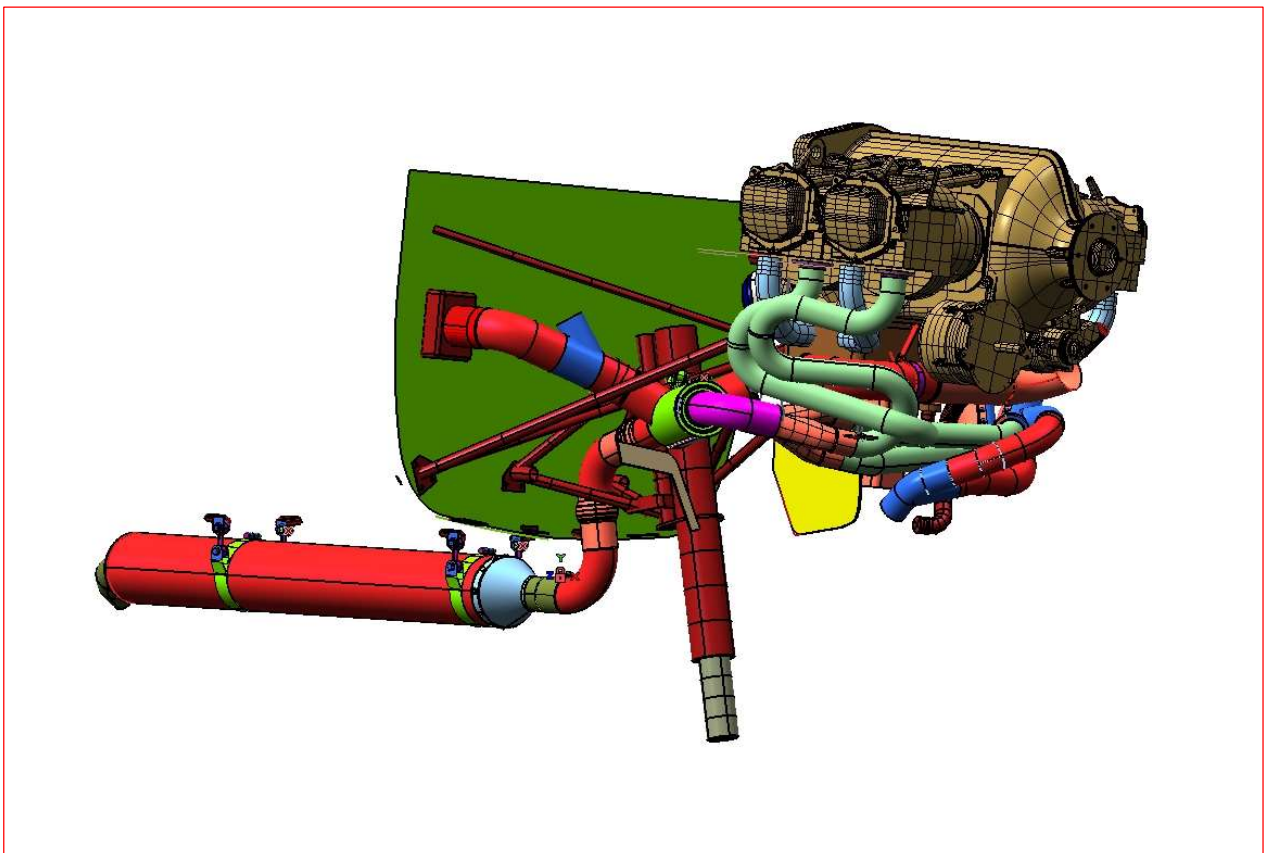


## EXHAUST MUFFLER TB10

REF. TB10-14-01B



**Installation and maintenance manual : 05/03/2015 edition**

**Table of Contents:**

- **Technical instructions for application of STC n° 10050022 Rev 02 approved by EASA**
- **Supplement to maintenance manual, corresponding to the STC**

## Applicability

STC n° 10050022 Rev 1, covers the installation of a tuned exhaust and its associated muffler in replacement of the original exhaust.

It applies to the following models :

- Socata TB10 equipped with Lycoming O-360-A1AD powerplants and Hartzell propellers Ref. HC-C2YK-1BF/F7666A-2.
- Socata TB10 equipped with Lycoming O-360-A1AD powerplants and Mc Cauley propellers Ref. B3D36C424/74SA-0.
- Socata TB10 equipped with Lycoming O-360-A1AD powerplants and MT propellers props Ref. MTV-12-B/180-17.
- Socata TB10 equipped with Lycoming O-360-A1AD propellers and Hoffmann propellers Ref. HO-V123K-()-() 180DT10.

**List of Revisions**

List of Revisions				
Rev. n°	Dates	Pages	Revision motive	Approval Reference
Original	18/01/2014		Creation	STC - 10050022 Rev 0
Rev. 1	05/03/2015	4, 5, 7, 8, 12, 14, 15,	Modification	STC - 10050022 Rev 1

Parts List

EXHAUST PARTS LIST TB10 - STC N° 10050022 REV 1						
P/N. TB10-13-01-000B - Inconel Version						
REF. nom-TB10-13-01-01B					Date	05/03/2015
Parts		Sub-assemblies				
Name	Ref	Name	Ref	Material	Qty	
Primary exhaust (1)		Clamp	CABRI90A	Inox 316L	4	
		Primary tube n°1	TB10-13-01-011A	Inconel 625	1	
		Primary tube n°2	TB10-13-01-012A	Inconel 625	1	
		Primary tube n°3	TB10-13-01-013A	Inconel 625	1	
		Primary tube n°4	TB10-13-01-014A	Inconel 625	1	
		Spacer n°1	Cessna17261A	Inconel 625	1	
		Spacer n°2	Cabri62A	Inconel 625	1	
		U support carb heat	DR400-1201080A	Inconel 625	4	
		Aviation nut	ECROUAVION90A	XC38Pb	8	
		Manifold (4)	TB10-13-01-004A	4 en 1	TB10-13-01-0041A	Inconel 625
4 en 1 exhaust	TB10-13-01-0042A			Inconel 625	1	
Exhaust support	TB10-13-00-008A	Spacer n°1	MORAN61A	Inconel 625	2	
		Spacer clamp	TB10-13-00-0081A	Inconel 625	24	
		connecting rod support	TB10-13-00-0082A	15CDV6T	1	
		Cover support	TB10-13-00-0083A	15CDV6T	26	
		Muffler clamp	TB10-13-00-0071A	Inox 316L	2	
Muffler support (6)	TB10-13-00-007A	Connecting rod	TB10-13-00-0072A	15CDV6T	4	
		Insulation under rear cockpit	TB10-13-00-0074A	15CDV6T	33	
		Insulation under front cockpit	TB10-13-00-0073A	15CDV6T	34	
		Tightening socket	MOUSQU4A	Inox 316L	4	
Air Intake Assembly (5)	TB10-13-00-009A	Cold air entry elbow	TB10-13-00-0091A	Inconel 625	1	
		Air elbow connecting rod	TB10-13-00-0093A	15CDV6T	52	
		Flexible ducting clamp	TB10-13-00-0092A	Inconel 625	53	
Double Swivel Tube (16)	TB10-13-01-005A	Tightening socket	MOUSQU4A	CF PLANS	2	
Muffler (15)	TB10-13-00-015A	Front junction	TB10-13-00-0157A	Inconel 625	1	
		Dynamic cone	TB10-13-00-0153A	Inox 316L	1	
		Core muffler exit	TB10-13-00-0155A	see plans	1	
		Core Muffler entry	TB10-13-00-0154A	Inox 316L	1	
		Core muffler main segment	TB10-13-00-0156A	Inox 316L	1	
		Muffler exterior	TB10-13-00-0158A	Inconel 625	1	
		Central structure	TB10-13-00-0159A	see Plans	1	
Carburetor Heat (1)	TB10-13-00-003B	Carb heat protection	TB10-13-00-00360B	Inox 316L	4	
		Cerflex 40-60 clamps	COD16B60	Inox 316L	19	
		Car heat washer	MOUS67A	Inox 316L	2	
Cabin Heat (2)	TB10-13-00-002A	Cabin heat protection (long)	TB10-13-00-00260A	Inconel 625	2	
		Cabin heat washer	TB10-13-00-00261A	Inox 316L	2	
		Cerflex 60-80 clamp	COD16B80	Inox 316L	23	
2 in 1 Carb Heat (8)	TB10-13-00-006B	2 in 1 cone	TB10-13-00-006-60a	Inox 316L	1	
Carburetor flexible ducting n°1 d50 L=310 mm	TB10-13-00-016A			Neoprene	1	
Flexible ducting*2 d50 L=310 mm	TB10-13-00-017A			Neoprene	1	
Cockpit flexible ducting n°1 d70 L=410 mm	TB10-13-00-018A			Neoprene	1	
Cockpit flexible ducting n°2 d70 L=210mm	TB10-13-00-019A			Neoprene	1	
Thermal protection kit	TB10-13-00-020A		12-5-363	3M	1	
Hardware Kit		TH M5x10 screw	00965 10	Inox	2	
		Simmonds M5 nut	5080PH115	Inox	4	
		CHC M6x35 screw	0094635	Inox	5	
		Simmonds M6 nut	6100PH135	Inox	5	
		CHC M6x25 screw	0094625	Inox	10	
		Nyistop M6 but	03916	Inox	40	
		M4x8 screw	HG-20-2114	Inox	46	
		Rivkle M4 nut		Inox	46	
D4 washer	1494410	Inox	46			

## Installation Instructions

### 1/ Installation :

The installation of the CHABORD exhaust and muffler must be done by an aviation-certified mechanic.

### 2/ Preparation :

21 - Remove top and bottom engine cowls.

22 - Remove original exhaust.

23 - Keep the existing 4 cylinder gaskets.

24 - Disassemble the original carburetor heat and cabin heat flexible ducting

Keep the cabin heat flexible ducting :

Ref. TB10 50 002 157

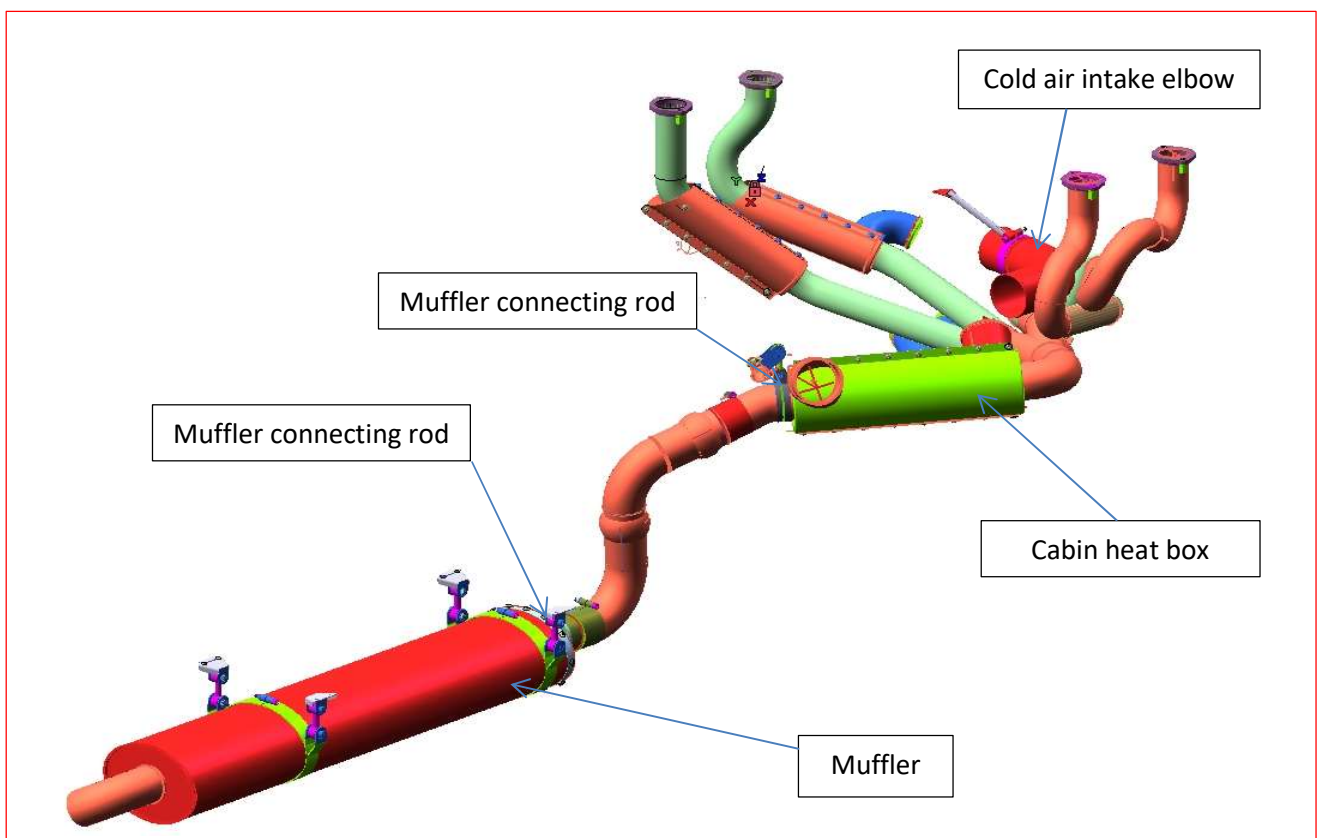
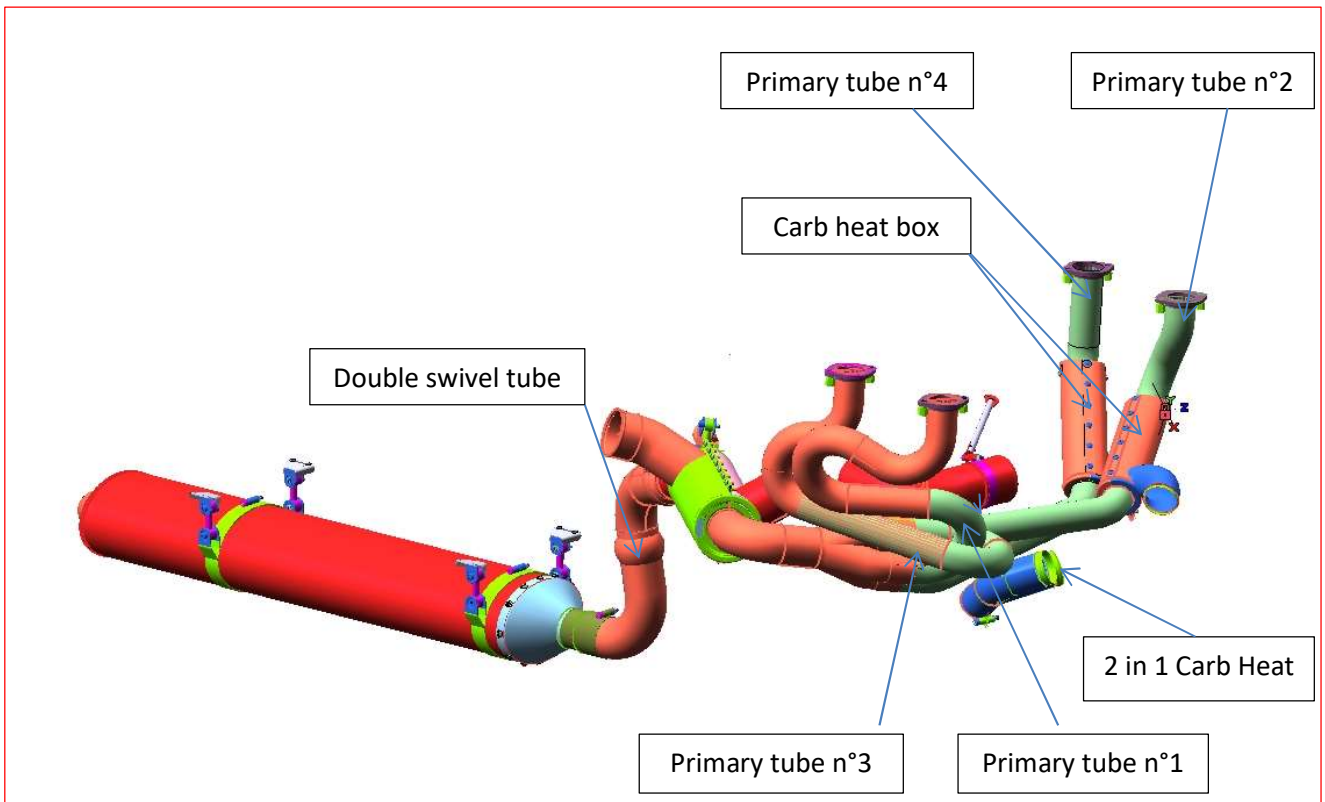
Ref. TB10 50 002 159

Ref. TB10 50 002 132

25 - Disassemble the muffler under the cockpit ; keep original washers and screws (respectively noted as 60 et 61 in Socata technical instructions Ref. OPTIOA887).

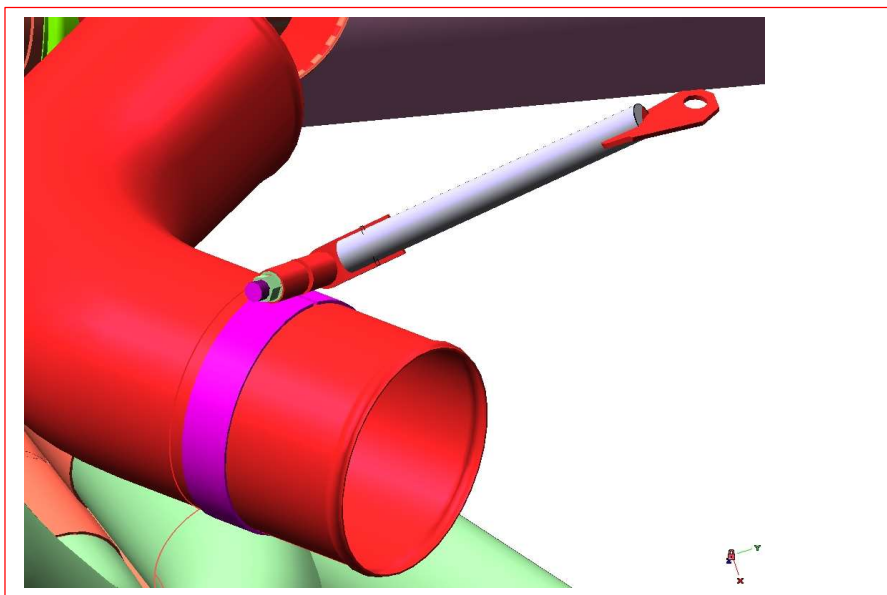
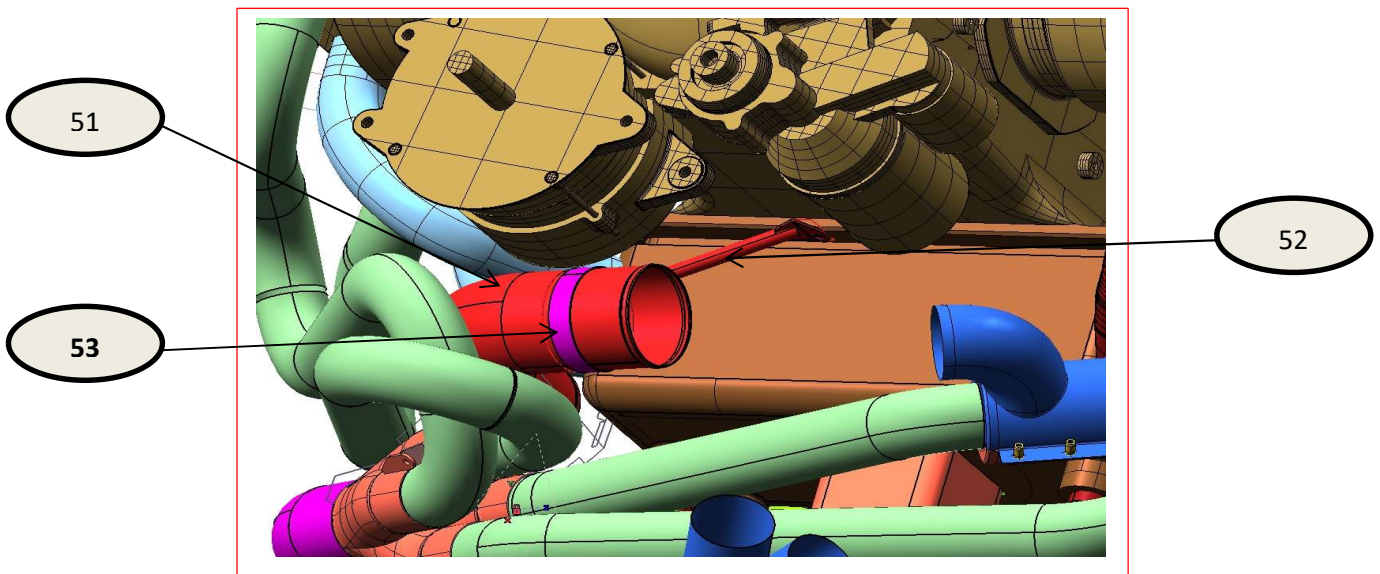
26 - Discard the heat shield on the right side of the carburetor.

3/ Installation :

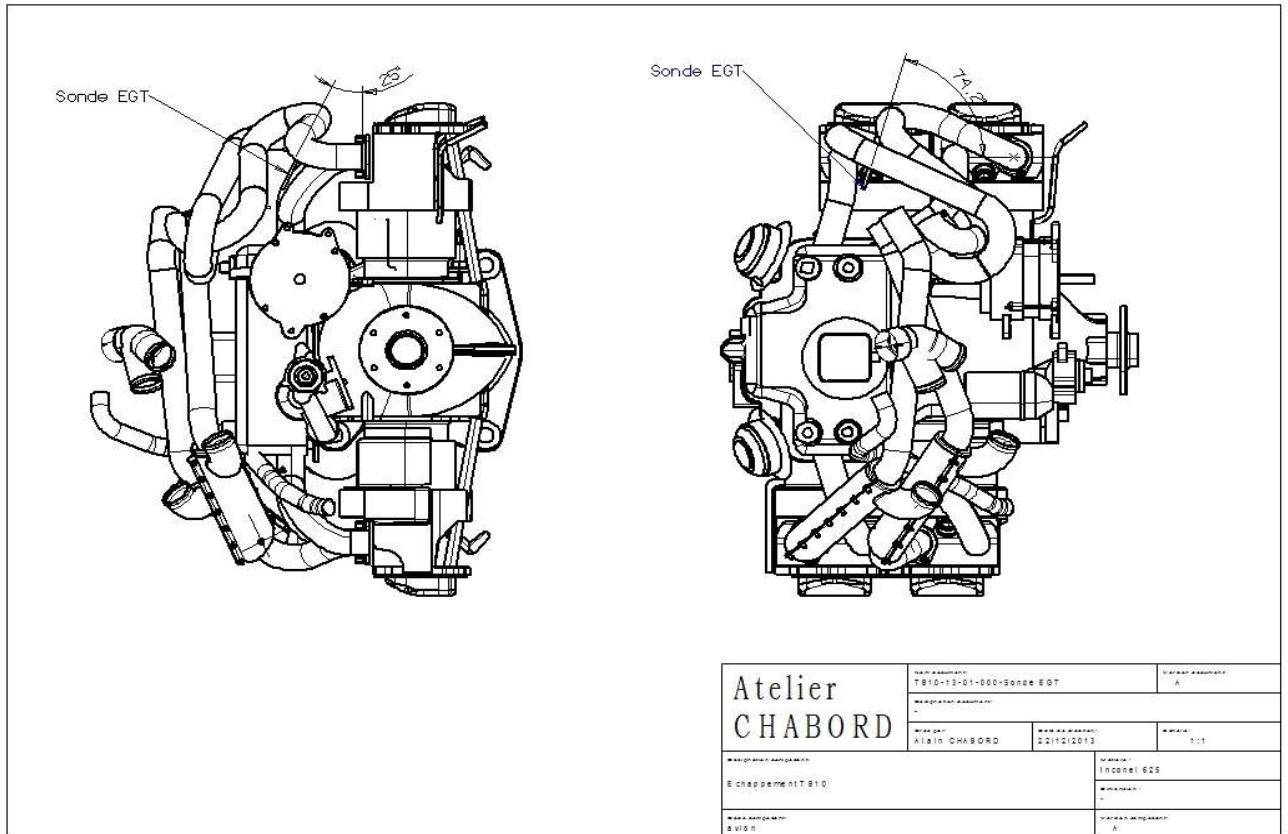


- 301 - Attach the air elbow connecting rod to the engine block (52) after loosening the screws on the right of the engine block.
- 302 - Install the cold air elbow (51) with its clamp (53) to the cold air elbow connecting rod (52) install the Chc M6 L=35 screw and Simmonds M6 nut.
- 303 - Present the screw ; ensure that it is positioned in such a way that the elbow is never in contact with any engine part (s) or any surrounding part (s).

Tighten the screw.

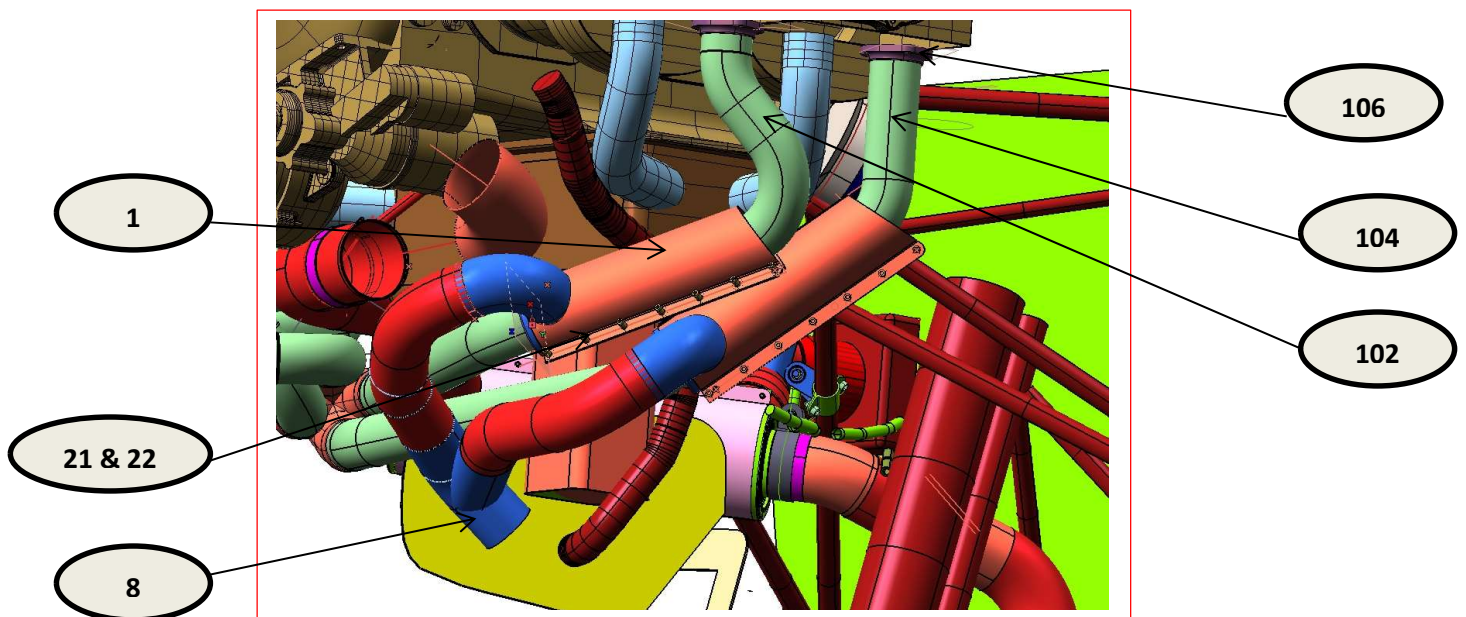


304 - For TB10 equipped with an EGT sensor  
 Drill the primary tube n°4 ref. TB10-13-01-104A with a d4.8 bit according to  
 this plan :

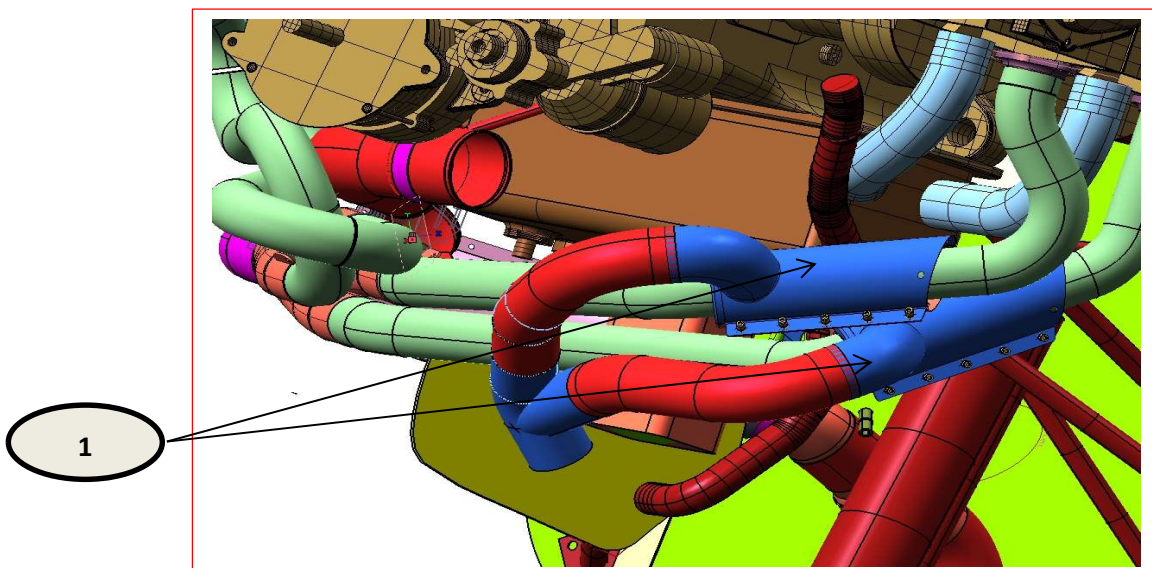




- 305 - Fix Carburetor Heat Box n°1 (1) on primary tube n°2 (102)  
 Insert the 3 poiliées screws (22) and washers d4 (21) on the three plates welded to primary tube n° 2 designed for this use.  
 Tighten the screws.
- 306 - Secure Carburetor Heat box n° 2 (1) on primary tube n°4 (104)  
 Insert the 3 poiliées screws (22) and washers d4 (21) on the three plates welded to primary tube n° 2 designed for this use.  
 Tighten the screws.



- 307 - Secure primary tube n° 2 (102), without forgetting the exhaust joint. Position, but do not tighten, the nuts (106).
- 308 - Secure primary tube n° 4 (104), without forgetting the exhaust joint (106) but do not tighten the nuts.



309 - Position the cerflex clamps (19) on the flexible ducting (58) ;

Insert the end of the N° 1 flexible ducting on the 2 in 1 (8) ; insert the other end on the carburetor heat box n° 1 (1).

Insert the end of the second flexible duct into the end of the 2 in 1 (8) ; insert the other end into the carburetor heat box n°2 (1). Check that there is no strain/tension between the flexible ducting and the carburetor heat boxes and the 2 in 1.

Position the cerflex clamps (19) ensuring that the burred ends are well maintained and positioned in each ferrule ; tighten the cerflex collars.

Position the cerflex clamps on the flexible ducting (57).

Insert one end of the flexible ducting (57) on the cold air intake elbow (51).

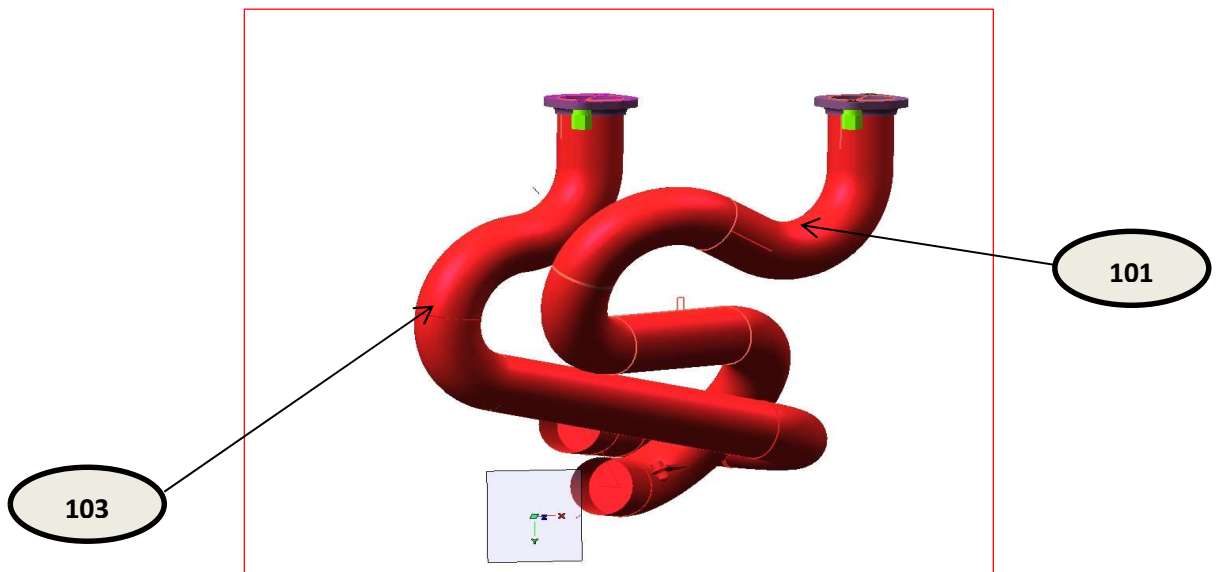
Insert the other end of the flexible ducting (57) on the cold air spigot.

Position the cerflex clamps ensuring that they are correctly held in place, and positioned, in each ferrule; tighten the cerflex collars.

Check that no part or ducting tube is/are under strain.

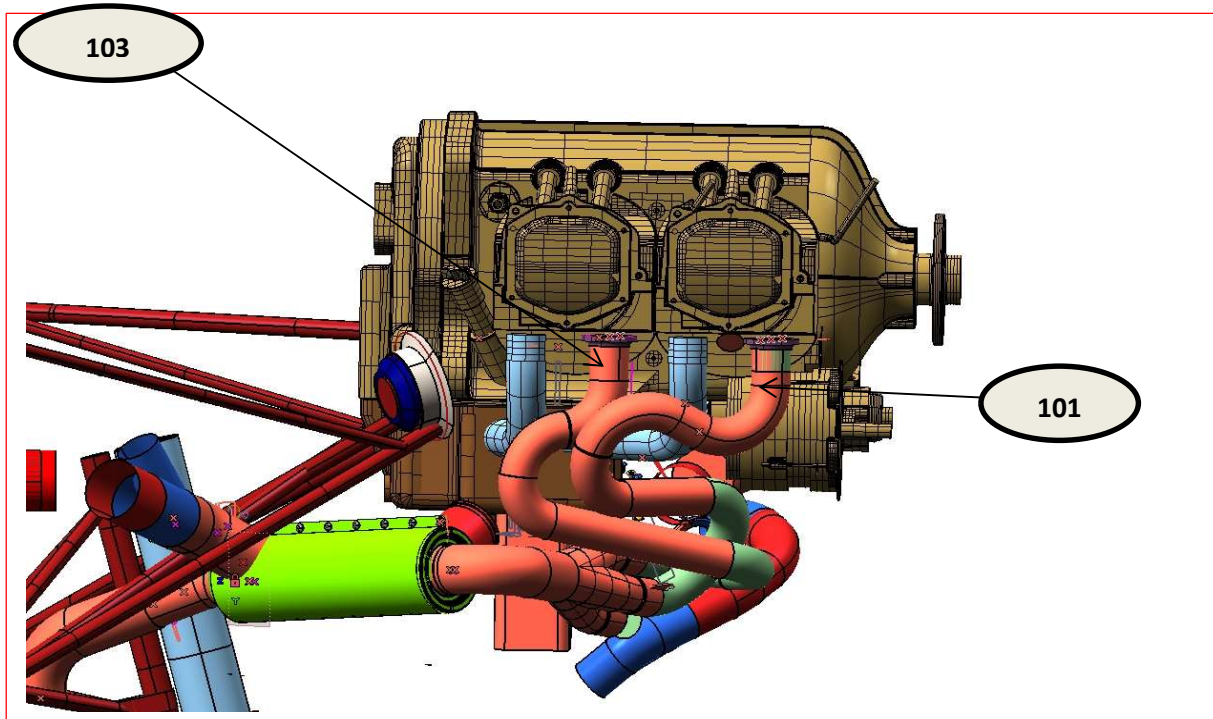
Tighten the clamps.

310 - Position primary exhaust tubes n° 1 (101) and n° 3 (103) according to the photo below :



Mount these 2 exhaust tubes without forgetting the exhaust gaskets.

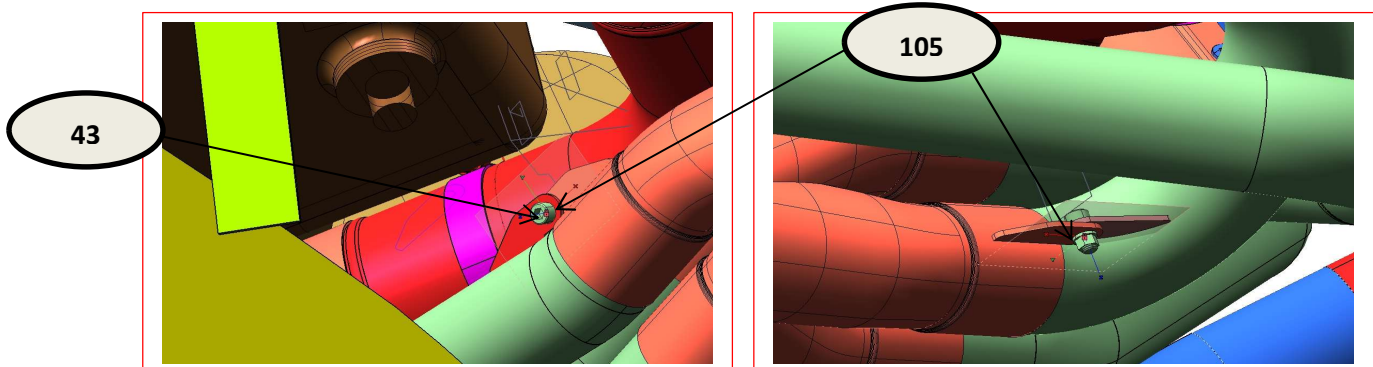
Position the nuts (106) but do not tighten.



311 - Apply high temperature grease to the interior of the 4 in 1 juncture.

Slot the 4 in 1 ensuring that the part number of each connection (105) faces its corresponding part ; 1 facing 1 and 2 facing 2.

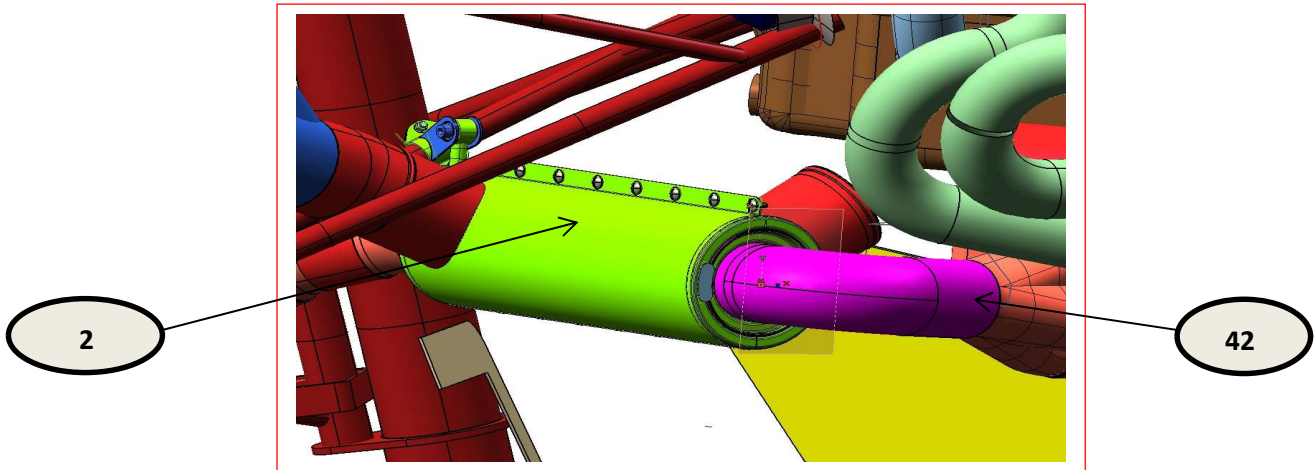
Position the Chc M5x10 screws (43) and Simmonds M5 (44) nuts ;



Tighten the 4 in 1 screws ; comply with 5N.m torque

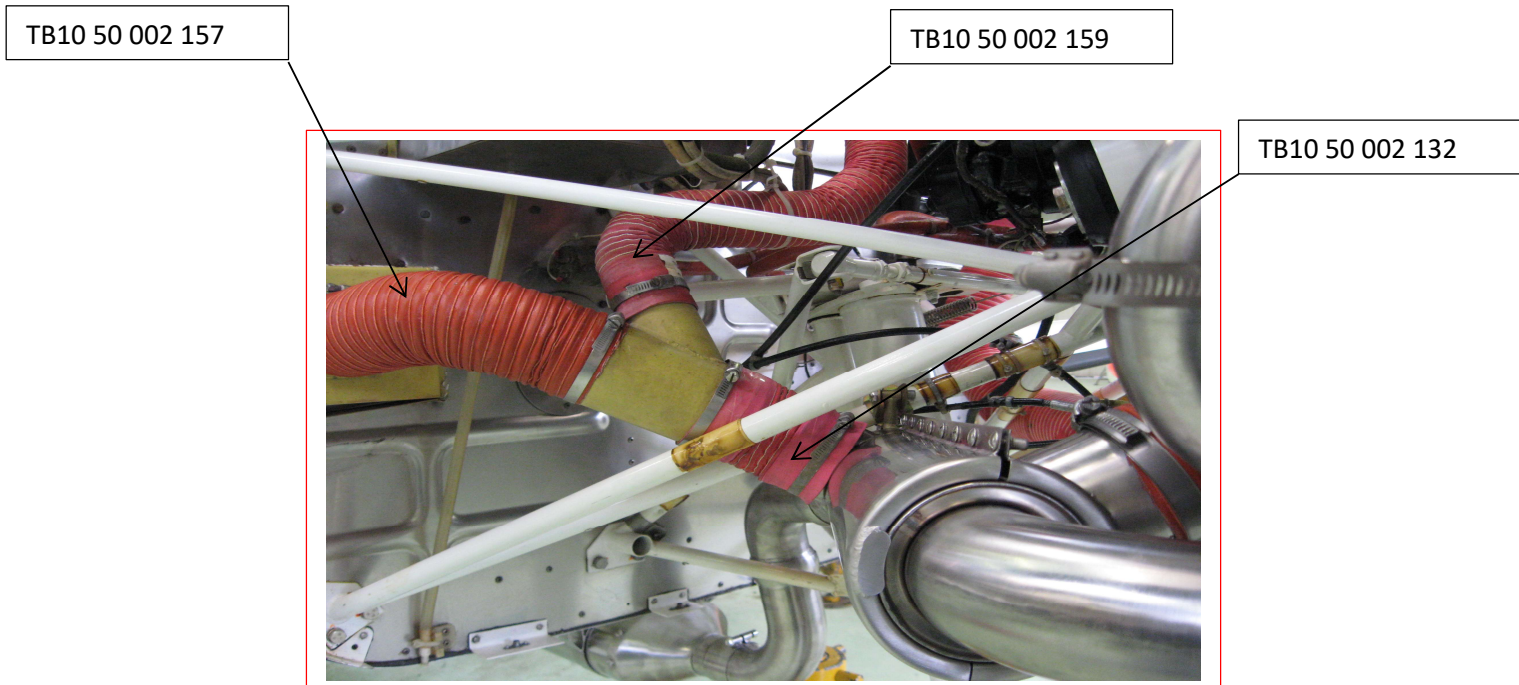
Tighten the gasket nuts ref. airplane-nut-90a torque 19 N.m .

312 - Position the Cabin heat box (2) on exit tube (42) ; Position M4 (22) screws and washers d4 (21); tighten the vertical screws; position the horizontal screws.



Position the end of flexible ducting admission tube (58) on the Cabin Heat entry flange, and the other end on the cold air admission elbow (51).

Position the exit end of the Cabin heat's flexible ducting on the exit tube of Cabin heat box and position the other end on the hot air Y separator



Position cerflex clamps, ensuring that they are well- held as checked previously with other clamps.

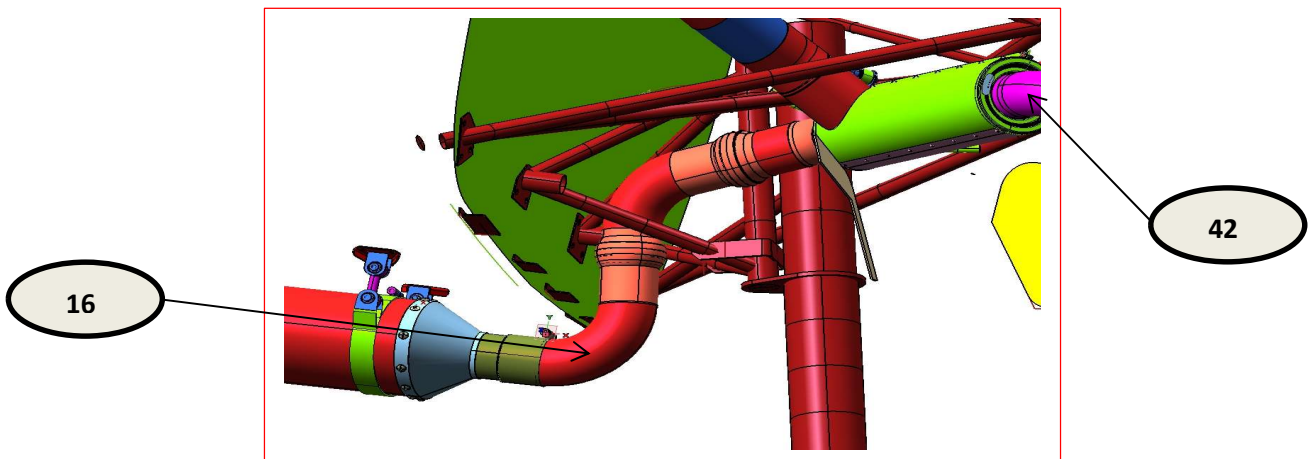
Adjust the Cabin heat box by roating it so that there is no strain on the flexible ducting ; Tighten the M4 horizontal screws ; tighten the cerflex clamps.

313 - Position support (24) at the rear of the tube supporting the Cabin heat box.

Apply high temperature grease inside the junction of the double swivel joint (16).

Insert the double swivel joint (16) into the end of exhaust tube (42)

Position Chc M6 L=35 (38) screw and then the Simmonds M6 (35) nut on the joined entry to the double swivel joint; tighten the nut.



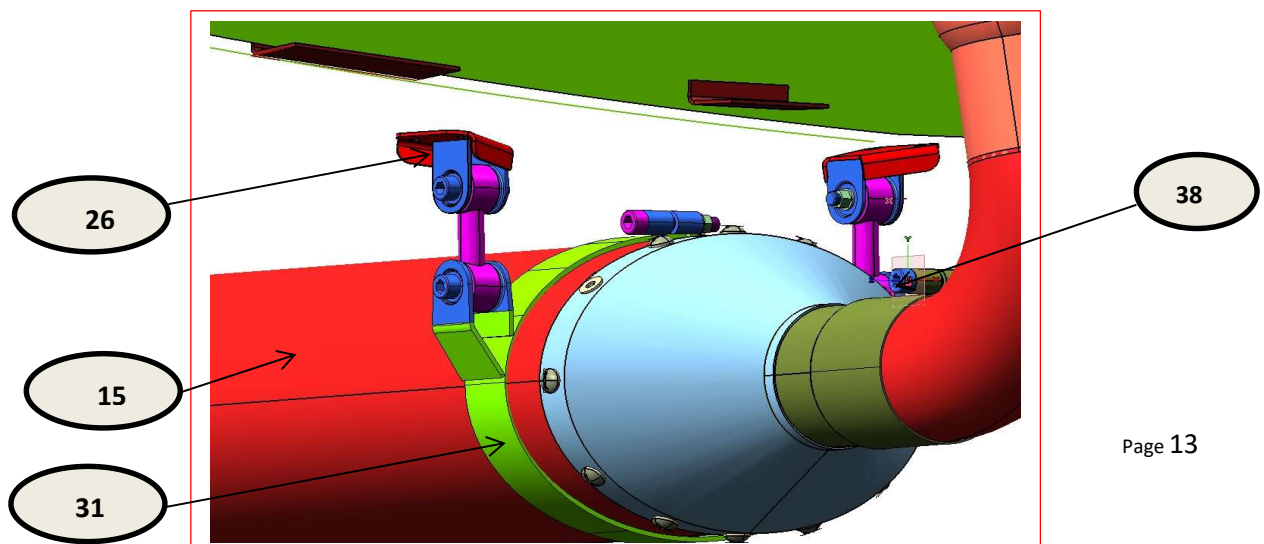
314 - Slide the front muffler support onto the muffler.

Slide the rear muffler support onto the muffler.

Position the front of the muffler attachment (26) on the original attach point with the original M5 screws.

Position the rear of the muffler attachment (26) on the original attach point with the original M5 screws.

Tighten the screws.



Apply high temperature grease to the junction of with the muffler (15).

Slide the muffler through the support clamps (31). Join the muffler with the end of the double swivel tube (16).

Adjust the longitudinal position of the muffler so that the swivel joints of the double swivel tube are aligned (16).

Position the Chc M6 L=35 screws (38) and the Simmonds M6 (35) nut on the muffler junction ; tighten the screw.

Tighten all the screws of the muffler attachments/supports.

315 - Protect the engine mount tube with 3M plastic tape ref. 8561 to shield the engine mount. Position the support plate (26) on the engine mount tube.

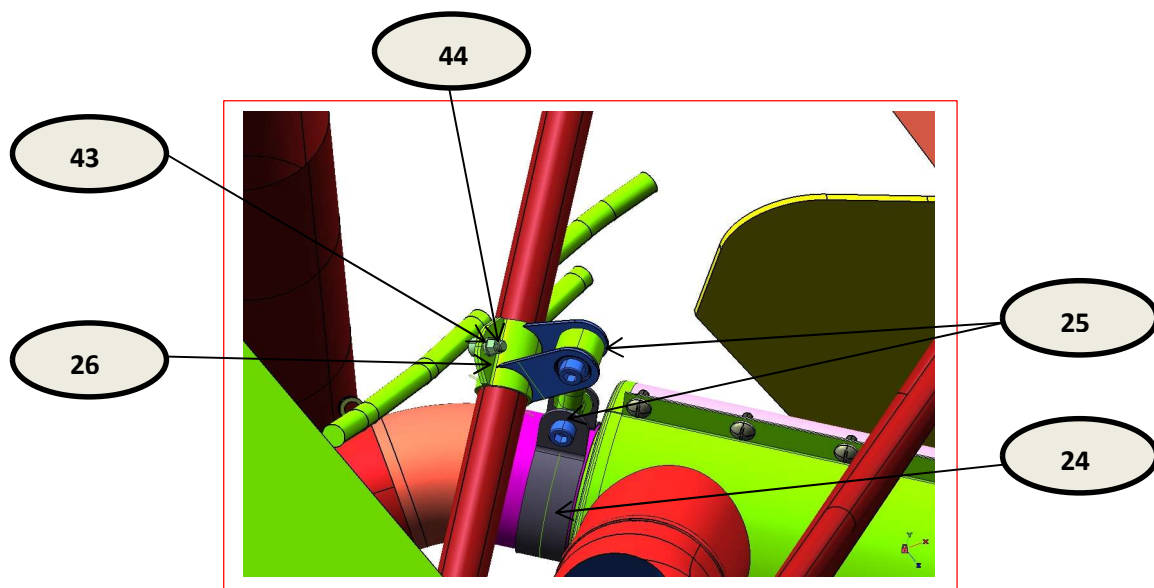
Position Chc M5 L=15 screws (43) and Simmonds nuts (44) without tightening them.

Attach the top end of the connecting rod (25) and the support flange (26); attach the bottom end of the connecting rod (25) on the clamp (24).

Position the Chc M6 L=25 screws (36) and the Simmonds nuts (35).

Ensure that there is no strain between any of the parts

Tighten the screws.



- 316 - Apply the auto-adhesive thermal protection strips provided with the kit ref. TB10-13-00-020A dimensions : 230 x 300 mm, on the right side in line with the Zetex (Socata LS10-0146-71) thermal protection strip.



Control the torque of all screws.

Displace any and all electric wires and fuel lines from all hot parts of the exhaust system. All electric wires and fuel lines must more than 25 mm away from such parts.

Check that no tools are left in the engine compartment.

Re-install cowlings ; secure and fasten cowlings.

Weigh the aircraft.

CHABORD shall in no way be held liable from any and all responsibility resulting from any and all incident (s) due to an installation of an exhaust/muffler kit, which has not fully complied with these instructions.

## Maintenance Program

1 / Every 600 hours remove the muffler.

It can be shipped to the manufacturer :

ATELIER CHABORD  
125, route de Bellegarde  
74330 EPAGNY

The muffler will be entirely dis-assembled, checked, and its acoustic insulation replaced in our own workshops.

Or a renewal kit can be purchased through Atelier Chabord, and the maintenance can be done by a certified aviation mechanic according to remanufacturing instructions supplied by the manufacturer.

2 / During removal of the muffler (every 600 hours) check the torque and the condition (fatigue) of all Inxo screws between the connecting support rods holding the muffler the fuselage.

In case any screw shows *any* trace of wear (...even minute), it is critical to replace it immediately.

3 / During 50-hour inspections, visually check the following areas :

- Liaison Carburetor Heat box and primary tube
- 4 in1 link
- Primary tubes

If any surface cracks are visible in these areas, or if any defects are noted in and on any of the exhaust/muffler parts or assemblies, report them using the form below.



**Product Follow-Up Form**

This form is to be completed and returned to the manufacturer at the sign of any (even minor) failure on a CHABORD exhaust/muffler :

ATELIER CHABORD  
 125, route de BELLEGARDE  
 74330 EPAGNY

This form will allow us to take into account any potential failures on the product.

Thank you for your collaboration.

**GENERAL INFORMATION**

Aircraft :	Owner :
Registration :	Date :
Product Serial N° :	Hours in use :
Failure in flight :	
Failure seen during ground inspection :	
Aéroclub / Company :	Maintenance Chief :
Person who saw/declared the failure :	
Phone N° :	
Visa :	

Information

**ATTENTION**

After mounting our equipment, fill out the aircraft logbooks indicating that STC n° 10050022 Rev 2 has been installed.

For any additional information relating to the manufacturing or installation of these parts, or to obtain our prices, you may contact us at :

Atelier CHABORD  
125, route de Bellegarde 74330 EPAGNY – France  
Phone : 04 50 22 14 02 - Fax : 04 50 22 00 83  
e-mail : [alain.chabord@wanadoo.fr](mailto:alain.chabord@wanadoo.fr)

You can view all our products on :

[www.echappement.chabord.fr](http://www.echappement.chabord.fr)