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## Removal and Replacement of Cable/Zip Ties connected to Oil Cooler Aluminum Fittings

### Repeating Symbols:

Please pay special attentions to the following symbols throughout this document, which are used to emphasize particular information.

- ◆ **Warning:** Used to identify an instruction that, if not followed, may cause serious injury or fatality.
- **Caution:** Used to identify an instruction that, if not followed, may cause severe damage to the aircraft or lead to suspension of warranty.
- **Note:** Used to identify useful information for better handling.

## 1 Planning Information

### 1.1 Affected Aircraft

Make: SilverLight Aviation AR-1 Kits

Model: AR-1

Serial Number(s): All

Applicable Countries: All

### 1.2 Concurrent Documents

Not Applicable

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### 1.3 Reason

Field report of damage caused by cable/zip ties on Oil radiator/cooler Aluminum fittings that connect to the body fairing

### 1.4 Subject

Inspect oil cooler/radiator fittings for damage under zip ties. Replace if damaged. Remove zip ties and place zip ties on the oil lines themselves instead of fittings or order the Aluminum back grill for AR-1 912 or 914 and use that instead

### 1.5 Compliance

Inspect the area of the oil cooler fitting under the zip tie or cable tie for damage from the tie rubbing. Cut and remove the zip tie. If damage is found, new fitting needs to be installed or the whole oil lines (x2) on the oil cooler need to be replaced and oil system purged per Rotax instructions for purging oil circuit. After installing the new fittings, slant the oil cooler further forward and tie new set of zip ties with rubber to the fiberglass body and the oil line but not the fitting. The zip ties need to be very snug so they can't easily move or have slack. Similarly check coolant pipe if such zip ties are tied to it for supporting it. These zip ties need to be so snug that there is no chance of movement.

### 1.6 Approval

Not applicable.

### 1.7 Type of Maintenance

Line

### 1.8 Personnel Qualifications

Owner/Operator

### 1.9 Return to Service

Logbook entry stating that ASB 005 for AR-1 has been satisfied should be stated in the logbook along with pilot or mechanic's signature and date

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### 1.10 Weight and Balance

Not Applicable

### 1.11 References

Not applicable

### 1.12 Superseded Documents

None

### 1.13 Contact Details

For further information on this Safety Alert or to report any Safety of Flight or Service Difficulty issues, please contact SilverLight Aviation at:

#### **SilverLight Aviation**

40420 Free Fall Ave, Unit A

Zephyrhills. FL 33542.

USA

info@silverlightaviation.com

### 1.14 Disclaimer

This Safety Alert has been generated with utmost care. Nevertheless errors and misunderstandings can never be fully excluded. In case of any doubts the recipient of this Service Alert is requested to contact SilverLight Aviation immediately to clarify the issue.

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## 2 Resources

### 2.1 Parts

### 2.2 Materials

Replacement cable/zip ties

### 2.3 Tools

Small cable tie snips

### 2.4 Special Tools

None

### 2.5 Manpower

15 minutes

### 2.6 Cost

Not determined

## 3 Instructions


### 3.1 General

Due to a deviation in assembly procedure, recently field reports have come to SilverLight Aviation's attention that show that plastic cable ties or as they are sometimes called zip ties that connect oil cooler lines to the main body fairing over a period of time and use and with vibration and being left loose have moved causing damage to the oil fittings. In one case the damage was severe enough that in more use, the fitting would have leaked oil possibly causing engine

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damage and thus a serious condition. The pictures of this damage are shown below:



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To rectify this condition, follow these guidelines:


- 1) Cut these and remove the cable ties.
- 2) Loosen the bolt that holds the oil cooler bracket secured to the keel tube and slant or angle the cooler so it's close to perpendicular to the keel tube diagonal member its affixed to. Make sure there is enough of an oil line to have slack that this angle does not cause oil line routing to touch or rub against anything. Adjust the angle if necessary
- 3) Tighten the bolt. This will bring the fittings farther away from the body fairing.
- 4) Now you can use replacement cable ties to affix the body fairing to the oil lines themselves and not to the fitting. The cable ties through the rubber hose standoff should be very snug so that there is no movement possible. If needed, use a new rubber hose (fuel line) standoff and cut it to size. Use flush snips.

The main point to note here is that cable ties need to be very snug on items they go on to so there is no movement. They should usually not be against soft metal like Aluminum fittings if possible without a rubber hose layer on them or some other protection.

If there is extensive damage like shown in above pictures to the oil fittings, contact the factory to purchase replacement oil lines. They will have to be replaced and oil circuit purging procedure as specified by Rotax when oil circuit is opened and gets air in it will need to be followed.

Newer production is using different method of oil hoses and body fairing tying and can be seen below in images.



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Please note that cable tie with standoff may also be used against Aluminum tubing for coolant to separate it from touching the ring mount in your aircraft. If so, please inspect this area as well and if the cable tie was kept loose, this area could also experience damage.



We advise that cable ties be checked and replaced on annual inspection depending on condition and when replaced, the installation should make sure that they are fairly snug so no movement is allowed on them. Keeping them loose is not a good practice as they can easily move and with aircraft vibration start to rub into metals

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like Aluminum. Tying something like a body fairing which may shake at a certain frequency in rotorcraft flight to an item like an Aluminum fitting that is fixed rather than oil line that can move slightly can create such hazards in general.

### 3.2 Documentation

Conduct of this Safety Alert must be logged in the aircraft logbook with name, date and signature of the responsible Person conducting the inspection/execution. The entry must include the following information:

- Identified aircraft S/N
- Registration Marking or identification of the aircraft (N-Number)
- Hours on the aircraft
- Identification of this Safety Alert
- Execution remarks and notes

## 4 Appendix

### 4.1 Changes to Previous Revision

Original Revision – no changes

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#### 4.2 Feedback Template

No feedback necessary