- Operating the engine at high rpm. at low throttle position, for example during descent, may increase engine and exhaust temperatures and cause critical overheating. Always compensate and match rpm. with throttle position.
- Maintain your engine in top condition and assume it's going to quit running at any time. Leave yourself a way out in the event of unexpected failure.
- Never mix fuel in an enclosed area, or where fumes could reach the ignition point.
- Make sure all engine controls are operative, that you know ON and OFF positions of throttle and ignition, that they are easily accessible, and that you can operate them instinctively without hesitation.
- Never refuel if fuel could be spilled on hot engine components. Use only safety approved fuel containers and never transport fuel in an unsafe manner.
- Check engine suspension frequently as well as the drive components, fuel lines, wiring, and fuel and air filters.
- Check for fuel contamination, air vents, etc. Protect engine while not in use from any contamination entering fuel or carburetion system, but be sure to remove storage protection before starting the engine.

6.3) General operating and safety instructions

- Please, observe besides the instructions in our documentation also the generally valid safety- and accident preventive prescriptions and legal regulations as well as the relevant regulations by the competent aeronautical authorities.
- The information contained in the Maintenance Manual is based on data and experience and is considered to be applicable for a professional technician under normal working conditions. The instructions given in the Maintenance Manual are useful and necessary supplements to personal instruction, but can by no means substitute theoretical and practical personal instruction.
- The manufacturer or supplier has no influence on the personnel and operational conditions of the buyer and assumes no responsibility for sustaining effect of the personal instructions.
- We point to the fact that spare parts and accessories not supplied as genuine ROTAX® parts are not tested and therefore not released by ROTAX®. Installation and/or use of such products may change and negatively affect the constructive properties of the engine. For damages due to use of non-genuine parts and accessories ROTAX® refuses any liability.
- Unauthorized modifications and use of components or accessories not corresponding with the installation instructions exclude any liability of the manufacturer.
- The engine is accurately tested before delivery, this however does not exclude hazards in case of incompetent handling.
- Before taking the engine into operation, make yourself familiar with the respective controls and their function. Searching during operation is too late! In case of vibrations or unusual noise, stop the engine and remedy the cause.

d00372

9) Maintenance

In this Manual the maintenance of the engines 447 UL SCDI, 503 DCDI and 582 UL DCDI and 582 UL DCDI mod. 99 are described. The Manual is subdivided into sections and description of function of the various systems. Some overlapping maintenance instructions are treated as generally valid information at the beginning of this section.

The information given in the Maintenance Manual is based on data and experience which is considered to be applicable for a skilled mechanic under normal working conditions. The guidelines given in the Maintenance Manual are useful and necessary supplements to training. They, however, cannot substitute competent theoretical and practical personal instruction.

Maintenance of engines and systems requires special knowledge and special tools.

We particularly emphasize that parts and accessories not supplied as genuine ROTAX® parts are not verified for suitability by ROTAX® and thus are not released for use. Installation and/or use of such products may possibly change or negatively influence the design characteristics of the engine. For damages resulting from use of non-genuine parts and accessories ROTAX® refuses any liability.

Non-authorized modifications as well as the use of components and auxiliary components not corresponding to the installation instructions exclude any liability of the engine manufacturer.

Besides our instructions in the documentation supplied, also respect the generally valid safety and accident preventive directives and legal regulations.

9.1) General proceeding instructions

When carrying out maintenance and service work, respect without fail the safety regulations. At maintenance of cooling, lubricating and fuel system take care without fail that no contamination, metal chips, foreign material and/or dirt enters the system. Use only mallet (plastic or rubber) for dis- and re-assembly of parts.

Never loosen or tighten screws and nuts with pliers but only with the specified tools.

Before each reassembly check assembled components for missing parts. Only use the adhesives, lubricating, cleaning agents and solvents indicated in the maintenance instructions. If not respected, damage may be the consequence.

Exactly observe the tightening torques for screws and nuts. Overstretching or too loose tightening may cause severe engine damage.

Before re-using parts disassembled, clean, check and refit them per instructions.

9.2) Trouble shooting

In the Operator's Manual there is a list of possible failures as well as indication of possible remedy. For details refer to the Repair Manual 462-532-582.

See current Operator's Manual for engine types 447 UL SCDI, 503 DCDI, 582 UL DCDI mod. 99.

d00375

10.2) Maintenance Schedule

The following maintenance is planned and necessary for ROTAX 447 UL SCDI, 503 UL DCDI, 582 UL DCDI and 582 UL DCDI mod. 99:

	Checks and work	2 h	10 h	12,5 h	25 h	50 h	75 h	100 h	125 h	150 h	175 h	200 h	225 h	250 h	275 h	300 h	chapter	signature
1	Ground run				X												11.1	
2	Level check of liquids	X															11.2	
3	Retorque cylinder head nuts 1)	X															11.3	
4	Retorque exhaust manifold screws 1)	X	X														11.4	
5	Check rewind starter rope 10)			X													11.5	
6	Check electric starter gear					X		X		X		X		X			11.6	
7	Inspect spark plugs 10)			X													11.7	
8	Replace spark plugs				X	X	X	X	X	X	X	X	X	X	X		11.8	
9	Check ignition system				X												11.9	
10	Check and clean inside spark plug caps 10)			X													11.10	
11	Checking of V- belt tension		X		X	X	X	X	X	X	X	X	X	X	X		11.11	
12	Lubricate ball joints				X	X	X	X	X	X	X	X	X	X	X		11.12	
13	Replace exhaust muffler springs						X			X			X				11.13	
14	Lubricate control cables 3)				X	X	X	X	X	X	X	X	X	X	X		11.14	
15	Check propeller balance and tracking 2,3)				X	X	X	X	X	X	X	X	X	X	X		11.15	
16	Inspect propeller mounting bolts 3)																11.16	
17	Clean and oil air filter				X	X	X	X	X	X	X	X	X	X	X		11.17	
18	Check fuel filter				X	X	X		X	X	X		X	X	X		11.18	
19	Replace fuel filter							X									11.18	
20	Check carburetor(s) and re-adjust (idle speed, cable tension, ...)	X			X		X		X		X		X		X		11.19	
21	Clean carburetor(s) and check for wear					X		X		X		X		X			11.19	
22	Replace jet needle and needle jet									X							11.20	
23	Check fuel pump (measure fuel pressure)						X			X			X				11.21	
24	Check gearbox oil level				X	X	X		X	X	X		X	X	X		11.22	
25	Replace gearbox oil		X					X				X					11.22	
26	Check and adjust gearbox, preload of springs (type B gearbox)							X				X					11.23	
27	Replace rotary valve lubrication oil							X									11.24	
28	Inspect cylinder head and piston crown 4)					X		X		X		X		X			11.25	
29	Inspect piston rings for free movement 5)					X		X		X		X		X			11.26	
30	Check piston diameter 7)					X 6)		X 6)		X		X 6)		X			11.27	
31	Piston ring: check gap 7,11)					X 6)		X 6)		X		X 6)		X			11.28	
32	Piston ring: check axial clearance (rectang. Ring) 8,12)					X 6)		X 6)		X		X 6)		X			11.28	
33	Check cylinder diameter 7,11)					X 6)		X 6)		X		X 6)		X			11.29	
34	Cylinder: check for roundness 7,11)					X 6)		X 6)		X		X 6)		X			11.29	
35	Replace cylinder head-, cylinder base- and exhaust-gasket 8)					X 6)		X 6)		X		X 6)		X			11.30	
36	Inspect piston pin and bearing									X							11.31	
37	Inspect crankshaft and replace outer seals if necessary									X							11.32	
38	General overhaul of engine 9)															X	11.33	
	Checks and work	2 h	10 h	12,5 h	25 h	50 h	75 h	100 h	125 h	150 h	175 h	200 h	225 h	250 h	275 h	300 h		

02948

1) and after every replacement of gasket(s)
2) also after any damage
3) according to instructions of manufacturer
4) if carbon layer is more than 0,5 mm thick, decarbonize
5) if piston ring sticks clean and replace if necessary
6) if used in very dusty atmosphere
7) wear limit see Service Information 5 UL 91
8) If cylinder has been dismantled
9) To be carried out every five years or every 300 hours whichever comes first. contact authorized distributor or service center.
10) To be examined after every 12,5 hours of operation.
11 Necessary only if piston rings are not freely moving

d00376

11.17.2) Cleaning of used air filters:

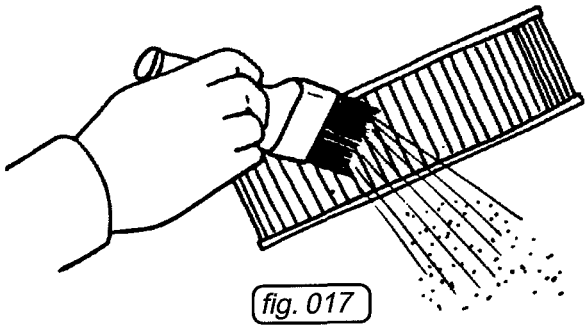

fig. 017

02893

First, lightly tap off surface dirt and wet with cold water. Roll filter in filter cleaning and degreasing fluid.

Never use gasoline, steam, caustic liquids, detergents or high pressure cleaning.

The level of the cleaning fluid should be approx. 3/4 of the height of corrugations. Dirty fluid must not run inside of filter. Allow at least 5 minutes to dissolve the dirt.

02894

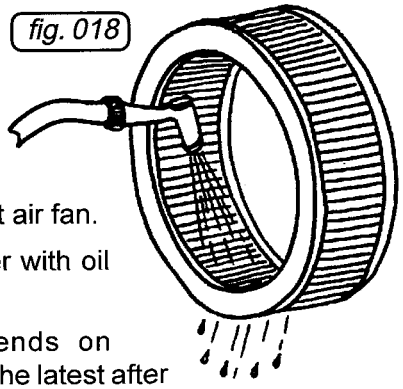

fig. 018

After that, rinse filter with cold water from inside to outside. Shake off and let it dry in free air. Don't dry with compressed air, over naked flame or with hot air fan.

Prior to installation, service filter with oil (see previous chapter).

Filter due for renewal depends on enviromental conditions, but at the latest after 300 hours of operation.

11.18) Check and replacement of fuel filter

The flow through the filter may be restricted due to the long term build up of dirt. A more serious type of blockage, which can occur quite rapidly is caused by a reaction between detergents in certain two-stroke oils and water in the fuel.

Both types of blockage may be difficult to detect visually. If blockage is suspected, renew fuel filter or filter element. Subsequently avoid water contamination of fuel.

11.19) Clean carburetors and check for wear

Attend to the following:

- Stop engine at raised speed and verify float level.
- Inspect carburetor assy. for leakage.
- Check float valve for easy operation.
- Inspect clip of jet needle for wear.
- Inspect sieve sleeve.
- Clean the carburetor with fuel as required.

◆ NOTE: For further details see also current Repair Manual 462-532-582

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