

International  
Aero Engines

V2500 Propulsion System — Engine

# SERVICE BULLETIN

Date: September 15, 1999

Subject: Transmittal of Revision 2 to Service Bulletin Number V2500-ENG-73-0137

Service Bulletin Revision History:

<u>Event</u>	<u>Date</u>
Original Issue	December 11, 1998
Revision 1	May 25, 1999
Revision 2	September 15, 1999

Reasons for issuance of Revision:

- (1) To amend the "Post-requisite Instructions" (Ref 2.C.(2)). The task to test the engine electrical system should read 71-00-00-710-017.

Effect on Past Compliance:

None.

List of Effective Pages:

<u>Page No.</u>	<u>Rev No.</u>	<u>Date</u>
1	2	September 15, 1999
2-3	Original	December 11, 1998
4	1	May 25, 1999
5-8	Original	December 11, 1998
9	2	September 15, 1999
10-14	Original	December 11, 1998
15-16	1	May 25, 1999

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Transmittal  
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ENGINE - POWERPLANT - INSTALLATION OF NEW TERMINAL BLOCK ASSEMBLY

## MODEL APPLICATION

V2500-A1  
V2522-A5  
V2524-A5  
V2527-A5  
V2527E-A5  
V2530-A5  
V2533-A5

## BULLETIN INDEX LOCATOR

73-00-00

## COMPLIANCE CATEGORY CODE

5

## INTERNAL REFERENCE No

PM/SM 97VN202

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## 1. Planning Information

### A. Effectivity

#### (1) Aircraft:

- (a) Airbus A319
- (b) Airbus A320
- (c) Airbus A321

#### (2) Engine:

- (a) All V2500-A1 Engines.
- (b) V2522-A5 Engines prior to V10440.
- (c) V2524-A5 Engines prior to V10440.
- (d) V2527-A5 Engines prior to V10440.
- (e) V2527E-A5 Engines prior to V10440.
- (f) V2530-A5 Engines prior to V10440.
- (g) V2533-A5 Engines prior to V10440.

### B. Reason

#### (1) Condition

The Tangs that hold the Terminal Blocks in place inside the Terminal Block Assembly may chafe and cause fretting of the Terminal Block.

#### (2) Background

There has been a report from Operators of erroneous Cockpit readings attributed to a Terminal Block damaged by fretting caused by the Tangs.

#### (3) Objective

To introduce a new Terminal Block Assembly with improved temperature, fluid and vibration resistance characteristics and so maintain engine reliability.

#### (4) Substantiation

Not Applicable.

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(5) Effect of Bulletin on:

(a)	Removal/Installation	Affected
(b)	Disassembly/Assembly	Affected
(c)	Cleaning	Not affected
(d)	Inspection/Check	Not affected
(e)	Repair	Not affected
(f)	Testing	Not affected

(6) Supplemental Information

- (a) The A320/V2500-A1, A320/A321/V2500-A5 Aircraft Maintenance Manual, Chapters 71-51-42 and 71-51-43 will be revised to include steps for the removal and installation of the new Terminal Block Assembly.
- (b) The CMM-EHC-V2500-11A Component Maintenance Manual, Chapter 73-22-34 will be revised to include steps for the removal and installation of the new Terminal Block Assembly.

C. Description

(1) The change introduced by this Service Bulletin is as follows:-

- (a) The cover of the Terminal Block Assembly is removed to expose the cable connections. All the cables are extracted and the associated connector then removed from the Terminal Block Assembly. The Replacement Terminal Block Assembly is installed, the cables inserted into the appropriate terminals and the associated connector installed on the new Terminal Block Assembly.

D. Approval

The technical content of this Service Bulletin has been approved under the authority of the DGAC (Direction Generale de L'Aviation Civile - France) Design Organisation Approval No. F.JA.02.

E. Compliance

Category 5

Accomplish when the Engine or System is disassembled sufficiently to afford access to the affected Subassembly (i.e. Modules, Accessories, Components) and all affected spare Subassemblies.

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## F. Manpower

Estimated man-hours to incorporate the intent of this Service Bulletin on each Engine:

<u>VENUE</u>	<u>ESTIMATED MANHOURS</u>
(1) In Service	<u>4.00 M/Hrs</u>
Total	4.00 M/Hrs

NOTE: Manhour estimate provided for planning purposes only.

## G. Material Cost and Availability

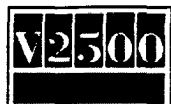
R There is no kit for this service bulletin. The part required to  
R accomplish this bulletin is available from the supplier as a single  
R line item. One 745-5435-501 Terminal Block Assembly is required for  
R each engine on which this this service bulletin is to be  
R accomplished.

## H. Tooling - Cost and Availability

M81968/14/02 Cable Inserter/Extractor.

## I. Weight and Balance

- (1) Weight change..... None
- (2) Moment arm..... None
- (3) Datum..... Engine Front Mount Centerline  
(Powerplant Station PPS 100.00)



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J. Electrical Load Data

Not affected.

K. References

<u>Publication</u>	<u>Chapter/Section</u>
A320/V2500-A1, A320/A321/V2500-A5 (M-V2500-1IA)	71-13-00
Aircraft Maintenance Manual	71-00-00
SPP-V2500-1IA Standard Practices/Processes Manual	70-41-00
IAE PCI-V2500-1IA Overhaul Processes And	Section II
Consumable Index	
Airbus Aircraft Modification No. 25189	

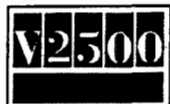
L. Other Publications Affected

<u>Publication</u>	<u>Chapter/Section</u>
A320/V2500-A1 Powerplant Illustrated Parts Catalog (PIP-V2500-2IA)	73-22-34
A320/A321/V2500-A5 Powerplant Illustrated Parts Catalog (PIP-V2500-2IA)	73-22-34
A320/V2500-A1 Engine Illustrated Parts Catalog (S-V2500-1IA)	73-22-34
A321/V2500-A5 Engine Illustrated Parts Catalog (S-V2500-2IA)	73-22-34
A320/V2500-A1, A320/A321/V2500-A5 Aircraft	71-51-42
Maintenance Manual	71-51-43
CMM-EHC-V2500-11A Component Maintenance Manual	73-22-34

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## 2. Accomplishment Instructions

### A. Pre-requisite Instructions

- (1) Open the Fan Cowl Doors as instructed in the A320/V2500-A1, A320/A321/V2500-A5 Aircraft Maintenance Manual, Task 71-13-00-010-010.

### B. Rework/Modification Instructions

- (1) Remove 1 off A218-B14 Screw and SP154-B Washer and 4 off A218-D14 Screws to release the 740-5455-505/503 Cover from the 740-5435-509/507/505 Terminal Block Assembly. Remove the cover. Refer to Figure 1, sheet 1.
- (2) Attach temporary tags to each Harness Cable to identify to which Terminal Block (M81714/3-B-A1 or M81714/3-B-B1) and to which Terminals (identified A thru H) that the Cables are connected. Refer to Figure 1, sheet 2.
- (3) Use a M81968/14/02 Cable Inserter/Extractor tool to remove the Cables from the Terminal Block.
- (4) Remove the Screws and Washers to release the Clamping Bars from the Backshell. Remove the Clamping Bars. Refer to Figure 1, sheet 3.
- (5) Remove the Backshell from the Terminal Block Assembly.
- (6) Remove the Adhesive Tape from the Harness Cables at the position marked by the Backshell Clamp.
- (7) Remove the Lacing Tape from around the Screen Tails of the Harness Cables.
- (8) Bend the screen tails away from the cables and release the Ground Ferrule.
- (9) Remove the Cables from the Terminal Block Assembly, the Ground Ferrule and the Backshell.
- (10) Remove the 2 off AS20625 Nuts and AS21512 Bolts to release the Terminal Block Assembly from the Engine (Flange FB). Remove the Terminal Block Assembly from the Engine.
- (11) Remove the 1 off A218-B14 Screw and SP154-B Washer and 4 off A218-D14 Screws to release the 745-5455-501 Cover from the new 745-5435-501 Terminal Block Assembly. Remove the cover. Refer to Figure 2, sheet 1.

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NOTE: Lubricate all threads and abutment faces of nuts, bolts, and screws with engine oil (CoMat 10-039).

NOTE: Torque all bolts, screws, and nuts as instructed in SPP-V2500-1IA Standard Practices/Processes Manual, Chapter 70-41-00.

- (12) Install the 745-5435-501 Terminal Block Assembly to the Engine (Flange FB) using 2 off AS20625 Nuts and AS21512 Bolts at the holes vacated during the removal of the old Terminal Block Assembly. Torque the Nuts to 85 - 105 lbfin (10 - 12 Nm).
- (13) Remove the Backshell from the Terminal Block Assembly.
- (14) Remove the Screws and Washers to release the 2 off Clamping Bars from the Backshell. Remove the Clamping Bars.

WARNING: SOLVENT (COMAT 01-438) IS FLAMMABLE AND THE VAPOUR IS HARMFUL. USE IN A WELL VENTILATED AREA. AVOID PROLONGED BREATHING OF VAPOURS OR PROLONGED OR REPEATED CONTACT WITH SKIN. HIGH CONCENTRATIONS MAY CAUSE IMPAIRED JUDGEMENT. PROTECTIVE GLOVES SHOULD BE WORN DURING USE. MAY CAUSE DERMATITIS BY REMOVING SKIN OILS. PRIOR TO USE OF THIS PRODUCT, READ THE "MATERIAL SAFETY DATA SHEET" AND FOLLOW ALL LISTED SAFETY AND HEALTH PRECAUTIONS.

- (15) Use a clean, lint free cloth (CoMat 02-099) dampened with solvent (CoMat 01-438) to remove all oil, grease, dirt or other contaminants from the Harness Pins. Wipe the area dry with a clean, lint free cloth before the solvent becomes dry.
- (16) Put all the Cables through the Backshell, Ground Ferrule and Terminal Block Connector and into the Terminal Block Assembly.

NOTE: The terminal blocks are positioned differently in the new terminal block assembly. Therefore, check that there is enough cable length in the terminal block assembly to enable a good connection between each cable and the corresponding terminal.

- (17) Move the Ground Ferrule along the Cables to secure the contact between the Screen Tails and the Terminal Block Connection.
- (18) Put the Screen Tails over the Ground Ferrule, at equal distant spacing, and along the Cables.
- (19) Attach the Screen Tails to the Cables immediately behind the Ground Ferrule with lacing tape (CoMat 02-159).

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- (20) Install the Backshell to the Terminal Block Connector. Hand tighten the Backshell to the Connector.
- (21) Use a pencil to make a small mark on the Cables to indicate the location of the Clamping Bars.
- (22) Remove the Backshell from the Terminal Block Connector.
- (23) Put tape (CoMat 02-148) around the Cables at the position marked with the pencil, to enable the Cables to be held tightly by the Clamp.

**WARNING:** IT IS THE RESPONSIBILITY OF THE OPERATOR TO OBTAIN AND OBSERVE THE MANUFACTURERS MATERIAL SAFETY DATA SHEETS FOR CONSUMABLE MATERIALS. INFORMATION SUCH AS, HAZARDOUS INGREDIENTS, PHYSICAL/CHEMICAL CHARACTERISTICS, FIRE, EXPLOSION, REACTIVITY, HEALTH HAZARD DATA, PRECAUTIONS AND SAFE HANDLING, USE AND CONTROL MEASURES AND ALSO TO TAKE LOCAL REGULATIONS INTO CONSIDERATION.

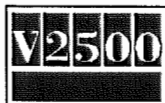
**CAUTION:** MAKE SURE THE LOCKING COMPOUND IS CONFINED TO THE THREADS.

- (24) Apply two drops of locking compound (CoMat 08-026), opposite to each other, to the threads of the Backshell.
- (25) Install the Backshell to the Terminal Block Connector. Torque the Backshell to 10 lbfin (1.13 Nm).
- (26) Apply one drop of locking compound (CoMat 08-026) to the threads of the two Clamping Bar Screws.
- (27) Attach the Clamping Bars to the Backshell with the 2 off Screws and Washers. Torque the Screws to between 10 and 20 lbfin (1.13 and 2.26 Nm).

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CAUTION: THE CONTACTS MUST BE INSTALLED IN THEIR CORRECT POSITIONS IN THE TERMINAL BLOCKS. IF THEY ARE INSTALLED IN THE INCORRECT POSITIONS, THE SYSTEM CAN BE DAMAGED.

- (28) Use a M81968/14/02 Cable Inserter/Extractor tool to install the Cables to their correct Terminal as indicated by their tags. All contacts must be correctly and fully attached to their related locations.

NOTE: Cables that were connected to the M81714/3-B-A1 terminal block should now be connected to the M81714/3-D-A1 terminal block and to the corresponding terminals. Cables that were connected to the M81714/3-B-B1 terminal block should now be connected to the M81714/3-D-B1 terminal block and to the corresponding terminals.

- (29) Remove the tags from the Cables.
- (30) Install the 745-5455-501 Cover to the 745-5435-501 Terminal Block Assembly using the 4 off A218-D14 Screws and A218-B14 Screw and SP154-B Washer. Refer to Figure 2, sheet 2. Torque the five screws to 40 lbfin (4.5 Nm).

C. Post-requisite Instructions

- (1) Close the Fan Cowl Doors as instructed in the A320/V2500-A1, A320/A321/V2500-A5 Aircraft Maintenance Manual, Task 71-13-00-410-010.
- (2) Do a test of the engine electrical system as instructed in the A320/V2500-A1, A320/A321/V2500-A5 Aircraft Maintenance Manual, Task 71-00-00-710-017.

R

D. Recording Instructions

- (1) A record of accomplishment is necessary. Write in the Engine Log that Service Bulletin V2500-ENG-73-0137 has been done.

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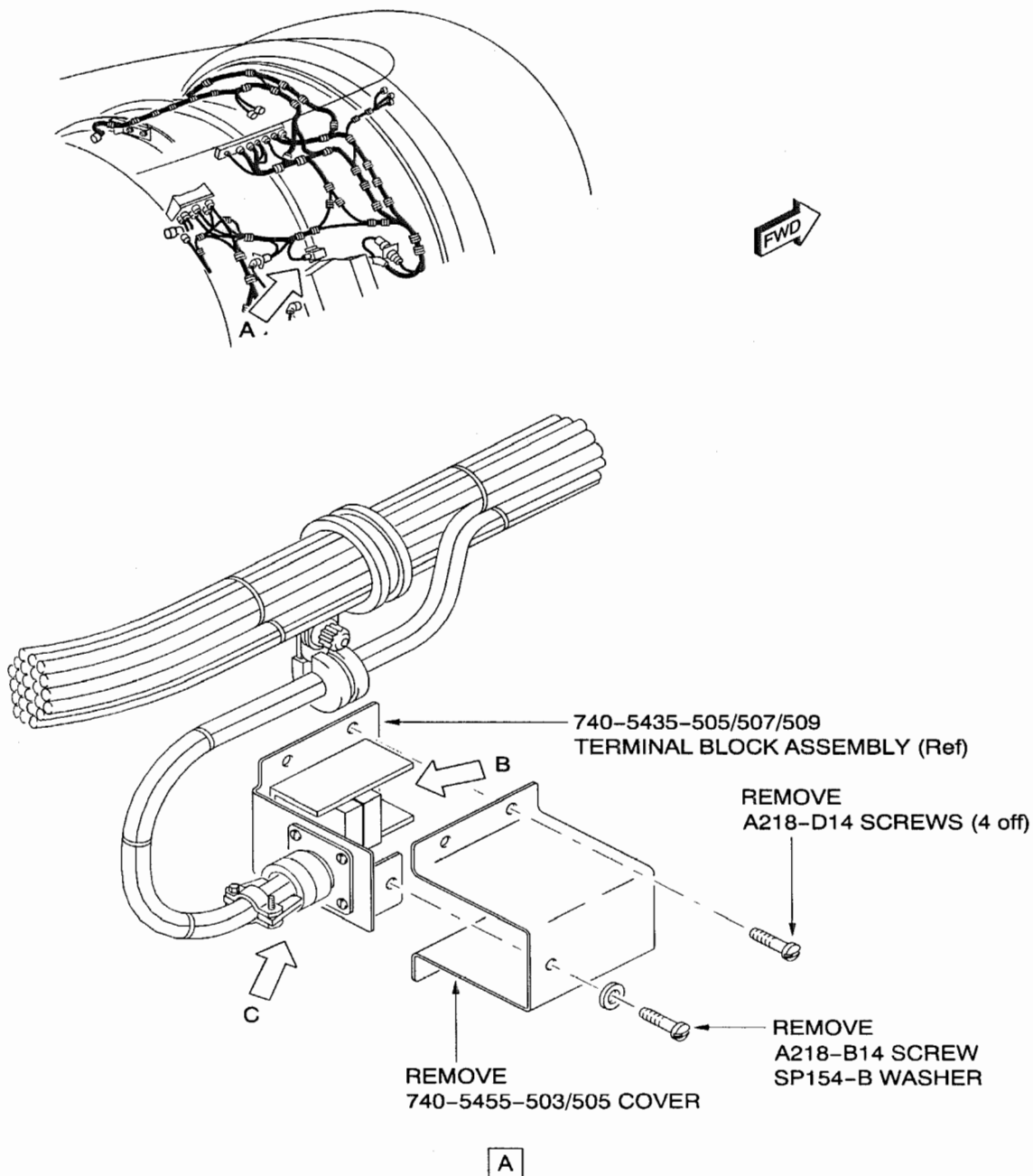
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REMOVAL OF TERMINAL BLOCK ASSY  
FIGURE 1 SHEET 1

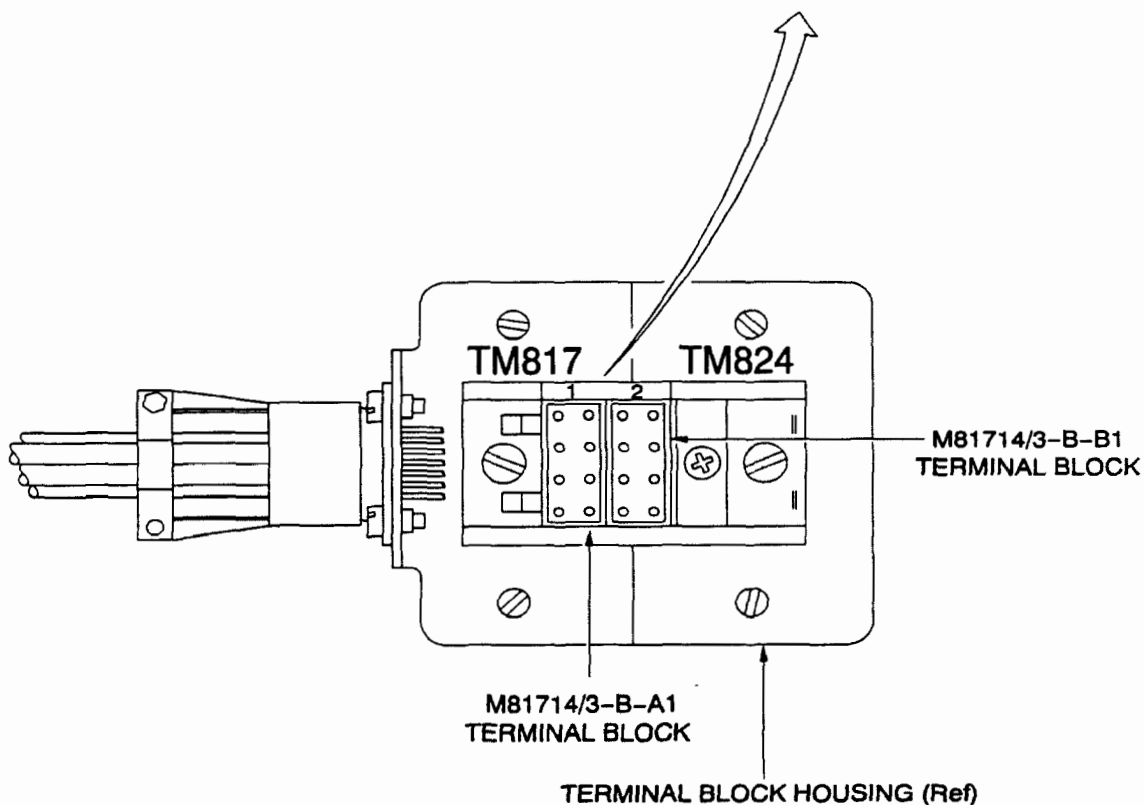
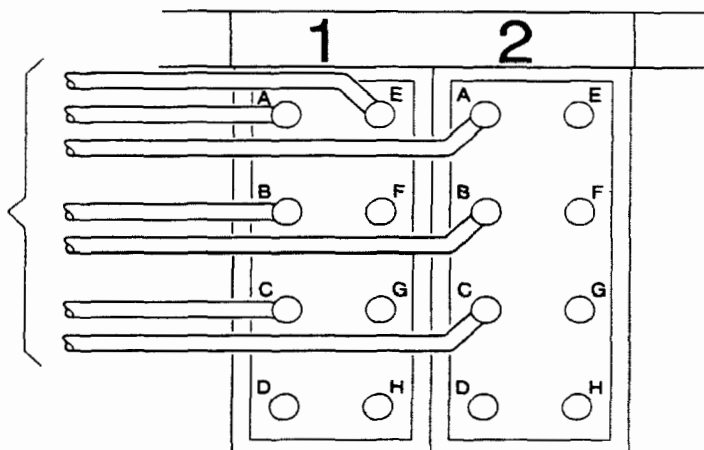
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ATTACH IDENTIFICATION TAGS  
TO EACH CABLE AND REMOVE  
CABLES FROM TERMINALS



**B**

REMOVAL OF TERMINAL BLOCK ASSY  
FIGURE 1 SHEET 2

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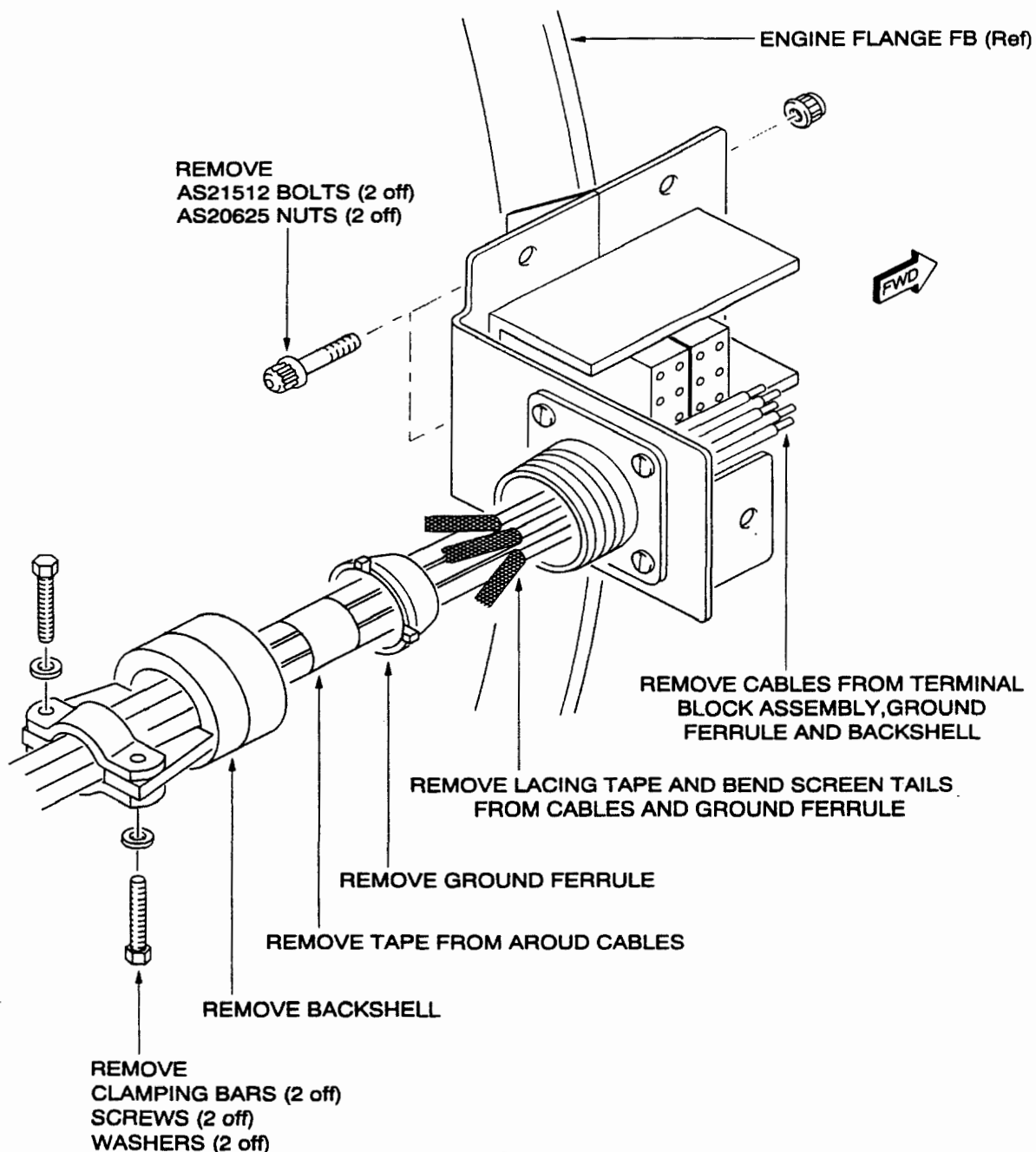
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C

REMOVAL OF TERMINAL BLOCK ASSY  
FIGURE 1 SHEET 3

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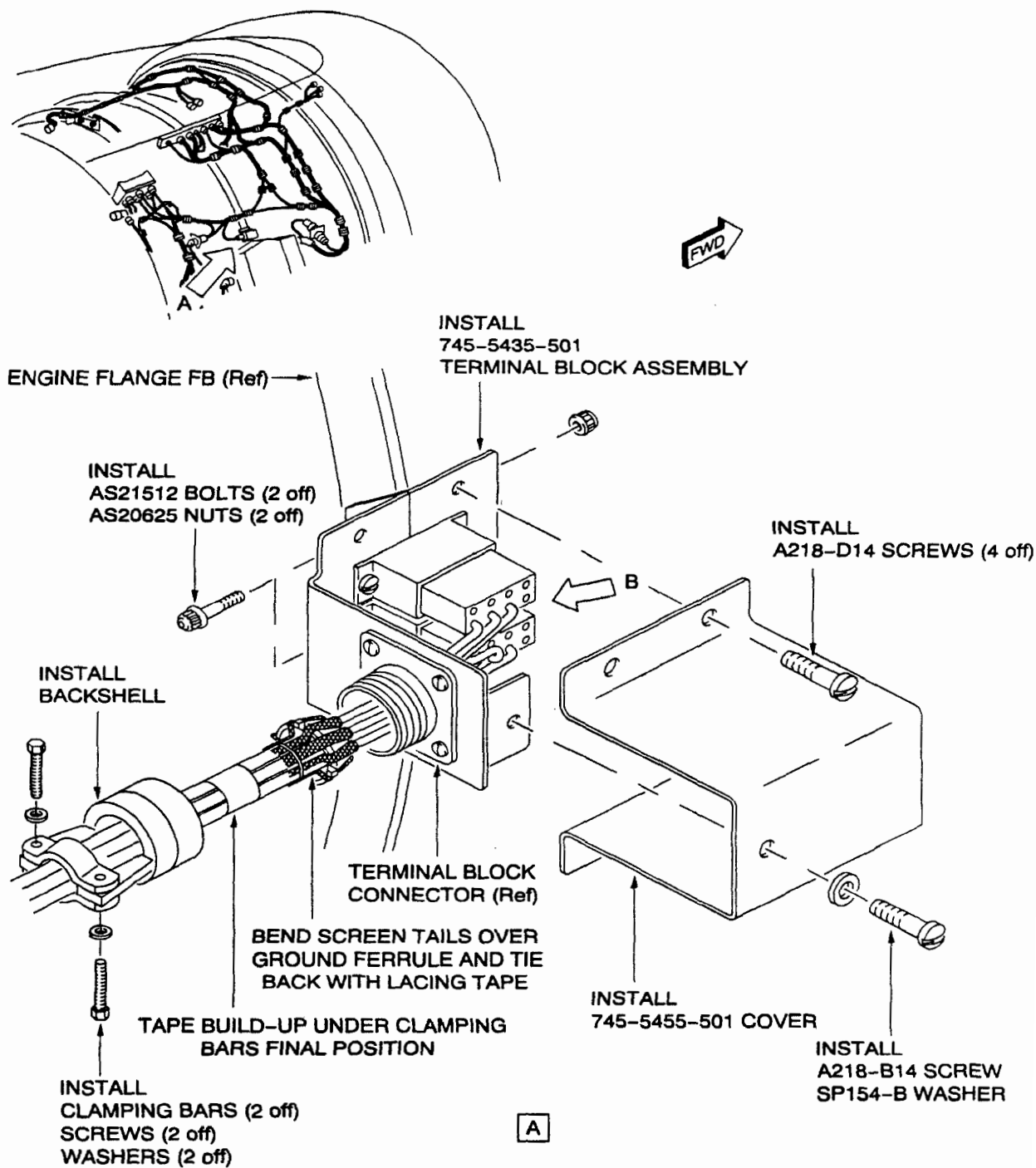
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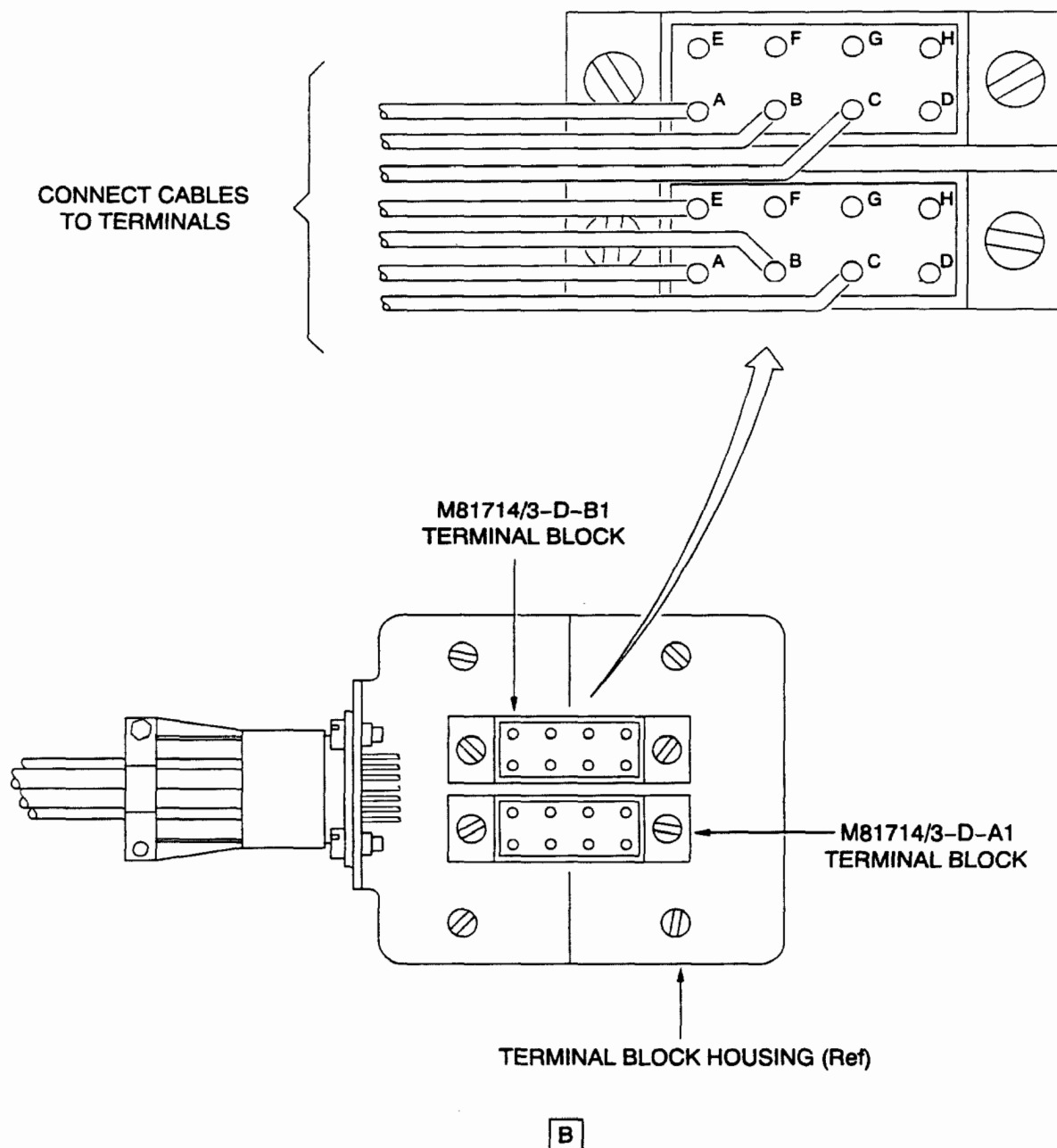
INSTALLATION OF TERMINAL BLOCK ASSY  
FIGURE 2 SHEET 1

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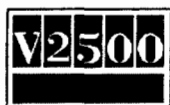


INSTALLATION OF TERMINAL BLOCK ASSY  
FIGURE 2 SHEET 2

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## 3. Material Information

Applicability: For each V2500-A1 or V2500-A5 Engine to incorporate this Bulletin.

NEW		EST'D		OLD	
PART No		UNIT		PART No	INSTR/
(ATA No)	QTY	PRICE (\$)	KEYWORD	(IPC No)	DISPOS

### A. Kits associated with this Bulletin

R None.

### B. Parts affected by this Bulletin

R	745-5435-501 (73-22-34)	1	\$1895.00	.Terminal Block Assembly	740-5435-509 (01-560)	(B) (1D) (S1)
	745-5455-501 (73-22-34)	1		..Cover	740-5455-505 (01-562)	(B) (S2)
	745-5454-501 (73-22-34)	1		..Bracket	740-5454-507 (01-570)	(B) (S2)
	745-5453-501 (73-22-34)	1		..Bracket	740-5453-509 (01-571)	(B) (S2)
	M81714-29-1 (73-22-34)	2		..Mounting Rail	MRTB2 (01-572)	(B) (S2)
	A218-B14 (73-22-34)	4		..Screw	A206-B14 (01-573)	(B) (S2)
	M81714-3D-A1 (73-22-34)	1		..Terminal Block	M81714-3B-A1 (01-574)	(B) (S2)
	M81714-3D-B1 (73-22-34)	1		..Terminal Block	M81714-3B-B1 (01-575)	(B) (S2)
	--- (73-22-34)	1		..Tube, End Block	592558-1 (01-576)	(S2)
	--- (73-22-34)	1		..Plate, End Block	592556-2 (01-577)	(S2)
	--- (73-22-34)	1		..Locking Screw, End Block	592144-1 (01-578)	(S2)

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## C. Instructions/Dispositions Code Statements

- R
- (A)
  - (B) New parts are currently available.
  - (1D) Discard old part.
  - (S1) New part may be used in lieu of old part but not vice versa.
  - (S2) New parts coded (S2) must replace old parts coded (S2) as a complete set per Engine.

- R
- NOTE: The estimated 1999 Unit Price shown is provided for planning purposes only and does not constitute a firm quotation. Consult the Rohr Price Catalog or contact Rohr's Spares Parts Sales Department for information concerning firm prices.

## D. Materials required to incorporate this Bulletin.

CoMat	01-438	Solvent
CoMat	02-099	Lint free cloth
CoMat	10-039	Lubricant (Engine Oil)
CoMat	02-159	Lacing Tape
CoMat	02-148	Tape
CoMat	08-026	Locking Compound

NOTE: To identify the consumable materials, refer to the Overhaul Processes and Consumable Index PCI-V2500-11A.