

Rotax 914 UL Engine Assessment Report

For EAA Chapter 237 April 14, 2025

Engine Assessment Details

Date of Assessment: April 14, 2025

Engine Type: ROTAX 914 UL

Engine Version: 914 UL2

Engine Serial Number: 4418286

Date of Manufacture: January 2003

Model Number: 3091400

Certification/Approval: Approved according to ASTM F2339

Rated Power: 115 HP

Assessment Findings

General Condition

The engine has "0" time in service, having only undergone the factory test run. This presents a unique opportunity as the engine is essentially new despite its manufacturing date of January 2003.

Internal Inspection

A borescope inspection reveals pristine cylinder walls, valves, and combustion chambers, confirming the engine's unused status. No signs of corrosion, carbon buildup, or wear were detected in any of the cylinders. Turbocharger compressor spins freely and appears in new condition.

Notes, Observations

- **Airbox:** The engine features the new style airbox as identified in Service Instruction SI-914-013. This updated component improves airflow characteristics and addresses potential issues identified in earlier versions.

Ignition Modules: The engine is equipped with old style ignition modules. While functional, owners should be aware that updated ignition modules are available should replacement become necessary in the future.

Time Limited Rubber Parts: Rubber hoses (with exclusion of coolant distribution that were updated with silicone) and carburetor components should be replaced before being placed in service. The fuel pumps should be suitable.

Engine Purge Procedure: Despite being in excellent condition, the engine should undergo standard new engine purge procedure before operation.

Note: The suitability of oil and coolant Radiators provided for a particular application is for the purchaser to determine.

Conclusion

The assessed Rotax 914 UL engine represents an exceptional opportunity, presenting as-new condition despite being manufactured in 2003.

Background

The Rotax 914 UL is a four-stroke, four-cylinder aircraft engine manufactured by BRP-Rotax GmbH & Co KG (formerly Bombardier-Rotax GmbH), a company with a long history in developing reliable powerplants for recreational and aviation applications. First introduced in the 1990s, the 914 series represents Rotax's turbocharged engine solution for light aircraft, ultralight aircraft, and advanced recreational aviation applications.

The 914 UL features an advanced design incorporating liquid-cooled cylinder heads with air-cooled cylinders, a design approach that optimizes thermal efficiency while maintaining weight advantages. The turbocharged system provides consistent power output at various altitudes, making it particularly suitable for operations in mountainous regions or at higher elevations where naturally aspirated engines may experience significant power loss.

With 115 horsepower (84.5 kW) at 5800 RPM, the Rotax 914 UL delivers an impressive power-to-weight ratio that makes it popular among kit aircraft builders and light sport aircraft manufacturers seeking performance without excessive weight penalties. The integrated reduction gearbox allows the propeller to operate at optimal speeds while the engine runs at higher, more efficient RPM ranges.