CHAPTER

77

ENGINE INDICATION

(GE90-100 SERIES ENGINES)

777-200/300
AIRCRAFT MAINTENANCE MANUAL

CHAPTER 77
ENGINE INDICATION

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

77-EFFECTIVE PAGES

777-200/300
AIRCRAFT MAINTENANCE MANUAL

CHAPTER 77
ENGINE INDICATION

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
77-31-03								
201	Jan 05/2017							
202	Jan 05/2017							
77-31-03								
401	May 05/2018							
402	May 05/2018							
403	May 05/2018							
404	May 05/2018							
405	May 05/2018							
406	BLANK							
77-31-06								
201	Jan 05/2017							
202	Jan 05/2017							
77-31-06								
401	Jan 05/2016							
402	Sep 05/2017							
403	Sep 05/2017							
404	Sep 05/2017							
405	Sep 05/2017							
406	Sep 05/2017							
407	Sep 05/2017							
408	Sep 05/2017							

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

77-EFFECTIVE PAGES

777-200/300
AIRCRAFT MAINTENANCE MANUAL

CHAPTER 77
ENGINE INDICATION

77-CONTENTS

CHAPTER 77
ENGINE INDICATION

77-CONTENTS

777-200/300
AIRCRAFT MAINTENANCE MANUAL

CHAPTER 77
ENGINE INDICATION

ENGINE INDICATING - MAINTENANCE PRACTICES

TASK 77-00-00-970-801-H01

1. EPCS Status Code Conversion and Definition

(Figure 201)

A. General

(1) This task tells you how to interpret the hexadecimal status codes found on the EICAS EPCS Maintenance page.

B. Interpret EPCS Status Words 1, 2, 3, 4, 5, 6, 7 and 8

SUBTASK 77-00-00-970-001-H01

(1) Use the tables that follow to interpret the EPCS status codes:

Table 201/77-00-00-993-809-H00 HEXADECIMAL TO BINARY CONVERSION

HEXADECIMAL NUMBER	BINARY EQUIVALENT
0	0000
1	0001
2	0010
3	0011
4	0100
5	0101
6	0110
7	0111
8	1000
9	1001
A	1010
B	1011
C	1100
D	1101
E	1110
F	1111

Table 202/77-00-00-993-801-H00 STATUS WORD 1, OUTPUT LABEL 270 EEC STATUS

STATUS WORD 1 BIT POSITION	DESCRIPTION	LOGIC	
		BIT=1	BIT=0
1	EECS DISPATCH STATUS IS NO DISPATCH	TRUE	NOT TRUE
2	EECS DISPATCH STATUS IS SHORT TERM DISPATCH	TRUE	NOT TRUE
3	RESERVED		

Table 202/77-00-00-993-801-H00 STATUS WORD 1, OUTPUT LABEL 270 EEC STATUS (Continued)

STATUS WORD 1 BIT POSITION	DESCRIPTION	LOGIC	
4	EECS DISPATCH STATUS IS LONG TIME DISPATCH	TRUE	NOT TRUE
5	RESERVED		
6	EEC CHANNEL IDENTIFICATION	CH “A”	CH “B”
7	EEC CHANNEL A IS IN CONTROL	TRUE	NOT TRUE
8	EEC CHANNEL B IS IN CONTROL	TRUE	NOT TRUE
9	RESERVED		
10	AIRCRAFT SUPPLIED 115V AC EEC POWER IS AVAILABLE	TRUE	NOT TRUE
11	TCMA SHUTDOWN,	TRUE	NOT TRUE
12	ALTERNATOR POWER FAULT (OR EEC INTERNAL FAULT)	TRUE	NOT TRUE
13	AIRCRAFT GROUND SPEED INVALID	TRUE	NOT TRUE
14	RTO DECEL ENABLED	TRUE	NOT TRUE
15	CROSS-CHANNEL DATA LINK INFORMATION IS NOT AVAILABLE	TRUE	NOT TRUE
16	RESERVED		

Table 203/77-00-00-993-802-H00 STATUS WORD 2, OUTPUT LABEL 271 ENGINE SUBSYSTEM STATUS

STATUS WORD 2 BIT POSITION	DESCRIPTION	LOGIC	
		BIT=1	BIT=0
1	ENGINE CORE COWL COOLING VALVE IS COMMANDED CLOSED	TRUE	NOT TRUE
2	ENGINE CORE COWL COOLING VALVE IS CLOSED	TRUE	NOT TRUE
3	ENGINE LOW PRESSURE TURBINE ACTIVE CLEARANCE CONTROL VALVE IS COMMANDED CLOSED	TRUE	NOT TRUE
4	ENGINE LOW PRESSURE TURBINE ACTIVE CLEARANCE CONTROL VALVE IS CLOSED	TRUE	NOT TRUE
5	ENGINE MAIN STAGING VLAVE IS COMMANDED CLOSED	TRUE	NOT TRUE
6	SPARE		
7	SPARE		
8	SPARE		
9	SPARE		
10	SPARE		

Table 203/77-00-00-993-802-H00 STATUS WORD 2, OUTPUT LABEL 271 ENGINE SUBSYSTEM STATUS (Continued)

STATUS WORD 2 BIT POSITION	DESCRIPTION	LOGIC	
11	STB VALVE	INSTALLED	NOT INSTALLED
12	LPC AI VALVE	INSTALLED	NOT INSTALLED
13	BURNER MODE BIT 1 (LSB)	*[1]	
14	BURNER MODE BIT 2	*[1]	
15	BURNER MODE BIT 3	*[1]	
16	BURNER MODE BIT 4 (MSB)	*[1]	

*[1] BURNER MODE TABLE INTERPRETATION MSB - LSB
MSB-LSB
0100 ..... 40 TIPS
0110 ..... 60 TIPS
OTHERS ... INVALID

Table 204/77-00-00-993-803-H00 STATUS WORD 3, OUTPUT LABEL 272 ENGINE OPERATION STATUS

STATUS WORD 3 BIT POSITION	DESCRIPTION	LOGIC	
		BIT=1	BIT=0
1	EEC OPERATING MODE BIT 1 (LSB)	*[1]	
2	EEC OPERATING MODE BIT 2	*[1]	
3	EEC OPERATING MODE BIT 3	*[1]	
4	EEC OPERATING MODE BIT 4	*[1]	
5	EEC OPERATING MODE BIT 5 (MSB)	*[1]	
6	SPARE		
7	ACMF SENSOR STATUS REPORT REQUESTED	TRUE	NOT TRUE
8	SPARE		
9	ALTERNATE MODE MANUALLY SELECTED	TRUE	NOT TRUE
10	ALTERNATE MODE AUTOMATICALLY SELECTED	TRUE	NOT TRUE
11	RESERVED		
12	VSV SYSTEM FAULT	TRUE	NOT TRUE
13	ACMS STALL REPORT REQUESTED	TRUE	NOT TRUE
14	RESERVED		
15	RESERVED		
16	SPARE		

*[1] EEC OPERATING MODE
MSB - LSB
00000 ..... INITIALIZATION
00001 ..... MAINTENANCE
00010 ..... MAINTENANCE – FUEL DRIVEN ACTUATOR TEST

00011 ..... MAINTENANCE – AIR DRIVEN ACTUATOR TEST
00100 ..... MAINTENANCE – T/R THRUST LEVER INTERLOCK TEST
00101 ..... MAINTENANCE – IGNITION SYSTEM TEST
00110 ..... MAINTENANCE – DEBRIS MONITORING SYSTEM TEST
00111 ..... MAINTENANCE – EEC TEST
01000 ..... MAINTENANCE – WET MOTOR SPECIAL FUNCTION
01001 ..... MAINTENANCE – VSV OPENING SPECIAL FUNCTION
01010 ..... MANUAL START
01011 ..... AUTO START
01100 ..... ENGINE AT OR ABOVE IDLE
01101 ..... ENGINE OFF
01110 ..... ENGINE CRANKING
10000 ..... INITIALIZATION AND DMS ACTIVATED
10001 ..... MAINTENANCE AND DMS ACTIVATED
10010 ..... MAINTENANCE – FUEL DRIVEN ACTUATOR TEST AND DMS ACTIVATED
10011 ..... MAINTENANCE – AIR DRIVEN ACTUATOR TEST AND DMS ACTIVATED
10100 ..... MAINTENANCE – T/R THRUST LEVER INTERLOCK TEST AND DMS ACTIVATED
10101 ..... MAINTENANCE – IGNITION SYSTEM TEST AND DMS ACTIVATED
10110 ..... MAINTENANCE – DEBRIS MONITORING SYSTEM TEST AND DMS ACTIVATED
10111 ..... MAINTENANCE – EEC TEST AND DMS ACTIVATED
11000 ..... MAINTENANCE – WET MOTOR SPECIAL FUNCTION AND DMS ACTIVATED
11001 ..... MAINTENANCE – VSV OPENING SPECIAL FUNCTION AND DMS ACTIVATED
11010 ..... MANUAL START AND DMS ACTIVATED
11011 ..... AUTO START AND DMS ACTIVATED
11100 ..... ENGINE AT OR ABOVE IDLE AND DMS ACTIVATED
11101 ..... ENGINE OFF AND DMS ACTIVATED
11110 ..... ENGINE CRANKING AND DMS ACTIVATED

Table 205/77-00-00-993-804-H00 STATUS WORD 4, OUTPUT LABEL 273 EBU SUBSYSTEM STATUS

STATUS WORD 4 BIT POSITION	DESCRIPTION	LOGIC	
		BIT=1	BIT=0
1	RESERVED		
2	RESERVED		
3	RESERVED		
4	RESERVED		
5	RESERVED		
6	IDG OIL FILTER DELTA PRESSURE SWITCH CLOSED, INDICATING IDG DELTA P BYPASS	TRUE	NOT TRUE
7	RESERVED		
8	RESERVED		
9	VSCF OIL FILTER DELTA PRESSURE SWITCH CLOSED, INDICATING VSCF DELTA P BYPASS	TRUE	NOT TRUE
10	ENGINE LOCATION (LSB)	*[1]	

Table 205/77-00-00-993-804-H00 STATUS WORD 4, OUTPUT LABEL 273 EBU SUBSYSTEM STATUS (Continued)

STATUS WORD 4 BIT POSITION	DESCRIPTION	LOGIC	
11	ENGINE LOCATION (MSB)	*[1]	
12	SPARE		
13	SPARE		
14	GE90 ENGINE TYPE	TRUE	NOT TRUE
15	GE90 ENGINE TYPE	NOT TRUE	TRUE
16	SPARE		

*[1] EEC OPERATING MODE
MSB - LSB
01 ..... LEFT ENGINE
10 ..... RIGHT ENGINE

Table 206/77-00-00-993-805-H00 STATUS WORD 5, OUTPUT LABEL 274 EEC TRIM SYSTEM STATUS

STATUS WORD 5 BIT POSITION	DESCRIPTION	LOGIC	
		BIT=1	BIT=0
1	TRIM LIMIT EXCEED (TRIM EXPAND)	TRUE	NOT TRUE
2	TRIM SYSTEM AUTHORITY UPPER LIMIT (LOWER LIMIT IS 0)	TRUE	NOT TRUE
3	TRIM SYSTEM LIMITED	TRUE	NOT TRUE
4	TRIM SYSTEM LOCKED IN	TRUE	NOT TRUE
5	APPROACH IDLE SELECTED	TRUE	NOT TRUE
6	ENGINE AT IDLE FLAT (ENGINE IS OPERATING AT IDLE)	TRUE	NOT TRUE
7	SPARE		
8	ENGINE AT OR ABOVE IDLE (ENGINE IS OPERATING AT OR ABOVE IDLE)	TRUE	NOT RTUE
9	SPARE		
10	ENGINE SYSTEM STATUS INDICATOR BIT 1 (LSB)	*[1]	
11	ENGINE SYSTEM STATUS INDICATOR BIT 2	*[1]	
12	ENGINE SYSTEM STATUS INDICATOR BIT 3	*[1]	
13	ENGINE SYSTEM STATUS INDICATOR BIT 4	*[1]	
14	ENGINE SYSTEM STATUS INDICATOR BIT 5 (MSB)	*[1]	
15	SPARE		
16	SPARE		

*[1] ENGINE SYSTEM STATUS INDICATOR
MSB - LSB
00001 ..... OFF

00010 ..... CRANK
00011 ..... START
00100 ..... RUN

Table 207/77-00-00-993-806-H00 STATUS WORD 6, OUTPUT LABEL 275 THRUST REVERSER STATUS

STATUS WORD 6 BIT POSITION	DESCRIPTION	LOGIC	
		BIT=1	BIT=0
1	SPARE		
2	THRUST REVERSER 28 VDC POWER UNAVAILABLE (AIRCRAFT SUPPLIED 28V DC POWER FOR THRUST REVERSER ISOLATION VALVE OPERATION IS NOT AVAILABLE)	TRUE	NOT TRUE
3	T/R ISOLATION VALVE COMMANDED OPEN (T/R ISOLATION VALVE HAS BEEN COMMENDED OPENED)	TRUE	NOT TRUE
4	T/R ISOLATION VALVE RELAY UNAVAILABLE (EEC HAS DETECTED THAT THE ISOLATION VALVE CIRCUITRY WITHIN THE EEC IS FAILED SUCG THAT THE ISOLATION SOLENOID CANNOT BE ENERGIZED)	TRUE	NOT TRUE
5	T/R ON GROUND (THE ON GROUND ENABLING LOGIC FOR THE ISOLATION VALVE HAS BEEN SATISFIED)	TRUE	NOT TRUE
6	T/R TEST ENABLE SWITCH FAILED (T/R TEST ENABLE SWITCH IS CLOSED AT INITIAL EEC POWER UP OR WHILE THE ENGINE IS RUNNING)	TRUE	NOT TRUE
7	T/R ISOLATION VALVE PRESSURE SWITCH (ISOLATION VALVE PRESSURE SWITCH US CLOSED)	TRUE	NOT TRUE
8	SPARE		
9	TRA IN REVERSE (TRA IS LESS THAN 30 DEGREES)	TRUE	NOT TRUE
10	T/R TEST ENABLE SWITCH CLOSED (T/R TEST ENABLE SWITCH IS CLOSED)	TRUE	NOT TRUE
11	T/R INTERLOCK STATUS FAILED (EEC HAS DETECTED A FAULT IN THE EEC INTERLOCK CIRCUITRY)	TRUE	NOT TRUE
12	THRUST LIMITED BY REVERSER POSITION (EEC IS LIMITING THRUST IN EITHER THE FORWARD OR REVERSE REGIME DUE TO REVERSER POSITION)	TRUE	NOT TRUE
13	T/R INTERLOCK COMMANDED (T/R INTERLOCK IS COMMANDED TO BE CLEARED BY EITHER EEC CHANNEL)	TRUE	NOT TRUE
14	SPARE		
15	SPARE		
16	SPARE		

Table 208/77-00-00-993-807-H00 STATUS WORD 7, OUTPUT LABEL 276 STARTING/IGNITION SYSTEM STATUS

STATUS WORD 7 BIT POSITION	DESCRIPTION	LOGIC	
		BIT=1	BIT=0
1	SAV ENABLE (CONTROL OF THE SAV HAS BEEN TAKEN BY START/RUN LOGIC)	TRUE	NOT TRUE
2	SAV COMMANDED OPEN (SAV HAS BEEN COMMANDED OPENED)	TRUE	NOT TRUE
3	SAV OPEN (SAV DP INDICATES THAT THE SAV IS OPEN)	TRUE	NOT TRUE
4	SPARE		
5	STARTER SWITCH LATCHED (AIRCRAFT STARTER SWITCH US LATCHED)	TRUE	NOT TRUE
6	START/IDLE ON GROUND (THE ON GROUND ENABLING LOGIC FOR THE START/IDLE SELECTION HAS BEEN SATISFIED)	TRUE	NOT TRUE
7	IGNITOR 1 COMMANDED ON (IGNITOR 1 HAS BEEN COMMANDED ON)	TRUE	NOT TRUE
8	IGNITOR 1 SELECTED ON (IGNITOR 1 HAS BEEN SELECTED FOR USE)	TRUE	NOT TRUE
9	IGNITOR 1 FAILED OR NO POWER (AIRPLANE 115V AC IS NOT AVAILABLE TO THE EEC FOR THE IGNITION SYSTEM, OR ENGINE HAS FAILED TO START USING IGNITOR 1)	TRUE	NOT TRUE
10	IGNITOR 2 COMMANDED ON (IGNITOR 2 HAS BEEN COMMANDED ON)	TRUE	NOT TRUE
11	IGNITOR 2 SELECTED ON (IGNITOR 2 HAS BEEN SELECTED FOR USE)	TRUE	NOT TRUE
12	IGNITOR 2 FAILED OR NO POWER (AIRPLANE 115V AC IS NOT AVAILABLE TO THE EEC FOR THE IGNITION SYSTEM, OR ENGINE HAS FAILED TO START USING IGNITOR 2)	TRUE	NOT TRUE
13	CONTINUOUS IGNITION SELECTED	TRUE	NOT TRUE
14	SPARE		
15	SPARE		
16	SPARE		

Table 209/77-00-00-993-808-H00 STATUS WORD 8, OUTPUT LABEL 277 STARTING STATUS

STATUS WORD 8 BIT POSITION	DESCRIPTION	LOGIC	
		BIT=1	BIT=0

Table 209/77-00-00-993-808-H00 STATUS WORD 8, OUTPUT LABEL 277 STARTING STATUS (Continued)

STATUS WORD 8 BIT POSITION	DESCRIPTION	LOGIC	
1	FUEL CONTROL SWITCH IN CUTOFF POSITION (FUEL CONTROL SWITCH IS IN CUTOFF)	TRUE	NOT TRUE
2	HP FUEL VALVE FAILED CLOSED (ENGINE HPSOV IS FAILED CLOSED)	TRUE	NOT TRUE
3	HP FUEL VALVE FAILED OPEN (ENGINE HPSOV IS FAILED OPEN)	TRUE	NOT TRUE
4	HP FUEL VALVE OPEN (ENGINE HPSOV IS OPEN)	TRUE	NOT TRUE
5	FUEL OFF VALVE SOLENOID COMMAND (ENGINE HPSOV IS COMMANDED CLOSED)	TRUE	NOT TRUE
6	FUEL ON VALVE SOLENOID COMMAND (ENGINE HPSOV IS COMMANDED OPEN)	TRUE	NOT TRUE
7	SPARE		
8	BURNER MODE (MSB)	*[1]	
9	BURNER MODE (LSB)	*[1]	
10	BURNER DEMAND (MSB)	*[1]	
11	BURNER DEMAND (LSB)	*[1]	
12	STB OPEN	TRUE	NOT TRUE
13	STB COMMANDED OPEN	TRUE	NOT TRUE
14	BAI OPEN	TRUE	NOT TRUE
15	BAI COMMANDED OPEN	TRUE	NOT TRUE
16	SELECTOR VALVE COMMANDED TO STB CONTROL	TRUE	NOT TRUE

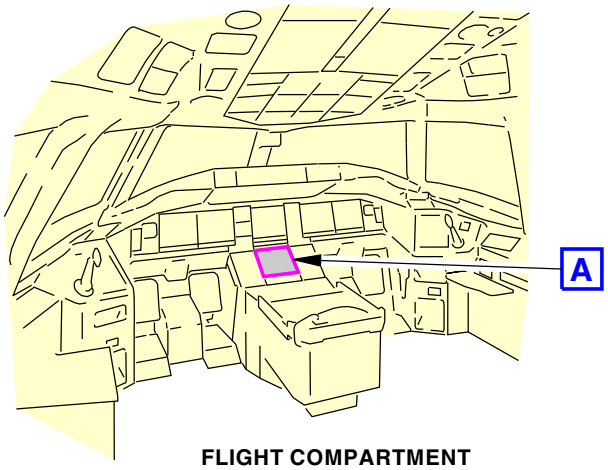
*[1] BURNER MODE/DEMAND
MSB - LSB
10 ..... 40 TIPS
11 ..... 60 TIPS
OTHER ..... INVALID

C. Put the Airplane Back to Its Usual Condition

SUBTASK 77-00-00-940-001-H01

(1) Push the ENG switch on the DSP to show the secondary engine format on the MFD.

——— END OF TASK ———



FLIGHT COMPARTMENT

EPCS PG 2/2

LEFT ENGINE A	LEFT ENGINE B		RIGHT ENGINE A	RIGHT ENGINE B
52	52	FMV	52	52
100	100	BSV	100	100
100	100	MSV	100	100
30	30	HPT ACC	30	30
OPEN CLOSED	OPEN CLOSED	LPT ACC CCC	OPEN CLOSED	OPEN CLOSED
60	60	OIL T	61	61
73	73	OIL P	72	72
4	4	OIL FLT	4	4
3	3	FUEL FLT	3	3
0000	0000	STATUS 1	0000	0000
0000	0000	STATUS 2	0000	0000
0000	0000	STATUS 3	0000	0000
0000	0000	STATUS 4	0000	0000
0000	0000	STATUS 5	0000	0000
0000	0000	STATUS 6	0000	0000
0000	0000	STATUS 7	0000	0000
0000	0000	STATUS 8	0000	0000

ENG OIL TEMP L DATE 02 SEP 90 UTC 18:54:04

STATUS WORD 1 RIGHT ENGINE CHANNEL 'A'

STATUS WORD 3 LEFT ENGINE CHANNEL 'B'

EPCS MAINTENANCE PAGE 2

A

M07170 S0004286142_V3

EPCS Status Words
Figure 201/77-00-00-990-801-H01 (Sheet 1 of 2)

THE EPCS MAINTENANCE PAGE SHOWS 16 STATUS WORDS WHICH CONTAIN INFORMATION ABOUT EEC OPERATION. STATUS WORDS 1 THROUGH 4, ARE PROVIDED FOR THE LEFT AND RIGHT ENGINES AND CHANNELS 'A' AND 'B' OF THE EEC. SIXTEEN (16) SEPARATE STATUS WORDS ARE DISPLAYED ON THE EPCS MAINTENANCE PAGE AT A SINGLE TIME.

EACH OF THE STATUS WORDS IS DISPLAYED AS A FOUR-DIGIT HEXADECIMAL NUMBER. TO INTERPRET THE STATUS WORDS, THE HEXADECIMAL NUMBER MUST BE CONVERTED TO THE EQUIVALENT 16-DIGIT BINARY NUMBER. YOU CAN USE TABLE 201 TO CONVERT THE HEXADECIMAL NUMBER TO A BINARY NUMBER.

IF NECESSARY, USE THE FOLLOWING EXAMPLE TO CLARIFY THIS CONVERSION PROCESS:

EXAMPLE: ASSUME THE 4-DIGIT HEXADECIMAL CODE FOR THE STATUS WORD 1, RIGHT ENGINE, CHANNEL 'A' IS 'F0C9'.

THE MOST SIGNIFICANT DIGIT OF HEXADECIMAL CODE IS 'F'. FROM THE TABLE BELOW, THE BINARY EQUIVALENT OF THE HEXADECIMAL 'F' IS '1111'. SIMILARLY, THE BINARY EQUIVALENT OF HEXADECIMAL '0' IS '0000', THE BINARY EQUIVALENT OF HEXADECIMAL 'C' IS '1100' AND THE BINARY EQUIVALENT OF HEXADECIMAL '9' IS '1001'. ARRANGING THE BINARY EQUIVALENTS, IN-SEQUENCE, PROVIDES THE FINAL BINARY EQUIVALENT OF (1111)(0000)(1100)(1001).

TO INTERPRET THE BINARY CODE, USE TABLES 202 THROUGH 209. THE STATUS WORD 'BIT POSITION 1' IS THE RIGHT MOST BIT OF THE BINARY CODE EQUIVALENT, AND THE STATUS WORD 'BIT POSITION 16' IS THE LEFT-MOST BIT OF THE BINARY CODE EQUIVALENT.

M07171 S0004286143_V1

EPCS Status Words
Figure 201/77-00-00-990-801-H01 (Sheet 2 of 2)

TASK 77-00-00-970-802-H00

2. Engine System Configuration Definitions - Maintenance Practices

A. General

(1) This task tells you how to interpret the information found on the System Configuration display. The Systems Configuration display can be used to find the Hardware or Software Configuration of a System. Refer to How to Find the Hardware or Software Configuration of a System, TASK 45-10-00-750-803.

B. References

Reference	Title
45-10-00-750-803	How to Find the Hardware or Software Configuration of a System (P/B 201)
73-21-20-800-801-H00	Engine Identification (Serial Number) Installation (ESN Special Function) (P/B 201)

C. Interpret Systems Configuration Display

SUBTASK 77-00-00-860-004-H00

(1) The following engine information is provided in the Systems Configuration Display and is reported for both channel A and channel B of the Full Authority Digital Engine Control (FADEC) Engine Electronic Controller (EEC) for both the left and right engines.

SUBTASK 77-00-00-860-005-H00

(2) The FADEC EEC hardware part number as recorded in the FADEC EEC non-volatile memory is reported. The hardware and software part numbers are independent. The FADEC EEC hardware part number is defined on the FADEC EEC name plate.

EEC Hardware Part Number

GE Part Number*[1]	VIN
1962M67P02	114E6791G2
1962M67P03	114E6791G3
1962M67P04	114E6791G4
1962M67P05	114E6791G5
1962M67P06	114E6791G6

*[1] Other hardware part numbers may be in service.

SUBTASK 77-00-00-860-006-H00

(3) The FADEC EEC software part number is reported. The hardware and software part numbers are independent and are not connected to each other.

EEC Software Part Number

Part Number*[1]	Version	GE90-100 Service Bulletin
7306-GEC-A07-05	A075	73-0098

*[1] Other software part numbers may be in service.

SUBTASK 77-00-00-860-007-H00

(4) The Engine Serial Number is reported. The Engine Serial Number is entered into the FADEC EEC non-volatile memory using Engine Identification (Serial Number) Installation (ESN Special Function), TASK 73-21-20-800-801-H00.

SUBTASK 77-00-00-860-008-H00

(5) The Engine thrust rating is reported. The Engine thrust rating information is provided by the Engine Rating Plug. The engine thrust ratings are:

- GE90-115BL – this is the baseline thrust rating for the B777-300ER
- GE90-115BL1 – this is an optional thrust rating that provides increased thrust during hot day sea level operations for the B777-200LR/300ER/F
- GE90-115BL2 - this is an optional thrust rating that provides increased thrust during hot day high airport elevation operations for the B777-200LR/300ER/F
- GE90-110B1L - this is the baseline thrust rating for the B777-200LR and B777F
- GE90-110B1L1 – this is an optional thrust rating that provides increased thrust during hot day sea level operations for the B777-200LR/F
- GE90-110B1L2 - this is an optional thrust rating that provides increased thrust during hot day high elevation airport operations for the B777-200LR/F

SUBTASK 77-00-00-860-009-H00

(6) The engine bump information is reported. The engine bump information is provided by the Engine Rating Plug. The engine bump information is:

- 0 - GE90-115BL or GE90-110B1L
- 1 - GE90-115BL1 or GE90-110B1L1
- 2 - GE90-115BL2 or GE90-110B1L2

SUBTASK 77-00-00-860-010-H00

(7) The engine configuration is reported. The engine configuration information is provided by the Engine Configuration Type Box. The configurations are:

- 0 DAC II – This is the baseline engine configuration
- 1 DAC II – This configuration deletes the Core Compartment Cooling Valve. Refer to GE90-100 SB 75-0022

——— END OF TASK ———

ENGINE INDICATING - DDG MAINTENANCE PROCEDURES

1. General

A. This procedure has the Master Minimum Equipment List (MMEL) as shown in the Dispatch Deviations Guide (DDG). These tasks prepare the airplane for flight with certain systems/components inoperative.

B. This task is an optional procedure if an inoperative engine vibration monitor system may be deactivated.

C. This procedure also has the tasks that put the airplane back to its usual condition.

D. These are the tasks for the components in the engine indicating system:

(1) MMEL 77-31-1 (DDG) Preparation - Airborne Vibration Monitoring (AVM) Systems Inoperative

(2) MMEL 77-31-1 (DDG) Restoration - Airborne Vibration Monitoring (AVM) Systems Inoperative.

NOTE: The MMEL 77-31-1 (DDG) Preparation and Restoration tasks are optional procedures if an inoperative engine vibration monitor system is to be deactivated.

TASK 77-00-00-040-801-H01

2. MMEL 77-31-1 (DDG) Preparation - Airborne Vibration Monitoring (AVM) Systems Inoperative

A. General

(1) This task gives the maintenance steps which prepare the airplane for flight with the Airborne Vibration Monitoring (AVM) Systems Inoperative.

(2) Deactivating an inoperative Airborne Vibration Monitoring (AVM) System is optional procedure.

(3) EICAS Status Messages

(a) ENG VIB MONITOR L

(b) ENG VIB MONITOR R

B. Location Zones

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right

C. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

D. Procedure

SUBTASK 77-00-00-010-001-H01

(1) Open this access panel:

Number	Name/Location
117AL	Main Equipment Center Access Door

SUBTASK 77-00-00-860-001-H01

(2) If the left engine AVM system does not operate, install a circuit breaker lock after you open the circuit breaker:

(a) Open this circuit breaker and install safety tag:

Left Power Management Panel, P110

Row	Col	Number	Name
C	23	C77403	L ENG VIB MON

SUBTASK 77-00-00-860-002-H01

(3) If the right engine AVM system does not operate, install a circuit breaker lock after you open the circuit breaker:

(a) Open this circuit breaker and install safety tag:

Right Power Management Panel, P210

Row	Col	Number	Name
E	6	C77400	R ENG VIB MON

SUBTASK 77-00-00-410-001-H01

(4) Close this access panel:

Number	Name/Location
117AL	Main Equipment Center Access Door

——— END OF TASK ———

TASK 77-00-00-440-801-H01

3. MMEL 77-31-1 (DDG) Restoration - Airborne Vibration Monitoring (AVM) Systems Inoperative

A. General

(1) This task puts the airplane back to its usual condition after operation with the Airborne Vibration Monitoring (AVM) Systems Inoperative.

B. Tools/Equipment

Reference	Description
STD-576	Lock - Circuit Breaker (Commercially available - per SWPM 20-00-10 or equivalent)

C. Location Zones

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right

D. Access Panels

Number	Name/Location
117AL	Main Equipment Center Access Door

E. Procedure

SUBTASK 77-00-00-010-002-H01

(1) Open the main equipment center access door to get access to the main equipment center.

(a) Open this access panel:

Number	Name/Location
117AL	Main Equipment Center Access Door

SUBTASK 77-00-00-860-003-H01

(2) Remove the circuit breaker lock, STD-576 and do these steps:

(a) For the left engine, remove the safety tag and close this circuit breaker:

Left Power Management Panel, P110

Row	Col	Number	Name
C	23	C77403	L ENG VIB MON

(b) For the right engine, remove the safety tag and close this circuit breaker:

Right Power Management Panel, P210

Row	Col	Number	Name
E	6	C77400	R ENG VIB MON

SUBTASK 77-00-00-410-002-H01

(3) Close this access panel:

Number	Name/Location
117AL	Main Equipment Center Access Door

SUBTASK 77-00-00-810-001-H01

(4) Identify the system failure (logbook report, EICAS message, or maintenance message) and do the related task in the FIM to correct the problem.

——— END OF TASK ———

ENGINE TACHOMETER SYSTEM - INSPECTION/CHECK

1. General

A. This procedure has one task:

(1) An inspection of the engine tachometer system.

TASK 77-12-00-200-801-H01

2. Engine Tachometer Inspection

A. General

(1) The engine tachometer inspection includes these checks:

(a) Examine the N1 speed sensor for damage.

(b) Examine the N2 speed sensor for damage.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
77-12-01-000-801-H01	N1 Speed Sensor Removal (P/B 401)
77-12-01-400-801-H01	N1 Speed Sensor Installation (P/B 401)
77-12-02-000-801-H01	N2 Speed Sensor Removal (P/B 401)
77-12-02-400-801-H01	N2 Speed Sensor Installation (P/B 401)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

E. Engine Tachometer System Inspection

SUBTASK 77-12-00-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the left and right thrust reversers on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left and right fan cowl panels, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the left and right thrust reversers, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

SUBTASK 77-12-00-210-001-H01

(2) Examine the N1 speed sensor for damage (Figure 601).

(a) Signs of loose electrical connectors

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

1) If the electrical connectors are loose, tighten the electrical connectors.

(b) Cracks in the mounting flange

1) Cracks are not permitted in the mounting flange.

(c) Signs of a loose N1 speed sensor

1) If the bolts are loose, tighten the bolts (TASK 77-12-01-400-801-H01).

(d) Signs of oil leaks

1) If you see the oil leakage on the N1 speed sensor, replace the preformed packing. These are the tasks: N1 Speed Sensor Removal, TASK 77-12-01-000-801-H01 and N1 Speed Sensor Installation, TASK 77-12-01-400-801-H01

SUBTASK 77-12-00-210-002-H01

(3) Examine the N2 speed sensor for damage (Figure 601).

(a) Signs of loose electrical connectors

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

1) If the electrical connectors are loose, tighten the electrical connectors.

(b) Cracks in the mounting flange

1) Cracks are not permitted in the mounting flange.

(c) Signs of a loose N2 speed sensor

1) If the bolts are loose, tighten the bolts (TASK 77-12-02-400-801-H01).

(d) Signs of oil leaks

1) If you see the oil leakage on the N2 speed sensor, replace the preformed packing. These are the tasks: N2 Speed Sensor Removal, TASK 77-12-02-000-801-H01 and N2 Speed Sensor Installation, TASK 77-12-02-400-801-H01

SUBTASK 77-12-00-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(4) Do these tasks in sequence to safely close the left and right thrust reversers on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine

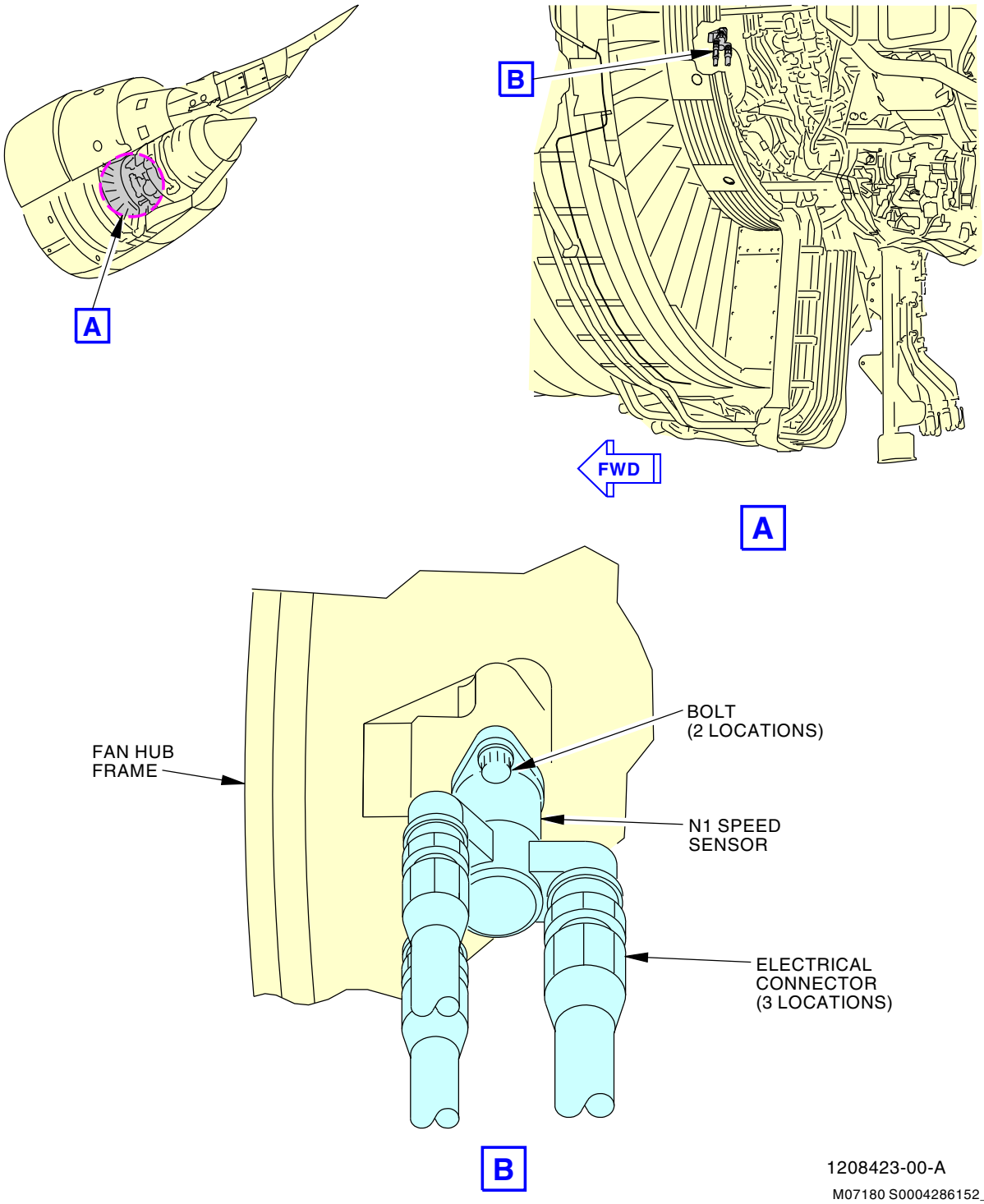
(Continued)

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

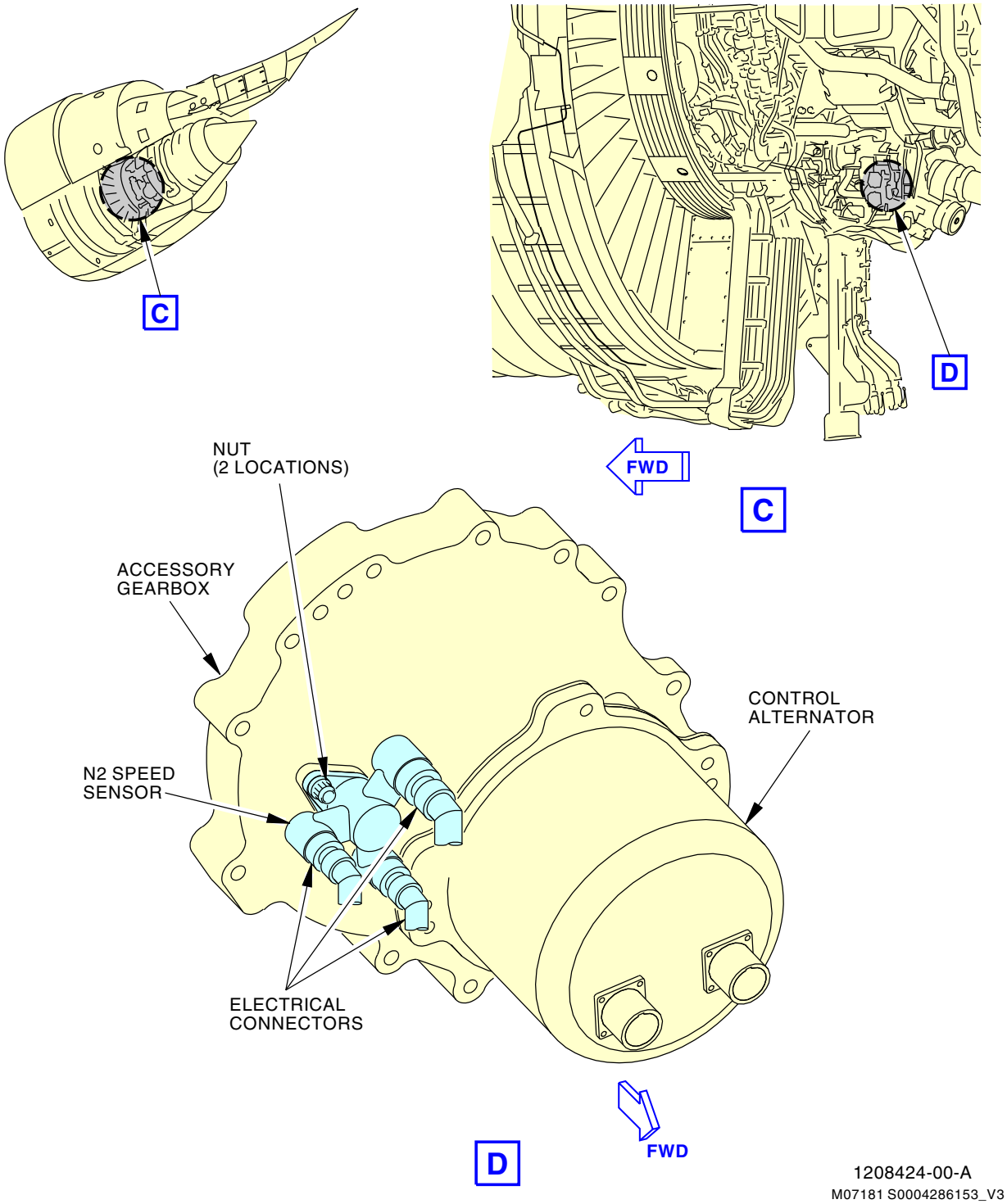
(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

——— END OF TASK ———



Engine Tachometer Inspection
Figure 601/77-12-00-990-801-H01 (Sheet 1 of 2)



Engine Tachometer Inspection
Figure 601/77-12-00-990-801-H01 (Sheet 2 of 2)

N1 SPEED SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the N1 speed sensor

(2) An installation of the N1 speed sensor.

TASK 77-12-01-000-801-H01

2. N1 Speed Sensor Removal

A. General

(1) The N1 speed sensor is installed at the 8:30 o'clock position on the aft side of the fan frame hub.

(2) To remove the N1 speed sensor, you must do these steps:

(a) Do the deactivation of the leading edge slat system.

(b) Do the deactivation on the thrust reverser system.

(c) Open the left fan cowl panel.

(d) Open the left thrust reverser.

(e) Disconnect the electrical connectors from the N1 speed sensor.

(f) Remove the N1 speed sensor from the fan hub frame.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-203	Container - Oil Resistant, 1 U.S.-Gal (3.8 l)
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine

F. Prepare for the Removal

SUBTASK 77-12-01-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the left thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine

(e) For the left thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine

G. N1 Speed Sensor Removal

SUBTASK 77-12-01-010-002-H01

(1) Disconnect the W737 harness [9] from loop clamps and spring clip as follows (Figure 401) :

(a) Remove the W737 harness [9] from the spring clamp [10].

(b) Remove the bolt [8] and disconnect the W737 harness [9] from the bracket [11].

(c) Remove the two bolts [7] and disconnect the W737 harness [9] from the bracket [11].

(d) Remove the bolt [6] and disconnect loop clamp [5] from the bracket [11].

(e) Remove the bolt [1] and disconnect loop clamp [15] from the bracket [14].

(f) Remove the bolt [4] and disconnect loop clamp [2] from the bracket [13].

SUBTASK 77-12-01-010-003-H01

(2) Remove the bracket [14] from the fan hub frame as follows (Figure 401):

(a) Remove the two bolts [12] from the bracket [14] and remove the bracket [14] from the fan hub frame.

SUBTASK 77-12-01-020-001-H01

(3) Remove the N1 speed sensor [3] (Figure 401):

CAUTION MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

(CAUTION PRECEDES)

CAUTION

USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(a) Use teflon-jawed pliers, STD-664 to disconnect the electrical connectors [22] from N1 speed sensor [3] (TASK 70-00-01-400-807-H01).

(b) Install protective covers on the electrical connections and the electrical connectors [22].

(c) Put a 1 U.S.-gal (3.81 l) oil resistant container, STD-203 below N1 speed sensor [3].

NOTE: A small quantity of oil could drain from the fan hub frame port for the N1 speed sensor.

CAUTION

THE N1 SPEED SENSOR IS NEARLY TWO FEET IN LENGTH. CARE SHOULD BE TAKEN WHEN YOU REMOVE THE N1 SPEED SENSOR OR DAMAGE MAY OCCUR.

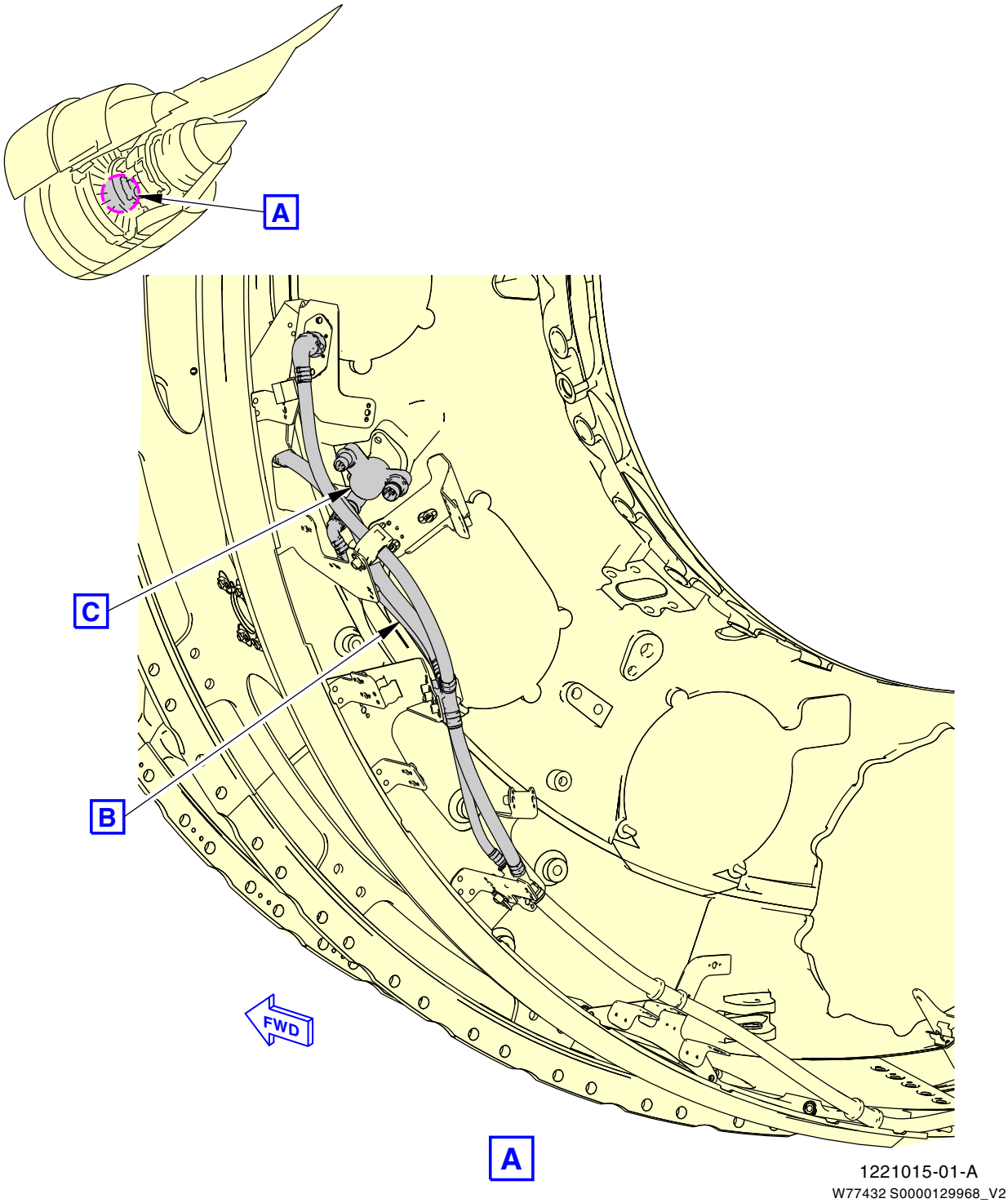
(d) Remove the bolts [21] that attach the N1 speed sensor [3] to the fan hub frame.

(e) Move the W737 harness [9] as necessary and remove the N1 speed sensor [3].

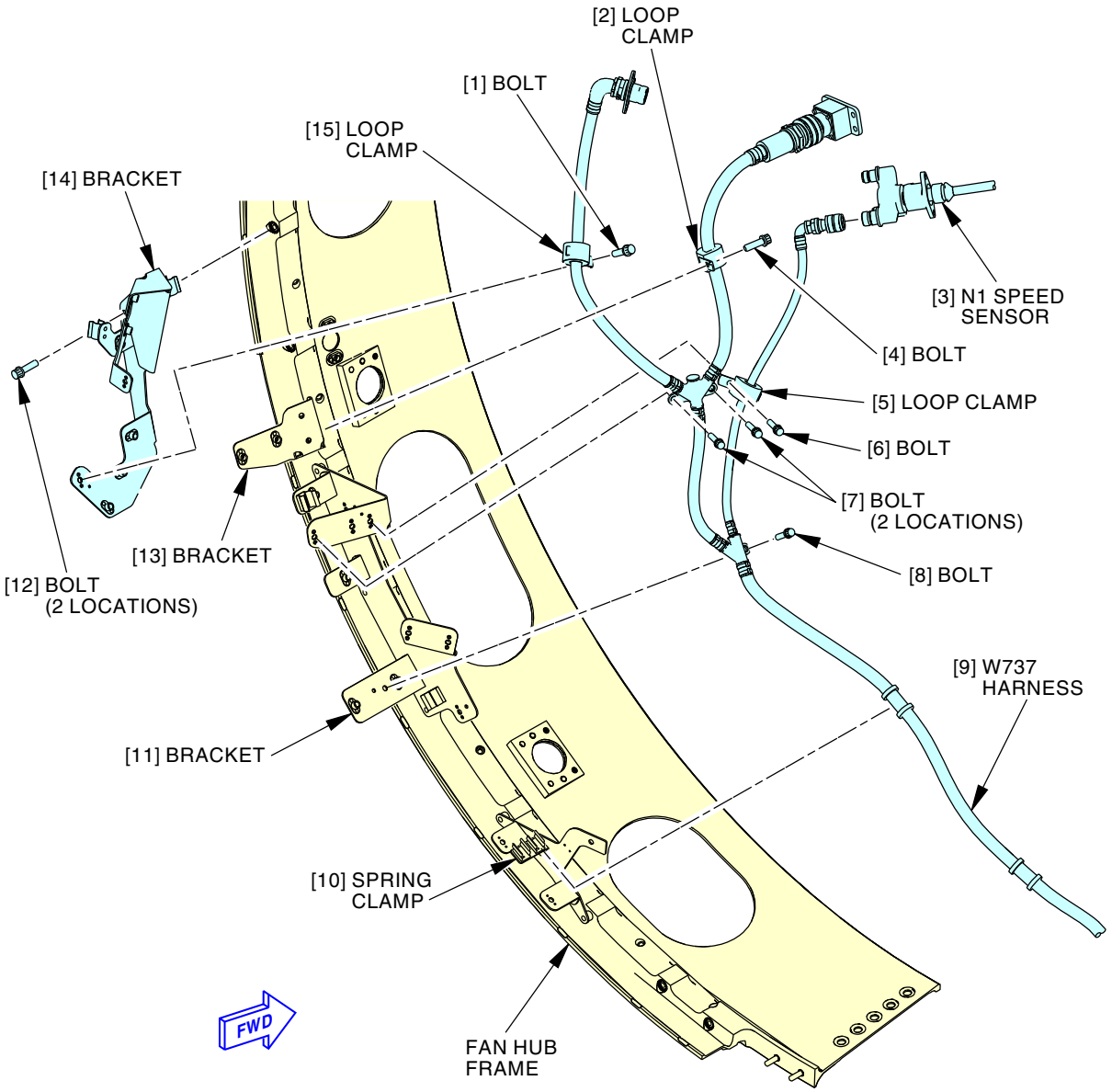
(f) Remove and discard the preformed packing [23] from the N1 speed sensor [3].

(g) Install the protective cover into the port of the N1 speed sensor [3] in the fan hub frame.

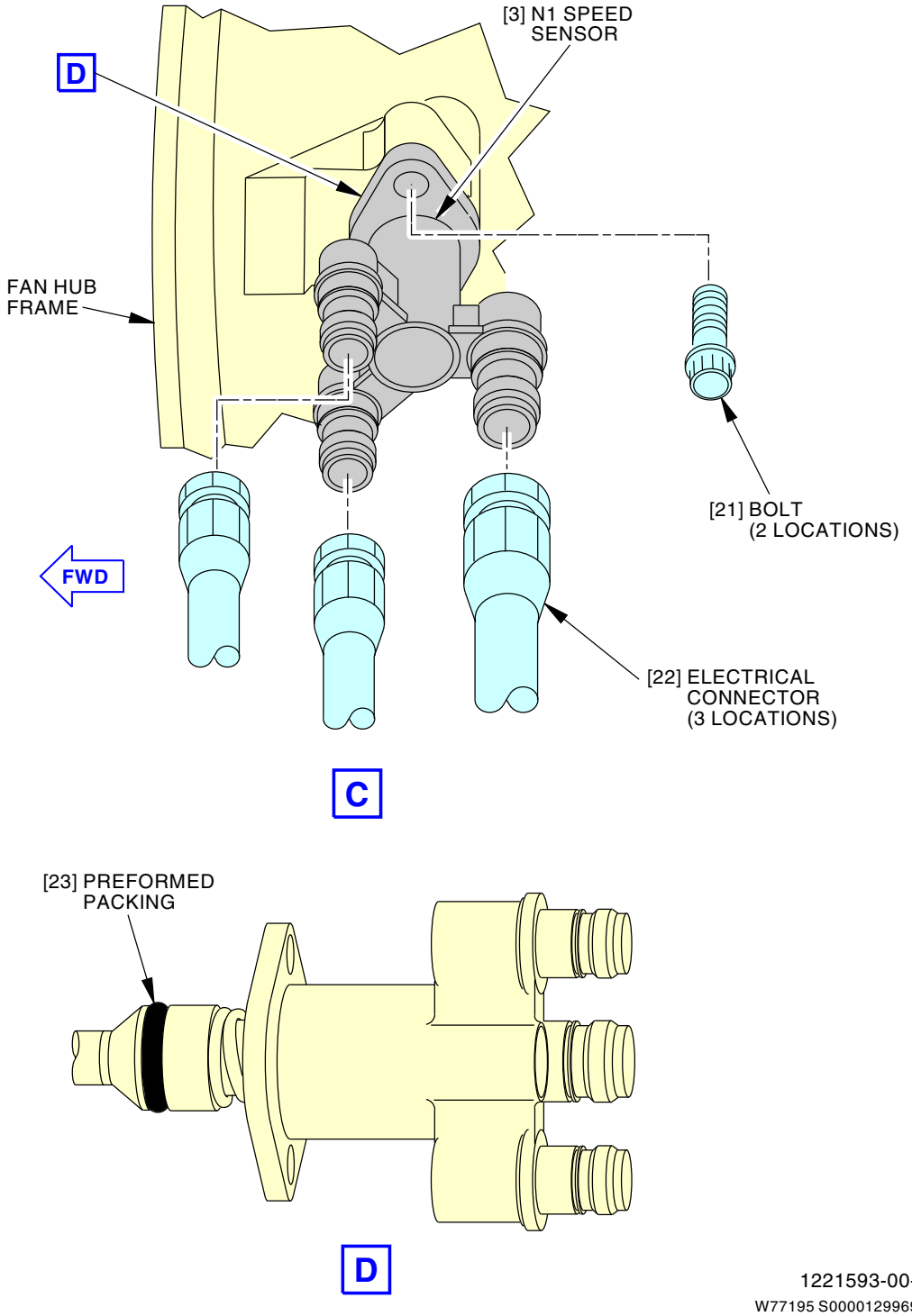
END OF TASK



N1 Speed Sensor Installation
Figure 401/77-12-01-990-801-H01 (Sheet 1 of 3)



N1 Speed Sensor Installation
Figure 401/77-12-01-990-801-H01 (Sheet 2 of 3)



N1 Speed Sensor Installation
Figure 401/77-12-01-990-801-H01 (Sheet 3 of 3)

TASK 77-12-01-400-801-H01

3. N1 Speed Sensor Installation

A. General

(1) To install the N1 speed sensor, you must do these steps:

(a) Install the N1 speed sensor into the fan hub frame.

(b) Connect the electrical connectors on the N1 speed sensor.

(c) Close the left thrust reverser.

(d) Do the activation procedure for the thrust reverser system.

(e) Close the left fan cowl panel.

(2) Do the necessary test for the engine.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-203	Container - Oil Resistant, 1 U.S.-Gal (3.8 l)
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Consumable Materials

Reference	Description	Specification
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
3	N1 speed sensor	77-12-01-05-015	ARO ALL
23	Preformed packing	77-12-01-05-050	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine

H. N1 Speed Sensor Installation

SUBTASK 77-12-01-420-001-H01

(1) Install the N1 speed sensor [3] (Figure 401):

(a) Remove the protective cover from the port of the N1 speed sensor [3] in the fan hub frame.

(b) Lubricate a new preformed packing [23] with clean oil, D00552 [C02-019].

(c) Install preformed packing [23] in the groove on the N1 speed sensor [3].

(d) Lubricate the bolts [21] with Acheson GP460 compound, D50043 [C02-058] .

CAUTION THE N1 SPEED SENSOR IS NEARLY TWO FEET IN LENGTH. CARE SHOULD BE TAKEN WHEN YOU INSTALL THE N1 SPEED SENSOR OR DAMAGE MAY OCCUR.

(e) Move the W737 harness [9] as necessary and install the N1 speed sensor [3] into the fan hub frame with the bolts [21].

1) Tighten the bolts [21] to 110-120 pound-inches (12.4-13.6 Newton-meters).

(f) Remove the 1 U.S.-gal (3.81 l) oil resistant container, STD-203 from the engine.

(g) Remove the protective covers from the electrical connections and the electrical connectors [22].

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(h) Use the teflon-jawed pliers, STD-664 to connect the electrical connectors [22] to the N1 speed sensor [3] (TASK 70-00-01-400-807-H01).

1) Tighten the electrical connectors [22].

SUBTASK 77-12-01-410-002-H01

(2) Install the bracket [14] to the fan hub frame as follows (Figure 401) :

(a) Install the two bolts [12] that attach the bracket [14] to the fan hub frame.

1) Tighten bolts [12] to 110-120 pound-inches (12.4-13.6 Newton meters).

SUBTASK 77-12-01-410-003-H01

(3) Install the W737 harness [9] on the the loop clamps, brackets, and spring clip (Figure 401).

(a) Attach the loop clamp [2] with the bolt [4] to the bracket [13].

1) Tighten the bolt [4] to 55-70 pound-inches (6.21-7.90 Newton-meters).

(b) Attach the loop clamp [15] with the bolt [1] to the bracket [14].

1) Tighten the bolt [1] to 55-70 pound-inches (6.21-7.90 Newton-meters).

(c) Attach the loop clamp [5] with the bolt [6] to the bracket [11].

1) Tighten the bolt [6] to 55-70 pound-inches (6.21-7.90 Newton-meters).

(d) Attach the W737 harness [9] to the bracket [11] with two bolts [7].

1) Tighten the bolts [7] to 110-120 pound-inches (12.4-13.6 Newton-meters).

(e) Attach the W737 harness [9] to the bracket [11] with bolt [8].

1) Tighten the bolt [8] to 110-120 pound-inches (12.4-13.6 Newton-meters).

(f) Attach the W737 harness [9] to the spring clamp [10].

I. Put the Airplane Back to its Usual Condition.

SUBTASK 77-12-01-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the left thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

J. N1 Speed Sensor Installation Test

SUBTASK 77-12-01-710-001-H01

(1) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

——— END OF TASK ———

N2 SPEED SENSOR - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the N2 speed sensor

(2) An installation of the N2 speed sensor.

TASK 77-12-02-000-801-H01

2. N2 Speed Sensor Removal

A. General

(1) This task is the removal procedure for the N2 Speed Sensor.

(2) The N2 speed sensor is installed at the 5:30 o'clock position on the forward side of the accessory gearbox.

(3) To remove the N2 speed sensor, you must do these steps:

(a) Open the left and right fan cowl panels.

(b) Do the deactivation on the leading edge slat system.

(c) Open the right thrust reverser.

(d) Do the deactivation on the thrust reverser system.

(e) Disconnect the electrical connectors from the N2 speed sensor.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Prepare for the Removal

SUBTASK 77-12-02-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

G. N2 Speed Sensor Removal

SUBTASK 77-12-02-020-001-H01

(1) Remove the N2 speed sensor [1] (Figure 401):

CAUTION MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(a) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [3] from the N2 speed sensor [1](TASK 70-00-01-400-807-H01).

(b) Install protective covers on the electrical connections and the electrical connector [3].

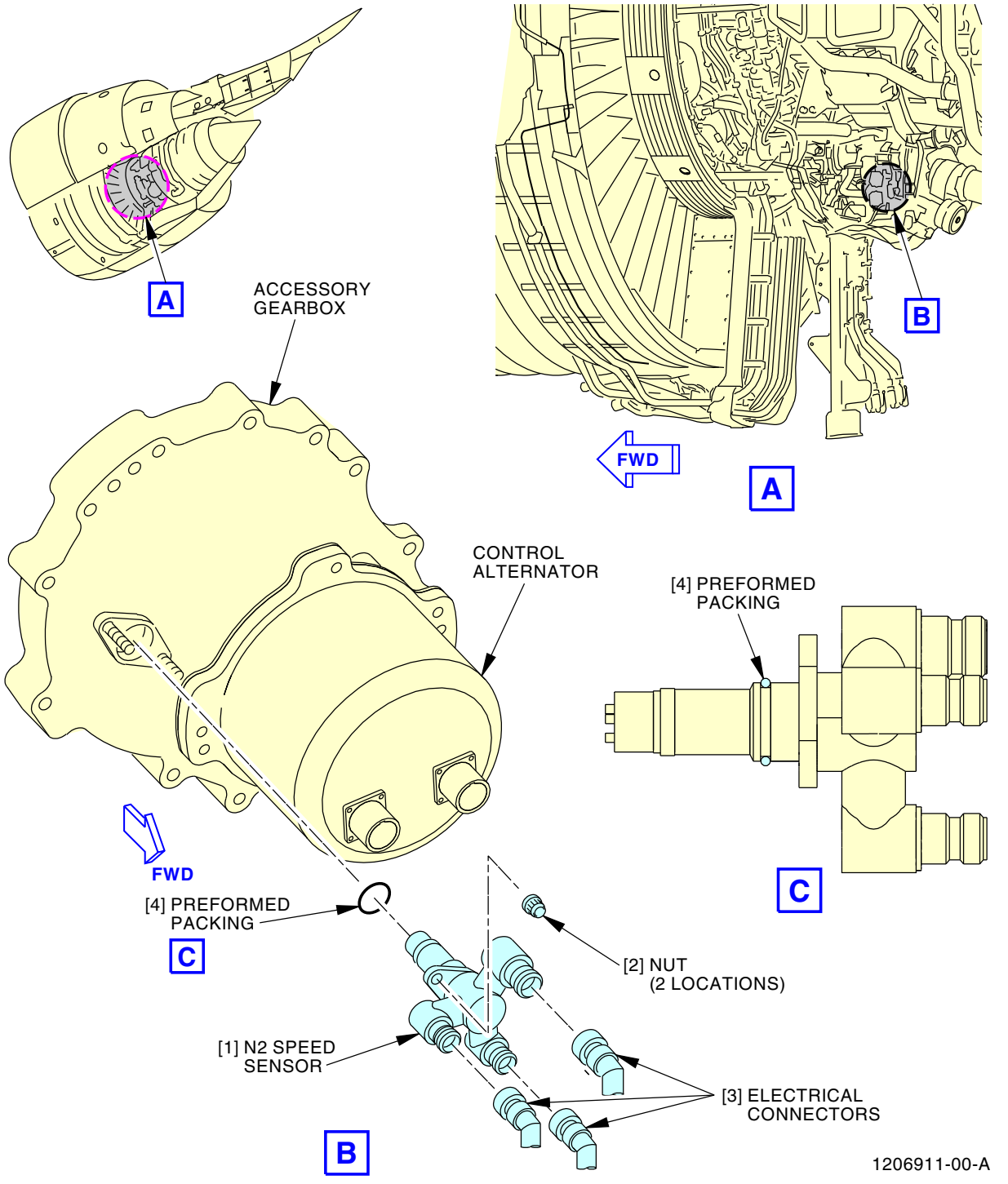
(c) Remove the nuts [2] that attach the N2 speed sensor [1] to the accessory gearbox.

(d) Remove the N2 speed sensor [1].

(e) Remove and discard the preformed packing [4] from the N2 speed sensor [1].

(f) Install a protective cover into the port of the N2 speed sensor [1] in the accessory gearbox.

END OF TASK



N2 Speed Sensor Installation
Figure 401/77-12-02-990-801-H01

TASK 77-12-02-400-801-H01

3. N2 Speed Sensor Installation

A. General

(1) This task is the installation procedure for the N2 Speed Sensor.

(2) To install the N2 speed sensor, you must do these steps:

(a) Install the N2 speed sensor to the accessory gearbox.

(b) Connect the electrical connectors on the N2 speed sensor.

(c) Close the right thrust reverser.

(d) Do the activation procedure for the thrust reverser system.

(e) Close the fan cowl panels.

(f) Do the activation procedure for the leading edge slat system.

(3) Do the necessary test for the engine.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Consumable Materials

Reference	Description	Specification
D00552 [C02-019]	Oil - Engine Lubricating	GE Spec. D50TF1
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	N2 speed sensor	77-12-02-02-010	ARO ALL
4	Preformed packing	77-12-02-02-045	ARO ALL

F. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

G. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(Continued)

Number	Name/Location
426AR	Right Thrust Reverser, Right Engine

H. N2 Speed Sensor Installation

SUBTASK 77-12-02-420-001-H01

CAUTION

MAKE SURE YOU USE THE CORRECT TOOLS AND PROCEDURES FOR THE N2 SPEED SENSOR INSTALLATION. IF YOU DO NOT USE THE CORRECT TOOLS AND PROCEDURES, YOU MAY DAMAGE THE PACKING ON THE SENSOR. A DAMAGED PACKING CAN CAUSE A LOSS OF ENGINE OIL, WHICH CAN AFFECT ENGINE OPERATION AND CAUSE AN IN FLIGHT SHUTDOWN.

(1) Install the N2 speed sensor [1] (Figure 401).

(a) Remove the protective cover from the port of the N2 speed sensor [1] in the accessory gearbox.

(b) Put Acheson GP460 compound, D50043 [C02-058] on the N2 speed sensor mount threads on the accessory gearbox.

(c) Lubricate the nuts [2] with Acheson GP460 compound, D50043 [C02-058].

(d) Lubricate a new preformed packing [4] with clean oil, D00552 [C02-019].

(e) Install the preformed packing [4] on the groove on the N2 speed sensor [1].

(f) Align the N2 speed sensor [1] to the accessory gearbox.

CAUTION

MAKE SURE YOU DO NOT DAMAGE THE PACKING WHEN YOU INSTALL THE N2 SPEED SENSOR. A DAMAGED PACKING CAN CAUSE A LOSS OF ENGINE OIL, WHICH CAN AFFECT ENGINE OPERATION AND CAUSE AN IN FLIGHT SHUTDOWN.

(g) Install the N2 speed sensor [1] on the accessory gearbox.

1) Install the nuts [2].

2) Tighten the nuts [2] to 110-120 pound-inches (12.4-13.6 Newton-meters).

(h) Remove the protective covers from the electrical connections and the electrical connector [3].

CAUTION

MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

CAUTION

USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(i) Use teflon-jawed pliers, STD-664 to connect the electrical connector [3] to the N2 speed sensor [1] (TASK 70-00-01-400-807-H01).

1) Tighten the electrical connector [3].

I. Put the Airplane Back to its Usual Condition.

SUBTASK 77-12-02-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

J. N2 Speed Sensor Installation Test

SUBTASK 77-12-02-710-001-H01

(1) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

——— END OF TASK ———

ENGINE TEMPERATURE SENSING SYSTEM - INSPECTION/CHECK

1. General

A. This procedure contains scheduled maintenance task data.

B. This procedure has two tasks:

(1) An engine temperature sensing system inspection

(2) An EGT system degradation inspection.

TASK 77-21-00-200-801-H01

2. Engine Temperature Sensing System Inspection

(Figure 601)

A. General

(1) This task is the inspection procedure for the engine temperature sensing system.

(2) The engine temperature sensing system inspection includes the examination of the EGT probes for damage.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
77-21-01-000-801-H01	EGT Probe Removal (P/B 401)
77-21-01-400-801-H01	EGT Probe Installation (P/B 401)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

D. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

E. Prepare for the Engine Temperature Sensing System Inspection

SUBTASK 77-21-00-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

F. Engine Temperature Sensing System Inspection

SUBTASK 77-21-00-210-001-H01

(1) Examine the EGT probe for damage (Figure 601):

(a) Dents

1) Minor damage is serviceable, if it is structurally serviceable.

(b) Signs of a loose EGT probe

1) If the bolts are loose, tighten the bolts (TASK 77-21-01-400-801-H01).

(c) Signs of air leaks

1) If the probe shows the signs of air leaks, replace the gasket on the EGT probe (TASK 77-21-01-400-801-H01).

(d) Chaffing of the leads

1) Chaffing is not permitted.

(e) The Continue-In-Service (CIS) limit for chaffing of leads is 1000 engine flight hours with these conditions:

1) Chaffing is limited to four locations on the EGT harness leads.

2) Chaffing is limited to leads applicable to no more than two EGT probes.

3) To prevent EGT fluctuations, the leads must be disconnected and secured as follows:

a) Disconnect both connections to the applicable EGT probe.

b) Select an insulation material which can stand the temperatures of 700°F (371°C).

c) Put an insulation cover over the EGT leads.

d) Fold each lead onto the harness to separate one from the other to prevent an electrical short.

e) Attach the pigtail to the EGT harness with a clamp.

(f) Cracks in the mounting flange

1) Cracks are not permitted in the mounting flange.

(g) Cracks in the terminal insulator (ceramic)

1) Cracks are not permitted in the terminal insulator.

2) If damage is evident, replace the EGT Probe (TASK 77-21-01-000-801-H01 and TASK 77-21-01-400-801-H01).

(h) The Continue-In-Service (CIS) limit for cracks in the terminal insulator (ceramic) is 1000 engine flight hours with these conditions:

1) Cracked terminal insulators are limited to no more than two EGT probes.

2) To prevent EGT fluctuations, the leads must be disconnected and secured as follows:

a) Disconnect both connections to the applicable EGT probe.

b) Select an insulation material which can stand the temperatures of 700°F (371°C).

c) Put an insulation cover over the EGT leads.

d) Fold each lead onto the harness to separate one from the other to prevent an electrical short.

e) Attach the pigtail to the EGT harness with a clamp.

(i) Loose or bad terminal studs

1) Loose or bad terminal studs are not permitted. Replace the EGT Probe (TASK 77-21-01-000-801-H01 and TASK 77-21-01-400-801-H01).

2) If loose or bad terminal studs is evident, replace the EGT Probe (TASK 77-21-01-000-801-H01 and TASK 77-21-01-400-801-H01).

(j) The Continue-In-Service (CIS) limit for loose or bad terminal studs is 1000 engine flight hours with these conditions:

1) Loose or bad terminal studs are limited to no more than two EGT probes.

2) To prevent EGT fluctuations, the leads must be disconnected and secured as follows:

a) Disconnect both connections to the applicable EGT probe.

b) Select an insulation material which can stand the temperatures of 700°F (371°C).

c) Put an insulation cover over the EGT leads.

d) Fold each pigtail lead onto the harness to separate each pigtail from the other to prevent an electrical short.

e) Attach the pigtail to the EGT harness with a clamp.

(k) Stripped or damaged threads on the EGT probes

1) 50% of one entrance thread or 10% each of two entrance threads if unwanted metal is removed is serviceable.

G. Put the Aircraft Back to Its Usual Condition

SUBTASK 77-21-00-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

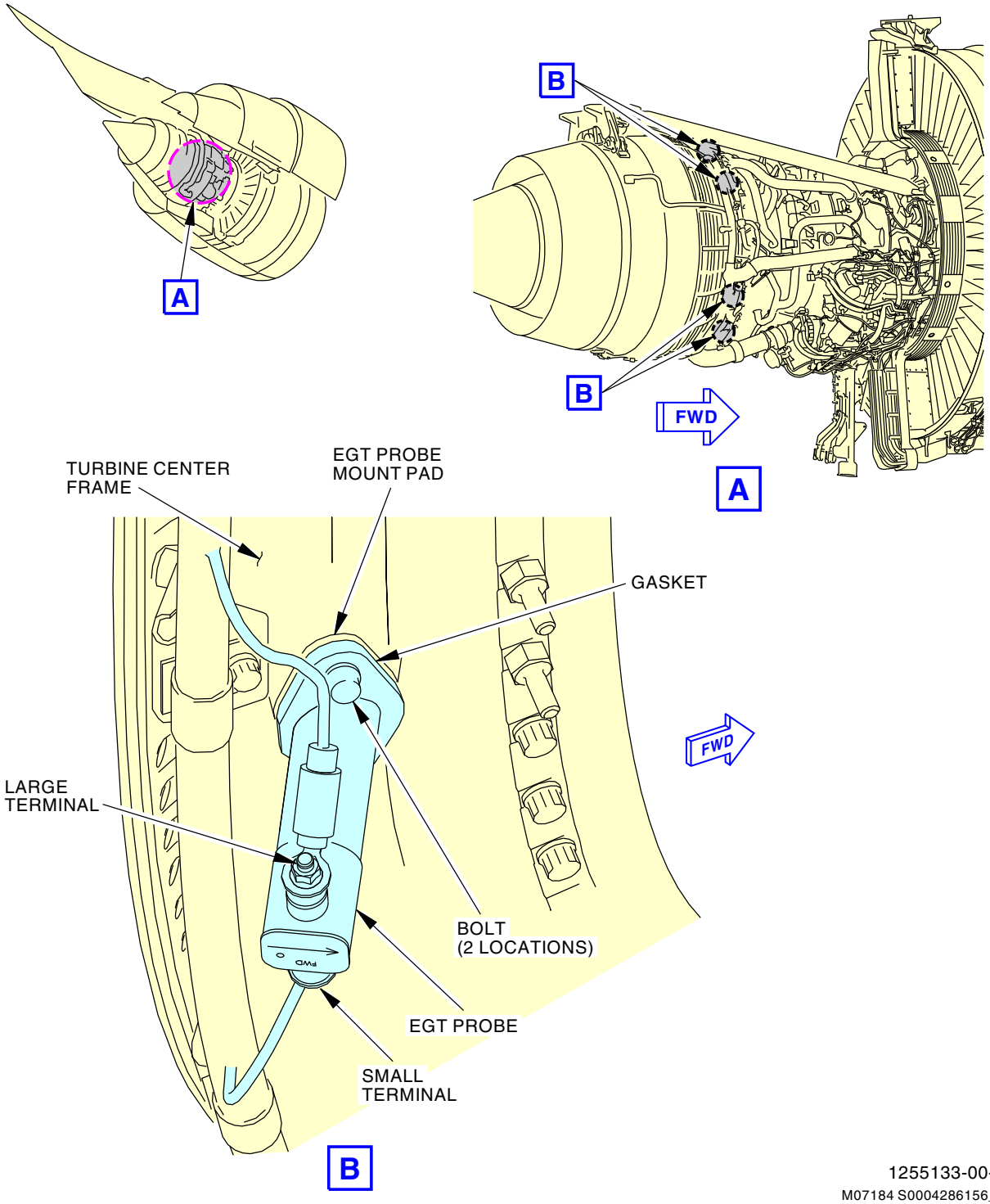
1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

——— END OF TASK ———



1255133-00-A
M07184 S0004286156_V4

Engine Temperature Sensing System Inspection
Figure 601/77-21-00-990-801-H01

TASK 77-21-00-700-801-H01

3. EGT System Degradation Inspection

NOTE: This procedure is a scheduled maintenance task.

A. General

(1) There are two procedures to do a check for EGT system degradation inspection. One procedure uses the MAT (preferred) to look for EGT system fault messages. The other procedure (alternate) is for use when the MAT/CMC functions are not available.

(2) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

B. References

Reference	Title
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Location Zones

Zone	Area
212	Flight Compartment, Right

D. EGT System Degradation Inspection (Preferred)

SUBTASK 77-21-00-860-001-H01

(1) Set the EEC MAINT L or R ENG POWER switch on the aft overhead maintenance panel, P61, to the TEST position.

(a) Wait 30 seconds before you start the test.

SUBTASK 77-21-00-740-001-H01

(2) Use a maintenance access terminal (MAT) to find the EGT System fault messages.

(a) Make these selections on the MAT:

1) ONBOARD MAINTENANCE
2) EXTENDED MAINTENANCE
3) FAULT HISTORY
4) 71-80 Left or Right Engine

(b) Look for one or more of these faults in the last 3 flight legs (LEG 0, LEG-1 or LEG-2). If the display shows a fault message, do the corrective action in the FIM Table 601.

Table 601/77-21-00-993-802-H01 EGT Degradation Maintenance Messages - TABLE 601

Maintenance Messages	
77-14661	T49 Sector 1 (L Eng Ch A) signal is out of range.
77-14662	T49 Sector 1 (R Eng Ch A) signal is out of range.
77-24661	T49 Sector 1 (L Eng Ch B) signal is out of range.
77-24662	T49 Sector 1 (R Eng Ch B) signal is out of range.
77-14671	T49 Sector 2 (L Eng Ch A) signal is out of range.
77-14672	T49 Sector 2 (R Eng Ch A) signal is out of range.
77-24681	T49 Sector 3 (L Eng Ch B) signal is out of range.

Table 601/77-21-00-993-802-H01 EGT Degradation Maintenance Messages - TABLE 601 (Continued)

Maintenance Messages	
77-24682	T49 Sector 3 (R Eng Ch B) signal is out of range.
77–14691	T49 Sector 4 (L Eng Ch A) signal is out of range.
77-14692	T49 Sector 4 (R Eng Ch A) signal is out of range.
77-24691	T49 Sector 4 (L Eng Ch B) signal is out of range.
77-24692	T49 Sector 4 (R Eng Ch B) signal is out of range.

(c) Select EXIT MAINTENANCE from the extended maintenance menu.

SUBTASK 77-21-00-860-002-H01

(3) Set the EEC MAINT L or R ENG POWER switch on the aft overhead maintenance panel, P61, to the NORM position.

E. EGT System Degradation Inspection (Alternate)

SUBTASK 77-21-00-220-001-H01

(1) Do this task: Engine Temperature Sensing System Inspection, TASK 77-21-00-200-801-H01.

——— END OF TASK ———

EGT PROBE - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the EGT probe

(2) An installation of the EGT probe.

TASK 77-21-01-000-801-H01

2. EGT Probe Removal

(Figure 401 and Figure 402)

A. General

(1) This task is the removal procedure for the EGT Probe.

(2) The EGT probes are installed radially in eight positions on the turbine center frame.

(3) The procedure is the same for the eight EGT probes.

(4) To remove the EGT probe, you must do these steps:

(a) Open the left and right fan cowl panels.

(b) Do the deactivation on the leading edge slat system.

(c) Open the right thrust reverser.

(d) Do the deactivation on the thrust reverser system.

(e) Remove the connectors from the EGT probe.

(f) Remove the EGT probe from the turbine center frame.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
SPL-8408	Puller - EGT Probe Part #: 9429M49G01 Supplier: 06083

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Prepare for the Removal

SUBTASK 77-21-01-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the right thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the right fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the right thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

G. T49 EGT Probe Removal

SUBTASK 77-21-01-020-001-H01

(1) Remove the EGT probe [1]:

CAUTION USE THE CORRECT TOOLS TO REMOVE THE THERMOCOUPLE PROBE. IF YOU USE INCORRECT TOOLS OR MOVE THE PROBE FROM SIDE TO SIDE, YOU CAN CAUSE DAMAGE TO THE PROBE SUPPORT.

CAUTION BE CAREFUL WHEN YOU USE THE THERMOCOUPLE PROBE PULLER TO REMOVE THE PROBE. DAMAGE TO THE ADJACENT TUBES AND BRACKETS CAN OCCUR.

CAUTION DO NOT APPLY SIDE LOADS ON THE THERMOCOUPLE HARNESS PIGTAIL LEADS DURING REMOVAL OR INSTALLATION. DAMAGE TO THE THERMOCOUPLE PROBE STUDS OR THE MAGNAFORM SLEEVES CAN OCCUR.

(CAUTION PRECEDES)

CAUTION

DO NOT REMOVE THE CAPTURED NUTS FROM THE LEADS. DAMAGE CAN OCCUR TO THE LEADS OR THE CAPTURED NUTS.

(a) Loosen the captive nuts.

(b) Remove the lead [2A] and lead [2B] from the EGT probe [1].

(c) Remove and discard the safety cable or lockwire from the bolts [4].

(d) Remove the bolts [4] that attach the EGT probe [1] to the mounting pad of the turbine center frame.

(e) Use the hand pressure and carefully pull the thermocouple probe radially outward from the mounting pad on the Turbine center Frame..

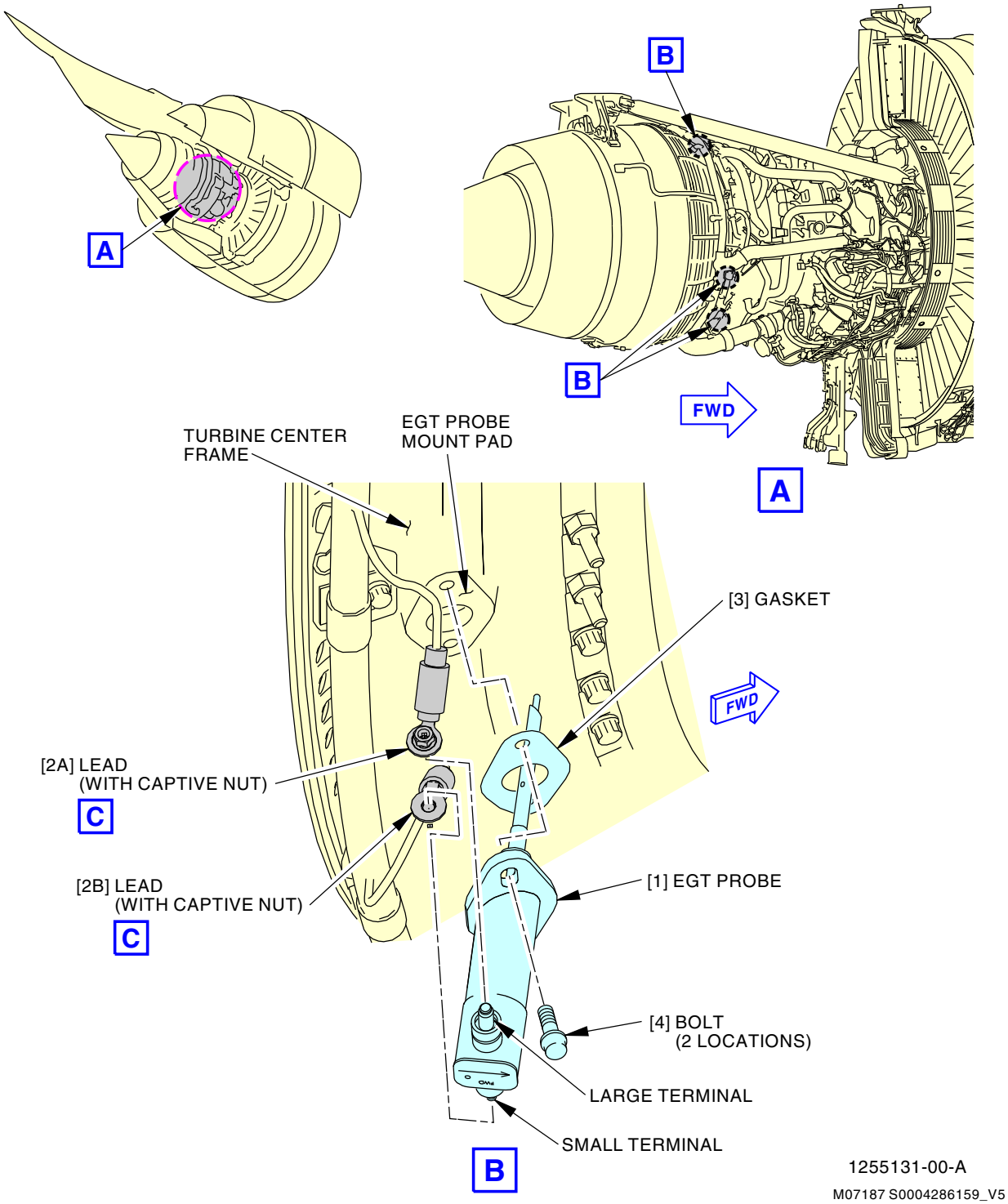
1) If it is necessary, use the EGT probe puller, SPL-8408 to remove the thermocouple probe.

NOTE: It may be necessary to remove some surrounding tubes and hardware to get access to the thermocouple probe when you use the EGT thermocouple probe puller.

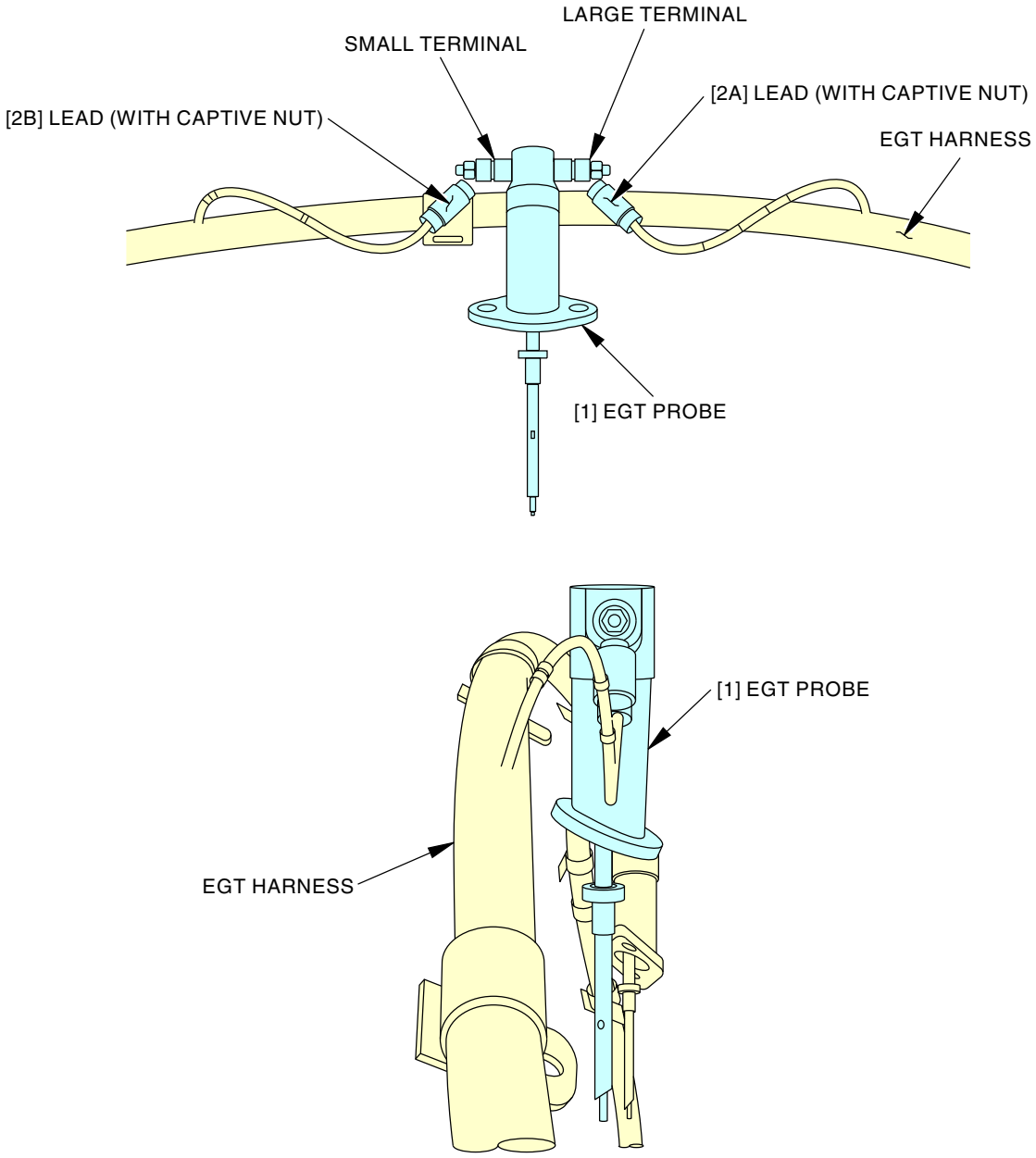
(f) Remove and discard the gasket [3] from the EGT probe [1].

(g) Install a protective cover on the mounting pad port on the turbine center frame.

——— END OF TASK ———



EGT Probe Installation
Figure 401/77-21-01-990-801-H01 (Sheet 1 of 2)



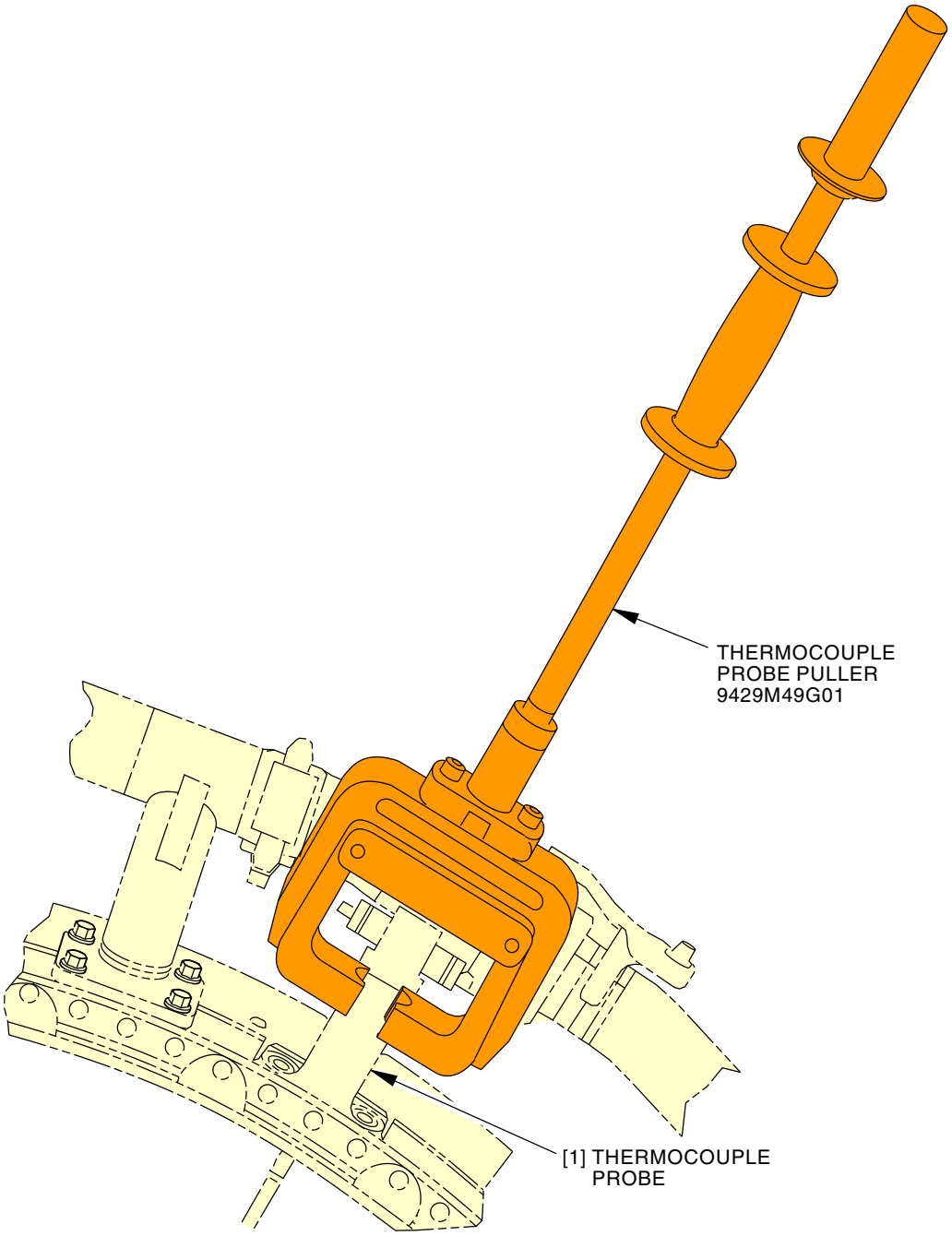
CORRECT POSITION OF THE EGT HARNESS LEADS

C

5014064-00

2372127 S0000542965_V2

EGT Probe Installation
Figure 401/77-21-01-990-801-H01 (Sheet 2 of 2)



EGT Probe Tool Installation
Figure 402/77-21-01-990-803-H00

TASK 77-21-01-400-801-H01

3. EGT Probe Installation

A. General

(1) This task is the installation procedure for the EGT Probe.

(2) To install the EGT probe, you must do these steps:

(a) Install the EGT probe into the turbine center frame.

(b) Attach the connectors to the EGT probe.

(c) Close the right thrust reverser.

(d) Do the activation procedure for the thrust reverser system.

(e) Close the fan cowl panels.

(f) Do the activation procedure for the leading edge slat.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Consumable Materials

Reference	Description	Specification
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A
G01505	Lockwire - Safety And Lock	NASM20995
G02325 [C10-145]	Cable, Safety - GE P/N J1285P01	

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	EGT probe	77-21-01-02-015	ARO ALL
3	Gasket	77-21-01-02-010	ARO ALL

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
416AR	Right Thrust Reverser, Left Engine
424AR	Right Fan Cowl Panel, Right Engine
426AR	Right Thrust Reverser, Right Engine

G. EGT Probe Installation

SUBTASK 77-21-01-420-001-H01

CAUTION BEFORE YOU TORQUE THE CONNECTOR NUTS, MAKE SURE THAT THE THERMOCOUPLE PIGTAIL LEADS WILL NOT TOUCH OTHER ENGINE PARTS DURING ENGINE OPERATION OR DAMAGE TO THE THERMOCOUPLE CABLE CAN OCCUR.

CAUTION DO NOT APPLY SIDE LOADS ON THE THERMOCOUPLE HARNESS PIGTAIL LEADS DURING REMOVAL OR INSTALLATION. DAMAGE TO THE THERMOCOUPLE PROBE STUDS OR THE MAGNAFORM SLEEVES CAN OCCUR.

CAUTION MAKE SURE THAT THE EGT HARNESS LEADS ARE IN THE CORRECT POSITION BEFORE YOU TIGHTEN THE CAPTIVE NUTS. IF THE LEADS ARE NOT IN THE CORRECT POSITION, YOU CAN CAUSE DAMAGE TO EGT HARNESS LEADS AND THE EGT PROBE.

CAUTION DO NOT APPLY TOO MUCH TORQUE TO THE CAPTIVE NUTS. IF YOU APPLY TOO MUCH TORQUE TO THE CAPTIVE NUTS, YOU CAN CAUSE DAMAGE TO THE TERMINALS ON THE EGT PROBE.

(1) Install the EGT probe [1]:

NOTE: The correct position of the leads is in a direction that is aligned with the body of the probe pointing in the TCF direction.

(a) Remove the protective cover from the mounting pad of the turbine center frame.

(b) Lubricate the bolts [4] with Acheson GP460 compound, D50043 [C02-058].

(c) Put the new gasket [3] on the EGT probe [1] flange.

(d) Install the EGT probe [1] into the mounting pad.

NOTE: Make sure that you install the connector nuts onto the thermocouple probe studs by hand before you tighten the nuts. If you do not obey, the damage to the threads on the connector nuts or the probes studs can occur.

1) Install the bolts [4].

2) Tighten the bolts [4] to 110-120 pound-inches (12.4-13.6 Newton-meters).

3) Install the safety cable, G02325 [C10-145] or lockwire, G01505 on the bolts [4].

(e) Install the lead [2A] on the EGT probe [1]:

NOTE: The EGT probe has two terminals and two connector nuts. One terminal has a smaller diameter than the other terminal. The smaller connector nut is installed on the smaller terminal. The larger connector nut is installed on the larger terminal.

1) Attach the lead [2A] to the EGT probe [1].

2) Tighten the captive nut to 29-35 pound-inches (3.3-4.0 Newton-meters).

NOTE: During tightening, hold the terminal lead in place, so it does not rotate.

(f) Install the lead [2B] on the EGT probe [1]:

NOTE: The EGT probe has two terminals and two connector nuts. One terminal has a smaller diameter than the other terminal. The smaller connector nut is installed on the smaller terminal. The larger connector nut is installed on the larger terminal.

1) Attach the lead [2B] to the EGT probe [1].

NOTE: During tightening, hold the terminal lead in place, so it does not rotate.

2) Tighten the captive nut to 17–19 pound-inches (1.9-2.1 Newton-meters).

H. Put the Airplane Back to its Usual Condition.

SUBTASK 77-21-01-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the right thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
416AR	Right Thrust Reverser, Left Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
414AR	Right Fan Cowl Panel, Left Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

I. EGT probe Installation Test

SUBTASK 77-21-01-730-001-H01

(1) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

——— END OF TASK ———

RIGHT EGT HARNESS - REMOVAL/INSTALLATION

1. General

A. This procedure contains two tasks:

(1) A removal of the right EGT harness.

(2) An installation of the right EGT harness.

TASK 77-21-04-000-801-H01

2. Right EGT Harness Removal

(Figure 401)

A. General

(1) This task is the removal procedure for the right EGT harness.

(2) To remove the right EGT harness, you must open the thrust reversers.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Prepare for the Removal

SUBTASK 77-21-04-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the left and right thrust reversers on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left and right fan cowl panels, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the left and right thrust reversers, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

G. Right EGT harness Removal

SUBTASK 77-21-04-020-001-H01

(1) Remove the right EGT harness [1] that attaches to the electrical harness (W721) [2]:

(a) Remove the bolts [4] from the loop clamps [5] that attaches to the engine brackets.

CAUTION MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(b) Use the teflon-jawed pliers, STD-664 to disconnect the electrical harness (W721) [2] connector (DP72103) from the right EGT harness [1] receptacle (TASK 70-00-01-400-807-H01).

CAUTION

DO NOT REMOVE THE CAPTIVE NUTS FROM THE LEADS. DAMAGE CAN OCCUR TO THE LEADS OR THE CAPTIVE NUTS.

(c) Remove the right EGT harness [1] from the EGT probes on the right side of the engine:

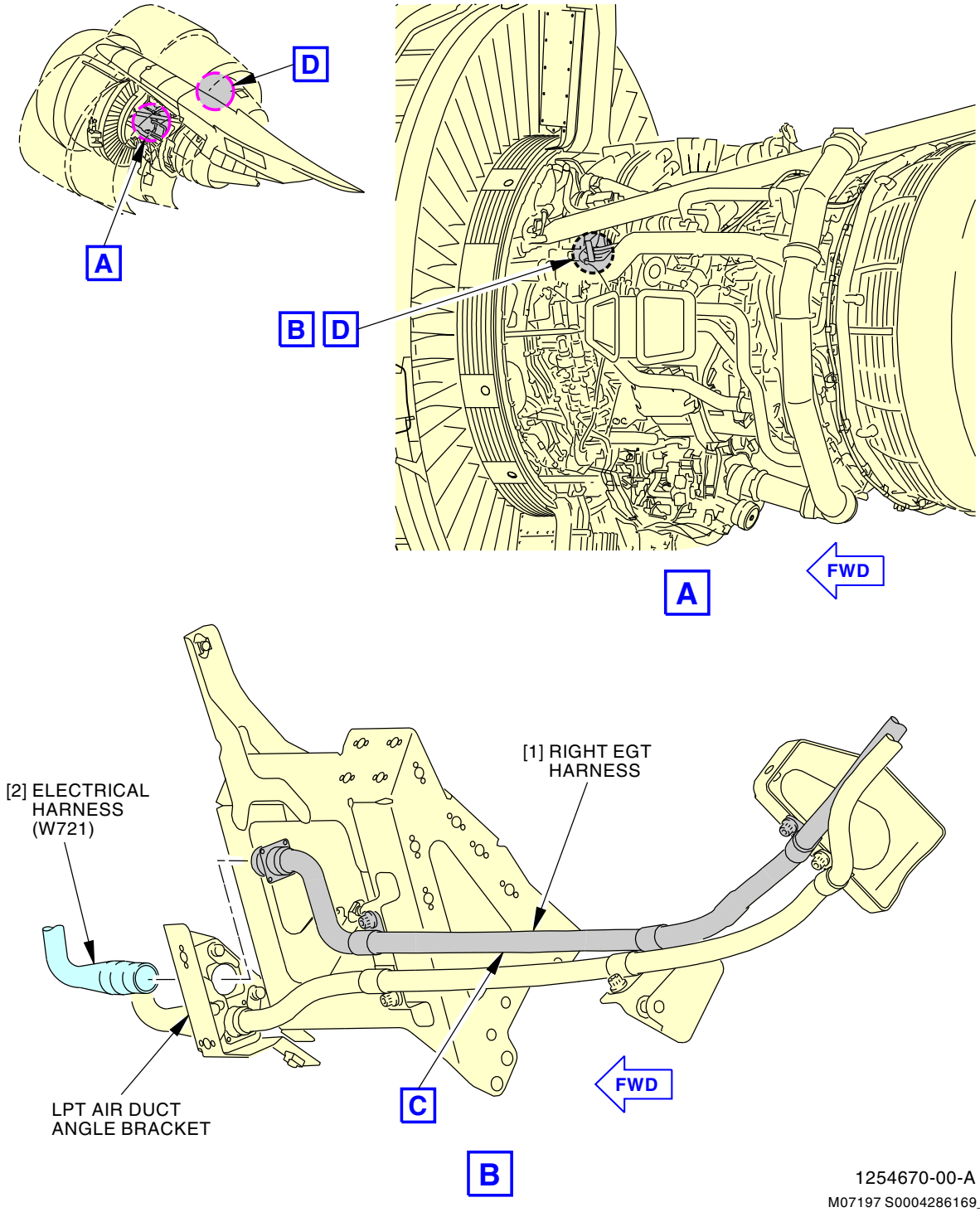
1) Loosen the captive nuts and remove the lead [6A] and lead [6B] from each of the EGT probes.

(d) Disconnect the integral camlocks [3] from the LPT air duct angle bracket.

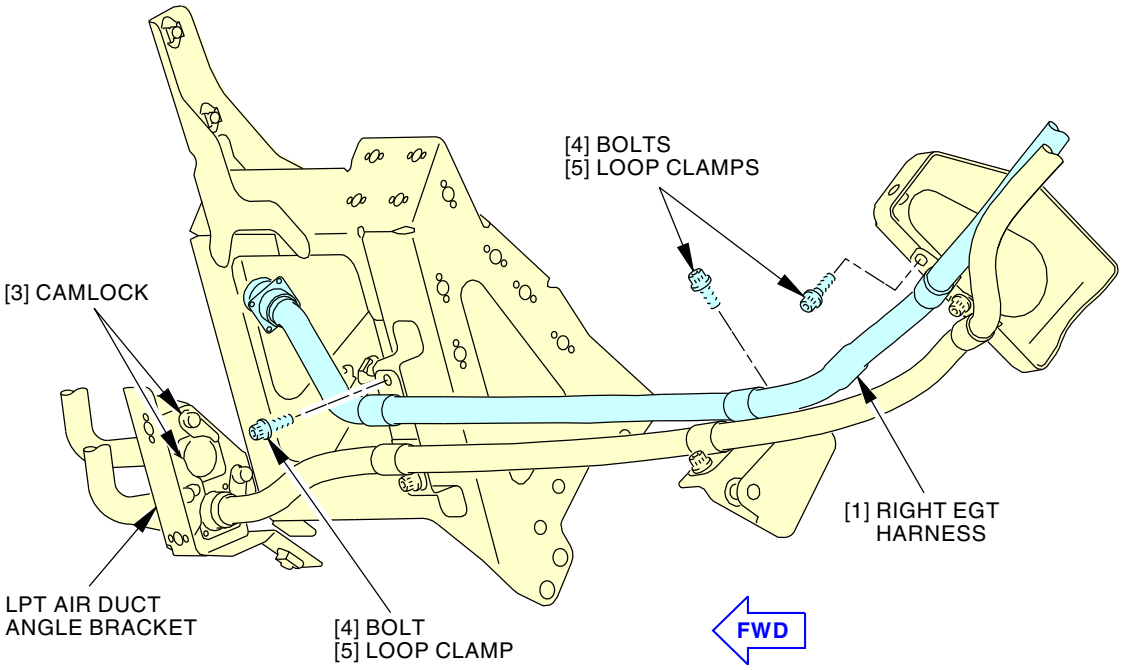
(e) Remove the right EGT harness [1] from the brackets.

(f) Put protective covers on the right EGT harness [1] receptacle, the EGT probe terminals, and the electrical harness (W721) [2].

END OF TASK

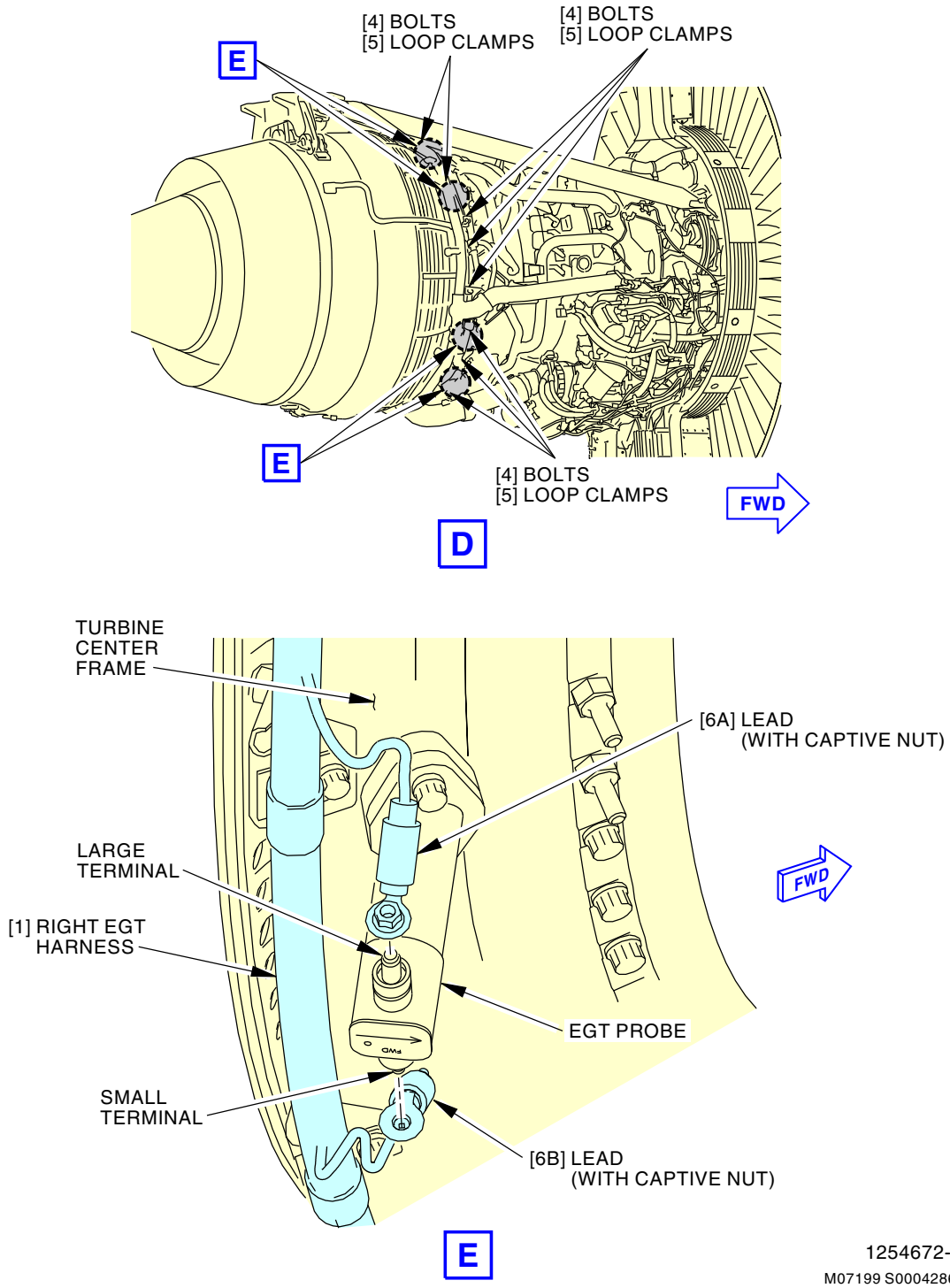


Right EGT Harness Installation
Figure 401/77-21-04-990-801-H01 (Sheet 1 of 3)



1254671-00-A
M07198 S0004286170_V3

Right EGT Harness Installation
Figure 401/77-21-04-990-801-H01 (Sheet 2 of 3)



Right EGT Harness Installation
Figure 401/77-21-04-990-801-H01 (Sheet 3 of 3)

TASK 77-21-04-400-801-H01

3. Right EGT Harness Installation

(Figure 401)

A. General

(1) This task is the installation procedure for the right EGT harness.

(2) After you install the right EGT harness, do these steps:

(a) Close the thrust reversers.

(b) Do the necessary test for the engine.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Right EGT harness	77-21-51-02-025	ARO ALL

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

G. Right EGT Harness Installation

SUBTASK 77-21-04-420-001-H01

(1) Install the right EGT harness [1] that attaches to the electrical harness (W721) [2]:

(a) Remove the protective covers from the right EGT harness [1] receptacle, the EGT probe terminals, and the electrical harness (W721) [2] connector.

(b) Put the right EGT harness [1] receptacle in the cable port (upper) of the LPT air duct angle bracket.

(c) Attach the cable receptacle with the integral camlocks [3] on the bracket.

(d) Install the leads [6A] on each of the EGT probes on the right side of the engine:

NOTE: The EGT probe has two terminals and two connector nuts. One terminal has a smaller diameter than the other terminal. The smaller connector nut is installed on the smaller terminal. The larger connector nut is installed on the larger terminal.

CAUTION BEFORE YOU TORQUE THE CONNECTOR NUTS, MAKE SURE THAT THE THERMOCOUPLE PIGTAIL LEADS WILL NOT TOUCH OTHER ENGINE PARTS DURING ENGINE OPERATION. IF THE LEADS TOUCH ENGINE PARTS, DAMAGE TO THE THERMOCOUPLE CABLE CAN OCCUR.

CAUTION DO NOT APPLY SIDE LOADS ON THE THERMOCOUPLE HARNESS PIGTAIL LEADS DURING REMOVAL OR INSTALLATION. DAMAGE TO THE THERMOCOUPLE PROBE STUDS OR THE MAGNAFORM SLEEVES CAN OCCUR.

CAUTION MAKE SURE THAT THE EGT HARNESS LEADS ARE IN THE CORRECT POSITION BEFORE YOU TIGHTEN THE CAPTIVE NUTS. IF THE LEADS ARE NOT IN THE CORRECT POSITION, YOU CAN CAUSE DAMAGE TO EGT HARNESS LEADS AND THE EGT PROBE.

CAUTION DO NOT APPLY TOO MUCH TORQUE TO THE CAPTIVE NUTS. IF YOU APPLY TOO MUCH TORQUE TO THE CAPTIVE NUTS, YOU CAN CAUSE DAMAGE TO THE TERMINALS ON THE EGT PROBE.

1) Insert the anti-rotation pin into the keyway in each of the EGT probes.
2) Attach each lead [6A] to the EGT probes with the captive nut.

   NOTE: The correct position of the leads is in a direction that is aligned with the body of the probe pointing in the TCF direction.

3) Tighten the captive nut to 31-34 pound-inches (3.5-3.8 Newton-meters).

(e) Install the leads [6B] on each of the EGT probes on the right side of the engine:

NOTE: The EGT probe has two terminals and two connector nuts. One terminal has a smaller diameter than the other terminal. The smaller connector nut is installed on the smaller terminal. The larger connector nut is installed on the larger terminal.

1) Insert the anti-rotation pin into the keyway in each of the EGT probes.
2) Attach each lead [6B] to the EGT probes with the captive nut.
3) Tighten the captive nut to 17-19 pound-inches (1.9-2.1 Newton-meters).

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

(CAUTION PRECEDES)

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(f) Use the teflon-jawed pliers, STD-664 to connect the electrical harness (W721) [2] connector to the right EGT harness [1] receptacle (TASK 70-00-01-400-807-H01).

1) Tighten the electrical harness (W721) [2] connector.

(g) Attach the loop clamps [5] to the engine brackets with the bolts [4].

(h) Tighten all the bolts [4] to 110-120 pound-inches (12.4-13.6 Newton-meters).

H. Put the Airplane Back to Its Usual Condition

SUBTASK 77-21-04-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the left and right thrust reversers on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

I. Right EGT Harness Test

SUBTASK 77-21-04-730-001-H01

(1) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

——— END OF TASK ———

LEFT EGT HARNESS - REMOVAL/INSTALLATION

1. General

A. This procedure contains two tasks:

(1) A removal of the left EGT harness

(2) An installation of the left EGT harness.

TASK 77-21-05-000-801-H01

2. Left EGT Harness Removal

(Figure 401)

A. General

(1) This task is the removal procedure for the left EGT harness.

(2) To get access to the left EGT harness, you must open the thrust reversers.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

F. Prepare for the Removal

SUBTASK 77-21-05-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the left and right thrust reversers on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left and right fan cowl panels, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the left and right thrust reversers, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

G. Left EGT Harness Removal

SUBTASK 77-21-05-020-001-H01

(1) Remove the left EGT harness [1] that attaches to the electrical harness (W722) [2]:

(a) Remove the bolts [4] from the loop clamps [5] that attaches to the engine brackets.

CAUTION MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(b) Use teflon-jawed pliers, STD-664 to disconnect the electrical harness (W722) [2] connector from the left EGT harness [1] receptacle (TASK 70-00-01-400-807-H01).

CAUTION

DO NOT REMOVE THE CAPTIVE NUTS FROM THE LEADS. DAMAGE CAN OCCUR TO THE LEADS OR THE CAPTIVE NUTS.

(c) Remove the left EGT harness [1] from the EGT harness on the left side of the engine:

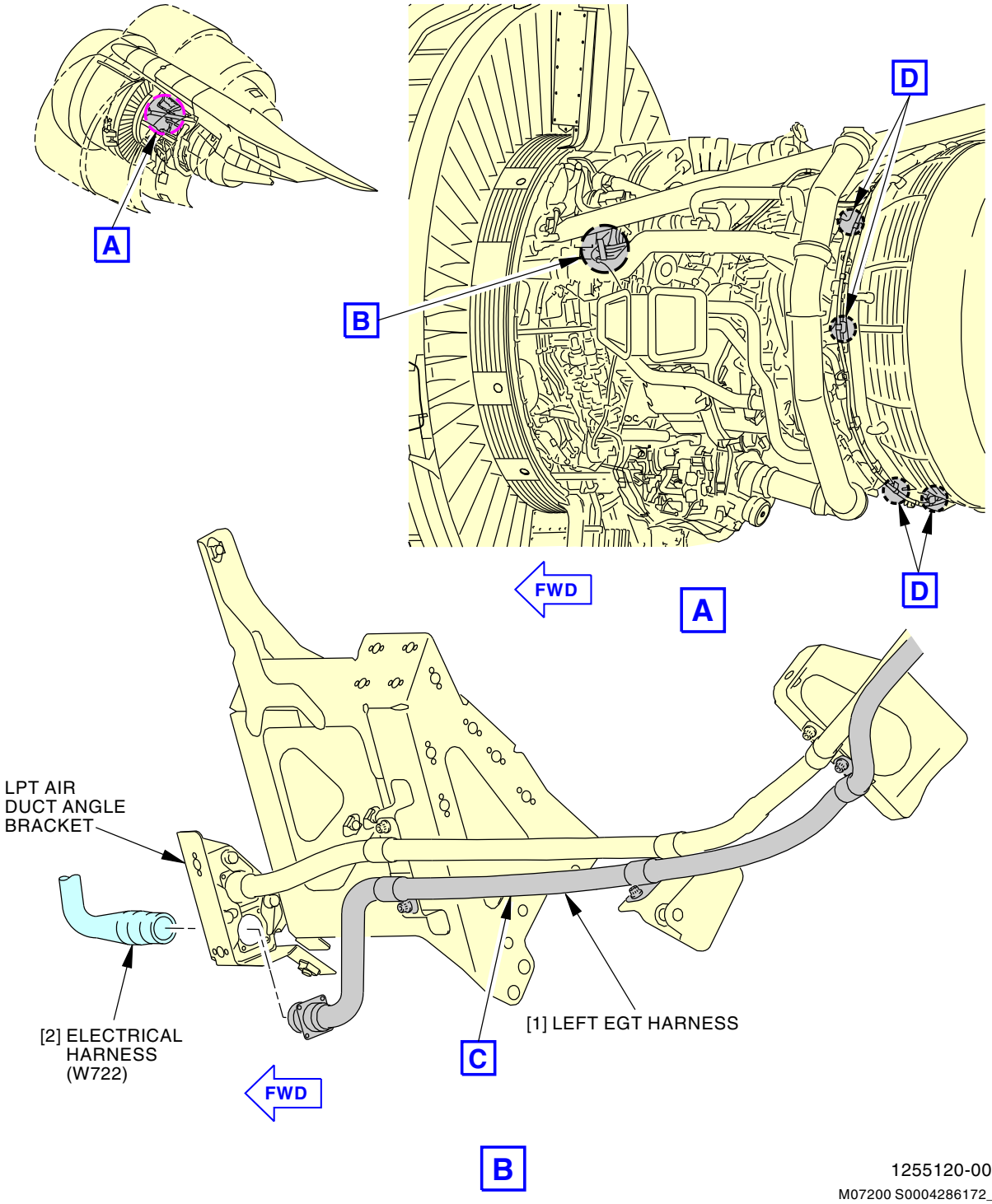
1) Loosen the captive nuts and remove the leads [6A] and leads [6B] from each of the EGT harness.

(d) Disconnect the integral camlocks [3] from the LPT air duct angle bracket.

(e) Remove the left EGT harness [1] from the brackets.

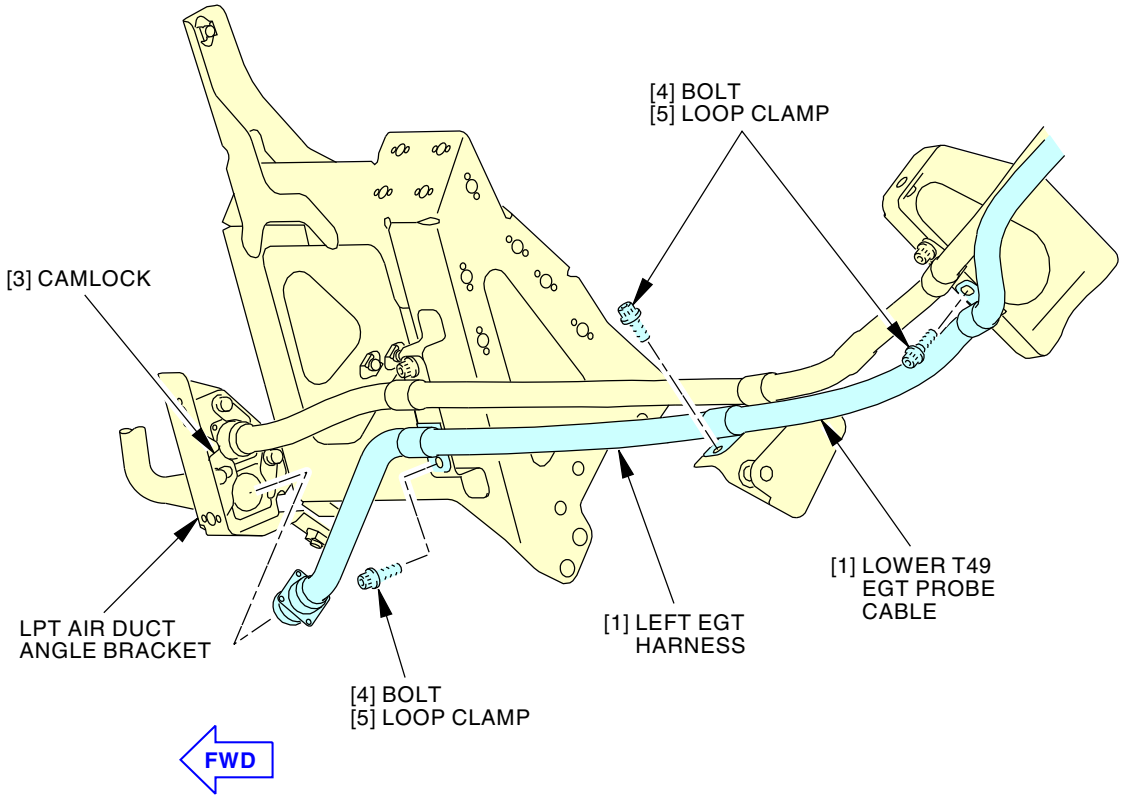
(f) Put protective covers on the left EGT harness [1] receptacle, the EGT harness terminals, and the electrical harness (W722) [2] connector.

——— END OF TASK ———



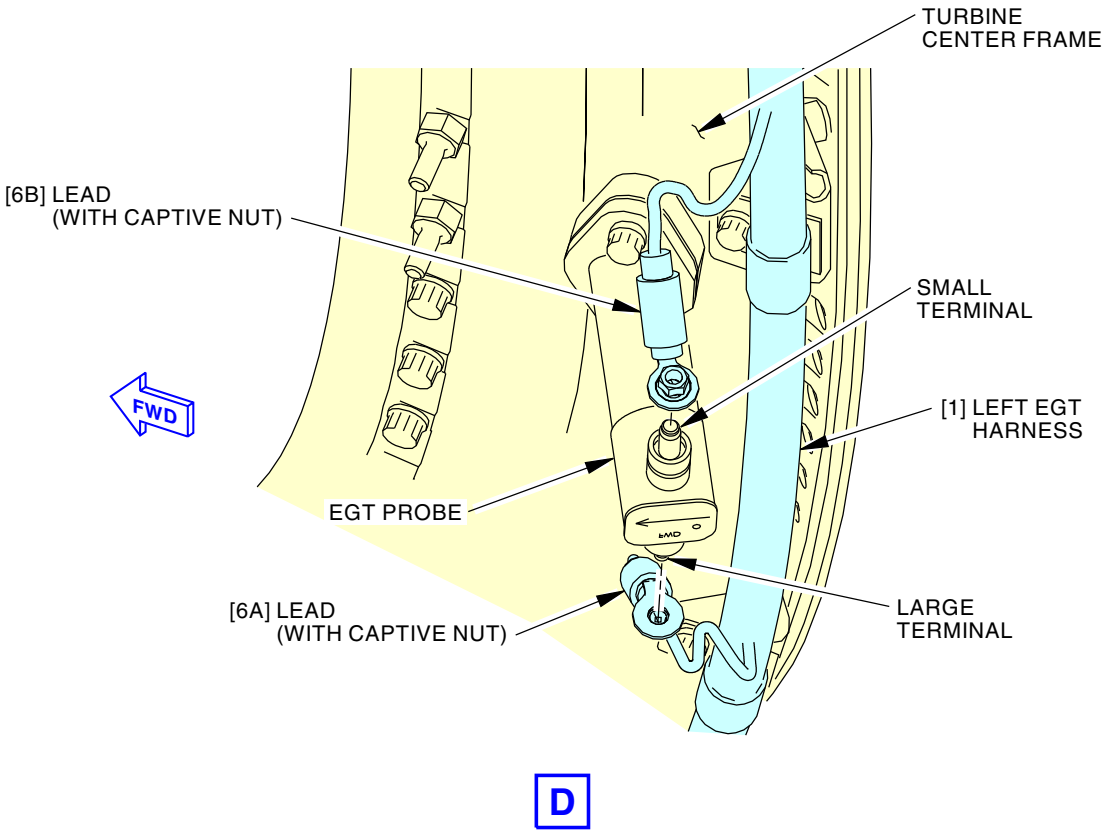
1255120-00-A
M07200 S0004286172_V3

Left EGT Harness Installation
Figure 401/77-21-05-990-801-H01 (Sheet 1 of 3)



1255121-00-A
M07201 S0004286173_V3

Left EGT Harness Installation
Figure 401/77-21-05-990-801-H01 (Sheet 2 of 3)



155122-00-A

M07203 S0004286175_V3

Left EGT Harness Installation
Figure 401/77-21-05-990-801-H01 (Sheet 3 of 3)

TASK 77-21-05-400-801-H01

3. Left EGT Harness Installation

(Figure 401)

A. General

(1) This task is the installation procedure for the left EGT harness.

(2) After you install the left EGT harness, do these steps:

(a) Close the thrust reversers.

(b) Do the operational test for the engine.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-00-00-800-833-H00	Power Plant Test Reference Table (P/B 501)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	Left EGT harness	77-21-51-02-020	ARO ALL

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

G. Left EGT Harness Installation

SUBTASK 77-21-05-420-001-H01

(1) Install the left EGT harness [1] that attaches to the electrical harness (W722) [2]:

(a) Remove the protective covers from the left EGT harness [1] receptacle, the left EGT harness terminals, and the electrical harness (W722) [2] connector.

(b) Put the left EGT harness [1] receptacle in the cable port (lower) of the LPT air duct angle bracket.

(c) Attach the cable receptacle with the integral camlocks [3] on the bracket.

(d) Install the leads [6B] on each of the EGT probe on the left side of the engine:

NOTE: The EGT probe has two terminals and two connector nuts. One terminal has a smaller diameter than the other terminal. The smaller connector nut is installed on the smaller terminal. The larger connector nut is installed on the larger terminal.

CAUTION BEFORE YOU TORQUE THE CONNECTOR NUTS, MAKE SURE THAT THE THERMOCOUPLE PIGTAIL LEADS WILL NOT TOUCH OTHER ENGINE PARTS DURING ENGINE OPERATION. IF THE LEADS TOUCH ENGINE PARTS, DAMAGE TO THE THERMOCOUPLE CABLE CAN OCCUR.

CAUTION DO NOT APPLY SIDE LOADS ON THE THERMOCOUPLE HARNESS PIGTAIL LEADS DURING REMOVAL OR INSTALLATION. DAMAGE TO THE THERMOCOUPLE PROBE STUDS OR THE MAGNAFORM SLEEVES CAN OCCUR.

CAUTION MAKE SURE THAT THE EGT HARNESS LEADS ARE IN THE CORRECT POSITION BEFORE YOU TIGHTEN THE CAPTIVE NUTS. IF THE LEADS ARE NOT IN THE CORRECT POSITION, YOU CAN CAUSE DAMAGE TO EGT HARNESS LEADS AND THE EGT PROBE.

CAUTION DO NOT APPLY TOO MUCH TORQUE TO THE CAPTIVE NUTS. IF YOU APPLY TOO MUCH TORQUE TO THE CAPTIVE NUTS, YOU CAN CAUSE DAMAGE TO THE TERMINALS ON THE EGT PROBE.

1) Insert the anti-rotation pin into the keyway in each of the EGT probes.
2) Attach each lead [6B] to the EGT probes with the captive nut.

   NOTE: The correct position of the leads is in a direction that is aligned with the body of the probe pointing in the TCF direction.
3) Tighten the captive nut to 17-19 pound-inches (1.9–2.1 Newton-meters).

(e) Install the leads [6A] on each of the EGT probes on the left side of the engine:

NOTE: The EGT probe has two terminals and two connector nuts. One terminal has a smaller diameter than the other terminal. The smaller connector nut is installed on the smaller terminal. The larger connector nut is installed on the larger terminal.

1) Insert the anti-rotation pin into the keyway in each of the EGT probes.
2) Attach each lead [6A] to the EGT probes with the captive nut.
3) Tighten the captive nut to 31-34 pound-inches (3.5-3.8 Newton-meters).

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

(CAUTION PRECEDES)

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(f) Use teflon-jawed pliers, STD-664 to connect the electrical harness (W722) [2] connector to the left EGT harness [1] receptacle (TASK 70-00-01-400-807-H01).

1) Tighten the electrical harness (W722) [2] connector.

(g) Attach the loop clamps [5] to the engine brackets with the bolts [4].

(h) Tighten all the bolts [4] to 110-120 pound-inches (12.4-13.6 Newton-meters).

H. Put the Airplane Back to Its Usual Condition

SUBTASK 77-21-05-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Do these tasks in sequence to safely close the left and right thrust reversers on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

I. Left EGT harness Test

SUBTASK 77-21-05-710-002-H01

(1) Do the tests listed in the Power Plant Test Reference Table (TASK 71-00-00-800-833-H00).

END OF TASK

AIRBORNE VIBRATION MONITORING (AVM) SYSTEM - INSPECTION/CHECK

1. General

A. This procedure has one task:

(1) An inspection of the airborne vibration monitoring (AVM) system.

TASK 77-31-00-200-801-H01

2. Engine Vibration Monitoring (AVM) System Inspection

A. General

(1) This task is the inspection procedure for the engine vibration monitoring system (AVM).

(2) The AVM system inspection includes these checks.

(a) Visually examine the No. 1 bearing accelerometer for damage.

(b) Examine the turbine center frame (referred to as TCF) accelerometer for damage.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
45-10-00-740-817	How to Find Maintenance Messages from the Present Leg that are not Correlated (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
77-31-06-400-801-H01	Turbine Center Frame Accelerometer Installation (P/B 401)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Consumable Materials

Reference	Description	Specification
B00679 [C04-035]	Alcohol - Isopropyl	
B50318 [C04-257]	Cleaner - Electrical Contact - Eco Spray	
B50319 [C04-254]	Cleaner - Electrical Contact - CRC Precision Cleaner Plus	
B50320 [C04-197]	Solvent - General - MagChem Diestone MTK	
B50322 [C04-199]	Solvent - Isoparaffinic - CE-SX-94, GB-SX-94, and L-SX-94	
B50324 [C04-253]	Cleaner - Electrical Contact - Super Degreaser	
C50233 [C04-258]	Cleaner - Electrical Contact Cleaner / Lubricant - ProGold GX100L or GX5L	

(Continued)

Reference	Description	Specification
G02330 [P05-058]	Brush - Stiff Bristle, Non-Metallic - Tampico GA55-1	
G50939 [C10-207]	Swab - Lint Free Rayon Tip	

E. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

F. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

G. Airborne Vibration Monitoring (AVM) System Inspection

SUBTASK 77-31-00-810-001-H01

(1) Look on the MAT for AVM maintenance messages (TASK 45-10-00-740-817).

(a) If a maintenance message is found, do the applicable task in the Fault Isolation Manual.

(b) If no message is found, then continue with the steps that follow.

SUBTASK 77-31-00-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(2) Do these tasks in sequence to safely open the left and right thrust reversers on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left and right fan cowl panels, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

(e) For the left and right thrust reversers, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

SUBTASK 77-31-00-210-001-H01

(3) Visually examine the No. 1 bearing accelerometer for damage (Figure 601):

(a) Signs of a loose electrical connector

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

1) If the electrical connector is loose, use teflon-jawed pliers, STD-664 to tighten the electrical connector.

(b) Do an inspection of the full length of the electrical harness from the No.1 bearing accelerometer to the remote charge converter.

1) Make sure there is no damage or chaffing on the accelerometer cable and harness.

(c) Remove all electrical connectors in the electrical wiring harnesses between the number 1 bearing accelerometer and the engine/airplane strut and to the Remote Charge Converter (RCC) M77101 (M77026).

1) Use your hand or teflon-jawed pliers, STD-664 to loosen the electrical connectors.

2) Visually examine the electrical connector and receptacle for obvious signs of damage, bent pins, contamination, or corrosion.

a) Replace the electrical connector or receptacle if damage is found.

3) Clean each electrical connector and receptacle.

WARNING DO NOT SPRAY FLAMMABLE CLEANERS AROUND POSSIBLE IGNITION SOURCES. MAKE SURE ALL ELECTRICAL POWER IS TURNED OFF, OR INJURY CAN OCCUR. IF CLEANING OF THE CONNECTORS IS DONE DURING THE ENGINE TEST, FOLLOW ALL OF THE LOCAL PROCEDURES RELATED TO COMBUSTIBLE MATERIAL HANDLING AND USE IN AND AROUND HOT ENGINE HARDWARE.

4) Spray the cleaner on the electrical contacts at ambient temperature, or at safe temperatures recommended by the manufacturer.

a) The cleaners are:

<1> solvent, B50320 [C04-197]

<2> solvent, B50322 [C04-199]

<3> electrical contact cleaner, B50324 [C04-253]

<4> electrical contact cleaner, B50319 [C04-254]

<5> alcohol, B00679 [C04-035]

<6> electrical contact cleaner, B50318 [C04-257]

<7> electrical contact cleaner, C50233 [C04-258]

b) Wipe off the area to be cleaned with a clean cloth, Tampico GA55-1 brush, G02330 [P05-058], or equivalent to remove loosened dirt and excess cleaner. While area is wet with cleaner use a Tampico GA55-1 brush, G02330 [P05-058] to clean around connector contacts, flushing with cleaner as required

WARNING USE EYE PROTECTION WHEN YOU USE COMPRESSED AIR TO CLEAN, COOL, OR DRY PARTS OR TOOLS. PARTICLES CAN CAUSE AN INJURY TO YOUR EYES. DO NOT USE MORE THAN 30 PSIG (200 KPA). DO NOT POINT COMPRESSOR AIR AT YOURSELF OR OTHER PERSONS.

<1> If necessary, blow dry with clean, filtered air at 30 psi (200 kPa) pressure maximum.

<2> Inspect and repeat cleaning as required.

<3> Coat the metal surfaces of the contacts with electrical contact cleaner, C50233 [C04-258], at each contact location using a short burst from the spray container or a lint free swabs, G50939 [C10-207] wetted with liquid version. Allow to air dry for 10 - 15 seconds.

5) Install and tighten using teflon-jawed pliers, STD-664 all electrical connectors in the electrical wiring harnesses between the number 1 bearing accelerometer and the engine/airplane strut and to the Remote Charge Converter (RCC) M77101 (M77026).

SUBTASK 77-31-00-210-003-H01

(4) Examine the TCF accelerometer for damage (Figure 601).

(a) Cracks in the mounting flange

1) Cracks are not permitted in the mounting flange.

(b) Signs of a loose TCF accelerometer

1) If the bolts are loose, tighten the bolts (TASK 77-31-06-400-801-H01).

(c) Do an inspection of the full length of the lead and electrical harness from the TCF accelerometer to the remote charge converter.

1) Damage or chaffing is not permitted.

(d) Remove all electrical connectors in the electrical wiring harnesses between the TFC accelerometer and the engine/airplane strut and to the Remote Charge Converter (RCC) M77101 (M77026).

1) Use your hand or teflon-jawed pliers, STD-664 to loosen the electrical connectors.

2) Visually examine the electrical connector and receptacle for obvious signs of damage, bent pins, contamination, or corrosion.

a) Replace the electrical connector or receptacle if damage is found.

3) Clean each electrical connector and receptacle.

WARNING DO NOT SPRAY FLAMMABLE CLEANERS AROUND POSSIBLE IGNITION SOURCES. MAKE SURE ALL ELECTRICAL POWER IS TURNED OFF, OR INJURY CAN OCCUR. IF CLEANING OF THE CONNECTORS IS DONE DURING THE ENGINE TEST, FOLLOW ALL OF THE LOCAL PROCEDURES RELATED TO COMBUSTIBLE MATERIAL HANDLING AND USE IN AND AROUND HOT ENGINE HARDWARE.

4) Spray the cleaner on the electrical contacts at ambient temperature, or at safe temperatures recommended by the manufacturer.

   a) The cleaners are:

      <1> solvent, B50320 [C04-197]

      <2> solvent, B50322 [C04-199]

      <3> electrical contact cleaner, B50324 [C04-253]

      <4> electrical contact cleaner, B50319 [C04-254]

      <5> alcohol, B00679 [C04-035]

      <6> electrical contact cleaner, B50318 [C04-257]

      <7> electrical contact cleaner, C50233 [C04-258]

   b) Wipe off the area to be cleaned with a clean cloth, Tampico GA55-1 brush, G02330 [P05-058], or equivalent to remove loosened dirt and excess cleaner. While area is wet with cleaner use a Tampico GA55-1 brush, G02330 [P05-058] to clean around connector contacts, flushing with cleaner as required

WARNING USE EYE PROTECTION WHEN YOU USE COMPRESSED AIR TO CLEAN, COOL, OR DRY PARTS OR TOOLS. PARTICLES CAN CAUSE AN INJURY TO YOUR EYES. DO NOT USE MORE THAN 30 PSIG (200 KPA). DO NOT POINT COMPRESSOR AIR AT YOURSELF OR OTHER PERSONS.

      <1> If necessary, blow dry with clean, filtered air at 30 psi (200 kPa) pressure maximum.

      <2> Inspect and repeat cleaning as required.

      <3> Coat the metal surfaces of the contacts with electrical contact cleaner, C50233 [C04-258], at each contact location using a short burst from the spray container or a lint free swabs, G50939 [C10-207] wetted with liquid version. Allow to air dry for 10 - 15 seconds.

5) Install and tighten using teflon-jawed pliers, STD-664 all electrical connectors in the electrical wiring harnesses between the TFC accelerometer and the engine/airplane strut and to the Remote Charge Converter (RCC) M77101 (M77026).

SUBTASK 77-31-00-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(5) Do these tasks in sequence to safely close the left and right thrust reversers on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
416AR	Right Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine
426AR	Right Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

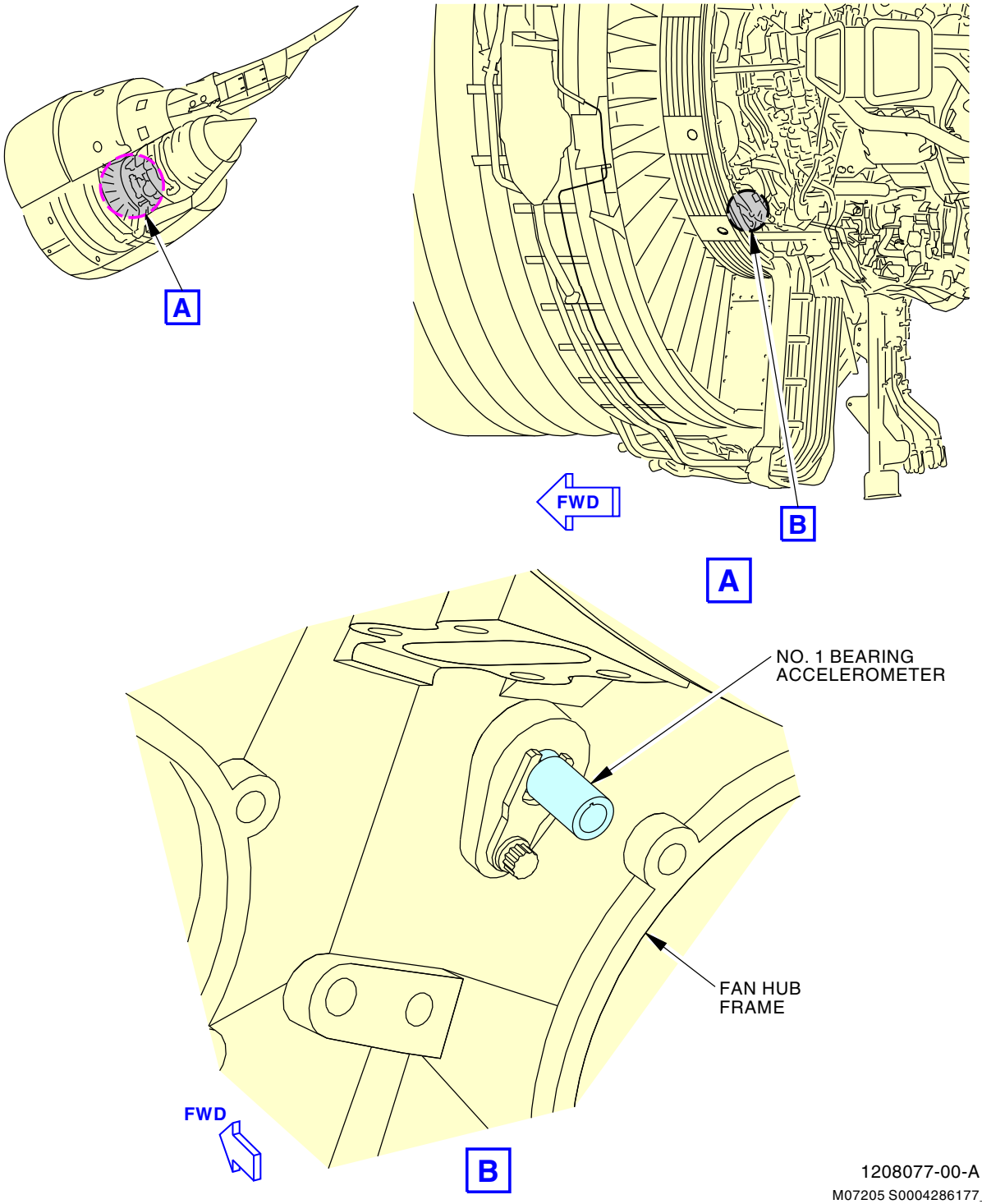
1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
414AR	Right Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
424AR	Right Fan Cowl Panel, Right Engine

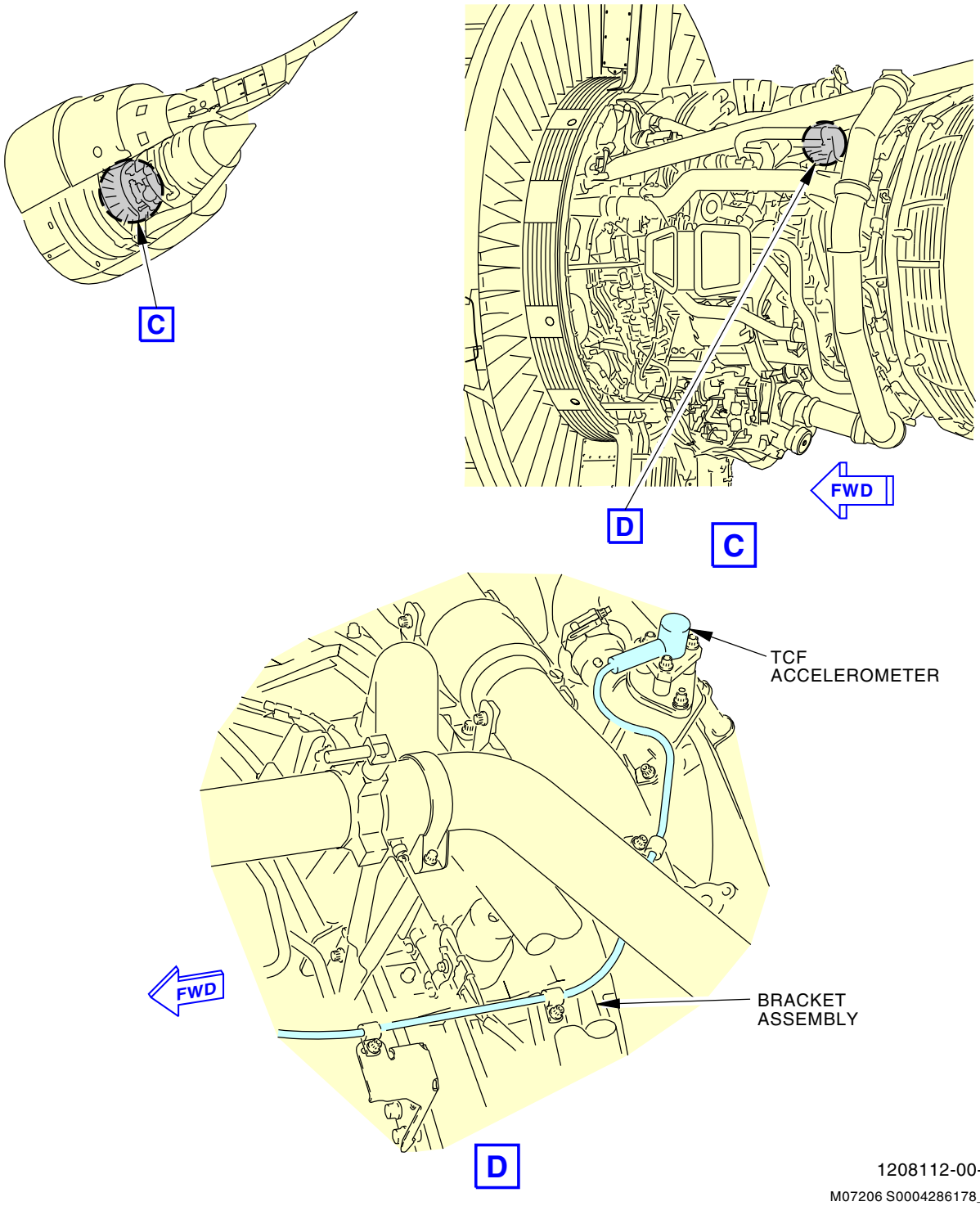
(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

——— END OF TASK ———



Airborn Vibration Monitoring System Inspection
Figure 601/77-31-00-990-801-H01 (Sheet 1 of 2)



Airborn Vibration Monitoring System Inspection
Figure 601/77-31-00-990-801-H01 (Sheet 2 of 2)

REMOTE CHARGE CONVERTER - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the remote charge converter

(2) An installation of the remote charge converter.

TASK 77-31-02-000-801-H01

2. Remote Charge Converter Removal

A. General

(1) The remote charge converter (referred to as the RCC) is installed in the strut.

(2) You need to use the fall arrest lifeline procedure or other safety equipment to do this task.

(3) To remove the remote charge converter, you must remove the left forward access fairing panel.

B. References

Reference	Title
54-52-00-910-804-001	Fall Arrest Lifeline Procedure (P/B 201)
54-52-01-000-801-001	Forward Fairings Removal (P/B 401)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
432	Forward Torque Box - Left Nacelle Strut
442	Forward Torque Box - Right Nacelle Strut

E. Access Panels

Number	Name/Location
431CL	Forward Access Fairing, Left Strut
441CL	Forward Access Fairing, Right Strut

F. Prepare for the Removal

SUBTASK 77-31-02-490-003-H01

WARNING USE THE FALL ARREST LIFELINE PROCEDURE IF YOU DO NOT USE OTHER SAFETY EQUIPMENT. IF YOU USE THE SAFETY EQUIPMENT OR PROCEDURES INCORRECTLY, IT CAN CAUSE INJURY OR KILL YOU.

(1) If you do not use other safety equipment, do the (strut-mounted) Fall Arrest Lifeline Procedure (TASK 54-52-00-910-804-001).

SUBTASK 77-31-02-010-001-H01

(2) For the applicable forward access fairing, do this task: Forward Fairings Removal, TASK 54-52-01-000-801-001.

(a) Remove these applicable access panels:

Number	Name/Location
431CL	Forward Access Fairing, Left Strut
441CL	Forward Access Fairing, Right Strut

SUBTASK 77-31-02-865-001-H01

(3) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
C	23	C77403	L ENG VIB MON

Right Power Management Panel, P210

Row	Col	Number	Name
E	6	C77400	R ENG VIB MON

G. Remote Charge Converter Removal

SUBTASK 77-31-02-020-001-H01

(1) Remove the RCC [1] (Figure 401):

CAUTION MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

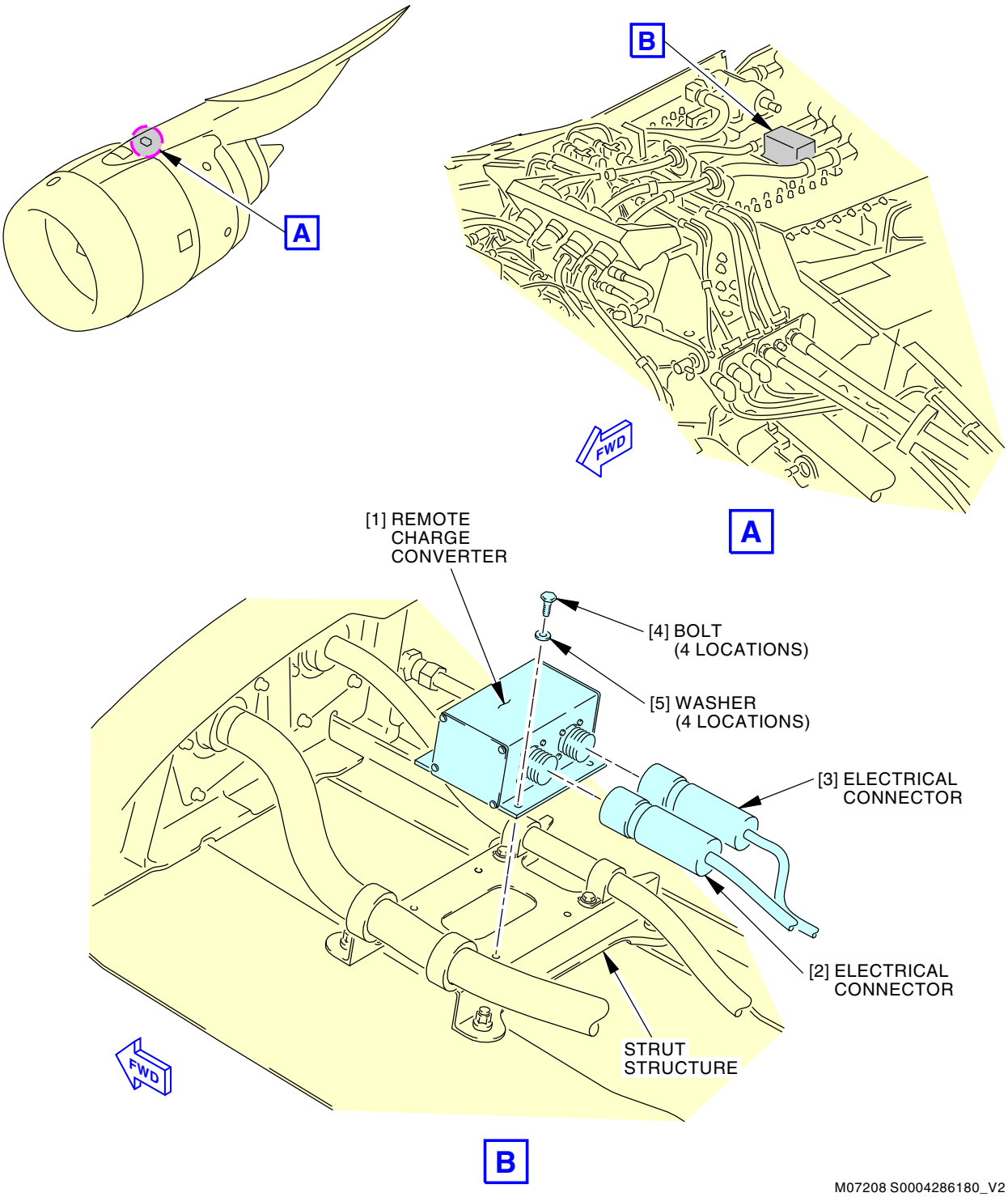
(a) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [2] and electrical connector [3] from the RCC [1] (TASK 70-00-01-400-807-H01).

(b) Install the protective caps on all connectors and receptacles.

(c) Remove the four bolts [4] and the washers [5] that attach the RCC [1] to the strut structure.

(d) Remove the RCC [1] from the strut structure.

END OF TASK



Remote Charge Converter Installation
Figure 401/77-31-02-990-801-H01

TASK 77-31-02-400-801-H01

3. Remote Charge Converter Installation

A. General

(1) You need to use the fall arrest lifeline procedure or other safety equipment to do this task.

(2) You must do the steps followings after you install the remote charge converter.

(a) You must access the maintenance access terminal (MAT) to find the fault messages after you install the remote charge converter.

(b) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

B. References

Reference	Title
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)
54-52-00-910-804-001	Fall Arrest Lifeline Procedure (P/B 201)
54-52-01-400-801-001	Forward Fairings Installation (P/B 401)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

Reference	Description
COM-1550	Bonding Meters - Approved, Intrinsically Safe (Approved for use in Class I, Divisions I & II hazardous (classified) locations. Outside these hazardous locations, COM-614 can be used in lieu of COM-1550). Part #: 620LK Supplier: 1CRL2 Part #: M1 Supplier: 3AD17 Part #: T477W Supplier: 01014 Opt Part #: M1B Supplier: 3AD17
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Consumable Materials

Reference	Description	Specification
C00064	Coating - Aluminum Chemical Conversion	BAC5719 Type II Class A (MIL-DTL-5541 Class 1A)
C00259	Coating - Chemical And Solvent Resistant Finish, Corrosion Inhibiting Primer	BMS10-11 Type I

E. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	RCC	Not Specified	

F. Location Zones

Zone	Area
432	Forward Torque Box - Left Nacelle Strut
442	Forward Torque Box - Right Nacelle Strut

G. Access Panels

Number	Name/Location
431CL	Forward Access Fairing, Left Strut
441CL	Forward Access Fairing, Right Strut

H. Remote Charge Converter Installation

SUBTASK 77-31-02-490-004-H01

WARNING USE THE FALL ARREST LIFELINE PROCEDURE IF YOU DO NOT USE OTHER SAFETY EQUIPMENT. IF YOU USE THE SAFETY EQUIPMENT OR PROCEDURES INCORRECTLY, IT CAN CAUSE INJURY OR KILL YOU.

(1) If you do not use other safety equipment, do the (strut-mounted) Fall Arrest Lifeline Procedure (TASK 54-52-00-910-804-001).

SUBTASK 77-31-02-869-003-H01

(2) Prepare to install the RCC [1]:

(a) Use appropriate bonding brush to clean the mating bracket surface at the fastener locations.

(b) Apply the coating, C00064 on the bracket surface.

NOTE: Do not apply to the edges of the bracket or the RCC flange.

(c) Clean the bracket surface.

SUBTASK 77-31-02-420-001-H01

(3) Install the RCC [1] on the strut structure:

(a) Align the RCC [1] bolt holes with the strut bolt holes.

(b) Install the bolts [4] and the washers [5] that attach the RCC [1] to the strut structure.

(c) Apply the primer, C00259 on all exposed bare surfaces of the bracket.

(d) With an intrinsically safe approved bonding meter, COM-1550, make sure the resistance between the primary structure and the RCC [1] is not more than 0.008 ohm.

(e) Tighten the bolts [4] to 27-33 pound-inches (3.0-3.7 Newton-meters).

(f) Remove the protective caps from the electrical connector [2] and electrical connector [3], and the receptacles.

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(g) Use teflon-jawed pliers, STD-664 to connect the electrical connector [2] and electrical connector [3] to the receptacles (TASK 70-00-01-400-807-H01).

I. RCC Test

SUBTASK 77-31-02-865-002-H01

(1) Remove the safety tags and close these circuit breakers:

Left Power Management Panel, P110

Row	Col	Number	Name
C	23	C77403	L ENG VIB MON

Right Power Management Panel, P210

Row	Col	Number	Name
E	6	C77400	R ENG VIB MON

SUBTASK 77-31-02-869-004-H01

(2) Use a maintenance access terminal (MAT) to make sure there are no maintenance messages for the remote charge converter:

(a) Make these selections on the MAT:

1) ONBOARD MAINTENANCE
2) EXTENDED MAINTENANCE
3) EXISTING FAULTS.

(b) Look for 71-80 Left Engine or 71-80 Right Engine.

NOTE: If 71-80 Left or Right Engine does not show, then there are no maintenance messages in existing faults for the remote charge converter.

(c) If 71-80 Left or Right Engine shows, do this:

1) Select the 71-80 Left or Right Engine.
2) Select CONTINUE.
3) Look at the maintenance messages that show and make sure there are no maintenance messages for the AVM system on the applicable engine.
4) If a maintenance message for the AVM sytem shows, refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

J. Put the Airplane Back to Its Usual Condition

SUBTASK 77-31-02-410-001-H01

(1) For the applicable forward access fairing, do this task: Forward Fairings Installation, TASK 54-52-01-400-801-001.

(a) Install these applicable access panels:

Number	Name/Location
431CL	Forward Access Fairing, Left Strut
441CL	Forward Access Fairing, Right Strut

SUBTASK 77-31-02-090-001-H01

(2) Remove the fall arrest equipment (TASK 54-52-00-910-804-001).

——— END OF TASK ———

AIRBORNE VIBRATION MONITOR (AVM) SIGNAL CONDITIONER UNIT - MAINTENANCE PRACTICES

1. General

A. This procedure has one task:

(1) An installation of the airborne vibration monitor (AVM) signal conditioner unit (SCU) software.

TASK 77-31-03-400-801-H01

2. Airborne Vibration Monitoring (AVM) Signal Conditioner Unit Software Installation

A. General

(1) This procedure tells you how to install software in the signal conditioner unit (SCU). The SCU must contain this piece of software:

- SCU DB

REF: AIPC 46-00-00-77C

(2) You must install the software for the two signal conditioner units (SCU).

(3) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System TASK 45-10-00-740-808.

(4) The airplane must be on the ground with the engines stopped before you can install software.

(5) If you do not know if the SCU needs new software, you can first do the software configuration check. It will save time if you only install software when the software is missing or the part number is incorrect. You can find the software configuration check in this task: Airborne Vibration Monitor (AVM) Signal Conditioner Unit Installation, TASK 77-31-03-400-804-H00.

(6) You can install the software from disks, the MAT hard drive or the PMAT hard drive (if available). It is recommended that you install software from the MAT or PMAT hard drive. To install new software on the MAT or PMAT hard drive, do this task: How to Add Software to the Hard Drive, TASK 45-10-00-860-812.

NOTE: When new software is installed in the SCU, the load process first erases the old software and then installs the new software. If you install software directly to the SCU from a faulty disk, the load process may erase the old software and then fail, so that no software is installed. If you install a faulty disk to the MAT or PMAT hard drive, the load may fail, but you will not erase the software from the SCU.

(a) It is recommended that you remove old software part numbers from the MAT or PMAT hard drive after new software is installed. To remove software from the hard drive, do this task: How to Remove Software from the Hard Drive, TASK 45-10-00-860-813.

(7) To read about the conditions and times necessary for software installation, do this task: On-Airplane Software Installation, TASK 20-15-11-400-801.

B. References

Reference	Title
20-15-11-400-801	On-Airplane Software Installation (P/B 201)
24-22-00-860-805	Supply Electrical Power (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)
45-10-00-860-812	How to Add Software to the Hard Drive (P/B 201)
45-10-00-860-813	How to Remove Software from the Hard Drive (P/B 201)

(Continued)

Reference	Title
77-31-03-400-804-H00	Airborne Vibration Monitor (AVM) Signal Conditioner Unit Installation (P/B 401)
AIPC 46-00-00-77C	Aircraft Illustrated Parts Catalog

C. Location Zones

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
211	Flight Compartment, Left
212	Flight Compartment, Right

D. Procedure

SUBTASK 77-31-03-420-001-H01

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 77-31-03-869-005-H01

(2) Use a maintenance access terminal (MAT) to install software in the signal conditioner unit:

NOTE: Make sure you know the correct software part number for the signal conditioner unit before you select the software part number on the display. For the signal conditioner unit to be an approved installation, the correct software must be installed.

(a) If the software is on a disk, put the correct disk in the disk drive.

(b) Make these selections on the MAT:

1) ONBOARD MAINTENANCE
2) EXTENDED MAINTENANCE
3) DATA LOAD.

(c) Make these selections to select the component that will receive the software:

1) SELECT DESTINATION
2) 71-80 Left Engine or 71-80 Right Engine
3) Signal Conditioner Unit (Left) or Signal Conditioner Unit (Right)
4) CONTINUE.

(d) Make these selections to select the source of the software:

1) SELECT SOURCE
2) Select the source of the software (if Disk Drive is the only selection, it is automatically selected).
3) Select the correct software part number from the display.
4) CONTINUE.

(e) Select START to start the software installation.

(f) When the software installation is completed, make sure the correct software part number shows on the display.

(g) Select CONTINUE to remove the configuration display.

SUBTASK 77-31-03-470-001-H01

(3) Install the new software on the remaining signal conditioner unit.

END OF TASK

AIRBORNE VIBRATION MONITOR (AVM) SIGNAL CONDITIONER UNIT - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the airborne vibration monitor (AVM) signal conditioner unit

(2) An installation of the airborne vibration monitor (AVM) signal conditioner unit.

TASK 77-31-03-000-803-H00

2. Airborne Vibration Monitor (AVM) Signal Conditioner Unit Removal

A. General

(1) The two Airborne Vibration Monitor (AVM) Signal Conditioner Unit (SCU) (referred to as the AVM SCU) are installed in the main E/E rack, on shelf E1-4 and E2-3 or E2-4 . The AVM SCUs are interchangeable.

(2) The AVM SCU is sensitive to electrostatic discharge.

B. Location Zones

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right

C. Prepare for the Removal

SUBTASK 77-31-03-865-002-H01

(1) Open these circuit breakers and install safety tags:

Left Power Management Panel, P110

Row	Col	Number	Name
C	23	C77403	L ENG VIB MON

Right Power Management Panel, P210

Row	Col	Number	Name
E	6	C77400	R ENG VIB MON

D. AVM Signal Conditioner Unit Removal

SUBTASK 77-31-03-080-001-H01

CAUTION

DO NOT TOUCH THE AVM SIGNAL CONDITIONER UNIT BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE AVM SIGNAL CONDITIONER UNIT.

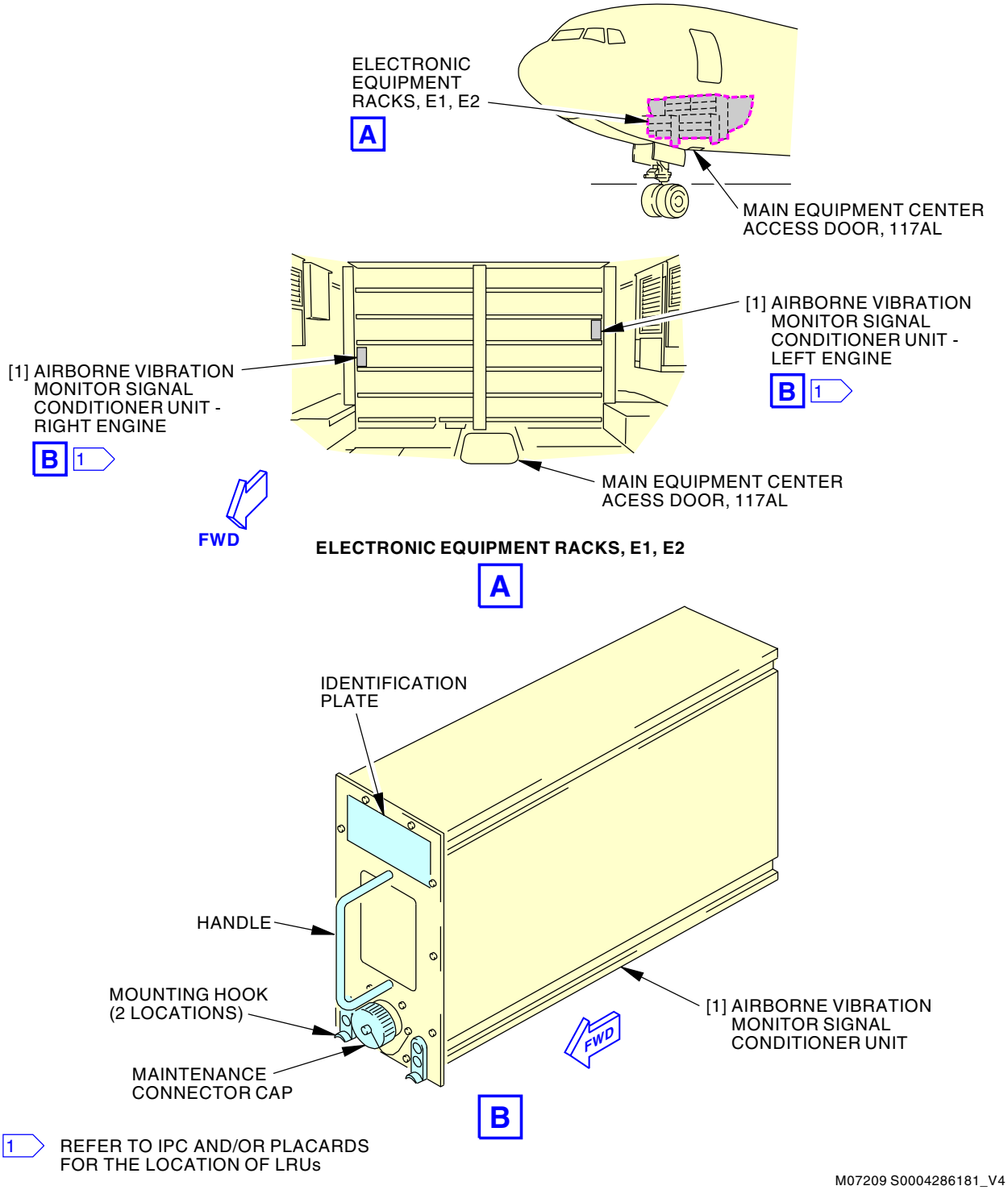
(1) To remove a device that is sensitive to electrostatic discharge (ESDS), do this task: Conductive Dust and Connector Cover Installation (AMM TASK 20-41-01-000-802).

SUBTASK 77-31-03-010-001-H01

(2) To remove the applicable AVM Signal Conditioner Unit [1] from the main E/E rack, do this task: E/E Box Removal (AMM TASK 20-10-01-000-801) (Figure 401).

(a) Install the protective caps on the electrical connectors.

END OF TASK



Airborne Vibration Monitor (AVM) Signal conditioner Unit Installation
Figure 401/77-31-03-990-801-H01

TASK 77-31-03-400-804-H00

3. Airborne Vibration Monitor (AVM) Signal Conditioner Unit Installation

A. General

(1) You must do these steps after you install the Airborne Vibration Monitor (AVM) Signal Conditioner Unit (SCU).

(a) You must access the Maintenance Access Terminal (MAT) to find the fault messages after you install the AVM SCU.

(b) A MAT is necessary for this procedure. For instructions on how to use a MAT, refer to How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

(c) This task also gives steps to make sure that the AVM SCU has the correct software. The configuration check will show a failure if the operational program software is not installed.

B. References

Reference	Title
20-10-01-400-801	E/E Box Installation (P/B 401)
20-41-01-400-802	Conductive Dust Cap and Connector Cover Removal (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)
77-31-03-400-801-H01	Airborne Vibration Monitoring (AVM) Signal Conditioner Unit Software Installation (P/B 201)

C. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	AVM Signal Conditioner Unit	25-17-01-32-505	ARO ALL
		77-31-04-01F-010	ARO ALL

D. Location Zones

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right

E. AVM Signal Conditioner Unit Installation

SUBTASK 77-31-03-480-001-H01

CAUTION DO NOT TOUCH THE AVM SIGNAL CONDITIONER UNIT BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE AVM SIGNAL CONDITIONER UNIT.

(1) To install a device that is sensitive to electrostatic discharge (ESDS), do this task: Conductive Dust Cap and Connector Cover Removal, TASK 20-41-01-400-802.

SUBTASK 77-31-03-869-001-H01

(2) Remove the protective caps from the electrical connectors.

SUBTASK 77-31-03-410-001-H01

(3) To install the applicable AVM Signal Conditioner Unit [1] on the main E/E rack, do this task: E/E Box Installation, TASK 20-10-01-400-801.

F. Put the Airplane Back to Its Usual Condition

SUBTASK 77-31-03-860-001-H00

(1) Remove the safety tags and close these circuit breakers:

Left Power Management Panel, P110

Row	Col	Number	Name
C	23	C77403	L ENG VIB MON

Right Power Management Panel, P210

Row	Col	Number	Name
E	6	C77400	R ENG VIB MON

G. Software Configuration Check

SUBTASK 77-31-03-869-002-H01

(1) Use a MAT to do a software configuration check of the SCU:

NOTE: Make sure you know the correct software part number for the SCU when you look at the software part number on the display. For the SCU to be an approved installation, the correct software part number must be installed.

(a) Make these selections on the MAT:

1) ONBOARD MAINTENANCE
2) LINE MAINTENANCE
3) SYSTEM CONFIGURATION
4) 71-80 Left Engine or 71-80 Right Engine
5) CONTINUE

(b) Find Signal Conditioner Unit (Left) or Signal Conditioner Unit (Right) on the display and make sure that the software part number is correct.

NOTE: The configuration check will show a failure if the operational software is not installed.

(c) Select GO BACK to remove the configuration display.

SUBTASK 77-31-03-869-003-H01

(2) If the part number is incorrect, do this task: Airborne Vibration Monitoring (AVM) Signal Conditioner Unit Software Installation, TASK 77-31-03-400-801-H01.

H. AVM Signal Conditioner Unit Test

SUBTASK 77-31-03-869-004-H01

(1) Use a MAT to make sure there are no maintenance messages for the AVM system:

(a) Make these selections on the MAT:

1) ONBOARD MAINTENANCE
2) EXTENDED MAINTENANCE
3) EXISTING FAULTS.

(b) Look for 71-80 Left Engine or 71-80 Right Engine.

NOTE: If 71-80 Left or Right Engine does not show, then there are no maintenance messages in existing faults for the AVM system.

(c) If 71-80 Left or Right Engine shows, do this:

1) Select the 71-80 Left or Right Engine.

2) Select CONTINUE.

3) Look at the maintenance messages that show and make sure there are no maintenance messages for the AVM system on the applicable engine.

4) If a maintenance message for the AVM system shows, refer to the applicable Maintenance Message Index in the FIM or select the maintenance message and select MAINTENANCE MESSAGE DATA.

——— END OF TASK ———

TURBINE CENTER FRAME ACCELEROMETER - MAINTENANCE PRACTICES

1. General

A. This procedure has one task:

(1) An activation procedure of the turbine center frame accelerometer.

TASK 77-31-06-400-802-H01

2. Turbine Center Frame Accelerometer Activation

A. General

(1) This procedure tells you how to install software into the signal conditioner unit (SCU).

(2) You must install the software for the signal conditioner unit (SCU) to switch from the primary No. 1 bearing accelerometer to the turbine center frame for vibration signal reading.

(3) A maintenance access terminal is necessary for this procedure. For instructions on how to use a maintenance access terminal, do this task: How to Use the Central Maintenance Computing System, TASK 45-10-00-740-808.

(4) The airplane must be on the ground with the engines stopped before you can install software.

(5) To read about the time that is necessary for software installation, do this task: On-Airplane Software Installation, TASK 20-15-11-400-801.

NOTE: This procedure applies to SCU P/N 8KE143GAD1 (S332W401-200). The AVM SCU P/N 241-322-008-022, P/N 241-322-007-021 switches to an alternate mode when No. 1 bearing accelerometer fault is detected..

B. References

Reference	Title
20-15-11-400-801	On-Airplane Software Installation (P/B 201)
24-22-00-860-805	Supply Electrical Power (P/B 201)
45-10-00-740-808	How to Use the Central Maintenance Computing System (P/B 201)

C. Location Zones

Zone	Area
117	Main Equipment Center, Left
118	Main Equipment Center, Right
211	Flight Compartment, Left
212	Flight Compartment, Right

D. Procedure

SUBTASK 77-31-06-862-001-H01

(1) Do this task: Supply Electrical Power, TASK 24-22-00-860-805.

SUBTASK 77-31-06-470-001-H01

(2) Use a maintenance access terminal (MAT) to install software for the signal conditioner unit:

NOTE: Make sure you know the correct software part number for the signal conditioner unit before you select the software part number on the display. For the signal conditioner unit to be an approved installation, the correct software must be installed.

NOTE: Boeing software P/N 777E-AEK-GE3-00 (S332W401-5300) is needed for activating the TCF accelerometer.

(a) Put the correct disk of the software P/N 777E-AEK-GE3-00 (S332W401-5300) in the disk drive.

(b) Make these selections on the MAT:

1) ONBOARD MAINTENANCE
2) EXTENDED MAINTENANCE
3) DATA LOAD.

(c) Make these selections to select the component that will receive the software:

1) SELECT DESTINATION
2) 71-80 Left Engine or 71-80 Right Engine
3) Signal Conditioner Unit (Left) or Signal Conditioner Unit (Right)
4) CONTINUE.

(d) Make these selections to select the source of the software:

1) SELECT SOURCE
2) Select the source of the software (if Disk Drive is the only selection, it is automatically selected).
3) Select the correct software part number from the display.
4) CONTINUE.

(e) Select START to start the software installation.

(f) When the software installation is completed, make sure the correct software part number shows on the display.

(g) Select CONTINUE to remove the configuration display.

END OF TASK

TURBINE CENTER FRAME ACCELEROMETER - REMOVAL/INSTALLATION

1. General

A. This procedure has two tasks:

(1) A removal of the turbine center frame accelerometer

(2) An installation of the turbine center frame accelerometer.

TASK 77-31-06-000-801-H01

2. Turbine Center Frame Accelerometer Removal

A. General

(1) This task is the removal procedure for the turbine center frame accelerometer, referred to as the TCF accelerometer.

(2) To remove the TCF accelerometer, you must do these steps:

(a) Do the deactivation procedure for the leading edge slat system.

(b) Open the left fan cowl panel.

(c) Do the deactivation procedure for the thrust reversers.

(d) Open the left thrust reverser.

(e) Remove the TCF accelerometer cable from the various clipping points.

(f) Remove the TCF accelerometer from the TCF.

B. References

Reference	Title
27-81-00-040-801	Leading Edge Slat - Deactivation (P/B 201)
27-81-00-860-805	Retract the Leading Edge Slats (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-010-814-H00	Open the Fan Cowl Panel (Selection) (P/B 201)
78-31-00-010-816-H00	Open the Thrust Reverser (Selection) (P/B 201)
78-31-00-040-806-H00	Thrust Reverser Deactivation For Ground Maintenance (P/B 201)

C. Tools/Equipment

Reference	Description
STD-664	Pliers - Teflon-jawed (or Equivalent Soft-Jawed)

D. Location Zones

Zone	Area
411	Engine, Left
421	Engine, Right

E. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine

F. Prepare for the Removal

SUBTASK 77-31-06-010-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO OPEN THE THRUST REVERSER(S). IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR

(1) Do these tasks in sequence to safely open the left thrust reverser on the applicable engine:

(a) Do this task: Retract the Leading Edge Slats, TASK 27-81-00-860-805.

(b) Do this task: Leading Edge Slat - Deactivation, TASK 27-81-00-040-801.

(c) Do this task: Thrust Reverser Deactivation For Ground Maintenance, TASK 78-31-00-040-806-H00.

(d) For the left fan cowl panel, do this task:

Open the Fan Cowl Panel (Selection), TASK 71-11-04-010-814-H00

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine

(e) For the left thrust reverser, do this task:

Open the Thrust Reverser (Selection), TASK 78-31-00-010-816-H00

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine

G. Turbine Center Frame Accelerometer Removal

SUBTASK 77-31-06-020-001-H01

(1) Remove the TCF accelerometer [1] (Figure 401):

CAUTION MAKE SURE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU DISCONNECT THEM. CONTAMINATION OF ELECTRICAL CONNECTORS CAN CAUSE DAMAGE TO EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO LOOSEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

CAUTION DO NOT MAKE A SHARP BEND ON THE ACCELEROMETER CABLE THAT IS LESS THAN 2.0 INCHES IN RADIUS. IF YOU BEND THE ACCELEROMETER CABLE IN A RADIUS THAT IS LESS THAN 2.0 INCHES, DAMAGE TO THE CABLE CAN OCCUR.

(a) Use teflon-jawed pliers, STD-664 to disconnect the electrical connector [5] from the strut disconnect panel receptacle (TASK 70-00-01-400-807-H01).

(b) Install protective covers on the strut disconnect panel receptacle and the electrical connector [5].

(c) Disconnect the TCF accelerometer cable from the various clamps [4] points.

1) Remove the bolts [3] (7 locations) that attach the TCF accelerometer [1] cable to the bracket assemblies.

(d) Remove the bolts [2] (3 locations) that attach the TCF accelerometer [1] to the TCF air adapter mount pad at the 11:00 o'clock position.

1) Remove the TCF accelerometer [1] from the adapter mount pad.

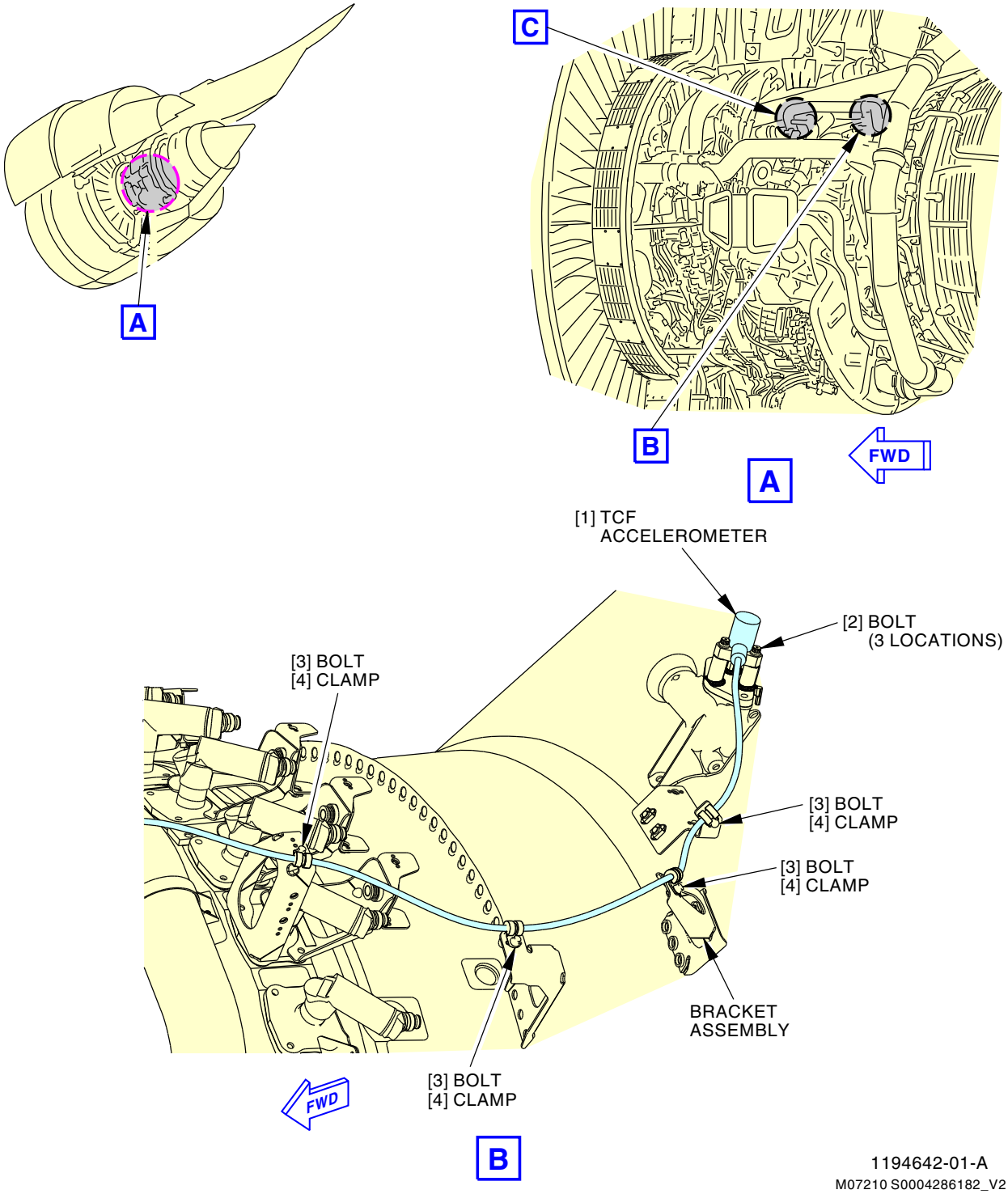
(e) Remove the clamps [4] from the TCF accelerometer [1] cable and keep them for the installation process.

NOTE: Do this step only if you replace the TCF accelerometer.

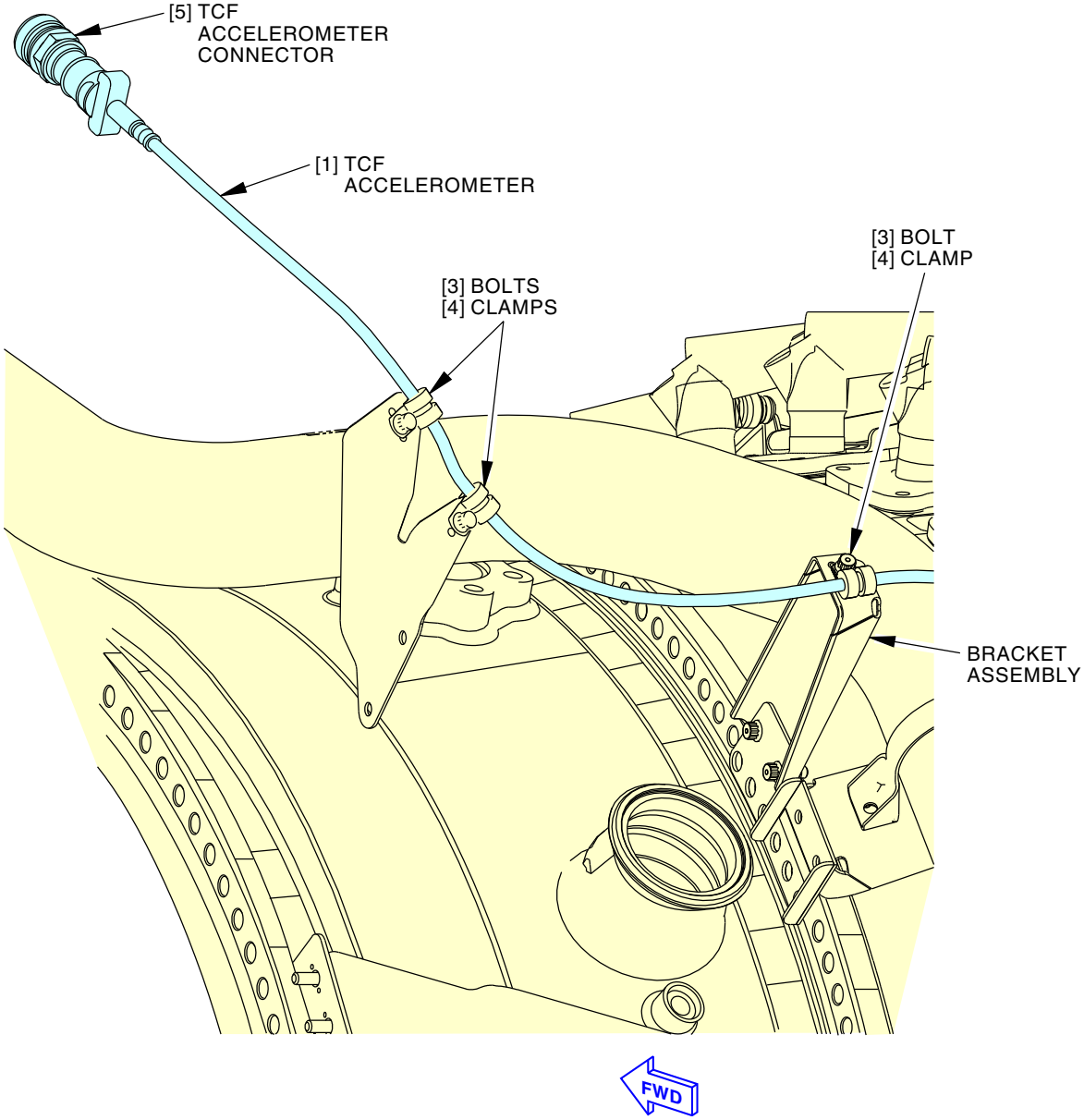
(f) Install protective cover on the TCF accelerometer port.

(g) Put the TCF accelerometer [1] in a protective cover.

——— END OF TASK ———



Turbine Center Frame Accelerometer Installation
Figure 401/77-31-06-990-801-H01 (Sheet 1 of 2)



Turbine Center Frame Accelerometer Installation
Figure 401/77-31-06-990-801-H01 (Sheet 2 of 2)

TASK 77-31-06-400-801-H01

3. Turbine Center Frame Accelerometer Installation

A. General

(1) This task is the installation procedure for the turbine center frame (TCF) accelerometer.

(2) If the No.1 Bearing accelerometer is bad, make sure that it is disconnected, capped and stowed away prior to activate the TCF accelerometer.

B. References

Reference	Title
27-81-00-440-801	Leading Edge Slat Reactivation (P/B 201)
70-00-01-400-807-H01	Electrical Connector - Disconnect and Connect (P/B 201)
71-11-04-410-814-H00	Close the Fan Cowl Panel (Selection) (P/B 201)
77-31-06-400-802-H01	Turbine Center Frame Accelerometer Activation (P/B 201)
78-31-00-410-816-H00	Close the Thrust Reverser (Selection) (P/B 201)
78-31-00-440-805-H00	Thrust Reverser Activation After Ground Maintenance (P/B 201)

C. Consumable Materials

Reference	Description	Specification
D50043 [C02-058]	Compound - Antiseize, Acheson GP460 (For Threaded Fasteners 0.250 Inches Diameter Or Larger, C02-079 Is An Alternative)	GE A50TF201 Class A
G50843 [C10-230]	Tape - PTFE Film, Silicone Adhesive	A-A-59474

D. Expendables/Parts

AMM Item	Description	AIPC Reference	AIPC Effectivity
1	TCF accelerometer	77-31-06-02-020	ARO ALL

E. Access Panels

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
415AL	Left Thrust Reverser, Left Engine
423AL	Left Fan Cowl Panel, Right Engine
425AL	Left Thrust Reverser, Right Engine

F. Turbine Center Frame Accelerometer Installation

SUBTASK 77-31-06-420-001-H01

CAUTION DO NOT MAKE A SHARP BEND ON THE ACCELEROMETER CABLE THAT IS LESS THAN 2.0 INCHES IN RADIUS. IF YOU BEND THE ACCELEROMETER CABLE IN A RADIUS THAT IS LESS THAN 2.0 INCHES, DAMAGE TO THE CABLE CAN OCCUR.

(1) Install the TCF accelerometer [1] (Figure 401):

(a) Remove the TCF accelerometer [1] from the protective cover.

(b) Remove the protective cover from TCF accelerometer port.

(c) Install the clamps [4] on the TCF accelerometer cable if the clamps [4] are not installed.

(d) Put Acheson GP460 compound, D50043 [C02-058] on the bolts [2].

(e) Install the clamps [4] on the TCF air adapter mount pad at the 11:00 o'clock position.

1) Put the clamps [4] to the mounting pad.

2) Install the bolts [2] (3 locations) through the TCF accelerometer [1] mount flange holes.

3) Tighten the bolts [2] to 110-120 pound-inches (12.4-13.6 Newton-meters).

(f) Remove the protective covers from the electrical connection and the electrical connector [5].

CAUTION MAKE SURE THE ELECTRICAL CONNECTORS ARE CLEAN WHEN YOU CONNECT THEM. THE CONTAMINATION OF THE ELECTRICAL CONNECTOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

CAUTION USE TEFLON-JAWED PLIERS TO TIGHTEN THE ELECTRICAL CONNECTORS. DO NOT USE METAL-JAWED PLIERS. DAMAGE TO THE ELECTRICAL CONNECTORS COULD OCCUR.

(g) Connect the electrical connector [5] to the strut disconnect panel receptacle (TASK 70-00-01-400-807-H01).

1) Tighten the electrical connector [5].

(h) Adjust the tension in the cable of the accelerometer until there is the same quantity of cable between the loop clamps.

1) Make sure that you can move the cable 0.25 in. (6.4 mm) each way from the center between any two loop clamps.

(i) For each TCF accelerometer cable loop clamp [4], one loop clamp location at a time, do these steps:

1) Remove the bolt [3] and loop clamp [4].

2) Put three layers of two inch wide PTFE Film Tape, G50843 [C10-230] around the TCF accelerometer [1] lead at the location of the clamp [4].

3) Loosely install the loop clamp [4]and bolt [3].

(j) Tighten the bolts [3] to 110-120 pound inches (12.4-13.6 Newton-Meters).

G. Put the Airplane Back to its Usual Condition

SUBTASK 77-31-06-860-001-H00

(1) If the No.1 Bearing accelerometer is bad, make sure that the No.1 Bearing accelerometer cable is disconnected, capped, and stowed away.

NOTE: If the vibration goes high or erratic when the AVM assumes that the No.1 bearing accelerometer is still working and the data is real, it therefore does not switch to alternate mode or set a fault. When the No. 1 Bearing accelerometer was deactivated, it would show lower vibration output, switch alternate mode and fault would be set.

SUBTASK 77-31-06-410-001-H01

WARNING DO ALL OF THE SPECIFIED TASKS IN THE CORRECT SEQUENCE TO CLOSE THE THRUST REVERSERS. IF YOU DO NOT OBEY THIS INSTRUCTION, INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Do these tasks in sequence to safely close the left thrust reverser on the applicable engine:

(a) Do this task: Close the Thrust Reverser (Selection), TASK 78-31-00-410-816-H00.

1) Close these access panels:

Number	Name/Location
415AL	Left Thrust Reverser, Left Engine
425AL	Left Thrust Reverser, Right Engine

(b) Do this task: Close the Fan Cowl Panel (Selection), TASK 71-11-04-410-814-H00.

1) Close these access panels:

Number	Name/Location
413AL	Left Fan Cowl Panel, Left Engine
423AL	Left Fan Cowl Panel, Right Engine

(c) Do this task: Thrust Reverser Activation After Ground Maintenance, TASK 78-31-00-440-805-H00.

(d) Do this task: Leading Edge Slat Reactivation, TASK 27-81-00-440-801.

SUBTASK 77-31-06-905-001-H01

(3) Make sure that you install the AVM data load software (P/N S332W401-5300 or S332W402-6200) on the MAT to activate the TCF accelerometer (TASK 77-31-06-400-802-H01).

NOTE: If you replace an unserviceable TCF accelerometer or if No.1 Bearing is not bad, then the AVM data load software is not necessary. If the No. 1 bearing is bad, it is necessary to do the AVM data load software. Once the data load is replaced, it will eliminate the No.1 bearing data from the system.

SUBTASK 77-31-06-210-001-H01

(4) Monitor the vibration data on the subsequent flight or engine operation for a satisfactory indication.

——— END OF TASK ———