

- Subject : Winglets at the wing tips, increase of max. mass of the non-lifting parts, improved wing-fuselage junctions, aileron end plates.
- Effectivity : LS sailplanes (LS1), variant LS1-f and LS1f-45, all serial numbers.
- Accomplishment : Optional
- Reason : To improve flight performance and handling removable winglets have been designed.
As a new stress analysis of the wings was necessary to prove the winglets it was possible to increase the max. mass of the non lifting parts to 250 kg instead of 230 kg, if the Option Winglets has been installed.
Only LS1-f (45): As the VNE had to be reduced for the Option Winglets, cloud flying is prohibited if this Option is installed.
- Instructions :
 1. Installation of the Option Winglets according to working instructions for TN 63-LS, section 3B.
 2. Installation of the wing-fuselage junctions according to working instructions for TN 63-LS, section 4B.
 3. Installation of the aileron end plates according to working instructions for TN 63-LS, section 5B.
 4. Exchange the following manual pages against new pages issued May 2017, marked with TN63-LS. Respect the changes marked in the right hand margin.
Flight manual LS1-f: 0.1,0.3, 0.4, 0.6, 1.3, 1.4, 2.2-2.5, 2.7-2.9, 4.1, 4.3, 4.4, 4.12 - 4.14, 5.2, 6.1, 6.2, 6.4, 6.5, 7.33
Maintenance manual LS1-f: 0.1 - 0.4, 2.2 - 2.4, 6.1 – 6.5, 12.1
 5. Print page 3 of this TN, best on self-adhesive film. Cut out placards, glue in place and cover with transparent self-adhesive film.
 6. Perform a weight and balance calculation of the sailplane and recalculate the min. and max. cockpit loading, according to FM chapter 6. These values have to be entered in following locations:
 - Weighing Report, FM 6.8.4.
 - New cockpit placard
 - Below the instrument panel cover
 7. Only LS1-f(45): Change the red line on the ASI from 270 km/h to 250 km/h with the yellow arc from 170-250.
- Material : Working instructions for TN 63-LS with the material mentioned therein
Manual pages, see above
- Weight and balance : Perform a new weight and balance

- Remarks : Instruction No. 1-3 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. 4, 5 & 7 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.

Instructions 1-3 can be executed optionally, independent of the installation of the other options. If any of the instructions 1-3 is being executed, instructions 4 up to 7 have to be performed as well.

If instruction 1 has been executed, the increased max. mass of the non-lifting parts is being increased to 250 kg (551 lbs). This might lead to a higher allowed max. cockpit load for instruction 6.

Bruchsal, date: 21.06.2016

Author: Jelmer Wassenaar Modifications approved by EASA Date 13. July 2017 under Approval No. 10062611



<u>Type: LS1-f</u>			
Serial No.: _____		Registration: _____	
Airspeed limits:			
Winch launch and auto tow	130 km/h	81 mph	70 kts.
Aero tow	170 km/h	106 mph	92 kts.
Manoeuvring	170 km/h	106 mph	92 kts.
Rough air	250 km/h	155 mph	135 kts.
Never exceed	250 km/h	155 mph	135 kts.
Aerobatic manoeuvres are prohibited.			
If the sailplane will be operated with winglets, the use of water ballast is prohibited.			
Max. take-off mass	390 kg	860 lbs.	
Pilot weight incl. max:	110 kg	242 lbs.	
Parachute min:	60 kg	132 lbs.	
With lower pilot weight necessary ballast must be added.			

Clearly visible at right cockpit wall

Type: LS1-f (45)			
Serial No.: _____		Registration: _____	
Airspeed limits:			
Winch launch and auto tow	130 km/h	81 mph	70 kts.
Aero tow	170 km/h	106 mph	92 kts.
Manoeuvring	170 km/h	106 mph	92 kts.
Rough air	250 km/h	155 mph	135 kts.
Never exceed	250 km/h	155 mph	135 kts.
Aerobatic manoeuvres and cloud flying are prohibited.			
If the sailplane is being operated with winglets, the use of water ballast is prohibited.			
Max. take-off mass	439 kg	968 lbs.	
Pilot weight incl. max:	110 kg	242 lbs.	
Parachute min:	60 kg	132 lbs.	
With lower pilot weight necessary ballast must be added.			

Clearly visible at right cockpit wall

Caution LS1-f(45): If the Option Winglets is installed this table of the LS1-f must be used.

Altitude in [m]	0-2000	3000	4000	5000	6000	7000	8000	9000	10000
VNE IAS km/h	250	237	225	214	202	191	180	170	160
Altitude in [ft]	0-6560	9843	13124	16405	19685	22966	26247	29528	32809
VNE IAS kts.	135	128	122	115	109	103	97	92	86