P U B L I C A T I O N T R A N S M I T T A L

International Aero Engines

628 Hebron Avenue, Suite 400
Glastonbury, CT 06033, USA.
Tel: +1 (860) 368-3823
Fax: +1 (860) 755-6876

DATE: Jul.26/12

V2500-A5 PROPULSION SYSTEMS NON-MODIFICATION SERVICE BULLETIN

This document transmits the Revision 4 of Non-Modification Service Bulletin V2500-ENG-73-0228.

Document History

Non-Modification Service Bulletin Revision Status

Initial Issue.	Jul.27/11.
Revision 1.	Aug. 5/11.
Revision 2.	Dec.14/11.
Revision 3.	Apr.23/12.

Non-Modification Service Bulletin Revision 4

Remove	Incorporate	Reason for change
All pages of the Non-Modification Service Bulletin.	Pages 1 to 15 of the Non-Modification Service Bulletin.	To update the Compliance. To remove the inspection requirements for the LPRR tube assembly (P/N 6B1353). To update the Accomplishment Instructions.

CHECK THAT ALL PREVIOUS TRANSMITTALS HAVE BEEN INCORPORATED
If any have not been received please advise IAE International Aero Engines AG

SERVICE BULLETIN

NON-MODIFICATION SERVICE BULLETIN - ENGINE - VARIABLE STATOR VANE (VSV) ACTUATOR - LOW PRESSURE (LP) RETURN LINE RE-ROUTE PIPEWORK - FUEL TUBE REPLACEMENT AND HARNESS INSPECTION

1. Planning Information

A. Effectivity

(1) Airbus A319/A320/A321

(a) V2500-A5 Engines with the following Engine Serial Numbers:

V10541, V10966, V11036, V11039, V11057, V11384, V11713, V12097, V12110, V12117, V12358, V12571, V12671, V15020, V15030, V15062, V15088, V15118, V15142, V15146, V15177, V15194, V15195, V15208, V15212, V15236, V15244, V15251, V15282, V15283, V15297, V15317, V15352, V15354, V15897, V15900 and V15901.

B. Reason

(1) The Low Pressure Re-Route (LPRR) modification (Service Bulletin - V2500-ENG-73-0219) provides enhanced VSVA force margin to overcome track check messages experienced by some operators. A Controlled Service Use (CSU), during which the LPRR system benefit was proven to address the track check issue, was successfully completed and fully released into service in March 2011. A recent engine inspection revealed traces of fuel on an LPRR tube assembly (P/N 6B1353). Further inspections and
R investigations have confirmed a total of three such instances where a leakage has been identified through a small pinhole in the wall of the subject tube, which is positioned downstream of the Pressure Raising Valve (PRV).

(2) Recent engine inspections have shown two instances of chafing to the harness cables next to the LPRR tube (P/N 6B1353).

C. Description

R (1) This Non-Modification Service Bulletin introduces a repeat replacement
R schedule for the affected LPRR tube assembly (P/N 6B1353).

(2) This Non-Modification Service Bulletin introduces a repeat inspection schedule to check for chafing of the harness cables next to the LPRR tube (P/N 6B1353).

(3) As result of two raised One Time Concessions, Service Bulletin V2500-ENG-73-0219 was removed from engines with serial number V12430 and V15091, these two engines serial numbers are removed from the Effectivity of this Non-Modification Service Bulletin as the actions described in the compliance and accomplishment instruction are no longer applicable to these two engines.

(4) The commercial conditions for the exchange of this tube assembly are detailed in the IAE Commercial Support Offer letter referencing this Non-Modification Service Bulletin, released in coordination with this Non-Modification Service Bulletin, Initial Issue.

D. Compliance

Category Code 3

The actions detailed in section 3. Accomplishment Instructions must be accomplished on engines, detailed in section 1.A. Effectivity, as follows:

R (1) Tube replacement interval:

R (a) The tube must be replaced between 600 and 750 hours of operation on a repeat basis.

R (2) Harness inspection interval:

(a) A harness chafing inspection must be completed between 600 and 750 hours of operation on a repeat basis. This must be completed at the
R same time as the repeat tube replacements.

E. Approval

The part number changes and/or part modifications described in sections 2 and 3 of this Non-Modification Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the engine models listed.

F. Manpower

(1) In Service

R Harness inspection:

R 30 minutes.

Tube replacement:

2 hours.

Harness adjustment:

30 minutes.

Harness repair:

1 Hour.

(2) At Overhaul/Shop Visit

Applicable (Hours not affected).

G. Material Price and Availability

Not applicable.

H. Tooling Price and Availability

Special tools are not required.

I. Industry Support Information

Not applicable.

J. Electrical Load Data

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

K. Software Accomplishment Summary

Not applicable.

L. References

(1) Service Bulletin V2500-ENG-73-0219.

(2) Aircraft Maintenance Manual (A319/A320/A321) Chapter 73-11-47.

(3) Aircraft Maintenance Manual (A319/A320/A321) Chapter 70-71-01.

(4) Aircraft Maintenance Manual (A319/A320/A321) Chapter 70-71-22.

(5) Aircraft Maintenance Manual (A319/A320/A321) Chapter 70-71-23.

(6) Aircraft Maintenance Manual (A319/A320/A321) Chapter 71-13-00.

(7) Aircraft Maintenance Manual (A319/A320/A321) Chapter 71-51-41.

(8) Internal Reference No.:

Engineering Change No. 11VR676, 11VR676A, 11VR676B and 11VR676C.

(9) ATA Locators 71-51-41 and 73-11-47.

M. Interchangeability of Parts

Not affected.

2. Material Information

A. The kit required consists of the following parts:

Replacement tube assembly, P/N 6B1353.

3. Accomplishment Instructions

A. Inspection/replacement Instructions

(1) General

WARNING: DO NOT TOUCH THE ENGINE COMPONENTS FOR A SHORT TIME AFTER THE ENGINE IS SHUT DOWN. THE COMPONENTS STAY HOT AND CAN CAUSE INJURY.

(a) Obey all WARNINGS and CAUTIONS in the procedures that are referred to.

(b) Consumable Materials

(i) Refer to the related Manual tasks given in this instruction.

(c) Tools and Equipment

(i) Refer to the related Manual tasks given in this instruction.

(2) Get access to the tube assembly that is installed on the left side of the fan case

(a) Open the left fan cowl door (Refer to the Aircraft Maintenance Manual, Chapter 71-13-00).

(3) Removal of the tube assembly

(a) Remove the tube assembly (73-11-47, 04-500) from the engine (Refer to Figure 1)

(i) Cut and discard the lockwire that safeties the tube (73-11-47, 04-500) to the PRV (73-11-47, 04-485) and to the 'T' piece of the engine fuel supply tube (73-11-47, 01-100).

(ii) Loosen the tube nuts that attach the tube assembly to the PRV (73-11-47, 04-485) and to the 'T' piece of the engine fuel supply tube (73-11-47, 01-100).

(iii) At the clip position CP1492:

(1) Remove the bolt (73-11-49, 26-789), the washer (73-11-49, 26-790) and the nut (73-11-49, 26-796) that attach the clip (73-11-49, 26-792) to the bracket on tube (73-11-47, 04-500).

(iv) At the clip position CP0921:

(1) Remove the nut (73-11-49, 26-164), the bolt (73-11-49, 26-157), the two washers (73-11-49, 26-158) and the spacer (73-11-49, 26-162) that attach the clip (73-11-49, 26-160) and the clip (73-11-47, 04-544) to the lug on tube (79-22-49, 12-500).

(v) At the clip position CP0789:

(1) For Pre SBE 71-0288 engines:

Remove the bolt (71-51-41, 01-870), the washer (71-51-41, 01-876), the spacers (71-51-41, 01-874) and (71-51-41, 01-875) and the nut (71-51-41, 01-877) that attach the clip (71-51-41, 01-873), the clip (73-11-47, 04-552) and the clip (73-11-49, 26-190) to the bracket on tube (73-11-49, 26-100).

For SBE 71-0288 engines:

Remove the bolt (71-51-41, 01-870), the washer (71-51-41, 01-876), the spacers (71-51-41, 01-874) and (71-51-41, 01-875) and the nut (71-51-41, 01-877) that attach the clip (71-51-41, 01-873), the clip (73-11-47, 04-552) and the clip (73-11-49, 26-190) to the bracket on tube (73-11-49, 26-100).

(vi) At the changed clip position CP1072:

(1) Remove the bolt (73-11-49, 26-173), the spacer (73-11-49, 26-179) and the spacer (73-11-49, 26-178) that attach the clip (73-11-47, 04-560), the clip (79-21-49, 05-184) and the clip (73-11-49, 26-176) to the bracket (73-11-49, 01-070).

(vii) Remove the tube assembly (73-11-47, 04-500) from the engine.

R NOTE: All removed tube assemblies must be scrapped to avoid
R the potential for re-installation. Operators should
R provide written confirmation to the local field
R representative that the permanently removed tubes have
R been locally disposed.

(1) Remove the clips (73-11-47, 04-544), (73-11-47, 04-552) and (73-11-74, 04-560) from the tube assembly (73-11-47, 04-500).

(4) Install a new tube assembly (73-11-47, 04-500) (Refer to Figure 1)

NOTE: Adjacent tubes and their related clip positions can be loosened to ensure stress-free installation of the engine fuel supply tube (73-11-47, 04-500).

(a) Loosely install the tube assembly (73-11-47, 04-500), P/N 6B1353 to the PRV (73-11-47, 04-485) and to the 'T' piece P/N 745-5651-501 on the engine fuel supply tube (73-11-47, 01-100), P/N 745-5650-505.

(b) At the clip position CP1492:

(i) Loosely install the bolt (73-11-49, 26-789), the washer (73-11-49, 26-790) and the nut (73-11-49, 26-796) that attach the clip (73-11-49, 26-792) to the bracket on tube (73-11-47, 04-500).

(c) At the clip position CP0921:

(i) Loosely install the bolt (73-11-49, 26-157), the two washers (73-11-49, 26-158), the spacer (73-11-49, 26-162 and the nut (73-11-49, 26-164) that attach the clip (73-11-49, 26-160) and the clip (73-11-47, 04-544 to the lug on tube (79-22-49, 12-500).

(d) At the clip position CP0789:

NOTE: Install the smallest possible clip size in this location (Refer to the Aircraft Maintenance Manual, Chapter 70-71-01).

(i) For Pre SBE 71-0288 engines:

Loosely install the bolt (71-51-41, 01-870), the spacers (71-51-41, 01-874) and (71-51-41, 01-875), the washer (71-51-41, 01-876) and the nut (71-51-41, 01-877) that attach the clip (71-51-41, 01-873), the clip (73-11-47, 04-552) and the clip (73-11-49, 26-190) to the bracket on tube (73-11-49, 26-100).

(ii) For SBE 71-0288 engines:

Loosely install the bolt (71-51-41, 01-870), the spacers (71-51-41, 01-874) and (71-51-41, 01-875), the washer (71-51-41, 01-876) and the nut (71-51-41, 01-877) that attach the clip (71-51-41, 01-873), the clip (73-11-47, 04-552) and the clip (73-11-49, 26-190) to the bracket on tube (73-11-49, 26-100).

(e) At the clip position CP1072:

(i) Loosely install the bolt (73-11-49, 26-173), the spacer (73-11-49, 26-179), and the spacer (73-11-49, 26-178) that attach the clip (73-11-47, 04-560), the clip (79-21-49, 05-184) and the clip (73-11-49, 26-176), to the bracket (73-11-49, 01-070).

(f) Make sure the tube (73-11-47, 04-500) is positioned correctly and torque the tube nuts to 230-248 lbf in. (26-28 Nm).

(g) Safety the tube nuts on tube (73-11-47, 04-500) with CoMat 02-126 lockwire.

(h) Torque the three nuts (73-11-49, 26-796), (73-11-49, 26-164) and (71-51-41, 01-877) of the clip positions CP1492, CP0921 and CP0789 to 36-45 lbf in. (4-5 Nm).

(i) Torque the bolt (73-11-49, 26-173) of the clip position CP1072 to 36-45 lbf in. (4-5 Nm).

(j) Retighten and torque all adjacent hardware that have been loosened before, to ensure stress-free installation of tube (73-11-47, 04-500).

(5) Inspect the harness

(a) Inspect the harness for chafing

(i) Inspect the harness cables between clipping points CP0788 and CP0789

NOTE: A mirror can be used to check that there is no chafing to any of the wires.

(1) If no signs of chafing are found, continue with paragraph 3.A.(5)(b).

R

(2) If chafing is found affecting the wire insulation only:

Repair must be carried out in accordance with Aircraft Maintenance Manual, Chapter 70-71-22.

(3) If chafing is found penetrating below the wire insulation:

The affected harness must be repaired in accordance with Aircraft Maintenance Manual, Chapter 70-71-23.

NOTE: The repaired harness must then be replaced when the harness is next removed, or at the next shop visit.

(b) Check the clearance between the harness and the LPRR pipe P/N 6B1353

(i) If the clearance between the harness and the LPRR pipe P/N 6B1353 is greater than 0.5 in. (12,7 mm), continue with
R paragraph 3.A.(5)(c).

(ii) If the clearance between the harness and the LPRR pipe P/N 6B1353 is less than 0.5 in. (12,7 mm), continue with paragraph
R 3.A.(5)(c)(ii).

(c) Inspect clipping points CP0788 and CP0789

(i) Inspect clipping points CP0788 and CP0789 for movement of the harness within the clips.

(1) If there is no movement of the harness within the clipping
R points, continue with paragraph 3.A.(6).

NOTE: Sufficient clearance as defined in paragraph
R 3.A.(5)(b)(i) is required to proceed.

(ii) At clipping point CP0789:

(1) Remove the bolt (71-51-41, 01-870), the washer (71-51-41, 01-876), the spacers (71-51-41, 01-874) and (71-51-41, 01-875) and the nut (71-51-41, 01-877) that attach the clip (71-51-41, 01-873), the clip (73-11-47, 04-552) and the clip (73-11-49, 26-190) to the bracket on tube (73-11-49, 26-100).

(2) Replace the clip (71-51-41, 01-873) with the smallest possible clip in this location (Refer to the Aircraft Maintenance Manual, Chapter 70-71-01).

(3) Loosely install the bolt (71-51-41, 01-870), the spacers (71-51-41, 01-874) and (71-51-41, 01-875), the washer (71-51-41, 01-876) and the nut (71-51-41, 01-877) that attach the clip (71-51-41, 01-873), the clip (73-11-47, 04-552) and the clip (73-11-49, 26-190) to the bracket on tube (73-11-49, 26-100).

(iii) At clipping point CP0788:

(1) Remove the nut (71-51-41, 01-889) and the bolt (71-51-41, 01-862) that attach the clip (71-51-41, 01-865).

(2) Replace the clip (71-51-41, 01-865) with the smallest clip possible at this location (Refer to the Aircraft Maintenance Manual, Chapter 70-71-01).

(3) Loosely install the bolt (71-51-41, 01-862), and the nut (71-51-41, 01-869) that attach the clip (71-51-41, 01-865).

(iv) Between the two clipping points, pull through a small amount of harness so that a curve in the harness is created.

NOTE: 1. Excessive slack should be avoided.

2. Additional ties can be installed at intervals of 1 in. (25,4 mm), to stiffen the harness.

(v) Torque the two nuts (71-51-41, 01-877) and (71-51-41, 01-869) of the clip positions CP0788 and CP0789 to 36 to 45 lbfin (4 to 5 Nm).

(vi) Check the clearance between the harness and the LPRR pipe P/N 6B1353.

(1) If the clearance between the harness and the LPRR pipe P/N 6B1353 is greater than 0.5 in. (12,7 mm), continue with
R paragraph 3.A.(6)(a).

(2) If the clearance between the harness and the LPRR pipe P/N 6B1353 is less than 0.5 in. (12,7 mm), loosen the nuts (71-51-41, 01-877) and (71-51-41, 01-869) of the clip positions CP0788 and CP0789 again and continue with
R paragraph 3.A.(5)(c)(iv).

(6) Return the engine to serviceable condition

(a) Make sure that the work area is clean and clear of tools, equipment and other unwanted materials.

R (b) Do an idle leak check (Refer to the Aircraft Maintenance Manual,
R Chapter/Task 71-00-00-710-017).

(c) Close the access to the tube assembly that is installed on the left side of the fan case

(i) Close the left fan cowl door (Refer to the Aircraft Maintenance Manual, Chapter 71-13-00).

B. Recording Instructions

(1) Record the incorporation of Non-Modification Service Bulletin V2500-ENG-73-0228 in the applicable engine records.

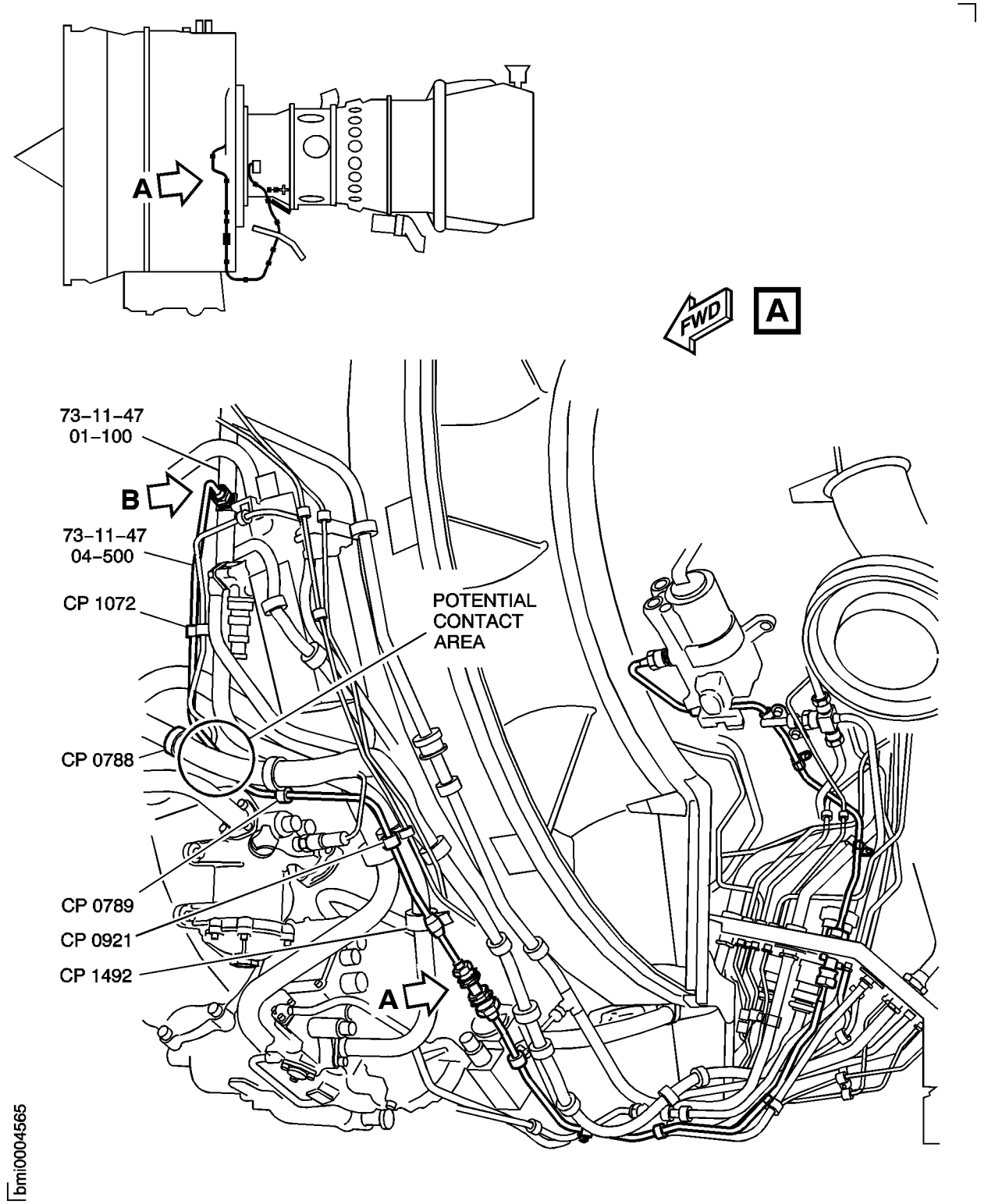
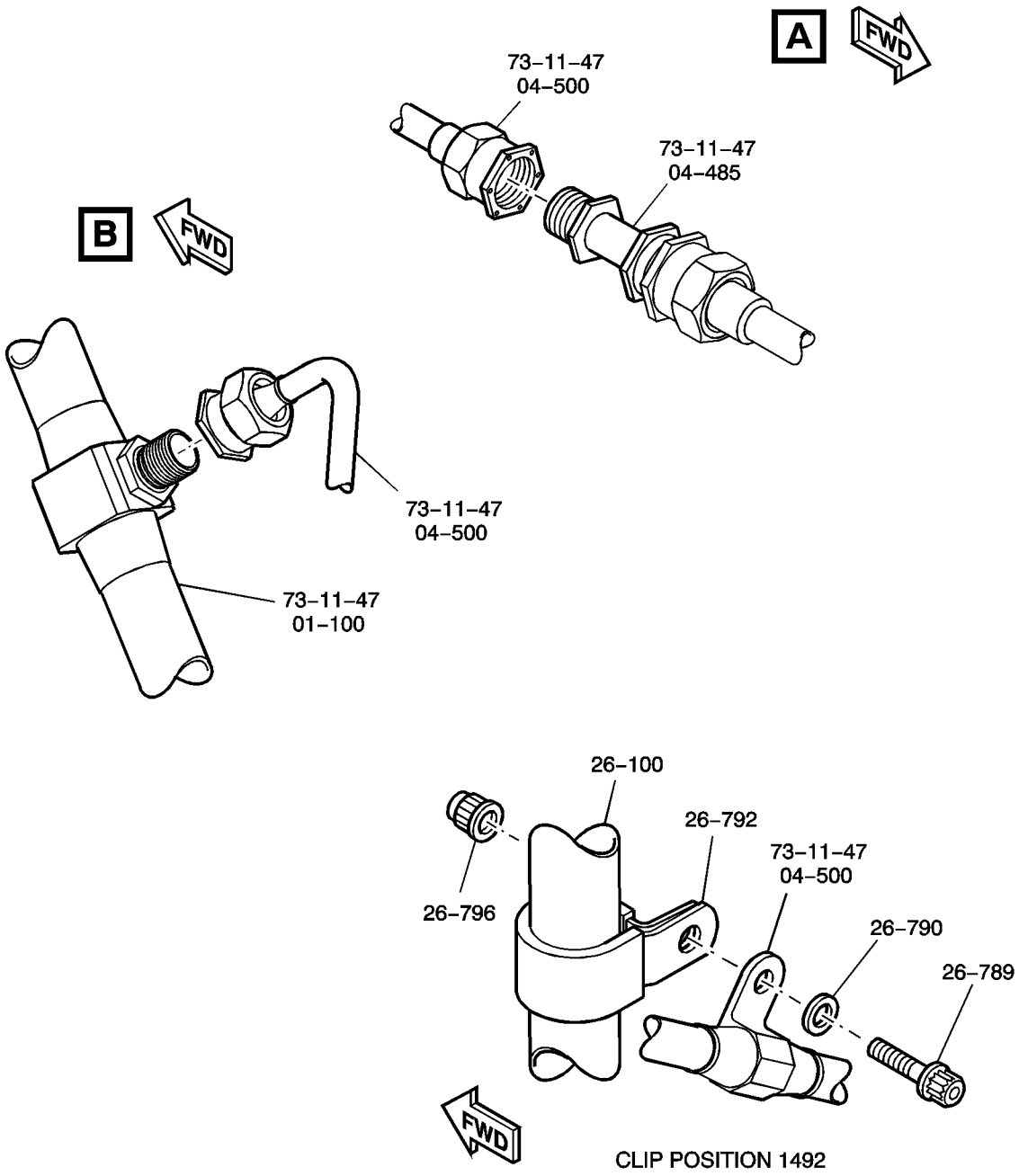
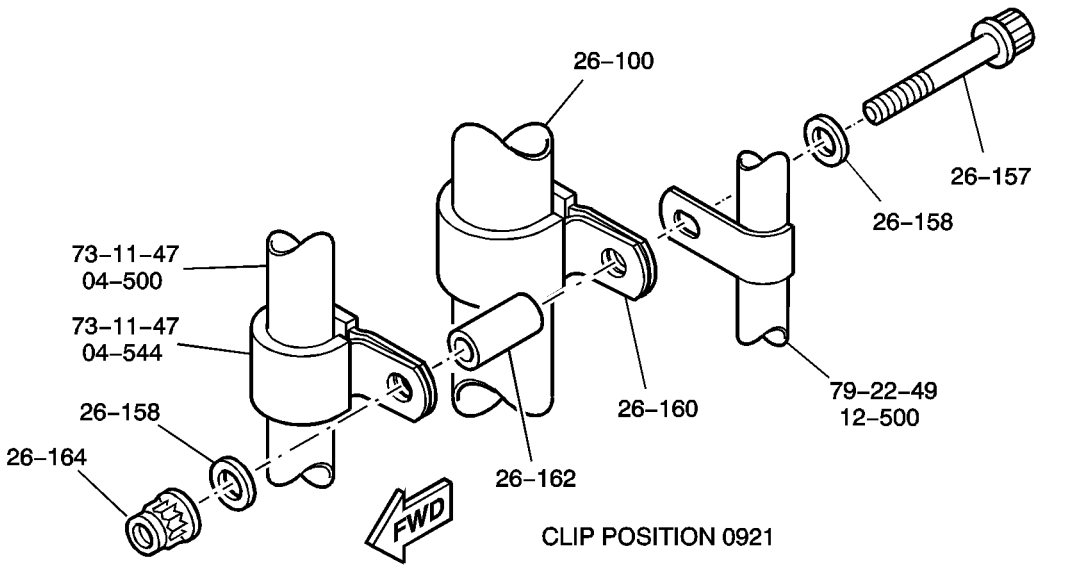


Figure 1 (Sheet 1 of 5)

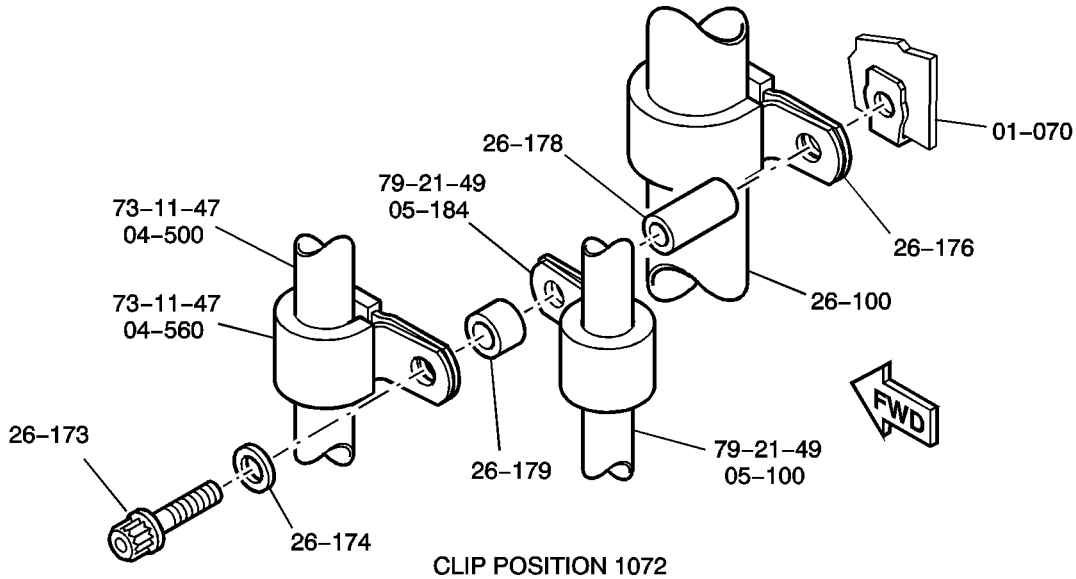


bmi0004566

Figure 1 (Sheet 2 of 5)

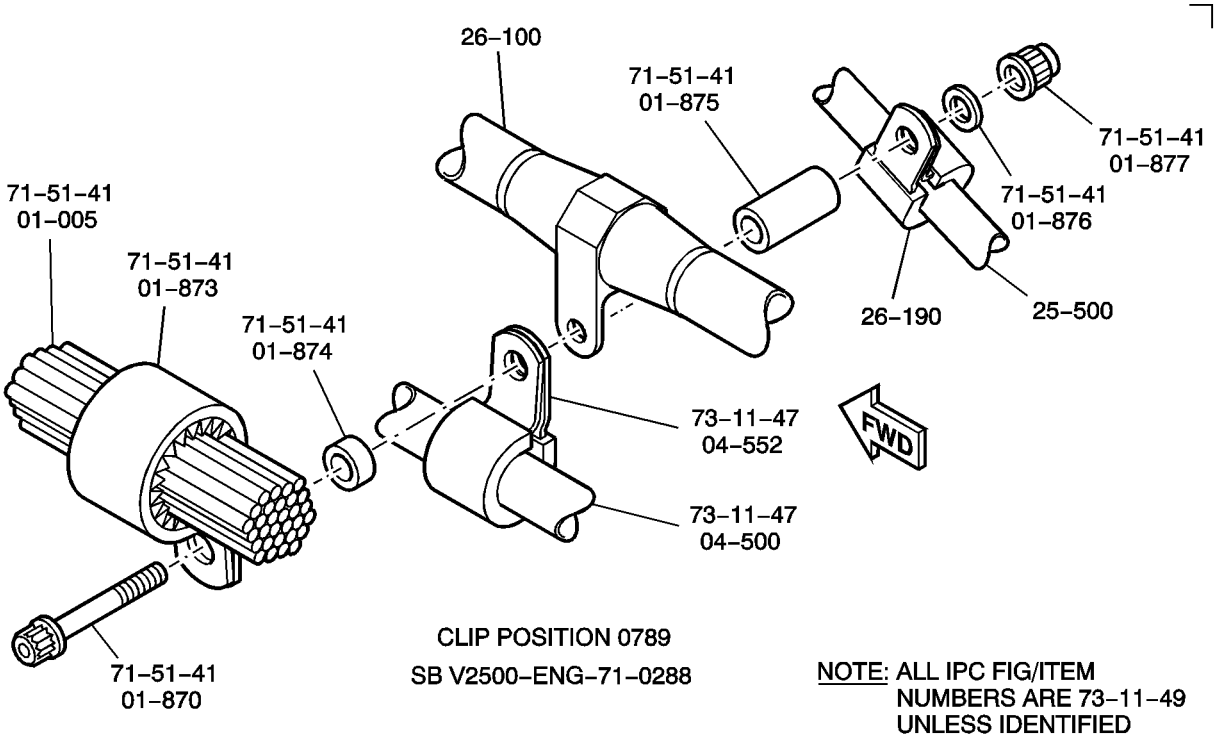


NOTE: ALL IPC FIG/ITEM NUMBERS ARE 73–11–49 UNLESS IDENTIFIED DIFFERENTLY.



bmi0004567

Figure 1 (Sheet 3 of 5)



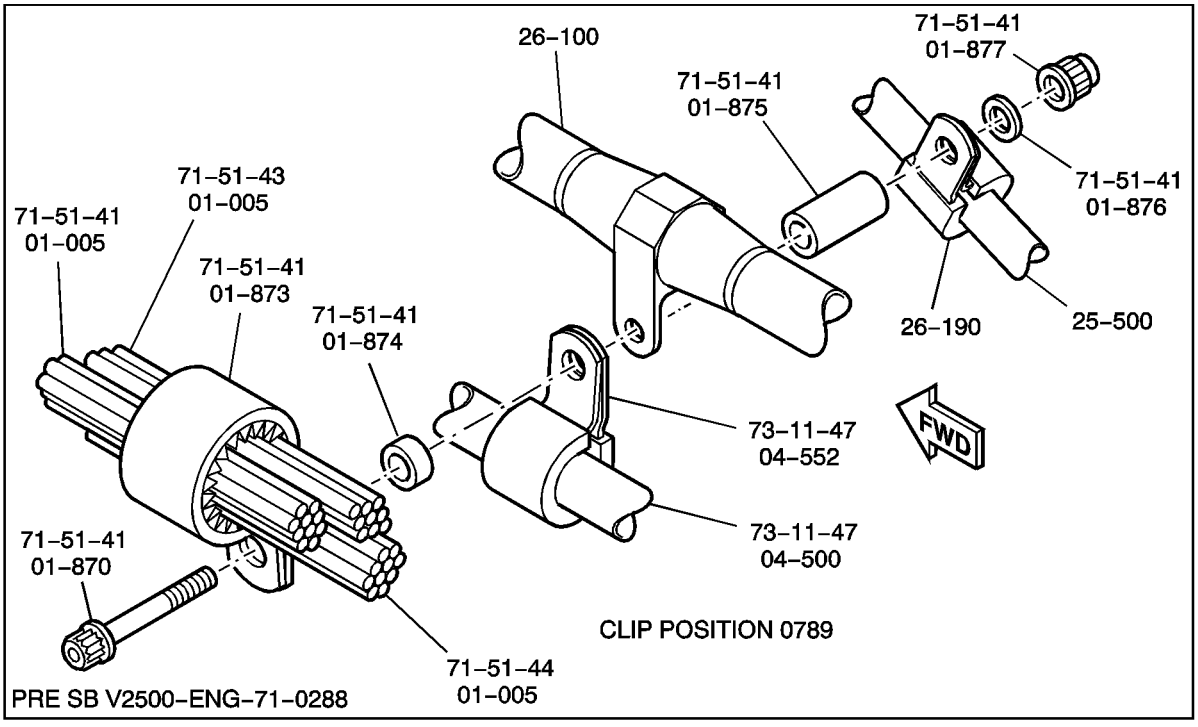
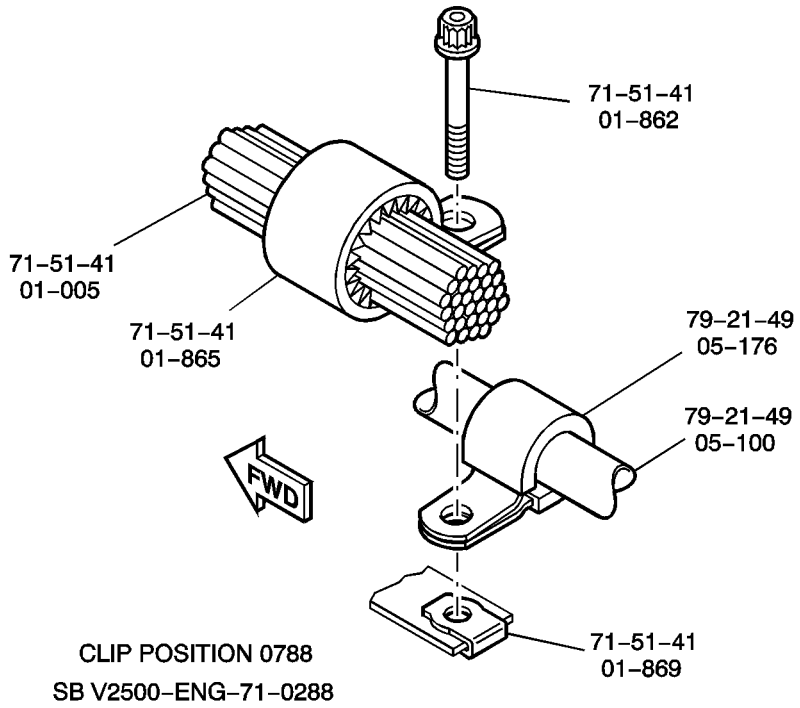


Figure 1 (Sheet 4 of 5)



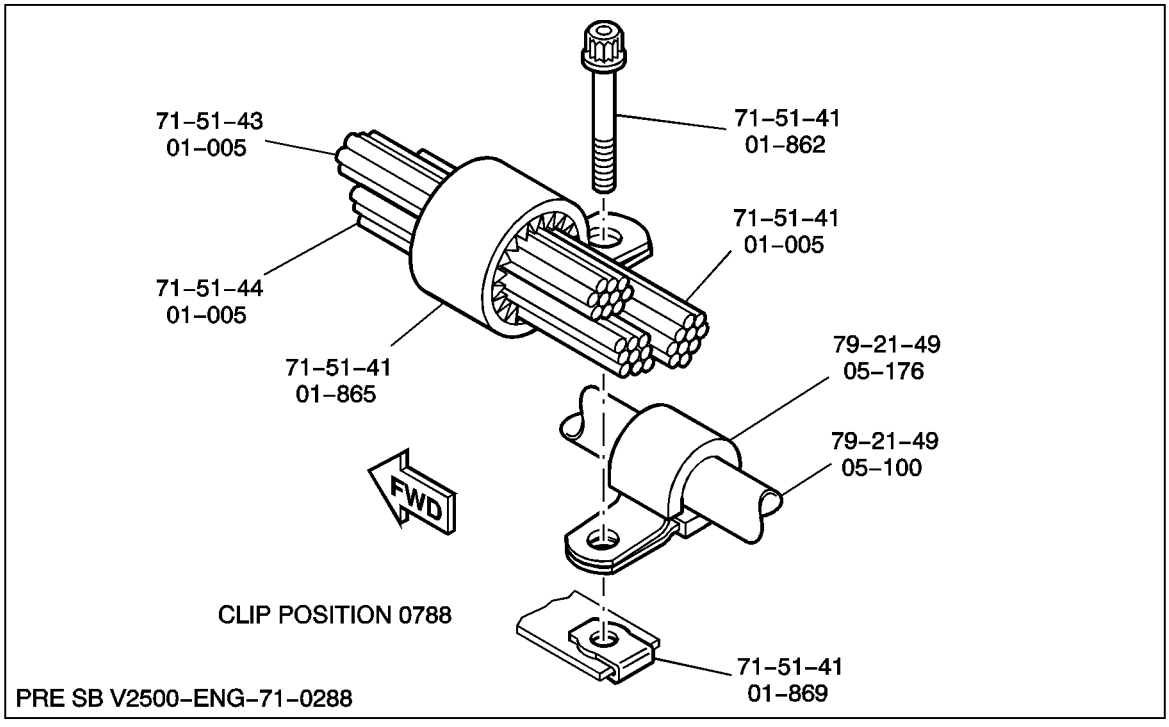


Figure 1 (Sheet 5 of 5)