



TITANIUM TECHNOLOGIES NEW ZEALAND

TiTeNZ - Titanium Technologies New Zealand - has created a platform of Titanium powder metallurgy technologies for high value manufacturing in NZ.

The TiTeNZ partners are expanding this capability in two new dimensions:

- Broadening the base of powder metallurgy beyond titanium alloys to a wide range of steels and other alloys, as well as high-performance ceramics
- Developing state-of-art near net shape forming methods, with an emphasis on Additive Manufacturing and Injection Moulding technologies, including:
 - Fused Filament Fabrication (FFF)
 - Metal and Ceramic Injection Moulding (MIM/CIM)
 - Wire Arc Forming
 - 3D printing with MIM feedstock in partnership with Massey University
 - High Precision Digital Light Processing (DLP) Processing of Metal Parts

High Pressure Injection Moulding

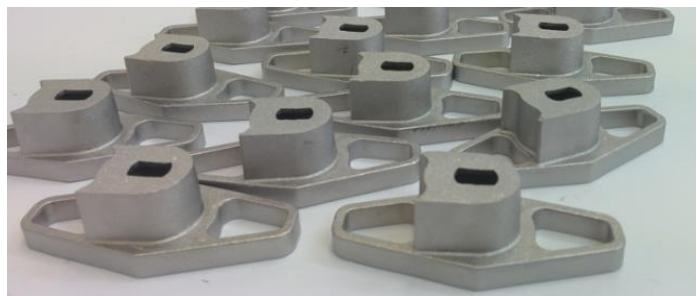
- Commercial feedstocks available for common alloys & ceramics
- High accuracy, repetitive manufacture of metal & ceramic components

Medium Pressure Injection Moulding

- In-house feedstock formulation ->Wide range of materials
- Ability to produce first prototypes



'Green', 'Brown' and Fired CP Titanium Parts
Manufactured by PGE Injection Moulding Ltd., Hamilton.



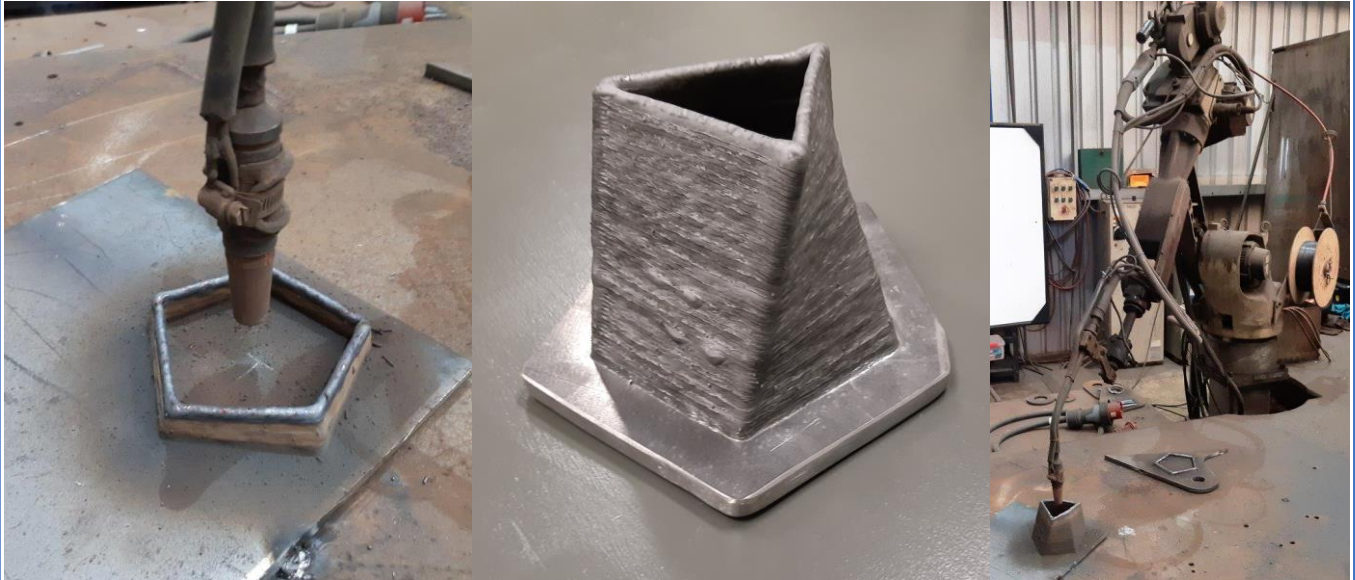
Ti6Al4V MIM Parts



Zirconia & Alumina CIM Parts

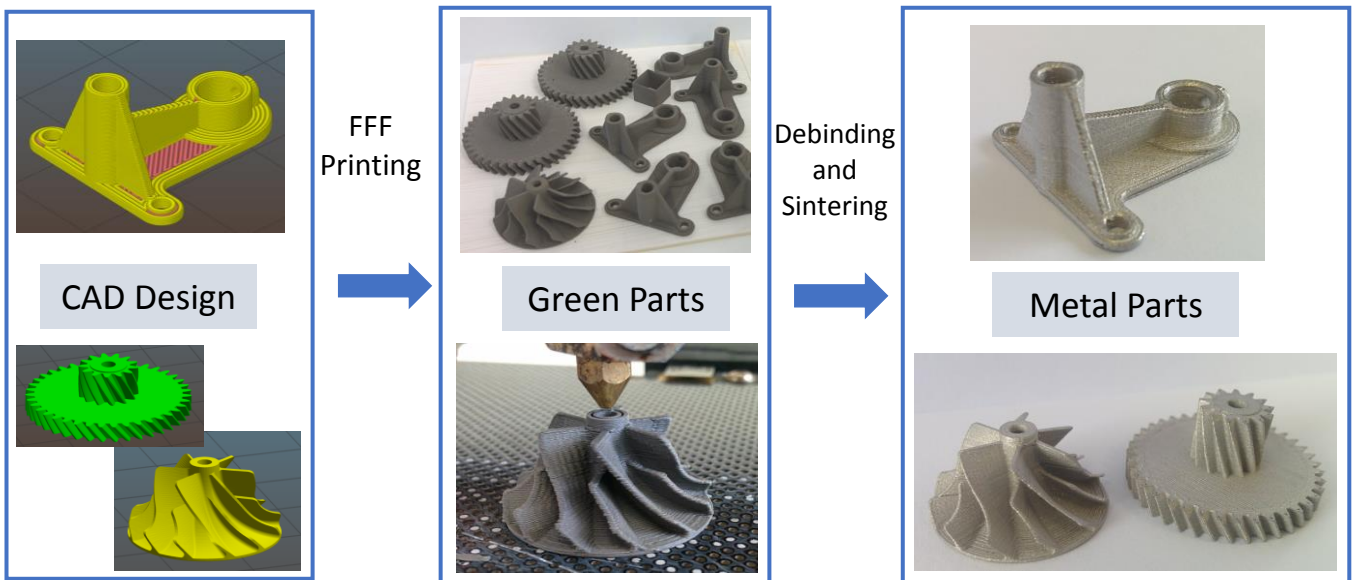
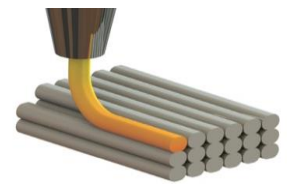
Wire-Arc Additive Manufacturing using a robotic welding facility at Page Macrae Engineering has demonstrated the feasibility of manufacturing customised large scale complex steel components.

A major cost saving comes from the use of wire feedstock, typically only 20% that of an equivalent metal powder feedstock. The image shows the use of Wire-Arc Robotic processing with steel wire to create a 5 side to 3 sided transformational structure.



Fused Filament Fabrication (FFF) of Metal Parts

- Metal-Binder composite filament with metal content >80 wt%.
- 316L Stainless steel; variety of other metals to come.
- Low investment cost: prints on any open FFF printing platform.



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Website: <https://titenz.co.nz/>