

	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							Date :
	Email: jpmadan@bhelbpl.co.in							
<u>SPECIFICATION CUM COMPLIANCE CERTIFICATE OF 10 TON TURN TABLE</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 TURN TABLE COMPLYING WITH SPECIFICATIONS AS BELOW								

SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED / TO BE CONFIRMED	OFFERED	DEVIATIONS	REMARKS
1	PURPOSE: (Operations/Jobs involved): Rotation of Job around vertical axis up to 10 Ton weight for Cladding or welding purpose at various prespecified RPM. The equipment to be suitable for continuous operation	Vendor to Confirm			
2	SPECIFICATION:				
2.1	Load Capacity: 10 ton	Vendor to Confirm			
2.2	Rotational Speed range of Table: 0.025 - 0.5 RPM (or more) RPM	Vendor to Confirm			
2.3	Table Size Dia: ≥ 2000 mm.	Vendor to Confirm			
2.4	Table should be with concentric circular marking for rapid cantering and clamping of work pieces.	Vendor to Confirm			
2.5	Table equipped with efficient built in earthing for 1000 A and carried on large diameter pre loaded cross roll bearing.	Vendor to Specify			
2.6	No of T -Slots on Face plate: ≥ 6 (Radial)	Vendor to Confirm			
2.7	Overall Height	Vendor to Specify			
2.8	General Assembly Drawing with Technical Specifications to be attached with offer.	Vendor to confirm			
3	Motors for Rotation				
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/NGEF/Bharat Bijlee	Vendor to specify			

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4	Operation & Control System: All the controls, switchgear and drive of the turn table shall be housed in a compact IP42 grade enclosure of RITTAL make or equivalent. The facility to control shall be on control panel & also from remote pendant as detailed below:		Vendor to specify			
4.1	Operational Control at Control Panel					
4.1.1	Control On-Off switch with indication lamp. AC Line contactor.		Vendor to Confirm			
4.1.2	Local / Remote selector switch		Vendor to Confirm			
4.1.3	Start/Stop push buttons 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 between 0.025-0.5 RPM along with speed indicator		Vendor to Confirm			
4.1.6	Inching of rotation		Vendor to Confirm			
4.1.7	Emergency Stop Switch		Vendor to Confirm			
4.1.8	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			
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 between 0.025-0.5 RPM		Vendor to Confirm			
4.2.4	Inching of rotation		Vendor to Confirm			

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4.2.5	Emergency Stop Switch	Vendor to Confirm			
5	CONSTRUCTION:				
5.1	The Turn Table shall 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 Turn Table shall be used for welding/ cladding and the job temperature during this operation may rise up to 200 °C. The temperature on bearings and gears may also rise up to 120 ° C. Suitable componets and lubrication to be provided to withstand above temperature.	Vendor to specify			
5.3	The Turn Table to be designed will be normally used on one fixxed position hwoever on few occasions it may be required to be shifted hence should be suitable for portability. Adequate lifting and 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 without neutral) Power Supply Source will be provided by BHEL at a single point near the Turn Table, 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 Turn Table/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			
6.3	Motors shall conform to IEC / equivalent International standard / Indian Standards	Vendor to confirm			

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6.4	Vendor should ensure the proper earthing for equipment and its peripherals.	Vendor to confirm			
7	Safety / environmental protection of the turn table is required.	Vendor to confirm			
8	LEVELING & ANCHORING SYSTEM: Complete anchoring system including foundation bolts, anchoring materials, fixators, levelling shoes etc shall be supplied for the Turn Table.	Vendor to confirm			
9	ACCESSORIES:				
9.1	12 number clamping tools/ bolts capable to hold jobs of 200 mm thickness and 10 Ton weight to be supplied along with Turn Table.	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 Turn Table 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. (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 Turn Table and accessories should be available for at least ten years after supply of the Turn Table. If Turn Table 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 confirm			
10.4	Vendor to confirm that complete list of spares for Turn Table and accessories, along with specification / type / model, name & address of the spare supplier shall be furnished along with documentation to be supplied with the Turn Table	Vendor to confirm			
11	DOCUMENTATION : Four sets of following documents (Hard copies) in English language should be supplied along with the Turn Table	Vendor to confirm			
11.1	Detailed O & M manual of Turn Table with all drawings of Turn Table assemblies/sub-assemblies/parts including electrical diagrams. All Assembly/Sub Assembly Drawings shall be supplied with the part list also				
11.2	Catalogues, O&M Manuals of all bought out items and supplied accessories including drawings, wherever applicable.				
11.3	Complete Master List of parts used in the Turn Table shall be submitted by the vendor.				
11.4	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 Turn Table, 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 (Turn Table 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.				
12.7	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 Turn Table including all system and all supplied items should 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 Turn Table is suitable for continuous running at above specified and details of provisions on the Turn Table for the same are to be furnished by Vendor)				

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14	Turn Table 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 Turn Table before dispatch :					
14.1.1	The Turn Table should be tested for continuous running at 8 hrs at various speeds.		Vendor to confirm			
14.1.2	Demonstration of all features of the Turn Table, and all accessories.		Vendor to confirm			
14.2	Test to be carried out at BHEL works while commissioning the Turn Table		Vendor to confirm			
14.2.1	Demonstration of all features of the Turn Table & 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 three days independent operation of Turn Table by BHEL after job prove out.		Vendor to confirm			
14.2.4	Training of BHEL operators and maintenance personnel in operation / maintenance of complete Turn Table & 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 to avoid any damage/loss in transit.		Vendor to confirm			
16	GUARANTEE : 12 months from the date of acceptance.		Vendor to confirm			

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17	GENERAL : The vendor should submit the following information:				
17.1	Floor area required (Length, Width, Height)	Vendor to specify			
17.2	Total weight of the Turn Table	Vendor to specify			
17.3	Vendor to submit, along with offer, the reference list of customers where similar Turn Tables have been supplied mentioning the customer, Turn Table Model, major specifications of the supplied Turn Table, 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			
18	QUALIFYING CONDITIONS :				
18.1	Only those models are to be quoted which have been supplied in large quantity (minimum five numbers) in the past to heavy fabrication industries in the past ten years and are of 10 Ton or higher capacity with variable speed control. Such machines should be presently working satisfactorily for more than one year 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.	Vendor to Confirm			
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			

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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			