Manual amendments

No.	Page	Description	Date	Signature
15	2, 4, 4a, 21, 29, 93, 8E201, 8E203, 8E218 up to ser.no. 8-194, 8E205 issue H from ser.no. 8-195 on	TN 873/19 powerplant control extension-retraction switch unit (retrofit, standard from ser.no. 8-195 on)	May 2000	
16	4, diagram 5	ÄM 800-12-00 Tow hooks / only for aerotow (Option)	Sept. 2000	
17	3, 4, 54, 94	TN 873/21 Dimple-tape-turbulators on the lower wing surfaces (retrofit, standard from ser.no. 8-219 on)	Dec. 2000	
18	2, 4, 4a, 10, 14, 24, 28-30, 93, diagrams 2a, 7a, 11b, 12a 8E206, 8E205 issue I	ÄM 800/13/00 Vertical tailplane, steerable tailwheel, powerplant incl. electrics from ser.no. 8-219 on	Dec. 2000	
19	2, 3, 4, 4a, 7, 16, 43-46a, 49, 73, 76, 86, 91, enclosure 96, diagram 10a, drawing W40:	TN 873/23 Manual revision	Febr. 2001	
20	2, 3, 4, 4a, 5, 20, 24, 25, 28, 28a, 29, 30, 49, 56, 58, 68, 69, 78, 86, 87, 91, 93, 6EP27M, 8EP35, 8E201, 8E203, 8E219	TN 873/26 Manual revision	Nov. 2001	

0. Airworthiness limitations

0.1 Repairs

Repair or replace damaged parts prior to next flight. Follow the instructions of the DG-800B repair manual for all airframe repairs. Repairs outside the scope of the DG-800B 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 and motorgliders is 12000 flight hours. Therefore inspections according to sect. 2.4 of this manual have to be executed at 3000 h, 6000 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.

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

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

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

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

g) **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.

h) **Flexible fuel bags in the wings (option)**
Type Uniroyal (rubber): these will have to be exchanged after 10 years.
Type HFK (plastic): see Mounting and testing instructions for HFK TLF.

Bandbrake see diagram 13a:

The bandbrake should be adjusted so that with the brake off both brake cables are completely loose, a radial clearance of at least 1mm (.04in) must be between band and magneto flywheel at the narrowest place. Additionaly there should be 2mm (.08in) axial clearance between the band and the actuator-plates on the magneto flywheel. Do not twist the band when securing the fork end!

1.11.10 **Tightening torques and locking:**

a)All bolts on the engine which are not secured by selflocking nuts should be tightened according to the following:

M 10	-	40 N m (29 ft lb)
M 8	-	20 N m (15 ft lb)
M 6	-	12 N m (9 ft lb)

They should also be secured with Loctite 243. All locked and secured bolts are marked with red paint which also marks the respective component at that particular point. Whenever a bolt has to be tightened or taken off, the red paint should also be removed and only renewed after the bolt is once again securely attached with Loctite.

b)Cylinder head nuts	20 N m (15 ft lb)
CHT probe	15 N m (11 ft lb)
spark plugs	20 N m (15 ft lb)
propeller	20 N m (15 ft lb)
magneto flywheel	80 N m (58 ft lb)
lower drive belt pulley	100 N m (73 ft lb)

1.11.11 **Fire warning light**

The probe is located at the engine bay side wall opposite to the carburettor. There is a fuse 0.2 A for the „fire“ probe in the wiring near the engine master switch.

To check its function you may heat the probe up to 160° C. Use a fan heater with a thin terminal to heat the probe only. The red light „fire“ on the instrument panel must shine.

Warning: Don’t execute this test without measuring the temperature close to the probe. 160° C must not be exceeded.

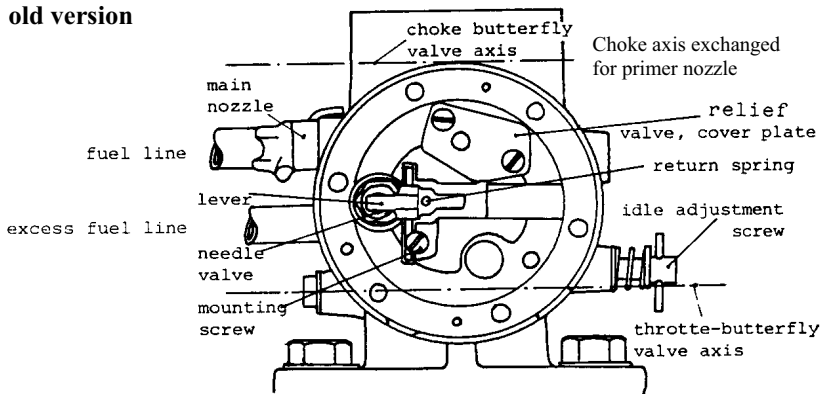
Note: From ser.no. 8-97 on a self-test- function is installed so that the check with 160°C is not necessary. When switching on the main switch the fire warning light must flash once.

1.13.7 **Carburettor**

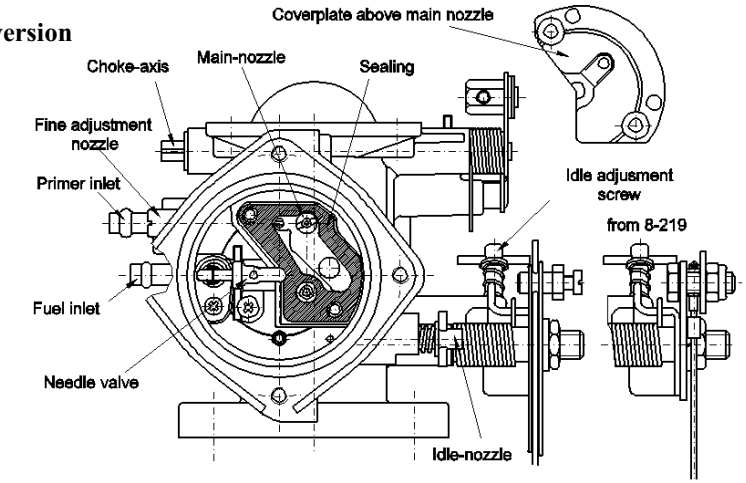
a) **Type Mikuni Membrane carburettor BN 38**

Instead of a choke a fuel injection (primer) is installed.

old version



new version



Normal position of the fine adjustment nozzle is fully anticlockwise (open). For high altitude operation the nozzle may be turned in clockwise direction (closed).

b) **Cleaning**

To clean the carburettor you should execute items 1 to 3. Switch on the ignition to clean the carburettor by the electric fuel pump.

If the carburettor is clean, a jet of fuel will spurt out. In addition, the openings for idle and main nozzle have to be cleaned with compressed air.

Warning: Don’t bend the lever which actuates the needle valve.

Cleaning cont.

1. **Removal of the needle valve**: Unscrew the carburettor cover and remove together with the membrane. Loosen the mounting screw and remove the lever, axle and needle valve as one unit. Be careful not to loose the return spring.

2a). **Removal of the main nozzle:**
Old version: Cut away with a sharp knife the heat shrink tubing which secures the Tommy screw. Screw in the Tommy screw first to note the number of turns and the actual position of the lever (ca. 5/8 turn). Then screw out the Tommy screw.
New version: Loosen the 2 screws and lift off the cover plate with the rubber sealing Screw out the main nozzle.
If it is necessary to remove the Tommy screw for cleaning you have to lift off the fine adjustment screw which covers the Tommy screw. Screw in the Tommy screw first to note the number of turns.

2b). **Removal of the relief valve (only old version):** Loosen the 2 screws and lift off the cover plate with the valve membrane and the rubber sealing. Now check the chamber behind the main nozzle for any dirt.

3. **Removal of the idle nozzle:** Screw in the Tommy screw first to note the number of turns and the actual position of the lever (1 1/8 turn). Then turn out the Tommy screw.
New version: In addition to the Tommy screw an idle nozzle must be screwed out. The nozzle is located in the same compartment as the main nozzle below the main nozzle.

4. **Reassembling:** Screw in the Tommy screw(s) completely and then screw them out to the noted positions.
Secure the lever of the main nozzle Tommy screw again with 1/2" heat shrink tubing, be careful not to mix up the valve membrane and the rubber sealing of the relief valve (only old version) during reassembly.
The membrane is to be positioned between the rubber and the metal cover plate. Use Loctite 243 to secure the screws of the carburettor cover. All measures should be executed carefully and cleanly.

5. **Carburettor setting:** Adjust the idle RPM by the idle adjustment screw to approx. 2500 RPM with warm engine. **Note:** With optional EGT probes the setting of the carburettor main nozzles can be controlled by the EGT values. Set the nozzles to EGT values of 640°C $\pm$ 10°C on the ground at full power with the engine warmed up. This value is valid with the fine adjustment screw open and for the hotter of both cylinders at 100m above MSL. If the adjustment is to be done at a higher altitude 2.5°C must be deducted from the EGT value per 100m altitude.

1.14.3 **Control unit**
This aluminium box is located in the relay compartment. The control unit incorporates the following functions:

1. Control of the extension-retraction procedure. The extension-retraction relays are also mounted inside the unit.
2. Regulator/generator, also supplies power to the fuel- and coolant-pumps with the masterswitch off.
3. Startermotor control: The starter motor is actuated by a power electronic, no relays. This applies to the normal engine start (ignition on) and also the slow turning of the propeller into retraction position (ignition off). Activation is via the starter button.
4. **Up to ser.no. 8-103** (Version with one fuel pump): Resettable fuses for the following circuits are installed in the control unit: proximity switch, fuel pump and coolant pump (for both when powered by the generator, otherwise protected via the DEI circuit breaker)
5. **Serial no. 8-103 up to 8-218**: A fuse holder for the fuse of the second fuel pump is installed in the housing. Resettable fuses for the following circuits are installed in the control unit: proximity switch, coolant pump (when powered by the generator, otherwise protected via the DEI circuit breaker)
6. **From serial no. 8-219 on:** Resettable fuses for the following circuits are installed in the control unit: proximity switch, second fuel pump, first fuel pump and coolant pump (when powered by the generator, otherwise protected via the DEI circuit breaker).
7. **Warning:** With the connector plug removed from the control unit, don't switch on the master switch.
Caution: When you plug in the connector plug, check by pulling at the plug that the locking devices at both sides have engaged. Then secure the locking devices with a ty-rap 4.8 x 360 mm.

1.14.4 **Generator – Regulator:** The generator is located in the ring gear housing and is incorporated with the ignition/ timing sensors. It is connected to a voltage regulator and can provide a maximum charging current of 10 Amp. The regulator is located in the control unit see sect. 1.14.3. The generator supplies electrical power to the fuel and water pumps, even with the master switch off.

1.14.5 **Master Switch:** The aircraft is supplied with a master switch and an engine master switch. The engine master switch supplies in **on** position electrical power to all engine controls and to the socket for the external electric fuel pump system.

1.14.6 **Engine elapsed - time indicator:** The engine time indicator is incorporated in the DEI and is connected directly to the regulator and therefore counts only the pure engine running time.

1.14.7 **Electric pumps:**

Up to ser.no. 8-103: Fuel pump and coolant pump are switched on and off by the ignition switch and receive power from the batteries (protection via the DEI circuit breaker) and with the engine running directly from the generator (protection via one resettable fuse for each pump in the control unit);.

Serial no. 8-103 up to 8-218: See above. in addition to the pumps described above, a second fuel pump is installed. This pump receives its electric power only with the engine running directly from the generator (protection via a fuse in the control unit). The first fuel pump is protected only by the DEI circuit breaker.

From serial no. 8-219 on: First fuel pump: Power supply from the batteries and from the generator (protection via the DEI circuit breaker). Coolant pump: Power supply from the Batteries (protection via the DEI circuit breaker) and with the engine running directly from the generator (protection via a resettable fuse in the control unit).

Second fuel pump: Power supply only with the engine running directly from the generator (protection via a resettable fuse in the control unit)

1.14.8 **12 V Socket:** The socket is located in the fuselage main-bulkhead (behind the pilots left shoulder).

It is used for:

- battery charging (master switch in on-position, engine master switch in off position, all instruments off
- to provide power for external accessories.

Required plug see sect. 8.2.

Connection of the socket terminals: centre pin is positive.

1.14.9 **Power plant extension-retraction mechanism:** See also sect. 1.12

The automatic extension and retraction is controlled by the control unit see sect. 1.14.3.

The extension-retraction motor will be switched off at the end limits by position switches see sect. 1.12.5.

Caution: If the proximity switch (see sect. 1.14.15) is defective (short circuit) a safety interlock in the control unit prevents the engine from being retracted automatically with the propeller not in the correct position. The retraction of the engine must be done with the manual switch. The DEI will display 000 instead of the engine RPM. The proximity switch must be exchanged prior to the next engine start.

1.14.10a **Manual extension-retraction switch**

Up to ser. no. 8-218:

This switch unit consists of 2 switches. If you lift the red cover you operate the first switch which cuts off the automatic extension - retraction.

Without TN 873/19: The second switch below the red cover plate activates the extension/retraction motor directly, bypassing the control unit and the safety functions in the DEI.

With TN873/19: The second switch below the red cover plate activates the extension/retraction relays in the control unit directly, bypassing the safety functions in the DEI.

From ser.no. 8-219 on: Manual extension and retraction is via one switch only which is located on the instrument panel. When this switch is operated, the automatic extension/retraction system will be switched off. The automatic system will be switched on again when you operate the ignition switch. The manual switch activates the extension/retraction relays in the control unit directly, bypassing the safety functions in the DEI.

1.14.10b **Switch for electric propeller brake**

Behind the manual extension-retraction switch, a switch to switch off the electric propeller brake is installed. This switch must be installed such that its toggle shows to the front in the propeller brake off position. In this position it should not be possible to move the red cover plate to its down position.

From ser.no. 8-219 on: There is no switch for the electric propellerbrake.

1.14.11 **Starter Press Button**

The starter press button is located in the centre of the throttle handle and activates the starter relay via the interlock in the DEI and the control unit, see sect. 1.14.3.

1.14.12 **Wiring**

- Wires from battery to master switch and to control unit: LN 9251 white 9 mm² => AWG 8.
- Starter motor wiring: FLK 16 = 16 mm² or MIL 22759 14 mm² => AWG 6
- Power cables: LN 9253 A white 1.2 mm² => AWG 16 and 2 mm² => AWG 14.
- Control wiring: LN 9253 A white and red 0.4 mm² => AWG 22, in the engine compartment MIL 22759 4mm² => AWG 22.

- Ignition and measuring cables: LN 29871 outer cover white, inner cable blue and red, 2 x 0.4 mm² => 2 x AWG 22.
- Wiring located at the engine: flexible wires 94F8128 1 mm².
- Measuring wires for the coolant temperature probe: coaxial RG 316/U.

Instead of wires from the LN specifications mentioned above suitable wires approved for aircraft use from other aircraft or MIL specifications may be used: Operating range min.:55°C up to 105°C (-67°F - 220° F), in the engine compartment up to 150°C (300°F), operating voltage 600 V.

1.14.13 **Circuit breakers and fuses**

1. In the console of the instrument panel:
   a) circuit breaker 10 A for the engine extension - retraction motor type Magnetic or 15 A for type Stross
   b) circuit breaker 4 A (5A up to ser.no. 8-149) for the DEI, protects also the first fuel pump and the coolant-pump (with power supply from the batteries)
   c) circuit breaker 4 A for the 12 V socket
   d) circuit breaker 3 A for the radio
   e) circuit breaker 3 A spare for turn- and bank indicator or horizon
   f) circuit breaker 2 A for the electric variometer
   g) circuit breaker 10 A for the generator, the control unit and the proximity switch
2. The battery main fuses are located in the seat shell at the right hand side of the instrument panel: 2 pieces 60 A.
3. Fuse 250V 0.2A 5x20 m for the fire warning light located in the wiring near the master switch.
4. **Up to ser.no. 8-103:** Resettable fuses are installed in the control unit for the following circuits: Proximity switch (0.2A), fuel pump (4A) and coolant pump (4A) for both pumps for power supply from the generator.
5. **Serial no. 103 up to 8-218**: fuse 250V 1.4A 5x20m for the second fuel pump, installed in the housing of the control unit. Resettable fuses are installed in the control unit for the following circuits: Proximity switch (0.2A) and coolant pump (4A) for power supply from the generator.
6. **From ser.no. 8-219 on:** Resettable fuses are installed in the control unit for the following circuits: Proximity switch (0.2A), second fuel pump (4A) and coolant pump (4A) for power supply from the generator.

4.2 **Replacement of control circuit cables**

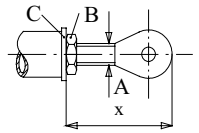
The following cable connections are approved:
3.2 mm dia. control cable construction 7x19 with Nicopress-sleeves 28-3-M Copper and tool No. 51-M850 or 63-V-XPM or 64-CGMP where the M groove is to be used. The above applies to the rudder cables, the tow release cable and the engine retaining cable.
The cable for the rudder pedal adjustment is 1.6 mm dia. control cable construction 7x7 with Nicopress-sleeves 28-1C Copper and the C groove for tool 64-CGMP should be used. The same type of cable is used for the control cables of throttle and manual propeller brake in Bowden outers with 2.6 mm inside diameter
Attachment of the Nicopress sleeves should only be done using the respective tool. All the procedures and checks noted by the tool manufacturers should be followed.
Please refer to aircraft inspection and repair FAA AC 43.13-1 A.
Note: Control cables according to MIL-W-83420 I/A (was MIL-W-1511A) or ISO 2020 (was LN 9374) should be used.
Note: For the electric propellerbrake a Bowdencable 1.5 mm 19 x 0.31 with Bowden outer with Teflon liner 2.5 mm inside diameter should be used instead of the material mentioned above.

4.3 **Adjustment and servicing of the control circuit**

a) In all cases, new self locking nuts DIN 985-8.8 zn or LN 9348 should be used.

b) Bolts which are not secured with locking nuts have to be secured with Loctite 243. Before installing the bolt clean the thread and the inside thread see section 4.8. Apply only 1 drop of Loctite on the bolt thread. Too much Loctite may cause damage when you try to loosen the bolt again.

c) With all adjustment work, it should be ensured that the rod ends are not screwed out too far from the pushrod - see sketch below for allowable max. distances for the two sizes used.



A	max. of x	
	mm	inch
M 6	36	1.4
M 8	60	2.36

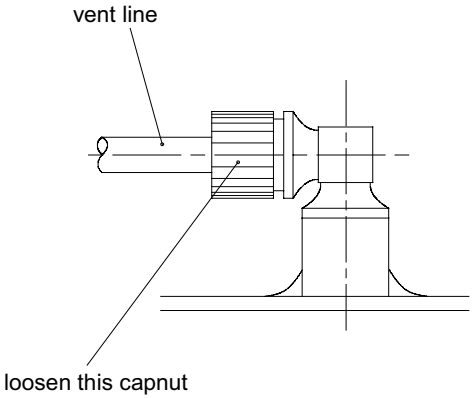
Note: All lock nuts (B) are secured by a spring washer (C) DIN 6798 I. Be careful not to loose that washer!

4.10 Replacement of wing fuel tanks

Disconnect the plastic fuel line inside the wing at the quick connector attached to the wing root rib. Loosen the red black marked perlon cords at their attachment at the root rib. Attach an extension line 3 mm diameter (1/8 in.) 5 m long to the red perlon line. Remove the fuel tank by pulling on the perlon cord marked red and black on the fuel line. Disconnect the wire for the electrostatic connection.

Tanks type Uniroyal part NO. 4F28: the tanks have no ventilation lines.

Tanks type HFK part No. 8F43: See installation plan 8EP35 enclosed to this manual.
In addition to the above described measures you have to disconnect the vent line from its screwed connection inside the wing, see sketch.



Installation:
Follow the removal procedure in reverse. Fill the tank and check for leaks.

Remove the sealing cap 8M118/1.
The groove in the front end of the axis shall point downwards. This is the lowest position of the eccentric. From this position rotate the axis in a clockwise direction (see a) 5.) from 1 mounting hole to the next and fix the axis min. 2 bolts in each position to check the drive belt tensioning. Proceed until the correct tensioning is reached.
During this the axis should not be rotated more than 180° (groove in upper position). However it should be impossible to reach this position.

e) **Reassembly**

1. Reassembly is the reverse of disassembly. Use Loctite 243 to secure all screws and bolts except for the propeller mounting bolts.
   Caution: When reassembling the drive belt covers be careful to use the correct screws. Screws which are too long will damage the belt!
2. If the position of the axis has been changed the fork 8M119 must be brought to vertical position again. Screw out the fork (axis already assembled with all 6 bolts). Loosen the distance washer 23 x 32 x 1 from the axis 8M115. Apply a suitable 2 component metal adhesive (e.g. UHU Plus 300) between 8M115 and the washer. Screw in the fork 8M119 again using Loctite 243 for securing until the fork is in vertical position. The glue should be pressed together to less than 1 mm thickness. Let the glue cure before operating the engine.
3. Adjust and secure the proximity switch according to sect. 1.14.15.

f) **Changing the relation of propeller to engine**
see sect. 1.11.4

1. Execute work according to a), b) and c) items 1,2 and 3.
2. Mark upper drive belt pulley and drive belt with a felt pen or with tape.
3. Move drive belt forward as far as possible on both pulleys. Then lift the belt off the upper pulley and rotate the pulley against the drive belt.

g) **Measuring the drive belt tension and tolerances**
please refer to drawing W57 (enclosed in MM)

1. Remove the left (in sense of flight) drive belt cover.
2. Insert the measuring tool W57 from the right hand side (inside) through the second threaded hole of the drive belt cover (counted from the upper end). Lay the Perlon cord around the left hand side of the propeller mount and fix it to the other side of W57. Hang a min. 100N (10kg, 22lbs.) spring balance into the cord. Measure the distance between the drive belt surface and the outer side of the propellermount at the same station from the left hand side through the opposite thread with the probe of a vernier caliper. First measure with no load on W57 and then with 100N (10kg, 22lbs.).
3. The difference should be min. 6 mm (0.236 in.) and should not exceed 11 mm (0.433 in.). If the difference is smaller than 6 mm the tension is too high and the load on the crankshaft is excessive. If the tension is too low the drive belt may slip and the relation propeller to engine will change.

4.16 cont.

4. Disconnect the electric wiring coming from the magneto housing near the propeller brake. First remove the heat shrink tubing carefully with a sharp knife.

5. Remove the mounting bolts and detach the starter motor.

6. Disassemble the fuel lines from the primer to the carburettor at the carburettor using a small screwdriver to open the hose clamp. Plug the line with a 6mm bolt.

7. Remove the EGT probes from the exhaust manifold with a 7 mm socket wrench (Option).

8. Unplug the electrical wiring of the coolant temperature probe on the cylinder head near the probe.

9. Empty the coolant system: Remove the coolant see section 4.15.2. Use a bucket to catch the coolant (approx. 2 litres).

10. Remove the spark plug connectors from all spark plugs.

11. Remove coolant outlet (on top of the engine) from the cylinder heads using a 4mm Allen key wrench. Seal openings at the cylinder heads with tape. Remove the hose of the coolant inlet (near the starter ring gear) and seal the inlet with tape.

12. Remove the four fixing screws of the cylinder heads to the CRFP plate with a 6mm Allen key wrench. Fasten together the group of ground wires which are fixed by the front right screw with a wire or similar. If necessary remove the front right hand side cap nut (cylinder head bolt).

13. Heat the engine's final four fixing screws at the front side of the crankcase with the hot-air gun and unscrew them with a 5mm Allen key wrench.

14. Now rotate the propeller mount a little forward and pull it from the crankshaft.

15. Removal of the propeller brake: Unscrew the propeller brake fixing plate from the engine's rear side by removing three screws with a 6 mm Allen key wrench.

16. Close the opening of the exhaust manifold with tape and seal the airfilter with a plastic bag or similar.

Removal of further attachments (don't execute for shipping the engine for repair or overhaul)**:**

17. Spark plugs: Unscrew spark plugs with an 21 mm (13/16'') socket wrench. Seal the cylinder holes with tape.

18. Exhaust manifold: The exhaust manifold can be removed by unscrewing the four bolts at the cylinder outlet with a 6mm Allen key wrench. Seal the cylinder outlets with tape.

19. Air intake filter: To remove the air intake filter from the carburettor loosen the clamp at the carburettor with a small screwdriver. Seal the carburettor intake with tape.

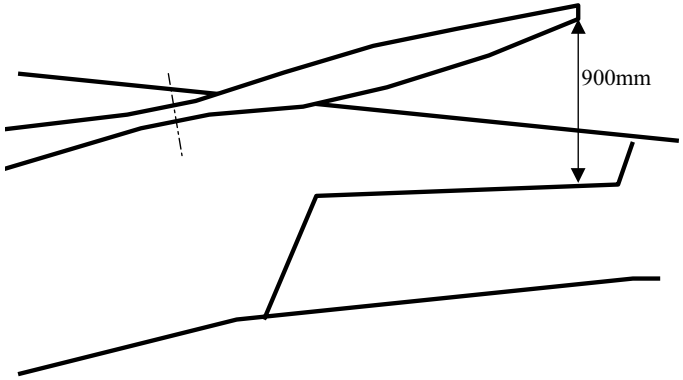
20. Remove both coolant inlets using a 3 mm Allen key wrench. Seal outlets with tape.

4.16.3 Reinstallation of the powerplant

Reverse the procedures for removal mentioned above. Note sections 4.11, 4.13, 4.15 and 4.21!
Use only new selflocking nuts for reinstallation. Use Loctite 243 to secure all threads and screws without selflocking nuts.
Use new gaskets for the coolant outlet.

4.21 Installation and removal of the extension/retraction unit

When installing the extension/retraction spindle drive proceed as follows: First, don't tighten the bolt which connects the spindle drive to its front mounting block. Extend the powerplant to the position (see sketch). Then tighten the bolt. The reason for this procedure is to make shure that the rubber bush in the mounting block will be twisted approx. by the same amount in upward and downward direction. False adjustment may result in cracks in the rubber.



5. Weight and balance

Method of weighing your aircraft:

1. Assemble the glider completely with gear down.
2. Place scales under the tailwheel.
3. The fuselage must be levelled so that the top of the aft fuselage boom has a tail-down slope of 1000 : 37.
4. Empty water ballast tanks and the fuel tank.
5. Read weight of tail wheel: W 2
6. Be certain the wings are level and hold so that no load is brought up.
7. Measure the distance between perpendiculars through points a and b.(See figure, next page).

Note: The distance a may change with different masses due to deflection of the landing gear.

Note: The total mass M may be determined by determining the weight W1 (M= W1+W2) or by determining and adding the weights of all single components.

Using the empty mass and the values determined above, calculate the C.G. as follows:

C.G. empty XSE: $XSE = W2E \bullet b / ME + a$

ME = empty mass
W2E = load on tailwheel (empty)

The empty weight includes all accessories but excludes pilot and parachute. Remove loose objects from the cockpit.

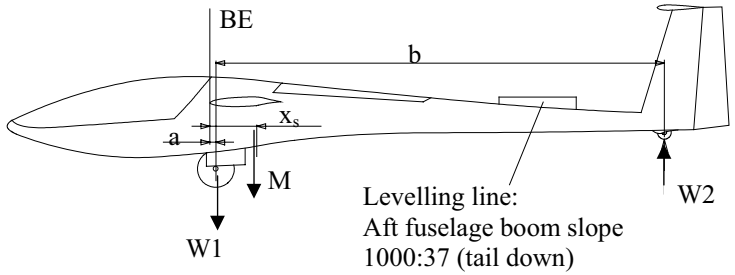
C.G. in flight XSF: $XSF = W2F \bullet b / MF + a$

MF = flight mass
W2F = load on tailwheel (flight mass)

The flight mass includes empty weight items plus pilot, parachute, and all items needed in flight (barograph, camera, cushions, etc.). In addition, the rudder pedals and seat back should be adjusted as in flight.

Datum (BE)

Wing leading at root rib



Moment arms of pilots and equipment see flight manual sect. 6.9

Empty weight C.G. measurements
After the addition or deletion of equipment or accessories, repairs, painting, or any change in the aircraft that could influence the weight and balance; a new weight and balance must be carried out. Aircraft certified as Standard Category must have the weight and balance carried out by a licensed Airframe Mechanic. Empty weight C.G. range is determined by reference to the diagram in sect. 6.4 of the flight manual. If the C.G. is out of limits, adjustments may be made by ballasting or by relocating equipment or accessories.

The result has to be entered in the flight manual page 6.5 and in the aircraft logs. If the min. cockpit load changes, the new value is to be noted on the cockpit placard.
Weight and balance must be carried out at least every four years.

C.G. shift due to extension of the engine
see flight manual section 6.9

8. **Partlist**
In this list you will find only parts of the powerplant and the electrical system.
Please find the part no's of the control-system parts and of the metal fittings of the powerplant in the following diagrams.

8.1 **Parts for the powerplant**

a) necessary for the 25 hours inspection

60510806 Spark plugs Bosch W5AC electrode gap 0.5 mm
Caution: The removable cap must be secured with a little bit of Loctite 638 on the thread prior to installation
40050360 Spark plug S36 (Bosch W5AC electrode gap 0.5 mm) with screw cap fastened to the thread by crimping, marked with a red dot of paint on the insulator
60507570 Fuel filter Entrata IN straight CH27
60507569 Fuel filter Entrata IN 90° elbow CH28
60500150 Gaskets for exhaust manifold (2 pieces needed)
60500142 Airfilter
70002200 Oil for airfilters with cottonfabric K&N 99-05046

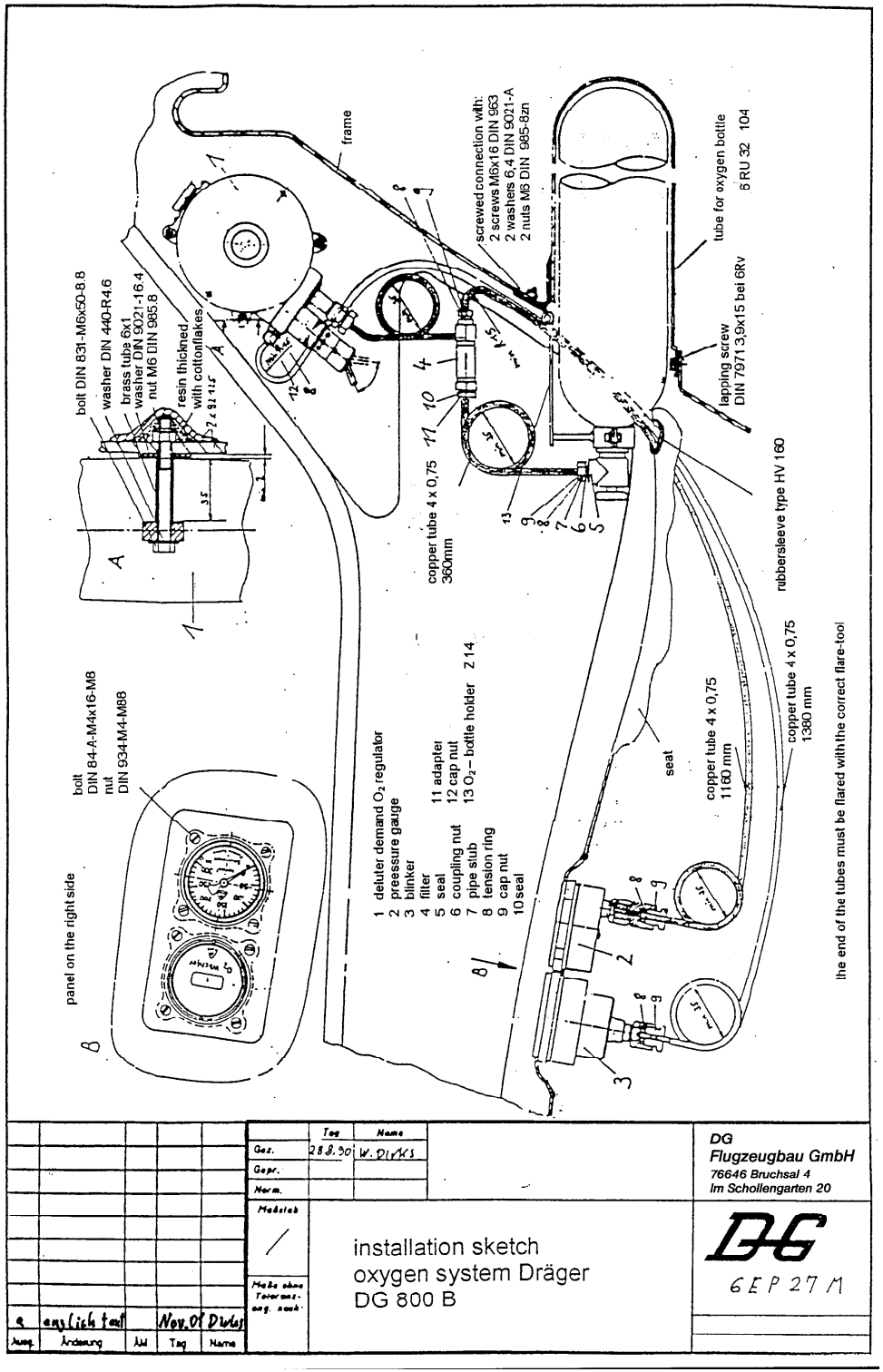
b) **Spare parts**

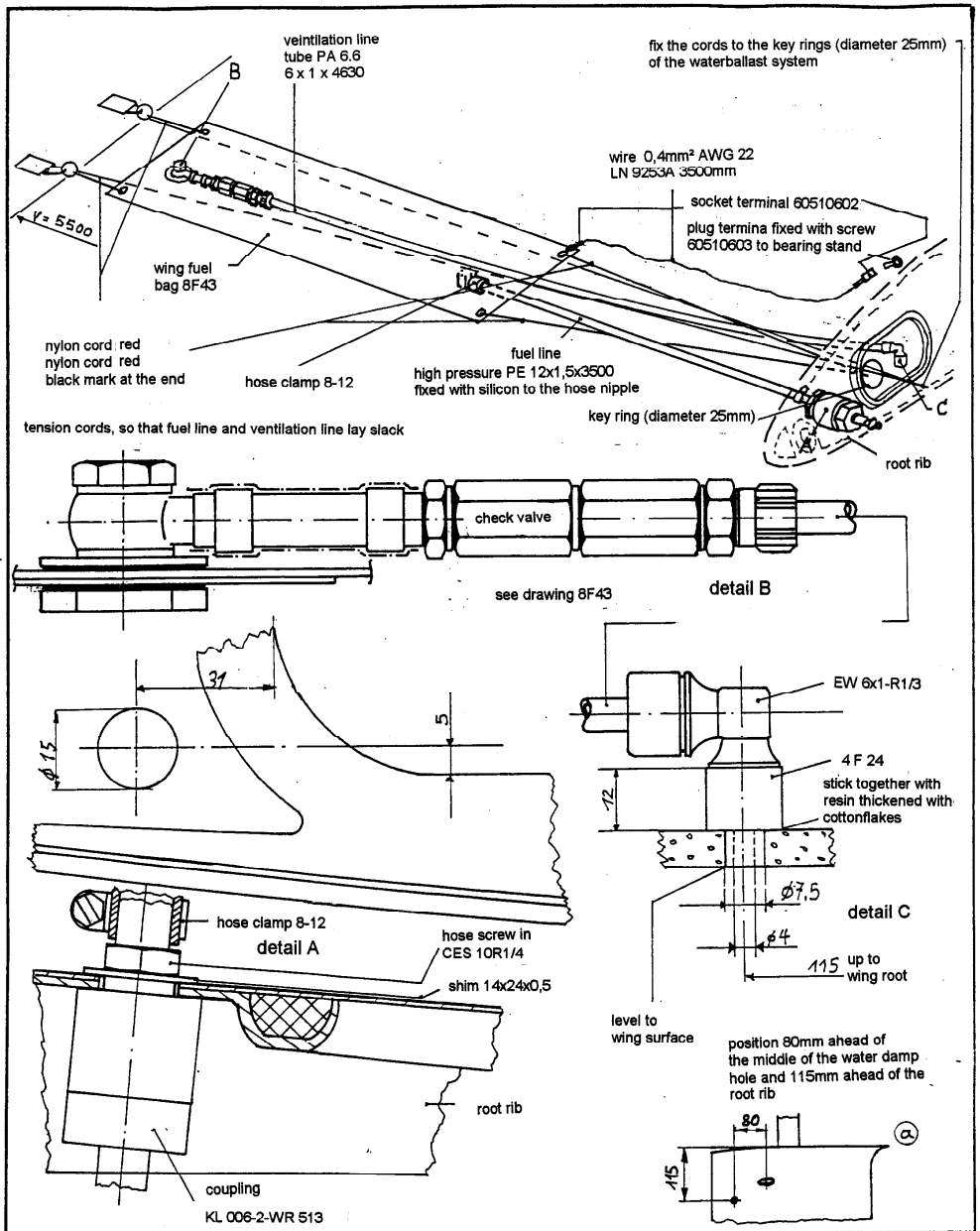
60510821 Spark plug connector Bosch 0356351032 1kΩ
60500127 Nut for spring coupling M 8 for exhaust muffler
60500128 Spring for spring coupling M 8
60502500 Starter motor: DENSO 128 000-1671 12 V
or DENSO 12 000-1679 12 V
60500155 Gasket for coolant outlet
60504012 Drive belt Poly Chain PC 8MGT 2400-36
59332050 Front bearing for upper pulley 32205B
59320320 Rear " " " " 320/32X
52200054 Securing washer 20 DIN 462 for upper pulley front bearing
30002028 Special grease for upper pulley bearings SKF LGMT3
39001026 Exchange kit nuts and bolts for 400 h overhaul
60000183 Gas spring for ext.-retr. drive A8 B1 Z-3-230-381/900N or A8B1Z-3-220-381-001/900N
60000182 Gas strut for muffler frame E1 E1-76-040-130/150N
60507561 Electric fuel pump Facet 40106
60001201 Electric water pump Webasto U4810 modified
60504051 Radiator KTM VW 0095
40871990 Ext.-retr. spindledrive type Magnetic GST 2011-200-01 or
60505002 Ext.-retr. spindledrive type Stross ELT 10 modified
40872873 Brake pad for propellerbrake (glued to mounting bracket)
40050350 Screw nipple S35 (throttle cable to carburettor) (not applicable from ser.no. 8-219 on)

8.2 Parts for the electrical system

60510891 Battery 6V, 10 or 12Ah equipped with screw - terminals
40876070 DEI MC802
40876030 **up to ser. no. 8-218:**Control unit 8E103
40876040 **from ser. no. 8-219 on:** Control unit 8E604
60510464 Limit-switch engine retracted and engine extended 164-574
up to ser. no. 8-218:
without TN873/19:
60510476 Manual extension-retraction switch APR 20-647H
60510475 Switch to switch over from normal to emergency extension-retraction APR 20-646H
with TN873/19, standard from ser.no. 8-195 on:
60510482 Manual extension-retraction switch APEM-637 H/2
60510483 Switch to switch over from automatic to manual extension-retraction APEM 5636 MA
from ser. no. 8-219 on:
60510484 Manual extension-retraction switch MTG 206 S

60510813 Master switch Bosch 0341001001
60510812 Key for master switch Bosch 0341001001
60510478 Engine master switch 631 H-215A
60510370 Press-button SECME 07 17801 21 for starter and **from ser.no. 8-103 on** for test of second fuel pump
60510392 Circuit breaker Klixon 7277-2-10A for spindledrive Magnetic GST 2011
60510391 Circuit breaker Klixon 7277-2-15A for spindledrive Stross ELT 10
60510391 **From ser.no. 8-150 on** Circuit breaker Klixon 7277-2-4A
60510385 Circuit breaker ETA 2A
60510386 Circuit breaker ETA 3A
60510387 Circuit breaker ETA 4A
60510384 Circuit breaker ETA 5A **not applicable from ser.no. 8-150 on**
60510388 Circuit breaker ETA 10A
60510436 Fuse 535257 60 A for batteries
60510440 Fuse 250V 0.2A 5x20 m for fire warning light
60510419 **From serial no. 8-103 on**: Fuse 250V 2A 5x20 m for second fuel pump, **not applicable from ser.no. 8-219 on**
60510550 Proximity switch Insor INCT 1212
40871350 Proximity switch ready assembled with wiring and plug
60510796 Socket BSB 12 (in main bulkhead)
60510797 plug BSK12 for socket BSB 12





	Tag	Name
Gez.	12.1098	S. Hübner
Gepr.		
Norm.		

DG
Flugzeugbau GmbH
76646 Bruchsal 4
Im Schollengarten 20

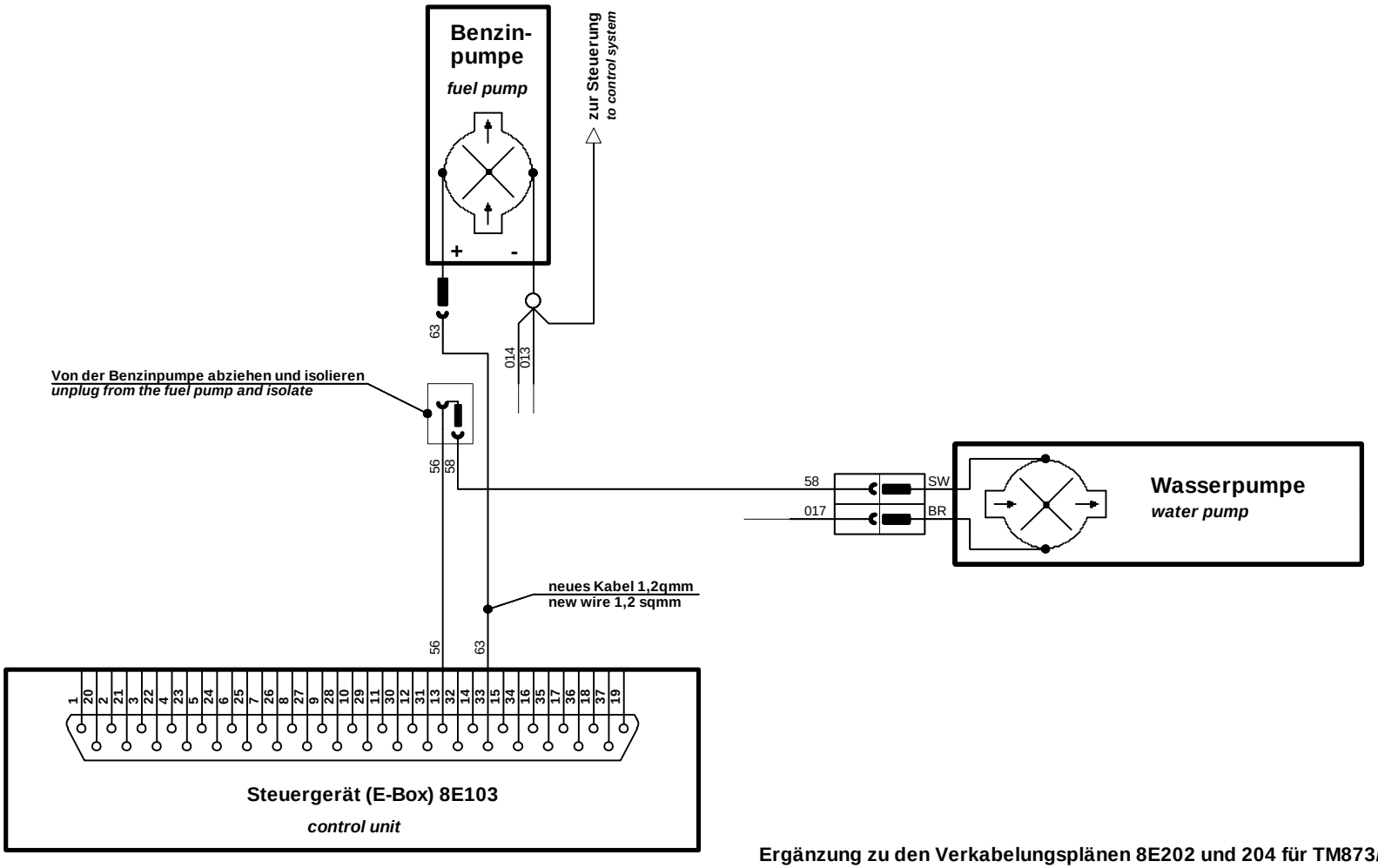
Maßstab 1:1

Maße ohne Toleranz-ang. nach:

installation sketch
wing fuel bags
with ventilation line

8 EP 35

Ausg.	Änderung	ÄM	Tag	Name
b	english text		Nov. 04	DWeiß
a	Skizze zu Position Detail C	/	08.01.98	Kühn



Ergänzung zu den Verkabelungsplänen 8E202 und 204 für TM873/26 Solo-Motor

Amendment to wiring plans 8E202 and 204 for TN873/26 Solo engine

Änderungen zur letzten Ausgabe	Datum	Name	Utz Schicke Kanalstr. 32 D-76356 Weingarten
	09.11.01	Utz Schicke	Schicke electronic

Zeichnungsnr.
8E219

Ausgabe	Blatt-Nr.	Datei
A	1 v. 1	8E219(BePu-Versorgung)_1.sch