

<u>BHARAT HEAVY ELECTRICAL LIMITED</u> <u>RAMACHANDRAPURAM</u>			Enquiry No. :		
UNIT'S ADDRESS:			Due Date :		
UNIT'S PHONE NOS. :			Supplier Qtn. No.:		
CONTACT PERSON'S NAME/DESIGN./PHONE NO./E-MAIL (FROM PURCHASE DEP'T.) :			Date :		
NOTES 1. Vendor must submit complete information against clause nos. 15.0 The offer meeting this clause would only be processed.					
2. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications shall be treated as non-compliance					
3. The offer and all documents enclosed with offer should be in English language only					
4. Only original equipment manufacturers to quote.					
ADDRESS OF THE SUPPLIER :					
TELEPHONE NOS.:					
FAX NOS.:					
E-MAIL ADDRESS :					
SPECIFICATION FOR SUPPLY, ERECTION & COMMISSIONING OF 30 TON CAPACITY WELDING ROTATORS - 3 SETS					
SNo.	Description for BHEL Requirement	REQUIRED	OFFERED	DEVIATIONS	REMARKS
1.0	PURPOSE:				
1.1	Motorised job rotator for rotation of shells to carry out welding & assembly works.	Vendor to confirm			
2.0	MAIN PARAMETERS:				
2.1	Total load capacity of Rotators: 30 Tons.	Vendor to confirm			
2.1.1	Drive Rotator unit support : 20 Tons	Vendor to confirm			
2.1.2	Idler Rotator unit support : 20 Tons.	Vendor to confirm			
2.2	Height from floor level to roller top : 750-1000 mm	Vendor to specify			
2.3	Maximum diameter of shell that can be accomodated on the roller : 3000 mm	Vendor to confirm			
2.4	Minimum diameter of shell that can be accomodated on the roller: 600 mm	Vendor to confirm			
2.5	Holes to be provided for drive and idler rollers to accommodate shells of 600, 1500, 2000, 2500, 3000mm shells	Vendor to Furnish details.			
2.6	Control Panel / Operators panel shall be provided at easily accessible location for carrying out all operations as well as maintenance. Operators panel shall have emergency stop, forward, Reverse push buttons, potentiometer, linear movement mm./min. (indicator) .The projected parts like potentiometer knob, push button, emergency stop knob shall be suitably protected.	Vendor to confirm			
2.7	No. of drives : TWO	Vendor to confirm			

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2.8	A.C. Variable drive with inverter to achieve speed range of 75 mm to 1000 mm / min. Inverter drives shall be SIEMENS or ABB make.	Vendor to confirm			
2.9	AC Motor Capacity (minimum 3KW) with Model & Make (ABB, Crompton, NGEF, Seimens, GEC & Kirloskar) -2 No One of left Roller one for Right roller of drive roller.	Specify make, model & capacity			
2.10	Suitable Gear Box Make & Model (Radicon & Shanti or equivalent)	Vendor to specify			
2.10.1	Gear hardness shall be : 50-52 HRC.	Vendor to specify			
2.11	Rotator Wheels (rollers) are of forged steel cambered wheels with required hardness (minimum hardness required is 40 HRC).The width of roller shall be minimum of 200 mm.	Confirm & specify hardness, width of rotator wheel.			
2.11.1	Peripheral (surface) speed of rotator - to suit Submerged Arc welding : 75-1000 mm/min	Vendor to specify			
2.11.2	BULL GEAR materials shall be FORGING : 42 CR MO 4 V or equivalent.	Vendor to specify			
2.12	Rotator Axles are of heat treated forged steel . Dia of axle shall be min 70 mm	Vendor to specify			
2.13	Materials for PINION SHAFTS shall be 40 Ni 2 Cr 1Mo 28 OR equivalent , Hardness : 50-52 HRC	Vendor to confirm and furnish details			
2.13	The rollers shall be manually adjustable type across the frame.	Vendor to confirm			
2.14	Difference between the top of the rotator wheel & OD of bull gear shall be minimum 150 mm.	Vendor to specify			
2.15	Width of the base frame shall be minimum of 750 mm.	Vendor to specify			
2.16	Base frame thickness i.e. top & bottom flange shall be minimum 25 mm.	Vendor to specify			
2.17	Wheel mounting bracket thickness shall be minimum 32 mm.	Vendor to specify			
2.18	The base plate thickness of the gear box shall be minimum 20 mm.	Vendor to specify			
2.19	Lifting hooks 4 nos. to be kept for driving & idler unit for comfortable lifting.	Vendor to specify			
2.2	REMOTE CONTROL with 15 mtr cable to be provided which should consist of Forward, reverse, Stop & potentiometer - with protection for push buttons & potentiometer.	Vendor to confirm			
3.0	General arrangement drawing of the rotator offered furnishing over all dimensions, location of Gear box, drive motor, control panel etc shall be submitted along with offer. WITHOUT WHICH THE OFFER IS LIABLE TO BE REJECTED without any intimation to the vendor.	Vendor to Furnish			
4.0	Suitable MANUAL Anti creep device shall be quoted along with offer as optional.	Vendor to quote with details			

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5.0	AMBIENT CONDITIONS & THERMAL STABILITY :	Vendor to confirm			
5.1	Rotator should work trouble free and efficiently under following operating conditions. Input Power Supply: Voltage : 415 V \pm 10% Frequency : 50 Hz \pm 5% No. of phases = 3 Ambient Conditions : Temperature = 5 to 50 degree celsius Relative Humidity = 95% Max.	Vendor to confirm			
6.0	ELECTRICAL :				
6.1	All electrical / electronic equipment shall be tropicalized.	Vendor to confirm			
6.2	Motors shall conform to IEC or Indian Standards	Vendor to confirm			
6.3	Vendor should ensure the proper earthing for the machine and its peripherals.	Vendor to confirm			
6.4	Total connected load (KVA)	Vendor to specify			
7.0	SAFETY ARRANGEMENTS:				
7.1	Equipment should have adequate and reliable safety interlocks / devices to avoid damage to the machine, work piece and the operator due during loading & unloading of job. Suitable protective covers to be provided where necessary.	Vendor to specify			
8.0	ENVIRONMENTAL PERFORMANCE OF THE ROTATOR :				
8.1	Maximum noise level shall be < 85 dB at normal load condition.	Vendor to confirm			
9.0	INSPECTION: BHEL Engineers will inspect the equipment at vendor's works. The vendor shall demonstrate the equipment for its proper functioning.	Vendor to confirm			
10.0	GUARANTEE: The equipment shall be guaranteed for 18 months from the date of commissioning.	Vendor to confirm			
11.0	Only original equipment manufacturers to quote.	Vendor to confirm			
12.0	QUOTATION: Along with technical offer, the firm to submit point to point answers to our specification with all relevant / supporting data.	Vendor to confirm			
13.0	GENERAL :				
13.1	Total weight of the Rotator.	Vendor to specify			
13.2	Painting of equipment : RAL 6011 Apple Green (Polyurethane Paint)	Vendor to specify			
13.3	General assembly drawing of the rotator to be provided along with the offer, without which the offer will be liable to be rejected.	Vendor to furnish			
13.4	Technical Catalog to be furnished It shall be with information about bearings used, gear box model, type.	Vendor to Furnish			

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13.4.1	Vendor to list all the bought out items used in the rotators.				
13.5	Erection and commissioning and prove out by vendor at BHEL works	Vendor to confirm			
14.0	Spares :				
14.1	Spares : spares for 2 years normal operation to be quoted separately - item wise , with break up.	Vendor to quote itemwise			
14.2	Set of coupling 1 no.	Vendor to quote			
14.3	QUOTE AS OPTIONAL : Remote control box 1 no.	Vendor to quote			
14.4	QUOTE AS OPTIONAL : Double reduction Gear box 1 no.	Vendor to quote			
14.5	QUOTE AS OPTIONAL : VFD Unit 1 no.	Vendor to quote			
15.0	REFERENCE LIST / QUALIFYING CONDITIONS:				
15.1	Only those vendors, who have supplied and commissioned atleast one of same or higher sizes for similar applications in the past ten years and such Rotator is working satisfactorily for more than one year, after commissioning should quote. The following information should be submitted by the vendor about the companies where similar Rotator have been supplied. This is required from all the vendors for qualification of their offer.	Vendor to furnish			
	Name of the customer / company where similar machine is installed.	Vendor to furnish			
	Complete postal address of the customer.	Vendor to furnish			
	Year of commissioning.	Vendor to furnish			
	Phone, FAX no. and email address of the contact person of the customer.	Vendor to furnish			
	Copy of PO and Performance certificate from the customer	Vendor to furnish			
16.0	TRAINING : for BHEL personnel at BHEL works after commissioning OPERATION : for production staff - 4 WELDERS MAINTENANCE STAFF : ONE ELECTRICAL AND ONE MECHANICAL PERSONNEL	Vendor to confirm			
17.0.	DELIVERY in months:	Vendor to specify			
18.0	DOCUMENTS : 5 Sets of operating and maintenance manuals in English for complete system with electrical, electronics and general arrangement drawings shall be furnished along with the equipment.	Vendor to furnish			