

## Croft Additive Manufacturing A blueprint for growth through innovation

“ Without the support of Made Smarter we simply would not be able to invest in this machine and take the next step as a company. ”

The Warrington-based metal manufacturer is unlocking future growth by innovating with cutting-edge 3D printing technology.

Croft AM designs and manufactures a wide range of complex metal components.

It has harnessed the design freedoms of 3D metal printing to deliver bespoke, innovative parts for use in oil and gas, water treatment, pharma, food and beverage, and aerospace industries.

The team of five at Croft AM is experiencing greater demand for printing in different metals such as steel, bronze and Inconel. But their expertise to deliver innovative solutions is being stifled by the technical limitations of the current print process and the costly and time-consuming cleaning involved when switching materials.

With specialist advice from Made Smarter, the business has identified a new leading-edge 3D metal printer to overcome these limitations and enable it to develop new products in new materials for new markets.

### The Challenge

While metal 3D printing technology is increasingly being used to produce industrial components, one of its major limitations is the time it takes to manipulate the technology to produce reliable parts.

Croft AM's current machine, a Realiser, takes more than five days to clean to avoid cross contamination of materials.

*“Moving between different metals in the same machine is a risky business,” Dr Louise Geekie, Director of Croft AM explained. “Cleaning is a long and expensive process with a printer capable of holding 100kg of powder. Unless you thoroughly clean it, you face contaminating the product with different metallic properties. This could waste thousands upon thousands of pounds worth of material, not to mention result in part failure.”*

Croft AM wants to be able to rapidly adopt different materials by investing in next generation technology that has open access software for build settings manipulation, as well as the ability to rapidly change metallic powders.

### The Solution

It is proposing to invest in a smaller metal 3D printer to overcome these limitations.

The new machine is capable of holding 4kg of powder and uses a different, more resource-efficient powder delivery system that recycles any unused powder.

The new system is also easier to clean, saving time and reducing labour-intensive cleaning processes.

It will become the testing ground for Croft AM's innovations, prior to mass production on its larger machine.

*“We are a company which is driven by innovation,” Louise said. “There is a culture that if anyone has an idea of how to do something differently, it will be trialled.”*

### The Benefits

Having a smaller printer which is easier to clean will dramatically speed up material change-over time, increase productivity and reduce downtime between jobs. This will unlock Croft AM's ability to take on a wider variety of work and grow.

The new machine recycles the unused powder for the next build, meaning there is less material waste produced by this manufacturing process.

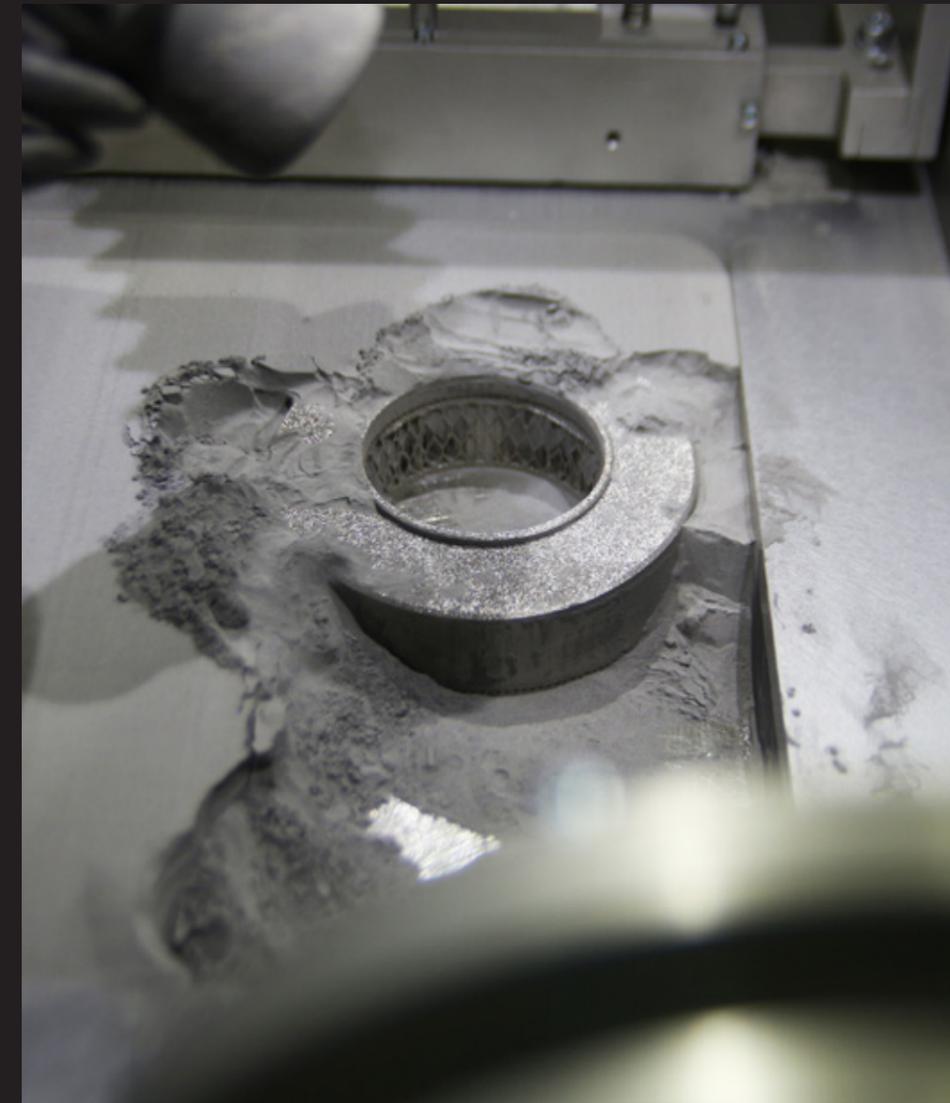
Louise said: *“By purchasing this machine, Croft AM will be able to change between different materials more effectively without the worry of cross contamination.”*

*“It will accelerate our ability to learn and develop our ability to manipulate the technology to produce reliable components.”*

*“To be able to rapidly deliver products in different materials, will give us more opportunity to quickly realise sales and generate profit. We will be able to say ‘yes’ to more, and in a wider range of industries.”*

### The Future

With more confidence in using different materials, Croft AM hopes to be able to invest in bigger printers to increase its capacity.



It is also embracing the opportunity to expand and improve its finishing service for additive manufacturing parts.

Louise said: *“Industrial additive manufacturing components are rapidly being adopted by many manufacturers across all sectors, as well as end-user processes to reduce costs, make tooling, decrease lead time, decrease*

*warehousing of parts, as well as introduction of part-on-demand.*

*“It's an exciting time to be innovating in this area.”*

