



EMB145 - EMB135

AIRCRAFT  
MAINTENANCE MANUAL

**THERMAL SWITCH - ADJUSTMENT/TEST**

*EFFECTIVITY: ACFT MODEL(S) EMB-145*

1. General

- A. This section gives the procedure to do an operational check on the thermal switches (duct leakage switches and massive leakage switches).
- B. The duct leakage switches are installed at all flexible joints in the bleed lines and the massive leakage switches (in the region of the rear electronic compartment) are not installed at flexible joints in the bleed lines.
- C. There are 14 duct leakage switches for the RH bleed line and 17 duct leakage switches for the LH bleed line (On the APU bleed line are 3 duct leakage switches installed).
- D. There are 3 massive leakage switches (one for the LH bleed line, one for the RH bleed line, and one for the APU bleed line).
- E. The procedures in this section are given in the sequence below. The tasks identified with (♦) are part of the Scheduled Maintenance Requirements Document (SMRD).

| <i>TASK NUMBER</i>   | <i>DESCRIPTION</i>                                          | <i>EFFECTIVITY</i>       |
|----------------------|-------------------------------------------------------------|--------------------------|
| 36-20-02-700-801-A ♦ | THERMAL SWITCH (DUCT LEAKAGE SWITCH) - OPERATIONAL CHECK    | ACFT MODEL(S)<br>EMB-145 |
| 36-20-02-700-802-A ♦ | THERMAL SWITCH (MASSIVE LEAKAGE SWITCH) - OPERATIONAL CHECK | ACFT MODEL(S)<br>EMB-145 |



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TASK 36-20-02-700-801-A

EFFECTIVITY: ACFT MODEL(S) EMB-145

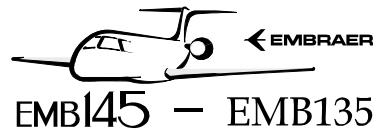
2. THERMAL SWITCH (DUCT LEAKAGE SWITCH) - OPERATIONAL CHECK

A. General

- (1) This check must be done on each duct leakage switch at a time.

B. References

| REFERENCE                       | DESIGNATION                                                |
|---------------------------------|------------------------------------------------------------|
| AMM MPP 06-30-00/100            | -                                                          |
| AMM MPP 06-41-00/100            | -                                                          |
| AMM MPP 06-41-01/100            | -                                                          |
| AMM MPP 06-41-02/100            | -                                                          |
| AMM MPP 06-41-05/100            | - COMPONENT LOCATION                                       |
| AMM MPP 06-42-00/100            | -                                                          |
| AMM MPP 06-43-00/100            | - COMPONENT LOCATION                                       |
| AMM TASK 20-40-01-860-801-A/200 | ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE |
| AMM TASK 25-51-01-000-801-A/400 | BAGGAGE COMPARTMENT LINING - REMOVAL                       |
| AMM TASK 25-51-01-400-801-A/400 | BAGGAGE COMPARTMENT LINING - INSTALLATION                  |
| AMM TASK 52-44-01-000-801-A/400 | REAR ELECTRONIC-COMPARTMENT DOOR - REMOVAL                 |
| AMM TASK 52-44-01-400-801-A/400 | REAR ELECTRONIC-COMPARTMENT DOOR - INSTALLATION            |
| AMM TASK 53-01-02-000-801-A/400 | -                                                          |
| AMM TASK 53-01-02-400-801-A/400 | -                                                          |
| AMM TASK 53-01-03-000-801-A/400 | BAGGAGE-COMPARTMENT FLOOR PANELS - REMOVAL                 |
| AMM TASK 53-01-03-400-801-A/400 | BAGGAGE-COMPARTMENT FLOOR PANELS - INSTALLATION            |
| AMM TASK 53-04-20-000-801-A/400 | LATERAL WING-TO-FUSELAGE FAIRING - REMOVAL                 |
| AMM TASK 53-04-20-400-801-A/400 | LATERAL WING-TO-FUSELAGE FAIRING - INSTALLATION            |
| AMM TASK 53-04-30-000-801-A/400 | -                                                          |
| AMM TASK 53-04-30-400-801-A/400 | -                                                          |
| AMM TASK 55-34-00-000-801-A/400 | DORSAL FIN - REMOVAL                                       |
| AMM TASK 55-34-00-400-801-A/400 | DORSAL FIN - INSTALLATION                                  |
| AMM TASK 55-35-00-000-801-A/400 | VERTICAL-STABILIZER LEADING EDGE - REMOVAL                 |
| AMM TASK 55-35-00-400-801-A/400 | VERTICAL-STABILIZER LEADING EDGE - INSTALLATION            |
| S.B.145-36-0005                 | -                                                          |
| S.B.145-36-0030                 | -                                                          |



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(Continued)

| REFERENCE   | DESIGNATION |
|-------------|-------------|
| WM 36-21-50 | -           |
| WM 36-21-51 | -           |

**C. Zones and Accesses**

| ZONE | PANEL/DOOR | LOCATION                               |
|------|------------|----------------------------------------|
| 193  | 193AL      | Aft wing-to-fuselage fairing           |
| 194  | 194CR      | RH side of wing-to-fuselage fairing    |
| 195  | 195CL      | LH side of wing-to-fuselage fairing    |
| 261  | 261BF      | Passenger floor panel                  |
| 261  | 261DF      | Passenger floor panel                  |
| 262  | 262AF      | Passenger floor panel                  |
| 262  | 262BF      | Passenger floor panel                  |
| 262  | 262CF      | Passenger floor panel                  |
| 271  | 271AF      | Floor panel of the baggage compartment |
| 271  | 271BF      | Floor panel of the baggage compartment |
| 271  | 271BLW     | Inside baggage compartment             |
| 272  | 272DR      | In the aft electronic compartment      |
| 272  | 272AF      | Floor panel of the baggage compartment |
| 272  | 272BF      | Floor panel of the baggage compartment |
| 272  | 272CRW     | Inside baggage compartment             |
| 320  | 322AL      | Dorsal Fin                             |
| 320  | 322BR      | Vertical Stabilizer Leading Edge       |
| 414  | 414DB      | LH pylon                               |
| 424  | 424DB      | RH pylon                               |
| 813  | 813AW      | Baggage compartment                    |

**D. Tools and Equipment**

| ITEM                   | DESCRIPTION                                                                              | PURPOSE                              | QTY |
|------------------------|------------------------------------------------------------------------------------------|--------------------------------------|-----|
| Commercially available | Heat gun                                                                                 | To make the duct leakage switch hot  |     |
| Commercially available | Digital thermometer - range up to $91 \pm 3^\circ\text{C}$ ( $195 \pm 5^\circ\text{F}$ ) | To measure the temperature           |     |
| Commercially available | Plastic ice bag                                                                          | To make the duct leakage switch cool |     |
| GSE 044                | Headset - Ramp handling                                                                  | For communication                    |     |

**E. Auxiliary Items**

Not Applicable

**F. Consumable Materials**

Not Applicable

**G. Expandable Parts**

Not Applicable

**H. Persons Recommended**

| QTY | FUNCTION               | PLACE                                      |
|-----|------------------------|--------------------------------------------|
| 1   | A - Does the task      | Where the duct leakage switch is installed |
| 1   | B - Helps technician A | Cockpit                                    |

**I. Preparation**
**SUBTASK 841-017-B**

- (1) Energize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).
- (2) Remove access panel 272DR (AMM MPP 06-41-01/100 and [AMM TASK 52-44-01-000-801-A/400](#)).
- (3) Open baggage compartment door 813 (AMM MPP 06-30-00/100).
- (4) Remove sidewall linings 271BLW and 272CRW ([AMM MPP 06-41-05/100](#) and [AMM TASK 25-51-01-000-801-A/400](#)).
- (5) Remove floor panels 271AF, 271BF, 272AF, and 272BF (AMM MPP 06-41-02/100 and [AMM TASK 53-01-03-000-801-A/400](#)), 261BF, 261DF, 262AF, 262BF, and 262CF (AMM MPP 06-41-02/100 and AMM TASK 53-01-02-000-801-A/400), as applicable.
- (6) Remove fairing 193AL (AMM MPP 06-41-00/100 and AMM TASK 53-04-30-000-801-A/400).
- (7) Remove fairings 194CR and 195 (AMM MPP 06-41-00/100 and [AMM TASK 53-04-20-000-801-A/400](#)).
- (8) Remove access panels 414DB and 424DB ([AMM MPP 06-43-00/100](#))
- (9) Remove Dorsal Fin access panel 322AL (AMM MPP 06-30-00/100 and [AMM TASK 55-34-00-000-801-A/400](#) and Vertical-Stabilizer Leading-Edge access panel 322BR (AMM MPP 06-42-00/100 and [AMM TASK 55-35-00-000-801-A/400](#)), as applicable.
- (10) Connect the headset (GSE 044).

**J. Operationally Check Thermal Switch (Figure 501)**
**SUBTASK 710-019-B**

NOTE: Refer to [Figure 501](#):

- The thermal switches identified by even numbers, from 2 to 28, are part of the RH Pneumatic System, which ends at the Cross Bleed Valve.

- The thermal switches identified by odd numbers, from 1 to 33, are part of the LH Pneumatic System, which ends at the Stab Anti-icing Valve (limited by the APU Bleed Air Check Valve and the Cross Bleed Valve).
- The thermal switches identified by numbers 30, 32 and 34, are part of the APU Pneumatic System, which starts at the APU Bleed Air Check Valve and ends in the APU.

NOTE: Refer to ATA 36 wiring manual (WM 36-21-50 and WM 36-21-51) for thermal switch electrical codes.

- (1) Do the check as follows:

**WARNING: BE CAREFUL WITH THE HIGH TEMPERATURE WHEN YOU HEAT THE THERMAL SWITCH.**

- (a) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the duct leakage switch of the LH bleed line with a heat gun, until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).

NOTE: On the overhead control panel, make sure that the BLEED 1 pushbutton is pushed.

Result:

- 1 The EICAS display shows the BLD 1 LEAK warning message.
- 2 The master WARNING lights flash.
- 3 The LEAK indication, on the BLEED 1 pushbutton, comes on (POST-MOD. S.B.145-36-0005).

- (b) Push the master WARNING light.

Result:

- 1 The master WARNING lights go off.

- (c) Let a plastic ice bag stay on the duct leakage switch, until the temperature of the switch decreases to below  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).

- (d) (POST-MOD. S.B.145-36-0030) On the overhead control panel, release the BLEED 1 pushbutton and press it again.

Result:

- 1 On the EICAS display, the BLD 1 LEAK warning message goes out of view.
- 2 LEAK indication on BLEED 1 pushbutton goes off (POST-MOD. S.B. 145-36-0005).

NOTE: Do the procedure for each duct leakage switch installed at the LH bleed line at a time.

- (e) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the duct leakage switch of the RH bleed line with a heat gun, until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).

NOTE: On the overhead control panel, make sure that the BLEED 2 pushbutton is pushed.

Result:

- 1 The EICAS display shows the BLD 2 LEAK warning message.

2 The master WARNING lights flash.

3 The LEAK indication, on the BLEED 2 pushbutton, comes on (POST-MOD. [S.B.145-36-0005](#)).

(f) Push a master WARNING light.

Result:

1 The master WARNING lights go off.

(g) Let a plastic ice bag stay on the duct leakage switch, until the temperature of the switch decreases to below  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).

(h) (POST-MOD. [S.B.145-36-0030](#)) On the overhead control panel, release the BLEED 2 pushbutton and press it again.

Result:

1 On the EICAS display, the BLD 2 LEAK warning message goes out of view.

2 The LEAK indication, on the BLEED 2 pushbutton, goes off (POST-MOD. [S.B.145-36-0005](#)).

NOTE: Do the procedure for each duct leakage switch installed at the RH bleed line at a time.

(i) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the duct leakage switch of the APU bleed line with a heat gun, until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).

NOTE: On the overhead control panel, make sure that the APU BLEED pushbutton is pushed.

Result:

1 The EICAS display shows the BLD APU LEAK warning message.

2 The master WARNING lights flash.

(j) Push a master WARNING light.

Result:

1 The master WARNING lights go off.

(k) On the overhead control panel, release the APU BLEED pushbutton.

(l) Let a plastic ice bag stay on the duct leakage switch, until the temperature of the thermal switch decreases to below  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).

Result:

1 On the EICAS display, the BLD APU LEAK warning message goes out of view.

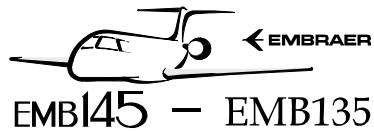
NOTE: Do the procedure for each duct leakage switch installed at the APU bleed line at a time.

## K. Follow-on

### SUBTASK 842-017-B

(1) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).

(2) Install sidewall linings 271BLW and 272CRW ([AMM MPP 06-41-05/100](#) and [AMM TASK 25-51-01-400-801-A/400](#)).



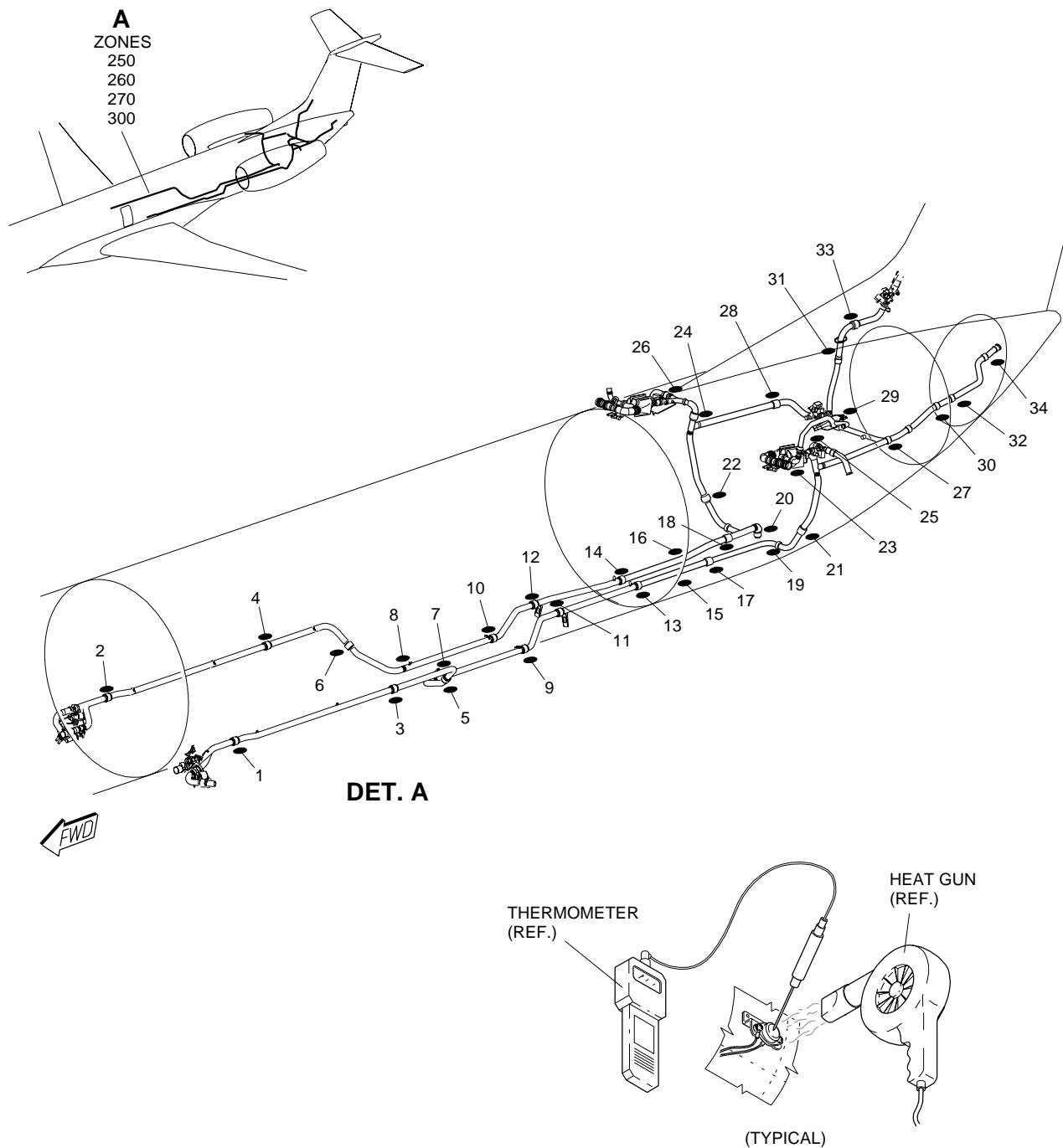
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- (3) Install floor panels 271AF, 271BF, 272AF, and 272BF (AMM MPP 06-41-02/100 and [AMM TASK 53-01-03-400-801-A/400](#)), 261BF, 261DF, 262AF, 262BF, and 262CF (AMM MPP 06-41-02/100 and AMM TASK 53-01-02-400-801-A/400), as applicable.
- (4) Close baggage compartment door 813 (AMM MPP 06-30-00/100)
- (5) Install access panel 272DR (AMM MPP 06-41-01/100 and [AMM TASK 52-44-01-400-801-A/400](#)).
- (6) Install fairing 193AL (AMM MPP 06-41-00/100 and AMM TASK 53-04-30-400-801-A/400).
- (7) Install fairings 194CR and 195CL (AMM MPP 06-41-00/100 and [AMM TASK 53-04-20-400-801-A/400](#)).
- (8) Install access panels 414DB and 424DB ([AMM MPP 06-43-00/100](#)).
- (9) Install Dorsal Fin access panel 322AL (AMM MPP 06-30-00/100 and [AMM TASK 55-34-00-400-801-A/400](#) and Vertical-Stabilizer Leading-Edge access panel 32BR (AMM MPP 06-42-00/100 and [AMM TASK 55-35-00-400-801-A/400](#)), as applicable.

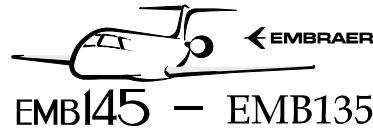
**EFFECTIVITY: ACFT MODEL(S) EMB-145**

Thermal Switch - Check

Figure 501



EM145AMM360595A.DGN



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TASK 36-20-02-700-802-A

EFFECTIVITY: ACFT MODEL(S) EMB-145

3. THERMAL SWITCH (MASSIVE LEAKAGE SWITCH) - OPERATIONAL CHECK

## A. General

- (1) This check must be done on each massive leakage switch at a time.
- (2) For aircraft POST-MOD. [SB145-36-0030](#), this check must be done on two switches of each line, as follows:
  - Do the check of the massive leakage switch;
  - At the same line do the check for the other leakage switch which is close to the massive leakage switch.

## B. References

| REFERENCE                                       | DESIGNATION                                                |
|-------------------------------------------------|------------------------------------------------------------|
| AMM MPP 06-41-02/100                            | -                                                          |
| AMM MPP 06-42-00/100                            | -                                                          |
| <a href="#">AMM MPP 06-43-00/100</a>            | - COMPONENT LOCATION                                       |
| <a href="#">AMM TASK 20-40-01-860-801-A/200</a> | ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE |
| <a href="#">SB145-36-0030</a>                   | -                                                          |

## C. Zones and Accesses

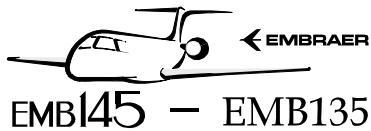
| ZONE | PANEL/DOOR | LOCATION                |
|------|------------|-------------------------|
| 272  | 272DR      | Fuselage rear section I |
| 313  | 313CL      | Tail cone               |
| 412  | 412BT      | LH pylon                |
| 414  | 414DB      | LH pylon                |
| 422  | 422BT      | LH pylon                |
| 424  | 424DB      | RH pylon                |

## D. Tools and Equipment

| ITEM                    | DESCRIPTION                                                                              | PURPOSE                                | QTY |
|-------------------------|------------------------------------------------------------------------------------------|----------------------------------------|-----|
| Commercially available  | Heat gun                                                                                 | To make the massive leakage switch hot |     |
| Commercially available  | Digital thermometer - range up to $91 \pm 3^\circ\text{C}$ ( $195 \pm 5^\circ\text{F}$ ) | To measure the temperature             |     |
| <a href="#">GSE 044</a> | Headset - Ramp handling                                                                  | For communication                      |     |

## E. Auxiliary Items

Not Applicable



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F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

| QTY | FUNCTION               | PLACE                           |
|-----|------------------------|---------------------------------|
| 1   | A - Does the task      | Rear electronic compartment     |
| 1   | B - Helps technician A | LH/RH pylon and APU compartment |

I. Preparation

SUBTASK 841-016-B

- (1) Energize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).
- (2) Remove access panels 272DR, 412BT, 414DB, 422BT and 424DB (AMM MPP 06-41-02/100) and ([AMM MPP 06-43-00/100](#)).
- (3) Open access door 313CL (AMM MPP 06-42-00/100).
- (4) Connect the headset (GSE 044).

J. Operationally Check Massive Leakage Switch ([Figure 502](#))

SUBTASK 710-017-B

EFFECTIVITY: A/C S/N 004 THRU 94, 96 THRU 98, 100 THRU 214.

- NOTE:
- For aircraft PRE-MOD. [SB145-36-0030](#), do the steps 1, 2 and 3.
  - For aircraft POST-MOD. [SB145-36-0030](#), do the steps 4, 5 and 6.

- (1) On aircraft PRE-MOD. [SB145-36-0030](#). Do the check of the massive duct leakage of the LH bleed line (Pneumatic 1) as follows:

**WARNING: BE CAREFUL WITH THE HIGH TEMPERATURE WHEN YOU HEAT THE THERMAL SWITCH.**

- (a) Disconnect the electrical connectors of these components:
  - LH engine bleed valve;
  - LH high stage valve;
  - Cross bleed valve;
- (b) Install a test lamp between pins A (+) and B (-) of the electrical connectors of the LH engine bleed valve, LH high stage valve, and cross bleed valve.
- (c) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, push the BLEED 1 and APU BLEED pushbuttons.  
Result:
  - 1 The BLEED 1 pushbutton light goes off.
  - 2 The APU BLEED pushbutton light comes on

- (d) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, set the XBLEED knob to the OPEN position.
- (e) On the RH electrical-power control/distribution box, open the PITOT HTG 3 and the HEATING/PITOT 2 circuit breakers and attach a DO-NOT-OPEN tag to it.
- (f) On the LH electrical-power control/distribution box, open the HEATING/PITOT 1 circuit breaker and attach a DO-NOT-CLOSE tag to it.
- (g) Open the POWERPLANT/N2 SIGNAL 1A and 1B circuit breakers, on the overhead circuit breaker panel.  
 Result:  
 1 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve come on.
- (h) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the massive leakage switch of the LH bleed line until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).  
 Result:  
 1 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve go off.
- (i) Let a plastic ice bag stay on the duct leakage switch until the temperature of the switch decreases to less than  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).  
 Result:  
 1 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve come on (aircraft S/N 004 thru 094, 096 thru 098, 100 thru 178, 180 thru 188, 190 thru 196, 199 thru 208).  
 2 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve stay off (a/c S/N 179, 189, 197, 198, S/N 209 thru 215).
- (j) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the BLEED 1 pushbutton and push them again (a/c S/N 003, 179, 189, 197, 198, S/N 209 thru 215).  
 Result:  
 1 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve come on.
- (k) Close the POWERPLANT/N2 SIGNAL 1A and 1B circuit breakers, on the circuit breaker panel.
- (l) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, set the XBLEED knob to the AUTO position.
- (m) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the BLEED 1 pushbutton.  
 Result:  
 1 The BLEED 1 pushbutton light comes on.
- (n) Remove the test lamp from between pins A (+) and B (-) of electrical connectors of the LH engine bleed valve, LH high stage valve and cross bleed valve.
- (o) Connect the electrical connectors of these components:
  - LH engine bleed valve;

- LH high stage valve;
  - Cross bleed valve;
- (2) On aircraft PRE-MOD. **SB145-36-0030**. Do the check of the massive duct leakage of the RH bleed line (Pneumatic 2) as follows:
- WARNING: BE CAREFUL WITH THE HIGH TEMPERATURE WHEN YOU HEAT THE THERMAL SWITCH.**
- (a) Disconnect the electrical connectors of these components:
    - RH engine bleed valve;
    - RH high stage valve;
    - Cross bleed valve;
  - (b) Install a test lamp between pins A (+) and B (-) of the electrical connectors of the RH engine bleed valve, RH high stage valve and cross bleed valve.
  - (c) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, push the BLEED 2 pushbutton.  
Result:  
1 The BLEED 2 pushbutton light goes off.
  - (d) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, set the XBLEED knob to the OPEN position.
  - (e) Open the POWERPLANT/N2 SIGNAL 2A and 2B circuit breakers, on the overhead circuit breaker panel.  
Result:  
1 The test lamps of the RH engine bleed valve, RH high stage valve, and cross bleed valve come on.
  - (f) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the massive leakage switch of the RH bleed line until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).  
Result:  
1 The test lamps of the RH engine bleed valve, RH high stage valve, and cross bleed valve go off.
  - (g) Let a plastic ice bag stay on the duct leakage switch until the temperature of the switch decreases to less than  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).  
Result:  
1 The test lamps of the RH engine bleed valve, RH high stage valve, cross bleed valve come on (aircraft S/N 004 thru 094, 096 thru 098, 100 thru 178, 180 thru 188, 190 thru 196, 199 thru 208).  
2 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve stay off (a/c S/N 179, 189, 197, 198, S/N 209 thru 215).
  - (h) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the BLEED 2 pushbutton and push them again (a/c S/N 003, 179, 189, 197, 198, S/N 209 thru 215).

Result:

- 1 The test lamps of the RH engine bleed valve, RH high stage valve, and cross bleed valve come on.
  - (i) Close the POWERPLANT/N2 SIGNAL 2A and 2B circuit breakers, on the circuit breaker panel.
  - (j) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, set the XBLEED knob to the AUTO position.
  - (k) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the BLEED 2 pushbutton.
- Result:
- 1 The BLEED 2 pushbutton light comes on.
  - (l) On the RH electrical-power control/distribution box, close the PITOT HTG 3 and the HEATING/PITOT 2 circuit breakers and remove the DO-NOT-OPEN tag from it.
  - (m) On the LH electrical-power control/distribution box, close the HEATING/PITOT 1 circuit breaker and remove the DO-NOT-CLOSE tag from it.
  - (n) Remove the test lamp from between pins A (+) and B (-) of the electrical connectors of the RH engine bleed valve, RH high stage valve, and cross bleed valve.
  - (o) Connect the electrical connectors of these components:
    - RH engine bleed valve;
    - RH high stage valve;
    - Cross bleed valve.

- (3) On aircraft PRE-MOD. **SB145-36-0030**. Do the check of the massive duct leakage of the APU bleed line (APU Pneumatic) as follows:

**NOTE:** Make sure that the BLEED 2 pushbuttons, on the AIR CONDITIONING/PNEUMATIC control panel, are released.

**WARNING: BE CAREFUL WITH THE HIGH TEMPERATURE WHEN YOU HEAT THE THERMAL SWITCH.**

- (a) Disconnect the electrical connector as follows:
  - APU FADEC (For aircraft with APU T-62T-40C14 - connector P2110).
  - Electronic Sequence Unit (ESU) (For aircraft with APU T-62T-40C11 - connector P0100).
- (b) Install a test lamp between pin B of the ESU connector (aircraft with APU T-62T-40C11) or pin C of the connector of the APU FADEC (aircraft with APU T-62T-40C14) and the aircraft ground.
- (c) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, push the APU BLEED pushbutton.

Result:

- 1 The APU BLEED pushbutton light comes on.

- 2 The test lamp of APU connector, comes on.
- (d) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the massive duct leakage of the APU bleed line until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).
- Result:
- 1 The test lamp of the APU connector, goes off.
- (e) Let a plastic ice bag stay on the duct leakage switch until the temperature of the switch decreases to less than  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).
- Result:
- 1 The test lamp of the APU connector, comes on (aircraft S/N 004 thru 094, 096 thru 098, 100 thru 178, 180 thru 196, 199 thru 208).
  - 2 The test lamp of the APU connector, stays off (a/c S/N 179, 197, 198, S/N 209 and on).
- (f) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the APU BLEED pushbutton and push it again (a/c S/N 003, 179, 189, 197, 198, S/N 209 thru 215).
- Result:
- 1 The test lamp of the APU connector, comes on.
- (g) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, push the BLEED 1 pushbutton.
- Result:
- 1 The BLEED 1 pushbutton light goes off.
- (h) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the massive leakage switch of the LH bleed line until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).
- Result:
- 1 The test lamp of the APU connector, goes off.
- (i) Let a plastic ice bag stay on the duct leakage switch until the temperature of the switch decreases to less than  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).
- Result:
- 1 The test lamp of the APU comes on.
- (j) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the APU BLEED pushbutton.
- (k) Remove the test lamp from between pin B of the ESU connector (aircraft with APU T-62T-40C11) or pin C of the connector of the APU FADEC (aircraft with APU T-62T-40C14) and the aircraft ground.
- (l) Connect the electrical connector as follows:
- APU FADEC (For aircraft with APU T-62T-40C14 - connector P2110).
  - Electronic Sequence Unit (ESU) (For aircraft with APU T-62T-40C11 - connector P0100).
- (4) On aircraft POST-MOD. **SB145-36-0030**. Do the check of the massive duct leakage of the LH bleed line (Pneumatic 1) as follows:

**WARNING: BE CAREFUL WITH THE HIGH TEMPERATURE WHEN YOU HEAT THE THERMAL SWITCH.**

- (a) Disconnect the electrical connectors of these components:
  - LH engine bleed valve;
  - LH high stage valve;
  - Cross bleed valve;
- (b) Install a test lamp between pins A (+) and B (-) of the electrical connectors of the LH engine bleed valve, LH high stage valve, and cross bleed valve.
- (c) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, push the BLEED 1 and APU BLEED pushbuttons.  
 Result:  
 1 The BLEED 1 pushbutton light goes off.  
 2 The APU BLEED pushbutton light comes on
- (d) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, set the XBLEED knob to the OPEN position.
- (e) On the RH electrical-power control/distribution box, open the PITOT HTG 3 and the HEATING/PITOT 2 circuit breakers and attach a DO-NOT-OPEN tag to it.
- (f) On the LH electrical-power control/distribution box, open the HEATING/PITOT 1 circuit breaker and attach a DO-NOT-CLOSE tag to it.
- (g) Open the POWERPLANT/N2 SIGNAL 1A and 1B circuit breakers, on the overhead circuit breaker panel.  
 Result:  
 1 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve come on.
- (h) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the massive leakage switch of the LH bleed line until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).  
 Result:  
 1 The EICAS display shows the BLD 1 LEAK warning message.  
 2 The master WARNING lights flash.  
 3 The LEAK indication, on the BLEED 1 pushbutton, comes on.  
 4 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve go off.
- (i) Push a master WARNING light.  
 Result:  
 1 The master WARNING lights go off.
- (j) Let a plastic ice bag stay on the duct leakage switch until the temperature of the switch decreases to less than  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).  
 Result:  
 1 On the EICAS display, the BLD 1 LEAK warning message does not out of view .

- 2 The LEAK indication, on the BLEED 1 pushbutton, stays on.
- 3 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve stay off.
- (k) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the BLEED 1 pushbutton and push them again.  
 Result:  
 1 On the EICAS display, the BLD 1 LEAK warning message goes out of view .  
 2 The LEAK indication, on the BLEED 1 pushbutton, goes off.  
 3 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve come on.
- NOTE:** Do steps (f) to (i) for other BLEED 1 leakage switch adjacent to the massive leakage switch.
- (l) Close the POWERPLANT/N2 SIGNAL 1A and 1B circuit breakers, on the circuit breaker panel.
- (m) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, set the XBLEED knob to the AUTO position.
- (n) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the BLEED 1 pushbutton.  
 Result:  
 1 The BLEED 1 pushbutton light comes on.
- (o) Remove the test lamp from between pins A (+) and B (-) of electrical connectors of the LH engine bleed valve, LH high stage valve and cross bleed valve.
- (p) Connect the electrical connectors of these components:  
 • LH engine bleed valve;  
 • LH high stage valve;  
 • Cross bleed valve;
- (5) On aircraft POST-MOD. [SB145-36-0030](#). Do the check of the massive duct leakage of the RH bleed line (Pneumatic 2) as follows:
- WARNING: BE CAREFUL WITH THE HIGH TEMPERATURE WHEN YOU HEAT THE THERMAL SWITCH.**
- (a) Disconnect the electrical connectors of these components:  
 • RH engine bleed valve;  
 • RH high stage valve;  
 • Cross bleed valve;
- (b) Install a test lamp between pins A (+) and B (-) of the electrical connectors of the RH engine bleed valve, RH high stage valve and cross bleed valve.
- (c) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, push the BLEED 2 pushbutton.

Result:

- 1 The BLEED 2 pushbutton light goes off.
- (d) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, set the XBLEED knob to the OPEN position.

- (e) Open the POWERPLANT/N2 SIGNAL 2A and 2B circuit breakers, on the overhead circuit breaker panel.

Result:

- 1 The test lamps of the RH engine bleed valve, RH high stage valve, and cross bleed valve come on.
- (f) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the massive leakage switch of the RH bleed line until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).

Result:

- 1 The EICAS display shows the BLD 2 LEAK warning message.
- 2 The master WARNING lights flash.
- 3 The LEAK indication, on the BLEED 2 pushbutton, comes on.
- 4 The test lamps of the RH engine bleed valve, RH high stage valve, and cross bleed valve go off.

- (g) Push a master WARNING light .

Result:

- 1 The master WARNING lights go off.
- (h) Let a plastic ice bag stay on the duct leakage switch until the temperature of the switch decreases to less than  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).

Result:

- 1 On the EICAS display, the BLD 2 LEAK warning message does not go out of view.
- 2 The LEAK indication, on the BLEED 2 pushbutton, stays on.
- 3 The test lamps of the RH engine bleed valve, RH high stage valve, cross bleed valve stay off.

- (i) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the BLEED 2 pushbutton and push them again.

Result:

- 1 On the EICAS display, the BLD 2 LEAK warning message goes out of view.
- 2 The LEAK indication, on the BLEED 2 pushbutton, goes off.
- 3 The test lamps of the RH engine bleed valve, RH high stage valve, and cross bleed valve come on.

NOTE: Do steps (f) to (i) for other BLEED 2 leakage switch adjacent to the massive leakage switch.

- (j) Close the POWERPLANT/N2 SIGNAL 2A and 2B circuit breakers, on the circuit breaker panel.
- (k) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, set the XBLEED knob to the AUTO position.

- (l) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the BLEED 2 pushbutton.
- Result:
- 1 The BLEED 2 pushbutton light comes on.
- (m) Remove the test lamp from between pins A (+) and B (-) of the electrical connectors of the RH engine bleed valve, RH high stage valve, and cross bleed valve.
- (n) Connect the electrical connectors of these components:
- RH engine bleed valve;
  - RH high stage valve;
  - Cross bleed valve.
- (6) On aircraft POST-MOD. [SB145-36-0030](#). Do the check of the massive duct leakage of the APU bleed line (APU Pneumatic) as follows:

**NOTE:** Make sure that the BLEED 1 and BLEED 2 pushbuttons, on the AIR CONDITIONING/PNEUMATIC control panel, are released.

**WARNING: BE CAREFUL WITH THE HIGH TEMPERATURE WHEN YOU HEAT THE THERMAL SWITCH.**

- (a) Disconnect the electrical connector as follows:
- APU FADEC (For aircraft with APU T-62T-40C14 - connector P2110).
  - Electronic Sequence Unit (ESU) (For aircraft with APU T-62T-40C11 - connector P0100).
- (b) Install a test lamp between pin B of the ESU connector (aircraft with APU T-62T-40C11) or pin C of the connector of the APU FADEC (aircraft with APU T-62T-40C14) and the aircraft ground.
- (c) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, push the APU BLEED pushbutton.
- Result:
- 1 The APU BLEED pushbutton light comes on.
  - 2 The test lamp of APU connector, comes on.
- (d) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the massive duct leakage of the APU bleed line until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).
- Result:
- 1 The EICAS display shows the BLEED APU LEAK warning message.
  - 2 The master WARNING lights flash.
  - 3 The test lamp of the APU connector, goes off.
- (e) Push a master WARNING light.
- Result:
- 1 The master WARNING lights go off.

- (f) Let a plastic ice bag stay on the duct leakage switch until the temperature of the switch decreases to less than  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).

Result:

- 1 On the EICAS display, the APU BLEED LEAK warning message does not go out of view.

- 2 The test lamp of the APU connector, stays off.

- (g) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the APU BLEED pushbutton and push it again.

Result:

- 1 On the EICAS display, the APU BLEED LEAK warning message goes out of view.

- 2 The test lamp of the APU connector, comes on.

**NOTE:** Do steps (d) to (g) for other APU bleed leakage switch adjacent to the massive leakage switch.

- (h) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the massive leakage switch of the LH bleed line until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).

Result:

- 1 The EICAS display shows the BLD 1 LEAK warning message.

- 2 The master WARNING lights flash.

- 3 The LEAK indication, on the BLEED 1 pushbutton, comes on.

- 4 The test lamp of the APU connector, goes off.

- (i) Push a master WARNING light.

Result:

- 1 The master WARNING lights go off.

- (j) Let a plastic ice bag stay on the duct leakage switch until the temperature of the switch decreases to less than  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).

Result:

- 1 On the EICAS display, the BLD 1 LEAK warning message goes out of view.

- 2 The LEAK indication, on the BLEED 1 pushbutton, goes off.

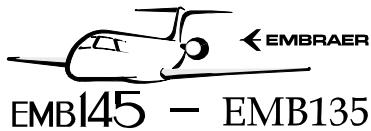
- 3 The test lamp of the APU comes on.

- (k) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the APU BLEED pushbutton.

- (l) Remove the test lamp from between pin B of the ESU connector (aircraft with APU T-62T-40C11) or pin C of the connector of the APU FADEC (aircraft with APU T-62T-40C14) and the aircraft ground.

- (m) Connect the electrical connector as follows:

- APU FADEC (For aircraft with APU T-62T-40C14 - connector P2110).
- Electronic Sequence Unit (ESU) (For aircraft with APU T-62T-40C11 - connector P0100).



EMB145 – EMB135

AIRCRAFT  
MAINTENANCE MANUAL

K. Operationally Check Massive Leakage Switch ([Figure 502](#))

SUBTASK 710-018-B

EFFECTIVITY: A/C S/N 002, 95, 99, 215 AND ON

- NOTE:
- For aircraft PRE-MOD. [SB145-36-0030](#), do the steps 1, 2 and 3.
  - For aircraft POST-MOD. [SB145-36-0030](#), do the steps 4, 5 and 6.

- (1) On aircraft PRE-MOD. [SB145-36-0030](#). Do the check of the massive duct leakage of the LH bleed line (Pneumatic 1) as follows:

**WARNING: BE CAREFUL WITH THE HIGH TEMPERATURE WHEN YOU HEAT THE THERMAL SWITCH.**

- Disconnect the electrical connectors of these components:
  - LH engine bleed valve;
  - LH high stage valve;
  - Cross bleed valve;
  - APU FADEC (For aircraft with APU T-62T-40C14 - connector P2110).
  - Electronic Sequence Unit (ESU) (For aircraft with APU T-62T-40C11 - connector P0100).
- Install a test lamp between pins A (+) and B (-) of the electrical connectors of the LH engine bleed valve, LH high stage valve, and cross bleed valve.
- Install a test lamp between pin B of the ESU connector (aircraft with APU T-62T-40C11) or pin C of the connector of the APU FADEC (aircraft with APU T-62T-40C14) and the aircraft ground.
- On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, push the BLEED 1 and APU BLEED push buttons.  
Result:
  - 1 The BLEED 1 pushbutton light goes off.
  - 2 The APU BLEED pushbutton light comes on.
- On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, set the XBLEED knob to the OPEN position.
- On the RH electrical-power control/distribution box, open the PITOT HTG 3 and the HEATING/PITOT 2 circuit breakers and attach a DO-NOT-OPEN tag to it.
- On the LH electrical-power control/distribution box, open the HEATING/PITOT 1 circuit breaker and attach a DO-NOT-CLOSE tag to it.
- Open the POWERPLANT/N2 SIGNAL 1A and 1B circuit breakers, on the overhead circuit breaker panel.  
Result:
  - 1 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve, and APU connector come on.

- (i) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the massive leakage switch of the LH bleed line until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).

Result:

- 1 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve, and APU connector go off.

- (j) Let a plastic ice bag stay on the duct leakage switch until the temperature of the switch decreases to less than  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).

Result:

- 1 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve, and APU connector stay off.

- (k) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the BLEED 1 and APU BLEED pushbuttons and push them again.

Result:

- 1 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve, and APU connector come on.

- (l) Close the POWERPLANT/N2 SIGNAL 1A and 1B circuit breakers, on the circuit breaker panel.

- (m) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, set the XBLEED knob to the AUTO position.

- (n) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the BLEED 1 and APU BLEED pushbuttons.

Result:

- 1 The BLEED 1 pushbutton light comes on.

- 2 The APU BLEED pushbutton light goes off.

- (o) Remove the test lamp from between pins A (+) and B (-) of electrical connectors of the LH engine bleed valve, LH high stage valve and cross bleed valve.

- (p) Remove the test lamp from between pin B of the ESU connector (aircraft with APU T-62T-40C11) or pin C of the connector of the APU FADEC (aircraft with APU T-62T-40C14) and the aircraft ground.

- (q) Connect the electrical connectors of these components:

- LH engine bleed valve;
- LH high stage valve;
- Cross bleed valve;
- APU FADEC (For aircraft with APU T-62T-40C14 - connector P2110).
- Electronic Sequence Unit (ESU) (For aircraft with APU T-62T-40C11 - connector P0100).

- (2) On aircraft PRE-MOD. **SB145-36-0030**. Do the check of the massive duct leakage of the RH bleed line (Pneumatic 2) as follows:

**WARNING: BE CAREFUL WITH THE HIGH TEMPERATURE WHEN YOU HEAT THE THERMAL SWITCH.**

- (a) Disconnect the electrical connectors of these components:
- RH engine bleed valve;
  - RH high stage valve;
  - Cross bleed valve;
- (b) Install a test lamp between pins A (+) and B (-) of the electrical connectors of the RH engine bleed valve, RH high stage valve and cross bleed valve.
- (c) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, push the BLEED 2 pushbutton.  
 Result:  
 1 The BLEED 2 pushbutton light goes off.
- (d) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, set the XBLEED knob to the OPEN position.
- (e) Open the POWERPLANT/N2 SIGNAL 2A and 2B circuit breakers, on the overhead circuit breaker panel.  
 Result:  
 1 The test lamps of the RH engine bleed valve, RH high stage valve, and cross bleed valve come on.
- (f) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the massive leakage switch of the RH bleed line until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).  
 Result:  
 1 The test lamps of the RH engine bleed valve, RH high stage valve, and cross bleed valve go off.
- (g) Let a plastic ice bag stay on the duct leakage switch until the temperature of the switch decreases to less than  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).  
 Result:  
 1 The test lamps of the RH engine bleed valve, RH high stage valve, and cross bleed valve, stay off.
- (h) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the BLEED 2 pushbutton and push it again.  
 Result:  
 1 The test lamps of the RH engine bleed valve, RH high stage valve, and cross bleed valve come on.
- (i) Close the POWERPLANT/N2 SIGNAL 2A and 2B circuit breakers, on the circuit breaker panel.
- (j) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, set the XBLEED knob to the AUTO position.
- (k) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the BLEED 2 pushbutton.  
 Result:  
 1 The BLEED 2 pushbutton light comes on.

- (l) Remove the test lamp from between pins A (+) and B (-) of the electrical connectors of the RH engine bleed valve, RH high stage valve, and cross bleed valve.
- (m) Connect the electrical connectors of these components:
- RH engine bleed valve;
  - RH high stage valve;
  - Cross bleed valve.
- (3) On aircraft PRE-MOD. **SB145-36-0030**. Do the check of the massive duct leakage of the APU bleed line (APU Pneumatic) as follows:
- NOTE:** Make sure that the BLEED 1 and BLEED 2 pushbuttons, on the AIR CONDITIONING/PNEUMATIC control panel, are released.
- WARNING: BE CAREFUL WITH THE HIGH TEMPERATURE WHEN YOU HEAT THE THERMAL SWITCH.**
- (a) Disconnect the electrical connector as follows:
- APU FADEC (For aircraft with APU T-62T-40C14 - connector P2110).
  - Electronic Sequence Unit (ESU) (For aircraft with APU T-62T-40C11 - connector P0100).
- (b) Install a test lamp between pin B of the ESU connector (aircraft with APU T-62T-40C11) or pin C of the connector of the APU FADEC (aircraft with APU T-62T-40C14) and the aircraft ground.
- (c) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, push the APU BLEED pushbutton.  
 Result:  
 1 The APU BLEED pushbutton light comes on.  
 2 The test lamp of APU connector, comes on.
- (d) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the massive duct leakage of the APU bleed line until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).  
 Result:  
 1 The test lamp of the APU connector, goes off.
- (e) Let a plastic ice bag stay on the duct leakage switch until the temperature of the switch decreases to less than  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).  
 Result:  
 1 The test lamp of the APU connector, stays off.
- (f) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the APU BLEED pushbutton and push it again.  
 Result:  
 1 The test lamp of the APU connector, comes on
- (g) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the APU BLEED pushbutton.

Result:

- 1 The APU BLEED pushbutton light goes off.
- (h) Remove the test lamp from between pin B of the ESU connector (aircraft with APU T-62T-40C11) or pin C of the connector of the APU FADEC (aircraft with APU T-62T-40C14) and the aircraft ground.
- (i) Connect the electrical connector as follows:
  - APU FADEC (For aircraft with APU T-62T-40C14 - connector P2110).
  - Electronic Sequence Unit (ESU) (For aircraft with APU T-62T-40C11 - connector P0100).
- (4) On aircraft POST-MOD. **SB145-36-0030**. Do the check of the massive duct leakage of the LH bleed line (Pneumatic 1) as follows:

**WARNING: BE CAREFUL WITH THE HIGH TEMPERATURE WHEN YOU HEAT THE THERMAL SWITCH.**

- (a) Disconnect the electrical connectors of these components:
  - LH engine bleed valve;
  - LH high stage valve;
  - Cross bleed valve;
  - APU FADEC (For aircraft with APU T-62T-40C14 - connector P2110).
  - Electronic Sequence Unit (ESU) (For aircraft with APU T-62T-40C11 - connector P0100).
- (b) Install a test lamp between pins A (+) and B (-) of the electrical connectors of the LH engine bleed valve, LH high stage valve, and cross bleed valve.
- (c) Install a test lamp between pin B of the ESU connector (aircraft with APU T-62T-40C11) or pin C of the connector of the APU FADEC (aircraft with APU T-62T-40C14) and the aircraft ground.
- (d) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, push the BLEED 1 and APU BLEED pushbuttons.

Result:

- 1 The BLEED 1 pushbutton light goes off.
- 2 The APU BLEED pushbutton light comes on.
- (e) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, set the XBLEED knob to the OPEN position.
- (f) On the RH electrical-power control/distribution box, open the PITOT HTG 3 and the HEATING/PITOT 2 circuit breakers and attach a DO-NOT-OPEN tag to it.
- (g) On the LH electrical-power control/distribution box, open the HEATING/PITOT 1 circuit breaker and attach a DO-NOT-CLOSE tag to it.
- (h) Open the POWERPLANT/N2 SIGNAL 1A and 1B circuit breakers, on the overhead circuit breaker panel.

Result:

- 1 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve, and APU connector come on.
  - (i) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the massive leakage switch of the LH bleed line until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).
- Result:
- 1 The EICAS display shows the BLD 1 LEAK warning message.
  - 2 The master WARNING lights flash.
  - 3 The LEAK indication, on the BLEED 1 pushbutton, comes on.
  - 4 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve, and APU connector go off.
- (j) Push a master WARNING light.
- Result:
- 1 The master WARNING lights go off.
- (k) Let a plastic ice bag stay on the duct leakage switch until the temperature of the switch decreases to less than  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).
- Result:
- 1 On the EICAS display, the BLD 1 LEAK warning message does not out of view.
  - 2 The LEAK indication, on the BLEED 1 pushbutton, stays on.
  - 3 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve, and APU connector stay off.
- (l) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the BLEED 1 and APU BLEED pushbuttons and push them again.
- Result:
- 1 On the EICAS display, the BLD 1 LEAK warning message goes out of view.
  - 2 The LEAK indication, on the BLEED 1 pushbutton, goes off.
  - 3 The test lamps of the LH engine bleed valve, LH high stage valve, cross bleed valve, and APU connector come on.
- NOTE:** Do steps (g) to (j) for other BLEED 1 leakage switch adjacent to the massive leakage switch.
- (m) Close the POWERPLANT/N2 SIGNAL 1A and 1B circuit breakers, on the circuit breaker panel.
  - (n) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, set the XBLEED knob to the AUTO position.
  - (o) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the BLEED 1 and APU BLEED pushbuttons.
- Result:
- 1 The BLEED 1 pushbutton light comes on.
  - 2 The APU BLEED pushbutton light goes off.

- (p) Remove the test lamp from between pins A (+) and B (-) of electrical connectors of the LH engine bleed valve, LH high stage valve and cross bleed valve.
  - (q) Remove the test lamp from between pin B of the ESU connector (aircraft with APU T-62T-40C11) or pin C of the connector of the APU FADEC (aircraft with APU T-62T-40C14) and the aircraft ground.
  - (r) Connect the electrical connectors of these components:
    - LH engine bleed valve;
    - LH high stage valve;
    - Cross bleed valve;
    - APU FADEC (For aircraft with APU T-62T-40C14 - connector P2110).
    - Electronic Sequence Unit (ESU) (For aircraft with APU T-62T-40C11 - connector P0100).
- (5) On aircraft POST-MOD. [SB145-36-0030](#). Do the check of the massive duct leakage of the RH bleed line (Pneumatic 2) as follows:
- WARNING: BE CAREFUL WITH THE HIGH TEMPERATURE WHEN YOU HEAT THE THERMAL SWITCH.**
- (a) Disconnect the electrical connectors of these components:
    - RH engine bleed valve;
    - RH high stage valve;
    - Cross bleed valve;
  - (b) Install a test lamp between pins A (+) and B (-) of the electrical connectors of the RH engine bleed valve, RH high stage valve and cross bleed valve.
  - (c) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, push the BLEED 2 pushbutton.  
Result:  
1 The BLEED 2 pushbutton light goes off.
  - (d) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, set the XBLEED knob to the OPEN position.
  - (e) Open the POWERPLANT/N2 SIGNAL 2A and 2B circuit breakers, on the overhead circuit breaker panel.  
Result:  
1 The test lamps of the RH engine bleed valve, RH high stage valve, and cross bleed valve come on.
  - (f) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the massive leakage switch of the RH bleed line until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).  
Result:  
1 The EICAS display shows the BLD 2 LEAK warning message.  
2 The master WARNING lights flash.

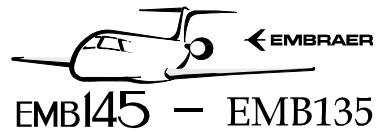
- 3 The LEAK indication, on the BLEED 2 pushbutton, comes on.
- 4 The test lamps of the RH engine bleed valve, RH high stage valve, and cross bleed valve go off.
- (g) Push a master WARNING light.  
 Result:  
 1 The master WARNING lights go off.
- (h) Let a plastic ice bag stay on the duct leakage switch until the temperature of the switch decreases to less than  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).  
 Result:  
 1 On the EICAS display, the BLD 2 LEAK warning message does not go out of view.  
 2 The LEAK indication, on the BLEED 2 pushbutton, stays on.  
 3 The test lamps of the RH engine bleed valve, RH high stage valve, and cross bleed valve, stay off.
- (i) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the BLEED 2 pushbutton and push it again.  
 Result:  
 1 On the EICAS display, the BLD 2 LEAK warning message goes out of view.  
 2 The LEAK indication, on the BLEED 2 pushbutton, goes off.  
 3 The test lamps of the RH engine bleed valve, RH high stage valve, and cross bleed valve come on.
- NOTE:** Do steps (f) to (i) for other BLEED 2 leakage switch adjacent to the massive leakage switch.
- (j) Close the POWERPLANT/N2 SIGNAL 2A and 2B circuit breakers, on the circuit breaker panel.
- (k) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, set the XBLEED knob to the AUTO position.
- (l) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the BLEED 2 pushbutton.  
 Result:  
 1 The BLEED 2 pushbutton light comes on.
- (m) Remove the test lamp from between pins A (+) and B (-) of the electrical connectors of the RH engine bleed valve, RH high stage valve, and cross bleed valve.
- (n) Connect the electrical connectors of these components:  
 • RH engine bleed valve;  
 • RH high stage valve;  
 • Cross bleed valve.
- (6) On aircraft POST-MOD. [SB145-36-0030](#). Do the check of the massive duct leakage of the APU bleed line (APU Pneumatic) as follows:

**NOTE:** Make sure that the BLEED 1 and BLEED 2 pushbuttons, on the AIR CONDITIONING/PNEUMATIC control panel, are released.

**WARNING: BE CAREFUL WITH THE HIGH TEMPERATURE WHEN YOU HEAT THE THERMAL SWITCH.**

- (a) Disconnect the electrical connector as follows:
  - APU FADEC (For aircraft with APU T-62T-40C14 - connector P2110).
  - Electronic Sequence Unit (ESU) (For aircraft with APU T-62T-40C11 - connector P0100).
- (b) Install a test lamp between pin B of the ESU connector (aircraft with APU T-62T-40C11) or pin C of the connector of the APU FADEC (aircraft with APU T-62T-40C14) and the aircraft ground.
- (c) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, push the APU BLEED pushbutton.  
 Result:
  - 1 The APU BLEED pushbutton light comes on.
  - 2 The test lamp of APU connector, comes on.
- (d) With the aid of a heat gun and thermometer, slowly and continuously increase the temperature of the massive duct leakage of the APU bleed line until you have a temperature higher than  $91 \pm 3^\circ\text{C}$  ( $195 \pm 5^\circ\text{F}$ ).  
 Result:
  - 1 The EICAS display shows the BLEED APU LEAK warning message.
  - 2 The master WARNING lights flash.
  - 3 The test lamp of the APU connector, goes off.
- (e) Push a master WARNING light.  
 Result:
  - 1 The master WARNING lights go off.
- (f) Let a plastic ice bag stay on the duct leakage switch until the temperature of the switch decreases to less than  $79 \pm 3^\circ\text{C}$  ( $175 \pm 5^\circ\text{F}$ ).  
 Result:
  - 1 On the EICAS display, the APU BLEED LEAK warning message does not go out of view.
  - 2 The test lamp of the APU connector, stays off.
- (g) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the APU BLEED pushbutton and push it again.  
 Result:
  - 1 On the EICAS display, the APU BLEED LEAK warning message goes out of view.
  - 2 The test lamp of the APU connector, comes on

**NOTE:** Do steps (d) to (g) for other APU leakage switch adjacent to the massive leakage switch.



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- (h) On the AIR CONDITIONING/PNEUMATIC control panel, on the overhead control panel, release the APU BLEED pushbutton.

Result:

- 1 The APU BLEED pushbutton light comes on.

- (i) Remove the test lamp from between pin B of the ESU connector (aircraft with APU T-62T-40C11) or pin C of the connector of the APU FADEC (aircraft with APU T-62T-40C14) and the aircraft ground.

- (j) Connect the electrical connector as follows:

- APU FADEC (For aircraft with APU T-62T-40C14 - connector P2110).
- Electronic Sequence Unit (ESU) (For aircraft with APU T-62T-40C11 - connector P0100).

L. Follow-on

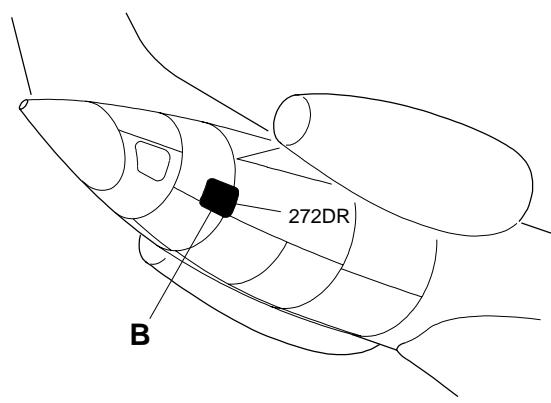
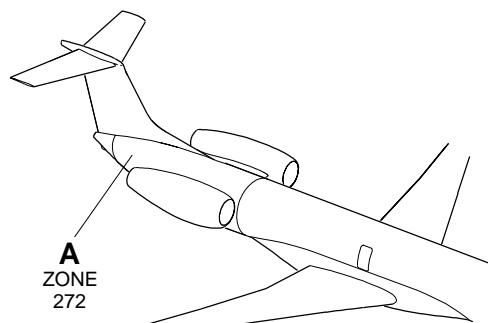
SUBTASK 842-016-B

- (1) On the RH electrical-power control/distribution box, close the PITOT HTG 3 and the HEATING/PITOT 2 circuit breakers and remove the DO-NOT-OPEN tag from it.
- (2) On the LH electrical-power control/distribution box, close the HEATING/PITOT 1 circuit breaker and remove the DO-NOT-CLOSE tag from it.
- (3) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).
- (4) Install access panels 272DR, 412BT, 414DB, 422BT and 424DB (AMM MPP 06-41-02/100) and ([AMM MPP 06-43-00/100](#)).
- (5) Close access door 313CL (AMM MPP 06-42-00/100).

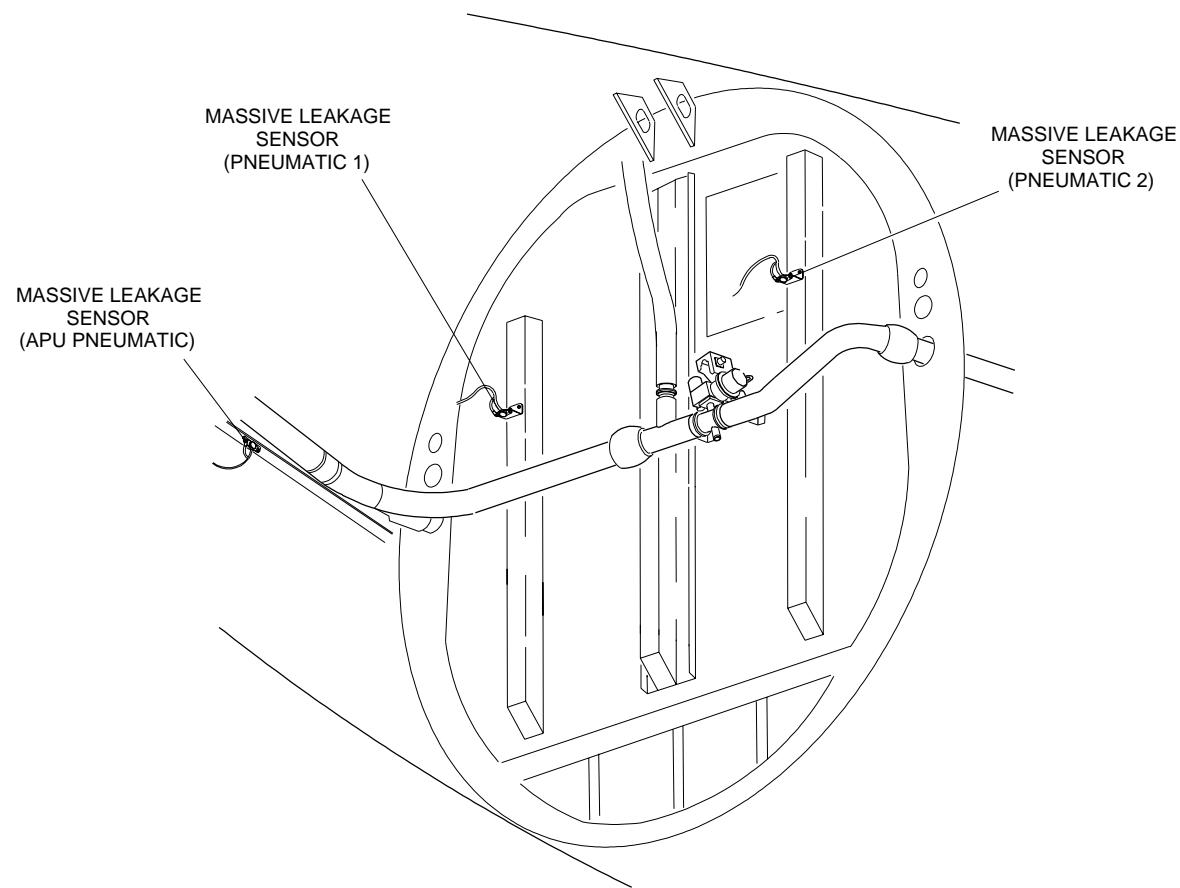
**EFFECTIVITY: ACFT MODEL(S) EMB-145**

Massive Leakage Switch - Check

Figure 502



**DET. A**



**DET. B**

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