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0.2 Record of revisions

Any revision of this Manual must be recorded in the following table and in case of approved Sections endorsed by the responsible airworthiness authority.
The new or amended text in the revised page will be indicated by a black vertical line in the left hand margin, and the Revision No. and the date will be shown on the bottom left hand of the page.

Rev. No.:	Affected Section	Affected Page	Date of Issue	Approval	Date of approval	Date Inserted	Signature
1	3	3-3	08/16				
2	1,3	1-2,1-8,1-9, 1-10,3-18	09/16				
3	1, 2, 3, 7	1-3, 2-1, 3-2, 4-1; 7-1 to 7-3	09/21				

1.3 Sailplane systems

1.3.1 Control systems in the fuselage

Elevator, ailerons, and air brakes control systems in the fuselage

FIG.1

2.1.1 Hangaring, Parking, and Ground Handling

The sailplane should only be stored or parked in well ventilated areas. Closed trailers should be equipped with sufficiently large ventilation. Always store with empty water tanks.

Parking in the open is not recommended. Suitable tie-down kits may be used to anchor the sailplane. Rain covers should be regarded as essential. Maintenance program focused on rust prevention should be applied if stored in adverse environmental conditions.

Take note to store the sailplane without stresses. This is particularly important at higher temperatures.
Because of their slim shape, it is particularly important to store the wings correctly. They should be stored with the L.E. pointing downwards and supported under the wing root spar at approx. 2.4 m *(7.9 ft)* from the wingtip, in a profile true wing sling.

Fuselage is correctly stored in a wide fuselage molding in front of the C.G. release, and supported by the tail wheel.

The Tailplane is stored in two profile true slings, separated 1.5-2m (*5 -6.6 ft.)*, and with the L.E. pointing downward.
Under no circumstances attach the tailplane into the trailer by using the tailplane main attachment fittings.

Sailplanes which stay rigged for the whole year or longer periods, should be attended to, so that rigging elements on the fuselage, wing and tailplane do not corrode.

Dust covers should be used and are highly recommended.

The sailplane should not be parked in the open with the canopy in the open position, as this may act as a concave mirror, and depending on direction of sun-radiation, constitutes a fire hazard.

A tail dolly should always be used for ground-handling this sailplane, to prevent unnecessary vibration of the tailplane, and stresses and wear to its attachment fittings.
When ground-handling, do not push at wingtips, but rather close to the fuselage.

3.2 Regular Maintenance

Within the framework of the yearly inspection, the following maintenance should be carried out:

The controls are accessible as follows:

1) Flaperon control system within the wing is accessible through pushrod openings in the root rib and through the flaperon drive opening when the ailerons drive caps are dismantled.
2) Air brake control system within the wing is accessible through the root rib and through the airbrakes slot when the airbrakes are opened.
3) Control systems in the fuselage are accessible after removal of the wheel box cover behind the back-rest, the removal of the four inspection covers in the wheel box, the upper wheel box cover, and after removing the seat tray.
4) Elevator drive after removal of the tailplane. If required for the inspection of the bellcrank at the base of the fin, an opening of diameter 12mm may be cut into the skin of the tail wheel fender at position 105 mm from the front edge of the fender and sealed (adhesive tape) after inspection. Elevator pushrod is accessible after removal of the rubber bellow at upper vertical tail rib.
5) Rudder drive after removal of the rudder.

After cleaning the whole aircraft, proceed as follows:

Check CFRP outside surface condition for holes, tears, cracks, paint cracks, indents, and delamination. If the outer layers of the sandwich are damaged, the inner layers should also be checked. Seek the help of an experienced person.
Check all metal parts for corrosion, and if necessary, clean up and preserve again (steel fittings, pushrods and levers should be primed with Zincromite and conserved with Nitro-lacquer). To prevent results of adverse environmental conditions cavity wax common in trade may be used for steel pushrods.
If control runs with excessive friction, the bearings and joints should be cleaned and lubricated. Lubricate all accessible control circuits (bearings with a sealed grease filling do not require any service).
Sailplane may be lubricated with acid-free grease and oil customary in trade.

The permissible friction in the elevator controls can be checked in flight.
From a trimmed speed of 65kts,(75mph, 120km/h), and when the control stick is gently released, the sailplane should return to ± 8 kts,(± 9 mph, ± 15km/h) of the original trimmed speed.

Bearings and joints with excessive radial play should be replaced. The automatic "link-up" connection for ailerons and airbrakes between wing and fuselage can be adjusted free of play on the adjusting bolts of the four socket fittings on the fuselage.

The play in the controls and airbrake drive should be checked according to 3.4 .
The play in the wing and tailplane should be checked according to 3.5.
All fittings, which are attached to CFRP, should be checked for firm attachment.
Check the condition of the CFRP near the fittings for cracks and white areas of delamination.

4.1 General

Initial test results of service strength of wing spars proved, that service life of 304S sailplanes manufactured from glass and carbon fiber composite materials may be extended to 6000 flight hours, if the multistage inspection program for proof of airworthiness will be carried out for each sailplane (except of obligatory annual inspections). This initial value could be changed according to results of the ongoing fatigue test.

4.2 Service Time

If the sailplane reaches the service life of 3000 hours, then the additional inspection must be carried out according inspection program stated by the manufacturer (see the points 4.3 and 4.4).
In the case of positive test result, respectively after repair of observed insufficiencies, then the service time of the (powered) sailplane could be increased by 1000 hours to a total of 4000 flight hours (1. step).

The additional inspection must be repeated, if the sailplane reaches 4000 flight hours. In the case of positive test result, respectively after repair of observed insufficiencies, then the service life could be increased by 1000 hours to a total of 5000 flight hours (2. step) .

When the (powered) sailplane reach of 5000 flight hours the additional test inspection must be carried out. If the inspection result is steady positive, respectively after repair of observed insufficiencies, then the service life could be increased for total of 6000 flight hours (3. step).

For eventually service over 6000 flight hours the additional specifications will be stated by the manufacturer.
The additional inspections have no influence for the obligatory periodical inspections specified in sec. 3.1 and 3.2, which should be carried out in proper periods.

4.3 Inspection

Inspections may only be carried out by the manufacturer or by the facility approved for this type of repair works.

4.4 Inspection program

The relevant and current inspection program may be obtained from the: HPH Ltd. , Čáslavská 234 , Kutná Hora 284 01 , CZECH REPUBLIC .
The results of the inspections are to be recorded in an inspection report, wherein comments are required for each inspection step.
If the inspections are carried out by a certified repair station, a copy of the records must be sent to the manufacturer for evaluation.

7. INSERTED SUPPLEMENTS

7.1 List of inserted supplements

Date of insertion	Doc.No.	Title of inserted supplement
09.09.2021	304S/MM SUP1 Issued 09/21	MAINTENANCE MANUAL SUPPLEMENT FOR Glasflügel 304S – replacement/reinstallation of elevator pushrod

7.1 List of Effective Pages

Section	Page	Date	Section	Page	Date	Section	Page	Date
7	7-0	09/21						
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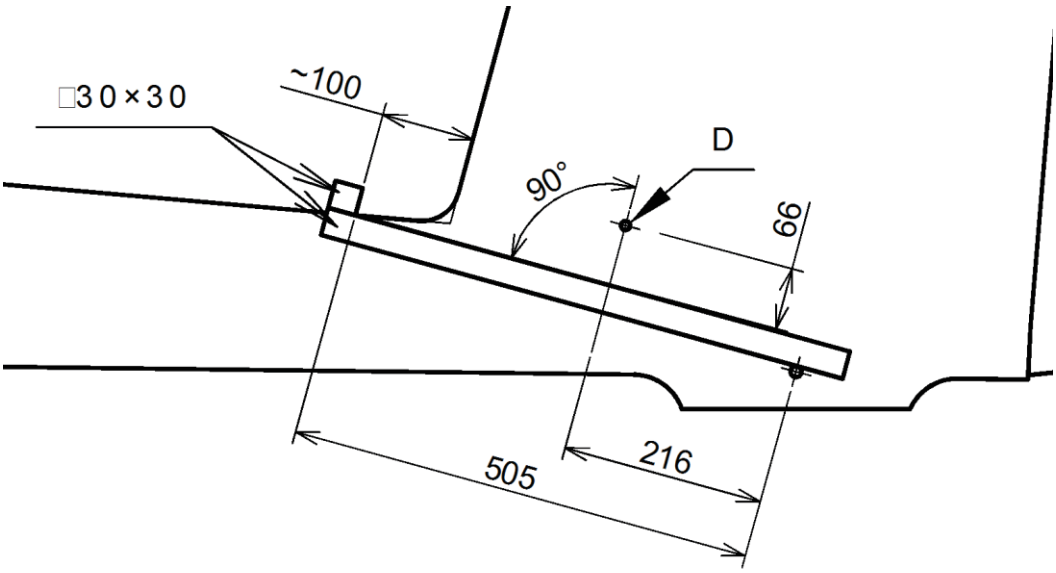
7.2 Replacement / reinstallation of elevator pushrod

This procedure covers the replacement or reinstallation of elevator control rod in the vertical stabilizer for 304S gliders and derived models and is valid for all s/n.

step no	action
1	Remove horizontal stabilizer and tailwheel. The hole for tailwheel axle has to be free of obstructions.
2	Disjoint the driving rod top end bearing from the fork driving elevator. Remove the sealing sleeve.
3	In both left and right shell of the vertical stabilizer, drill a ∅6mm hole in the position marked „D“ on the fig. below. To do so assemble a jig using 30×30 profiles and mark dimensions and positions on it. The rear part of the jig should rest on a ∅12 rod inserted in the tailwheel axle hole. The front part sits on the top of the fuselage tail boom.  Look through the hole to verify the position and orientation of the bolt securing the rod bottom end bearing in the fork. Adjust the control rod position if needed by pulling it at upper end. Make holes wider so that the bolt can be unscrewed by an appropriate wrench. Socket sizes – 9mm hex head for the bolt, 10mm hex head for the nut.
4	Insert wrenches through holes, unscrew and remove the bolt and nut securing the bottom rod joint. Remove the rod carefully by pulling it upwards.
5	Check the rod or replace it if necessary.
6	Install the rod in reversed order.
7	Seal the holes drilled in the vertical stabilizer shells by white self-adhesive foil.