



An ISO 9001  
Company

## Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

<b>ENQUIRY</b>	Phone: +91 431 257 76 53
<b>NOTICE INVITING TENDER</b>	Fax : +91 431 252 00 31
	Email : <a href="mailto:skaruna@bheltry.co.in">skaruna@bheltry.co.in</a>
	Web : <a href="http://www.bhel.com">www.bhel.com</a>

<b>TWO PART BID</b>	<b>Enquiry Number:</b>	<b>Enquiry Date:</b>	<b>Due date for submission of quotation:</b>
Tender to be submitted in two Parts	<b>2631500037</b>	<b>23.11.2015</b>	<b>21.12.2015</b>

You are requested to quote the Enquiry number date and due date in all your correspondence. This is only a request for quotation and not an order.

Please note that under any circumstances both delayed offer and late offers will not be considered. Hence vendors are requested to ensure that the offer is reaching physically our office before 14.00 hrs on the Date of tender opening.

Item	Description	Quantity
10	5 Ton Capacity Electronically Controlled Variable Speed Self Centering Job Rotator	02 Set
20	25 Ton Capacity Electronically Controlled Variable Speed Self Centering Job Rotator	01 Set.

as per the technical specification & commercial conditions applicable (to be downloaded from web site [www.bhel.com](http://www.bhel.com) or <http://tenders.gov.in>)

### Important points to be taken care during submission of offer

1. The rate of EMD for this Tender will be ( INR ) : 40,000/-
2. The Compliance form for Acceptance of Commercial Terms & Conditions to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
3. All updates, amendments, corrigenda, etc., (if any), for each tender will be posted only on the above websites from time to time, as and when required, until each tender is opened. There will be no publication of such updates, amendments, corrigenda, etc., through newspapers or any other media.

**BHEL's General guidelines / instructions (refer MM/CE/GENL/001/EMD) including bank guarantee formats and list of consortium banks, commercial terms Compliance form can be downloaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units > Bharat Heavy Electricals Limited page) under above Enquiry reference.**

Tenders should reach us before 14:00 hours on the due date.

Tenders will be opened at 14:30 hours on the due date.

Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present.

Yours faithfully,  
For **BHARAT HEAVY ELECTRICALS LIMITED**

  
Sr. Engineer / MM / Capital Equipment

## PART – A

### **SECTION- 1: Qualifying Criteria**

The BIDDER has to compulsorily meet the Qualifying Criteria indicated in **Section 1** to get qualified. Otherwise the technical offer will not be considered.

S NO.	REQUIREMENTS	VENDOR'S RESPONSE
1.1	The BIDDER / VENDOR ( <b>OEM</b> ) shall have a <b>minimum TEN</b> Years of Continuous Experience in Design, Manufacture & Supply of “ELECTRONICALLY CONTROLLED VARIABLE SPEED SELF CENTERING JOB ROTATORS of capacity 25 ton or more”. Vendor shall indicate the actual number of years of experience in the field.	
1.2	Only those vendors ( <b>OEMs</b> ) should quote, who have commissioned in the last 10 years (as on the original date of tender opening) at least <b>ONE</b> “Electronically Controlled Variable Speed Self Centering Job Rotators of capacity 25 Ton or more” <b>EITHER</b> (i) In at least one country other than the country of origin to establish vendor's global business activity. <b>OR</b> (ii) In India and the referred Job Rotators are presently working satisfactorily for more than one year from the date of commissioning (as on the original date of tender opening). The name and contact addresses of the customers to whom the ELECTRONICALLY CONTROLLED VARIABLE SPEED SELF CENTERING JOB ROTATORS were supplied to be furnished with details.	
1.3	Vendor has to submit at least <b>ONE</b> PERFORMANCE CERTIFICATE for satisfactory performance of electronically controlled variable speed self centering job rotators as referred under clause 1.2 above, for a minimum period of one year from the date of commissioning (as on the original date of tender opening) from their customers in India or in any other country outside the country of origin, supplied and commissioned in the last 10 years. Performance certificate as Original Certificate or E-mail directly from the customer may be submitted. The original certificate may be returned after verification by BHEL, if required. For obtaining the Performance certificate, a suggestive format is provided at the end of Part A.	
1.4	BHEL reserves the right to verify the information provided by the Vendor for the referred ELECTRONICALLY CONTROLLED VARIABLE SPEED SELF CENTERING JOB ROTATORS at their referred customer's works. It shall be the responsibility of the vendor to facilitate the visit of BHEL's team at their referred customer works. The Travel, Board and Lodging expenses for BHEL Personnel shall be borne by BHEL. In case the information provided by vendor is found to be false/ incorrect, the offer shall be rejected. BHEL reserves the right to accept or reject the OEMs based on the assessment of their technical and financial capability.	

**SECTION - 2:**

The BIDDER / VENDOR are requested to provide the following information:-

<b>S NO.</b>	<b>REQUIREMENTS</b>	<b>VENDOR'S RESPONSE</b>
2.1	The BIDDER / VENDOR to furnish Reference List of Customers, with complete address, details of contact person, where ELECTRONICALLY CONTROLLED VARIABLE SPEED SELF CENTERING JOB ROTATORS has been supplied in the past.	
2.2	Specify details of ELECTRONICALLY CONTROLLED VARIABLE SPEED SELF CENTERING JOB ROTATORS supplied to other units of BHEL, if any (Year of commissioning with details etc.	
2.3	Details on SERVICE-AFTER-SALES Set-up in India including the Address of Agents / Service Centres in India.	
2.4	Any Additional data to supplement the manufacturing capability of the BIDDER for the subject equipment.	

**SECTION – 3:**

The BIDDER to note:

<b>S NO.</b>	<b>REQUIREMENTS</b>	<b>VENDOR'S RESPONSE</b>
3.1	The BIDDER / VENDOR shall submit the offer in TWO parts. 1. Technical Offer [ <b>with PART A &amp; PART B</b> ] 2. Commercial Offer and Price bid.	
3.2	The Technical Offer shall contain complete details against all clauses of Technical Specifications given by BHEL.	
3.3	The Technical Offer shall be supported by copies of product Catalogues, Data Sheets and technical details of Bought- Out-Items.	
3.4	The Commercial Offer (given with the Technical Offer) shall contain the Scope of Supply and the Un-Priced Part of the Price-Bid, for confirmation.	

**Suggestive Format of Performance Certificate:**

The Performance should be certified by the customer on **Customer's Letter Head** and submitted along with the offer.

**PERFORMANCE CERTIFICATE**

1.0	<b>ELECTRONICALLY CONTROLLED VARIABLE SPEED SELF CENTERING JOB ROTATORS</b> Supplied by : (Manufacturer's name)	
2.0	Make & Model number of the Machine	
3.0	Month & Year of Commissioning	
4.0	Application for which The Machine is used	
5.0	<b>Machine Details</b>	
5.1	Weight carrying & Rotating capacity of ELECTRONICALLY CONTROLLED VARIABLE SPEED SELF CENTERING JOB ROTATORS	
5.2	Speed Control Mechanism	
5.3	Min. & Max. size of jobs that can be handled on electronically controlled variable speed self centering job rotators	
6.0	Performance of the electronically controlled variable speed self centering job rotators (Please tick the appropriate option)	Satisfactory
		Not Satisfactory
7.0	Service after sales (Please tick the appropriate option)	Satisfactory
		Not Satisfactory
8.0	Other remarks (if any)	
Date:		Signature & Seal of the Authority Issuing the Performance Certificate

**Part B-****SPECIFICATION FOR ELECTRONICALLY CONTROLLED VARIABLE SPEED SELF CENTERING JOB ROTATORS**

Clause No.	PARTICULARS AND BHEL SPECIFICATIONS	Bidder's OFFER
1.0	<b><u>APPLICATION:</u></b> For use in heavy fabrication of Pressure Vessels and Heat Exchangers which are cylindrical in shape and welded with attachments and nozzles.	Vendor to Confirm
2.0	<b><u>Scope of Supply: Supply, Erection and Commissioning of :</u></b> A. 5 T Capacity Electronically controlled, Variable Speed Self centering Job Rotator – 02 Sets ( One set consists of 1 no. of drive unit & 1 no. of idle unit) B. 25 T Capacity Electronically controlled, Variable Speed, Self centering Job Rotator - 01 Set ( One set consists of 1 no. of drive unit & 1 no. of idle unit)  <b><u>which includes:</u></b> a. Detailed Design, Manufacture and supply as per BHEL specifications b. Assembly and Testing before Dispatch c. Supply of Electric & Mechanical Spares d. Erection (Assembly), Commissioning and Performance Prove-Out at BHEL e. Training on Maintenance for BHEL personnel f. O & M Manuals and related documents	Vendor to confirm
3.0	<b>TECHNICAL SPECIFICATIONS</b>	
3.1.0	<b>ROTATOR DRIVE UNIT:</b>	

Clause No.	PARTICULARS AND BHEL SPECIFICATIONS	Bidder's OFFER
3.1.1	<b>Weight Carrying Capacity should be designed to rated capacity as mentioned in the clause no. 2.0 scope of supply.</b>	Vendor to confirm
3.1.2	<b>Rotating Capacity (With Idle Unit):</b> <b>A: 05 Metric Ton</b> <b>B: 25 Metric Ton</b>	Vendor to confirm
3.1.3	<b>Eccentric Loading:</b> 20 % of the Job Weight	Vendor to confirm
3.1.4	<b>Rotation direction:</b> Both Clockwise and Anti clock wise rotation	Vendor to confirm
3.1.5	<b>Wheel Surface Speed:</b> 50 mm to 1200 mm / minute (approx.), with step less speed variation and uniform speed at set value.	Vendor to specify
3.1.6	<b>Electric Motor &amp; Drive:</b> AC Motor with suitable Variable Speed Drive, to take care of eccentric loading and uniform job rotation in either direction. The induction motor shall be suitable for VFD application and shall be of energy efficient class EFF1/IE2 conforming to IS standards. All the electrical components like motor, etc. shall be properly earthed.	Vendor to confirm
3.1.7	<b>Variable frequency drive:</b> Total harmonic distortion values for current and voltage, introduced by the drives shall be within allowable limits, as specified by IEEE Std 519-1992. Vendor shall specify the values of THD(V) and THD(I) in %.	Vendor to specify
3.1.8	<b>Rotator Operation:</b> Shall be controllable either from Main control panel or from the hand held remote pendant. A Key type selector switch has to be provided for Local / Remote selection at Main control panel.	Vendor to confirm

Clause No.	PARTICULARS AND BHEL SPECIFICATIONS		Bidder's OFFER
3.1.9	<p>A <b>hand held remote unit</b> with the following features has to be provided:</p> <p>(a) Remote ON / OFF selector switch            (b) Single turn Potentiometer for speed variation            (c) Emergency Off Push button            (d) 2 way selector switch for rotator forward / reverse operation</p> <p>The remote cable shall be connected to the Main control panel through easily detachable Plug &amp; sockets and length of the connecting cable shall be <b>15 mtrs.</b> The cable shall be routed through a <b>metallic braided hose</b> and suitable provision shall be provided on the rotator to <b>wind and keep</b> the remote cable safely when the remote is not in use. Provision shall be provided near the control panel/on the machine for suitably mounting the pendant after use.</p>	Vendor to confirm	
3.1.10	The control cables & power cables shall be routed through metallic cable tray / flexible conduit and they shall be properly clamped on the positioner.	Vendor to give details	
3.1.11	<b>Electro - Mechanical Drive Details:</b> VENDOR to give details on the mode of power transmission from the electric motor to the gear-box driving the rotator wheel along with offer.	Vendor to give details	
3.1.12	<b>Gear Box Details:</b> VENDOR to furnish complete technical details of the Gear Box used for mechanical power transmission. BHEL prefers vendor to use standard gear boxes rather than built in gear boxes. <b>Planetary Gears not permitted.</b>	Vendor to give details	
3.2	<b>ROTATOR IDLER UNIT:</b>		
3.2.1	Weight Carrying Capacity should be designed to rated capacity as mentioned in the clause no. 2.0 scope of supply.	Vendor to confirm	
3.2.2.	<b>Eccentric Loading:</b> 20 % of the Job Weight.	Vendor to confirm	

Clause No.	PARTICULARS AND BHEL SPECIFICATIONS	Bidder's OFFER
3.2.3	Welding return cable connection on the positioner: Suitable arrangement to be provided on the idler unit for connecting the welding return cables and to ensure the proper conductivity of welding current through job, rotator wheels to the welding machine. The maximum welding current to be carried is 1200A.	Vendor to confirm & provide details
<b>4.0</b>	<b>GENERAL FEATURES / INPUTS for DESIGN &amp; FABRICATION:</b>	
4.1	<b>Outer Diameter Range of Job (approx.):</b> A: 350 to 1200 mm B: 400 to 4000 mm	Vendor to specify
4.2	<b>Size of Wheel (Diameter X Width (approx.)):</b> A: 250 X 75 mm B: 500 X 140 mm	Vendor to specify
4.3	Vendor to indicate approximately range of Job rotation speed (Minimum & maximum) for jobs sizes mentioned in clause no. 4.1	Vendor to specify
4.4	Vendor to specify the height of roller top most point from shop floor level	Vendor to specify
4.5	<b>Wheel Material</b> : Solid Steel Forging	Vendor to confirm
4.6	<b>Wheel Contact Surface Hardness</b> : 300-350 BHN	Vendor to confirm & specify
4.7	<b>Wheel Surface Profile</b> : Crowning Surface	Vendor to confirm

Clause No.	PARTICULARS AND BHEL SPECIFICATIONS	Bidder's OFFER
4.8	<b>Wheel Pitch Adjustment :</b> Each wheel assembly with Housing/Bracket and Integral Drive Unit shall be movable on the Rotator Base Frame, through a manually driven screw-rod in Drive Unit . It shall be possible to position and lock each wheel assembly on the Rotator Base Frame at required pitches to cover the job diameter range. The drive arrangement to be designed to avoid loading on the screw-rod while loading / after loading the job on the wheels. (A scale to be fixed on the base frame to identify the range of job diameters that can be loaded at that particular pitch)	Vendor to confirm
4.9	<b>Hardness and finish of Base frame slide:</b> The sliding surfaces of the base frame in Drive units shall be hardened and machined.	Vendor to confirm
4.10	<b>Wheel Alignment:</b> The alignment of the wheel face in the plane perpendicular to the wheel shaft axis to be maintained within 1mm for the entire stroke of the wheel assembly positions on the base frame.	Vendor to confirm
4.11	<b>Wheel Positioning:</b> There shall be suitable provision for locking the wheel assembly with the base frame, to prevent movement under working/loaded conditions.	Vendor to confirm
4.12	<b>Wheel Shaft Assembly:</b> The high grade shafts are to be shrunk fit into wheel assemblies with <b>shrunk disc</b> , to eliminate the provision of key arrangement.	Vendor to confirm
4.13	<b>Wheel Support:</b> Wheels are to be supported on Heavy Duty Roller Bearings	Vendor to confirm
4.14	<b>Lifting Hook:</b> Four numbers of Lifting Hook are to be provided at suitable locations for facilitating lifting the entire rotator unit by EOT Crane in a geometrically balanced state. Also, Self-weight of the rotators should be painted legibly for lifting purpose.	Vendor to confirm

Clause No.	PARTICULARS AND BHEL SPECIFICATIONS	Bidder's OFFER
4.15	<b>Cover for Gears:</b> Suitably profiled steel outer-covers (with easily replaceable provisions) are to be provided for the spur gears, to protect from welding flux, slag and other foreign particles, while in operation. The thickness of the cover plate shall be minimum 3mm.	Vendor to confirm
4.16	<b>Cover for base frame:</b> Suitably profiled steel covers (with easily replaceable provisions) are to be provided to cover the sliding surface (top face) of the base frame, to protect from welding flux, slag and other foreign particles falling on it, while in operation. The thickness of the cover plate shall be minimum 3mm.	Vendor to confirm
4.17	<b>Job Temperature:</b> The ROTATORS will be used in the Fabrication Shop floors, where the jobs are pre-heated / post-heated to a temperature of maximum 300 °C and hence the mechanical parts coming in contact with the jobs are to be designed to withstand this high temperature.	Vendor to confirm
4.18	<b>Electric Power Input:</b> A 3 phase, 415 ± 10% V, 50 ± 2% Hz AC input supply will be provided at machine terminals. 3 wire system without neutral.	Vendor to confirm
4.19	<b>Power Supply Cable:</b> Power supply cable shall be of flexible copper and suitable capacity with <b>4 core (one for earth) of length 10 mtrs</b> with flexible rubber conduit for mechanical protection	Vendor to confirm

Clause No.	PARTICULARS AND BHEL SPECIFICATIONS	Bidder's OFFER
4.20	<p>The Main Control Panel shall have the following features:</p> <p>(a) A suitable capacity MCB as Main switch for On/ Off. The MCB shall be operable without opening the control panel door.</p> <p>(b) Indication lamp for the indication of Main On / Power On, Drive Trip.</p> <p>(c) Emergency Stop Push button.</p> <p>(d) 2 - way selector switch for rotator Forward / Reverse selection</p> <p>(e) A single turn POT for setting the RPM.</p> <p>(f) Key type Local / Remote selector switch.</p> <p>(g) Sufficient capacity Cooling fan with required Air filter.</p> <p>(h) Push button for Drive Reset</p> <p>All the electrical components shall be of 'DIN rail' mountable type and the panel shall have IP 54 protection.</p>	Vendor to confirm
4.21	<p><b>Ambient Condition:</b> Indoor Working Environment with temperature up to 50 ° C and Humidity up to 85%, but both not occur simultaneously. Hence, the offered equipment shall be of tropicalized in design.</p>	Vendor to confirm
4.22	<p>Control Voltage: The control Voltage shall be 24 V AC / DC.</p>	Vendor to confirm
5.0	<p><b><u>Bought-Out Items:</u></b></p> <p>a. VENDOR has to list down all the Bought- Out Items and their makes / brand names with technical specifications.</p> <p>b. Bought-Out Items / Components supplied make shall be ABB / SIEMENS / CROMPTON GREAVES / HINDUSTAN / BHARAT BIJLEE / KIRLOSKAR for Electric Motors and TIMKEN / FAG / SKF for Bearings.</p> <p>c. The variable speed drive shall be of ABB / SIEMENS/ MITSUBISHI / YASKAWA / TOSHIBA / PARKER / SCHNEIDER / AMTECH make.</p> <p>d. The Gear boxes shall be of Greaves / Elecon / Bonfiglioly/ Radicon / New Allenbury.</p>	Vendor to give details

Clause No.	PARTICULARS AND BHEL SPECIFICATIONS	Bidder's OFFER
6.0	<b>STRUCTURAL FABRICATION</b>	
6.1	<b>Rotator Base Frame and Heavy Wheel Bracket / Housing:</b> Steel Fabrication Procedures to be followed. The Base Frame work shall be with steel plates of sufficient thickness, including REINFORCING RIBS.	Vendor to confirm
6.2	<b>Raw Material:</b> Only steel plates tested and certified for quality by reputed inspection authorities, shall be used. Test Certificates to be produced for BHEL verification and form part of the documentation.	Vendor to confirm
6.3	<b>Welded Joints:</b> No Butt Joints are allowed for Plate Build-Up to increase effective length	Vendor to confirm
6.4	<b>Welding Electrodes:</b> For all Welding E 7018 Electrode/higher grade shall be used.	Vendor to confirm
6.5	<b>Welded Joint Testing:</b> All Fillet Welded Joints shall be subjected to Non Destructive Testing like Liquid Penetrant Test (LPI) and Magnetic Particle Inspection (MPI). Testing Documents to be produced for BHEL evaluation and form part of the documentation. Random MPI / LPI to be shown to BHEL inspectors at the time of inspection at vendor's works.	Vendor to confirm
6.6	<b>Heat Treatment &amp; NDT Examination:</b> The Structural Items (Base Frame / Wheel Housing, etc.) shall be Stress Relieved by thermal heat-treatment process after welding and NDT examinations. All welding shall be tested by NDT means [MPI or LPI] after Stress Relieving operation.	Vendor to confirm
6.7	<b>Machining Operation:</b> All mechanical mating sliding surfaces are to be machined and ground to the required finish after heat treatment and protected.	Vendor to confirm
6.8	<b>Surface Cleaning:</b> All steel parts are to be shot blasted or chemically treated for surface cleaning, after completion of all operations but prior to painting.	Vendor to confirm

Clause No.	PARTICULARS AND BHEL SPECIFICATIONS	Bidder's OFFER
6.9	<p><b>Painting:</b> The ROTATORS are to be painted as follows :</p> <ul style="list-style-type: none"> <li>a. One coat of Primer (Zinc Chromate) with 48 hours of compulsory curing after painting.</li> <li>b. Two coats of Enamel Paint [ Colour Apple Green] .</li> <li>c. Weight carrying capacity &amp; Self weight shall be painted legibly on each unit.</li> </ul>	Vendor to confirm
6.10	<p><b>Frame Dimensions:</b> VENDOR has to indicate the tentative DIMENSIONS for the Base Frame of Drive Units and Wheel Brackets</p>	Vendor to give details
7.0	<p><b>SPARES SUPPLY:</b> VENDOR to Quote for the following spares along with the rotator for two years of trouble free operation:</p> <ul style="list-style-type: none"> <li>a. Bearings for each wheel assembly</li> <li>b. Shrunken Disc</li> <li>c. Seals, gaskets &amp; Belts used in the Rotator - - if applicable</li> <li>d. Pulleys &amp; Couplings used in the Rotator</li> <li>e. Variable Frequency Drive for each capacity rotator</li> <li>f. Selector switches, push-buttons, potentiometer, limit-switches-one in each type</li> </ul>	Vendor to provide a separate unpriced complete list of spares
7.1	<p><b>The following Electrical maintenance tools kit &amp; instrument –has to be supplied:</b></p> <ul style="list-style-type: none"> <li>(a) Electrical maintenance Tool kit (KENNEDY make, 46piece ratchet screwdriver bit and socket set, Order code: KEN5736360K) - 1 No for each capacity rotator.</li> <li>(b) MECO make digital Multimeter, Model: 801 Auto – 1 No. for each capacity rotator</li> <li>(c) Hand wheel / Ring spanner for driving the lead screw for pitch adjustment of wheels – 4 No.</li> </ul>	Vendor to confirm

Clause No.	PARTICULARS AND BHEL SPECIFICATIONS		Bidder's OFFER
8.0	<b>DRAWINGS / DOCUMENTS / DETAILS:</b>		
8.1	<p>Drawings and Documents after receipt of P.O.: The following documents and details are to be submitted for BHEL Approval, with in one month after the receipt of PO - prior to taking up the manufacture of the ROTATORS:</p> <ul style="list-style-type: none"> <li>a. GA Drawing of the ROTATOR showing design of prove out of job sizes.</li> <li>b. GA Drawing of Wheel Drive Mechanism</li> <li>c. GA drawing of wheel shifting mechanism in Drive Units.</li> <li>d. GA Drawing of Electric/Electronic System.</li> <li>e. Sub-Assembly Drawing for Wheels.</li> <li>f. Calculations for Selection of Electric Motors, Gear Reducers, etc.</li> <li>g. Wiring Diagram with Logic Circuits.</li> <li>h. Weight of the ROTATOR (Drive &amp; Idler Unit) including all Electrical Equipment.</li> </ul> <p>Note: All the drawings should have the major &amp; critical dimensions and list of bought out items with make and specification</p>	Vendor confirm to	

Clause No.	PARTICULARS AND BHEL SPECIFICATIONS	Bidder's OFFER
8.2	<p>Drawings and Documents along with Equipment supply: Each ROTATOR shall be provided with THREE Copies of Erection / Assembly, Operation &amp; Maintenance Manual, containing the following technical details :</p> <ul style="list-style-type: none"> <li>a. General Arrangement and Sub-assembly Drawings</li> <li>b. Electrical Wiring Schematics</li> <li>c. Detailed Wiring Diagrams for Control Panels and Remote Control</li> <li>d. Rotator Wheel Sub- Assembly Drawing</li> <li>e. Gear Box Details / Drawings.</li> <li>f. Specifications / Ratings of Bought-Out Items</li> <li>g. VFD drive Programming / User manual</li> <li>h. VFD drive Parameter manual</li> <li>i. Mechanical manufacturing drawings for all wearing components. (Screw rod, boxnut, drive pinion, gears, bushes, etc.)</li> <li>j. Operation &amp; Maintenance manual with complete specification of the equipment and Preventive Maintenance check list.</li> </ul> <p><b>Note:</b></p> <ol style="list-style-type: none"> <li>1. One soft copy of the entire documents stated above to be provided in <b>Pen drive</b>.</li> <li>2. One Hard copy and one soft copy to be submitted at the time of inspection at suppliers works for checking the sufficiency of the documents. If any additional requirements are found needed for maintenance, it should be provided.</li> </ol>	Vendor confirm to

Clause No.	PARTICULARS AND BHEL SPECIFICATIONS	Bidder's OFFER
9.0	<p><b><u>Inspection :</u></b> The following Schedule of Inspection is to be carried out, prior to dispatch from the Supplier's Works :</p> <ul style="list-style-type: none"> <li>a. Verification of Test Certificate for Raw Materials &amp; Bought-Out Items used.</li> <li>b. Random Testing on the Welds, by physical examination and NDT</li> <li>c. Wheel alignment as per clause 4.8.</li> <li>d. Idle Run Test and Test under simulated conditions (on mutually agreed)</li> <li>e. Verification of O&amp;M Manuals.</li> </ul>	Vendor confirm to
10.0	<b>ROTATOR ERECTION &amp; COMMISSIONING</b>	
10.1	<b><u>Erection / Assembly:</u></b> Erection / Assembly of the ROTATORS will have to be done by the Qualified Technical Representative of the Supplier at BHEL Works	Vendor confirm to
10.2	<b><u>Commissioning:</u></b> Commissioning of the ROTATOR and Performance Prove – Out for Carrying & Rotating Capacity and Smooth Functioning of the ROTATOR (at BHEL Works) shall be the RESPONSIBILITY of the supplier.	Vendor confirm to
11.0	<b><u>Training:</u></b> After Erection & Commissioning, the Vendor shall give necessary training to Operators & Maintenance persons on Operation & Maintenance of the Unit.	Vendor confirm. to
12.0	<b><u>Training on VFD:</u></b> Also, the Vendor shall arrange training at VFD manufacturer's work in India for 2 BHEL personal on VFD Programming, Maintenance & troubleshooting. The Boarding, Lodging & travelling expenses of BHEL personal will be borne by BHEL.	Vendor confirm. to