PITOT-STATIC SYSTEM - ADJUSTMENT/TEST

EFFECTIVITY: ALL

1. General

A. This section gives the procedures to do the check of the pitot/static system for leaks.

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*
34-13-00-790-801-A ♦	PITOT/STATIC SYSTEM - CHECK FOR LEAK	ALL
34-13-00-790-802-A	PITOT-STATIC SYSTEM 1 - LEAKAGE TEST	ALL
34-13-00-790-803-A	PITOT-STATIC SYSTEM 2 - LEAKAGE TEST	ALL
34-13-00-790-804-A	STANDBY SYSTEM - LEAKAGE TEST	ALL

TASK 34-13-00-790-801-A
EFFECTIVITY: ALL

2. PITOT/STATIC SYSTEM - CHECK FOR LEAK

A. General

(1) The pitot/static system has two pitot sensors, one pitot/static sensor, and four anemometric static ports.

B. References

REFERENCE	*DESIGNATION*
AMM SDS 34-52-00/1	
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
123		LH front fuselage
124		RH front fuselage
213		LH front fuselage
214		RH front fuselage

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
GSE 128	Air Data Kit	To connect the Pitot/Static-System Test Set	
GSE 129	Pitot/Static-System Test Set	To do a test for leaks	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
MIL-S-46163, Type I	Loctite 221 (or equivalent), Adhesive	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	LH/RH forward fuselage

I. Preparation

SUBTASK 841-002-A

(1) Make sure that the nose-landing-gear safety pin is installed.

J. Functionally Check of Pitot/Static System for Leakage (Figure 501)

SUBTASK 790-002-A

(1) Do the check as follows.

WARNING: TO PREVENT INJURY TO PERSONS, DO NOT TOUCH THE PITOT, PITOT/STATIC SENSORS, ANEMOMETRIC STATIC PORTS, AND INTERNAL TUBES IMMEDIATELY AFTER THE HEATER WAS TURNED OFF.

CAUTION:
- ALL THE CONNECTIONS FOR THIS CHECK MUST BE MADE EXTERNALLY.
- IN A STATIC SYSTEM, THE RATE OF APPLICATION OR RELEASE OF VACUUM MUST NOT BE MORE THAN 5000 ft. PER MINUTE.
- IN A PITOT SYSTEM, THE RATE OF APPLICATION OR RELEASE OF PRESSURE MUST NOT BE MORE THAN 300 KNOTS PER MINUTE.
- TO PREVENT INCORRECT ALIGNMENT OF PITOT AND PITOT/STATIC SENSORS, THE TEST HOSES MUST BE HELD NOT TO LET WEIGHT TO BE ADDED TO THE SENSORS.

CAUTION:
- MAKE SURE THAT THE SENSOR (PITOT 1/TAT 1/AOA 1, PITOT 2/TAT 2/AOA 2, PITOT/STATIC 3) PUSHBUTTONS, ON THE OVERHEAD PANEL, ARE SET AT OFF AND ATTACH A DO-NOT-SET-TO-AUTO TAG TO THEM.
- ON THE CIRCUIT BREAKER PANEL, ON THE COCKPIT CEILING, MAKE SURE THAT THE SENSORS HTG CIRCUIT BREAKER IS CLOSED.

(a) Write the local altitude.

(b) With a cross-fitting, connect the dynamic-pressure hoses to one another.

(c) With a cross-fitting, connect the static-pressure hoses to one another.

(d) Install the dynamic-pressure test adapters to pitot sensors 1 and 2.

(e) Remove two screws from each of anemometric static ports 1, 2, 3, and 4 for you to install the static-pressure test adapters.

NOTE: Keep the removed screws in a safe location and install them back after the test.

(f) Install the static-pressure test adapters to anemometric static ports 1, 2, 3, and 4.

(g) Install the static/dynamic pressure test adapters to pitot/static sensor 3.

(h) Install the adapters to the related hoses.

(i) Connect a hose between the cross-fitting of the dynamic-pressure line and the PT fitting of the pitot/static system test set.

(j) Connect a hose between the cross-fitting of the static-pressure line and the PS fitting of the pitot/static system test set.

(k) Energize the aircraft with the external DC-power supply (AMM TASK 20-40-01-860-801-A/200).

(l) Adjust the speed to 300 knots on the pitot/static-system test set.

Result:

1 After one minute with no pumping, do a check to make sure that the leakage is not more than 5 knots on the two PFD airspeed indicators and standby IAS or ISIS.

(m) On the pitot/static-system test set, set the airspeed to ZERO knots.

(n) Adjust the altitude to 30000 ft. and the rate to 5000 ft. per minute on the pitot/static-system test set.

NOTE: This procedure can cause interference with the local air traffic during simulations of altitude with the anemometric bench test. To prevent this, make sure that the transponder is on the STANDBY condition (AMM SDS 34-52-00/1).

Result:

1 After one minute with no pumping, make sure that the test-set (GSE 129) leakage indication is less than 100 ft.

(o) On the pitot/static-system test set, set the altitude back to the local value.

(p) Remove the dynamic lines from the adapters of pitot sensors 1 and 2, and of pitot/static sensor 3.

(q) Remove the static line from the adapters of anemometric static ports 1, 2, 3, and 4, and of pitot/static 3 sensor.

(r) Remove the test adapters from pitot sensors 1 and 2.

(s) Remove the test adapters from pitot/static sensor 3.

(t) Remove the adapter test from anemometric static ports 1, 2, 3, and 4.

(u) Apply Loctite adhesive on the surfaces of the screws of anemometric static ports 1, 2, 3, and 4.

(v) Install the screws of anemometric static ports 1, 2, 3, and 4 back.

NOTE: Apply a torque of 2.26 - 2.48 N.m (20 - 22 lb.in) to the screws.

(w) Remove the dynamic lines from the adapters of pitot sensors 1 and 2, and of pitot/static sensor 3.

(x) Remove the static line from the adapters of anemometric static ports 1, 2, 3, and 4, and of pitot/static 3 sensor.

(y) Remove the test adapters from pitot sensors 1 and 2.

K. Follow-on

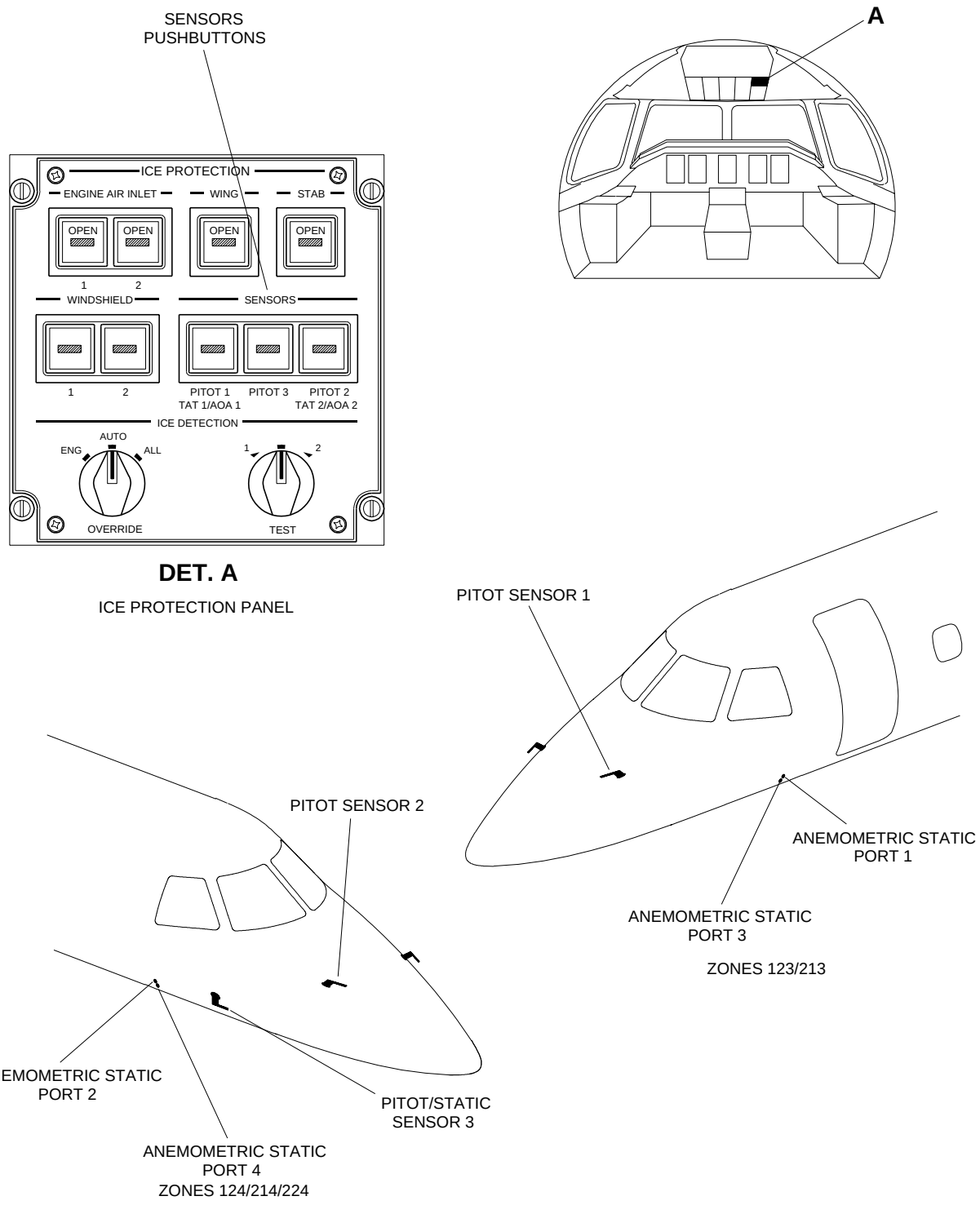
SUBTASK 842-002-A

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

(2) Set the SENSOR (PITOT 1/AOA 1/TAT 1, PITOT 2/TAT 2/AOA 2, and PITOT 3) pushbuttons to AUTO and remove the DO-NOT-TURN-TO-AUTO tag from them.

EFFECTIVITY: ALL

Check of the Pitot-Static System for Leaks
Figure 501



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TASK 34-13-00-790-802-A
EFFECTIVITY: ALL

3. PITOT-STATIC SYSTEM 1 - LEAKAGE TEST

A. General

(1) Pitot/static system 1 includes pitot sensor 1, anemometric-static ports S1 and S4, and ADC1.

B. References

REFERENCE	*DESIGNATION*
AMM SDS 34-52-00/1	
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
GSE 128	Air Data Kit	To connect the Pitot/Static-System Test Set	
GSE 129	Pitot/Static-System Test Set	To do a test for leaks	

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/RH forward fuselage

I. Preparation (Figure 502)

SUBTASK 841-003-A

(1) Do these steps to inhibit the sensor heating:

(a) On the LH electrical-power control/distribution box, open these circuit breakers:

- HEATING/TAT 1.
- HEATING/PITOT 1.
- HEATING/AOA 1.

WARNING: THE PITOT STATIC/STATIC SENSORS AND INTERNAL TUBES CAN BE HOT IMMEDIATELY AFTER HEATER POWER IS REMOVED AND BURN YOUR HAND IF YOU TOUCH THEM.

CAUTION:
- BEFORE YOU CONNECT THE TEST SET, MAKE SURE THAT THERE ARE NO FOREIGN MATERIALS IN THE PITOT/STATIC TUBE OR IN THE ADAPTERS. THIS IS TO PREVENT CONTAMINATION OF THE SYSTEM.
- IN A PITOT SYSTEM, THE RATE OF APPLICATION OR RELEASE OF PRESSURE MUST NOT BE MORE THAN 300 KNOTS PER MINUTE.

(2) Do the connections from the test set to the ADC1 system sensors (Static ports 1/4, Pitot 1) as follows:

NOTE: For this test, it is not necessary to make connections to PITOT/STATIC 3.

(a) Connect the output static port of the test set to anemometric static port 4.

(b) Use one adapter to seal anemometric static port 1 and attach a REMOVE-BEFORE-FLIGHT tag to it.

(c) Connect the output pressure port of the test set to pitot sensor 1.

(3) Energize the aircraft with the external DC-power supply (AMM TASK 20-40-01-860-801-A/200).

J. Test Procedures

SUBTASK 790-003-A

(1) Do the check as follows:

(a) Adjust the speed to 300 knots on the pitot/static-system test set.

Result:

1 After one minute with no pumping, do a check to make sure that the leakage is not more than 5 knots on PFD1.

(b) On the pitot/static-system test set, set the airspeed to ZERO knots.

(c) Adjust the altitude to 30000 ft. and the rate to 5000 ft. per minute on the pitot/static-system test set.

NOTE: This procedure can cause interference with the local air traffic during simulations of altitude with the anemometric bench test. To prevent this, make sure that the transponder is on the STANDBY condition (AMM SDS 34-52-00/1).

Result:

1 After one minute with no pumping, do a check to make sure that the leakage is not more than 100 ft. on PFD1.

(d) On the pitot/static-system test set, set the altitude back to the local value.

K. Follow-on

SUBTASK 842-003-A

(1) Make sure that the pressures are relieved.

(2) Disconnect the Pitot-Static System test set.

(3) Remove the adapter from anemometric static port 4.

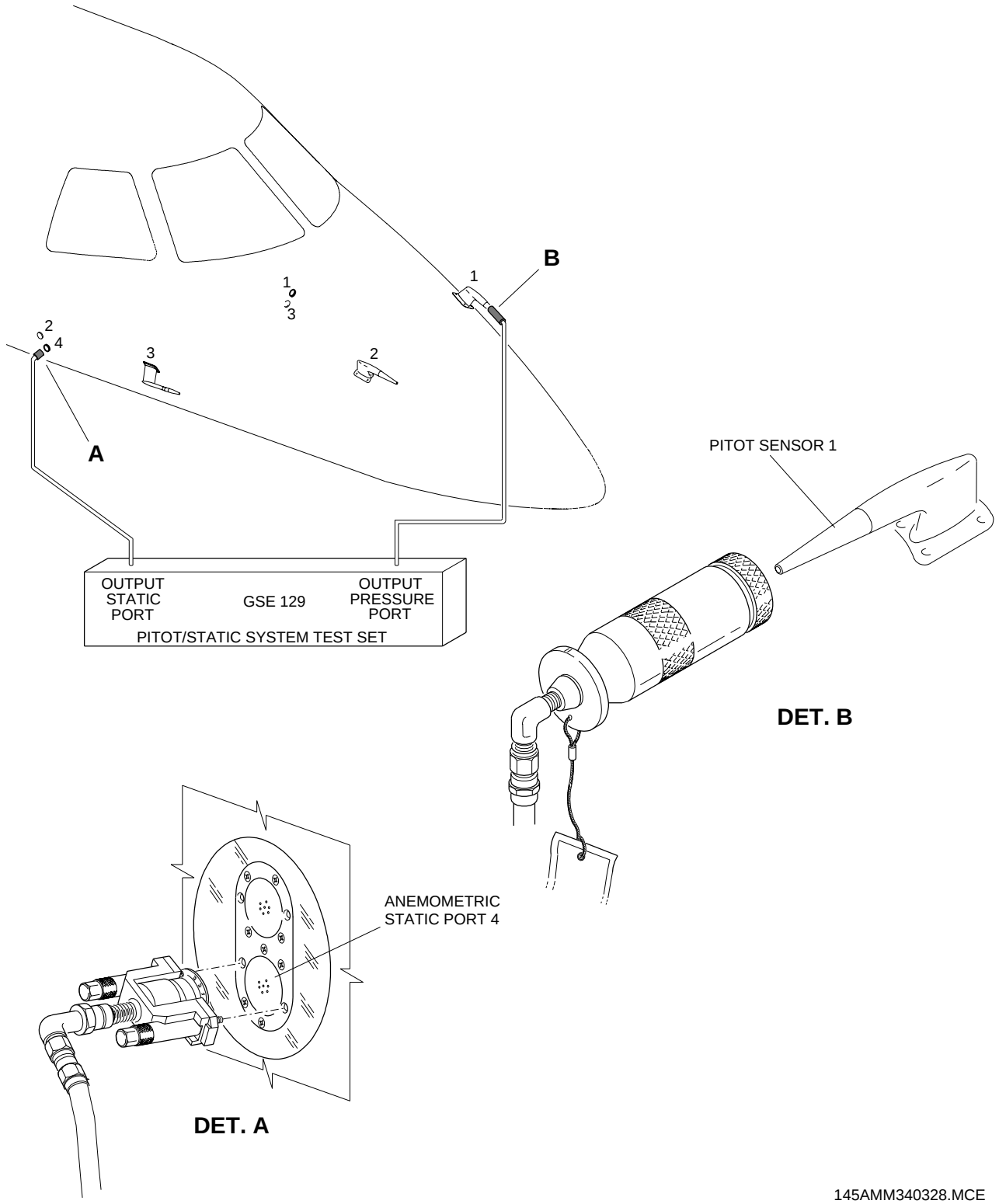
(4) On the LH electrical-power control/distribution box, close these circuit breakers:

- HEATING/TAT 1.
- HEATING/PITOT 1.
- HEATING/AOA 1.

(5) Deenergize the aircraft (AMM TASK 20-40-01-860-801-A/200).

EFFECTIVITY: ALL

Pitot-Static System 1 Leakage Test
Figure 502



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TASK 34-13-00-790-803-A
EFFECTIVITY: ALL

4. PITOT-STATIC SYSTEM 2 - LEAKAGE TEST

A. General

(1) Pitot/static system 1 includes pitot sensor 2, anemometric-static ports S2 and S3, and ADC2.

B. References

REFERENCE	*DESIGNATION*
AMM SDS 34-52-00/1	
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
GSE 128	Air Data Kit	To connect the Pitot/Static-System Test Set	
GSE 129	Pitot/Static-System Test Set	To do a test for leaks	

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/RH forward fuselage

I. Preparation (Figure 503)

SUBTASK 841-004-A

(1) Do these steps to inhibit the sensor heating:

(a) On the RH electrical-power control/distribution box, open these circuit breakers:

- HEATING/TAT 2.
- HEATING/PITOT 2.
- HEATING/AOA 2.

WARNING: THE PITOT STATIC/STATIC SENSORS AND INTERNAL TUBES CAN BE HOT IMMEDIATELY AFTER HEATER POWER IS REMOVED AND BURN YOUR HAND IF YOU TOUCH THEM.

CAUTION:
- BEFORE YOU CONNECT THE TEST SET, MAKE SURE THAT THERE ARE NO FOREIGN MATERIALS IN THE PITOT/STATIC TUBE OR IN THE ADAPTERS. THIS IS TO PREVENT CONTAMINATION OF THE SYSTEM.
- IN A PITOT SYSTEM, THE RATE OF APPLICATION OR RELEASE OF PRESSURE MUST NOT BE MORE THAN 300 KNOTS PER MINUTE.

(2) Do the connections between the test set and the ADC2 system sensors (Static ports 2/3, Pitot 2) as follows:

NOTE: For this test, it is not necessary to make connections to PITOT/STATIC 3.

(a) Connect the output static port of the test set to anemometric static port 2.

(b) Use one adapter to seal anemometric static port 3 and attach a REMOVE-BEFORE-FLIGHT tag to it.

(c) Connect the output pressure port of the test set to pitot sensor 2.

(3) Energize the aircraft with the external DC-power supply (AMM TASK 20-40-01-860-801-A/200).

J. Test Procedures

SUBTASK 790-004-A

(1) Do the check as follows:

(a) Adjust the speed to 300 knots on the pitot/static-system test set.

Result:

1 After one minute with no pumping, do a check to make sure that the leakage is not more than 5 knots on PFD2.

(b) On the pitot/static-system test set, set the airspeed to ZERO knots.

(c) Adjust the altitude to 30000 ft. and the rate to 5000 ft. per minute on the pitot/static-system test set.

NOTE: This procedure can cause interference with the local air traffic during simulations of altitude with the anemometric bench test. To prevent this, make sure that the transponder is on the STANDBY condition (AMM SDS 34-52-00/1).

Result:

1 After one minute with no pumping, do a check to make sure that the leakage is not more than 100 ft. on PFD2.

(d) On the pitot/static-system test set, set the altitude back to the local value.

K. Follow-on

SUBTASK 842-004-A

(1) Make sure that the pressures are relieved.

(2) Disconnect the Pitot-Static System test set.

(3) Remove the adapter from anemometric static port 3.

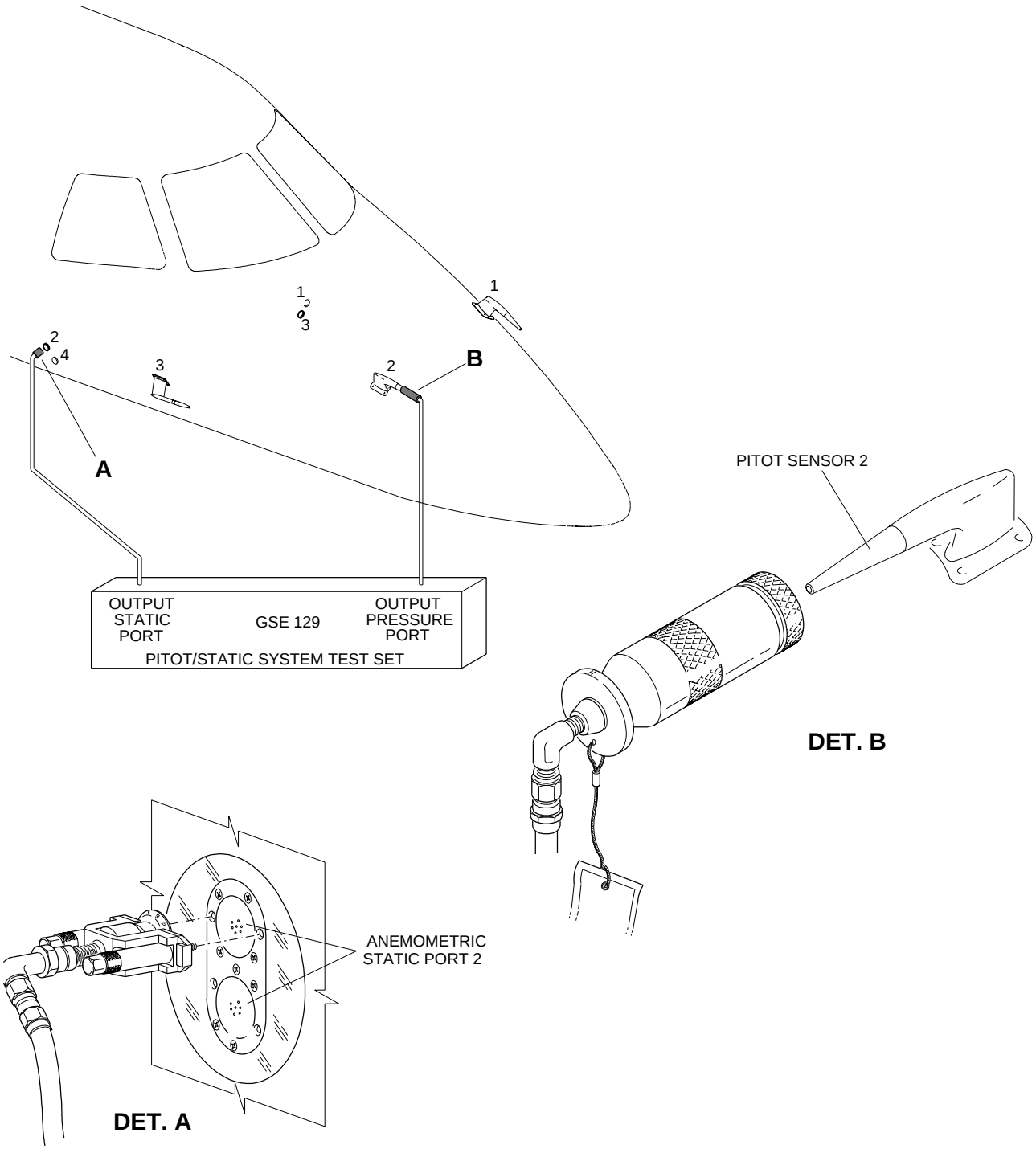
(4) On the RH electrical-power control/distribution box, close these circuit breakers:

- HEATING/TAT 2.
- HEATING/PITOT 2.
- HEATING/AOA 2.

(5) Deenergize the aircraft (AMM TASK 20-40-01-860-801-A/200).

EFFECTIVITY: ALL

Pitot-Static System-2 Leakage Test
Figure 503



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TASK 34-13-00-790-804-A
EFFECTIVITY: ALL

5. STANDBY SYSTEM - LEAKAGE TEST

A. General

(1) The standby system includes pitot-static sensor 3, the altimeter and airspeed standby indicators or the integrated standby instrument system (ISIS), and the cabin pressure-acquisition module.

B. References

REFERENCE	*DESIGNATION*
AMM SDS 34-52-00/1	
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
GSE 128	Air Data Kit	To connect the pitot/static-system test set	
GSE 129	Pitot/Static-System Test Set	To do a test for leaks	

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	RH forward fuselage

I. Preparation (Figure 504)

SUBTASK 841-005-A

(1) Do these steps to inhibit the sensor heating:

(a) On the RH electrical-power control/distribution box, open the PITOT HTG 3 circuit breaker.

WARNING: THE PITOT STATIC/STATIC SENSORS CAN BE HOT IMMEDIATELY AFTER HEATER POWER IS REMOVED AND BURN YOUR HAND IF YOU TOUCH THEM.

CAUTION:
- BEFORE YOU CONNECT THE TEST SET, MAKE SURE THAT THERE ARE NO FOREIGN MATERIALS IN THE PITOT/STATIC TUBE OR IN THE ADAPTERS. THIS IS TO PREVENT CONTAMINATION OF THE SYSTEM.
- IN A STATIC SYSTEM, THE RATE OF APPLICATION OR RELEASE OF VACUUM MUST NOT BE MORE THAN 5000 ft. PER MINUTE.
- KEEP THE PITOT PRESSURE AT A VALUE EQUAL TO OR LIGHTLY SMALLER THAN THE STATIC PRESSURE. IF NOT, DAMAGE TO THE STBY AIRSPEED INDICATOR CAN OCCUR.

(2) Do the connections between the test set and the Standby system sensor (PITOT/STATIC 3) as follows:

NOTE: For this test, it is necessary to make connections only to PITOT/STATIC 3.

(a) Connect the output static port of the test set to the anemometric static ports of PITOT/STATIC 3.

(b) Connect the output pressure port of the test set to PITOT/STATIC 3.

(3) Energize the aircraft with the external DC-power supply (AMM TASK 20-40-01-860-801-A/200).

J. Test Procedures

SUBTASK 790-005-A

(1) Do the check as follows:

(a) Adjust the speed to 300 knots on the pitot/static-system test set.

Result:

1 After one minute with no pumping, do a check to make sure that the leakage is not more than 5 knots on the standby airspeed or ISIS.

(b) On the pitot/static-system test set, set the airspeed to ZERO knots.

(c) Adjust the altitude to 30000 ft. and the rate to 5000 ft. per minute on the pitot/static-system test set.

NOTE: This procedure can cause interference with the local air traffic during simulations of altitude with the anemometric bench test. To prevent this, make sure that the transponder is on the STANDBY condition (AMM SDS 34-52-00/1).

Result:

1 After one minute with no pumping, make sure that the test-set (GSE 129) leakage indication is less than 100 ft.

(d) On the pitot/static-system test set, set the altitude back to the local value.

K. Follow-on

SUBTASK 842-005-A

(1) Make sure that the pressures are relieved.

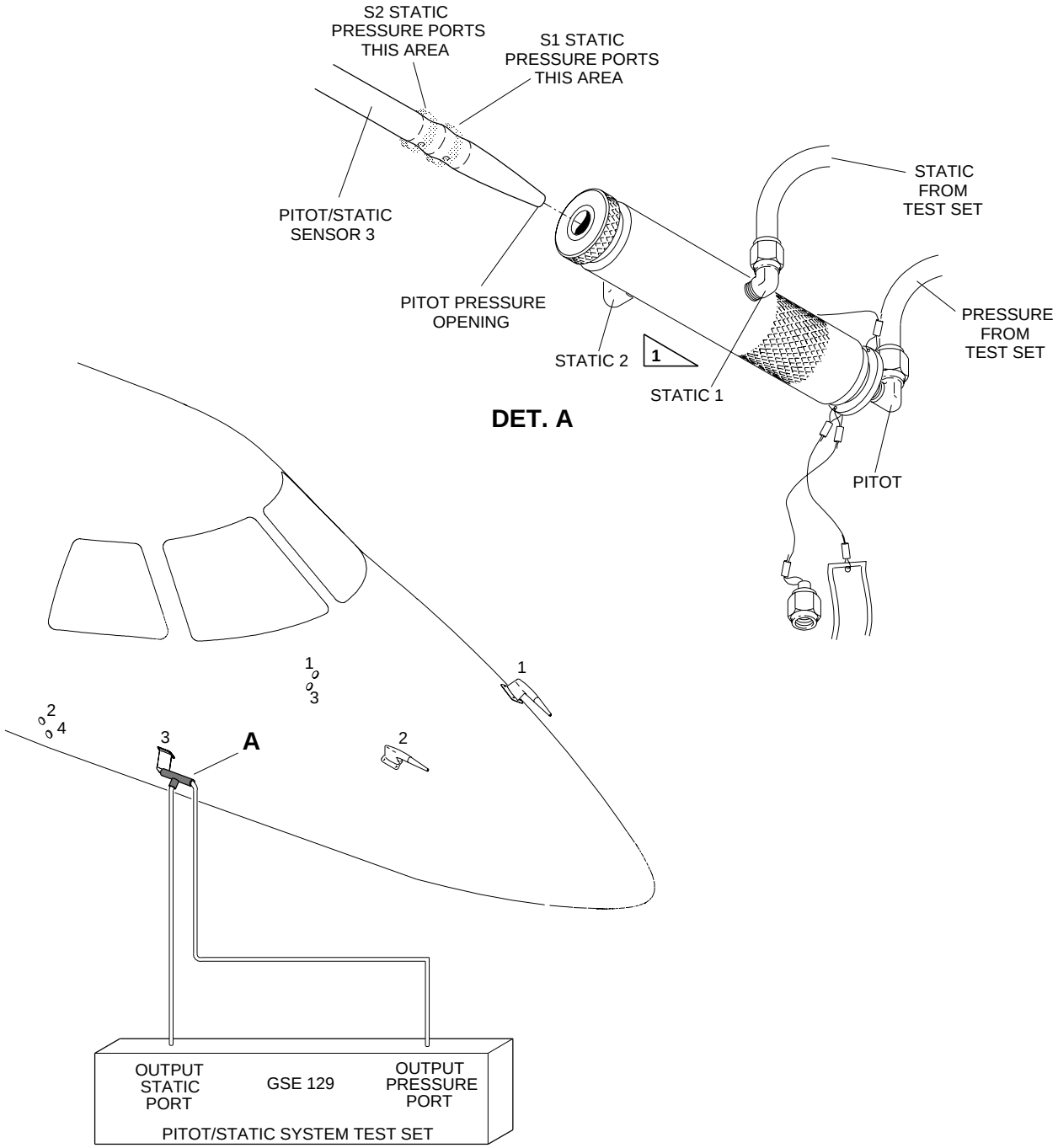
(2) Disconnect the Pitot-static system test set.

(3) On the RH electrical-power control/distribution box, close the PITOT HTG 3 circuit breaker.

(4) Deenergize the aircraft (AMM TASK 20-40-01-860-801-A/200).

EFFECTIVITY: ALL

Standby System Leakage Test
Figure 504



1 STATIC 2 CLOSED

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