

		BHARAT HEAVY ELECTRICAL LIMITED						Enquiry No. :	
		UNIT'S ADDRESS:						Due Date :	
		CONTACT PERSON'S: J. P. Madan (AGM) MOD - MM						Supplier Qtn. No.:	
		Phone: + 91 (755) 2506848 Fax: + 91 (755) 5201444							
		Email: ipmadan@bhelbpl.co.in						Date :	
<u>SPECIFICATION CUM COMPLIANCE CERTIFICATE OF 18 TON WELDING POSITIONER</u>									
		NOTE:-							
		1. Vendor must submit complete information against clause no. 18.0 The offer meeting this clause would only be processed							
		2. The "Offered" Column and where applicable, the "Deviations" & "Remarks" Column of this format shall be filled in by the Vendor and submitted along with the offer. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications/requirements shall be treated as non-compliance.							
		3. The offer and all documents enclosed with offer should be in English language only.							
NAME & ADDRESS OF THE SUPPLIER :									
NAME & ADDRESS OF THE SUPPLIER :									
FAX NOS.:									
E-MAIL ADDRESS :									
SCOPE: SUPPLY, ERECTION & COMMISSIONING OF WELDING POSITIONER COMPLYING WITH SPECIFICATIONS AS BELOW									

SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED / TO BE CONFIRMED	OFFERED	DEVIATIONS	REMARKS
1	PURPOSE: (Operations/Jobs involved): Rotation of Jobs up to 18 Ton at various angles as required by job geometry and at various prespecified RPM.	Vendor to Confirm			
2	SPECIFICATION:				
2.1	Load Capacity: 18 ton at 90 ° tilt (Positioner face plate vertical and Job axis Horizontal)	Vendor to Confirm			
2.2	Load Capacity at 0 ° tilt: (Positioner face plate horizontal and Job axis Vertical)	Vendor to Specify			
2.3	Load capacity at overhang / center of gravity: 200 mm (approx)	Vendor to Specify			
2.4	Load capacity at offcenter / eccentricity of : 200 mm (approx)	Vendor to Specify			
2.5	Rotational Speed range of Table: 0.005 - 0.5 (or more) RPM	Vendor to Specify			
2.6	Minimum to maximum rotational speed ratio 1:20 (approx)	Vendor to Confirm			
2.7	Tilt: 135 ° (Tilt angle protractor to be provided)	Vendor to Confirm			
2.8	Time taken to tilt at 135° with Full Load and No Load	Vendor to Specify			
2.9	Table Size Dia with / without Extension arms: ≥ 4000 mm. Extension arm (if any) complete details must be given by Vendor. Extension arm system (if any) must be strong enough to carry full load.	Vendor to Confirm			
2.10	Degree of table rotation on vertical axis - 360°	Vendor to Confirm			
2.11	Table should be with concentric circular marking for rapid centering and clamping of work pieces.	Vendor to Confirm			
2.12	Table equipped with efficient built in earthing for 600 A and carried on large diameter pre loaded cross roll bearing.	Vendor to Specify			
2.13	No of T -Slots on Face plate: ≥ 8	Vendor to Confirm			
2.14	Overall Height	Vendor to Specify			

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2.15	General Assembly Drawing with Technical Specifications to be attached with offer.	Vendor to confirm			
3	Motors for Rotation / Tilting				
3.1	Type: AC Vector motor	Vendor to Confirm			
3.2	Make and Model: Siemens / ABB / Crompton	Vendor to specify			
3.3	Capacity and Rating of Motor	Vendor to specify			
3.4	Controller for Motor: AC Vector drive of Allen Bradley / Siemens / ABB / Schneider / Yashakawa	Vendor to specify			
4	Operation & Control System: All the controls, switchgear and drive of the turn table rotator shall be housed in a compact IP42 grade enclosure of RITTAL make or equivalent.	Vendor to Specify			
4.1	Operational Control at Control Panel				
4.1.1	Power On-Off switch with indication lamp.	Vendor to Confirm			
4.1.2	Local / Remote selector switch	Vendor to Confirm			
4.1.3	Start / stop switch for Rotation	Vendor to Confirm			
4.1.4	Selector Switch for rotation in clockwise and anticlockwise direction.	Vendor to Confirm			
4.1.5	Rotational speed control with Speed infinitely variable in full range.	Vendor to Confirm			
4.1.6	Inching of rotation	Vendor to Confirm			
4.1.7	Switch for tilting forward reverse of positioner at specified angle	Vendor to Confirm			
4.1.8	Emergency Stop Switch	Vendor to Confirm			
4.1.9	Equipment should be equipped with Overload protection and indication.				
4.2	Dust tight Remote control pendant: The length of cable connecting the main panel shall be at least 5m long. The cable shall be housed in heavy duty metallic conduit with PVC sheath of LAPP make or equivalent. It shall have following controls:	Vendor to Specify			

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4.2.1	Start stop switch for Rotation	Vendor to Confirm			
4.2.2	Selector Switch for rotation in clockwise and anticlockwise direction.	Vendor to Confirm			
4.2.3	Rotational speed control with Speed infinitely variable in full range.	Vendor to Confirm			
4.2.4	Inching of rotation	Vendor to Confirm			
4.2.5	Emergency Stop Switch	Vendor to Confirm			
5	CONSTRUCTION:				
5.1	The Positioner will be used for Submerged Arc Welding. The bearings and gears should also be suitably protected to avoid ingress of flux. The bearings shall be self lubricated.	Vendor to confirm			
5.2	The Positioner including all the bearings gears etc to be made suitably to withstand temperature of 200 ° C, which may occur due to welding or preheating for long hrs.	Vendor to specify			
5.3	The Positioner to be designed for portability, which might be necessary for shifting the Positioner at different places in the shop. Adequate clamping arrangement to be provided for the purpose.	Vendor to confirm			
6	ELECTRICAL SYSTEM :				
6.1	415V ±10%, 50HZ ±3%, 3 Phase AC (3 wire system with out neutral) Power Supply Source will be provided by BHEL at a single point near the positioner, as per layout recommended by Vendor. All types of cables, connections, circuit breakers etc. required for connecting BHEL's power supply point to different parts of the positioner/control cabinets, shall be the responsibility of vendor.	Vendor to confirm			
6.2	All electrical & electronic control cabinets & panels should be dust, heat and vermin proof	Vendor to confirm			

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6.3	Motors shall conform to IEC / equivalent International standard / Indian Standards	Vendor to confirm			
6.4	Vendor should ensure the proper earthing for equipment and its peripherals.	Vendor to confirm			
7	Safety / environmental protection is required for the equipment.	Vendor to confirm			
8	LEVELING & ANCHORING SYSTEM				
	Complete anchoring system including foundation bolts, anchoring materials, fixators, levelling shoes etc shall be supplied for the positioner.	Vendor to confirm			
9	ACCESSORIES:				
9.1	Clamping tools capable to hold jobs of 200 mm thickness and 18 Ton weight to be supplied along with Positioner along with torque Wrench and spanner.	Vendor to specify			
9.2	Accessories if any recommended by vendor for better functioning of equipment.	Vendor to specify			
10	SPARES:				
10.1	Unit price list for itemised breakup of mechanical, electrical and electronic spares used on the positioner in sufficient quantity as per recommendation of Vendor for 2 years of trouble free operation on three shifts continuous running basis should be offered by vendor. The list to include following, in addition to other recommended spares: (Unit Price of each item of spare should be offered)	Vendor to specify			

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10.2	All types of spares for total positioner and accessories should be available for at least ten years after supply of the positioner. If positioner or control is likely to become obsolete in this period, the vendor should inform BHEL sufficiently in advance and provide drawings of parts / details of spares & suppliers to enable BHEL to procure these in advance, if required	Vendor to specify			
10.3	Recommended set of spares for all attachments are to be offered with details.	Vendor to specify			
10.4	Vendor to confirm that complete list of spares for positioner and accessories, along with specification / type / model, name & address of the spare supplier shall be furnished along with documentation to be supplied with the positioner	Vendor to confirm			
11	DOCUMENTATION : Four sets of following documents (Hard copies) in English language should be supplied along with the positioner	Vendor to confirm			
11.1	Operating manuals of positioner.				
11.2	Detailed Maintenance manual of positioner with all drawings of positioner assemblies/sub-assemblies/parts including electrical diagrams. All Assembly/Sub Assembly Drawings shall be supplied with the part list also				
11.3	Catalogues, O&M Manuals of all bought out items and supplied accessories including drawings, wherever applicable.				
11.4	Complete Master List of parts used in the positioner shall be submitted by the vendor.				
11.5	One additional set of all the above documentation on CD ROM, wherever possible.				

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12	ERECTION & COMMISSIONING	Vendor to confirm			
12.1	Supplier to take full responsibility for carrying out the erection, start up, testing of positioner, it's control system & all types of other supplied equipment.. Service requirement like power, air, shall be provided by BHEL at only one point to be indicated by supplier in advance. Other requirements like crane and helping personnel shall also be provided by BHEL. Details of these requirements should be informed by vendor in advance.				
12.2	Successful proving of BHEL components by the supplier shall be considered as part of commissioning. All tests, as mentioned at clause 14 (positioner Acceptance) shall form part of the commissioning activity.				
12.3	Tools, instruments and other necessary equipment required to carry out all above activities should be brought by the supplier.				
12.4	Charges, duration, terms & conditions for E&C should be furnished in detail separately by vendor along with offer.				
13	AMBIENT CONDITIONS & THERMAL STABILITY :	Vendor to confirm			
13.1	Total positioner including all system and all supplied items should continuously work trouble free and efficiently under following operating conditions and should give specified accuracies. Ambient Conditions: Temperature = 5 to 50 degree Celsius Relative Humidity = 95% max. (Vendor to confirm that positioner is suitable for above and details of provisions on the positioner for the same are to be furnished by Vendor)				

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14	Positioner ACCEPTANCE: (Tests/Activities To be Performed by Vendor)	Vendor to accept & confirm			
14.1	Tests/Activities should be carried out at supplier's works on the positioner before dispatch :				
14.1.1	The positioner should be tested for continuous running at 8 hrs at various speeds.	Vendor to confirm			
14.1.2	Demonstration of all operational features of the positioner, and all accessories.	Vendor to confirm			
14.2	Test to be carried out at BHEL works while commissioning the positioner	Vendor to confirm			
14.2.1	Demonstration of all features of the positioner & all accessories to the satisfaction of BHEL.	Vendor to confirm			
14.2.2	Demonstration by actual use of all supplied attachments and accessories to their full capacity.	Vendor to confirm			
14.2.3	On Job prove out and one week independent operation of positioner by BHEL after job prove out.	Vendor to confirm			
14.2.5	Training of BHEL operators and maintenance personnel in operation / maintenance of complete positioner & accessories etc by the supplier's experts / engineers during their stay at BHEL works	Vendor to confirm			
15	PACKING: Sea worthy & rigid packing for all items of complete positioner, all Accessories and other supplied items to avoid any	Vendor to confirm			

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16	GUARANTEE : 12 months from the date of acceptance of the positioner.		Vendor to confirm			
17	GENERAL : The vendor should submit the following information:					
17.1	Floor area required (Length, Width, Height) for complete positioner & accessories		Vendor to specify			
17.2	Total weight of the positioner		Vendor to specify			
17.3	Vendor to submit, along with offer, the reference list of customers where similar positioners have been supplied mentioning the customer, positioner Model, major specifications of the supplied positioner, Year of Supply etc		Vendor to specify			
17.4	Detailed catalogues , sketch/ photographs of the m/c and accessories/ attachments should be submitted with the offer.		Vendor to specify			

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18	QUALIFYING CONDITIONS :	Vendor to Confirm			
18.1	Only those models are to be quoted which have been supplied to at least two customers in the past ten years and are of 18 Ton or higher capacity and tilting angle of 135 ° with variable speed control and such machines are presently working satisfactorily for more than one years after commissioning (six months in case of BHEL). The following information is to be submitted by the vendor about the companies where similar machines have been supplied.				
18.1.1	Name of the customer / company where similar machine is installed.	Vendor to Confirm			
18.1.2	Complete postal address of the customer.	Vendor to Confirm			
18.1.3	Year of commissioning.	Vendor to Confirm			
18.1.4	Application for which the machine is supplied with details of accuracies	Vendor to Confirm			
18.1.5	5. Name and designation of the contact person of the customer.	Vendor to Confirm			
18.1.6	Phone, FAX no. and email address of the contact person of the customer.	Vendor to Confirm			
18.1.7	Performance certificate from the customers regarding satisfactory performance of machine supplied to them	Vendor to Confirm			
18.1.8	BHEL reserves the right to verify information provided by vendor. In case the information provided by vendor is found to be false/incorrect, the offer shall be rejected.	Vendor to Confirm			