

Your partner for innovative manufacturing



Metal additive manufacturing for industrial applications



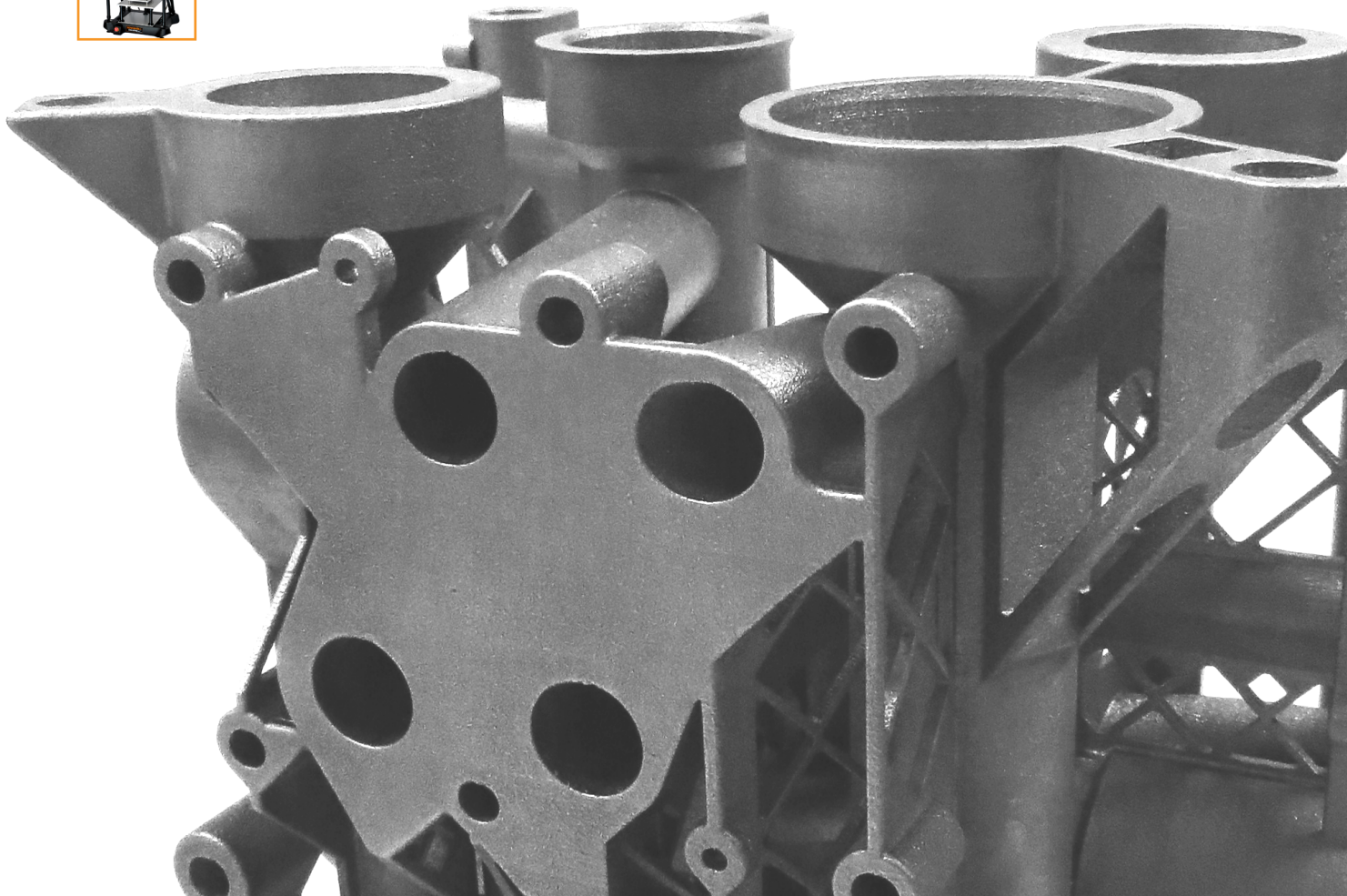
Global network of solutions centres



Applications expertise for a wide range of industries



Integrated manufacturing solutions



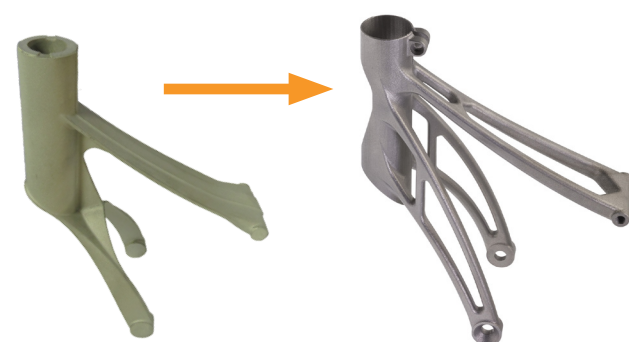
Your additive manufacturing solutions partner

AM benefits

Additive manufacturing (AM) offers firms in many industries the freedom to design innovative new products, taking advantage of the many potential benefits of this disruptive technology.

Renishaw's AM systems use metal powder bed fusion technology, and are capable of building in a variety of metals, including titanium alloy, stainless steel, aluminium, cobalt chromium and nickel alloys.

- Access to complex geometries
- Internal features e.g. cooling channels
- Multiple parts consolidation
- Lightweight optimised components
- Minimal tooling requirements
- Increased design freedom
- Rapid design iterations right up to manufacture
- Customised or bespoke parts
- Efficient material usage with minimal waste



Cast aluminium bike seat post bracket and optimised titanium bracket. A weight reduction of 44% was achieved by optimising the design for AM.

Barriers to AM process adoption

For many companies there are still barriers to the adoption of the technology as a production manufacturing choice.

Renishaw Solutions Centres lower these barriers by answering your questions and revealing hidden opportunities for AM technology.

What is possible?	Design for additive manufacturing know-how
	Time and effort to optimise and validate new designs
Will it work for me?	Identify components for AM
	Qualify and control new processes
What else do I need to know?	Finishing operations to complete part production
	Safe powder handling facilities and practices
What is the business case?	Significant costs for initial machine, facility and staffing
	Quantify performance and cost benefit

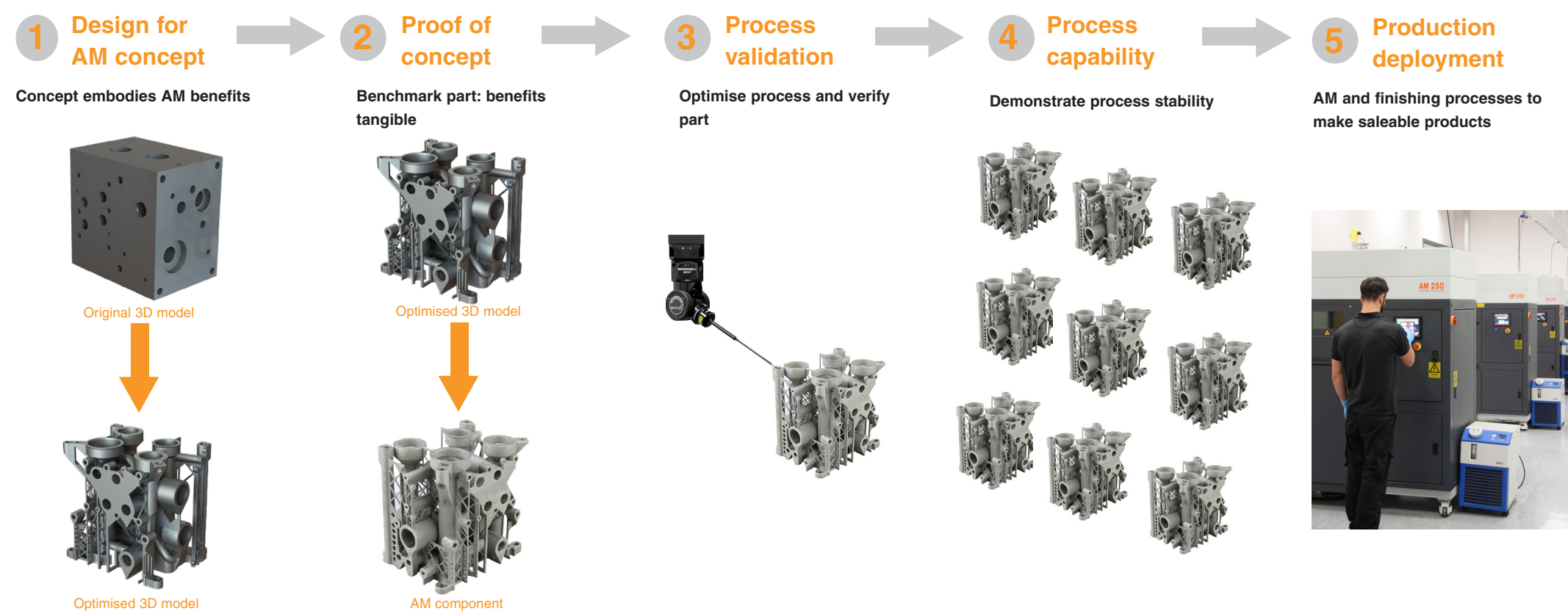
Your pathway to innovative AM products

Renishaw Solutions Centres provide a secure development environment in which you can build your knowledge and confidence using AM technology.

Equipped with the latest AM systems and staffed with knowledgeable engineers, a Solutions Centre offers you a fast and accessible way to rapidly deploy this exciting technology in your business.

Renishaw will support you throughout your investigation and business case development process, helping you to optimise your design, build your confidence in the process, and gain the evidence you need to make investment decisions.

Whilst AM can create complex geometries in a single process step, some level of finishing is generally required to produce functional products. Our knowledge of metrology, machining and finishing processes can assist you to develop an integrated manufacturing solution.



Application engineering support • Dedicated incubator cell • Pre-production facility • Your supply chain

AM Solutions Centres capabilities

Pre-production

To demonstrate process capability.

Incubator cells

Develop your design and AM process expertise with access to all ancillaries and qualified engineers.

Private offices

Confidential working environment.

Materials lab

For QA analysis, including microscopy, gauging and density measurements.

Machining

5-axis CNC to finish complex components.

Finishing

Supports removal, polishing and surface treatment.

Heat treatment

Dedicated heat treatment room and expertise.

Inspection

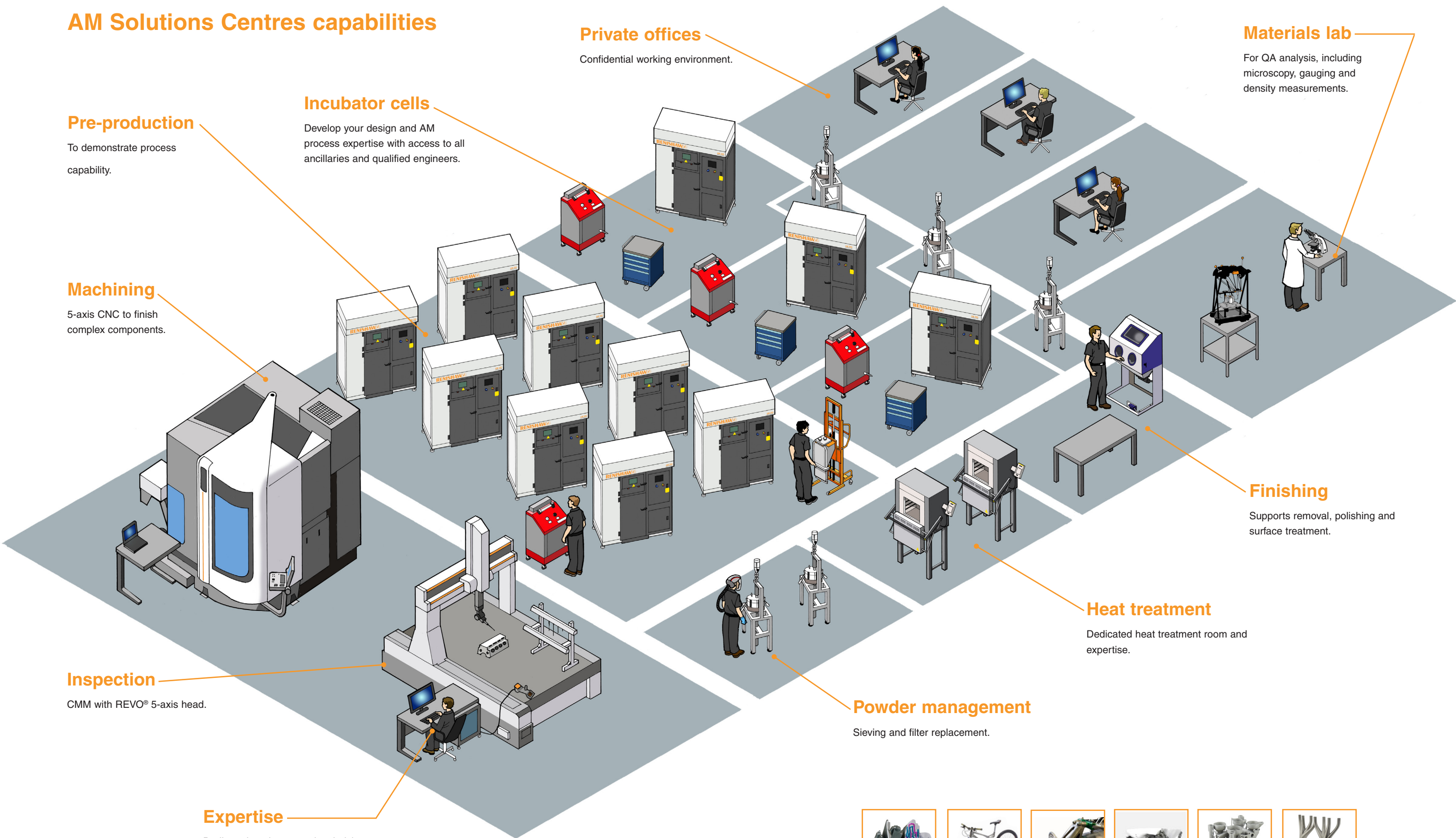
CMM with REVO® 5-axis head.

Powder management

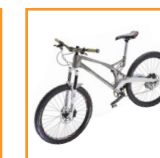
Sieving and filter replacement.

Expertise

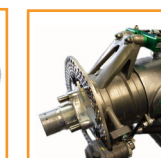
Dedicated engineers and technicians.



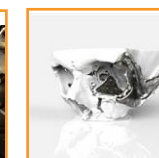
Mould and die



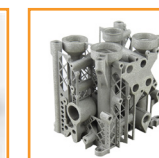
Consumer



Automotive



Medical and dental



Oil and gas



Space and aerospace

End to end manufacturing solutions

Incubator cells to nurture your idea

Your private development facility, including:

- Secure, access-controlled process incubator cell
- Direct data transfer to AM machine from non-networked computer
- Dedicated Renishaw additive manufacturing system
- Choice of materials, with the option to use your own powder
- Dedicated powder handling accessories to ensure purity
- Predictable costs and no overheads
- Access to expert Renishaw engineers and technicians
- Optional access to finishing processes, metrology and material analysis



Pre-production capacity to prove your process

Ramp up towards production volumes

- Access to multiple AM systems
- Metrology and finishing processes as required
- Agreed unit costs
- Support for process capability studies
- Business case preparation



Process and applications expertise

Manufacturers in many fields apply Renishaw's world leading metrology systems to verify and control their processes.

As an experienced manufacturer itself, Renishaw has expertise in precision machining, finishing and treatment processes, which are essential complements to additive manufacturing.

Our approach is to work with you to develop an end to end process that optimises the performance and cost of your innovative new product, equipping you with the capability to unlock hidden performance benefits.



To find out more call +44 (0) 1785 285000 or e-mail additive@renishaw.com

About Renishaw

Renishaw is an established world leader in engineering technologies, with a strong history of innovation in product development and manufacturing. Since its formation in 1973, the company has supplied leading-edge products that increase process productivity, improve product quality and deliver cost-effective automation solutions.

A worldwide network of subsidiary companies and distributors provides exceptional service and support for its customers.

Products include:

- Additive manufacturing and vacuum casting technologies for design, prototyping, and production applications
- Dental CAD/CAM scanning systems and supply of dental structures
- Encoder systems for high-accuracy linear, angle and rotary position feedback
- Fixturing for CMMs (co-ordinate measuring machines) and gauging systems
- Gauging systems for comparative measurement of machined parts
- High-speed laser measurement and surveying systems for use in extreme environments
- Laser and ballbar systems for performance measurement and calibration of machines
- Medical devices for neurosurgical applications
- Probe systems and software for job set-up, tool setting and inspection on CNC machine tools
- Raman spectroscopy systems for non-destructive material analysis
- Sensor systems and software for measurement on CMMs
- Styli for CMM and machine tool probe applications

For worldwide contact details, visit www.renishaw.com/contact



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