LF 26

Operations Manual

Please read this manual before using.

Engine S/N:
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Warning
This is a non-certified aircraft engine; the possibility of engine failure exists at all times. Do not operate this engine over densely populated areas. Do not operate this engine over terrain where a safe, power off landing cannot be performed.

The operating and maintenance instructions supplied with this engine must be followed at all times. Flying any aircraft involves the risk of injury or death, building and maintaining your own aircraft requires great personal responsibility.

WARNING !!
DUE TO THE PRECISION OF THE ECU CRANKSHAFT ROTATION MEASUREMENT
IT IS POSSIBLE TO HAND START THE LF26 BY ROTATING THE PROPELLER.

ALWAYS ENSURE ALL SWITCHES ARE OFF BEFORE WORKING ON THE ENGINE.
1 GENERAL

1.1. Log of revisions.
2. LF 26 ENGINE

2.1 Type designation

LF 26
4 stroke 4 cylinder
1. Manufacturer: D-Motor
2. Engine displacement in c.c. 2696cc

2.2 Description of the LF 26

- Liquid-cooled, four-stroke.
- Cylinder arrangement: 4 cylinders, horizontally opposed.
- One central camshaft, mechanical lifters, push rods and side valves.
- Liquid cooled cylinder head & cylinders.
- Dual CDI (capacitive discharge ignition).
- Electric starter.
- Alternator.
- Nikasil coated cylinders.
- Dry sump forced lubrication.

2.3 Views of the engine
3. TECHNICAL DATA LF 26

3.1. Dimensions and weights.
- Bore: 103.6 mm
- Stroke: 80 mm
- Total piston displacement: 2996 CC
- Compression ratio: 8:1
- Direction of crankshaft and prop shat rotation: Clockwise (Looking from pilot seat).
- Weight: Approx. 58kg
  Dry, with all electrical equipment, electric starter, fuel injection and exhaust, oil tank and oil cooler.
- Weight: Approx. 63kg
  As above with liquid coolant radiator and liquids

3.2. Equipment
- Ignition unit: Dual CDI (capacitive discharge ignition)
- Ignition timing: Variable firing order 1-3-2-4
- Spark plugs: Beru DXT 1
- Spark plug gap: 1.0 mm
- Alternator performance: 200W DC
- Fuel injection: Optimex aero
- Air filter: Various to meet customer requirements.
- Fuel pump: Electric pump bosch 0 580 464 038
- Fuel filter: Bosch 0 450 906 462
- Starter: 12V/1.1KW, engagement via gear reduction and overrunning clutch

3.3. Performance
- Max continuous power: Approx. 65.3kW (88HP) at 2800 RPM.

3.4. RPM limitations
- Max. permissible r/min: 3000 RPM
- Max. continuous r/min: 2800 RPM
- Idle r/min: Approx. 800 RPM

3.5. Fuel consumption (with full throttle (loaded))
- Consumption @ max. permissible RPM: 18 L/H
- Consumption @ max. continuous RPM: 16 L/H
- Consumption @ 75 %: 13 L/H
3.6. Information about fuels and lubricants

Fuel: Automobile fuel, unleaded premium 95 Octane (RON) minimum.

Fuel pressure: 2,5 BAR

Oil type: Fully synthetic branded automotive oil to API SJ standard as a minimum. Engine warranty is void if oil is used that is below this standard.

Oil volume: 2,5 Litres

Oil level is between: Ensure between max. & min. On standard oil tank 2 cm above middle of the tank.

Oil pressure:
- 1,5 Bar @ 2000 RPM
- 0,8 Bar @ idle RPM

Oil temperature (readings off of the feed line into engine):
- Min. 50 Deg.C (122 Deg.F)
- Max. 110 Deg.C (230 Deg. F)
- Optimum oil temperature range: 80 – 100 Deg.C (170-212 F.)

⚠️ CAUTION!

Don’t use any additives

3.7. Cooling system

Liquid cooled (Max. water temperature 100 Deg. C)

Max. continuous power keep water temperature between min. 75 & max. 95 Deg. C.

50% coolant by volume.

Recommended coolants are: BP Procool and Shell Glyco Shell
4. PERFORMANCE CURVE
5. OPERATING INSTRUCTIONS FOR THE LF 26
These instructions and procedures must be followed in detail for the proper operation of the engine and systems. Any deviation from these instructions may lead to increased wear and a loss of reliability.

5.1. Before starting the engine
- with the aircraft chocked or tied down
- ignition “OFF”
- Complete the daily check. (see Sec 6.1)
- check the range and free movement of the throttle lever.

<table>
<thead>
<tr>
<th>CAUTION!</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never start the engine without prop installed. Otherwise the engine will be damaged.</td>
</tr>
</tbody>
</table>

5.2. Starting the engine
- * parking brake: Set (or aircraft chocked)
- * fuel shutoff valve: OPEN
- * Throttle: Closed
- * Master switch: ON
- * Ignition: Both ON
- * Starter : Engage
- * Let engine run at approx. 1200 RPM
- * Oil pressure : Check nominal. (See Sec 3.6)

<table>
<thead>
<tr>
<th>CAUTION!</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check the oil pressure after starting engine, if no oil pressure within 10 sec, stop the engine. Otherwise the engine will be damaged.</td>
</tr>
</tbody>
</table>
5.3. Warm up and run up

- Let the engine run at 1200-1500 RPM until coolant temperature is 50 deg C (122 deg F). Avoid the oil pressure exceeding 6 Bar, during run up.
- Wait for the oil temperature to reach a minimum of 50 Deg. C (122 Deg.F) before taking off or running up to a high RPM.
- Perform a magneto check of the two ignition circuits at 2200 RPM.
- Engine must not stop during magneto check.

5.4. Take-off and climb

- Advance the throttle smoothly and quickly to full throttle.
- Perform the take-off and initial climb in this position, and then reduce power slightly to the maximum continuous RPM. (See Sec. .3).

5.5. Engine shutdown

- Let the engine cool sufficiently
- Throttle: IDLE
- ECU OFF
- Ignitions: OFF
- Master Switch: OFF

5.6. The in-flight re-start procedure is the same as the starting procedure on the ground.

6. MAINTENANCE INSTRUCTIONS

6.1. Daily check

- Take off the engine cowling (if so equipped).
- Check the engine for missing or loose parts as well as for any wear.
- Check the condition of the ignition harness.
- Check the actuating mechanisms for the throttle, make certain that the action of the throttle is smooth.
- Check the oil level and fill if necessary. The oil level should be between Min. & Max. of the oil tank dipstick.
- Check the oil and fuel system for any leakage.
- Drain a sample of fuel from each fuel drain valve. Check each sample for contamination or water in the fuel. If the fuel is contaminated then DO NOT START THE ENGINE. The fuel
contamination must be investigated, rectified and the fuel system flushed before the engine is started.

- If water is present, drain the water until the sample is all fuel.
- Re-attach the engine cowling if equipped.
- Before flight carry out an engine test run.

Observe the starting behaviour. Let the engine warm up, monitoring the temperatures and pressures. Do a run-up observing the throttle response (adequate RPM acceleration) and a full-power run-up. (Maximum RPM depends on the type of propeller and pitch used)

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**DANGER!**

1. Prior to turning the propeller by hand, confirm that.
   - The ignition and master switches are: **OFF**
   - The aircraft is chocked or properly tied down and the engine is cold to touch.
2. Cockpit operations must be performed by a trained person.

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6.2. Periodic inspections

After the first 25 hours of operation the inspections listed in 6.2.1 are to be performed. The next inspection is due to at 50 hours and thereafter every 100 hours. The 100-hour inspection mentioned under 6.2.2 is to be performed every 100 hours but at least annually. The 200-hour inspection mentioned under 6.2.3 is to be performed every 200 hours.

6.2.1. First 25 & 50-hour-inspection

- Check condition of the throttle cables, choke cables.
- Engine mounts. Check for cracks, looseness of mounts, and looseness of engine to mounts.
- Check for looseness of bolts, nuts and pins.
- Check for oil leaks from hoses, the oil tank and fittings.
- Perform an oil change. (See Sec 7.1) and send sample to constructor
- Check the magnet of oil drain screw for the metal contamination.
- Change the oil filter.
- Fuel lines-check the standoffs, safeties, leaks and wear.
- Fuel filter-check, clean.
- Check the ignition harness for damage and tight connections at spark plug cap.
- Air filter-check, clean.
- Check the fuel lines.
- Check the general condition of the exhaust system; look for cracks, particularly at the welds.
- Check the muffler and attaching flanges at the exhaust ports on the cylinders for exhaust leaks.
- Check the ignition coils for wear and security of attachment.
- Check for leaks at the oil pressure and temperature sensors.
- Electrical wiring-check for wear, damage and security of attachment.
- Check the crankcase for leaks and cracks.
- Clean engine if dirty or oiled.
- Run up the engine (See Sec. 5.3).
6.2.2. 100-hour-inspection or annually
- carry out the 50-hour-check.
- Perform a compression check. (See Sec.7.3)
- Change spark plugs.

6.2.3. 200-hour-inspection
- carry out the 100-hour-inspection.
- Check the spark plug caps. Change if necessary.
- Change the fuel filter.
- Change the air filter.

6.3. Preservation of the engine for long term storage
For long out of operation periods and at extreme climatic conditions, we recommend the following instructions to protect against corrosion. Extra protection against corrosion beyond these recommendations is not necessary.

1. Change the engine oil in accordance with 7.1
2. Blank all openings, the exhaust tubes, the breather tube and air filters. Place in a large heavy duty plastic bag with a minimum of 4KG of desiccant bags. Take care not to puncture the plastic storage bag.
   Using a vacuum cleaner, draw all the air out of the storage bag and seal the neck of the bag by gathering the neck, folding it back on itself and clamping with a large ty-wrap.
   Re-activate the desiccant bags at least once a year by placing in a warm oven at 100 deg C for several hours.

Bringing the engine back operation
1. remove all the protections.

⚠️ CAUTION!
For longer storage periods, the preservation procedures must be performed at least annually.

6.4. Winter operation
6.4.1. Care of the electrical system

Generally in the beginning of
the winter an engine inspection shall be performed.
- check all the connections of the ignition system and clean if necessary.
- Check the battery voltage.
- The battery poles and terminal connectors should be cleaned.
- Check the liquid coolant mix is suitable to cope with an outside air temperature of -36deg C.
In Countries with extremely low temperatures it is recommended to protect the battery against freezing by keeping it in a warm location for storage between flights.

6.4.2. Cold starting procedures
Throttle OFF
Limit cranking the engine for periods longer than 10 sec. After the engine starts, keep the engine running but do not exceed 2000 RPM until the oil temperature reaches 50 deg C (122 deg F).

7. MAINTENANCE

7.1. Changing the engine oil.
- warm the engine up to normal operational temperatures.
- Remove the oil drain screw from the oil tank, drain oil, and replace the oil filter.
- Drain the oil from the oil cooler and oil lines.
- Screw in the oil drain screw. Tighten according Chapter 9.
- Fill with new oil in the oil tank (2.5L).
- Run engine at idle for 3 minutes.
- Recheck oil level of oil tank and fill if necessary, the oil level should be between Min. & Max. on the dipstick of the oil tank.

⚠️ CAUTION!
(1) use only oil specified in 3.6
(2) don’t use any additives.

7.2. Air filter
For operation in heavy dust conditions, clean the air filter at shorter intervals or replace.

7.3. Throttle adjustments.
Adjust idle speed to 800 RPM using the idle screw on the throttle.

Confirm smooth running at idle. Run the engine at 1800 RPM and close the throttle to idle position. The engine should idle smoothly at 800 RPM.
by increasing RPM to 1800 RPM and bring throttle back to idle. Engine must run smooth continuously

⚠️ CAUTION!
The rotating propeller is extremely dangerous! Adjustments must be done with the utmost caution from behind the engine. The aircraft must be tied down or properly chocked. Do not perform this operations without a safety observer.

7.4. Spark plugs
- Spark plugs should only be removed when engine is cold.
- Brush clean with a plastic bristle brush.
- Do not use a brass brush or a steel wire brush for cleaning.
- After 200 hours or at least annually. Replace spark plugs.
- Spark plug type: Beru UXT 1
• Re-fit or replace spark plugs. The engine must be cold before the spark plugs are torque tightened. (See Chapter 9)

7.5. Exhaust system
• visually check for any damage and or leaks.
• Check the exhaust flanges at the cylinders. Tighten the nuts if necessary.

7.6. misc. bolts and nuts
• check for tightness, re-torque if necessary (See chapter 9)

8. OVERHAULS
8.1. Major inspections at TBO is to be performed by the manufacturer or approved service centres only. For this purpose the engine is to be sent with its logbook to the manufacturer or the nearest approved service centre. The recommended time between overhaul (TBO) is at present 1500 hours of operation. An increase of TBO due to field experience will be published in the Service Bulletins of the manufacturer.

8.2. Major repairs and major modifications are also only to be performed by the manufacturer or by approved service centres, which are authorized by the manufacturer. In case of prop strikes or sudden stoppage, the engine must be disassembled and the crankshaft must be checked for cracks. This is considered a major repair and must be performed by the manufacturer or an approved service centre.

9. TABLE FOR TORQUE VALUES

<table>
<thead>
<tr>
<th>Component</th>
<th>Size</th>
<th>Nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil drain screw</td>
<td>M22</td>
<td>15</td>
</tr>
<tr>
<td>Oil pump screw (banjo)</td>
<td>M18</td>
<td>32</td>
</tr>
<tr>
<td>Crankcase screw small</td>
<td>M6</td>
<td>12</td>
</tr>
<tr>
<td>Crankcase medium *</td>
<td>M8</td>
<td>34</td>
</tr>
<tr>
<td>Crankcase screw big</td>
<td>M12</td>
<td>105</td>
</tr>
<tr>
<td>Crankcase screw front</td>
<td>M8</td>
<td>34</td>
</tr>
<tr>
<td>Rods</td>
<td>M8</td>
<td>42</td>
</tr>
<tr>
<td>Cylinder head</td>
<td>M6</td>
<td>12</td>
</tr>
<tr>
<td>Mounting plate</td>
<td>M6</td>
<td>14</td>
</tr>
<tr>
<td>Oil pump</td>
<td>M6</td>
<td>12</td>
</tr>
<tr>
<td>Flange</td>
<td>M20</td>
<td>240</td>
</tr>
<tr>
<td>Screw for starter</td>
<td>M5</td>
<td>7</td>
</tr>
<tr>
<td>Intake manifold screw</td>
<td>M5</td>
<td>7</td>
</tr>
<tr>
<td>Water pump housing</td>
<td>M5</td>
<td>7</td>
</tr>
<tr>
<td>Gear on camshaft</td>
<td>M6</td>
<td>18</td>
</tr>
<tr>
<td>Extension crankshaft</td>
<td>M6</td>
<td>18</td>
</tr>
<tr>
<td>Screw-nut alternator</td>
<td>M20</td>
<td>60</td>
</tr>
<tr>
<td>Bolts cylinders to crankcase</td>
<td>M8</td>
<td>34</td>
</tr>
<tr>
<td>Spark plugs</td>
<td>M14x1.25</td>
<td>22</td>
</tr>
</tbody>
</table>
If torque wrench is not available. Tighten as far as possible by hand with spark plug tool (fig 2) and then 90° for new spark plug and 30° for used spark plugs.

When replacing used spark plugs, two points in particular are to be observed: Firstly, under no circumstances must contamination around plug hole fall into combustion chamber. Secondly, plugs must be tightened to the correct torque. Excessive torque tightening can damage the plug, insufficient torque results in poor sealing and heat dissipation

(*) 1 internal and 1 external in the middle of crankcase

10. TROUBLE SHOOTING

10.1. Engine does not fire

<table>
<thead>
<tr>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignitions OFF</td>
<td>ON.</td>
</tr>
<tr>
<td>Spark plug gap too big</td>
<td>Change plugs or re-gap plugs.</td>
</tr>
<tr>
<td>Fuel shutoff valve OFF or fuel filter blocked</td>
<td>Fuel shutoff valve ON, clean or replace fuel filter.</td>
</tr>
<tr>
<td>Lack of fuel</td>
<td>Fill fuel tank.</td>
</tr>
<tr>
<td>Ignition line loose or damaged</td>
<td>Check line connections. Replace if necessary.</td>
</tr>
<tr>
<td>Battery defective or discharged</td>
<td>Install charged battery or recharge.</td>
</tr>
<tr>
<td>Starting speed too low, start problems</td>
<td>Check battery.</td>
</tr>
<tr>
<td>Spark plugs wet from condensation</td>
<td>Dry plugs inside and outside.</td>
</tr>
<tr>
<td>Spark plugs wet with fuel (over-choked)</td>
<td>Dry spark plugs.</td>
</tr>
<tr>
<td>Inner mechanical defect</td>
<td>Contact engine manufacturer or approved service centre.</td>
</tr>
</tbody>
</table>

10.2. Warm engine shows irregular idling

<table>
<thead>
<tr>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intake manifold leaky</td>
<td>Tighten all intake connections. Replace any defective parts.</td>
</tr>
</tbody>
</table>

10.3. Engine runs erratic or misfires occasionally

<table>
<thead>
<tr>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spark plug failure</td>
<td>Clean plugs inside and outside. Replace if necessary.</td>
</tr>
</tbody>
</table>
## LF 26

<table>
<thead>
<tr>
<th>Operation</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignition wire breaks down</td>
<td>Check ignition wire and replace if necessary.</td>
</tr>
<tr>
<td>Ignition troubles</td>
<td>Check complete ignition system and replace parts if necessary.</td>
</tr>
<tr>
<td>Fuel filter blocked</td>
<td>Disassemble and replace the filter.</td>
</tr>
<tr>
<td>(fuel pressure indicator</td>
<td></td>
</tr>
<tr>
<td>below 2.5 Bar)</td>
<td></td>
</tr>
</tbody>
</table>

### 10.4. Engine overheats, Oil temperature over 100 deg.C (212 deg.F)

<table>
<thead>
<tr>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too much oil remaining in the crankcase</td>
<td>Check the oil return line.</td>
</tr>
<tr>
<td>Insufficient air-flow to the oil cooler</td>
<td>Check and clear the air passages.</td>
</tr>
<tr>
<td>Insufficient oil supply</td>
<td>Check oil level and fill if necessary.</td>
</tr>
<tr>
<td>Poor oil quality</td>
<td>Change oil. Use prescribed oil.</td>
</tr>
<tr>
<td>Oil filter blocked</td>
<td>Change the oil filter.</td>
</tr>
<tr>
<td>Defective oil temperature gauge</td>
<td>Replace the oil temperature gauge.</td>
</tr>
<tr>
<td>Excessive piston ring gas leakage</td>
<td>If there is metal contamination in the crankcase sump, a major overhaul is necessary.</td>
</tr>
<tr>
<td>(blow by)</td>
<td></td>
</tr>
<tr>
<td>Bearings defective</td>
<td></td>
</tr>
</tbody>
</table>

### 10.5. The engine does not develop full power

<table>
<thead>
<tr>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignition trouble</td>
<td>Tighten all connections.</td>
</tr>
<tr>
<td>Too much oil remaining in the crankcase</td>
<td>Check oil return line.</td>
</tr>
<tr>
<td>Fuel supply inadequate (less than 2.5 Bar)</td>
<td>Check fuel filter.</td>
</tr>
<tr>
<td>Incorrect fuel grade</td>
<td>Refuel with prescribed grade fuel.</td>
</tr>
<tr>
<td>Intake leaking</td>
<td>Tighten all connections. Replace defective parts.</td>
</tr>
</tbody>
</table>

### 10.6. Low oil pressure

<table>
<thead>
<tr>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient oil in oil tank</td>
<td>Check oil level and fill if necessary</td>
</tr>
<tr>
<td>Oil remains in engine and doesn’t circulate</td>
<td>Check oil return line to tank</td>
</tr>
<tr>
<td>High oil temperature</td>
<td>See 10.4.</td>
</tr>
<tr>
<td>Pressure loss</td>
<td>Check the pressure control valve.</td>
</tr>
<tr>
<td>Air in suction line</td>
<td>Vent the oil line.</td>
</tr>
<tr>
<td>Defective oil pressure gauge</td>
<td>Replace the oil pressure gauge.</td>
</tr>
<tr>
<td>Bearings defective (no oil pressure)</td>
<td>A major overhaul is necessary.</td>
</tr>
</tbody>
</table>

### 10.7. The engine does not stop immediately

<table>
<thead>
<tr>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idle speed to high</td>
<td>Adjust proper idle speed (800 r/min)</td>
</tr>
<tr>
<td>Ignition switch defective</td>
<td>Replace the switch.</td>
</tr>
</tbody>
</table>
### 10.8. Excessive oil consumption

<table>
<thead>
<tr>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piston rings or oil scraper rings worn</td>
<td>A major overhaul is necessary</td>
</tr>
<tr>
<td>Poor oil quality</td>
<td>Change oil. Use prescribed oil.</td>
</tr>
<tr>
<td>Worn valve guides or bad valve guide seals</td>
<td>A top overhaul is necessary.</td>
</tr>
<tr>
<td>External oil system leaky</td>
<td>Check for defects and correct as necessary.</td>
</tr>
</tbody>
</table>

### 10.9. Engine «knocks»

<table>
<thead>
<tr>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using fuel with a low octane rating</td>
<td>Use fuel with a higher octane rating.</td>
</tr>
</tbody>
</table>

### 10.10. Engine hard to start at low temperatures

<table>
<thead>
<tr>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low battery charge</td>
<td>Replace battery or recharge.</td>
</tr>
<tr>
<td>High oil pressure</td>
<td>During a cold start a pressure reading up to 100 psi (7bar) is permissible</td>
</tr>
</tbody>
</table>
## 11. INSPECTION AND MAINTENANCE ITEMS

<table>
<thead>
<tr>
<th>Inspection-maintenance item</th>
<th>Hourly inspection routine</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>first 25hr.</td>
</tr>
<tr>
<td>1. Check condition of throttle cable</td>
<td>O</td>
</tr>
<tr>
<td>2. Engine mounts-check for cracks, looseness of mounts, and looseness of engine to mount.</td>
<td>O</td>
</tr>
<tr>
<td>3. Check for looseness of bolts, nuts and pins.</td>
<td>O</td>
</tr>
<tr>
<td>4. Check for oil leaks from hose, tank and fittings.</td>
<td>O</td>
</tr>
<tr>
<td>5. Exchange oil filter.</td>
<td>O</td>
</tr>
<tr>
<td>6. Perform oil change and send sample to constructor.</td>
<td>O</td>
</tr>
<tr>
<td>7. Fuel lines-check for leaks, safeties and wear.</td>
<td>O</td>
</tr>
<tr>
<td>8. Fuel filter-check, clean or replace.</td>
<td>O</td>
</tr>
<tr>
<td>9. Check ignition harness for damage and tight connections at spark plug caps.</td>
<td>O</td>
</tr>
<tr>
<td>10. Air filter-check, clean or replace</td>
<td>O</td>
</tr>
<tr>
<td>11. General condition of the exhaust system, check muffler and attaching flanges at exhaust port on cylinder for leakage.</td>
<td>O</td>
</tr>
<tr>
<td>12. Check ignition coils for wear and security of attachment.</td>
<td>O</td>
</tr>
<tr>
<td>13. Check for leaks at oil pressure and temperature sensor.</td>
<td>O</td>
</tr>
<tr>
<td>14. Electrical wiring-check for damage, wear and security of attachment.</td>
<td>O</td>
</tr>
<tr>
<td>15. Check resistance of electrical equipment.</td>
<td>O</td>
</tr>
<tr>
<td>16. Check crankcase for leaks and cracks.</td>
<td>O</td>
</tr>
<tr>
<td>17. Clean engine if dirty of oily.</td>
<td>O</td>
</tr>
<tr>
<td>18. Check spark plug caps. Change if necessary.</td>
<td>O</td>
</tr>
<tr>
<td>19. Change spark plugs (at least annually).</td>
<td>O</td>
</tr>
<tr>
<td>20. Change the fuel filter.</td>
<td>O</td>
</tr>
<tr>
<td>21. Change the air filter.</td>
<td>O</td>
</tr>
</tbody>
</table>

100-hr-inspection must be performed at least annually. The overhaul must be performed within 10 years after shipping or 1500 hours operation time.
Warranty conditions
The D-Motor non-certified aircraft engine limited warranties

1. Period
D-Motor as manufacturer, warrants through their authorized D-Motor distributors form the date of sale to the first consumer, every D-Motor non-certified engines, sold as NEW and UNUSED, and delivered by an authorized D-Motor distributor for a period of the earliest of:

   24 consecutive months or 300 hours engine running time logged by ECU.

2. What an authorized D-Motor distributor will do
The authorized distributor will, at its option, repair and/or replace components defective in material and/or workmanship under normal use and service, with a genuine component without charge for parts or labour, during said warranty period. All parts replaced under warranty become the property of D-Motor.

3. Condition to have warranty work performed
You must present to an authorized D-Motor service-centre, the hard copy of the D-Motor warranty registration card and/or proof of purchase of the engine from an authorised D-Motor dealer and ECU.

4. Warranty exclusions
   - normal wear on all items.
   - Replacement parts and/or accessories that are not genuine D-Motor parts and/or accessories.
   - Damage resulting from the installation of parts other than genuine D-Motor parts.
   - Damage caused by failure to provide proper maintenance as detailed in the OPERATIONS MANUAL. The labour, parts and lubricants costs of all maintenance services, including tune-ups and adjustments will be charged to the owner.
   - Aircraft engines modified and/or used for racing or commercial purposes.
   - All optional accessories installed on the aircraft engine.
   - Damage resulting from running the aircraft engine without propeller.
   - Damage resulting from modification to the aircraft engine not approved in writing by D-Motor.
   - Damage caused by electrolysis.
   - Use of propellers, which exceed the inertia and balance limits as specified by D-Motor. Propeller maximum rotational moment of inertia of up to 0.6kgm².
   - Never use the engine without a propeller. Damage will occur in this state
   - If engine instruments recommended by D-Motor have not been installed.
   - Losses incurred by the aircraft engine owner other than the parts and labour, such as, but not limited to, mounting and dismounting of the engine from the aircraft, loss of use, transportation, towing, telephone calls, taxis, or any other incidental or consequential damage.
   - Damage resulting from accident, fire or other casualty, misuse, abuse or neglect.
   - Damage/rust/corrosion premature wear to the engine caused by water ingestion.
   - Damage resulting from sand/stones.
   - Damage resulting from any foreign material ingestion.
   - Damage resulting from service by an unqualified mechanic.
5. **Expressed or implied warranties**
This warranty gives you specific rights, and you may also have other legal rights which may vary from state to state, or province to province. Where applicable this warranty is expressly in lieu of all other expressed or implied warranties of D-Motor, its distributors and the selling distributor, including any warranty of merchantability or fitness for any particular purpose; otherwise the implied warranty is limited to the duration of this warranty. However, some states or provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply.

Neither the distributor, nor any other person has been authorized to make any affirmation, representation or warranty other than those contained in this warranty, and if made, such affirmation, representation or warranty shall not be enforceable against D-Motor or any other person.

D-Motor reserves the right to modify its warranty policy at any time, being understood that such modification will not alter the warranty conditions applicable to aircraft engines sold while the above warranty is in effect.

6. **consumer assistance procedure**
If a servicing problem or other difficulty occurs, please contact:
- authorized D-Motor service-center
- authorized D-Motor distributor.

7. Warranty will only be valid if the end user completes this registration card within 1 month after invoice and returns it to D-Motor Company, Kapelstraat 198, 8540 Deerlijk, Belgium.

8. This warranty will be effective for all non-certified aircraft engines delivered by D-Motor as of April 1st, 2010.

9. **WARNING**!
This is a non-certified aircraft engine, the possibility of engine failure exists at all times. Do not operate this engine over densely populated areas. Do not operate this engine over terrain where a safe, power off landing cannot be performed.

The operating and maintenance instructions supplied with this engine must be followed at all times. Flying any aircraft involves the risk of injury or death, building and maintaining your own aircraft requires great personal responsibility.
WARRANTY CARD

WARRANTY / OWNER’S REGISTRATION CARD

1. To be eligible for warranty, this registration card must be returned completed and signed by the end user to D-Motor, Kapelstraat 198, 8540 Deerlijk, Belgium, within 30 days as of date of purchase.

2. no other warranties and/or guarantees than defined in the actual warranty conditions are made.

3. Engine Type:
   Engine S/N:
   Date of purchase:
   Buyer:
   Address:
   Telephone:
   Seller:
   Aircraft :
   Propeller :
   Registration :

I have read and understood the operations manual in its entirety.

Date:
Signature:

This is a non-certified aircraft engine, the possibility of engine failure exists at all times. Do not operate this engine over densely populated areas. Do not operate this engine over terrain where a safe, power off landing cannot be performed.

The operating and maintenance instructions supplied with this engine must be followed at all times. Flying any aircraft involves the risk of injury or death, building and maintaining your own aircraft requires great personal responsibility.