

CASE STUDY

Box Build Manufacturing

Product Resources manufacturing team builds electronic boxes for medical radiation systems

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Product Resources provides turnkey product development and box build manufacturing solutions to the medical and scientific community.

In many cases, clients come to us with a product idea that needed to be designed and engineered, or a prototype that needs to be further developed for the manufacturing process.

In this particular case, the product development work was complete and fully documented. Our role was confined to manufacturing.

Background

The treatment and survival rates of cancer continue to improve with advances in science research and technology.

Today, transformative proton therapy is being recognized as the next evolution of radiation treatment for cancer. This high-powered method of proton therapy provides enhanced, direct beam quality and stability.

The proton beam is directed to target the affected area with minimal dose impact to areas not targeted for treatment. This approach reduces the risk of possible side effects and complications that coincide with cancer treatment.

These systems are seen to have a higher level of reliability and increased up-time combined with lower capital and operating costs.

The Challenge

This radiation treatment system is a massive manufacturing project involving multiple suppliers and contract manufacturers.

All design and engineering work, as well as the documentation, were finalized before the project arrived.

Our challenge was simple and straightforward: to build to the client's exact specifications.

Manufacturing

As an ISO 9001 and 13485 contract manufacturer, Product Resources has extensive experience with short run, complex box build manufacturing.

The client's radiation treatment system itself was beyond our scope of work. Our assignment was to build a series of electronic control and power distribution modules – which would later be installed into the larger system.

Each box build assignment came with its own specifications and documentation. And each followed our usual manufacturing protocol:

- loading the documents into our ERP system
- producing a bill of materials
- sourcing all of the components from our supply chain

Product Resources maintains a network of some 600 approved suppliers. We used 15-20 of those suppliers on this project.

Assembly and Testing

As parts and components arrived from our suppliers, our electronic assembly team developed a quality plan that outlined the assembly process which included ongoing functional testing and sub-assembly testing, and final inspection.

For each completed module, we conducted Input/Output (I/O) response tests and provided the required test records and reporting to the client with delivery.

A Focus on Quality

Product Resources has an outstanding reputation of maintaining the highest levels of quality both in house and in the field. This includes ISO 9001 (for design and manufacturing) and ISO 13485 (for medical device manufacturing).

“This project fit very well with our manufacturing capabilities,” said Gerry Mace, Partner and VP of Manufacturing at Product Resources. “The client provided us with very clear and specific instructions for building and testing these boxes. And we’ve been able to follow them to their exact specifications.”

Learn More

Find out more about Product Resources and how our design, engineering and manufacturing services could fit into your product development process.

To request a quote or schedule an initial discussion, contact John Erickson at 978 225 4994 or jerickson@prodres.com. Or complete the form at the right for an immediate informational download.

About Product Resources

Product Resources is a product development and contract manufacturing company specializing in complex products for the scientific, medical and industrial markets.

Product Resources provides a full range of design and manufacturing services that include:

- Industrial Design
- Prototype Development
- Design for Manufacturability (DFM)
- Manufacturing Assembly and Supply Chain Management
- Post-Manufacturing Support & Service
- Product Testing & Compliance
- Sustained Engineering
- Design for Explosive Atmospheres

Customer projects may include complete products, sub-systems or sub-assemblies.

Product Resources is located in Newburyport, MA – about 35 miles north of Boston. All testing and assembly work is done in its 33,000 square foot manufacturing plant.

ISO-certified product manufacturing

Recognizing the importance of quality, Product Resources has earned and maintained the following quality certifications:

- **ISO 9001**-approved for engineering design, development, manufacturing and service – certified by TUV.
- **ISO 13485**-approved for medical device manufacturing and service – certified by TUV.
- **ISO/IEC 80079-34** approved for engineering design, manufacturing and service, audited by TRaC Global, for equipment and instrumentation used in explosive atmospheres.