

Temporary Maintenance Instruction TMI 139-345 Rev B

Rear fuselage central fitting at STA8700 P/N 3P5340A14153 – Replacement procedure

AW139 Equipped with MIDDLE LEFT BRACKET STA 8700 P/N 3P5340A14153

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: July 22nd 2022.

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Introduction

The purpose of this Temporary Maintenance Instruction is to provide the procedure necessary to perform the replacement of central fitting at STA8700 P/N 3P5340A14153.

Rev B of this TMI is published in order to extend its applicability to all AW139 equipped with REAR FUSELAGE ASSY P/N 3P5340A00132 and 3P5340A00133 without REAR FITTING REINFORCEMENT RETRO-MOD P/N 3G5306P38811 (SB139-418).



Rear Fuselage Central Fitting at STA 8700 P/N 3P5340A14153 -**Replacement Procedure**

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References

Table 1 References			
Data Module	Title		
AMP – 39-A-00-20-00-00A-120A-A	Helicopter safety – Make the helicopter safe for maintenance		
AMP – 39-A-53-40-00-00A-520A-A	Tail Section (structure) – Remove Procedures		
AMP – 39-A-53-40-00-00A-520B-A	Tail Section (system components installed) – Remove Procedures		
AMP – 39-A-53-40-00-00A-720A-A	Tail Section (structure) – Install Procedures		
AMP – 39-A-53-40-00-00A-720B-A	Tail Section (system components installed) – Install Procedures		
AMP – 39-A-71-11-03-00A-520A-A	Top Forward Cowl – Remove Procedures		



AMP – 39-A-71-11-03-00A-720A-A	Top Forward Cowl – Install Procedures
AMP – 39-A-71-11-04-00A-520A-A	Top Aft Cowl – Remove Procedures
AMP – 39-A-71-11-04-00A-720A-A	Top Aft Cowl – Install Procedures
AMP – 39-A-71-11-05-00A-520A-A	Left Aft Cowl – Remove Procedures
AMP – 39-A-71-11-05-00A-720A-A	Left Aft Cowl – Install Procedures
AMP – 39-A-71-11-06-00A-520A-A	Right Aft Cowl – Remove Procedures
AMP – 39-A-71-11-06-00A-720A-A	Right Aft Cowl – Install Procedures
AMP – 39-A-78-10-01-00A-520A-A	Number 1 Nozzle - Remove Procedures
AMP – 39-A-78-10-01-00A-720A-A	Number 1 Nozzle - Install Procedures
AMP – 39-A-78-10-02-00A-520A-A	Number 2 Nozzle - Remove Procedures
AMP – 39-A-78-10-02-00A-720A-A	Number 2 Nozzle - Install Procedures
AMP – 39-A-25-83-05-00A-520A-A	Left Lining Panel - Remove Procedures
AMP – 39-A-25-83-05-00A-720A-A	Left Lining Panel - Install Procedures

Preliminary Requirements

Required conditions

Table 2 Required conditions			
Condition	Data Module/Technical Publication		
Helicopter must be safe for maintenance	39-A-00-20-00-00A-120A-A		
Tail Section – Remove Procedures	39-A-53-40-00-00A-520A-A or 39-A-53-40-00-00A-520B-A		
Top Forward Cowl – Remove Procedures	39-A-71-11-03-00A-520A-A		
Top Aft Cowl – Remove Procedures	39-A-71-11-04-00A-520A-A		
Left Aft Cowl – Remove Procedures	39-A-71-11-05-00A-520A-A		
Right Aft Cowl – Remove Procedures	39-A-71-11-06-00A-520A-A		
Number 1 Nozzle - Remove Procedures	39-A-78-10-01-00A-520A-A		
Number 2 Nozzle - Remove Procedures	39-A-78-10-02-00A-520A-A		
Left Lining Panel - Remove Procedures	39-A-25-83-05-00A-520A-A		



Support equipment

Table 3 Support Equipment			
Nomenclature	Identification No.	Qty	
Positioning and Drilling Tool Kit	3G5350A00133A005A	1	

Supplies

Table 4 Supplies			
Nomenclature	Identification No.	Qty	
1. Adhesive EA9309.3NA	C021	AR	
2. Adhesive MIL-S-81733 Ty. 2 Cl. B2, PR1436G	500215763	AR	
3. Sealing Compound MIL-PRF-81733 Ty. 1 Cl. 2	900004549	AR	
4. Aliphatic Naphtha	C059	AR	

Spares

Table 3 Spares			
Nomenclature	Identification No.	Qty	
1. Middle Left Bracket 2. Hi-Lok Pin 3. Hi-Lok Pin 4. Hi-Lok Pin 5. Hi-Lok Pin 6. Hi-Lok Collar	3P5340A14153 HL20PB-6-3 HL19PB-6-5 HL19PB-6-6 HL19PB-6-7 HL86PB-6	1 6 2 2 2 2 12	

Safety condition

WARNING

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

- Adhesive (Supply Ref. 1)
- Adhesive (Supply Ref. 2)
- Sealing Compound (Supply Ref. 3)
- Aliphatic Naphtha (Supply Ref. 4)



Procedure

NOTE

Exercise extreme care during drilling operations to prevent damage to adjacent structure

NOTE

After drilling, remove all swarf and sharp edges. Apply on bare metal a light film of primer unless the hole is used for ground connection

NOTE

Use aliphatic naphtha (Supply Ref. 4) to degrease. Cleaned surfaces shall be allowed to air dry for at least 30 minutes before bonding

NOTE

All dimensions are in mm

- 1. Prepare the helicopter for a safe ground maintenance. Disconnect the battery and all the electrical power sources and/or the external power supply, Refer to AMP DM 39-A-00-20-00-00A-120A-A
- 2. Remove the Top Forward Cowling, Refer to AMP DM 39-A-71-11-03-00A-520A-A
- 3. Remove the Top Aft Cowling, Refer to AMP DM 39-A-71-11-04-00A-520A-A
- 4. Remove the LH Aft Cowling, Refer to AMP DM 39-A-71-11-05-00A-520A-A
- 5. Remove the RH Aft Cowling, Refer to AMP DM 39-A-71-11-06-00A-520A-A
- 6. Remove the Number 1 Tail Pipe, Refer to AMP DM 39-A-78-10-01-00A-520A-A
- 7. Remove the Number 2 Tail Pipe, Refer to AMP DM 39-A-78-10-02-00A-520A-A
- 8. Remove the Tail Assy from the Rear Fuselage and place it on a suitable cradle, Refer to AMP DM 39-A-53-40-00-00A-520A-A (Structure) or 39-A-53-40-00-00A-520B-A (Dressed)
- 9. With reference to Figure 5, and in accordance with aircraft configuration, remove the Framing, P/N 3P7110A18351
- 10. ,Remove the Left Lining Panel, Refer to AMP DM 39-A-25-83-05-00A-520A-A
- 11. Install the positioning and drilling tool kit P/N 3G5350A00133A005A on rear fuselage centring the plate in the points 1-2-4-5-6 (see Figure 1) and lock it using the spindles PART 14. In order to guarantee the beat on the boss, install the no spot faced shims/washers PART 20 (insert as shown in *Figure 3*), between the positioning and drilling tool kit P/N 3G5350A00133A005A plate and the rear fuselage, in the four corners
- 12. With a depth micrometer, take the distance to the Middle Left Bracket P/N 3P5340A14153 rear surface and the drilling tool kit P/N 3G5350A00133A005A, refer to Figure 2, the tool shown in Figure 2 is not the correct tool to be used. Take and record measurements at the 12-3-6-9 o'clock positions. The measurements have to be stored
- 13. Remove the Middle Left Bracket P/N 3P5340A14153, refer to Figure 7 and 8
- 14. Clean the affected area and parts from remaining sealant and adhesive

NOTE

If necessary, working on bench, ream the fitting hole to initial diameter of 11.0 mm



Insert between bracket P/N 3P5340A14153 and plate P/N 3G5350A00133A005A the shim PART 18 (insert as shown in Figure 3)

- 15. Connect the new Middle Left Bracket P/N 3P5340A14153 to the drilling tool kit 3G5350A00133A005A, fix it with the spindle PART 21 and special bushing PART 23 (see Figure 4) to ensure orthogonal displacement
- 16. Countermark installation holes on new Middle Left Bracket P/N 3P5340A14153

NOTE

For the cold working activity the standard tool 4-3-N shall be available (Ref. BT139-015 Annex A, chart IV)

Apply sealing compound (Supply Ref. 3) mixture of Ty. I and Ty II on rivet shank (50% 50%)

Before rivet installation in places where fasteners were just removed, check holes diameter and, if necessary, install oversized rivets

- 17. (Working on bench) Rework the aluminium alloy bracket P/N 3P5340A14153 with the cold working process, following the standard procedure reported in BT139-015, Appendix A. Final hole's diameter shall be 4.775/4.788 mm
- 18. Fix the new bracket 3P5340A14153 to the helicopter's structure according to Figures 7-9. Bond the parts with Adhesive (Supply Ref. 1)
- 19. Install Hi Lock rivets as indicated in Figures 7-9
- 20. Verify that the measurement taken in Step 12, between the Middle Left Bracket P/N 3P5340A14153 rear surface and the drilling tool kit P/N 3G5350A00133A005A, is respected with the new bracket 3P5340A14153 is respected. If necessary level off and deburr the boss on the Middle Left Bracket P/N 3P5340A14153

NOTE

Maximum tolerance allowable is 0.1mm on the face of the boss with respect to the measure taken on bracket replaced

- 21.Through the plate of the positioning and drilling tool kit P/N3G5350A00133A005A, ream the new Middle Left bracket P/N 3P5340A14153 hole to 11.80 mm in diameter using the reamer and the special bush PART 13
- 22. Ream the fitting hole to 12.3-12.6 mm in diameter using the reamer and the special bush PART 13.
- 23.Perform the reaming of the fitting hole to it is final diameter of 12.70 (+0/+0.027) mm, use the bushing PART 13
- 24. Remove the positioning and drilling tool kit P/N 3G5350A00133A005A from the frame at STA 8700.
- 25.Install the Left Lining Panel, Refer to AMP DM 39-A-25-83-05-00A-720A-A
- 26.With reference to Figure 5, install Framing P/N 3P7110A18351 by means of the indicated hardware and rivets, refer to Figure 6, or, depending on configuration, by means of existing hardware
- 27.Install the tailboom, Refer to AMP DM 39-A-53-40-00-00A-720B-A (Dressed) or 39-A-53-40-00-00A-720A-A (Structure), as applicable
- 28. Install the Number 1 Tail Pipe, Refer to AMP DM 39-A-78-10-01-00A-720A-A



- 29. Install the Number 2 Tail Pipe, Refer to AMP DM 39-A-78-10-02-00A-720A-A
- 30.Install the LH Aft Cowling, Refer to AMP DM 39-A-71-11-05-00A-720A-A
- 31.Install the RH Aft Cowling, Refer to AMP DM 39-A-71-11-06-00A-720A-A
- 32.Install the Top Aft Cowling, Refer to AMP DM 39-A-71-11-04-00A-720A-A
- 33.Install the Top Forward Cowling, Refer to AMP DM 39-A-71-11-03-00A-720A-A

Requirements after job completion

- 1. Remove all the tools and the other items from the work area. Make sure that the work area is clean
- 2. Return the helicopter to flight configuration



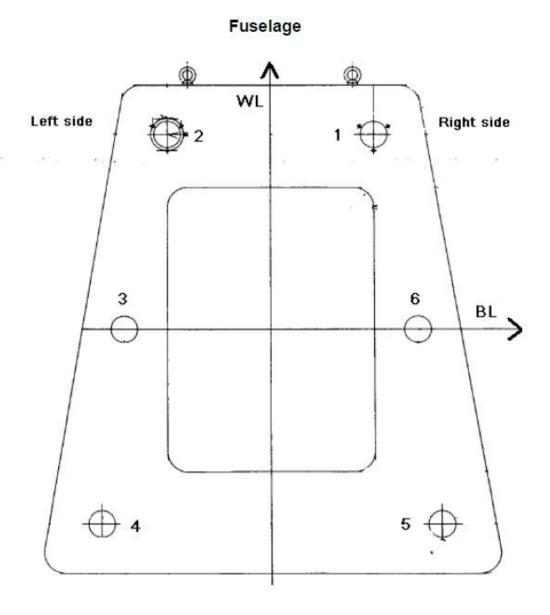


Figure 1 - Positioning And Drilling Tool Centering Plate



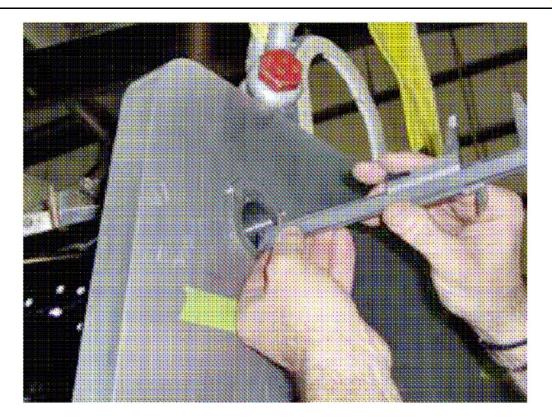


Figure 2

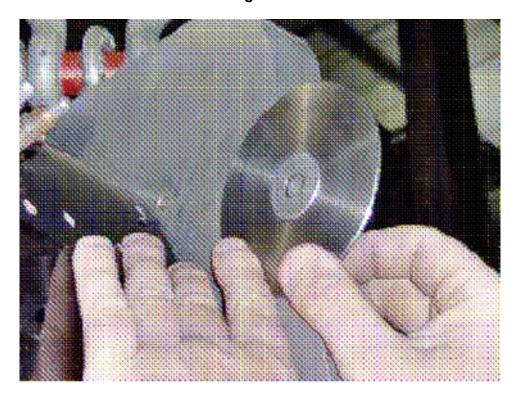


Figure 3





Figure 4

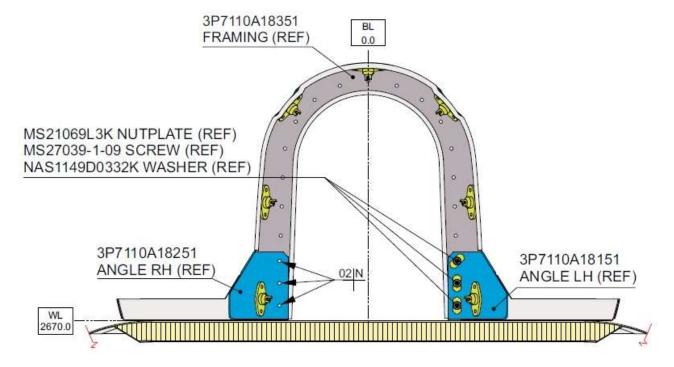


Figure 5



RIVET CODE IN ACCORDANCE WITH NTA018R CODICE RIVETTO SECONDO NTA018R					
REF. NUMBER/ ORIENTATION/ NUMERO DI RIFERIMENTO ORIENTAMENTO					
T	COUNTERSINK/ BLANK/ TIPO DI SVASATURA LASCIARE LIBERO				
NOTE: EDGE DIS WHERE IN	NOTE: EDGE DISTANCE FROM CENTRELINE EXCEPT DISTANZA DEL BORDO DALL'ASSE ECCETTO COME INDICATED OTHERWISE COME INDICATO				
UNIVERSA	NON-COMPOSITE UNIVERSAL HEAD 2 TIMES SHANK DIA. COUNTERSINK HEAD 2.5 TIMES SHANK DIA. TESTA UNIVERSALE 2 VOLTE IL DIAMETRO DEL GAMBO. TESTA SVASATA 2.5 VOLTE IL DIAMETRO DEL GAMBO.				
COMPOS UNIVERSA COUNTERS	LTE NL HEAD 2.5 TIMES SHANK DIA. SINK HEAD 3 TIMES SHANK DIA.	DIAMETRO TESTA SV	ITO NIVERSALE 2.5 VOLTE IL O DEL GAMBO. VASATA 3 VOLTE IL O DEL GAMBO.		
REF No/ No RIF	RIVET PART NUMBER/ NUMERO PEZZO RIVETTO	REF No/ No RIF	RIVET PART NUMBER/ NUMERO PEZZO RIVETTO	REF No/ No RIF	RIVET PART NUMBER/ NUMERO PEZZO RIVETTO
01	MS20426AD4	10	MS20470AD5	19	A297A05TW04
02	MS20470AD4	1 1	NAS9301BNS-4-02		
03	AS46789-405	12	NAS9301BNS-4-03		
04	AS46789-407	13	A298A04TW02		
05	AS46789-409	14	NAS9302BNS-4-04		
06	MS20427M3-4	15	A297A04TW03		
07	M7885/3-4-02	16	A298A04TW03		
08	A298A05TW03	17	A298A04TW04		
09	AGS4720-407	18	NAS1399C3-2		

Figure 6



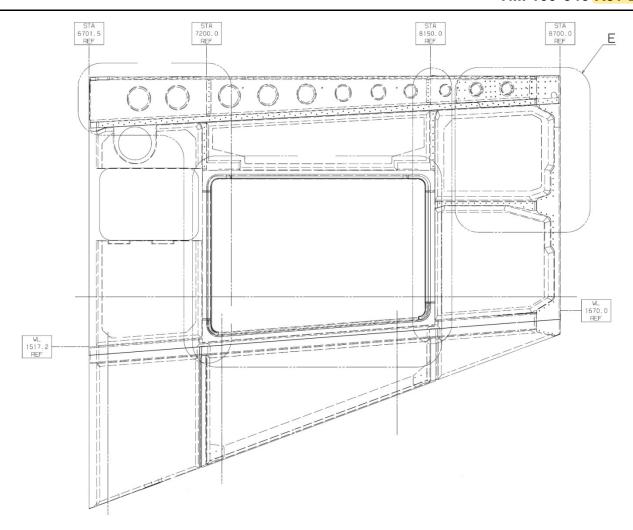


Figure 7

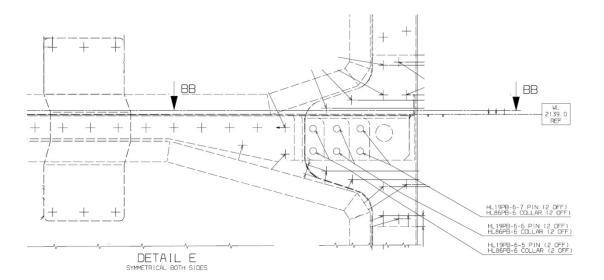


Figure 8



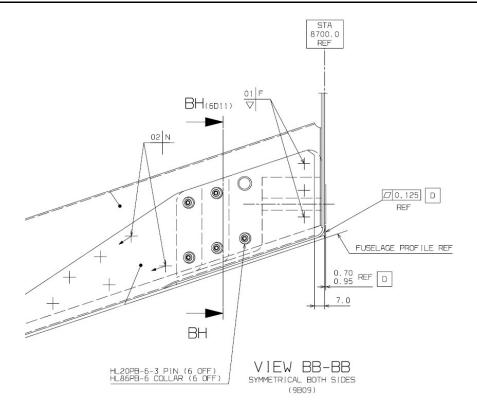




Figure 9