

November 24/15

V2500-ENG-72-0649

Page 13

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* DO NOT USE IN MODEL V2533-A5

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RING SEGMENT AND VANE CLUSTER ASSEMBLY (BOREScope) REF. CATALOG
SEQUENCE NO. 72-45-24 FIGURE 02 ITEM 260.
CHART B, SHEET 2

November 24/15

V2500-ENG-72-0649

Page 14

Added Data

Internal Reference Information

Revision No.	Reference Document	Origination
Original	EC12VA007	BB/IEL

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

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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	