0 General

0.1 Amendments

No.	Page	Description	Date
0.1	all	New standardized format of the initial Maintenance Manual of Variant DG-500M	December 2009
0.2	0.10, 1.15, 1.22, 1.27, 2.1, 3.9, 4.2, 4.15, 5.1, 6.2, 8.1-8.3	Miscellaneous changes to the contents of the latest amendment of the initial maintenance manual	December 2009
1	0.3, 0.6, 0.9, add diagram 7a	Wheel brake TN500/03	July 2011
2	0.3, 0.4, 0.6, 0.9, 1.10, 2.1, 2.3, 2.6, 2.8,, 2.9, 4.5, 4.6, file working instruction No. 1 for TN348/20 issue 3 at the end of the MM	Headrest securing ropes in the rear cockpit, manual amendments TN500/05	September 2011
3	0.1, 0.3, 0.4, 0.6, 0.10, 0.11, 3.4, 3.6, 3.9, Diagramm 14	Fuel hoses TN500/10	Oktober 2016
4	0.1, 0.6, 0.10, diagram 14	Oil return line, TN500/10 Rev. 1	May 2017
5	0.1, 0.3-0.5, 0.10, 0.11, 1.4, 1.7, 1.11, 1.15, 2.1, 2.3-2.6, 3.5, 3.6, 3.9, 4.19, 8.1, 8.3	manual revision, TN500/11	July 2017

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0.2 List of effective pages

Section	page	issued	replaced /	replaced /	replaced /
0	0.0	December 09			
	0.1	See manual amendments			
	0.2	See manual amendments			
	0.3	See manual amendments			
	0.4	See manual amendments			
	0.5	See manual amendments			
	0.6	See manual amendments			
	0.7	December 09			
	0.8	"	July 2017		
	0.9	"	July 11	September 11	
	0.10	"	October 2016	July 2017	
	0.11	"	October 2016	July 2017	
	1.1	December 09			
	1.2	"			
	1.3	"			
	1.4	"	July 2017		
	1.5	"			
	1.6	"			
	1.7	"	July 2017		
	1.8	"			
	1.9	"			
	1.10.	"	September 11		
	1.11	"	July 2017		
	1.12	"			
	1.13	"			
	1.14	"			
	1.15	"	July 2017		
	1.16	"			
	1.17	"			
	1.18	"			
	1.19	"			
	1.20	"			
	1.21	"			
	1.22	"			
	1.23	"			
	1.24	"			
	1.25	"			
	1.26	"			
	1.27	"			
	1.28	"			

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List of effective pages (cont.)

Section	page	issued	replaced /	replaced /	replaced /
	1.29	December 09			
	1.30	"			
2	2.1	December 09	September 11	July 2017	
	2.2	"			
	2.3	"	September 11	July 2017	
	2.4	"	July 2017		
	2.5	"	July 2017		
	2.6	"	September 11	July 2017	
	2.7	"			
	2.8	"	September 11		
	2.9	"	September 11		
	2.10	"			
3	3.1	December 09			
	3.2	"			
	3.3	"			
	3.4	"	October 2016		
	3.5	"	July 2017		
	3.6	"	October 2016	July 2017	
	3.7	"			
	3.8	"	July 2017		
	3.9	"	October 2016	July 2017	
4	4.1	December 09			
	4.2	"			
	4.3	"			
	4.4	"			
	4.5	"	September 11		
	4.6	"	September 11		
	4.7	"			
	4.8	"			
	4.9	"			
	4.10	"			
	4.11	"			
	4.12	"			
	4.13	"			
	4.14	"			
	4.15	"			
	4.16	"			
	4.17	"			

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List of effective pages (cont.)

Section	page	issued	replaced /	replaced /	replaced /
	4.18	December 09			
	4.19	"	July 2017		
	4.20	"			
	4.21	"			
	4.22	"			
	4.23	"			
	4.24	"			
	4.25	"			
	4.26	"			
	4.27	"			
	4.28	"			
	4.29	"			
	4.30	"			
	4.31	"			
	4.32				
	4.33				
	4.34				
5	5.1	December 09			
	5.2	"			
6	6.1	December 09			
	6.2	"			
	6.3	"			
7	7.1	December 09			
8	8.1	December 09	July 2017		
	8.2	"			
	8.3	"	July 2017		

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Instructions for continued airworthiness

0.4 Airworthiness limitations

0.4.1 Repairs:

Repair or replace damaged parts prior to next flight. Follow the instructions of the DG-500M repair manual for repairs of the airframe. Repairs outside the scope of DG-500M repair manual and major repairs must be accomplished at an approved repair station or by an approved mechanic rated for composite aircraft structure work in accordance with DG repair methods.

Use only genuine spare parts.

For all aircraft under EASA regulations the following applies: According to part 21, subpart M to accomplish major repairs an approved repair instruction is required, see also TN DG-G-01 “Approved repair methods according to EU Commission Regulation 1702/2003 part 21, subpart M”

0.4.2 Life time of the airframe

The maximum allowable operating time for variant DG-500M is 12000 flight hours. Therefore inspection according to section 2.4 of this manual has to be executed at 3000 h, 6000 h, 9000 h and every 1000 hours following thereafter.

0.4.3 Life time of equipment and components

Use only genuine spare parts. For part. No.’s of all parts please refer to section 8.

a) The **fabric straps of the safety harness** have to be exchanged according to the instructions of the respective manufacturer. If no limitations are given, exchange after 12 years.

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

c) The following **parts of the power plant** have to be exchanged after 300 hours engine time
   1. all bolts and nuts of the power plant
   2. the drive belt
   3. all relays (starter, extension-retraction)
   4. the propeller bearings

d) The **flexible fuel lines** including the plugged piece of hose at the pneumatic fuel pump 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.

Note: The oil return line from the diaphragm fuel pump to the fuel tank Iif installed) has no life time limitation.

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e) The **coolant hoses** have to be exchanged after 6 years8.

Note: The **coolant** (type see section 1.11.2) has to be exchanged after 6 years.

f) The **spark plugs** have a life time of 25 engine hours.

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

Note: The **brake fluid of the wheel brake** has to be exchanged after 4 years (types see section1.6.1.4).

Note: 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.

0.4.4 Service time, maintenance documents of equipment and components

Follow the instructions of the respective manufacturer.

a) Operating Manual for Tow Releases
Series: E 85 Nose Tow Release
latest approved version

Operating Manual for Safety Tow Releases
Series: Europa G 88 Safety Tow Release
latest approved version

b) Safety harness: instructions of the manufacturer latest approved version. Approved types see section 6.3.

c) Minimum instrumentation: instructions of the manufacturer.
Approved types see section 6.1, 6.2 and 6.4.

d) Engine: Manual for ROTAX engine type 535 C latest approved version

e) Propeller: MT-Propeller Operation and installation manual No. E-112 latest approved version

0.4.5 Power plant trouble shooting

Please find a checklist in section 4.22

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1.3 Rudder control

1.3.1 Rudder control circuit - see diagram 2

1.3.2 Rudder deflections and tolerances

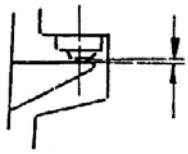
217-5 mm (± 30°) (8.54 - .2 inch) measured at 420 mm (16.5 inch) from the hinge axis.

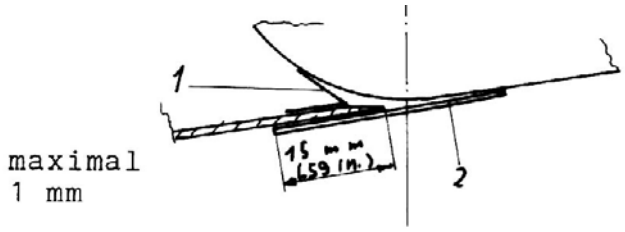
1.3.3 Rudder stops

The rudder stops are located at the lower hinge of the rudder.

1.3.4 Axial free play

The maximum allowable free play at the upper hinge point is 1 mm (0.04 inch)





axial free play sealing the rudder

1.3.5 Sealing the rudder

The rudder is sealed on both sides. Inside the fin with a V sealing tape (3 M Scotch Flexodicht Band 2743 white) which is attached at the fin trailing edge. If damaged it should be replaced and sprayed with Teflon spray. On the outside a combi sealing (flexible sealing with turbulator zig-zag dents at its leading edge) is installed. Prior to installation of this sealing clean the glue area of the fin with Acetone.

Caution: Acetone may damage competition no's. or the colour scheme.

Warning: These sealings are not to be removed. If damaged or if the flexible sealings does not touch the rudder any more, the sealing have to be exchanged. Use only original material. These materials should be purchased from DG Flugzeugbau.

item	part.-no.	amount	
1	70000295	2x1.5 m(59in.)	V sealing tape
2	30003130	2x1.48m(58in.)	combi sealing 30/15

1.3.6 Retaining spring for the pedal adjustment handle

A rubber cord with 2 mm (0.08 in.) diameter which pulls the pedal adjustment cable tight is installed in the console below the instrument panel. If this rubber cord is defective the handle of the pedal adjustment cable won't be pulled to the front so that it may hook into the trim release lever at the control stick with pedals in a rear position.

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then:
1. Adjust the control stick to neutral.
2. Adjust the wing flap handle to 0° flap setting.
3. Adjust wing flaps and ailerons to zero.

Adjustment of the ailerons
Deflect aileron downwards. Then screw off the aileron control surface horn 5St53/2 (at the wing parting) by use of a 10 mm socket wrench.

Then loosen the counter nut at the rod end with a 10 mm open end wrench.
Adjustment is made by rotating the complete drive.

Note: Secure the bolts again with a small amount of Loctite 243 (672) resp. Loctite 243.

Adjustment of the wing flaps
Adjust at the rod ends of the pushrods 5St56 which run from the mixer shaft 5 St 60 to the wing flaps operating shaft 5St54.
4. Adjust the aileron stops. (See section 1.4.3)
5. Check the flap deflections and adjust the stops if necessary. (See section 1.4.3)

1.4.6 Pilot force reducing rubber cord

The rubber cord in the wing flap control system reduces the pilot forces when moving the flap into the positive positions. The cord is located on the left hand side behind the main bulkhead below the baggage compartment floor. The cord runs from a fork at the main bulkhead around a pulley at the rear main bulkhead to the spring at pushrod 5St74. The length of the rubber cord when loose should be 700 mm (27.5 in.) If the cord is longer or worn it must be replaced. It must be replaced at least every 6 years.

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1.7 Tow hooks

1.7.1 Tow release circuit see diagram 5

1.7.2 Adjustment

Check if both tow releases open fully. Adjustment at the bell crank 5 R 32 in the rear cockpit.

1.7.3 Damage

The ring muzzle of the C.G. hook should not be bent or ground down and move easily. If the muzzle is damaged, the tow release has to be exchanged and repaired by the manufacturer (Tost).

1.7.4 Removing the tow hooks

1.7.4.1 C.G. tow hook

Move the tow hook some mm in an upward direction (use a piece of hard wood and a hammer). Then move it to the front and rotate it so far that the ring muzzle of the hook is located between the stands for the mounting bolts. Then pull the hook out upwards.

1.7.4.2 Nose tow hook

Remove the tow hook with the fittings 5R3/2 and 3.

1.7.5 Rubber cords

To keep the actuating cables tight there is a rubber cord at both of the cables in front of the bell crank 5R32. Replace the rubber cords if worn.

1.7.6 Operating and maintenance instructions

For further information refer to the operating and maintenance instructions for the release mechanism. (See section 0.4 of this maintenance manual)

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1.11 Power plant

1.11.1 Arrangement see diagrams 11 and 12

You will find a part list with the designations and the reference numbers for the power plant parts at the end of this manual.

1.11.2 Engine

Rotax 535 C with electronic dual ignition and water-cooling.
Filling and bleeding of the cooling system see section 4.15.

Coolant: Commercially available anti-freeze for car engines (recommended: BASF Glysantin G48 Protect Plus concentrate) and distilled water.

Mixing ratio 1:2 (up to approx. –20°C, -4°F),
for high altitude flying to mixing ratio 1:1 (up to approx. –40°C, -40°F)
Min. liquid quantity in system 2.2 L

Oil quantity in rotary valve drive:
Same 2-stroke motor oil as used for the fuel. Min. 280 c.c. in the system.
Exchange the oil at each 25 hour inspection.

For further information please refer to the "Manual for ROTAX engine type 535 C".

The exhaust muffler is made especially for the DG-500 M by the Rotax factory. The muffler is suspended with 3 Rotax spring couplings.

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.

1.11.3 Spark plugs

Electrode gap 0.4 - 0.6 mm (0.016 - 0.024 in.) types see part list section 8.

1.11.4 Starter Motor

The starter motor should be mounted such that its drive gear meshes neatly with the motor ring-gear. The max. play between the teeth should not exceed 0.3 mm (0.012 in.).

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2 Inspections

2.1 Daily inspection

see flight manual DG-500M.

2.2 Regular inspections

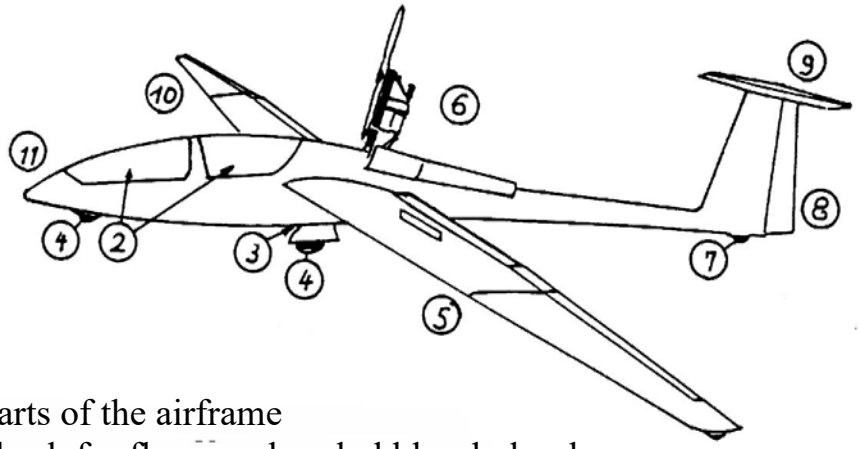
A Annual inspection (and 100hr inspection – only for USA)

- Execute all items of the daily inspection (see flight manual section 4.3 or inspection program on the following pages).
  Check especially the headrest securing ropes in the rear cockpit according to "Working instruction No. 1 for TN348/20 issue 3" (attached to this manual) for correct assembly and for wear.
- Check the rudder cables for wear especially around the S tubes on the rudder pedals. Worn rudder cables should be replaced (see section 4.2.
- Check the sealings of the rudder (see section 1.3.5.
- Check all control circuits: Inspect all bolted connections and locking devices ie. locknuts, split pins etc.
- Check all control circuits for adequate greasing and rust prevention. (see section 3.3).
- Check the control surface deflections (see section 1.2 - 1.4).
- Check the free play in all control circuits (see section 1.2 - 1.6) and the fore and aft play of the wings (see section 1.10).
- Check the canopy emergency release (see flight manual section 7.15).
- Check the tension of the lines of the waterbag attachment (see section 4.1.).
- Check the rubber cords in the control system (see section 1.2.6, 1.4.6 and 1.7.5).
- Check the thickness of the wheel brake linings and the thickness of the wheel brake disc (see section 1.6.1.4).
- Check if the wheel brake fluid has been exchanged (see section 1.6.1.4).
- Check if the powerplant has been serviced according to section 3.5.1
- Check the complete power plant.
- Check the friction brake of the throttle control (see section 1.11.8).
- **Propeller**
  You have to dismount the propeller for inspection especially for cracks at the hub boss. After reassembling the propeller you should check the blade track see section 3.5 of the propeller manual. After the first flight after reassembling the propeller, you have to check the torque of the propeller bolts again see section 3.5.1 item 33 of this manual.
- **Tow hook**
  The operating and maintenance instructions for the release mechanisms, see section 0.4 of this maintenance manual have to be followed.
- **All-up weight and centre of gravity** These should be checked at least every 4 years during the yearly inspection.

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b) Inspection after rigging

Walk around the aircraft



1. All parts of the airframe
   a) check for flaws such as bubbles, holes, bumps and cracks in the surface
   b) check leading -and trailing edges of the wings and control surfaces for cracks
2. Cockpit area
   a) check the canopy locking mechanism
   b) check the canopy emergency release see section 7.15 flight manual
   c) check the main pin securing
      Check especially the headrest securing ropes in the rear cockpit according to “Working instruction No. 1 for TN348/20 issue 3” (attached to this manual) for correct assembly and for wear.
   d) check all controls for wear and function, incl. positive control check, check if the handle of the pedal adjustment cable will be pulled to the front so that it can’t hook into the trim release lever at the control stick, even with pedals in a rear position;
   e) check the tow release system for wear and function incl. cable release check
   f) check for foreign objects
   g) check the instrumentation and radio for wear and function
   h) check the brake fluid level
   i) check the fuel filter for dirt and sludge
   j) check the engine controls
   k) check all fuses including the battery fuse
   l) check the extension-retraction mechanism by operating it in both directions. The extension time should not exceed 13 seconds!

   Note: If the mechanism can't be operated with the ignition switch or with the manual switch, check the circuit breaker.
   m) extend the engine with the manual switch
3. C.G. Tow hook
   a) check the ring muzzle of the C.G. hook for wear and function
   b) check for cleanliness and corrosion

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4. Main landing gear and nose wheel
   a) check the struts, the gear box, the gear doors and the tyre for wear; dirt in the struts can hinder the landing gear from locking over center the next time!
   b) check the tyre pressure
      main wheel: 3.0 bar - 44 psi
      nose wheel: 2.5 bar - 36 psi
   c) check wheel brake and cable for wear and function
5. Left wing
   a) check locking of the outboard wing
   b) check the aileron for excessive free play
   c) check the wing flaps for excessive free play
   d) check airbrake- and box and control rod for wear and free play. It must be possible to retract the airbrake, even if it is pressed in backward direction. If there is any water in the airbrake box this has to be removed.
   e) check the locking of the rear wing attachment pin
6. Power plant checks
   Extend the powerplant via the manual switch (ignition off).
   a) all screwed connections and their securing
   b) function of throttle and propellerbrake
   c) ignition system incl. wires and the spark plug connectors for tight fit
   d) toothed belt for wear and correct tension, sudden loss of tension indicates damage of the engine assembly see item h)
   e) engine restraining cables and their connections in the engine compartment
   f) fuel lines, electrical wires, bowden cables and structural parts for wear and kinks
   g) exhaust muffler, intake muffler, engine mount and accessories for tight fit and any cracking, intake opening screens of intake muffler for dirt.
   h) apply strong forward pressure to the propeller mount, to check if the bolted connection between the propeller mount and the engine block are loose or damaged.
      Check the mounting points of the two GFRP struts for free play. No free play is allowed.
   i) check cooling liquid level, refill if necessary
      Warning: The hose clamp which secures the cap of the cooling liquid reservoir must be mounted so that the screwed joint is in the front to prevent the engine retaining cables catching the screwed joint.
   j) check the oil level for rotary valve drive
   k) check the cooling system and the oiling system for leaks,
      check the coolant hoses visually for leaks and any defects of the outer surface.
   l) visual check of the propeller
   m) turn the propeller 1 revolution by hand listen for abnormal sounds which may indicate engine damage

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n) fuel level
o) drain condensed water from the fuel tank.
The drainer is located in the main wheel box on the rear wall on the right hand side.

7. Tail wheel
   a) check for wear, free play and excessive dirt in the wheel box. Remove excessive dirt prior to take off!
   b) check tyre pressure: 4 bar -58 psi
8. Rear end of the fuselage
   a) check the lower rudder hinge and the connection of the rudder cables for wear, free play and correct securing
   b) check the bulkhead and fin trailing edge shear web for cracks and delamination
9. Fin - horizontal tail
   a) check the upper rudder hinge for wear and free play
   b) check the elevator for free play and correct control hook up, look from the rear into the gap at the right hand side of the rudder
   c) check the securing of the stabilizer
   d) check the horizontal tail for free play
   e) check the TE or Multiprobe for correct insertion
10. Right wing
    see detail 5.
11. Fuselage nose
    a) check the ports for the static pressure and the pitot pressure for cleanliness.
    b) if the sailplane was parked in rain, you have to empty the static ports by sucking out the water at the ports.
    c) check the nose hook for cleanliness and corrosion

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B) Special inspections

Tow hook

After a wheel-up landing, the C.G. tow hook is to be cleaned. Check tow hook and tow hook bulkheads carefully for any damage.

C.G. weighing: After all work which may influence the C.G.

Propeller

In addition to the instructions given in the propeller manual you have to check the torque of the propeller bolts if you operate your aircraft in varying temperature and humidity conditions. Especially high ambient temperature and low humidity are likely to cause shrinkage of the wooden propeller and thus loss of torque (pre-tension) which may lead to failure of the propeller bolts. To check see section 3.5.1 item 33 of this manual.

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5. Measure the fuel flow (see section 1.13.3).
   Therefore disconnect the hose which runs from the carburettor to the next T-junction at this T-junction. Install a piece of fuel line (ca. 5 cm, 2 in. long) onto the T-junction and hold into a measuring container. Switch on the electric fuel pump with the ignition switch. Determine the time for supplying 1 litre of fuel. Therefore a minimum of 10 l of fuel should be in the fuselage tank. Note down the value. Max. time is 72 seconds for 1 litre.

6. Install another T-junction with ca. 2 m (6 ft) fuel hose and a manometer to the piece of fuel line (see above) and connect the T-junction to the supply line to the carburettor. The manometer installation is needed for the engine test run see item 40.

7. 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 complete closing of the needle valve

   b) the main nozzle is clogged (dirty), so that the engine can't take in the full amount of fuel. In this case you have to disassemble the main nozzle and to clean its chamber see 1.13.7 2a), b).

8. Remove the air intake silencer and clean it, especially the meshes over the intake openings.

8.a With the air intake silencer still removed check visually the screws of the throttle valve and of the choke valve (if existent) for tight fit.

9. Check the function of the primer valve and nozzle (engine must be cold). Therefore disassemble the positive wire from the starter motor and insulate the wire. Switch the primer switch (front instrument panel) in on position. Switch on DEI and ignition. Press the starter button. The control light for the Primer must shine and fuel must be injected via the nozzle in the intake manifold of the carburettor.

   Test only for 2-3 seconds, otherwise you may flood the engine.
   Switch off the ignition.
   Reassemble the intake silencer.

10. Check the rotary valve drive for wear see engine manual section 8.10 and section 4.16 of this manual.

11. Change gear oil of rotary valve drive. Use same Super two stroke oil as you use for the fuel.
    Note: The items 10 and 11 must be executed only every 50 hours engine time.

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12. Check cooling system for leaks, refill cooling water if necessary, check antifreeze. Check the coolant hoses Check the radiator and its mounting.

Caution: The hose clamp which secures the cap of the cooling liquid reservoir must be mounted so that the screwed joint is in the front to prevent the engine retaining cables catching the screwed joint.

13. Check the cylinders and pistons via the exhaust ports for seizing marks, rings sticking and for carbon remains. Illuminate the combustion chamber and check for combustion deposits. Use torch and mirror for these checks. If seizing marks can be detected the engine shall not be used any more.
Excessive combustion deposits have to be removed. If rings are sticking, the cylinders must be removed. Remove and clean rings and grooves. Exchange rings if necessary. Check and remove combustion deposits also from the inner sides of the pistons.

Caution: Necessary repair work must be accomplished at an approved repair station rated for such engine work.

14. 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 has to be exchanged.
15. Clean the starter ring gear and check for cracks. If you find any cracks the ring gear must be exchanged. see section 4.17.
16. Check all engine bolts with a torque wrench see 1.11.10.
Check especially the torque of the cylinder head nuts.
17. Clean engine and radiator
18. Check the exhaust pipe and muffler and their mounting for cracks.
19. Check all fuel lines including the plugged piece of hose at the pneumatic fuel pump 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.
20. Oil all cables and associated levers and check for proper functioning. Replace cables when worn.
21. Check the drive belt for wear and correct tension see 1.11.6. If the drive belt shows signs of wear or if there are cracks/tears at the base of the belt teeth, the drive belt has to be replaced.

3.5.2 Every 3 years

Section no more effective.

3.5.3 After 300 engine hours

The power plant must undergo a major overhaul. To accomplish this remove the power plant, disassemble the power plant, ship the engine to an approved repair station approved for Rotax engine overhaul.

Rotax SB-535-009 R1: The major overhaul will not be required if you service the engine according tot he maintenance plan provided with this SB.

Note: Instead oft he service work described in Rotax SB-535-009 R1 other service work may be defined in the maintenance program of your motorglider.

Further work which needs to be done after 300 engine hours:

1. Replace all the nuts and bolts on the engine
2. Replace the drive belt
3. Replace all the relays
4. Replace the propeller bearings

3.5.4 After 6 years

1. The flexible fuel lines incl. the plugged piece of hose at the pneumatic fuel pump have to be exchanged after 6 years.
   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.

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

2. The hoses of the engine cooling system and the coolant have to be exchanged after 6 years.

3.5.5 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 section 1.13.2)
2. If the engine should run rough between idle and full throttle even after all the points in section 3.5.1 are OK, then it is possible that the membrane in the carburettor is hardened. It should then be replaced.

3.6 Hydraulic wheel brake system

The brake fluid must be exchanged at least every 4 years (see section 1.6.1.4)

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4.15 Filling and bleeding the cooling system of the Rotax 535 C engine

Numbering see sketch on next page

Filling the cooling system

a) The engine must be cold and fully extended.

b) Check the cooling system hoses, hose clamps and bleeding screws for tight fit.

c) Remove the Ty rap which holds the tank for the rotary valve oil to get access to the bleeding screw 11 located behind this tank.

d) Remove the bleeding screw 11.

e) Pour the coolant (water with antifreeze) into the expansion tank 8 until the liquid comes out of the bleeding hole 11. Rotate the propeller during this procedure. Type of coolant see section 1.11.2

f) Screw in the bleeding screw 11 again. Use a new copper sealing ring if necessary.

g) Fill the expansion tank to 2/3 of its volume and close it with its screw cap.

h) Fix the tank for the rotary valve oil again with a Ty rap.

i) Run the engine until hot. Stop the engine and remove the excess air from the cooling system by pressing down the valve in the screw cap of the expansion tank. **Caution: hot!**

Bleeding the cooling system

For bleeding execute items c - i.

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8 Partlist

In this list you will find only parts of the power plant and the electrical system. Please find the part no's of the controlsystem parts and of the metal fittings of the power plant in the following diagrams.

8.1 Parts for the power plant

a) necessary for the 25 hours inspection

	Spark plugs:	electrode gap 0.4-0.6 mm
With Bosch electronic boxes:		
60510811	NGK B 8 ES or	
60510810	Bosch W 3 CC	
With Ducati electronic boxes:		
60510809	NGK BR 8 ES	

Warning: The spark plugs should not have a cap which can be screwed off! Such spark plugs are a special version which can be supplied only by Rotax or DG Flugzeugbau.

60507570	fuel filter, filter mesh size 200µ
39001030	Service Kit: Screwed joint of propellerstruts 2 bushes 5 M 54/3 2 bushes 5 M 55/1 2 Unbrako fitted bolts M 8 x 10 x 50 total length 58 mm 2 Unbrako fitted bolts M 8 x 10 x 50 total length 60 mm

b) Spare parts

With Bosch electronic boxes:	
60510821	Spark plug connectors 0356 351 032
With Ducati electronic boxes:	
60502312	Spark plug connectors 866 708 NGK TB 05 EMA
60500115	Return spring for muffler Rotax 938790
60500127	Nut for spring coupling M 8 for exhaust muffler (Rotax 842330)
60500128	Spring for spring coupling M 8 (Rotax 239628)
60500131	Starter motor: Bosch American E-Starter 992807
60504011	Drive belt HTD 1280-8M-65 Ball bearings for upper pulley
57620822	Ball bearing for upper pulley 6208-2Z
57601022	Ball bearing for upper pulley 6010-2Z
39001020	Service kit nuts and bolts for 300 hour overhaul
60000178	Gas spring for extension-retraction drive B1 B1-05-300 750/2400 N

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60510813 Main switch Bosch 0341001001

60510812 Key for main switch Bosch 0341001001

60510370 Starter button SECME 07 17801 21

60510391 Circuit breaker Klixon 15 A

60510400 Holder for fuses 14.331.1
60510401 Screw cap with window 14.339.3 for 14.331.1
Note: screw caps with window are no more available

60510430 Fuse G 250V with indicator 5 x 25 6 A (exact value 6.3 A)
60510429 Fuse G 250V with indicator 5 x 25 4 A
60510427 Fuse G 250V with indicator 5 x 25 2.5 A
60510425 Fuse G 250V with indicator 5 x 25 1 A
60510432 Fuse G 250V with indicator 5 x 25 10 A

60510438 Fuse Bosch 1191017006 100 A

60510550 Proximity switch

Socket in rear cockpit and plug
a) initially installed but no more available:

60510801 Preh 71 206 2P (socket in baggage compartment)

60510800 plug Preh for socket in baggage compartment

b) possible replacement:

60510796 socket BSB12

60510797 plug BSK12

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