0.2 List of Effective Pages

Section	Page	Date
0	Title	07.03.89
	0.1	25.04.94
	0.2	07.03.89
	0.3	07.03.89
	0.4	23.06.94
	0.5	23.06.92
	0.6	07.03.89
1	1.1	07.03.89
	1.2	07.03.89
	1.3	07.03.89
	1.4	18.08.92
	1.5	07.03.89
	1.6	07.03.89
2	LBA-App. 2.1	07.03.89
	LBA-App. 2.2	07.03.89
	LBA-App. 2.3	07.03.89
	LBA-App. 2.4	07.03.89
	LBA-App. 2.5	07.03.89
	LBA-App. 2.6	08.02.90
	LBA-App. 2.7	07.03.89
	LBA-App. 2.8	07.03.89
	LBA-App. 2.9	07.03.89
3	LBA-App. 3.1	07.03.89
	LBA-App. 3.2	07.03.89
	LBA-App. 3.3	07.03.89
	LBA-App. 3.4	07.03.89
	LBA-App. 3.5	07.03.89
	LBA-App. 3.6	23.06.94
4	LBA-App. 4.1	07.03.89
	LBA-App. 4.2	18.08.92
	LBA-App. 4.3	07.03.89
	LBA-App. 4.4	18.08.92
	LBA-App. 4.5	07.03.89
	LBA-App. 4.6	18.08.92
	LBA-App. 4.7	07.03.89
	LBA-App. 4.8	07.03.89
	LBA-App. 4.9	07.03.89
	LBA-App. 4.10	07.03.89
	LBA-App. 4.11	25.04.94
	LBA-App. 4.12	18.08.92
	LBA-App. 4.13	18.08.92
	LBA-App. 4.14	25.04.94
	LBA-App. 4.15	23.06.94
	LBA-App. 4.16	07.03.89
	LBA-App. 4.17	23.06.94
	LBA-App. 4.18	25.04.94
	LBA-App. 4.19	07.03.89
	LBA-App. 4.20	18.08.92
	LBA-App. 4.21	18.08.92
5	LBA-App. 5.1	07.03.89
	LBA-App. 5.2	07.03.89
	LBA-App. 5.3	07.03.89
	LBA-App. 5.4	07.03.89
	LBA-App. 5.5	07.03.89
	LBA-App. 5.6	07.03.89
	5.7	07.03.89
	5.8	07.03.89
	5.9	07.03.89
6	6.1	07.03.89
	6.2	07.03.89
	6.3	07.03.89
	6.4	25.04.94
	6.5	08.02.90
	6.6	25.04.94
7	7.1	07.03.89
	7.2	07.03.89

Section	Page	Date	Section	Page	Date
	7.3	07.03.89			
	7.4	07.03.89			
	7.5	07.03.89			
	7.6	07.03.89			
	7.7	07.03.89			
	7.8	07.03.89			
	7.9	07.03.89			
	7.10	23.06.94			
	7.11	23.06.94			
	7.12	07.03.89			
	7.13	07.03.89			
8	8.1	07.03.89			
	8.2	07.03.89			
	8.3	18.08.92			
	8.4	07.03.89			
	8.5	07.03.89			
	8.6	07.03.89			
	8.7	07.03.89			
9	9.1	07.03.89			
	9.2	07.03.89			

3.7 Other Emergencies

(1) Emergency Landing with retracted landing gear

Emergency landings with retracted landing gear are disadvised in principle, as the capacity for energy absorption of the fuselage is many times less than that of the sprung landing gear. If the wheel cannot be lowered, the ASW 24 should be touched down with airbrakes closed as far as possible, at a shallow angle and without stalling on to the ground.

(2) Groundloops

If the aircraft threatens to roll out beyond the intended landing area, the decision should be made not less than 40 m = 130 ft before reaching the end of the landing area to initiate a controlled ground loop.

- If possible, turn into wind!
- When putting down a wing, at the same time push the stick forward and apply opposite rudder!

(3) Emergency Landing on Water

A landing on water by a plastic glider with wheel retracted has been experimentally tried out. The experience gained on that occasion suggests that the aircraft will not skim across the water, but that the whole cockpit area will be forced under the surface. If the depth of the water is less than 2 m = 6,5 ft, the pilot is in the greatest danger. Touching down on water is, therefore, recommended **only with wheel lowered,** and **only** as a very last resort.

(4) Flying with Defective Water Ballast Drainage

The electric valve operation ensures that, when water ballast is jettisoned, both tanks are drained at the same time. [This applies to the electrical operation (ASW 24) as well as for the mechanically operated versions (ASW 24B) and Mr.Hank Nixon's US-version]. This is necessary for reasons of flight characteristics.

When jettisoning water ballast in flight, it should be positively ensured that the water is draining from both wings. The jettisonning of the waterballast can be seen from inside the cockpit.
If a failure of the valves should cause asymmetric loads, the flight should be terminated with extreme care, maintaining an adequate margin above stalling speed as incipient or full spins with asymmetric ballast load are not permissible. Special care should be taken to avoid turning in the direction of the heavier wing.

If a drain valve is defective, the matching valve on the opposite side must be closed, as a landing at a higher landing weight is to be preferred.

4.5.6 Flight with Water Ballast

For normal European weather conditions, the wing loading of the ASW 24 is at its best even without additional water ballast.

If achieved lift is markedly greater than 2 m/s = 394 ft/min, wing loading can be increased up to a maximum of 50 kg/m² = 10,24 lb/ft² by use of water ballast.

NOTE: Remember that ballast will increase the stalling speeds and take-off runs.
Ensure that the condition of the airfield, the length of take-off run available and the power of the tug permit a safe launch.

Filling of Water Ballast

The water ballast valves are opened by the operating lever on the righthand cockpit sidewall.

The fill and dump ports for the water ballast are situated about 65 cm (2 feet) left and right of the fuselage and about 25 cm (10 inches) behind the wing leading edge on the lower wing surface.

Start by filling the tank of the wing with its tip on the ground. The tank venting is so designed that in this way the tank will be well vented. The other tank is filled with the wing up, as both valves can only be opened together, at the same time. This is an important LBA requirement, to prevent inadvertent draining of only one tank.

With wings level, carry out a balancing test to

Jettisoning of Water Ballast.

To jettison water ballast, the operating lever at the righthand cockpit wall behind the landing gear lever is pushed forward (valve open).
Every time any water is let off, it is most important to look at the wing trailing edges to check that the water is draining at an equal rate from both the opened valves!
We distinguish between two distinct types of circumstance in which ballast is normally released.

1. Partial reduction of wing loading:
   The mean rate of drainage amounts to 0.5 l/sec, higher if tanks are full, less if they are nearly empty. After an appropriate lapse of time the valves should be closed.

2. Rapid ballast jettison:
   The full tanks take about 5 1/2 minutes - about 340 seconds - to drain. The first half of the ballast will drain in about 2 minutes, while the remainder will take about another 3 1/2 minutes.

Should the ballast fail to drain as intended, the valves should be closed immediately (pull the operation lever backwards); try again to achieve even drainage by operating the valves again or, if icing is suspected, try again after descending into warmer air to achieve a symmetric jettison.
If you do not succeed after several attempts the situation should be regarded as an emergency, and instructions in Section 3.7, (4) (Other Emergencies) should be followed.

4.5.7 High Altitude Flight

Flutter tests were carried out at about 2000 m = 6562 ft msl. As the ASI under-reads at increasing altitude, but since flutter limits for light aircraft are determined by the true air speed, the following limitations apply to high altitude flights :

Altitude msl.	VNE Indicated
0-3000 m (9843 ft)	280 km/h (151 kts)
5000 m (16404 ft)	250 km/h (135 kts)
7000 m (22966 ft)	225 km/h (121 kts)
9000 m (29528 ft)	200 km/h (108 kts)
11000 m (36089 ft)	175 km/h (94 kts)
13000 m (42651 ft)	150 km/h (81 kts)

If these indicated air speeds are observed above 3000 m = 9843 ft altitude, the true air speed will remain constant at 325 km/h = 175,5 kts. Therefore, in spite of considerably lower indicated speeds, the actual speed achieved relative to the ground will be adequate for penetrating even against strong head winds at greater altitudes.

Only effective for U.S. registered gliders !
Placard for speed limits high altitude:

VNE Speed Limit high altitude	
Altitude msl. (ft)	VNE IAS (kts)
< 10.000	151
< 16.500	135
< 23.000	121
< 29.500	108
< 36.000	94
< 42.500	81

This placard has to be installed near the ASI !

check that the ballast loads are even. Should one wing prove to be heavier, block the drain hole of the lighter wing briefly by hand while opening the valves until equilibrium is achieved.

WARNING: It is expressly prohibited to use pressurised water (mains, immersion pumps &c) for filling ballast tanks due to possible damage to the wing structure!
It is recommended to fill from slightly elevated, unpressurised containers (on wing or car roof &c). If water under pressure is used, it is essential to interpose an open intermediate vessel (funnel &c), to ensure that the head-of-pressure cannot rise beyond 1.5 m = 4,9 ft.

If the wings are filled to capacity, it can happen that the tanks slowly drain through the vents while the aircraft is parked. In this case we recommend that the wingtips should be supported level, but on no acount to tape up the vents !

The maximum permissible water ballast volume can be calculated as follows:-

500 kg = 1102,5 lbs
less - Empty Mass
less - Cockpit Load

= max. water ballast volume (in kg or liters)

You will find a table with precise values in Section 6.2. !

(7) Automatical parachute static line:

An anchor ring is provided for the static line (rip chord) of an automatic parachute lefthand on the main bulkhead beneath the lift pin tube.

7.7 Baggage Compartment

Hard objects may not be carried in the baggage compartment in front or on top of the spar without a suitably designed lashing or anchorage !
If, for instance, a barograph is to be carried in this space, a mounting recommended by the manufacturer must be used. A moulded seating for a 12V and 5.6Ah battery is supplied with the glider as standard equipment.

The baggage load in the compartment may not exceed 15 kg = 33 lbs.

BAGGAGE COMPARTMENT LOAD max. 15kg (33 lbs.)

7.9 Electrical System

The electrical system is supplied by a 12V battery. Each electrical applicance is protected by its own fuse. A fuse is also fitted in the cable connected to the fin-mmounted battery, close to the battery.

7.10 Pitot and Static Systems

Pitot pressure is obtained from a Prandtl-tube mounted in the fin. Ensure that this Prandtl tube is fully pushed home in its seating in the fin. The inner end of the probe should from time to time be lightly lubricated with Vaseline or a similar lubricant, in order to save the O-ring gaskets from wear.

At the same time, the Prandtl tube provides air at accurate static pressure which can be used for electrically compensated variometer systems.

Static pressure for the ASI is obtained from the static ports at either side of the fuselage tail boom.

7.11 Miscellaneous Equipment

(1) Removable Trim Ballast

If required, the ASW 24 can be fitted with a fitting for lead trim ballast plates which can be bolted into place in front of the rudder pedals.

In this location, a 1.11 kg (= 2.45 lbs) lead trim plate equals an additional pilot weight of 2.5 kg (= 5.5 lbs).
Thus, a pilot weighing 10 kg (22 lbs) less than the minimum cockpit load must fit four trim plates weighing 1.11 kg (=2.45 lbs) each.

(2) Trim Mass (Battery) mounted in the fin

If a trim mass (battery) is fitted in the fin, the minimum cockpit seat load will be more than 70 kg = 154,5 lbs (incl. parachute). This increased minimum cockpit load must then be shown in the DATA and LOADING PLACARD in the cockpit.

Any reduced minimum cockpit load when no tail ballast is fitted will be quoted on page 6.4.

For further details of minimum cockpit load see page 2.7 of this manual.

The foam buffer fitted over the battery secures it above. This plastic foam pad must not be forgotten when changing or replacing batteries.
You should also ensure that there is adequate plastic foam seating under the battery to protect it from hard knocks!

7.8 Water Ballast System

The water ballast valves in the wings are operated mechanically. The operating lever is situated at the righthand cockpit wall behind the landing gear lever.

Pushing the lever forward openes both valves inthe wings at the same time.

By combining the operation of left and right tank with one lever only, an inadvertent opening of only one valve, resulting in a one-sided ballast load, becomes impossible.

Testing the Water Bags for Leakage while dismantled from Aircraft

Close the valve. Disconnect the vent tubes at the Y-piece. Now take the longer vent tube and make a U/tube manometer as shown in Fig.2.4-2, and fill with water.

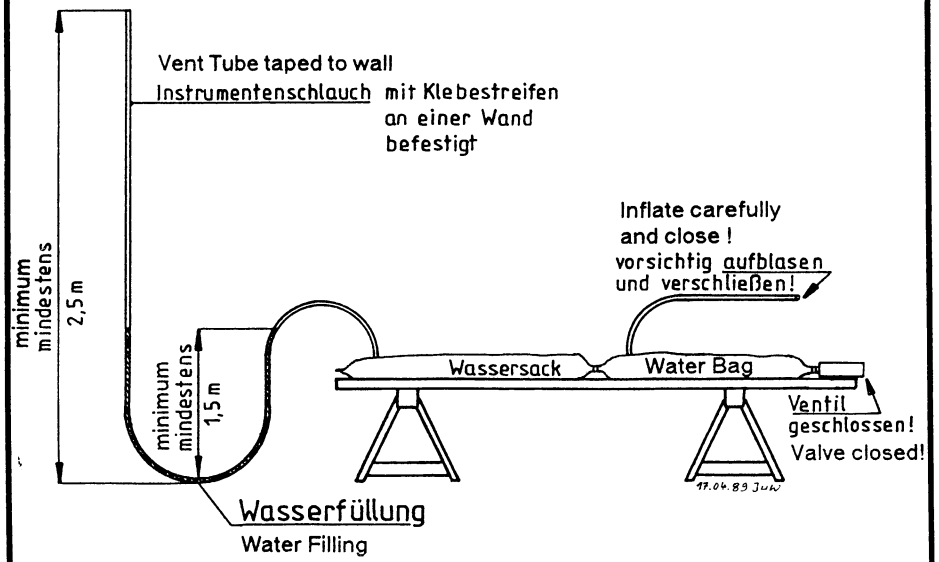


Fig. 2.4-2 Simple U/Tube Manometer for Leakage Tests of Ballast Bags.

Re-Fitting of Water Ballast Equipment

- Tie the nylon fixing cords to the bags and draw the bags carefully into the wings by means of the fixing cords (the re-inforcements at both ends of the bags again should be presented in an oblique attitude during this operation). Carefully regard that the pushrod is not bent!

- Hold the valve assy down by use of a hook made from wire which is put over the pushrod inside the valve and screw nut M 221,5 in place after some Teflon sealing tape was wrapped aroud the thread.

- Tighten the fixing cords of the bags and tie them to the wing root rib; stow remaining cord in the wing.

- After rigging the wings, the vent tubes are re-connected at the vent fitting in the fuselage.

In case of difficulties or problems, please consult Messrs. Schleicher.

Storing the bags outside the wing

Water bags must alwsays be kept in a dark, cool and dry place.

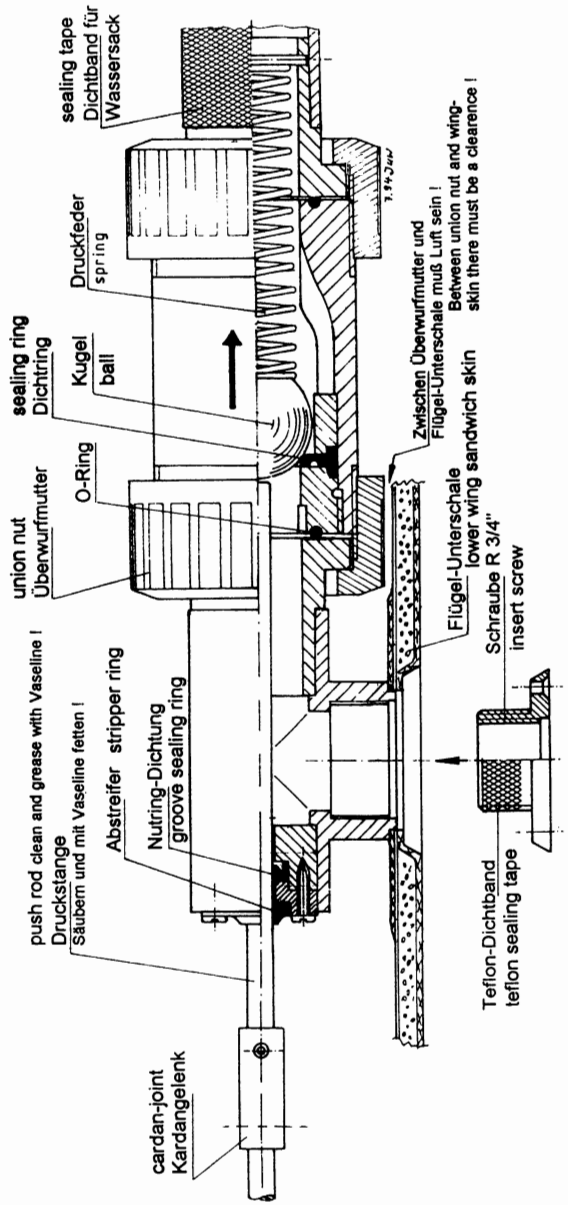
Repair

"Smiley" water bags as per TN no.3 may be repaired using bicycle repair kit.

Through the other vent tube, now inflate the water bag carefully by means of an air pump or compressed air to a pressure of about 0.2 bar (2.90 psi), or 2 m (6.56 ft) water column, (i.e. 2 m height difference between the two water surfaces in the U/tube manometer vent tube), and then close it. If no pressure drop can be observed after 5 minutes, it may be assumed that the bag is watertight.

All water bags have to be tested for leaks!

Fig.2.4-1 Valve General View



Tie the end of the longer fixing cord back to the root rib so that the cord cannot be pulled out of the wing.
At the drain port now the flanged insert screw is screwed out by use of tool Gedore No. 44/7 which holds the valve in place.
The water bags may now be carefully drawn out from the apertures in the root ribs; please pay attention that there is a plastic tube (about 2.5 m = 8.2 ft long) inside the bag, running from the valve to the constriction of the water bag, and that the re-inforcements at both ends of the bags should be presented in an oblique attitude during this operation. Lay the bags out on a clean surface. Untie the long nylon fixing cords from the bags and leave them inside the wing.

Testing the Valves

As shown in Fig. 2.4-1 the valve is opened for cleaning by unscrewing the union nut; inspect sealing ring, ball and spring and replace if necessary. reassemble the valve. Clean and grease the push rod with Vaseline and push it back into the valve. If the valve has a leak at its actuation rod, replace the groove sealing ring.

The water ballast is filled into the bags by using the extension AS-No. 99.336.0022. This part contains a mesh which allows no dirt to stick in the valves
Filling the water ballast is best done by means of a Y-shaped hose coupling so that both water bags are filled simultaneously (Two extensions are needed). The wings should be supported level.

If no Y-shaped hose coupling is used and each water bag is filled separately, the respective other drain valve must be closed and sealed by means of cap AS-No. 99.000.8861 while the water is filled.
After closing the valves, the cap must be removed from the wing and then **check that both drain tubes are open and that the Mylar covers are flush with the wing surface!**

CAUTION:
Grossly unequal filling of ballast can cause failure of the wing shells during a spin. Therefore the water ballast system should be carefully maintained as follows:

- Use only clean water for ballast, which must be further filtered through the strainer in the filling appliance.

- As the prolonged effect of moisture can harm structures incorporating an epoxy resin matrix, (e.g. wavy deformation of the wing shell and impaired wing profile), it is strongly recommended that after each flight with water-ballast the ballast bags should be checked for leakage.

- If the bags are not going to be used for any appreciable time they should in any case be removed.

2.4 Waterballast System

The waterballast installation allows the all-up mass of the ASW 24 to be increased to a maximum take-off mass of 500 kg (1102 lbs).
This corresponds to a wing loading of 50 kg/m² (10.24 lb/ft²).

The operation of the waterballast valves is done by a lever on the righthand cockpit wall behind the landing gear lever. Two Bowden cables lead to the fuselage side wing root ribs. in the wing two push rods actuate the water ballast valve. When rigging the wings to the fuselage the water ballast system is automatically connected.

The valves are commercial quality back pressure ball valves as supplied by Messrs. GF, in which a supplementary stainless-steel closed-position ball retaining spring has been fitted.

For operational and safety reasons both valves are actuated by only one lever from the cockpit.
The waterballast drain ports are situated about 65 cm (2 ft) left and right of the fuselage about 25 cm (10 inches) behind the wing leading edge on the lower wing surface. The ports are covered by an elastic Mylar fairing.

The water ballast is filled into 2 mutually independent, double-walled plastic bags. Otherwise single--wall "Smiley-type" water bags from poly-urethane according to TN no.3 complying with specification No.01, dated April 08, 1994 may be used.

- Never fill direct from the water supply, or by means of pumps. Even low pressures can damage the wing. A head-of-pressure of about 7 m = 0.7 bar (or 22.97 ft = 10.15 psi) will break the wing shells.

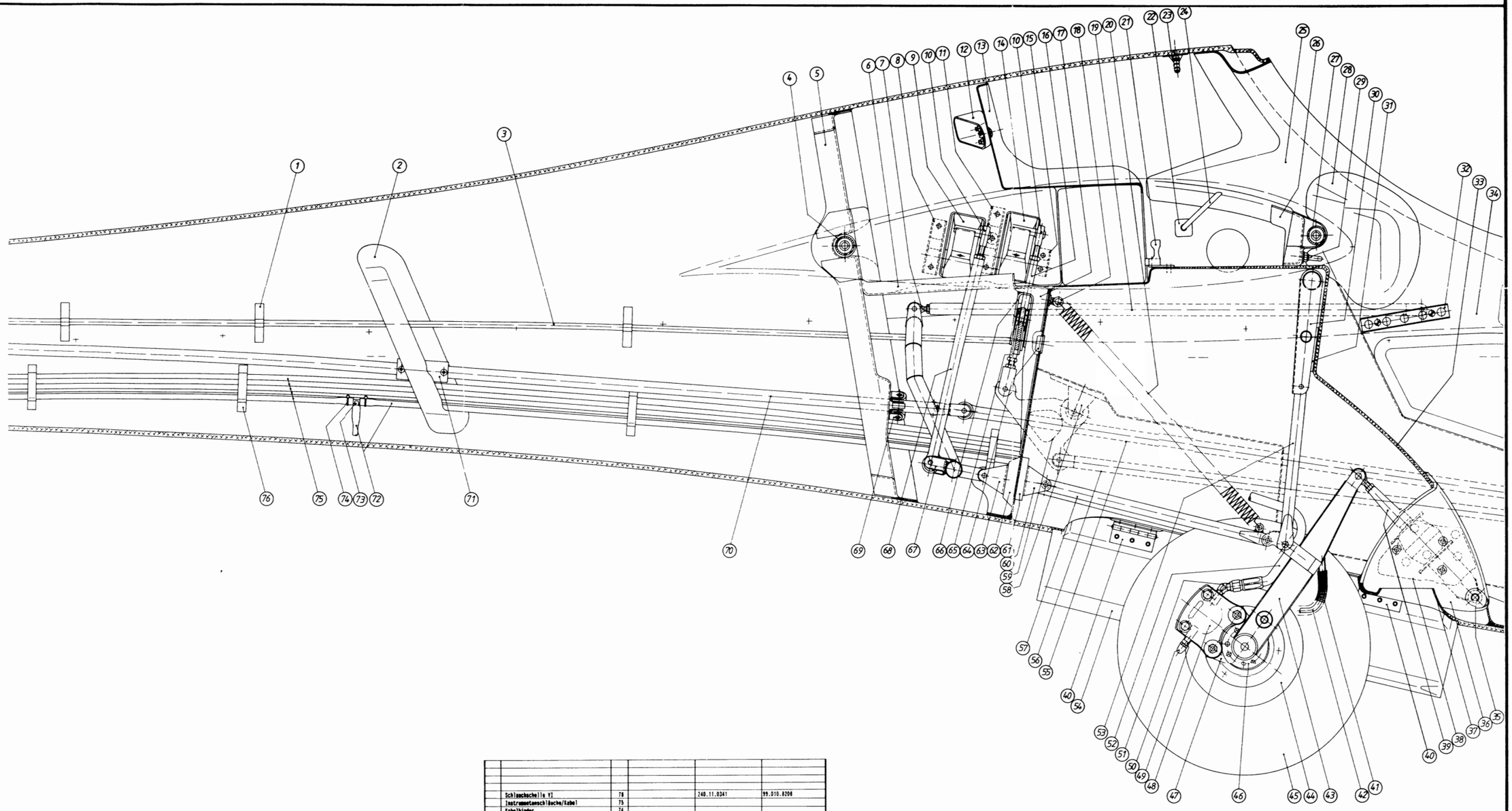
There is a way of checking the symmetrical draining of the ballast bags in flight:-

All water trails from drain valves are easily seen from the cockpit. This visual check should never be omitted !

Fitting and Dismantling of Water Ballast Bags, Maintenance Instructions

Detach the vent tubes from the vent fitting in the fuselage and de-rig the wing. If the ventilation is integrated in the wing, the vent tubes are disconnected at the wing root.

As shown in Fig.2.2-6, the waterballast bag is fixed at the front root rib by means of two nylon cords. Untie the fixing cords and unscrew the bracket plate and pull the push rod out of the valve.



SI	Benennung	Lfd Nr	Werkstoff	Rohmaße Teil- oder DIN-Nr	Bemerkung
	Schlauchschelle VI	78		240.11.0341	99.010.8208
	Instrumentenschläuche/Kabel	75			
	Kabelbinder	74			
	Instrumentenschlauchverbinder TS II	73			Fa. Norma
	Instrumentenschlauch klar, stat. Druck	72		ø8*1,5	
	Stoßstangenlager f. HR-St	71		240.11.0012	99.000.7195
	Stoßstange IV f. HR-St	70		240.48.0006	
	Stoßstangenführung f. HR-St	69		240.11.0013	99.000.2090
	Stoßstange III f. BK-St	68		240.43.0019	
	Torsionshebel f. BK-St	67		240.43.0014	
	U-Bock f. QR-Hebel 1.Rumpf	66		240.41.0015	
	Stoßstange IV f. QR-St 1.Rumpf	65		240.41.0009	
	Plastik-Stopfen f. FW-Kasten	64	ø 20 mm	300 F 19	Fa. Pöppelmann
	Lagerbock f. BK-Torsionshebel 1.R.	63		240.43.0020	99.000.4133
	Verstärkung f. BK-Lagerbock 1.Rumpf	62		240.43.0301	
	Verstärkung f. FW-Kasten 1.R.	61		240.11.0319	
	Lagerbock f. horizont. FW-Strebe	60		240.21.0003	
	Umlenkhebel II f. QR-St 1.Rumpf	59		240.41.0004	
	Lagerbock schräg f. Umlenkhebel II	58		240.41.0023	
	Strebe, horizontal f. Fahrwerk	57		240.21.0001	
	Stoßstange III f. QR-St 1.Rumpf	56		240.41.0006	
	Stoßstange III f. HR-St 1.Rumpf	55		240.48.0005	
	Klappe f. Fahrwerk	54		240.21.0301	
	Knickstrebe f. Fahrwerk	53		240.21.0002	
	Druckmeßleitung	52	l=700 mm		Fa. Cleveland
	FITTING	51		MS 20823-40	Fa. Von Duesen
	Schutzkappe (Cap)	50		183-00100	Fa. Cleveland
	Ventilsitz (Seat Blender)	49		081-00100	Fa. Cleveland
	Bremszylinder 30-9	48			Fa. Cleveland
	Bremsenbrplatte	47		075-00000	Fa. Cleveland
	Bremsbar f. Schnellenbrcuse	46		240.23.0003	
	Reifen 5.00-5, Bpr TT	45			Fa. Cleveland
	Felge 40 788	44			Fa. Cleveland
	Radgabel f. Fahrwerk	43		240.21.0003	
	Bremszylinder	42	l=125 mm	ø 5,0	
	Zugfeder f. FW-Klappe	41		240.21.0011	99.000.9802
	Scharnier f. FW-Klappe	40		240.21.0022	
	Federbein f. Fahrwerk, komplett	39		240.21.1001	
	Halteblech f. SP-Kupplung	38		240.11.0011	
	Abdeckung f. SP-Kupplung von unten	37		240.11.0327	
	Spant f. SP-Kupplung	36		240.11.0312	
	Lagerbuchse f. FW-Federbein	35		240.11.0004	
	Stoßstange I f. BK-St	34		240.43.0016	
	Kasten f. Fahrwerk 1.Rumpf	33		240.11.0309	
	Rosta f. Sitzleiste	32		240.11.0017	99.000.5148
	Anschlagplatte f. Strebe FW	31		240.11.0343	
	A-Strebe f. Fahrwerk	30		240.21.0006	
	Beschlag f. Schultergurt	29		240.11.0024	
	Blende f. Lautsprecher links	28		240.01.0301	
	Querkraftrohr vorn	27		240.11.0301	
	Gepäckraumboden vor dem Holm li.	26		240.11.0323	
	Cockpitverkleidung links	25		240.11.0303	
	Steuerleitung f. Wasserballast	24	SiSi-0	ø40,5	Fa. Kabel Union
	Entlüftung f. Wasserballast 1.Rumpf	23		240.77.0006	99.000.5988
	Füllungsbohne f. Radio-Steckverbindung	22		99 26 963 0401	Fa. Nerting
	Sicherung f. Haupthelm	21		240.11.0294	
	Zugfeder f. Fahrwerk	20		240.21.0020	99.000.9802
	Stoßstange II f. BK-St 1.Rumpf	19		240.43.0015	
	Ringsenkmutter M4*12 f. Zugfeder FW	18		240.21.0029	99.000.5281
	GFK-Auflager f. U-Bock QR-St	17		240.11.0313	
	Stoßstange V f. QR-St	16		240.41.0010	
	Beschlag II f. autom. Steueranschluß	15		240.11.0006	
	Tülle f. autom. QR-Steuer Anschluß	14		240.41.0002	
	Gepäckraum-Abschluß (hinten über Holm)	13		240.11.0329	
	Anschlag f. Gepäckraum	12		240.11.0331	99.010.0054
	Beschlag I f. autom. Steueranschluß	11		240.11.0005	
	Gelenkkopf SKF MB	10		385 800	
	Tülle f. autom. BK-Steuer Anschluß	9		240.43.0002	
	Beschlag III f. autom. Steueranschluß	8		240.11.0007	
	Gelenkkopf SKI C M8	7		GE 1363	Fa. Hirschmann
	Abdeckung f. Steuerseg li. hi. d. Holm	6		240.11.0324	
	Spant am hinteren Querkraftrohr	5		240.11.0305	
	Querkraftrohr hinten	4		240.11.0302	
	Tecalanrohr 80 f. QR-St	3		ø80*1	
	Halbspant-Rumpfrohre	2		240.11.0304	
	Schlauchschelle I	1		240.11.0330	99.010.8201

SI	Benennung	Lfd Nr	Werkstoff	Rohmaße Teil- oder DIN-Nr	Bemerkung

Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht ausdrücklich zugestanden. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patenterteilung oder Gebrauchsmuster-Eintragung vorbehalten.

	Datum	Name	Typ	Benennung	Maßst
Bearb	12.05.89	H. Hünsch	ASW 24	Rumpf-Mittelteil links	1:25
Geprü					
Norm					

A. Schlecher GmbH & Co. Segelflugzeugbau 5416 Poppenhausen

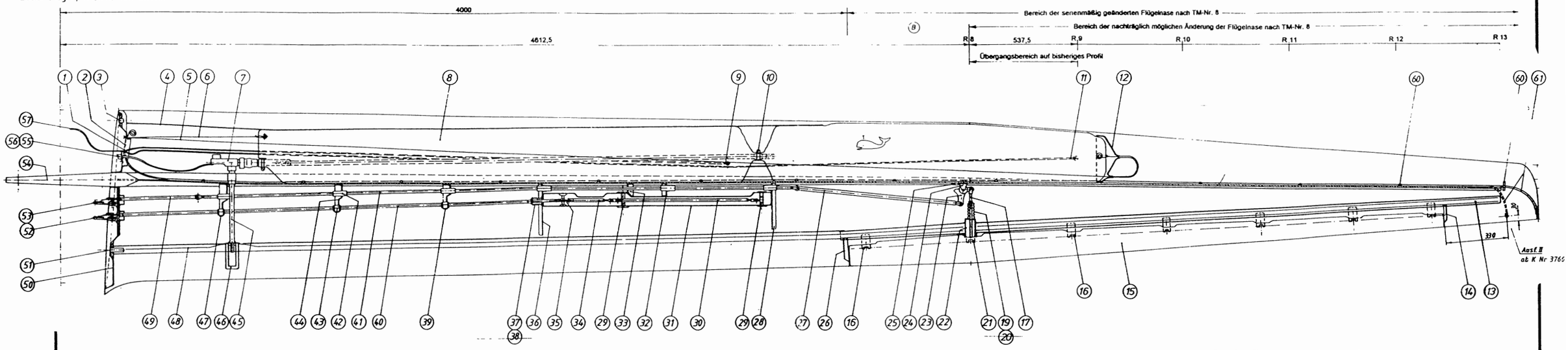
Zeichnungsnummer 240.11.9007

Blatt

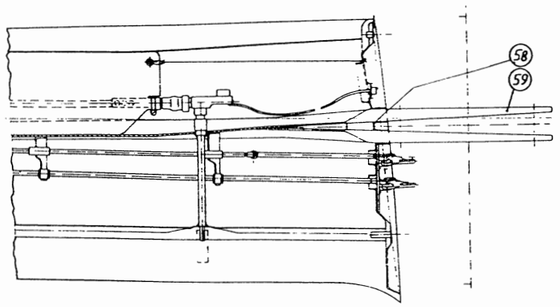
Zust	Änderung	Datum	Na	Urspr	Ers f	Ers d

Fig. 2.2-5

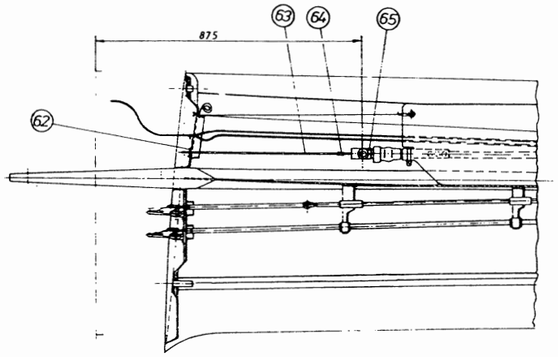
Linker Flügel, Ansicht von unten.



Rechter Flügel, Ansicht von unten.



Ⓐ TM-Nr. 9
Linker Flügel, Ansicht von unten.



St.	Benennung	Lfd.Nr.	Werkstoff	Rohmaße	Bemerkung
	Waße-Ventil komplet, Ausf. B	65		241.76.1006	TM-Nr. 9
	Kardangelenk f. Druckstange	64		99 103 0049	TM-Nr. 9
	Verlängerungsstange f. Druckst.	63		241.76.0014	TM-Nr. 9
	Führungsblech f. Wurzelrippe	62		241.76.0011	TM-Nr. 9

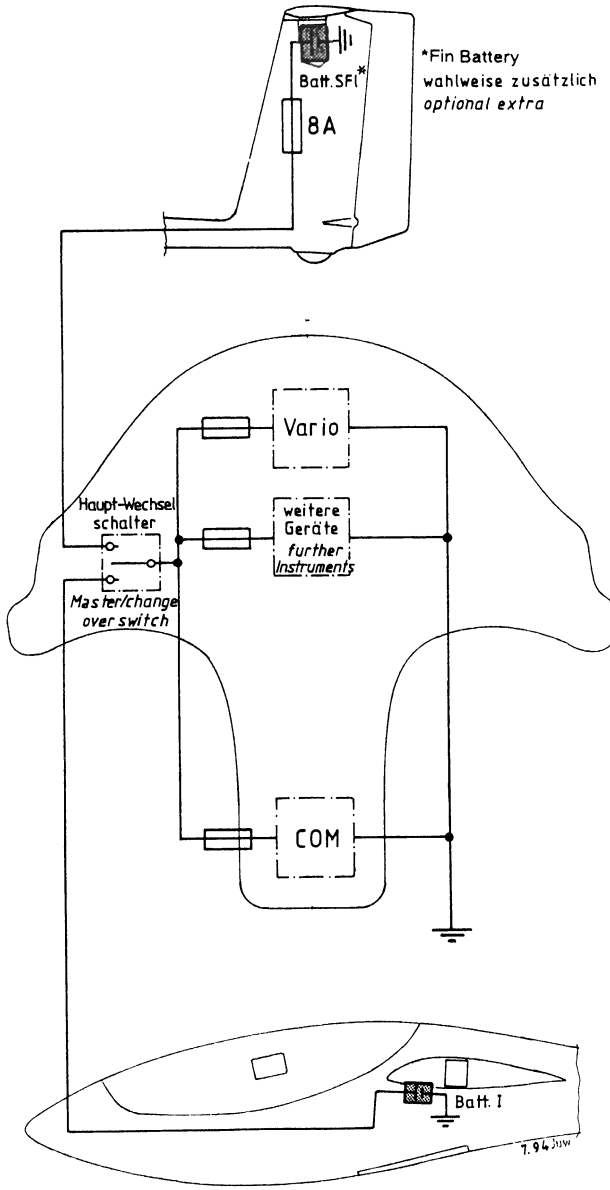
Serie bei 246/248

St.	Benennung	LfdNr.	Werkstoff	Rohmaße Tab. oder DIN-Nr.	Bemerkung
	Entlüftungsschlauch	61	PVC weich	ø7x1.0-7500	Wahlweise
	Schlauchschelle I f. Waße-Entlüftung	60		240.05.0301	99.010.0201 Wahlw.
	Hals mit Stammel, li.	59		240.51.1001	
	Wurzelrippe zwischen Belagnut, re.	58		240.51.0307	
	Entlüftungsschlauch	57	PVC weich	ø8x1.5-600	entfällt bei 246/248
	Stecker Stuf 6	56			Fa. Harting
	Haltebleck f. Stecker	55		240.76.0003	
	Hals mit Kabel, re.	54		240.51.1002	
	Hebel f. anbau. RS4-Anschluß	53		240.42.0001	
	Hebel f. anbau. RE-St-Anschluß	52		240.44.0008	
	Querkraftzange, hinten	51		240.51.0007	
	Wurzelrippe, hinten	50		240.51.0303	
	Stoßstange VI f. OR	49		240.42.0011	
	Z-Steg bis OR	48		240.51.0326	
	Rippe I	47		240.51.0309	
	Dütze f. Wasserauslaß	46		240.51.0322	
	Ablaßrohr f. Waße	45		240.76.0202	
	Rippe II	44		240.51.0310	
	Filzführung f. RE-St.	43		240.51.0204	
	Stoßstangenlager f. OR-St.	42		240.51.0008	99 000 7195
	Stoßstange VII f. OR	41		240.42.0014	
	Stoßstange IV f. RE	40		240.44.0013	
	Rippe III	39		240.51.0311	
	Faltenbalgbeschlag V f. RE-St.	38		240.44.0201	
	Faltenbalg 96-13	37			
	Rippe IV	36		240.51.0312	
	Knickhebel f. RE	35		240.44.0003	
	Stoßstange V f. RE	34		240.44.0006	99 000 7178
	Rippe V	33		240.51.0313	
	Rippe VI	32		240.51.0314	
	RE-Fasten	31		240.51.0305	
	Stoßstange VI f. RE	30		240.44.0005	99 000 7177
	Hebel f. RE	29		240.44.0004	
	Rippe VII	28		240.51.0315	
	Stoßstange VIII f. OR	27		240.42.0012	
	Rippe f. OR-Ausschnitt, innen	26		240.51.0316	

St.	Benennung	LfdNr.	Werkstoff	Rohmaße Tab. oder DIN-Nr.	Bemerkung
	Anschlag f. OR-Umlenkhebel	25		240.42.0302	
	Lagerbock, schräg mit Lasche	24		240.42.0017	99 000 4140
	Umlenkhebel f. OR-Antrieb	23		240.42.0003	
	Dütze f. Faltenbalg-OR-Antrieb	22		240.51.0319	
	Festlager RS f. OR-Antrieb	21		240.51.0325	99 010 4621
	Faltenbalgbeschlag f. OR-Antrieb	20		240.42.0201	
	Faltenbalg 96-R30	19			
		18			
	Stoßstange IX f. OR (Antriebsstoßstange)	17		240.42.0013	99 000 7174
	Loslager RS f. OR	16		240.51.0304	99 000 4624
	Querruder	15		240.31.1001	
	Rippe f. OR-Ausschnitt, außen	14		240.51.0317	
	Butzstag in OR-Bereich	13		240.51.0308	
	Rippe f. Waße	12		240.51.0318	
	Entlüftungsschlauch	11	PVC weich	ø8x1.5-5000	
	Schlauchschelle 25-40	10			Hurma
	Entlüftungsschlauch	9	PVC weich	ø8x1.5-3100	
	Wassersack	8		240.76.0203	
	Ventil f. Waße	7		240.76.1002	
	Perlon-Schnur	6		ø2-1100	
	Perlon-Schnur	5		ø2-11000	
	Hasenstag	4		240.51.0306	
	Querkraftzange, vorn	3		240.51.0003	99 332 0082
	Wurzelrippe, vorn	2		240.51.0302	
	Schlauchverbinder TS6	1			Hurma

	22.09.88 Juw	ASW 24 Flügel-Übersicht ASW 24 E TOP	1 10
B TM-Nr. 8 23.6.94 Juw A TM-Nr. 9 29.6.94 Juw		240.51.9001	

Fig.2.6-1 Aircraft Circuit Diagram



Intentionally left blank for ASW 24 B !

7.1. Special Inspection Procedures

After Hard Landings

1. Check landing gear mountings at the top of the front main bulkhead !
2. Check landing gear wheel fork, as well as toggle strut, A- and horizontal struts for distortion !
3. Are the rubber buffers in the L/G springing still serviceable ?
4. Check tail wheel mountings!
5. Examine spar fork and tongue for white areas !
6. Inspect wing mounting drag pins on fuselage !
7. Check drag spar cross tubes and bulkheads in the fuselage !
8. Re-establish wing bending frequency and compare with the value shown in the last inspection report ! If they differ by more than 5 %, contact Messrs. Schleicher ! For correct fuselage support positions see Fig. 3.0-1.

After Groundloops

1. Inspect the tail boom at the fuselage-to-fin junction and the horizontal tail mountings at the fin !
2. Check wing mounting drag pins on fuselage !
3. Inspect drag spar cross tubes and bulkheads in fuselage !
4. Examine horizontal partition in fuselage (between front and rear main bulkhead) !

After Flying with Water Ballast

After de-rigging the aircraft, briefly raise the tips of the wings and check whether water originating from the ballast bags accumulates behind the root ribs.
If water is found there, the water bags and the valves should be checked for leaks. Seeping or leaking valves must be overhauled in accordance with Section 2.4 without fail.

Do not forget to dry the wings out !
Always picket the aircraft with **valves open !**

Trial Filling of Water Bags

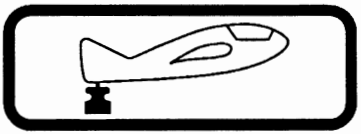
In the course of the annual C of A inspection, a test filling of the ballast bags should be carried out. During this test, special attention should be paid to water seepage from the bags and to dripping valves.

Inspection and Pressure Test

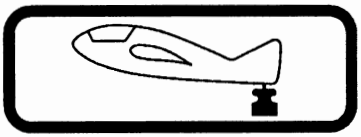
for water bags as per TN no.3 or specification for PU-waterbags issue No 01, dated 08.04.94. !

In addition to the annual inspection as described in Section 2.4, the water bags must be tested for leaks and porosity every two years as follows:
Dismantle the water bags and make a pressure check with water. After reaching the test pressure of 0.2 bar (2.90 psi) and after a temperature & pressure balance time of 2 min. the pressure drop after another 5 minutes must not be greater than 1 %, and after 30 min. no water pearls must be seen on the otherwise dry surface of the water bags.

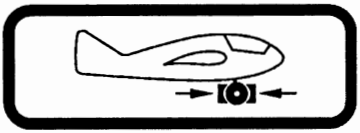
(1)



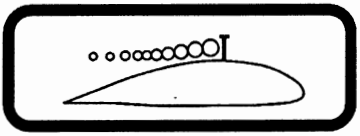
(2)



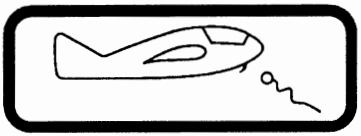
(3)



(4)



(7)

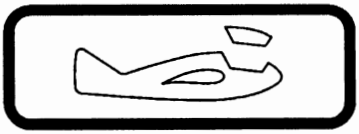


(8a)

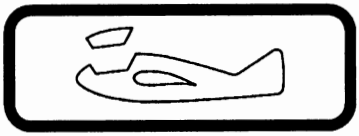
(8b)

(10)

(9a)

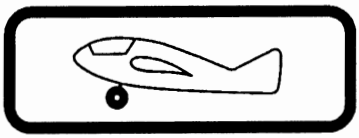


(9b)

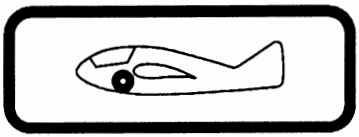


(11)

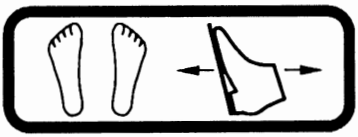
(15)



(16)



(17)



FOR ASW 24 B

(13)

Segelflugzeugbau A. Schleicher GmbH & Co. Poppenhausen

Model: ASW24 B *S.No.: 24 xxx*

DATA and LOADING PLACARD

Empty Mass (Weight):		*kg*
Max. Mass (Weight):	*1102 lbs.*	*500 kg*
Min. Cockpit Load:		*kg*
Max. Cockpit Load:		*kg*
Maximum Speeds:		
Auto or Winch Launch W/L:		*75.5 kts. 140 km/h*
Aerotow A/T:		*97 kts. 180 km/h*
Operating Landing Gear:		*110.6 kts. 205 km/h*
Maneuvering Speed:		*110.6 kts. 205 km/h*
Strength of Weak Link for A/T and W/L		*560 to 660 daN*
Tire Pressure: Main Wheel:	*34 to 37 psi*	*2.4 to 2.6 bar*
Tail Wheel:	*34 to 37 psi*	*2.4 to 2.6 bar*

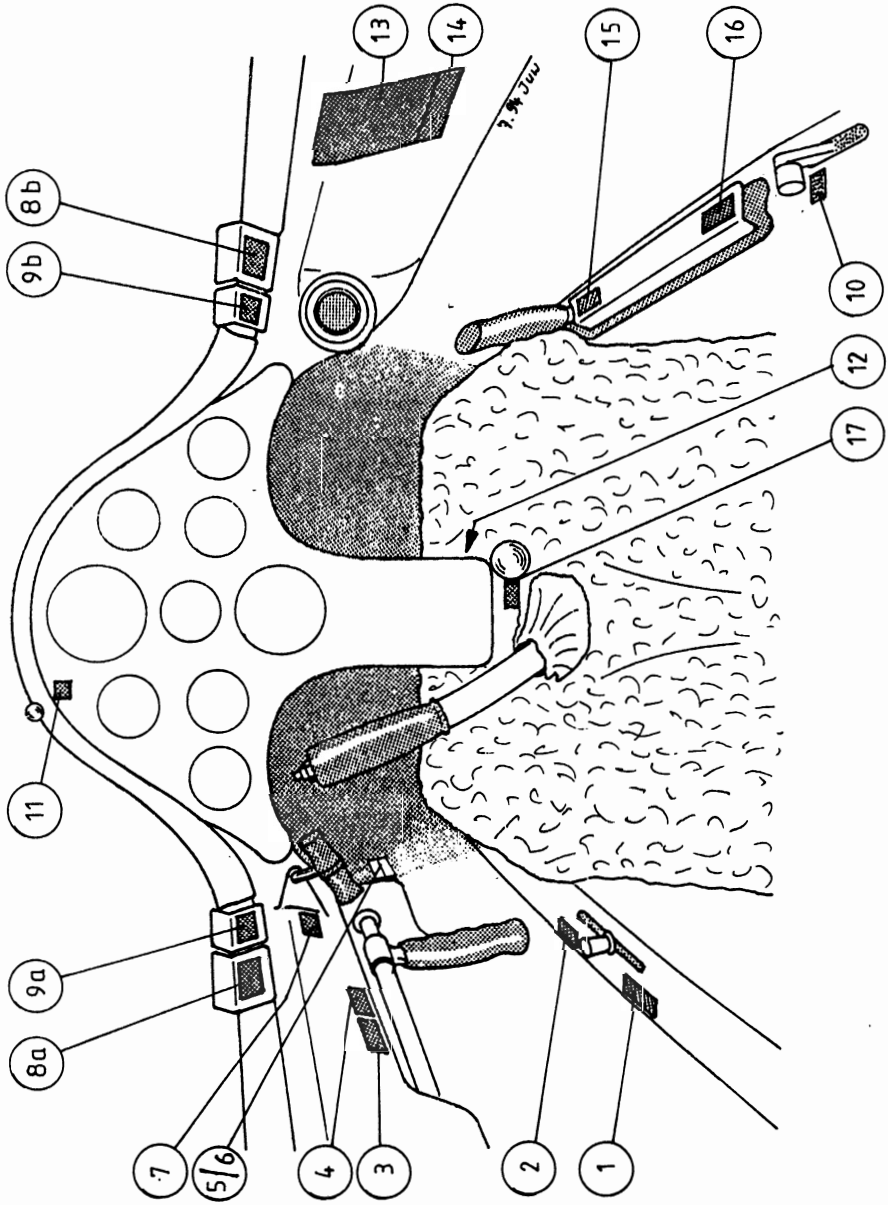
(14)

REDUCED MINIMUM COCKPIT LOAD
WITHOUT TRIM BALLAST IN THE FIN:
SEE FLIGHT MANUAL - PAGE 6.4 !

This placard is located on the bulkhead in the center of the cross tube.

BAGGAGE COM- max. 15kg
PARTMENT LOAD (33 lbs.)

Fig.9.0-1 Cockpit View



12.2 Special Tools

For Rigging the horizontal tailplane:
a) Socket (Allen) wrench 6 DIN 911-12.9 and
b) Light alloy sheet, P/N 99.000.4657
For filling with waterballast:
c) Connector P/N 99.336.0022 and
d) Plug P/N 99.000.8861
For fitting the water ballast valve:
e) Forked key Gedore No. 44/7" with bolt ends 3mm ⌀

12.3 Supply Sources for Special Tools

The special tools b) through d) are supplied by Messrs. A. Schleicher only.
The Allen wrench a) as well as the forked key e) is available from all good tool shops, but can also be obtained from Messrs. A. Schleicher.

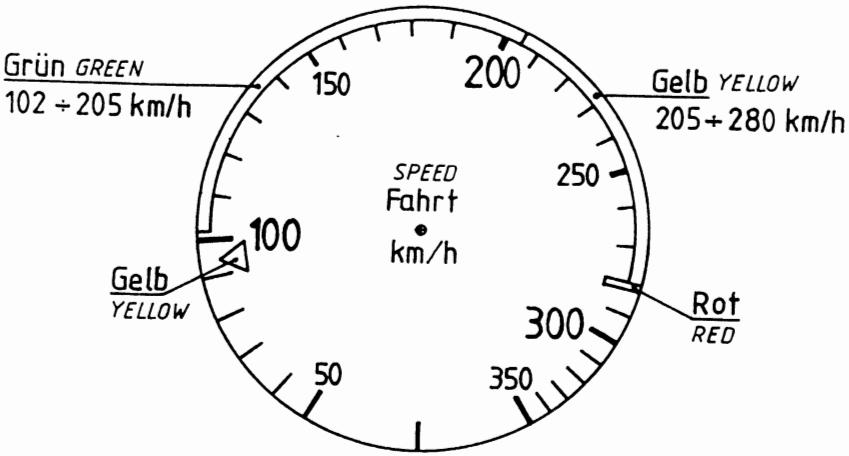
12.4 List of Maintenance Documents for Fitted Equipment

a) Operating and Maintenance Instructions for Tow Release Coupling:-
Safety Release Coupling "Europa G 72" and "G 73" and "G 88"
Nose Release Coupling "E 72/E 75 or E 85"
from Messrs. TOST Flugzeuggerätebau München.

b) WHEEL and BRAKE ASSEMBLIES CATALOG
Component Maintenance Manual,
Appendix A, Fits and Clearances
A-1. Brake Lining Wear Limits
A-2. Brake Disc Minimum Thickness
from Messrs. Parker Hannifin Corporatin, Avon, OH. USA.

12.5 Air Speed Indicator Markings

JAR 22.1543:
(a) When markings are on the cover glass of the instrument, there must be means to maintain the correct alignment of the glass cover with the face of the dial; and
(b) each arc and line must be wide enough and located to be clearly visible to the pilot and not mask any portion of the dial.



12.6 Maintenance Instructions

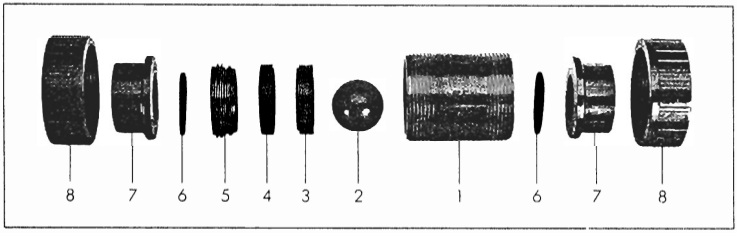
The following Maintenance Instructions are established from time to time as required, in accordance with experience accumulated in operating the ASW 24. The Maintenance Manual is to be supplemented in case of new issues of Maintenance Instructions.

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 A** for the ASW 24 (dated Feb.5, 1990) describes how to apply or replace the elastic plastic fairing strips for the control surface gaps.
The **Maintenance Instruction B** for the ASW 24 (dated Feb.7, 1990) describes how to apply or replace the turbulators on the wing, and on the horizontal and vertical tail unit.
The **Maintenance Instruction C** for the ASW 24 (dated April 26, 1990) describes how to repair the landing gear box.
The **Maintenance Instruction D** for the ASW 24 (dated Dec. 2, 1992) describes how to install airbrake and aileron quadrant belcranks incl. FRP basis plate into the wing root rib.
The general Maintenance Instruction "**WATER BALLAST VALVES**" dated July 25, 1994 describes how to remove or install water ballast valves and contains servicing instructions.

Wartungsanweisung
WASSERBALLASTVENTILE
Ausgabe I

Alexander Schleicher
GmbH & Co
Segelflugzeugbau
36163 Poppenhausen
neue PLZ: D-36163

Hinweise für die Wartung



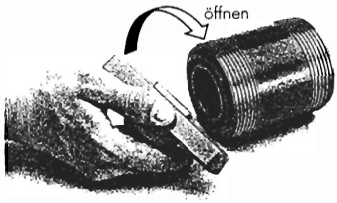
Montage

Kugel ② ins Gehäuse ① legen. Stütz- ③ und Dichtring ④ in das Gehäuse ① schieben. Die Rundung am Innendurchmesser des Dichtringes ④ muss zur Kugel ② zu liegen kommen.
Konus des Einschraubringes ⑤ leicht einfetten*. Einschraubring ⑤ in das Gehäuse ① einschrauben bis zum spürbaren Widerstand. Dann um ca. 90° weiterdrehen (Achtung: Linksgewinde). Als Schlüssel dient z.B. ein Doppelhebel vom Kugelhahn Typ 346 der gleichen Dimension oder ein entsprechendes Blechstück.
Bundbuchsendichtung ⑥ in die Nut des Einschraubringes ⑤ und des Gehäuses ① legen.
Bundbuchse ⑦ mit der Überwurfmutter ⑧ beidseits auf das Gehäuse ① aufschrauben und anziehen.

** Für Dichtringe aus EPDM darf nur Fett auf Silikon- oder Polyglykolbasis verwendet werden. Speziell Vaseline oder Mineralöle sind nicht zu verwenden.*

Demontage

Achtung: Demontage nicht unter Betriebsdruck. Rohrleitung entleeren. Überwurfmuttern ⑧ lösen und das Kugelrückschlagventil radial aus der Rohrleitung nehmen. Achtung auf die O-Ringe ⑥ (Gefahr des Verlierens). Einschraubring ⑤ lösen und herausdrehen (Linksgewinde).
Stütz- ③ mit Dichtring ④ und Kugel ② aus dem Gehäuse ① stossen.



Empfehlung

Bei Demontage der Armatur empfehlen wir aus Sicherheitsgründen, die O-Ringe oder Flachdichtungen auszutauschen.

Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patenterteilung oder Gebrauchsmuster-Eintragung vorbehalten.

Weitergabe sowie Vervielfältigung dieser Unterlage, Verwertung und Mitteilung ihres Inhalts nicht gestattet, soweit nicht ausdrücklich zugestanden.

Quellenangabe: Handbuch "Kunststoff-Rohrleitungssysteme" Ausgabe 1994, Georg Fischer GmbH, Daimlerstr. 6, 73095 Albertshausen

Poppenhausen, den 25.07.94

ALEXANDER SCHLEICHER
GmbH & Co.

i.A. Lutz-W. Jumtow

(Lutz-W. Jumtow)