

<b><u>BHARAT HEAVY ELECTRICAL LIMITED RAMACHANDRAPURAM</u></b>			<b>Enquiry No. :</b>		
<b>HYDERABAD 502 032</b>			<b>Due Date :</b>		
<b>UNIT'S PHONE NOS.+91 040 23182250, 23020173</b>			<b>Supplier Qtn. No.:</b>		
<b>CONTACT PERSON'S NAME/DESIGN./PHONE NO./E-MAIL (FROM PURCHASE DEP'T DGM/ Pur-CG</b>			<b>Date :</b>		
<b>SPECIFICATION CUM COMPLIANCE CERTIFICATE FOR 20 TON CAPACITY WELDING ROTATOR.</b>					
<b>NOTE;</b>					
<b>1. Vendor must submit complete information against clause nos. 12.0 and 15.0 The offer meeting this clause would only be processed.</b>					
<b>2. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications/requirements shall be treated as non-compliance</b>					
<b>3. The offer and all documents enclosed with offer should be in English language only</b>					
<b>ADDRESS OF THE SUPPLIER :</b>					
<b>TELEPHONE NOS.:</b>			<b>TELEPHONE</b>		
<b>FAX NOS.:</b>			<b>FAX NOS.:</b>		
<b>E-MAIL ADDRESS :</b>			<b>E-MAIL</b>		
<b>SNo.</b>	<b>Description for BHEL Requirement</b>	<b>REQUIRED</b>	<b>OFFERED</b>	<b>DEVIATIONS</b>	<b>REMARKS</b>
<b>1.0</b>	<b>PURPOSE:</b>				
<b>1.1</b>	Motorised job rotator for rotation of Barrel to carry out welding / overlaying in inner surface all along the periphery. The job with 120 degrees preheated condition will be rotated continuously on the roller.	Vendor to note.			
<b>2.0</b>	<b>MAIN PARAMETERS:</b>				
<b>2.1</b>	Total load capacity of Rotators:	20 Tons.			
<b>2.1.1</b>	<b>Drive Rotator:</b>				
<b>2.1.1a</b>	Load Carrying capacity:	10 Tons			
<b>2.1.1b</b>	Roller Width:	200mm (min)			
<b>2.1.1c</b>	Drive unit should have end stopper at both sides	Vendor to confirm			
<b>2.1.1d</b>	Roller Diameter:	300mm (min)			

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<b>2.1.2</b>	<b>Idler Rotator:</b>				
<b>2.1.2a</b>	Load Carrying capacity:	10 Tons.			
<b>2.1.2b</b>	Roller Width:	Same as Drive Rotator			
<b>2.1.2c</b>	Roller Diameter:	Same as Drive Rotator			
<b>2.2</b>	Height from floor level to roller top :	500mm-900mm			
<b>2.3</b>	Maximum diameter of Barrel :	1500 mm			
<b>2.4</b>	Minimum diameter of Barrel :	400 mm			
<b>2.5.1</b>	<b>Holes</b> to be provided on frame for drive rollers to accommodate Barrels of 1430, 1308, 1100mm Diameter.	Vendor to Furnish details.			
<b>2.5.2</b>	<b>Holes</b> to be provided on frame for idler rollers to accommodate Barrels of 1240, 1106, 966 mm Diameter.	Vendor to Furnish details.			
<b>2.6</b>	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 projected.	Vendor to confirm			
<b>2.7</b>	No. of drives : TWO	Vendor to confirm			
<b>2.8</b>	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.	Specify make & model			
<b>2.9</b>	AC Motor Capacity (minimum 3KW) with Model & Make (ABB, Crompton, NGEF, Seimens, GEC & Kirloskar)	Specify make, model & capacity			
<b>2.10</b>	Suitable Gear Box Make & Model (Radicon, Elecon, Bonsigliol, Premium & Shanti)	Specify			
<b>2.10.1</b>	Gear hardness shall be : 50-52 HRC.	Specify			

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2.11	Rotator Wheels (rollers) are of forged steel cambered wheels with required hardness (Range of hardness required is 40-45 HRC)	Confirm& specify hardness			
2.11.1	BULL GEAR/ WORM GEAR materials shall be FORGING : 42 CR MO 4 V or equivalent	Vendor to specify			
2.12	Rotator Axels are of heat treated forged steel	Vendor to confirm			
2.13	Materials for PINION SHAFTS shall be 40 Ni 2 Cr 1 Mo 28 OR equivalent, Hardness : 50-52 HRC	Vendor to confirm and furnish details			
2.14	The rollers shall be manually adjustable type across the frame.	Vendor to confirm			
3.0	<b>BASE FRAME CONSTRUCTION :</b>				
3.1	Width of the Frame should not be less than 500mm. Please specify the width.	Vendor to specify the width			
3.2	Thickness of the Plate used for bottom of the Frame should not be less than 36mm.	Vendor to confirm			
3.3	Top Plate should be of 40mm thickness.	Vendor to confirm			
3.4	General arrangement drawing of the rotator offered furnishing over all dimensions, location of Gear box, drive motor, control panal etc shall be submitted along with offer.	Furnish			
4.0	Suitable Anti creep device shall be quoted along with offer.	vendor to quote with details			
5.0	<b>WORKING CONDITIONS &amp; THERMAL STABILITY :</b>				
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 Working Temperature : Roller machine is exposed to Job at 120 degrees centigrade Relative Humidity = 95% Max.	Vendor to confirm			

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<b>6.0</b>	<b>ELECTRICAL :</b>				
<b>6.1</b>	All electrical / electronic equipment shall be tropicalized.	Confirm			
<b>6.2</b>	Motors shall conform to IEC or Indian Standards	Specify the standard			
<b>6.3</b>	Vendor should ensure the proper earthing for the machine and its peripherals.	Confirm			
<b>6.4</b>	Total connected load (KVA)	specify			
<b>7.0</b>	<b>SAFETY ARRANGEMENTS:</b>				
<b>7.1</b>	Equipment should have adequate and reliable safety interlocks / devices to avoid damage to the machine, work piece and the operator during loading & unloading of job. Suitable protective covers to be provided where ever necessary.	specify			
<b>8.0</b>	<b>ENVIRONMENTAL PERFORMANCE OF THE ROTATOR :</b>				
<b>8.1</b>	Maximum noise level shall be 85 dB at normal load condition, 1 meter away from the machine with correction factor for back ground noise, if necessary. This will be measured as per international standards like DIN 45635-16. Supplier to demonstrate compliance to noise level, if so required.	Vendor to specify			
<b>9.0</b>	<b>INSPECTION:</b> BHEL Engineers will inspect the equipment at vendor's works. The vendor shall demonstrate the equipment for its proper functioning.	Vendor to confirm			
<b>10.0</b>	<b>GUARANTEE:</b> As per BHEL terms and conditions.	Vendor to confirm			
<b>11.0</b>	Only original equipment manufacturers to quote.	Vendor to confirm			
<b>12.0</b>	<b>QUOTATION:</b> Along with technical offer, the vendor to submit point to point answers to our specification with all relevant / supporting data.	Vendor to provide			
<b>13.0</b>	<b>GENERAL :</b>				

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13.1	Total weight of the Rotator.	Specify			
13.2	Painting of equipment : RAL 6011 Apple Green (Polyurethane Paint)	Specify			
13.3	General assembly drawing of the rotator to be provided along with the offer	Vendor to furnish			
13.4	Technical Catalog to be furnished It shall be with information about bearings used, gear box model, type. Vendor to list all the bought out items used in the rotators mentioning the Make and Model No.s.	Vendor to Furnish			
13.5	Erection and commissioning and prove out by vendor at BHEL works	Vendor to confirm			
14.0	<b>SPARES :</b> These set of Spares are applicable for <b>EACH</b> set of Driver & Idler Units. 1. One electrical control panel. 2. Two sets of Pinion shaft and Bull gear/ Worm gear. 3. Spares for 2 years normal operation. The above mentioned spares to be quoted separately - item wise, with break up.	Vendor to furnish the list of Spares with Make and Model No.s ( if applicable )			
15.0	<b>REFERENCE LIST / QUALIFYING CONDITIONS:</b>				
15.1	Only those vendors, who have manufactured, supplied and commissioned atleast one of same or higher sizes for similar applications in the past ten years and such Rotator is working satisfactorily at present, 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			

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<b>15.2</b>	Name of the customer / company where similar machine is installed.	Vendor to furnish			
<b>15.3</b>	Complete postal address of the customer.	Vendor to furnish			
<b>15.4</b>	Year of commissioning.	Vendor to furnish			
<b>15.5</b>	Phone, FAX no. and email address of the contact person of the customer.	Vendor to furnish			
<b>15.6</b>	<b>Copy of PO</b> from customer and <b>Performance certificate</b> from customer for similar or higher capacity	Vendor to furnish			
<b>16.0</b>	<b>TRAINING</b> : for BHEL personnel at BHEL works after commissioning	Vendor to confirm			
<b>17.0</b>	<b>DELIVERY in months:</b>	Not more than 3-4 months.			
<b>18.0</b>	<b>DOCUMENTS</b> : 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			