Manual amendments

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10	0, 1a, 2 - 5, 48, 52, 92, diagram 14	Fuel hoses TN500/10	Oktober 2016

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		6	Nov. 98
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	" "	9	" "
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1	Elevator control , trim	April 90
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5	Tow releases	" "
6	Water ballast system	" "
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10	Steerable nose wheel	April 90
11	Powerplant	Sept. 98
12	Powerplant	" "
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14	Fuel system	October 2016
14a	Installation of the fuel filter	Sept. 98
15	Propellerbrake	" "
16	Engine door control	" "
17	Retaining cable	" "
18	Retaining cable	March 04

Enclosures		**issued**
Equipment list	(94)	Nov. 98
Checklist for checks and maintenance work	(95)	Nov. 98
5EP31 Installation Dräger oxygen system		08.10.90
5EP50 Installation ELT ACK		07.12.98
5E101 Wiring scheme issue I		25.06.03
5E102 Wiring plan DIN A 1 (in aircraft log) **or**		2.07.03
5E102 Wiring plan DIN A 1 **together with**		02.02.99
5E218 Amendment to the wiring plan 5E102		25.06.03
Instructions for inspection 500/20		July 1995
Questionnaire for TN 348/4		" "
Working instruction No. 1 for TN 348/4		Oct. 1994
Working instruction No. 2 for TN 348/4		" "
5V18 Tool for airbrake adjustment		14.10.94
Drawing W40		30.11.99
Drawing W51		20.11.96
Drawing W57		10.09.99
Drawing 8E210		22.05.97
Drawing 5M110		23.10.02
Enclosure 1 Instructions for transponder Installation		Jan. 06
Working instruction No. 1 for TN348/20 issue 3, headrest securing ropes		22.10.08

Instructions for continued airworthiness

0 Airworthiness limitations

0.1 Repairs:

Repair or replace damaged parts prior to next flight. Follow the instructions of the DG-500MB repair manual. Repairs outside the scope of DG-500 MB repair manual and major repairs must be accomplished at a certified repair station or by a certified mechanic rated for composite aircraft structure work in accordance with DG repair methods.
Use only genuine parts for all repairs.

0.2 Life time of the airframe

The maximum allowable operating time for composite sailplanes is 12000 flight hours. Therefore inspections according to sect. 2.4 of this manual have to be executed at 3000 h, 6000 h, 9000 h and every 1000 hours following thereafter.

0.3. Life time of components

a) The following components of the power plant have to be replaced after 400 engine hours.
   1. All nuts and bolts on the engine
   2. The bearings of the upper drive belt pulley

b) All flexible fuel lines and the gasket for the drainer valve have to be exchanged after 6 years.
   TN 500/10: When instructions 2 and 3 of this TN have been accomplished the life time of the flexible fuel lines is 10 years.

c) The **hoses of the cooling system** have to be exchanged after 6 years.

d) The **drive belt** has to be exchanged after 50 engine hours.

e) The 2 upper **rollers for the drive belt** have to be exchanged every 50 engine hours

f) The **spark plugs** have to be exchanged after 25 engine hours.

g) The **fabric straps of the safety harness** have to be exchanged after 12 years.

h) The rubber cords in the elevator control system see sect. 1.2.6 and in the wing flap control system see sect. 1.4.6 have to be replaced at least every 6 years.

i) **Other components**
   All other components like tow hook, wheels, gas struts, control system parts, bolts, pins etc. have no life time limitation, but should be replaced when worn, damaged or disqualified by excessive corrosion.

j) **Flexible fuel bags in the wings (option)**
   These have to be exchanged after 10 years.

6.a) Check the filter of the primer valve. The filter is installed in the hose connector between T-type connector and primer valve. Loosen the hose clamps and take out the connector with the filter. Flow fuel through the filter in reverse direction and check that as the fuel comes out of the filter any dirt is removed. Reinstall the filter.

b) Check the function of the primer valve and nozzles (engine must be cold). Switch the primer switch in auto position. Remove the air intake filters. Press the switch 47 to the left, switch on the DEI and then switch on the ignition. Now the DEI must show **P** on the centre display and fuel must be injected via the nozzles into the intake manifolds of both carburettors. Test only for 2-3 seconds, otherwise you may flood the engine. Check the hoses which connect the primer valve to the carburettors for any damage.

c) Leak test of the primer valve: When only the ignition is switched on (fuel pump running) no fuel must be injected by the primer.

7. Check all fuel lines for any wear, fissures, kinks, tight fit and leaks. For the check switch on the ignition to run the electric fuel pump to demonstrate operating fuel pressure.

8. Check the intake airfilters of the carburettors for excessive dirt and wear, wash with pure petroleum spirit and blow compressed air in reverse direction through the filters. Spray the outside with oil for filters with cotton fabric, reinstall the filters. We recommend exchange of the filters every 25 hours. Also new filters must be sprayed with filter oil.

9. Check all cables and associated levers and the propellerbrake (see sect. 1.11.8 and 1.11.9). Replace levers and pins of the brake in case of excessive free play. Replace cables when worn.

10. Clean engine and radiator

11. Check cooling system for leaks, refill coolant if necessary, check antifreeze. Check the radiator and its mounting. To check the water pump, switch on the ignition. Your should hear a buzz.

12.a) Remove the exhaust manifold.

b) Check the cylinders and pistons via the exhaust ports for seizing marks, for carbon remains and for sticking piston rings. Press against the piston rings with a suitable tool. The rings must be movable. Black remains on the outside of the pistons below the rings indicate sticking or damaged piston rings, this is not acceptable. Illuminate the combustion chamber and check for combustion deposits. Use a torch and mirror for these checks. If seizing marks are detected the engine must not be used. Excessive combustion deposits have to be removed.

3.5.2 **Every 3 years**
Exchange the coolant, see sect. 4.15.

3.5.3 **After 50 engine hours** exchange the drive belt.

3.5.4. **After** 4**00 engine hours** the power plant must undergo a major overhaul. Apart from the items listed in section 3.4.1., the following items also need to be done.

1. Remove the power plant and remove the engine from the powerplant. Ship the engine to the manufacturer or an aircraft engine maintenance workshop approved by the manufacturer and by the authorities.
2. Replace all the nuts and bolts on the engine
3. Replace the drive belt
4. Replace the bearings of the upper drive belt pulley.

3.5.5. **After 6 years**

1. Replace all rubber fuel lines and the gasket of the drainer valve. **TN500/10:** When instructions 2 and 3 of this TN have been accomplished the above mentioned fuel lines must not be exchanged after 3 years. But after 6 years all fuel hoses are to be inspected visually thoroughly and completely for any damage especially fissures, kinks or leaks. For the check switch on the ignition to run the electric fuel pump to demonstrate operating fuel pressure. Repeat this inspection every following year.

Note: The new fuel lines must be flushed thoroughly with fuel after assembly.

2. replace all coolant hoses.

3.5.6. **When required**

1. If the fuel tank is excessively dirty or when the fuel gauge gives false indications, a thorough flushing of the fuel tank is required (see sect. 1.13.6).
2. If the engine should run rough between idle and full throttle even after all the points in sect. 3.4.1. are OK, then it is possible that the membranes in the carburettors have hardened. They should then be replaced.
3. After sudden power loss at full throttle:

Check pistons and cylinders for seizing marks, see sect. 3.5.1 item 12b.

3.5 **Hydraulic wheel brake**
The brake fluid must be exchanged at least every 4 years see sec. 1.6.4.

60000330 Rubber mount at engine hinge axis Ultrabuchse 0118288

For the fuel system

60507550 Drainer CAV 110 (1/8" NPT)

Warning: Replace the sealing ring of the drainer against partno. 60504402 prior to installation

60504402 Sealing ring for drainer CAV 110 (for automotive fuel)

39001004 Service kit fuel lines incl. gasket for the drainer valve

40872880 Filter for primer valve

60000527 Fuel cock KH 1078TI/A

60507604 Coupling KL-006-2-SL009 for fuel filler hose (without optional permanently installed fuel pump system)

60507600 Coupling KL-006-0-SL009 for fuel wing tanks (at fuselage) and for fuel filler hose (with optional permanently installed fuel pump system)

60507601 Coupling KL-006-2-WR513 for fuel wing tanks (at wing)

60510470 Pressure switch in fuel system

60510471 Membrane for pressure switch in fuel system

60510472 Cover cap for pressure switch in fuel system

For the cooling system

60510565 Probe for coolant temperature TG 150/2

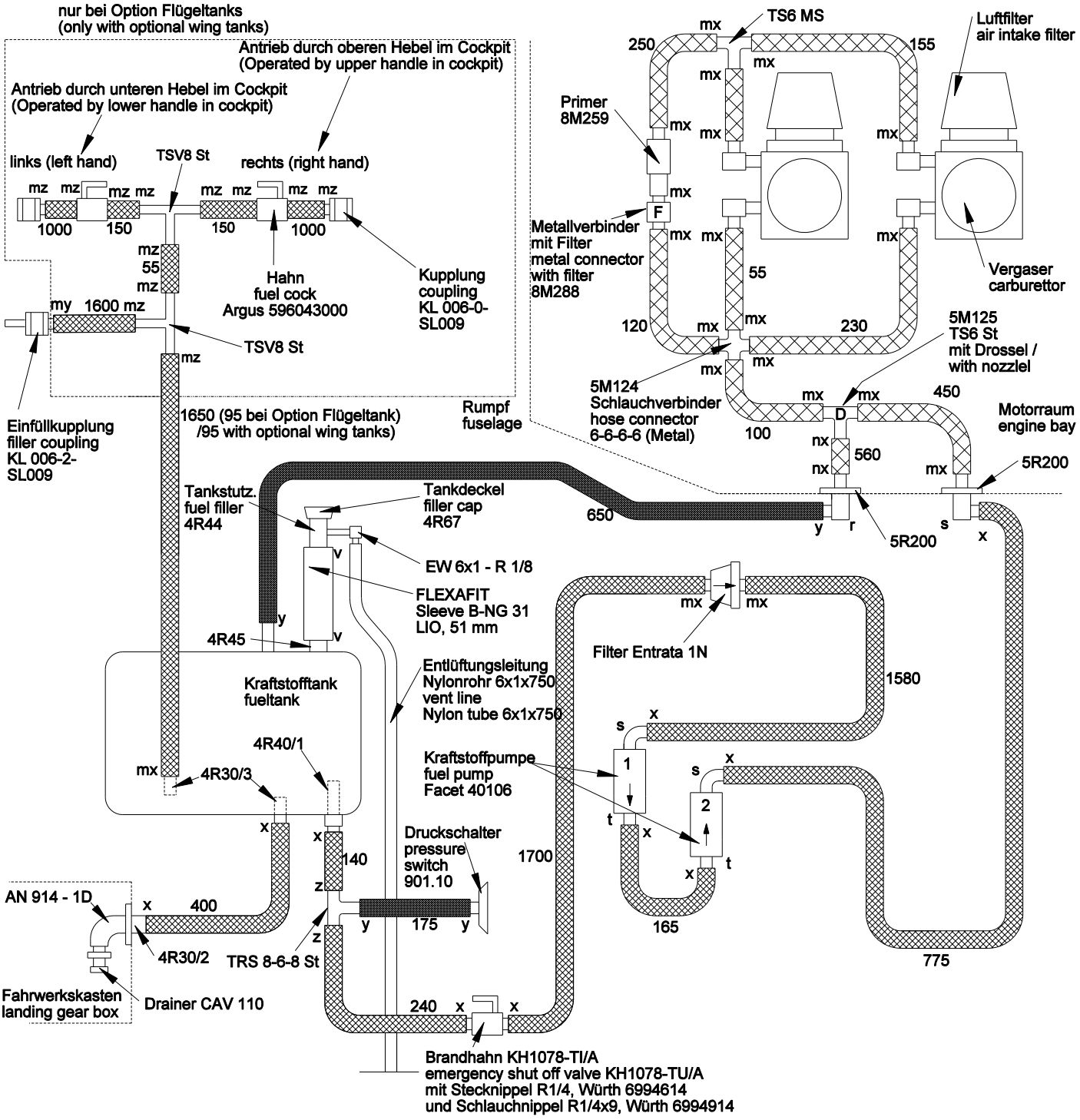
39001019 Service kit cooling system hoses

Rubber mounts for radiator

60000275 2 pieces Rundlager Type B (upper mount)

60000262 1 piece Rundlager Type A (lower mount)

Kraftstoffanlage/fuel system



Kraftstoffschläuche
fuel hoses

500
Länge [mm]
length [mm]

DIN 73379-2A ∅ 6mm innen/inside dia. 6 mm

DIN 73379-2A ∅ 8mm innen/inside dia. 8 mm

ISO 7840-A1 ∅6mm innen/inside dia. 6 mm

Verbindungsstücke und Klemmen
Fittings and clamps

- m Schrumpfschlauch rot 30mm lang
  heat shrink tubing red 30 mm long
- n Schrumpfschlauch blau,30mm lang
  heat shrink tubing blue 30 mm long
- s Winkelstück/elbow fitting WSAG 08 1/8" zn
- t Einschraubnippel/nipple SAG08/R 1/8" MS
- v Schlauchschelle/hose clamp 40-60
- x Schlauchschelle/hose clamp S70/7 14/9
- y Schlauchschelle/hose clamp S70/6 13/9
- z 1-Ohrklemme/ear clamp 157.3