Electron Beam Welding Machine (Qty=01 Nos.)

Electron beam welding Machine with vertically mounted Electron Gun and with CNC Control system	
Material to Weld	• Stainless Steel & Alloys • Copper & Copper based alloys • Aluminum and Aluminum Alloys
Gun Position & Type	Vertically mounted outside the chamber with Direct Heating Cathode (Cathode mounting device with minimum change time and without beam adjustment after cathode change.)
Gun accelerating voltage	**60KV** (Adjustable) Stability: ± 0.5% , Reproducibility: ± 0.5%
Beam Power	**6 KW** (Max)
Beam current	**0.1-100 mA** Stability: ± 0.5% , Reproducibility: ± 0.5%
Beam penetration range	**0.1-25mm**
Beam Focusing system	Adjustable Focus current (CNC and Manual beam focus control) Focus control by magnetic Lens Stability: ± 0.5% , Reproducibility: ± 0.5%
Beam Deflection System	CNC and Manual Deflection Control X & Y Deflection angle: ± 3° or better Function Generator: Sine ,Square ,circle, Ellipse, double sine etc.
Gun vacuum system	Upto 10^{-6} mbar or better Isolation valve to ensure gun vacuum.
Chamber Vacuum System	Working vacuum 10^{-5} mbar or better Pumping time less than 5 minutes. Vacuum gages to show vacuum data on the PLC. Note: **All the vacuum components should be from same reputed manufacturer such as Leybold Germany , Pfeiffer or Edwards only.**
Gun travel	**250mm or better**
Gun travel speed	0.1- 2 meter/minute
Position accuracy	± 0.03 mm
Welding Chamber Size & Specifications	**350 mmx350mmx1500mm (inside effective)** & should be extendable Horizontally from rear side Rear side should be free from any hindrance. Front access door, viewing port and sealing system. The wall thickness of welding chamber should be rigid for protection again X-Ray Leakage.
Work handling system	1. Horizontal Rotary chuck mounted externally on left of chamber. 2. Tail stock at the right of chamber. 3. CNC controlled X&Y Table mounted on bottom of chamber
Chuck(Rotary system) capacity	Nature: 3-jaw self-aligning (non-magnetic) Speed: Adjustable 1-50 rpm ,speed stability: ± 1% Through hole dia: 70 mm, Minimum gripping dia: 5 mm Servo motor drive system (CNC controlled) Axis accuracy: ± 0.03 mm

X-Y Table Capacity	Table Size: 150X150 mm or better Speed of Rotary table: 0-30Rpm Accuracy X&Y Axis: ± 0.03 mm, Load capacity: 20 kg
Wire Feeder	Quote Wire feeder option also.
Control system	**(SINUMERIK or FANUC Control only)** CNC with auto diagnostic maintenance and alarm Control of accelerating voltage, Beam current ,Focus current, X&Y Beam deflection, Gun movement, XY Table axis, Chuck speed etc. Welding program should have data of full welding cycle including vacuum up, dwell time and vacuum down.
Parameter Display	Parameter display on control panel Vacuum level in chamber &Gun, Valve position indicators etc. Speed and position of chuck and XY Table Speed and position of Gun, Focus current, Beam current , Beam deflection, Accelerating voltage Separate windows for circular welding and XY Table welding to input parameters.
PLC System	The PLC components should be from reliable manufacturer such as Siemens or equivalent EU or Japanese brand.
Vacuum System	All the vacuum components such as pumps, gages and controllers should be from same reputed manufacturer such as Leybold , Pfeiffer or Edwards.
Pneumatic system	The Pneumatic components should be from reliable manufacture such as SMC ,Festo or Parker.
Welding Programs	Specific welding program should be included in the machine Welding program for circular (pipe) welding Welding program for XY table welding
Standard Spare Parts & tools	Necessary spares for gun maintenance, cathode mounting device, filaments, mechanical& Electrical kit, pump maintenance kits, oils, O-rings/seals etc. will be provided with the machine.
Opt spares & accessories	Quote other optional spares and accessories separately.
Safety& Protection systems	Machine should include safety systems from high voltage, X-ray radiation ($<1\mu Sv/hr$), rotary drives etc. Automatic protection against over kV, filament failure, accidental beam "On" without sufficient vacuum and opening of isolation valve.
Viewing & Beam Alignment system	Beam viewing & alignment system including Color Camera with autofocus system& magnification of 10X,work illumination and optics Screen monitor with adjustable cross hair. Cross hair to precisely position the beam on joint
Input Electrical Supply	Voltage : 380± 10% Volts Frequency: 50Hz ± 1%
Documentation (must be in English Language)	• Instructional Manual • Maintenance Manual with diagnostic of each alarm • Technical manual of major parts • Electrical, Pneumatic& Electronics Diagrams • Spare part list • Soft copy of each manual

	• Soft Copy of Specific CNC programs • Backup/reinstallation CD for PC and PLC system • Calibration certificates of Vacuum gages, X Ray radiation safety, control system and other requirements as per international standards.
Installation	• Free Installation and commissioning of the machine and running of specific welding application by the manufacturer.
Inspection	The following parameters will be checked during inspection • Maximum Accelerating voltage & Stability • Maximum Beam power • Depth penetration on different materials • Beam current and Stability • Beam Focus Range • Beam Deflection & Generator functions • Data monitoring and Acquisition system
Training	Training of 02 buyer's Engineers shall be provided at manufacture's place for at least 02 weeks for free of cost. The training will cover operation, programming & Maintenance of the Machine.
Warranty	The Machine should have a standard warranty period of 24 months from the date of installation. Any Maintenance/repair of any hardware/software part during warranty will be done free of cost.
Make	EU,UK,Korea,Taiwan,Turkey,China
Note: Quotation should include detail specifications, catalogue/drawings in English language.	