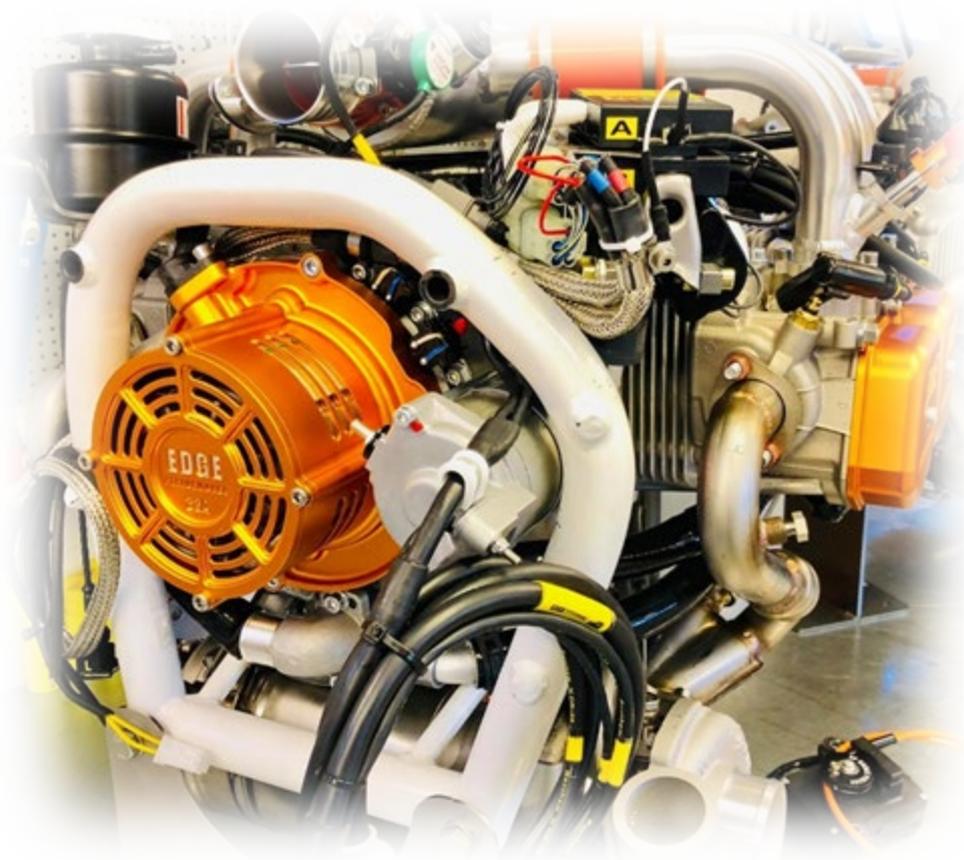




EDGE PERFORMANCE AS

*32A Secondary alternator upgrade
"EFI & Non-Injected"*

Installation manual



Introduction

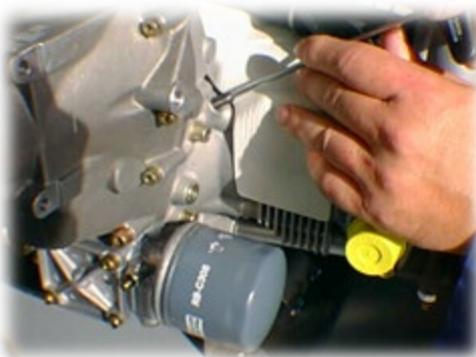
- First of all, thank you for choosing EdgePerformance AS as your supplier. We know there are other companies making similar products, but we are pleased to know that our devotement, quality and highly modern components and kits made you choose us as your supplier.
- The warranty from Rotax will be voided once the engine is modified. Any 12-month-old engine is out of warranty.
- This installation manual covers the basic details on how to install the components to complete this conversion. Pictures are for illustration purpose only. Do not proceed if you are in any doubt. Consult your local dealer or with us immediately.
- Common sense and good workmanship practice must be used.
- Use thread-sealant (Loctite) where required. Use correct torque values. Refer to your Rotax “Line and Heavy maintenance manual for proper torque values”.
- All electrical connections are HIGHLY critical. Use ONLY high-quality crimpers, tefzel aviation grade wires and terminals. Keep in mind that every unnecessary connection, terminal, relay etc. is a possible source for error. KIS – Keep It Simple!
- IF IN DOUBT AT ANY STAGE OF THE INSTALLATION, PLEASE ASK!



1. Start by removing the flywheel plastic cover by undoing the 3x 10mm M6 hex bolts.



2. Remove the M8x20 socket head screw in the engine case right behind the gearbox. Use a flashlight to see where the V-groove for the locking pin bolt is. The groove will align with the hole when piston N° 1 is at TDC. With the flywheel cover off, use a ratchet wrench with a 22mm socket and turn the crankshaft in the orientation of normal rotation until you see the V-groove in the crankshaft.



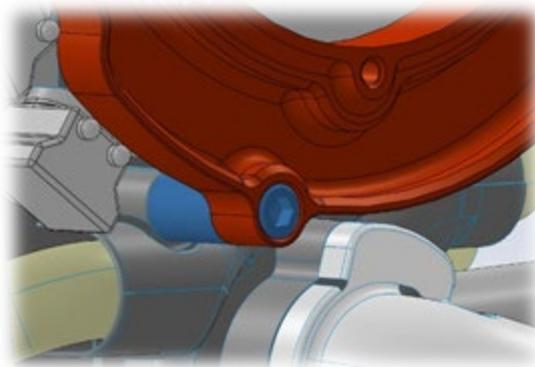
3. Install the locking pin bolt (**Rotax part nr 240880**) and tighten firmly.



4. Undo the flywheel bolt. The bolt has normal right-hand threads. Normally a 50-60cm long socket wrench is required to loosen the bolt.



5. Now install the housing ring adapter with the 3x M6x25 bolts and the M6x60 bolt with the spacer at the lower left hole mating to the water pump housing. Insert the centering tool and orientate the notch so that it clears the crankshaft sensor. Apply Loctite 243 and torque all 4 bolts to 12Nm.



6. Picture showing the spacer between the ring adapter plate and the water pump housing.

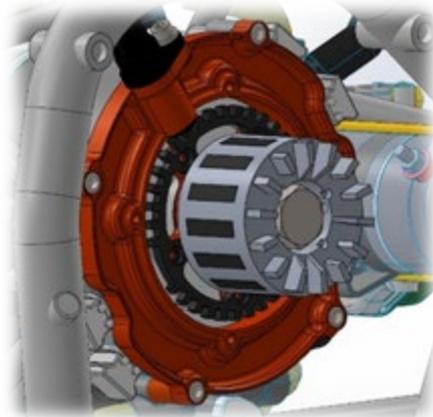


7. Install the trigger wheel and rotor assembly onto the M46x1 threaded section of the flywheel hub.



Ref. image only for trigger wheel orientation.

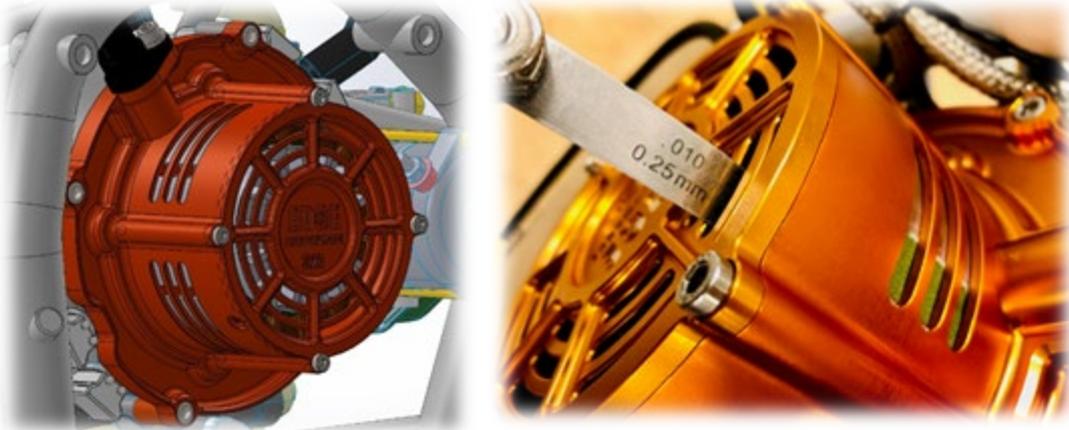
8. Use the existing lock-washer and crush-washer just removed onto the new M16x80 socket head bolt. Apply engine oil on the flywheel bolt threads and tighten the bolt to 140Nm or 103ft.lb. **You might want to use a dial indicator to ensure the rotor is properly aligned and running straight.** If not perfectly aligned, you can undo the bolt and gently tap the rotor with a plastic hammer to get it zeroed. The yellow marked tooth shall be centered on the hall sensor with Cyl. N°1 at TDC, or with the crankshaft fixation bolt installed (PN 876-640)



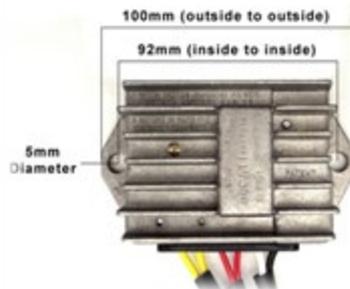
9. The rotor assembly should now look like this once assembled. The rotor itself does not have a unique orientation.



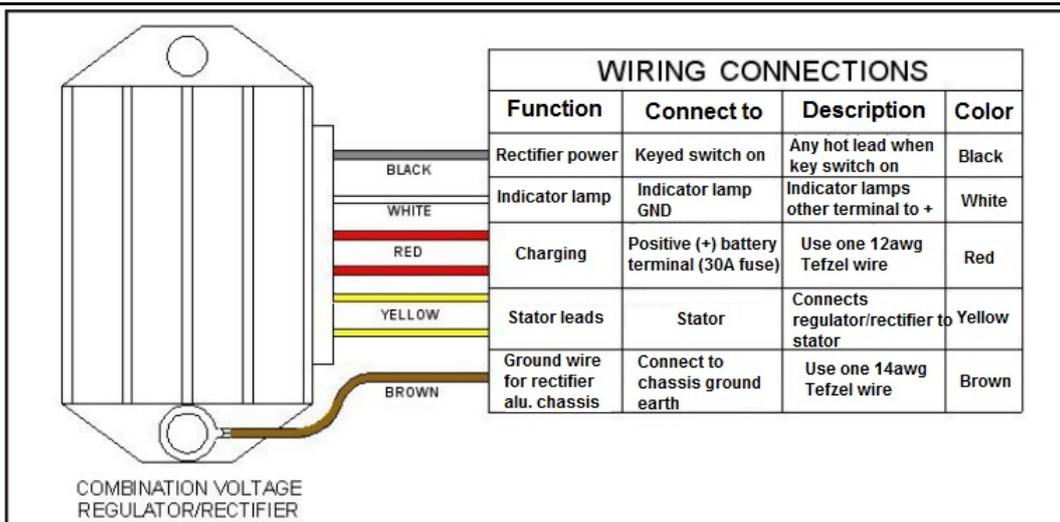
10. Next install the stator housing with the stator assembly seated all the way down to its seating flange internally. Ensure that the stator cables are exiting through the cable grommet hole.



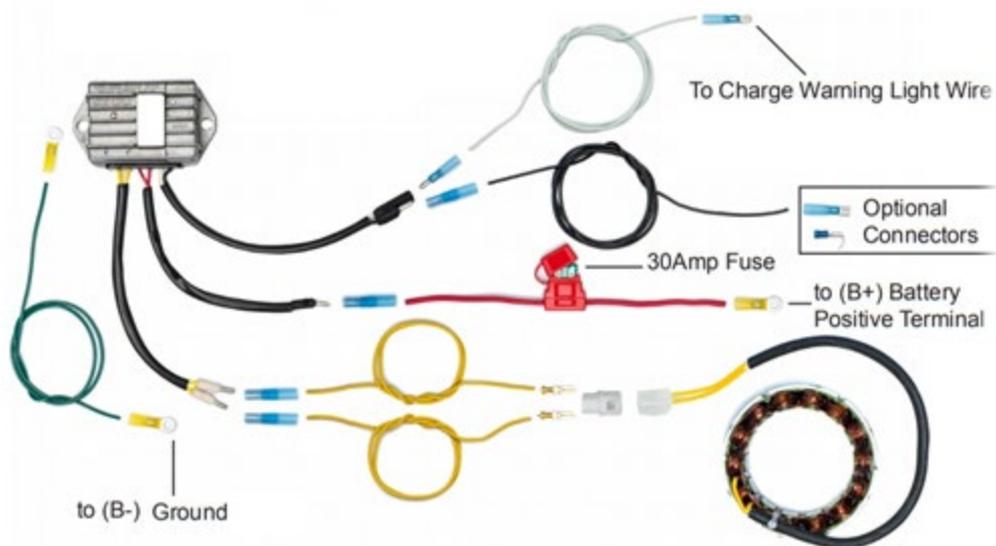
11. Complete the assembly by installing the front cover plate and secure it with the provided M5x80 socket head bolts. Use a 0.25mm (0.10") feeler gauge and insert into every cooling slot on the housing cover to ensure there is sufficient clearance between the rotor and stator. Rotate the crankshaft every 90 degree and double check. Once confirmed apply Loctite 243 and torque the M5x80 socket bolts to 6-8Nm. If the rotor is not perfectly centered loosen the adapter rings 4x M6 bolts and tap the assembly to either directions using a rubber mallet and re-check clearance.



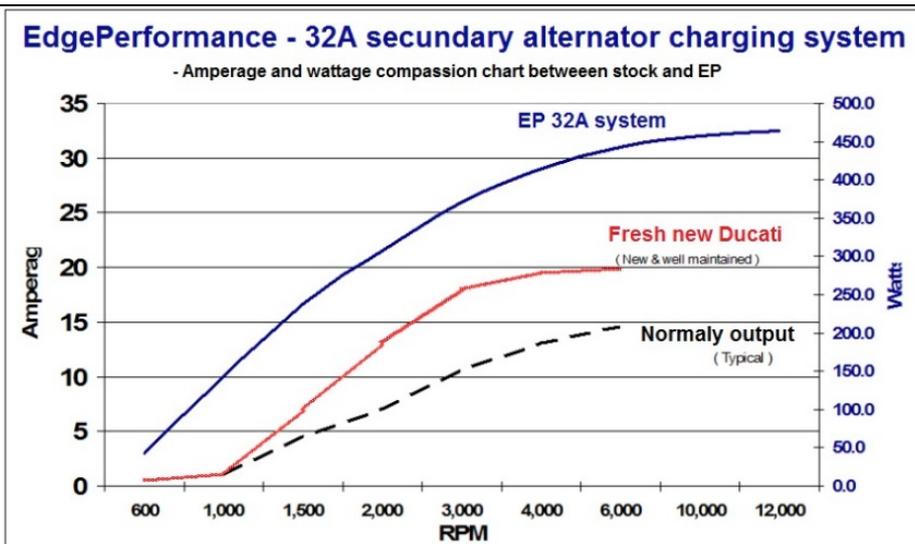
12. Install the regulator/rectifier on the firewall. The regulator must be installed in the engine compartment and cannot be installed inside the fuselage. If it for some reason must be installed inside the fuselage, and small 60x60mm or 80x80mm 12v fan must be used to prevent it from overheating and failing.



13. Wiring connections. Use only aviation grade Tefzel cable. The charging leads must be routed through a 30A circuit breaker for protection. You may also want to install a dedicated 30A rated switch for the alternator charging system. The black “voltage sensing” lead must be supplied true and stable +12.5 volts; if not, the voltage regulator will automatically compensate for the lower voltage being sensed and produce constant and / or intermittent higher voltage. Please recheck the voltage source to the black lead. It may be required to identify or create a new switched-on 12-volt source to the black lead to eliminate this problem. A completely independent switched power source with a relay dedicated to supplying stable 12-volt power to the black lead is an ideal solution.



14. Typical wiring diagram.



15. Graph showing a typical installation of the EFI system onto a Rotax 912ULS engine.

Battery Voltage	State of Charge / Battery Condition	Recommended Action
12.7 V	100 %	Battery Good
12.6 V	90%	Battery Good
12.4 V	75 %	Charge Battery
12.2 V	50 %	Replace Battery
12.0 V	25 %	Replace Battery
11.9 V or less	Discharged	Replace Battery

16. Verify your battery voltage to determine the condition of it.

17. Intentionally left blank

18. Intentionally left blank

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