

# Precision MANUFACTURING

FROM THE SMALLEST TO THE LARGEST MAGNET, BUCKLEY SYSTEMS DELIVERS UNPARALLELED MANUFACTURING CAPABILITY WITH PRECISION AND SPEED. WE DO THIS VIA A POWERFUL COMBINATION OF PEOPLE AND PLANT, INNOVATIVE TECHNIQUES AND AN INTEGRATED APPROACH FROM PROTOTYPE TO PRODUCTION. FED INTO THIS PROCESS ARE THE RIGHT INGREDIENTS, SUPPLIERS AND PARTNERS.

## UNPARALLELED MANUFACTURING CAPABILITY

Buckley Systems' machine shop comprises more than 30 CNC machining and lathe centers, spread over a 7,000m<sup>2</sup> workshop. Our investment in machining capability is about more than just purchasing the largest, most advanced CNC equipment – we also hire and develop a large team of highly skilled operators.

Choosing to maintain this depth of in-house machining capability streamlines the manufacturing process and provides our customers with the best product, faster and with less risk.

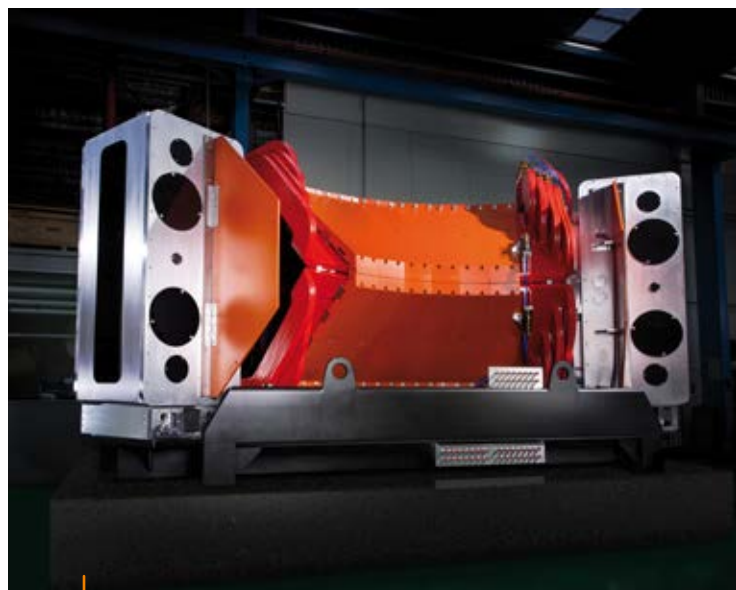
## SCALE, PRECISION, AND SPEED: HAVE ALL THREE

Our obsession with machining capability means that you don't have to compromise. We can manufacture the largest analyzing and scientific magnets (many tens of tonnes) through to devices you could hold in your hand.

Our manufacturing precision is world-class, and trusted by industry and research institutes alike. Using our latest CNC milling equipment (such as the recent DMG MORI DMU 210 5-AXIS), EDM wire cutters, and precision grinders, we can tailor a manufacturing technique to achieve critical tolerances.

That's why we're trusted by national laboratories like TRIUMF to machine their cutting edge spectrometer systems.

Finally, we have unrivalled capacity – so we can offer unbeatable delivery times.



Buckley Systems manufactures this 28-ton analyser magnet.



## POWERED BY PEOPLE

We employ over 50 dedicated CNC operators. Since we are focused on the particle accelerator systems, our operators have a depth of industry specific knowledge. Because merely owning a machine isn't enough - by investing in training and development, we can push our tools to achieve every last micron of tolerance.

## POWERED BY INNOVATION

Hand in hand with our people investment, we regularly innovate on production techniques in order to meet the exacting requirements of our customers. For example, we have invested in friction stir-welding technology to produce unparalleled vacuum welds in aluminum.



"Buckley Systems prototyped and manufactures this projected field magnet for GMW. Innovative manufacturing techniques allowed GMW to reach impressive current densities in this highly space-constrained magnet.



Buckley Systems' machine shop is built around flexibility. We can produce prototypes and first articles, efficiently and responsively. We can then seamlessly scale up to production runs - using the same production line as the prototyping phase. That's how we produced 641 precise magnets for the Taiwan Photon Source Synchrotron project, and over 1,000 (and counting) magnets for Varian Clinac X-Ray therapy machines.

We also pioneered a highly efficient and precise method of producing laminated multipole magnets using laser cutting and EDM machining. Obtaining 6-micron tolerances on assembled multipole magnets may have been thought infeasible, until Buckley Systems did it.

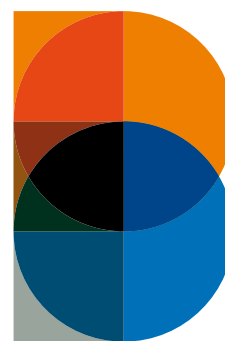
## WE DO IT ALL

Plating, welding, finishing. We take care of all the ancillary processes. We also manufacture all coil formers, jiggging, tooling, even the test equipment associated with producing product - all in house, with our characteristically high level of care and attention. You typically don't see this process, but it's critical to the quality and repeatability of the finished product.

## THE RIGHT INGREDIENTS

We source magnet steel especially made for Buckley Systems by our trusted suppliers. We've fully characterized the magnetic properties and are confident in providing consistently high quality magnetic materials.

We also draw on the experience of a network of trusted suppliers for exotic manufacturing techniques such as electron beam welding or robotic laser welding.



**BUCKLEY  
SYSTEMS**

Ingenious at work

To understand how we can forge an ingenious partnership with you, contact us on +1 978 948 3403 or +64 9 573 2200, visit [www.buckleysystems.com](http://www.buckleysystems.com), or email [sales@buckleysystems.com](mailto:sales@buckleysystems.com)

