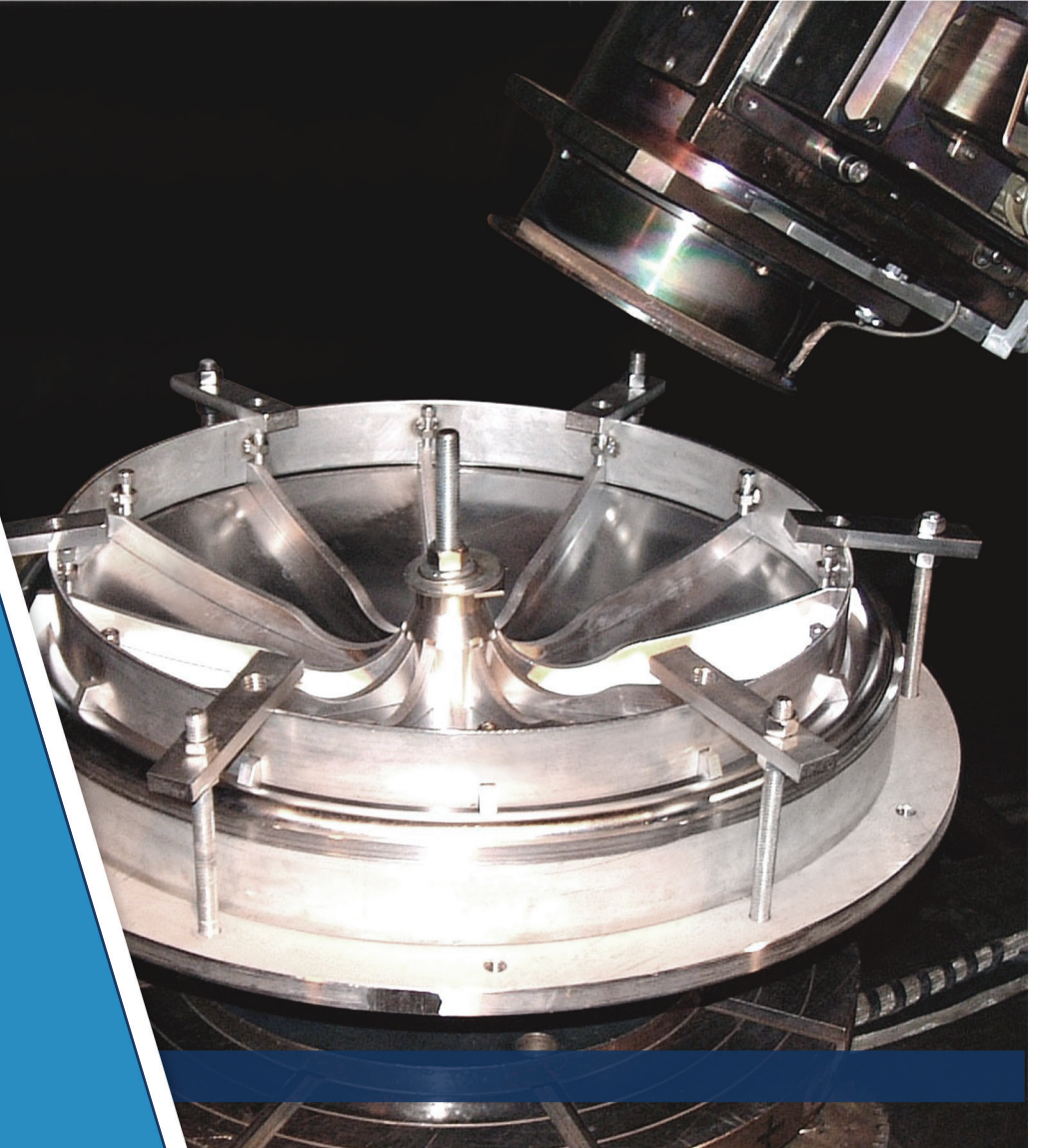


SCIAKY INC.®



EB Welding Services

Sciaky offers a wide range of affordable EB welding services for customers in a variety of industries all over the world.



Sciaky offers a wide range of affordable EB Welding services

Sciaky offers a wide range of affordable EB welding services for customers in numerous industries all over the world. We have the capability to weld large assemblies up to 24 feet in length or 92 inches in diameter, to tiny parts that fit in the palm of your hand. Whether your requirements call for the development of a prototype part or fabrication services for large volume production, Sciaky has the right solution to meet your needs. Best of all, Sciaky's custom EB welding services are competitively priced and offer tremendous advantages over smaller job shops in terms of equipment and expertise.

WHY EB?

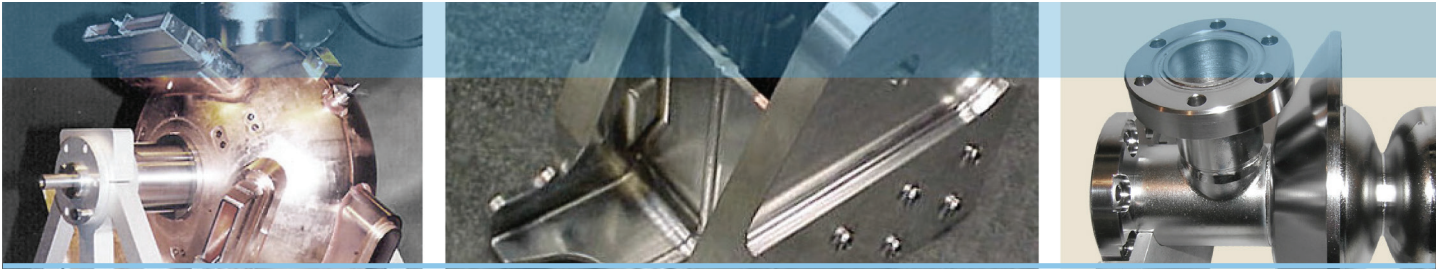
EB is an excellent choice for applications containing refractory alloys and dissimilar materials. Advantages of electron beam welding include a high power density with very low overall heat input and, therefore, minimum distortion. Electron beam welded parts require a minimum of post weld machining and heat treatment, and, unlike other fusion welding processes electron beam requires no shielding gases. The weld quality is exceptional, while the process is fully automated and extremely efficient—typically 90%.

Our Electron Beam Welding services offer you the following advantages:

- ▶ Versatility to weld thin foils to thick sections (greater than 2.5" depth of penetration)
- ▶ Multi-axis EB control
- ▶ High ratio of depth-to-width
- ▶ High precision and repeatability with virtually 0% scrap
- ▶ Maximum penetration with minimal distortion
- ▶ Exceptional weld strength
- ▶ Inert atmosphere (vacuum)

Sciaky has been at the forefront of EB welding technology for decades and has used this time-tested technology to meet stringent military specifications on items such as airframes, landing gear, jet engines, guided missiles and vehicle parts.

1+ (877) 450-2518
sciaky.com



ELECTRON BEAM ADDITIVE MANUFACTURING (EBAM)

Sciaky's exclusive Additive Manufacturing (AM) solution, which utilizes our state-of-the-art EB technology, is the only commercially-available, large-scale, fully-programmable means of achieving near-net shape parts. This unique process can be provided as a service to produce functional prototypes and production parts at a fraction of the cost and time of traditional manufacturing methods. The process starts with a 3D model from a CAD program and utilizes Sciaky's fully-articulated, moving electron beam gun to deposit metal (via wire feedstock), layer by layer, until the part is ready for minor finish machining. Depending on the part being manufactured, deposition rates can range from 7 to 20 pounds of metal per hour. Plus, Sciaky's patented Closed-Loop Control technology ensures that part production can be replicated according to the same established parameters (i.e. geometry, material properties, and material composition), from the first part to the last.

LABORATORY TESTING AND DEMONSTRATION CAPABILITIES

Sciaky's process development laboratory is staffed with highly qualified personnel and the latest equipment to evaluate your specialized welding applications and feasibility programs. Our skilled technicians offer the latest welding processes, system design, weld joint design, metallurgical expertise, and programming skills. The process laboratory occupies about 4,000 square feet within the service facility. Additional testing, such as radiographic inspection and ultrasonic inspection scanning of electron microscopy, are available as well.

OTHER EB WELDING SERVICE CAPABILITIES

- ▶ Welding Specification Certification
 - Standards such as AMS2680, AMS2681B, AWS D17.1, AWS C7-3, Mil-W-46132, ASME Boiler & Pressure Vessel Code
 - Quality Procedures and Manuals, Detailed operation sheets, Approved EB weld schedules with configuration controls
 - Nadcap accreditation for EB welding and Quality Systems AS7003 and AC7004
 - Customer-Specific Certifications
(For example, Sciaky has been certified by GE Aviation for EB welding services since 2001)
- ▶ EB Welding Consultation – Have a Sciaky EB welding expert show you how to get the most out of your Sciaky EB welding system
- ▶ Metallurgical Analysis Services
- ▶ NDE – Leak checking, Dye Penetrant inspection, Laboratory Testing
- ▶ Custom Part Fixturing & High-Throughput Fixturing
- ▶ Pre-or Post Weld Machining
- ▶ Work Handling Capacity up to 20 tons
- ▶ Cleaning and Painting Facilities

EXAMPLES OF ASSEMBLIES/COMPONENTS/PARTS WELDED USING SCIAKY'S EB TECHNOLOGY

Superconducting Cavities for High Energy Physics, Aircraft Engine Cases and Assemblies, Military Aircraft Components and Structures, Rock-bit Assemblies and Tank Tubes for Petroleum/Mining Diaphragm Assemblies for Power Generation, Transmission Gears for Automotive and Truck/Off-Highway.

OUR EB SYSTEMS

Sciaky's 140,000 square foot facility houses the largest range of EB systems in the world. Our large and small chambers, with CNC-controlled multiple axes, handle some of the largest, most sophisticated EB applications in the industry. Plus, Sciaky's exclusive moving EB gun helps deliver unmatched precision and quality. Below is a partial list of our versatile machines and capabilities:

► VX-300 EBAM/Electron Beam Welder

Hard Vacuum (1×10^{-4} Torr)
42 kW- 60 kV Gun with Optics
CNC Control - Joint Scanning and Digitizing System
Work Envelope - 228" x 48" x 48"
Chamber Interior Dimensions - 300" x 108" x 132"
Closed-Loop Control Technology (EBAM)

► VX-68 Electron Beam Welder

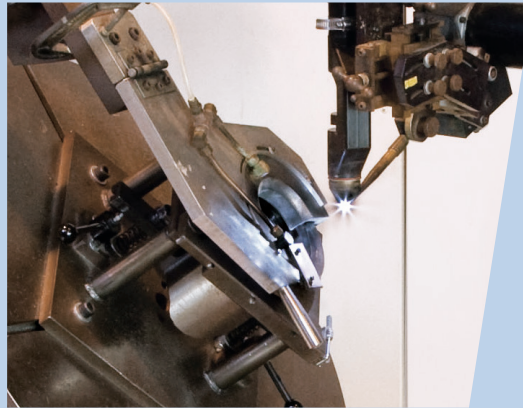
Hard Vacuum (1×10^{-4} Torr)
42 kW - 60 kV Gun with Optics
CNC Control - Joint Scanning and Digitizing System
Work Envelope – 51" x 33" x 41"
Chamber Interior Dimensions – 68" x 68" x 84"

► VX-54 Electron Beam Welder

Hard Vacuum (1×10^{-4} Torr)
12 kW - 60 kV Gun
CNC Control - Joint Scanning and Digitizing System
Work Envelope – 37" x 24" x 20"
Chamber Interior Dimensions – 54" x 50" x 54"

► Two AcuWeld 1000 Advanced Arc Welding Systems

5 axis GTAW / PAW - CNC controlled
X : 42" Travel
Y : 18" Travel
Z : 21" Travel
Part Tilt : - 5° / + 95°
Part Rotation : Infinite



*Sciaky also provides additional rotary, rotary tilt, and multiple-spindle part manipulators.

Call Sciaky today to see how we can help you maximize part throughput.

1+(877)450-2518



To learn about Sciaky's patented technology,
visit www.sciaky.com/patents

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