

## 2.10 Tow Releases

The tow release fitted at the C. G. is model TOST "Europa G 88" (Data Sheet No: 60.230/2).

Models TOST "Europa G 72 or G 73" may be used as a replacement tow release.

The forward tow release fitted at the fuselage nose is model TOST "E 22" (Data Sheet No: 11.402/9 NTS).

When replacing tow release couplings, care should be taken to use again new bolts of strength grade 12.9 .

## 2.11 Other Equipment and Installations

For further equipment as for example ELT, barograph, turn point cameras, GPS flight data recorders and so on, the installation into the sailplane must comply with JAR 22.597 .

According to this requirement such equipment must be fitted in such a way that it may withstand the following accelerations (which must be demonstrated in tests when necessary):

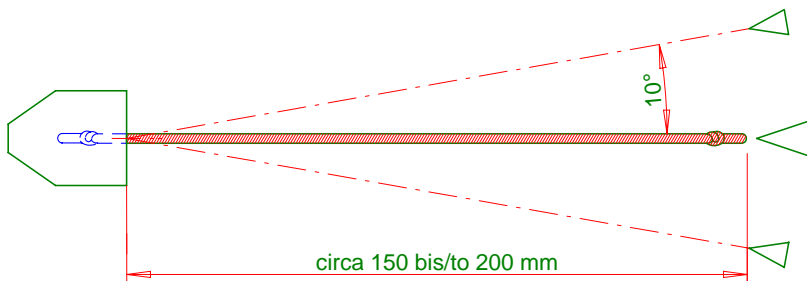
forward	9.0 g
rearward	2.5 g
upward	6.7 g
downward	10.0 g
sideways	3.0 g

Above accelerations already include a safety factor of  $j = 1.5$  ! We strongly recommend to adapt the strength of fittings of equipment installation to about 25 g to the high cockpit impact strength of the ASW 28 .

### 2.11.1 Yaw string on top of the canopy

In the center line of the forward canopy a yaw string as shown in Fig. 2.11.1-1 as a view from above. An angle of the yaw string of  $10^\circ$  is equivalent to  $5^\circ$  yaw angle relative to the air stream.

**Fig. 2.11.1 - 1**



**2nd Stage:**

When a service life of 10000 flying hours has been reached the above inspection program must be repeated. If the results are positive, or any defects found have been satisfactorily repaired, the service life may be increased to a total of 11000 flying hours. This procedure can be continued until flying 12000 hours are accumulated.

For a possible extension of service life beyond 12000 hours, detailed requirements will be established in due course.

**Inspection Program**

The appropriate inspection program must be obtained from the manufacturer. The inspections may be carried out only by the manufacturer, or by an appropriately licensed aircraft repairer.

The results of the inspections must be listed in an inspection report in which each item must be annotated with a comprehensive comment, as laid down. If the inspection is carried out by a licensed aircraft repairer, a copy of the inspection report must be forwarded to the manufacturer for the purpose of evaluation.

After receipt and examination of this report Messrs. SCHLEICHER will issue an acknowledgement of receipt and send it back to the aircraft owner. Only then the inspector must certify the increase of the service life in the logbook and in the aircraft inspection records.

The need for annual Certificate of Airworthiness inspections and overhauls (for German registered gliders § 27 (1) LuftGerPO applies<sup>\*)</sup>) is not affected by this rule.

<sup>\*)</sup> LuftGerPO = Aeron. Products Examination Order

## 4.2 Special Servicing Procedures and Equipment subject to Service Life Limitations

### Special Servicing Procedures

At regular intervals of 5 years, the sealing rings and groove sealing rings of the water ballast valves must be checked, and replaced if required (see Fig. 2.4-4).

At regular intervals of 6 years the brake line hose of the hydraulic wheel brake must be replaced. Should this hose be found to be in good condition, it need not be replaced provided that its condition is checked at least every 100 flying hours.

### Equipment subject to Service Life Limitations

#### **Tow Release Couplings**

The tow release coupling **fitted at the C.G.** is model TOST "Europa G 72" or "G 73" or "G 88" respectively ,  
and the optional tow release coupling **fitted at the fuselage nose** is model TOST "E 22".

The above TOST tow release couplings must comply with the service life limitations before inspection as laid down in their respective authorized release certificates.

The relevant "Operations and maintenance instructions" issued by the manufacturer TOST must be complied with.

### **Control Surfaces Hinges and Mylar Fairings:**

As series production standard the ASW 28 is equipped with elastic fairing strips at the control surface gaps. Under the elastic fairing strip the aileron and the elevator use in addition a Teflon tape to ensure proper sealing of the gap. Consequently the control surfaces hinges are not exposed to any substantial soiling.

Without the need of removing the elastic fairing strips, the degree of soiling can be checked at the lower rudder hinge and at the inner elevator hinges (when the horizontal tail is disassembled).

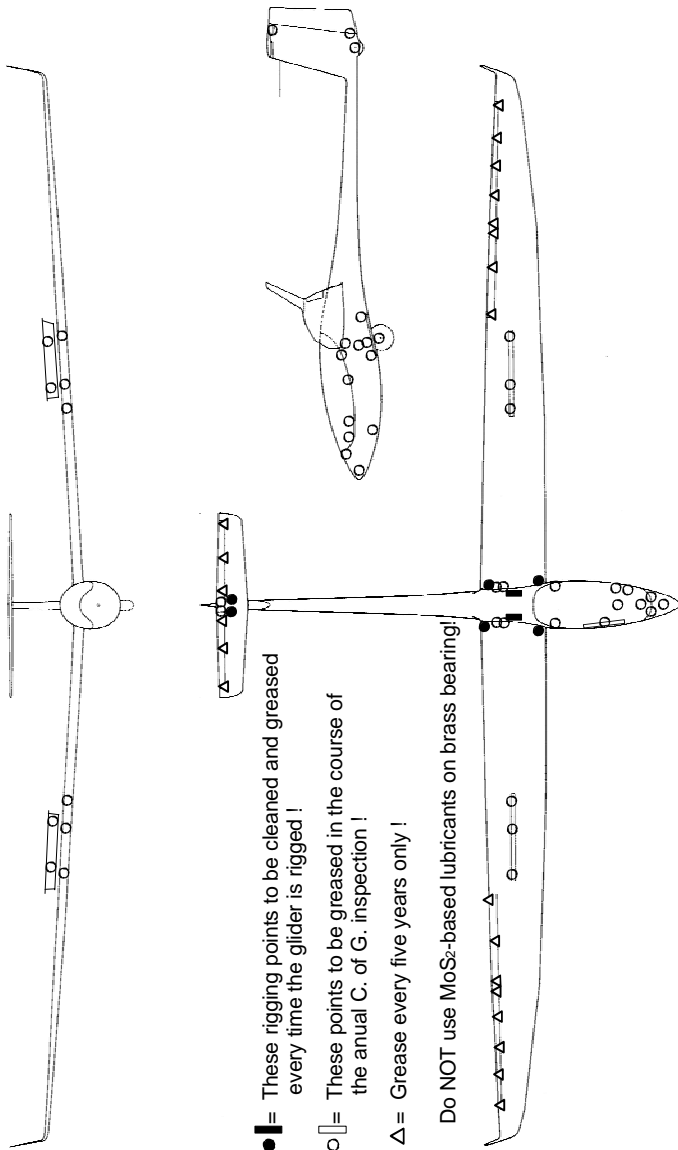
Depending on the degree of soiling it should be decided during the next annual C. of A. - but not later than every 5 years - whether it is necessary to re-lubricate the control surface hinges.

However do not forget to grease and oil all hinges when a Mylar cover is exchanged.

If these are heavily soiled or if the controls are not free moving, the elastic fairing strips and the Teflon tape must be removed on the upper wing surface and the top surface of the horizontal tail in order to re-lubricate the hinges.

**NOTE:** *The flutter calculation takes the spring effect of the plastic fairings into consideration which lead to higher control circuit frequencies. This means that the Mylar seals must always be installed to the sailplane to be in the certified condition!*

In the upper rudder hinge a self-lubricating **maintenance-free** plastic low-friction-type bearing bush is fitted.

**Fig. 8.0-1 Lubrication Chart**

## 10.4 Removing and installing tow releases

### 10.4.1 Tow release fitted at the C.G.

1. Remove the seat back and the seat pan.
2. Undo the safety springs from the L/G doors.
3. Remove the wheel. First proceed as described in Section 2.3.4 Exchange of Brake Pads: dismount the wheel brake cylinder. The brake hose must be left **attached throughout!** The bolt which holds the torque plate of the wheel brake cylinder, and the wheel axle must be removed. Now the wheel with the wheel brake cylinder can be pulled off the wheel fork.
4. Take the two safety springs off the horizontal struts.
5. Remove the shock absorber legs.
6. Unscrew the release cable off the end fitting and turn out the three bolts which hold the tow release coupling. Pull out the release coupling to the front.

### 10.4.2 Tow release fitted at the nose

1. Move rudder pedals backwards. It may be handy to tie them down.
2. Remove cover from the bulkhead visible in the fuselage nose.
3. The release is then visible through the first bulkhead. Two brackets hold it attached to the second bulkhead. Remove the four nuts from the brackets.
4. Pull out the release to the rear. It fits easily through the first bulkhead when it is swayed a bit.
5. Pull one of the pins at the release rope fitting and unscrew the brackets

Installing the tow releases is done in the reverse order.

When installing the nose hook, use only new split pins. Take care that none of the pins on the rope attachment hits the housing. Do not forget to screw on the ground line together with the bracket. Attach the bulkhead cover with silicone.

Tow releases are attached with screws of strength grade 10.9 or 12.9 and nuts of the strength grade 6. See also "Operating Manuals for tow releases" from Messrs. Tost.

When the tow releases are exchanged, new bolts and nuts must be used for reinstallation.





## 12.6 Maintenance Instructions

The following Maintenance Instructions are established from time to time as required, in accordance with experience accumulated in operating the sailplane ASW 28. The Maintenance Manual is to be supplemented in case of new issues of Maintenance Instructions.

The general **"Maintenance Instruction ALL FRP GLIDER MODELS dated June 19, 1986"** describes the removing of play between the sockets (= bushings) and bolts (= pins) of the wing-to-fuselage transition.

The general Maintenance Instruction **"PAINT CRACKS"** dated June 26, 1989, describes how to inspect, preserve, and repair the paint surface.

The **Maintenance Instruction C** for the ASW 24 (dated April 26, 1990), which is also applicable to the ASW 28, describes how to repair the landing gear box.

The **Maintenance Instruction D** for the ASW 24 (dated Dec. 2, 1992), which is also applicable to the ASW 28, describes how to install airbrake and aileron quadrant belcranks incl. FRP basic plate into wing root rib.

The general Maintenance Instruction **"WATER BALLAST VALVES"**, Issue I, dated July 25, 1994 describes maintenance procedures for the valve itself.

The **Maintenance Instruction A** for the ASW 28 (dated July 02, 2001) describes how to apply or replace the elastic plastic fairing strips for the control surface gaps.

The **Maintenance Instruction B** for the ASW 28 (dated July 02, 2001) describes the fixing or replacing the turbulators on winglet, horizontal and vertical tail.

The **Maintenance Instruction C** for the ASW 28 (dated July 02, 2001) describes how to adjust the water ballast actuation system.

The **Repair Instruction for Cockpit Area following Belly/Gear-up Landings** (dated Dec 12, 2001) a special repair procedure for the cockpit area.

The **Maintenance Instruction for all Models having integrated (wet) water ballast tanks inside the wings. Issue 1** dated May 6th, 2002 describes the complete dumping of integrated (wet) water ballast tanks inside the wings.

The **Maintenance Instruction Safety of Aileron Hinge Pins** (dated Sept 05, 2001) describes the inspection of the aileron hinge pins.