



Component Fabrication for Gyro Home-builders

Most aircraft home-builders (rotary or fixed wing) have a good modicum of engineering skills and a well equipped home workshop. But where to turn when the task gets a little too complicated or where particular accuracy or fabrication skills are required? Many gyro builders in particular give Neil Hintz a call at Autoflight.



1. Dominator suspension with disc brake package fitted. 2. Disc brake components. 3. Multi cable push-pull throttle quadrant. 4. Engine mounting system component. 5. CNC machining a gearbox output flange. 6. RFD rotor-head bearing block. 7. 3D modelled, machined pattern for casting. 8. Subaru EA81 engine frame on Dominator gyro. 9. Two stroke crankcase casting in CC601-T6 ready for machining. 10. Front oleo with damped castering wheel.

AUTOFLIGHT can trace its origins back to a time when owner Neil Hintz, an experienced fitter turner and toolmaker, began to get asked by friends to make parts for the autogyros they were building, similar to those that Neil was fabricating for himself. At about the same time Neil also recognised the potential for utilising Subaru engines as cost effective microlight power plants and developed conversion kits for their aeromotive use.

The latter brought Neil to the attention of Rotor Flight Dynamics (RFD) in the USA, makers of Dominator autogyros and well renowned in autogyro circles. After meeting with RFD, an arrangement was subsequently agreed for Neil to supply engines to the company, exported from a small workshop in Hamilton. At this time, just over 10 years ago, Neil formed Autoflight Limited to also manufacture Dominator autogyros in NZ under licence to RFD, for



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sales throughout the Asia Pacific region.

A part-time business quickly became a full-time one, as Neil continued with his development of Subaru conversions, focusing on geared reduction drives under his new Autoflight brand. These reduction drives are exported worldwide and under a now familiar theme, they caught the attention of Titan Aircraft in the USA who now purchase Autoflight drives for their own kits as well as a variety of other components that are all manufactured in Autoflight's Hamilton workshop.

The company also produces a variety of gyro components as a sub-contractor to RFD, supplying all of their rotor-heads and many other CNC machined components which RFD then on-sell as part of their own kits. In turn, Neil supplies New Zealand customers with RFD manufactured rotor-blades and tails which he imports.

Extensive fabrication capabilities

With a workshop that includes a 4 axis CNC machining centre (with a dimensional capability of 850x500x500mm) and CNC lathe (both driven by a suite of 3D solid modelling and machining programs), manual lathes and mills, a cylindrical grinder for grinding hard shafts, tube bending and tig welding equipment, plus much more, there isn't much that Neil and his team of two can't turn their hands to. Capabilities include complicated patternmaking and casting, usually in CC601 alloy heat treated to T6 standards, either for one-off jobs or production runs. The CNC lathe can operate up to 400mm diameter, and is well suited to one of its current tasks being the manufacture of light aircraft wheels, again for export.

If it can't be made in house at AutoFlight, then Neil can probably arrange it through his wide network of engineering contacts – including for hard chroming, nikasil treatments, gear hobbing and more.

Autoflight hasn't forgotten its beginnings however, and Neil is well known in autogyro and other microlight and experimental aircraft circles as a go-to person for all of the fabrication jobs that home-builders aren't quite confident enough to take on themselves. These can include the bending and welding of complicated engine frames; fabrication of suspension, brakes and wheel components; control components; pre-rotators; and more. Development, fitting and tuning of Subaru engines for aeromotive use has also become a speciality.

For more information

To discuss any component fabrication requirements, email: info@autoflight.co.nz or phone Neil weekdays between 8.30 and 5pm on 07 824 1978. Neil can also supply Autoflight gear reduction drives and Dominator autogyro kitsets (both of which will be covered in more detail in a future issue of KiwiFlyer).

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