



# Engine Components NZ Limited

HAMILTON based Engine Components NZ Limited specialise in the repair and manufacture of critical and precision components for the aviation industry. Probably much more familiar to engine overhaul shops than the general aviation public, the company has a well established history of “fix it” capabilities that are often called upon for difficult repair jobs that sometimes save customers quite considerable amounts of money.

Formed in 1991 as a joint venture with Engine Components Inc. of the USA, the company has operated as a wholly owned subsidiary of Aeromotive Limited since 1997 and shares their CAA Part 145 certification. They are also participants in the Aeromotive (and wider Oceania Group) MORE (Maintenance, Overhaul and Repair Excellence) programme.

The company’s original bread and butter work was cylinder overhaul, at a rate of some 100 per month, however manufacturers’ pricing structures have long since undermined this market. Cylinder overhauls and Select Repairs are still undertaken, but Engine Components’ workload is now more focused toward other component repair and precision engineering tasks. These include:

- Crankcase repair services
- Hard chrome plating
- Precision reground cam followers
- Parco Lubriting
- Cadmium plating
- Aviation exhaust system repairs
- Precision welding to aviation standards (alloy, steel, engine mount frames, etc.)

There is significant experience and longevity of employment to be claimed by Engine Components four staff members. The company is also where Aeromotive’s Engineering Manager Brett Puddle first began his association with the organisation. All of the present staff were in fact with Engine Components at the beginning in 1991 and now specialise in particular roles in the company: Craig Patterson, (himself looking after crankcase work) manages the team of Steve Hunter (Chroming), Evan Lurman (Cylinders and Welding) and Murray Matheson (Cadmium Plating). All of the team either hold or are working towards ATITTO qualifications in aeronautical engineering and machining.

### Crankcase Overhaul

Crankcases are obviously complicated components. Cracks can develop due

to damage or casting defects and thrust surfaces may become worn or a bearing spun, necessitating either replacement or repair. Engine Components offer a suite of crankcase services from inspection, through to select repair and full overhaul.



Murray Matheson on the Cadmium Plating Line

Typically, a submersion dye check will be undertaken to check crack locations, followed by grinding of cracks or damaged areas, heating, specialist heli-arc welding, hardness checking, then surface and internal machining to as-new tolerances.

### Hard Chromium Plating

Engine Components are specialists in hard chrome plating and over the years have restored thousands of hydraulic rams, shafts, rollers, cylinder bores, wear plates, and much more. Worn or scored parts can often be salvaged by this process which will usually involve grinding, plating, embrittlement relieving and final grinding to size as required.

A common aircraft application is the reclaiming of worn pistons in nose gear oleo struts. This can be accomplished at a very competitive cost and Engine Components have a large variety of repair schemes available for different aircraft. (If one isn’t currently available, it can be easily arranged via design engineers.) It is becoming common to find pistons straight from the factory with very poor chrome as some are now using cheaper decorative chromes rather than genuine hard chrome.

Engine Components can strip and re-chrome back to factory new tolerances when required.

### Cylinders

The company offers a full range of cylinder services. These include supply and installation of new parts, welding and machining as required, grinding bores to oversize and honing. A re-barrelling service is also available whereby a useable barrel can be separated from an un-useable cylinder and vice-versa. These components can be mixed and matched within allowed tolerances, potentially saving the considerable cost of replacing an entire assembly for what might be a minor fault.

### Cam Follower Grinding

Engine Components can regrind cam followers to the contour specified for new parts. After grinding, cam followers are treated with Parco Lubrite, an immersion application of manganese phosphate which produces a non-metallic, corrosion resistant and oil-absorptive coating. This permits rapid break-in of moving parts without scuffing by preventing metal-to-metal contact between the bearing surfaces.

### Cadmium Plating

Cadmium plating protects from corrosion and rust. Engine Components are the only North Island company to offer a cad plating service, obviously undertaken to aviation standards.

### General Services

Although specialising in aviation, Engine Components often turn their skills toward other industries. Examples include dairy and automotive (particularly racing and classic cars) where complex and technical welding and machining is frequently required.

Perhaps the greatest strength of all though, is Engine Components “fix-it” reputation. When a problem is discovered during routine aircraft maintenance, a frequent solution is to “send it to EC and see if they can fix it”. In particular, their specialty welding skills have often saved the day (and a lot of money) for customers.

### More Information

For more information, contact Craig Patterson on 07 843 0426, email: craig.patterson@aeromotive.co.nz or visit [www.enginecomponents.co.nz](http://www.enginecomponents.co.nz)

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