

S O L O  
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H A N D B O O K  
for  
Engine 2 3 5 0 C

H A N D B O O K

for

Engine SOLO Type 2350 C

Serial-No. ....

Year of Manufacture .....

Type of Aircraft : .....

Aircraft Identification : .....

Owner : .....

List of changes to the Handbook

No.	Issue	Replaced Issue	Page	Date of Filing

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**1. Description**

- Two-cylinder in-line, 2-cycle Otto engine
- Air-cooled
- Fuel-oil mix lubrication
- 2 diaphragm carburetors with additional fuel pump
- Electronic magneto ignition
- Belt-driven propeller drive
- Electric Starter 12 Volt, 100 Watts

**2. Technical Data**

- Displacement : 430 cm<sup>3</sup> Bore 70 mm  
Stroke 56 mm
- Compression ratio : 12 : 1
- Ignition system : Magneto wheel SOLO, Ignition coil PVL
- Spark plug : BOSCH W5A C Heat range 225  
CHAMPION L82C  
Spark plug gap 0,5 mm
- Carburetor : MIKUNI BN 38
- Direction of rotation : counterclockwise
- Starter : Fa. SJCE Type 101
- Fuel : 2-cycle-fuel mix, High grade leaded fuel or AVGAS 100 LL
- Lubrication : Mix ratio 1:25  
2-cycle-oil Castrol TT or TTS
- Weight : 25 kg
- Belt-drive : Reduction Ratio 1:2.3
- Fuel Filter : Micron Filter  
Type 99.106/8-100  
KARCOMA, Sindelfingen

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### 3. Performance Data and Limits

- Take-off Power : 22 kW (30 HP) at 6500 RPM
- Max. continuous Power : 20 kW (27 HP) at 6100 RPM
- Max. engine RPM : 6500 RPM
  
- Idle speed : 3000 RPM
- Max. Cylinder Head Temp.: 270 °Celsius
- Fuel consumption : 100% continuous Power 15 l/h  
75 % continuous Power 14 l/h

### 4. Operating Instructions

A prerequisite to maintaining the engine in operation condition is the observation of following instructions:

- Prior to starting : Has daily inspection been carried out? Check throttle control lever for easy movement and in "Full" position.  
Turn Ignition off. Turn propeller by hand and check at the same time if unusual engine noises occur or engine is difficult to crank.  
Check primer system.
  
- Starting : Open fuel-valve. Move lever to half throttle. Main switch to "ON". Fuel pump "ON". Check to see that no one is in the area of the propeller. Lock brakes. Squeeze primer bulb 3 times. Push starter button until engine runs. If engine does not run continuously, squeeze primer bulb 1 more time and repeat starting.  
Do not warm engine up.
  
- Take off : Smoothly, but firmly open full throttle. Check cylinder head temperature during climb. The limits must not be exceeded.
  
- Engine shut-down : Prior to shut down engine, run for 1 minute in idle to allow engine to cool off. Then switch off engine and close fuel valve.
  
- Starting in flight : Follow procedures for starting but do not use primer with warm engine.

5. Service Instruction

- Reduction gear : There is no servicing required in addition to the below stated belt maintenance steps.
- Daily Pre-flight Inspection : Check fuel level.  
 Check movement of throttle control lever and primer system.  
 Check exterior condition of engine, belt-drive and engine mounts.  
 Check spark wires.
- Inspection at 25 hours intervals or once annually : Replace spark plugs  
 Visual inspection.  
 Check flow of fuel filter  
 Check fuel line  
 Check screws for tight fit  
 check control cables  
 Check electrical wires and connections  
 Clean engine  
 Lubricate starter gear teeth  
 Check belt tension  
 Apply test pressure of 120 N to the center of the drive belt on the return slide and measure slack. Slack depth should be 5 mm. If required, loosen retainer screws on propeller shaft and tighten with excentric.
- 200 hour Inspection : Complete overhaul by Manufacturer
- Engine preservation and storage : If an engine will not be run for a period of more than 2 months, steps to preserve the engine should be taken. Drain fuel tank and fuel system. Inject 5 ml 2-cycle oil into both carburetors and crank engine manually.
- Torque specifications :
 

Spark plug	20 Nm	
Hub to crankshaft (LH)		70 Nm
Nut cylinder head M 6		12 Nm
Nut cylinder head M 8		20 Nm
Hex Nut, Allenhead	M 4	3 Nm
Screws & corresponding Nuts	M 6	10 Nm
	M 8	23 Nm
Slotted Head Screws and corresponding Nuts	M 3	0,9 Nm
	M 4	2 Nm
	M 5	4 Nm

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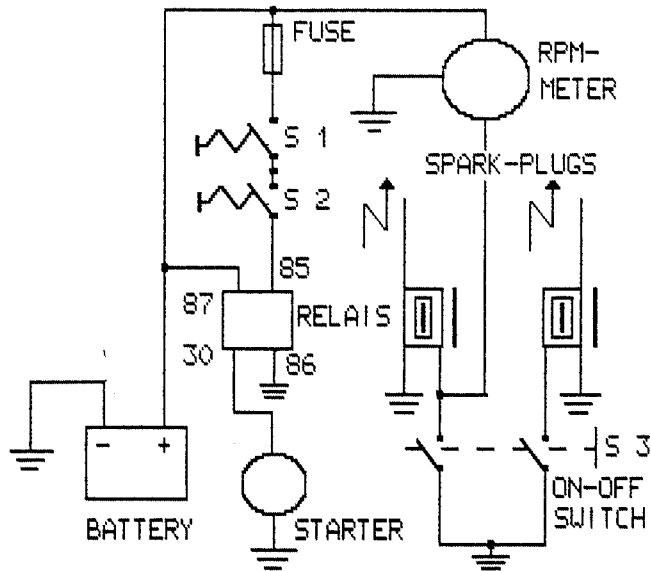
6. Trouble Shooting

Engine does not start

- Insufficient fuel supply : Check fuel supply lines to carburetors. Check if fuel pump works properly. Check fuel filter.
- No spark on one spark plug : Defective spark plug or ignition coil. Wires short circuit to ground
- No spark on both spark plugs : Cranking RPM too low - caused by weak battery, wires short circuit to ground.
- Engine floods : Continued starting at full throttle Choke open.
- Engine gets hot : Carburetor adjustments set too lean, insufficient fuel supply, dirty spark plugs.
- Carburetor adjustment : Basic setting:  
 Idle mixture adjusting screw (L)  
 1 turn open.  
 Main jet adjusting screw (H)  
 1.5 turns open  
 Adjust idle speed adjusting screw until engine reaches 3000 RPM.
- Engine does not reach full power : insufficient fuel supply. Fuel filter clogged. Throttle shutter not completely open. Choke shutter not completely open. Defective spark plug. Impulse line clogged or leaking.

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7. Wiring Diagram



S1 MAIN SWITCH  
 S2 STARTER SWITCH

8. Engine Performance Chart (Power curve)

