

AFT PRESSURE BULKHEAD - REPAIR

EFFECTIVITY: ALL

1. General

- A. This section gives the procedures to repair the aft pressure bulkhead.
- B. The aft pressure bulkhead is located in the aft section of the cargo compartment.
- C. If a tear, a hole or other type of damage to the aft pressure bulkhead occurs, it must be repaired to agree with the safety condition of the flame resistance test.
- 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
25-51-03-300-801-A	AFT PRESSURE BULKHEAD - PATCH RE-PAIR	ALL
25-51-03-300-802-A	AFT PRESSURE BULKHEAD - WET LAY-UP REPAIR	ALL

TASK 25-51-03-300-801-A
EFFECTIVITY: ALL

2. AFT PRESSURE BULKHEAD - PATCH REPAIR

A. General

- (1) This task gives the procedures to repair the aft pressure bulkhead with patches:

NOTE: There are two patches certified for this repair: AKRO Fireguard Speed Patch, AF 800 Series, and Permaglass Cargo Lining Repair Patch, 100 Series.

- (2) For these patch repairs, no set-up or cure time is necessary. The aircraft can be put back into service immediately.
- (3) The minimum distance between two patch repairs must be 38 millimeters (1.5 inches).
- (4) Refer to table 801 and [Figure 801](#) for the maximum and types of damage that can be repaired.

Table 801 - PATCH REPAIR X MAXIMUM AND TYPES OF DAMAGE

PATCH REPAIR	QUANTITY OF PIECES	TYPE OF DAMAGE	MAXIMUM DAMAGE length x width mm (in)
PERMALI	one	square-shaped and L-shaped tears	101 x 101 (4 x 4)
		U-shaped tear	101 x 101 (4 x 4)
AKRO AF 844	one	Any type of damage (hole in liner) ^[1]	25 x 25 (1 x 1)
AKRO AF 848			127 x 25 (5 x 1)
AKRO AF 888			127 x 127 (5 x 5)
AKRO AF 844	127 x 50 (5 x 2)		
AKRO AF 848	330 x 50 (13 x 2)		
AKRO AF 888	330 x 152 (13 x 6)		

[1] Straight slits are not approved for repair with patches. Cut/Notch straight slits into "U" section.

[2] The minimum patch-to-patch overlap must be 25 millimeters (1.0 inch).

- NOTE:**
- For use of one piece of patch material, the minimum distance between the damage and the patch repairs must be 38 millimeters (1.5 inches).
 - For use of two pieces of patch material, the minimum distance between the damage and the patch repair must be 25 millimeters (1.0 inch).

- (5) If these requirements cannot be obeyed, the damaged aft pressure bulkhead must be replaced.
- (6) The aft pressure bulkhead that has other type of damage than that specified in table 801 (or with damage larger than the dimensions in table 801) must be replaced.

B. Zones and Accesses

Not Applicable

C. Tools and Equipment

Not Applicable

D. Auxiliary Items

ITEM	DESCRIPTION	PURPOSE	QTY
1	Rubber gloves	Hand protection	
1	Safety goggles	Eye protection	
Commercially available	Spatula	To strip the tapestry	1
Commercially available	Sandpaper, 320-400 grit	To remove the paint	AR

E. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
Commercially available	Rhodiasolve E-23 - Commercial grade	AR
TT-I-735	Isopropyl Alcohol - Commercial grade	AR
O-E-760	Ethanol - Commercial grade	AR
Commercially available	AKRO Fireguard Speed Patch Repair 800 Series (AF 844, AF 848 and AF 888)	AR
Commercially available	PERMALI Gloucester Permaglass Patch Repair 100 Series	AR

F. Expandable Parts

Not Applicable

G. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Baggage compartment

H. Patch Repair (Figure 801) (Figure 802)

SUBTASK 340-002-A

WARNING: WEAR GLOVES AND GOGGLES AND PREVENT CONTACT WITH SOLVENT VAPORS DURING THE CLEANING.

- (1) Clean the aft pressure bulkhead with Rhodiasolve E-23, ethanol or isopropyl alcohol to remove dirt, oil, and debris.

- (2) Mask off the surface to keep the original paint intact outside the patch repair and on the adjacent border.
- (3) With a 320-400 grit sanding paper, fully remove the paint, primer and filler from the area where you will install the patch repair.

NOTE:

- Remove the paint at least 38 millimeters (1.5 inches) on the adjacent border of the damage where you will install the patch.
- Be careful not to go through the first layer when you sand the area.
- Make sure that all filler or primers are also removed and the bare glass surface is exposed.

- (4) Wipe the surface after you sand it, with a clean, shop wipe soaked with Rhodiasolve E-23, ethanol or isopropyl alcohol.

NOTE:

- Dry the surface with a clean dry shop wipe. Do not permit the solvent to evaporate from the part and make sure that there is no remaining contamination on it.
- The part will be clean when a clean, dry shop wipe can be passed over the surface and show no indications of dirt, oil, or debris.
- Do not touch the cleaned surfaces.

- (5) Find the patch that correctly agrees with the damage and periphery area (see table 801) ([Figure 801](#)).

NOTE:

- For repairs with one piece of patch, make sure that there is a border of liner material with 38 millimeters (1.5 inches) between the damage and the outer edge of the patch repair.
- For repairs with two pieces of patches, make sure that there is a border of liner material with 25 millimeters (1.0 inch) between the damage and the outer edge of the patch repair.
- Make sure that there is a minimum of 25 millimeters (1.0 inch) in overlapping patches.
- These materials can be trimmed as necessary.
- To mark the periphery of the damage, you can use a compass if you think it will make your job easier.

- (6) Remove the protective liner from one corner of the patch and bond it to the partition periphery ([Figure 802](#)).

NOTE:

- Be careful not to contaminate the adhesive side of the patch.
- Apply firm, positive pressure and smooth as necessary to prevent entrapped air.
- Work the patch down over all the area.

- (7) Use a straightedge or rule to make sure that the edges of the patch are correctly bonded to the panel.

- NOTE:
- The patch is not correctly bonded if the scale or straightedge can be placed below the patch and between the patch and liner more than 1.6 millimeters (1/16th inch).
 - Push the edges down until the scale cannot slip between the liner and the patch.

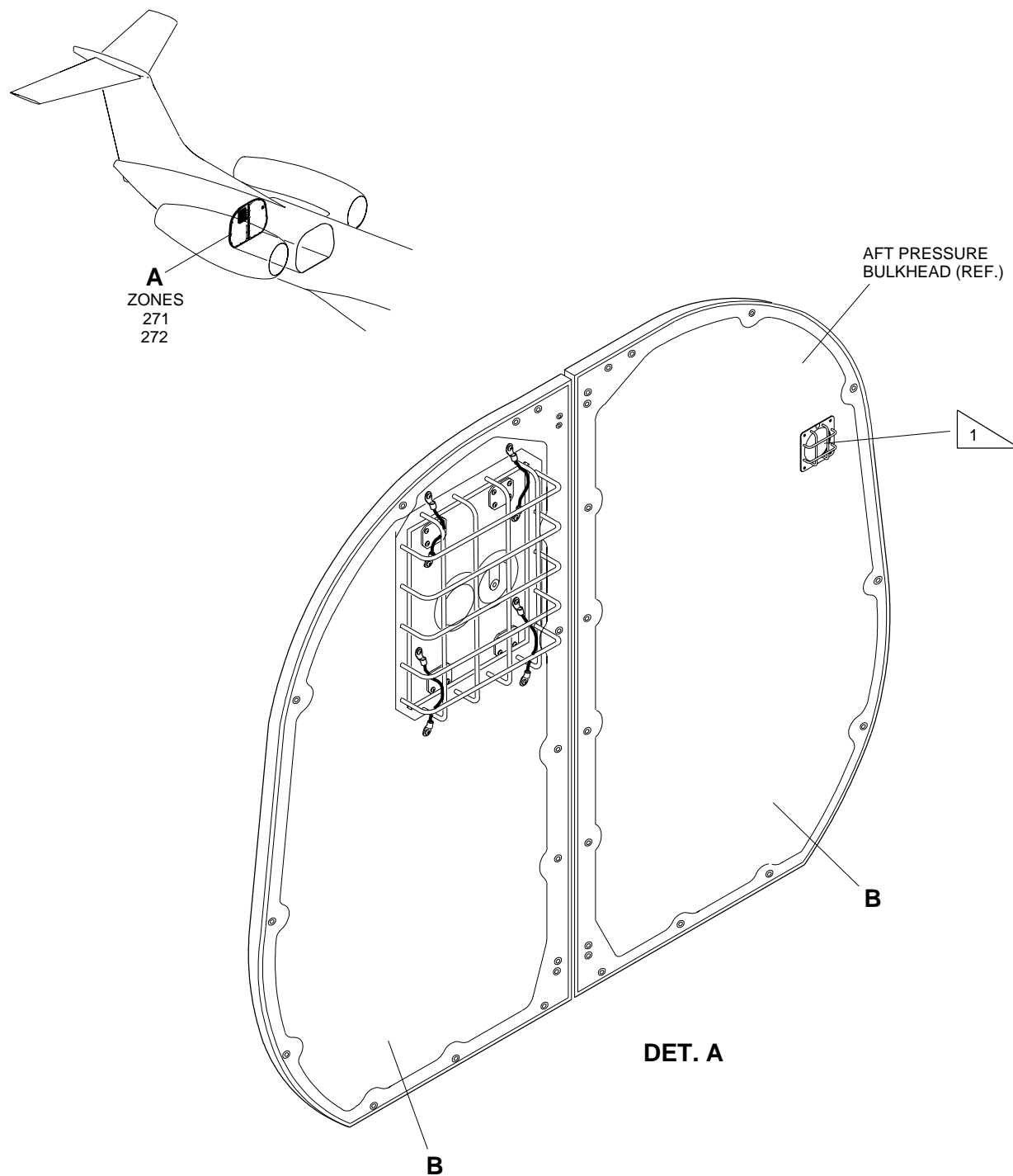
- (8) If the adhesion is not sufficient, remove the patch and discard it.

- NOTE:
- Clean the partition surface again, install a new patch, and do an inspection.
 - Obey the above procedures to do the cleaning, the installation, and the inspection.

EFFECTIVITY: ALL

Aft Pressure Bulkhead - Maximum Damage

Figure 801 - Sheet 1



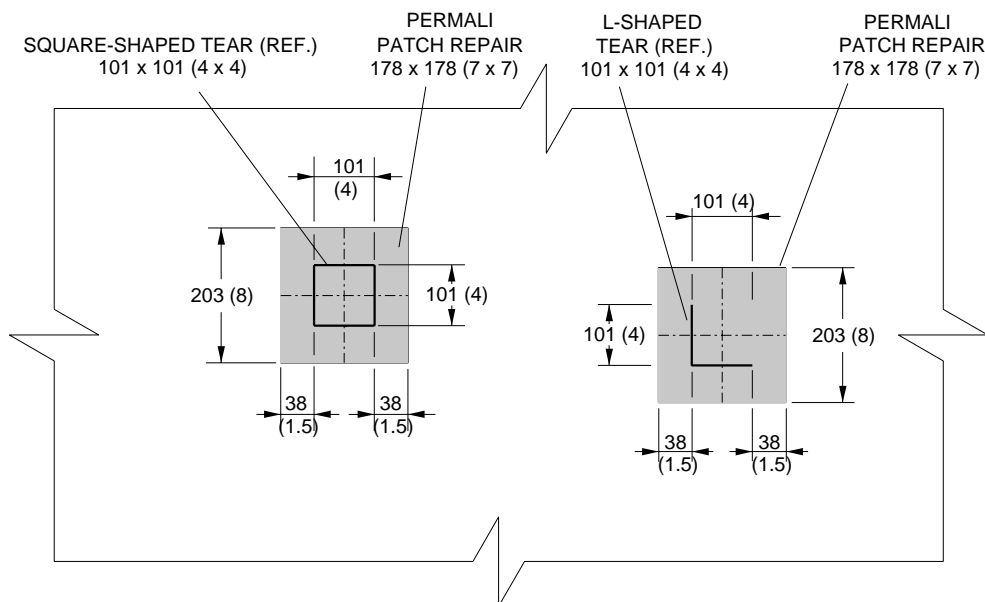
1 FOR AIRCRAFT WITH CLASS-C BAGGAGE COMPARTMENT

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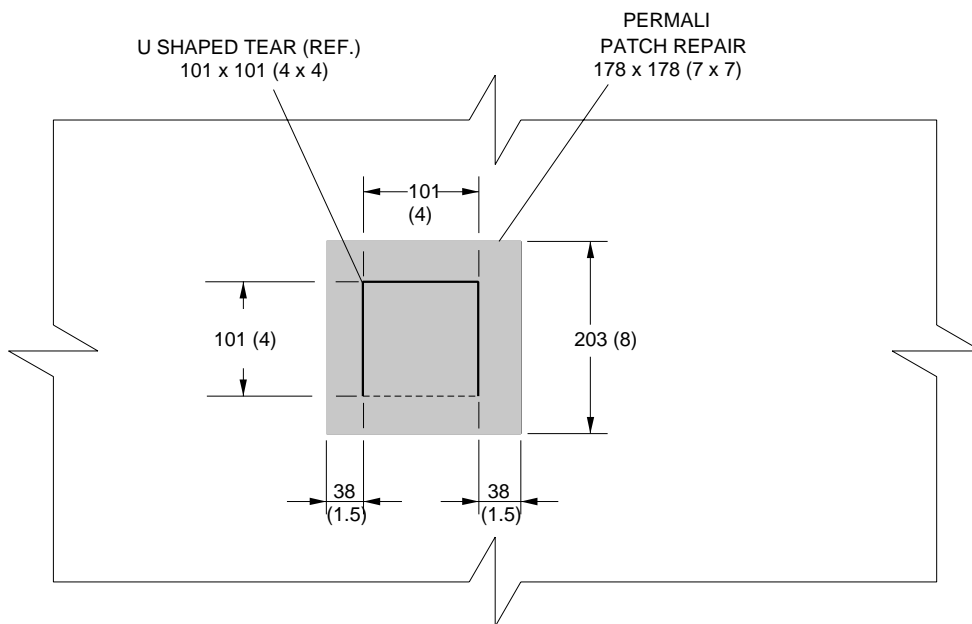
EFFECTIVITY: ALL

Aft Pressure Bulkhead - Maximum Damage

Figure 801 - Sheet 2



DET. B



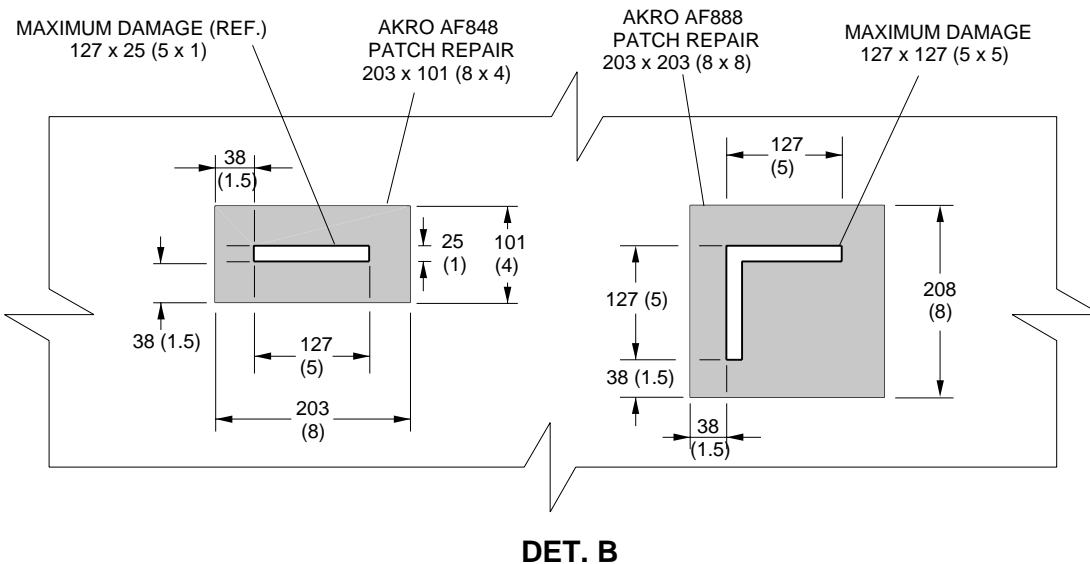
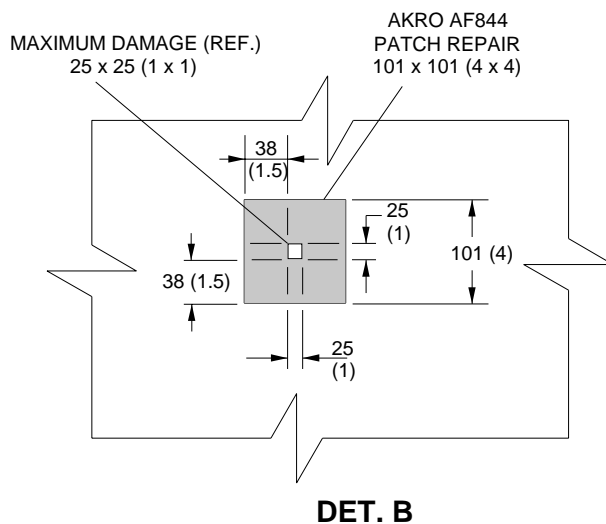
DET. B

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EFFECTIVITY: ALL

Aft Pressure Bulkhead - Maximum Damage

Figure 801 - Sheet 3

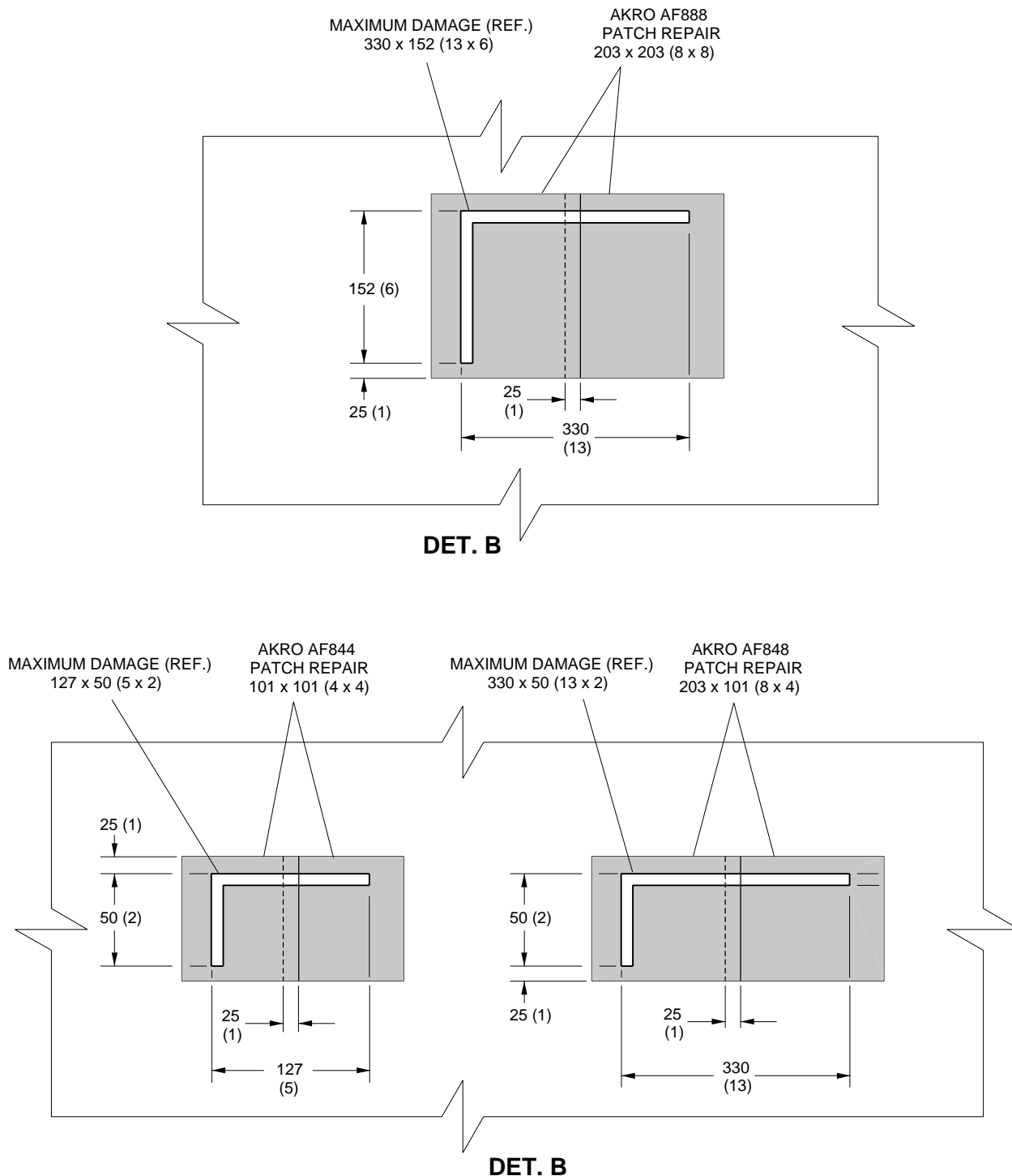


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EFFECTIVITY: ALL

Aft Pressure Bulkhead - Maximum Damage

Figure 801 - Sheet 4

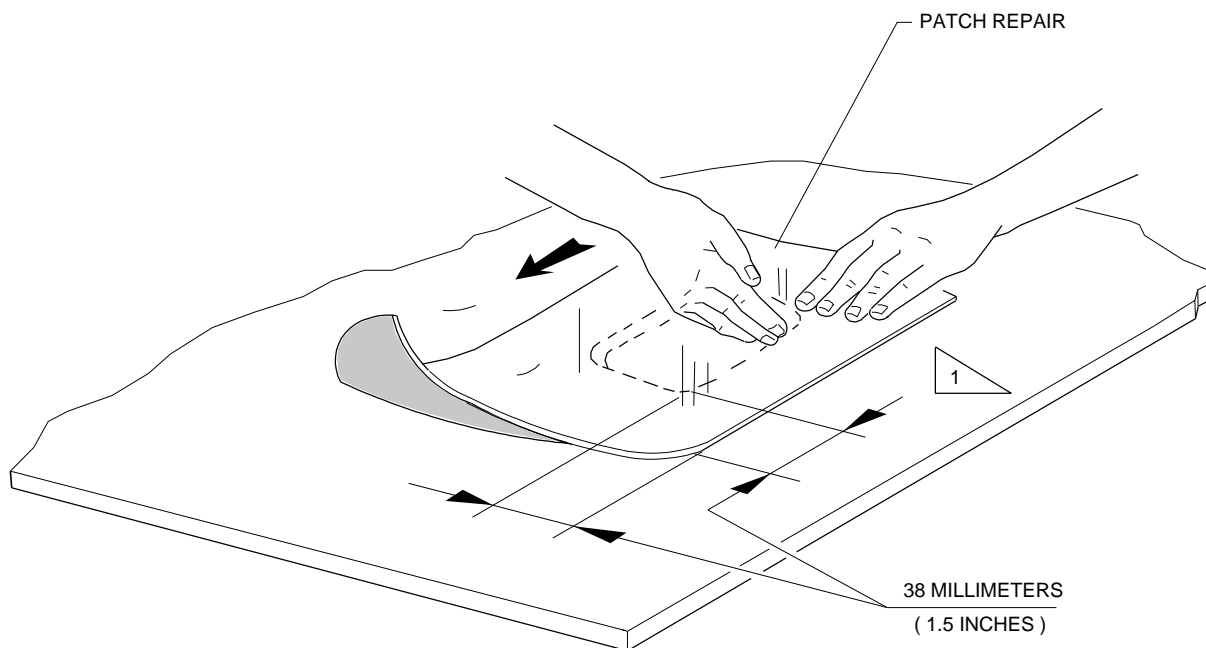


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EFFECTIVITY: ALL

Aft Pressure Bulkhead - Patch Repair Procedure

Figure 802




 APPLY THE PATCH FIRMLY AND SMOOTH AS NECESSARY TO PREVENT ENTRAPPED AIR.

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TASK 25-51-03-300-802-A

EFFECTIVITY: ALL

3. AFT PRESSURE BULKHEAD - WET LAY-UP REPAIR

A. General

- (1) The repair method was tested and approved for use on the front side or the backside of the aft pressure bulkhead.
- (2) Refer to table 802 for the maximum and types of damage that can be repaired in each case.

Table 802 - PATCH REPAIR X MAXIMUM AND TYPES OF DAMAGES

TYPE OF DAMAGE	MAXIMUM DAMAGE length x width mm (in)
square-shaped	101 x 101 (4 x 4)
U-shaped slit	127 x 127 (5 x 5)

- (3) If the requirements in table 802 cannot be obey, the damaged aft pressure bulkhead must be replaced.
- (4) The aft pressure bulkhead that has damage larger than the referred to dimension must be replaced.

B. References

REFERENCE	DESIGNATION
AMM TASK 25-51-03-000-801-A/400	AFT PRESSURE BULKHEAD - REMOVAL
AMM TASK 25-51-03-400-801-A/400	AFT PRESSURE BULKHEAD - INSTALLATION

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Balance with precision in grams ± 1.0 gram	To weigh the fiberglass plies	

E. Auxiliary Items

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Rubber gloves	Hand protection	1
Commercially available	Safety goggles	Eye protection	1
Commercially available	Paint brush	To apply the resins	AR
Commercially available	Sandpaper 320-400 grit	To remove the paint	AR

(Continued)

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Shop Wipes	For cleaning	AR

F. Consumable Materials

SPECIFICATION (BRAND)	DESCRIPTION	QTY
Commercially available	Rhodiasolve E-23 - Commercial grade	AR
TT-I-735	Isopropyl Alcohol - Commercial grade	AR
O-E-760	Ethanol - Commercial grade	AR
MIL-C-9084	8 Harness Satin 7781 - Dry fiberglass	AR
Commercially available	Shell resin 828 with Epicure 3223 catalyst	AR
Commercially available	Georgia Pacific GP667D60 resin with GP4840 catalyst	AR
WLS P/N 412-109	WLS Paint	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	A - Does the task	Baggage compartment
1	B - Helps technician A	Baggage compartment

I. Wet Lay-up Repair ([Figure 803](#))

SUBTASK 340-003-A

WARNING: THE AFT PRESSURE BULKHEAD IS FRAGILE, LARGE AND DIFFICULT TO MOVE. ASK FOR HELP TO MOVE THE PARTITION AND BE CAREFUL TO PREVENT INJURY TO PERSONS AND DAMAGE TO THE PARTS.

- (1) Remove the damaged aft pressure bulkhead ([AMM TASK 25-51-03-000-801-A/400](#)).
- (2) Find the damage size.

WARNING: WEAR GLOVES AND GOGGLES AND PREVENT CONTACT WITH SOLVENT VAPORS DURING THE CLEANING.

- (3) Clean the aft pressure bulkhead with Rhodiasolve E-23, ethanol or isopropyl alcohol to remove dirt, oil, and debris.
- (4) With a 320-400 grit sandpaper, fully remove the paint from the area where the repair will be installed.

NOTE: • Mask off the surface to keep the original paint intact outside the repair and the adjacent border.

- Remove a minimum of 25 millimeters (1.0 inch) of paint on the border adjacent to the damage where the repair will be done.
 - Be careful not to go through the first layer when you sand the area.
 - Make sure that all filler or primers are also removed and the bare glass surface is exposed.
- (5) Wipe the surface with a clean, shop wipe soaked with Rhodiasolve E-23, ethanol or isopropyl alcohol.
- NOTE:**
- Dry the surface with a clean dry shop wipe. Do not permit the solvent to evaporate on the part and make sure that there is no remaining contamination on it.
 - The part will be clean when a clean, dry shop wipe can be passed over the surface and show no indications of dirt, oil, or debris.
 - Do not touch the cleaned surfaces.
- (6) Trim 3 plies of 7781 fiberglass to cover the damaged area and extend a minimum of 25 millimeters (1.0 inch) past on all sides.
- NOTE:** Put the fiberglass pieces on a table with release paper to prevent contamination of the resin on the shop benches.
- (7) Weigh the fiberglass plies. Use this figure as start weight for resin to be mixed for repair (Table 803).

Table 803 - LAMINATING RESIN/CATALYST

Laminating Resin : Catalyst (by weight)
100:10

- (8) Mix Shell Resin 828 (laminating resin) and Epicure 3223 (catalyst). Resin mixture must cause a complete saturation of the glass to occur.
- (9) With a paint brush, apply a small quantity of the resin on the 25-millimeter (1.0-inch) border past the partition damage.
- (10) With a paint brush, apply a small quantity of resin on the first fiberglass ply. Use of a roller pin or dowel will help distribute the resin equally on the fiberglass ply.
- (11) Install the first fiberglass ply with resin on the damaged panel. Make sure that the patch extends a minimum of 25 millimeters (1.0 inch) past the damage.
- (12) Use the resin and brush to distribute the resin and smooth the partition surface as necessary.
- (13) Install the second ply on the first ply.
- (14) Apply more resin on the surface of the panel. Make sure that the partition is fully soaked in the resin solution.

(15) Install the third ply on the repair and apply more resin on the surface, as necessary to have a complete saturation.

(16) Use of a nylon or Teflon paddle to help seat the plies onto the partition is recommended.

NOTE: Apply pressure from one corner of the repair and work outward to prevent air bubbles.

(17) Let the repair cure for a minimum of 6 hours.

(18) Brush-apply to the side of the partition, GP667D60 resin with GP4840 catalyst mixed 1:1 by weight.

NOTE: • Try to make a uniform coat with a minimum thickness of 0.08 millimeters (0.003 inches).

- Additional resin does not affect performance.

(19) Before you finish, let the resin cure for 8 hours.

NOTE: • The partition can be returned to service or painted as desired.

- Do not remove the GP667D60 resin if you apply a finish.

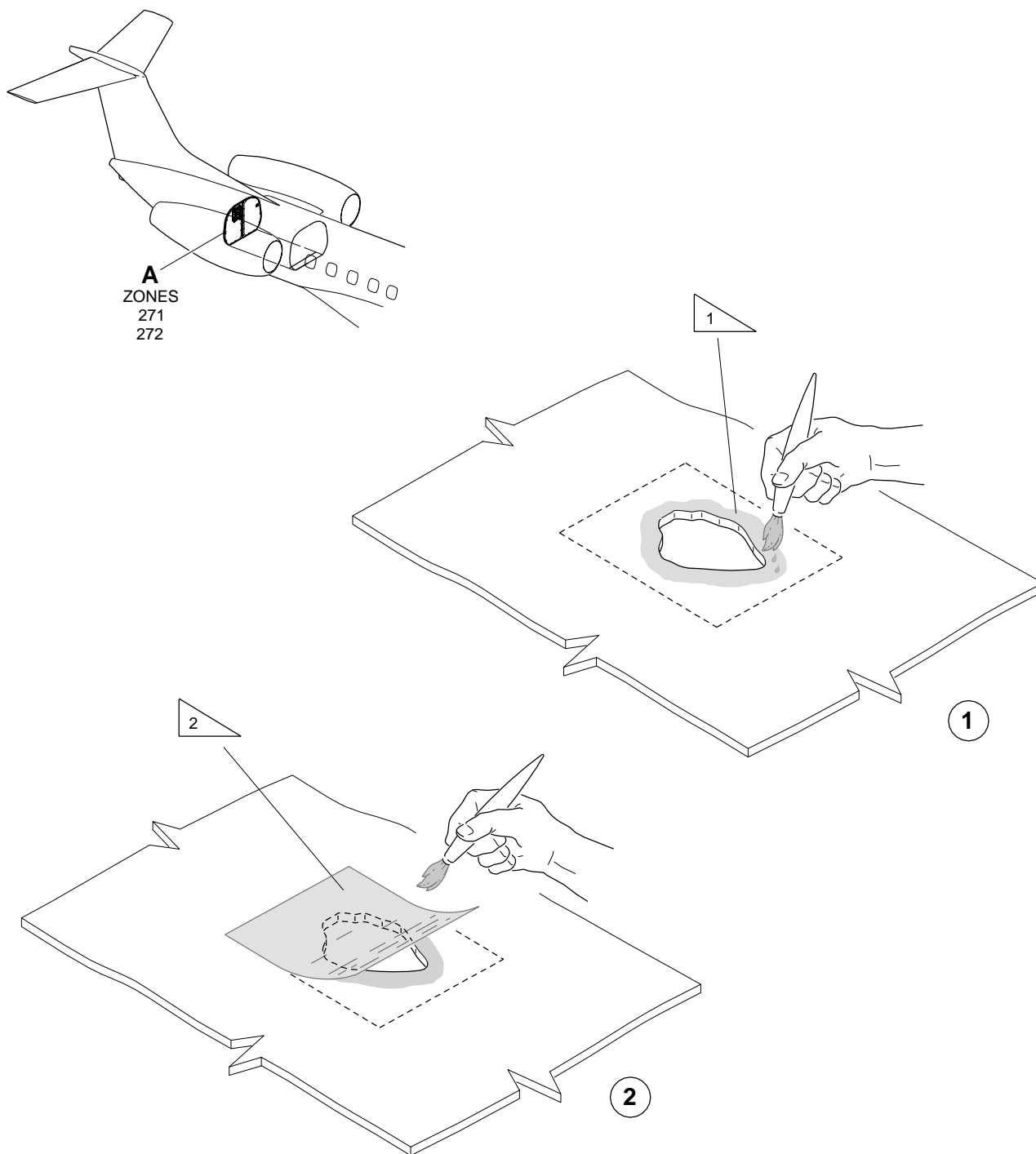
(20) Sand the area softly and paint with WLS P/N 412-109 to finish the repair, if applicable.

(21) Install the aft pressure bulkhead ([AMM TASK 25-51-03-400-801-A/400](#)).

EFFECTIVITY: ALL

Aft Pressure Bulkhead - Wet Lay-up Repair

Figure 803 - Sheet 1



1 APPLY SHELL RESIN 828 AND EPICURE 3223 ALL AROUND THE DAMAGE.

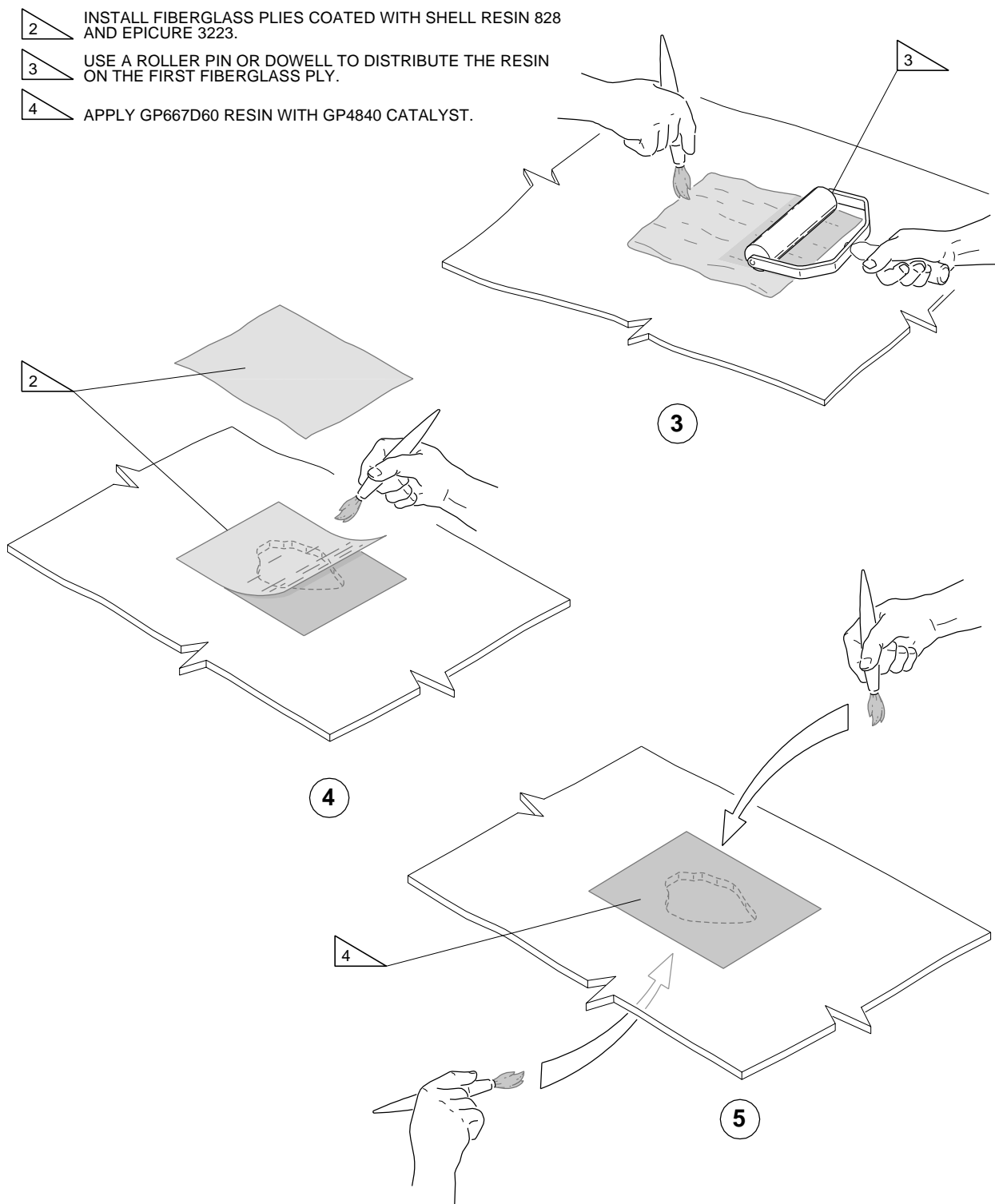
2 INSTALL FIBERGLASS PLY COATED WITH SHELL RESIN 828 AND EPICURE 3223.

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EFFECTIVITY: ALL

Aft Pressure Bulkhead - Wet Lay-up Repair

Figure 803 - Sheet 2



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