Test Project

Module D - Aircraft Component Inspection Rectification

Aircraft Maintenance

Submitted by:

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Marking Scheme

MODULE D – AIRCRAFT COMPONENT INSPECTION RECTIFICATION	MARKS
D1: Preparation, Safety and documentation	20
D2: Rectification and component replacement	
D3: Functional Test	

Acronyms

An **MCDU** (Multifunction/Multipurpose Control and Display Unit) is a pilot's main interface for the aircraft's Flight Management System (FMS), featuring an LCD screen, alphanumeric keypad, and function keys to input flight plans, manage navigation, set performance data, and control radios, essential for modern cockpit operations in aircraft.

EEC (Electronic Engine Control) refers to the computerized "brain" of a modern jet engine, a core part of the FADEC system, which continuously monitors engine/environmental data (temp, pressure, RPM) to optimize performance, adjust fuel flow, protect against overspeed/overheating, and reduce pilot workload, ensuring safety and efficiency through automatic adjustments and built-in redundancy (dual channels).

The **HMU** (Hydromechanical Unit) is a vital turbine engine component that acts as the primary fuel control unit, metering fuel flow to the nozzles based on throttle position (PLA) and engine conditions. It manages speed, prevents overspeed/stalls, and bridges the gap between FADEC electronic commands and physical hydraulic action.

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Introduction to Test Project

INTRODUCTION TO TEST PROJECT MODULE D		
NAME	**(First)**	**(Last)**
COUNTRY		**Date**
START TIME		**END TIME**

Introduction

An aviation engine technician performs maintenance and replacement of defective components (including engine parts). They also test the components and systems to ensure that they are functioning correctly and use test equipment to diagnose and identify technical problems. All work is done by following technical manuals instructions. An aviation technician should have the ability to understand complex aircraft/engine specifications and equipment, as well as possess strong mechanical skills.

Objective	To test the Competitor's ability to interpret technical instructions, perform inspections, use special inspection equipment, diagnosing damages, replacing parts, and ensuring the safe and efficient operation of aircraft and powerplant in accordance with the manuals and safety regulations.
Time allotted	3.5 hours.

Description of tasks

1	Diagnose and interpret EEC fault code.
2	Perform rectification and component replacement as per the Task Cards.
3	Record corrective actions in the Task Cards.
4	Restore engine, workplace and submit completed Task Cards to Experts. Handover the aircraft to the next shift Engineer for release to service.

Reference

Turbofan Engine Trainer Maintenance Manual

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Instructions to Competitor – Overview

During the after-flight inspection, it was found that the MCDU displayed the EEC fault code as shown below - " **HMU/FMV Control Current is out of Range** ".

ENGINE POSITION	EEC FAULT CODE	FAULT CODE
LEFT ENGINE	73-3032**1**	A seven-digit number **AA – XDDDN**. **AA** = ATA Chapter. **X** = EEC Channel (1=Channel A, 2=Channel B, 3=Channels A and B). **DDD** = a unique fault number. **N** = Engine Position (1 = Engine 1 and 2 = Engine 2).
RIGHT ENGINE	73-3032**2**	

Handover to you: The Handover shift Engineer has diagnosed that the fault is likely caused by the wiring or the HMU.

You are to conduct further verification, troubleshooting and to rectify the defect(s).

On completion, **you are to hand over the aircraft to the next shift for the Engineer** to close the Technical Log entry and to release the aircraft for service.

Preparations/Process

1. Put on necessary Personal Protection Equipment.
2. Check the equipment status and confirm there are no obstacles in the working area. If any issues arise, report to the Expert.
3. Perform as per TASK CARD. Record data as requested.
4. Restore aircraft and engine to original configuration.
5. Clean and tidy the work area.
6. Return the tools in accordance with the tool list.
7. Submit the completed task card.

Reference

Turbofan Engine Trainer Maintenance Manual.

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Appendix 1: Aviation material requisition form

Fill in the aviation material requisition form and collect them with this form.

#	DESCRIPTION	PART NUMBER	QTY
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
Task Card Number			
Collected by			
Date	dd/mmm/yyyy		

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worldskills	AIRCRAFT TECHNICAL LOG		REGISTRATION #	CAPTAIN	Samson	PAGE SEQUENCE
			(Expert to fill)	SIGNATURE	Samson	123457

FLIGHT DETAILS	LEG	DATE	TIME UP (UTC)	TIME DOWN (UTC)	AIRTIME	FROM	TO
	1	22.09.2026	13:00	14:00	01:00	STN 1	STN 2
	2	22.09.2026	15:30	16:45	01:15	STN 2	STN 3
TIME	TOTAL TIME B/F FLIGHT		12:00	TOTAL AIRTIME	02:15	TOTAL TIME	14:15

DEFECT/MAINT					
	The MCDU displays "EEC Fault"			REPORTED BY	Capt Samson
	WORK ORDER SUMMARY #	If applicable		DATE:	**22.09.2026**

RESOLUTION							
						RESOLVED BY	(Signature)
						DATE:	dd/mmm/yyyy
	P/N		DEFERRAL #		☐ Function Check	Independent Check accomplished before Maintenance Release by	Certifies that the work specified except as otherwise specified was carried out in accordance with the requirement of the Air Navigation Act and in respect to that work the aircraft/engine/aircraft component is considered ready for release to service
	S/N ON		MEL		☐ Leak Check		
	S/N OFF		CAT	A/B/C/D/P	☐ Independent Check	Signature Date	(Signature) Date
	BATCH #				☐ Others		

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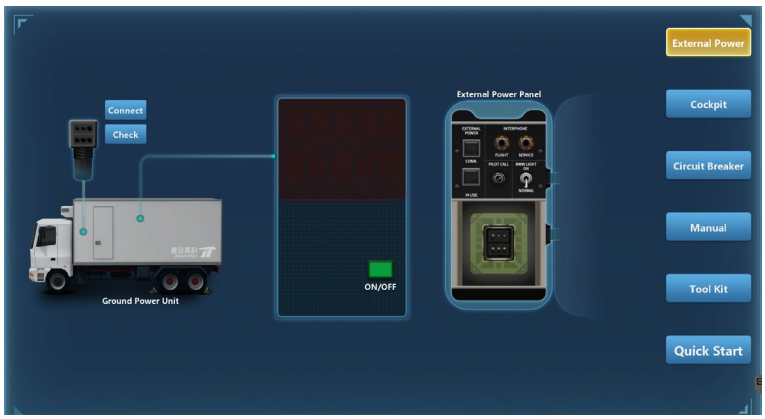
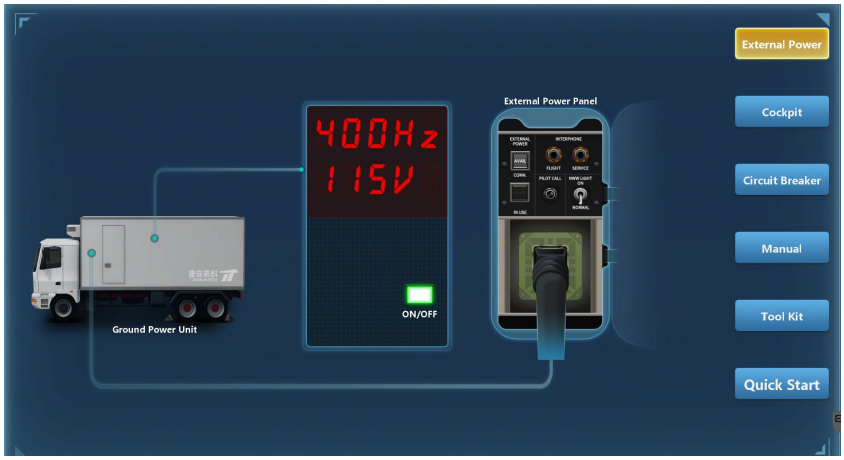
TASK CARD JA-ENG-001	From Technical Log	Technical log #	Page 1 of 23
ENG Component Inspection Rectification	Aircraft Regn		Reported by
	Date	dd/mmm/yyyy	

S/N	TASKS	COMPETITOR
1	**Overview** TASK: During the after-flight inspection, it was found that the MCDU displayed the EEC fault code 73-3032X - "HMU/FMV Control Current is out of Range". The Handover shift AME (Engineers) have confirmed that the fault is likely caused by the wiring or the HMU. You are to conduct further verification, troubleshooting and to rectify the defect(s).	
2	**Reference Manual** Turbofan Engine Trainer Maintenance Manual.	
3	**Parts and Consumables**	
4	**Preparations** 1. Put on necessary Personal Protection Equipment. 2. Check the equipment status and confirm there are no obstacles in the working area. If any issues arise, report to the Expert. 3. Read the task card.	

NAME	PN	QTY
O-ring	JA1315-1-001	1
HMU	TBESTHMU2025-12	1

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	Date	dd/mmm/yyyy	

S/N	TASKS	COMPETITOR
5	**Aircraft Power on in Virtual Cockpit (via computer)** 1. Click the external power button, select the external power panel, click the ground power unit plug, and press the Connector button to ensure the power unit plug is connected to the external power panel.  2. Click the ON/OFF button on the ground power display, check that the ground power supply is 115 V and 400 Hz. 3. Confirm that the EXTERNAL PWR CONN AVAIL light on the aircraft's External Power Panel is on. 	

S/N	TASKS	COMPETITOR
	4. Click the Cockpit button, set the BAT switch to the ON position, and check that the BAT POWER AVAILABLE and GRD POWER AVAILABLE lights are on. 5. Set the GRD switch on the cockpit panel to the ON position. 6. Click the external power button, check that EXTERNAL PWR IN USE light is on and the EXTERNAL PWR CONN AVAIL light is off on the aircraft's External Power Panel. 7. Click the Cockpit button, Set the Lights Test switch to the TEST position and ensure all indicator lights are functioning normally. 8. Set the Lights Test switch to the DIM position and ensure all indicator lights are functioning normally. **(Proceed to the next step after Expert confirmation)**	
6	**Do EEC BITE TEST-RECENT FAULTS** 1. Click the Cockpit button, click the MCDU button.  2. Press the INIT REF key to show the PERF INIT screen on the MCDU.	

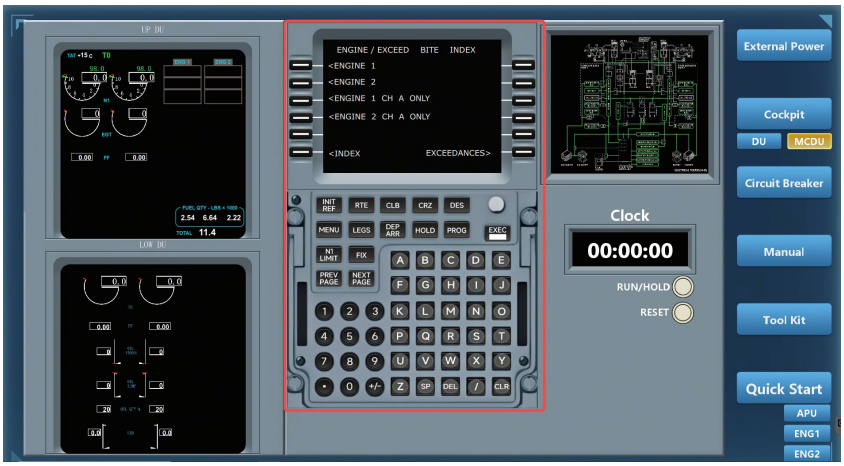
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ENG Component Inspection Rectification	Aircraft Regn		Reported by
	Date	dd/mmm/yyyy	

S/N	TASKS	COMPETITOR

3. Push this line select keys (LSK) on the MCDU:

   (a) INDEX
   (b) MAINT
   NOTE: THIS LSK CAUSES THE MAINT BITE INDEX SCREEN TO SHOW.
   (c) ENGINE
   NOTE: THIS LSK CAUSES THE ENGINE/EXCEED BITE INDEX SCREEN TO SHOW.
   (d) Applicable ENGINE X, (X = 1 or 2)



NOTE: THIS LSK CAUSES THE ENGINE X BITE TEST MAIN MENU TO SHOW. ALSO, THE ENGINE X LSK AUTOMATICALLY APPLIES POWER TO THE EEC AND CAUSES THE EEC TO INITIALIZE. THE MCDU WILL SHOW INITIALIZING EEC X AND EEC SORTING FAULT HISTORY DATA FOR A SHORT TIME, JUST BEFORE THE ENGINE X BITE TEST MAIN MENU SHOWS.

4. Push the RECENT FAULTS LSK.

NOTE: THIS LSK CAUSES THE RECENT FAULTS SCREEN TO SHOW. THE HISTORY LSK, ON THE RECENT FAULTS SCREEN, WILL SHOW THE FAULT HISTORY FOR THE MAINTENANCE MESSAGE THAT SHOWS ON THE SCREEN. THE NEXT PAGE KEY WILL CONTINUE TO SHOW THE OTHER FAULTS IN THE RECENT FAULTS FORMAT. THE INDEX LSK WILL SEND YOU TO THE ENGINE X BITE TEST MAIN MENU.

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ENG Component Inspection Rectification	Aircraft Regn		Reported by
	Date	dd/mmm/yyyy	

S/N	TASKS	COMPETITOR
	5. Record this data from each screen: (a) The Dispatch Level: _____ *NOTE: THE DISPATCH LEVEL WILL SHOW AT THE TOP OF THE SCREEN. THE MCDU WILL DISPLAY THE FAULTS IN THE ORDER OF THEIR DISPATCH LEVEL. THE ENGINE CONTROL LIGHT FAULTS WILL SHOW FIRST, THEN THE ALTERNATE MODE LIGHT FAULTS, THEN THE SHORT TIME FAULTS, THEN THE LONG TIME FAULTS, AND LAST THE ECONOMIC AWARENESS FAULTS.* (b) Maintenance Message Number: _____ *NOTE: A SEVEN-DIGIT NUMBER WITH THIS FORMAT: AA - XDDDN. AA = ATA CHAPTER, X = EEC CHANNEL (1=CHANNEL A, 2=CHANNEL B, 3=CHANNELS A AND B), DDD = A UNIQUE FAULT NUMBER, AND N = ENGINE POSITION (1=ENGINE 1, 2=ENGINE 2).* 6. Push the NEXT PAGE key to see the subsequent maintenance message. 7. Continue to push the NEXT PAGE key until you **record all of the faults**. _____ 8. If you want to go back to the previous message, push the PREV PAGE key. 9. If you are in RECENT FAULTS and there are no faults stored for the flight legs 0 through 3, the screen will show NO RECENT FAULTS STORED. 10. If you wish to do other tests, push the INDEX LSK several times, until the correct menu shows. 11. To end the test, push the INIT REF key.	

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S/N	TASKS	COMPETITOR
7	**Examine wires** 1. Switch to the Circuit Breaker interface, open the applicable circuit breakers, place the circuit breaker clip. (a) For Left Engine/No.1 Engine：C458, C153, C1390 and C1314 Circuit Breaker. (b) For Right Engine / No.2 Engine：C459, C151, C1391 and C1315 Circuit Breaker. 2. Open the Fan Cowl Panels and ensure that the support struts are securely locked. 3. Disconnect the DP0505 (Ch A) and DP0606 (Ch B) electrical connector from the EEC. 4. Visually examine the EEC receptacle and wire harness connector. 5. Measure the resistance between these pins to examine the wires between the applicable EEC connector, DP0505 (Ch A) and DP0606 (Ch B) on the wire harness through the HMU: **(See Figure 1: WDM 73-25-11)**	

CONNECTOR DP0505 & DP0606	RESISTANCE	Record the data DP0505 & DP0606	
PINS 8 TO 7	10 TO 21 OHMS		
PIN 8 TO THE CONNECTOR SHELL	GREATER THAN 10 MEGOHMS		

6. Connect the DP0505 (Ch A) and DP0606 (Ch B) electrical connector at the EEC.
7. Disconnect the DP0501 (Ch A) and DP0601 (Ch B) electrical connector from the HMU.
8. Visually examine the HMU receptacle and wire harness connector.

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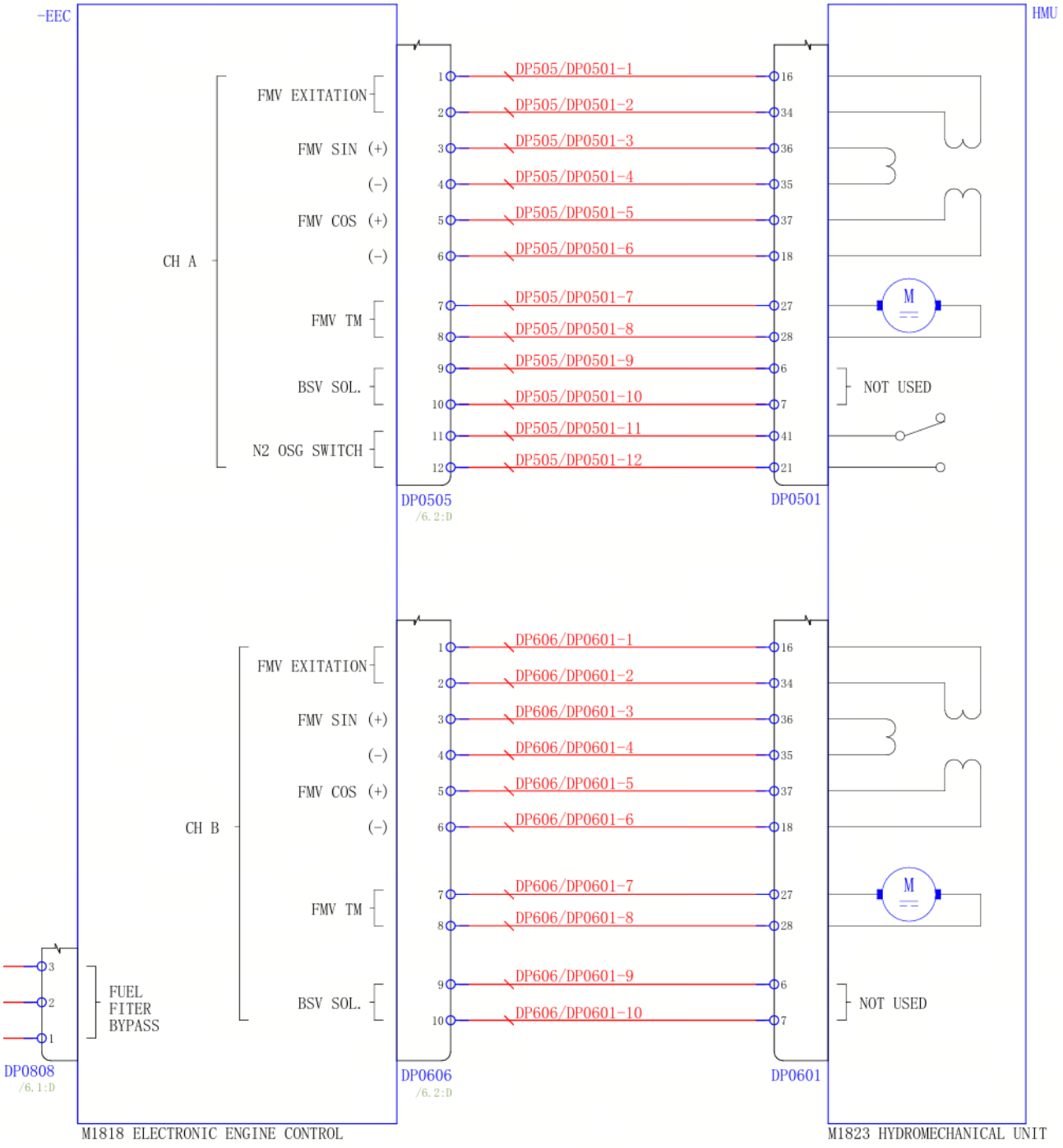


Figure 1: WDM 73-25-11

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S/N	TASKS	COMPETITOR

9. Examine the resistance of these pins of the HMU receptacle, DP0501 (Ch A) and DP0601 (Ch B): **(See Figure 1: WDM 73-25-11)**

RECEPTACLE DP0501 & DP0601	RESISTANCE	Record the data DP0501 & DP0601	
PINS 27 TO 28	10 TO 21 OHMS		
PIN 27 TO THE CONNECTOR SHELL	GREATER THAN 10 MEGOHMS		

10. If the resistance is not in the specified range, then replace the HMU.

11. Connect the DP0501 (Ch A) and DP0601 (Ch B) electrical connector to the HMU.

8 Replace the HMU

1. Make sure that the engine start lever is in the CUTOFF position.

2. Install the DO NOT OPERATE tag on the applicable engine start lever.



3. Make sure that the ENG VALVE CLOSED (engine fuel shutoff valve) light is dim.

NOTE: *THE LIGHT TEST SWITCH CAN BE USED FOR CONFIRMATION. THE LIGHT FOR THE ENGINE FUEL SHUTOFF VALVE HAS THREE POSITIONS: 1) BRIGHT WHEN THE VALVE IS IN TRANSITION, 2) DIM WHEN THE VALVE IS CLOSED, OR 3) OFF WHEN THE VALVE IS OPENED.*

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4. Make sure that the SPAR VALVE CLOSED light is dim.



5. Set the GRD switch on the cockpit panel to the OFF position.

6. Set the BAT switch on the cockpit panel to the OFF position. Install the DO NOT OPERATE tag.

7. Click the external power button, click the power unit OFF button, and ensure the external power is turned off.

8. Disconnect the aircraft external power plug.

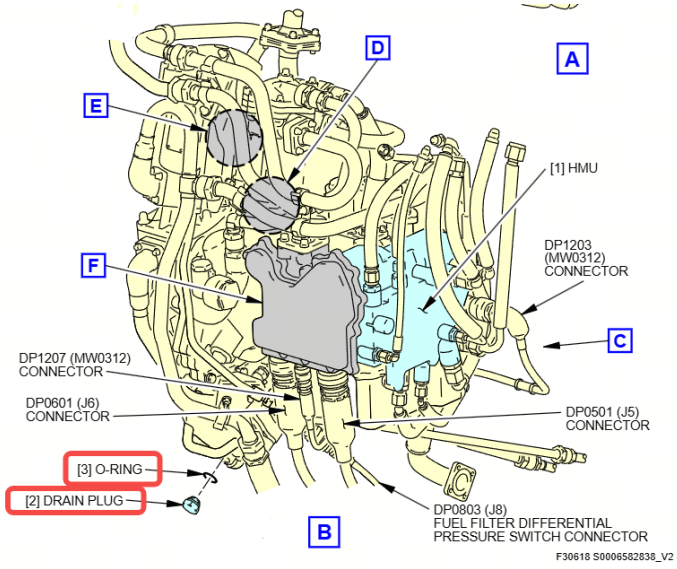
9. Click the external power panel and ensure it is in the close (Shadow) position.

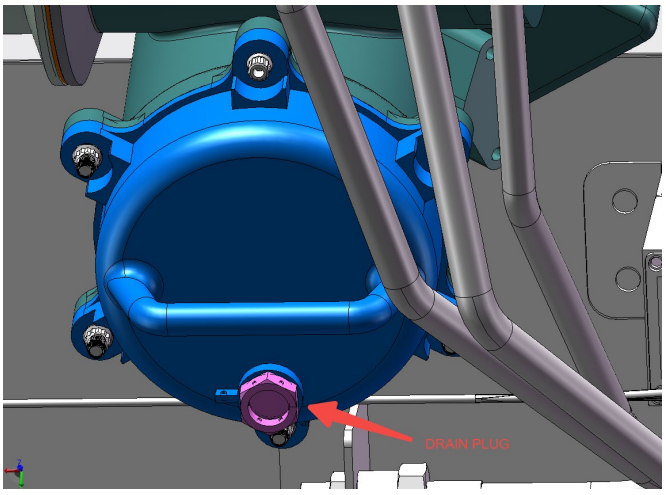
WARNING: DO NOT GET FUEL IN YOUR MOUTH, EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM THE FUEL. PUT ON GOGGLES, AND GLOVES WHEN YOU USE FUEL. KEEP FUEL AWAY FROM SPARKS, FLAME, AND HEAT. FUEL IS POISONOUS AND FLAMMABLE. FUEL CAN CAUSE INJURIES TO PERSONNEL AND DAMAGE TO EQUIPMENT.

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S/N	TASKS	COMPETITOR
	10.Put a fuel resistant container below the fuel pump. 11.Remove the lockwire and remove drain plug from the fuel filter cover. 12.Remove and discard the O-ring from the drain plug.	





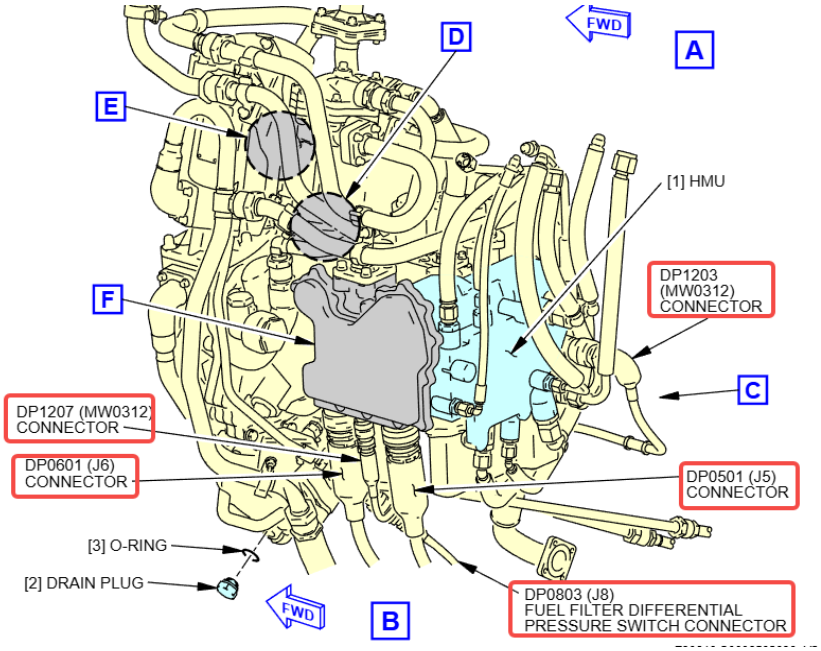
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ENG Component Inspection Rectification	Aircraft Regn		Reported by
	Date	dd/mmm/yyyy	

S/N	TASKS	COMPETITOR
	WARNING: DO NOT LET OIL STAY ON YOUR SKIN. YOU CAN ABSORB POISONOUS MATERIALS FROM THE OIL THROUGH YOUR SKIN. 13. Fill in the aviation material requisition form (Appendix 1 of TP) and collect the O-ring. 14. Check and verify the integrity of newly received aviation materials. 15. Lubricate a new O-ring with Vaseline. 16. Install a new O-ring to the drain plug. 17. Lubricate the threads of the drain plug with Vaseline. 18. Install the drain plug. 19. Tighten the drain plug to 45 in-lb (5.1 N·m) - 55 in-lb (6.2 N·m). Record the torque value: _____ 20. Install 0.8 mm lockwire on the drain plug. 21. Disconnect these electrical connectors from the HMU: (a) The DP1203 (MW0312) connector (b) The DP0501 (J5) connector (c) The DP1207 (MW0312) connector (d) The DP0601 (J6) connector (e) The DP0803 (J8) connector on the fuel filter differential pressure switch.	

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22. Move the electrical connectors out of the way, to make sure that they are not damaged.

23. Make sure that the container stays below the HMU during the removal procedure.

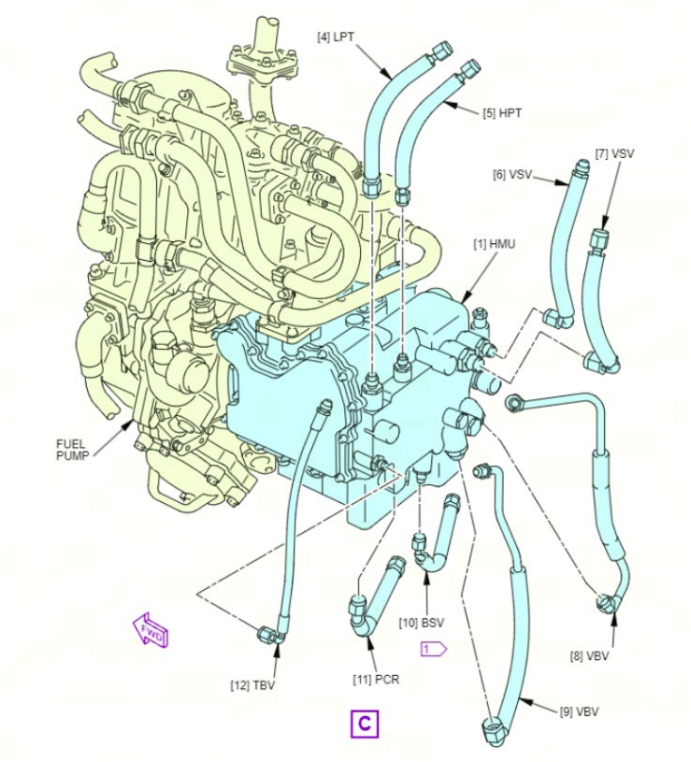
24. Remove the lockwire and remove the following tubes:

    (a) The LPT [4].
    (b) The TBV [12].
    (c) The HPT [5]
    (d) The VSV (HEAD) [7]
    (e) The VSV (ROD) [6]
    (f) The PCR [11]
    (g) The VBV (OPEN) [9]
    (h) The VBV (CLOSED) [8]

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ENG Component Inspection Rectification	Aircraft Regn		Reported by
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25. Remove the fuel tube [17] from the HMU:

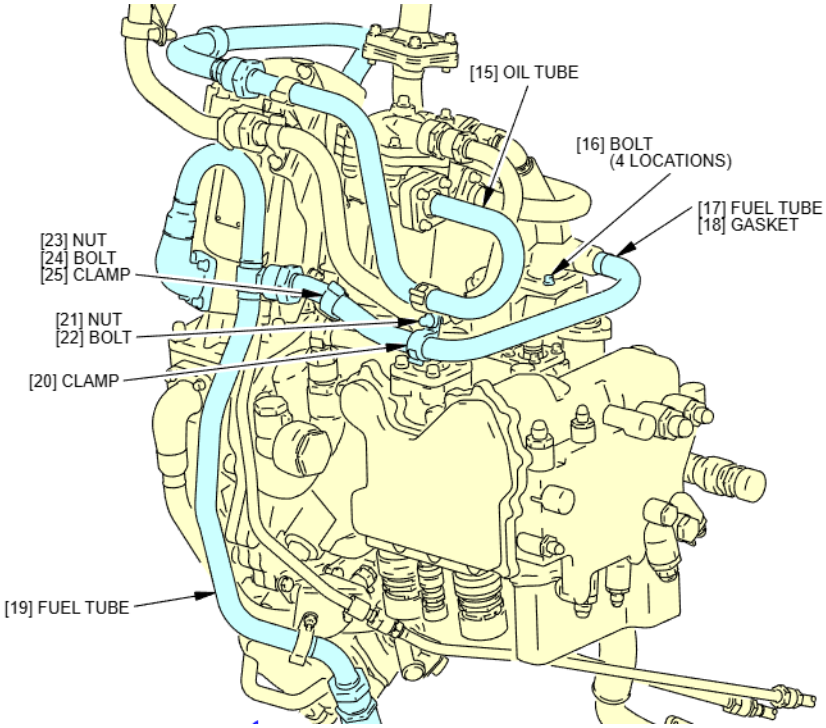
(a) Remove the lockwire and disconnect the fuel tube [17] from the fuel tube [19].
(b) Remove the lockwire from the bolts [16]
(c) Remove the bolts [16] that hold the fuel tube [17] and the gasket [18] to the HMU [1].
(d) Remove the nut [21], bolt [22], and clamp [20] that hold the fuel tube [17] to the bracket.

NOTE: *THE NUT AND BOLT ALSO HOLD A CLAMP FOR THE OIL TUBE.*

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(e) Remove the nut [23], bolt [24], and clamp [25] that hold the fuel tube [17] to the bracket.
(f) If the gasket [18] is serviceable (no cracks), keep it with the tube for the subsequent installation.



26. Remove the fuel tube [43] from the servo-fuel heater inlet port.

(a) Remove the lockwire.
(b) Disconnect the fuel tube [43] from the servo-fuel heater inlet port.
(c) Disconnect the fuel tube [43] from the fuel pump.

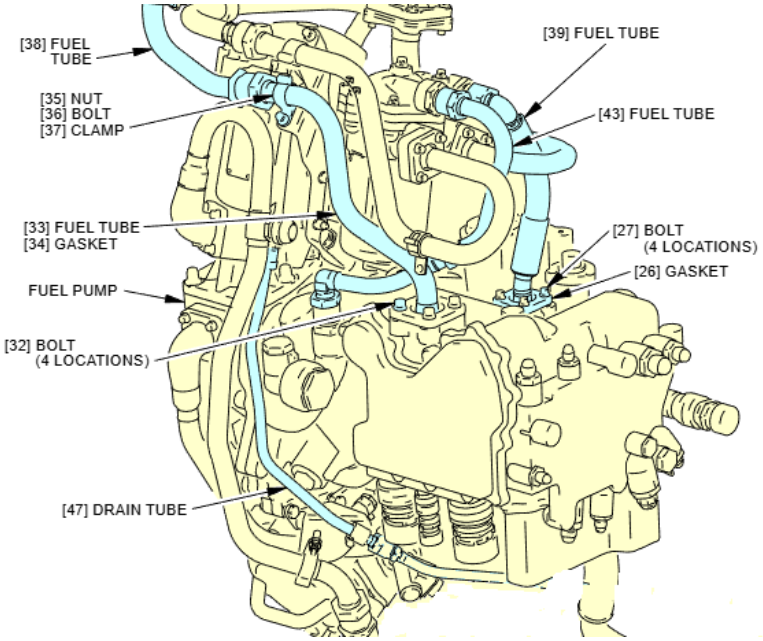
27. Remove the fuel tube [39] from the HMU [1] and the servo-fuel heater:

(a) Remove the lockwire and disconnect the fuel tube [39] from the servo-fuel heater.

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S/N	TASKS	COMPETITOR

(b) Remove the four bolts [27] that hold the fuel tube [39] and gasket [26] to the HMU [1].
(c) If the gasket [26] is serviceable (no cracks), keep it with the tube for the subsequent installation.



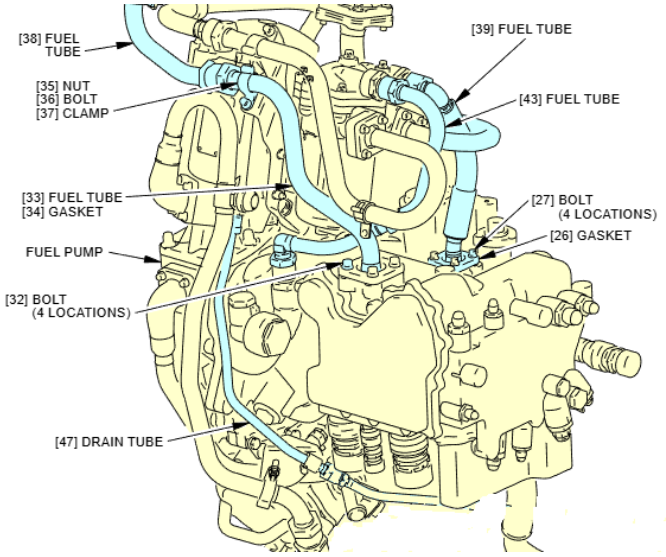
28. Remove the fuel tube [33] from the HMU [1]:

(a) Remove the lockwire and disconnect fuel tube [33] from fuel tube [38].
(b) Remove the lockwire from the bolts [32].
(c) Remove the four bolts [32] that hold the fuel tube [33] and the gasket [34] to the HMU [1].
(d) Remove the nut [35], bolt [36], and clamp [37] that hold the fuel tube [33] to the bracket.

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S/N	TASKS	COMPETITOR

(e) If the gasket [34] is serviceable (no cracks), keep it with the tube for the subsequent installation.



WARNING: BE CAREFUL WHEN YOU MOVE THE HMU. THE WEIGHT CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO THE EQUIPMENT.

29. Disconnect the HMU [1] from the fuel pump:

(a) Remove the six nuts [40] and washer [41] that hold the HMU [1] to the fuel pump.

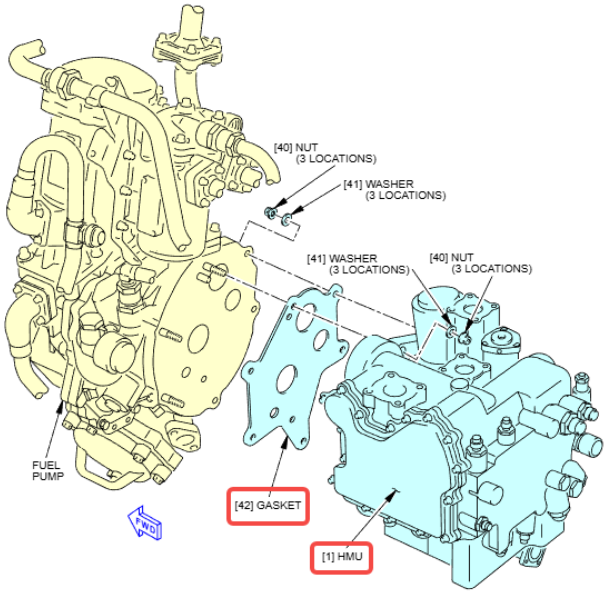
NOTE: *THE THREE OUTBOARD STUDS ARE ON THE FUEL PUMP, AND THE THREE INBOARD STUDS ARE ON THE HMU.*

NOTE*: Use the special tools, as required, to remove and install the nuts. Special tool P/N HMU300845K01 and HMU300845K02.*

(b) Remove the HMU [1].
(c) Remove the gasket [42].
(d) Examine the gasket [42] for scratches, nicks, dents, and cuts.

S/N	TASKS	COMPETITOR

(e) If the gasket [42] is serviceable, keep it for the subsequent installation.
(f) If the gasket [42] is not serviceable, replace it.



30. To drain the fuel by gravity from the HMU, do these steps:

(a) Let the HMU [1] sit on each of its four sides for approximately one minute.

31. Hang a red Unserviceable Label on the HMU.

32. On the workbench, clean and visually check the external condition of the tubes and the T-joint, and record the external condition:

_____

33. Fill in the aviation material requisition form (Appendix 1 of TP) and collect the HMU.

34. Check and verify the integrity of newly received aviation materials.

35. Remove the protective covers from the HMU [1], the fuel pump, and the fuel tube connections.

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S/N	TASKS	COMPETITOR
	36. Thoroughly clean the mating surfaces and the adjacent areas of the components. 37. Examine the component mating surfaces and the adjacent areas to make sure that they are serviceable. 38. Replace the components that are not serviceable. 39. Examine the studs on the fuel pump. 40. Use your hand to move the ends of the fuel pump studs. *NOTE: THE THREE STUDS ON THE FUEL PUMP ARE KEYLOCKED STUDS. DUE TO THE LOCKING MECHANISM, YOU CAN FEEL A SMALL LATERAL MOVEMENT OF THE END OF THE STUDS.* 41. If there is any wobble at the ends, report to the Expert and perform repairs in accordance with the Expert's instructions, if required. WARNING: BE CAREFUL WHEN YOU MOVE THE HMU. THE WEIGHT CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO THE EQUIPMENT. 42. Lubricate the three studs on the fuel pump with Vaseline. 43. Lubricate the three studs on the HMU [1] with Vaseline. 44. Lubricate the gasket [42] with Vaseline. 45. Put the gasket [42] in its correct position on the fuel pump. 46. Put the HMU [1] on the fuel pump. 47. Install the six washer [41] and nut [40] on the studs to connect the HMU [1] to the fuel pump. 48. Torque the nut [40] to 80 in-lb (9.04 N·m) - 90 in-lb (10.17 N·m). Record the torque value: _____ 49. Do these steps to install the fuel tube [33]: (a) Lubricate the gasket [34] with Vaseline.	

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	(b) Lubricate the threads of the bolt [32] and bolt [36] with Vaseline. (c) Lubricate the threads of the nipple with Vaseline. (d) Put the fuel tube [33] and the gasket [34] in the correct position between the HMU [1] and the fuel tube [38]. (e) Install and hand tighten the four bolt [32] that hold the fuel tube [33] and gasket [34] to the HMU [1]. (f) Use your hands to connect the fuel tube [33] to the fuel tube [38]. (g) Install and hand tighten the nut [35], bolt [36], and clamp [37] that hold the fuel tube [33] to the bracket. (h) Make sure that there is no gap between the fuel tube [33] and the gasket [34] or between the gasket [34] and the HMU [1]. (i) Torque the bolt [32] to 70 in-lb (7.91 N·m) - 80 in-lb (9.04 N·m). Record the torque value: _____ (j) Install 0.8mm lockwire on the bolt [32]. (k) Torque the coupling nut between the fuel tube [33] and fuel tube [38] to 140 in-lb (15.82 N·m) - 165 in-lb (18.65 N·m). Record the torque value: _____ (l) Install 0.8mm lockwire on the coupling nut between the fuel tube [33] and fuel tube [38]. (m)Torque the bolt [36] to 70 in-lb (7.91 N·m) - 80 in-lb (9.04 N·m). Record the torque value: _____ 50. Do these steps to install the fuel tube [39]: (a) Lubricate the gasket [26] with Vaseline. (b) Lubricate the threads of the bolt [27] with Vaseline. (c) Lubricate the threads of the nipple with Vaseline. (d) Put the fuel tube [39] and the gasket [26] in the correct position between the HMU [1] and the servo-fuel heater. (e) Install and hand tighten the four bolt [27] that hold the fuel tube [39] and the gasket [26] to the HMU [1]. (f) Connect and hand tighten the fuel tube [39] to the servo-fuel heater. (g) Torque the bolt [27] to 65 in-lb (7.34 N·m) - 75 in-lb (8.47 N·m). Record the torque value: _____ . (h) Torque the coupling nut between the fuel tube [39] and the servo-fuel heater to 140 in-lb (15.82 N·m) - 165 in-lb (18.65 N·m). Record the torque value: _____.	

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	51. Do these steps to install the fuel tube [43]: (a) Lubricate the threads of the nipples with Vaseline. (b) Put the fuel tube [43] in the correct position between the servo-fuel heater inlet port and the fuel pump. (c) Connect and hand tighten the fuel tube [43] to the servo-fuel heater. (d) Connect and hand tighten the fuel tube [43] to the fuel pump. (e) Torque the two coupling nuts to 140 in-lb (15.82 N·m) - 165 in-lb (18.65 N·m). Record the torque value: _____ . (f) Install 0.8mm lockwire on the two coupling nuts. 52. Do these steps to install the fuel tube [17]: (a) Lubricate the gasket [18] with Vaseline. (b) Lubricate the threads of the bolt [16], bolt [22], and bolt [24] with Vaseline. (c) Lubricate the threads of the nipple with Vaseline. (d) Put the fuel tube [17] and the gasket [18] in the correct position between the fuel tube [19] and the HMU [1]. (e) Install and hand tighten the four bolt [16] that hold the fuel tube [17] and the gasket [18] to the HMU [1]. (f) Connect and hand tighten the fuel tube [17] to the fuel tube [19]. (g) Use your hand to install the nut [21] and bolt [22] that hold the clamps and the oil tube [15] and fuel tube [17] to the bracket. (h) Install and hand tighten the nut [23], bolt [24], and clamp [25] that hold the fuel tube [17] to the fuel pump. (i) Torque the bolt [16] to 70 in-lb (7.91 N·m) - 80 in-lb (9.04 N·m). Record the torque value: _____ . (j) Install 0.8mm lockwire on the bolt [16]. (k) Torque the coupling nut, between the fuel tube [17] and fuel tube [19], to 140 in-lb (15.82 N·m) - 165 in-lb (18.65 N·m). Record the torque value: _____. (l) Install 0.8mm lockwire on the coupling nut, between the fuel tube [17] and fuel tube [19]. (m) Torque the bolt [22] and bolt [24] for the clamp [20] and clamp [25], to 70 in-lb (7.91 N·m) - 80 in-lb (9.04 N·m). Record the torque value: _____ .	

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	53. Connect these tubes to the HMU [1]: (a) Lubricate the threads of the nipples with Vaseline. (b) Install and hand tighten following tubes, torque the coupling nuts to 120 in-lb (13.56 N·m) - 130 in-lb (14.69 N·m). Record the torque value: _____ ① The VBV (CLOSED) [8] ② The VBV (OPEN) [9] ③ The PCR [11] ④ The VSV (ROD) [6] ⑤ The VSV (HEAD) [7] ⑥ The HPT [5] ⑦ The TBV [12] ⑧ The LPT [4] (c) Install 0.8mm lockwire on the coupling nuts. 54. Connect these electrical connectors to the HMU [1]. (a) The DP0803 (J8) connector on the fuel filter differential pressure switch. (b) The DP0601 (J6) connector. (c) The DP1207 (MW0312) connector. (d) The DP0501 (J5) connector. (e) The DP1203 (MW0312) connector. 55. Remove the fuel resistant container below the fuel pump. 56. Check the installation quality of the HMU. 57. Check the installation quality of all tubes. 58. Check the lockwire installation quality of joints. 59. Check the installation quality of all connectors.	

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9	**HMU Installation Test** 1. Click the Cockpit button, remove the DO-NOT-OPERATE tags from the BAT switch and engine start lever. 2. Set the BAT switch to the ON position. 3. Click the QUICK START button, click the APU button. 4. Switch to the Circuit Breaker interface, remove the circuit breaker clip and close the applicable circuit breakers： (a) For Left Engine/No.1 Engine：C458, C153, C1390 and C1314 Circuit Breaker. (b) For Right Engine/No.2 Engine：C459, C151, C1391 and C1315 Circuit Breaker. *NOTE: TO ENSURE TEST SAFETY, CLICK THE QUICK START BUTTON FOR ALL TEST PROCEDURES INVOLVING ENGINE RUN, THEN PRESS THE CORRESPONDING ENGINE BUTTON TO INITIATE THE ENGINE'S QUICK START.* **CAUTION: BEFORE ENGINE STARTING, REPORT TO EXPERTS AND CONFIRM ALL PREPARATIONS ARE COMPLETED AND ALL ENGINE START CONDITIONS ARE FULFILLED.** 5. Click the QUICK START button, click the applicable ENG1 or ENG2 button. 6. Let the engine become stable at the idle position for a minimum of 2 minutes. 7. Make sure that the applicable ENGINE CONTROL light, on the Cockpit panel, is OFF. 8. Examine the applicable component or system for signs of fluid leakage. (a) If you find leakage, repair or replace the tubes, tube flanges, the fittings or components as it is necessary. 9. Refer to step 6 Do EEC BITE TEST-RECENT FAULTS, Look for faults in Flight Leg 0. 10.1Make sure there is no fault (X) in Flight Leg 0. 11.Click the applicable ENG1 or ENG2 button to stop ENG.	

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10	**Aircraft Power Off** 1. Ensure that all switches and lights in the cockpit are set in accordance with the figure below.  2. Click the QUICK START button and APU button. 3. Set the BAT switch on the cockpit panel to the OFF position. 4. Close the Fan Cowl Panels.	

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11	**Self-Inspection and Finalization** 1. Return the tools in accordance with the tool list. 2. Clean and tidy the work area. 3. Submit the current task card.	

Certifies that the work specified except as otherwise specified was carried out in accordance with the requirement of the Air Navigation Act and in respect to that work the aircraft/engine/aircraft component is considered ready for release to service	(Name & signature) Certified by (Signature) Date: dd/mmm/yyyy

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