

SHEET:  
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ASW 24 E  
Technical Note  
No. 4

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**Subject:** 1. Modification for optional operation with / without 0.3 m high winglets.

**Serial number applicability:** ASW 24 E, German Data Sheet no.859, all serial no.s as of 24801, optional mod only.

**Compliance:** None, optional mod only.

**Reason:** 1. In the recent past tests with relatively small winglets (installed almost perpendicularly at the wingtip) have demonstrated comparatively high performance improvement. Therefore, for the ASW 24 E about 0.3 m high winglets were developed which improve the performance at low speeds and do not adversely affect the high speed performance. The winglets generally improve the flight characteristics (circling, stall behaviour and stalled flight). However, in sideslips the pilot has to pay attention to the possible greater yaw angles and to the rudder control force reversal. Therefore the Flight and Maintenance Manuals must be supplemented.

**Action:** 1. The winglets are built and pre-assembled according to assembly drawing 240.05.9001 and lamination scheme 240.05.0304. Because of the molds required for the construction of the winglets only the manufacturer is approved to produce the winglets.

2. In accordance with drawing 240.05.1003 paper and cardboard or plywood templates must be made which will serve as rigging aids for assembly. Remove the plastic skid from the wing tip underside! By means of the paper or cardboard template no. 3 the cutting lines are drawn on the wing tips. For this purpose the folded edge of template 3 must rest against the trailing edge of the wing. Reference in span direction is the wing-side rib of the aileron cutout. When making the template No. 3 it is absolutely necessary to make sure that the given distance of 474 mm is precisely met. The template is correctly folded around the wing tip if the paper ends of upper and lower template surface meet each other at the leading edge of the wing. Drawing 240.05.1003 shows the correct aligning and fixing of the template. The cutting lines are correctly drawn if the cutting section is inclined inboard at the upper end (see drawing 240.05.9001). The cut itself must be done as narrow as possible (max. 1.5 mm wide), as the wing tip must still be used (a small diamond saw is recommended).

3. Sand a 1 cm wide glue area for the root rib P/N 240.05.0204 and fit this rib including its fitting P/N 240.05.0008 into the wing. The glue area for the fitting must also be carefully sanded.

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4. Check the correct dihedral of the winglet by use of cardboard or plywood template no.1 and auxiliary template no.2.  
NOTE: The rear steel tube of the fitting 240.05.0008 is very close to the wing upper surface; if necessary, use a rasp to provide clearance.
5. As shown in drawing 240.05.9001, glue a styrofoam strip (item 20) as a dam behind end rib (item 19) by means of double-adhesive tape to prevent the epoxy mixture from being pushed into the wing during application of the end rib.
6. Apply parting agent(\*) to the winglet root rib!  
(\* e.g. recommended for epoxy: Johnson's wax or PVA).
7. For each wing tip prepare an epoxy resin mixture of 50 g resin /hardener plus microballoons, cotton flocks and Aerosil. Resin/hardener weight ratios:  
Epikote + Epikure = 100:38  
Rütapox L 20 + H 91 = 100:27
8. Apply the above epoxy mixture in a about 5 mm thick coat below the steel fitting (with the holes) and also in a rather rich coat to the glue areas of the end rib. Make sure that all sanded areas (including those at the wing side) are covered with some epoxy mixture as preservation.
9. After inserting the end rib into the wing fix the winglet to the template no.1 and to the wing by means of adhesive tape; cure for 24 h at min. 25° C.
10. Remove the epoxy glue mixture from inside the cut-off wing tip and sand the inside.
11. After the curing (see 9.) carefully sand the wing to winglet intersection (transition).
12. Install the pair of pins P/N 240.05.0009 to the root rib P/N 240.05.0205, fit the cut-off wing tip and adjust.
13. Apply parting agent to the wing end rib!
14. For glueing each wing tip to the root rib prepare a mixture of 25 g resin /hardener plus microballoons, cotton flocks and Aerosil (for each wing half). Resin/hardener weight ratios:  
Epikote + Epikure = 100:38  
Rütapox L 20 + H 91 = 100:27
15. Install the wing tip to the wing and fix it with adhesive tape; cure for 24 h at min. 25° C.
16. After the curing carefully fill and sand the transition at the wing to wingtip separation point.

17. Paint all components with Polyester Gelcoat or anti-collision paint and sand carefully.
18. Glue back the plastic skid to the wing tip underside!
19. The following pages in the manuals must be exchanged for new pages with the revision entry "TN 4" date "09.09.92 JUW"; in the Flight Manual: 0.4, 0.5, 1.4, 4.5, 4.9, 4.11, 4.17. 4.33 to 4.35, 4.43, 4.45 and 8.4; in the Maintenance Manual: 0.4, 0.5, 1.3, 1.5, 2.45, 6.3 and 7.4.  
The accomplishment of the change to the Manuals must be documented on the respective page "Record of Revisions" in each manual.

Material & drawings:

See drawings detailed in above para "Action".

Mass and C.G.:

The mass of each wing is increased by 0.3 kg. It is not necessary to redetermine the mass and C.G. data because the winglets are located very close to the C.G. of the sailplane.


Notes:

1. For ordering the winglets kit and pertinent assembly drawings owners may contact the manufacturer or the Schleicher agency in their country.
2. This retrofit mod can be accomplished by the manufacturer SCHLEICHER, or by a competent person, or by a technical aviation service station holding an appropriate license; The exchange of the pages in the Manuals can be done by the owner/operator of the powered sailplane himself. The accomplishment of this mod must be checked by a licensed aviation inspector who must certify this in the powered sailplane's inspection documents, log-book, and the Flight and Maintenance Manuals.
3. For this Technical Note supplemental substantiation has been approved:  
"Installation of 0.3 m high winglets to the ASW 24",  
Pages 1909 &ff.

Poppenhausen, Sept. 9, 1992

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i.A.



(Rüdiger Werner Juntow)

The German original of this Technical Note has been approved by the LBA under the date of OCTOBER 20, 1992 (signature: SCHMALJOHANN). The translation into English has been done by best knowledge and judgement; in any case of doubt the German original is controlling.