

**BHARAT HEAVY ELECTRICALS LIMITED**Heavy Power Equipment Plant, Ramachandrapuram,
Hyderabad - 502 032. Telangana, INDIA.**SCOPE OF SUPPLY FOR WELDING SIMULATOR**

SUPPLIER :		E-MAIL ADDRESS :	
Sl. No.	DESCRIPTION	Specified/To be confirmed by	Offered
1.0	PURPOSE : For training of welders in augmented reality	Vendor to confirm	
2.0	TECHNICAL PARAMETERS		
2.1	Welding process - SMAW, GTAW and GMAW	vendor to specify and confirm	
2.2	Honing welding skills - Arc striking, Beads on plates, Fillets and Butt welds with minimum of three multi layers	Vendor to confirm	
2.3	Welding Skills to be perfected - Welding speed, torch angle, travel angle, stick out, arc length and straightness	Vendor to confirm	
2.4	Type of work piece - Haptic physical work pieces required for plate, pipe and plate pipe joints	Vendor to confirm	
2.5	Types of joints - Plate to plate, Pipe to pipe and Plate to Pipe (Single "V" Butt & Fillet welds)	Vendor to confirm	
2.6	Guidance to student/welder - During welding, system shall guide welder to adjust the optimum variables	Vendor to confirm	
2.7	Welding positions - Plate and pipe all positions (upto 6G and 6F positions)	Vendor to confirm	
2.8	Base material options - Carbon steels and stainless steels as minimum	Vendor to specify	
2.9	Welding weaving techniques	Vendor to specify	
2.1	Type of electrodes - Basic and rutile	Vendor to specify	
2.11	Thickness of base material - min Three thicknesses ranges	Vendor to specify	
2.12	Types of metal transfers in GMAW	Vendor to specify	
2.13	Torch operation in GMAW & GTAW	Vendor to specify	
2.14	Types of gases - Argon, Co2 and Argon+ Co2	Vendor to confirm	
2.15	Machine menu language - English, Hindi & Telugu	Vendor to specify	
2.16	Weight of the machine	Vendor to specify	
2.17	Input Power	Vendor to specify	
3.0	Special features		
3.1	Machine display screen - 18" minimum	Vendor to specify	
3.2	Shall include predefined programs of welding	Vendor to specify	
3.3	Software shall allow user defined programs	Vendor to specify	
3.4	Software license - Life time	Vendor to confirm	
3.5	Software upgradation	Vendor to specify	
3.6	Provision for individual Login facility	Vendor to specify	
3.7	Trainer login ID facility to monitor the students	Vendor to specify	
3.8	Data backup	Vendor to specify	
3.9	Provision of play back facility	Vendor to confirm	
3.1	Calibration of equipment - To give complete details	Vendor to specify	
3.11	Machine shall alert on wrong parameter selection	Vendor to specify	
3.12	Form of student evaluation records	Vendor to specify	
3.13	Software shall support to play videos and audio visuals for training	Vendor to specify	
4.0	Vendor to supply working spares for two years for the complete system and quote separately	Vendor to confirm	
4.1	Detailed catalogue of the machine and torches to be furnished along with offer	Vendor to confirm	
5.0	SAFETY : The equipment should have adequate safety devices to avoid damage to the equipment, work piece and the operator due to the malfunctioning or mistakes. Furnish details.	Vendor to specify	
6.0	PROVE OUT OF THE EQUIPMENT & operator training : The equipment is to be proved at BHEL works for its proper function and operational training to the operator.	Vendor to confirm	
7.0	MACHINE ACCEPTANCE : During pre-inspection of the equipment by BHEL Engineers at supplier's works, the supplier to demonstrate proper function of the equipment.	Vendor to confirm	
7.1	BHEL engineers shall witness peak load test of equipment at vendors works	Vendor to confirm	
8.0	PACKING : Proper packing of the equipment is to be ensured to avoid any damage in transit.	Vendor to confirm	

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9.0	DOCUMENTATION:- Five sets of operation and maintenance manual along with complete set of circuit diagrams to be submitted.	Vendor to confirm	
10.1	COMMISSIONING:- The supplier shall commission the machine at BHEL works and prove the performance.	Vendor to confirm	
10.2	Delivery period in months	Vendor to specify	
10.3	Training for trouble shooting maintenance (electrical and electronics) for two days to be given to BHEL personnel at the time of commissioning	Vendor to confirm	
11.0	GUARANTEE:- 24 months from the date of commissioning.	Vendor to confirm	
12.0	QUOTATION:- Quotations should be submitted with point to point answers.	Vendor to confirm	
13.0	REFERENCE LIST / QUALIFYING CONDITIONS :		
13.1	Only those vendors, who have supplied and commissioned in Govt organizations / public sectors or any reputed customers atleast one Machine of similar Capacity, Rating, or higher for similar applications in the past ten years (On the Date of Opening of tender) and such machine is working satisfactorily for more than 6 months, after commissioning (On the Date of Opening of tender) should quote. The following information should be submitted by the vendor	Vendor to furnish	
13.2	Name of the customer / company where similar machine is installed.		
13.3	Complete postal address of the customer.		
13.4	Month & Year of commissioning.		
13.5	PO copy from the customers and performance certificate regarding performance of machine supplied to them.		
13.6	BHEL reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false/incorrect the offer shall be rejected.		