

HIGH-PERFORMANCE MACHINES FOR ELECTRON-BEAM WELDING OF CRITICAL STRUCTURES



Specification

Welded materials: steels, high-tensile and heat-treated alloys, non-ferrous and light alloys, reactive and refractory alloys.

Vacuum chamber volume, m ³	0.2–100
Vacuum chamber evacuation time, min	3–20
Chamber operating vacuum, mm Hg	2×10^{-4}
Welded metal thickness, mm	0.5–200
Power of generating units, kW	6–120
Accelerating voltage of power generating units, kV	60–120

Areas of Application

The machines are designed for welding assembly units in aerospace industry, power and chemical engineering, instrumentation and medicine and for implementing the technology for electron-beam repair of assembly units of aircraft engines and gas turbines

Stage of Development. Suggestions for Commercialization

IRL9, TRL9
Manufacture, commissioning, warranty and post-warranty maintenance of electron-beam equipment are provided in accordance with customer's specifications and intended use of the product

Advantages

The machines have an intra-chamber mobile electron-beam gun with 3–5 degrees of freedom and positioning accuracy of, at least, 0.08 mm. The box-structured walls and doors of the vacuum chamber provide a twice higher inertia moment at the same thickness. The machines are controlled using distributed computer systems

IPR Protection

IPR1

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