57

WINGS

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WINGS

DESCRIPTION AND OPERATION

1. GENERAL

This system consists of wing structural elements and associated components which allow aircraft lift.

The wings consist of :

- the wings,
- the wing tips,
- the flaps,
- the ailerons.

2. LOCATION (Figure 1)

COMPONENT	QTY	AREA	ACCESS DOOR	REFERENCE
Wing	2	500 / 600	/	57-20-00
Wing tip	2	500 / 600	/	57-30-00
Flap	2	500 / 600	/	57-50-00
Aileron	2	500 / 600	/	57-60-00

3. DESCRIPTION

A. Wings - refer to 57-20-00

The wings allow aircraft lift.

Wings characteristics :

Profile RA16-3C3
Aspect ratio 8
Dihedral ..... 4°5
Aerodynamic chord ..... 4.002 ft - 1.220 m
True chord ..... 4.085 ft - 1.245 m
Wing area ..... 128.091 sq.ft - 11.90 m^2
Wing setting ..... + 3°

B. Wing tips - refer to 57-30-00

The wing tips include the navigation lights, the anti-collision lights and the recognition lights.

C. Flaps - refer to 57-50-00

The flaps allow to increase the lift at low speed by modifying the wing profile.

Recoil and slotted type flaps characteristics :

Unit area ..... 10 sq.ft - 0.93 m^2

Mean span ..... 8.366 ft - 2.550 m

D. Ailerons - refer to 57-60-00

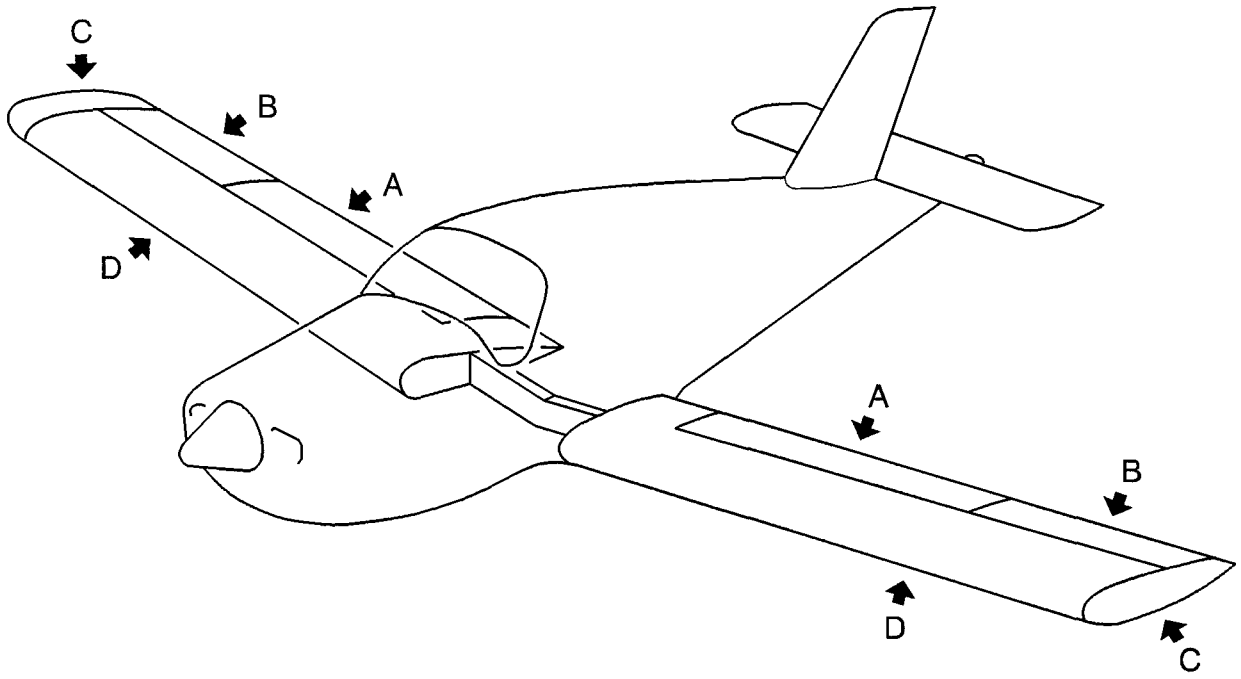
The ailerons allow aircraft maneuver around the roll axis.

Ailerons characteristics :

Unit area ..... 4.897 sq.ft - 0.46 m^2

Mean span ..... 4.081 ft - 1.244 m

A - Flap
B - Aileron
C - Wing tip
D - Wing



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Wings - Identification and location of components
Figure 1

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WINGS

SERVICING

1. REPLACEMENT OF THE ANTI-SKID COATING ON THE WINGS

A. Tools and consumable materials

- Anti-skid coating (TB 05-919)
- Sealant (TB 09-910)
- Hot air generator
- Clean lintfree cloths
- Nylon spatula
- Cleaning agent (TB 11-003)

B. Procedure

1) Moderately heat anti-skid coating (TB 05-919) with a hot air generator to soften the adhesive.
2) De-bond defective anti-skid coating (TB 05-919) with a nylon spatula.
3) Clean the bared surface with clean lintfree cloths moistened with cleaning agent (TB 11-003).
4) Position the new coating to cut out the footstep area.
5) Bond the new anti-skid coating (TB 05-919).
6) Apply sealant (TB 09-910) on the periphery of anti-skid coating (TB 05-919), make an even bead overlapping anti-skid coating (TB 05-919) and wing upper surface.

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WINGS

REMOVAL / INSTALLATION

NOTE : Hoisting can also be used to separate the wings and the fuselage - refer to 07-20-00.

1. REMOVAL OF THE WINGS (Figure 401)

A. Tools and consumable materials

- 1 padded support for frame C0
- 1 padded support for frame C6
- 2 wing padded supports, P / N TB10 99000911
- Blanking caps and plugs
- Clean lintfree cloth
- Cleaning agent (TB 11-003)

B. Procedure

1) Drain fuel tanks - refer to 12-11-02.
2) Remove the rear section of the nose landing gear fairing.
3) Remove the fairings from the main landing gears.
4) Jack up the aircraft - refer to 07-10-00.

CAUTION : TO AVOID DAMAGING THE STRUCTURE, THE SUPPORTS MUST PERFECTLY FIT THE FUSELAGE PROFILE AND HAVE PADDED BEARING AREAS

CAUTION : PAY SPECIAL ATTENTION TO THE ANTI-SPIN FINS

5) Place two padded supports under the fuselage at frames C0 (firewall) and C6 (baggage compartment bottom frame).
6) Remove the cowling under hull 218 and the junction fairings 217L and 217R.
7) Drain the brake hydraulic system - refer to 12-13-02.
8) Disconnect the brake system at wing / fuselage junction. Blank off.
9) Disconnect the fuel system at wing / fuselage junction. Blank off.
10) Disconnect aileron control rods (25) from lever (20), retain bolts (21), washers (22) and nuts (24). Discard cotter pins (23).
11) Uncouple the flap control :

a) Remove and discard cotter pin (5). Remove nut (4), washer (3) and bolt (2).

With "AVIAC" actuators - refer to Detail A, Figure 401 (1/3)

b) Remove nut (9) and washer (8) then, disengage ball joint (7) from lever. Discard nut (9).

Without bearing plate - refer to Detail C, Figure 401 (1/3)

c) Remove bolts (16), tab washers (18), washers (17) and retain half-bearings (12). Discard tab washers (18).

With bearing plate - refer to Detail D, Figure 401 (1/3)

c) Remove bolts (16), tab washers (18), bearing plates (19) and retain half-bearings (12). Discard tab washers (18).

NOTE : Identify bolts (16) of side bearings and of central bearing as their length is different.

12) Disconnect wing electrical connectors (13), (14) and (10) at wing / fuselage junction.

13) Remove three-way union of static system (11) and disconnect the dynamic system at fuselage / wing junction. Blank off.

14) Remove the front seats - refer to 25-11-00 and the side upholstery panels.

15) Remove and discard cotter pins (47) then remove castellated nuts (46) or remove and discard locknuts (45). Remove bolts (40), washers (44) and shims (42).

16) Remove and discard cotter pins (38) then remove castellated nuts (37) or remove and discard locknuts (39). Retain washers (36) and, if installed, thrust washer (31).

17) Remove bolts (33), shims (34) and washers (32).

18) Remove wing root seals (30) located on the wing upper surface at wing / fuselage junction.

19) Hold the wing assembly at both ends and slowly and simultaneously lower the jacks located under each wing until the main landing gear wheels touch the ground.

20) Disengage the wing assembly from the fuselage and install it on two padded supports positioned at two ribs.

2. INSTALLATION OF THE WINGS (Figure 401)

A. Tools and consumable materials

- 1 padded support for frame C0
- 1 padded support for frame C6
- 2 wing padded supports, P / N TB10 99000911
- Blanking caps and plugs
- Grease (TB 04-004A)
- Petrolatum (TB 04-012)
- Red paint
- Adhesive (TB 08-006A)
- Clean lintfree cloth
- Cleaning agent (TB 11-003)
- Teflon tape (TB 05-938)
- Hydraulic fluid (TB 02-001)
- Sealant (TB 09-013A)
- Sealant (TB 09-007)
- Torque wrench 0 - 885 lbf.in (0 - 100 N.m)

B. Procedure

1) Inspect the splices, spacers, fittings and mounting pads for correct condition and torque - refer to 20-00-01.

2) Inspect the wings (spars, splices, spacers, etc.) and the fuselage (skins, tunnel, frames, etc.) for corrosion.

3) Make sure there is a Teflon tape (TB 05-938) on lower face of wing upper surface skin at footstep. Inspect for condition. Replace if necessary.

   a) Remove the Teflon tape and clean the skin with a clean lintfree cloth moistened with cleaning agent (TB 11-003).

   CAUTION : DO NOT TOUCH THE ADHESIVE SIDE OF THE TEFLON TAPE TO AVOID BAD BONDING.

   b) Bond the Teflon tape (TB 05-938) under the wing upper surface skin.

   c) Cut excess Teflon tape (TB 05-938).

4) Inspect the bead of sealant around the spacers for condition. Replace the sealant if necessary - refer to 57-20-03.

5) If necessary, protect the wings splicing and the spacers with sealant (TB 09-007) - refer to 20-00-09.

6) Inspect the anticorrosion protection between the wing root and the rib located at 55.41 in (1406.5 mm) from the aircraft centerline for condition. If necessary, protect with sealant (TB 09-013A) - refer to 20-00-09.

7) Install both centering cups in the holes provided in the wing spar lower surface.

8) Hold the wing assembly at both ends and slide it under the fuselage.

9) Gradually and simultaneously raise the jacks. Make sure that front fittings (43) properly engage into front cross-beam (41) under the fuselage and front and rear spacers (35) properly engage into tunnel fittings under the fuselage.

10) Lubricate bolts and ball ends with grease (TB 04-004A) - refer to 12-21-04.

11) Position the central attachment spacers against the tunnel front face.

12) Measure the gap between spacers (35) and the tunnel rear face.

13) Install suitable shims (34) - refer to Table, Figure 401 (3/3).

14) Install washers (32) and bolts (33).

Post-MOD. 167

15) Measure the dimension between the tunnel and bolt (33). Install thrust washer (31) according to the recommended assembly - refer to Table, Figure 401 (3/3).

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16) Install washers (36) and castellated nuts (37) or new locknuts (39). Torque - refer to 20-00-01. Lock castellated nuts (37) with new cotter pins (38).

17) Measure gap on front fittings - refer to Detail G, Figure 401 (3/3).

18) Install suitable shims (42) - refer to Table, Figure 401 (3/3).

19) Install bolts (40), washers (44) and castellated nuts (46) or new locknuts (45). Torque - refer to 20-00-01. Lock castellated nuts (46) with new cotter pins (47).

20) Connect wing electrical connectors (13), (14) and (10) at wing / fuselage junction.

21) Remove the blanks. Connect the dynamic system and install three-way union of static system (11).

22) Connect the flap control :

CAUTION : DAMAGED BEARINGS MUST BE REPLACED.

a) Inspect half-bearings (12) for condition and deformation and bearing surfaces for wear. Replace them if necessary.

Without bearing plate - refer to Detail C, Figure 401 (1/3)

b) Install half-bearings (12) with bolts (16), washers (17) and new tab washers (18).

With bearing plate - refer to Detail D, Figure 401 (1/3)

CAUTION : BOLTS (16) OF SIDE BEARINGS AND OF CENTRAL BEARING HAVE DIFFERENT LENGTHS.

b) Install half-bearings (12) with bolts (16), bearing plates (19) and new tab washers (18).

With "AVIAC" actuator - refer to Detail A, Figure 401 (1/3)

c) Secure ball joint (7) to the lever with washer (8) and a new nut (9).

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d) Install bolt (2), washer (3), nut (4) and a new cotter pin (5).

23) Connect aileron control rods (25) to lever (20) with bolts (21), washers (22) and nuts (24). Install new cotter pins (23).

24) Remove the blanking plugs. Connect the fuel system at wing / fuselage junction - refer to 20-00-02.

25) Remove the blanking plugs. Connect the brake system at wing / fuselage junction – refer to 20-00-02.

CAUTION : PAY SPECIAL ATTENTION TO THE ANTI-SPIN FINS

26) Remove the two padded supports located under the fuselage.

27) Lower the aircraft to ground and remove the jacks - refer to 07-10-00.

28) Install the front seats - refer to 25-11-00 and the side upholstery panels.

29) Replenish then bleed the brake hydraulic system - refer to 12-13-01.

30) Replenish the fuel tanks - refer to 12-11-01, and check the fuel supply for correct operation - refer to 28-20-01.

31) Check hydraulic unions and fuel unions for leaks.

32) Mark with a red paint line the hydraulic unions, the fuel unions and the bolts and nuts securing the wings to the fuselage.

33) Install the main landing gear fairings.

34) Install the rear section of the nose landing gear fairing.

35) Inspect the anti-skid coating for condition, replace if necessary - refer to Page 301.

Pre-MOD. 151

36) Make sure all the tools and materials are removed and the work area is clean and free from debris.

37) Install the junction fairings 217L and 217R and the cowling under hull 218.

38) Install and, if necessary, bond the wing root seals to the wing upper surface at wing / fuselage junction. Use adhesive (TB 08-006A).

Post-MOD. 151

36) Lubricate the wing root seal bead with petrolatum (TB 04-012).

37) Using a spatula, install the seals on the wing upper surface at wing / fuselage junction.

NOTE : The seal must extend by 7.9 in (200 mm) aft of the wing trailing edge. This extra length must be positioned in the cowling under hull.

38) Make sure all the tools and materials are removed and the work area is clean and free from debris.

39) Install the junction fairings 217L and 217R and the cowling under hull 218.

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40) Close main switch-breaker. Check for correct operation :

Pre-MOD. 151

- the navigation and anti-collision lights - refer to 33-40-02,
- if installed, the heated pitot tube - refer to 30-30-00, and the outside air temperature sensor - refer to 34-13-00,

Post-MOD. 151

- the navigation lights, anti-collision lights and recognition lights (if installed) - refer to 33-40-02,
- the heated pitot tube - refer to 30-30-00, and the outside air temperature sensor - refer to 34-13-00,

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- the stall warning device - refer to 27-30-04,
- the airspeed indicating system - refer to 34-10-00,
- the taxi and landing lights - refer to 33-40-01,
- the fuel indication system - refer to 28-40-00,
- the flaps - refer to 27-50-00.

41) Open main switch-breaker.

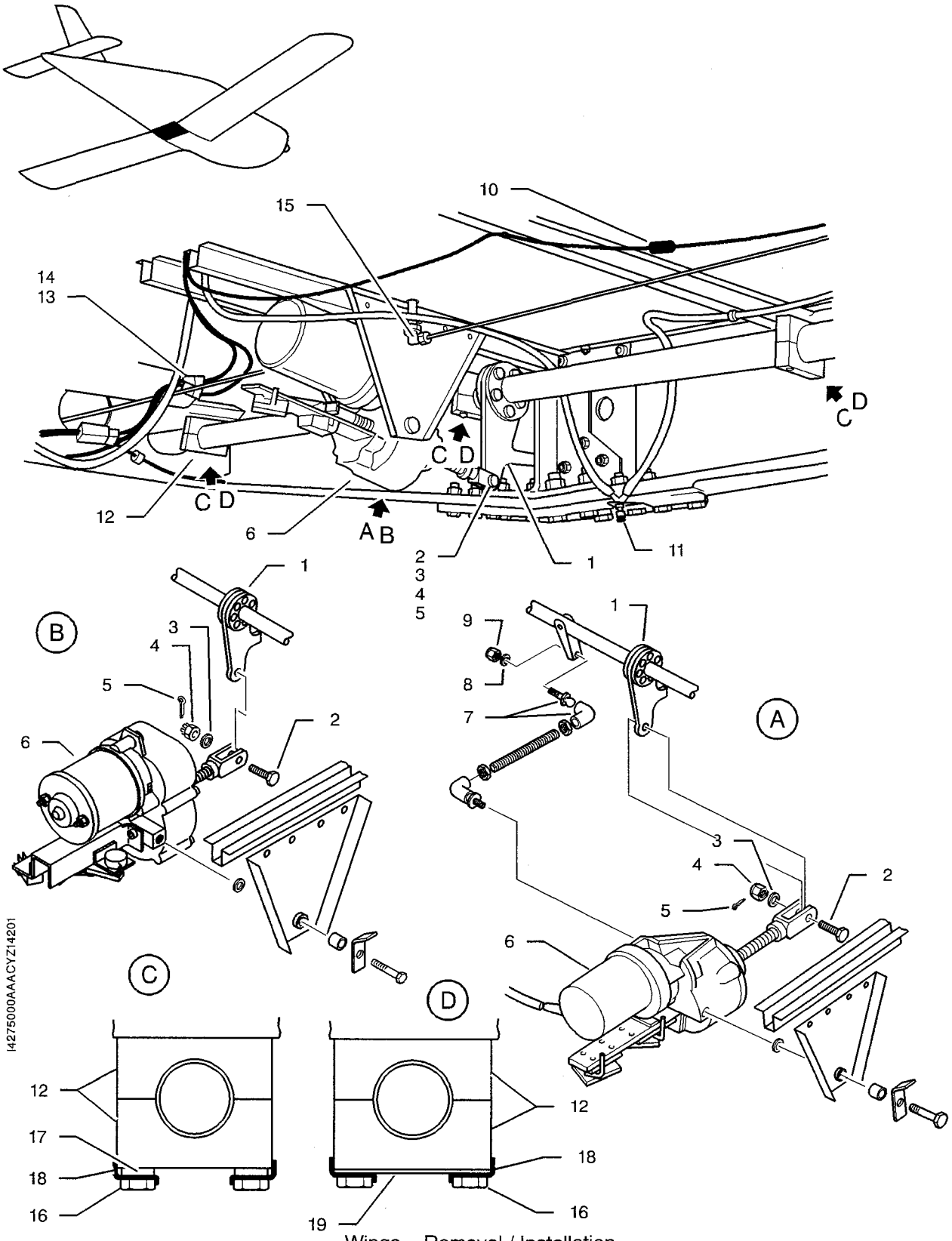
42) Check the roll control linkage for correct operation - refer to 27-10-00.

43) Perform a triangulation check - refer to 51-50-01.

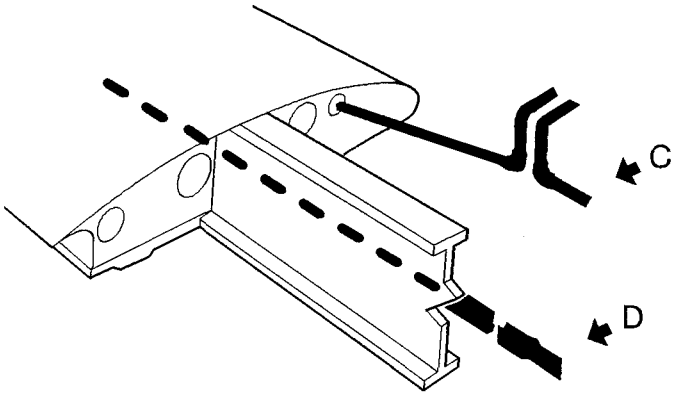
44) Perform a test flight - refer to 05-30-00.

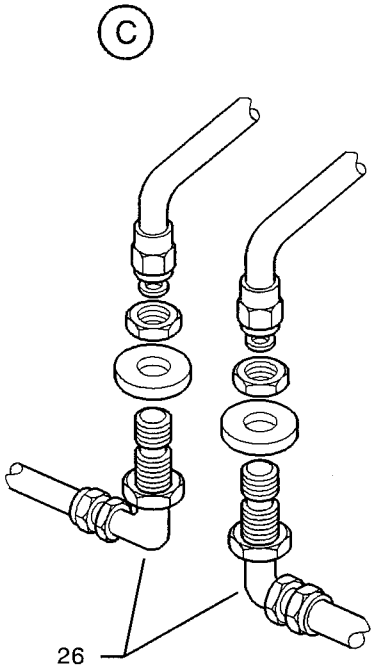
1 - Central lever
2 - Bolt
3 - Washer
4 - Nut
5 - Cotter pin
6 - Actuator
7 - Ball joint
8 - Washer
9 - Nut
10 - Electrical connector
11 - Three-way union of static system
12 - Half-bearing
13 - Electrical connector
14 - Electrical connector
15 - Hydraulic union
16 - Bolt
17 - Washer
18 - Tab washer
19 - Bearing plate
20 - Lever
21 - Bolt
22 - Washer
23 - Cotter pin
24 - Nut
25 - Aileron control rod
26 - Fuel union
30 - Wing root seal
31 - Thrust washer
32 - Washer
33 - Bolt
34 - Shim
35 - Spacer
36 - Washer
37 - Castellated nut
38 - Cotter pin
39 - Locknut
40 - Bolt
41 - Front cross-beam
42 - Shim
43 - Front fitting
44 - Washer
45 - Locknut
46 - Castellated nut
47 - Cotter pin

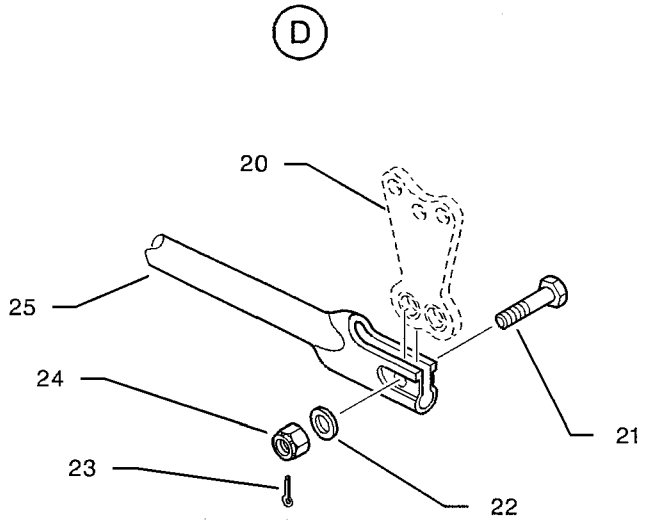
Wings - Removal / Installation
Key to Figure 401



Wings - Removal / Installation
Figure 401 (1/3)







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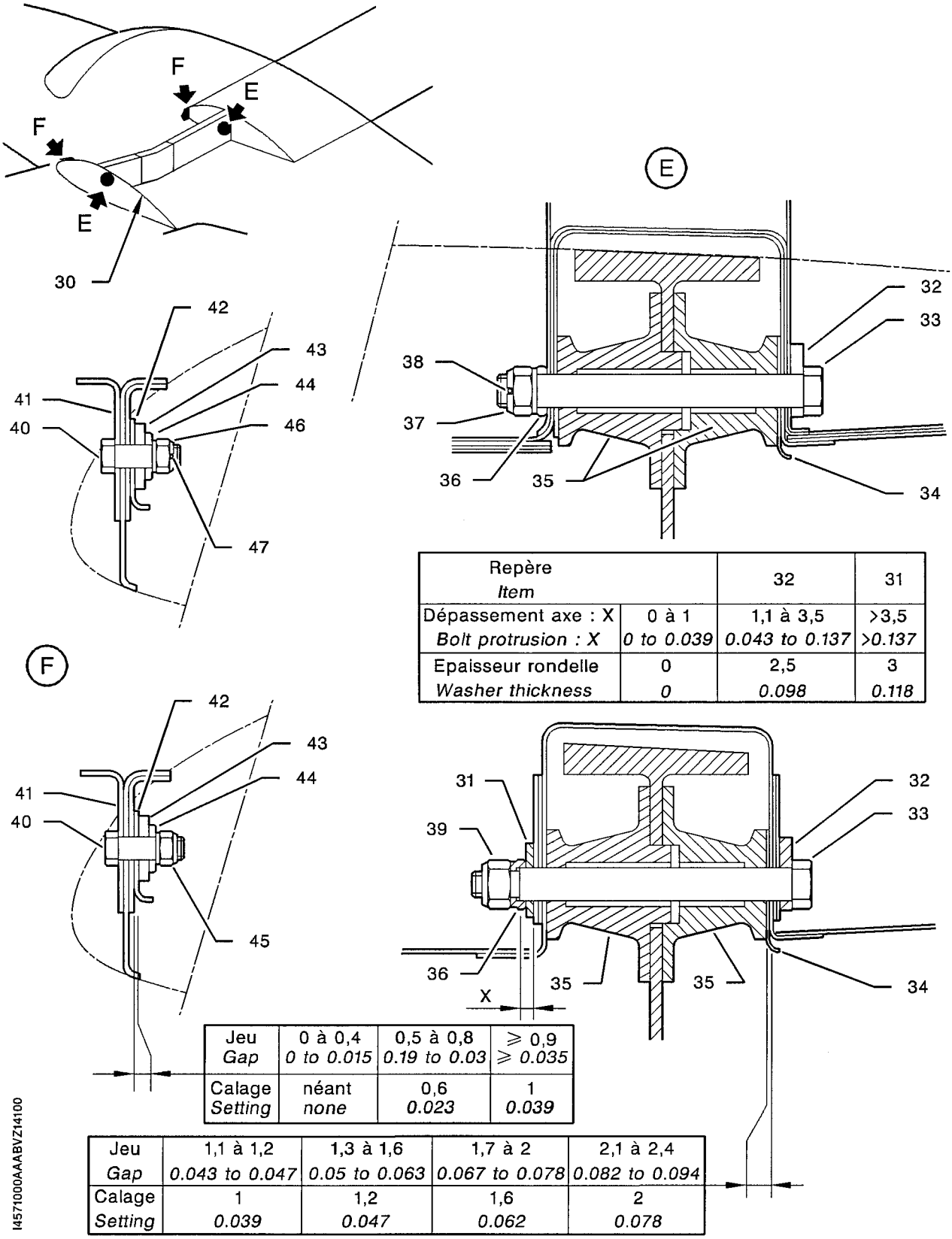
Wings - Removal / Installation
Figure 401 (2/3)



Repère *Item*		32	31
Dépassement axe : X	0 à 1	1,1 à 3,5	>3,5
Bolt protrusion : X	*0 to 0.039*	*0.043 to 0.137*	*>0.137*
Epaisseur rondelle	0	2,5	3
Washer thickness	*0*	*0.098*	*0.118*

Jeu *Gap*	0 à 0,4 *0 to 0.015*	0,5 à 0,8 *0.19 to 0.03*	⩾ 0,9 *⩾ 0.035*
Calage *Setting*	néant *none*	0,6 *0.023*	1 *0.039*

Jeu *Gap*	1,1 à 1,2 *0.043 to 0.047*	1,3 à 1,6 *0.05 to 0.063*	1,7 à 2 *0.067 to 0.078*	2,1 à 2,4 *0.082 to 0.094*
Calage *Setting*	1 *0.039*	1,2 *0.047*	1,6 *0.062*	2 *0.078*

Wings - Removal / Installation
Figure 401 (3/3)

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WINGS

INSPECTION / CHECK

NOTE : This procedure is applicable to L.H. and R.H. installations. Information specific to R.H. installation are given in square brackets.

1. INSPECTION - WINGS

A. Tools and consumable materials

- Flashlight
- Swivel inspection mirror
- Borescope
- Cleaning agent (TB 11-002)
- Cleaning agent (TB 11-019)
- Cleaning agent (TB 11-904)
- Cleaning agent (TB 11-905)
- Clean lintfree cloths

B. Preliminary steps

NOTE : The inspection must be carried out once the areas to be inspected (upper and lower surface skins, splicing area, etc.) have been carefully cleaned.

1) Perform an external inspection of the fuel tanks, with full fuel - refer to 28-10-00.
2) Drain the fuel tanks - refer to 12-11-02.
3) Ventilate the fuel tanks - refer to 12-11-03.
4) Remove junction fairing 217L [217R] - refer to 06-30-00.
5) Remove the cowling under hull 218 - refer to 06-30-00.
6) If installed, remove wing / main landing gear junction fairings 731 [741] - refer to 06-30-00.
7) Remove the wing tips - refer to 57-30-00.

   NOTE : If the wing tips are riveted, remove the rivets.

8) Extend the flaps.
9) Install the warning sign prohibiting main switch-breaker operation.

WARNING

DO NOT OPERATE
MAINTENANCE WORK IN PROGRESS

10) Remove all wing inspection doors - refer to 52-40-00.

NOTE : To facilitate the inspection, it is recommended to install two additional doors on the wing lower surface, between N5 and N6 ribs (if not installed) aft of the spar, and between N9 and N10 ribs forward of the spar. Order Kits OPT10 918700 and 918800.

11) Remove and mark the rods of the roll control in the wings.

12) Remove the anti-skid coating on the wing - refer to Page 301.

C. Inspection of the wings

NOTE : If symptoms of corrosion (blisters, tulip-deformed rivets, etc.) are detected, especially along the spar and in particular in the N1 to N4 area (wing lower and upper surfaces), perform a corrosion inspection - refer to Paragraph 2.

1) Inspect the overall external appearance of the upper and lower surface skins for :

- impacts, distortions, scratches, cracks and blisters due to corrosion (especially in the spar aera),
- loose rivets,
- overall condition of the paint, especially around rivet heads,
- correct condition and positioning of the wing root seal,

With trailing arm main landing gear

- condition and security of the upper surface fitting,

All

- lower surface skin distortions, in the area of the main landing gear plate,
- security of the main landing gear on the lower surface skin,
- tightening of the upper and lower surface screws on the spar, on wing root side,
- blockage of the drain tubes,
- blockage of the fuel tank vent tube,
- condition and security of the outside air temperature sensor, if installed,
- condition and security of the pitot tube,
- condition and security of the stall warning indicator,
- condition and security of the transparent covers of the landing and taxi lights,
- condition of the trailing edge closing plate and loose rivets,
- condition and correct security of the electrical harness and the pitot tube hose along the closing plate.

2) Inspect the junction of both spars for :

- evidence of impacts, cracks and corrosion,

  NOTE : In case of doubt on the presence of a crack, perform a fluorescent penetrant inspection - refer to 20-00-14.

- tightening of the nuts securing the upper, lower, front and rear splices,
- condition and security of the static port three-way union support,
- presence of a coat of sealant (TB 09-007) over the area.

3) Inspect the spacers for :

- impacts, cracks and evidence of corrosion,

  NOTE : In case of doubt on the presence of a crack, perform a fluorescent penetrant inspection – refer to 20-00-14.

- tightening of the attachment nuts,

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- presence of a bead of sealant (TB 09-002A) around the spacer, on spar side,
- protection of the spacers with sealant (TB 09-007).

4) Inspect wing front attachment for :

- distortions, impacts, cracks and evidence of corrosion,
- tightening of the attachment nuts on the small spar,

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- presence of sealant (TB 09-916) between the parts,

All

- cracks, evidence of corrosion and loose rivets on the small spar and the brackets,
- tightening of the nut securing the front attachment to the fuselage,
- cracks, evidence of corrosion and loose rivets on the brackets reinforcing frame C1.

  NOTE : In case of doubt on the presence of a crack, perform a fluorescent penetrant inspection - refer to 20-00-14.

TB 10 and TB 200

5) Inspect wing rear attachment for :

- distortions, impacts, cracks and evidence of corrosion on the rear fitting (wing side), the rod and the half-fittings (fuselage side),

  NOTE : In case of doubt on the presence of a crack, perform a fluorescent penetrant inspection - refer to 20-00-14.

- tightening of the two nuts securing the rod to the rear fitting and the half-fittings,
- tightening of the bolts securing the half-fittings to the fuselage,

Rear fitting secured with blind rivets

- loose rivets,

Rear fitting secured with bolts and nuts

- tightening of the bolts,

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- installation of the fittings with sealant (TB 09-916).

All

6) Inspect flap and aileron arm assemblies for :
   - distortions, impacts, cracks and evidence of corrosion,

     NOTE : In case of doubt on the presence of a crack, perform a fluorescent penetrant inspection - refer to 20-00-14.

   Attachment with rivets

   - loose rivets,

   Attachment with bolts

   - tightening of the nuts,

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   - presence of sealant (TB 09-916) between the arm assembly and the rib.

7) Carefully inspect each box for :

   NOTE : Depending on accessibility, each box must be inspected either with a swivel mirror and a flashlight or with a borescope.

   - distortions, impacts, cracks and evidence of corrosion between the rib and the skin,
   - loose rivets,
   - impacts, cracks and evidence of corrosion between the spar and the skin,

   Sealed areas

   - coating of the spar flanges and the flanged edges of the ribs with sealant (TB 09-001A),

   Non-sealed areas from N1 rib to N4 rib

   S / N 1607, 1615 - 1626, 1628 - 9999

   - coating of the spar flanges with sealant (TB 09-013A) or (TB 09-918),

   All areas

   - security and condition of the fuel tube support on N1 rib,
   - correct routing of the fuel tube from N4 rib to the filter selector,

Telescopic leg main landing gear

- routing and security of the brake tube, from N1 rib to the union secured to the landing gear body,

Trailing arm main landing gear

- routing and security of the brake tube, from N1 rib to the union secured to the lower surface,

All

- security of the main landing gear on N2 and N3 ribs,
- distortions, loose rivets, cracks and evidence of corrosion on N2 and N3 ribs, with special attention to the main landing gear attachment area,
- distortions, loose rivets, cracks and evidence of corrosion of the roll control bellcranck support between N3 and N4 ribs,
- presence of protection edgings on the clearing holes and the sharp edges at cable and brake tube passages,
- condition and security of the tank vent tube/hose and presence and condition of the grommets,
- security and routing of the wires with clamps or wire retainers and tie-wraps,
- if installed, condition, security and sealing of the low level detector,
- condition, security and sealing of the fuel gages,
- distortions, loose rivets, cracks and evidence of corrosion of the roll control bellcrank support between N8 and N9 ribs.

D. Final steps

1) Make sure all the tools and materials are removed and the work area is clean and free from debris.
2) Bond the anti-skid coating - refer to Page 301.
3) Install the roll control rods as marked during removal.
4) Make sure the roll control moves freely.
5) Install the wing inspection doors - refer to 52-40-00.
6) Install the wing tips - refer to 57-30-00.
7) Install the cowling under hull 218.
8) Install junction fairing 217L [217R].
9) If removed, install wing / main landing gear junction fairings 731 [741].
10) Remove the warning sign prohibiting main switch-breaker operation.
11) Retract the flaps.
12) Replenish the fuel tanks - refer to 12-11-01.
13) Perform a test run-up - refer to 05-30-02.

2. CORROSION INSPECTION OF THE SPAR / SKINS INTERFACE FROM N1 RIB TO N4 RIB (Figures 601, 602, 603, 604, 605, 606 and 607)

A. Tools and consumable materials

- Corrosion inspection ruler TB81105Z TB20 11990003 or metrology ruler
- Feeler gage set
- 6 x magnifying glass
- Mobile lighting equipment
- Cleaning agent (TB 11-002)
- Waterproof compound (TB 05-027)
- Clean lintfree cloths

B. Visual examination

NOTE 1 : The examination must be performed once the wing upper and lower surface skins have been thoroughly cleaned.

NOTE 2 : This examination may be replaced by an eddy current test, for users having such equipment at their disposal. The experience tends to demonstrate that, with eddy current testing, the value read is doubled with respect to a visual inspection - refer to Figure 602.

NOTE 3 : This procedure is applicable to the wing upper and lower surface skins. Information specific to the lower surface is given in square brackets.

1) Position ruler (15) at wing root on the upper surface skin [lower surface skin] in the spar area and lengthways - refer to Figure 607.
2) With horizontal lighting, slide the ruler over the entire width of the spar, and scan the area in this way up to N4 rib.
3) Visually check the evenness of the distance between the ruler and the skin.
4) If a defect (blister) is detected, move ruler (15) sideways and lengthways to determine the surface of the defect and mark its outline on the skin.
5) Using a feeler gage set, measure the height of the defect.
6) Depending on the height of the defect, determine the required solution :
   - for a defect < 0.0078 in (< 0.2 mm), no corrective action, the defect is certainly due to padding,
   - for a defect < 0.0118 in and ≥ 0.0078 in (< 0.3 mm and ≥ 0.2 mm), record the readings for annual follow-up, to check for possible evolution. If acessible, perform a preventive treatment with waterproof compound (TB 05-027),
   - for a defect ≥ 0.0118 in (≥ 0.3 mm), perform a thorough examination - refer to Paragraph C.

C. Thorough examination

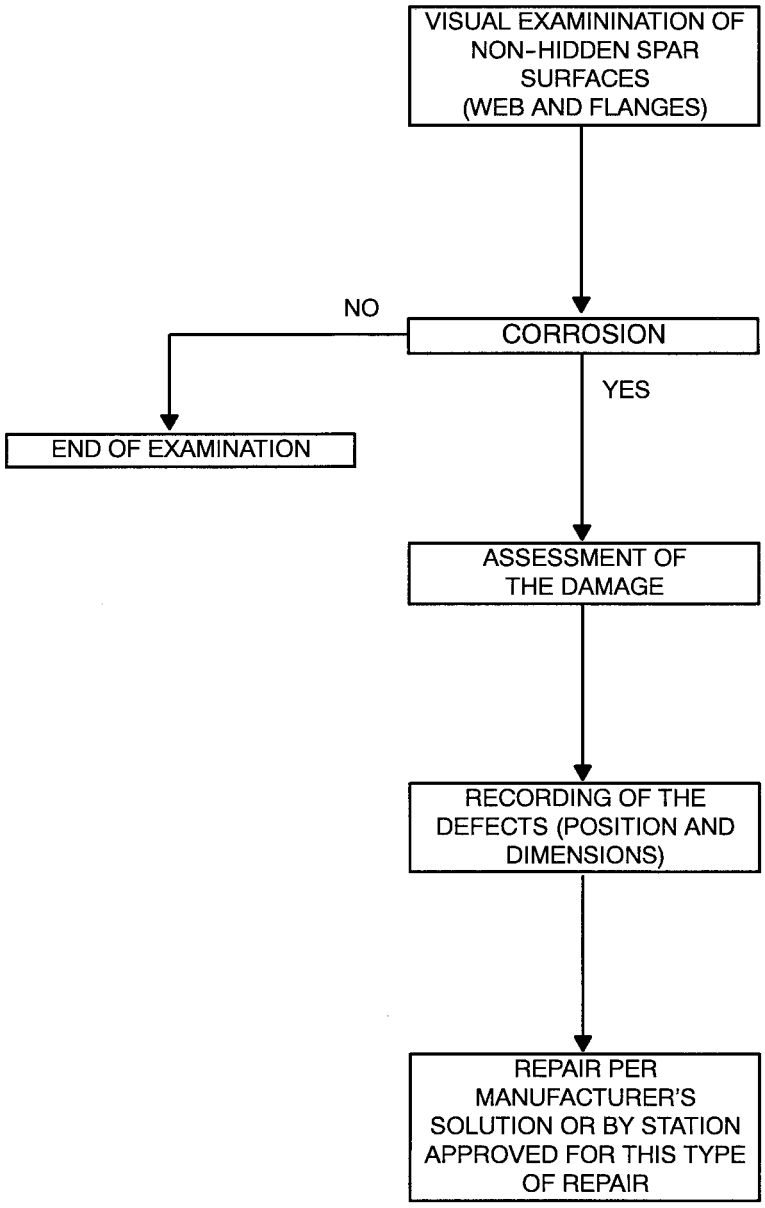
1) Depending on the extent of the suspected corrosion, partially open (core sampling, window...) or completely open the skin concerned.

   NOTE : Core sampling consists in cutting out the skin over a diameter of 0.78 in (20 mm), taking as an axis the tip of the distortion.

2) Measure the depth of the defect.

3) Record the defects (position and dimensions) and contact the manufacturer or a station approved for this type of repair.

NOTE : If no evidence of corrosion is detected, apply the blanking solution on the core sample area - refer to Page 801.

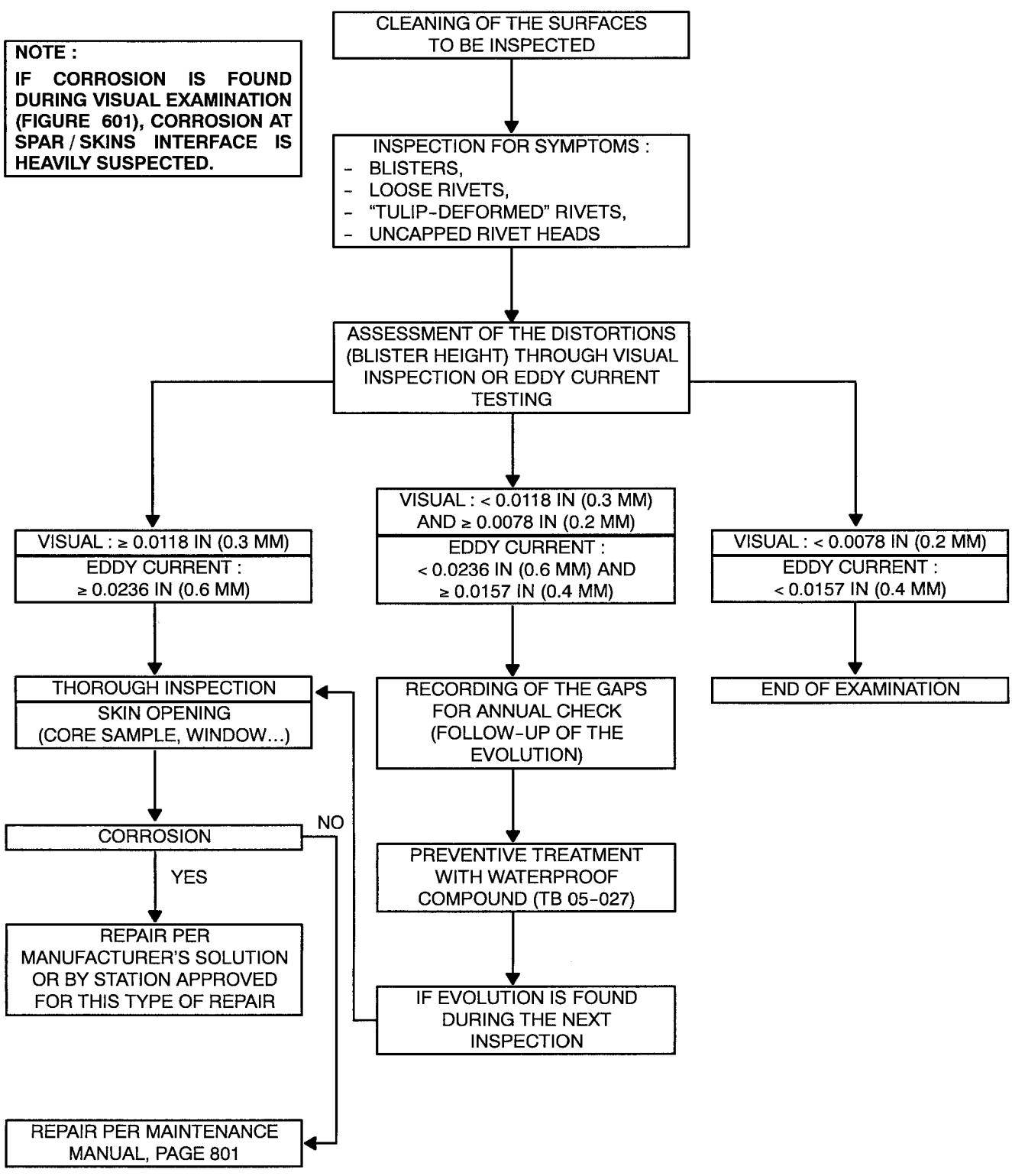


CAUTION

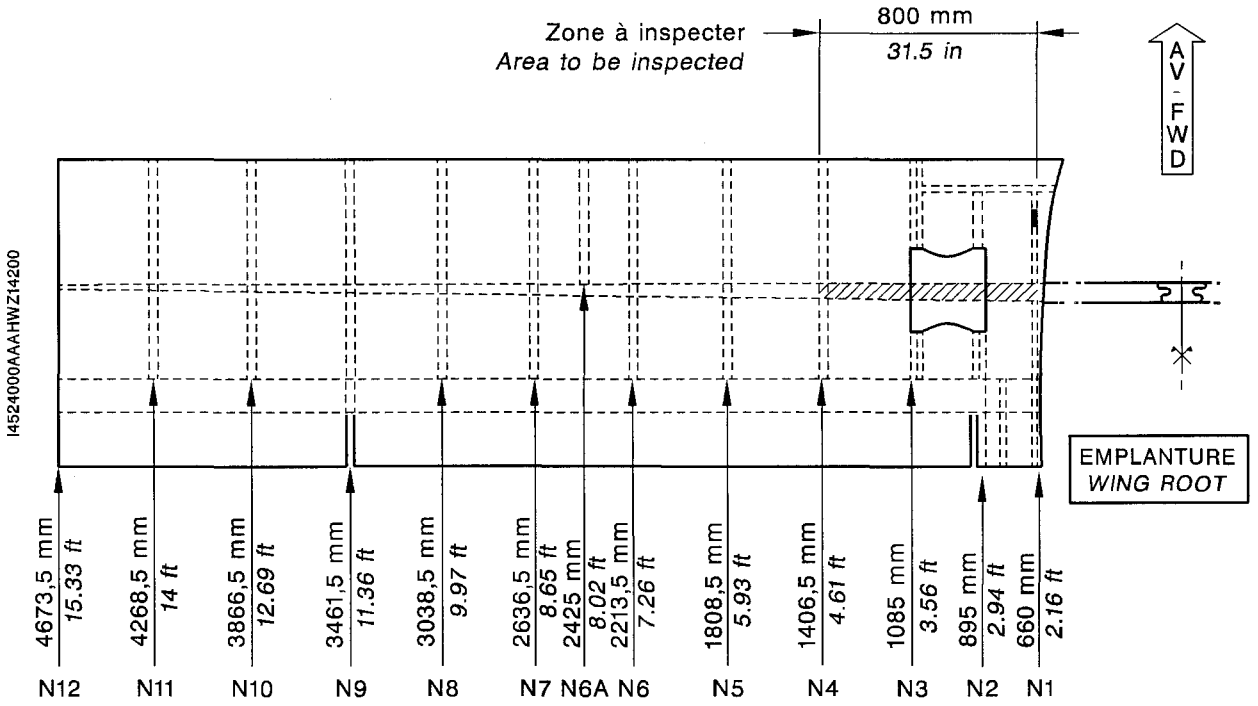
FOR AIRCRAFT WHOSE SERIAL NUMBER IS IN ACCORDANCE WITH SERIAL NUMBERS DESCRIBED IN CHAPTERS 05-20-01, 05-20-04, 05-20-05 OR 05-20-06, PERFORM A THOROUGH EXAMINATION OF THE SPAR FLANGE / SKINS JUNCTION.

IF CORROSION IS DETECTED ON THE SPAR FLANGES OR WEB, CORROSION AT SPAR / SKINS INTERFACE IS HEAVILY SUSPECTED.

Corrosion inspection (box interior) - Visual examination
Figure 601

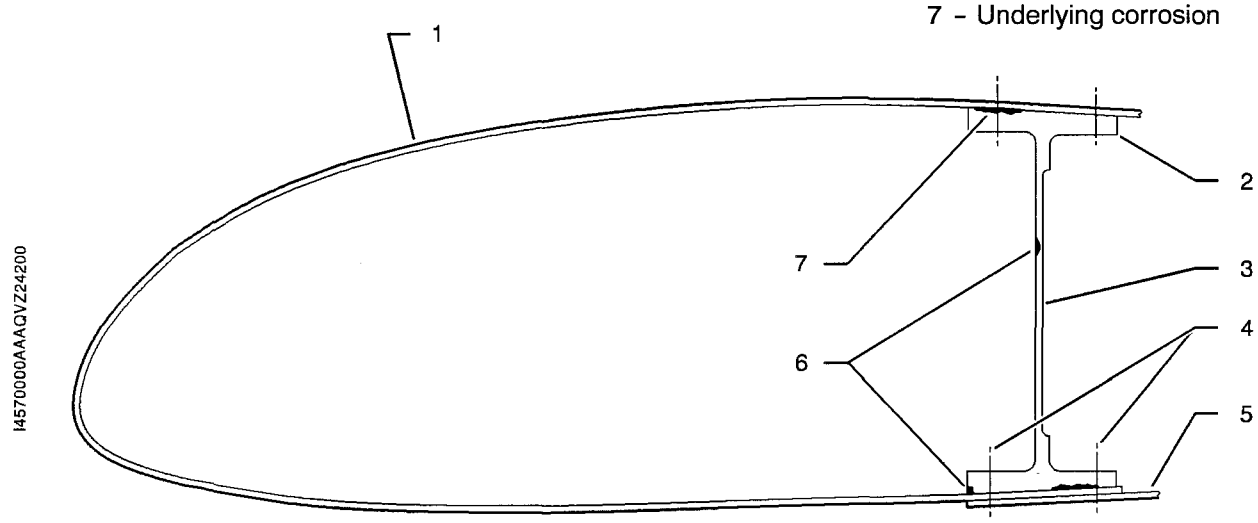


Corrosion inspection (spar / skins interfaces) - Thorough examination
Figure 602



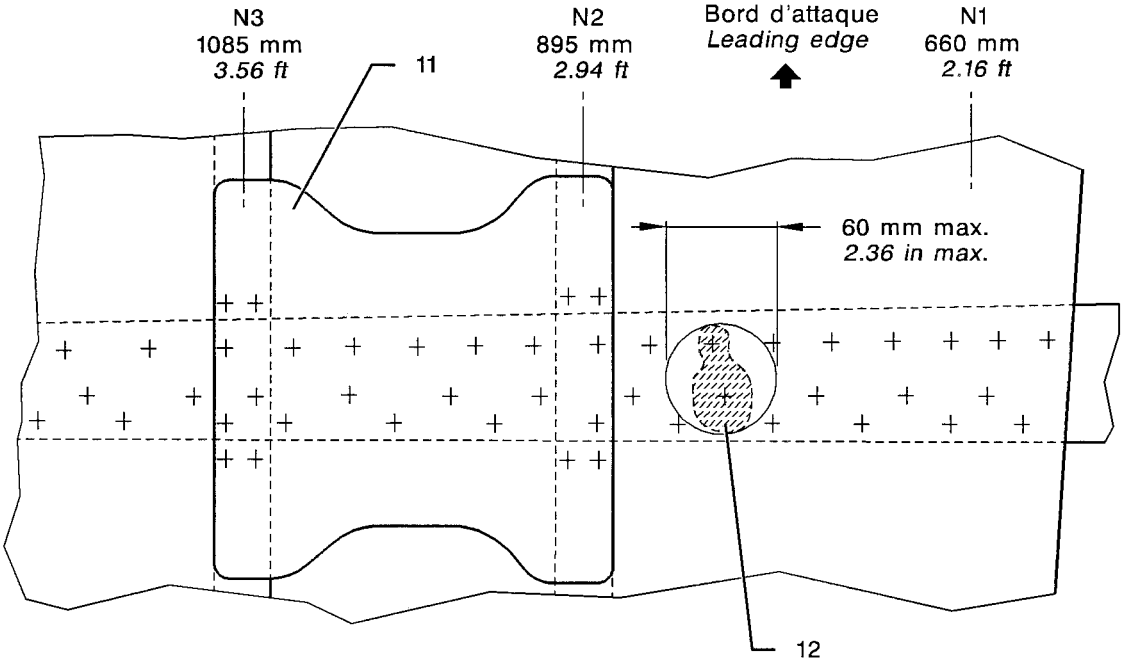
Corrosion inspection - Area to be inspected
Figure 603

1 - Wing upper surface skin
2 - Spar flange
3 - Spar web
4 - Rivet
5 - Wing lower surface skin
6 - Visible corrosion
7 - Underlying corrosion



Corrosion inspection - Type of defect
Figure 604

11 - Stiffener
12 - Example of corrosion



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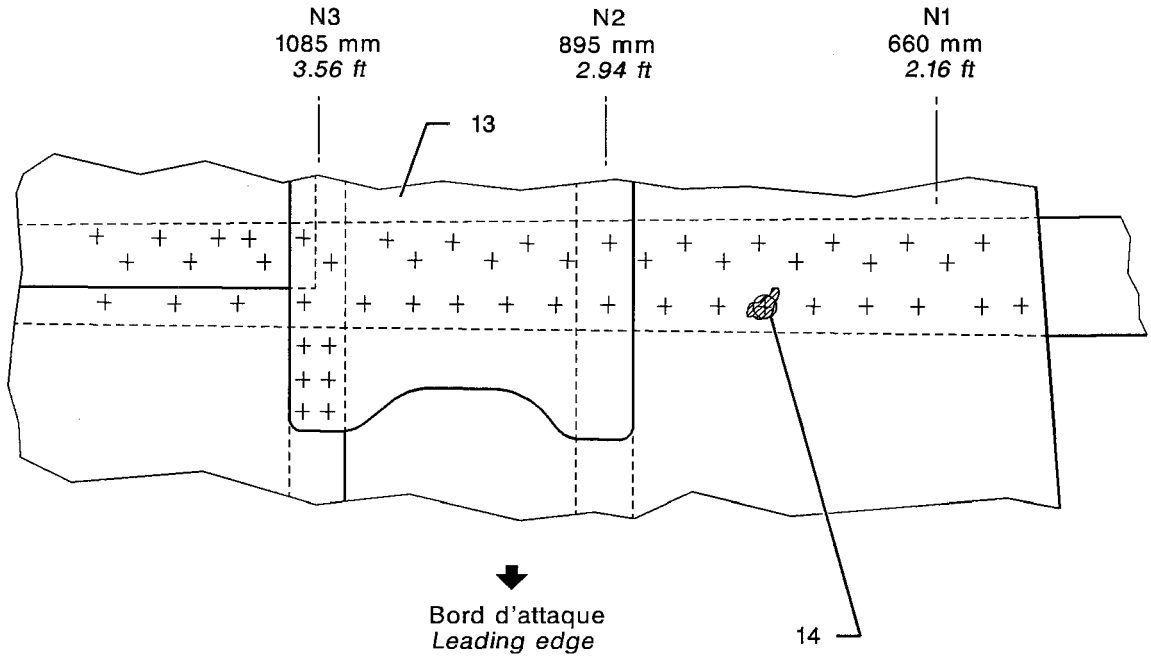
Corrosion inspection (spar / skins interfaces) - Wing upper surface
Figure 605

13 - Stiffener
14 - Core sample



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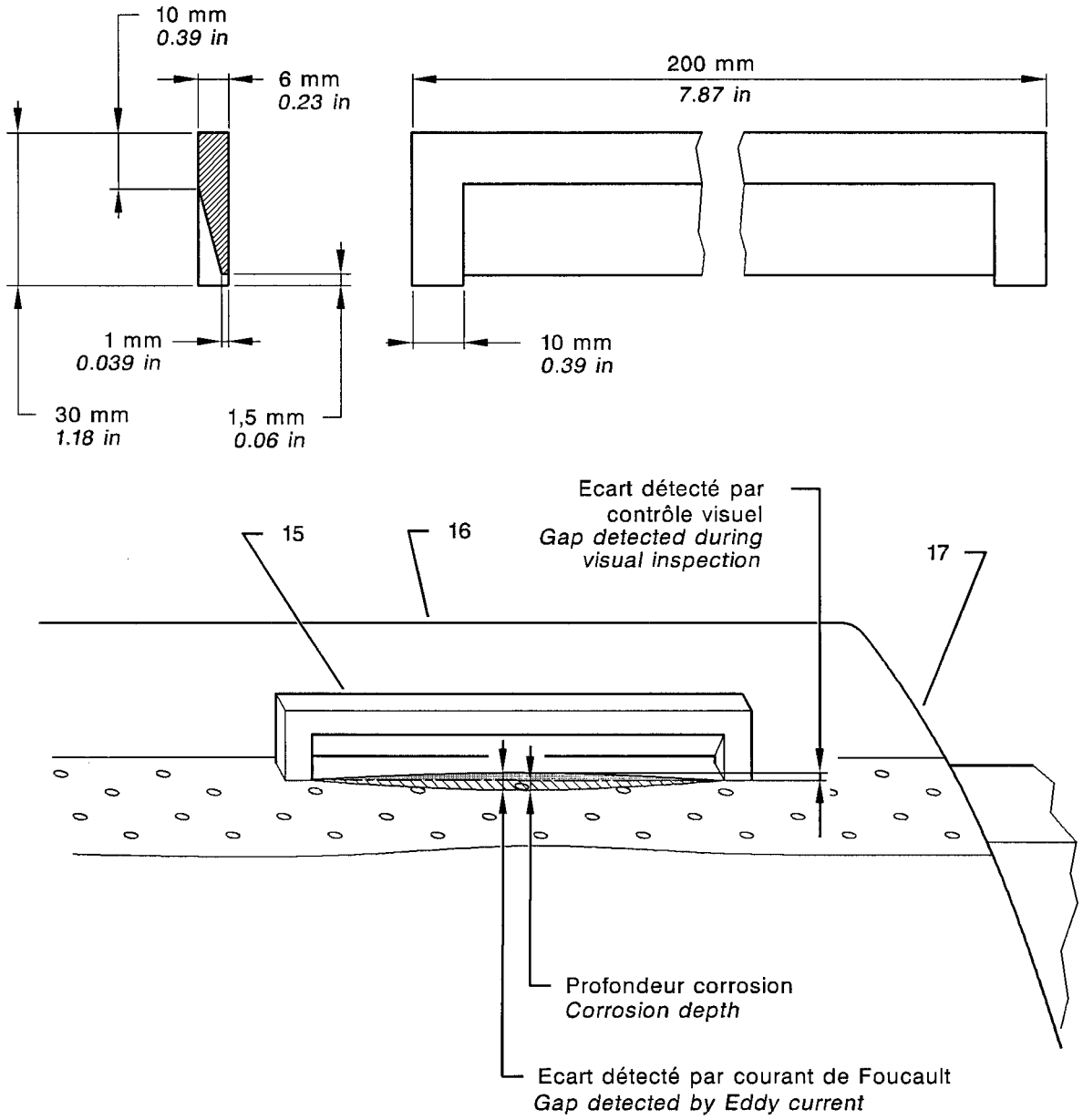
Corrosion inspection (spar / skins interfaces) - Wing lower surface
Figure 606

15 - Ruler
16 - Leading edge
17 - Wing root



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Corrosion inspection (spar / skins interfaces) - Visual examination
Figure 607

WINGS

REPAIR

NOTE : Apply a protection treatment - refer to 20-00-04, to all metal parts which have been bared during repair operations.

1. REPAIR - WRINKLED SKIN, LEADING EDGE BOX, WING ROOT AREA

A. Tools and consumable materials

- A rib P / N TB10 11016100 or a stiffener (2), see Figure 802 for fabrication details
- A R.H. shim (3), see Figure 802 for fabrication details
- A L.H. shim (4), see Figure 802 for fabrication details

- 2 screws	Z00.N5122683194	(15)
- 2 screws	Z00.N5122683084	(10)
- 2 screws	Z00.N5122683087	(13)
- 2 screws	Z00.N5122683099	(14)
- 2 washers	Z00.N5701039240	(16)
- 6 washers	Z00.N5701039160	(11)
- 2 nuts	Z00.N5401458239	(17)
- 6 nuts	Z00.N5401458159	(12)
- 8 rivets	Z00.N5528371382	(8)
- 18 rivets	Z00.N5529308001	(19) and (21)
- 1 rivet	Z00.N5529308004	(5)

B. Procedure (Figure 801)

1) Remove the wings - refer to 57-00-00.
2) Inspect the fitting of front attachment (7) on the fuselage, make sure that there are no screw head marks in the bent sections.
3) Remove wing upper surface stiffener (20) forward of footstep area.
4) Flatten the wrinkled area of the skin.
5) Install intermediate stiffener (2) with blind rivets (21).

   NOTE : Stiffener (2) is to be cut from a rib P / N TB10 11016100 or fabricated from a sheet - see Figure 802 for fabrication details.

6) Drill a hole with a drill No. 22 (dia. 4 mm) to install rivet (5) attaching the wing root half-ribs.
7) Using a drill No. 22 (dia. 4 mm), drive out rivet (6) and flat round head rivets (18) and (9).
8) Counterdrill both holes (a) with a drill No. 9 (dia. 5 mm).
9) Install R.H. shim (3) and L.H. shim (4) on wing root rib (1). Replace flat round head rivets dia. 0.157 in (4 mm) with screws (10), (13), (14) and (15), washers (11) and (16), nuts (12) and (17).

10) Replace the 8 rivets dia. 0.126 in (3.2 mm) (8) securing, on the upper surface, the skin to the front small spar with flat round head rivets (AU4G) dia. 0.157 in (4 mm) P / N Z00.N5528371382.

NOTE : Some aircraft are already factory-fitted with rivets dia. 0.157 in (4 mm) on wing lower surface.

11) Plug skin holes (b) with blind rivets (21).

12) Vacuum-clean any chips from the leading edge box.

13) Make sure all the tools and materials are removed and the work area is clean and free from debris.

14) Perform paint touch-ups - refer to 20-00-03.

15) Install the wings - refer to 57-00-00.

2. REPLACEMENT - MAIN LANDING GEAR SUPPORT RIBS (Figures 803 and 804)

A. Tools and consumable materials

- 1 L.H. rib (double) / L.H. wing	TB10 11008003	
- 1 R.H. rib (double) / L.H. wing	TB10 11008004	
- 1 L.H. rib (double) / R.H. wing	TB10 11008003	
- 1 R.H. rib (double) / R.H. wing	TB10 11008004	
- Washer	Z00.N5701039515	(5)
- Rivets	Z00.N5528340283	(E)
- Rivets	Z00.N5528371397	(D)
- Rivets	Z00.N5561357267	(B)
- Rivets	Z00.N5561357325	(C)
- Rivets	Z00.N5529308006	(A)
- Rivets	Z00.N5529308008	(A')
- Rivets	Z00.N5536342404	(F)
- Rivets	Z00.N5536342406	(G)
- Rivets	Z00.N5548340286	(H)

NOTE : Quantities as required.

B. Procedure

1) Remove the main landing gear from the damaged wing - refer to 32-10-00.

2) Unrivet the trailing edge.

3) Unrivet the main landing gear support rib(s) to be replaced.

4) For rib installation, two cases can be considered :

a) rivet counterdrilling during removal is correct (appropriate hole diameter) : install rivets identical to those previously used

b) rivet counterdrilling during removal shows elongated holes or holes with a diameter greater than the nominal diameter :

- area A' : counterdrill the holes with a drill No. 10 (dia. 4.9 mm) and install Brazier head blind rivets dia. 0.189 in (4.8 mm) P / N Z00.N5529308008
- areas B, C, D, E, F, G, H : install rivets identical to those previously used, but add two additional rivets of the same type around the rivet(s) whose hole(s) is(are) defective - see Detail, Figure 803.

5) Install and secure the rib

a) Rivet the rib to the spar with :

(A) - Brazier head blind rivets or - bolt NSA 5041C2-4 + nut NSA 5076-5	dia. 0.157 in (4 mm)	Z00.N5529308006
(A') - Brazier head blind rivets or - bolt NSA 5041C3-4 + nut NSA 5076-6	dia. 0.189 in (4.8 mm)	Z00.N5529308008

b) Rivet the rib to the wing upper surface with :

CAUTION : DOUBLE RIB RIVETING AT THE WING UPPER SURFACE AT THE REINFORCEMENT PLATE LEVEL - SEE DETAIL X, FIGURE 804

(B) - Countersunk rivets	dia. 0.126 in (3.2 mm)	Z00.N5561357267
(C) - Countersunk rivets	dia. 0.142 in (3.6 mm)	Z00.N5561357325
(D) - Flat round head rivets	dia. 0.157 in (4 mm)	Z00.N5528371397
(E) - Brazier head rivets	dia. 0.126 in (3.2 mm)	Z00.N5528340283
(H) - Countersunk rivets	dia. 0.126 in (3.2 mm)	Z00.N5548340286

NOTE : Cut rivets (B), (C), (D), (E) and (H) to length.

c) Rivet the rib to the wing lower surface with :

(C) - Countersunk rivets	dia. 0.142 in (3.6 mm)	Z00.N5561357325
(D) - Flat round head rivets	dia. 0.157 in (4 mm)	Z00.N5528371397
(E) - Brazier head rivets	dia. 0.126 in (3.2 mm)	Z00.N5528340283

NOTE : Cut rivets (C), (D) and (E) to length.

d) Rivet the rib to the rear small spar with :

(F) - Brazier head blind rivets	dia. 0.126 in (3.2 mm)	Z00.N5536342404
(G) - Brazier head blind rivets	dia. 0.126 in (3.2 mm)	Z00.N5536342406

6) Clean the inside of the wings.

7) Make sure all the tools and materials are removed and the work area is clean and free from debris.

8) Perform finish paint touch-ups - refer to 20-00-03.

CAUTION : A WASHER (5) P / N Z00.N5701039515 MUST BE INSTALLED.

9) Install the main landing gear - refer to 32-10-00.

3. REINFORCEMENT - MAIN LANDING GEAR SUPPORT RIBS (Figure 805)

CAUTION : THIS REINFORCEMENT MUST BE PERFORMED ON BOTH RIBS LOCATED AT 35.24 in (895 mm) AND 42.72 in (1085 mm)

A. Tools and consumable materials

- Kit OPT10 910800 composed of :

. 1 L.H. inner reinforcement plate	TB10 11008100	(10)
. 1 R.H. inner reinforcement plate	TB10 11008100	(2)
. 1 L.H. outer reinforcement plate	TB10 11008102	(9)
. 1 R.H. outer reinforcement plate	TB10 11008102	(3)
. 2 shims	TB10 11008104	(1)
. 10 bolts	Z00.N5101229174	(8)
. 10 washers	Z00.N5701039240	(11)
. 10 locknuts	Z00.N5401458239	(12)
. 1 "Z" washer	Z00.N5701039515	(4)
. 1 locknut	Z00.N5401458520	(5)
. Rivets	Z00.N5548340238	(6)
. Rivets	Z00.N5548340241	(6)
. Rivets	Z00.N5528340238	(6)
. Rivets	Z00.N5528340241	(6)

B. Procedure

1) Remove the main landing gear from the damaged wing - refer to 32-10-00.
2) Unrivet and discard both support shims (13). Counterdrill rivets (14) with a drill No. 12 (dia. 4.8 mm).
3) Drive out rivets (6) with a drill dia. 1/8" (3.2 mm).
4) Install both inner reinforcement plates (2) and (10) and both outer reinforcement plates (3) and (9) on the ribs, temporarily secure them to the upper surface with pins.
5) Install both new shims (1) on the inner reinforcement plates, center the shims / reinforcement plates assembly on the ribs using axle (7).
6) Counterdrill the 10 attaching holes on the rib with a drill No. 9 (dia. 5 mm).
7) Counterdrill the attaching holes of the outer and inner reinforcement plates on the rib and upper surface with a drill dia. 1/8" (3.2 mm) - see Detail X, Figure 805.
8) Remove the 4 reinforcement plates and the two shims. Deburr and apply the protection treatment - refer to 20-00-04.
9) Clean the inside of the wing.
10) Install and center the 4 reinforcement plates and the two shims with axle (7). Rivet the reinforcement plates to the rib and upper surface with rivets (6).

11) Install bolts (8), washers (11) and locknuts (12). Torque twice - refer to 20-10-01, in accordance with the sequence given (A, B, C, D and E) in Figure 805 (2/2).

12) Make sure all the tools and materials are removed and the work area is clean and free from debris.

13) Perform finish paint touch-ups - refer to 20-00-03.

14) Install the main landing gear - refer to 32-10-00.

NOTE : On installation of axle (7), do not install underhead washer (15).

Replace recessed washer (16) with a "Z" washer (4).

It is admitted (after fatigue tests) that the smooth part of axle (7) does not cover the entire grip.

Install a new locknut (5).

4. PRINCIPLE OF BLANKING OFF A CORE SAMPLE (Figure 806)

CAUTION : DEPENDING ON THE LOCATION OF THE CORE SAMPLE, THE SKIN THICKNESSES CAN BE DIFFERENT. REFER TO CHAPTER 51-30-01 TO DETERMINE THE THICKNESSES OF THE SHEETS TO BE USED.

A. Tools and consumable materials

- AU4G1 2024 sheets, thickness 0.039 and/or 0.047 in (1 and/or 1.2 mm) (for shim and stiffener)
- Alodine (TB 13-002)
- Primer (TB 16-901)
- Finish paint (per aircraft range)
- Sealant (TB 09-001A)
- Sealant (TB 09-002A)
- Waterproof compound (TB 05-027)
- Drill, dia. 0.13 in (3.3 mm) (No. 30)
- 100° micrometric countersink, with pilot dia. 1/8 in (3.2 mm)
- Clamping pins, dia. 1/8 in (3.2 mm)
- Rivets, P / N 5595 7 32 001
- Cleaning agent (TB 11-002)
- Pneumatic vacuum cleaner
- Clean lintfree cloths

B. Procedure

NOTE 1 : The rivets are to be used "as supplied".

NOTE 2 : The rivet part numbers are incomplete, the two digits before the last digit are reserved for length ; e.g. : 5595 7 32 081 for a length of 8 mm (0.315 in).

1) Fabricate a shim (3), dia. 0.75 in (19 mm), and a stiffener (2), dia. 2.05 in (52 mm), of the same thickness as the skin.

2) Mark then, using a drill, dia. 0.13 in (3.3 mm) (No. 30), drill the holes in stiffener (2) - refer to Section AA.

   NOTE : Depending on the position of stiffener (2) with respect to the existing rivets, adapt stiffener drilling with a minimum pitch of 0.787 in (20 mm).

3) If the axis of the core sample was a rivet, drill the center of shim (3) and stiffener (2) to diameter 0.13 in (3.3 mm) (No. 30) - refer to Detail B.

4) Position and center stiffener (2) on the core sample area, then turn it correctly to obtain a regular pitch between the existing rivets and the holes in the stiffener.

5) Counterdrill the skin and spar (1) to diameter 0.13 in (3.3 mm) (No. 30). Secure with pins as you progress.

6) Remove stiffener (2). Deburr the holes and vacuum-clean the chips.

7) Using a 100° micrometric countersink, with pilot dia. 1/8 in (3.2 mm), countersink the holes in stiffener (2).

8) Apply a protection to stiffener (2) and shim (3).

   - Alodine (TB 13-002) and primer (TB 16-901) for the shim,
   - Alodine (TB 13-002), primer (TB 16-901) and finish paint identical to the aircraft paint for the stiffener.

9) Using a cloth moistened with cleaning agent (TB 11-002), clean the spar and the skin around the aperture.

10) Protect the edge of the skin with Alodine (TB 13-002).

11) Smear shim (3) and stiffener (2) with a coat of sealant (TB 09-001A) and position them.

12) Cut the rivets to length and install them wet with sealant (TB 09-001A).

13) Apply a bead of sealant (TB 09-002A) to the periphery of stiffener (2).

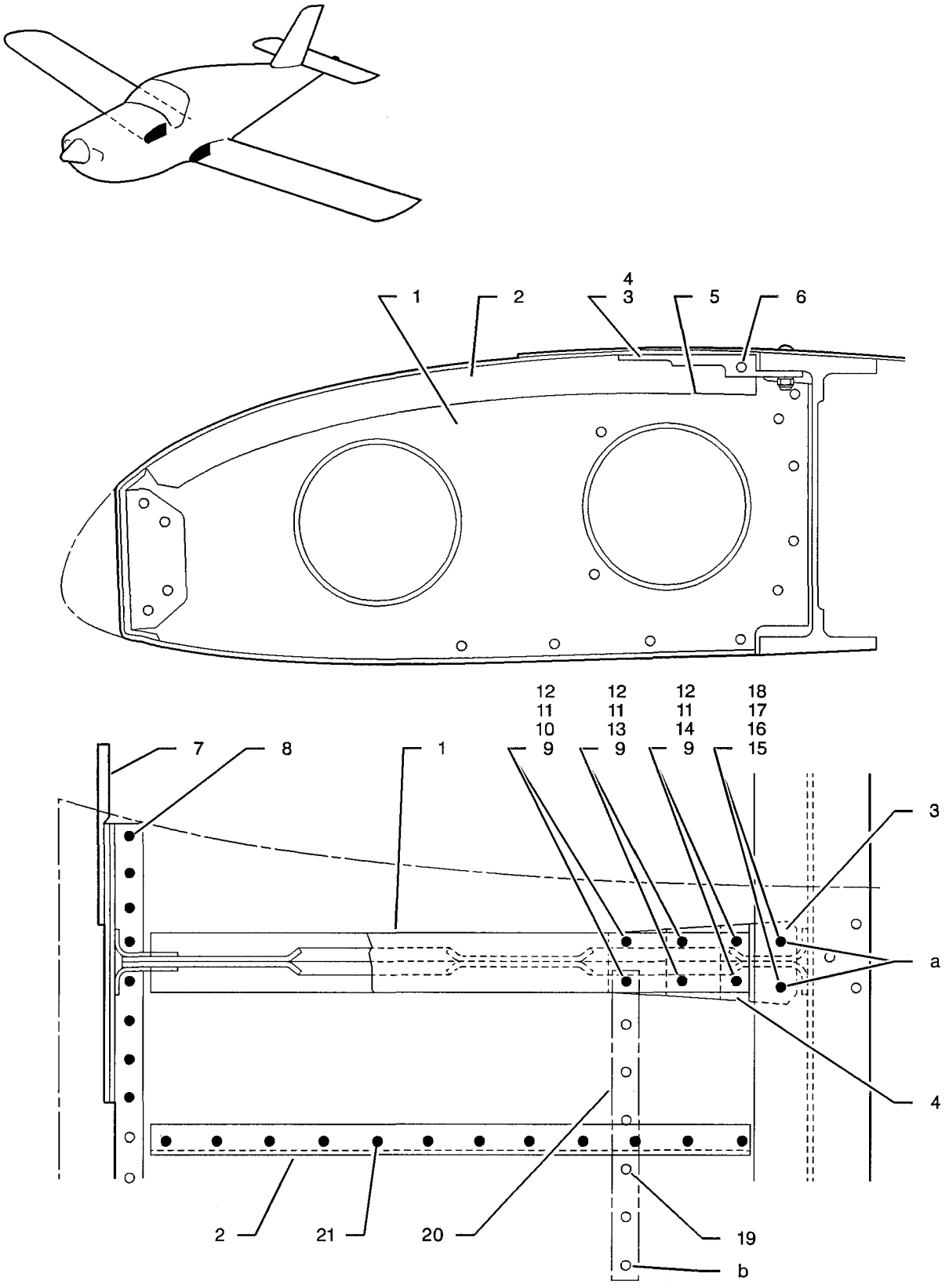
14) Smear the rivet shanks with sealant (TB 09-001A).

15) Perform paint touch-ups on the rivet heads and the sealant bead.

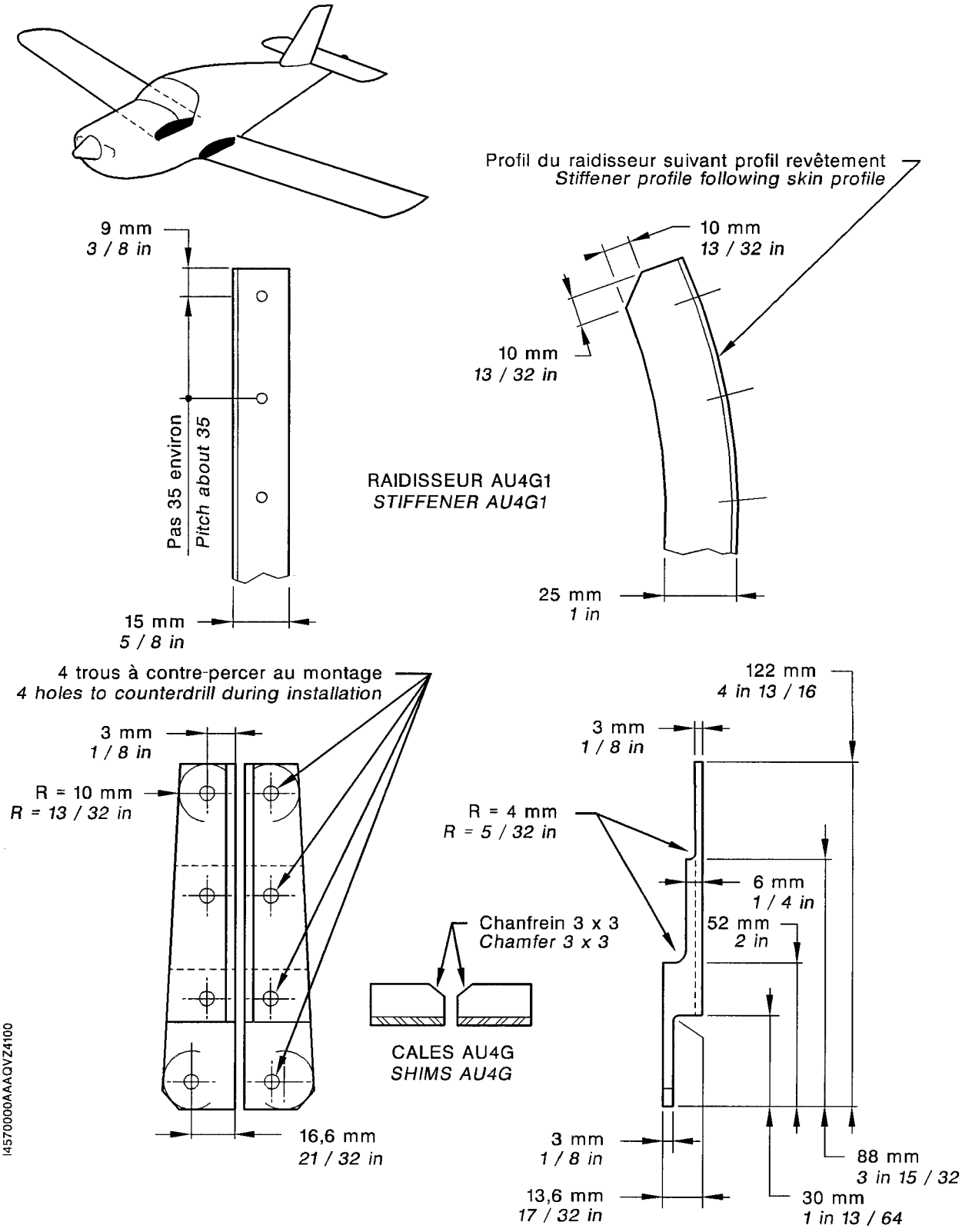
16) Protect the spar flanges / skins junctions with waterproof compound (TB 05-027).

1 - Wing root rib
2 - Stiffener
3 - R.H. shim
4 - L.H. shim
5 - Rivet
6 - Rivet
7 - Front attachment
8 - Rivet
9 - Flat round head rivet
10 - Screw
11 - Washer
12 - Nut
13 - Screw
14 - Screw
15 - Screw
16 - Washer
17 - Nut
18 - Flat round head rivet
19 - Rivet
20 - Stiffener
21 - Blind rivet

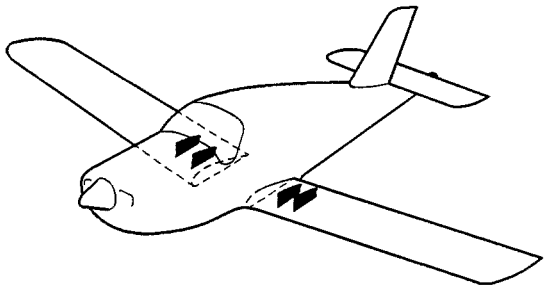
Installation details
Key to Figure 801

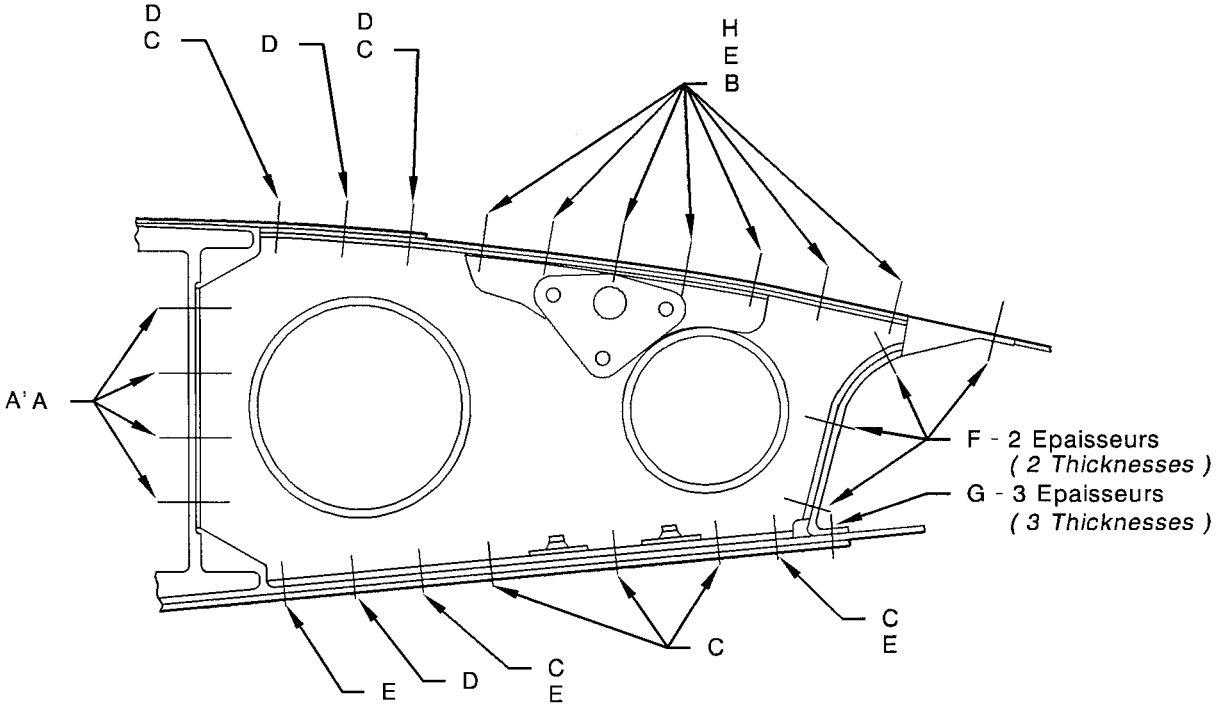


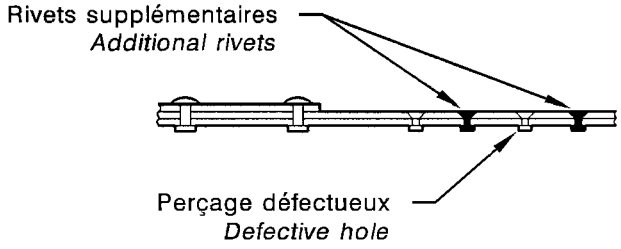
Installation details
Figure 801



Fabrication details
Figure 802







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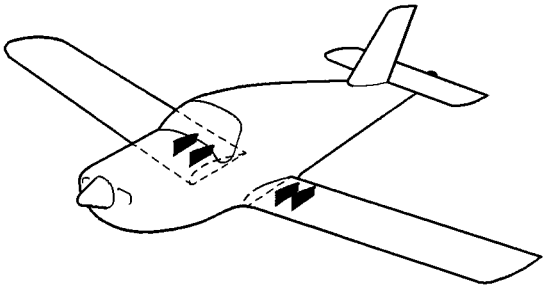
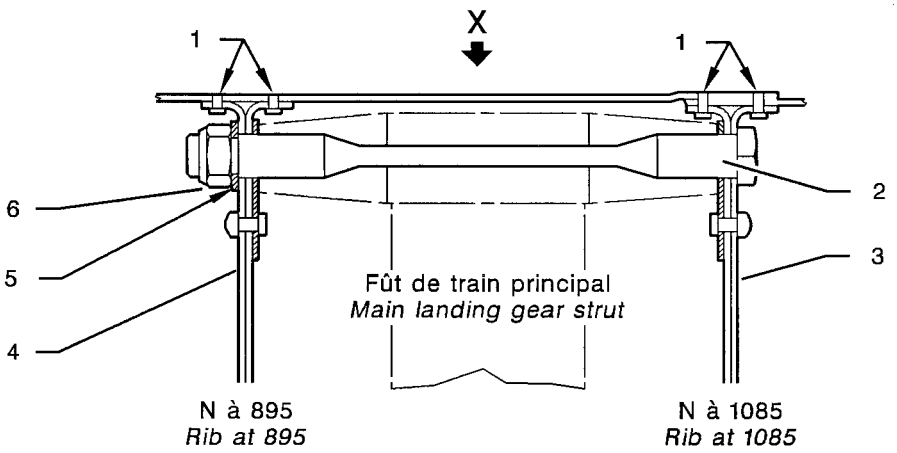
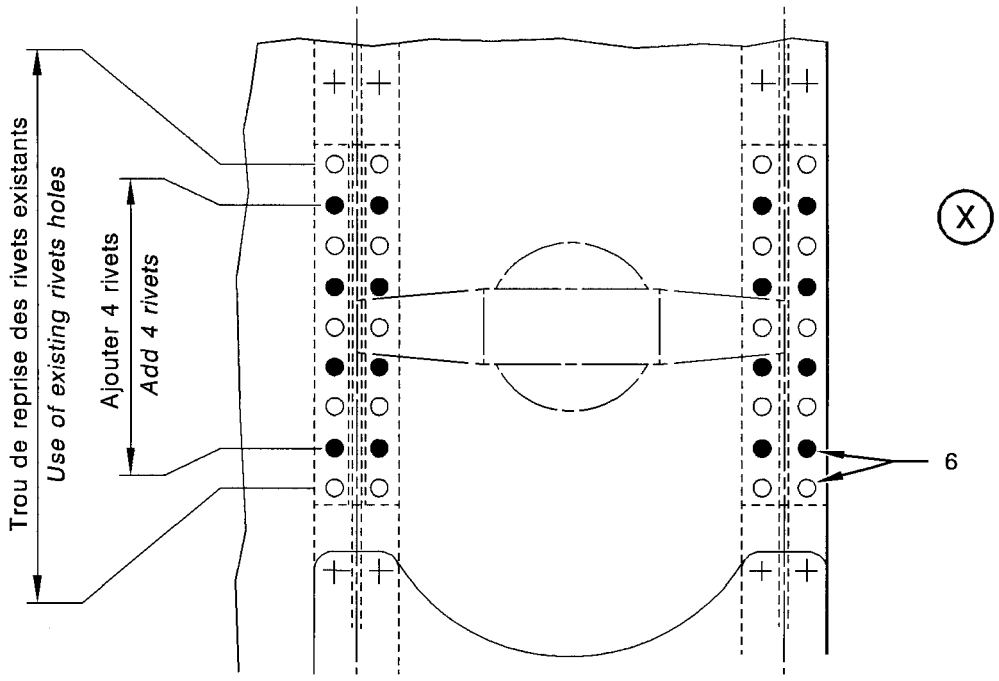
Replacement of main landing gear support ribs
Figure 803



1 - Rivet
2 - Axle
3 - Rib
4 - Rib
5 - Washer
6 - Locknut





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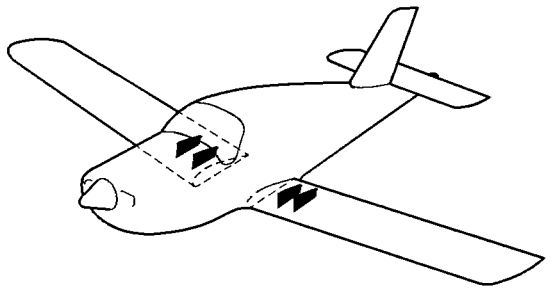
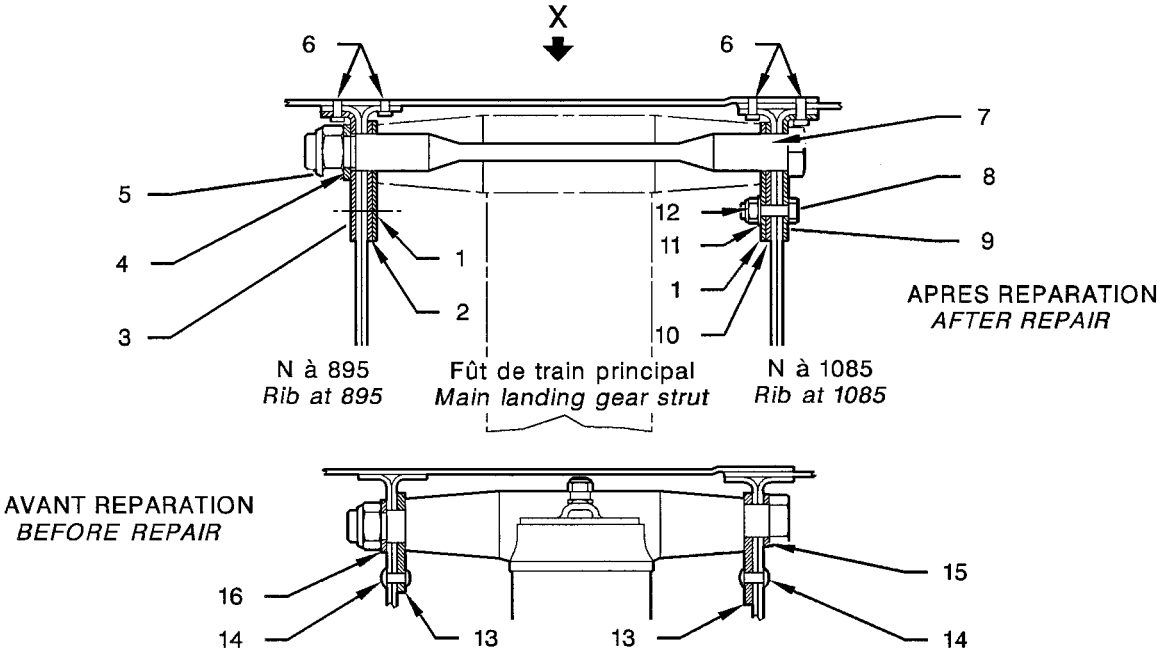
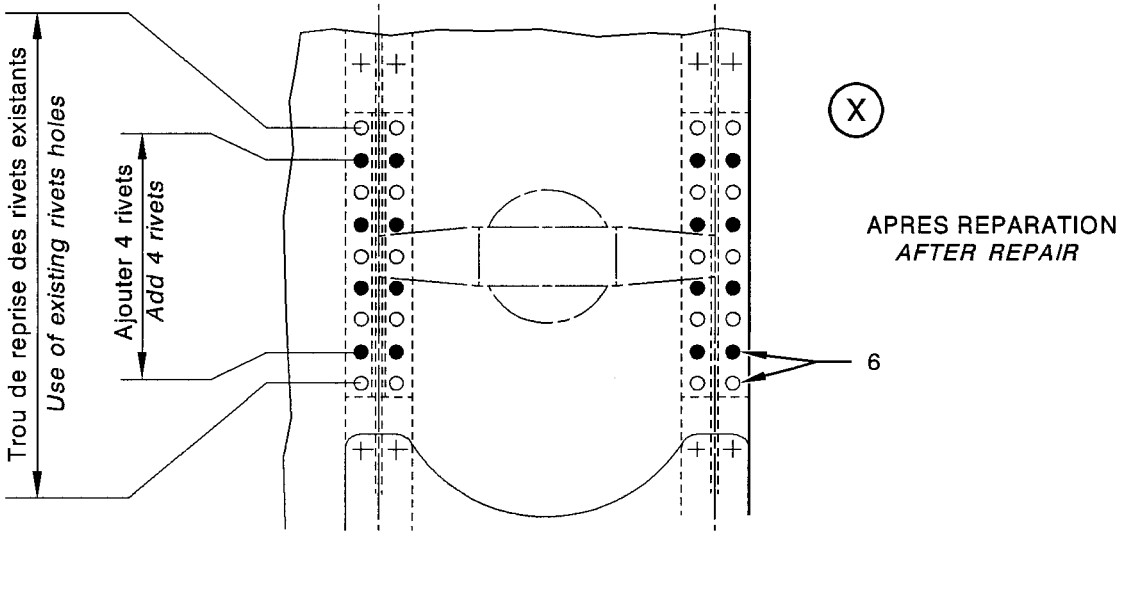
Replacement of main landing gear support ribs
Figure 804



1 - Shim
2 - R.H. inner reinforcement plate
3 - R.H. outer reinforcement plate
4 - "Z" washer
5 - Locknut
6 - Rivet
7 - Axle
8 - Bolt
9 - L.H. outer reinforcement plate
10 - L.H. inner reinforcement plate
11 - Washer
12 - Locknut
13 - Support shim
14 - Rivet
15 - Underhead washer
16 - Recessed washer





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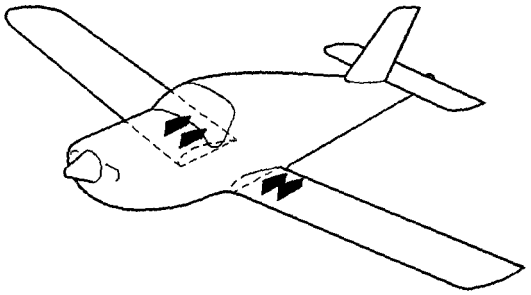
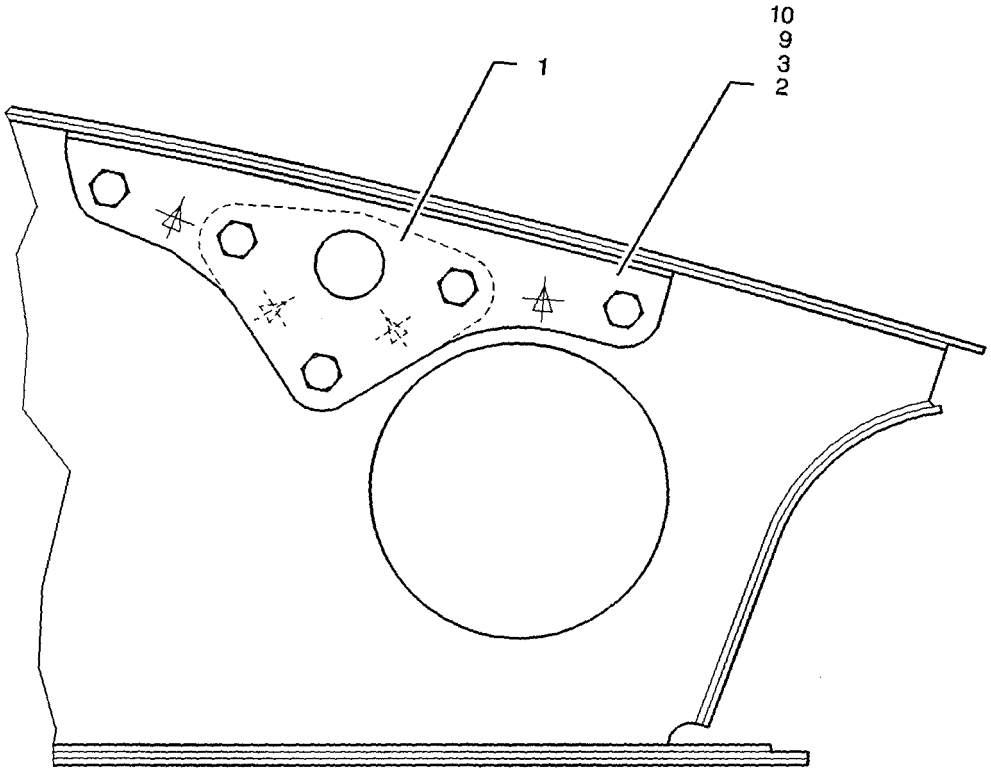
Reinforcement of main landing gear support ribs
Figure 805 (1/2)





Nota : - Perçage des renforts (2),(3),(9) et (10) au dia. 17,5 mm (0,689 in.).
- Perçage des cales (1) au dia. 17H9 mm (0,669H9 in.).
- △ Trou de fabrication, ne pas utiliser pour fixation.

Note : - Reinforcement plates (2),(3),(9) and (10) drilling at a diameter 0.689 in. (17.5 mm).
- Shims drilling (1) at a diameter 0.669H9 in. (17H9 mm).
- △ Tooling hole, do not use for attachment.

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Reinforcement of main landing gear support ribs
Figure 805 (2/2)

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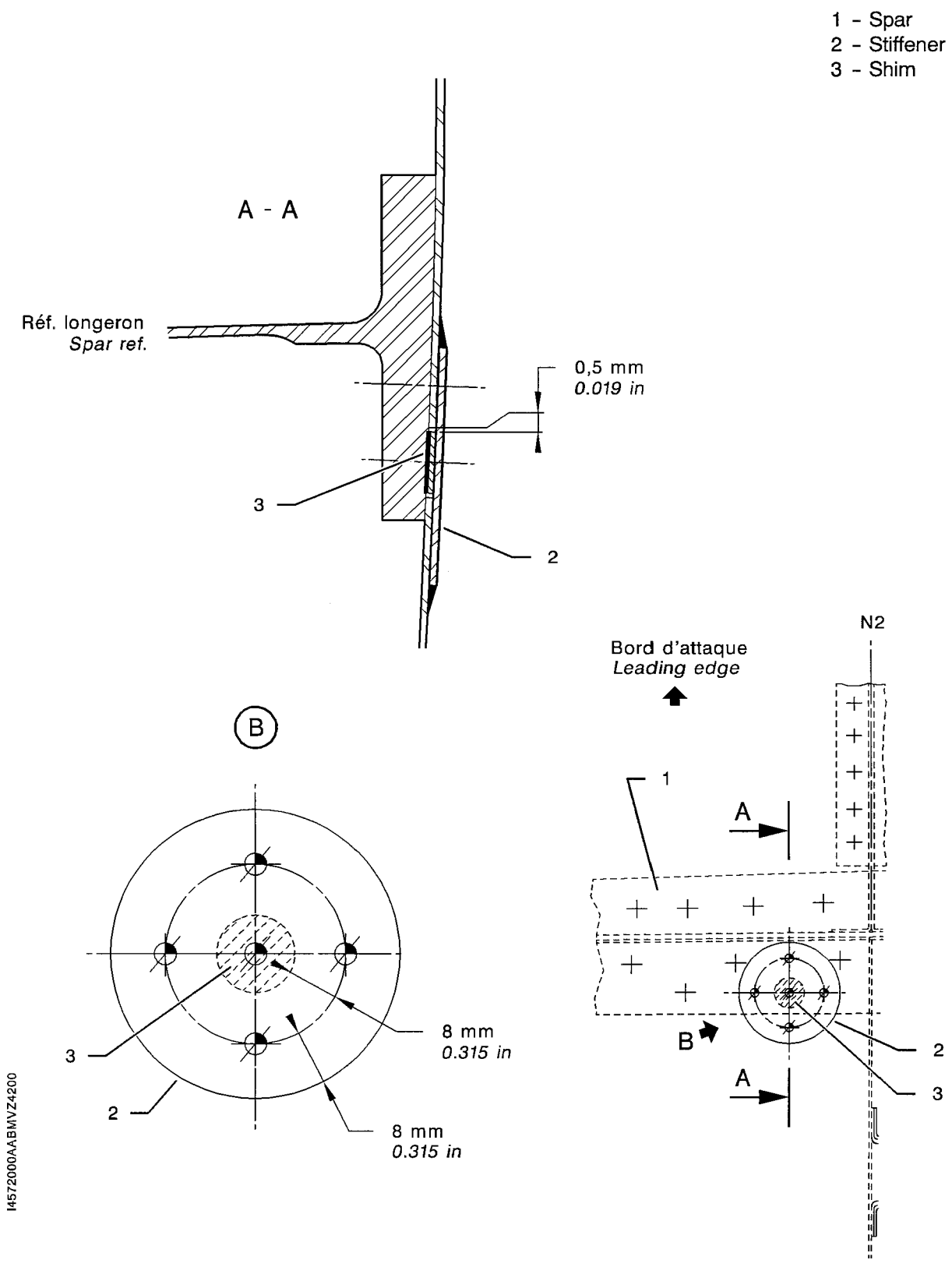


Wings - Repair of a core sample
Figure 806

WINGS

DESCRIPTION AND OPERATION

1. GENERAL

The wings are metal structures, each consisting of a spar, ribs, stiffeners and reinforcement plates. The skin panels are riveted to these structures.

The wing spar is the main structural component of the wing. It is designed to absorb the structural stresses. The main spar is machined from an aluminium alloy section.

The L.H. and R.H. spars are spliced by means of plates and bolts.

The arms fitted with ailerons and those fitted with flaps are secured to rear ribs.

The fuel tanks are an integral part of the wings. They consist of stamped metal ribs attached to the wing skin and the one-piece spar.

Inspection doors are installed in various areas of the lower and upper surfaces.

Fittings provide wing / fuselage junction.

2. LOCATION (Figure 1)

COMPONENT	QTY	AREA	ACCESS DOOR	REFERENCE
Wing fitting	6	500 / 600	/	57-20-03

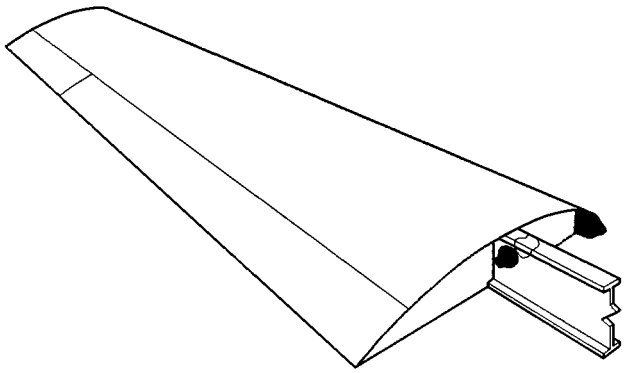
3. DESCRIPTION

A. Wing fittings - refer to 57-20-03

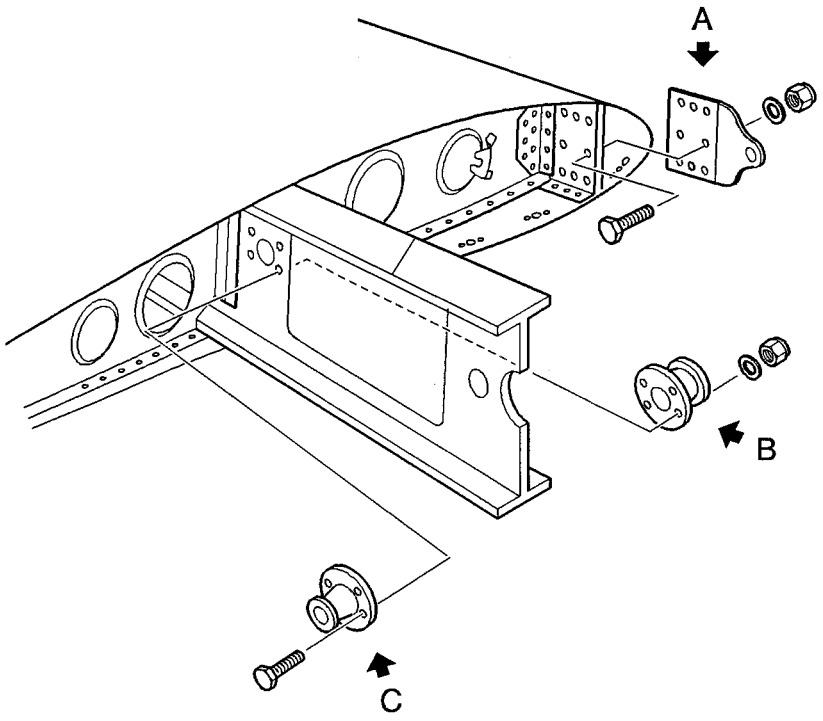
The front attachment fitting secures the wing to frame C1.

The front spacer, attached to the front section of the wing spar, secures the wing to frame C2.

The rear spacer, attached to the rear section of the wing spar, secures the wing to frame C2.



A - Front attachment fitting
B - Front spacer
C - Rear spacer



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Wings - Identification and location of components
Figure 1

WINGS

REMOVAL / INSTALLATION

NOTE : This procedure is applicable to L.H. and R.H. installations. Information specific to R.H. installation are given in square brackets.

1. REMOVAL OF THE ARMS FITTED WITH FLAPS (Figure 401)

A. Tools and consumable materials

- Cleaning agent (TB 11-003)
- Spatula
- Clean lintfree cloths

B. Procedure

1) Remove the flaps - refer to 57-50-00.
2) Remove the inspection doors 512 [612] and 516 [616] - refer to 52-40-00.
3) Disconnect the external gage connector and the electrical wiring of the heated pitot tube, if installed.
4) Check the type of attachment of the arm assemblies (with rivets or bolts).

Attachment with rivets

5) Remove the rivets carefully - refer to 51-40-02.
6) Remove arm assemblies (1) and (5).
7) Apply a protection treatment to the sections bared during removal - refer to 20-00-04.

NOTE : During installation, replace the rivets with bolts, washers and nuts - refer to the Illustrated Parts Catalog.

Attachment with bolts

5) Remove and discard nuts (4), remove washers (3) and bolts (2).
6) Remove arm assemblies (1) and (5).
7) Remove the sealant with a spatula and clean the surfaces with a clean lintfree cloth moistened with cleaning agent (TB 11-003).

2. INSTALLATION OF THE ARMS FITTED WITH FLAPS (Figure 401)

A. Tools and consumable materials

- Sealant (TB 09-916)
- Petrolatum (TB 04-012)
- Cleaning agent (TB 11-003)
- Clean lintfree cloths

B. Procedure

1) Apply a very thin coat of petrolatum (TB 04-012) to the bearing face of arm assemblies (1) and (5).
2) Apply sealant (TB 09-916) to the bearing face of arm assemblies (1) and (5) and to bolts (2) - refer to 20-00-09.
3) Position arm assemblies (1) and (5) and secure them with bolts (2), washers (3) and new nuts (4).
4) Wipe off excess sealant with a clean lintfree cloth moistened with cleaning agent (TB 11-003).
5) Connect the external gage connector and the electrical wiring of the heated pitot tube, if installed.
6) Make sure all the tools and materials are removed and the work area is clean and free from debris.
7) Install the inspection doors 512 [612] and 516 [616] - refer to 52-40-00.
8) Install the flaps - refer to 57-50-00.

3. REMOVAL OF THE ARMS FITTED WITH AILERONS (Figure 401)

A. Tools and consumable materials

- Cleaning agent (TB 11-003)
- Spatula
- Clean lintfree cloths

B. Procedure

1) Remove the ailerons - refer to 57-60-00.
2) Remove the inspection door 516 [616] - refer to 52-40-00.
3) Remove the wing tip - refer to 57-30-00.
4) Disconnect the electrical wiring of stall warning device - refer to 27-30-04.
5) Remove harness holding clips (8) and clear electrical harness (9) to gain access to the work area.
6) Unrivet and remove coverplate (7) - refer to 51-40-02.
7) Check the type of attachment of the arm assemblies (with rivets or bolts).

Attachment with rivets

8) Remove the rivets carefully - refer to 51-40-02.
9) Remove arm assemblies (6) and (10).
10) Apply a protection treatment to the sections bared during removal - refer to 20-00-04.

NOTE : During installation, replace the rivets with bolts, washers and nuts - refer to the Illustrated Parts Catalog.

Attachment with bolts

8) Remove and discard nuts (13), remove washers (12) and bolts (11).
9) Disengage and remove arm assemblies (6) and (10).
10) Remove the sealant with a spatula and clean the surfaces with a clean lintfree cloth moistened with cleaning agent (TB 11-003).

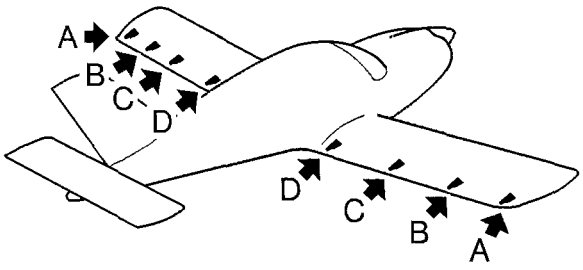
4. INSTALLATION OF THE ARMS FITTED WITH AILERONS (Figure 401)

A. Tools and consumable materials

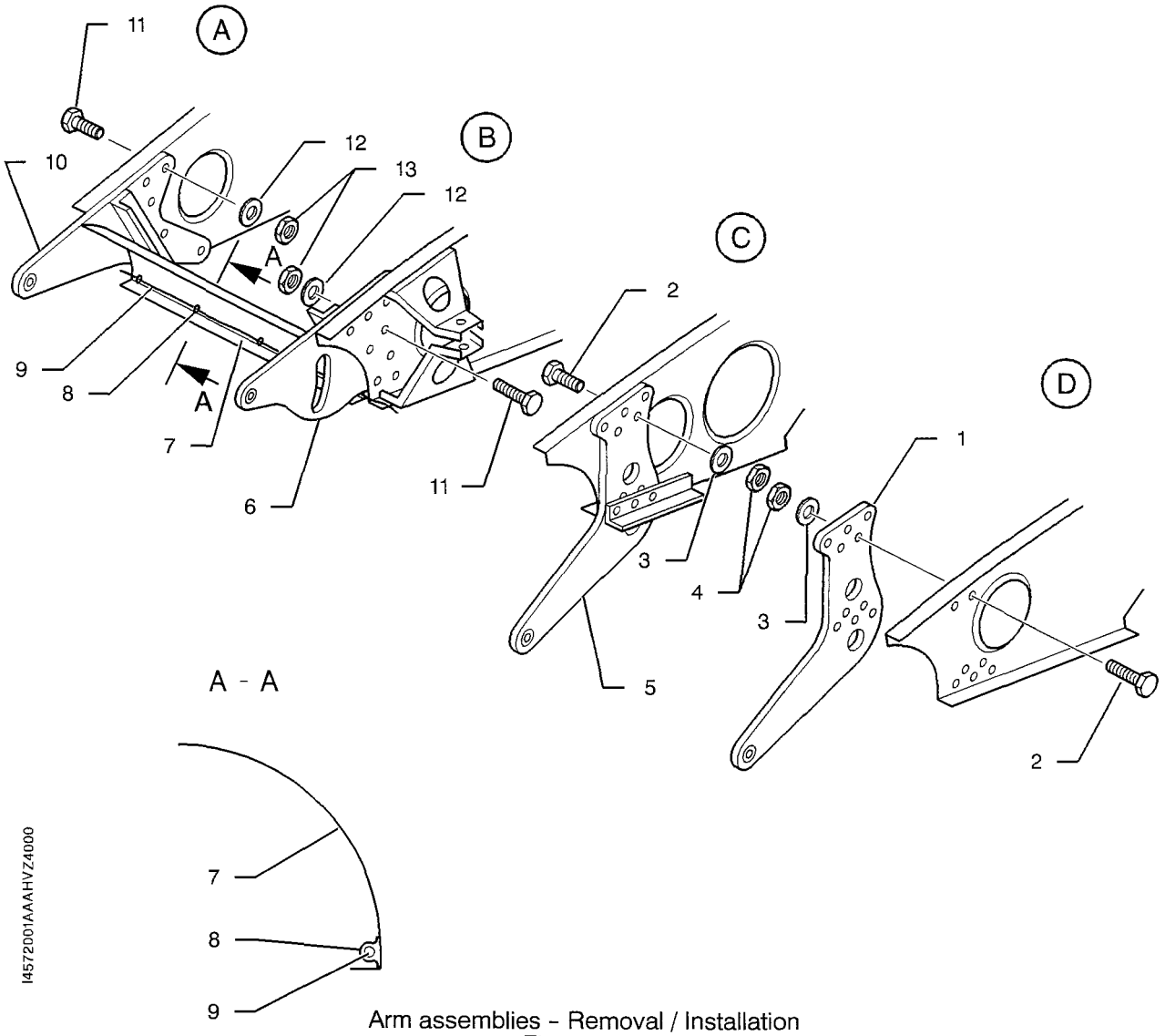
- Sealant (TB 09-916)
- Petrolatum (TB 04-012)
- Cleaning agent (TB 11-003)
- Clean lintfree cloths
- Rivets P / N Z00.N5536342404
- Rivets P / N Z00.N5553368406

B. Procedure

1) Apply a very thin coat of petrolatum (TB 04-012) to the bearing face of arm assemblies (6) and (10).
2) Apply sealant (TB 09-916) to the bearing face of arm assemblies (6) and (10) and to bolts (11) - refer to 20-00-09.
3) Position arm assemblies (6) and (10) and secure them with bolts (11), washers (12) and new nuts (13).
4) Wipe off excess sealant with a clean lintfree cloth moistened with cleaning agent (TB 11-003).
5) Position coverplate (7) and install rivets - refer to 51-40-02.
6) Perform paint touch-ups - refer to 20-00-03.
7) Position electrical harness (9) and install harness holding clips (8) on coverplate (7).
8) Connect the electrical wiring of stall warning device - voir 27-30-04.
9) Make sure all the tools and materials are removed and the work area is clean and free from debris.
10) Install the wing tip - refer to 57-30-00.
11) Install the inspection door 516 [616] - refer to 52-40-00.
12) Install the ailerons - refer to 57-60-00.



1 - Arm assembly
2 - Bolt
3 - Washer
4 - Nut
5 - Arm assembly
6 - Arm assembly
7 - Coverplate
8 - Harness holding clip
9 - Electrical harness
10 - Arm assembly
11 - Bolt
12 - Washer
13 - Nut



Arm assemblies - Removal / Installation
Figure 401

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Validity : S / N 1 - 9999

WING FITTINGS

REMOVAL / INSTALLATION

NOTE : This procedure is applicable to L.H. and R.H. installations. Information specific to R.H. installation are given in square brackets.

1. REMOVAL OF THE WING FRONT ATTACHMENT (Figure 401)

A. Tools and consumable materials

- 1 padded support for frame C8
- 2 wing padded supports, P / N TB10 99000911
- Cleaning agent (TB 11-003)
- Spatula
- Clean lintfree cloths

B. Procedure

1) Remove the cowling under hull 218.
2) Remove junction fairing 217L [217R].

CAUTION : TO AVOID DAMAGING THE STRUCTURE, THE SUPPORTS MUST PERFECTLY FIT THE FUSELAGE PROFILE AND HAVE PADDED BEARING AREAS.

3) Install padded supports under the L.H. and R.H. wings at a rib, and under the rear fuselage at frame C8.
4) If installed, remove blanking plugs (11) from the wing leading edge.

NOTE : For the wing front attachment first removal - refer to Page 801.

5) Remove and discard nut (2), remove washer (1), shim (4) and bolt (5).
6) Remove and discard nuts (9), remove washers (8) and bolts (10).
7) Remove and retain front fitting (3).
8) Remove the sealant with a spatula and clean the surfaces with a clean lintfree cloth moistened with cleaning agent (TB 11-003).
9) If necessary, check front fitting (3) - refer to Page 601.

2. INSTALLATION OF THE WING FRONT ATTACHMENT (Figure 401)

A. Tools and consumable materials

- 1 padded support for frame C8
- 2 wing padded supports, P / N TB10 99000911
- Grease (TB 04-004A)
- Red paint
- Loctite (TB 08-043)
- Torque wrench 0 - 885 lbf.in (0 - 100 N.m)

- Blanking plug P / N Z00.N7088595062
- Sealant (TB 09-916)
- Petrolatum (TB 04-012)
- Cleaning agent (TB 11-003)
- Clean lintfree cloths

B. Procedure

1) Apply a very thin coat of petrolatum (TB 04-012) to the bearing face of front fitting (3).
2) Apply sealant (TB 09-916) to the bearing face of front fitting (3) and to bolts (10) - refer to 20-00-09.
3) Position front fitting (3) on the wing.

CAUTION : OBSERVE THE MOUNTING DIRECTION OF THE FITTING UPPER ATTACHMENTS.

4) Secure front fitting (3) with bolts (10), washers (8) and new nuts (9). Torque according to "Specific cases" tightening procedure - refer to 20-00-01.
5) Wipe off excess sealant with a clean lintfree cloth moistened with cleaning agent (TB 11-003).
6) Lubricate bolt (5) with grease (TB 04-004A) - refer to 12-21-04.
7) Install shim (4), bolt (5), washer (1) and new nut (2). Torque - refer to 20-00-01.
8) Mark bolts (5) and (10) and nuts (2) and (9) with a red paint line.
9) Install new blanking plugs (11) with Loctite (TB 08-043) - refer to 20-00-08.
10) Remove the wing and fuselage padded supports.
11) Make sure all the tools and materials are removed and the work area is clean and free from debris.
12) Install junction fairing 217L [217R].
13) Install the cowling under hull 218.

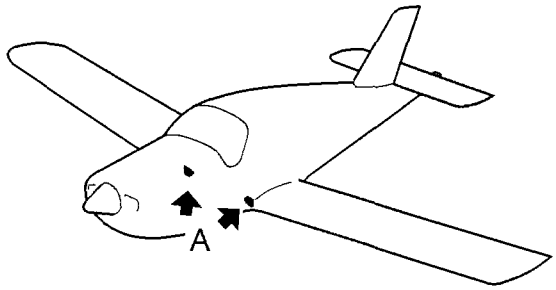
3. REMOVAL OF THE SPACERS (Figure 402)

A. Tools and consumable materials

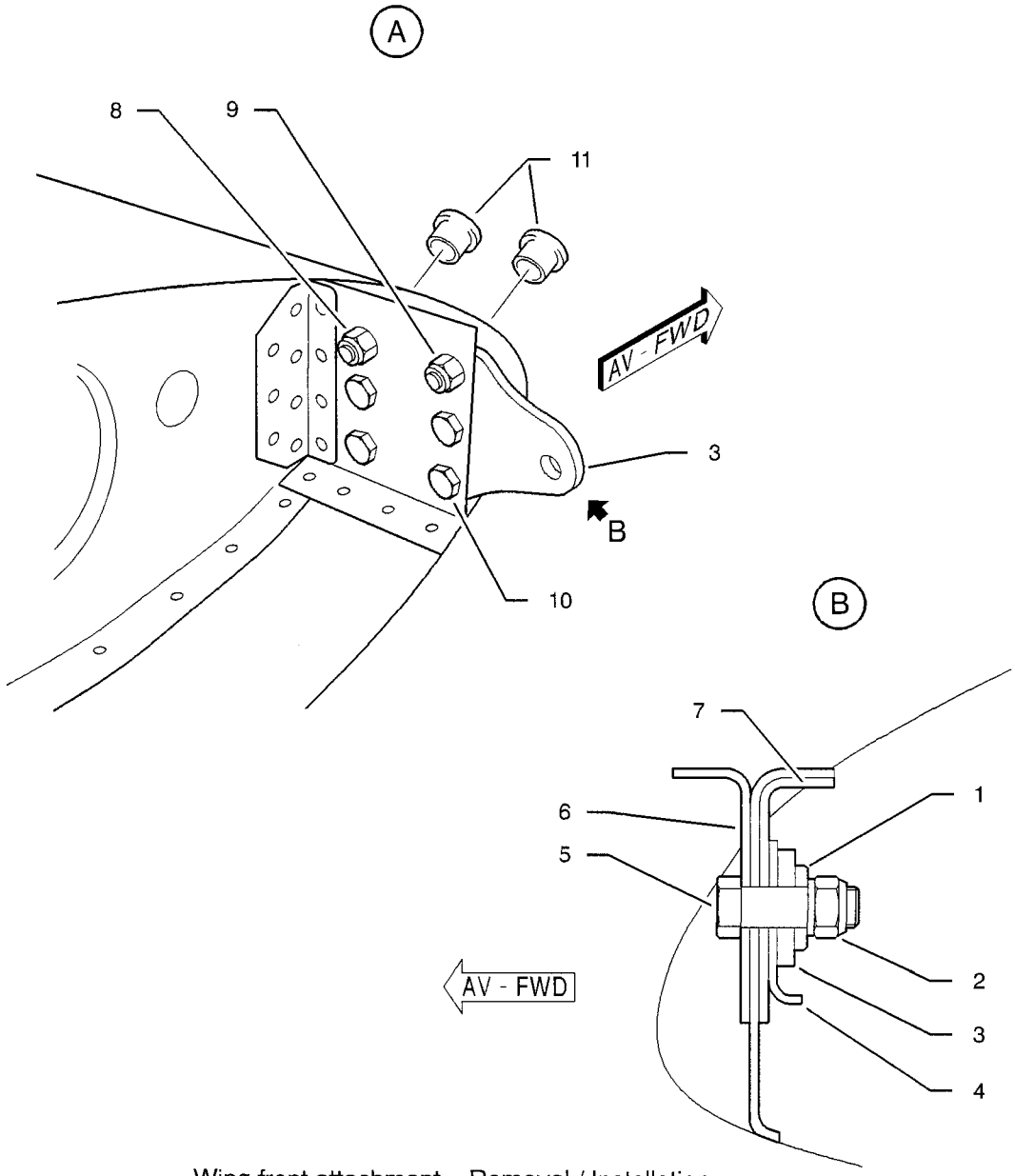
- Cleaning agent (TB 11-003)
- Clean lintfree cloths
- Spatula

B. Procedure

1) Remove the wings - refer to 57-00-00.
2) Remove and discard nuts (5), remove washers (4) and bolts (1).
3) Remove front spacer (2) and rear spacer (3).
4) Remove the sealant with a spatula and clean the surfaces with a clean lintfree cloth moistened with cleaning agent (TB 11-003).
5) Check the spacers for condition and replace them if necessary.



1 - Washer
2 - Nut
3 - Front fitting
4 - Shim
5 - Bolt
6 - Fitting on frame C1
7 - Fitting on frame C1
8 - Washer
9 - Nut
10 - Bolt
11 - Blanking plug



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Wing front attachment - Removal / Installation
Figure 401

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4. INSTALLATION OF THE SPACERS (Figure 402)

A. Tools and consumable materials

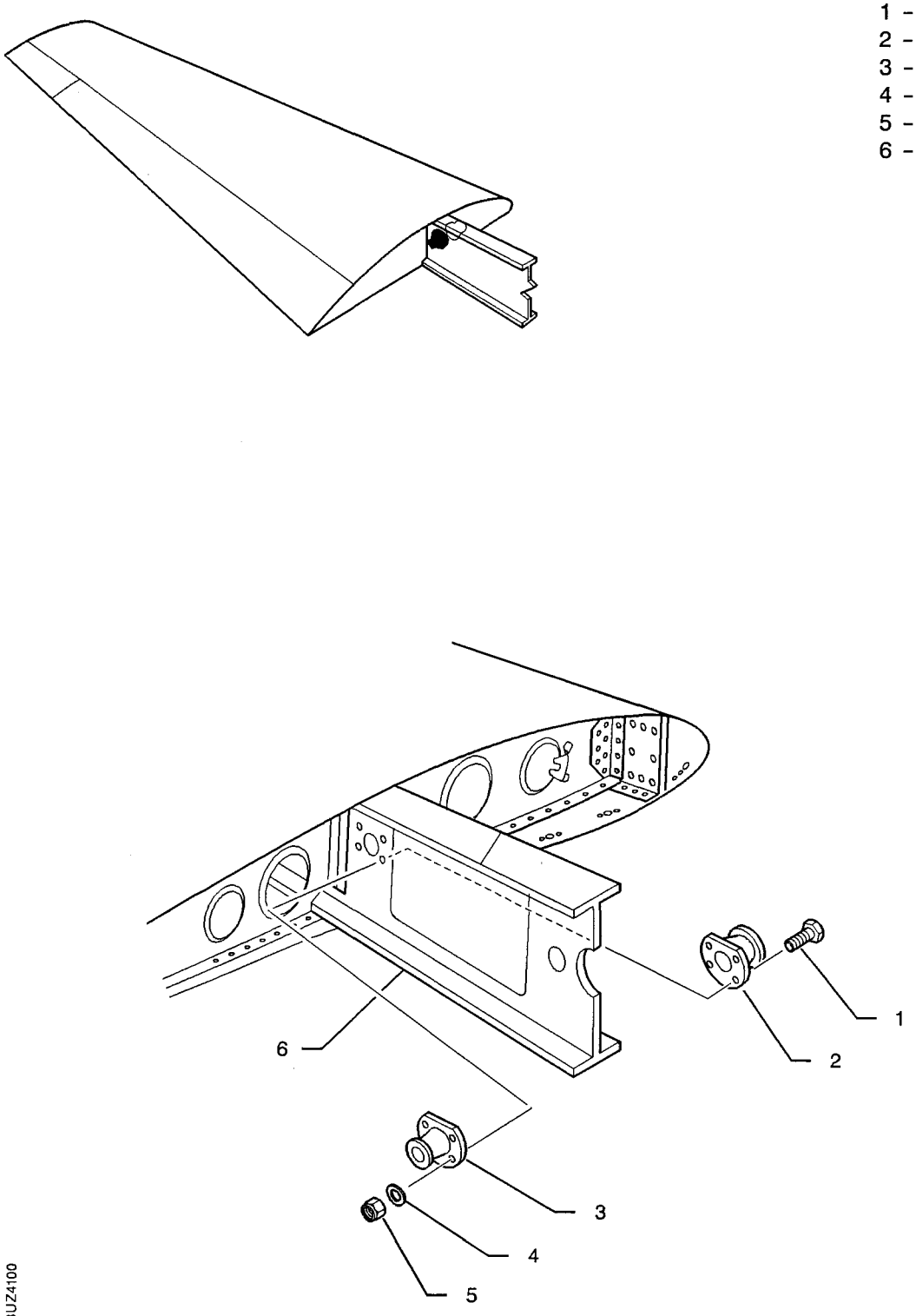
- Sealant (TB 09-916)
- Sealant (TB 09-007)
- Petrolatum (TB 04-012)
- Torque wrench 0 - 177 lbf.in (0 - 20 N.m)
- Cleaning agent (TB 11-003)
- Clean lintfree cloths
- Red paint

B. Procedure

1) Apply a very thin coat of petrolatum (TB 04-012) to the bearing face of front spacer (2) and rear spacer (3).
2) Apply sealant (TB 09-916) to bolts (1) and to front spacer (2) and rear spacer (3) bearing faces - refer to 20-00-09.

CAUTION : OBSERVE THE MOUNTING DIRECTION OF BOLTS (1).

3) Install front spacer (2) and rear spacer (3) on spar (6) and secure them with bolts (1), washers (4) and new nuts (5). Torque according to "Specific cases" tightening procedure - refer to 20-00-01.
4) Wipe off excess sealant with a clean lintfree cloth moistened with cleaning agent (TB 11-003).
5) Make a bead of sealant around the spacers with sealant (TB 09-916) - refer to 20-00-09.
6) Mark nuts (5) with a red paint line.
7) Protect the spacers with sealant (TB 09-007) - refer to 20-00-09.
8) Install the wings - refer to 57-00-00.



Spacer - Removal / Installation
Figure 402

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WING FITTINGS

INSPECTION / CHECK

NOTE : This procedure is applicable to L.H. and R.H. installations. Information specific to R.H. installation are given in square brackets.

1. INSPECTION OF THE WING FRONT ATTACHMENT (Figure 601)

A. Tools and consumable materials

- Stripper (TB 12-901) or (TB 12-902)
- Penetrant inspection material (TB 05-905)
- Cleaning agent (TB 11-003)
- Primer

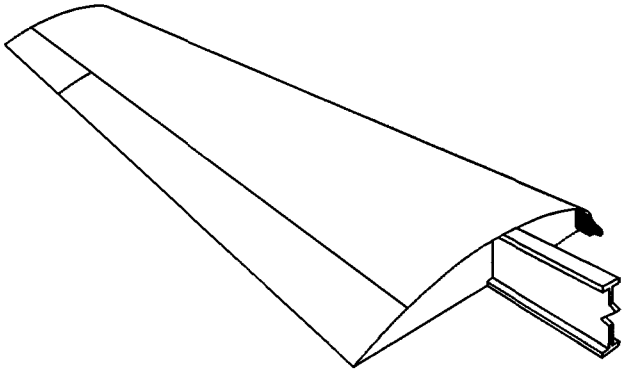
B. Procedure

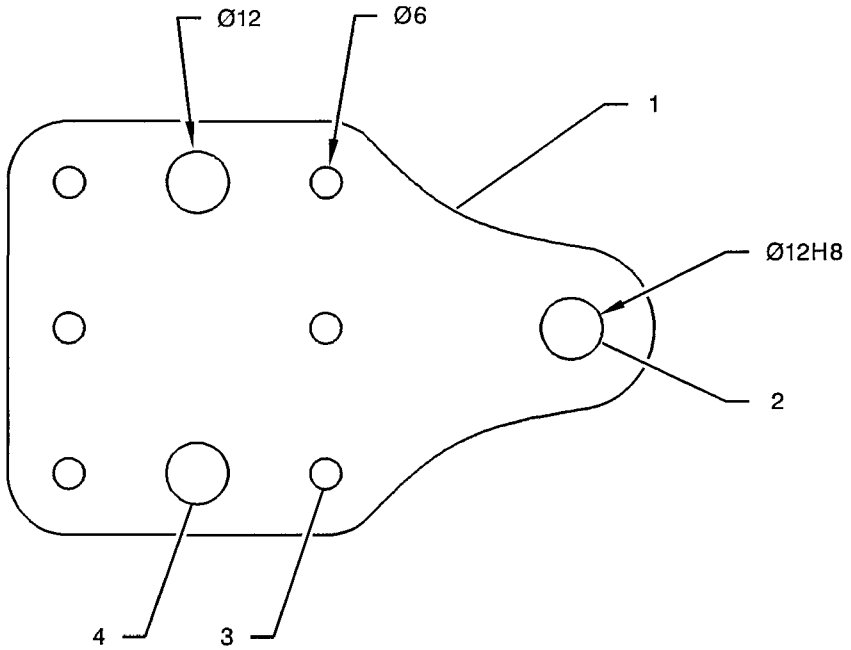
1) Remove the wing front attachment - refer to Page 401.
2) On fitting (1), check :
   - bore (2), dia. 12H8 (+ 27 ; + 0 microns),
   - attachment holes (3) for elongation.

   NOTE : If the bore is not correct or if the holes are out-of-round, discard and replace fitting (1).
3) Perform a dye penetrant inspection - refer to 20-00-14.

   NOTE : If a defect is detected on fitting (1), discard and replace fitting (1).
4) Repaint fitting (1) - refer to 20-00-03.
5) Make sure the bolt is free of any marks.
6) Install the wing front attachment - refer to Page 401.

1 - Fitting
2 - Bore
3 - Attachment hole
4 - Clearing hole





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Wing front attachment - Inspection / Check
Figure 601

WING FITTINGS

REPAIR

NOTE : This procedure is applicable to L.H. and R.H. installations. Information specific to R.H. installation are given in square brackets.

1. REPAIR - WING FRONT ATTACHMENT (Figures 801 and 802)

A. Tools and consumable materials

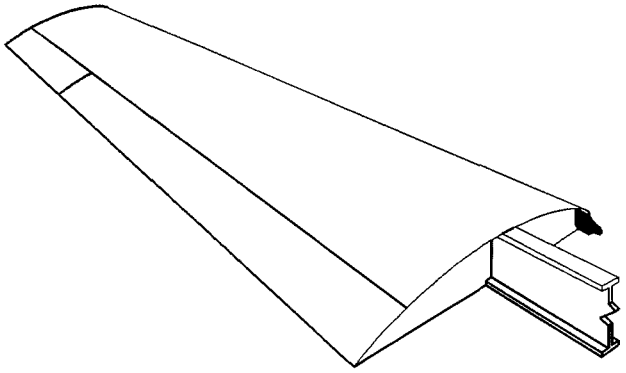
- 1 padded support for frame C8
- 2 wing padded supports, P / N TB10 99000911
- Alodine (TB 13-002)
- Primer and finish paint in compliance with the aircraft range
- Drill No. 22 (dia. 4 mm)
- Drill dia. 35/64" (14 mm)

B. Procedure

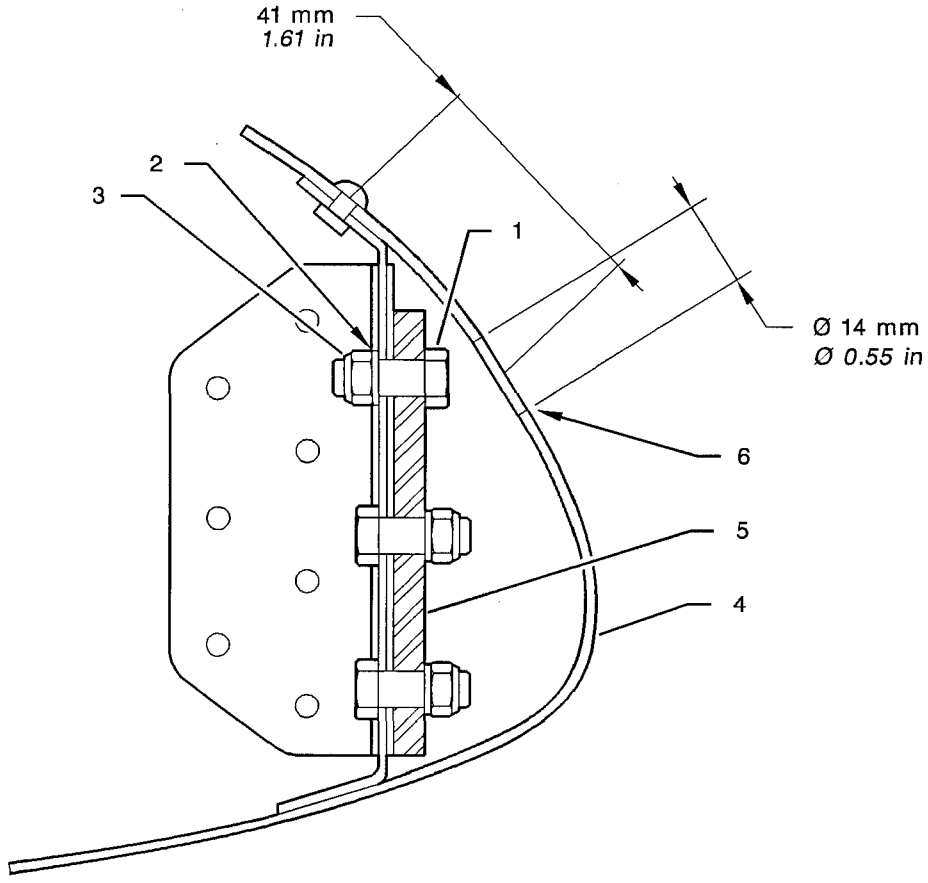
1) Remove the cowling under hull 218.
2) Remove junction fairing 217L [217R].

CAUTION : TO AVOID DAMAGING THE STRUCTURE, THE SUPPORTS MUST PERFECTLY FIT THE FUSELAGE PROFILE AND HAVE PADDED BEARING AREAS

3) Install padded supports under the L.H. and R.H. wings at a rib, and under the rear fuselage at frame C8.
4) Mark out the position of both holes on the wing skin with respect to the rivet lines.
5) Drill both pilot holes with a drill No. 22 (dia. 4 mm), perpendicularly to the skin.
6) Drill both holes with a drill dia. 35/64" (14 mm). Deburr.
7) Remove and retain front attachment (5) - refer to Page 401.
8) Vacuum-clean any drilling chips from inside the wing.
9) Protect the bared metal with Alodine (TB 13-002) - refer to 20-00-04.
10) Perform paint touch-ups - refer to 20-00-03.
11) Install the wing front attachment - refer to Page 401.
12) Remove the padded supports from the wings and fuselage.
13) Make sure all the tools and materials are removed and the work area is clean and free from debris.
14) Install junction fairing 217L [217R].
15) Install the cowling under hull 218.



1 - Bolt
2 - Washer
3 - Locknut
4 - Wing skin
5 - Front attachment
6 - Upper attachment bolt access hole



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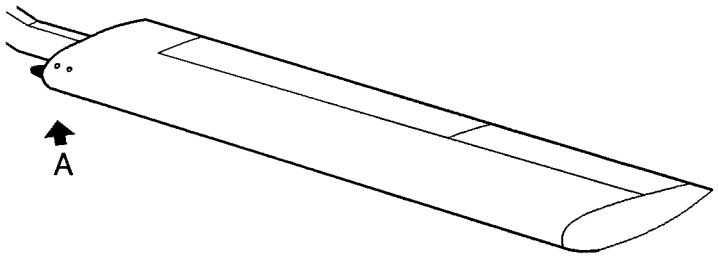
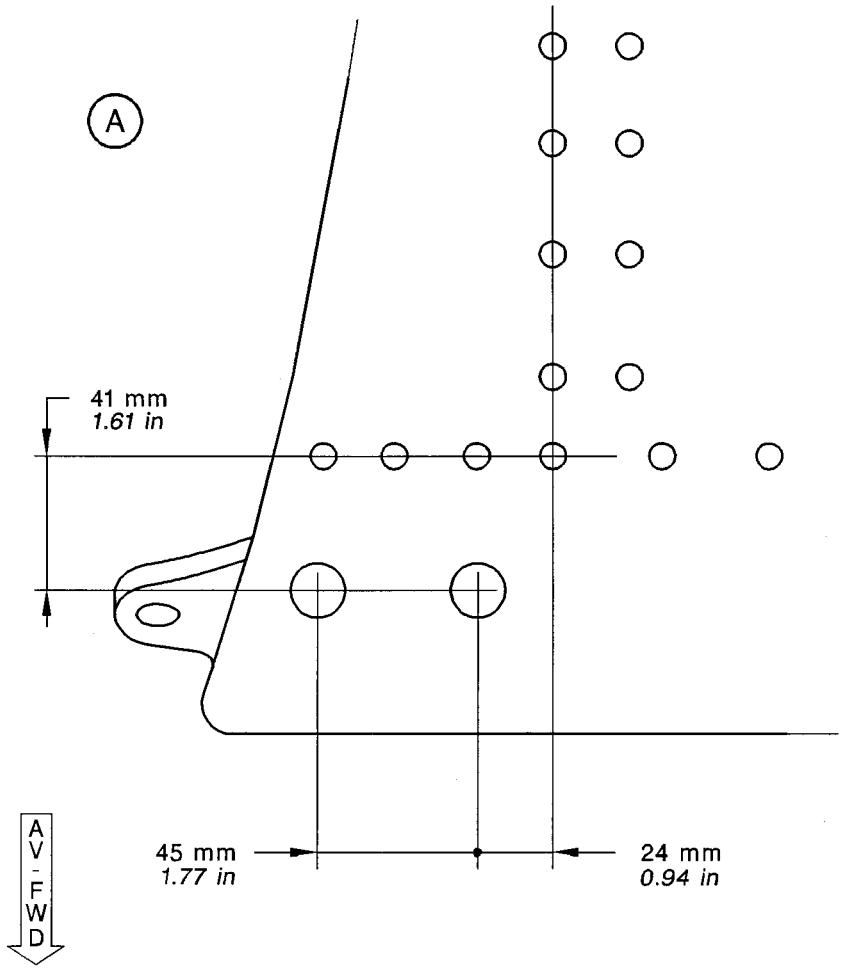
Wing front attachment - Repair
Figure 801





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Wing front attachment - Repair
Figure 802

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WING TIPS

DESCRIPTION AND OPERATION

1. GENERAL

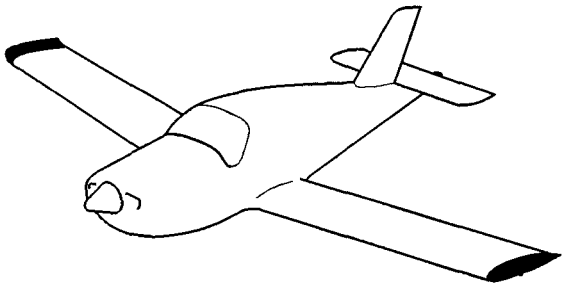
The wing tips include the navigation lights, the anti-collision lights and the recognition lights.

The wing tips are secured with screws to the extreme rib of each wing.

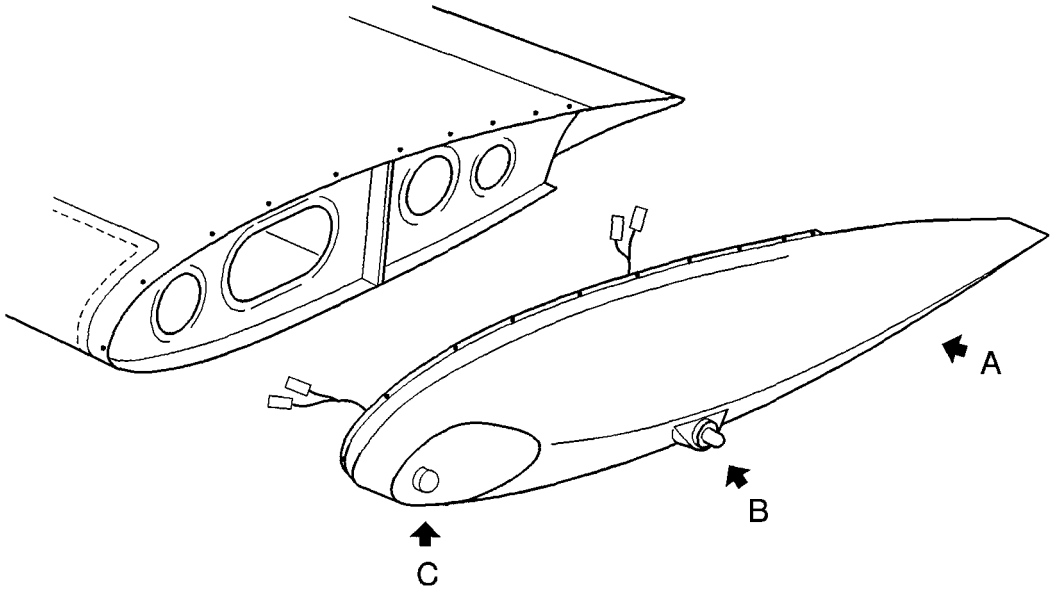
The wing tips are made of composite material.

2. LOCATION (Figures 1 and 1A)

COMPONENT	QTY	AREA	ACCESS DOOR	REFERENCE
Wing tip	2	500 / 600	/	57-30-00



A - Wing tip
B - Anti-collision light
C - Navigation light



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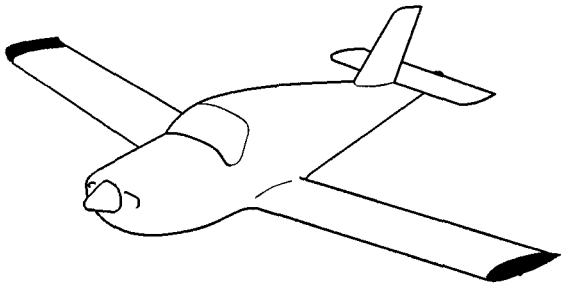
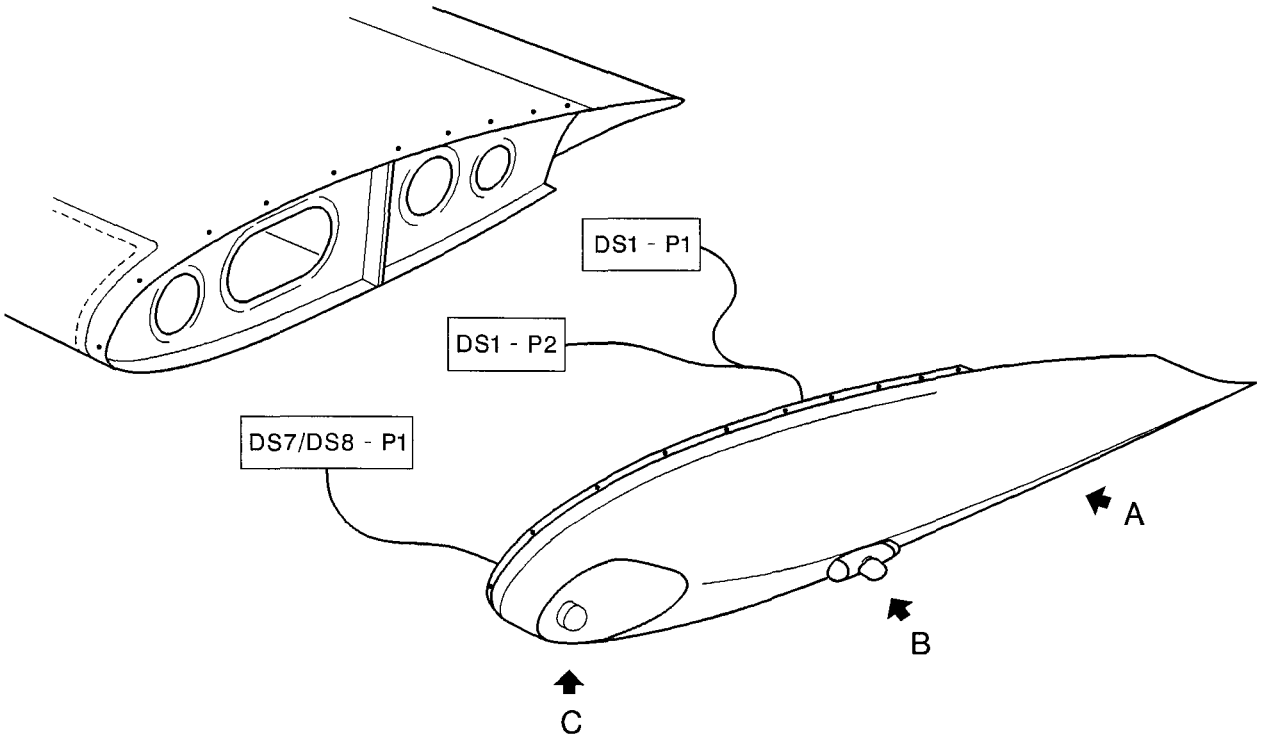
Wing tips - Identification and location of components
Figure 1 - Pre-MOD. 151



A - Wing tip
B - Navigation and anti-collision light
C - Recognition light



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Wing tips - Identification and location of components
Figure 1A - Post-MOD. 151

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WING TIPS

MAINTENANCE PRACTICES

NOTE : This procedure is applicable to L.H. and R.H. installations. Information specific to R.H. installation are given in square brackets.

1. SERVICING

None

2. REMOVAL / INSTALLATION - WING TIP (Figure 201)

A. Tools and consumable materials

- Ground power unit

B. Removal of the wing tip

WARNING : ALLOW FIVE MINUTES AFTER ELECTRICAL POWER SUPPLY CUTOFF TO THE ANTI-COLLISION LIGHTS BEFORE TOUCHING THE CONNECTORS

1) Make sure that the main switch-breaker is open.

2) Install the warning sign prohibiting main switch-breaker operation.

WARNING

DO NOT OPERATE
MAINTENANCE WORK IN PROGRESS

3) Remove screws (2).

4) Disengage wing tip (3) by clearing it by a few inches.

5) If installed, disconnect navigation light (5) and anti-collision light (4).

6) Remove wing tip (3).

C. Installation of the wing tip

1) Inspect the interfaces for cleanliness and condition.

2) Make sure all the tools and materials are removed and the work area is clean and free from debris.

3) Position wing tip (3) and, if installed, connect navigation light (5) and anti-collision light (4).

4) Position wing tip (3) on wing (1) and install all screws (2). Do not fully tighten.

5) Tighten all screws (2).

6) Remove the warning sign prohibiting main switch-breaker operation.

7) If required, connect the ground power unit - refer to 24-40-00.

8) Perform the following test :

ACTION	RESULT
(1) Close main switch-breaker.	
(2) Close "NAV. LIGHT" switch-breaker.	(a) Navigation lights come on.
(3) Open "NAV. LIGHT" switch-breaker.	
(4) If installed, close "STROBE LIGHT" switch-breaker.	(a) Anti-collision lights operate.
(5) Open "STROBE LIGHT" switch-breaker.	
(6) Open main switch-breaker.	

9) If connected, disconnect the ground power unit - refer to 24-40-00.

3. ADJUSTMENT / TEST

None

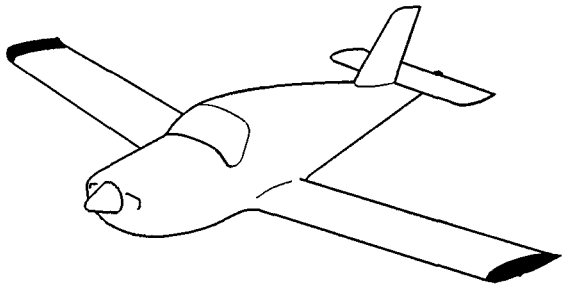
4. INSPECTION / CHECK - WING TIP (Figure 201)

A. Tools and consumable materials

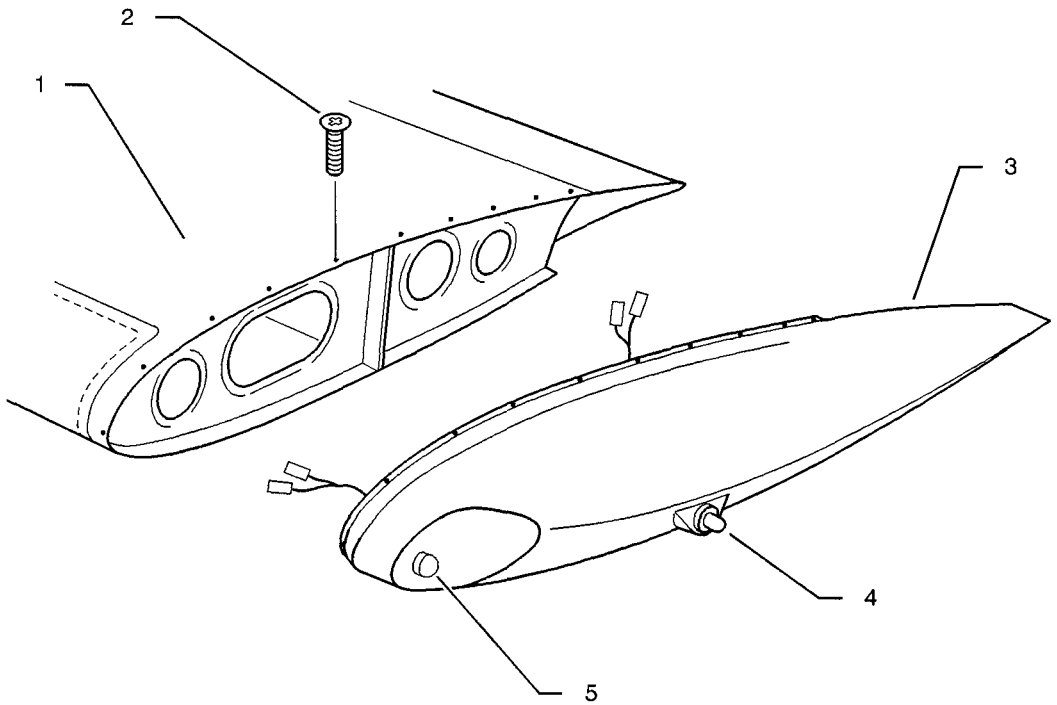
None

B. Procedure

1) Visually inspect the wing tip surface for :
   - cracks,
   - dents.
2) Check screws (2) for tightening.
3) If installed, visually inspect navigation lights (5) and anti-collision lights (4) for condition and attachment.



1 - Wing
2 - Screw
3 - Wing tip
4 - Anti-collision light
5 - Navigation light



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Wing tip - Removal / Installation
Figure 201

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WING TIPS

MAINTENANCE PRACTICES

NOTE : This procedure is applicable to L.H. and R.H. installations. Information specific to R.H. installation are given in square brackets.

1. SERVICING

None

2. REMOVAL / INSTALLATION - WING TIP (Figure 201)

A. Tools and consumable materials

- Ground power unit

B. Removal of the wing tip

WARNING : ALLOW FIVE MINUTES AFTER ELECTRICAL POWER SUPPLY CUTOFF TO THE ANTI-COLLISION AND NAVIGATION LIGHTS BEFORE TOUCHING THE CONNECTORS

1) Make sure that the main switch-breaker is open.

2) Install the warning sign prohibiting main switch-breaker operation.

WARNING

DO NOT OPERATE
MAINTENANCE WORK IN PROGRESS

3) Remove screws (2).

4) Disengage wing tip (3) by clearing it by a few inches.

5) Disconnect anti-collision and navigation light (4).

6) If installed, disconnect recognition light (5).

7) Remove wing tip (3).

C. Installation of the wing tip

1) Inspect the interfaces for cleanliness and condition.

2) Make sure all the tools and materials are removed and the work area is clean and free from debris.

3) Position wing tip (3) and connect anti-collision and navigation light (4) and, if installed, recognition light (5).

4) Position wing tip (3) on wing (1) and install all screws (2). Do not fully tighten.

5) Tighten all screws (2).

6) Remove the warning sign prohibiting main switch-breaker operation.

7) Perform an operational test of the anti-collision and navigation lights (4) and, if installed, recognition lights (5) - refer to 33-40-02.

3. ADJUSTMENT / TEST

None

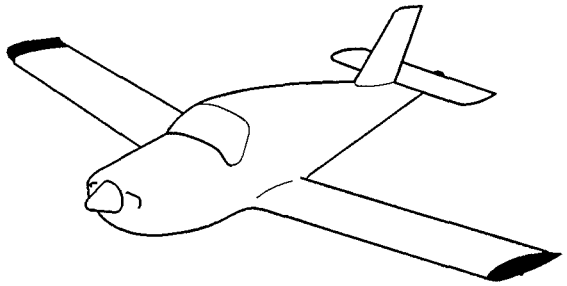
4. INSPECTION / CHECK - WING TIP (Figure 201)

A. Tools and consumable materials

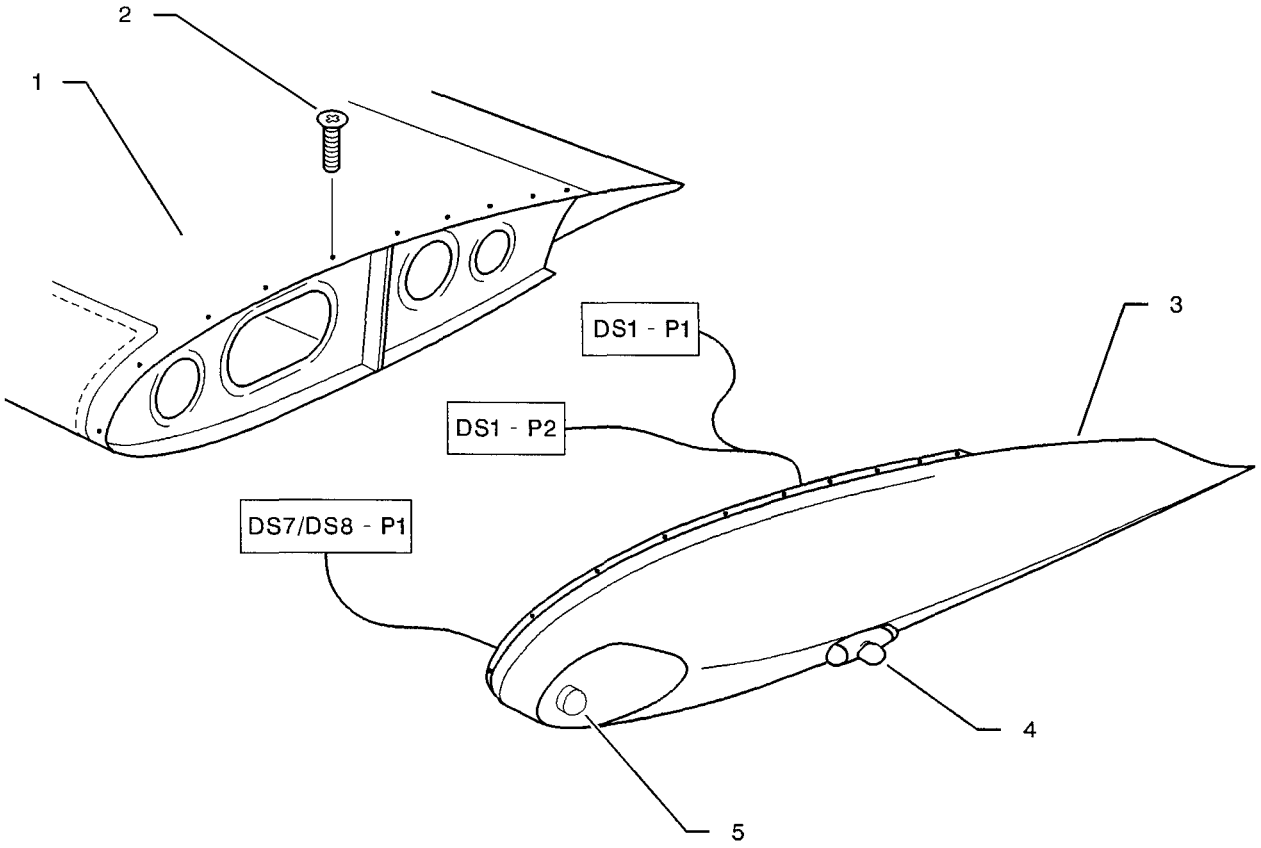
None

B. Procedure

1) Visually inspect the wing tip surface for :
   - cracks,
   - dents.
2) Check screws (2) for tightening.
3) Visually inspect anti-collision and navigation lights (4) and, if installed, recognition lights (5) for condition and attachment.



1 - Wing
2 - Screw
3 - Wing tip
4 - Anti-collision and navigation light
5 - Recognition light



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Wing tip - Removal / Installation
Figure 201

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FLAPS

DESCRIPTION AND OPERATION

1. GENERAL

The flaps, of metal structure, ensure a lift increase at low speeds during takeoff and landing. These flaps are of the large span, single-slot type, articulated on two arm assemblies.

A static discharger is secured to the external trailing edge of each flap.

Extension and retraction, electrically controlled from the cockpit, is ensured by an electric actuator.

The flaps have three main positions :

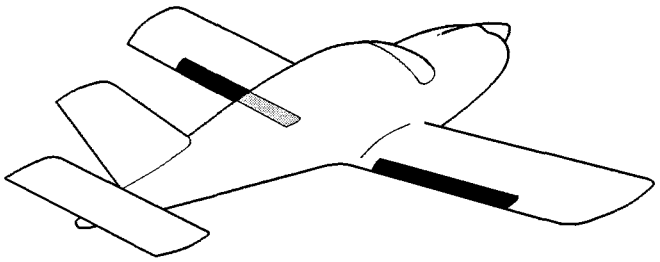
- Retracted position 0°,
- Takeoff position 10°,
- Landing position 32°.

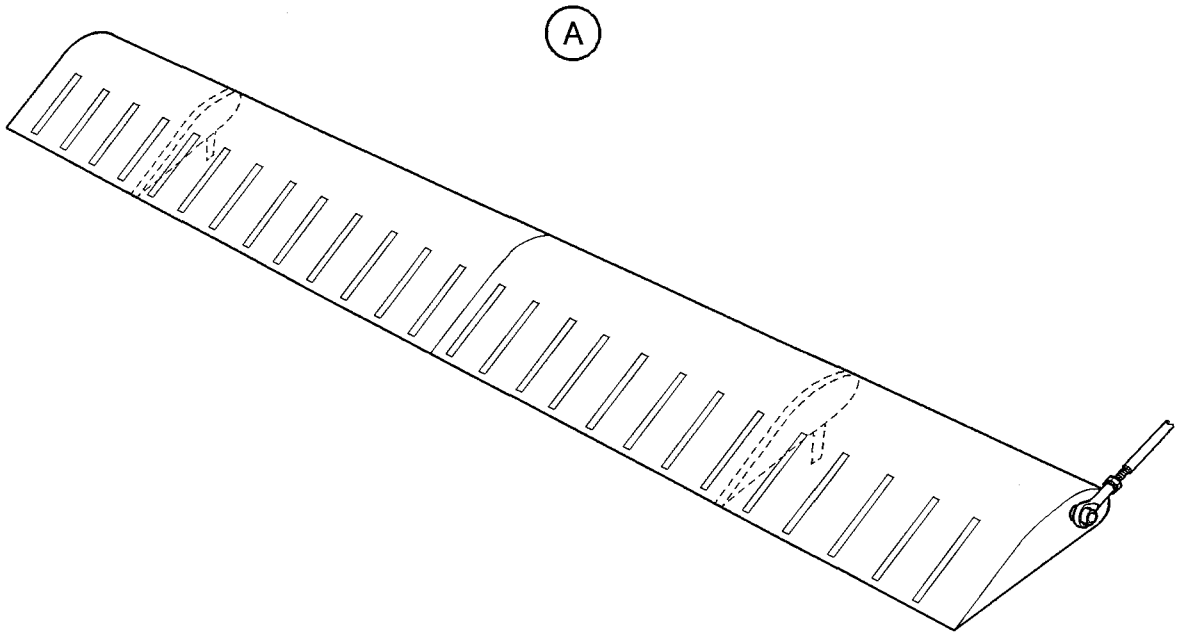
The control circuit powered by "BUS 1" bar is protected by a circuit breaker located on the L.H. circuit breaker panel.

2. LOCATION (Figure 1)

COMPONENT	QTY	AREA	ACCESS DOOR	REFERENCE
Flap	2	520 620	/	57-50-00

A - Flap





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Flaps - Identification and location of components
Figure 1

FLAPS

DESCRIPTION AND OPERATION

1. GENERAL

The flaps, of metal structure, ensure a lift increase at low speeds during takeoff and landing. These flaps are of the large span, single-slot type, articulated on two arm assemblies.

A static discharger is secured to the external trailing edge of each flap.

Extension and retraction, electrically controlled from the cockpit, is ensured by an electric actuator.

The flaps have three main positions :

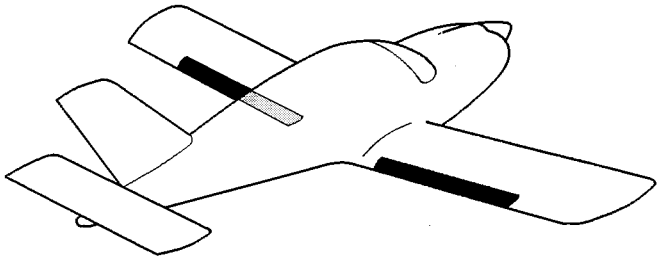
- Retracted position 0°,
- Takeoff position 10°,
- Landing position 25°30'.

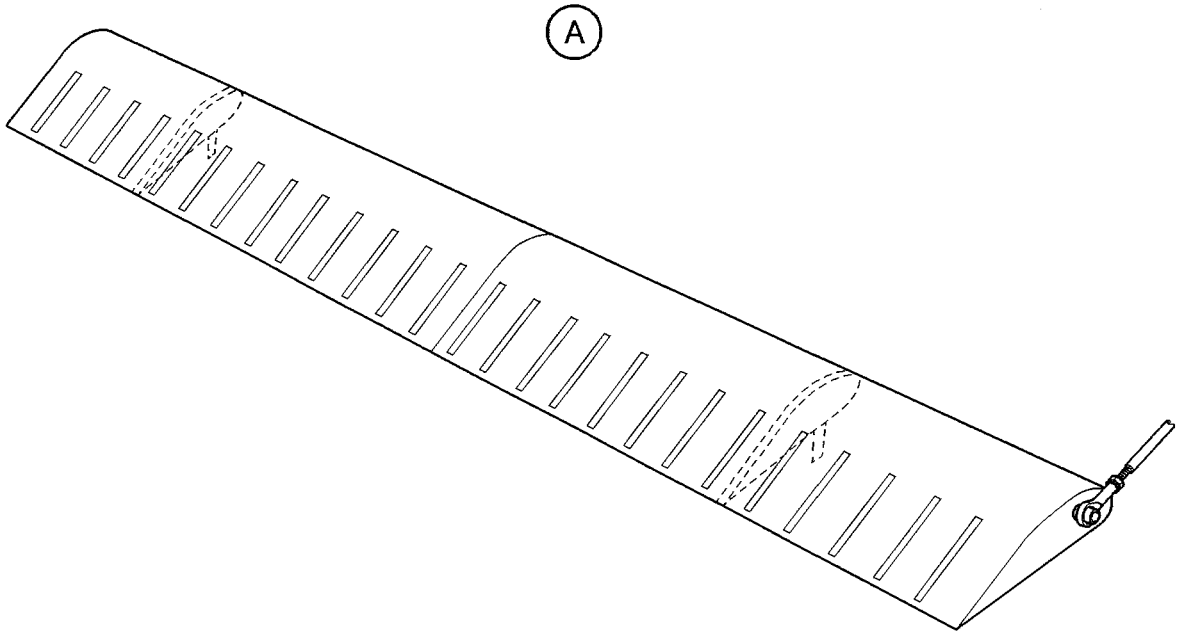
The control circuit powered by "BUS 1" bar is protected by a circuit breaker located on the L.H. circuit breaker panel.

2. LOCATION (Figure 1)

COMPONENT	QTY	AREA	ACCESS DOOR	REFERENCE
Flap	2	520 620	/	57-50-00

A - Flap





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Flaps - Identification and location of components
Figure 1

FLAPS

REMOVAL / INSTALLATION

NOTE : This procedure is applicable to L.H. and R.H. installations. Information specific to R.H. installation are given in square brackets.

1. REMOVAL OF ONE FLAP (Figures 401 and 401A)

A. Tools and consumable materials

- Padded supports

B. Procedure

1) Close main switch-breaker.

CAUTION : MAKE SURE THE FLAP AREA IS CLEAR.

2) Extend the flaps.

3) Open main switch-breaker.

4) Install the warning sign prohibiting main switch-breaker operation.

WARNING

DO NOT OPERATE
MAINTENANCE WORK IN PROGRESS

Pre-MOD. 93

5) Hold the flap and remove cotter pins (6), nuts (7), washers (8) and bolts (9). Discard cotter pins (6).

6) Disengage the flap by pulling it towards the aileron so as to clear access to input rod (4).

7) Hold the flap and remove cotter pin (1), nut (2) and washer (3). Discard cotter pin (1).

8) Disengage input rod (4) from threaded rod (5).

Post-MOD. 93

5) Remove inspection door 518 [618] - refer to 06-30-00.

6) Remove cotter pin (12), nut (13), washer (11) and bolt (10). Discard cotter pin (12).

7) Hold the flap and remove cotter pins (6), nuts (7), washers (8) and bolts (9). Discard cotter pins (6).

All

9) Disengage the flap and place it on two padded supports.

2. INSTALLATION OF ONE FLAP (Figures 401 and 401A)

A. Tools and consumable materials

None

B. Procedure

1) Lubricate hinges and rod end - refer to 12-21-04.

2) Position the flap.

Pre-MOD. 93

3) Position input rod (4) onto threaded rod (5). Install washer (3) and nut (2).

4) Install a new cotter pin (1).

5) Secure the flap to the arm assemblies with bolts (9), washers (8) and nuts (7).

6) Install new cotter pins (6).

Post-MOD. 93

3) Secure the flap to the arm assemblies with bolts (9), washers (8) and nuts (7).

4) Install new cotter pins (6).

5) Secure input rod (4) to lever (14) with bolt (10), washer (11) and nut (13).

6) Install a new cotter pin (12).

7) Install inspection door 518 [618].

All

8) Make sure all the tools and materials are removed and the work area is clean and free from debris.

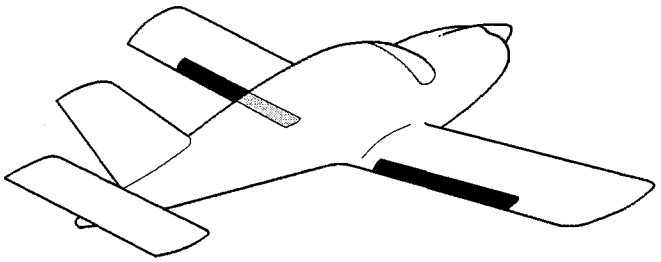
9) Close main switch-breaker.

CAUTION : MAKE SURE THE FLAP AREA IS CLEAR.

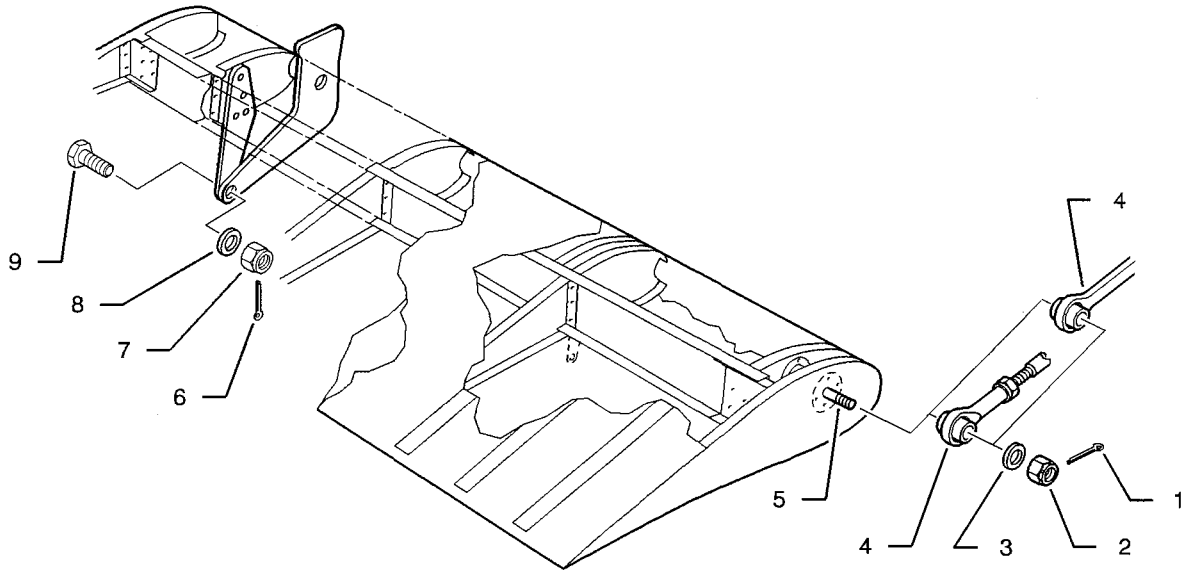
10) Retract the flaps and check travels - refer to 27-50-00.

11) Remove the warning sign prohibiting main switch-breaker operation.

12) Perform a test flight - refer to 05-30-00.



1 - Cotter pin
2 - Nut
3 - Washer
4 - Input rod
5 - Threaded rod
6 - Cotter pin
7 - Nut
8 - Washer
9 - Bolt



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Flaps - Removal / Installation
Figure 401 - Pre-MOD. 93

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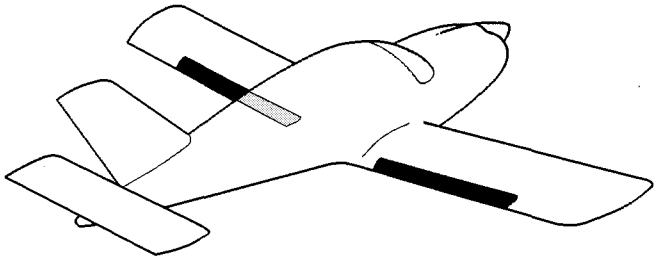
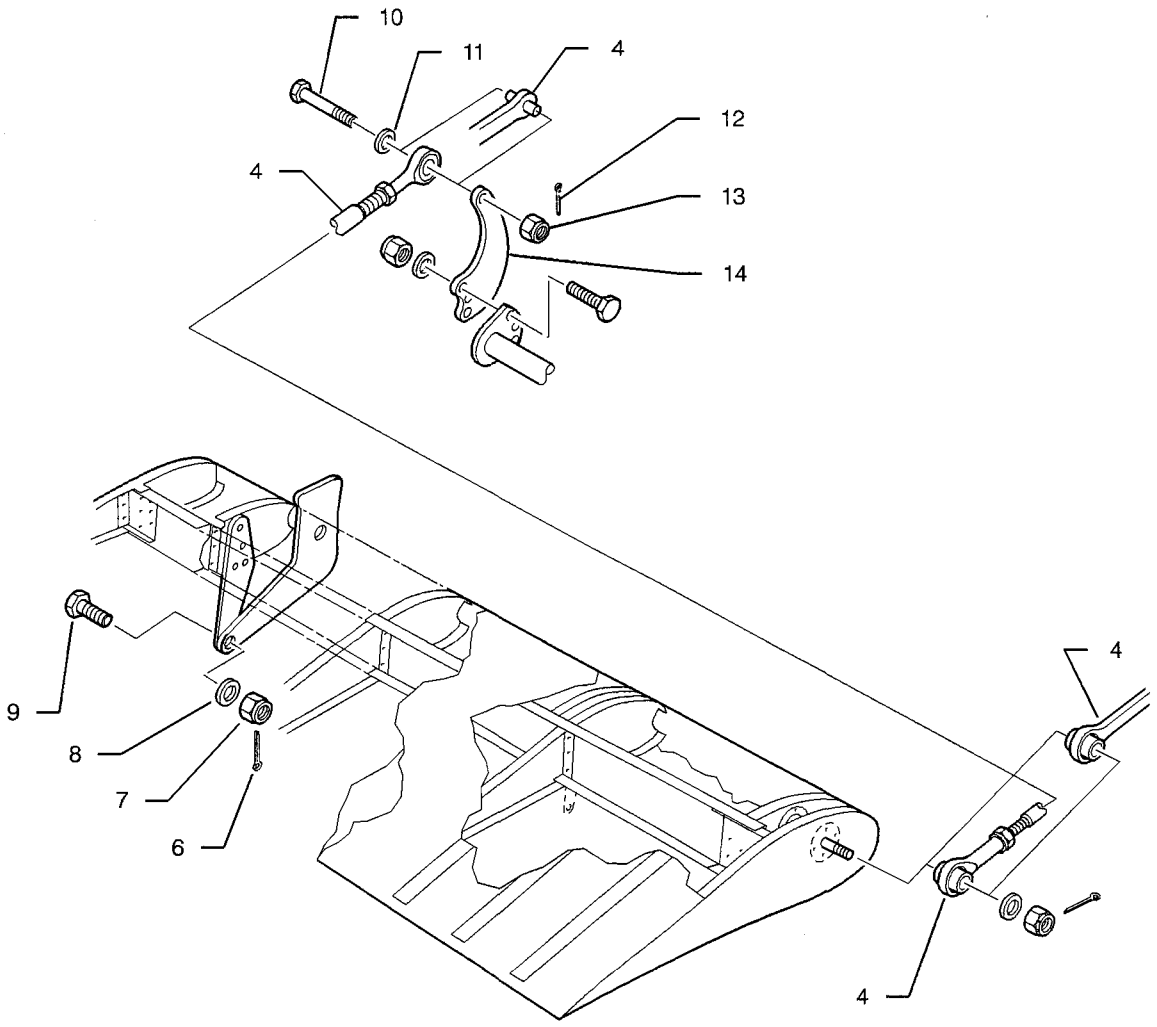


4 - Input rod
6 - Cotter pin
7 - Nut
8 - Washer
9 - Bolt
10 - Bolt
11 - Washer
12 - Cotter pin
13 - Nut
14 - Lever



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Flaps - Removal / Installation
Figure 401A - Post-MOD. 93

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AILERONS

DESCRIPTION AND OPERATION

1. GENERAL

The metal structure ailerons allow aircraft maneuver around the roll axis. They are actuated by the pilot using a control wheel and an aileron control linkage composed of rods and bellcranks.

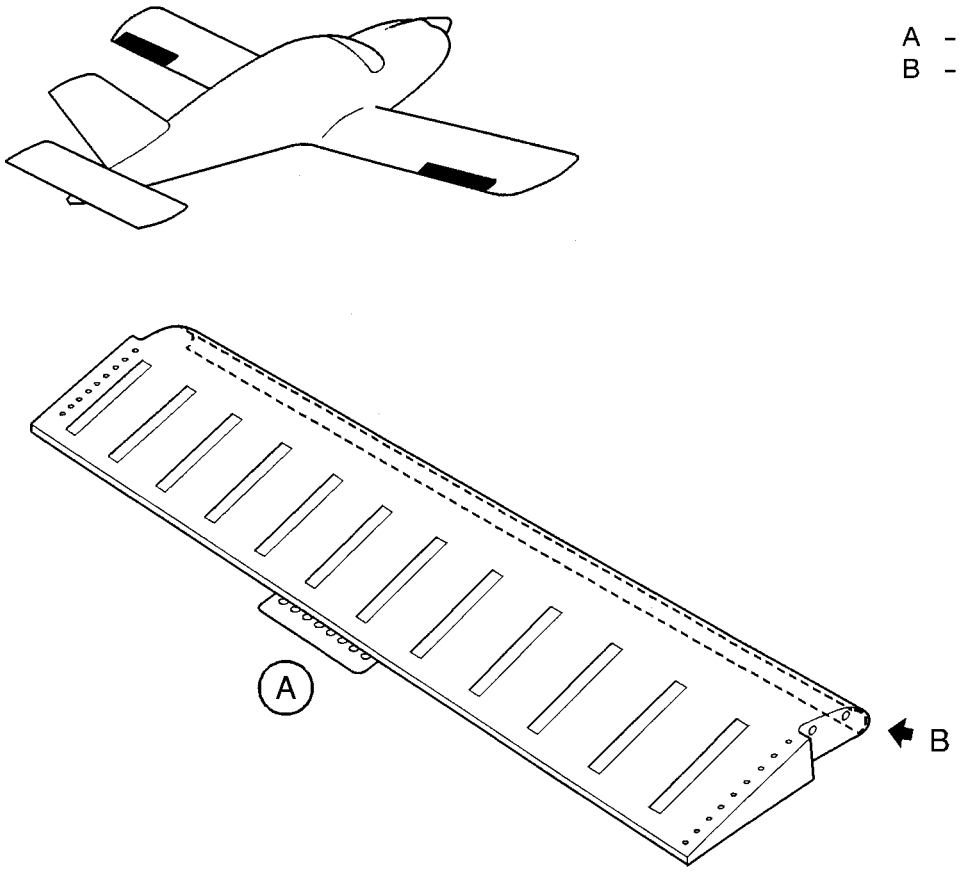
A static discharger is secured to the external trailing edge of each aileron.

With the control wheel fully turned, aileron deflection is as follows :

- Upward 15° ± 1.5,
- Downward 15° ± 1.5.

2. LOCATION (Figure 1)

COMPONENT	QTY	AREA	ACCESS DOOR	REFERENCE
Aileron	2	520 620	/	57-60-00



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Ailerons - Identification and location of components
Figure 1

AILERONS

REMOVAL / INSTALLATION

NOTE : This procedure is applicable to L.H. and R.H. installations. Information specific to R.H. installation are given in square brackets.

1. REMOVAL OF THE AILERON (Figure 401)

A. Tools and consumable materials

- Padded supports

B. Procedure

1) Remove the tip - refer to 57-30-00.

2) Close main switch-breaker.

CAUTION : MAKE SURE THE FLAP AREA IS CLEAR.

3) Extend the flaps.

4) Open main switch-breaker.

5) Remove stop screw (3) and washer (2).

6) Remove bolt (5), spacer (9) and disengage input rod (7).

7) Hold the aileron and remove bolts (4) and (10), lockplates (6), washers (8) and spacers (1). Discard lockplates (6).

NOTE : Disengage the bonding strap, if installed.

8) Disengage the aileron and place it on two padded supports.

2. INSTALLATION OF THE AILERON (Figure 401)

A. Tools and consumable materials

None

B. Procedure

NOTE : In case of repair, painting or addition of an option to the aileron, check aileron balancing - refer to 51-60-00.

1) Lubricate hinges and rod end - refer to 12-21-04.

2) Position the aileron and secure it with bolts (4) and (10), new lockplates (6), washers (8) and spacers (1).

NOTE : Secure the bonding strap, if installed. Perform the bonding procedure - refer to 20-00-12.

3) Secure input rod (7) to the aileron with bolt (5) and spacer (9).

4) Lock bolts (4), (5) and (10) with lockplates (6).

5) Install stop screw (3) and washer (2).

6) Make sure all the tools and materials are removed and the work area is clean and free from debris.

7) Close main switch-breaker.

CAUTION : MAKE SURE THE FLAP AREA IS CLEAR.

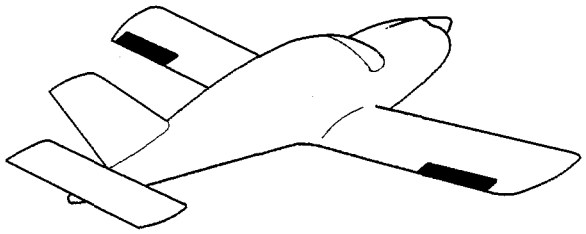
8) Retract the flaps.

9) Open main switch-breaker.

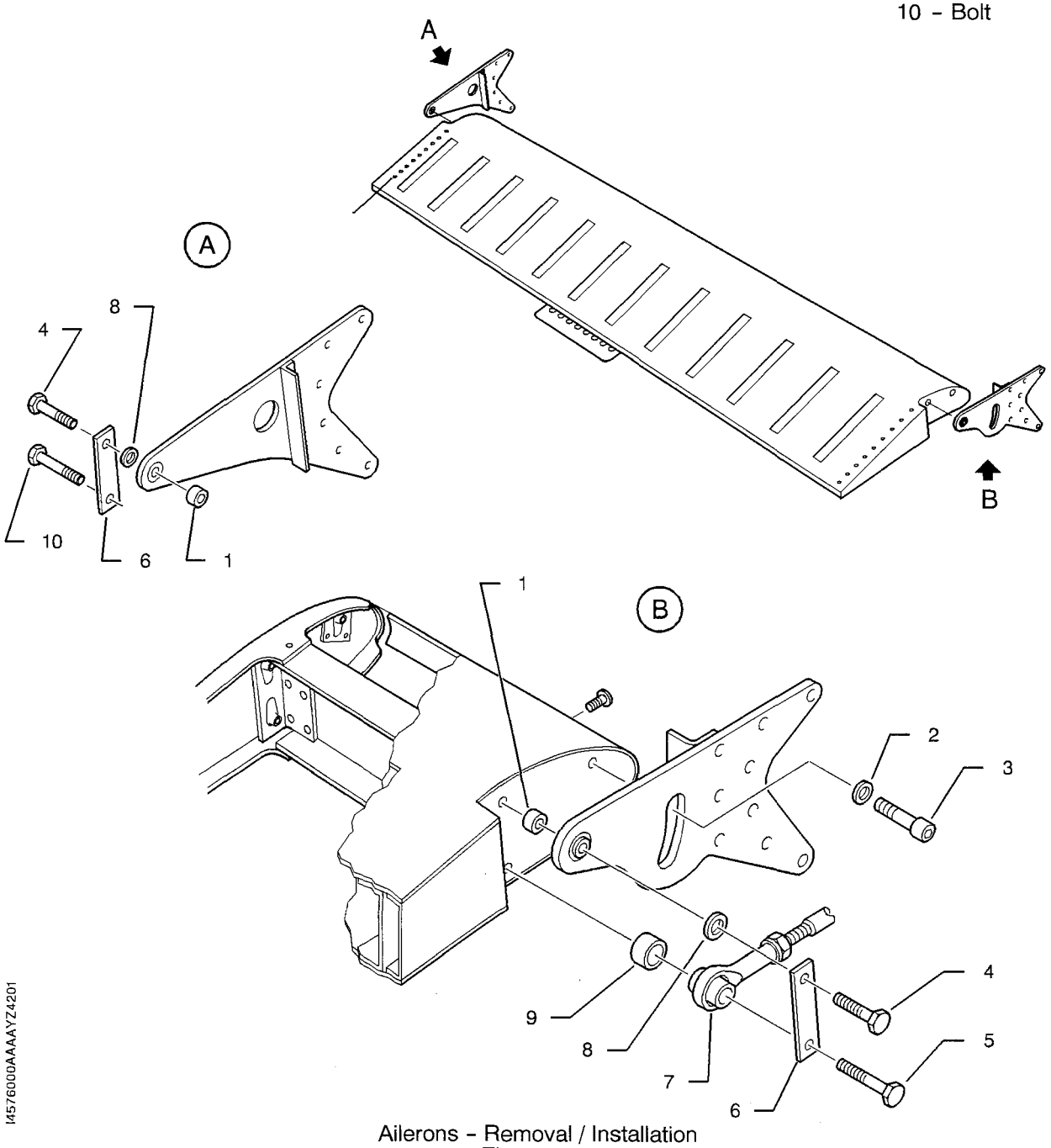
10) Install the tip - refer to 57-30-00.

11) Check the roll control - refer to 27-10-00.

12) Perform a test flight - refer to 05-30-00.



1 - Spacer
2 - Washer
3 - Stop screw
4 - Bolt
5 - Bolt
6 - Lockplate
7 - Input rod
8 - Washer
9 - Spacer
10 - Bolt



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Ailerons - Removal / Installation
Figure 401

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