



- Subject** : Winglets at the wing tips and increase of max. mass of the non-lifting parts
- Effectivity** type: LS sailplanes (LS4)
variants: variants LS4, LS4-a, LS4-b, all serial numbers
- Accomplishment** : Optional
- Reason** : To improve flight performance and handling, removable neo-Winglets have been designed.
As a new stress analysis of the wings was necessary to prove the strength with winglets, it could be shown that an increase of the max. mass of the non-lifting parts from 230 kg to 250 kg is possible, with limitation of the max. mass to 505 kg (LS4 remains 472 kg).
- Instructions** : 1. Installation of the wing parting and the winglets according to working instructions TM4049 FE-33-01.
2. Perform the technical bulletins 4046 and 4047 if not already done. When modifying the water ballast system regard the supplement to Technical Bulletin 4047 issue 2.
3. Exchange the following manual pages against new pages issued February 2019, marked with TN4049. Respect the changes marked in the right hand margin.
Flight manual LS4 pages: 0-3, 0-5, 0-6, 1-5, 4-1 - 4-3
Flight manual LS4_USA pages: 1-1, 1-2, 1-5, 2-3, 9-0, 9-8 -9-12
Flight manual LS4-a pages: 1-1, 1-2, 1-5, 2-3, 9-0, 9-8 – 9-12
Flight manual LS4-a_USA pages: 1-1, 1-2, 1-5, 2-3, 9-0, 9-8 – 9-12
Flight manual LS4-b pages without fin tank: 0-1, 0-2, 2-4, 9-1 – 9-6
Flight manual LS4-b pages with fin tank: 0-1, 0-2, 2-4, 9-1 – 9-6
Maintenance manual LS4 pages: 0-2, 0-4 - 0-6, 1-1, 2-2, 2-3, 2-5, 2-17, 4-6, 7-3, 7-5
4. For flutter reasons the aileron seals according to MM LS4 section 4.2.2.2: (Mylar tape, combined with fibre reinforced Teflon tape) must be installed. If the seals are not installed in that way, they have to be modified.
5. Install an additional placard see page 9-3 FM below the cockpit data placard. Print that page preferably on transparent self-adhesive film, cut out the placard, glue in place and cover with transparent tape.
6. Perform a weight and balance calculation of the sailplane and recalculate the min. and max. cockpit loading, according to MM section 2.2. These values have to be entered in the following locations:
- Weighing Report, FM LS4: page 1.7, FM LS4_USA: page 9.1
FM LS4-a & FM LS4-a_USA: page 9.1
FM LS4-b & FM LS4-b_USA: page 6.2
 - Cockpit data placard
 - Below the instrument panel cover
- Material** : Working instructions TM4049 FE-33-01-01b including the material mentioned therein
Manual pages, see above
If necessary: Technical Bulletins 4046/4047 with Supplement 2 to Technical Bulletin 4047, including the material mentioned therein.
If necessary:: Material for instructions 4 see list in MM LS4 section 2.2.2

The technical content of this document is approved under the authority of DOA Ref. EASA.21J.530.



Weight and balance : A new weight and balance has to be performed

Remarks : Instruction No. 1,2 and 6:
1. EASA countries: The actions have to be performed according to the regulations of the Part M in an approved maintenance organisation and released according to M.A.801.
2. Non EASA countries: The actions have to be performed in a licensed workshop. All instructions are to be inspected and entered in the aircraft logs by a licensed inspector.

Instruction no. 3 & 4 may be executed by the pilot/owner himself.
The correct implementation of instructions 4 is to be inspected and entered in the aircraft logs by the pilot/owner.

The increase of the max. mass of the non-lifting parts to 250 kg (551 lbs) might lead to a higher allowed max. cockpit load

Manual pages and working instructions will be shipped with the material.

Use only genuine spare parts.
Parts (except for standard parts) and material kits shall only be installed if an EASA Form 1 is existent for these products.
The DG invoice is valid as "Certificate of conformity" for standard parts.

If you have any questions concerning this TN please contact DG Flugzeugbau: Tel.: 0049 7251 3020-0, e-mail: dg@dg-flugzeugbau.de

Bruchsal, date:
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For LS4-a and LS4-b:
Additional placard clearly visible at right cockpit wall to be installed below the data placard Cockpit placard.

Max. take-off mass	505 kg	1113 lbs.
with neo-Winglets installed		