MANDATORY SERVICE BULLETIN
NO. MSB-42-055
"Water Circulation Installation in Thielert TAE 125-01 Engines"

I TECHNICAL DETAILS

I.1 Category

Mandatory

I.2 Airplanes affected

Type: DA 42

Serial Numbers: 42.AC001 through 42.AC064,

equipped with Thielert TAE 125-01 (1.7 liter) engines.

I.3 Date of Effectifity

January 14th, 2008

I.4 Time of Compliance

Within next 100 hours flight time, but not later than March 15th, 2008.

I.5 Subject

Engine – Water Circulation Installation

ATA-Code: 71-00

I.6 Reason

During maintenance training some damages and wears on the coolant hoses and the oil pan were detected. To reduce wear of the coolant system inspections of the coolant hoses, hose clamps and the oil pan are necessary.

I.7 Concurrent Documents

DA 42 – Airplane Maintenance Manual, Doc. 7.02.01 latest effective issue.

I.8 Approval

The technical content of this document has been approved under the authority of DOA No. EASA.21J.052.

I.9 Accomplishment/Instructions

WI-MSB-42-055.

I.10 Mass (Weight) and CG

Mass and Center of Gravity are not affected.

II PLANNING INFORMATION

II.1 Material & Availability

Refer to Working Instruction WI-MSB-42-055, Section II.3.

II.2 Special Tools

No special tools are necessary.

II.3 Credit

Contact Diamond Aircraft Canada.

II.4 Reference Documents

DA 42 Airplane Maintenance Manual Doc. No. 7.02.01, latest effective issue.

III REMARKS

1) All measures must be carried out by a certified aircraft station or a certified aircraft mechanic.
2) Accomplishment of the measures must be confirmed in the log book.
3) In case of any doubt, contact Diamond Aircraft Canada.

Execution Report to

SERVICE BULLETIN for MSB 42-055

AIRPLANE DATA

Airplane Serial Number: _____

Airplane Registration: _____

Airplane Operator: _____

Hours of operation of airplane: _____

No. of landings: _____

Hours of operation-engine LH: _____

RH: _____

Typical operation of airplane: private, club, training, other _____

_____

Date, Name, Sign

Please fax the completed form to Fax No. +43-2622-26700-369 or e-mail to airworthiness@diamond-air.at

WORK INSTRUCTION

WI-MSB-42-055

"Water Circulation Installation in Thielert TAE 125-01 Engines"

I GENERAL INFORMATION

I.1 Subject:

Engine – Water Circulation Installation

I.2 Reference Documents:

Diamond Aircraft Industries GmbH DA 42 Airplane Maintenance Manual, Doc. No. 7.02.01 latest effective issue.

I.3 Remarks:

a) The work must be carried out by a certified aircraft service station or a certified aircraft maintenance mechanic. In case of doubt, contact Diamond Aircraft Canada.

b) All works, particular those that are not especially described in this work instruction, have to be carried out in accordance with the referenced maintenance manual.

II DRAWINGS, SPECIAL TOOLS & MATERIALS

II.1 Drawings:

D60-7526-00-00.

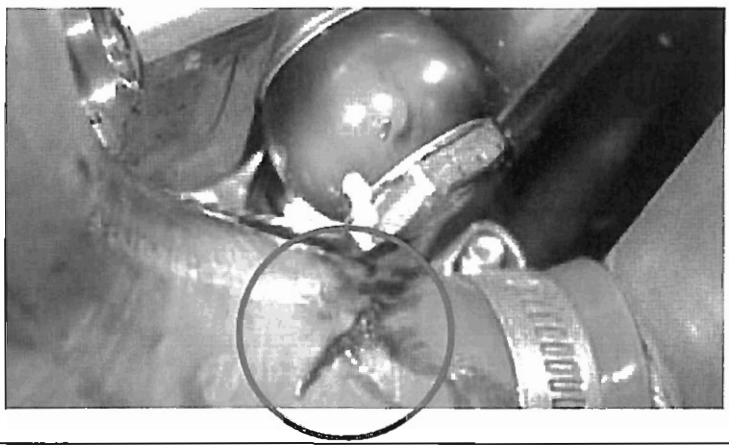
II.2 Special Tools:

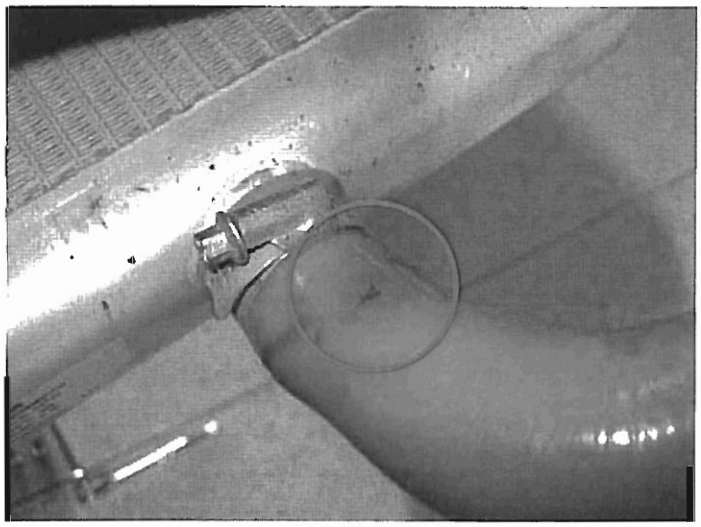
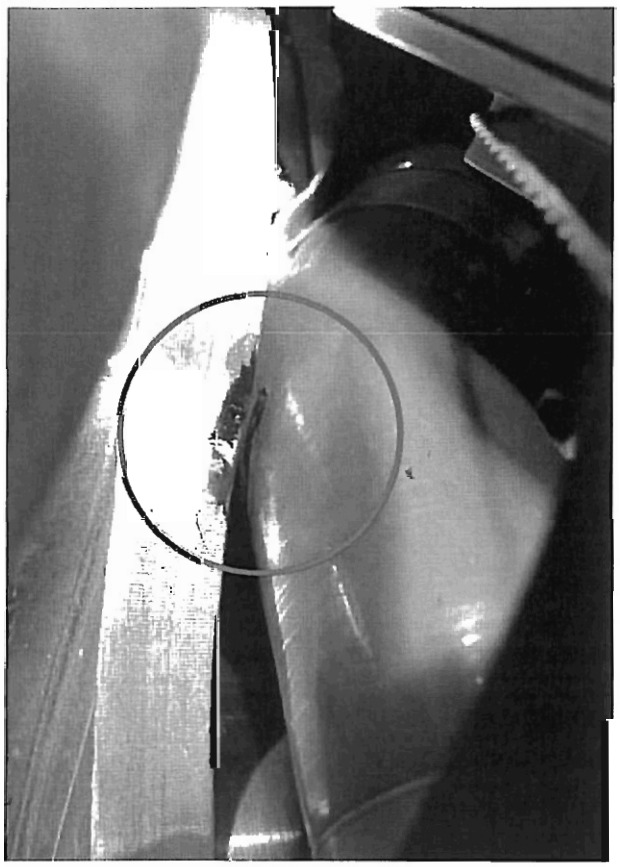
No special tools necessary.

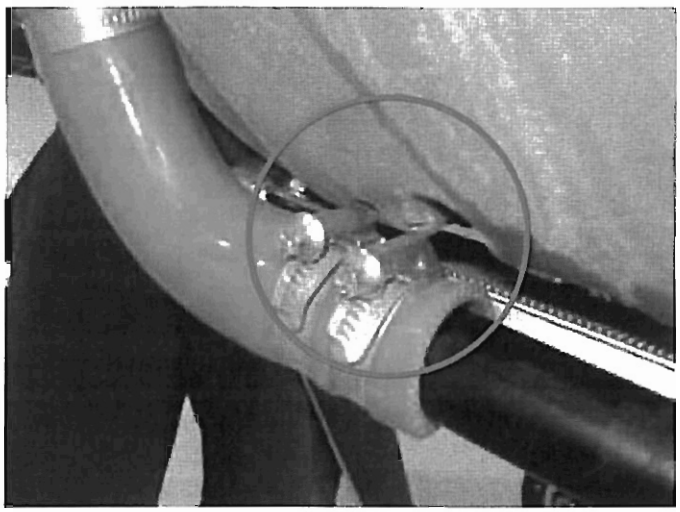
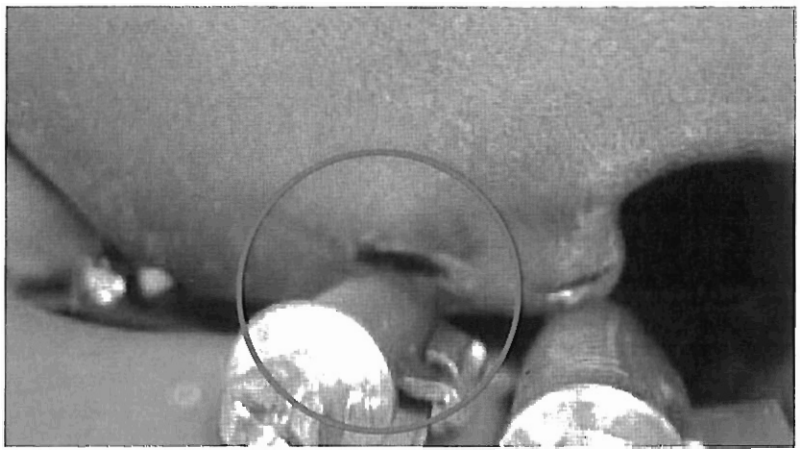
II.3 Material:

- If material is necessary for compliance, the appropriate required quantities of washers are listed in Table III-I on page 6.
- To replace damaged/worn hoses the following part numbers may be necessary:
  - 90 degree hose: P/N E90-30,
  - 45 degree hose: P/N E45-30,
  - Worm drive clamp: P/N ASK 25-40.
- To adjust the water cooler with washers and replacement of damaged shock mounts the following part numbers may be necessary:
  - LH shock mount: P/N 90589
  - RH shock mount: P/N 509053
  - Washer: DIN 9021-6.4-A2
  - Self locking nuts: DIN 985-M6-A2.

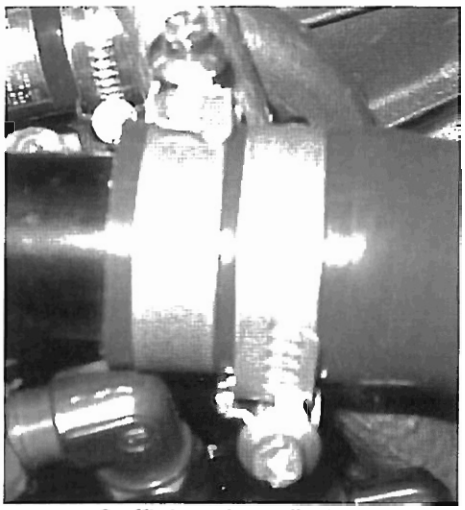
III INSTRUCTIONS

1	Remove cowlings in accordance with AMM section 71-10.
2	Inspect the coolant hoses at the banjo-screw for wear. If wear is noticed, replace the damaged hose in accordance with AMM section 75-00. Pay attention for sufficient clearance between the gear box and the coolant hose. 

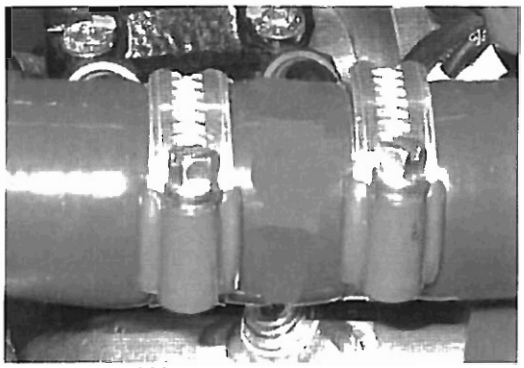
3	Inspect the inlet hose of the water cooler for wear (front side). If wear is noticed, replace the damaged hose in accordance with AMM section 75-00. 
4	Check the upper coolant hose near the gear box for wear. If wear is noticed, replace the damaged hose in accordance with AMM section 75-00. Pay attention for sufficient clearance between the gear box and the hose. 

5	Check the clamps of the coolant hose of the water cooler outlet line for adequate clearance to the oil pan. If the clamps touching the pan and damages to the oil pan are detected contact Thielert Aircraft Engines for further maintenance/repair actions.  

6 Check all hose clamps for proper installation.
For all connections which require two clamps the clamps must be installed in accordance with the following pictures. The minimum angle between the two screws must be 90° (cf. left picture below).



Sufficient Installation.

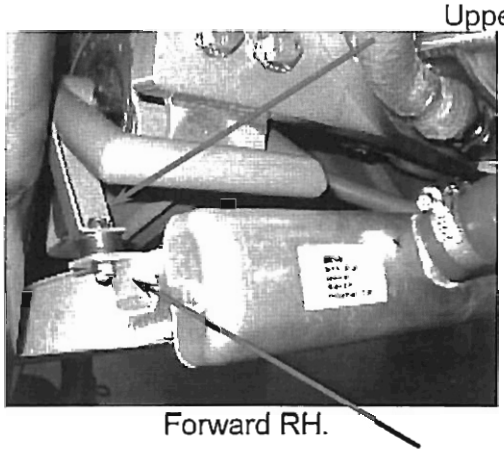


Wrong Installation.

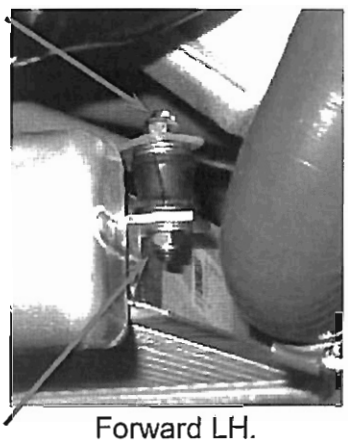
7 Check the four coolant radiator shock mounts for supporting washers, compare with Table III-I. Check the clearance between the hose and the gear box assembly.
If supporting washers are installed and the clearance is more than 8 mm (0,315 in) proceed with step 11.

Ensure that the shock mounts are not distorted torsionally.

Upper Side



Forward RH.

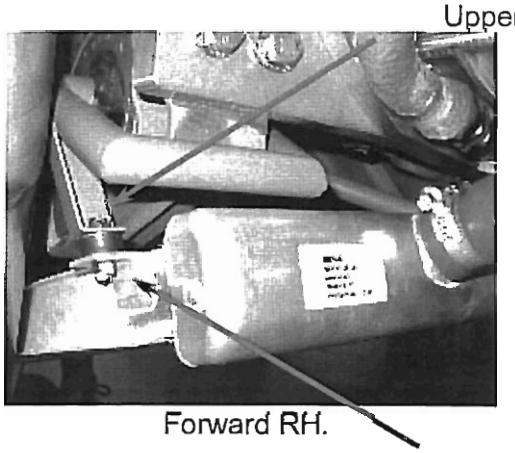


Forward LH.

Lower Side

	Upper Side	Lower Side
Forward LH	3 Washer(s)	2 Washer(s)
Forward RH	1 Washer(s)	0 Washer(s)
Aft LH	2 Washer(s)	2 Washer(s)
Aft RH	0 Washer(s)	0 Washer(s)

Table III-I: Amount of Washers for Support.

8	Remove coolant radiator in accordance with AMM section 75-00. Discard the nuts. Note: Drain the coolant circuit only when required to perform the Service Bulletin. To install the washers only draining is not necessary.
9	Widen the mounting holes in the engine mount to the RH-side max. 2 mm.
10	Install the coolant radiator in accordance with AMM section 75-00, support the shock mounts with DIN 9021-6.4-A2 washers. Install the radiator as far right as possible. Refer to Table III-I at step 7 and the following figures. Replace shock mount in accordance with AMM section 75-00 only if it is distorted torsionally and damaged. Undamaged shock mounts can be adjusted and must not be replaced. Do not over torque or torsionally distort the shock mounts of the coolant radiator. Upper Side  Forward RH.  Forward LH. Lower Side
11	Inspect entire coolant circuit for areas of wear and contact. If wear, damages or contact is noticed, repair the affected parts in accordance with the corresponding section of the Airplane Maintenance Manual. In case of any doubt contact Diamond Aircraft Canada.
12	Service coolant system if necessary (i.e. replacement of hoses).
13	Perform pressure check of coolant system in accordance with AMM section 75-00 if coolant system was drained.
14	Clean working area and check for foreign objects.
15	Repeat procedure starting from step 1 on the second engine.
16	Perform functional check of altered, repaired and new parts.
17	Test all systems in working area for function.

18	Install cowlings of the LH and RH engine in accordance with AMM section 71-10.
19	Make necessary entries into aircraft logs.