WING ANTI-ICING SYSTEM MONITORING TUBES - ADJUSTMENT/TEST

EFFECTIVITY: ALL

1. General

   A. This section gives the procedures to do the test of the wing anti-icing system monitoring tubes for leakage.

   B. The wing anti-icing system monitoring tubes are installed in front of wing spar I and in the wing stub.

   C. These procedures are applicable to the LH and RH wings.

   D. 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*
30-11-09-700-801-A	WING ANTI-ICING SYSTEM MONITORING TUBES - LEAKAGE/TEST	ALL
30-11-09-700-802-A	WING STUB ANTI-ICING SYSTEM MONITORING TUBES - LEAKAGE/TEST	ALL

TASK 30-11-09-700-801-A
EFFECTIVITY: ALL

2. WING ANTI-ICING SYSTEM MONITORING TUBES - LEAKAGE/TEST

A. General

(1) The function of this test is to make sure that there is no leakage in the connections of the wing anti-icing system monitoring tubes.

(2) This test is divided into two steps:

(a) Step I: To make sure that there is no leakage.

(b) Step II: If leakage is found in step I, this step is done to find the position of the leakage and make the necessary repairs.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 57-30-00-000-801-A/400	WING TIP - REMOVAL
AMM TASK 57-30-00-400-801-A/400	WING TIP - INSTALLATION
AMM TASK 57-41-00-000-801-A/400	LEADING EDGE I - REMOVAL
AMM TASK 57-41-00-400-801-A/400	LEADING EDGE I - INSTALLATION
AMM TASK 57-42-00-000-801-A/400	LEADING EDGE II - REMOVAL
AMM TASK 57-42-00-400-801-A/400	LEADING EDGE II - INSTALLATION
AMM TASK 57-43-00-000-801-A/400	LEADING EDGE III - REMOVAL
AMM TASK 57-43-00-400-801-A/400	LEADING EDGE III - INSTALLATION
S.B.145-30-0022	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
511		LH Wing
512		LH Wing
513		LH Wing
561		LH Wing tip
611		RH Wing
612		RH Wing
613		RH Wing
661		RH Wing tip

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
GSE 080	Box-Leakage test	To apply measured pressure to the tubes	
GSE 115	Hose assembly	To connect the leakage test box to the tubes	

(Continued)

ITEM	DESCRIPTION	PURPOSE	QTY
GSE 116	Two hose assemblies	To connect the leakage test box to the tubes	

E. Auxiliary Items

ITEM	DESCRIPTION	PURPOSE	QTY
Locally available	Dry and filtered compressed air source	To pressurize the wing anti-icing system monitoring tubes	1
Commercially available	Sponge	To apply the leak detection fluid	1
Commercially available	Union-AN 815 - 4D or equivalent	To connect the pressure line	1
Commercially available	Sleeve-MS 20819 - 4D or equivalent	To connect the pressure line	1
Commercially available	Tee-AN 834 - 4D or equivalent	To connect the pressure line	1
Commercially available	Flared tube-AL 5052 - 6.35 mm (1/4 in) in diameter/101 mm (4 in) in length	To connect the pressure line	1
Commercially available	Nut-AN 818 - 4D or equivalent	To connect the pressure line	1
Commercially available	Ladder	To get access to the wing tip	1

F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
MIL-L-25567 or equivalent	LEAK TEC 16 OX leakage detector	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	A - Does step I	Wing tip
1	B - If step II is necessary, helps technician A	LH and RH wing leading edge

I. Preparation (Figure 501) (Figure 504) (Figure 505) (Figure 506)

SUBTASK 841-002-A

WARNING: DO NOT TOUCH THE DUCTS OR COMPONENTS OF THE ANTI-ICING SYSTEM IMMEDIATELY AFTER THE SYSTEM IS TURNED OFF, BECAUSE THE HIGH AIR TEMPERATURE CAN CAUSE INJURY TO YOU.

(1) On the overhead Circuit Breaker Panel, open the circuit breakers below and attach a DO-NOT-CLOSE tag to them.

(a) (PRE-MOD. S.B.145-30-0022)

- WING: (Location Tip: DC BUS 1/ICE AND RAIN PROTECTION/WING).

(b) (POST-MOD. S.B.145-30-0022)

- WING: (Location Tip: DC BUS 1/ICE AND RAIN PROTECTION/WING).
- WING A/I IND 1: (Location Tip: DC BUS 2/ICE AND RAIN PROTECTION/ WING A/I IND 1).
- WING A/I IND 2: (Location Tip: ESSENTIAL DC BUS 2/POWERPLANT/ WING A/I IND 2).

(2) Remove the wing tip (AMM TASK 57-30-00-000-801-A/400) to get access to the wing anti-icing system hose.

(3) Remove the lockwire and loosen the clamp that holds the hose to the piccolo tube.

(4) Before you connect the leakage test box to the wing anti-icing system hose, do the procedure as follows to adjust the leakage test box (Figure 501):

(a) Make sure that there is no moisture and no foreign matter in the inlet filter of the leakage test box.

(b) Install a hose to connect the air outlet coupling to the manometric pressure coupling on the LH side of the leakage test box.

(c) Turn the pressure regulator knob fully counterclockwise (-).

(d) Keep the pressure source selector in the CLOSE position.

CAUTION: MAKE SURE THAT THE PRESSURE REGULATOR KNOB OF THE TEST BOX (GSE 080) IS FULLY CLOSED IN THE COUNTERCLOCKWISE POSITION BEFORE YOU CONNECT THE SOURCE OF COMPRESSED AIR. IF YOU DO NOT OBEY THIS PROCEDURE DAMAGE TO THE EQUIPMENT CAN OCCUR.

(e) Connect a source of compressed air to the leakage test box.

(f) Turn the pressure source selector to the AIR position.

(g) Move the operation selector lever to the PRESSURE position and turn the pressure regulator knob clockwise (+) until you get an indication of 2 psi on the pressure gauge.

(h) Turn the pressure source selector to the CLOSE position.

(i) Disconnect the source of compressed air from the leakage test box.

(j) Push the operation selector lever to the ESCAPE position until the pressure gauge shows zero.

(5) Install the hoses (GSE 116) to the leakage test box and to the tee (Figure 502).

(6) Install the hose (GSE 115) to the tee and the union.

(7) Install the tube assembly to the union and to the wing anti-icing system hose.

J. Leakage Test (Figure 502) (Figure 504) (Figure 505) (Figure 506)

SUBTASK 790-002-A

CAUTION: TOO MUCH PRESSURE CAN CAUSE DAMAGE TO THE WING ANTI-ICING SYSTEM COMPONENTS. USE ONLY THE SPECIFIED PRESSURE VALUE (2 PSI) TO DO THE TEST.

(1) Step I:

(a) Connect the source of compressed air to the leakage test box.

(b) On the leakage test box, turn the pressure source selector to the AIR position.

(c) Move the selector lever of the leakage test box to the PRESSURE position and turn the pressure regulator knob clockwise until you have a pressure of 2 psi.

(d) When the pressure becomes stable at 2 psi, release the leakage test box lever and turn the source selector to the CLOSE position.

(e) After one minute (1 min.), read the leakage test box gauge to make sure the pressure decreased:

1 If it did: do step II.

2 If it did not: move the leakage test box lever to the ESCAPE position until the pressure gauge shows zero, and go to the Follow-on procedures.

(2) Step II:

(a) Remove leading edge I 511 or 611 (AMM TASK 57-41-00-000-801-A/400), leading edge II 512 or 612 (AMM TASK 57-42-00-000-801-A/400), and leading edge III 513 or 613 (AMM TASK 57-43-00-000-801-A/400) to get access to the wing anti-icing system monitoring tubes.

(b) On the leakage test box, turn the pressure source selector to the AIR position.

(c) Move the selector lever of the leakage test box to the PRESSURE position and turn the pressure regulator knob clockwise until you have the pressure of 2 psi.

(d) When the pressure becomes stable at 2 psi, release the leakage test box lever and turn the source selector to the CLOSE position.

(e) Use a sponge to apply the leak detection fluid to the connections and examine them for leaks.

(f) If there are leaks, find the related area(s).

(g) Turn the selector of the leakage test box to the CLOSE position.

(h) Move the leakage test box lever to the ESCAPE position until the pressure gauge shows zero.

(i) If applicable, repair the wing anti-icing system components as necessary to remove the leak(s).

(j) Do the test again and make sure that there are no leaks.

(k) Install leading edge I 511 or 611 (AMM TASK 57-41-00-400-801-A/400), leading edge II 512 or 612 (AMM TASK 57-42-00-400-801-A/400), and leading edge III 513 or 613 (AMM TASK 57-43-00-400-801-A/400).

K. Follow-on

SUBTASK 842-002-A

(1) Remove the tube assembly from the union and from the wing anti-icing system hose.

(2) Connect the hose to the piccolo tube, with the clamp, and safety it.

(3) Disconnect the hoses (GSE 115) and (GSE 116) from the tee, from the leakage test box, and from the union.

(4) On the overhead Circuit Breaker Panel, close the circuit breakers below and remove the DO-NOT-CLOSE tag from them.

(a) (PRE-MOD. S.B.145-30-0022)

- WING: (Location Tip: DC BUS 1/ICE AND RAIN PROTECTION/WING).

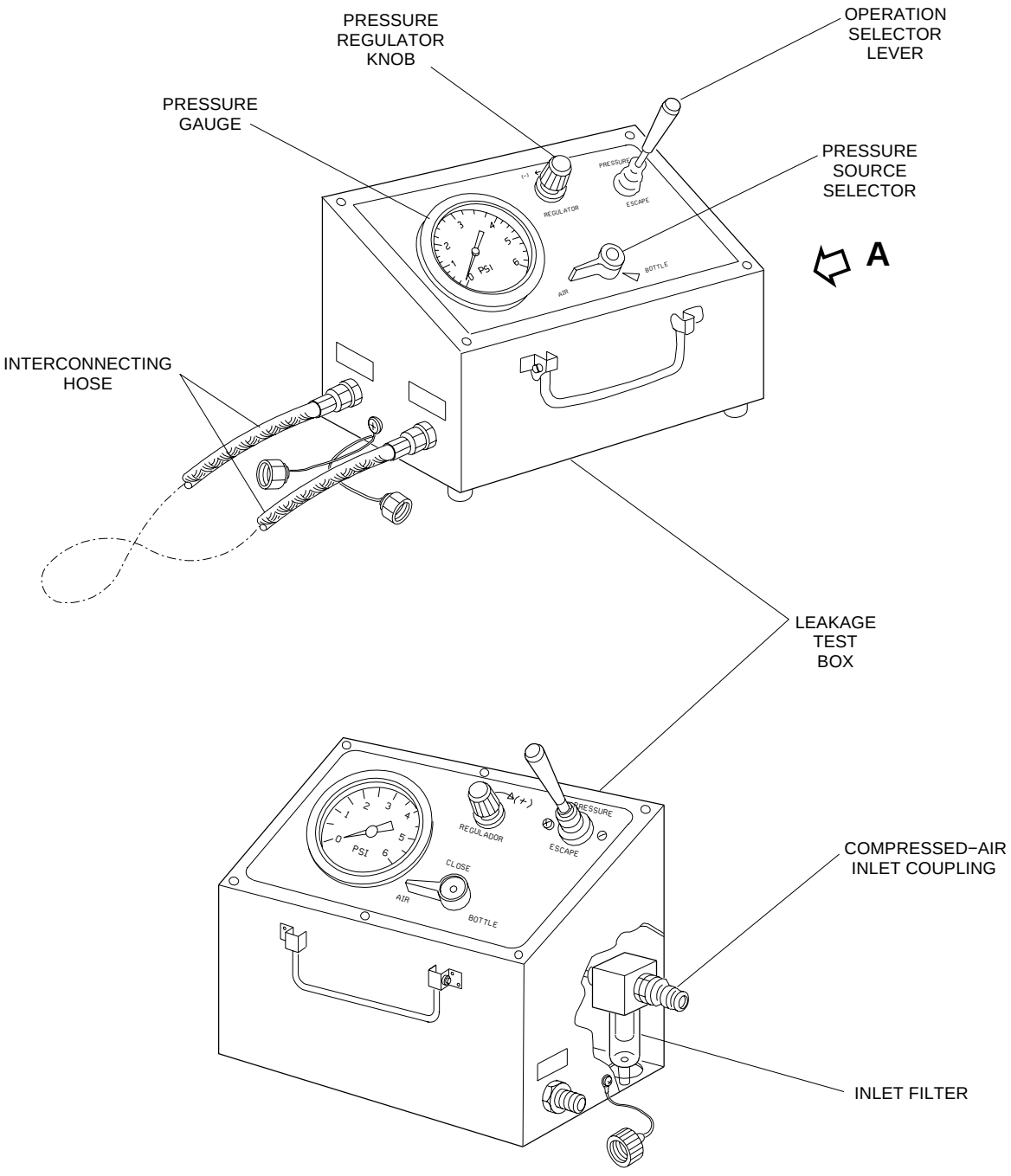
(b) (POST-MOD. S.B.145-30-0022)

- WING: (Location Tip: DC BUS 1/ICE AND RAIN PROTECTION/WING).
- WING A/I IND 1: (Location Tip: DC BUS 2/ICE AND RAIN PROTECTION/ WING A/I IND 1).
- WING A/I IND 2: (Location Tip: ESSENTIAL DC BUS 2/POWERPLANT/ WING A/I IND 2).

(5) Install the wing tip (AMM TASK 57-30-00-400-801-A/400).

EFFECTIVITY: ALL

Leakage Test Box - Adjustment/Test
Figure 501

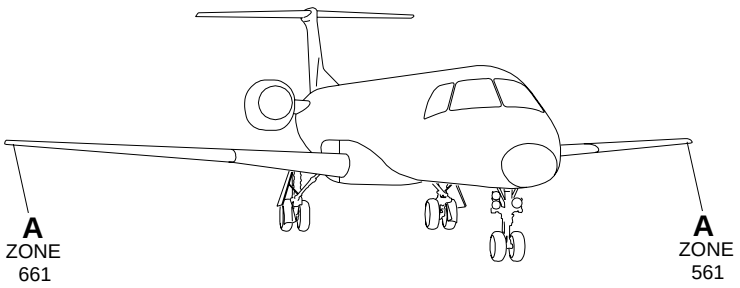


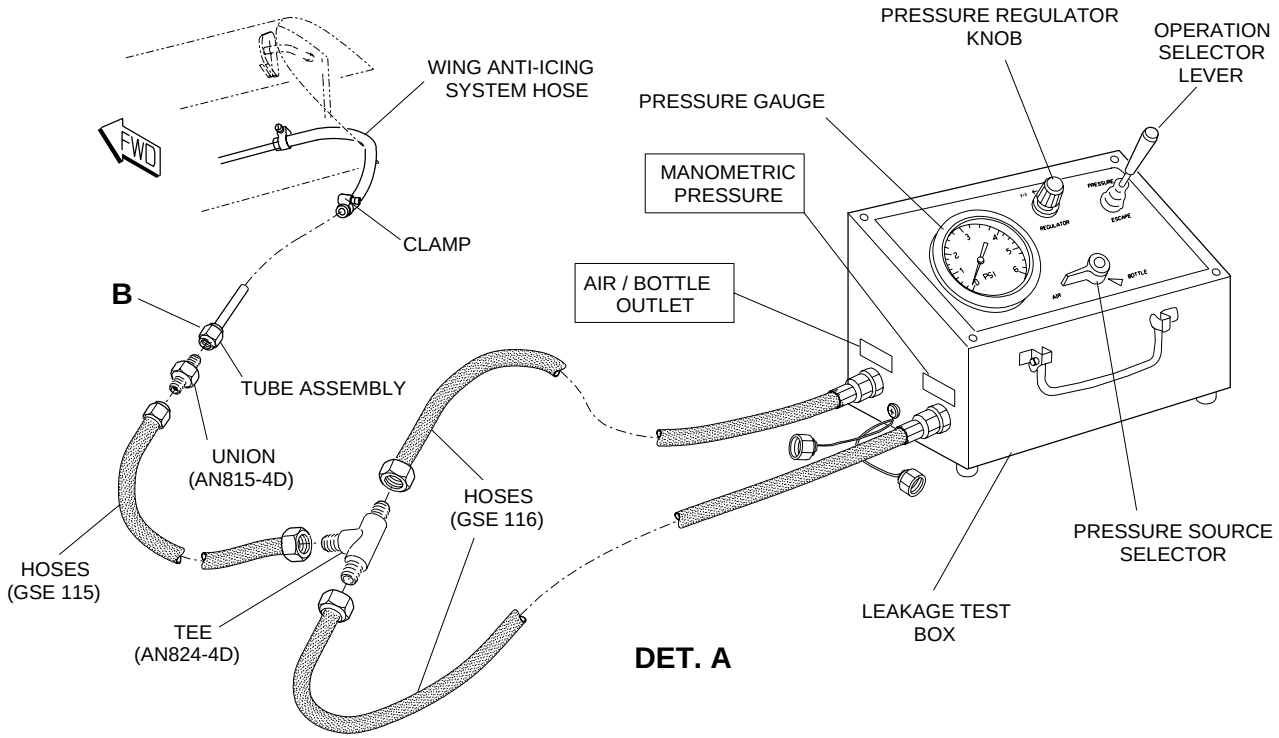
VIEW A

EM145AMM281629A.DGN

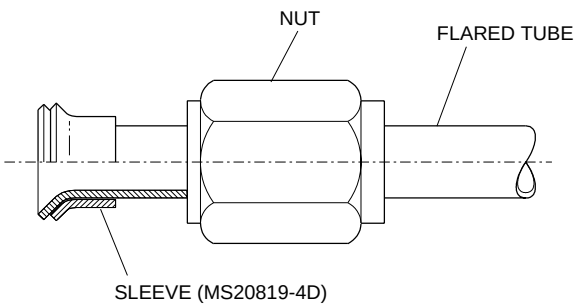
EFFECTIVITY: ALL

Wing Anti-icing System Monitoring Tubes - Component Locations
Figure 502





DET. A



DET. B

145AMM300080.MCE A

TASK 30-11-09-700-802-A
EFFECTIVITY: ALL

3. WING STUB ANTI-ICING SYSTEM MONITORING TUBES - LEAKAGE/TEST

A. General

(1) The function of this test is to make sure that there is no leakage in the connections of the wing anti-icing system monitoring tubes.

(2) This test is divided into two steps:

(a) Step I: To make sure that there is no leakage.

(b) Step II: If leakage is found in step I, this step is done to find the position of the leakage and make the necessary repairs.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-41-01/100	-
AMM TASK 28-41-00-200-801-A/600	-
S.B.145-30-0022	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
191	191EL/191ML/191FR/191NR	Forward lower fairing
192	192AL/192BR	Center lower fairing

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
GSE 080	Box-Leakage test	To apply measured pressure to the tubes	
GSE 115	Hose assembly	To connect the leakage test box to the tubes	
GSE 116	Two hose assemblies	To connect the leakage test box to the tubes	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Locally available	Dry and filtered compressed air source	To pressurize the wing anti-icing system monitoring tubes	1
Commercially available	Sponge	To apply the leak detection fluid	1
Commercially available	Union-AN 815 - 4D or equivalent	To connect the pressure line	1
Commercially available	Tee-AN 834 - 4D or equivalent	To connect the pressure line	1
Commercially available	Flared tube-AL 5052 - 6.35 mm (1/4 in) in diameter/101 mm (4 in) in length	To connect the pressure line	1

(Continued)

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Nut-AN 818 - 4D or equivalent	To connect the pressure line	1
Commercially available	Ladder	To get access to the wing tip	1

F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
MIL-L-25567 or equivalent	LEAK TEC 160X leakage detector	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	A - Does step I	Wing stub
1	B - If step II is necessary, helps technician A	Wing stub

I. Preparation (Figure 503) (Figure 501)

SUBTASK 841-003-A

WARNING: DO NOT TOUCH THE DUCTS OR COMPONENTS OF THE ANTI-ICING SYSTEM IMMEDIATELY AFTER THE SYSTEM IS TURNED OFF, BECAUSE THE HIGH AIR TEMPERATURE CAN CAUSE INJURY TO YOU.

(1) On the overhead Circuit Breaker Panel, open the circuit breakers below and attach a DO-NOT-CLOSE tag to them.

- (PRE-MOD. S.B.145-30-0022)
  WING: (Location Tip: DC BUS 1/ICE AND RAIN PROTECTION/WING).
- (POST-MOD. S.B.145-30-0022)
  WING: (Location Tip: DC BUS 1/ICE AND RAIN PROTECTION/WING).
  WING A/I IND 1: (Location Tip: DC BUS 2/ICE AND RAIN PROTECTION/WING A/I IND 1).
  WING A/I IND 2: (Location Tip: ESSENTIAL DC BUS 2/POWERPLANT/WING A/I IND 2).

(2) Before you connect the leakage test box to the wing anti-icing system hose, do the procedure as follows to adjust the leakage test box (Figure 501):

(a) Make sure that there is no moisture and no foreign matter in the inlet filter of the leakage test box.

(b) Install a hose to connect the air outlet coupling to the manometric pressure coupling on the LH side of the leakage test box.

(c) Turn the pressure regulator knob fully counterclockwise (-).

(d) Keep the pressure source selector in the CLOSE position.

CAUTION: CAUTION: MAKE SURE THAT THE PRESSURE REGULATOR KNOB OF THE TEST BOX (GSE 080) IS FULLY CLOSED IN THE COUNTERCLOCKWISE POSITION BEFORE YOU CONNECT THE SOURCE OF COMPRESSED AIR. IF YOU DO NOT OBEY THIS PROCEDURE DAMAGE TO THE EQUIPMENT CAN OCCUR.

(e) Connect a source of compressed air to the leakage test box.

(f) Turn the pressure source selector to the AIR position.

(g) Move the operation selector lever to the PRESSURE position and turn the pressure regulator knob clockwise (+) until you get an indication of 5 psi on the pressure gauge.

(h) Turn the pressure source selector to the CLOSE position.

(i) Disconnect the source of compressed air from the leakage test box.

(j) Push the operation selector lever to the ESCAPE position until the pressure gauge shows zero.

(3) Install the hoses (GSE 116) to the leakage test box and to the tee (Figure 503).

(4) Install the hose (GSE 115) to the tee and the union.

(5) Open access panels 191EL and 191FR (AMM MPP 06-41-01/100) to get access to the wing anti-icing system monitoring tube of the wing stub.

(6) Install the union (AN815-4D) to the hose (GSE 115) and to the wing anti-icing monitoring tube, as shown (Figure 503).

J. Leakage Test of the Wing Stub Anti-icing System Monitoring Tubes (Figure 503) (Figure 504) (Figure 505) (Figure 506)

SUBTASK 790-003-A

CAUTION: TOO MUCH PRESSURE CAN CAUSE DAMAGE TO THE WING ANTI-ICING SYSTEM COMPONENTS. USE ONLY THE SPECIFIED PRESSURE VALUE (5 PSI) TO DO THE TEST.

(1) Step I:

(a) Connect the source of compressed air to the leakage test box.

(b) On the leakage test box, turn the pressure source selector to the AIR position.

(c) Move the selector lever of the leakage test box to the PRESSURE position and turn the pressure regulator knob clockwise until you have a pressure of 5 psi.

(d) When the pressure becomes stable at 5 psi, release the leakage test box lever and turn the source selector to the CLOSE position.

(e) After one minute (1 min.), read the leakage test box gauge to make sure the pressure decreased:

1 If it did: do step II.

2 If it did not: move the leakage test box lever to the ESCAPE position until the pressure gauge shows zero, and go to the Follow-on procedures.

(2) Step II:

(a) Open access panels 191ML, 191NR, 192AL, and 192BR (AMM MPP 06-41-01/100) to get access to the wing anti-icing system monitoring tubes of the wing stub.

(b) On the leakage test box, turn the pressure source selector to the AIR position.

(c) Move the selector lever of the leakage test box to the PRESSURE position and turn the pressure regulator knob clockwise until you have the pressure of 5 psi.

(d) When the pressure becomes stable at 5 psi, release the leakage test box lever and turn the source selector to the CLOSE position.

(e) Use a sponge to apply the leak detection fluid to the connections and examine them for leaks.

(f) If there are leaks, find the related area(s).

(g) Turn the selector of the leakage test box to the CLOSE position.

(h) Move the leakage test box lever to the ESCAPE position until the pressure gauge shows zero.

(i) If applicable, repair the wing anti-icing system components as necessary to remove the leak(s).

(j) Do the test again and make sure that there are no leaks.

(k) 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).

(l) Close access panels 191ML, 191NR, 192AL, and 192BR (AMM MPP 06-41-01/100).

K. Follow-on

SUBTASK 842-003-A

(1) Remove the union (AN815-4D) from hose (GSE 115) and from the wing anti-icing system tube.

(2) Connect the wing anti-icing system tube to the anti-icing duct.

(3) Disconnect the hoses (GSE 115) and (GSE 116) from the tee, from the leakage test box, and from the union.

(4) On the overhead Circuit Breaker Panel, close the circuit breakers below and remove the DO-NOT-CLOSE tag from them.

- (PRE-MOD. S.B.145-30-0022)
  WING: (Location Tip: DC BUS 1/ICE AND RAIN PROTECTION/WING).

- (POST-MOD. S.B.145-30-0022)
  WING: (Location Tip: DC BUS 1/ICE AND RAIN PROTECTION/WING).
  WING A/I IND 1: (Location Tip: DC BUS 2/ICE AND RAIN PROTECTION/WING A/I IND 1).
  WING A/I IND 2: (Location Tip: ESSENTIAL DC BUS 2/POWERPLANT/WING A/I IND 2).

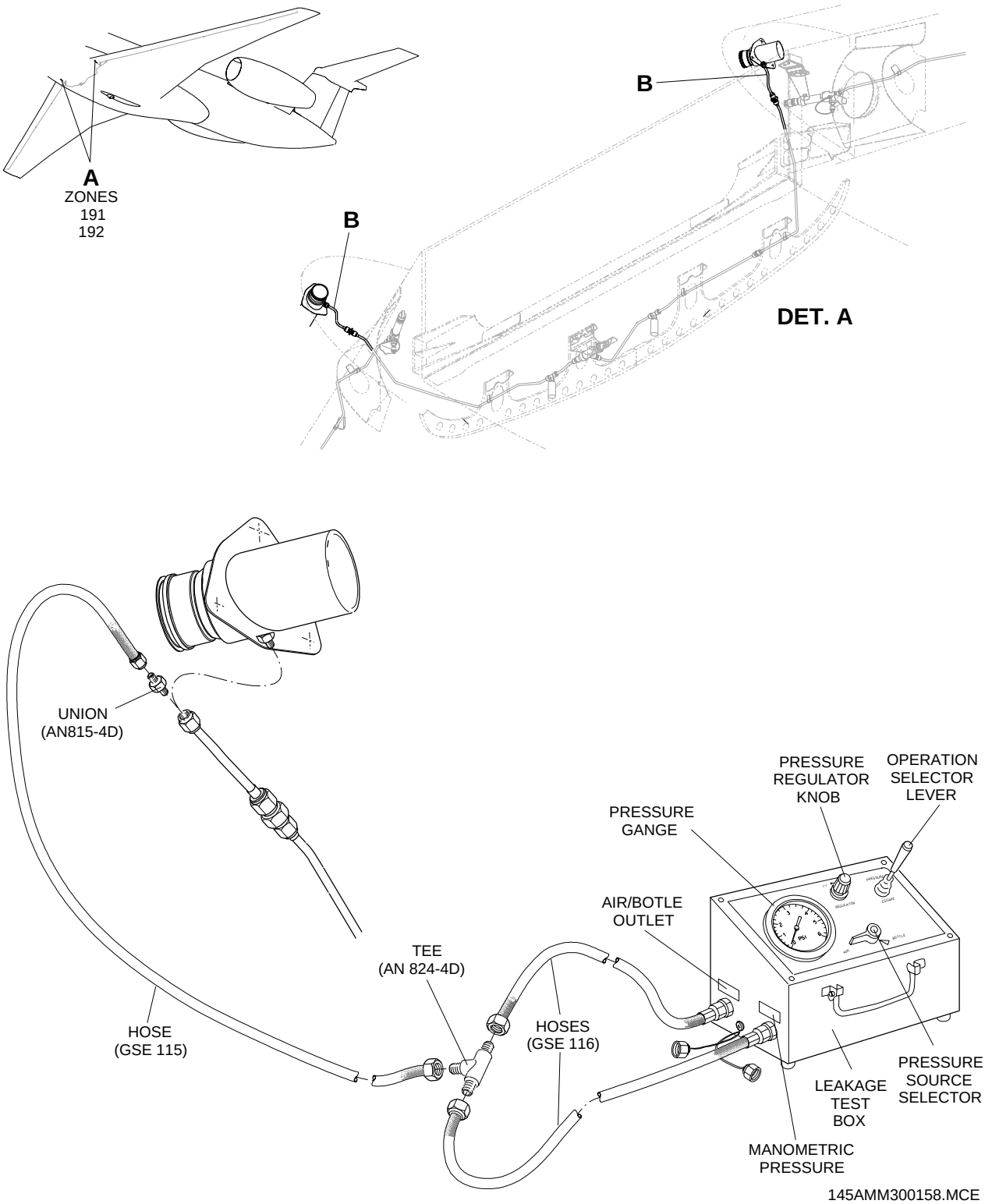
(5) Do an inspection on the fuel quantity indication harness (AMM TASK 28-41-00-200-801-A/600).

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).

(6) Close access panels 191EL and 191FR (AMM MPP 06-41-01/100).

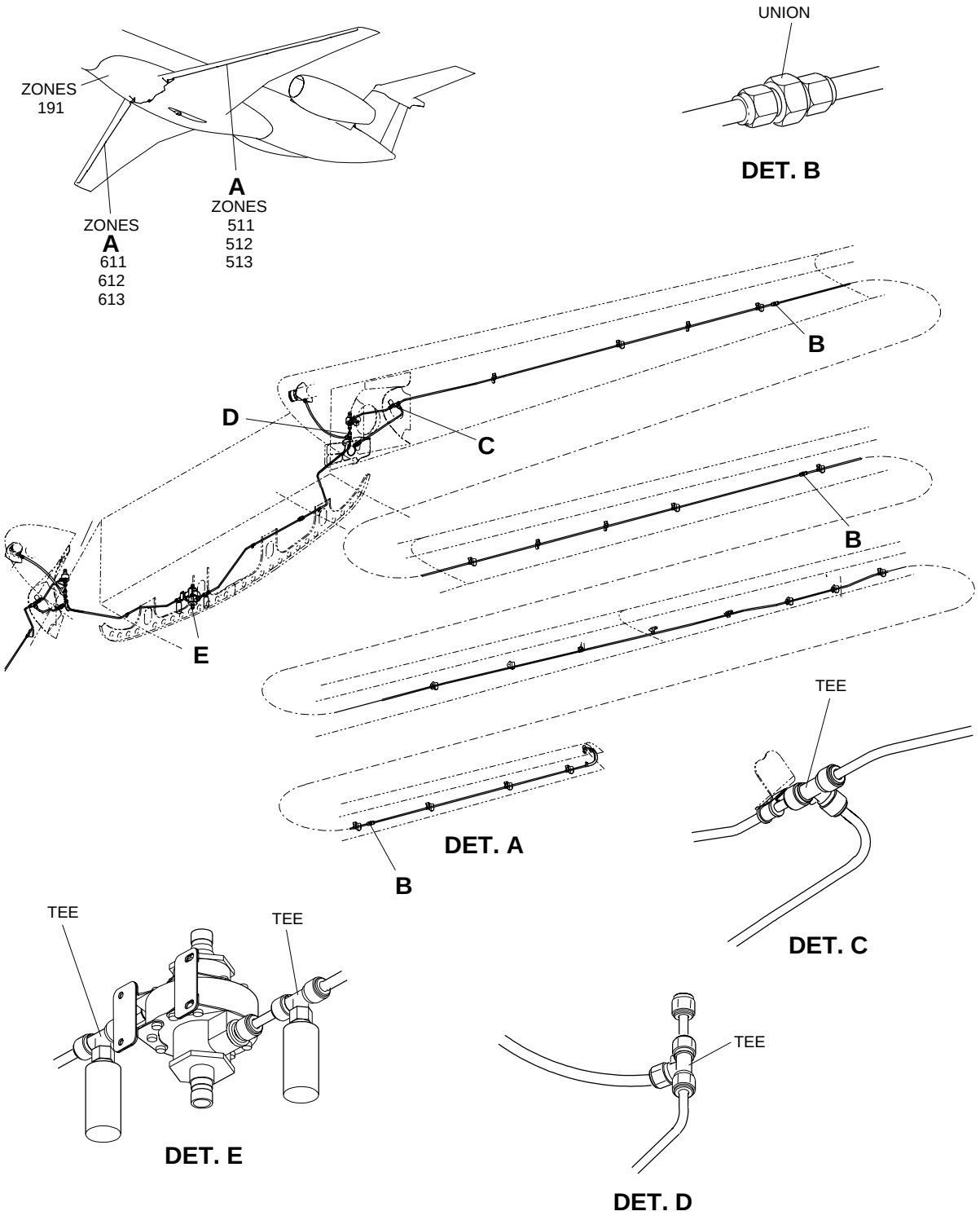
EFFECTIVITY: ALL

Wing Stub Anti-icing System Monitoring Tubes - Component Locations
Figure 503



EFFECTIVITY: PRE-MOD. S.B. 145-30-0019

Wing Anti-icing System Monitoring Tubes - Component Locations
Figure 504

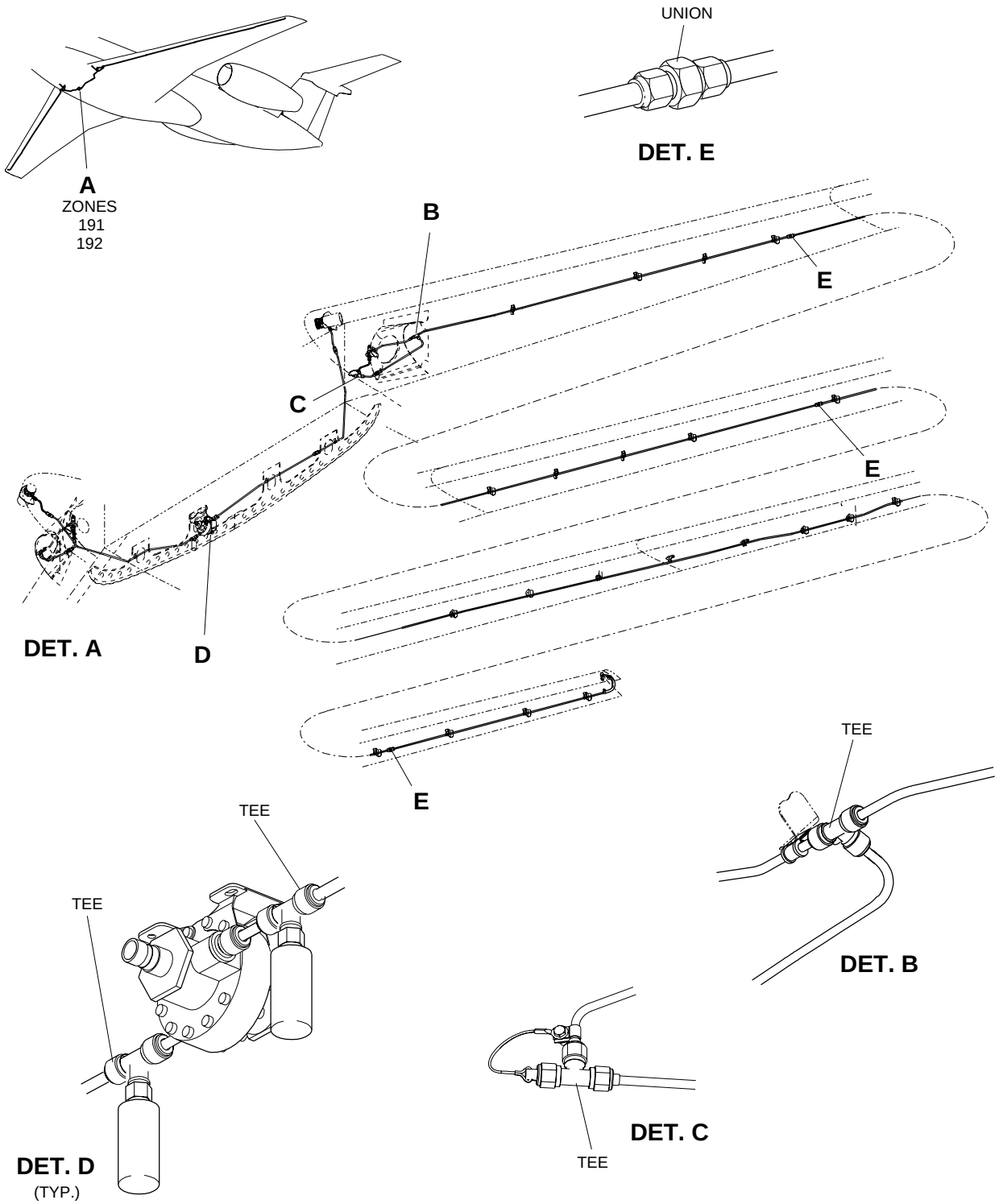


145AMM300078.MCE B

EFFECTIVITY: POST-MOD. S.B. 145-30-0019 AND PRE-MOD. S.B. 145-30-0022

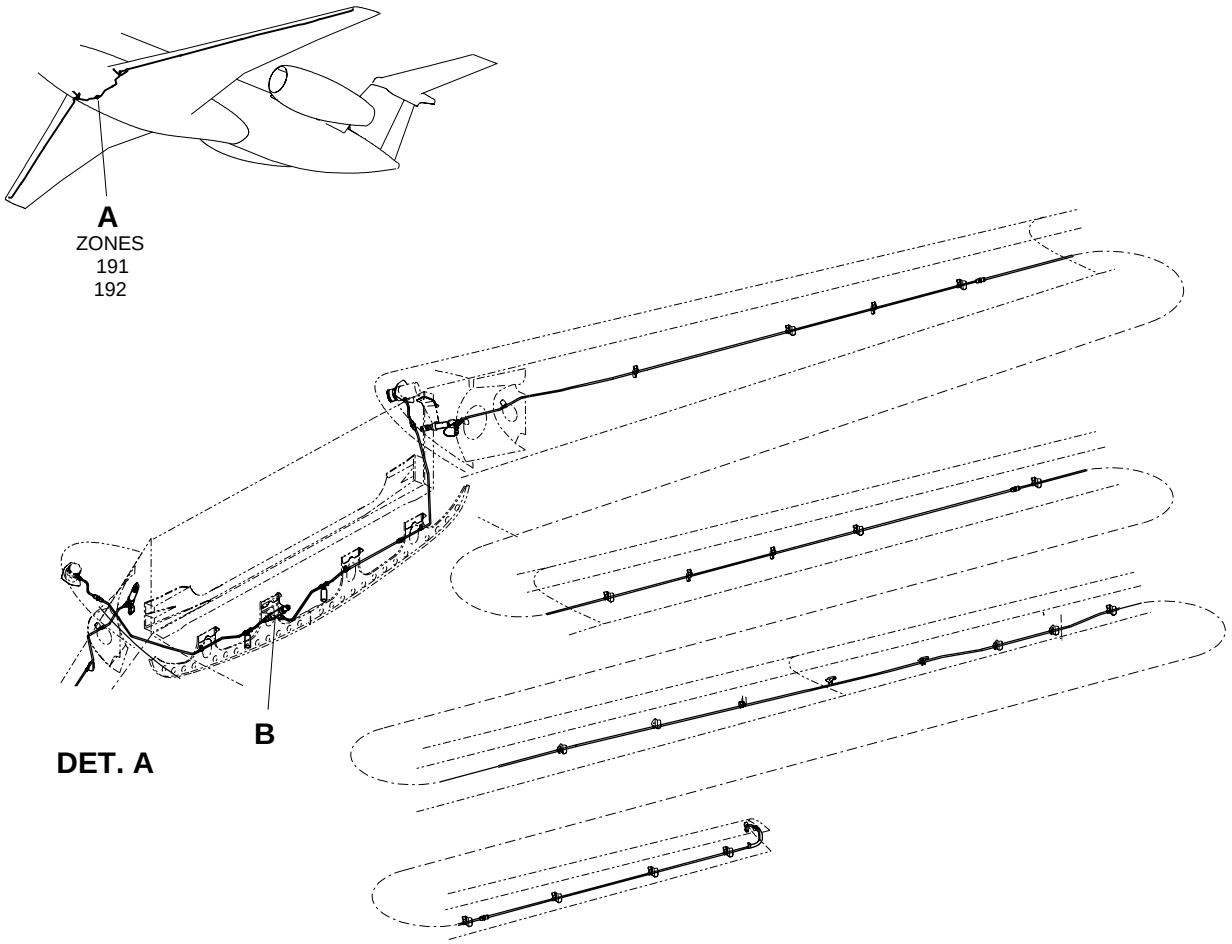
Wing Anti-icing System Monitoring Tubes - Component Locations

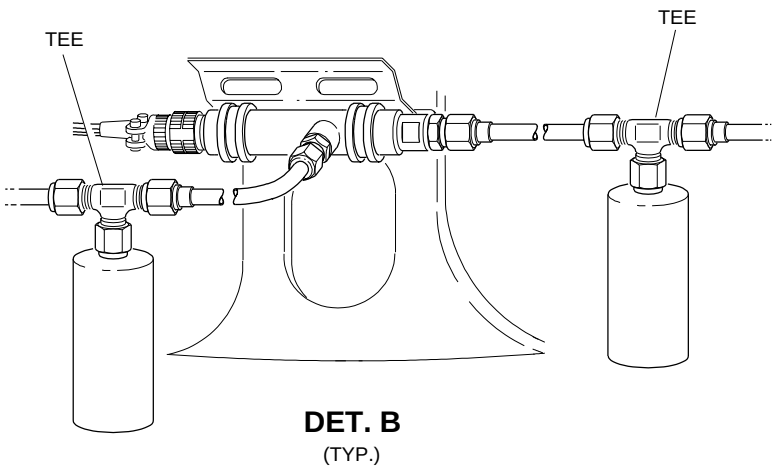
Figure 505



145AMM300148.MCE A

EFFECTIVITY: POST-MOD. S.B. 145-30-0022 AND S.B. 145-30-0026
Wing Anti-icing System Monitoring Tubes - Component Locations
Figure 506





145AMM300149.MCE A