POWER PLANT - ENGINE - INCORPORATION OF REROUTING AND MODIFICATION REQUIREMENTS FOR THE EEC FAN HARNESS - CATEGORY CODE 5 - MOD.ENG-71-0050

1. Planning Information

A. Effectivity

(1) Aircraft: Airbus A320

(2) Engine: V2500-A1 Engines prior to Serial No.V0086 except V0084

B. Reason

(1) Condition

Chafing to the FMU Harness (which breaks out of the EEC Fan Harness (A/O), may occur because of the close proximity to a wirelocked tube joint between CP1046 and CP1047. The FMU Harness may also contact the No.4 Fan Cowl Latch during the opening of the Fan Cowl Doors.

The cause of the condition results from current routing and clipping of the FMU Harness.

(2) Background

This condition has been found during the opening of the Fan Cowls on the Flight Test Engines installed on A320 Aircraft.

(3) Objective

The changes in configuration recommended in this Service Bulletin are intended to maintain engine reliability.

(4) Substantiation

Substantiation test is not required.

(5) Effects of Bulletin on Workshop Procedures:

Removal/Installation	Affected (See Supplemental Information)
Disassembly/Assembly	Not affected
Cleaning	Not affected
Inspection/Check	Affected (See Supplemental Information)
Repair	Not affected
Testing	Not affected

(6) Supplemental Information:

(a) The removal/installation of the Post-Service Bulletin configuration require instructions fo revised clipping positions and clipping parts.

(b) The inspection/check of the Post-Service Bulletin configuration requires the instruction for visual inspection of the Spiral Wrapping.

C. Description

(1) The changes introduced by this Service Bulletin are as follows:

(a) The existing CP1045 which safeties the FMU Harness and the IDG Cooling Tube has been deleted to replace with CP1095. (See Figures 2 and 4).

(b) A new CP1095 is introduced to reroute the Harness. (See Figure 4).

(c) The existing CP1047 which safties the Harness and the Fuel Tube has been deleted to reroute the Harness. (See Figure 2 and 4).

(d) The existing CP1048 which safties the Harness and the Fuel Tubes has been rearranged to get the clearance between the Harness and the Fuel Tube Joint. (See Figures 2 and 4).

(e) The Spiral Wrapping is installed on the Harness between CP1043 and CP1048 to improve Harness durability. (See Figure 3).

(2) The existing EEC Fan Harness can be reworked to a new configuration. (See Figure 3).

D. Approval

The Part Number Changes and/or part modifications described in Sections 2 and 3 of this Service Bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA-APPROVED for the Engine Model listed.

E. Compliance

Category Code 5.

Accomplish when the engine is disassembled sufficiently to afford access to the affected subassembly (i.e. modules, accessories, components, build groups) and to all affected spare subassemblies.

F. Manpower

Estimated Manhours to incorporate the full intent of this Bulletin.

Venue	Estimated Manhours
(1) In Service	TOTAL 56 mins
(a) To gain access	
(i) Open fan cowl doors ..	7 mins
(b) To embody	41 mins
(c) To return to flyable status	
(i) Close fan cowls ..	8 mins

NOTE: This time is based on option 1 (The removal of the harness from the engine is not required).

G. Material - Price and Availability

(1) Modification Kit not required. Parts supplied as single line items.

(2) See Material Information section for prices and availability of future spares.

H. Tooling - Price and Availability

Special tools are not required.

I. Weight and Balance

(1)	Weight change	None
(2)	Moment arm	No effect
(3)	Datum	Engine front mount centerline (Power Plant Station (PPS) 100)

J. Electrical Load Data

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

K. References

(1) Internal Reference No.

EC89VJ023

ECM89VJ023-01

ECM89VJ023-03

(2) Other References

V2500 Engine Manual, 72-00-32, Removal-02 and Installation-04.

V2500 Standard Practices/Processes Manual, 70-41-00, Torque Tightening Technique.

V2500 Overhaul Processes and Consumable Index.

L. Other Publications Affected

(1) The V2500 Power Plant Illustrated Parts Catalog, 24-21-49 and 71-51-41.

(2) The V2500 Engine Illustrated Parts Catalog, 24-21-49 and 71-51-41.

(3) The V2500 Engine Manual, 72-00-32.

2. Accomplishment Instructions

NOTE: The rework instructions for the EEC Fan Harness are divided into two optional procedures to permit the accomplishment of the Harness rework by Option 1 (The removal of the Harness from the engine is not required) or Option 2 (The removal of the Harness from the engine is required).

A. Rework Instructions

Procedure	Supplementary Information
(1) Option 1 (The removal of the Harness from the engine is not required).	
(a) Find the clipping positions CP1043, CP1044, CP1045 CP1046, CP1047,and CP1048 where PN 5A0278 EEC Fan Harness is safetied.	Refer to Figure 1 and Figure 2, Sheet 1.
(b) At each CP1043, CP1044 and CP1045, remove PN 4W0001 Nut, PN 5W1086, Washer, PN 4W0103, Bolt and PN JM44LC39H105RG, Clamp from PN 5A0278, EEC Fan Harness and each Lug on PN 740-5271-503, IDG Cooling Tube	Refer to Figure 2, Sheet 1
(c) At CP1046, remove PN 4W0001, Nut, PN 5W1086, Washer, PN JM44LC39H105RG, Clamp and PN 4W0103, Bolt from PN 5A0278 EEC Fan Harness and the Lug on PN 740-5273-503, IDG Cooling Tube	Refer to Figure 2
(d) At CP1047, remove PN 4W0001, Nut, PN 5W1086, Washer, PN JM44LC39H105RG, Clamp and PN 4W0103, Bolt from PN 5A0278 EEC Fan Harness and the Lug on PN 5R8131 Fuel Tube	Refer to Figure 2

(e)	At CP1048, remove PN 4W0001, Nut, two PN 5W1086, Washers PN 4W0105, Bolt, PN JM44LC39H105RG, Clamp and PN 400WSS4, Adel Clamp, from PN 5A0278, EEC Fan Harness, PN 5R8102, Fuel Tube and the Lug on PN 5R8131 Fuel Tube	Refer to Figure 2
(f)	At each CP1043 and CP1048, make a mark on PN 5A0278, EEC Fan Harness with CoMat No.06-069, Marks-A-Lot to identify the area to be reworked	Refer to Figure 3, Sheet 1
(g)	Install PN 5A0276, Spiral Wrapping between two marks on PN 5A0278, EEC Fan Harness and fasten each end with PN 5A9215, Lacing Tape	Refer to Figure 3, Sheet 3 and Sheet 4
(h)	Renumber by hand writing on PN 5A9246, Marker on the EEC Fan Harness	Refer to Figure 3, Sheet 5
(i)	At each CP1043 and CP1044, install new PN JM44LC39H106RG, Clamp, PN 4W0103, Bolt, PN 5W1086, Washer and PN 4W0001, Nut to new PN 5A0356, EEC Fan Harness and PN 740-5271-503, IDG Cooling Tube	Refer to Figure 4
(j)	At new CP1095, install new PN JM44LC39H106RG, Clamp, new PN 400WSS10, Adel Clamp, two PN 5W1086, Washers, PN 4W0103, Bolt and PN 4W0001, Nut to new PN 5A0356, EEC Fan Harness and PN 740-5273-503, IDG Cooling Tube	Refer to Figure 4
(k)	At CP1046, install new PN JM44LC39H106RG, Clamp, PN 4W0103, Bolt, PN 5W1086, Washer and PN 4W0001, Nut to new PN 5A0356, EEC Fan Harness and PN 740-5273-503, IDG Cooling Tube	Refer to Figure 4

(1)	At CP1048 with new Clipping configuration, install new PN JM44LC39H106RG, Clamp, PN 400WSS4, Adel Clamp, PN 4W0105, Bolt, two PN 5W1086, Washers and PN 4W0001, Nut to new PN 5A0356, EEC Fan Harness, PN 5R8102, Fuel Tube and PN 5R8131, Fuel Tube	Refer to Figure 4
(m)	At CP1043, CP1044, CP1095, CP1046 and CP1048, torque each PN 4W0001, Nut to 36-45 lbfin (4 to 5 Nm)	Refer to Figure 4, and Standard Practices/Processes Manual, 70-41-00, Torque Tightening Technique

(2) Option 2 (The removal of the Harness from the engine is required)

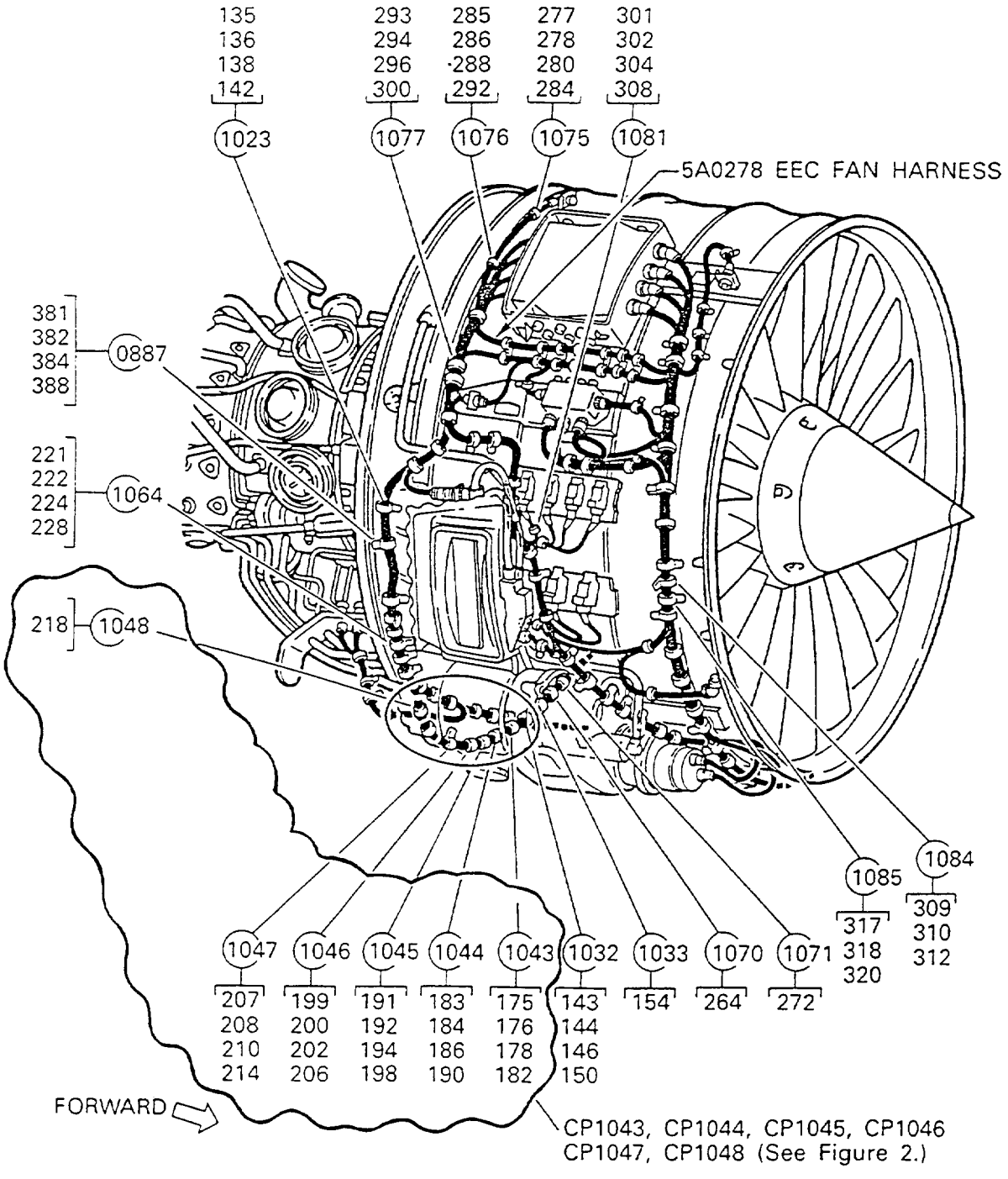
(a)	Find the clipping positions CP1043 and CP1048 where PN 5A0278 EEC Fan Harness is safetied before the removal of the Harness from the engine	Refer to Figure 1 and Figure 2, Sheet 1
(b)	At CP1043, remove PN 4W0001, Nut, PN 4W0103, Bolt, PN 5W1086, Washer and PN JM44LC39H105RG, Clamp from PN 5A0278, EEC Fan Harness and Lug on PN 740-5271-503, IDG Cooling Tube	Refer to Figure 2, Sheet 1
(c)	At CP1048, remove PN 4W0001, Nut, two PN 5W1086, Washers, PN 4W0105, Bolt, PN JM44LC39H105RG, Clamp and PN 400WSS4, Adel Clamp, from PN 5A0278, EEC Fan Harness, PN5R8102, Fuel Tube and the Lug on PN 5R8131, Fuel Tube	Refer to Figure 2, Sheet 2
(d)	At each CP1043 and CP1048, make a mark on PN 5A0278, EEC Fan Harness with CoMat No.06-069, Marks-A-Lot to identify the area to be reworked	Refer to Figure 3, Sheet 1, and Overhaul Processes and Consumable Index

(e)	Write a note on CoMat No.02-092, Identification Tag, before you install it on PN 5A0278, EEC Fan Harness	Refer to Figure 3, Sheet 2 and Overhaul Processes and Consumable Index
(f)	Install CoMat No.02-092, Identification Tag on PN 5A0278, EEC Fan Harness near CP1048 to identify the area to be reworked by this Service Bulletin	Refer to Figure 3, Sheet 2
(g)	Remove PN 5A0278, EEC Fan Harness from the engine and send it to a shop where the Harness is reworked by this Service Bulletin	Refer to Engine Manual, 72-00-32, Removal-02, TASK 72-00-32-020-002
(h)	Install PN 5A0276, Spiral Wrapping between two marks on PN5A0278, EEC Fan Harness and Fasten each end with PN 5A9215, Lacing Tape	Refer to Figure 3, Sheets 3 and Sheet 4
(i)	Renumber by hand writing on PN 5A9246, Marker on the EEC Fan Harness	Refer to Figure 3, Sheet 5
(j)	Remove CoMat No.02-092, Identification Tag from the EEC Fan Harness	Refer to Figure 3, Sheet 2
(k)	Install reidentified PN 5A0356, EEC Fan Harness to the engine, but follow the subsequent instructions in steps (1) through (p)	Refer to Engine Manual, 72-00-32, Installation-04, TASK 72-00-32-420-005
(l)	At each CP1045 and CP1047, remove PN 4W0001, Nut, PN 5W1086, Washer, PN 4W0103, Bolt and PN JM44LC39H105RG, Clamp from the EEC Fan Harness to cancel the use of these clipping positions	Refer to Figure 2 and 4

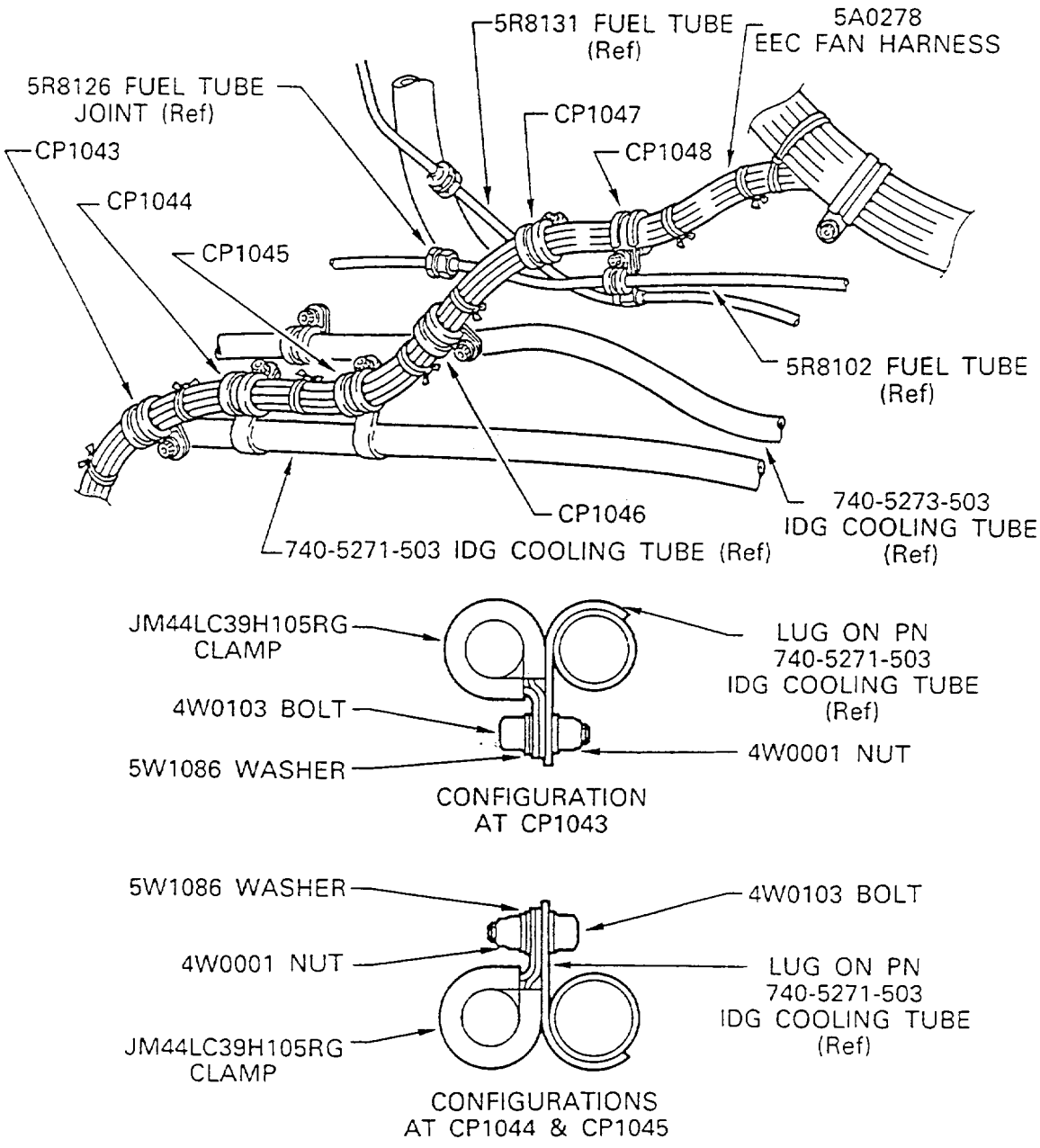
(m)	At each CP1043, CP1044, CP1046 and CP1048 replace PN JM44LC39H105RG, Clamp with new PN JM44LC39H106RG, Clamp	Refer to Figure 2 and 4
(n)	At CP1048, change the clipping configuration to a new configuration	Refer to Figures 2 and 4
(o)	At new CP1095, install new PN JM44LC39H106RG, Clamp, new PN 400WSS10, Adel Clamp, two PN 5W1086, Washers, PN 4W0103, Bolt and PN 4W0001, Nut to new PN 5A0356, EEC Fan Harness and PN 740-5273-503, IDG Cooling Tube	Refer to Figure 4
(p)	At CP1043, CP1044, CP1095, CP1046 and CP1048, torque each PN 4W0001, Nut to 36-45 lbfin (4 to 5 Nm)	Refer to Figure 4, and Standard Practices/Processes Manual, 70-41-00, Torque Tightening Technique

D. Recording Instructions

(1) A record of accomplishment is necessary

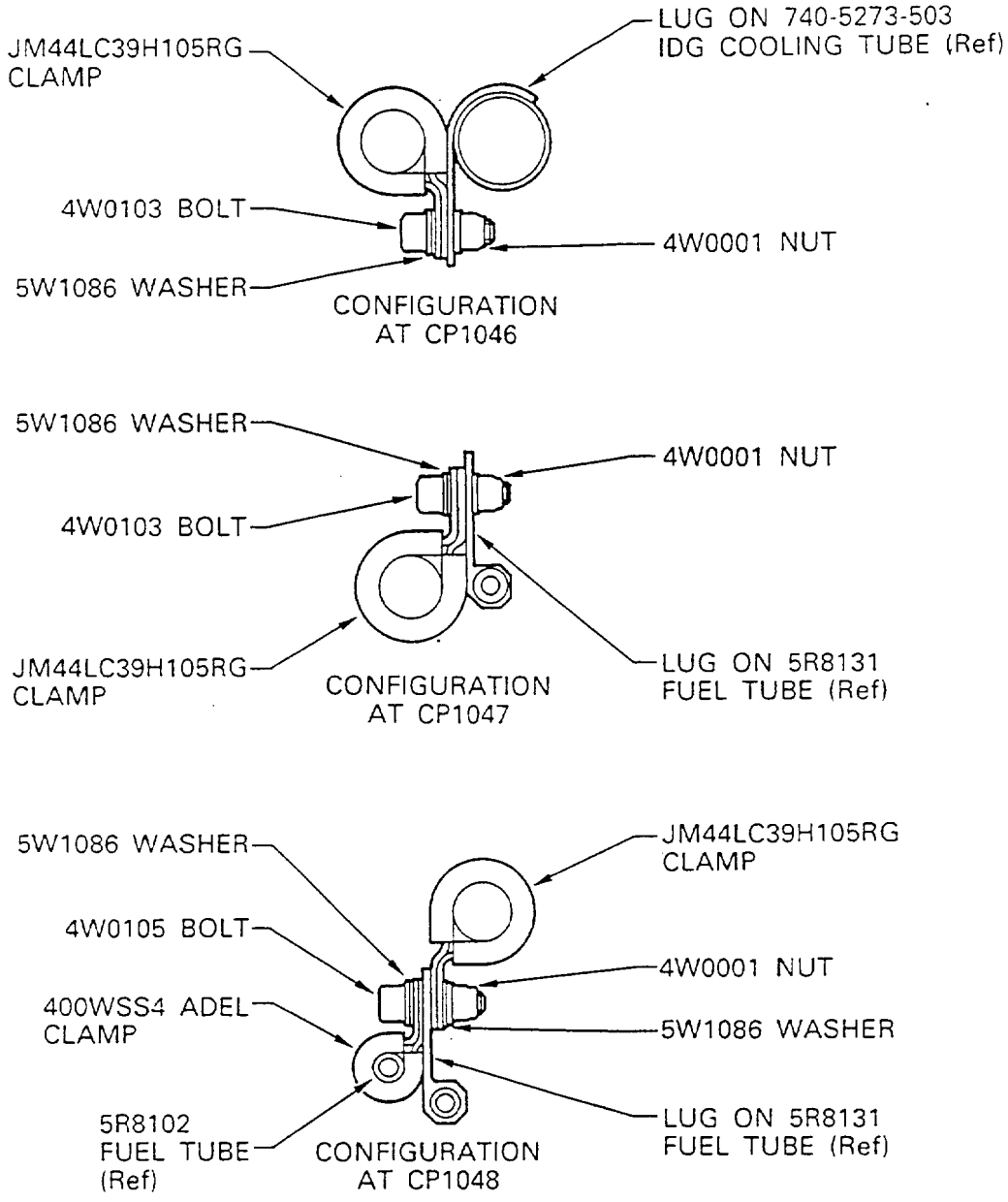


Location of the EEC Fan Harness clipping positions
Fig.1



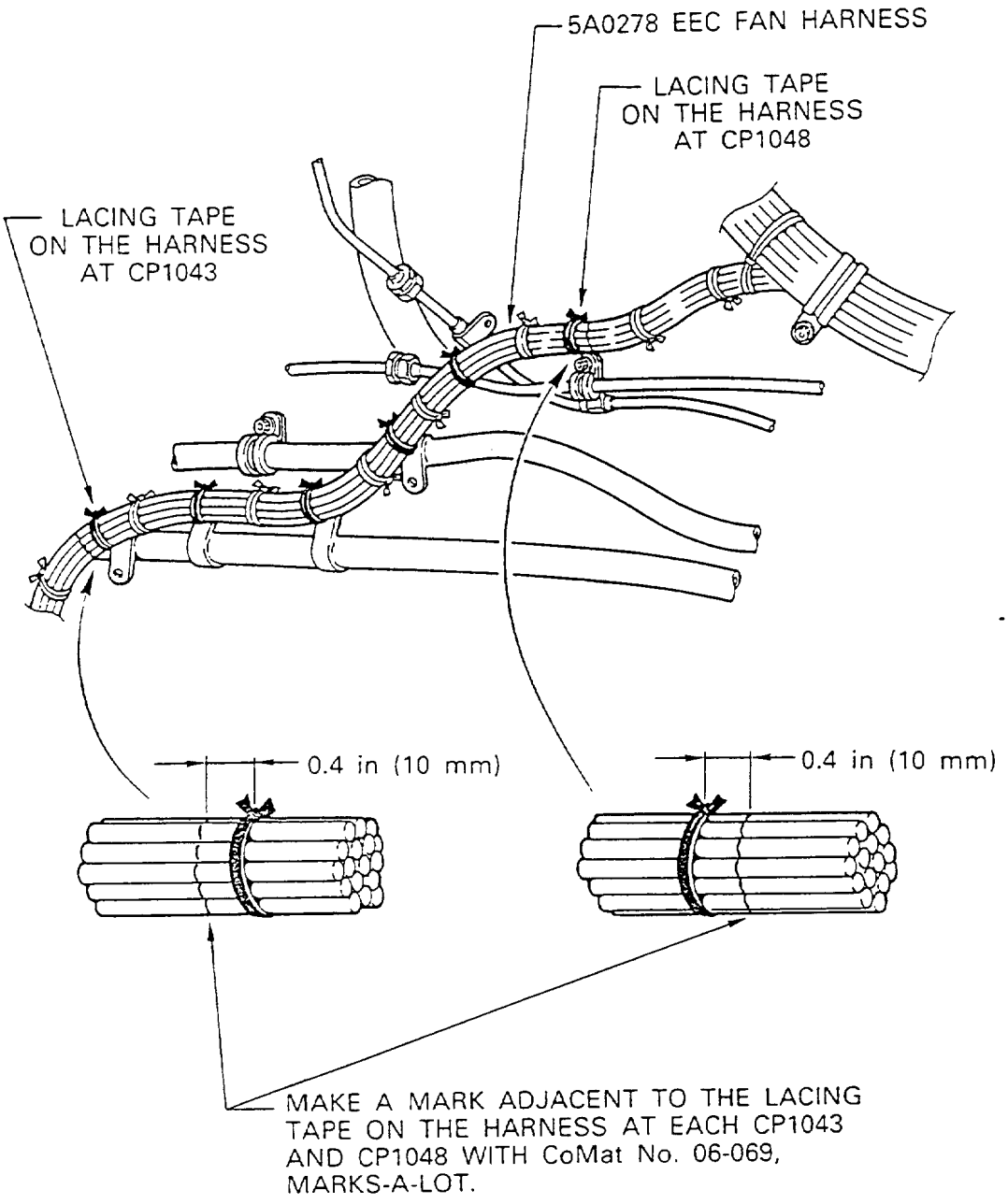
ded0000159

EEC Fan Harness clipping detail - Before alteration
Fig.2 (Sheet 1 of 2)



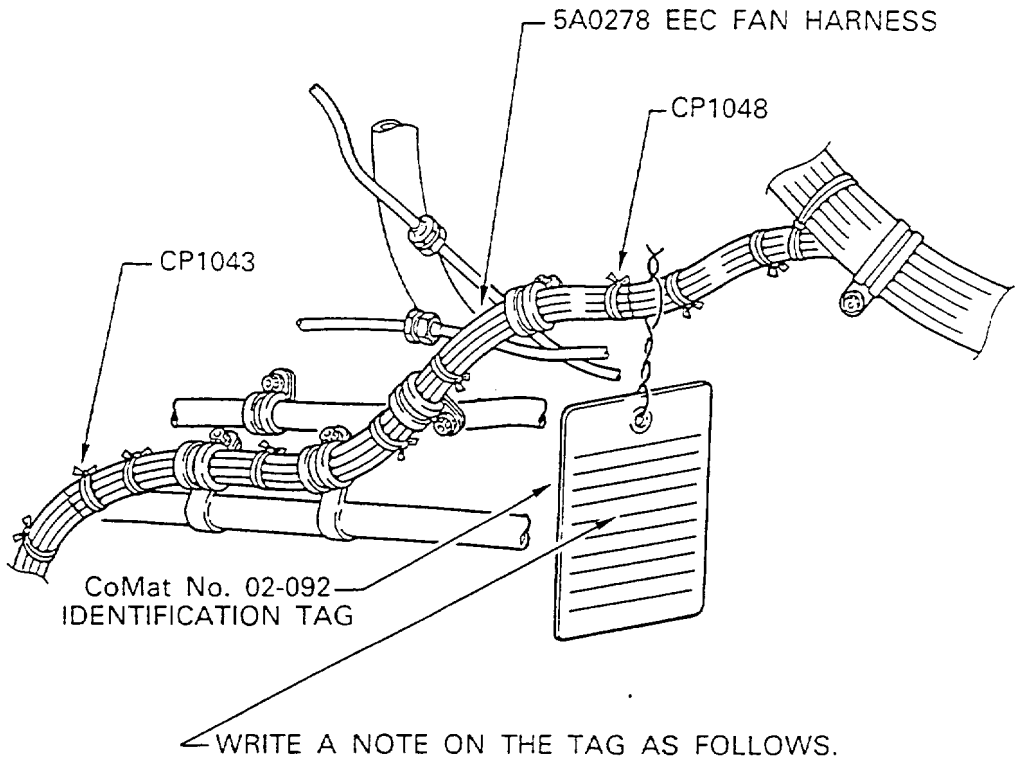
ded0000160

EEC Fan Harness clipping detail - Before alteration
Fig.2 (Sheet 2 of 2)



ded0000161

Rework of the EEC Fan Harness
Fig.3 (Sheet 1 of 5)



IMPORTANT!

TO PERSONS WHO ACCOMPLISH THIS S.B. No: V2500-ENG-71-0050.

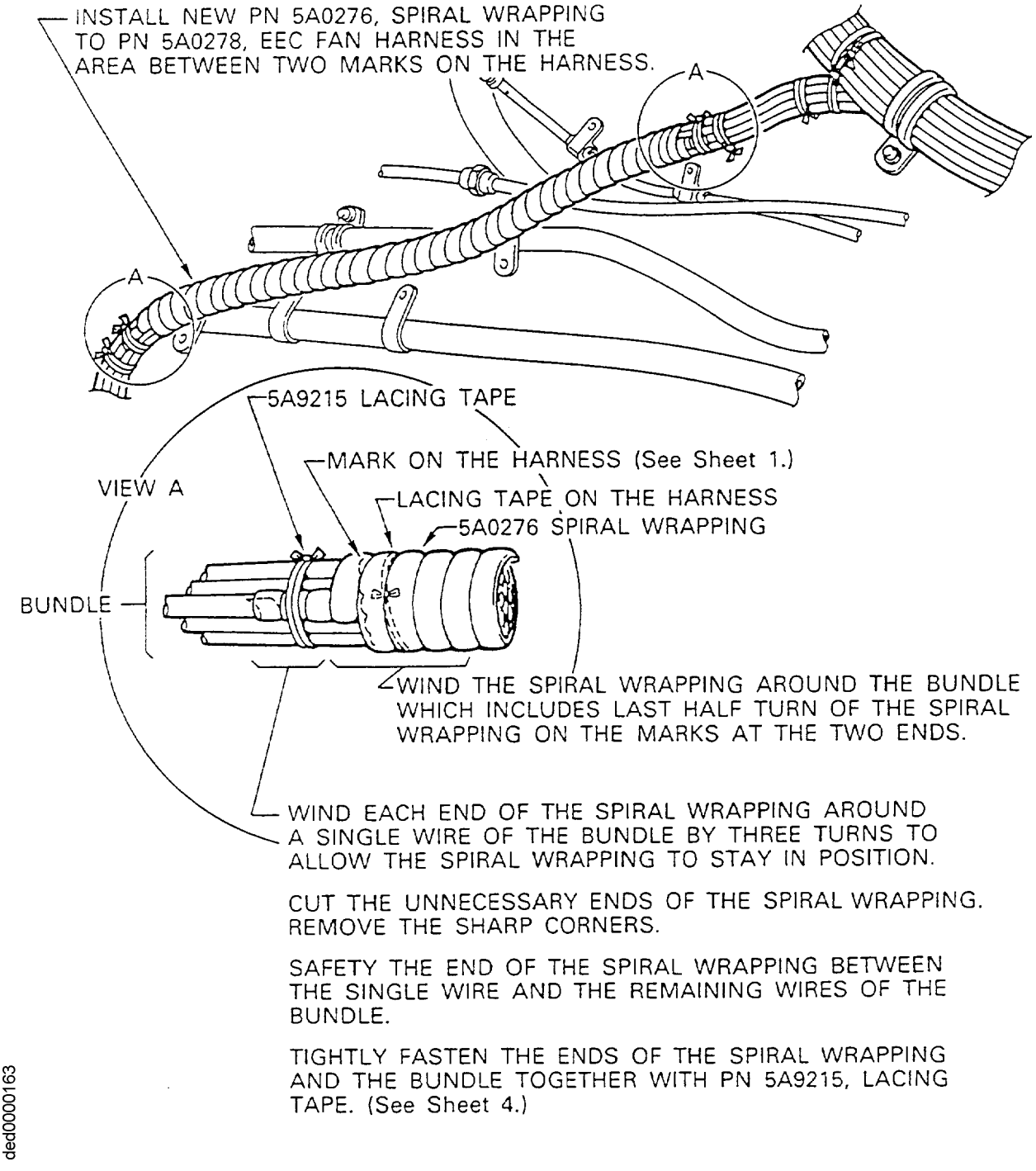
1 THIS TAG SHOWS THE AREA BETWEEN TWO MARKS TO BE REWORKED.

2 DO NOT REMOVE THIS TAG UNTIL THE MODIFICATION BY THIS S.B. IS COMPLETED.

3 SEND THE HARNESS TO A SHOP WHERE IT IS TO BE REWORKED.

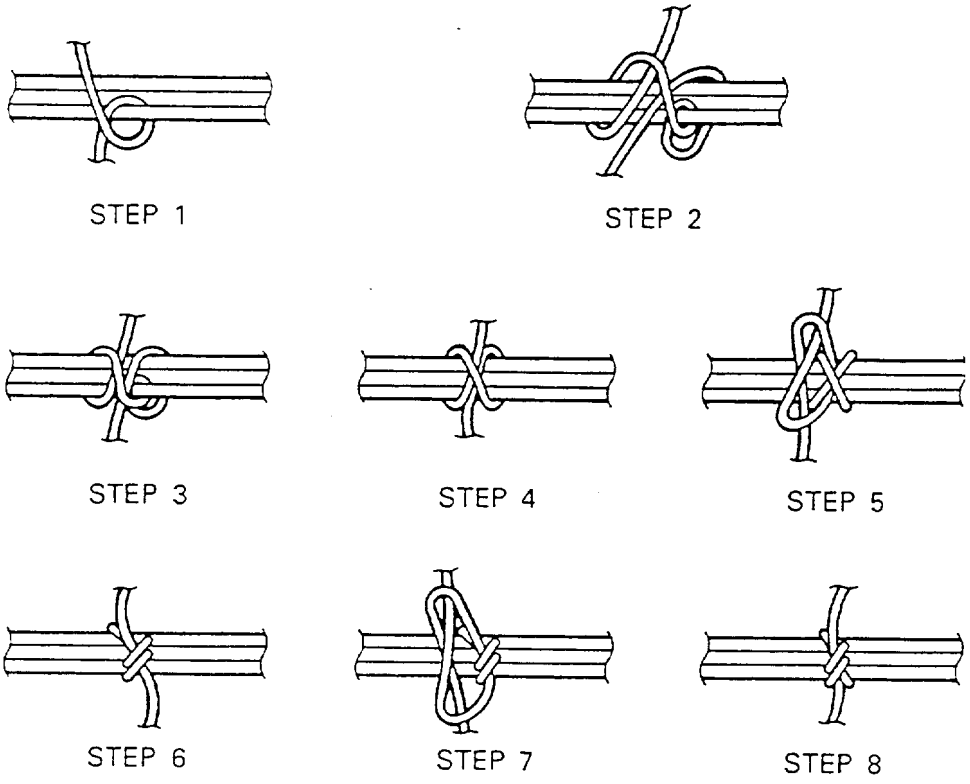
ded0000162

Rework of the EEC Fan Harness
Fig.3 (Sheet 2 of 5)



ded0000163

Rework of the EEC Fan Harness
Fig.3 (Sheet 3 of 5)

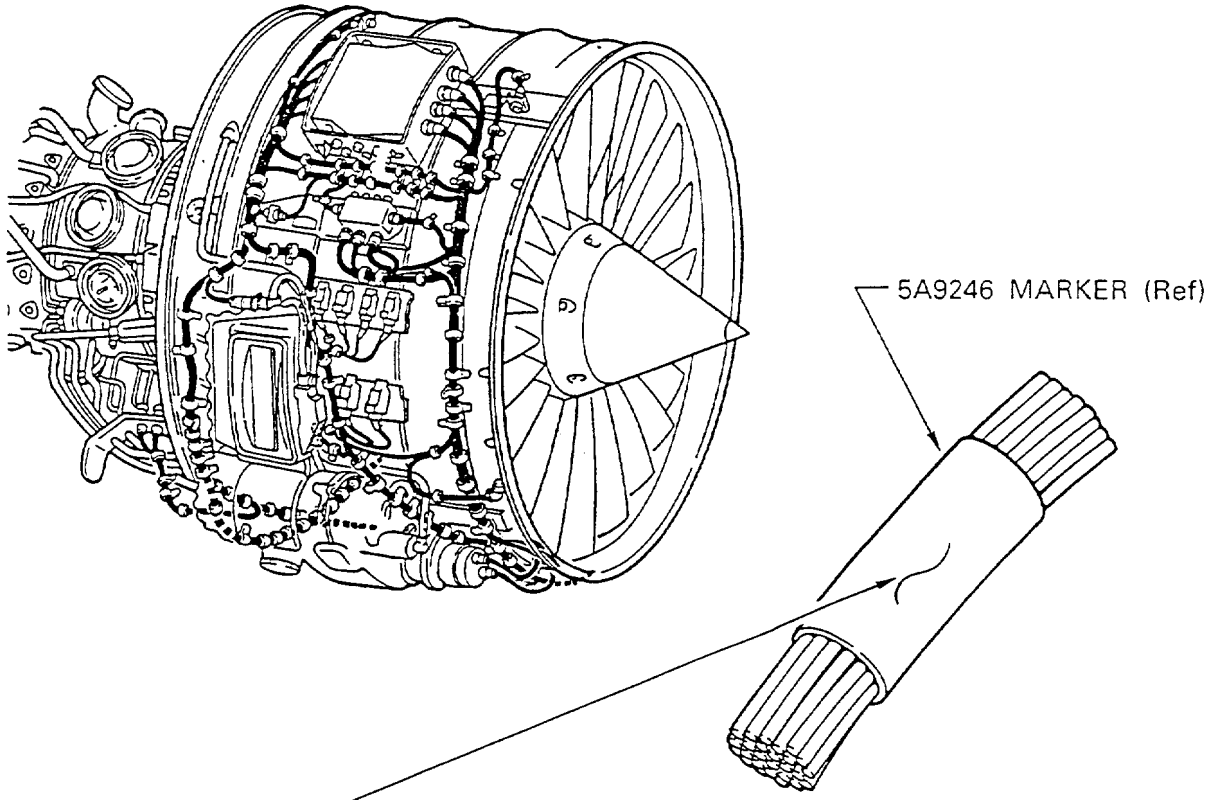


THIS ILLUSTRATION SHOWS A STEP-BY-STEP PROCEDURE HOW TO FASTEN EACH END OF THE SPIRAL WRAPPING AND THE BUNDLE TOGETHER WITH THE LACING TAPE.

NOTE: REQUIRED QUANTITY OF THE LACING TAPE IS 23.62 in (600 mm) LONG TO FASTEN EACH END OF THE SPIRAL WRAPPING AND THE BUNDLE.

ded0000164

Rework of the EEC Fan Harness
Fig.3 (Sheet 4 of 5)



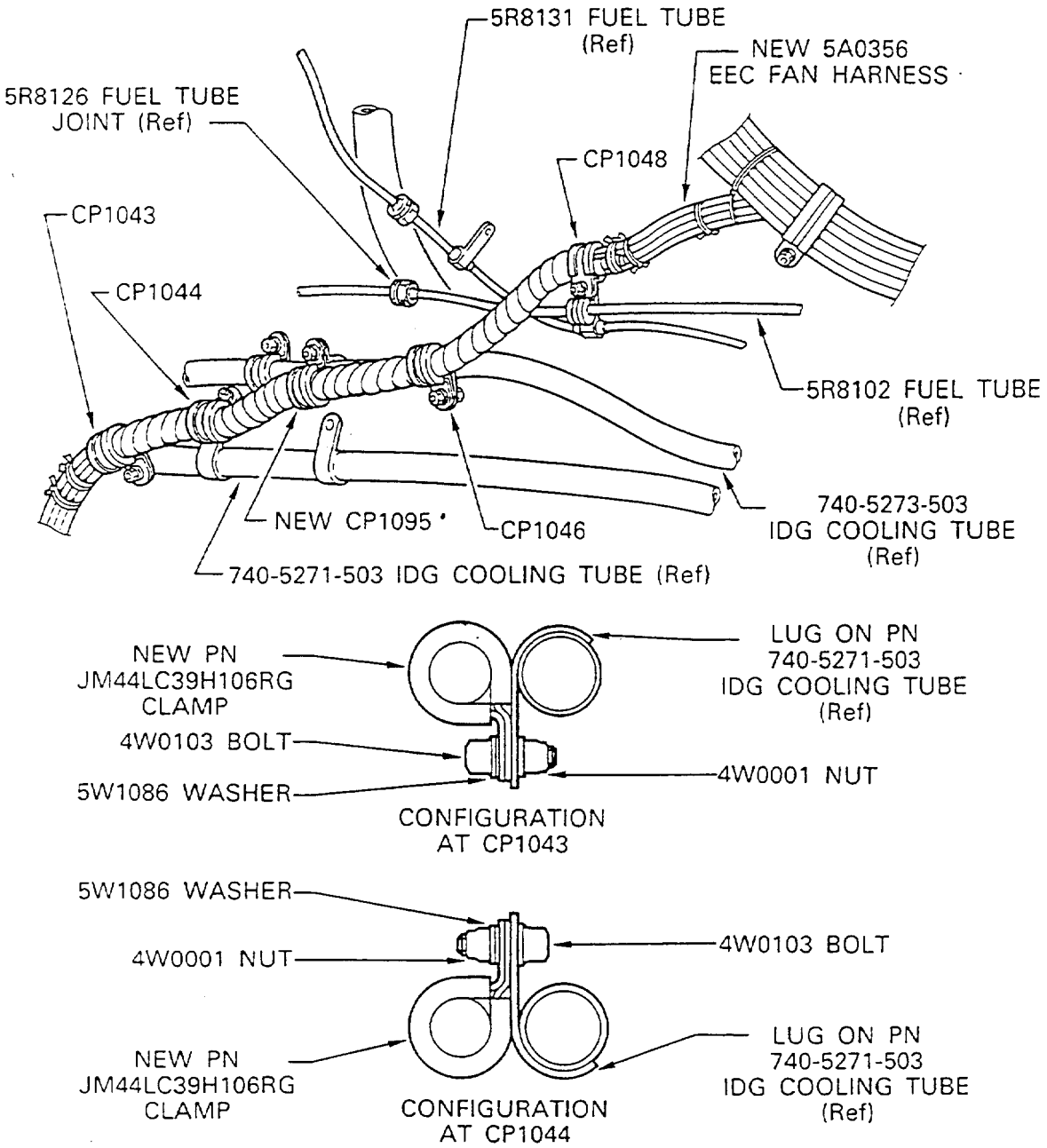
ERASE THE EXISTING PN 5A0278 ON PN 5A9246, MARKER WITH CoMat No. 05-019, WATERPROOF ABRASIVE PAPER.

MAKE A NEW PN 5A0356 ON PN 5A9246, MARKER WITH THE MATTHEWS WHITE M-145 INK AND No.7 INK THINNER.

REFER TO SUPPLIER FOR THE MATTHEWS WHITE M-145 INK AND No.7 INK THINNER;
JAS. H. MATTHEWS & CO.
INDUSTRIAL MARKING PRODUCTS DIVISION,
6515 PENN AVENUE, PITTSBURGH,
PENNA 15206 U.S.A.

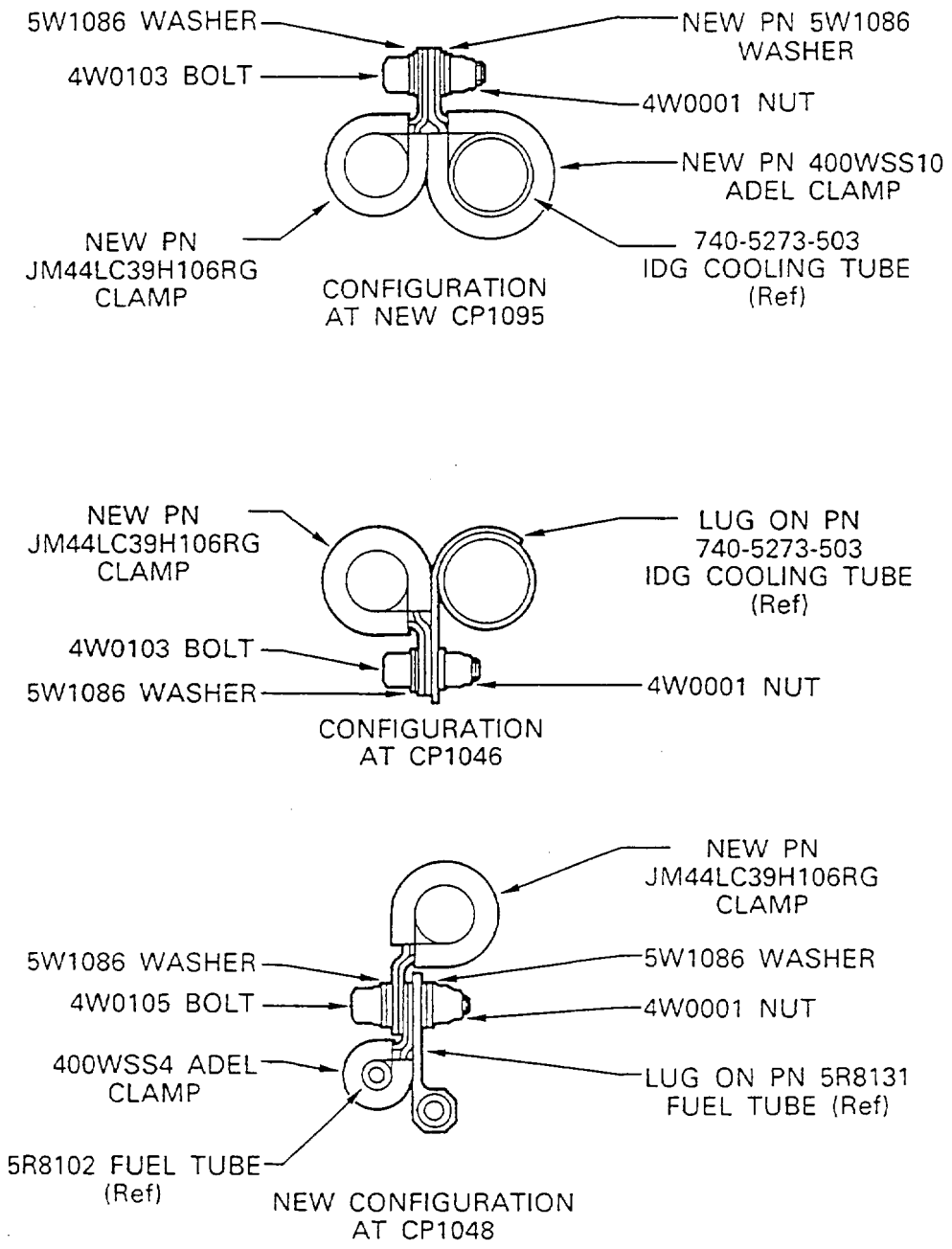
ded0000165

Rework of the EEC Fan Harness
Fig.3 (Sheet 5 of 5)



ded0000166

EEC Fan Harness clipping details - After alteration
Fig.4 (Sheet 1 of 2)



ded0000167

EEC Fan Harness clipping details - After alteration
Fig.4 (Sheet 2 of 2)

3. Material Information

New Part No. (ATA No.)	Qty	Est'd Unit Price ($)	Keyword	Old Part No. (IPC No.)	Instructions Disposition
Applicability: For each V2500 Engine to incorporate this Bulletin.					
A. Kits associated with this Bulletin:					
None					
B. Parts affected by this Bulletin:					
400WSS10 (24-21-49)	1	4.81	Clip, CP1095	- (02-544)	(A)
5A0356 (71-51-41)	1	-	Harness EEC Fan	5A0278 (01-005)	(A)(B) (S2)(1D)
JM44LC39H 106RG (71-51-41)	1	1.27	Clamp, CP1043	JM44LC39H 105RG (02-178)	(A)(S1)
JM44LC39H 106RG (71-51-41)	1	1.27	Clamp, CP1044	JM44LC39H 105RG (02-186)	(A)(S1)
- (71-51-41)	1	-	Bolt, CP1045	4W0103 (02-191)	(S1)
- (71-51-41)	2	-	Washer, CP1045	5W1086 (02-192)	(S1)
- (71-51-41)	1	-	Clamp, CP1045	JM44LC39H 105RG (02-194)	(S1)
- (71-51-41)	1	-	Nut, CP1045	4W0001 (02-198)	(S1)
JM44LC39H 106RG (71-51-41)	1	1.27	Clamp, CP1046	JM44LC39H 105RG (02-202)	(A)(S1)
- (71-51-41)	1	-	Bolt, CP1047	4W0103 (02-207)	(S1)
- (71-51-41)	1	-	Washer, CP1047	5W1086 (02-208)	(S1)
- (71-51-41)	1	-	Clamp, CP1047	JM44LC39H 105RG (02-210)	(S1)
- (71-51-41)	1	-	Nut, CP1047	4W0001 (02-214)	(S1)
JM44LC39H 106RG (71-51-41)	1	1.27	Clamp, CP1048	JM44LC39H 105RG (02-218)	(A)(S1)
4W0103 (71-51-41)	1	8.77	Bolt, CP1095	- (02-397)	(A)

5W1086 (71-51-41)	1	2.44	Washer, CP1095	- (02-398)	(A)
JM44LC39H 106RG (71-51-41)	1	1.27	Clamp, CP1095	- (02-400)	(A)
4W0001 (71-51-41)	1	4.80	Nut, CP1095	- (02-404)	(A)
5A9215 (71-51-41	1	-	Tape, Lacing	5A9215 (03-915)	(A) (See Note 1)
5A0276 (71-51-41)	1	-	Wrapping, Spiral	5A0276 (03-950)	(A) (See Note 2)

C. Instructions/Disposition Code Statements:

(A) New part is currently available.
(B) Old part will no longer be available for sale.
(S1) Old part can be used up on other applications.
(S2) Old and new part is freely and fully interchangeable, both pysically and functionally.
(1D) Old Part can be reworked and reidentified to the New Part Number.

NOTE: 1. Required quantity of the Lacing Tape is 47.24in. (1200 mm.) long when reworking assembly part No.5A0278.

NOTE: 2. Required quantity of the Spiral Wrapping is 27.56in. (700 mm.) long when reworking assembly part No.5A0278.

D. Expendables Required to Incorporate this Bulletin:

None.

E. Consumables Required to Incorporate this Bulletin.

(1) Option 1

CoMat 06-069 Marks-A-Lot
CoMat 05-019 Waterproof Abrasive Paper
Mathews White M-145 Ink and No.7 Ink Thinner
(see Figure 3, Sheet 5)

(2) Option 2

CoMat 06-069 Marks-A-Lot
CoMat 02-092 Identification Tag
CoMat 05-019 Waterproof Abrasive Paper
Mathews White M-145 Ink and No.7 Ink Thinner
(see Figure 3, Sheet 5)

NOTE: The estimated 1989 unit prices shown are provided for planning purposes only and do not constitute a firm quotation. Contact IAE's Spare Parts Sales Department for information concerning firm prices.