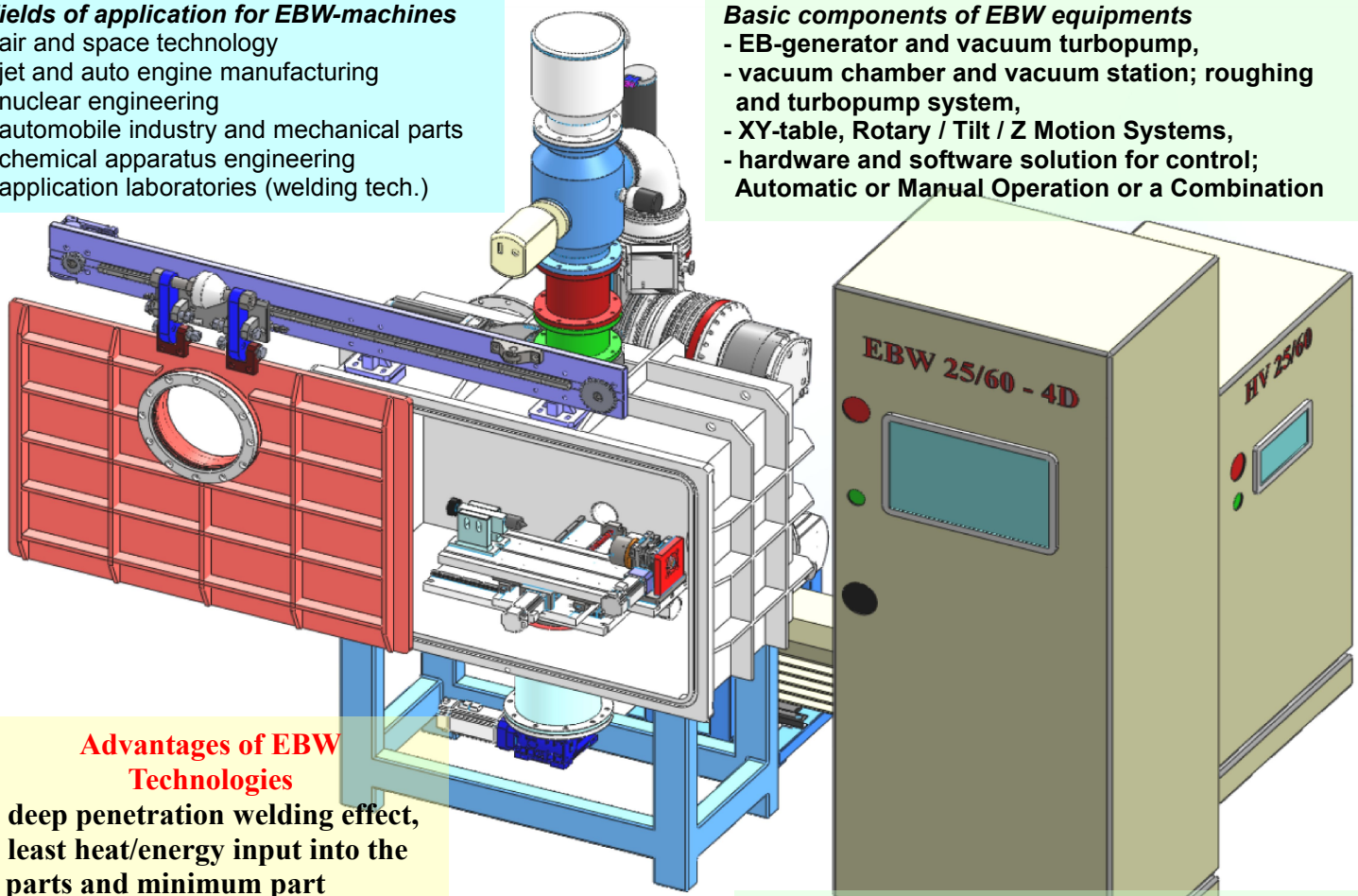
Electron Beam Welding System

EBW 25/60 - 4D equipments are a universal machines for electron beam technology. The mechanical and electrical components are made up of a system of modules and can, therefore, be easily adapted to the various processing requirements. A high operating convenience and the great selection of additional facilities make chamber machines flexible machine tools for complex welding operations.

Fields of application for EBW-machines
- air and space technology
- jet and auto engine manufacturing
- nuclear engineering
- automobile industry and mechanical parts
- chemical apparatus engineering
- application laboratories (welding tech.)

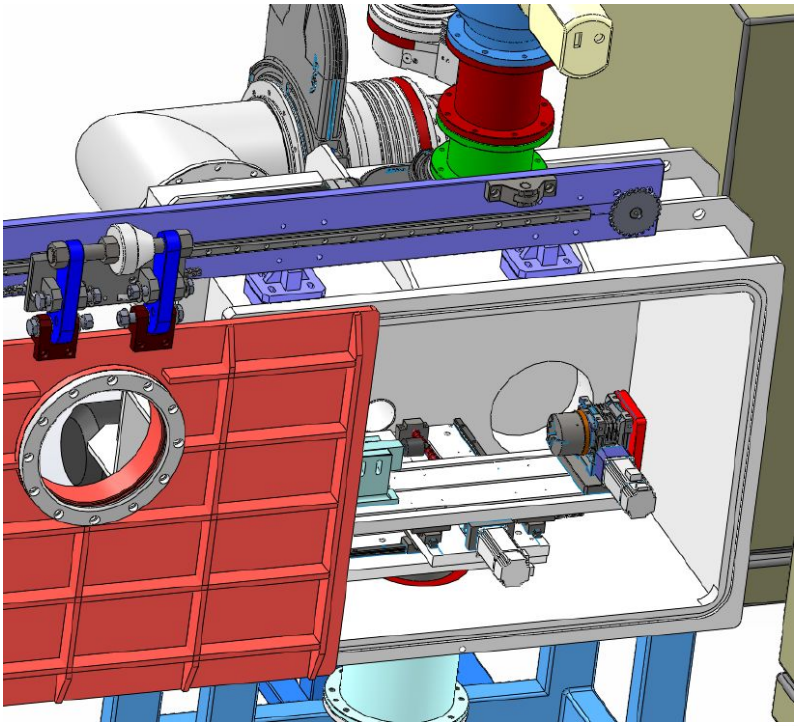
Basic components of EBW equipments
- **EB-generator and vacuum turbopump,**
- **vacuum chamber and vacuum station; roughing and turbopump system,**
- **XY-table, Rotary / Tilt / Z Motion Systems,**
- **hardware and software solution for control; Automatic or Manual Operation or a Combination**



Advantages of EBW Technologies
- **deep penetration welding effect,**
- **least heat/energy input into the parts and minimum part distortion,**
- **welding of different materials,**
- **high welding speed,**
- **high process assurance,**

- **viewing systems: light-optical, electronoptical and video viewing system**
- **high-voltage power supplies; Fast Response, Closed Loop Beam Current Control**
- **Data Acquisition System (option)**

ADVTECH not only advises you regarding a suitable electron beam machine type, but can suggest entire system concepts, and develop solutions for integrating the system in the production chain. The design of an electron beam system is based on the manufacturing requirements. Smart solutions for securing and moving the work pieces contribute decisively to optimizing cycle time.

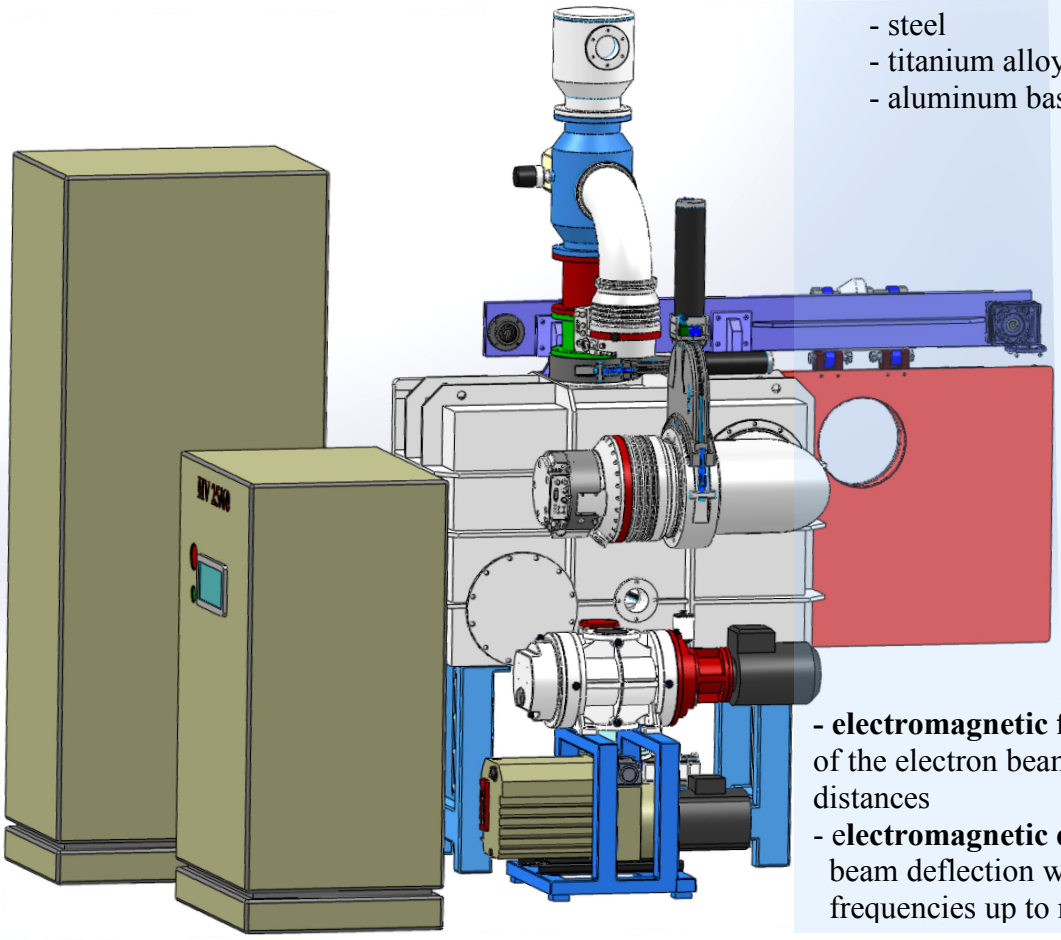


Main Technical Parameters

- vacuum chamber dimensions (mm)

Lenght	Width	Height
1000 - 2000	800 - 1600	800 - 2000

- ultimate pressure;
  - in vacuum chamber; $5x10^{-7}$ mbar
  - in eb - gun; $1x10^{-8}$ mbar
- high-voltage generators: up to 60 kV
- beam power of the systems: 1 – 25 kW
- stability of accelerating voltage and welding current; 0.5 %
- beam deflection angle using XY electromagnetic coil;
  - Static - ± 5°
  - Dinamic - ± 3°
- beam spot diameter;
  - at 250 mm working distance = 0.4 mm
  - at 600 mm working distance = 0.6 mm
- Maximal thickness of materials penetration, (mm)
  - steel 70
  - titanium alloys 105
  - aluminum based alloys 135



- **electromagnetic focusing lens** - precise focusing of the electron beam also for various working distances
- **electromagnetic deflection system** - universal beam deflection with DC and AC current with frequencies up to more than 100 kHz,

SC Advanced Technologies Trade SRL
Address: Calea Cringasi, No 36, Block No.13, Stairs 2, 1st Floor, Ap. 60, District 6, Bucharest - Romania
Mobile : +40 72 6387625, **Mail :** lg@advtech.ro, office@advtech.ro, **Web :** www.advtech.ro