SERVICE BULLETIN

No. 300-1-06

Extra considers compliance mandatory

Subject: **Repositioning of Single Oil Cooler**

Affected Aircraft: EA 300/S and EA 300/L aircraft equipped with the single oil cooler system manufactured before May 2006.

Also affected are aircraft that are (to be) equipped with a retrofit kit intended for a conversion from a double to a single cooler oil cooler system containing baffles EA-83002.6-03 index A , EA-83002.3 index 0 and EA-83002.8 index 0.

Purpose: Cracks have been reported on EA 300/S and EA 300/L airplanes equipped with the single oil cooler system. The cracks were found in the RH AFT engine cooling baffles where the oil cooler is attached to or in the oil cooler flanges. This Service Bulletin provides instructions for repositioning of the single oil cooler from the cylinder cooling baffles to the engine mount. Refer to Figure 7 for an overview.

Approval: The technical content of this document is approved under the authority of DOA Nr. EASA.21J.073.

Compliance time: Within the next 10h time-in-service (TIS) or at the next 25h inspection.

Instructions:

Note: Alterations or repair of the aircraft must be accomplished by licensed personnel only. Refer to AC 43.13-1B and Chapter 51-70-05 “Structural Repair of Steel Components” of the Service Manual. TIG welding is required, use appropriate welding rod.

- Order repair kit (P/N SB300106) from Extra Flugzeugproduktions- & Vertriebs-GmbH, see Material Allowance.
- Remove upper and lower engine cowling and the LH landing gear cuffs (see Chapter 53 of the Service Manual).
- Disconnect battery ground wire and engine ground wire to firewall.
- Disconnect and remove oil cooler.
- Check oil cooler for cracks, especially around the attachment flanges, see Figure 1.
- Loosen oil separator worm drive clamps, disconnect oil hoses and remove oil separator from its bracket. Remember orientation of separator.
- Remove oil line between oil valve upper connection and engine.
- Disconnect fuel sensing lines at RH AFT cooling baffle and remove bulkhead fitting, point A in Figure 2 (the AN832-4D bulkhead fitting is not needed for the new installation).
- Remove rod EA-83002.9, point B in Figure 2 (not needed for the new installation).
- If installed, also remove reinforcement rod on outside head cooling baffles, see Figure 7 (not on all aircraft, not needed for new installation).
- Remove bolts connecting the AFT middle baffle (P/N EA-83002.7) to the RH AFT baffle (P/N EA-83002.3), refer to connection C in Figure 2. Disconnect the threaded rods on the underside from the RH AFT baffle (P/N EA-83002.3), see Figure 4.
- Remove baffles EA-83002.6-03 index A and EA-83002.3 index 0 including attached rubber flanges, respectivily points D and E in Figure 2 (not needed for the new installation). Pre-cut the rubber flange attached to the cylinder head baffles between Cylinders No.3 and No.5 just FWD of the most FWD rivet position on the baffle on Cylinder No.5, see Figure 4.
- Remove paint on engine mount in the areas where the new oil cooler LH oil cooler attachment bracket (P/N EA-83705.10) and tube (P/N EA-83705.2) will be welded to, see Figure 3 & 4.
- Drill a small hole (3mm./ 1/8”, Drill Size #31) in the attachment tube (P/N EA-83705.2) and both engine mount tubes that will be welded on to prevent pressure buildup during welding.
- Bolt the LH and the RH oil cooler attachment brackets (P/N EA-83705.10 & EA-83705.1) to the jigs (P/N V8300220-01 & -02) with the supplied wing nuts (P/N M5 & M6 DIN315). Install

jigs according to Figure 3. On some aircraft it may be necessary to shim the two jigs for correct alignment.

- Spot weld the LH oil cooler attachment bracket (P/N EA-83705.10) to vertical tube of engine mount.

- Prepare the attachment tube (P/N EA-83705.2) to fit between the RH oil cooler attachment bracket (P/N EA-83705.1) and the engine mount according Figures 3 & 4. Check for enough space between tube and oil separator (temporarilly installed for this purpose) and its fittings, see Figure 5. Here, the oil separator is installed rotated 15º CCW when viewed from above relative to its original position to provide enough separation between the middle fitting and the oil cooler. The upper fitting has to point in its original direction i.e. has to be rotated 15º CW when viewed from above.

- Spot weld attachment tube (P/N EA-83705.2) between RH oil cooler attachment bracket (P/N EA-83705.1) and engine mount. For the protection of the tube interior fill a small amount of corrosion preventive compound like ACF-50 or equivalent into the tube.

- Remove jigs and complete welds on LH and RH oil cooler attachment brackets (P/N EA-83705.10 & EA-83705.1) and the attachment tube (P/N EA-83705.2).

- Close the 3 small holes in the engine mount tubes with welding rod and refinish all unprotected surfaces according Chapter 51-70-07 of the Service Manual.

- Bolt the preassembled RH cylinder head baffle (P/N EA-63105.6-03) to the preassembled RH AFT Baffle (P/N EA-83002.3) according to Figure 4.

- Install the baffle attachment plate (P/N EA-63105.11) on the engine, see Figure 4.

- Temporarilly install assembled baffles. Make sure there is enough space between the engine mounting bracket and the RH AFT baffle (P/N EA-83002.3), there is a smooth transition to the middle baffle (P/N EA-83002.7) and that the baffles are not twisted.

- Determine the position of the hole, needed to bolt the baffle to the engine (Cylinder No.5), located on the lower outboard side of the RH AFT baffle (P/N EA-83002.3). Drill the (∅5mm, Drill Size #8)-hole in the baffle and insert original bolt and washer, see Figure 4.

- Check the position of the assembled baffles and mark the positions of the holes of the baffle attachment plate (P/N EA-63105.11) onto the RH AFT baffle (P/N EA-83002.3) and drill the holes (∅4.2mm, Drill Size #19). Rivet the baffle attachment plate (P/N EA-63105.11) to the RH AFT baffle (P/N EA-83002.3) using the AN470AD5-5 rivets.

- Mark the position of the holes (for point C in Figure 2) in the middle baffle (P/N EA-83002.7) on the RH AFT baffle (P/N EA-83002.3). Remove assembled baffles and drill holes (∅4mm / ∅5/32”, Drill Size #21) in the marked locations in the RH AFT baffle (P/N EA-83002.3).

- Install threaded rods (P/N EA-83002.29) on oil cooler and temporarilly install oil cooler according Figure 4.

- Install assembled baffles according Figure 4. The pre-cut baffle rubber on the RH middle cylinder head (Cylinder No.3) has to be cut to exactly fit the new installation.
- Attach preassembled oil cooler duct (P/N EA-83002.31) to the oil cooler and finalize oil cooler installation.
- Install oil separator in its new orientation.
- Reinstall oil line between oil valve and engine and connect the oil line to the engine mount with two tiedown straps.
- Reinstall bulkhead fitting (use AN837-4D) and reconnect fuel sensing lines, see Figure 6.
- Reconnect battery ground wire as well as engine ground wire to the firewall.
- Reinstall upper and lower engine cowling and LH landing gear cuff.
- Make appropriate logbook entry of compliance with this Service Bulletin.

Materials allowance:

The material required for the retrofit needs to be ordered from EXTRA Flugzeugproduktions- & Vertriebs-GmbH. Please specify aircraft model and serial number to obtain the appropriate reinforcement kit free of charge (valid only when complying with this Service Bulletin).

Kit No.:	SB300106		
Parts:	Preassembled RH cylinder head baffles		1 EA
	Baffle Cyl RH AFT (Cyl No.5)	*EA-63105.6-03/C*	*1 EA*
	Baffle Rubber Cyl. RH	*EA-63105.20SB*	*1 EA*
	Rivet 4x10.3	*GFB304473*	*13 EA*
	Washer	*4.3x15x1.25*	*13 EA*
	Preassembled RH AFT baffles		1 EA
	Baffle AFT RH	*EA-83002.3/B*	*1 EA*
	Baffle Rubber AFT RH	*EA-63105.19*	*1 EA*
	Baffle Rubber Cooler Upper	*EA-83002.32*	*1 EA*
	Baffle Rubber Cooler Lower	*EA-83002.33*	*1 EA*
	Baffle Rubber Cooler LH	*EA-83002.34*	*1 EA*
	Baffle Rubber Cooler RH	*EA-83002.35*	*1 EA*
	Reinforcement Plate	*EA-83002.36*	*1 EA*
	Washer	*4.3x15x1.25*	*14 EA*
	Rivet	*AN470AD4-4*	*2 EA*
	Rivet 4x8.5	*GFB304472*	*4 EA*
	Rivet 4x10.3	*GFB304473*	*10 EA*

Baffle Attachment Plate	EA-63105.11	1 EA
Threaded Rod	EA-83002.29	2 EA
Oil Cooler Duct	EA-83002.31	1 EA
RH Oil Cooler Attachment Bracket	EA-83705.1	1 EA
Attachment Tube	EA-83705.2	1 EA
LH Oil Cooler Attachment Bracket	EA-83705.10/A	1 EA
Bolt	LN9037-05012	1 EA
Bolt	LN9038-04010	5 EA
Nut	LN9348-04	5 EA
Nut	LN9348-05	10 EA
Nut	DIN934 05	2 EA
Washer	DIN125 4.3	5 EA
Washer	DIN125 5.3	8 EA
Washer	DIN9021 4.3	5 EA
Washer	DIN9021 5.3	5 EA
Rivet	AN470AD5-5	2 EA
Bulkhead Fitting 45º	AN837-4D	1 EA
Jig/Template		
Jig	V8300220-01	1 EA
Jig	V8300220-02	1 EA
Bolt	DIN933 M5x20	4 EA
Bolt	DIN933 M6x20	1 EA
Wingnut	M5 DIN315	4 EA
Wingnut	M6 DIN315	1 EA
Welding Rod 1.7734.2		

Please note:
For aircraft in warranty only, 16 manhours is the maximum time to be allowed for the inspection and modification work, per aircraft. Extra Flugzeugproduktions- und Vertriebs-GmbH will only pay for the hours it actually takes an Authorized Service Center (in Europe: Extra Flugzeugproduktions- & Vertriebs-GmbH) to perform the task, up to but not exceeding the “hours” listed. Please reimburse for hourly rates.

Address:
EXTRA Flugzeugproduktions- und Vertriebs-GmbH
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Schwarze Heide 21
46569 Hünxe (Germany)

Fax. N°: (+49)-2858-9137-42
E-mail: extraaircraft@extraaircraft.com

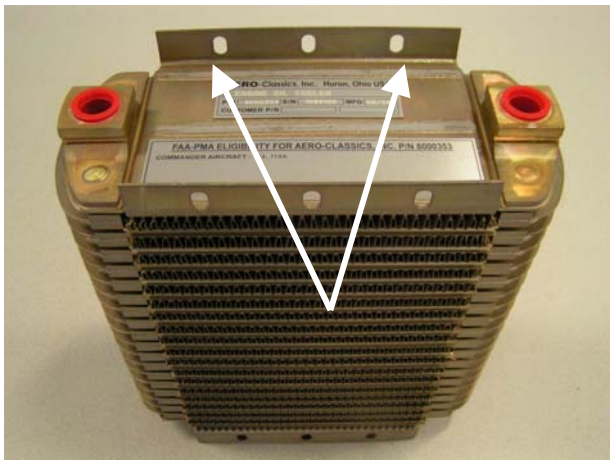

Fig. 1: Oil cooler, typical crack locations

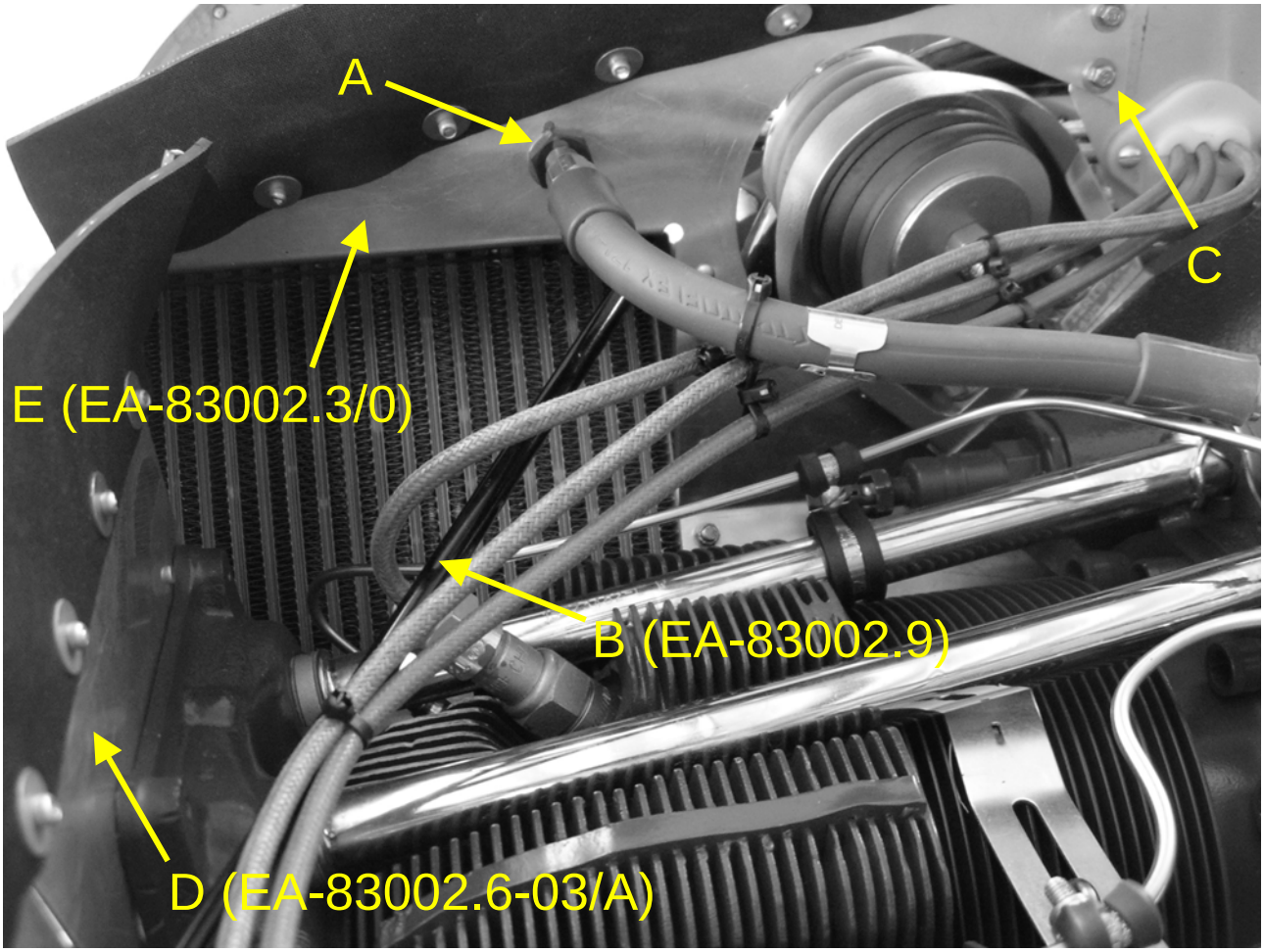

Fig. 2: Front View Current Oil Cooler Installation.

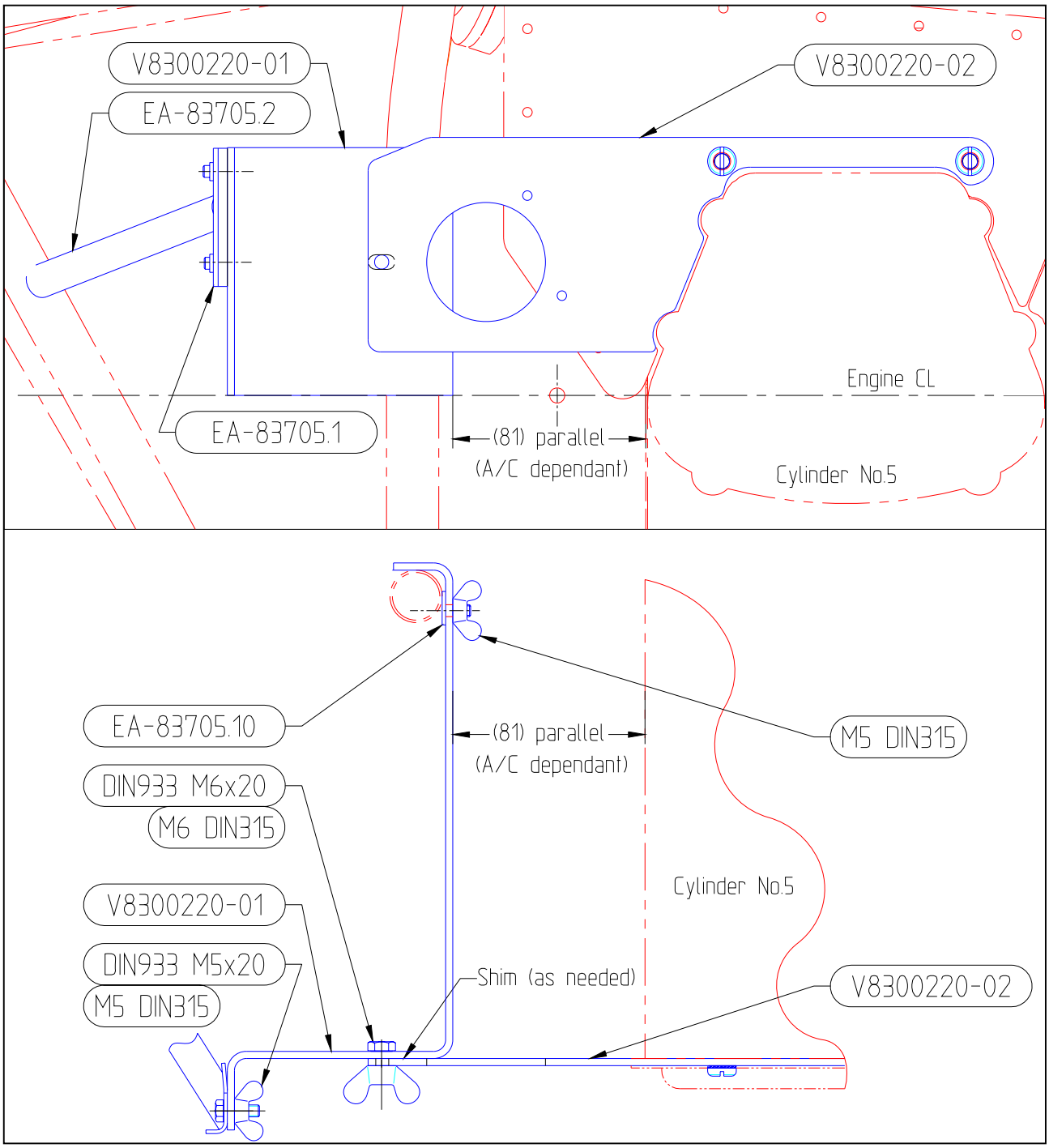

Figure 3: Side and top view of jig installation.

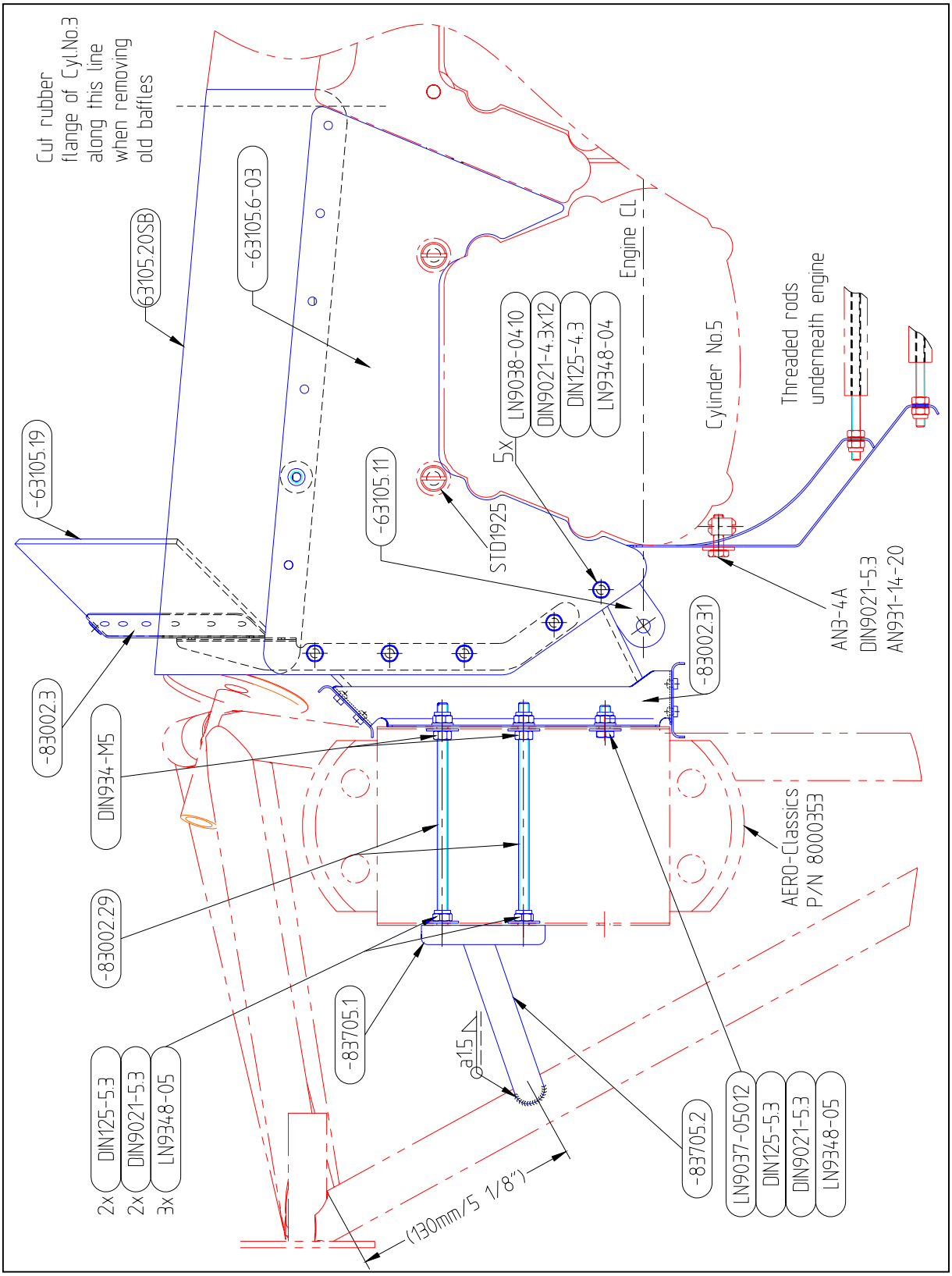

Figure 4: Side view of oil cooler installation on engine mount

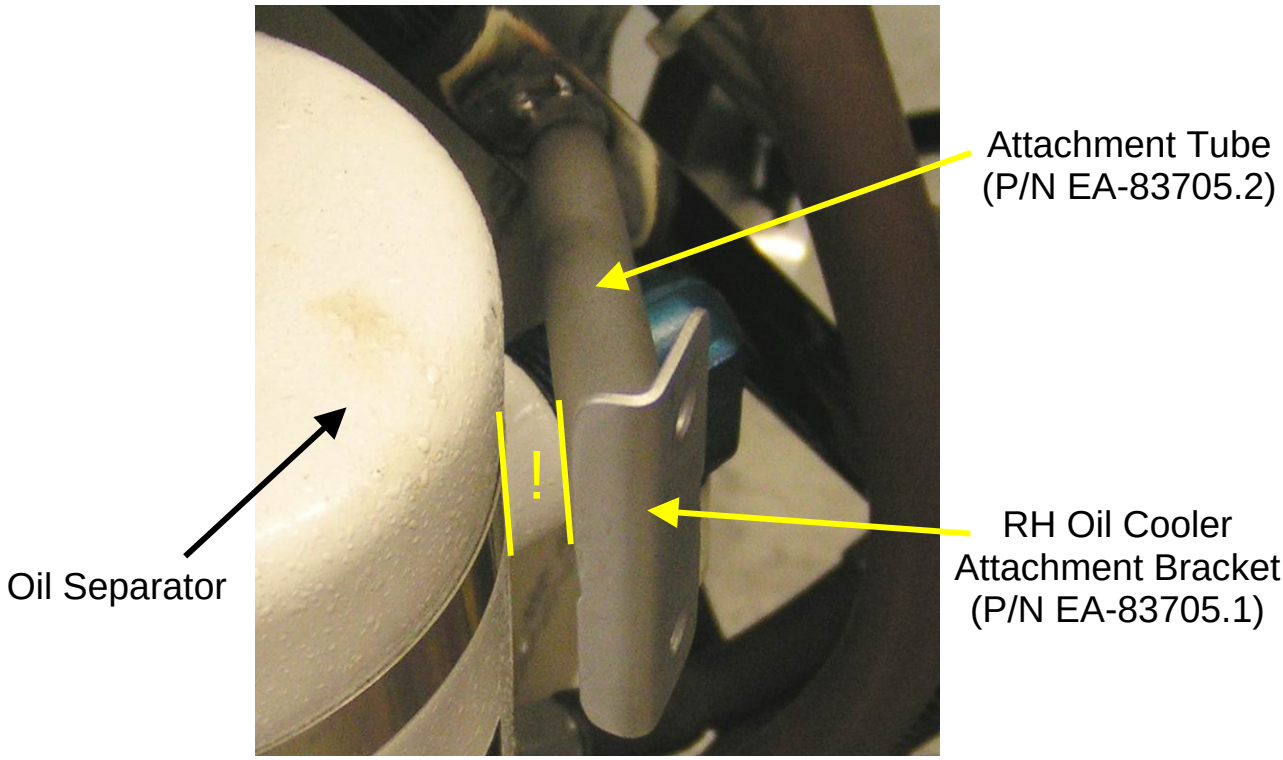

Figure 5: Separation between oil separator and attachment tube.

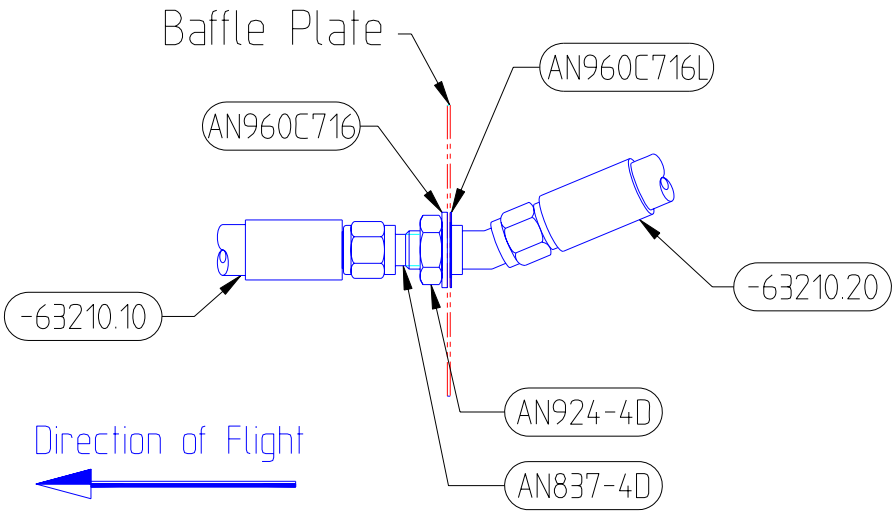

Fig. 6: Bulkhead Fitting Fuel Sensing Line Installation

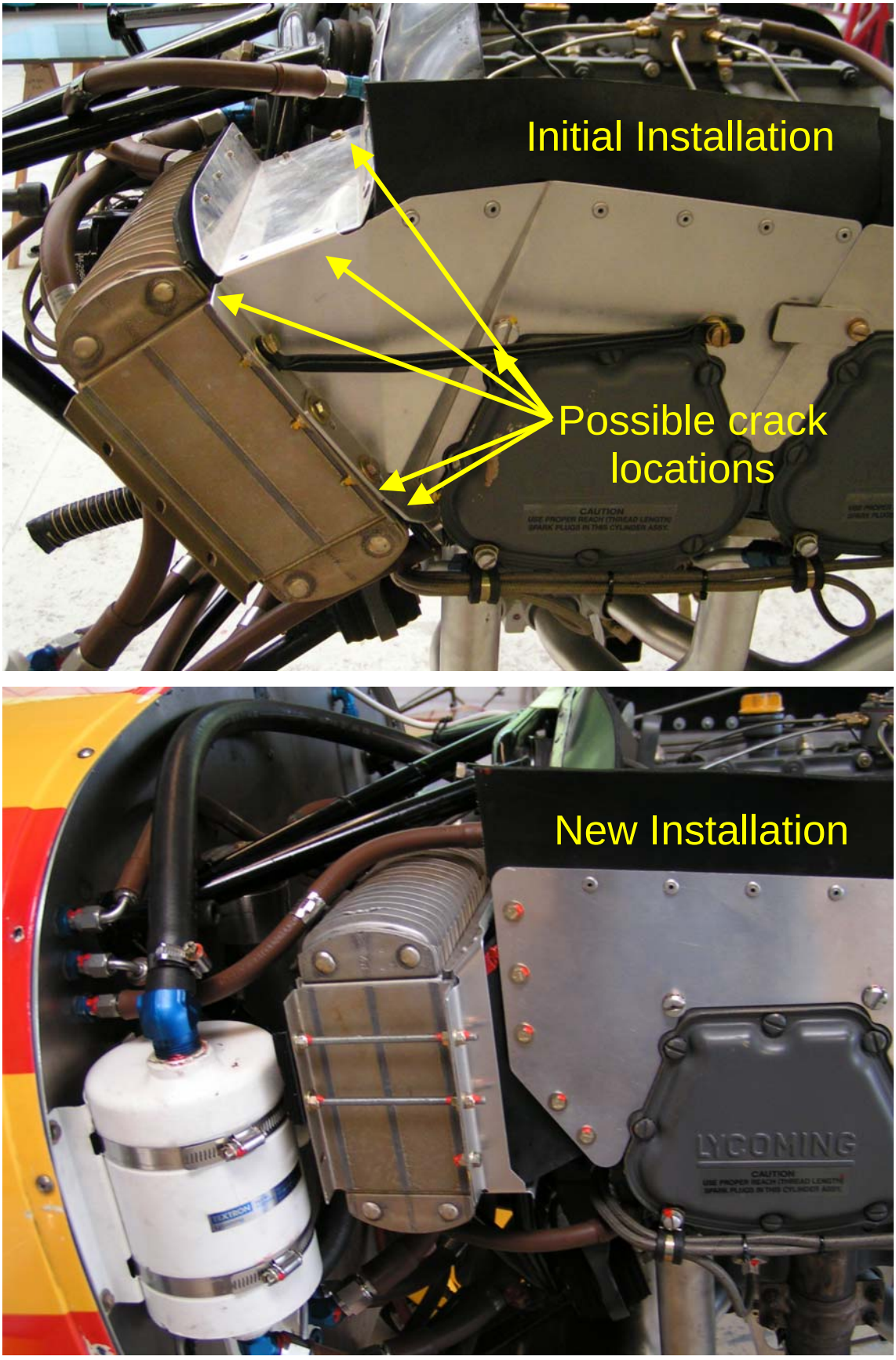

Fig. 7: Possible crack locations on current installation and view of new installation.