



EMB145 - EMB135

AIRCRAFT
MAINTENANCE MANUAL

LEFT POWER CONTROL/DISTRIBUTION BOX - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures to remove and install the Left Power Control/Distribution Box.
- B. The procedures in this section are given in the sequence below. The tasks identified with (♦) are part of the Scheduled Maintenance Requirements Document (SMRD).

TASK NUMBER	DESCRIPTION	EFFECTIVITY
24-65-00-000-801-A	LEFT POWER CONTROL/DISTRIBUTION BOX - REMOVAL	ALL
24-65-00-400-801-A	LEFT POWER CONTROL/DISTRIBUTION BOX - INSTALLATION	ALL



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AIRCRAFT
MAINTENANCE MANUAL

TASK 24-65-00-000-801-A

EFFECTIVITY: ALL

2. LEFT POWER CONTROL/DISTRIBUTION BOX - REMOVAL

A. General

(1) This procedure gives the instructions to remove the Left Power Control/Distribution Box.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-01/100	-
AMM MPP 06-41-02/100	-
AMM MPP 06-41-03/100	- COMPONENT LOCATION
AMM SDS 24-40-00/1	
AMM TASK 25-11-01-000-801-A/400	PILOT SEAT - REMOVAL
AMM TASK 25-12-05-000-801-A/400	LH AFT CONSOLE - REMOVAL
AMM TASK 25-21-02-000-801-A/400	FLIGHT ATTENDANT SEAT - REMOVAL

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
113	113DL	Forward fuselage section I
220	221CF	Cockpit floor panels
220	221EF	Cockpit floor panels
220	221GF	Cockpit floor panels
220	223UZ	Cockpit internal panels II

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Cockpit - LH
1	Helps the other technician	Cockpit - LH

I. Preparation

SUBTASK 841-002-A

- (1) Make sure that the GPU pushbutton, on the electrical panel, on the overhead panel, is set at OFF ([AMM SDS 24-40-00/1](#)).
- (2) Attach a DO-NOT-SET-ON tag to the GPU pushbutton.
- (3) Make sure that the BATT 1 and BATT 2 switches, on the electrical panel, on the overhead panel, are set at OFF.
- (4) Attach a DO-NOT-SET-AUTO tag to the BATT 1 and BATT 2 switches.
- (5) Make sure that the engines are not in operation.
- (6) Make sure that the APU engine is not in operation.
- (7) Remove the lifevest compartment ([AMM TASK 25-21-02-000-801-A/400](#)).
- (8) Remove the pilot seat ([AMM TASK 25-11-01-000-801-A/400](#)).
- (9) Remove the LH aft console ([AMM TASK 25-12-05-000-801-A/400](#)).
- (10) Open Main Battery Compartment Door 113DL (AMM MPP 06-41-01/100).
- (11) Open floor panels 221CF, 221EF, and 221GF (AMM MPP 06-41-02/100) to get access to the Left Power Control/Distribution Box.
- (12) Open access panel 223UZ ([AMM MPP 06-41-03/100](#)) to get access to the cables of the Left Power Control/Distribution Box.

J. Removal ([Figure 401](#)) ([Figure 402](#)) ([Figure 403](#))

SUBTASK 020-002-A

CAUTION: DO NOT ENERGIZE THE AIRCRAFT AND DO NOT START THE ENGINES AND APU IF THE LEFT POWER CONTROL/DISTRIBUTION BOX IS NOT INSTALLED.

- (1) Refer to [Figure 401](#) and do as follows:
 - (a) Cut the lockwire (2) from the power connectors (1) of the main batteries (3).
 - (b) Disconnect the power connectors (1) from the main batteries (3).
- (2) Refer to [Figure 402](#) and do as follows:
 - (a) Remove the cover (1) of the Left Power Control/Distribution Box (2).
 - (b) Remove the four screws (3) and four washers (4) which attach the Left Power Control/Distribution Box (2).
- (3) Refer to [Figure 403](#) and do as follows:
 - (a) Disconnect the seven electrical connectors (24) from the Left Power Control/Distribution Box (1).

NOTE: If the electrical connectors are without identification code, identify the connectors to make the reinstallation easier.

- (b) Remove the electrical connector (23) of the contactor (20).
- (c) Remove the nut (21) and washer (22) which attach the electrical cable (19) to the contactor (20).
- (d) Disconnect the electrical cable (19) from the contactor (20).

NOTE: If the electrical cable is without identification code, identify the electrical cable to make the reinstallation easier.

- (e) Applicable to aircraft equipped with ovens: Cut the cable tiedown strap (25) to loosen the electrical cable (26) of the Left Power Control/Distribution Box (1).
- (f) Applicable to aircraft equipped with ovens: Remove the bolt (27), spring washer (28), two washers (29), and nut (31) which attach the electrical cable (30) to the interconnection bar (32).
- (g) Applicable to aircraft equipped with ovens: Disconnect the electrical cable (30) from the interconnection bar (32).

NOTE: If the electrical cable is without identification code, identify the electrical cable to make the reinstallation easier.

- (h) Remove the two nuts (6), two spring washers (5), four washers (3), and two bolt (2) which attach the four electrical cables (4) to the interconnection bar (7).

- (i) Disconnect the four electrical cables (4) from the interconnection bar (7).

NOTE: If the electrical cables are without identification code, identify the electrical cables to make the reinstallation easier.

- (j) Remove the six bolts (10), six spring washers (9), and six washers (8) which attach the six electrical cables (11) to the three feeder protection relays (12).

- (k) Disconnect the six electrical cables (11) from the three feeder protection relays (12).

NOTE: If the electrical cables are without identification code, identify the electrical cables to make the reinstallation easier.

- (l) Remove the nut (36) and washer (35) which attach the electrical cable (34) to the contactor (33).

- (m) Disconnect the electrical cable (34) from the contactor (33).

NOTE: If the electrical cable is without identification code, identify the electrical cable to make the reinstallation easier.

- (n) Remove the bolt (44) and washer (43) which attach the electrical cables (41) and (42) to the fuse (45).

- (o) Disconnect the electrical cables (41) and (42) from the fuse (45).

NOTE: If the electrical cable is without identification code, identify the electrical cable to make the reinstallation easier.

- (p) Remove the two bolts (40) and two washers (39) which attach the two electrical cables (38) to the two interconnection bars (37).

- (q) Disconnect the electrical cables (38) from the interconnection bars (37).

NOTE: If the electrical cables are without identification code, identify the electrical cables to make the reinstallation easier.

- (r) Remove the nut (13), spring washer (14), two washers (15), and bolt (18) which attach the electrical cable (16) to the interconnection bar (17).

- (s) Disconnect the electrical cable (16) from the interconnection bar (17).

NOTE: If the electrical cable is without identification code, identify the electrical cable to make the reinstallation easier.

- (t) Applicable to aircraft with MEDEVAC configuration: Remove two bolts (49) and two washers (48) which attach the two electrical cables (47) from the two fuses (46).

NOTE: If the electrical cable is without identification code, identify the electrical cable to make the reinstallation easier.

- (u) Applicable to aircraft with MEDEVAC configuration: Disconnect two electrical cables (47) from the two fuses (46).

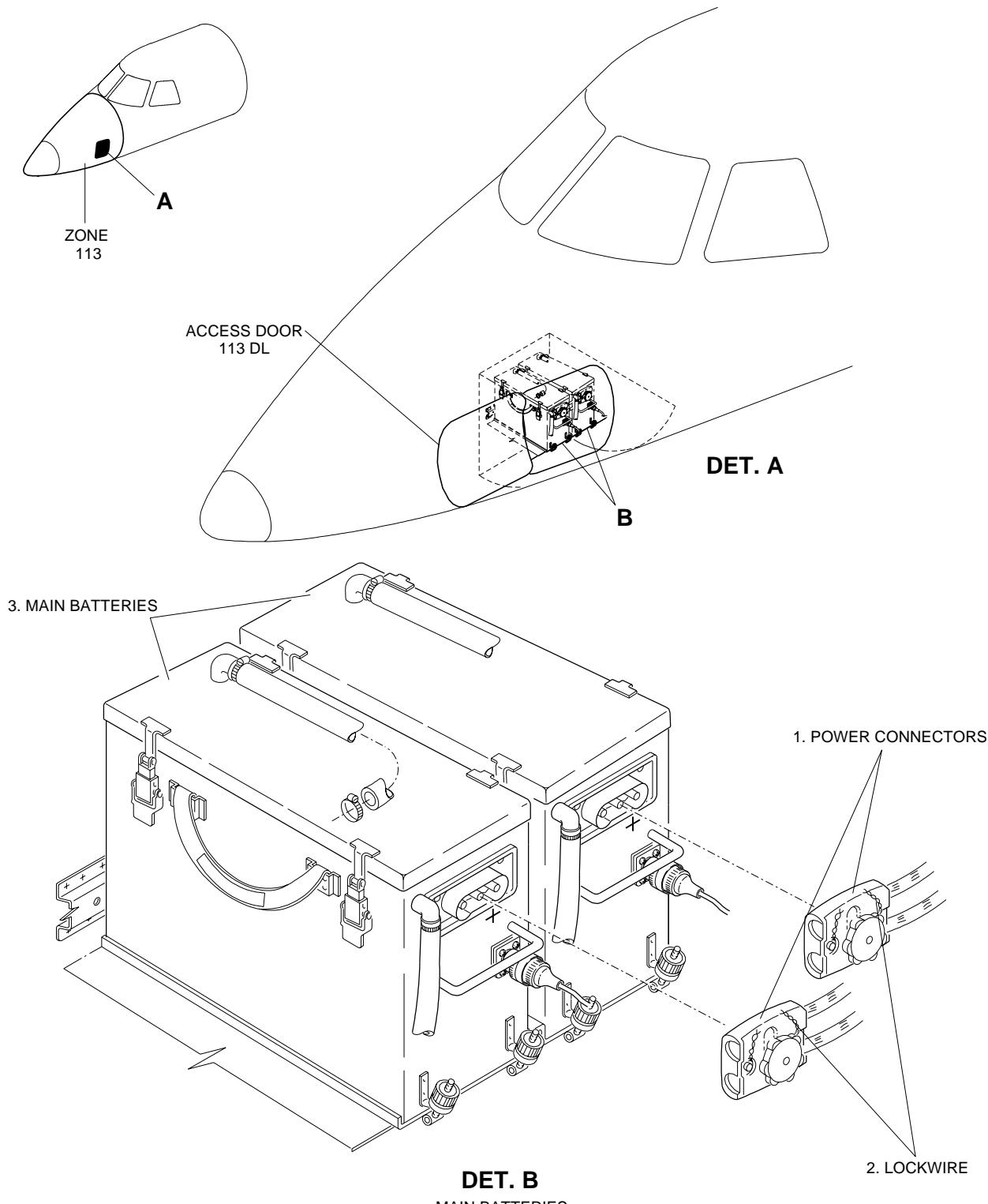
CAUTION: AFTER THE REMOVAL OF THE LEFT POWER CONTROL/DISTRIBUTION BOX, DO NOT ENERGIZE THE AIRCRAFT AND DO NOT START THE ENGINES AND APU BEFORE THE BOX REINSTALLATION.

- (v) Remove the Left Power Control/Distribution Box (1).

EFFECTIVITY: ALL

Left Power Control/Distribution Box - Removal/Installation

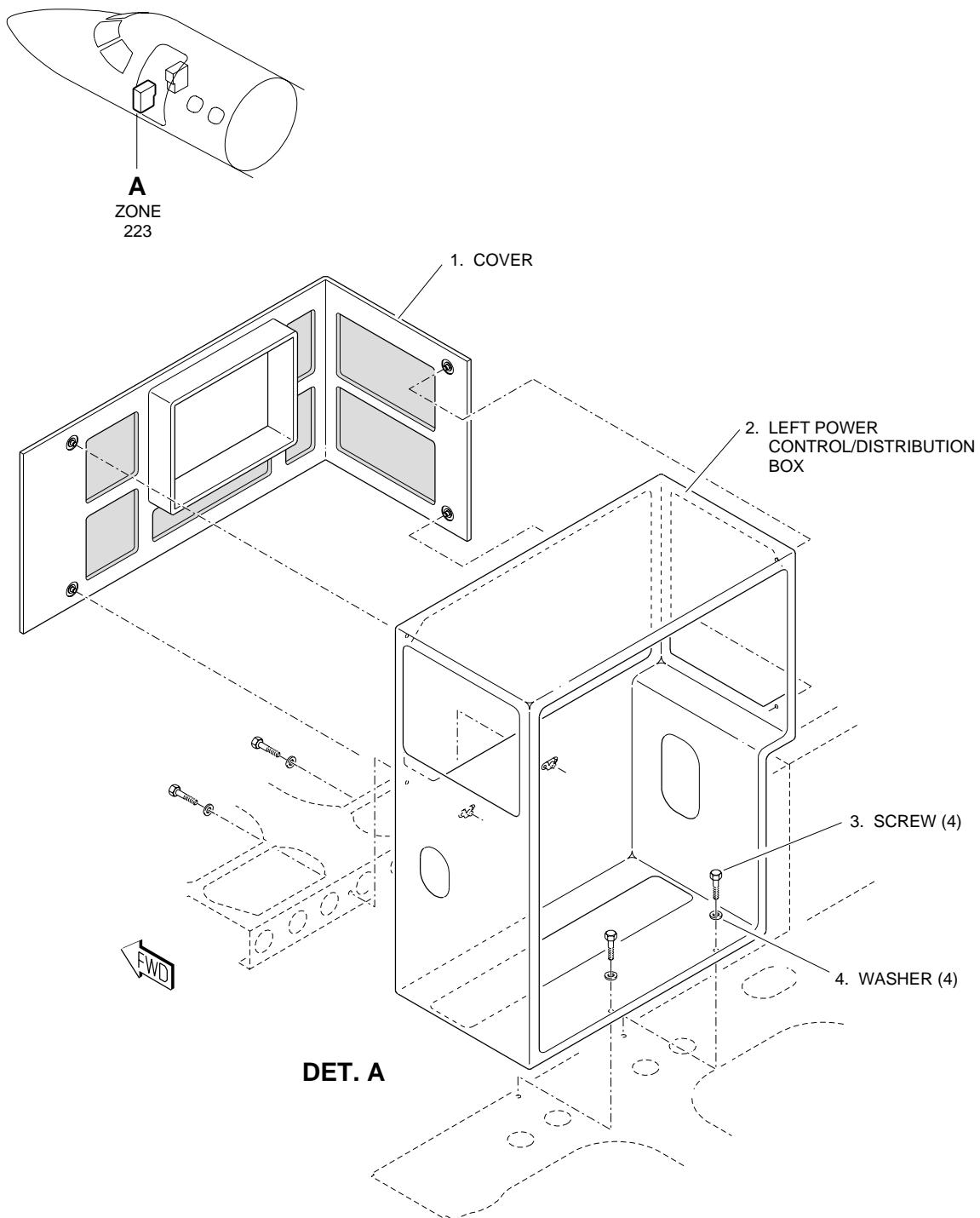
Figure 401



EFFECTIVITY: ALL

Left Power Control/Distribution Box - Removal/Installation

Figure 402

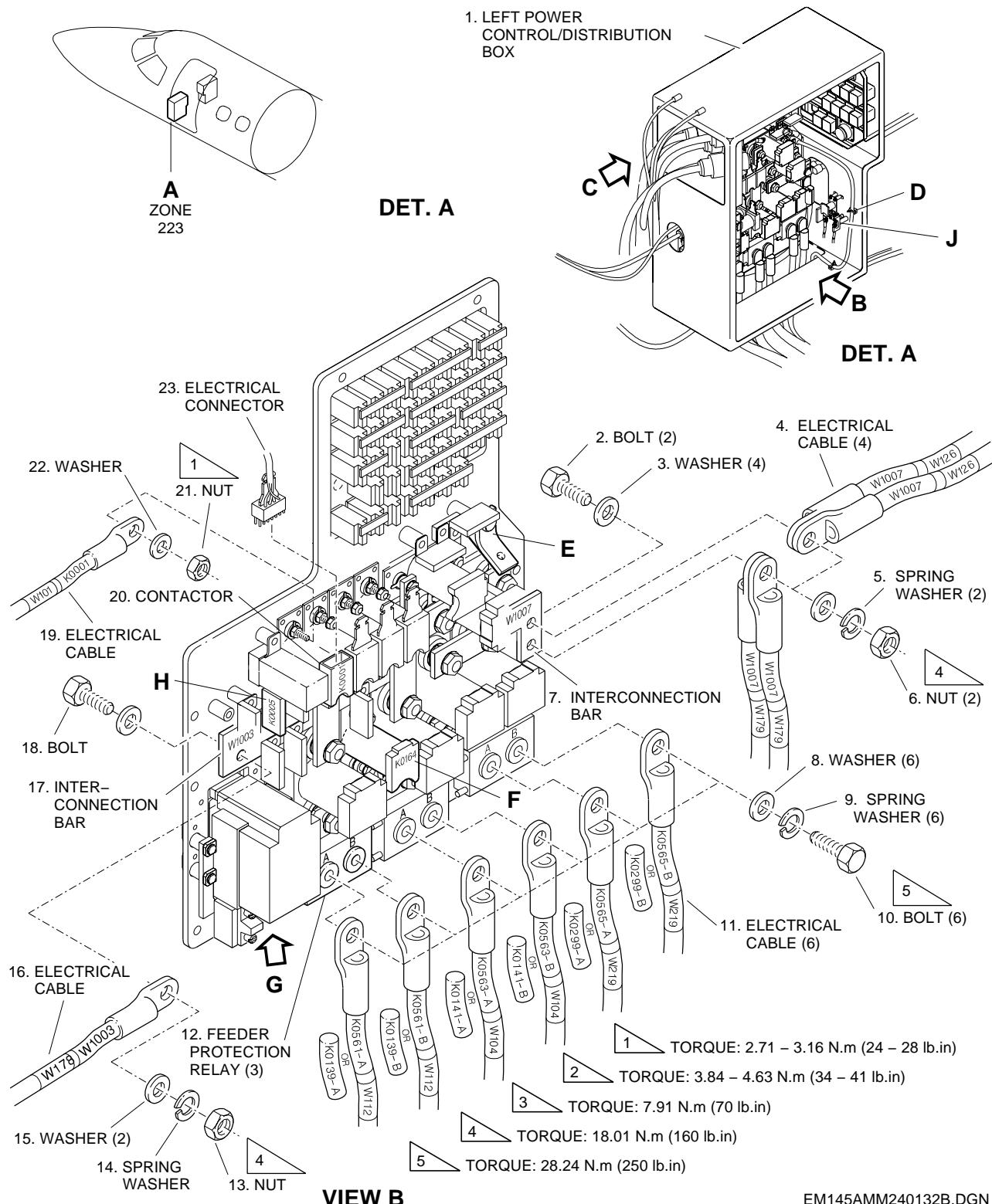


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EFFECTIVITY: ALL

Left Power Control/Distribution Box - Removal/Installation

Figure 403 - Sheet 1

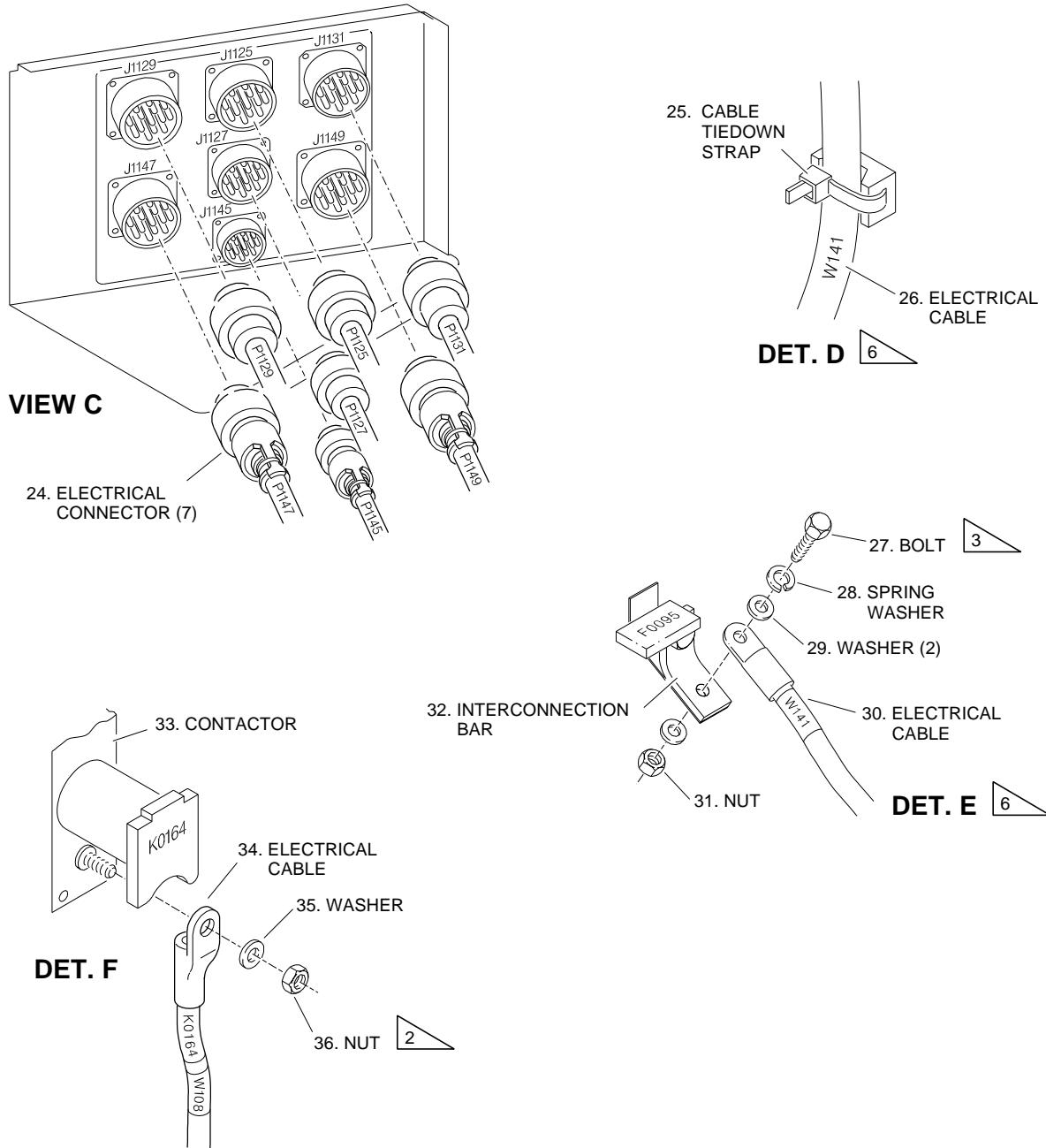


EM145AMM240132B.DGN

EFFECTIVITY: ALL

Left Power Control/Distribution Box - Removal/Installation

Figure 403 - Sheet 2



[2] TORQUE: 3.84 – 4.63 N.m (34 – 41 lb.in)

[3] TORQUE: 7.91 N.m (70 lb.in)

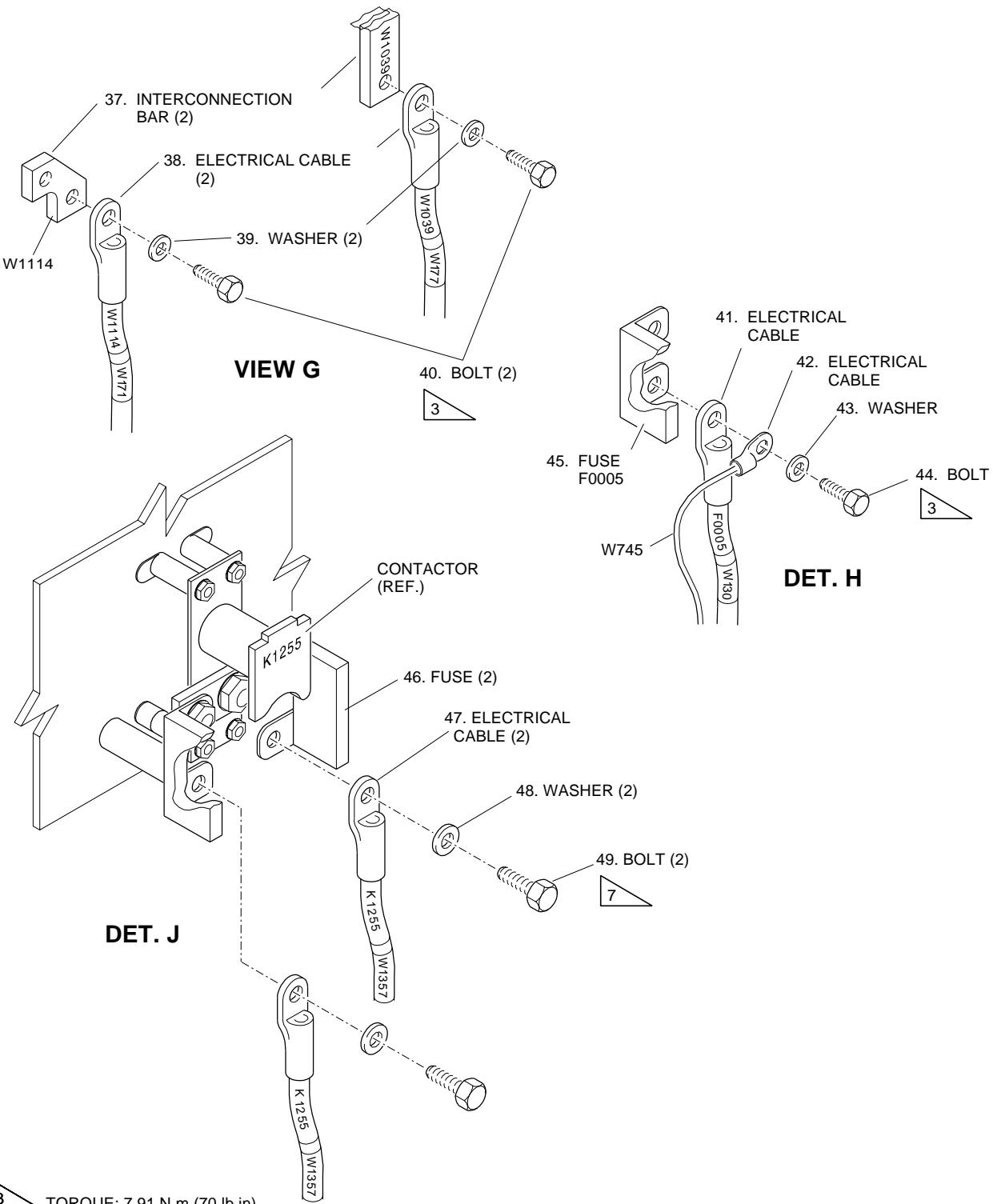
[6] APPLICABLE TO AIRCRAFT EQUIPPED WITH OVENS.

EM145AMM240133D.DGN

EFFECTIVITY: ALL

Left Power Control/Distribution Box - Removal/Installation

Figure 403 - Sheet 3



EM145AMM240639A.DGN

TASK 24-65-00-400-801-A
EFFECTIVITY: ALL
3. LEFT POWER CONTROL/DISTRIBUTION BOX - INSTALLATION
A. General

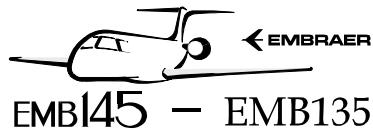
- (1) This procedure gives the instructions to install the Left Power Control/Distribution Box.

B. References

<i>REFERENCE</i>	<i>DESIGNATION</i>
AMM MPP 06-41-01/100	-
AMM MPP 06-41-02/100	-
AMM MPP 06-41-03/100	- COMPONENT LOCATION
AMM TASK 21-20-00-700-801-A/500	CONDITIONED AIR DISTRIBUTION SYSTEM - OPERATIONAL CHECK
AMM TASK 24-20-00-700-801-A/500	AC GENERATION SYSTEM - OPERATIONAL TEST
AMM TASK 24-31-00-700-803-A/500	MAIN GENERATION SYSTEM - OPERATIONAL TEST
AMM TASK 24-34-00-700-803-A/500	APU GENERATION SYSTEM - OPERATIONAL TEST
AMM TASK 24-36-00-700-801-A/500	MAIN BATTERY SYSTEM - OPERATIONAL TEST
AMM TASK 24-60-00-700-801-A/500	ELECTRICAL EMERGENCY TRANSFER CIRCUIT - OPERATIONAL CHECK
AMM TASK 24-60-00-700-802-A/500	ELEC EMERG ABNORM ALARM - OPERATIONAL CHECK
AMM TASK 25-11-01-400-801-A/400	PILOT SEAT - INSTALLATION
AMM TASK 25-12-05-400-801-A/400	LH AFT CONSOLE - INSTALLATION
AMM TASK 25-21-02-400-801-A/400	FLIGHT ATTENDANT SEAT - INSTALLATION
AMM TASK 28-41-00-200-801-A/600	-
AMM TASK 29-10-04-700-801-A/500	ELECTRIC MOTOR DRIVEN PUMP (EMDP) - OPERATIONAL CHECK
AMM TASK 30-42-00-700-801-A/500	WINDSHIELD HEATING - OPERATIONAL CHECK
AMM TASK 33-41-00-700-801-A/500	LANDING LIGHTS - OPERATIONAL TEST
AMM TASK 33-42-00-700-801-A/500	TAXI LIGHTS - OPERATIONAL TEST

C. Zones and Accesses

<i>ZONE</i>	<i>PANEL/DOOR</i>	<i>LOCATION</i>
113	113DL	Forward fuselage section I
220	221CF	Cockpit floor panels
220	221EF	Cockpit floor panels
220	221GF	Cockpit floor panels
220	223UZ	Cockpit internal panels II



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D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Torque wrench (For the torque range, refer to Figure 402)	To torque the fasteners correctly	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
MIL-S-23190 (P/N MS3367-1-9)	Cable Tiedown Strap	1
ASTM B 134-(OS)	Lockwire - Annealed Brass C26000, .012 in (mm)	400 (mm)

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
2	Do the task	Cockpit - LH

I. Installation (Figure 401) (Figure 402) (Figure 403)

SUBTASK 420-002-A

- WARNING:** • DO NOT ENERGIZE THE AIRCRAFT. MAKE SURE THAT THE GPU PUSHBUTTON, BACKUP PUSHBUTTON, BATT 1 AND BATT 2 SWITCHES, ON THE ELECTRICAL PANEL, ON THE OVERHEAD PANEL, ARE SET AT OFF.
- MAKE SURE THAT THE ENGINES AND APU ARE NOT IN OPERATION.

- (1) Refer to (Figure 402) and do as follows:
 - (a) Tighten the four screws (3) and four washers (4) which attach the Left Power Control/Distribution Box (2).
 - (b) Install the cover (1) to the Left Power Control/Distribution Box (2).
- (2) Refer to (Figure 403) and do as follows:
 - (a) Connect the electrical cable (16) to the interconnection bar (17).

CAUTION: SEE ITS IDENTIFICATION TO MAKE SURE THAT THE ELECTRICAL CABLE IS INSTALLED CORRECTLY AND THAT THE TORQUE VALUE IS APPLIED CORRECTLY. INCORRECT INSTALLATION OF THE CABLE WILL CAUSE SERIOUS PROBLEMS TO THE AIRCRAFT.

- (b) Tighten the nut (13), spring washer (14), two washers (15), and bolt (18) which attach the electrical cable (16) to the interconnection bar (17).
- (c) Connect the two electrical cables (38) to the two interconnection bars (37).

CAUTION: SEE THEIR IDENTIFICATION TO MAKE SURE THAT THE ELECTRICAL CABLES ARE INSTALLED CORRECTLY AND THAT THE TORQUE VALUE IS APPLIED CORRECTLY. INCORRECT INSTALLATION OF THE CABLES WILL CAUSE SERIOUS PROBLEMS TO THE AIRCRAFT.

- (d) Tighten the two bolts (40) and two washers (39) which attach the two electrical cables (38) to the two interconnection bars (37).
- (e) Connect the electrical cables (42) and (41) to the fuse (45).

CAUTION: SEE THEIR IDENTIFICATION TO MAKE SURE THAT THE ELECTRICAL CABLES ARE INSTALLED CORRECTLY AND THAT THE TORQUE VALUE IS APPLIED CORRECTLY. INCORRECT INSTALLATION OF THE CABLES WILL CAUSE SERIOUS PROBLEMS TO THE AIRCRAFT.

- (f) Tighten the bolt (44) and washer (43) which attach the electrical cables (42) and (41) to the fuse (45).
- (g) Connect the electrical cable (34) to the contactor (33).

CAUTION: SEE ITS IDENTIFICATION TO MAKE SURE THAT THE ELECTRICAL CABLE IS INSTALLED CORRECTLY AND THAT THE TORQUE VALUE IS APPLIED CORRECTLY. INCORRECT INSTALLATION OF THE CABLE WILL CAUSE SERIOUS PROBLEMS TO THE AIRCRAFT.

- (h) Tighten the nut (36) and washer (35) which attach the electrical cable (34) to the contactor (33).
- (i) Connect the six electrical cables (11) to the three feeder protection relays (12).

CAUTION: SEE THEIR IDENTIFICATION TO MAKE SURE THAT THE ELECTRICAL CABLES ARE INSTALLED CORRECTLY AND THAT THE TORQUE VALUE IS APPLIED CORRECTLY. INCORRECT INSTALLATION OF THE CABLES WILL CAUSE SERIOUS PROBLEMS TO THE AIRCRAFT.

- (j) Tighten the six bolts (10), six spring washers (9), and six washers (8) which attach the six electrical cables (11) to the three feeder protection relays (12).
- (k) Connect the four electrical cables (4) to the interconnection bar (7).

CAUTION: SEE THEIR IDENTIFICATION TO MAKE SURE THAT THE ELECTRICAL CABLES ARE INSTALLED CORRECTLY AND THAT THE TORQUE VALUE IS APPLIED CORRECTLY. INCORRECT INSTALLATION OF THE CABLES WILL CAUSE SERIOUS PROBLEMS TO THE AIRCRAFT.

- (l) Tighten the two nuts (6), two spring washers (5), four washers (3), and two bolt (2), which attach the four electrical cables (4) to the interconnection bar (7).
- (m) Applicable to aircraft equipped with ovens: Connect the electrical cable (30) to the interconnection bar (32).

CAUTION: SEE ITS IDENTIFICATION TO MAKE SURE THAT THE ELECTRICAL CABLE IS INSTALLED CORRECTLY AND THAT THE TORQUE VALUE IS APPLIED CORRECTLY. INCORRECT INSTALLATION OF THE CABLE WILL CAUSE SERIOUS PROBLEMS TO THE AIRCRAFT.

- (n) Applicable to aircraft equipped with ovens: Tighten the nut (31), two washers (29), spring washer (28), and bolt (27) which attach the electrical cable (30) to the interconnection bar (32).
- (o) Applicable to aircraft equipped with ovens: Install the cable tiedown strap (25) to attach the electrical cable (26) to the Left Power Control/Distribution Box (1).
- (p) Connect the electrical cable (19) to the contactor (20).

CAUTION: SEE ITS IDENTIFICATION TO MAKE SURE THAT THE ELECTRICAL CABLE IS INSTALLED CORRECTLY AND THAT THE TORQUE VALUE IS APPLIED CORRECTLY. INCORRECT INSTALLATION OF THE CABLE WILL CAUSE SERIOUS PROBLEMS TO THE AIRCRAFT.

- (q) Tighten the nut (21) and washer (22) which attach the electrical cable (19) to the contactor (20).
- (r) Connect the electrical connector (23) to the contactor (20).
- (s) Applicable to aircraft with MEDEVAC configuration: Connect two electrical cables (47) to the two fuses (46).

CAUTION: SEE ITS IDENTIFICATION TO MAKE SURE THAT THE ELECTRICAL CONNECTORS ARE INSTALLED CORRECTLY. INCORRECT INSTALLATION OF THE CONNECTORS WILL CAUSE SERIOUS PROBLEMS TO THE AIRCRAFT.

- (t) Applicable to aircraft with MEDEVAC configuration: Tighten the two bolts (49) and the two washers (48) which attach the two electrical cables (47).

CAUTION: SEE ITS IDENTIFICATION TO MAKE SURE THAT THE ELECTRICAL CONNECTORS ARE INSTALLED CORRECTLY. INCORRECT INSTALLATION OF THE CONNECTORS WILL CAUSE SERIOUS PROBLEMS TO THE AIRCRAFT.

- (u) Connect the seven electrical connectors (24) to the Left Power Control/Distribution Box (1).
- (3) Refer to (Figure 401) and do as follows:
- (a) Connect the power connectors (1) to the main batteries (3).
 - (b) Use a lockwire (2) to lock the power connectors (1) of the main batteries (3).

J. Follow-on

SUBTASK 842-002-A

- (1) Close Main Battery Compartment Door 113DL (AMM MPP 06-41-01/100).
- (2) Close access panel 223UZ ([AMM MPP 06-41-03/100](#)).

- (3) Do an inspection on the fuel quantity indication harness (AMM TASK 28-41-00-200-801-A/600).

NOTE: The inspection of fuel quantity indication harness is a part of Critical Design Configuration Control Limitations (CDCCL) in the Airworthiness Limitations (Section 6) of the Maintenance Review Board Report (MRB).

- (4) Close floor panels 221CF, 221EF, and 221GF (AMM MPP 06-41-02/100)
- (5) Install the LH aft console (AMM TASK 25-12-05-400-801-A/400).
- (6) Install the pilot seat (AMM TASK 25-11-01-400-801-A/400).
- (7) Install the lifevest compartment (AMM TASK 25-21-02-400-801-A/400).
- (8) Remove a DO-NOT-SET-AUTO tag to the BATT 1 and BATT 2 switches.
- (9) Remove a DO-NOT-SET-ON tag to the GPU pushbutton.
- (10) Do the Operational Test of the Main Battery System (AMM TASK 24-36-00-700-801-A/500).
- (11) Do the Operational Check of the Electrical Emergency Transfer Circuit (AMM TASK 24-60-00-700-801-A/500).
- (12) Do the Operational Check of the ELEC EMERG ABNORM Alarm (AMM TASK 24-60-00-700-802-A/500).
- (13) Do the Operational Test of the AC Generation System (AMM TASK 24-20-00-700-801-A/500).
- (14) Do the Operational Check of the conditioned air distribution subsystem in the cockpit (AMM TASK 21-20-00-700-801-A/500).
- (15) Do the Operational Check of the Electric Motor-Driven Pump, of system 2 (AMM TASK 29-10-04-700-801-A/500).
- (16) Do the Operational Test of Windshield Heating 1 (AMM TASK 30-42-00-700-801-A/500).
- (17) Do the Operational Test of Landing Light 1 and Nose Landing Light (AMM TASK 33-41-00-700-801-A/500).
- (18) Do the Operational Test of the upper Taxi Light (AMM TASK 33-42-00-700-801-A/500).
- (19) Do the Operational Test of the APU Generation System (AMM TASK 24-34-00-700-803-A/500).
- (20) Do the Operational Test of the Main Generation System (AMM TASK 24-31-00-700-803-A/500).

