Light Aircraft Association	**Standard Modification** Issue 1	Mod No. SM12970 Page : 1 of 3 Compiled : I Rickard Approved : F. Donaldson

TITLE : Schicke GR6 Regulator

APPLICABILITY : **Rotax 91x series engines**
Mod Type : **New build and Retro-fit**

1. Introduction

The regulator supplied as standard with the Rotax 91X series engines is manufactured by Ducati. Up to 2008 this was Rotax part number 965347 (now replaced by the mechanically identical unit part no 965349). The Schicke GR6 regulator is an alternative with improved cooling which can be used to replace either of the Ducati units. The replacement of the Ducati regulator with the Schicke GR6 regulator is described below.

2. Parts List

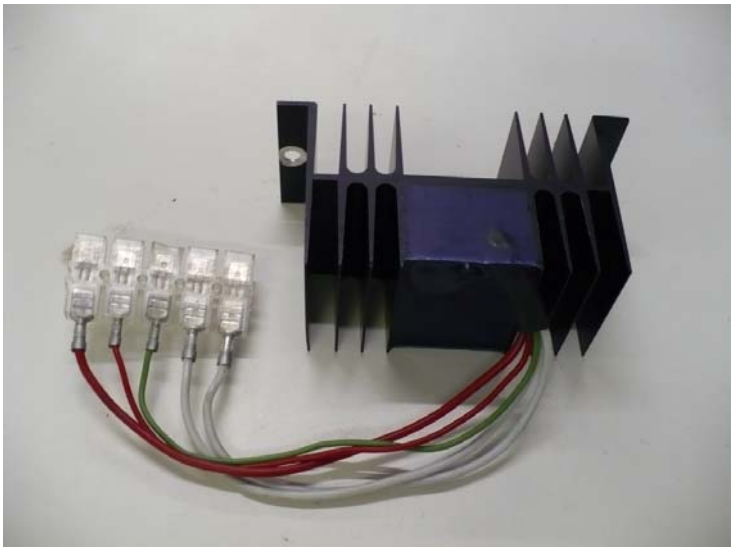
Qty	Part No.	Description	Source
1	Schicke GR6	Regulator	ConAir Sports Ltd Wayland House, Station Fields Fenny Compton Southam, CV47 2XD tel 01295 771088 www.conairsports.co.uk
1	M – M Connector Block	Connector block	
		Heat shrink sleeve	Maplin
1	N79AX, N05BB, etc.	Red LED	Maplin
1	359-5999	Fuse holder	RS Components
1	537-01240	0.5A 5 x 20mm fuse	RS Components

List of related Drawings / Photo's

Drawing No.	Title / Description	Issue
Picture 1	The Schicke GR6 regulator	1
Pictures 2 & 3	Extraction of spade terminals from the connector block	1
Figure 1	Wiring diagram	1

3. Action

3.1 Installation Overview.



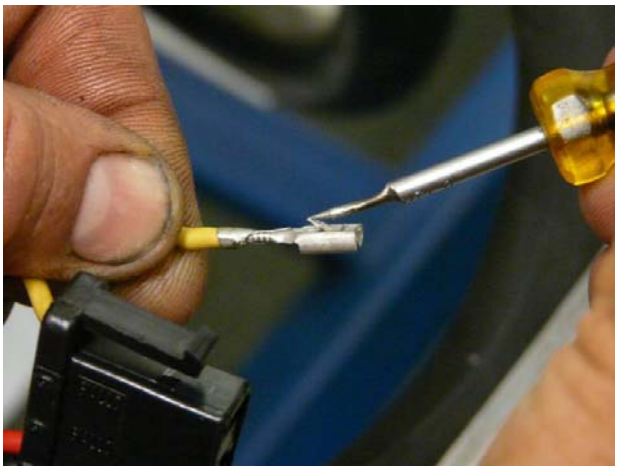
The regulator is the same width as the Ducati unit and may fit on the existing mounting holes. It should be installed in a cool location with the cooling fins vertical (see picture 1).

The regulator is supplied with un-insulated female "Faston" spade connectors on its wires. For safety, the exposed portion of the connectors must be insulated with heat shrink sleeve, extended 1 - 2cm onto the cable to provide some strain relief (not shown).

A male to male connector block is provided to connect between the regulator and the Rotax wiring loom.

Picture 1. Schicke regulator as supplied, with male to male connector block attached.

3.2 Ducati Regulator. Removal the connector block from the Ducati regulator. The individual spade connectors can be removed from the block by depressing the locking tongue with a small screw driver. See pictures 2 and 3.



Picture 2. The connector's locking tongue.

Picture 3. Depressing the tongue.

The connectors removed from the Ducati block are un-insulated. For safety, the exposed portion of the connectors must be insulated with heat shrink sleeve, extended 1 - 2cm onto the cable to provide some strain relief.

Mount the connector block securely and connect the wires. Double check that the connections are correct and the connector block is protected from water ingress.

3.3 Wiring layout. The wiring layout to be used is shown below. Note that the wiring schematic differs from the diagram supplied by Schicke and incorporates an additional capacitor and alternator switch.

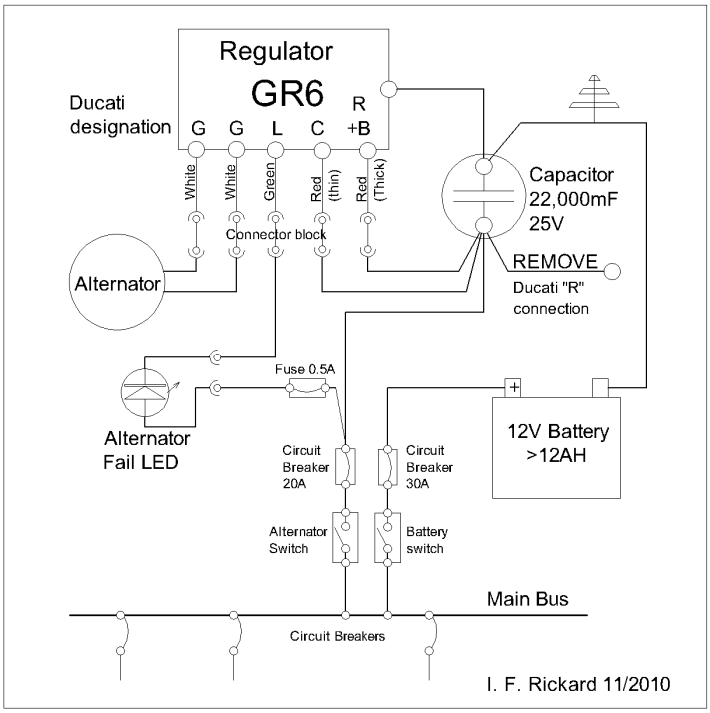


Figure 1. Wiring diagram.

The GR6 regulator has only five connectors; (the "R" connector is omitted). Either remove the "R" connection completely or ensure it is fully insulated and held firmly in a position where it cannot be grounded.

In this installation the original capacitor recommended for the Ducati regulator is shown, but any capacitor of 10,000µF or greater and rated at 25V or greater can be used.

3.4 Alternator warning light. If the existing alternator warning light installed is a thermionic bulb it must be removed and replaced with a suitable red LED protected by a 0.5A fuse. Car type fuses are not available at this rating. Part numbers for a suitable fuse holder and fuse from RS Components is given in the parts list. The current flow through the LED is controlled by the regulator so the voltage rating of the LED may be between 1.5 and 12 volts. Select a red LED which matches your panel layout.

4. Weight and Balance – No significant effect (68 grams lighter).

5. Test and Special Instructions

5.1 Initial test. Close the alternator and battery switches and ensure that the "Alternator Fail" LED illuminates. After the normal safety precautions, start the engine and ensure the LED goes out.

5.2 With the engine running above 3000rpm check that the voltage on the main bus is stable at 14.2 Volts.

6. Certification

Before the modified aircraft may be flown a suitable LAA inspector must check the Schicke GR6 regulator installation for fit and function and, if satisfied, make an appropriate logbook entry, including reference to SM12970 and sign a Permit Maintenance Release (PMR).

Approved:	F Donaldson B.Tech C.Eng FRAeS Chief Engineer	Signed: