MAIN-DOOR FRAME RUBBER SEAL - REMOVAL/INSTALLATION

EFFECTIVITY: ALL

1. General

A. This section gives the procedure to remove and install the main-door frame rubber seal.

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*
53-21-01-000-801-A	MAIN-DOOR FRAME RUBBER SEAL - REMOVAL	ALL
53-21-01-400-801-A	MAIN-DOOR FRAME RUBBER SEAL - INSTALLATION	ALL

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TASK 53-21-01-000-801-A
EFFECTIVITY: ALL

2. MAIN-DOOR FRAME RUBBER SEAL - REMOVAL

A. General

(1) This procedure gives the instructions to remove the main-door frame rubber seal.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 25-23-06-000-801-A/400	MAIN-DOOR TRIM SHROUD ASSEMBLY - REMOVAL
AMM TASK 52-00-00-910-801-A/200	MAIN-DOOR - SUPPORTING

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Acrylic Spatula	To remove the sealant	1
Commercially available	Cutter	To remove the rubber seal	1
Commercially available	Protective Gloves	For operator's protection	1
Commercially available	Safety Goggles	For operator's protection	1

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
ASTM-D-740	Methyl Ethyl Ketone - (MEK)	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	In the forward fuselage, on the LH side

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I. Preparation

SUBTASK 841-002-A

(1) For aircraft with airstairs main door, open the main door and put it on a bench (AMM TASK 52-00-00-910-801-A/200).

For aircraft with side-hinged main door, open the main door.

(2) Remove the main door upper, forward, and aft corner trim shrouds (AMM TASK 25-23-06-000-801-A/400).

J. Removal (Figure 404)

SUBTASK 020-002-A

WARNING: BE CAREFUL WHEN YOU USE A CUTTER NOT TO MAKE SCRATCHES ON THE FUSELAGE FRAME.

(1) With a cutter, remove the sealant to lift the rubber seal end.

(2) Slowly release the rubber seal with a cutter until the rubber seal is fully removed.

(3) Remove the old sealant with an acrylic spatula.

WARNING: BE CAREFUL WHEN YOU USE THE METHYL-ETHYL-KETONE (MEK). PUT ON SAFETY GOGGLES, PROTECTIVE GLOVES AND CLOTHING. DO NOT BREATHE THE GAS. DO THE WORK IN AN AREA WHICH HAS A GOOD FLOW OF AIR. MEK IS POISONOUS AND HIGHLY FLAMMABLE.

(4) With a cloth soaked in MEK, clean the surface (Refer to Figure 404; DET. 1).

NOTE: Make sure that the surface of the door frame where the rubber seal will be installed is clean and without residues of sealant, rubber, or oil.

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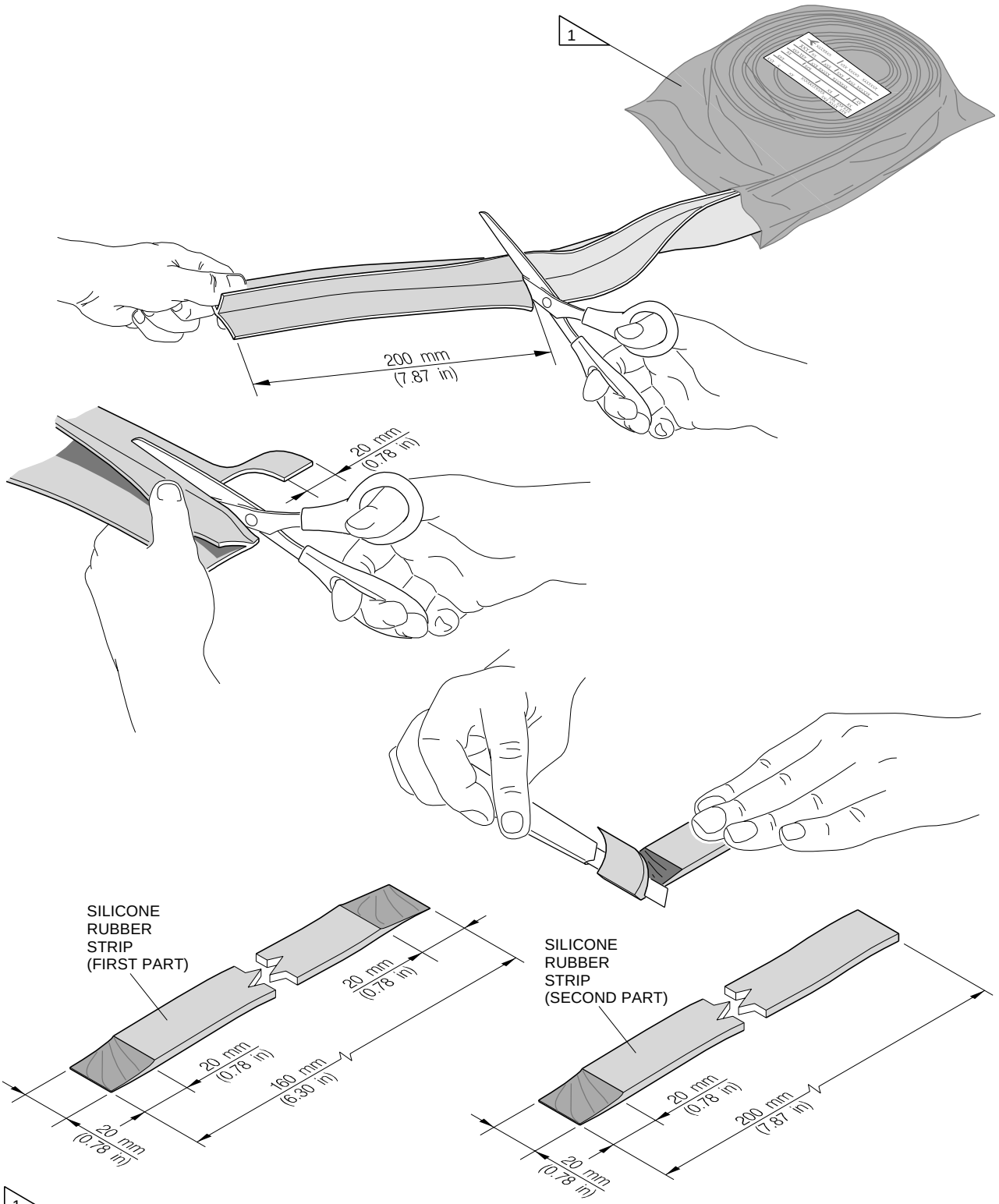
EFFECTIVITY: ALL

Main-Door Frame Silicone Rubber Strips - Fabrication
Figure 401



1 FOR PART NUMBERS, REFER TO "INSTALLATION" SUBTASK.

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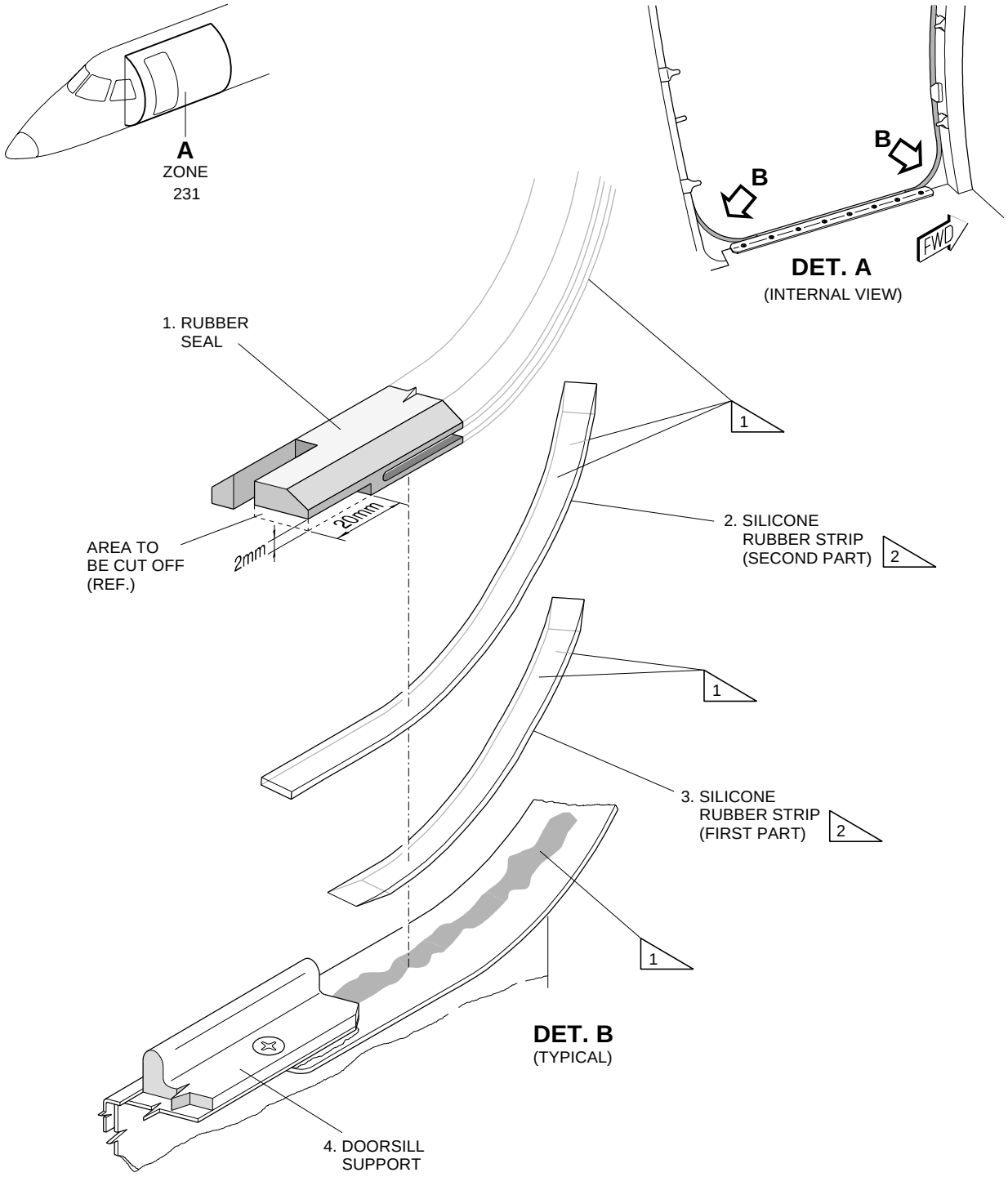
EFFECTIVITY: ALL

Main-Door Frame Silicone Rubber Strips - Removal/Installation
Figure 402



1 SEALANT RTV 157.

2 CHAMFERED SIDE FACING THE FUSELAGE SKIN.

EM145AMM530108E.DGN

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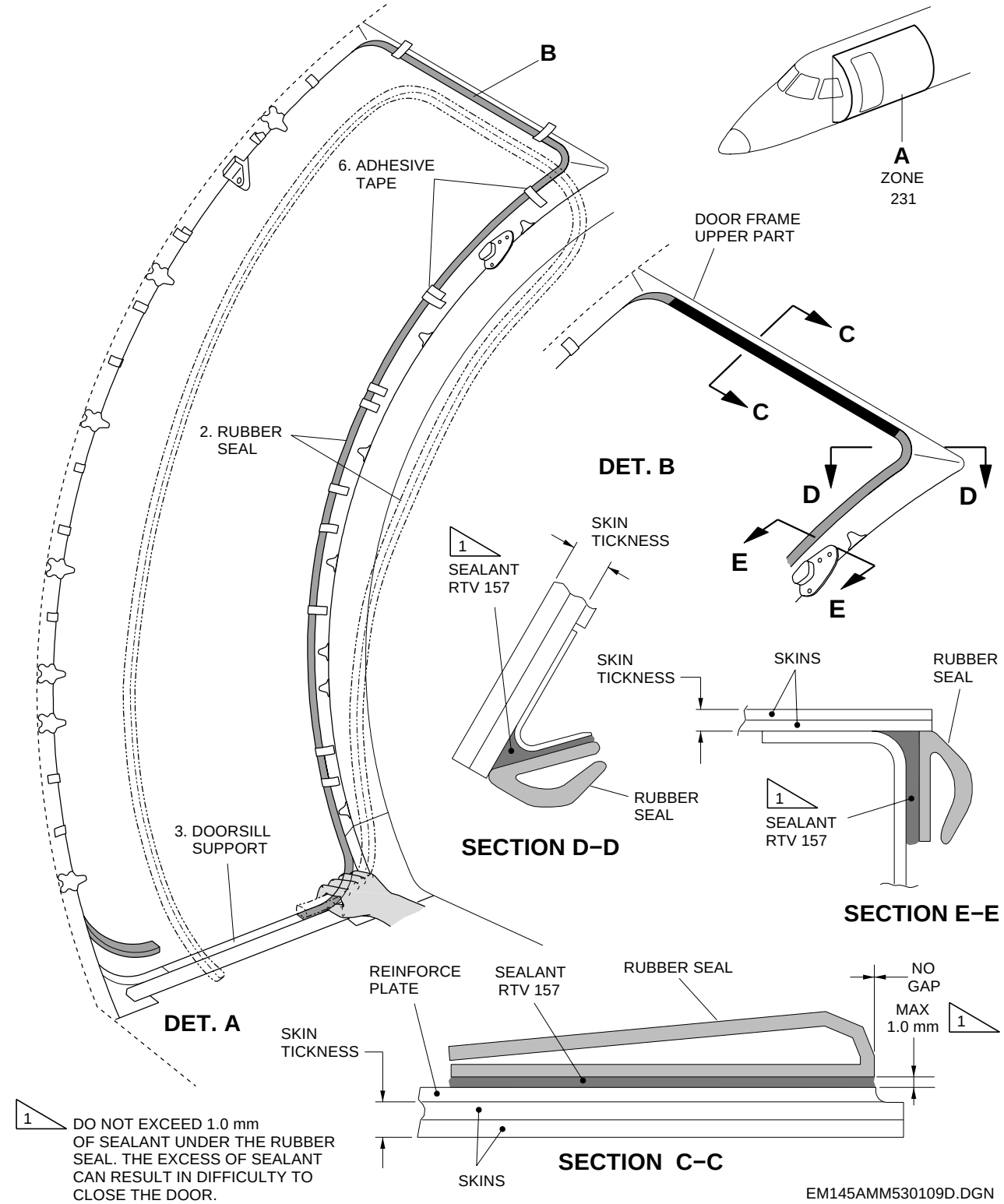
EFFECTIVITY: ALL

Main-Door Frame Rubber Seal - Removal/Installation
Figure 403 - Sheet 1



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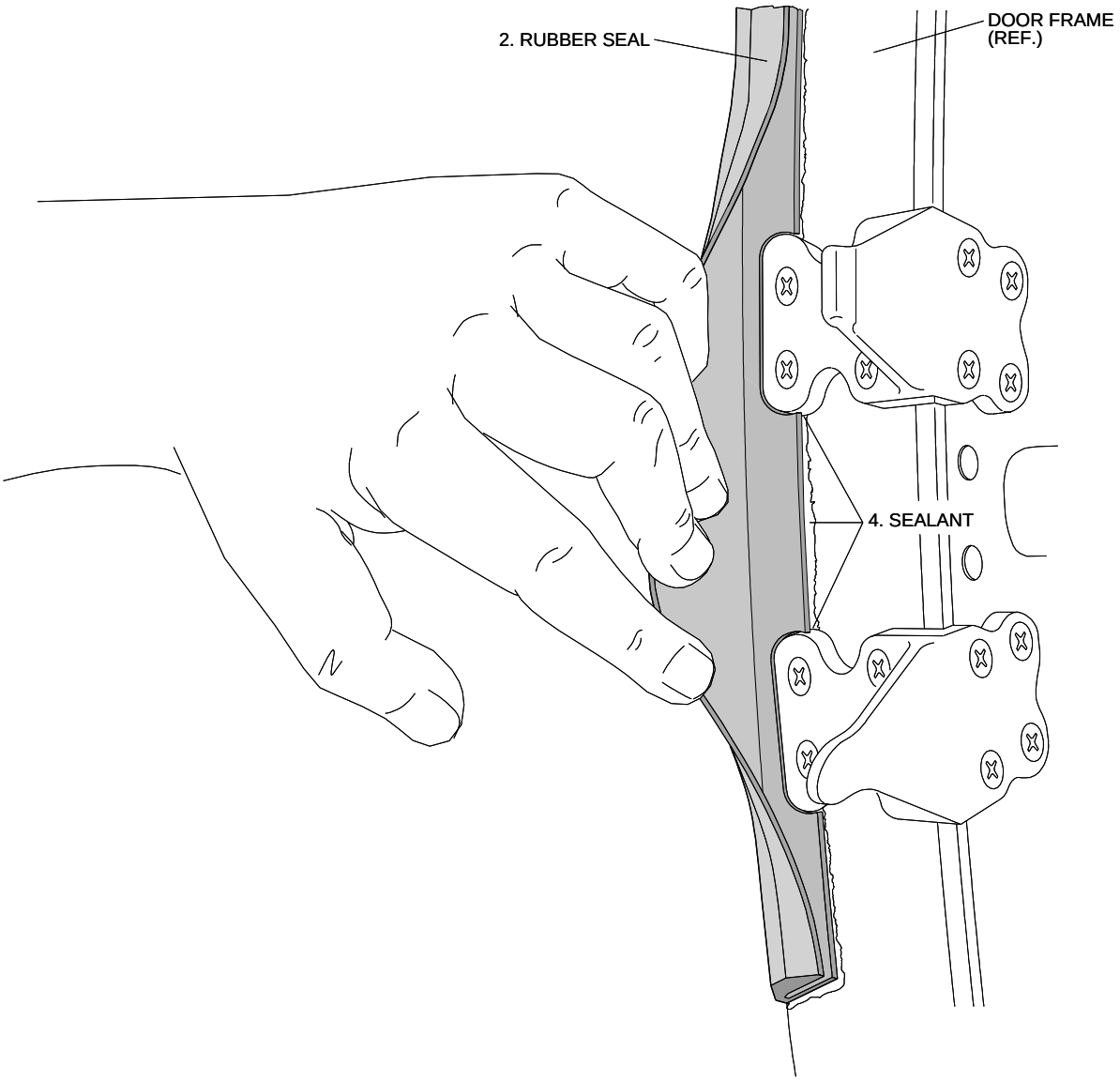
EFFECTIVITY: ALL

Main-Door Frame Rubber Seal - Removal/Installation
Figure 403 - Sheet 2



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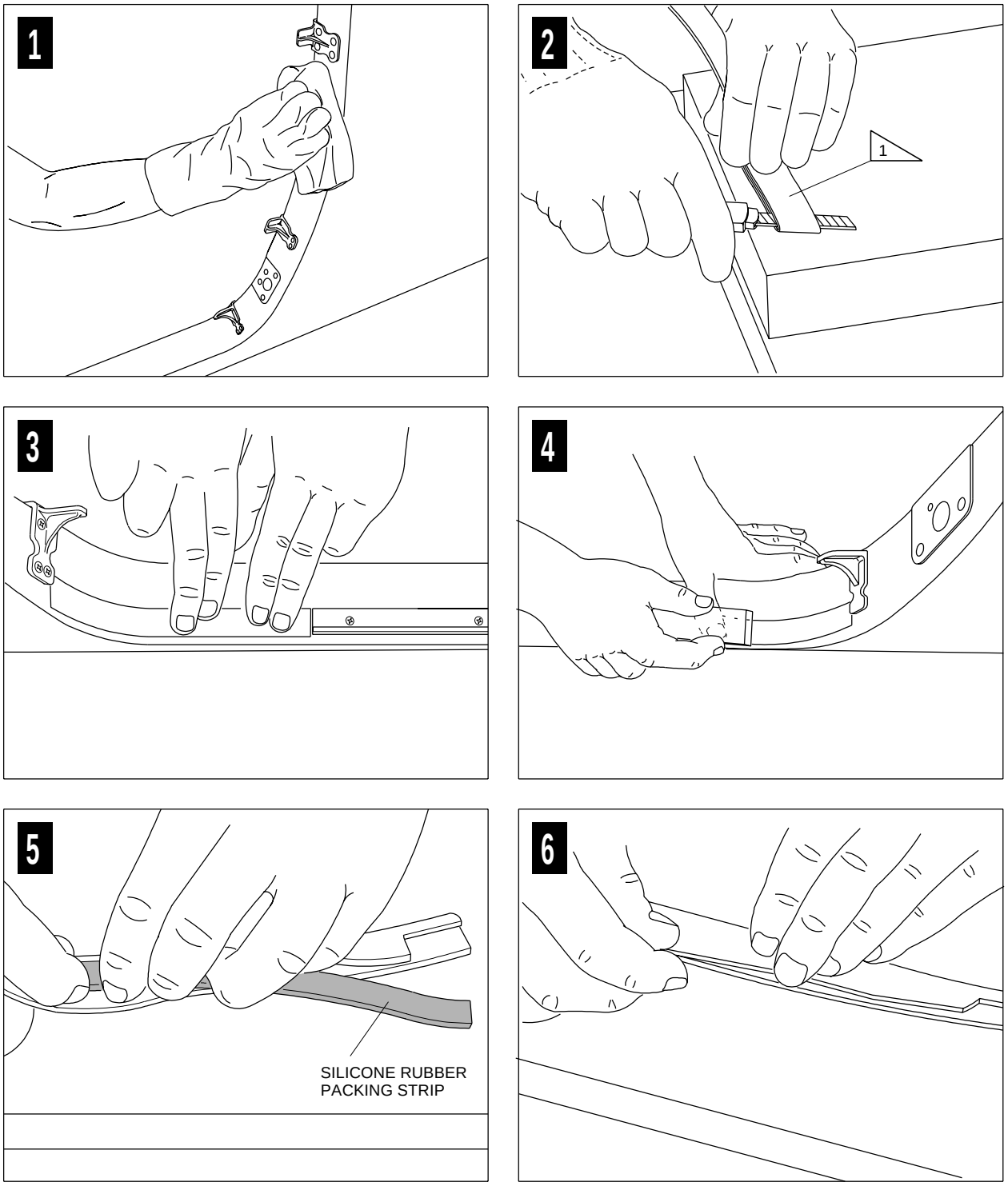
EFFECTIVITY: ALL

Main-Door Frame Rubber Seal - Installation Procedure
Figure 404 - Sheet 1



1 SILICONE RUBBER STRIP FABRICATION.

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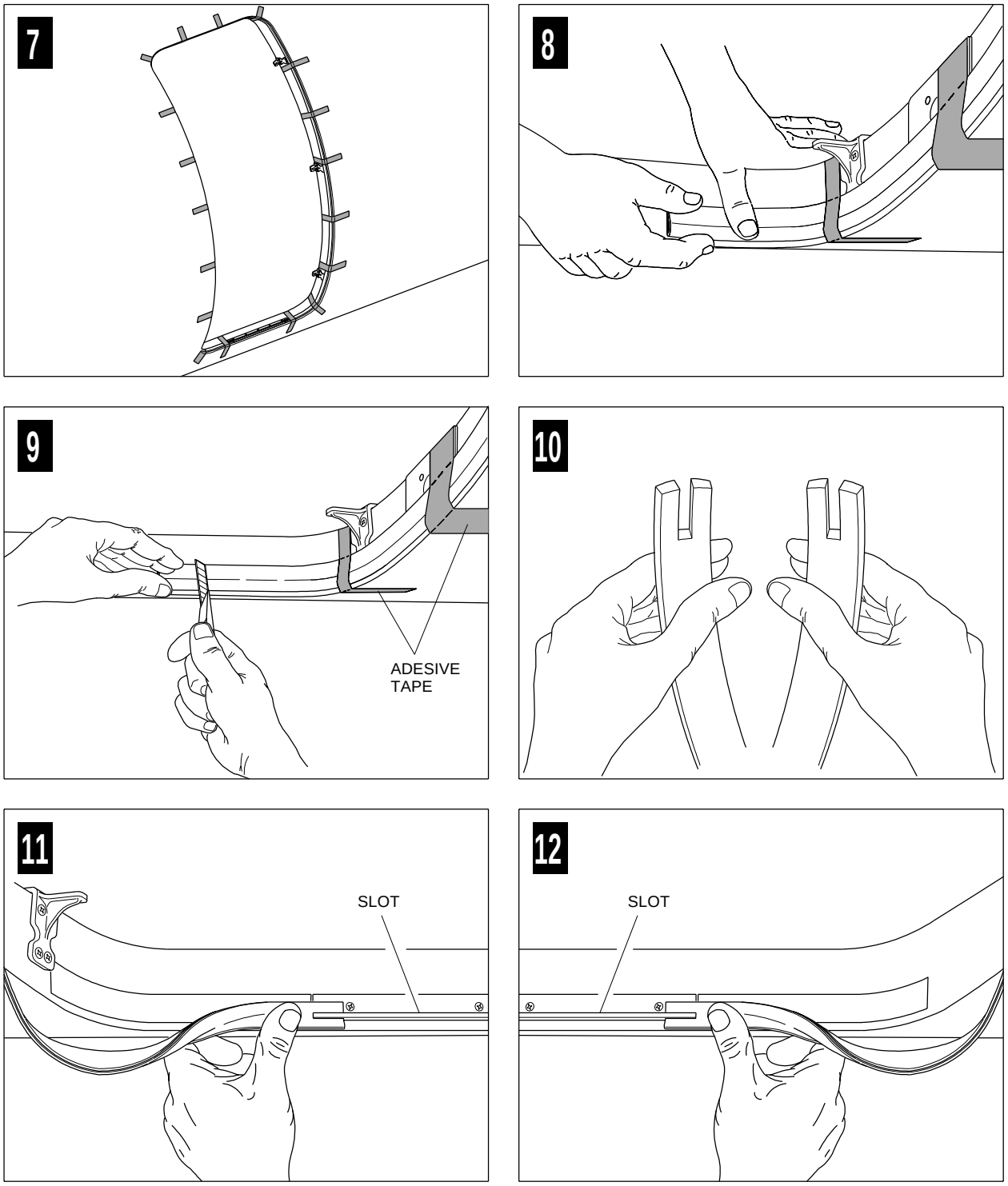
EFFECTIVITY: ALL

Main-Door Frame Rubber Seal - Installation Procedure
Figure 404 - Sheet 2



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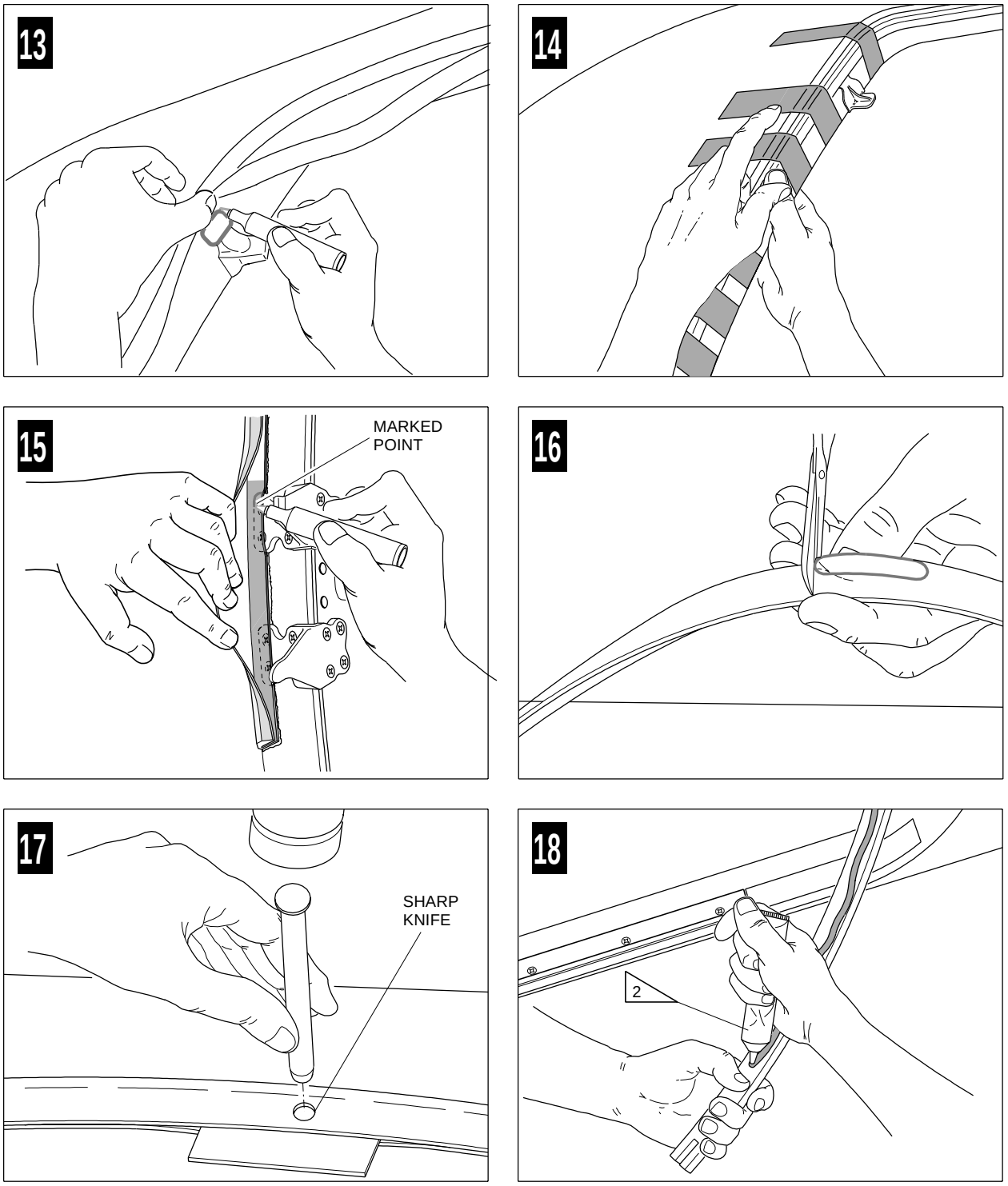
EFFECTIVITY: ALL

Main-Door Frame Rubber Seal - Installation Procedure
Figure 404 - Sheet 3



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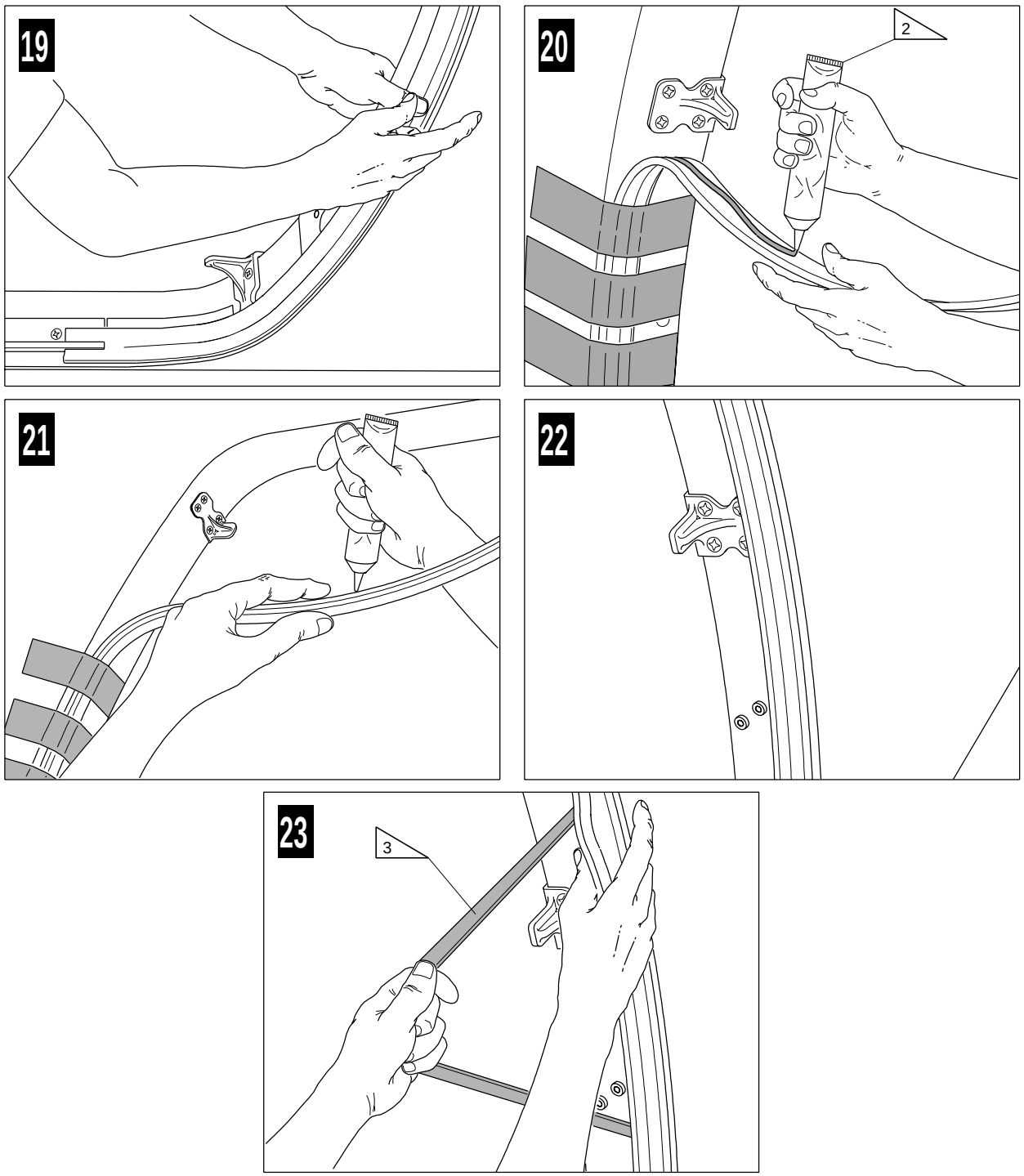
EFFECTIVITY: ALL

Main-Door Frame Rubber Seal - Installation Procedure
Figure 404 - Sheet 4



2 APPLY RTV−157.

3 REMOVE SILICON RUBBER PACKING STRIP.

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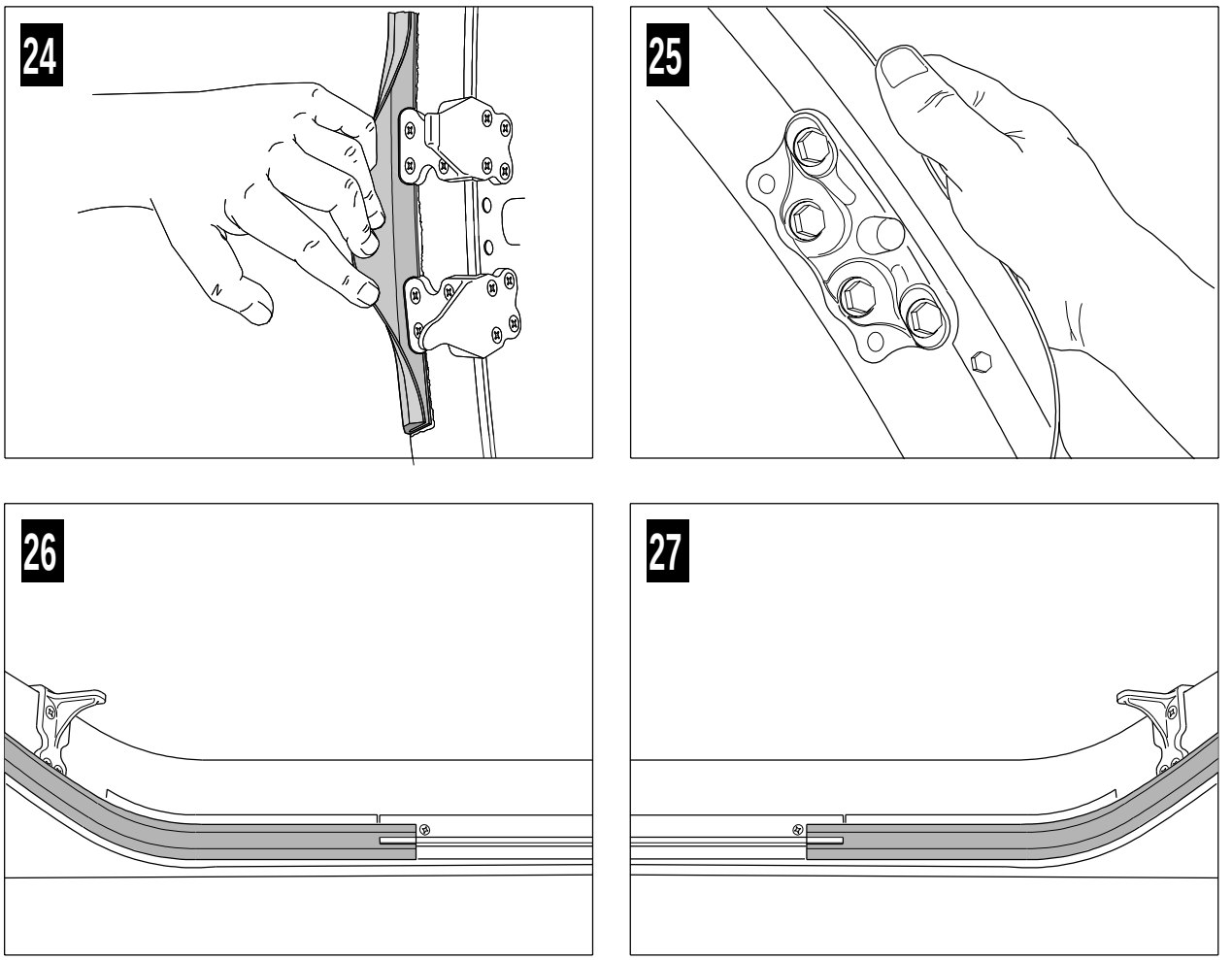
EFFECTIVITY: ALL

Main-Door Frame Rubber Seal - Installation Procedure
Figure 404 - Sheet 5



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TASK 53-21-01-400-801-A
EFFECTIVITY: ALL

3. MAIN-DOOR FRAME RUBBER SEAL - INSTALLATION

A. General

(1) This procedure gives the instructions to install the main-door frame rubber seal.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 20-30-06/200	- MAINTENANCE PRACTICES
AMM TASK 21-31-00-860-801-A/200	PROCEDURE TO PRESSURIZE THE AIRCRAFT FOR MAINTENANCE
AMM TASK 21-31-00-860-802-A/200	PROCEDURE TO DEPRESSURIZE THE AIRCRAFT FOR MAINTENANCE
AMM TASK 25-23-06-400-801-A/400	MAIN-DOOR TRIM SHROUD ASSEMBLY - INSTALLATION
SRM 51-20-01-PR	-

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Acrylic Spatula	To remove the sealant	1
Commercially available	Cutter	To remove the rubber seal	1

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
	Silicone sealant - RTV 157 (Gray)	AR
Commercially available	Adhesive tape	AR
Commercially available	Detergent	AR
	Silicone Rubber Strip - Part Number: 8512	AR

G. Expandable Parts

Not Applicable

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H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	In the forward fuselage, on the LH side

I. Installation (Figure 401) (Figure 402) (Figure 403) (Figure 404)

SUBTASK 420-002-A

(1) Make the silicone rubber strips as follows:

(a) NOTE: Silicone rubber strips can be made of rubber blanket Part Number 8512, or of the alternative Part Number 120-28438, or made of alternative materials given in AMM MPP 20-30-06/200.

Cut two pieces of silicone rubber strips (1st part) with 160 mm (6.30 in) in length x 20 mm (0.78 in) in width, and make 20 mm (0.78 in) chamfers in the two ends. (Refer to (Figure 401).

(b) Cut two pieces of silicone rubber strips (2nd part) with 200 mm (7.87 in) in length x 20 mm (0.78 in) in width, and make a 20 mm (0.78 in) chamfer in one of their ends. (Refer to (Figure 401).

(2) Bond the silicone rubber strips (1st and 2nd part) with the chamfered side facing the fuselage shin as follows (refer to (Figure 402); and (Figure 404); DET. 3 and DET. 4):

(a) Apply RTV 157 sealant to the full length of the silicone rubber strips (1st part) chamfered side and to the door frame as from the doorsill support (4). (Refer to (Figure 402); DET. B and (Figure 404); DET. 3).

(b) Install the silicone rubber strip (1st part) in the middle of the corner. (Refer to (Figure 402).

(c) Apply RTV 157 sealant to the full length of the silicone rubber strips (2st part) chamfered side, to the door frame as from the doorsill support (4), and to the silicone rubber strip (1st part) that is already installed. (Refer to (Figure 402); DET. B and (Figure 404); DET. 3).

(d) Install the silicone rubber strips (2nd part) with its non-chamfered end butting against the doorsill support (4) end. (Refer to (Figure 402); DET. B).

NOTE: Before you bond the rubber seal over the silicone rubber strip, wait for the sealant tack-free time.
Sealant curing time will change with environment conditions. Refer to SRM 51-20-01-PR.

(3) To guarantee maximum efficiency of adhesive tape, and consequently a maximum adherence of the seal to the frame, insert a silicon rubber packing strip in the internal part of the seal (this rubber packing strip will be removed after cure of the sealant). (Refer to (Figure 404); DET. 5 and DET. 6).

NOTE: If you do not have a silicon rubber packing strip available, you can use another material to increase the stiffness of the rubber seal during its installation.

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(4) Cut the rubber seal (1) to adjust it to the doorsill support (4) if necessary. Refer to (Figure 402); DET. B.

(5) Do a pre-mounting of the seal in the frame to measure the size of the seal. (Refer to (Figure 404); DET. 7).

NOTE: Do a start pre-mounting seal as in (Figure 404); DET. 11 and DET. 12.

(6) Adjust the seal to the correct length and remove the excess. (Refer to (Figure 404); DET. 8 and DET. 9).

(7) Make sure that the rubber seal (1) has the correct length and cut off the rubber seal ends at the dashed area. (Refer to (Figure 402); DET. B and (Figure 404); DET. 10).

(8) Place the end of the rubber seal in the slots. (Refer to (Figure 404); DET. 11 and DET. 12).

(9) With the seal already adjusted to its correct length, place masking tape over the fasteners and fittings, listed below, and mark them with a marker. (Refer to (Figure 404); DET. 13).

(a) Fittings on aircraft with airstairs main door: doorsill sealing support, door stops, handrail supports, door handrail stop supports, and frame roller supports.

(b) Fittings on aircraft with side-hinged main door: door sealing support, door stops, rotating arm supports, and frame roller supports.

(c) Fasteners: screws and rivets.

(10) Place the rubber seal in its correct position so that the ink will mark the points where the rubber material must be removed from the seal. (Refer to (Figure 404); DET. 14).

(11) With a marker, draw the contour of the fasteners and fittings listed above, on the opposite side of the rubber seal. (Refer to (Figure 404); DET. 15).

NOTE: The seal will be marked in both sides for each fitting and fastener.

(12) Cut the rubber seal at the marked points and leave a small gap to fill with sealant after the installation is complete. (Refer to (Figure 404); DET. 16).

(13) Punch holes to make provisions for fasteners. (Refer to (Figure 404); DET. 17).

(14) With the rubber seal positioned, lift the upper rubber seal flange and use scissors to cut the lower rubber seal flange, to remove the areas which interfere with the fittings (Refer to (Figure 404); DET. 15):

NOTE:
- Be sure to cut only the side of the rubber seal section which will be bonded to the frame.
- Be careful when cutting the rubber seal flange to prevent door frame damage.

(15) Start the rubber seal (1) installation from its bottom end on the doorsill sealing support. During this process, apply adhesive tape to hold the rubber seal in its position. (Refer to (Figure 403); DET. A and (Figure 404); DET. 18).

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(16) Attach the rubber seal along the main door frame contour, as far as the other end. Avoid stretching the seal so that it remains with the original length (Refer to (Figure 404); DET. 19).

(17) Apply RTV 157 in stages and secure it in position with adhesive tape to assure correct seal location while the RTV 157 cures. Pay particular attention to corners (Refer to (Figure 404); DET. 20 and DET. 21).

(18) Bond the rubber seal to the main door frame structure with RTV 157 sealant . Refer to (Figure 403); Sections C-C, D-D and E-E, to visualize the thickness of the sealant (maximum 1mm).

NOTE: Do not exceed 1.0 mm of sealant under rubber seal. The excess of sealant can result in difficulty to close the door.

(19) During the installation follow the structure guide (ridge) of the door frame to prevent subsequent problems during the door operation. (Refer to (Figure 404); DET. 22).

(20) After the sealant cure, remove the silicon rubber packing strip. (Refer to (Figure 404); DET. 23).

(21) Fill the gaps and voids between the two sides of the rubber seal and door frame with RTV 157 sealant. (Refer to (Figure 403); Sheet 2 and (Figure 404); DET. 24, 25, 26 and 27).

NOTE:
- To bond the upper part of the door frame, use only sufficient sealant to avoid waste. (Refer to (Figure 403); Sheet 1; DET. B).
- Wet the finger in a water-detergent solution and mold the sealant around the rubber boundary.
- When the sealant is cured, the aircraft can be dispatched.
- The sealant curing time changes with the environmental conditions. Refer to SRM 51-20-01-PR.

J. Follow-on

SUBTASK 842-002-A

(1) Remove the adhesive tape.

(2) Install the main door upper, forward and aft corner trim shrouds (AMM TASK 25-23-06-400-801-A/400).

(3) Close the main door.

(4) Pressurize the aircraft (AMM TASK 21-31-00-860-801-A/200).

(5) Make sure that there is no air leakage through the main door contour. If leakage occurs, find its specific location. When the leakage is related to the main door frame rubber seal, remove and install the rubber seal again in this region to remove the leakage. After this, do the functional test again.

(6) Depressurize the aircraft (AMM TASK 21-31-00-860-802-A/200).

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