



EMB145 – EMB135

AIRCRAFT
MAINTENANCE MANUAL

BUS TIE CONTACTOR (BTC) - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures to remove/install the bus tie contactors (BTC 1 and/or BTC 2).
- B. BTC 1 is installed in the left electrical-power control and distribution box.
- C. BTC 2 is installed in the right electrical-power control and distribution box.
- D. You can get access to BTC 1 through the 223UZ panel on the left side of the cockpit in forward fuselage section II.
- E. You can get access to BTC 2 through the 224NZ panel on the right side of the cockpit in forward fuselage section II.
- F. 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
24-60-01-000-801-A	BUS TIE CONTACTORS (BTCS) - REMOV- ALL	
24-60-01-400-801-A	BUS TIE CONTACTORS (BTCS) - INSTAL- LATION	



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TASK 24-60-01-000-801-A

EFFECTIVITY: ALL

2. BUS TIE CONTACTORS (BTCS) - REMOVAL

A. General

- (1) This task gives the procedures to remove the bus tie contactors (BTC 1 and/or BTC 2).

B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-03/100	- COMPONENT LOCATION

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
223	223UZ	LH forward fuselage section II
224	224NZ	RH forward fuselage section 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	LH forward fuselage section II
1	Does the task	RH forward fuselage section II

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 (The striped bar is off).
- (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) Remove the lifevest compartment and open access panel 223UZ (to get access to BTC 1) ([AMM MPP 06-41-03/100](#)).
- (6) Open access panel 224NZ (to get access to BTC 2) ([AMM MPP 06-41-03/100](#)).

J. Removal

SUBTASK 000-002-A

- (1) Do the BTC 1 removal as follows ([Figure 401](#)):
 - (a) Disconnect the electrical connectors (1), (2), and (3).
 - (b) Disconnect the electrical connector (23) from BTC 1 (4).
 - (c) Remove the nuts (8) and (18), washers (7) and (19) from the connection bar (22).
 - (d) Remove the two bolts (20) and two washers (21) which attach the connection bar (22) to the left electrical-power control and distribution box (24).
 - (e) Remove the connection bar (22) from the left electrical-power control and distribution box (24).
 - (f) Remove the bolt (13) and release the electrical wire (12).
 - (g) Remove the nuts (11), (14) and (16), and washers (10), (15) and (17) to remove the connection bar (9).
 - (h) Remove the connection bar (9) from the left electrical-power control and distribution box (24).
 - (i) Remove the four screws (6) and four washers (5) which attach BTC 1 (4) to the left electrical-power control and distribution box (24).
 - (j) Remove BTC 1 (4).
- (2) Do the BTC 2 removal as follows ([Figure 402](#)):
 - (a) Disconnect the electrical connector (1) from BTC 2 (2).
 - (b) Remove nuts (7) and (17), washers (6) and (18) from the connection bar (5).
 - (c) Remove the two bolts (19) and washers (20) which attach the connection bar (5) to the right electrical-power control and distribution box (21).
 - (d) Remove the connection bar (5) from the right electrical-power control and distribution box (21).
 - (e) Remove the nuts (11) and (13), washers (10) and (14) and electrical cables (9) from the connection bar (8).
 - (f) Remove the bolt (12) washer (15) and electrical wire (16) which connect the connection bar (8) to the right electrical-power control and distribution box (21).
 - (g) Remove the connection bar (8) from the right electrical-power control and distribution box (21).



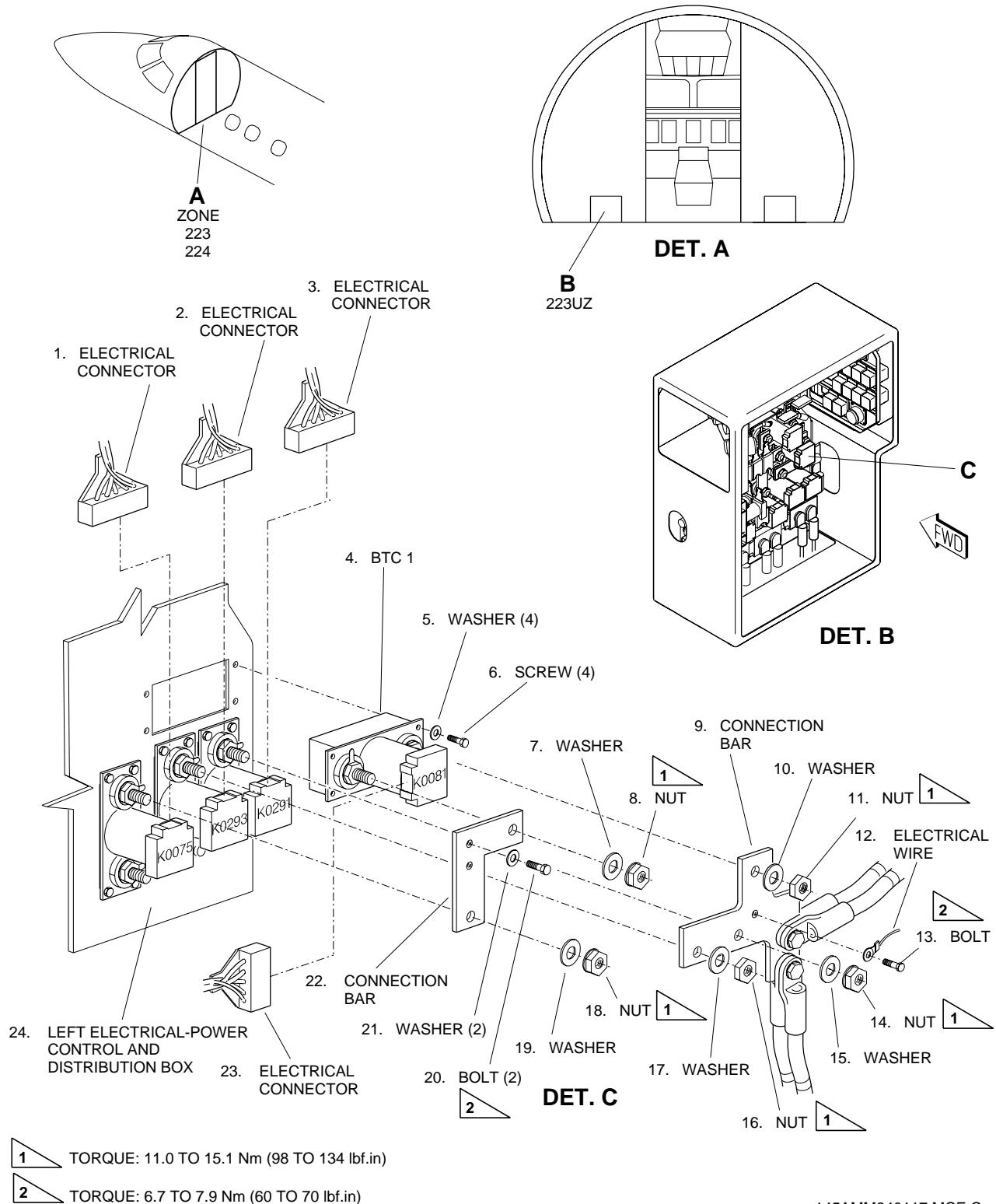
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- (h) Remove the four screws (4) and four washers (3) which attach BTC 2 (2) to the right electrical-power control and distribution box (21).
- (i) Remove BTC 2 (2).

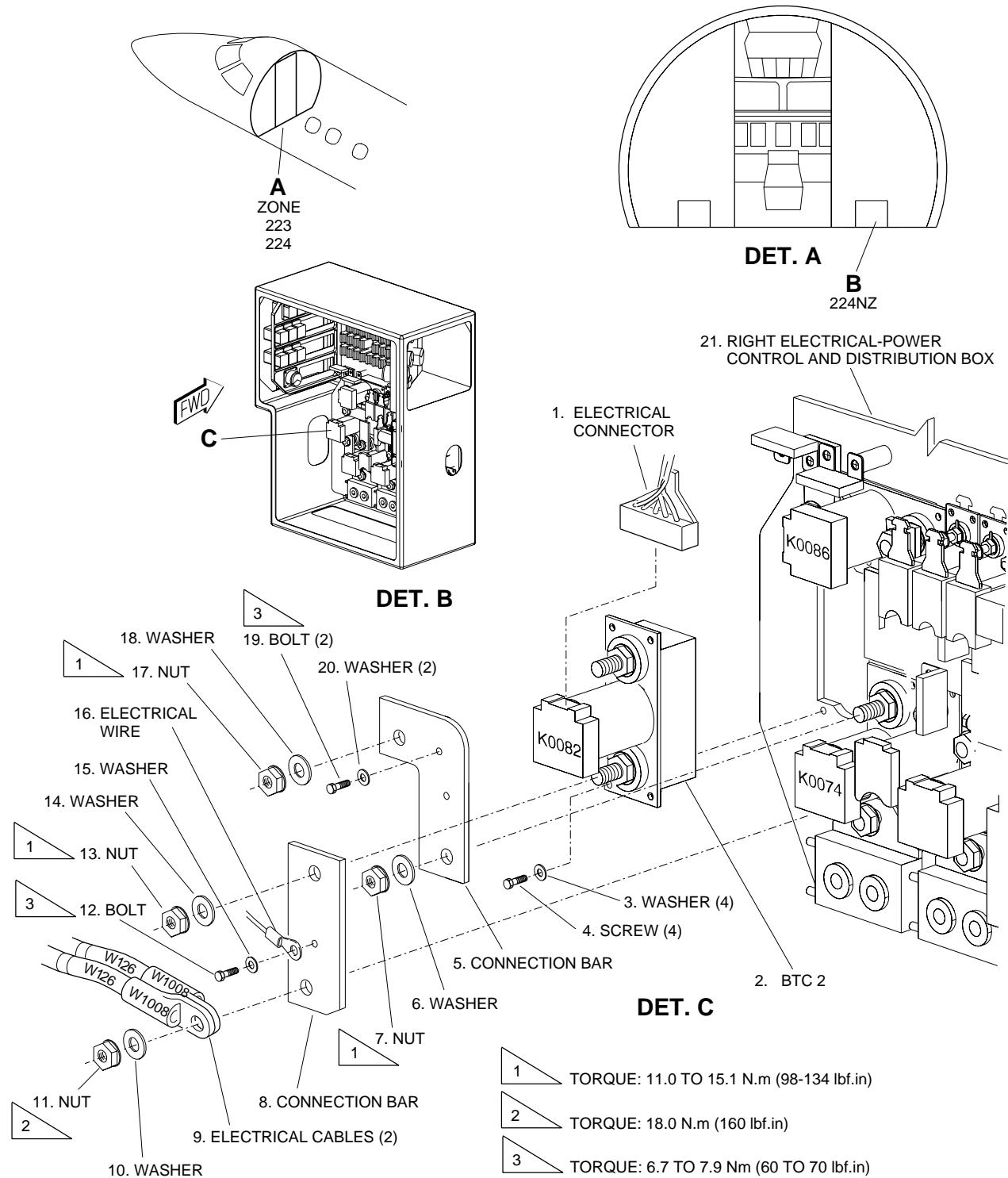
EFFECTIVITY: ALL

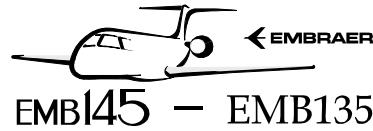
Bus Tie Contactor (BTC 1) - Removal/Installation
Figure 401



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EFFECTIVITY: ALL

 Bus Tie Contactor (BTC 2) - Removal/Installation
 Figure 402




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TASK 24-60-01-400-801-A

EFFECTIVITY: ALL

3. BUS TIE CONTACTORS (BTCS) - INSTALLATION

A. General

- (1) This task gives the procedures to install the bus tie contactors (BTC 1 and/or BTC 2).

B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-03/100	- COMPONENT LOCATION
AMM TASK 24-60-00-700-802-A/500	ELEC EMERG ABNORM ALARM - OPERATIONAL CHECK

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
223	223UZ	LH forward fuselage section II
224	224NZ	RH forward fuselage section II

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Torque wrench (For the torque range, refer to Figures 401 and 402)	To torque the fasteners correctly	

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	LH forward fuselage section II
1	Does the task	RH forward fuselage section II

I. Installation (Figure 401)

SUBTASK 420-002-A

- (1) Do the BTC 1 installation as follows (Figure 401):

- Put BTC 1 (4) in the left electrical-power control and distribution box (24).
- Attach BTC 1 (4) to the left electrical-power control and distribution box (24) with the four screws (6) and four washers (5).

- (c) Put the connection bar (22) in the left electrical-power control and distribution box (24) and attach it with the two bolts (20) and the two washers (21).
 - (d) Connect the connection bar (22) to BTC 1 (4) and contactor K0075 with the nuts (8) and (18), and washers (7) and (19).
 - (e) Put the connection bar (9) in the left electrical-power control and distribution box (24).
 - (f) Connect the connection bar (9) to BTC 1 (4), contactor K0291, and contactor K0293, with the nuts (11), (14), and (16), and washers (10), (15), and (17).
 - (g) Connect the electrical wire (12) to the connection bar (9) with the bolt (13).
 - (h) Tighten the bolt (13) to the connection bar (9).
 - (i) Tighten the nuts (8), (11), (14), (16), and (18), and the washers (7), (10), (15) and (19)
 - (j) Tighten the two bolts (20) and the two washers (19) to the connection bar (22).
 - (k) Connect the electrical connectors (1), (2), and (3) to contactors K0075, K0293, and K0291.
 - (l) Connect the electrical connector (23) to contactor K0081 (BTC 1) (4).
- (2) Do the BTC 2 installation as follows (Figure 402):
- (a) Put BTC 2 (2) in the right electrical-power control and distribution box (21).
 - (b) Attach BTC 2 (2) to the right electrical-power control and distribution box (21) with the four screws (4) and four washers (3).
 - (c) Put the connection bar (5) in the right electrical-power control and distribution box (21) and attach it with the two bolts (19) and two washers (20).
 - (d) Connect the connection bar (5) to BTC 2 (2) and contactor K0074 with the nuts (17) and (7), and washers (18) and (6).
 - (e) Put the connection bar (8) in the right electrical-power control and distribution box (21) and attach it with the bolt (12), washer (15) and electrical wire (16).
 - (f) Connect the electrical cables (9) in the connection bar (8) to BTC 2 (2) and to the right electrical-power control and distribution box (21).
 - (g) Tighten the nuts (11) and (13), and washers (10) and (14) to the connection bar (8) .
 - (h) Connect the electrical connector (1) to BTC 2 (2).

J. Follow-on

SUBTASK 842-002-A

- (1) Close access panel 223UZ and/or access panel 224NZ ([AMM MPP 06-41-03/100](#)).
- (2) Remove the DO-NOT-SET-ON tag from the GPU pushbutton.



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- (3) Remove the DO-NOT-SET-AUTO tag from the BATT 1 and BATT 2 switches.
- (4) Do the Operational Check ELEC EMERG ABNORM Alarm ([AMM TASK 24-60-00-700-802-A/500](#)).

