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M A I N T E N A N C E M A N U A L

for the

M O T O R G L I D E R

DG-800B

Commercial designation from ser. no. 8-219 on: ***DG-808B***

Models: DG-800B (SOLO 2 625 01)

German Data Sheet No.: 873

_____

Factory Serial No.: _____

Year of Construction: _____

Registration No.: _____

Issued: February 1998

Approval of translation has been done by best knowledge and judgement.

In any case the original text in German language is authoritative.

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1.3 Rudder control

1.3.1 Rudder control circuit - see diagram 2

1.3.2 Rudder deflections and tolerances

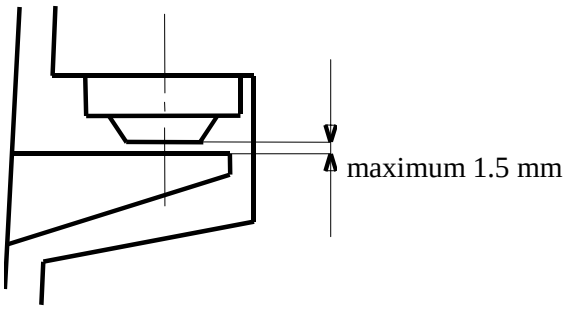
Up to serial no. 8-218: 165 +0, -5 mm (± 30°) (6.5 +0, -0.2 inch)
From serial no. 8-219 on: 155 +0, -5 mm (± 30°) (6.1 +0, -0.2 inch)
measured at 318 mm (12.52 inch) from the hinge axis.

1.3.3 Rudder stops

The rudder stops are located at the lower hinge pedestal and can be adjusted with an Allen key wrench.

1.3.4 Axial free Play

The maximum allowable free play at the upper hinge point is 1.5 mm (0.06 inch)



1.3.5 Sealing the rudder

The rudder is sealed on both sides with external and internal seals. This seals must not be removed. If damaged they should be replaced, see section 4.9.

1.12. Retraction - Extension Mechanism

1.12.1 **Layout** see diagram 10

1.12.2 **The retraction-extension mechanism** (spindle drive) consists of a 12 V electrically driven sealed trapezoid screw shaft. A tension gas-strut is installed parallel to the spindle drive to compensate the engine weight.

1.12.3 **Extension force of the gas-strut**

Time for extension appr. 11-13 seconds, time for retraction appr. 10-12 seconds. If the extension takes much longer (4 seconds) than retraction, the gas-strut must be replaced. Measure at room temperature, with full batteries and via the ignition switch.

1.12.4 **Adjusting the powerplant retaining cable**

Extend the engine via the ignition switch until the extension will be switched off by the position switch.

Up to ser. no. 8-243: It should be possible in this position to pull out the retaining cable approx. 25mm (1 in.) before it comes to its stop. If necessary adjust via the adjustment screw at the rear engine bay bulkhead. Secure the adjustment screw by fastening its lock nut.

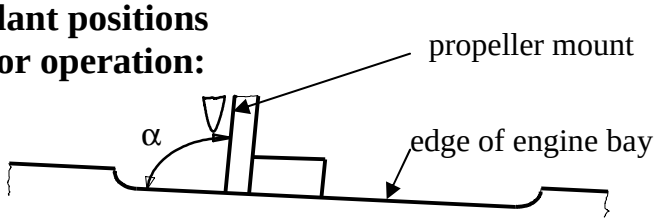
From ser. no. 8-244 on (with retaining cable shock absorber): It should be possible in this position to pull out the retaining cable approx. 15mm
(.6 in.) before it comes to its stop. If necessary adjust via the adjustment screw. Secure the adjustment screw by fastening its lock nut.

1.12.5**Position switches**

Position engine retracted: via a switch actuated by the propellermount
Position engine extended: via a switch actuated by the muffler frame

1.12.6 **Adjustment of the powerplant positions**

Position engine extended for operation:



Extend the engine via the ignition switch until the extension will be switched off by the position switch. The angle α must be 91°. If necessary, the angle has to be corrected by bending the metal lever of the limit switch. In this position the green control light “engine extended” must be on.

3.5 Servicing the Engine

Caution: If you don't operate the engine for periods longer than 2 months you must preserve your engine according to the instructions in the engine manual. The same applies for any overseas transportation.

3.5.1 25 hour inspection

The following checks and maintenance work should be done every 25 hours engine time. Items 1, 2, 3, 7, 8, 10, 13 and 25 should be executed at least 1 year after the last 25 hour inspection, preferably with the annual inspection. In your aircraft log you will find stickers on which you can enter the next maintenance dates. Fix these stickers in a visible place in the cockpit, preferably on the right side console. Checklists for this maintenance work are in the enclosures of this manual. Please complete the checklist when executing the inspection and file it in the aircraft log.

1. General visual inspection.

2. Change spark plugs.
   Check if the spark plug connectors have a tight fit on the spark plugs after you have exchanged the spark plugs. If not, the connector must be replaced.

3. Exchange the fuel filter. Filter types see sect. 8. Paper filters should under **no** circumstances be used. Assembly see diagram 11c.

4. Measure fuel flow (see sect. 1.13.3). Disconnect the hose at the T-junction behind the rear carburettor. Hold the hose into a measuring container. Switch on the electric fuel pump with the ignition switch. Determine the time for supplying 1 litre of fuel. For the measurement a minimum of 10 l of fuel should be in the fuselage tank. Note down the value, max. time is 90 seconds for 1 litre.

5. Remove the carburettor cover and membrane, remove the needle valve, flush the carburettor by switching on the fuel pump. The fuel must spout out as a powerful stream. If a large amount of fuel leaks out of the carburettor when you remove the membrane this is a sign that:

   a) a dirt particle prevents the needle valve from closing completely.
   b) the main nozzle is clogged (dirty), so that the engine can't receive the full amount of fuel. In this case you have to disassemble the main nozzle and to clean its chamber, see sect. 1.13.7 2a), b).
   c) Check the connection of the throttle cable for damage and wear.

6.a) Check the filter of the primer valve. The filter is installed in the hose connector below the primer valve. Loosen the hose clamps and take out the connector. 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 connector.

From ser. no. 8-155 on: In addition flow fuel in reverse direction through that outlet of the multiple-connector where the excess fuel line restriction is installed.

b) Check the function of the primer valve and nozzle (engine must be cold). Switch the primer switch in auto position. Remove the air intake filter.

Up to ser. no. 8-130: Disassemble the positive wire from the starter motor and insulate the wire.

From ser. no. 8-131 on: Press switch 45 (in the DEI) to the left and switch on the DEI, then switch on the ignition. Now the DEI must show **P** on the centre display and fuel must be injected via the nozzle into the intake manifold of the carburettor.

All serial no.'s: Test only for 2-3 seconds, otherwise you may flood the engine. Check the hose which connects the primer valve to the carburettor for any damage.

Leak test of the primer valve: with the ignition on (fuel pump running) fuel must not be injected.

7. Check all fuel lines for any wear, kinks, tight fit and leaks. Check especially the fuel lines in the engine compartment, switch on the ignition to run the fuel pump.
8. Check the intake airfilter of the carburettor for excessive dirt and wear, wash with pure petroleum spirit and blow compressed air in reverse direction through the filter. Spray the outside with oil for filters with cotton fabric, reinstall the filter. We recommend exchange of the filter 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. You 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.
With sticking piston rings the cylinders must be removed. Take out the piston rings and clean the grooves and the rings or replace the rings. Remove also any combustion deposits inside the pistons.
Caution: Necessary repair work including removal of combustion deposits must be accomplished at a certified repair station rated for such engine work.

13. Check the muffler for cracks and ensure mounting is secure. Check especially the cable which lifts the muffler during engine extension. Check the retaining cable for the muffler lifting cable incl. the rubber cord. Check the movable part at the front end of the muffler for cracks. Check the exhaust manifold (already removed) for cracks. Reinstall the exhaust manifold, therefore remove any remains of the gaskets, install new gaskets. Check the function of the gas-spring at the muffler frame. Therefore retract the engine until the muffler pops downwards. The gas-spring must press the muffler-frame securely to its lower stop. Check the length of the cable which lifts the muffler. To accomplish this extend the engine and press the muffler body in a downward direction at its front end with a force of approx. 5 daN (11 lbs.). If the cable is too long or if the spring in the cable has been permanently stretched, the muffler will interfere with the exhaust manifold.
Check the spring pressure at the coupling of exhaust manifold to muffler. To accomplish this, measure the distance between the brackets for the spring couplings at the muffler pipe and at the movable part of the muffler in disengaged and in operating position.
Up to ser.no. 8-194: Extend the powerplant to its operating position via the ignition switch. As soon as the extension stops, lift the red cover of the manual extension switch and switch off the ignition.
From ser. no. 8-195 on: Extend the engine via the manual switch to the fully extended position.
In operating position the distance should be approx. 1 mm (0.04 in.) smaller than when disengaged.
If the difference should be less than 0.5 mm (0.02 in.) you have to adjust to 1mm using the nut on the eyebolt. By this procedure you will pull the muffler forwards in its frame.
Note: With new manifold and/or new movable part the difference should be adjusted to 2 – 3 mm (0.04 – 0.12 in.) to allow breaking in of the parts.

14. Check all engine nuts and bolts with a torque wrench (see sect. 1.11.10).
15. Check the rubber engine mounts, especially for cracks. Therefore apply strong pressure to the propeller mount in forward, backward and sideways direction.
16. Check and grease the starter motor gear shaft (don't grease the starter motor gear) Check starter motor for tight mounting. There should be no excessive radial free play of the starter motor gear axle. With too much free play the starter must be exchanged.
17. Clean the starter ring gear and check for damage. Check if the starter ring gear was bent forwards by the starter motor. There should be approx. 1mm (.04 in.) clearance between starter ring gear and drive belt.
19. Remove the fairings which protect the drive belt. Check the drive belt for wear and tension (see sect. 1.11.5). If the drive belt shows signs of wear or if there are cracks/tears at the base of the belt teeth, the drive belt must be replaced. Check the 6 rollers which guide the drive belt for tight fit to their mounting brackets and for easy turning. If there is any significant friction in their bearings, the rollers have to be replaced.
20. Clean the spindle drive.
21. Check all the hinges on the engine compartment doors for proper fit and any cracks, tears etc. Check if hinge pins are secured properly.
21. Oil all hinge points of the powerplant
22. Check the time taken to extend the power plant. If it takes longer than described under sect.1.12.3 the gas strut has to be replaced.
23. Check the engine retaining cable for wear and kinks.
    Check thimble and bolt of the upper cable connection for wear.
    Check the adjustment of the retaining cable according to sect. 1.12.4. If necessary adjust the cable at the adjustment screw in the rear end of the engine bay.
24. Check the main bearings of the upper pulley for any free play.
25. Check the tension of the propeller bolts: remove the lockwire, loosen the propeller bolts and retorque them with a torque wrench, torque value see sect. 1.11.10. Secure again with lockwire.
26. Check the propeller blades for any damage.
27. Check all electric cables and connectors. Check the terminals especially of the starter positive and earth wire for cracks.
    Note: The critical spots may be covered by heat shrink tubing.

28. Check the whole electrical system wiring, ensure all equipment is secure and all connections are OK. Check proper functioning of all systems and fuses/circuit breakers.

29. Check the automatic fuel tank calibration: Fill the tank with an electric pump until the pressure switch switches off the pump (see AFM sect. 4.2.3.3a and b). Remove the tank filler cap and check if the tank is completely filled. If not, use a calibrated container to fill the tank up to the upper end of the GFRP pipe stub. If you can refill more than 2 litres, the pressure switch must be exchanged.

Ground test run:

Warning: Never run the engine without the wings assembled.

30. If needed adjust the idle RPM (see sect. 1.13.7).

31. Check the magnetos - at 3000 RPM, drop should not be more than 300 RPM.

32. Check max. engine RPM - 5800 RPM minimum.

33. Check EGT's (only with optional EGT probes) EGT should be adjusted according to the instructions see sect. 1.13.7, item 5.

34. **From serial no. 8-103 on**: With engine running at full power press the test button for 10 seconds to switch off the first fuel pump. The engine must run with the same speed with the fuel supplied by the second pump.

4.11 Mounting and tensioning of the drive belt

please refer to drawing 8M110 (enclosed in MM)

a) **Tensioning of the drive belt**

1. Tensioning and loosening of the drive belt is accomplished by turning the eccentric axis 8M115, which carries the upper drive belt pulley, against the propeller mount (carbonfibre tower).
2. Remove the engine retaining cable from fork 8M119.

Caution: Let cable retract slowly, otherwise the retraction bungee may jump from its pulley located inside the rear end of the fuselage.

3. Mark the actual position of axis 8M115 by marking the position of fork 8M119 at the propeller mount.

Caution: Turn the pulley into such a position that there is no risk that the actuators touch and damage the proximity switch when loosening the pulley.

4. Remove the 6 mounting bolts which fix the flange of axis 8M115 to the propeller mount (5 x bolt with hexagonal head, 1 x countersunk screw).
5. Turn the assembly applying a 22 mm open end spanner at the fork 8M119 until the next mounting hole in the flange of axis 8M115 appears. Therefore press the pulley in upward direction at its front end. Rotation in clockwise direction increases the belt tension (view from the back, in flight direction).
6. Continue with f).

b) **Indication for drive belt tension**

If the belt with axis 8M115 screwed into place is not quite tensioned, the flange of the axis must be rotated up to the next but one mounting hole (see a) 5.) to tension the belt.
After assembling of the flange measure the drive belt tension according to section g) and adjust if necessary.

c) **Exchanging the drive belt**

In addition to a):

1. Remove the propeller
2. Remove the front retaining rings of upper and lower drive belt pulleys.
3. Remove the carbonfibre fairings (drive belt covers) from the propeller mount.
4. Disassemble gas-strut and spindle drive from the propeller mount.
   Caution: Regard the instructions in sect. 4.13.
5. When reassembling mount the axis 8M115 2 mounting holes prior to the marked position. Fix the axis with min. 2 mounting bolts.

6. Check and if necessary correct the drive belt tensioning see b).

d) **Initial setting of eccentric axis 8M115**

If the marking was lost or if a new axis is to be installed, the eccentric must be positioned as follows:
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.

Caution: After installation of a new drive belt check the belt tension again after approx. 30 minutes engine time, readjust if necessary.

4.12 Replacing the bearings of the upper drive belt pulley

see drawing 8M110 (enclosed to this manual)

a) **Removing the bearings**

1. Remove the propeller.
2. Remove the proximity switch. Its best to remove the switch together with its mounting plate 8M138. Mark the position prior to removal.
3. Remove the drive belt see sect. 4.11.
4. Remove the sealing cap 8M118/1.
5. Bend up the securing washer 20 DIN 462.
6. Screw off the nuts KM4 one after the other.
   Note: left hand thread.
   Use one of the 2 specially bent hook spanners according to drawing W51 (encl. with this manual). Remove the antirotation securing washer.
7. Now you can pull off the complete pulley 8M111 from the shaft 8M115.
8 Take the inner ring and the rollers of the front bearing out of the pulley.
9. To remove the outer rings of both bearings from the pulley you have to produce 2 pieces of round material each 100 mm (4 in.) long and with 47 mm (1.85 in.) and with 53 mm (2.09 in.) diameter.
10. Press out the outer rings together with the Nilos rings carefully using a press or a hammer.
11. Pull off the inner ring of the rear bearing together with part 8M117/1 from shaft 8M115. Use a suitable puller assy..

b) **Installation of the new bearings**

1. To press the outer rings of both bearings into the pulley you have to produce 2 pieces of round material each 30 mm (1.6 in.) long and with 51 mm (2 in.) and with 57 mm (2.24 in.) diameter.
2. Press in new outer ring together with new Nilos rings.
3. To press the inner ring of the rear bearing to the shaft you have to produce a piece of tube with 32 mm (1.26 in.) inside diameter and 90 mm (3.54 in.) long.
4. Press the inner ring together with part 8M117/1 to the shaft.
5. Fill the space for both bearings with grease.
6. Apply grease to the inner ring of the bearing and place the rollers onto the ring. Apply enough grease to completely fill the bearing.
7. Place the pulley onto the shaft with care. It´s best if the powerplant is retracted so that the shaft is in vertical direction.
8. Put the rollers and the inner ring of the front bearing into place. Put on the antirotation securing washer and the first one of the KM4 nuts. Tighten the nut with the other hook spanner see a) 6. until the pulley starts to rotate a little stiffer than with a loose nut. Put on a new securing washer 20 DIN 462. Screw on the second nut. Secure this nut with Loctite 72B. Fix the first nut with a hook spanner so that the adjustment doesn't change and tighten the second nut as far as possible. Check again the rotation of the pulley. No free play is allowable.
9. Press the sheet metal securing washer into the grooves of the rear nut.
10. Fill the sealing cap with grease and put it into place.
11. Install the drive belt and adjust it according to sect. 4.11.
12. Reinstall the proximity switch and check its adjustment, see also sect. 4.11.
13. Reinstall the propeller and secure with lockwire according to sect. 4.18.

Necessary material

1. roller bearing	32205B
2. "	320/32X
3. Nilos ring	32205 JV
4. " "	320/32 JV
5. securing washer	20 DIN 462
6. grease for bearings	SKF LGMT3

Caution: Don't use another type of grease

4.16 cont.

4.16.2 **Removal of the engine from the propeller mount**

General notes:

Before removing the engine from the propeller mount screw four long bolts M 10 resp. M12 into the 4 threads at the lower end of the engine block. This facilitates handling on the workbench because the powerplant can be placed on the screws.

Necessary tools

Socket wrenches: 6, 7, 17, 19 mm
Open end spanner 30 mm
Wrench for spark plugs 21 mm (13/16 in.)
Allen key wrenches: 3, 4, 5, 6 mm
1 wire cutter
1 hot-air gun
1 small screwdriver
1 flange bolt (incl. in SOLO tool kit)
1 puller assembly W40 (drawing encl. to this manual) with
1 bolt M 12 x 90 DIN 933-8.8 and
4 bolts M5 x 20 DIN 912-10.9
1 sharp knife
1 roll insulating tape
1 bucket

1. Remove the drive belt fairings from the propeller mount by unscrewing the 16 bolts with a 3 mm Allen key wrench.

2. Remove the drive belt according to section 4.11a) and c).

3. Pull off the lower drive belt pulley including starter ring gear from the crankshaft:
   a) Remove the front retaining ring from the pulley.
   b) First heat the screw at the crankshaft with the hot-air gun, then remove it with a 19mm socket wrench.
   c) Put the factory supplied flange bolt in the crankshaft thread.
   d) Install the puller assy W40 with 4 bolts M5x20 DIN 912-10.9 to the drive belt pulley. Then screw the bolt M12x90 DIN 933-8.8 into the puller and pull off the pulley from the crankshaft. Secure the puller with a 30 mm open end spanner against rotation. If the pulley resists coming off you should hit the head of the bolt M12x90 with a hammer to loosen the pulley.

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.

Reinstallation of the starter ring gear

1. When reinstalling the starter ring gear adjust the propeller position versus the engine compression point according to sect. 1.11.4 via the drive belt.
2. Install the screw at the crankshaft without using Loctite and tighten with a torque of 100Nm (73 ft lb).

3. Tighten the drive belt according to sect. 4.11e).
4. Reinstall the proximity switch and check its adjustment according to sect. 1.14.15 and correct if necessary.
5. Reconnect the spindle drive.
6. Rig the wings to the fuselage and secure the glider. Start the engine, apply full throttle for a short while (max. 30 seconds) and stop the engine again.
7. Retorque the screw at the crankshaft with 100Nm, to accomplish this the spindle drive must be disconnected again.
8. Start the engine, apply full throttle for a short while (max. 30 seconds) and stop the engine again, retorque again. Repeat this procedure until the screw can't be turned any more with the same torque. Normally it is necessary to repeat the procedure 4 times. After the last retorque remove the screw, apply Loctite 243 and torque again with 100 Nm.
9. Install a new selflocking nut M10DIN985-8zn to the spindle drive bolt.
   Check if the propeller position versus the engine compression point is still in the limits. If necessary correct according to sect. 4.11 f).

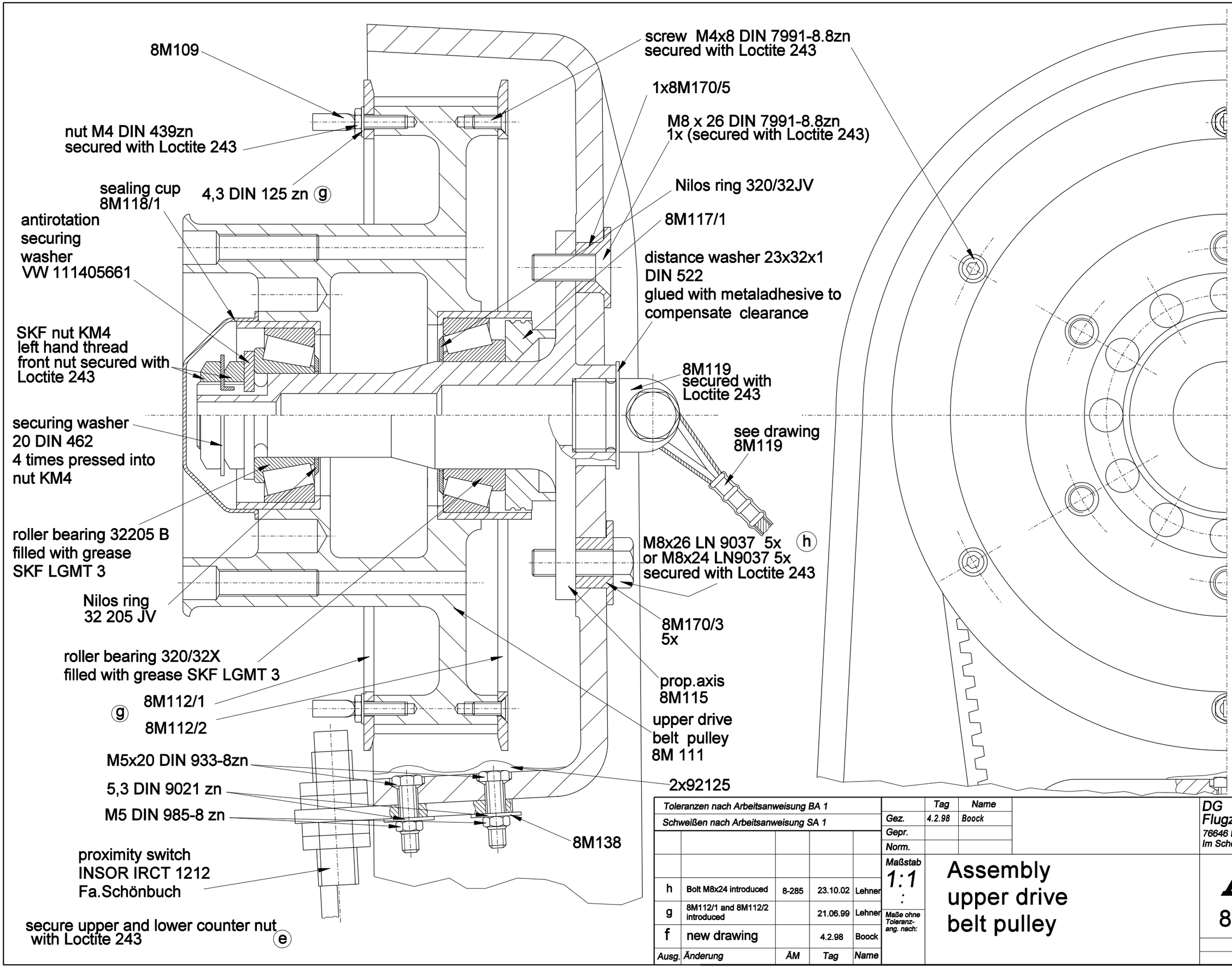
4.17 Removal and assembly of the engine doors

It is not necessary to cut the rubber cords for removal and assembly of the engine doors.

a) Removal of the left engine door, e.g. for working at the carburettor: Extend the engine. Remove the selflocking nut at the mounting point of the helical spring of the left engine door at the engine bay wall. Unhook the spring. Pull the spring pins out of the hinge pins. Remove the hinge pins. Retract the engine until just before the engine doors close. Move the left engine door far enough backwards, so that you can lift the rear rubber cord on top of the propeller. Lift the engine door and lay it down on the right engine door.

b) Removal of both engine doors:
   Disassemble springs and hinge pins of both engine doors. Retract the engine ¾ of it´s travel and lift both doors away.

c) Assembly is the reverse of disassembly. Use new selflocking nuts.



Toleranzen nach Arbeitsanweisung BA 1				
Schweißen nach Arbeitsanweisung SA 1				
h	Bolt M8x24 introduced	8-285	23.10.02	Lehner
g	8M112/1 and 8M112/2 introduced		21.06.99	Lehner
f	new drawing		4.2.98	Boock
Ausg.	Änderung	ÄM	Tag	Name

	Tag	Name
Gez.	4.2.98	Boock
Gepr.		
Norm.		

Maßstab 1:1 :

Maße ohne Toleranz-ang. nach:

Assembly upper drive belt pulley

DG Flugzeugbau GmbH
76646 Bruchsal 4
Im Schollengarten 20

8M110