Temporary Maintenance Instruction
TMI 139-513 Rev. A

Replacement of Reinforcement Bracket P/N 3P5338A14351 (L/H) or 3P5338A14451 (R/H) at STA 6700, BL 950, WL 830

All AW139 Helicopters

The technical content of this document is approved under the authority of DOA nr. EASA.21J.005.

The present TMI will be evaluated for its introduction in the standard set of Technical Publication.
If no further notice is received, the present document expires on: June 10th 2022.

2021-06-10

Introduction

This TMI provides the instructions and requirements to perform the replacement of the left or right reinforcement bracket, respectively P/N 3P5338A14351 (L/H) or 3P5338A14451 (R/H), installed at STA 6700, BL 950, WL 830.

Replacement of Reinforcement Bracket P/N 3P5338A14351 (L/H) or 3P5338A14451 (R/H) at STA 6700, BL 950, WL 830

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Table 1 References

Data Module	Title
39-A-00-20-00-00A-120A-A	Helicopter safety - Pre-operation (make helicopter safe for maintenance)
39-A-25-62-03-00A-520A-K	Left life raft container - Remove procedure
39-A-25-62-04-00A-520A-K	Right life raft container - Remove procedure
39-A-25-62-05-00A-520A-K	Left life raft control cable - Remove procedure
39-A-25-62-05-00A-720A-K	Left life raft control cable - Install procedure
39-A-25-62-06-00A-520A-K	Right life raft control cable - Remove procedure
39-A-25-62-06-00A-720A-K	Right life raft control cable - Install procedure
39-A-28-11-01-00A-520A-A	Number 1 tank - Remove procedure
39-A-28-11-02-00A-520A-A	Number 2 tank - Remove procedure
39-A-28-13-01-00A-921A-A	Number 1 tank foam installation - Replacement (remove and install a new item)
39-A-28-13-02-00A-921A-A	Number 2 tank foam installation - Replacement (remove and install a new item)
39-A-32-11-01-00A-520A-A	Left main landing gear - Remove procedure
39-A-32-11-01-00A-720A-A	Left main landing gear - Install procedure
39-A-32-12-01-00A-520A-A	Right main landing gear - Remove procedure
39-A-32-12-01-00A-720A-A	Right main landing gear - Install procedure
39-A-32-21-01-00A-520A-A	Nose landing gear - Remove procedure
39-A-32-21-01-00A-520B-A	Nose landing gear - Remove procedure
39-A-32-21-01-00A-720A-A	Nose landing gear - Install procedure
39-A-32-21-01-00A-720B-A	Nose landing gear - Install procedure
CSRP-A-51-00-00-00A-013A-D	List of consumables for repairs - Numeric index
39-A-52-12-01-00A-520A-A	Left cabin door - Remove procedure
39-A-52-12-02-00A-520A-A	Right cabin door - Remove procedure
39-A-52-61-01-00A-520A-K	Left cockpit footstep - Remove procedure
39-A-52-61-01-00A-520B-K	Left cockpit footstep - Remove procedure
39-A-52-61-02-00A-520A-K	Right cockpit footstep - Remove procedure
39-A-52-61-02-00A-520B-K	Right cockpit footstep - Remove procedure
39-A-52-63-01-00A-520A-K	Left cabin fixed footstep - Remove procedure
39-A-52-63-02-00A-520A-K	Right cabin fixed footstep - Remove procedure
39-A-53-10-01-00A-520A-A	Left sponson - Remove procedure
39-A-53-10-01-00A-720A-A	Left sponson - Install procedure
39-A-53-10-02-00A-520A-A	Right sponson - Remove procedure
39-A-53-10-02-00A-720A-A	Right sponson - Install procedure

39-A-53-40-00-00A-520A-A	Tail section (structure) - Remove procedure
39-A-53-40-00-00A-520B-A	Tail section (system components installed) - Remove procedure
39-A-62-22-00-00A-520A-A	Main rotor head - Remove procedure
39-A-63-20-00-00A-520A-A	Main gearbox group - Remove procedure
39-A-65-11-01-00A-520A-A	Number 1 drive shaft - Remove procedure
39-A-71-02-01-00A-520A-A	Number 1 engine - Remove procedure
39-A-71-02-02-00A-520A-A	Number 2 engine - Remove procedure
39-A-71-11-03-00A-520A-A	Top forward cowl - Remove procedure
39-A-71-11-05-00A-520A-A	Left aft cowl - Remove procedure
39-A-71-11-06-00A-520A-A	Right aft cowl - Remove procedure
39-A-71-11-07-00A-520A-A	Forward sliding fairing - Remove procedure
39-A-95-61-05-00A-520A-K	Left bottle assembly - Remove procedure
39-A-95-61-06-00A-520A-K	Right bottle assembly - Remove procedure
39-A-95-61-10-00A-520A-K	Aft left submersion switch - Remove procedure
39-A-95-61-11-00A-520A-K	Aft right submersion switch - Remove procedure

Table 2 Access Point

Access Panel / Door Id	Data Module
No Access Point	

Table 3 Zones

Zone ID	Data Module
No Zones	

Preliminary requirements

Required conditions

Table 2 Required conditions

Condition	Data Module/Technical Publication
The Helicopter must be safe for maintenance	39-A-00-20-00-00A-120A-A
Left cockpit footstep must be removed	39-A-52-61-01-00A-520A-K or 39-A-52-61-01-00A-520B-K
Right cockpit footstep must be removed	39-A-52-61-02-00A-520A-K or 39-A-52-61-02-00A-520B-K
Left cabin fixed footstep must be removed	39-A-52-63-01-00A-520A-K
Right cabin fixed footstep must be removed	39-A-52-63-02-00A-520A-K
Left cabin door must be removed	39-A-52-12-01-00A-520A-A
Right cabin door must be removed	39-A-52-12-02-00A-520A-A
MR head must be removed	39-A-62-22-00-00A-520A-A
Forward sliding fairing must be removed	39-A-71-11-07-00A-520A-A
Top forward cowl must be removed	39-A-71-11-03-00A-520A-A
Left aft cowl must be removed	39-A-71-11-05-00A-520A-A
Right aft cowl must be removed	39-A-71-11-06-00A-520A-A
Main Gearbox Group must be removed	39-A-63-20-00-00A-520A-A
Number 1 Engine must be removed	39-A-71-02-01-00A-520A-A
Number 2 Engine must be removed	39-A-71-02-02-00A-520A-A
Tail section must be removed	39-A-53-40-00-00A-520A-A or 39-A-53-40-00-00A-520B-A
Number 1 drive shaft must be removed	39-A-65-11-01-00A-520A-A
Left life raft container must be removed	39-A-25-62-03-00A-520A-K
Right life raft container must be removed	39-A-25-62-04-00A-520A-K
Left bottle assembly must be removed	39-A-95-61-05-00A-520A-K
Right bottle assembly must be removed	39-A-95-61-06-00A-520A-K
Aft left submersion switch must be removed	39-A-95-61-10-00A-520A-K
Aft right submersion switch must be removed	39-A-95-61-11-00A-520A-K
Seats must be removed	Refer to applicable DM as function of the cabin configuration
Number 1 tank must be removed	39-A-28-11-01-00A-520A-A
Number 2 tank must be removed	39-A-28-11-02-00A-520A-A
Number 1 tank foam must be removed	39-A-28-13-01-00A-921A-A
Number 2 tank foam must be removed	39-A-28-13-02-00A-921A-A

Support equipment

Table 3 Support Equipment		
Nomenclature	Identification No.	Qty
1. Fuselage Ground Support Tool	Local supply	1

Note: Refer also to ITEP for the special tools required to comply with the AMP Data Module referenced in Procedure and in Required conditions.

Supplies

Table 4 Supplies		
Nomenclature	Identification No.	Qty
1. Hi-lock	HL19PB-5-11 HL19PB-5-12 HL20PB-5-6 HL20PB-5-7 HL20PB-5-9 HL20PB-5-10 HL20PB-5-11 HL20PB-5-12	AR AR AR AR AR AR AR AR
2.Collar	HL86PB-5	AR
3.Sealant	AWMS05-004 Ty II, Cl B-2	AR

Note: Sealant spec. AWMS05-004 ty II, Cl B-2 is available for local supply under trade name PROSEAL 890 B-2. As alternative, it is possible to use PR1440 B-2 or MC236 B-2 as per CSRP-A-51-00-00-00A-013A-D.

Spares

Table 5 Spares		
Nomenclature	Identification No.	Qty
1. LH Bracket	3P5338A14351M01	1
2. RH Bracket	3P5338A14451A1	1

Safety conditions

WARNINGS

The materials that follow are dangerous. Before you do this procedure, make sure that you know all the safety precautions and first aid instructions for these materials:

- **Sealant (Supply Ref. 3)**

NOTES

A. Place an identification tag on all components that are re-usable, including the attaching hardware that has been removed to gain access to the modification area and adequately protect them until their later re-use.
B. During drilling operations pay extreme attention in order to prevent instruments, cables and hosing damage. After drilling, clean the area and remove sharp edges. Apply on bare metal a light film of primer unless the hole is used for ground connection.
C. Before installing new rivets check for holes condition; if holes condition is not suitable use oversize rivets. If necessary install rivets with different grips.
D. All riveting and de-riveting in accordance with the IETP CSRP.
E. All Hi-Lok fasteners installed and removed in accordance with IETP CSRP.
F. Use aliphatic naphtha to degrease. Cleaned surfaces shall be allowed to air dry for at least 30 minutes before bonding.
G. All dimensions are in mm.

Procedure

1. Locally manufacture the ground support tool (Support Equipment Ref. 1) making reference to the guidelines of Appendix A.

2. In accordance with AMP 39-A-07-32-00-00A-028A-A, lift the helicopter and put it on fuselage saddles (Support Equipment Ref. 1) at STA 3120, 3900, 4800, 5700, 6700 and 8700 (ref. to figure A-4):

   2.1. Adapt the length of saddle STA 6700, taking care to let free the area below the bracket to be replaced as detailed into Appendix A (ref. figure A-2).

3. In accordance with AMP 39-A-32-21-01-00A-520A-A or 39-A-32-21-01-00A-520B-A, remove nose landing gear.

4. In accordance with AMP 39-A-32-11-01-00A-520A-A and 39-A-32-12-01-00A-520A-A, remove left and right main landing gears.

5. In accordance with AMP 39-A-53-10-01-00A-520A-A and 39-A-53-10-02-00A-520A-A, remove left and right sponsons.

6. In accordance with applicable steps in AMP 39-A-25-62-05-00A-520A-K and 39-A-25-62-06-00A-520A-K, remove the parts that attach the left and right life raft cables to the structure of the left and right sponson, respectively. Secure the portions of cables removed.

7. Get access to the work area in the fuel compartment of the helicopter main cabin at approximately STA 6700 and WL 830 and BL +/-950 (L/H or R/H depending on which side is installed the bracket to be replaced).

8. Remove the bracket at BL -950 (if the affected component is the L/H side one) or at BL +950 (if the affected component is the R/H side one).

9. Temporary place the L/H bracket (Spares Ref. 1) or R/H bracket (Spares Ref. 2) in its position on the structure.

10. Countermark installation holes on the part.

11. Remove the bracket and enlarge existing holes to nominal values reported in Figures 7 (Ø4.1mm).

12. Deburr and clean holes.

13. Install the L/H bracket (Spares Ref. 1) or R/H bracket (Spares Ref. 2) on structure by means of related hardware (Supplies Ref. 1 and 3), in accordance with the constructions series which the involved helicopter belongs to (SN, LN, ENH or PLUS), as shown on Figures 1 thru 6. The bracket shall be installed with interlayer sealing under spec. AWMS05-004 Ty II Cl B-2 (Supplies Ref. 3).

    NOTE:
    Please be aware that hardware used to install frame and surrounding structures can be different from what previously installed. Refer to applicable figures to identify the hardware.

14. In accordance with applicable steps in AMP 39-A-25-62-05-00A-720A-K and 39-A-25-62-06-00A-720A-K, install the portions of cables removed at step 6.

15. In accordance with AMP 39-A-53-10-01-00A-720A-A and 39-A-53-10-02-00A-720A-A, install left and right sponsons.

16. In accordance with AMP 39-A-32-11-01-00A-720A-A and 39-A-32-12-01-00A-720A-A, install left and right main landing gears.

17. In accordance with AMP 39-A-32-21-01-00A-720A-A or 39-A-32-21-01-00A-720B-A, install nose landing gear.

Requirements after job completion

1. Return helicopter to flight configuration.

2. Remove all the tools and the other items from the work area. Make sure that the work area is clean.

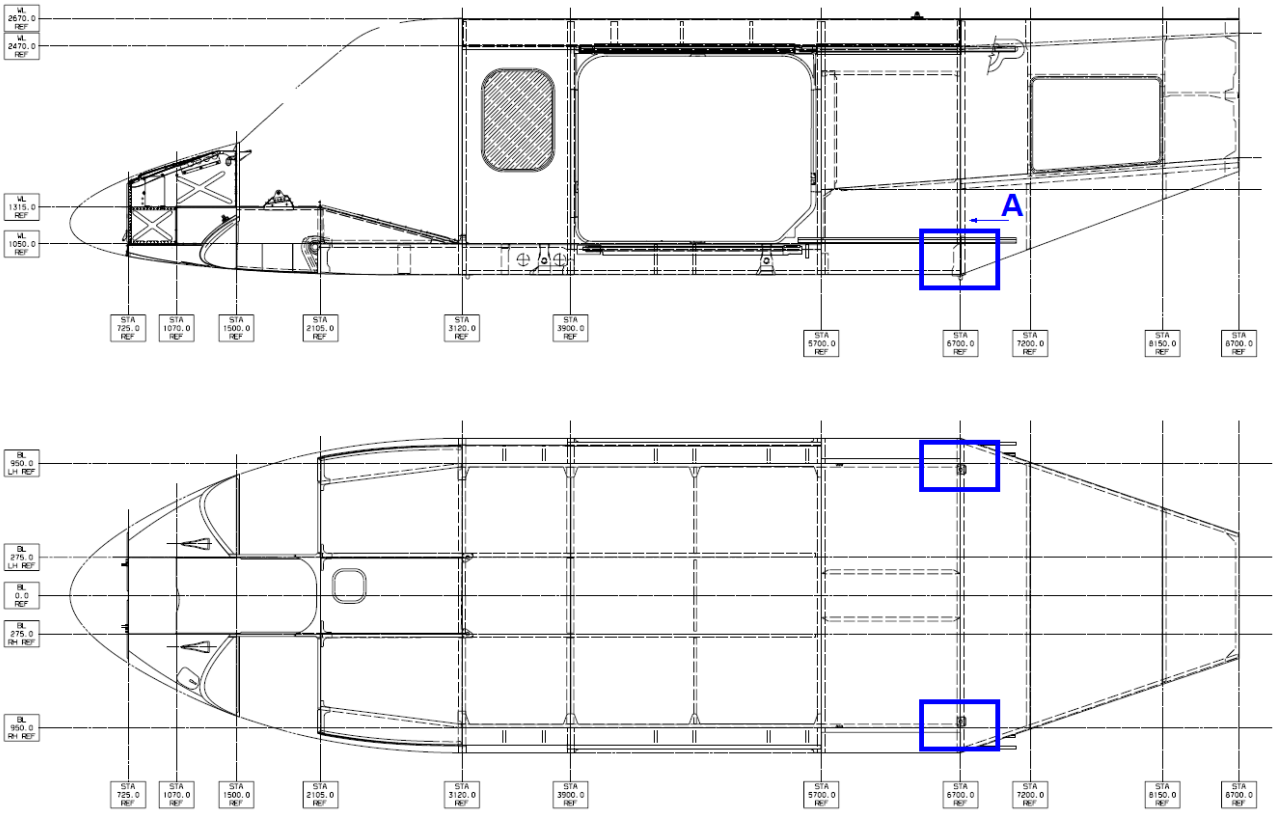
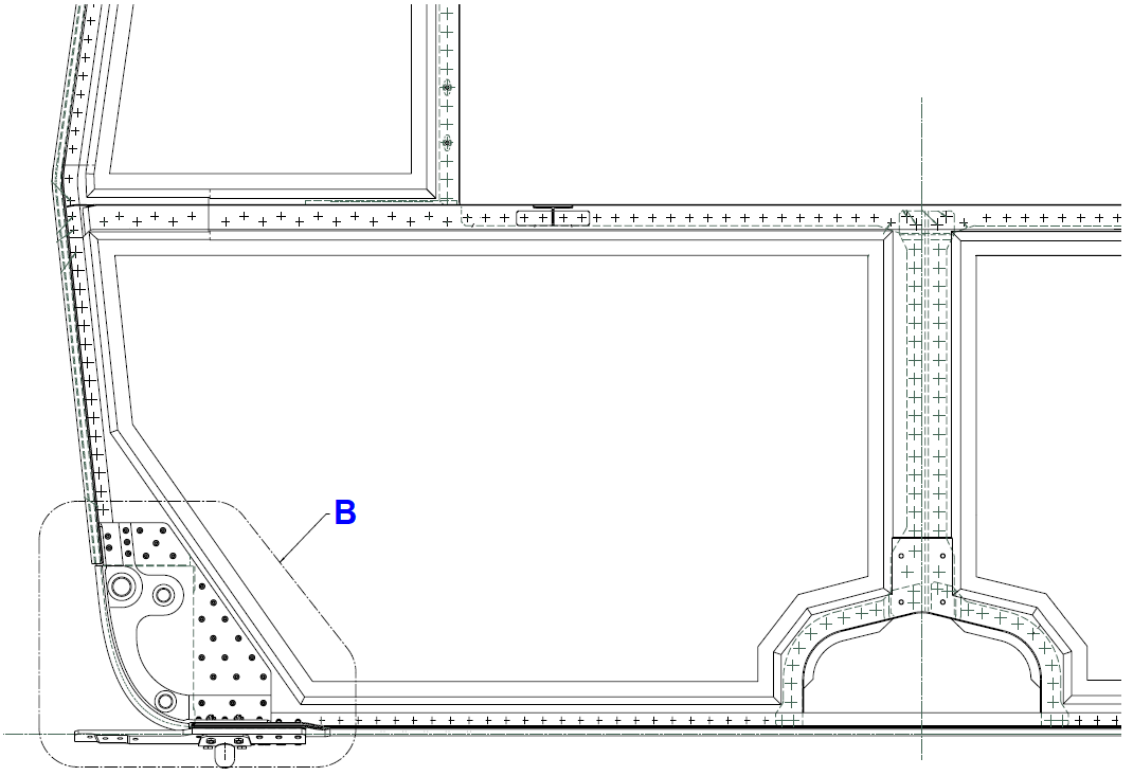
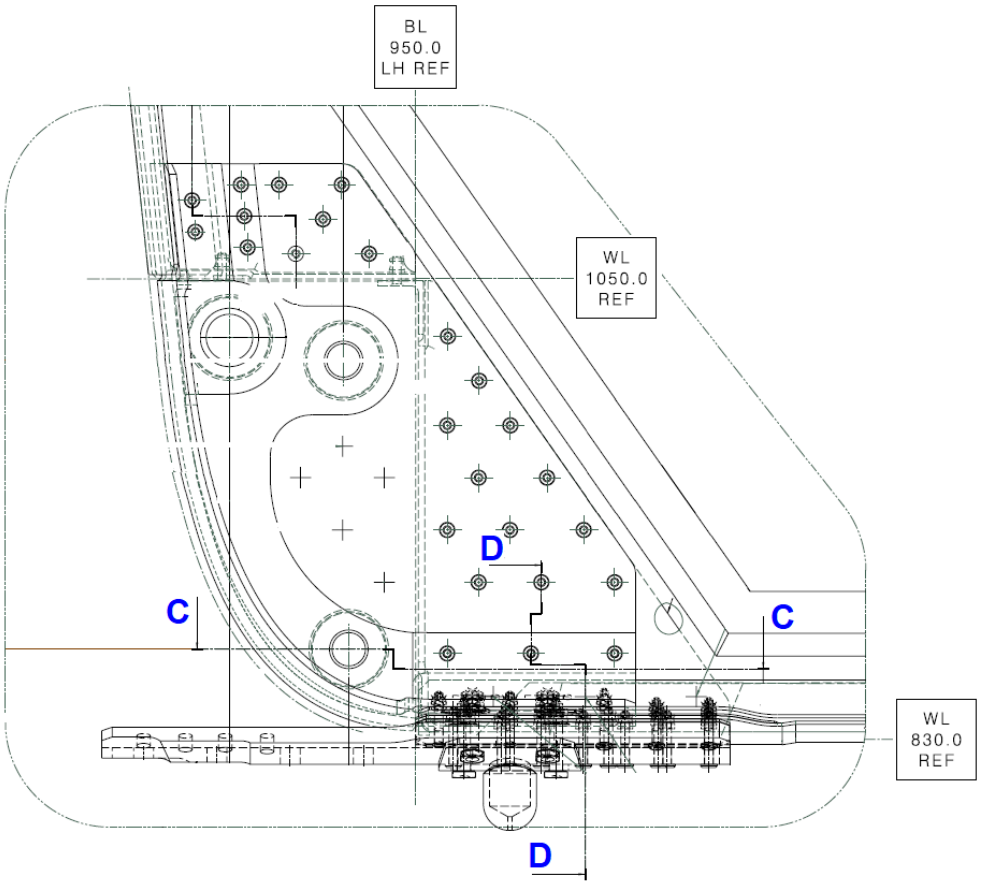


Figure 1



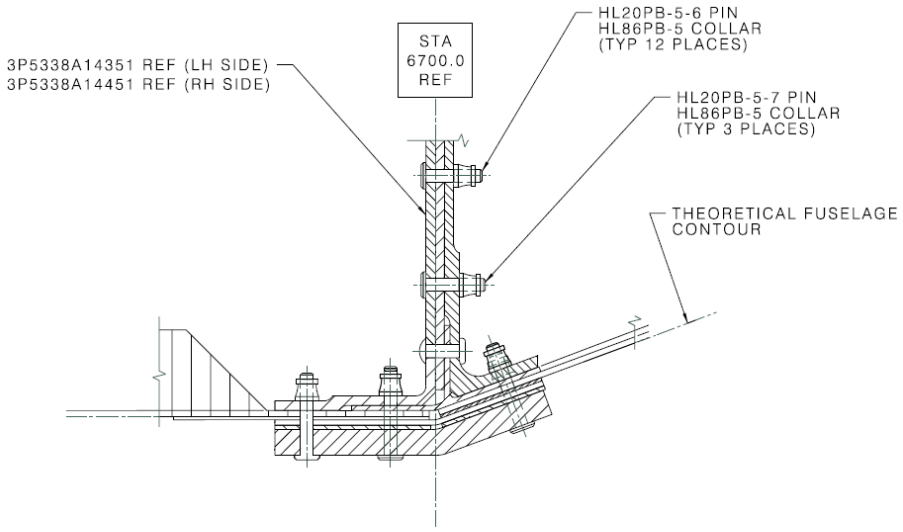
VIEW A
(RH SIDE SYMMETRICAL)

Figure 2



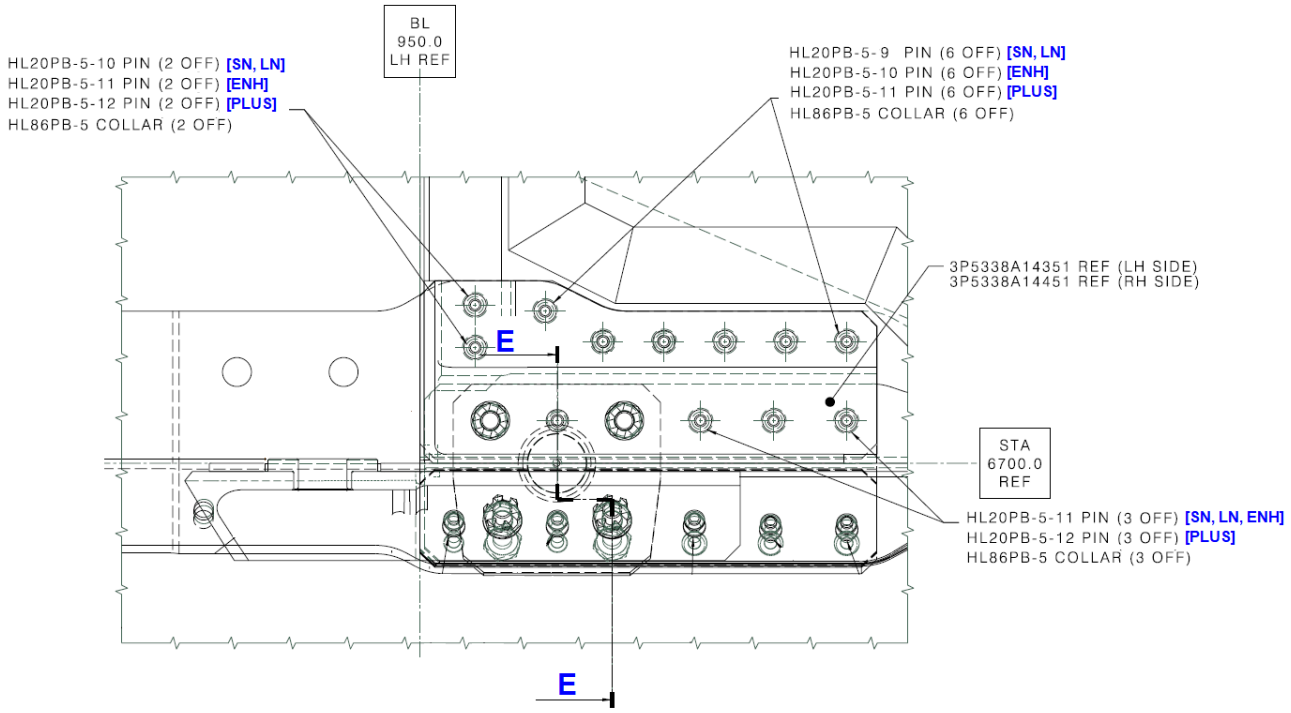
DETAIL B
(RH SIDE SYMMETRICAL)

Figure 3



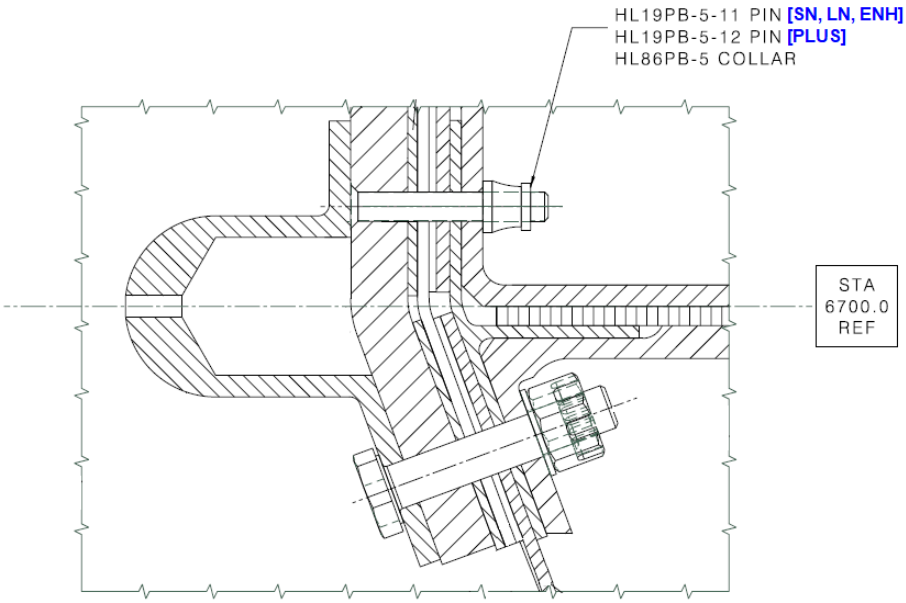
SECTION D - D
(RH SIDE SYMMETRICAL)

Figure 4



SECTION C - C
(RH SIDE SYMMETRICAL)

Figure 5



SECTION E - E
(RH SIDE SYMMETRICAL)

Figure 6

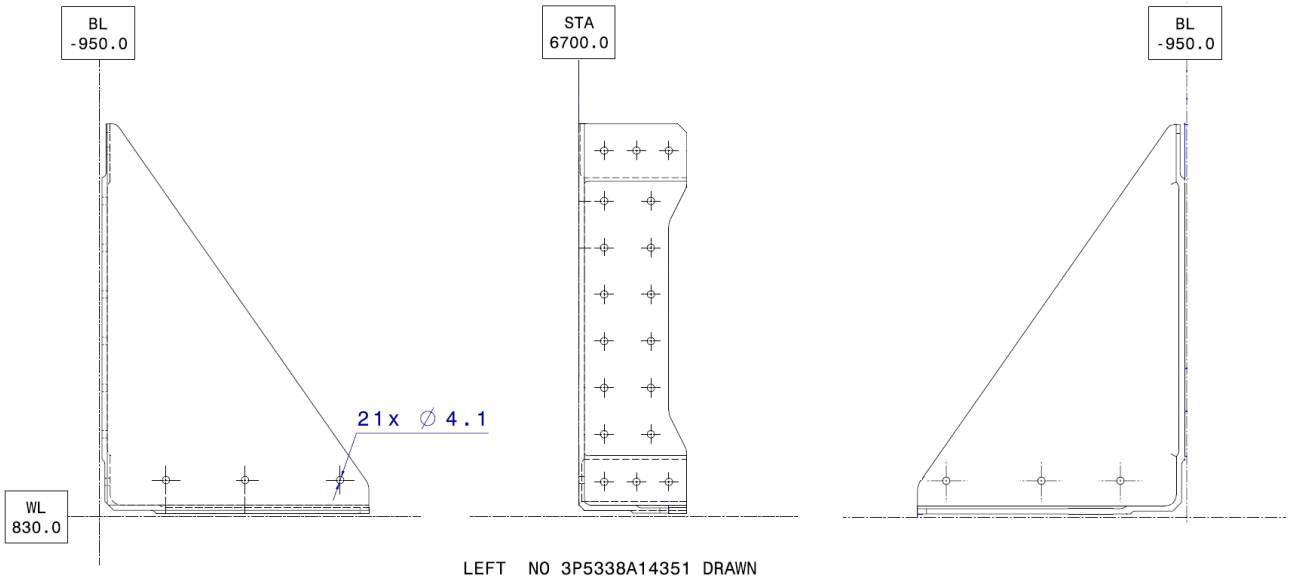

BL
-950.0
STA
6700.0
BL
-950.0
21x ∅4.1
WL
830.0
LEFT NO 3P5338A14351 DRAWN
RIGHT NO 3P5338A14451 SYMMETRICAL

Figure 7

Appendix A – Fuselage Ground Support Tool

Taking as reference the below enclosed pictures and dimensions (Figures A-1 to A-4), locally produce or adapt the ground support tool needed to sustain the airframe structure.
The following requirements have to be respected:

1. The airframe must be sustained on saddles at STA 3120, 3900, 4800, 5700 and 6700, as shown on figure A-1 and A-4;

2. Length of saddles (transversal beams) at STA 3120, 3900, 4800 and 5700 must be at least equal to the overall airframe width, plus a proper minimum safety margin to ensure that fuselage is stable during the activity accomplishment (ref. to figure A-2). A nominal width of 2300mm can be considered as a suitable reference value;

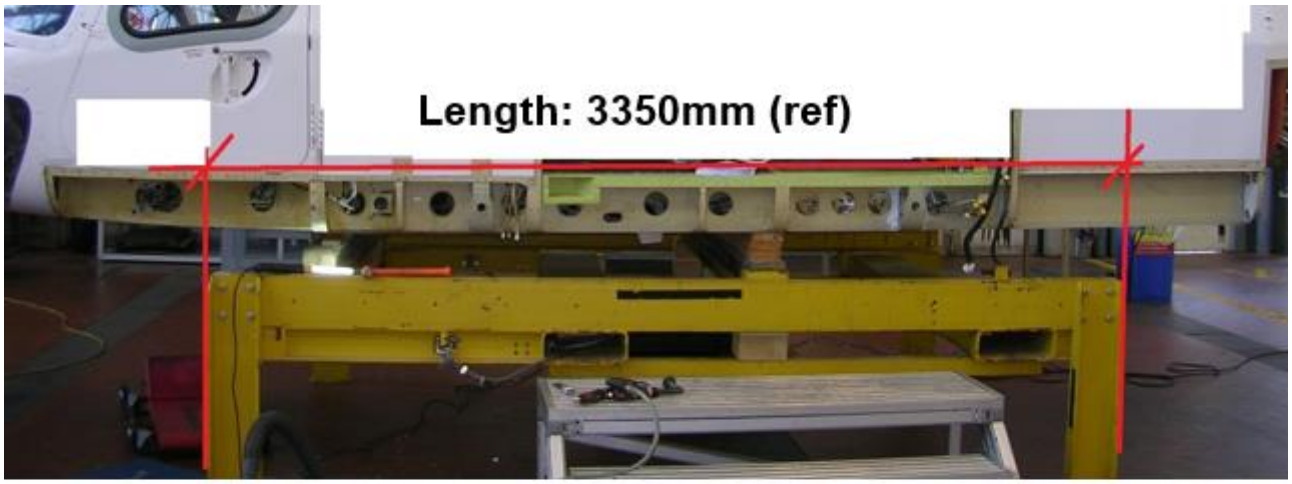
3. Concerning STA 6700, it is needed to sustain the airframe only for a portion of the total width (1700mm can be considered a suitable reference value), keeping free the area below the affected bracket (left or right), in order to let enough margin of action for the replacement as shown on figure A-2:

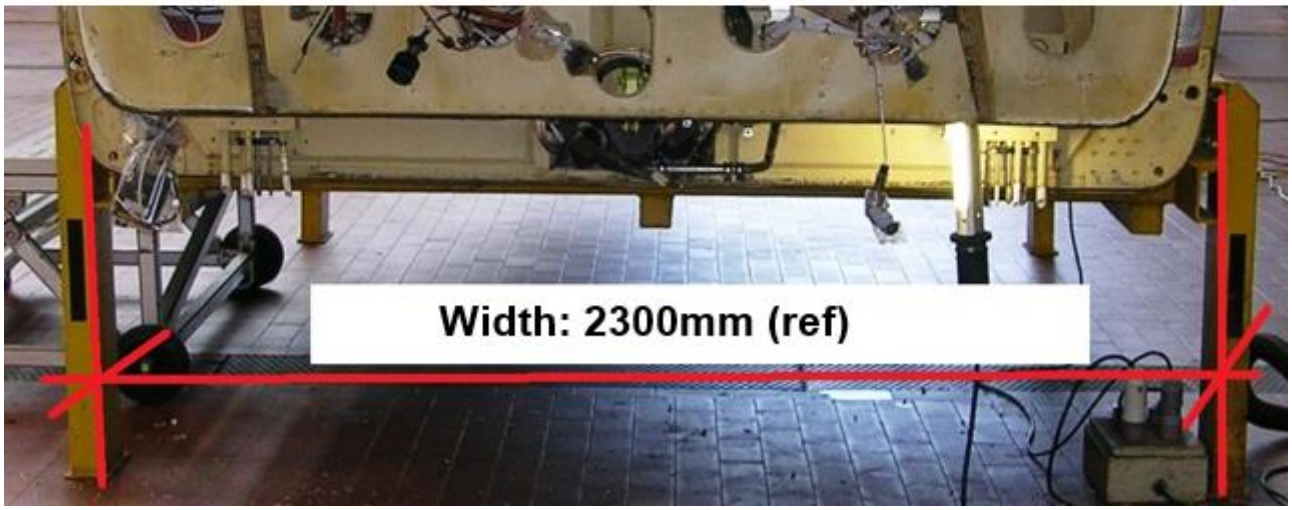
   3.1 If the bracket to be replaced is the left one, the saddle at STA 6700 will have to sustain the fuselage approximately from BL-750 thru BL+950 (ref. length 1700mm);

   3.2 If the bracket to be replaced is the left one, the saddle at STA 6700 will have to sustain the fuselage approximately from BL-750 thru BL+950 (ref. length 1700mm);

4. For stability purpose, it is recommended to sustain the fuselage also at STA 8700 by mean of suitable support fixture as shown on figure A-3;

Figure A-1


Length: 3350mm (ref)


Width: 2300mm (ref)

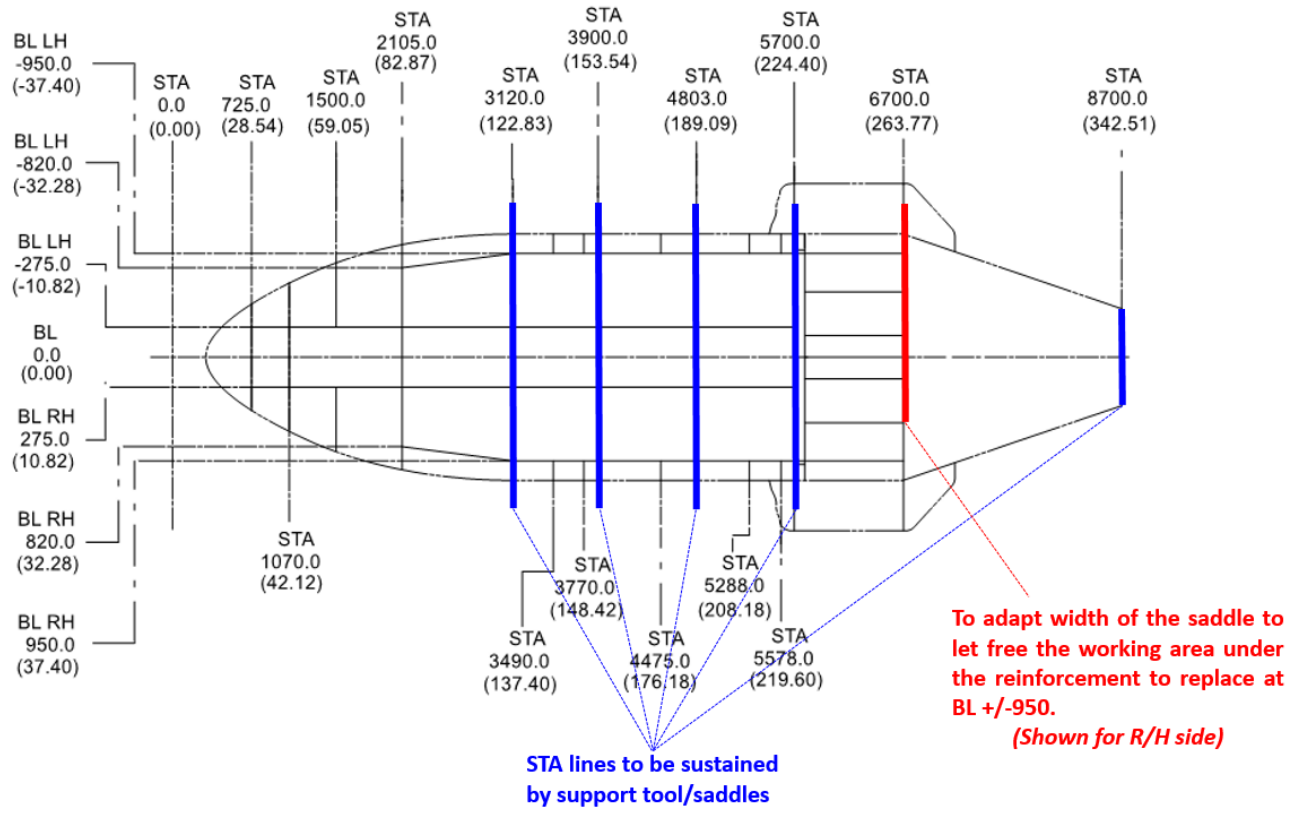
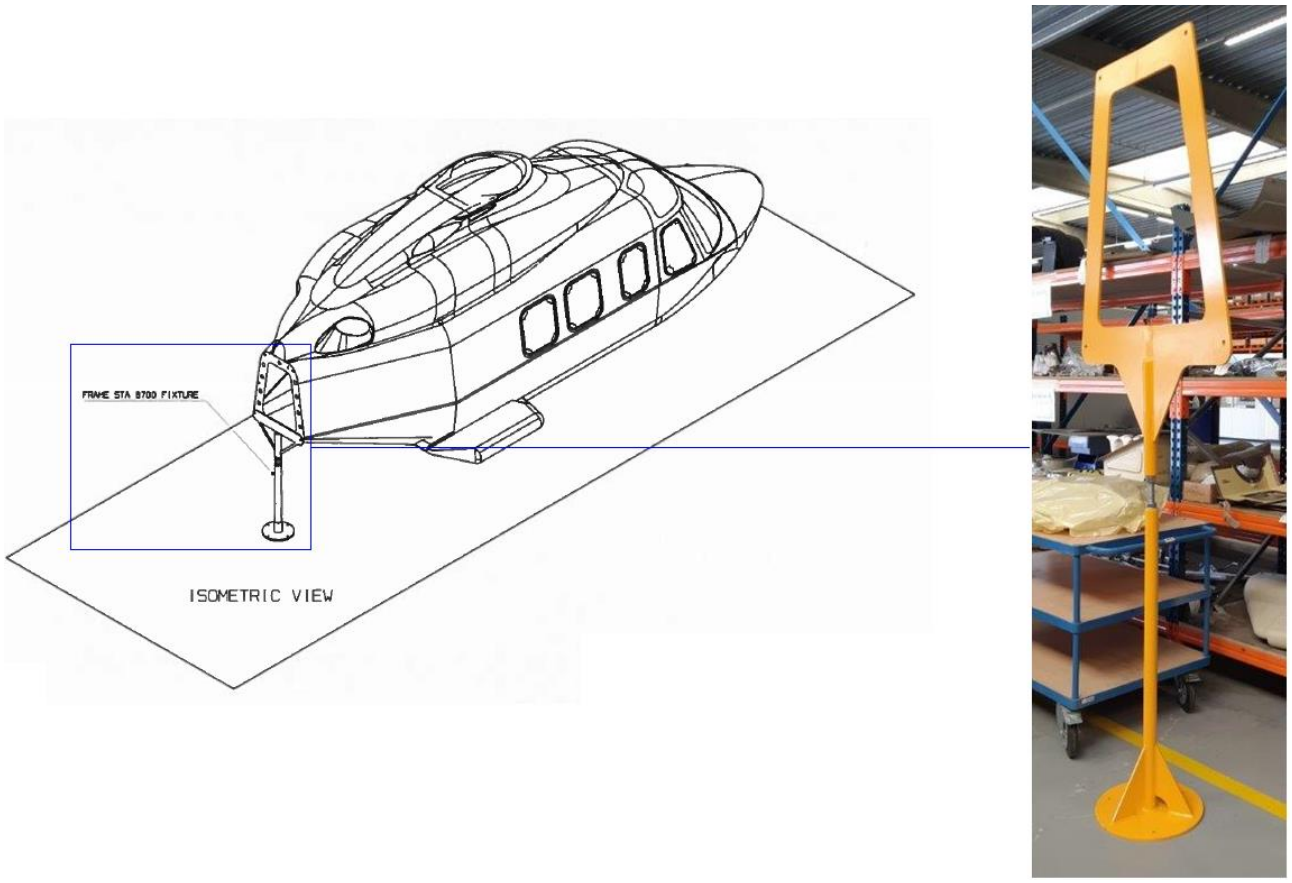

BL LH -950.0 (-37.40)
BL LH -820.0 (-32.28)
BL LH -275.0 (-10.82)
BL 0.0 (0.00)
BL RH 275.0 (10.82)
BL RH 820.0 (32.28)
BL RH 950.0 (37.40)
STA 0.0 (0.00)
STA 725.0 (28.54)
STA 1070.0 (42.12)
STA 1500.0 (59.05)
STA 2105.0 (82.87)
STA 3120.0 (122.83)
STA 3490.0 (137.40)
STA 3770.0 (148.42)
STA 3900.0 (153.54)
STA 4475.0 (176.18)
STA 4803.0 (189.09)
STA 5288.0 (208.18)
STA 5578.0 (219.60)
STA 5700.0 (224.40)
STA 6700.0 (263.77)
STA 8700.0 (342.51)
STA lines to be sustained by support tool/saddles
To adapt width of the saddle to let free the working area under the reinforcement to replace at BL +/-950.
(Shown for R/H side)

Figure A-2


FRAME STA 6700 FIXTURE
ISOMETRIC VIEW

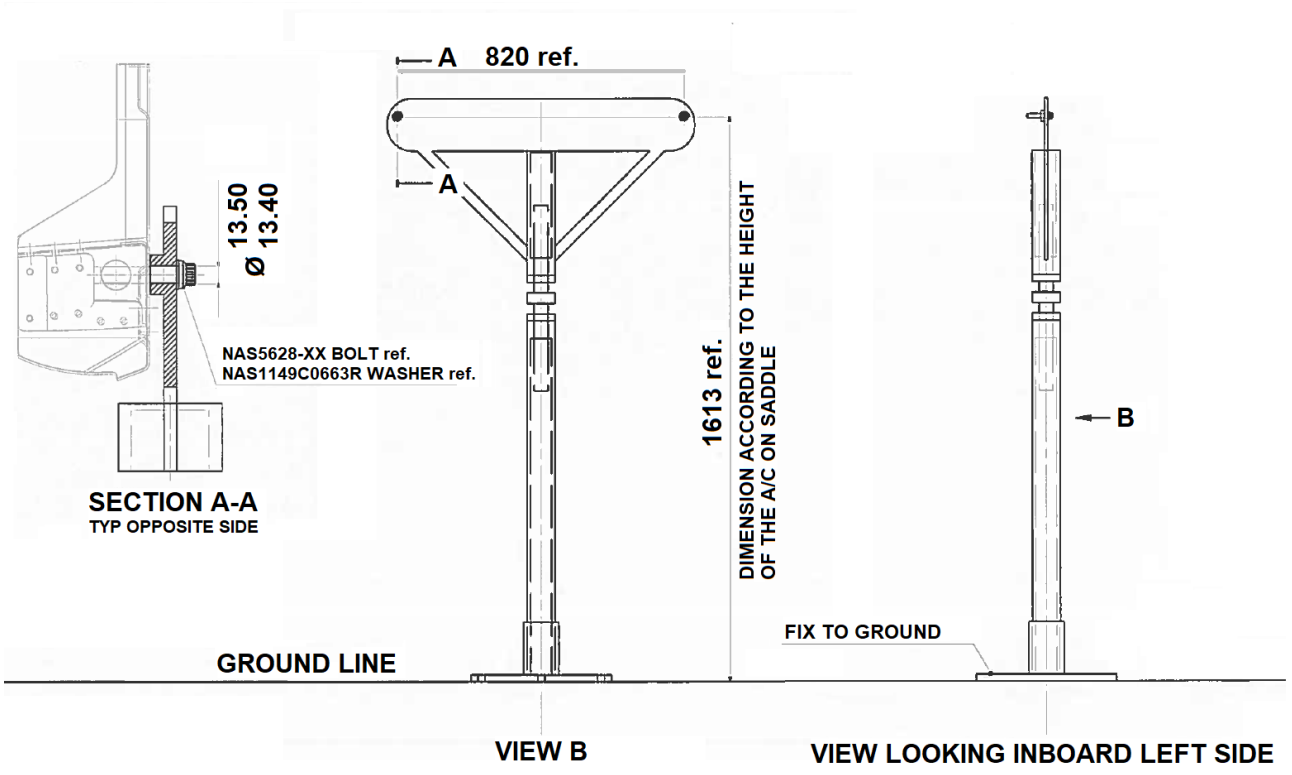

A 820 ref.
A
13.50
Ø 13.40
NAS5628-XX BOLT ref.
NAS1149C0663R WASHER ref.
SECTION A-A
TYP OPPOSITE SIDE
1613 ref.
DIMENSION ACCORDING TO THE HEIGHT
OF THE A/C ON SADDLE
B
FIX TO GROUND
GROUND LINE
VIEW B
VIEW LOOKING INBOARD LEFT SIDE

Figure A-3

Figure A-4