SERVICE BULLETIN

ENGINE FUEL AND CONTROL — VARIABLE STATOR VANE (VSV) ACTUATOR — REVERSAL OF SERVICE BULLETIN V2500-ENG-73-0219 (LOW PRESSURE (LP) RETURN LINE RE-ROUTE PIPEWORK)

MODEL APPLICATION

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

BULLETIN ISSUE SEQUENCE

V2500 Series 73-0235

ATA NUMBER

73-11-00

Compliance Category

3

Summary

The purpose of this Service Bulletin is to provide instructions for demodification, covering pressure release valve, engine pipe work, clipping points and blanking plug.

Planning Information

Effectivity Data

Engine Models Applicable

V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5 If Service Bulletin V2500-ENG-73-0219 is incorporated in
Engine Serial Nos. V10001 thru V13191
Engine Serial Nos. V15001 thru V15894

V2522-A5, V2524-A5, V2527-A5, V2527E-A5, V2527M-A5, V2530-A5, V2533-A5
Engine Serial Nos. V15895 thru V17200

Concurrent Requirements

There are no concurrent requirements.

Reason

1. Condition: IAE has suspended implementation of Low Pressure Return Reroute (LPRR) (SB 73-0219) for new production and in-service engines. For engines currently fitted with LPRR, a detailed inspection and management plan for the affected tube, PN 6B1353, is available in Non-Modification Service Bulletin (NMSB) V2500-ENG-73-0228 Revision 2.

2. Background: The LPRR modification (SB 73-0219) was designed to enhance the VSVA force margin to overcome VSVA track check messages experienced by some operators. After a successfully demonstrated Controlled Service Use (CSU), during which the LPRR system benefit was proven to address the VSVA track check issue, it was fully released into service in March 2011.

   Scheduled inspections have revealed leakage of fuel through small pin holes on LPRR pipe (PN 6B1353), which is the return line downstream of the pressure raising valve (PRV). The root cause of the fuel tube leakage is flow induced excitation of the Pressure Raising Valve (PRV), which results in cavitation erosion of the tube.

3. Objective: Provide instructions to remove the configuration introduced in SB 73-0219.

4. Substantiation: Avoid leakage caused by cavitation.

5. Effects of Bulletin on:

   Removal/Installation: Affected

   Disassembly/Assembly: N/A

   Cleaning: N/A

   Inspection/Check: N/A

   Repair: N/A

   Testing: N/A

6. Supplemental Information

   None.

Description

This SB removes effect of SB 73-0219, by introducing previous tubes and clip position standards.

Compliance

Category 3

Accomplish within 1500 Cycles of issuance of initial release of this Service Bulletin.

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 compliance statement and the procedures described in this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the engine model listed.

Manpower

1. In Service

   To gain access: ..... 1 hour

   To embody: ..... 8 – 12 hours

   To close up: ..... 0.5 hours

2. At Overhaul

   Applicable .....hours not affected

Weight and Balance

1. Weight Change

   Minus 2.0 lbs (0.91 kg)

2. Moment Arm

   7.1 in. (180 mm) rearward of datum.

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

1. ATA Locator — diverse, see material information.
2. V2500 Standard Practices/Processes Manual (E-V2500-1IA), Chapter/Section diverse.
3. V2500 Engine Illustrated Parts Catalogs (S-V2500-1IA), Chapter/Section diverse.

4. V2500 Engine Illustrated Parts Catalogs (S-V2500-2IA, S-V2500-2IB, S-V2500-5IA, S-V2500-5IB, S-V2500-6IA, S-V2500-6IB, S-V2500-7IA, S-V2500-7IB), Chapter/Section diverse.
5. V2500 Engine Illustrated Parts Catalogs (S-V2500-2SA, S-V2500-2SB, S-V2500-2NA, S-V2500-2NB, S-V2500-5SA, S-V2500-5SB, S-V2500-5NA, S-V2500-5NB, S-V2500-6SA, S-V2500-6SB, S-V2500-6NA, S-V2500-6NB, S-V2500-7SA, S-V2500-7SB, S-V2500-7NA), Chapter/Section diverse.
6. V2500 Engine Manual (E-V2500-1IA), Chapter/Section diverse.
7. IAE V2500 Service Bulletin V2500-ENG-73-0219 (Engine — Variable Stator Vane (VSV) Actuator — Low Pressure (LP) Return Line Re-Route Pipework).
8. IAE V2500 Service Bulletin V2500-ENG-73-0228 (Non-Modification Service Bulletin — Engine — Variable Stator Vane (VSV) Actuator — Low Pressure (LP) Return Line Re-Route Pipework — Fuel Tube Replacement and Harness Inspection).

Other Publications Affected

1. V2500 Engine Illustrated Parts Catalogs (S-V2500-1IA, S-V2500-2IA, S-V2500-2IB, S-V2500-5IA, S-V2500-5IB, S-V2500-6IA, S-V2500-6IB, S-V2500-7IA, and S-V2500-7IB), Chapter/Section diverse.
2. AMM, chapter 71-00-00, 73-11-47 and 73-11-49, see SB 73-0219.

Interchangeability of Parts

Old and new parts are not interchangeable, refer to SB ENG 73-0219 material information (para 2.E).

Information in the Appendix

Alternate Accomplishment Instructions (No)

Progression Charts (No)

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

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
4W0118	1	7.45	.BOLT, MACHINE DOUBLE HEX	4W0119 (71-51-41-01-870)	(A)(S1)(B)
4W0114	1	7.65	.BOLT, MACHINE DOUBLE HEX	4W0114 (71-51-41-02-899)	(A)(S2)
K8831	2	0.45	.WASHER	K8831 (71-51-41-02-900)	(A)(S1)(2D)
AS61915	1	23.90	.CLAMP, LOOP	AS62217 (71-51-41-02-902)	(A)(S1)(B)
LK62478	1	15.10	.COVER	LK62478 (72-38-25-01-290)	(A)(S2)
4W0163 (72-38-25-01-292)	2	12.70	.BOLT, MACHINE DOUBLE HEX		(A)(S1)
4W0002 (72-38-25-01-294)	2	5.48	.NUT, SELF LOCK-ING DBL HEX		(A)(S1)
	1		.TUBE, ASSY	6B1332 (73-11-47-04-100)	(B)
	1		.CLIP	AS62406 (73-11-47-04-136)	(B)
	1		.CLIP	AS62406 (73-11-47-04-144)	(B)
	1		.CLIP	AS62406 (73-11-47-04-152)	(B)

New PN	Qty	Estimate of Unit Price ($)	Keyword	Old PN	Instructions — Disposition
	1		..WIRE, THRUST	AS15777 (73-11-47-04-200)	(B)
	1		..NUT, TUBE COUPLING	AS15701 (73-11-47-04-201)	(B)
	1		..FERRULE, ASSY WELDING	AS15768 (73-11-47-04-202)	(B)
	1		..REDUCER	JR16292 (73-11-47-04-210)	(B)
	1		..ADAPTOR, TUBE CLIPPING	UP11121 (73-11-47-04-214)	(B)
	1		..TUBE	NND6972 (73-11-47-04-216)	(B)
	1		..TUBE	NND6978 (73-11-47-04-224)	(B)
	1		..REDUCER	K18207 (73-11-47-04-225)	(B)
	1		..WIRE, THRUST	AS15781 (73-11-47-04-240)	(B)
	1		..NUT, TUBE COUPLING	AS15705 (73-11-47-04-241)	(B)
	1		..FERRULE, WELDING TUBE	AS15730 (73-11-47-04-242)	(B)
	1		.TUBE, ASSY	6B1353 (73-11-47-04-500)	(B)
	1		.CLIP	AS62406 (73-11-47-04-544)	(B)
	1		.CLIP	AS62406 (73-11-47-04-552)	(B)
	1		.CLIP	AS62406 (73-11-47-04-560)	(B)
	1		..WIRE, THRUST	AS15779 (73-11-47-04-600)	(B)
	1		..NUT, TUBE COUPLING	AS125703 (73-11-47-04-601)	(B)
	1		..FERRULE, WELDING TUBE	AS15726 (73-11-47-04-602)	(B)
	1		..ADAPTOR, TUBE CLIPPING	UP11121 (73-11-47-04-614)	(B)

New PN	Qty	Estimate of Unit Price ($)	Keyword	Old PN	Instructions — Disposition
	1		..TUBE	NND6979 (73-11-47-04-616)	(B)
	1		..TUBE	NND6977 (73-11-47-04-624)	(B)
	1		..WIRE, THRUST	AS15779 (73-11-47-04-640)	(B)
	1		..NUT, TUBE COUPLING	AS15703 (73-11-47-04-641)	(B)
	1		..FERRULE, WELDING TUBE	AS15726 (73-11-47-04-642)	(B)
4W0102	1	11.30	.BOLT, MACHINE DOUBLE HEX	4W0102 (73-11-49-10-165)	(A)(S2)
K8831	1	0.45	.WASHER	K8831 (73-11-49-10-166)	(A)(S2)
	1		.SPACER	UP10480 (73-11-49-10-170)	(B)
	1		.BOLT	4W0104 (73-11-49-10-725)	(B)
	1		.WASHER	K8831 (73-11-49-10-726)	(B)
	1		.CLIP	AS62408 (73-11-49-10-728)	(B)
	1		.NUT, OPTION	4W0001 (73-11-49-10-732)	(B)
	1		.BOLT	4W0103 (73-11-49-12-549)	(B)
	1		.WASHER	K8831 (73-11-49-12-550)	(B)
	1		.CLIP	AS62406 (73-11-49-12-552)	(B)
	1		.NUT, OPTION	4W0001 (73-11-49-12-556)	(B)
MS9967-012	2	6.44	.PACKING	MS9967-012 (73-11-49-19-096)	(A)(S2)
6A2150	1	1,085.00	.TUBE A/O-FUEL, SERVO RETRACT	6A2150 (73-11-49-19-100)	(A)(S2)

New PN	Qty	Estimate of Unit Price ($)	Keyword	Old PN	Instructions — Disposition
4W0103	1	11.30	.BOLT	4W0103 (73-11-49-19-173)	(A)(S2)
K8831	2	0.45	.WASHER	K8831 (73-11-49-19-174)	(A)(S2)
AS62406	1	54.60	.CLIP	AS62406 (73-11-49-19-176)	(A)(S2)
4W0106	1	11.30	.BOLT	4W0106 (73-11-49-19-181)	(A)(S2)
400WSS6	1	15.90	.CLIP, LOOP TYPE	400WSS6 (73-11-49-19-184)	(A)(S2)
	1		.PACKING	MS9967-012 (73-11-49-19-696)	(B)
	1		.TUBE, ASSY	6B1327 (73-11-49-19-700)	(B)
	1		.CLIP	AS62406 (73-11-49-19-728)	(B)
	1		..NUT, TUBE COUPLING	MS9197-09 (73-11-49-19-801)	(B)
	1		..ADAPTOR	6B1328 (73-11-49-19-802)	(B)
	1		..BRACKET, INTER TUBE SUPPORT	UP11154 (73-11-49-19-814)	(B)
	1		..TUBE	NND6902 (73-11-49-19-816)	(B)
4W0102	1	11.30	.BOLT, MACHINE DOUBLE HEX	4W0102 (73-11-49-20-157)	(A)(S2)
K8831	1	0.45	.WASHER	K8831 (73-11-49-20-158)	(A)(S2)(1D)
AS20908	1	11.30	.BOLT, MACHINE DOUBLE HEX	AS20908 (73-11-49-26-157)	(A)(S2)
K8831	1	0.45	.WASHER	K8831 (73-11-49-26-158)	(A)(S2)(1D)
	1		.SPACER	UP10481 (73-11-49-26-162)	(B)

New PN	Qty	Estimate of Unit Price ($)	Keyword	Old PN	Instructions — Disposition
4W0116	1	30.00	.BOLT, MACHINE DOUBLE HEX	4W0116 (73-11-49-26-173)	(A)(S2)
	1		.WASHER	K8831 (73-11-49-26-174)	(B)
400WSS16	1	25.50	.CLIP, LOOP TYPE	400WSS16 (73-11-49-26-176)	(A)(S2)
	1		.SPACER	UP10479 (73-11-49-26-179)	(B)
400WSS4	1	14.90	.CLIP, LOOP TYPE	400WSS4 (73-11-49-26-190)	(A)(S1)
	1		.BOLT	4W0104 (73-11-49-26-789)	(B)
	1		.WASHER	K8831 (73-11-49-26-790)	(B)
	1		.CLIP	AS62416 (73-11-49-26-792)	(B)
	1		.NUT, OPTION	4W0001 (73-11-49-26-796)	(B)
	1		.ADAPTOR	6B1329 (73-11-49-33-040)	(B)
	2		.NUT, SELF LOCK-ING DBL HEX	4W0002 (73-11-49-33-042)	(B)
	2		.BOLT, MACHINE DOUBLE HEX EXT	MS9566-08 (73-11-49-33-044)	(B)
	1		.PACKING	MS9967-012 (73-11-49-33-096)	(B)
	1		.PACKING	MS9967-011 (73-11-49-33-098)	(B)
	1		.TUBE, ASSY	6B1331 (73-11-49-33-100)	(B)
	1		.CLIP, LOOP TYPE	400WSS6 (73-11-49-33-128)	(B)
	1		.BOLT	4W0103 (73-11-49-33-133)	(B)

New PN	Qty	Estimate of Unit Price ($)	Keyword	Old PN	Instructions — Disposition
	1		.WASHER	K8831 (73-11-49-33-134)	(B)
	1		.CLIP	AS62406 (73-11-49-33-136)	(B)
	1		.NUT, OPTION	4W0001 (73-11-49-33-140)	(B)
	1		..NUT, TUBE COUPLING	MS9197-08 (73-11-49-33-201)	(B)
	1		..CONNECTOR, TUBE	UP11086 (73-11-49-33-202)	(B)
	1		..REDUCER	EU70492 (73-11-49-33-210)	(B)
	2		..ADAPTOR, TUBE CLIPPING	UP11121 (73-11-49-33-214)	(B)
	1		..TUBE	NND6900 (73-11-49-33-216)	(B)
	1		..TUBE	NND6903 (73-11-49-33-224)	(B)
	1		..TUBE	NND6901 (73-11-49-33-228)	(B)
	1		..NUT, TUBE COUPLING	MS9197-09 (73-11-49-33-241)	(B)
	1		..CONNECTOR, TUBE	UP11087 (73-11-49-33-242)	(B)
	1		.BOLT, MACHINE DOUBLE HEX	4W0111 (79-21-49-10-165)	(B)
	1		.WASHER	K8831 (79-21-49-10-166)	(B)
	1		.CLIP	AS62412 (79-21-49-10-168)	(B)
	1		.SPACER	UP10479 (79-21-49-10-170)	(B)
	1		.NUT, OPTION	4W0001 (79-21-40-10-172)	(B)

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.

Spare Parts Availability

(A) The new part is available.

(B) The part must not be retained for spares.

(S1) The part is not interchangeable.

(S2) The part is interchangeable.

(1D) This part is decreased from 2 to 1.

(2D) This part is increased from 1 to 2.

Vendor Services or Special Components/Materials

Not Applicable.

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

NOTE: NOTE: For Engines “In Service” do Para 1-15.

NOTE: For Engines “At Overhaul/Shop Visit” do Para 4-12 and 14-15.

1. General

   WARNING: 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 the WARNINGS and CAUTIONS in the procedures that are referred to.

   B. Consumable Materials

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

   C. Tools and Equipment

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

2. Get access to the Variable Stator Vane (VSV) actuator that is installed in the central area of the engine.

   A. Deactivate the thrust reverser Hydraulic Control Unit (HCU) (Refer to the Aircraft Maintenance Manual, Chapter 78-30-00).

   B. Open the fan cowl doors (Refer to the Aircraft Maintenance Manual, Chapter 71-13-00).

   C. Open both halves of the thrust reverser (Refer to the Aircraft Maintenance Manual, Chapter 78-32-00).

3. Remove the old fuel tube (73-11-49, 19-100) from the engine (Refer to Aircraft Maintenance Manual, Chapter 75-32-41)

   A. Remove the two tubes (73-22-49, 05-500) and (73-11-49, 18-100) to get sufficient access for the removal of the tube (73-11-49, 19-100) and for the later installation of the two tubes (73-11-49, 19-700) and (73-11-49, 33-100), refer to Fig. 1 (sheet 1 of 7).

   B. Cut and discard the lockwire that safeties the tube (73-11-49, 19-100) to the VSV actuator (75-32-41, 01-100) and the four way connector (73-11-49, 11-242), refer to Fig. 2 (sheet 1 of 5).

   C. Loosen the tube nuts that attach the tube to the VSV actuator (75-32-41, 01-100) and the four way connector (73-11-49, 11-242).

4. Remove the two new tubes (73-11-49, 33-100) and (73-11-49, 19-700) from the engine, refer to Fig. 1 (sheet 1 of 7 & sheet 2 of 7 view C, D and E).

   NOTE: Adjacent tubes and their related clip positions can be loosened to ensure stress-free removal of tubes (73-11-49, 33-100) and (73-11-49, 19-700).

   A. At the changed clip position CP5770, refer to Fig. 1 (sheet 1 of 7 & sheet 3 of 7).

      (1) Remove the new bolt (73-11-49, 19-181), the washer (73-11-49, 19-187), the spacer (73-11-49, 19-183) and the nut (73-11-49, 19-188) that attach the new clip (73-11-49, 33-128), to the lug on tube (73-22-49, 09-100).

   B. At the new clip position CP6158, refer to Fig. 1 (sheet 1 of 7 & sheet 3 of 7)

(1) Remove the new bolt (73-11-49, 12-549), the new washer (73-11-49, 12-550), and new nut (73-11-49, 12-556), that attach the new clip (73-11-49, 12-552), to the lug on tube (73-11-49, 33-100).

C. At the new clip position CP6159, refer to Fig. 1 (sheet 1 of 7 & sheet 3 of 7)

(1) Remove the new bolt (79-21-49, 10-165), the new spacer (79- 21-49, 10-170), the new washer (79-21-49, 10-166), and new nut (79-21-49, 10-172), that attach the new clip (79-21-49, 10-168), to the lug on tube (73-11-49, 33-100).

D. At the changed clip position CP5766, refer to Fig. 1 (sheet 1 of 7 & sheet 3 of 7)

(1) Remove the new bolt (73-11-49, 19-173), PN 4W0105, the washer (73-11-49, 19-174) and the nut (73-11-49, 19-180) that attach the clip (71-52-41, 01-126) and the new clip (73-11-49, 19-728), PN AS62406 to the lug on tube (73-22-49, 05-500).

E. At the new clip position CP6157, refer to Fig. 1 (sheet 1 of 7 & sheet 4 of 7)

(1) Remove the new bolt (73-11-49, 33-133), PN 4W0103, the new washer (73-11-49, 33-134), PN K8831 and the new nut (73-11-49, 33-140), PN 4W0001 that attach the new clip (73-11-49, 33-136), PN AS62406 to the lug on tube (73-11-49, 19-700).

F. Cut and discard the lockwire that safeties tube nuts on tubes (73-11-49, 33-100) and (73-11-49, 19-700).

G. Remove the two tubes (73-22-49, 05-500 and 73-11-49, 18-100), refer to Fig. 1 (sheet 1 of 7), to get sufficient access for the removal of tubes (73-11-49, 19-700) and (73-11-49, 33-100) and for the later installation of the tube (73-11-49, 19-100), refer to Fig. 2 (sheet 1 of 5).

H. Loosen the nuts on tubes (73-11-49, 33-100) and (73-11-49, 19-700) and remove them from the engine.

5. Install the fuel tube (73-11-49, 19-100) to the engine (Refer to the Aircraft Maintenance Manual, Chapter 75-32-41), refer to Fig. 2 (sheet 1 of 5 view B and C)

A. Install new packing on the servo retract fuel tube (73-11-49, 19-100), PN 6A2150

(1) At the VSV Actuator end install new packing (73-11-49, 19-096), PN MS9967-012.

(2) At the four way connector end install new packing (73-11-49, 19-096), PN MS9967-012.

B. Install the servo retract fuel tube (73-11-49, 19-100), PN 6A2150 on the engine, refer to Fig. 2 (sheet 1 of 5).

C. Attach the tube nuts that attach the tube to the VSV actuator (75-32-41, 01-100) and the four way connector (73-11-49, 11-242), refer to Fig. 2 (sheet 1 of 5 view B and C).

D. At the clip position CP5770, refer to Fig. 2 (sheet 2 of 5)

(1) Install the nut (73-11-49, 19-188), the washer (73-11-49, 19-187), the spacer (73-11-49, 19-183) and the bolt (73-11-49, 19-181), PN 4W0106, that attach the clip (73-11-49, 19-184), PN 400WSS6 to the lug on tube (73-22-49, 09-100).

E. At the clip position CP5766, refer to Fig. 2 (sheet 2 of 5)

(1) Install the nut (73-11-49, 19-180), the two washers (73-11-49, 19-174) and the bolt (73-11-49, 19-173), PN 4W0103 that attach the clip (73-11-49, 19-176),

PN AS62406 and the clip (71-52-41, 01-126) to the lug on tube (73-22-49, 05-500).

F. Make sure the tube (73-11-49, 19-100) is positioned correctly and torque the tube nuts to the values defined below

(1) At the VSV actuator connection torque the tube nut of the tube (73-11-49, 33-100) to 330 – 360 lbf in. (37.20 – 40.60 Nm).

(2) Torque the tube nut of the tube (73-22-49, 19-100) to the four way connector (73-11-49, 11-242) to 425 – 475 lbf in. (48.00 – 53.70 Nm).

G. Torque the two nuts (73-11-49, 19-188), and (73-11-49, 19-180) in the sequence that follows:

(1) At the clip position CP5770 torque the nut (73-11-49, 19-188) to 36 to 45 lbf in. (4 to 5 Nm).

(2) At the clip position CP5766 torque the nut (73-11-49, 19-180) to 36 to 45 lbf in.(4 to 5 Nm).

H. Safety the tube nuts on tube (73-11-49, 19-100) with CoMat 02-126 lockwire.

I. Retighten and torque all adjacent hardware that have been loosened before, to ensure stress-free removal of tubes (73-11-49, 33-100) and (73-11-49, 19-700) and for installation of the tube (73-11-49, 19-100).

J. Install the two tubes (73-22-49, 05-500) and (73-11-49, 18-100) that have been removed before to get sufficient access for the removal of the two tubes (73-11-49, 33-100) and (73-11-49, 19-700) and for the installation of tube (73-11-49, 19-100).

6. Remove the tube assembly (73-11-47, 04-500), refer to Fig. 1 (sheet 1 of 7)

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

A. Cut and discard the lockwire that safeties the tube nuts on tube (73-11-47, 04-500).

B. At the new clip position CP1492, refer to Fig. 1 (sheet 1 of 7 & sheet 6 of 7)

(1) Remove the new bolt (73-11-49, 26-789), PN 4W0104, the new washer (73-11-49, 26-790), PN K8831 and the new nut (73-11-49, 26-796), PN 4W0001 that attach the new clip (73-11-49, 26-792), PN AS62416 to the bracket on tube (73-11-47, 04-500).

C. At the changed clip position CP0921, refer to Fig. 1 (sheet 1 of 7 & sheet 6 of 7)

(1) Remove the new bolt (73-11-49, 26-157), PN 4W0118, the two new washers (73-11-49, 26-158), PN K8831, the new spacer (73-11-49, 26-162), PN UP10481 and the nut (73-11-49, 26-164) that attach the clip (73-11-49, 26-160) and the new clip (73-11-47, 04-544), PN AS62406 to the lug on tube (79-22-49, 12-500).

D. At the changed clip position CP0789, refer to Fig. 1 (sheet 1 of 7 & sheet 7 of 7)

(1) Remove 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 new clip (73-11-47, 04-552), PN AS62406 and the new clip (73-11-49, 26-190), PN AS62404 to the bracket on tube (73-11-49, 26-100).

E. At the changed clip position CP1072, refer to Fig. 1 (sheet 1 of 7 & sheet 6 of 7)

(1) Remove the new bolt (73-11-49, 26-173), PN 4W0124, the new spacer (73-11-49, 26-179), PN UP10479 and the spacer (73-11-49, 26-178) that attach the new clip (73-11-47, 04-560), PN AS62406, the clip (79-21-49, 05-184) and the new clip (73-11-49, 26-176), PN AS62416 to the bracket (24-21-49,01-070).

F. Remove the new tube assembly (73-11-47, 04-500), PN 6B1353 from the PRV (73-11-47, 04-485) and from the 'T' piece on the new tube (73-11-47, 01-100), PN 745-5650-505, refer to Fig. 1 (sheet 1 of 7 & sheet 2 of 7 view G and H).

G. At the changed clip position CP0921, refer to Fig. 2 (sheet 4 of 5)

(1) Install the nut (73-11-49, 26-164), the bolt (73-11-49, 26-157), PN AS20908 and the washer (73-11-49, 26-158) that attach the clip (73-11-49, 26-160) to the lug on tube (79-22-49, 12-500).

H. At the changed clip position CP0789, refer to Fig. 2 (sheet 5 of 5)

(1) Install the nut (71-51-41, 01-877), the washer (71-51-41, 01-876), the spacers (71-51-41, 01-875) and (71-51-41, 01-874) and the bolt (71-51-41,01-870) that attach the clip (71-51-41, 01-873) and the clip (73-11-49, 26-190), PN 400WSS4 to the bracket on tube (73-11-49, 26-100).

I. At the changed clip position CP1072, refer to Fig. 2 (sheet 4 of 5)

(1) Install the bolt (73-11-49, 26-173), PN 4W0116 and the spacer (73-11-49, 26-178) that attach the clip (79-21-49, 05-184) and the clip (73-11-49, 26-176), PN 400WSS16 to the bracket (24-21-49, 01-070).

J. Torque the two nuts (73-11-49, 26-164) and (71-51-41, 01-877) of the clip Positions CP0921 and CP0789 to 36 to 45 lbf in. (4 to 5 Nm).

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

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

7. Remove the tube assembly (73-11-47, 04-100) and the Pressure Raising Valve (PRV) (73-11-47, 04-485), refer to Fig. 1 (sheet 1 of 7)

NOTE: Adjacent tubes and their related clip positions can be loosened to ensure stress-free removal of tube assembly (73-11-47, 04-100) and the PRV (73-11-47, 04-485).

A. At the new clip position CP1489, refer to Fig. 1 (sheet 1 of 7 & sheet 4 of 7)

(1) Remove the new bolt (73-11-49, 10-725), PN 4W0104, the new washer (73-11-49,10-726), PN K8831 and the new nut (73-11-49, 10-732), PN4W0001 that attach the new clip (73-11-49, 10-728), PN AS62408 to the lug on tube (73-11-47, 04-100).

B. At the changed clip position CP1460, refer to Fig. 1 (sheet 1 of 7 & sheet 4 of 7)

(1) Remove the new bolt (73-11-49, 20-157), PN 4W0104, the two new Washers (73-11-49, 20-158), PN K8831 and the nut (73-11-49, 20-164) that attach the clip (73-11-49, 20-160) and the clip (73-11-47, 04-136) to the lug on tube (71-51-50, 01-100).

C. At the changed clip position CP1461, refer to Fig. 1 (sheet 1 of 7 & sheet 4 of 7)

(1) Remove the new bolt (73-11-49, 10-165), PN 4W0114, the two new Washers (73-11-49, 10-166), PN K8831, the new spacer (73-11-49, 10-170), PN UP10480 and the nut (73-11-49, 10-172) that attach the clip (73-11-49, 10-168) and the new clip (73-11-47, 04-144), PN AS62406 to the lug on tube (71-51-50, 01-100).

D. At the changed clip position CP1465, refer to Fig. 1 (sheet 1 of 7 & sheet 5 of 7)

(1) Remove the new bolt (71-51-41, 02-899), PN 4W0116, the washer (71-51-41, 02-900), the spacer (71-51-41, 02-904) and the nut (71-51-41, 02-906) that attach the clips (71-51-41, 02-902 and 71-71-48, 02-164) and the new clip (73-11-47, 04-152), PN AS62406 to the lug on tube (71-51-50, 01-100).

E. Cut and discard the lockwire that safeties the tube nuts on tube (73-11-47, 04-100).

F. Remove the PRV (73-11-47, 04-485), PN 70100-1-6 from the tube assembly (73-11-47, 04-100), refer to Fig. 1 (sheet 1 of 7 & sheet 2 of 7 view G)

G. Remove the new tube assembly (73-11-47, 04-100), PN 6B1332 from the Adaptor (73-11-49, 33-040) on the bifurcation panel (72-38-25, 01-300), refer to Fig. 1 (sheet 2 of 7 view B and F)

H. At the changed clip position CP1460, refer to Fig. 2 (sheet 2 of 5)

(1) Install the nut (73-11-49, 20-164), the bolt (73-11-49, 20-157), PN 4W0102 and the washer (73-11-49, 20-158) that attach the clip (73-11-49, 20-160) to the lug on tube (71-51-50, 01-100).

I. At the changed clip position CP1461, refer to Fig. 2 (sheet 2 of 5)

(1) Install the nut (73-11-49, 10-172), the washer (73-11-49, 10-166) and the bolt (73-11-49, 10-165), PN 4W0102 that attach the clip (73-11-49, 10-168) to the lug on tube (71-51-50, 01-100).

J. At the changed clip position CP1465, refer to Fig. 2 (sheet 3 of 5)

(1) For pre SBE 71-0288 engines: Install the nut (71-51-41, 02-906), the two washers (71-51-41, 02-900), the spacer (71-51-41, 02-904) and the bolt (71-51-41, 02-899), PN 4W0114 that attach the clip (71-51-41, 02-902), PN AS62215 and the clip (71-71-48, 02-164) to the lug on tube (71-51-50, 01-100).

(2) For SBE 71-0288 engines: Install the nut (71-51-41, 02-906), the washer (71-51-41, 02-900), the spacer (71-51-41, 02-904) and the bolt (71-51-41, 02-899), PN 4W0114 that attach the clip (71-51-41, 02-902) and the clip (71-71-48, 02-164) to the lug on tube (71-51-50, 01-100).

K. Torque the three nuts (73-11-49, 20-164), (73-11-49, 10-172) and (71-51-41, 02-906) of the clip positions CP1460, CP1461 and CP1465 to 36 to 45 lbf in. (4 to 5 Nm).

L. Retighten and torque all adjacent hardware that have been loosened before, to ensure stress-free removal of tube (73-11-47, 04-100) and the PRV (73-11-47, 04-485).

8. Remove the adaptor from the bifurcation panel, refer to Fig. 1 (sheet 2 of 7 view B)

A. Remove the new adaptor (73-11-49, 33-040), PN 6B1329 from the bifurcation panel (72-38-25, 01-300)

9. Install the cover on the bifurcation panel, refer to Fig. 2 (sheet 1 of 5 view A)

A. Clean the mating surfaces of the bifurcation panel (72-38-25, 01-300) and the cover (72-38-25, 01-290).

B. Add sealant between the bifurcation panel (72-38-25, 01-300) and the cover (72-38-25, 01-290), PN LK62478 circumferentially using CoMat. V08-013 Silcoset 152.

C. Install the cover (72-38-25, 01-290), PN LK62478 to the bifurcation panel (72-38-25,01-300).

D. Install the two nuts (72-38-25, 01-294), PN 4W0002 and the two bolts (72-38-25, 01-292), PN 4W0163 that attach the cover (72-38-25, 01-290) to the bifurcation panel (72-38-25, 01-300).

E. Torque the two nuts (72-38-25, 01-294) to 85 to 105 lbf in. (10 to 12 Nm).

10. Get access to the fuel tube assembly (73-11-47, 01-100) PN 745-5650-505 that is installed on the left side of the fan case, refer to Fig. 1 (sheet 1 of 7 & sheet 2 of 7 view H)

A. Use solvent (CoMat 01-076) and a lint free cloth (CoMat 02-099) to clean the surfaces of the 745-5650-505 tube assembly and tee piece. Refer to CMM Task 73-11-47-100-101.

NOTE: Make sure you wipe the parts before the solvent evaporates.

B. The upper end of the tube has a “hex nut” where it connects to the flex tube going to the pylon.

C. The lower end of the tube has a flange where it connects to the FMU.

D. Locate the Tee piece on the 745-5650-505 tube assembly.

11. Install the nut assembly PN AS15827 on the T-piece assembly

NOTE: Nut assembly PN AS15827 comprises of: blank ferrule AS15839; Nut AS15703; and thrust wire AS15779.

A. Make sure the nut assembly is positioned correctly on the Tee piece.

B. Torque the nut assembly to 230 to 248 lbf in. (26 to 28Nm).

C. Safety the nut assembly PN AS15827 on the Tee piece with CoMat 02-126 lockwire.

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

13. Close the access to the Variable Stator Vane (VSV) actuator

A. Close the fan cowl doors (Refer to the Aircraft Maintenance Manual, Chapter 71-13-00).

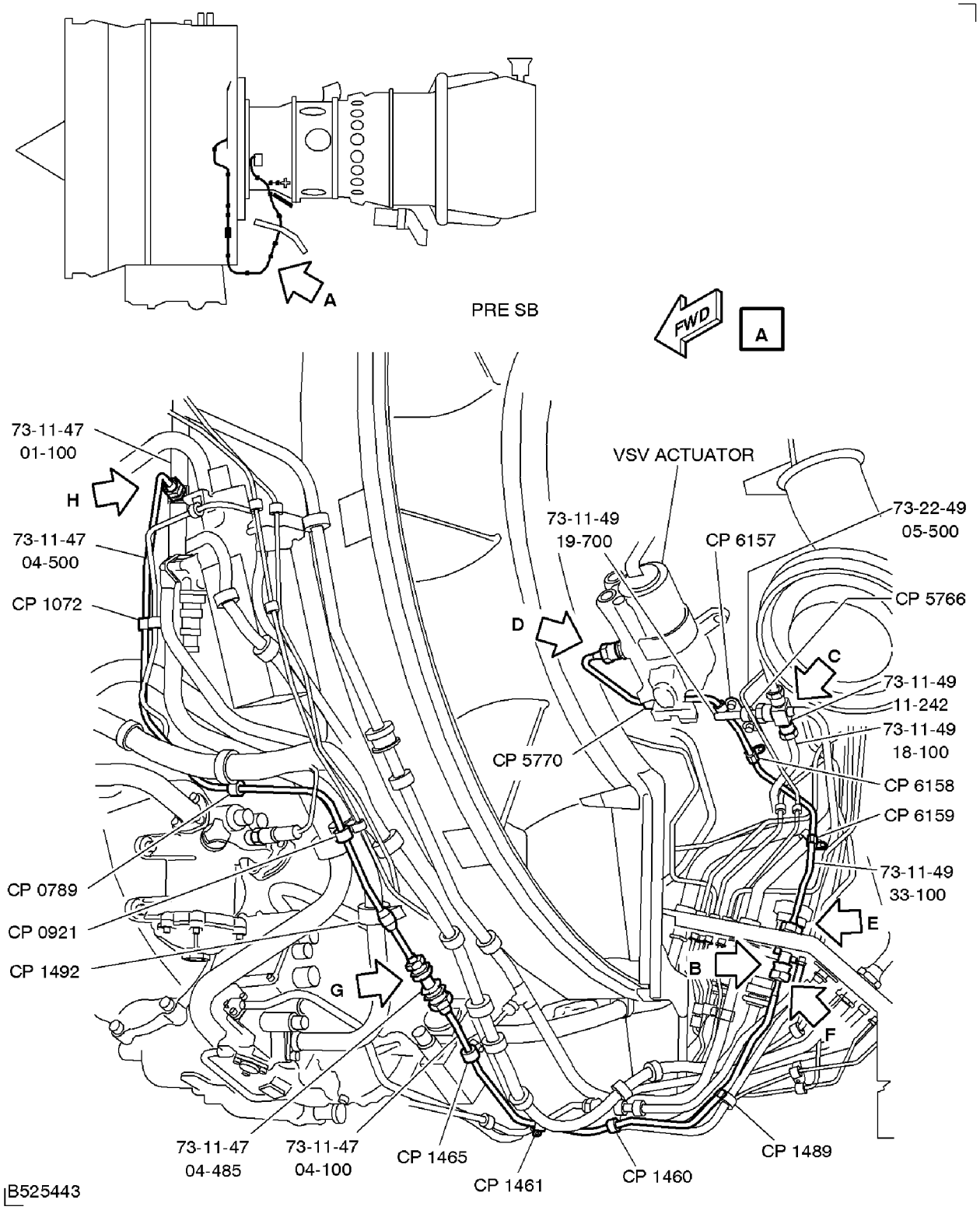
B. Close both halves of the thrust reverser (Refer to the Aircraft Maintenance Manual, Chapter 78-32-00).

C. Activate the thrust reverser Hydraulic Control Unit (HCU) (Refer to the Aircraft Maintenance Manual, Chapter 78-32-00).

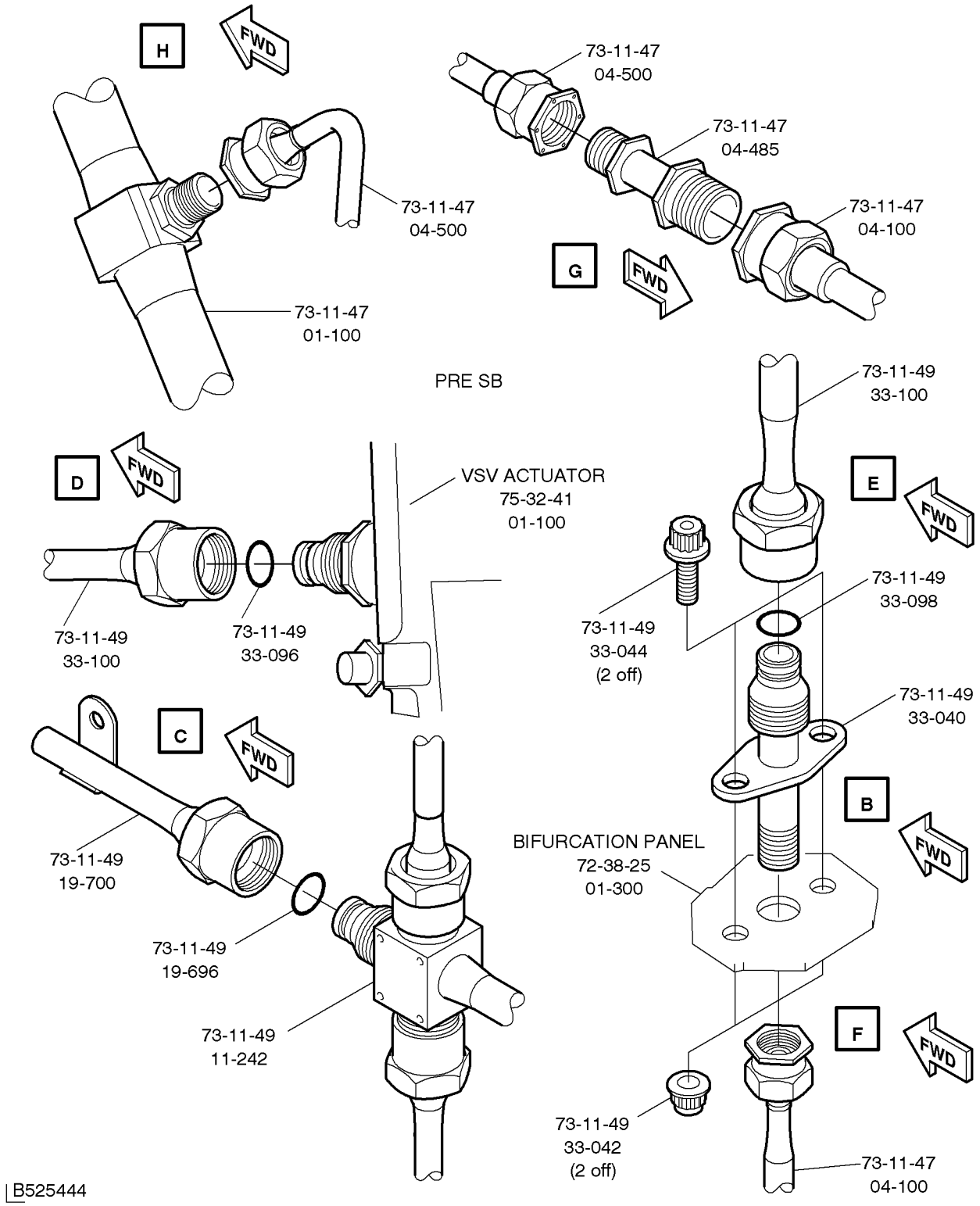
14. Do an idle leak check when the engine is reinstalled (Refer to the Aircraft Maintenance Manual, Chapter 71-00-00) or before the engine leaves the overhaul shop (Refer to the Engine Manual, Chapter 71-00-00).

15. Recording Instructions

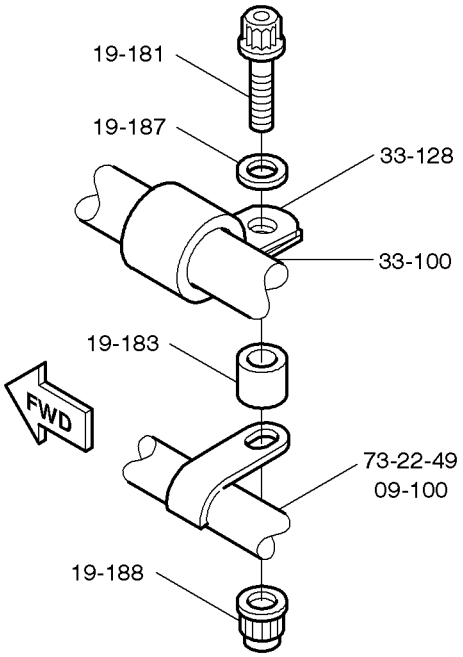
A. A record of accomplishment is required.



REMOVAL
FIGURE 1, SHEET 1



REMOVAL
FIGURE 1, SHEET 2



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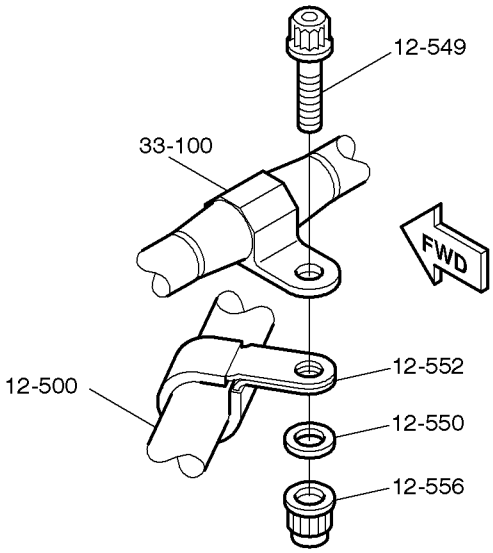
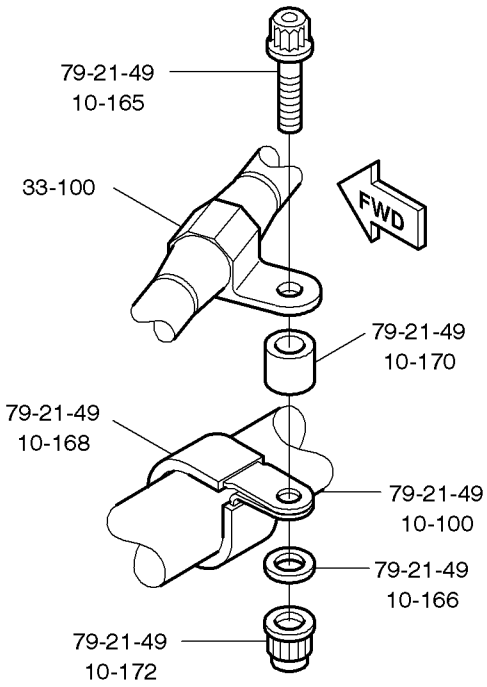


CLIP POSITION 6158

PRE SB



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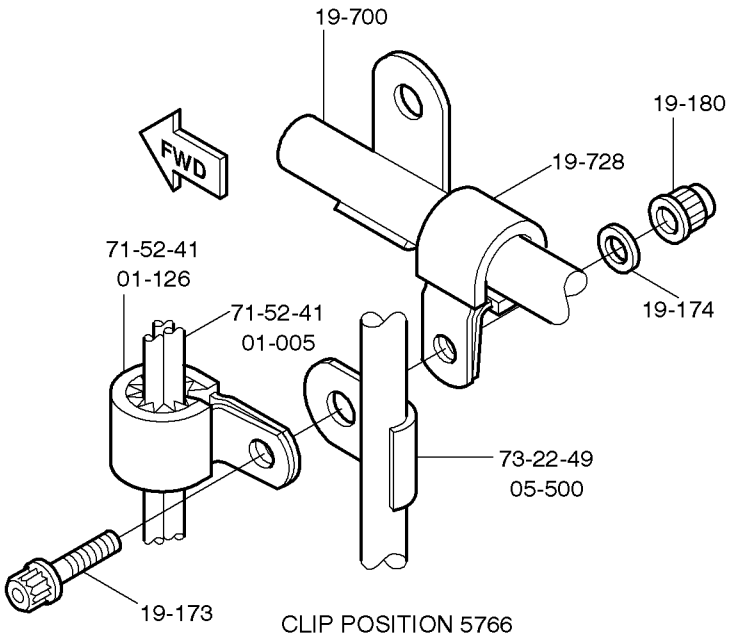

CLIP POSITION 5766

B525445

NOTE: All IPC FIG/ITEM numbers are 73-11-49 unless identified differently

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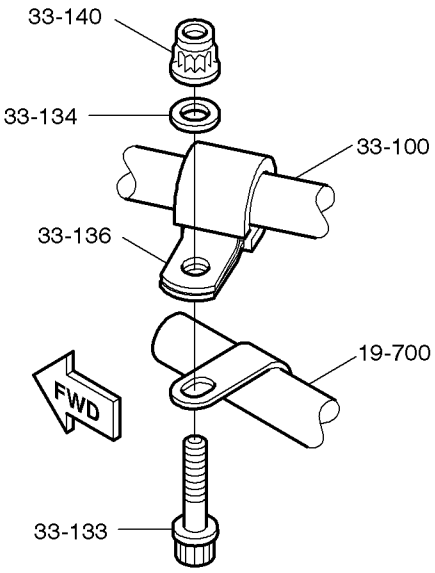

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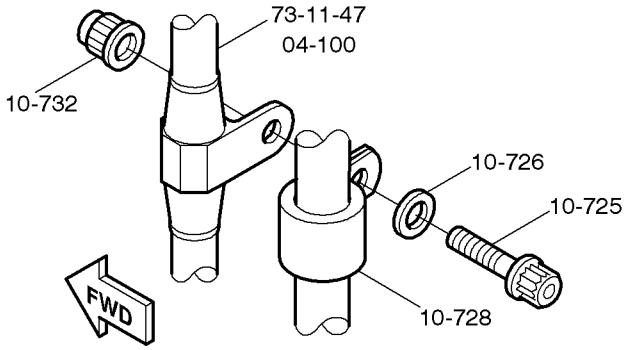

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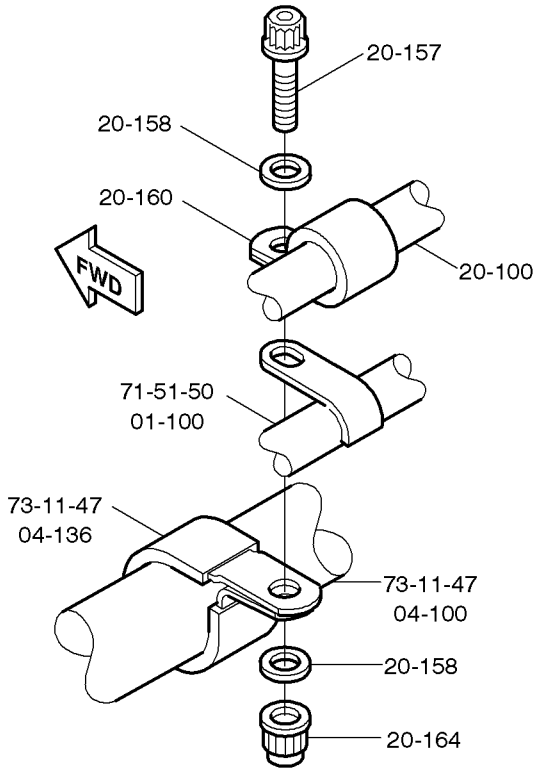
PRE SB



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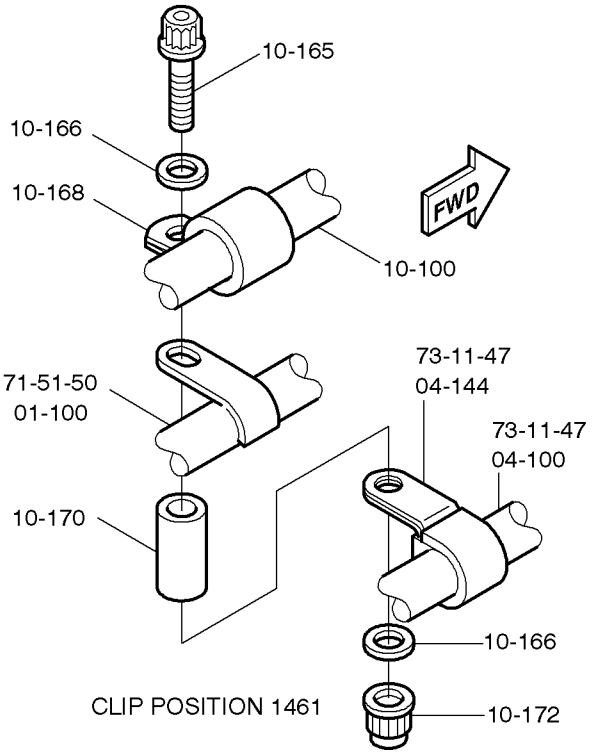

CLIP POSITION 1461

B525446

NOTE: All IPC FIG/ITEM numbers are 73-11-49 unless identified differently

REMOVAL
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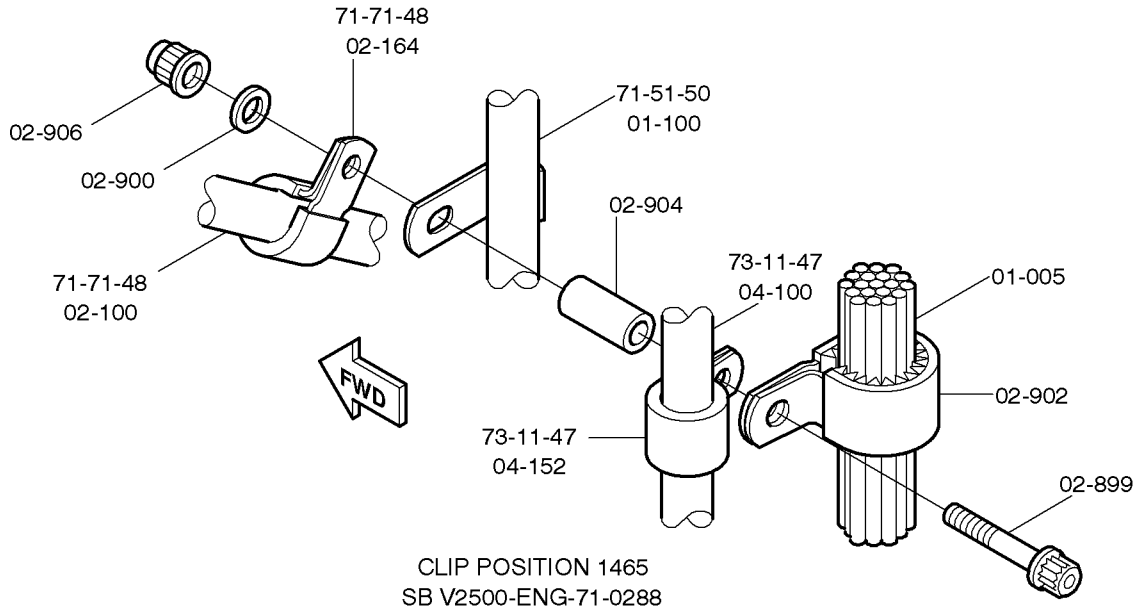
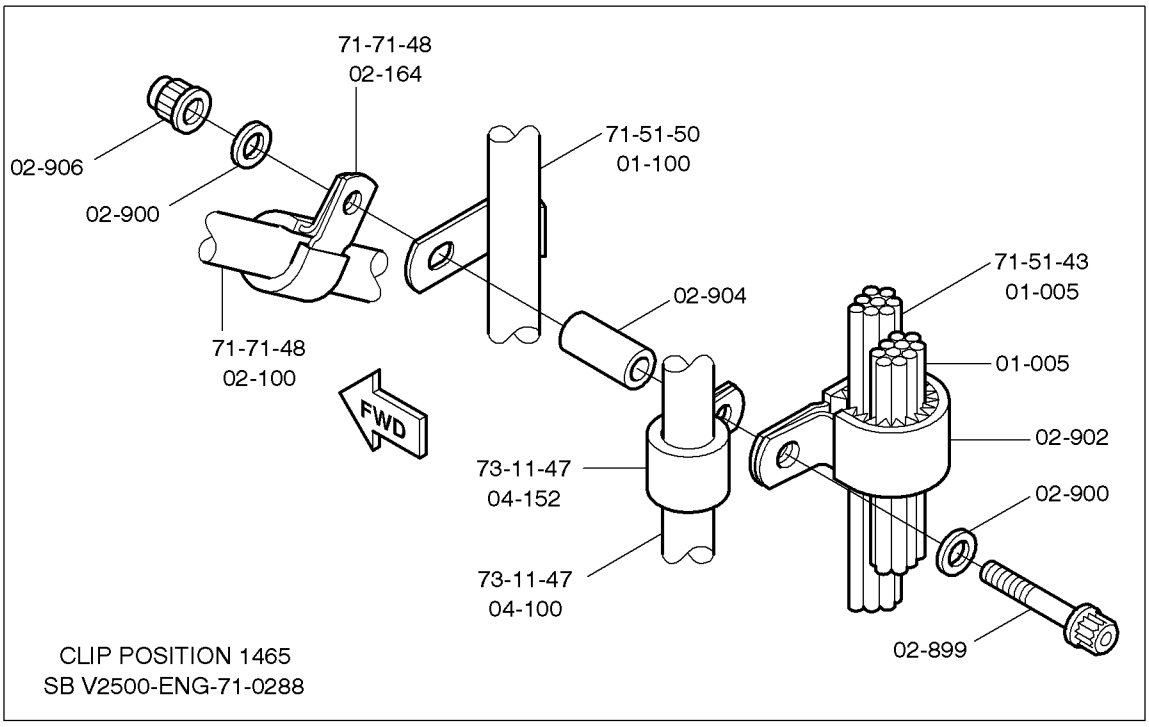


CLIP POSITION 1465
SB V2500-ENG-71-0288

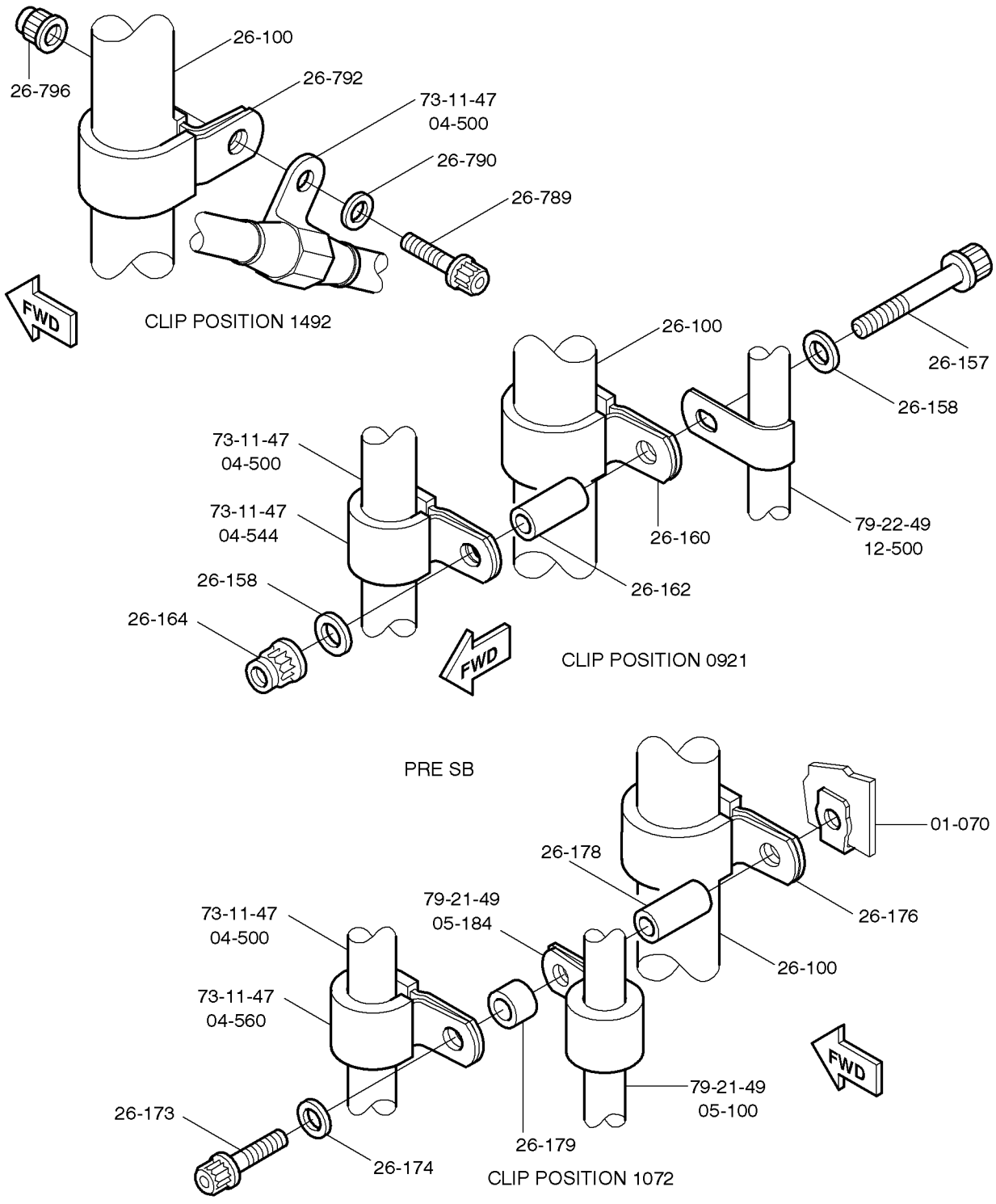
PRE SB



CLIP POSITION 1465
SB V2500-ENG-71-0288

B525447 NOTE: All IPC FIG/ITEM numbers are 71-51-41 unless identified differently

REMOVAL
FIGURE 1, SHEET 5



B525448

NOTE: All IPC FIG/ITEM numbers are 73-11-49 unless identified differently

REMOVAL
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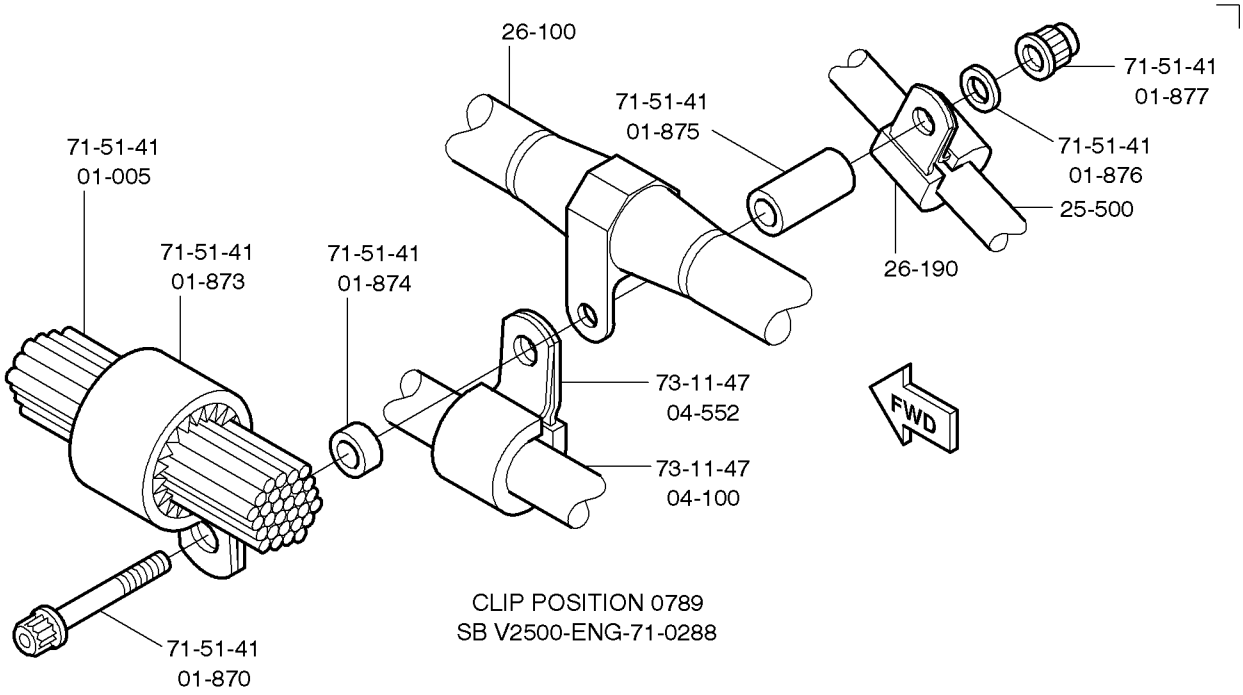
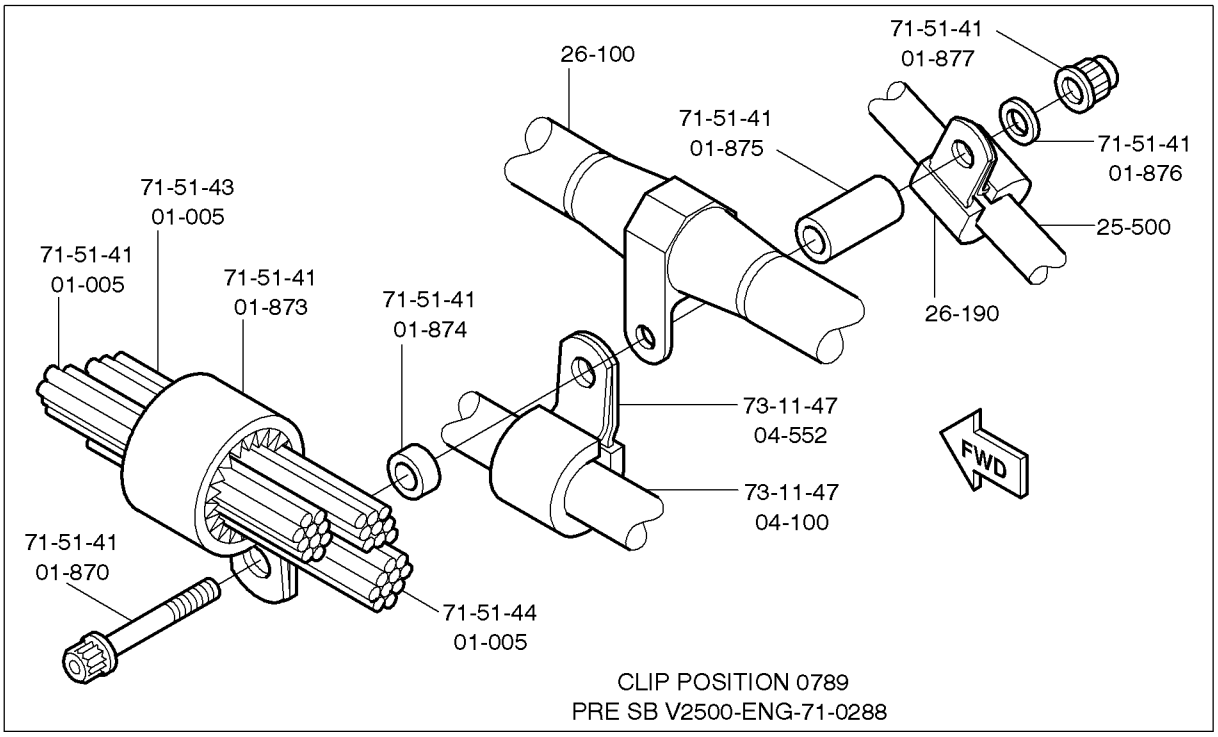


CLIP POSITION 0789
SB V2500-ENG-71-0288

PRE SB

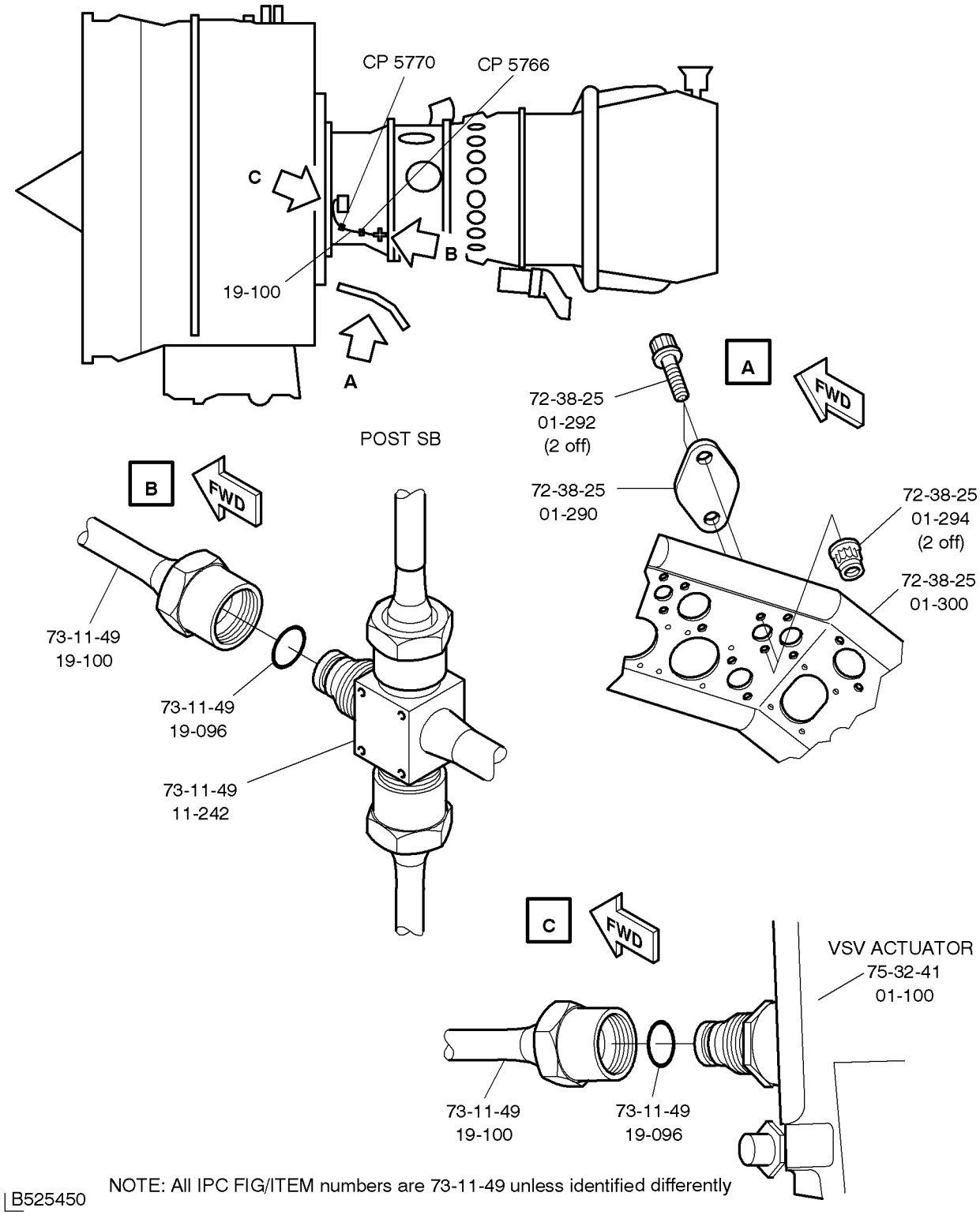


CLIP POSITION 0789
PRE SB V2500-ENG-71-0288

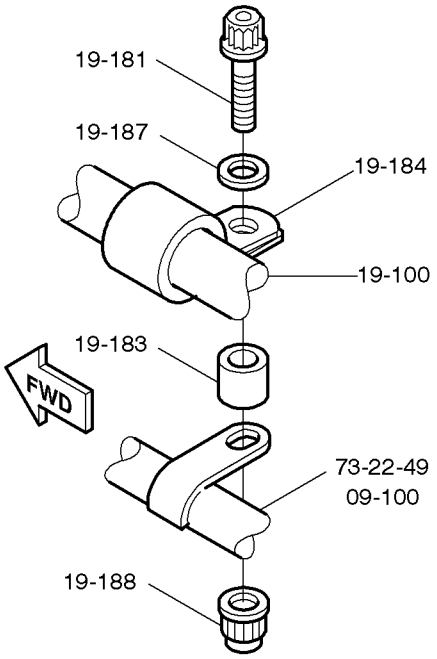
B525449

NOTE: All IPC FIG/ITEM numbers are 73-11-49 unless identified differently

REMOVAL
FIGURE 1, SHEET 7



INSTALLATION
FIGURE 2, SHEET 1



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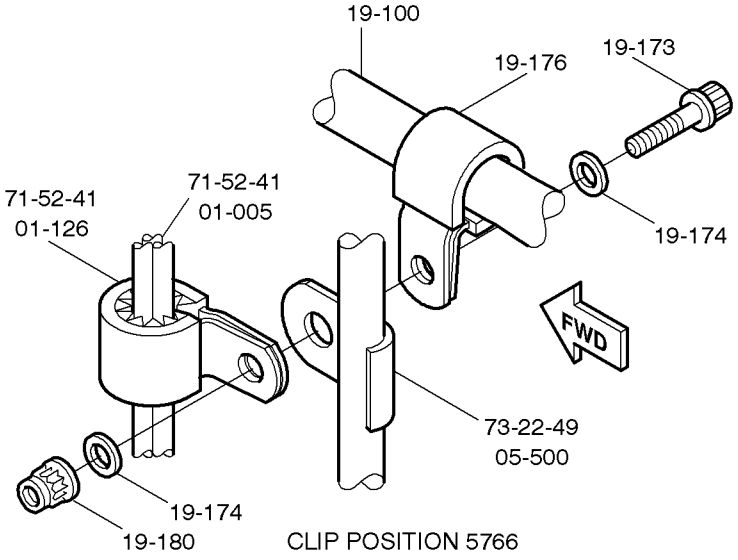

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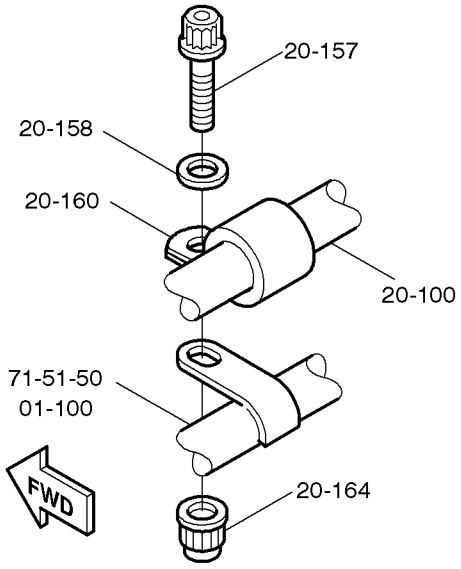

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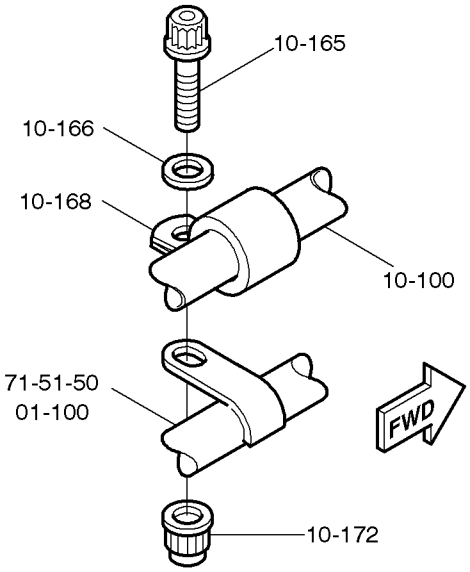
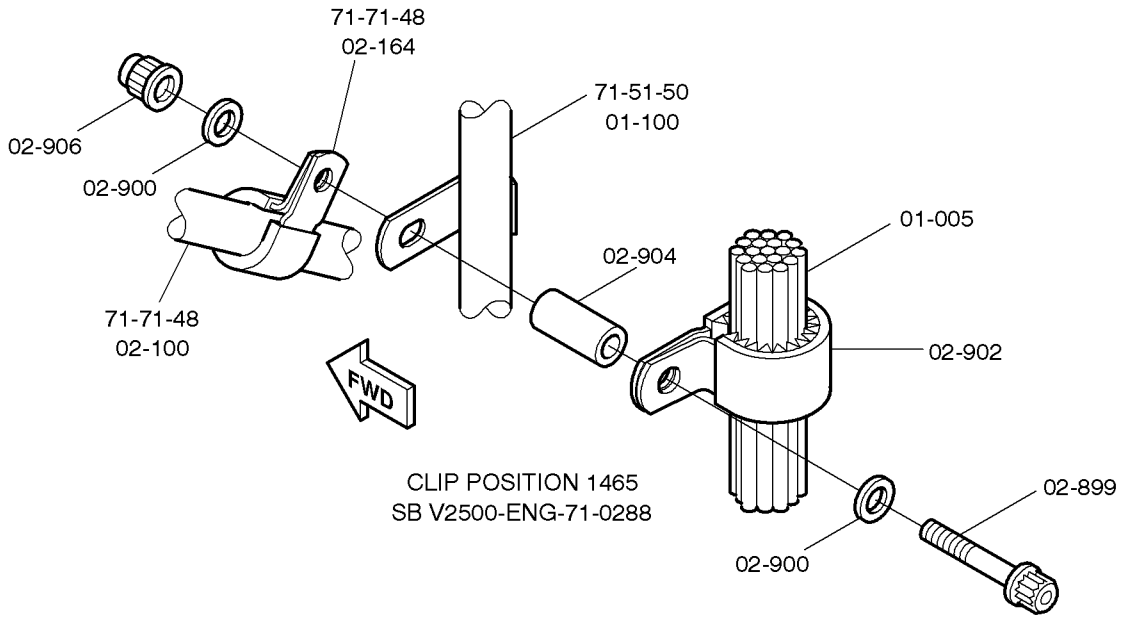


CLIP POSITION 1461

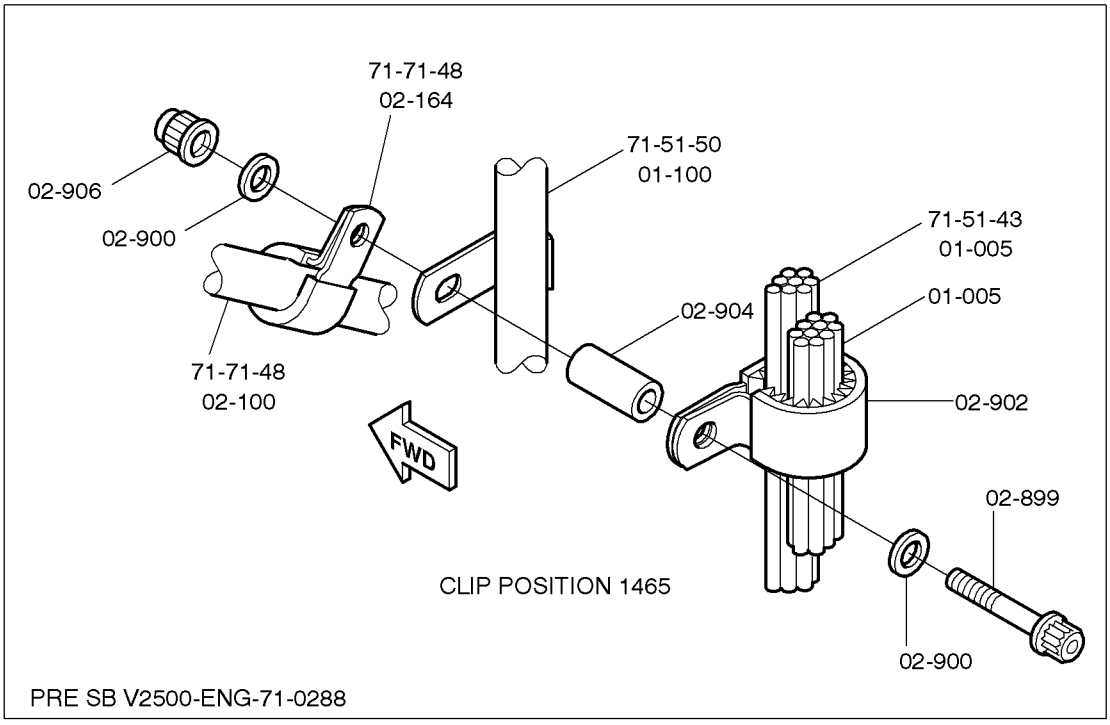
B525451

NOTE: All IPC FIG/ITEM numbers are 73-11-49 unless identified differently

INSTALLATION
FIGURE 2, SHEET 2



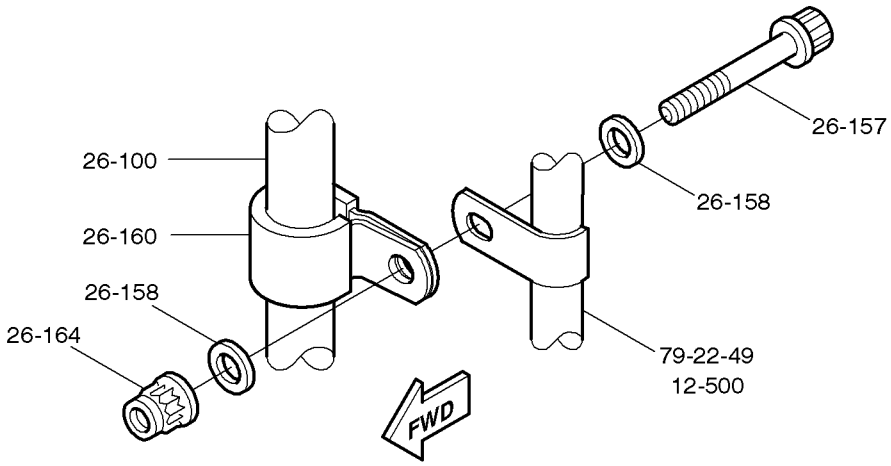
POST SB



B525452

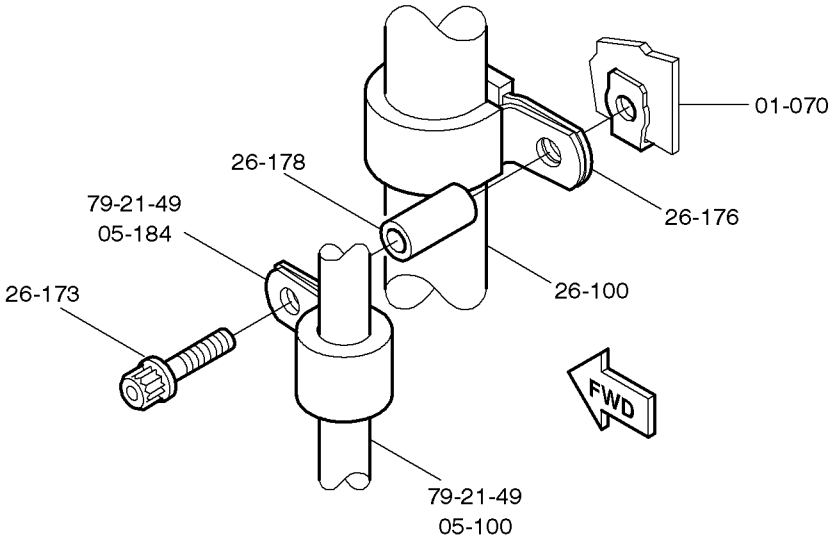
NOTE: All IPC FIG/ITEM numbers are 71-51-41 unless identified differently

INSTALLATION
FIGURE 2, SHEET 3



CLIP POSITION 0921

POST SB

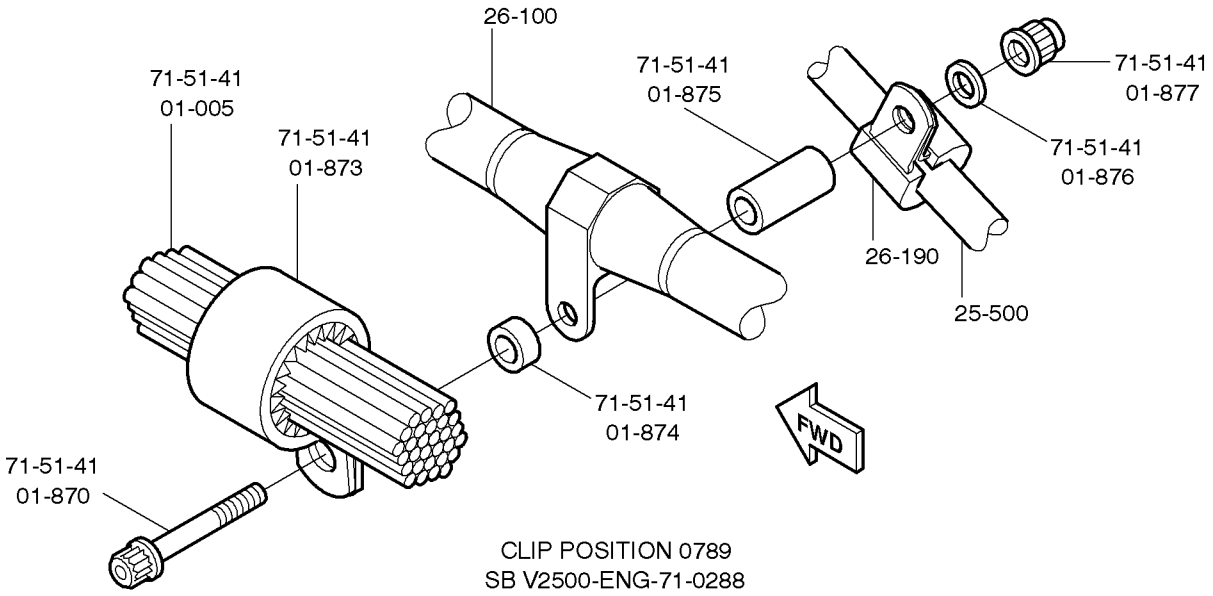


CLIP POSITION 1072

NOTE: All IPC FIG/ITEM numbers are 73-11-49 unless identified differently

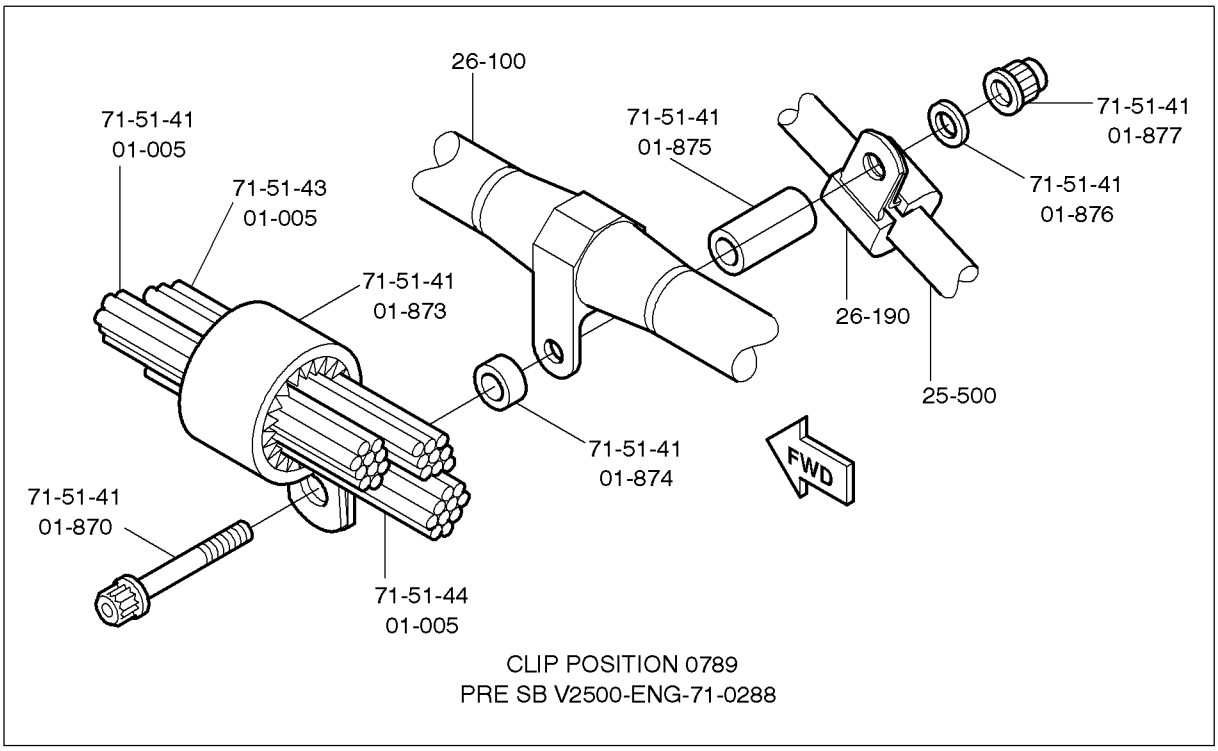
B525453

INSTALLATION
FIGURE 2, SHEET 4



CLIP POSITION 0789
SB V2500-ENG-71-0288

POST SB



CLIP POSITION 0789
PRE SB V2500-ENG-71-0288

B525454

NOTE: All IPC FIG/ITEM numbers are 73-11-49 unless identified differently

INSTALLATION
FIGURE 2, SHEET 5

Appendix

Added Data

Internal Reference Information

Revision No.	Reference Document	Origination
Original	EC13VU010	HK/MTU

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