

SERVICE BULLETIN

TB AIRCRAFT

SB 10-152

AMENDMENT 1

55

ATA No.

MANDATORY

The technical content of this document is approved
under the authority of DOA No. EASA.21J.013
is the subject of an AD

HORIZONTAL STABILIZERS ON WHICH ORIGINAL SB HAS ALREADY BEEN APPLIED ARE NOT
CONCERNED BY FIRST APPLICATION OF THIS SERVICE BULLETIN

REFERENCE : MODIFICATION No. MOD10-0230-55 – REPAIR SHEET No. 20-116

SUBJECT : HORIZONTAL STABILIZER INTERNAL STRUCTURE

EFFECTIVITY : All TB aircraft

PURPOSE :

A. PROBLEM

Field reports of corrosion on horizontal stabilizer spar that could result in buckling and permanent horizontal stabilizer distortion and consequently a lower controllability of the airplane.

B. REASON

Humidity accumulation on aircraft subject to severe environmental conditions.

C. SOLUTION

Implementation of a regular inspection of the area.
Implementation of a repair solution, if necessary.

PURPOSE OF THE REVISION 1 :

- To modify SB classification
- To modify paragraphs A. PROBLEM and C. SOLUTION
- To modify paragraph APPLICATION
- To add 3 repair solutions

SUMMARY :

- A. CREATION OF INSPECTION HOLES
- B. INSPECTION
- C. MEASUREMENT OF CORRODED AREA
- D. TYPE 1 REPAIR
- E. TYPE 2 REPAIR
- F. TYPE 3 REPAIR
- G. RECONDITIONING

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APPLICATION :1st application :

During the next scheduled inspection and at the latest, 1 year and 1 month after the Service Bulletin issuance reference date.

Further applications (except Paragraph "A") :

This inspection must be repeated every 6 years.

WARRANTY :

- None

PROCURABLE MATERIAL :

- Kit No. OPT10K152-01 to be ordered from your TB spare parts distributor if Type 1 repair is applied

Item	Part number	Description	Qty/aircraft
25	5521667504	Rivet	25
81	5536342402	Rivet	80
82	5529565405	Rivet	60
83	5536342404	Rivet	8
84	5536342406	Rivet	30
85/87	5521668502	Rivet	45
86	5528340232	Rivet	0.010 kg

- Kit No. OPT10K152-02 to be ordered from your TB spare parts distributor if Type 2 repair is applied

Item	Part number	Description	Qty/aircraft
28/30	5528371416	Rivet	0.050 kg
29	5521668502	Rivet	10
31	5529565405	Rivet	15
31	5521668402	Rivet	10
32/36/83	5536342404	Rivet	25
61	TB109606710100	Short doubler	1
81	5536342402	Rivet	80
82	5529565405	Rivet	60
84	5536342406	Rivet	33
85/87	5521668502	Rivet	45
86	5528340232	Rivet	0.010 kg
/	5521667505	Rivet	10
/	5548340253	Rivet	0.10 kg

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Item	Part number	Description	Qty/aircraft
/	5431218060	Ecrou à river	3
/	5553368406	Rivet	3
/	5521667504	Rivet	12

- Kit No. OPT10K152-03 to be ordered from your TB spare parts distributor if Type 3 repair is applied

Item	Part number	Description	Qty/aircraft
28/30	5528371416	Rivet	0.050 kg
29	5521668502	Rivet	10
31	5529565405	Rivet	15
31	5521668402	Rivet	10
32/36/83	5536342404	Rivet	30
71	TB109606710000	Long doubler	1
74	TB109606710300	Angle bracket	1
75	TB109606710200	Angle bracket	1
72	TB109606710400	Rib root	1
72	TB109606710500	Rib root	1
73	TB109606710800	Washer	6
81	5536342402	Rivet	80
82	5529565405	Rivet	60
84	5536342406	Rivet	33
85/87	5521668502	Rivet	45
86	5528340232	Rivet	0.010 kg
/	5528371314	Rivet	0.015 kg
/	5548340253	Rivet	0.050 kg
/	5521667505	Rivet	30
/	5521667504	Rivet	6
/	5521674403	Rivet	5
/	5521348507	Rivet	3
/	5528658506	Rivet	3
/	5431218060	Anchor nut	11
/	5553368406	Rivet	3

NOTE :

The contents of the kits is given for your information and will not be updated.

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CONSUMABLE MATERIAL or OTHER PRODUCTS (Local purchase) :

- Alodine 1200 (MIL-C-5541) or wash – primer
- Epoxy Primer
- Finish paint
- 2 grommets DKK 8/14/18-3 or equivalent
- Clean cloths
- Methyl – Ethyl – Ketone (M.E.K)
- Adhesive HYSOL EA9394
- Anti corrosion Wadis 24 (MIL-C-16173D) or equivalent
- Sealant PR 1782 C2

TOOLS :

- Standard aeronautical maintenance station tools
- Counterbore dia. suitable with endoscope dimensions
- Pneumatic vacuum cleaner
- Endoscope

MANPOWER :

- 1 aeronautical mechanic :
 - . repair type 1 : 15 hours
 - . repair type 2 : 30 hours
 - . repair type 3 : 38 hours
- 1 helper (partially)

TECHNICAL INCIDENTS :

- If no corrosion is detected or Type 1 repair is applied : None
- If Type 2 repair is applied :
 - . Weight : 0.055 lbs (+ 0.025 kg)
 - . Arm : 217.56 in (5526 mm)
 - . Electrical consumption : not applicable
- If Type 3 repair is applied :
 - . Weight : 0.373 lbs (+ 0.169 kg)
 - . Arm : 217.56 in (5526 mm)
 - . Electrical consumption : not applicable

DESCRIPTION OF ACCOMPLISHMENT INSTRUCTIONS :**NOTE :**

The kit installation must be accomplished by persons authorized by their Airworthiness Authorities and according to the procedure described hereafter.

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NOTE :

Any removed anchor nut must be replaced by a new one and reinstalled at the same location as before, with rivet P/N 5548340253, 5536342406 and 5553368406.

A. CREATION OF INSPECTION HOLES – see Figure 1

- 1) On the bottom surface, drill the 2 inspection holes (1) to dia. 1/8" (3.2 mm)
- 2) Bore to a diameter suitable with the endoscope dimensions, the 2 inspection holes (1) and the 2 drainage holes (2) using a counterbore with its associated guide pin 0.62 in. max (16 mm max). Deburr.
- 3) Vacuum chips and clean area with a clean cloth moistened with M.E.K.
- 4) Protect bare metal with Alodine 1200 or wash-primer, primer and finish paint.

B. INSPECTION – see Figure 1

- 1) Insert the endoscope through the 4 holes to check corrosion on the spar.
- 2) If the inspection does not reveal corroded area, spray Wadis 24 on the spar to protect it, plug the two inspection holes with grommets and refer to Paragraph UPDATING OF THE AIRCRAFT DOCUMENTATION.
- 3) If the inspection reveals a corroded area, refer to Paragraph C.

C. MEASUREMENT OF CORRODED AREA – see Figures 2, 3, 4 and 5

- 1) Remove tail cone – refer to Chapter 53-20-04 of the Maintenance Manual.
- 2) Remove horizontal stabilizer – refer to Chapter 55-20-01 of the Maintenance Manual.
- 3) Remove upper surface rivets as indicated on Figure 2 or Figure 3 – refer to Chapter 51-40-00 of the Maintenance Manual.

NOTE :

In order not to damage the horizontal stabilizer during removal of rivets, maintain it on a table using straps.

CAUTION

TAKE CARE NOT TO DAMAGE THE UPPER SURFACE SKIN

- 4) Using an appropriate means, keep the upper surface skin open.

CAUTION

IF SPAR WEB (21) AND SPAR FLANGE (22) ARE AFFECTED BY CORROSION, HORIZONTAL STABILIZER MUST BE REPLACED BEFORE NEXT FLIGHT – REFER TO CHAPTER 55-20-01 OF THE MAINTENANCE MANUAL.

IF SPAR WEB (21) IS AFFECTED BY CORROSION AND SPAR FLANGE (22) IS NOT, CONTACT DAHER (*).

IF CORRODED AREA “Y” IS NOT COMPRISED BETWEEN – 14.37 IN (– 365 MM) AND 14.37 IN (365 MM), HORIZONTAL STABILIZER MUST BE REPLACED BEFORE NEXT FLIGHT – REFER TO CHAPTER 55-20-01 OF THE MAINTENANCE MANUAL.

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- 5) Remove rivets (25).
- 6) Measure Y min and Y max positions of the corroded area.
- 7) Remove corrosion – refer to Chapter 20–00–04 of the Maintenance Manual.
- 8) Measure the minimum remaining thickness (51).
- 9) Apply the procedure according to the table hereunder :

CORRODED AREA ON THE SPAR FLANGE (22) GEOMETRICAL CHARACTERISTICS		AIRCRAFT TYPE	
T : minimum remaining thickness (51)	Y : Y max and Y min positions of the corroded area	TB09 TB10 TB200	TB20 TB21
$T \geq 0.11 \text{ in (2.8 mm) AND}$ $- 3.54 \text{ in (- 90 mm)} \leq Y \leq 3.54 \text{ in (90 mm)}$		TYPE OF REPAIR	
		Type 1 repair Apply Parag. D.	Type 2 repair Apply Parag. E.
$0.098 \text{ in (2.5 mm)} \leq T < 0.11 \text{ in (2.8 mm) OR}$ $-14.37 \text{ in (- 365 mm)} \leq Y \leq 14.37 \text{ in (365 mm)}$		Type 3 repair Apply Parag. F.	
$0.087 \text{ in (2,2 mm)} \leq T < 0.098 \text{ in (2,5 mm) AND}$ $-14.37 \text{ in (- 365 mm)} \leq Y \leq 14.37 \text{ in (365 mm)}$		Type 3 repair Apply Parag. F.	
T < 0.087 in (2,2 mm)		Replace horizontal stabilizer	

D. TYPE 1 REPAIR – see Figures 4 and 5

- 1) In compliance with Figure 5, eliminate sharp edges on corroded area.
- 2) Inspect the corroded area to check absence of cracks – refer to Chapter 20–00–14 of the Maintenance Manual.

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- 3) Vacuum working area.
 - 4) Protect bare metal with Alodine 1200 and epoxy primer.
 - 5) Prepare a compound with adhesive Hysol 9394.
 - 6) Fill and level corroded area with adhesive Hysol 9394. If necessary, insert shim (52).
 - 7) Remove excess adhesive.
 - 8) Allow adhesive to cure for 24 hours at an ambient temperature between 59° and 68° F (15 and 20° C).
 - 9) Install rivets (25) – refer to Chapter 51-40-00 of the Maintenance Manual.
 - 10) Reconditioning – refer to Paragraph G.
- E. TYPE 2 REPAIR – see Figures 4, 5 and 6
- 1) Remove rivets (28), (29) and (30) – refer to Chapter 51-40-00 of the Maintenance Manual.
 - 2) Locate and remove levers (27).
 - 3) Pin 100% of upper surface skin.
 - 4) Return horizontal stabilizer.
 - 5) On lower surface skin, remove rivets (31) and (32).
 - 6) Return horizontal stabilizer.
 - 7) Locate and remove ribs (26) and (24).
 - 8) In compliance with Figure 5, eliminate sharp edges on corroded area.
 - 9) Inspect the corroded area to check absence of cracks – refer to Chapter 20-00-14 of the Maintenance Manual.
 - 10) From the spar flange (22), using a drill suitable with the diameter of removed rivet, backdrill existing hole on short doubler (61).
 - 11) Vacuum working area.
 - 12) Protect bare metal with Alodine 1200 and epoxy primer.
 - 13) Prepare a compound with adhesive Hysol 9394.
 - 14) Fill and level corroded area with adhesive Hysol 9394. If necessary, insert shim (52).
 - 15) Remove excess adhesive.
 - 16) Allow adhesive to cure for 24 hours at an ambient temperature between 59° and 68° F (15 and 20° C).

CAUTION

BEFORE INSTALLING SHORT DOUBLER (61) ON SPAR FLANGE (22), CONTROL THE REPAIRED AREA FLATNESS

- 17) Install short doubler (61) on spar flange (22) with sealant PR 1782 C2 and rivets P/N 5521667505 – refer to Chapter 51-40-00 of the Maintenance Manual.
- 18) On both sides of short doubler (61), install rivets P/N 5521667504 on spar flange (22).

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- 19) Install rib (24) on rib (23) web and on rib (26) web with rivets (29) P/N 5521668502.
 - 20) Install rib (26) on lower surface skin with rivets (31) P/N 5529565405 and P/N 5521668402.
 - 21) Install rib (24) on lower surface skin with rivets (32) P/N 5536342404.
 - 22) Install rib (26) on spar web (21) with rivets (30) P/N 5521660503.
 - 23) Install levers (27) on rib (26) web with rivets (28) P/N 5528371416.
 - 24) Install rivets (36) P/N 5536342404
 - 25) Reconditioning –refer to Paragraph G.
- F. TYPE 3 REPAIR – see Figures 4, 5 and 7
- 1) Remove rivets (28), (29) and (30) – refer to Chapter 51–40–00 of the Maintenance Manual.
 - 2) Remove and retain lever (27).
 - 3) Pin 100% of upper surface skin.
 - 4) Turn over horizontal stabilizer.
 - 5) On lower surface skin, remove rivets (31), (32) and (34).
 - 6) Turn over horizontal stabilizer.
 - 7) Identify and remove ribs (26) and rib (24).
 - 8) Remove rivets (35).
 - 9) Identify and remove ribs (23).
 - 10) On table, remove and discard angle brackets (33)
 - 11) In compliance with Figure 5, eliminate sharp edges on corroded area.
 - 12) Inspect the corroded area to check absence of cracks – refer to Chapter 51–40–00 of the Maintenance Manual
 - 13) From the spar flange (22) and using a drill suitable with the diameter of removed rivet, backdrill existing holes on long doubler (71).
 - 14) Vacuum working area.
 - 15) Protect bare metal with Alodine 1200 and epoxy primer.
 - 16) Prepare a compound with adhesive Hysol 9394.
 - 17) Fill and level corroded area with adhesive Hysol 9394. If necessary, insert a shim (52).
 - 18) Remove excess adhesive.
 - 19) Allow adhesive to cure for 24 hours at an ambient temperature between 59° and 68° F (15 and 20° C).

CAUTION**BEFORE INSTALLING LONG DOUBLER (71) ON SPAR FLANGE (22), CONTROL THE REPAIRED AREA FLATNESS**

- 20) Install long doubler (71) on spar flange (22) with sealant PR 1782 C2 and rivets P/N 5521667505 and P/N 5521667504 – refer to Chapter 51–40–00 of the Maintenance Manual.

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- 21) According to Figure 7, cut rib (23).
- 22) Apply Alodine 1200 and epoxy primer on rib (23) bare end.
- 23) Pin rib (23) on the spar web (21) and on the lower surface skin.
- 24) From the rib (23) web and using a drill suitable with the diameter of removed rivet, backdrill existing holes on angle brackets (74), (75) and rib root (72).
- 25) Assemble rib (23), angle brackets (74), (75) and rib root (72) on a table with rivets P/N 5528371314.
- 26) Install the assembly on spar web (21) with rivets P/N 5548340253.
- 27) From the spar web (21) and using a drill suitable with the diameter of removed rivet, backdrill existing holes and lower surface skin holes on angle brackets (74), (75) and rib root (72).
- 28) Install the assembly on lower surface skin with washers (73), and rivets P/N 5521674403.
- 29) Install the assembly on spar flange (22) with washers (73) rivets P/N 5528658506 and P/N 5521348507.
- 30) Install rib (24) on rib (23) web and on rib (26) web with rivets (29) P/N 5521668502.
- 31) Install rib (26) on lower surface with rivets (31) P/N 5529565405 and P/N 5521668402.
- 32) Install rib (24) on lower surface skin with rivets (32) P/N 5536342404.
- 33) Install rib (26) on spar web (21) with rivets (30) P/N 5521660503.
- 34) Install lever (27) on rib (26) web with rivets (28) P/N 5528371416.
- 35) Install rivets (36) P/N 5536342404.
- 36) Reconditioning – refer to Paragraph G.

G. RECONDITIONING – see Figures 8 and 9

- 1) In compliance with Figure 8 or 9, install upper surface skin rivets.

NOTE :

Check horizontal stabilizer balancing – refer to Chapter 51-60-00 of the Maintenance Manual.

- 2) Install horizontal stabilizer – refer to Chapter 55-20-01 of the Maintenance Manual.
- 3) Install tail cone – refer to Chapter 53-20-00 of the Maintenance Manual.

CAUTION

DO NOT PLUG THE DRAINAGE HOLES

- 4) Plug the 2 inspection holes with grommets.
- 5) Make sure all the tools and materials are removed and the work area is clean and free from debris.

UPDATING OF THE AIRCRAFT DOCUMENTATION :

Upon completion of Service Bulletin No. SB 10-152-55, Revision 1 (Reference MOD10-0230-55) "HORIZONTAL STABILIZER INTERNAL STRUCTURE", make an appropriate maintenance record entry.

If Paragraphs D, E. or F. have been applied, upon completion of Repair Sheet No. 20-116, make an appropriate maintenance record entry.

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WARNING : SOCATA considers that it is MANDATORY for operators to comply with the instructions of this SB.
Operators who arbitrarily ignore the compliance statement indicated in this SB do so at their own risk.

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- 1 – Inspection hole
- 2 – Drainage hole
- 3 – Spar

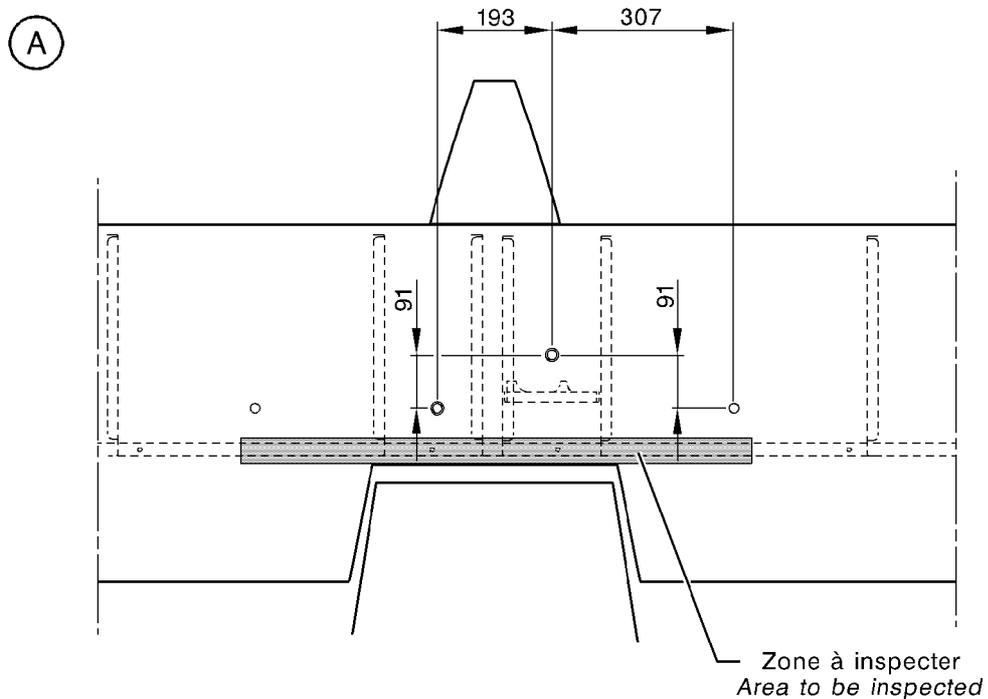
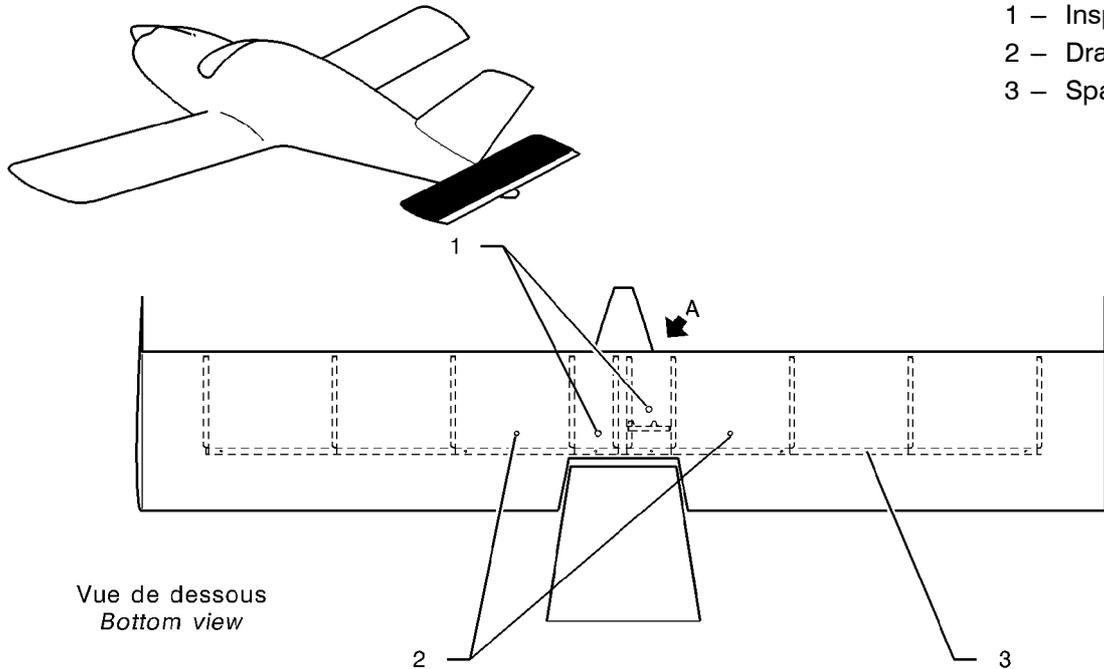


Figure 1 – Inspection of horizontal stabilizer internal structure

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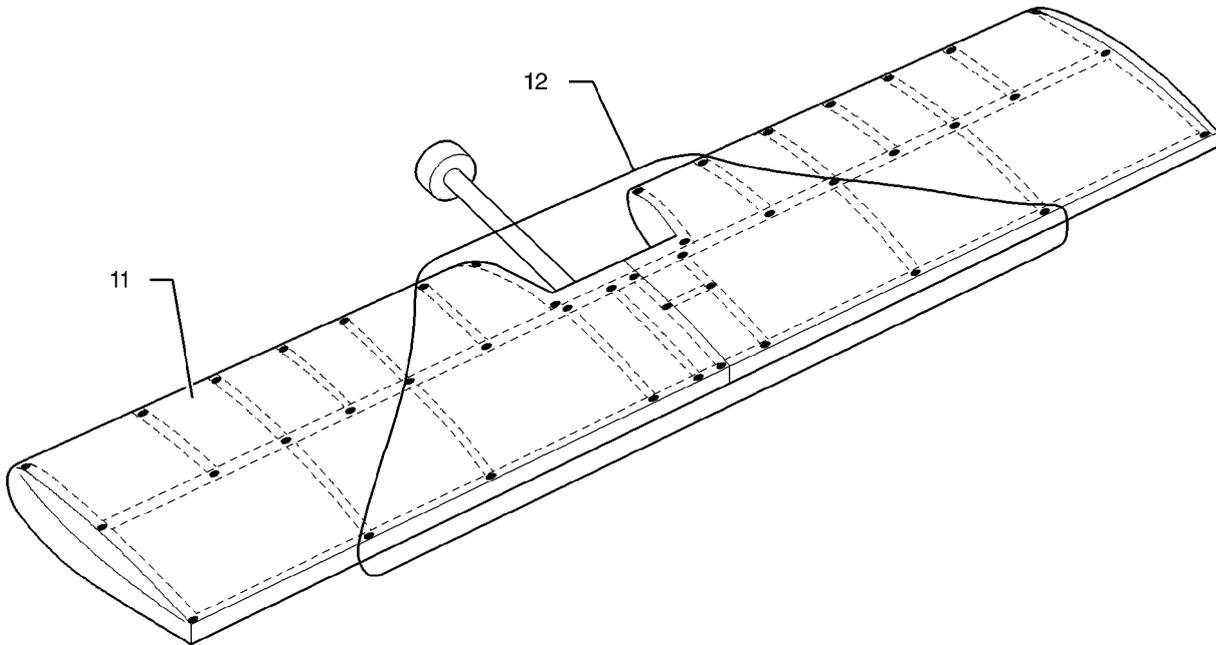
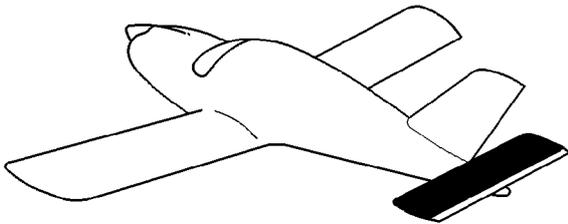
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- 11 – Upper surface skin
- 12 – Area of rivets to be removed



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Figure 2 – TB9 – TB10 – TB200 Area of rivets to be removed on upper surface skin

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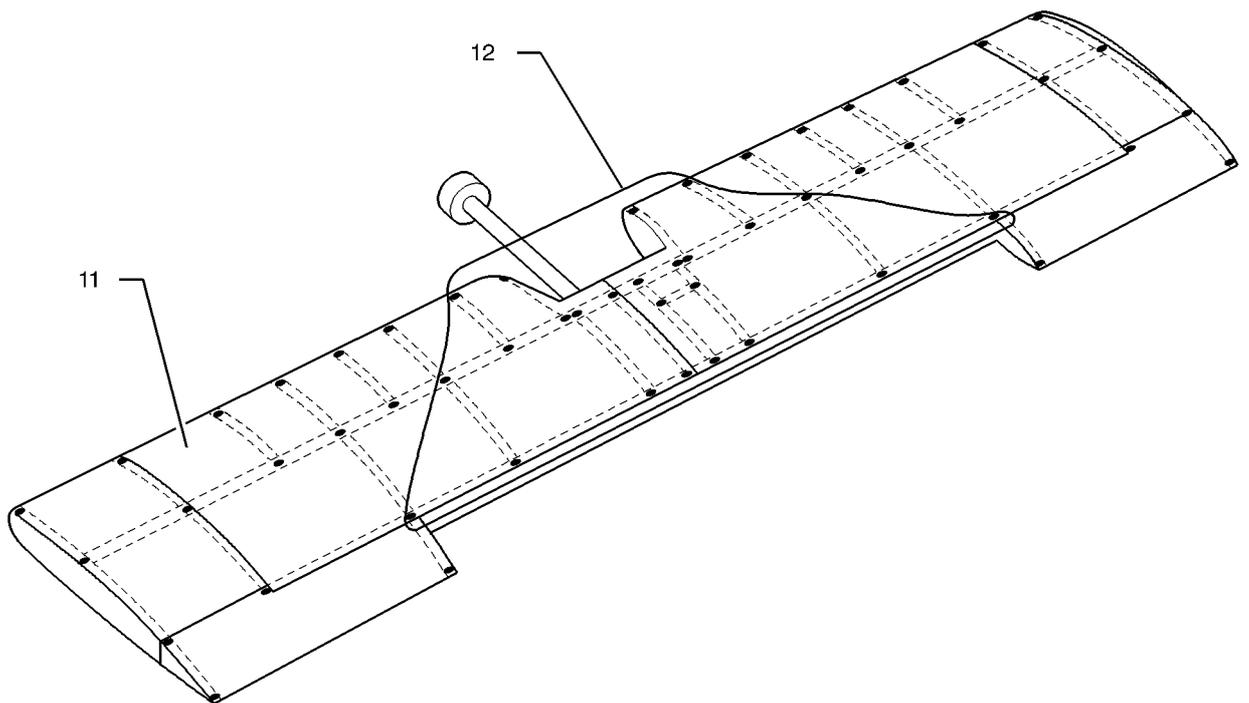
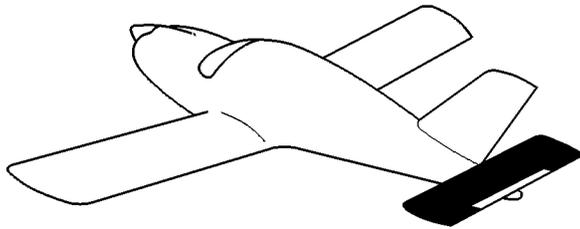
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- 11 – Upper surface skin
- 12 – Area of rivets to be removed



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Figure 3 – TB20 – TB21 Area of rivets to be removed on upper surface skin

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- 21 – Spar web
- 22 – Spar flange
- 23 – Rib
- 24 – Rib
- 25 – Rivet
- 26 – Rib
- 27 – Lever
- 28 – Rivet
- 29 – Rivet
- 30 – Rivet
- 31 – Rivet
- 32 – Rivet
- 33 – Angle bracket
- 34 – Rivet
- 35 – Rivet
- 36 – Rivet

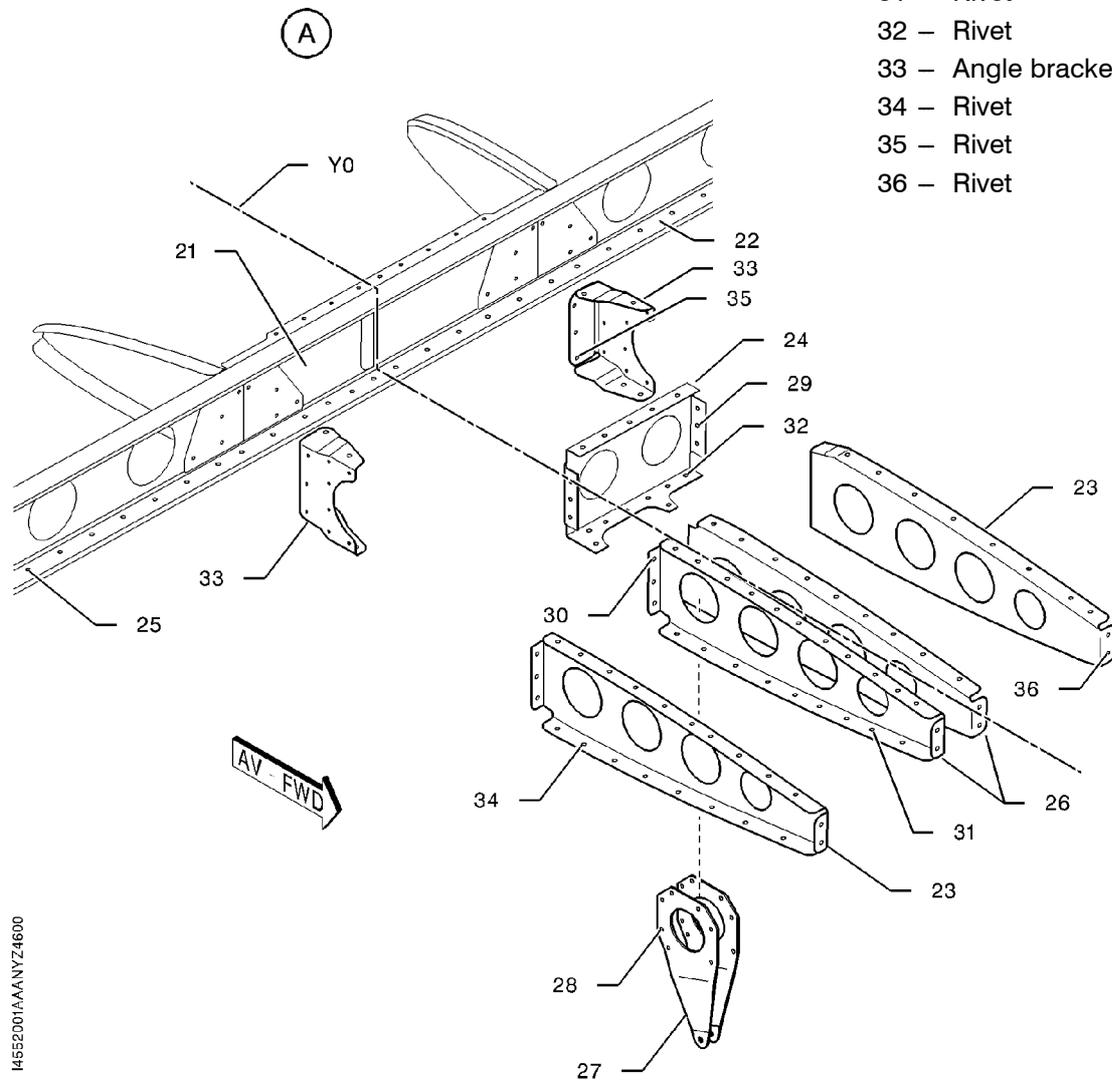
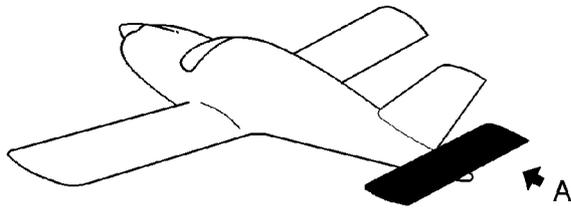


Figure 4 – Removal of ribs

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22 – Spar flange

51 – Remaining minimum thickness

52 – Shim

Selon Axe longitudinal du longeron

According to spar longitudinal axis

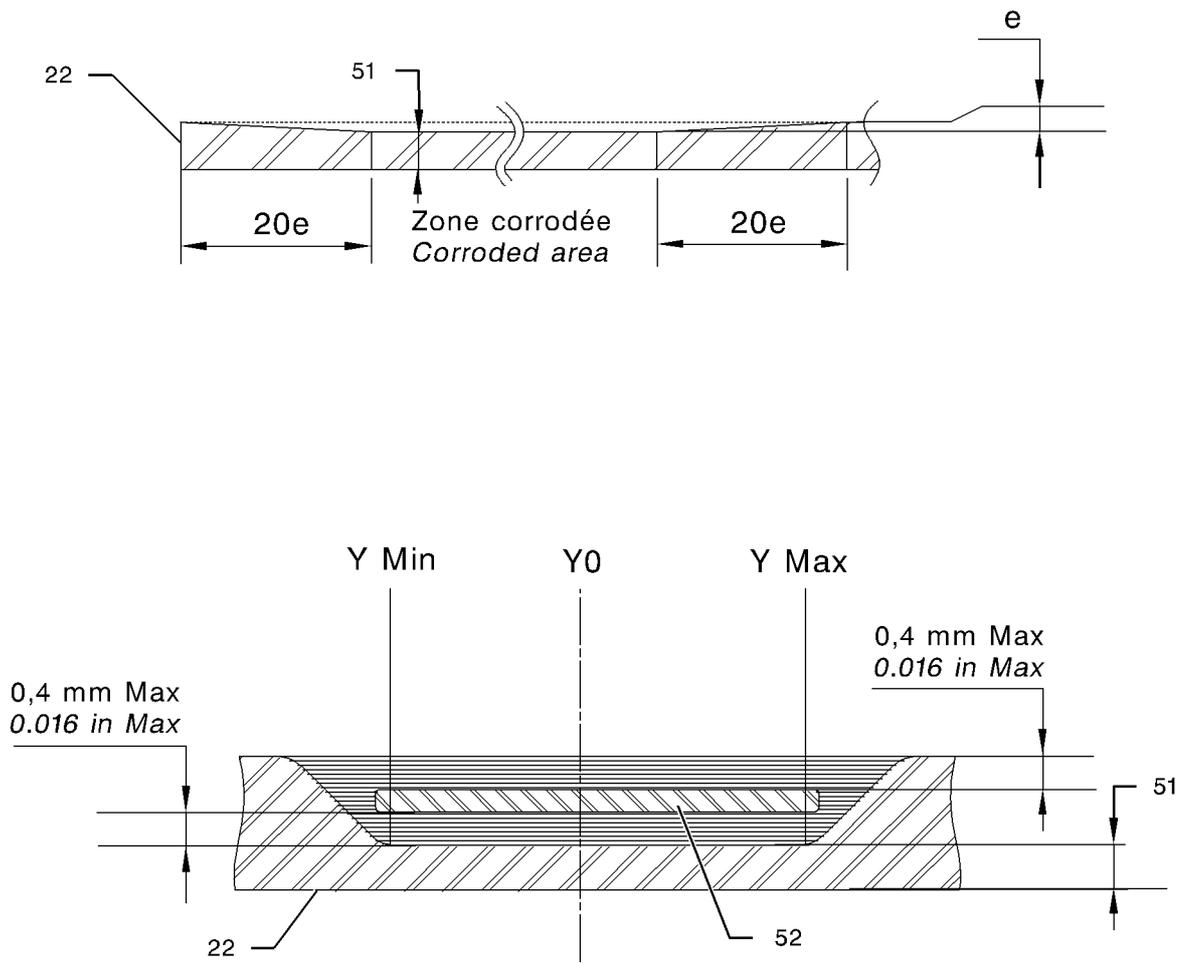


Figure 5 – Preparation of corroded area

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- 22 – Spar flange
- 23 – Rib
- 24 – Rib
- 26 – Rib
- 27 – Lever
- 28 – Rivet
- 33 – Angle bracket
- 61 – Short doubler

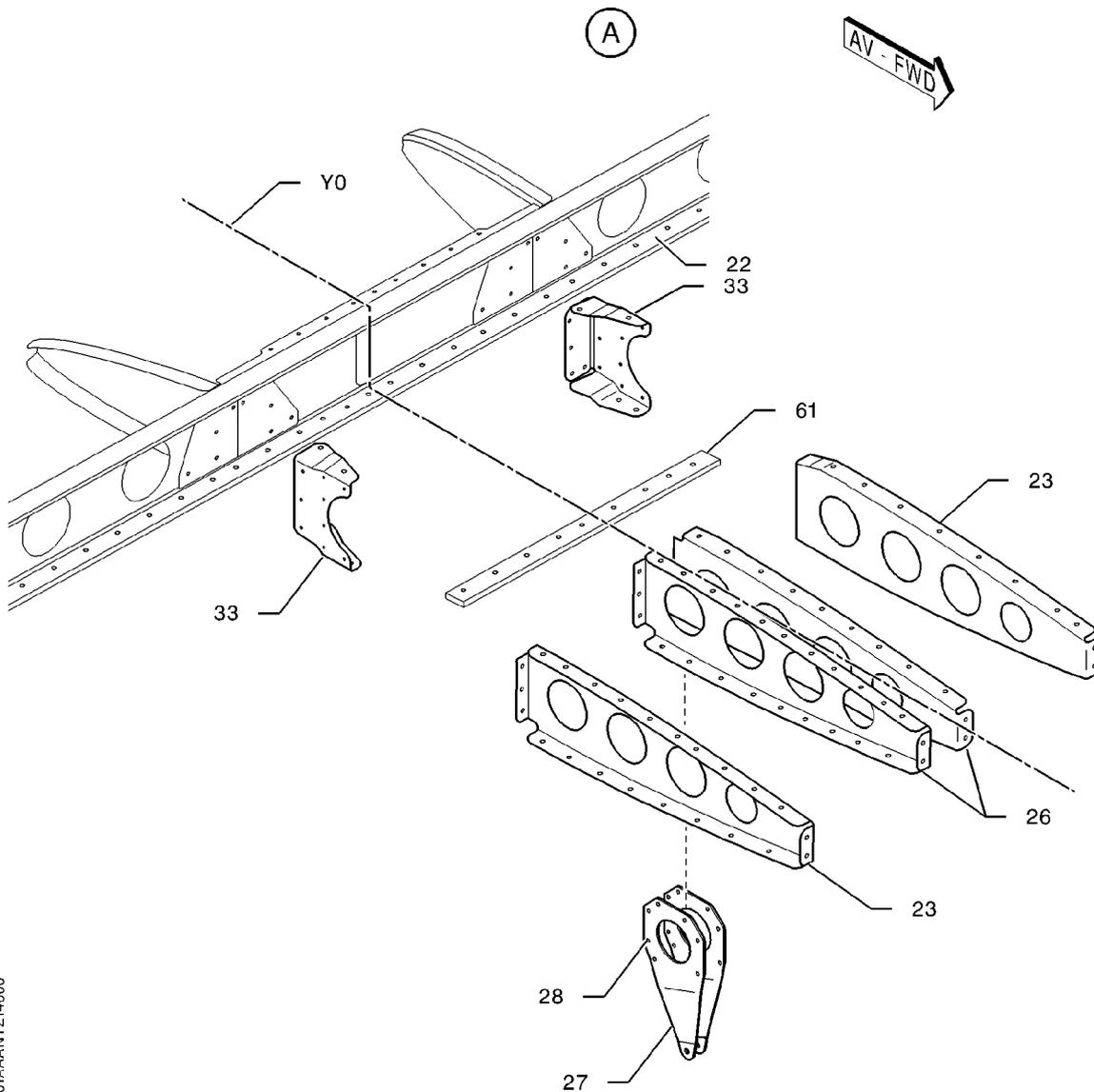
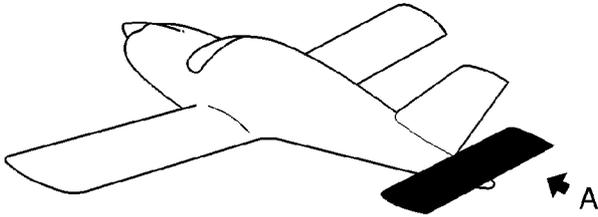


Figure 6 – Type 2 repair

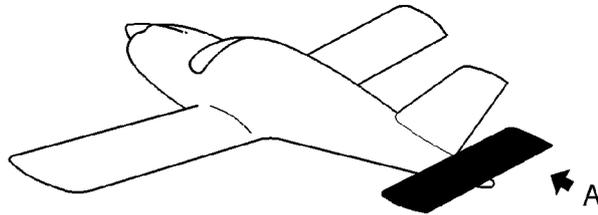
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|------------------|--------------------|
| 22 – Spar flange | 28 – Rivet |
| 23 – Rib | 71 – Long doubler |
| 24 – Rib | 72 – Rib root |
| 26 – Rib | 73 – Washer |
| 27 – Lever | 74 – Angle bracket |
| | 75 – Angle bracket |

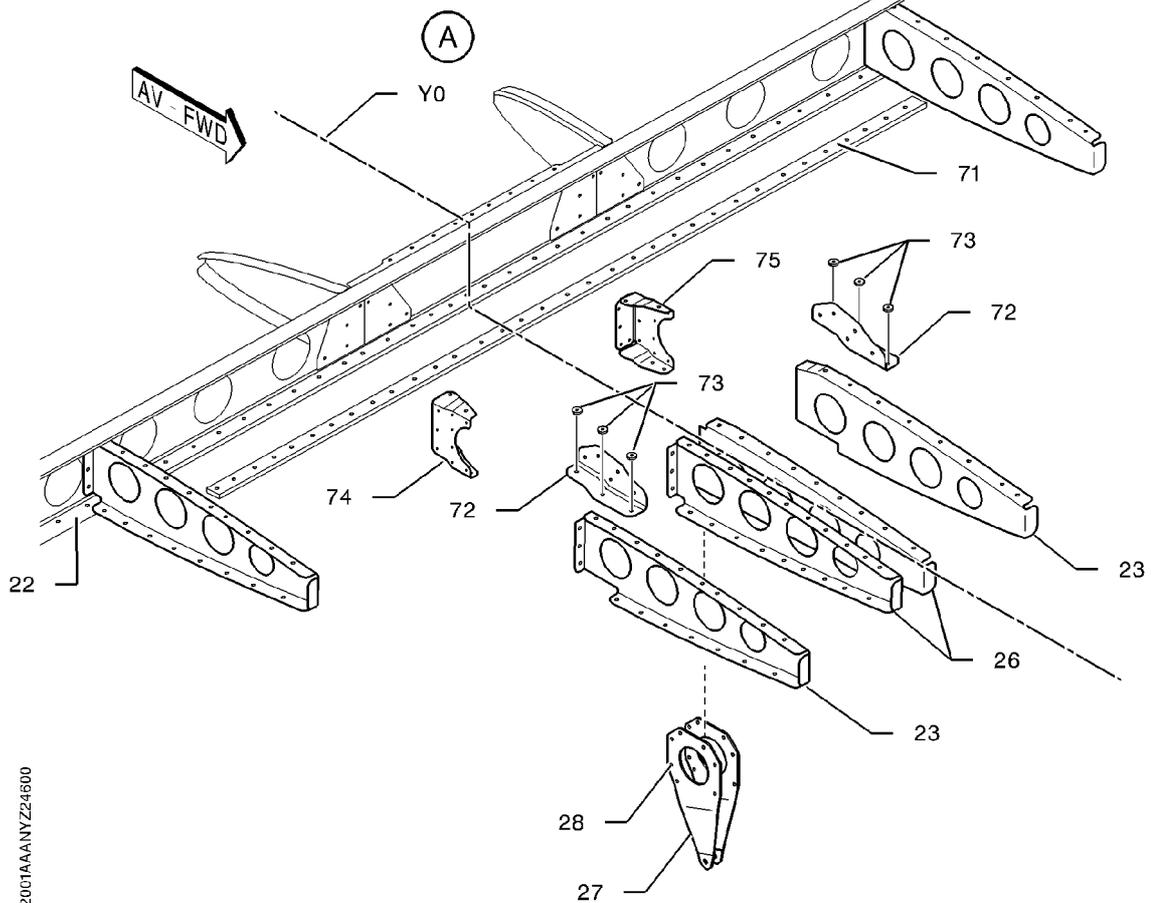
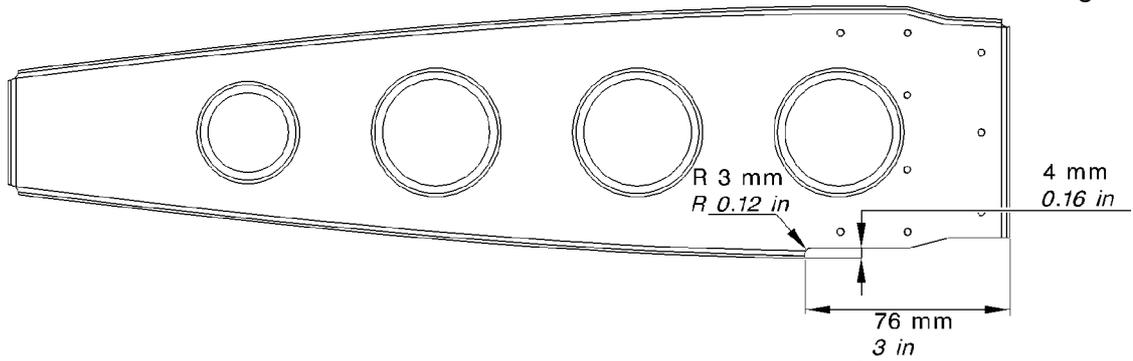


Figure 7 – Type 3 repair

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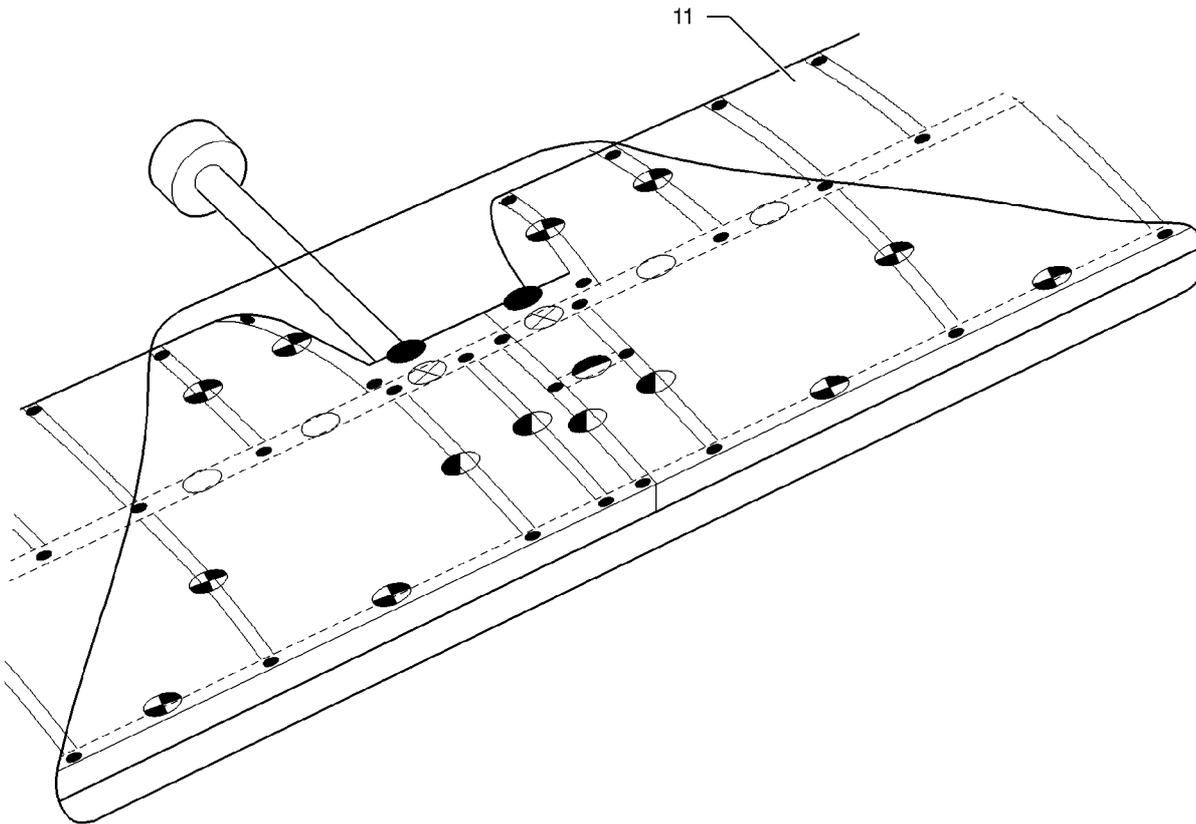
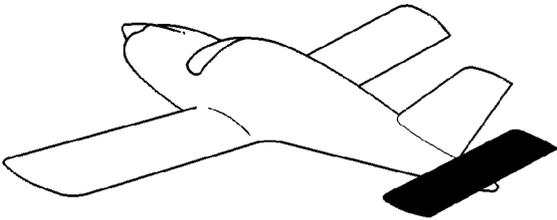
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- 11 – Upper surface skin
- 81 –  Rivet
- 82 –  Rivet
- 83 –  Rivet
- 84 –  Rivet
- 85 –  Rivet
- 86 –  Rivet



4552001AAFPY24600

Figure 8 – TB9 – TB10 – TB200 Installation of rivets on upper surface skin

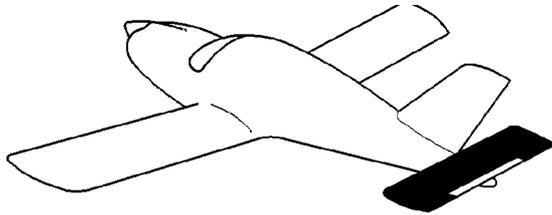
SERVICE BULLETIN

TB AIRCRAFT

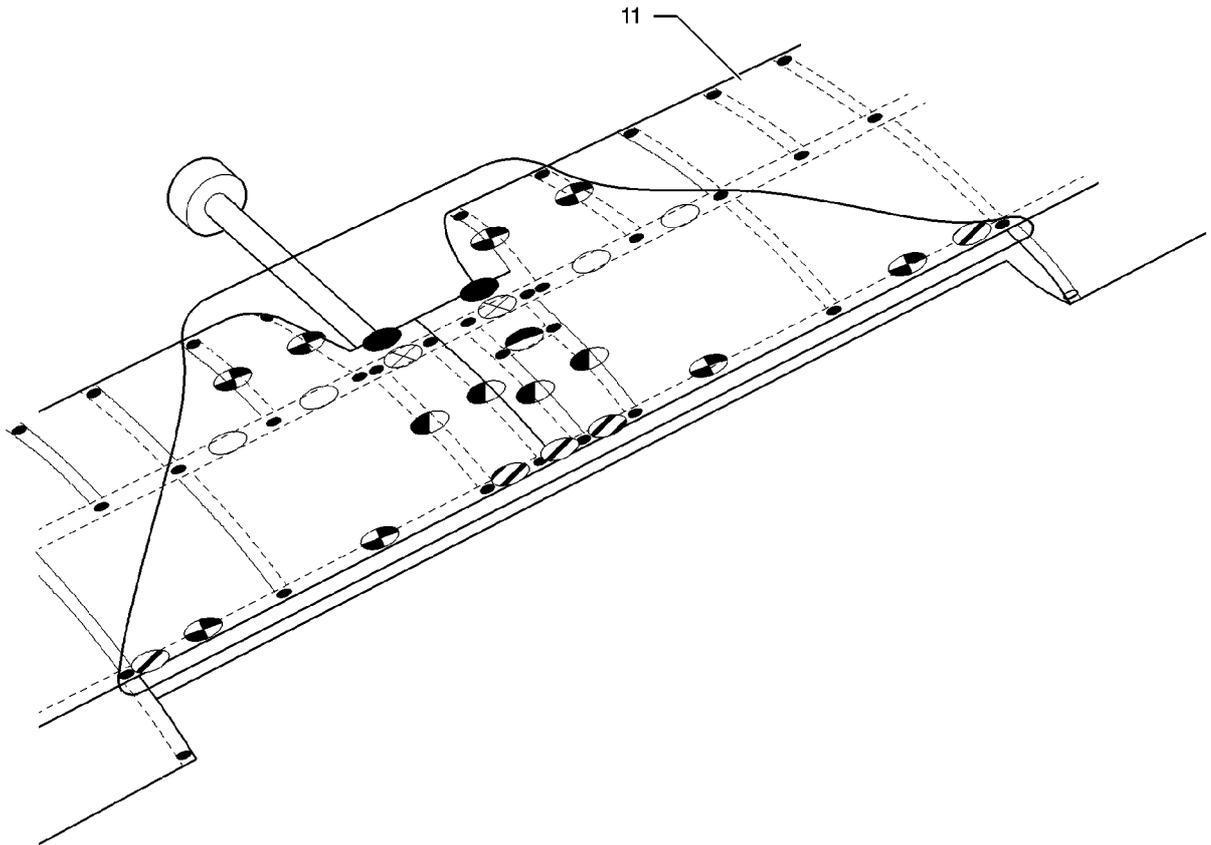
SB 10-152	55
REVISION 1	ATA No.

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- 11 – Upper surface skin
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- 83 –  Rivet
- 84 –  Rivet
- 85 –  Rivet
- 86 –  Rivet
- 87 –  Rivet



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Figure 9 – TB20 – TB21 Installation of rivets on upper surface skin

