V2500 International Aero Engines

Date: Jan.15/95

Subject: Transmittal of Revision 3 to Service Bulletin Number V2500-ENG-72-0014

Service Bulletin Revision History:

Event	Date
Basic Issue	Jun.16/89
Revision 1	Sept.7/90
Revision 2	Nov.16/90
Revision 3	Jan.15/95

Reasons For Issuance Of Revision:

(1) To revise the accomplishment instructions and the material information to include the removed parts.

Effect On Past Compliance:

None

List Of Effective Pages:

	Bulletin Page No.	Rev. No.	Effective Date
R	1	3	Jan.15/95
	2 to 4	Basic	Jun.16/89
R	5 to 8	3	Jan.15/95
	9 to 11	2	Nov.16/90
R	12	3	Jan.15/95
	13	Basic	Jun.16/89
R	14	3	Jan.15/95

V2500 International Aero Engines

SERVICE BULLETIN

ENGINE - INCORPORATE RE-ROUTED E.G.T. HARNESS ASSEMBLY

MODEL APPLICATION

V2500-A1

BULLETIN INDEX LOCATOR

72-50-00
73-22-00
77-21-00

Compliance Category Code	Internal Reference No.
3	88VA101 88VA116 88VA218 88VA251 88VA222A

R

June 16/89
R Revision 3 Jan.15/95

V2500 – ENG – 72 – 0014

ENGINE - INCORPORATE RE-ROUTED E.G.T. HARNESS ASSEMBLY

1. Planning Information

A. Effectivity

(1) Aircraft: Airbus A320

(2) Engine: V2500-A1 Engines serial numbers V0003 through V0006 and V0008 through V0029.

B. Reason

(1) Condition

The harness may become chafed.

(2) Background

The harness does not have sufficient length so that its routing can be changed to clear the parts which may cause chafing. As a result, a new harness, brackets, and a revised clipping configuration are necessary.

(3) Objective

To supply an EGT Harness which has changes in length and the number of brackets used to attach the harness.

(4) Substantiation

Not necessary.

(5) Effects of Bulletin on Workshop Procedures:

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

(6) Supplemental Information

(a) The Engine Manual Removal and Installation procedures under Chapter/Section 72-00-50 are revised to give the necessary information for the Post-Service Bulletin Parts.

C. Description

(1) The thermocouple box and cable is replaced with a new one which has revised length and additional integral clipping. An additional bracket is provided at P flange and the EGT harness bracket assembly is redesigned.

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 3

Accomplish prior to revenue service.

F. Manpower

Estimated manhours to incorporate the intent of this bulletin:

Venue	Estimated Manhours
(1) In Service	Not applicable
(2) At Overhaul (Note: The parts affected by this Service Bulletin are accessible at overhaul).	
(a) To accomplish removal and installation of replaced parts	1 hours, 17 minutes
TOTAL	1 hours, 17 minutes

G. Material - Price and Availability

(1) Modification Kit not required.

(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 (Powerplant Station P.P.S.100)

J. Electrical Load Data

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

K. References

(1) V2500 Standard Practices Manual

(2) V2500 Engine Manual

L. Other Publications Affected

(1) V2500 Illustrated Parts Catalog, Chapter/Section 72-50-00 and 72-22-51 to add the new parts.

(2) V2500 Engine Manual, Chapter/Section 72-00-50, Removal and Installation to revise and add to the procedures to remove and install the thermocouple box and cable and related brackets.

(3) A320 Aircraft Maintenance Manual, Chapter/Section 77-21-43 Removal/Installation.

2. Accomplishment Instructions

A. Remove the PN 2A1117 Thermocouple Box and Cable by the instructions which follow and Figure 1.

(1) Remove the parts which connect the thermocouple harness to the EGT thermocouples.

(a) Remove the nuts and the washers, 2 each chromel and alumel, which attach the harness lugs to the thermocouple connections.

(b) Remove the harness lugs from the thermocouple.

(c) Install the washers and nuts back on to the thermocouple connections.

(d) Do the procedure at each of four locations C, D, E, and F.

(2) Disconnect the harness at the flange T and flange P bracket locations. Refer to Figure 1.

(a) Remove the bolts which attach the harness clamps to the brackets at flange T.

(b) Remove the nuts and bolts which attach the harness clamps to the brackets on flange P.

(c) Remove the bolts which attach the harness clamps to the bracket at the bottom of the exhaust case.

(3) Disconnect the core EGT harness from the junction box terminals. Refer to Figure 1.

(a) Remove the lockwire from the screws which hold the Junction Box Cover on.

(b) Remove four screws.

(c) Remove the Junction Box Cover.

(d) Remove the four nuts which attach the engine harness to the junction box terminals.

(e) Install the nuts back on the junction box terminals.

R (4) Remove the Cushion Loop Clamps that hold the EGT Harness to the P4.9 Manifold. See Figure 2.

R (a) Remove the nuts and bolts that connect the cushion loop clamps.

R (b) Remove the cushion loop clamps from the P4.9 manifold.

R (c) Remove the cushion loop clamps from the EGT harness.

R NOTE: The parts removed in step (4) will not be installed again in
R the new configuration.

(5) Remove the EGT harness and junction box assembly from the engine. Refer to Figure 1.

(a) Remove the nuts and bolts which hold the junction box to the bracket.

(b) Remove the EGT harness and junction box from the engine.

B. Remove the PN 2A1092 Loop Clamp Assembly by Figure 1 and as follows:

(1) Remove the nuts and bolts which hold the bracket to the flange.

(2) Remove the bolts and the bracket.

C. Install the PN 2A1803 Loop Clamp Bracket (1 off) on the P4.9 Pipe Adapter at the 6 o'clock position on the Turbine Exhaust Case, as follows:

(1) Lubricate the the bolts with CoMat 10-039 Engine Oil. Refer to Figure 1.

(2) Put the Loop Clamp Bracket in position adjacent to the pipe adapter and as shown.

(3) Make sure the holes in the bracket align with the holes in the adapter.

(4) Install the bolts and tighten them with your hand.

(5) Torque the bolts to 85 to 105 lbfin (9,604 to 11,863 Nm). See Reference (1), Chapter/Section 70-41-00, Torque Tightening Technique.

(6) Safety the bolts with CoMat 02-126 Lockwire.

D. Install the PN 2A1804 Loop Clamp Bracket (1 off) to P flange on the Turbine Exhaust Case Assembly by Figure 1 and as follows:

(1) Remove the nuts and the bolts from P flange at holes 62 and 63.

(2) Lubricate the nuts and bolts with CoMat 10-039 engine oil.

(3) Put the PN 2A1804 Loop Clamp Bracket in position at P flange and as shown. Refer to Figure 1.

(4) Install the nuts and bolts which were removed in step (1) and tighten them with your hand.

E. Install the PN 2A1380 Thermocouple Box and Cable (1 off).

(1) Install the EGT Harness and Junction Box as follows:

(a) Install the EGT Harness and Junction Box to the bracket on the Turbine Exhaust Case. Refer to Figure 1.

(b) Apply CoMat 10-039 Engine Oil to the threads of the bolts.

(c) Install the bolts and the nuts which hold the junction box to the bracket.

(d) Torque the bolts to between 85 to 95 lbfin (9,604 to 10,734 Nm).

(2) Attach the harness lugs to the thermocouples. Refer to Figure 1.

(a) Remove the four nuts and washers from the thermocouples at four locations.

(b) Attach the harness lugs to the thermocouples.

(c) Apply CoMat 10-039 Engine Oil to the threads of the thermocouple connections.

(d) Install the nuts and washers.

(3) Torque the alumel connection (larger stud) to between 10 and 15 lbfin (1,130 to 1,695 Nm). See Reference (1) Chapter/Section 70-41-00, Torque Tightening Technique.

(4) Torque the chromel connection (smaller stud) to between 8 and 10 lbfin (0,904 to 1,356 Nm). See Reference (1), Chapter/Section 70-41-00, Torque Tightening Technique.

(5) Install the EGT core harness to the junction box. Refer to Figure 1.

(a) Remove the nuts on the junction box connections.

(b) Install the engine harness to the junction box.

(c) Apply CoMat 10-039 Engine Oil to the threads of the nuts.

(d) Torque the larger nuts (alumel) to between 18 and 32 lbfin (2,034 to 3,616 Nm). See Reference (1), Chapter/Section 70-41-00 Torque Tightening Technique.

(e) Torque the smaller nuts (chromel) to between 15 and 18 lbfin (1,695 to 2,034 NM). See Reference (1), Chapter/Section 70-41-00, Torque Tightening Technique.

(f) Put the cover on the Junction Box and install the four screws.

(g) Torque the screws to 16 to 22 lbfin (1,8 to 2,5 Nm) and safety with CoMat 02-127 Lockwire.

(6) Attach the harness clamps to the flange brackets.

(a) Install the harness clamps to the brackets on flange P at the left and right sides of the engine and secure with the bolts and the nuts.

(b) Install the harness clamps to the bracket on the boss on the case at the 6 o'clock position and secure with the bolts.

(c) Install the harness clamps to the brackets on flange T on the lower portion of the exhaust case and secure with the bolts.

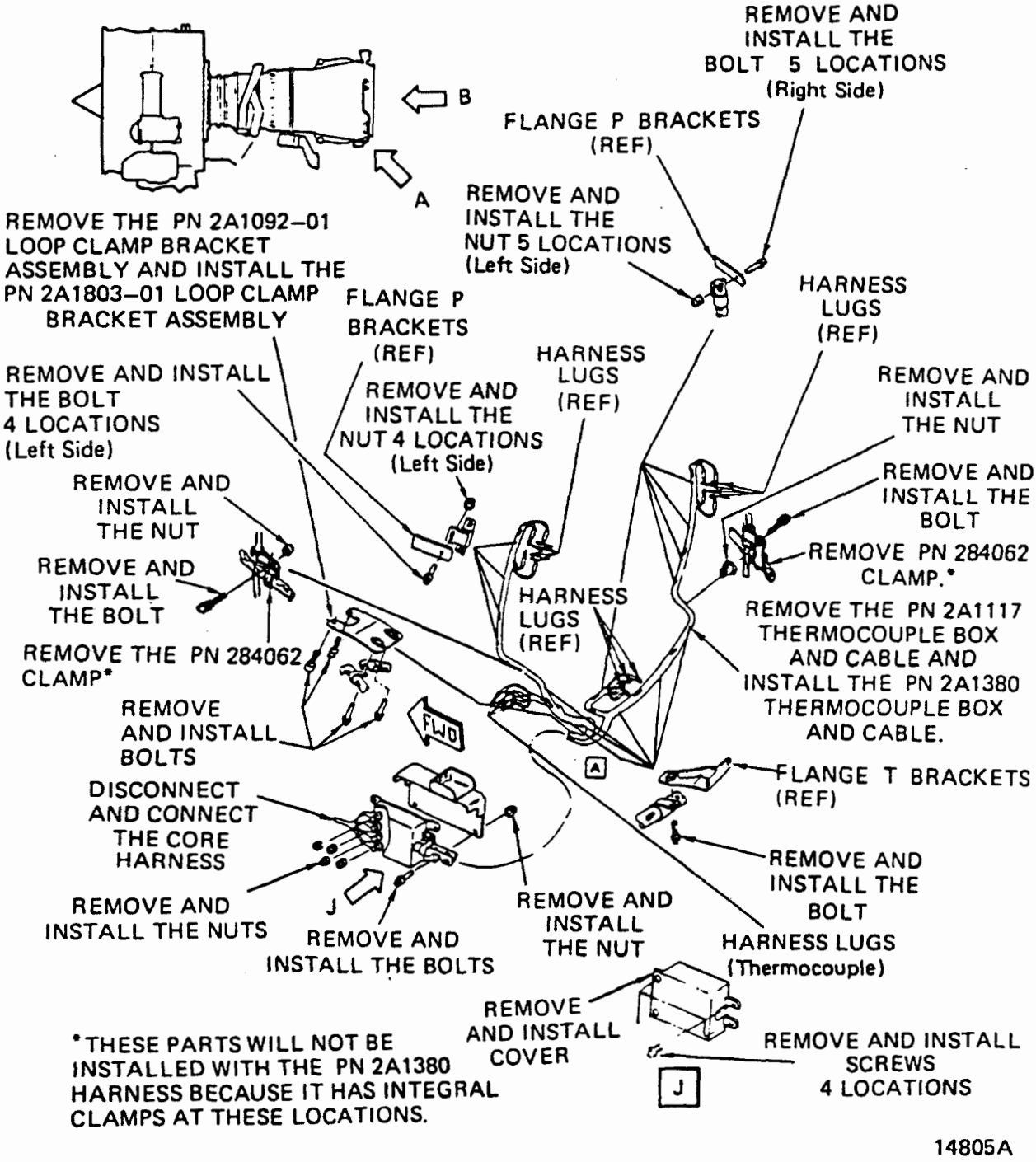
(d) Install the nuts and bolts to the brackets which attach the harness to the P4.9 Manifold.

(e) Torque all the harness clamp bolts to between 36 and 40 lbfin (4,067 to 4,519 Nm). See Reference (1), Chapter/Section 70-41-00, Torque Tightening Technique.

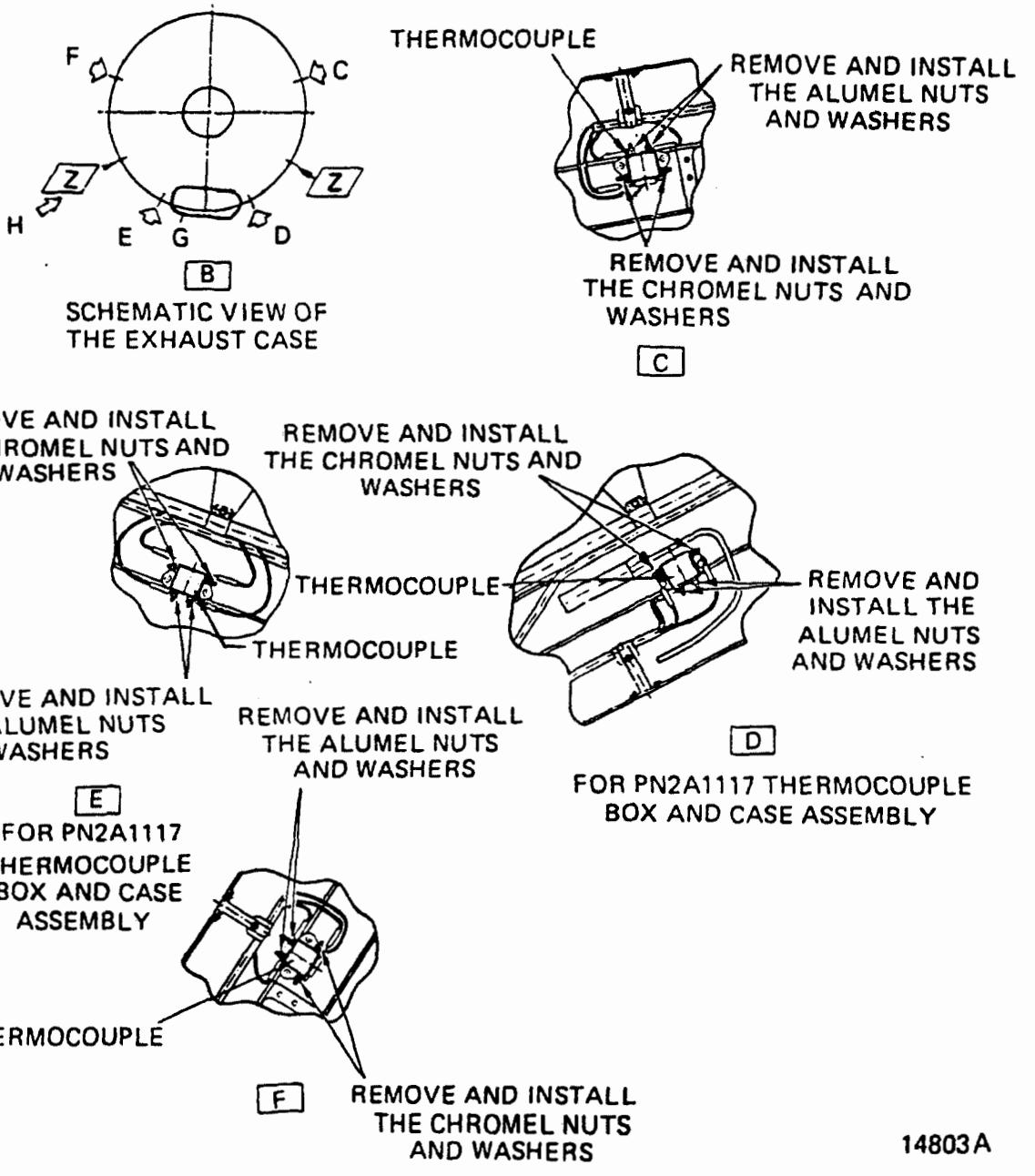
F. Do a performance test of the engine. See Reference (2), Chapter/Section 71-00-00 Engine Testing.

R G. Recording Instructions

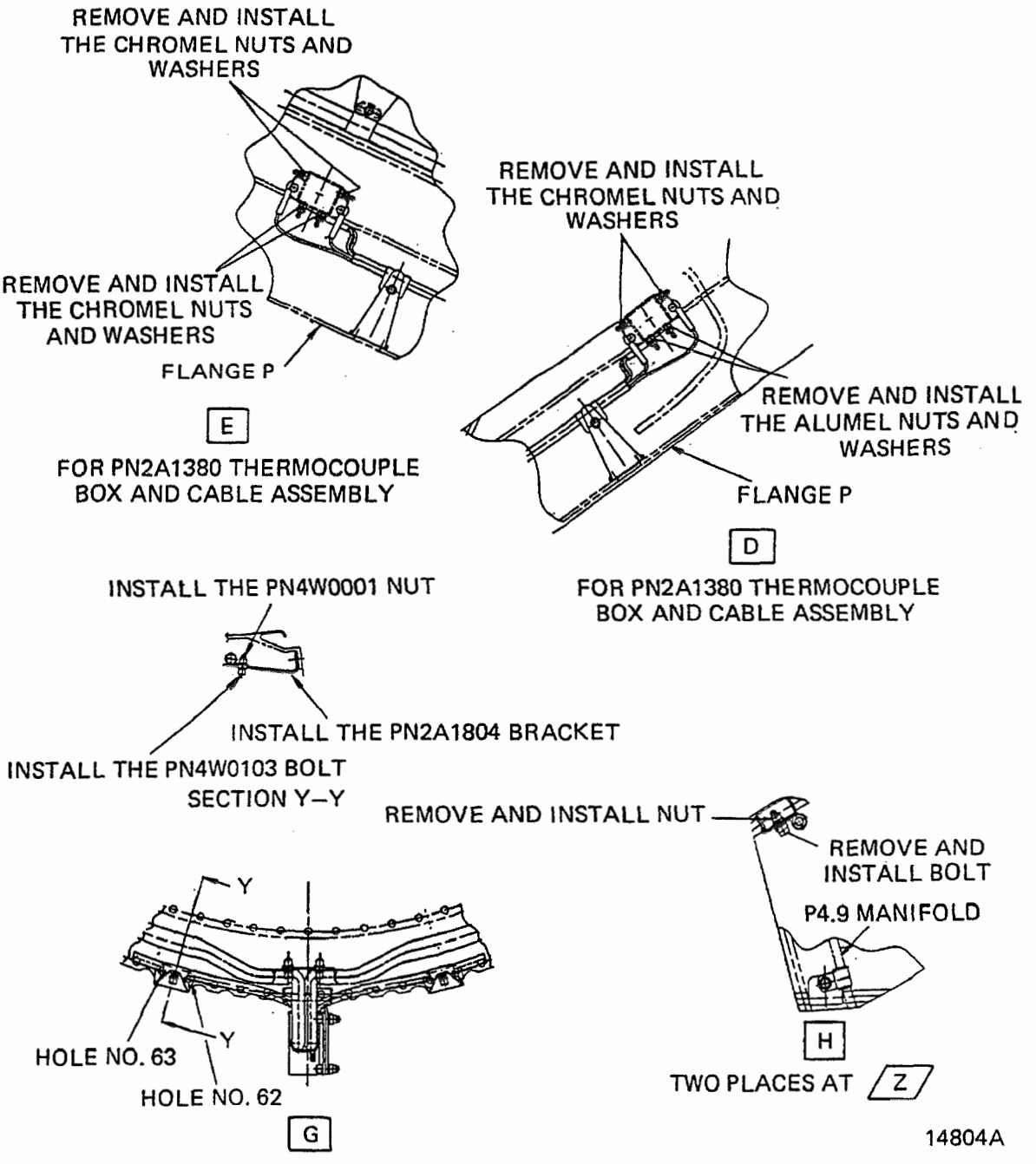
R (1) A record of accomplishment is necessary.



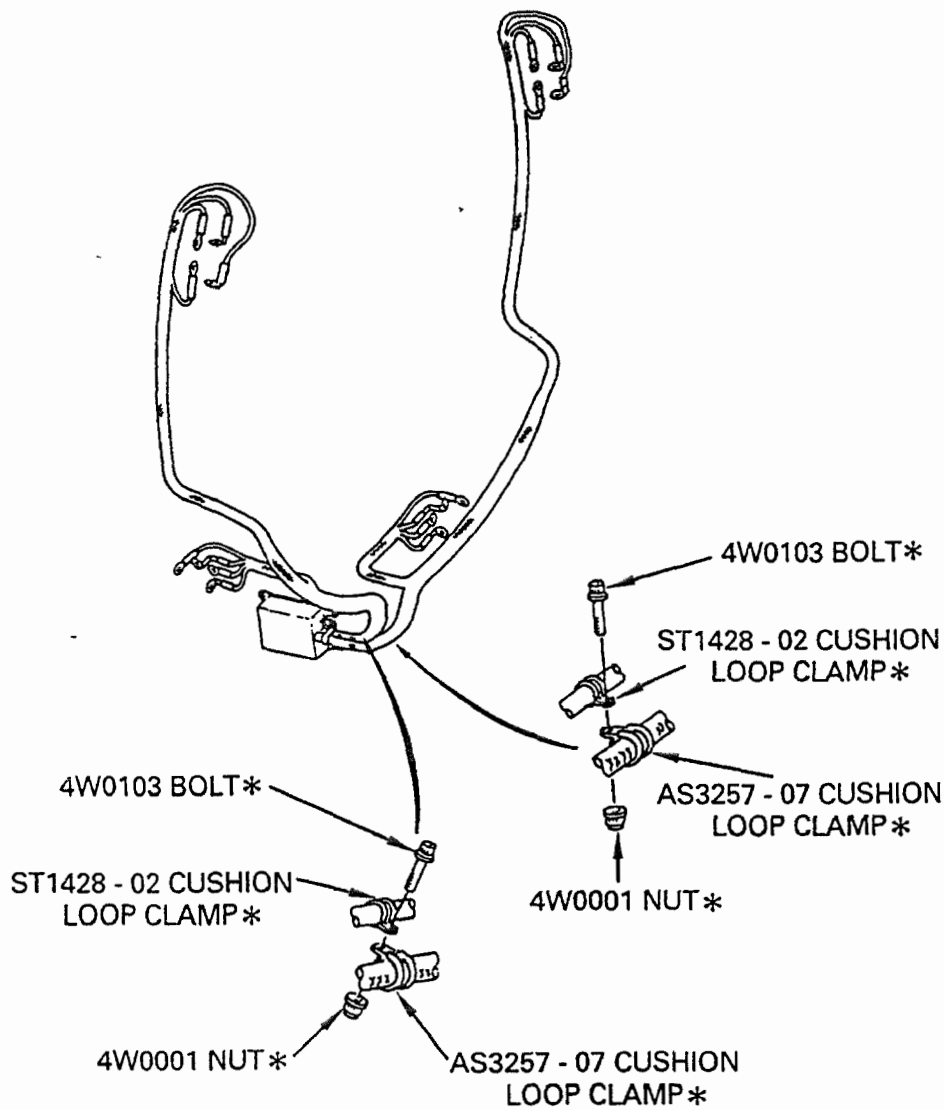
Replacement of thermocouple box and cable
Figure 1
Sheet 1 of 3



Replacement of thermocouple box and cable
Figure 1
Sheet 2 of 3



Replacement of Thermocouple Box and Cable
Figure 1
Sheet 3 of 3



*THESE PARTS ARE REMOVED AND WILL NOT BE INSTALLED AGAIN IN THE NEW CONFIGURATION

E2103

Replacement of Thermocouple Box and Cable
(Removed Parts)
Figure 2

3. Material Information

Applicability: For each V2500 Engine to incorporate this Bulletin.

A. Kits associated with this Bulletin:

None

B. Parts affected by this Bulletin:

New Part No. (ATA No.)	Qty.	Est'd Unit Price ($)	Keyword	Old Part No. (IPC No.)	Instructions/ Disposition
2A1380 (77-21-43)	1	2088.00	Thermocouple - Box and Cable	2A1117 (01-010)	(S1) (A)
			Clamp-Loop, Cushion	284062 (01-274) (01-284)	(S1) (B)
2A1804 (72-50-00)	1	18.00	Bracket-Loop Clamp	-	(S1) (A)
4W0001 (77-21-43)	1	4.80	..Nut Option Consisting of:	- (01-288)	(S1) (A)
AS20624	1		...Nut	-	
or					
AS3066-09	1		...Nut	-	
or					
AS3067-09	1		...Nut	-	
or					
AS3068-09	1		...Nut	-	
or					
AS3069-09	1		...Nut	-	
or					
AS3070-09	1		...Nut	-	
4W0103 (77-21-43)	1	8.77	..Bolt Option Consisting of:	- (01-290)	(S1) (A)
AS21408	1		...Bolt	-	
or					
MS9556-06	1		...Bolt	-	
2A1803-01 (73-22-51)	1	88.90	..Bracket-Loop Clamp, Assembly	2A1092-01 (01-323)	(S1) (A)
4W0038 (73-22-51)	2	6.03	...Nut Option Consisting of:	- (01-325)	(S1) (A) (C)
AS3262-03	2		....Nut	-	
or					
AS46725	2		....Nut	-	

	New Part No. (ATA No.)	Qty.	Est'd Unit Price ($)	Keyword	Old Part No. (IPC No.)	Instructions/ Disposition
	594412 (73-22-51)	2	2.47	...Nut Option Consisting of:	- (01-325)	(S1) (A) (C)
	594405 or	2		....Nut	-	
	594413 or	2		....Nut	-	
	594414	2		....Nut	-	
	714845 (73-22-51)	2	3.79	...Nut Option	-	(S1) (A) (C)
	714846 or	2		....Nut	-	
	714847 or	2		....Nut	-	
	714848	2		....Nut	-	
R	-	1		.Nut Option	4W0001	(E)
R	(77-21-43)				(01-300)	
R	-	1		.Bolt	4W0103	(E)
R	(77-21-43)				(01-302)	
R	-	1		.Clamp, Loop Cushion	ST1428-02	(E)
R	(77-21-43)				(01-304)	
R	-	1		.Clamp, Loop Cushion	AS3257-07	(F)
R	(77-21-43)				(01-306)	
R	-	1		.Nut, Option	4W0001	(E)
R	(77-21-43)				(01-310)	
R	-	1		.Bolt	4W0103	(E)
R	(77-21-43)				(01-312)	
R	-	1		.Clamp, Loop Cushion	ST1428-02	(E)
R	(77-21-43)				(01-314)	
R	-	1		.Clamp, Loop	AS3257-07	(F)
R	(77-21-43)				(01-316)	

C. Instruction/Disposition Code Statements:

(S1) New Parts coded (S1) must replace Old Parts coded (S1) as a COMPLETE SET per Engine.
(A) New part is currently available for sale.
(B) Retain part for future use.
R (C) Nut options are interchangeable with each other.
R (E) Old part will continue to be available for use at other locations.
(F) Old part is no longer available.

NOTE: The estimated 1991 unit prices shown are provided for planning purposes only and do not constitute a firm quotation. Consult the IAE Price Catalog or contact IAE's Spare Parts Sales Department for information concerning firm prices.