COCKPIT WINDSHIELD - ADJUSTMENT/TEST

EFFECTIVITY: ALL

1. General

A. This section gives the procedures to do the functional check and the adjustment of the cockpit windshield attachments and external static charge.

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*
56-10-01-700-801-A ♦	COCKPIT WINDSHIELD ATTACHMENTS - FUNCTIONAL CHECK	PRE-MOD. S.B. 145-56-0006
56-10-01-700-802-A ♦	COCKPIT WINDSHIELD ATTACHMENTS - FUNCTIONAL CHECK	POST-MOD. S.B. 145-56-0006
56-10-01-700-803-A ♦	COCKPIT WINDSHIELD EXTERNAL STATIC CHARGE - FUNCTIONAL CHECK	ALL

TASK 56-10-01-700-801-A
EFFECTIVITY: PRE-MOD. S.B. 145-56-0006

2. COCKPIT WINDSHIELD ATTACHMENTS - FUNCTIONAL CHECK

A. General

(1) This task gives the procedure to do the functional check of the cockpit windshield attachments.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 25-12-01-000-801-A/400	COCKPIT LINING - REMOVAL
AMM TASK 25-12-01-400-801-A/400	COCKPIT LINING - INSTALLATION
AMM TASK 25-12-07-000-801-A/400	GLARESHIELD COVERAGE - REMOVAL
AMM TASK 25-12-07-400-801-A/400	GLARESHIELD COVERAGE - INSTALLATION
AMM TASK 25-12-09-000-801-A/400	LH/RH COCKPIT LINING - REMOVAL
AMM TASK 25-12-09-400-801-A/400	LH/RH COCKPIT LINING - INSTALLATION
S.B.145-56-0002	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
223	223AZ	Forward Fuselage Section I
223	223BLW	Forward Fuselage Section I
224	224BRW	Forward Fuselage Section I
225	225FTC	Forward Fuselage Section I
225	225GTC	Forward Fuselage Section I

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Torque Wrench	To torque the screws that attach the windshield	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
2	Do the task	Forward Fuselage

I. Preparation

SUBTASK 841-002-A

(1) Make sure that the aircraft is safe for maintenance.

CAUTION: BE CAREFUL NOT TO SCRATCH THE WINDSHIELD TRANSPARENCY.

(2) Remove the glareshield panel (223AZ) from the instrument panel (AMM TASK 25-12-07-000-801-A/400).

(3) Remove the ceiling linings (225FTC and 225GTC)(AMM TASK 25-12-01-000-801-A/400).

(4) Remove the LH/RH cockpit linings (223BLW and 224BRW) (AMM TASK 25-12-09-000-801-A/400).

J. Check and Adjustment of the Cockpit Windshield Attachments (Figure 501) (Figure 502)

SUBTASK 720-002-A

CAUTION: BE CAREFUL NOT TO SCRATCH THE WINDSHIELD TRANSPARENCY.

(1) Do a check and an adjustment of the cockpit windshield attachments as follows:

(a) Do a visual inspection on the screws and nuts that attach the windshield to the cockpit structure.

NOTE: If there are damaged screws and nuts, replace them with screws and nuts of the same P/N.

(b) Respecting the same tightening order of (Figure 502), check the torque of the screws. They must be with the values specified below:

1 For aircraft PRE-MOD. S.B.145-56-0002, they must be with 4.29 N.m (38 lb.in).

2 For aircraft POST-MOD. S.B.145-56-0002, they must be with 6.55 N.m (58 lb.in).

K. Follow-on

SUBTASK 842-002-A

CAUTION: BE CAREFUL NOT TO SCRATCH THE WINDSHIELD TRANSPARENCY.

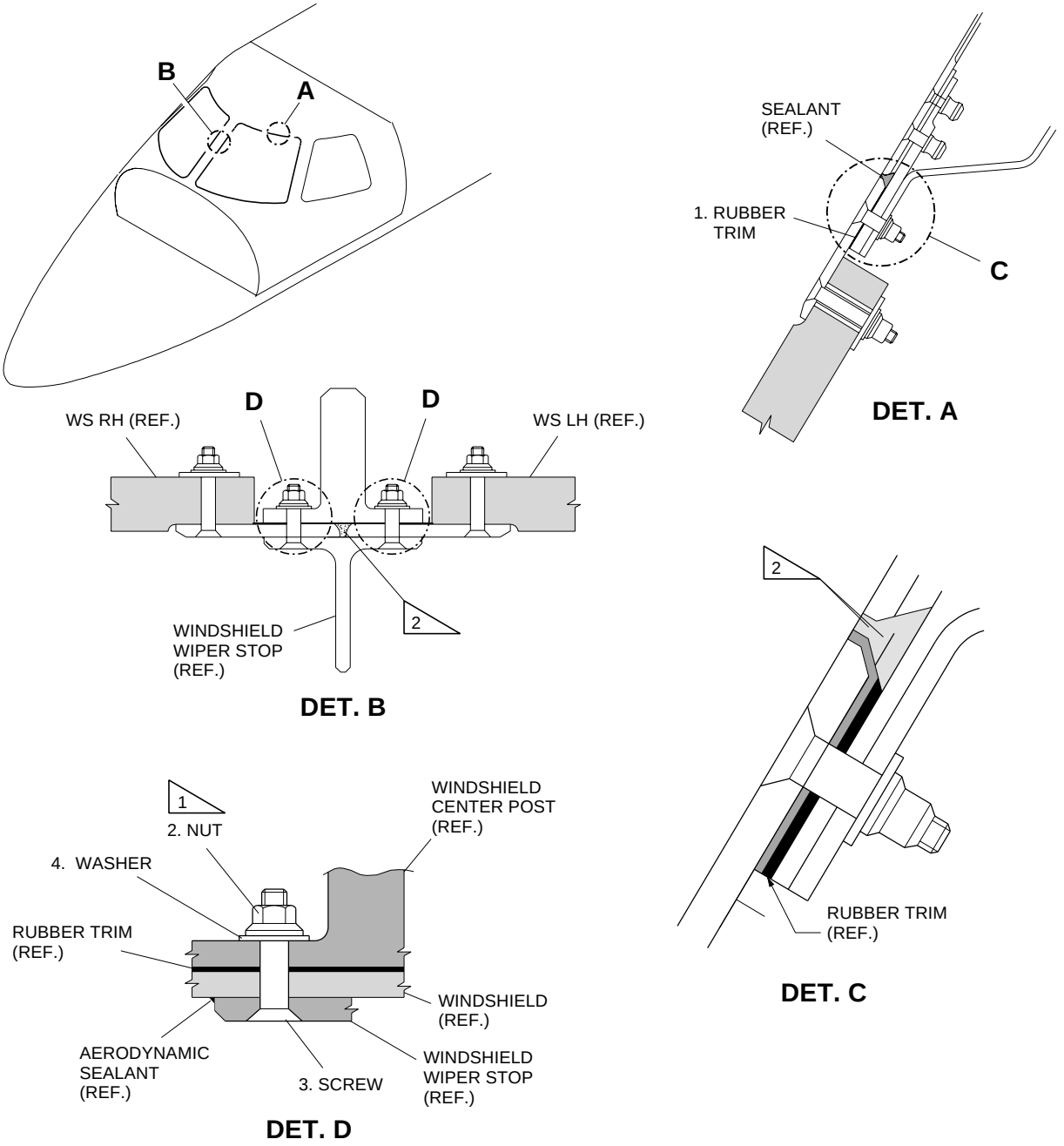
(1) Install the LH/RH cockpit linings (223BLW and 224BRW) (AMM TASK 25-12-09-400-801-A/400).

(2) Install the ceiling linings (225FTC and 225GTC) (AMM TASK 25-12-01-400-801-A/400).

(3) Install the glareshield panel (223AZ) to the instrument panel (AMM TASK 25-12-07-400-801-A/400).

(4) Put the aircraft back to its initial condition.

EFFECTIVITY: PRE-MOD. S.B. 145-56-0006
Check and Adjustment of the Cockpit Windshield Attachments
Figure 501



1 TORQUE: 4.29 N.m (38 lb.in) FOR PRE−MOD SB 45−56−0002
6.55 N.m (58 lb.in) FOR POST−MOD SB 145−56−0002

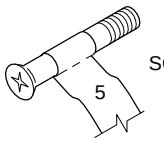
2 SEALANT P/S 870 B−2 OR P/S 870 B−1/2.

EM145AMM560039C.DGN

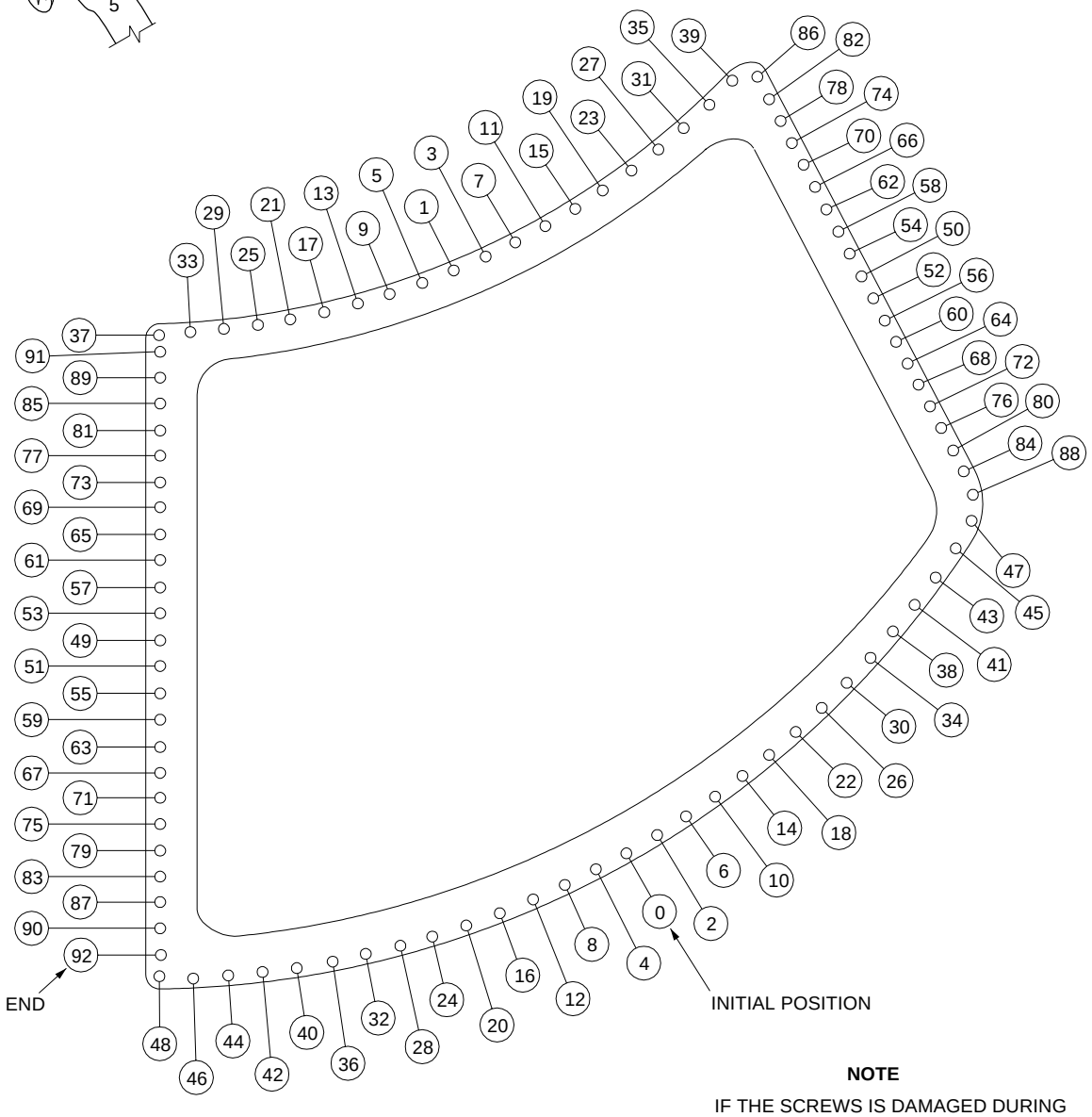
EFFECTIVITY: PRE-MOD. S.B. 145-56-0006

Sequence of Tightening of Windshield Attaching Screws
Figure 502

EXAMPLE OF IDENTIFICATION
OF SCREWS REMOVED, WITH THE
TIGHTENING SEQUENCE NUMBER



SCREWS No. 5



NOTE

IF THE SCREWS IS DAMAGED DURING
THE REMOVAL, REPLACE IT.

EM145AMM560041A.DGN

TASK 56-10-01-700-802-A
EFFECTIVITY: POST-MOD. S.B. 145-56-0006

3. COCKPIT WINDSHIELD ATTACHMENTS - FUNCTIONAL CHECK

A. General

(1) This task gives the procedure to do the functional check of the cockpit windshield attachments.

B. Zones and Accesses

Not Applicable

C. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Torque Wrench	To torque the screws that attach the windshield	

D. Auxiliary Items

Not Applicable

E. Consumable Materials

Not Applicable

F. Expandable Parts

Not Applicable

G. Persons Recommended

QTY	*FUNCTION*	*PLACE*
2	Does the task	Forward Fuselage

H. Preparation

SUBTASK 841-003-A

(1) Make sure that the aircraft is safe for maintenance.

I. Check and Adjustment of the Cockpit Windshield Attachments (Figure 503) (Figure 504)

SUBTASK 720-003-A

CAUTION: BE CAREFUL NOT TO SCRATCH THE WINDSHIELD TRANSPARENCY.

(1) Do a check and an adjustment of the cockpit windshield attachments as follows:

(a) Do a visual inspection on the screws that attach the windshield to the cockpit structure.

NOTE: If there are damaged screws, replace them with screws of the same P/N.

(b) Respecting the same tightening order of (Figure 504), check the torque of the screws. They must be between 6.78 - 7.34 N.m (60 - 65 lb.in).

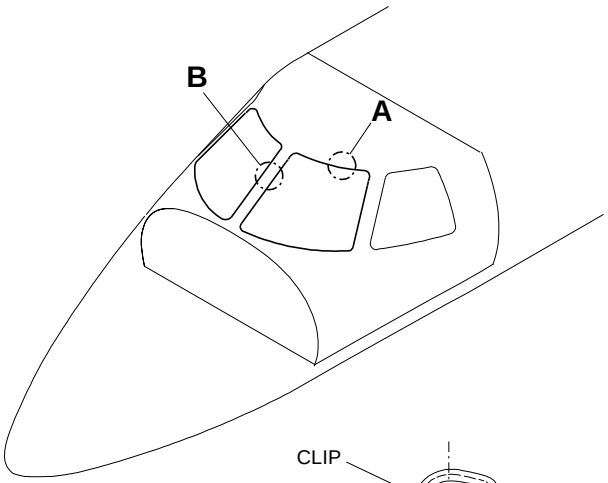
J. Follow-on

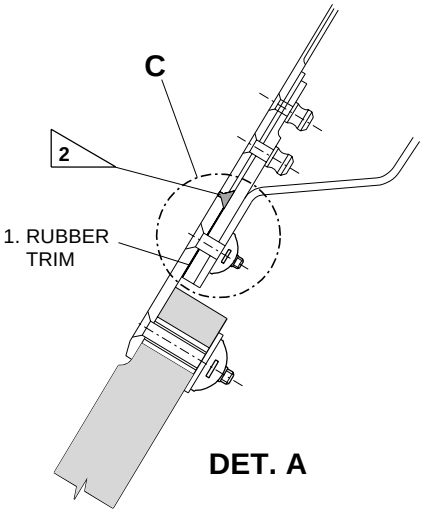
SUBTASK 842-003-A

(1) Put the aircraft back to its initial condition.

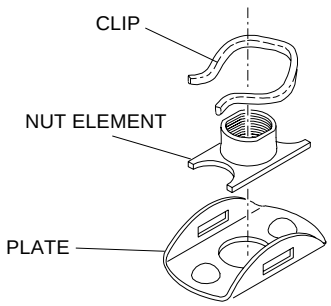
EFFECTIVITY: POST-MOD. S.B. 145-56-0006

Check and Adjustment of the Cockpit Windshield Attachments
Figure 503



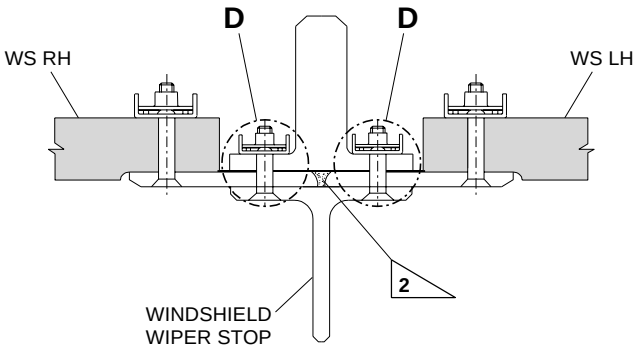


DET. A

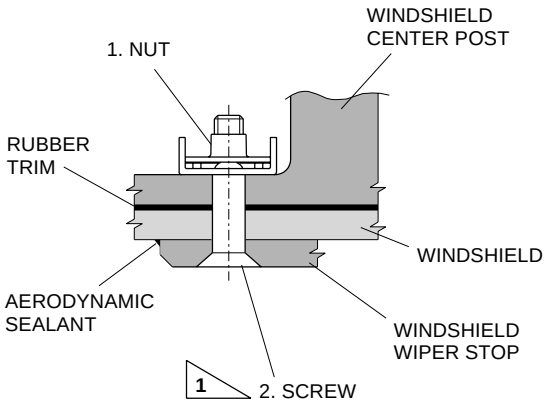


DET. E

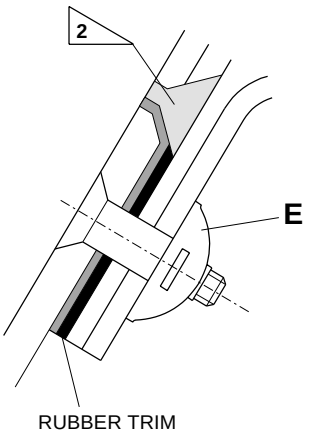
BONDED NUT PLATE ASSEMBLY



DET. B



DET. D



DET. C

1 TORQUE: 6.78 − 7.34 N.m (60 − 65 lb.in)

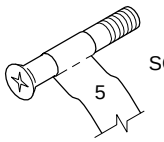
2 SEALANT PR 2050 B−1/2.

EM145AMM560038E.DGN

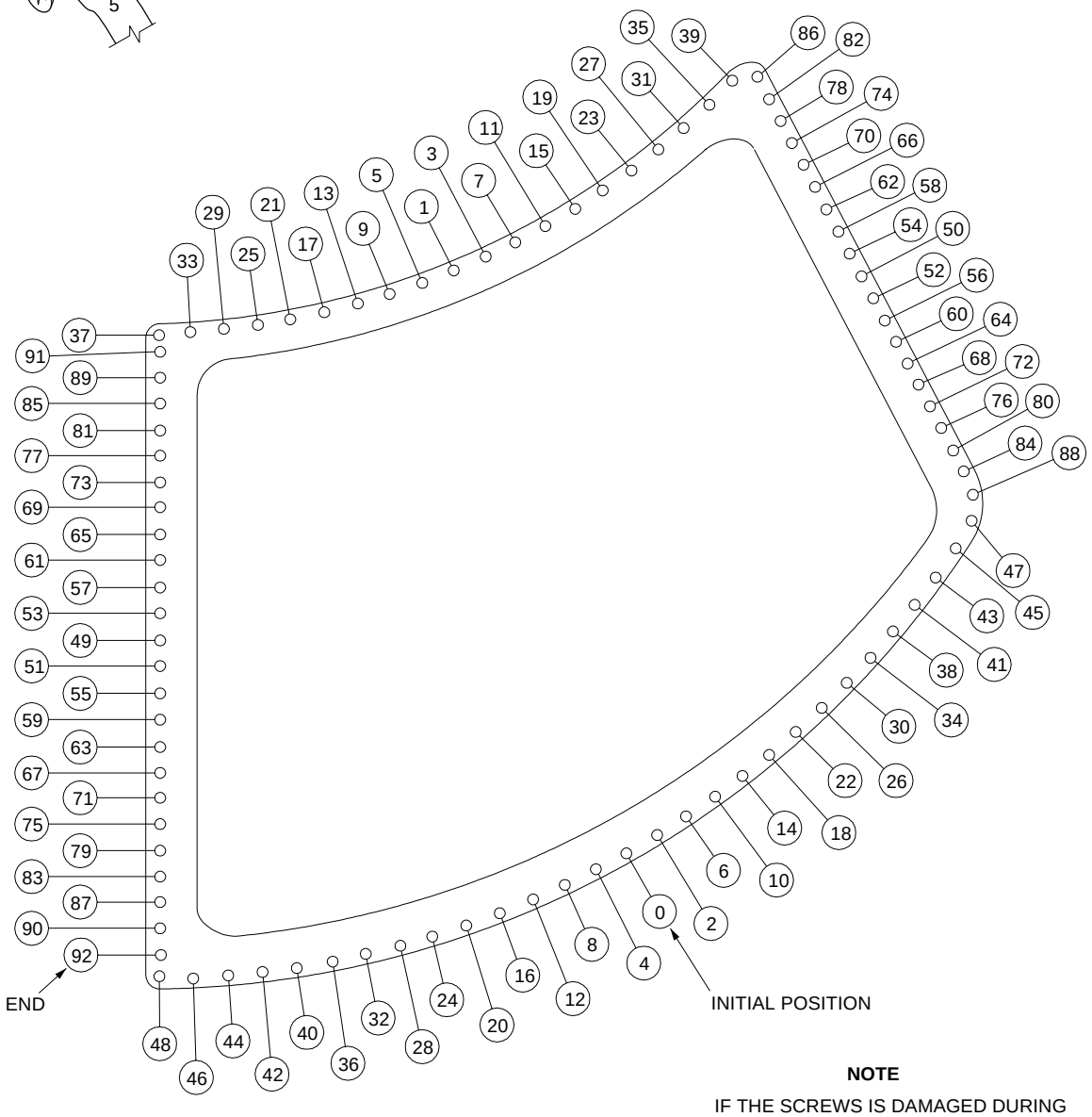
EFFECTIVITY: POST-MOD. S.B. 145-56-0006

Sequence of Tightening of Windshield Attaching Screws
Figure 504

EXAMPLE OF IDENTIFICATION
OF SCREWS REMOVED, WITH THE
TIGHTENING SEQUENCE NUMBER



SCREWS No. 5



NOTE

IF THE SCREWS IS DAMAGED DURING
THE REMOVAL, REPLACE IT.

EM145AMM560042A.DGN

TASK 56-10-01-700-803-A
EFFECTIVITY: ALL

4. COCKPIT WINDSHIELD EXTERNAL STATIC CHARGE - FUNCTIONAL CHECK

A. General

(1) This task gives the procedure to do the functional check of the cockpit windshield for external static charge.

(2) Refer to S.B.145-56-0008 Effectivity and, if applicable, do this procedure.

(3) Refer to the Sierracin or PPG-made windshield-specific procedure. Refer to the aircraft configuration.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 30-42-00-700-801-A/500	WINDSHIELD HEATING - OPERATIONAL CHECK
AMM TASK 56-10-01-100-801-A/700	COCKPIT WINDSHIELD - CLEANING
S.B.145-56-0008	-

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
223	-	Cockpit windshield
224	-	Cockpit windshield

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Multimeter - Digital	To scan all the area above the heater coating	
Commercially available	Megohmmeter - 1000 V DC (capable of reading resistances up to at least 20 Megaohms)	To scan all the area above the heater coating	

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Workstand	To get access to the cockpit windshield from the outside	1

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Outside the cockpit

I. Preparation

SUBTASK 841-004-A

(1) Put the workstand in position and get access to the cockpit windshield from the outside.

CAUTION: BE CAREFUL NOT TO SCRATCH THE WINDSHIELD TRANSPARENCY.

(2) Clean the windshield surface (AMM TASK 56-10-01-100-801-A/700).

J. Check and Adjustment of the Cockpit Windshield External Static Charge (Figure 505)

SUBTASK 720-004-A

EFFECTIVITY: AIRCRAFT WITH SIERRACIN-MADE WINDSHIELD

(1) Use a multimeter to do an inspection of the windshield for anti-static drain coating, as follows:

(2) Attach one probe to the frame of the windshield.

CAUTION:
- LIGHT HAND PRESSURE ON THE PROBES IS SUFFICIENT TO MAKE SURE THAT THERE IS ELECTRICAL CONTACT WHEN YOU MAKE THE MEASUREMENT.
- FOR WINDSHIELDS WITH PYROLYTIC COATING, A SLIGHTLY STRONGER HAND PRESSURE IS NEEDED TO HAVE ELECTRICAL CONTACT.
- BE CAREFUL NOT TO SCRATCH THE WINDSHIELD DURING THIS TEST.

(3) Make the tip of the other probe touch the face ply of the windshield.

CAUTION:
- BE CAREFUL NOT TO SCRATCH THE GLASS FACEPLY WHEN IT IS SCANNED FOR ELECTRICAL CONDUCTIVITY.
- DO NOT TRY TO REMOVE THE SCRATCHES OR STREAKS FROM THE GLASS SURFACES WITH A POLISHING PROCEDURE. POLISHING CAN REMOVE THE ANTI-STATIC COAT AND CAUSE OPTICAL DISTORTIONS.

(4) Scan all the area above the heater coating and make sure that there is continuity between the two probe tips.

NOTE:
- No resistance value is specified. This is only a continuity check and any resistance readable will be satisfactory.

- The anti-corrosion finish on the frame, surface contaminants on the windshield, and other factors can affect the resistance measurement, but they do not affect the function of the part.
- The resistance measurement can be made at the screws or with two probe tips put on the glass surface.

(5) Do step (4) again and again while you move the probe tips to different locations across the surface of the windshield and the adjacent frame. If there is not continuity, go to step (6).

NOTE:
- It is not necessary to make readings in the unheated areas of the windshield.
- Continuity readings at any point on the part are indication of a satisfactory windshield.
- If the two windshields on the same aircraft fail to meet test requirements in actions (2) to (5), then at least one must be removed from service after detection and replaced.
- If only one windshield on an aircraft fails to meet test requirements in actions (2) to (5), then it must be removed from service after detection and replaced.

WARNING: BE CAREFUL WHEN YOU USE A MEGOHMMETER. THE AIRCRAFT MUST BE PROPERLY GROUNDED. WARN PERSONNEL OUTSIDE THE AIRCRAFT NOT TO TOUCH THE FUSELAGE. ELECTRICAL SHOCK CAN OCCUR.

(6) Do the steps (2) to (5) again, with a megohmmeter set at 1000 V DC.

K. Check and Adjustment of the Cockpit Windshield External Static Charge (Figure 506)

SUBTASK 720-004-B

EFFECTIVITY: AIRCRAFT WITH PPG-MADE WINDSHIELD

WARNING: BE CAREFUL WHEN YOU USE A MEGOHMMETER. THE AIRCRAFT MUST BE PROPERLY GROUNDED. WARN PERSONNEL OUTSIDE THE AIRCRAFT NOT TO TOUCH THE FUSELAGE. ELECTRICAL SHOCK CAN OCCUR.

CAUTION:
- LIGHT HAND PRESSURE ON THE PROBES IS SUFFICIENT TO MAKE SURE THAT THERE IS ELECTRICAL CONTACT WHEN YOU MAKE THE MEASUREMENT.
- FOR WINDSHIELDS WITH PYROLYTIC COATING, A SLIGHTLY STRONGER HAND PRESSURE IS NEEDED TO HAVE ELECTRICAL CONTACT.
- BE CAREFUL NOT TO SCRATCH THE WINDSHIELD DURING THIS TEST.

(1) Use a standard ohmmeter to check the anti-static coating resistance from the outer glass surface to the ground terminal.

CAUTION: • BE CAREFUL NOT TO SCRATCH THE GLASS FACEPLY WHEN IT IS SCANNED FOR ELECTRICAL CONDUCTIVITY.

• DO NOT TRY TO REMOVE THE SCRATCHES OR STREAKS FROM THE GLASS SURFACES WITH A POLISHING PROCEDURE. POLISHING CAN REMOVE THE ANTI-STATIC COAT AND CAUSE OPTICAL DISTORTIONS.

(2) Scan all the area above the heater coating and make sure that there is continuity between the two probe tips.

NOTE: • The anti-corrosion finish on the frame, surface contaminants on the windshield and other factors can affect the resistance measurement, but they do not affect the function of the part.

• It is not necessary to make readings on the unheated areas of the windshield.

(3) Make sure that the anti-static coating resistance is lower or equal than 20 MegaOhms.

NOTE: • Continuity readings at any point on the part are indication of a satisfactory windshield.

(4) If there is no continuity and the windshield fails to meet the test requirement, remove and replace it after the detection.

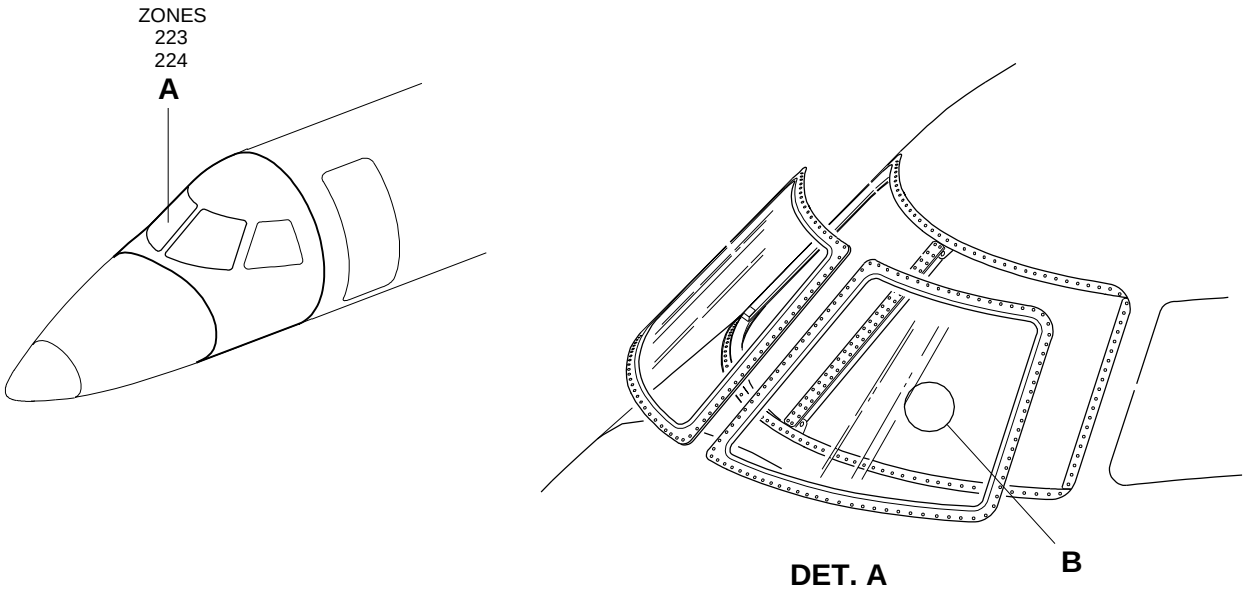
L. Follow-on

SUBTASK 842-004-A

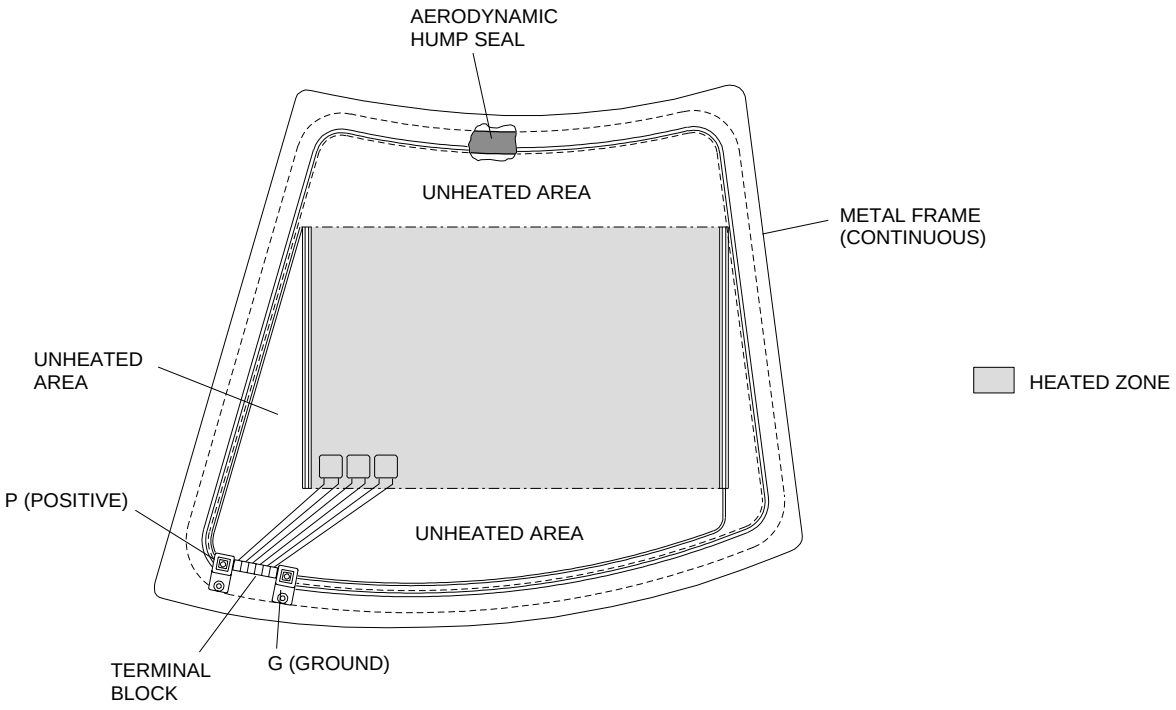
(1) Remove the workstand from the work area.

(2) If necessary, do the operational test of the windshield heating (AMM TASK 30-42-00-700-801-A/500).

EFFECTIVITY: AIRCRAFT WITH SIERRACIN-MADE WINDSHIELD
Cockpit Windshield External Static Charge - Functional Check
Figure 505



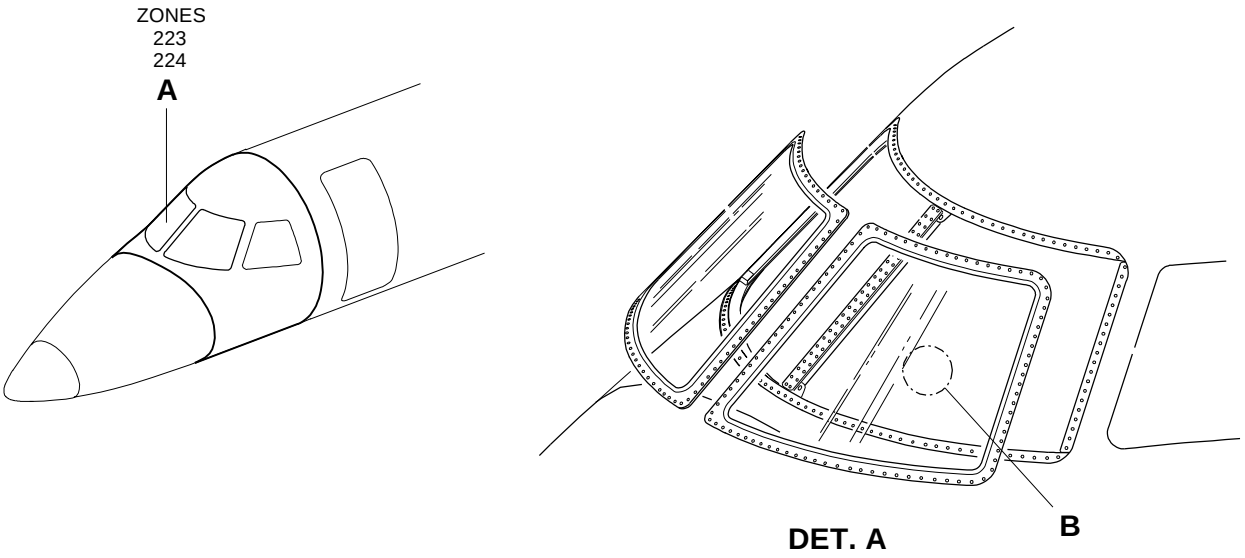
DET. A

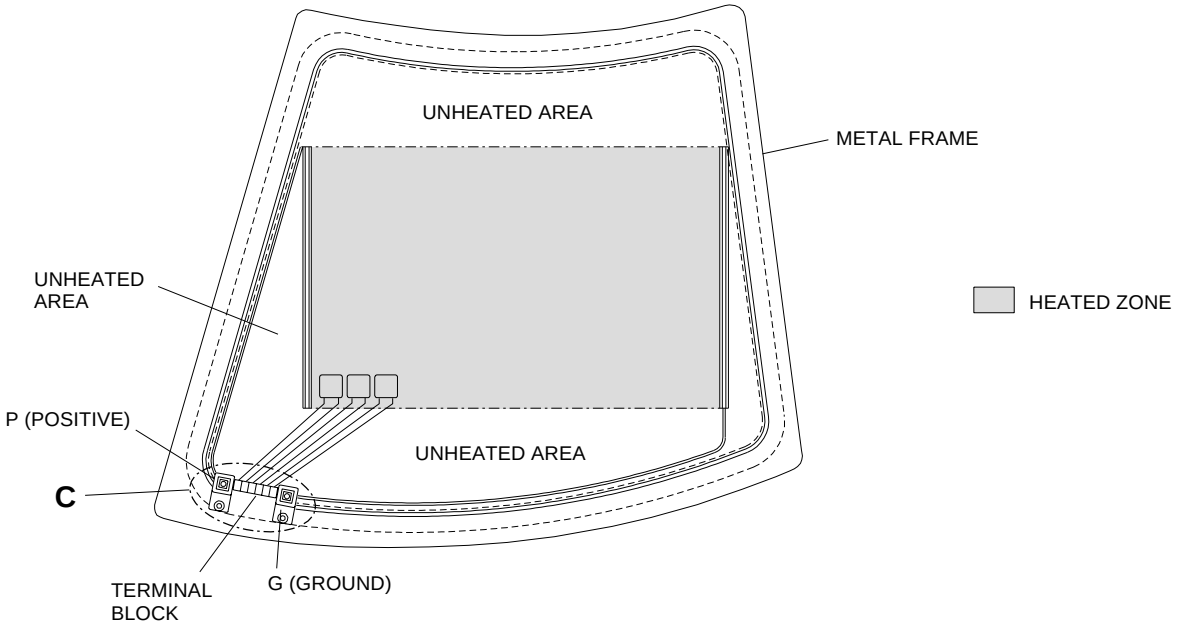


DET. B
(OUTSIDE, LOOKING IN)

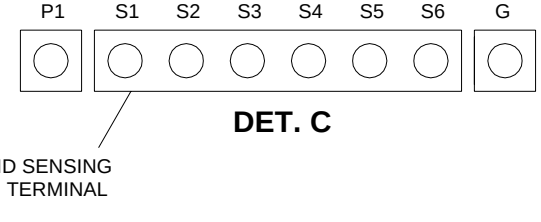
145AMM560030.MCE

EFFECTIVITY: AIRCRAFT WITH PPG-MADE WINDSHIELD
Cockpit Windshield External Static Charge - Functional Check
Figure 506





DET. B
(OUTSIDE, LOOKING IN)



EM145AMM560072A.DGN